CAPITALISATION OF OPERATING LEASE AND ITS IMPACT ON FIRM'S FINANCIAL RATIOS: EVIDENCE FROM ITALIAN LISTED COMPANIES

Roberto Maglio *, Valerio Rapone **, Andrea Rey **

* *Corresponding author* Department of Economics, Management and Institutions, University Federico II of Naples, Italy
Contact details: University Federico II of Naples, Via Cinthia - Monte Sant'Angelo, 26, 80126, Italy
** Department of Economics, Management and Institutions, University Federico II of Naples, Italy

OPEN ACCESS

How to cite this paper: Maglio, R., Rapone, V., & Rey, A. (2018). Capitalisation of operating lease and its impact on firm's financial ratios: Evidence from Italian listed companies. *Corporate Ownership & Control, 15(3-1),* 152-162.
http://doi.org/10.22495/cocv15i3c1p1

ISSN Online: 1810-3057
ISSN Print: 1727-9232

Received: 18.01.2018
Accepted: 02.04.2018

JEL Classification: G10, G14, G30, G32, G34, M40, M41
DOI: 10.22495/cocv15i3c1p1

Abstract

Lease accounting will never be the same again. The endorsement of IFRS 16 on November 2017 sets out new rules for the recognition and measurement of the lease. The new standard removes the lessee's distinction between operating and financial lease and it will have a substantial impact for companies have previously kept a large proportion of their financing off balance sheets. Under IAS 17 companies have exploited a financial accounting loophole by structuring lease transactions as operating leases, favouring opportunistic behaviours by managers and distorting the investors' perception of the disclosure. IFRS 16 removes the so-called bright lines companies used to avoid capitalisation of leases and turns any attempt to hide lease liabilities off the balance sheet into a futile exercise to improve transparency of information. The purpose of this research is to analyse the potential impact of the new accounting rules on key financial ratios of Italian listed companies using a refined constructive capitalisation method. The results of the study show that the reflection of the operating leases on the balance sheet shall cause a significant increase in the assets and liabilities and for this reason, there shall be a significant effect on the main debt, liquidity and profitability ratios.

Keywords: IFRS 16, Operating Leases, Liabilities, Financial Ratios, Impact Assessment, Constructive Capitalisation

1. INTRODUCTION

Lease and hire purchase agreements are common methods of business financing in Europe in the broadest sense (not just the EU and European Economic Area, EEA, countries). In particular, the lease is used to finance a wide range of assets, including cars, trucks, industrial machinery and equipment, IT and other office equipment, planes, and real estate to name but a few. In the global lease landscape defined in its widest sense (i.e. including hire purchase), Europe plays a major role, accounting for 38 percent of total volume, with Germany and UK being the largest markets.

The main impact of IFRS 16 will be to bring assets held under operating leases and the lease liabilities onto balance sheets. Profitability and leverage ratios would also be affected.

When the IASB was founded, accounting for leases had for more than twenty years dominated by the approach embodied in FAS 13 – Accounting for Leases (1976). The logic of FAS 13 had been adopted by IASC in IAS 17 – Accounting for leases (1982) involving lessors and lessees accounted for finance leases as the equivalent of a sale and accounted for operating leases as an executory contract. The practical implication of these accounting standards was that many leases did not qualify for capitalisation on the balance sheet of lessees and, as was often asserted, an important activity of the leasing industry was to structure contracts deliberately so as to avoid capitalisation.

The mandatory adoption of new standards has been generated a lot of debates and controversies around the world (Uwuigbe, Emeni, Uwuigbe & Ataiwrehe, 2016) for more than 30 years. Users and preparers have criticized the lease accounting standards as unnecessarily complex and have led the standard setters to rethink the model issued. This heated debate is reflected in the international media

and in the substantial number of comment letters received by standard setters during the lease standard-setting process. Durocher and Fortin (2011) say the legitimacy and quality of an international accounting standard depend on the involvement of those affected by it.

DP 2009, ED 2010 and ED 2013 have received 302, 788 and 655 comment letters, respectively, a number surpassing the average for other projects. Additionally, the effective issue date of the final standard was delayed several times and the on-going debate over the prosecution and consequences of the new lease accounting standard has become an important matter that has attracted the attention of accounting academia, professional and media.

The accounting topic of leases and its manipulation in the lessees financial statement has since the beginning faced very difficult problems, linked to a structure that made it the most classic example of a business operation application, namely disapproval, of what has been progressively affirmed over the years as the "principle of the prevalence of the economic substance over the legal form" (Maglio R., 1998). Lease falls under the category of contract executory, agreements that the international standard setter defines as: “contracts under which neither party has performed any of its obligations or both parties have partially performed their obligations to an equal extent”.

Traditionally, accounting practice has considered the execution of an executory contract as a condition not sufficient to allow the asset to be recognized in the financial statements, so accounting principles and rules have in most cases preferred a limited exposure to the effects of the transaction, favouring opportunistic behaviour of preparers. On the other hand, the identification of the minimum conditions for "recognition" is a topic that has been constantly evolving over the last few years so, if under the economic and legal perspective it is undeniable that those who subscribe to a lease contract assume rights and obligations, the way these will be represented in the financial accounting depends first of all on the minimum requirements that shared practice is needed for such disclosure. The underlying discipline based on the so-called ownership approach adopted by the main Anglo-Saxon setters and whose justification of the capitalisation of lease contract components is based on the transfer to the lessee of the majority of the risks and associated benefits of the leased asset, has left a wide margin of discretion to the statement editors. This allowed, as claimed by the Securities and Exchange Commission (SEC), a repeated and expressive use of instrumentalized qualifications, with the result of avoiding the capitalisation of the transaction and improving performance and leverage ratios, distorting the correct perception of stakeholders and reducing the information quality of the financial accounting in terms of faithfulness, accuracy and transparency (Kohansal, S., Rostami, S., & Rostami, Z., 2017). According to a study performed by IASB and FASB, it has led listed companies to account for an off-balance sheet about 76% of total operations worldwide, for a current value of approximately $ 2.16 trillion.

The recent publication of IFRS 16 completes its long-running project to overhaul lease accounting with the aim of countering the phenomenon of bright lines and consequently of off-balance sheet leases in order to improve the quality disclosure of the transaction and ensure greater transparency on the debt and the risks that companies use in their operations through lease contracts. The new standard, based on the so-called "right of use approach", will overcome the main difficulties encountered in accounting practice, imposing the capitalisation of contract components for the lessee irrespective of the type of contract. From these short considerations, the aim of this research is to analyse the transition to the new model of lease accounting, which will certainly not be neutral with respect to the quantification and qualification of the company's structure and performance. The purpose is to investigate the impact of the implementation of the new lease treatment on identified financial indicators. Through manual data collection of consolidated financial statements of listed companies and the Thomson Reuters platform, it was possible to obtain information about the future minimum lease payments applying the constructive capitalisation method and estimating assets and liabilities to be recorded in the financial statements.

Using comparative analysis, it was then preceded by the comparison between the value of before and after capitalisation indicators, taking into account the percentage changes resulting from the application of the new standard. Section II presents the literature review; Section III includes the description of the sample and the research methodology; Section IV contains the results; Section V contains the conclusions.

2. LITERATURE REVIEW

This study aims to predict what will be the impact of lease capitalisation on financial statement’s users of a change in the leases regulatory framework in Italy.

Researcher performed by several previous studies have investigated the potential impact on financial figures due to a change in the lease accounting standard. These studies yielded mixed results. Some researchers showed significant deviations from the main figures and financial indicators (Imhof, Lipe, Wright 1991, Beattie 1998, Bennet & Bradbury, 2003; Durocher 2008; Lückerath & de Bos, 2009; Grossman and Grossman, 2010; Fito et al., 2013). Some researchers tested the impact of capitalisation on investor decision-making (Imhoff et al., 1991; Beattie et al., 1998; Bennet & Bradbury, 2003; Lückerath & de Bos, 2009); others researchers argued that financial analysts do not often perform accurate accounting adjustments (Garrod, 1989; El-Gazzar, 1993; Gallery & Imhoff, 1998). Others have also stressed the importance of capitalisation for disclosure transparency for the credit system (Stanga & Tillere 1983; Kemp & Overstreet, 1990).

Nelson’s study “Capitalizing leases: the effect on financial ratios" (1963) was the first study that tested the impact of lease capitalisation on financial ratios. The author analysed 11 American companies and demonstrated how capitalisation would increase the significance and reliability of the financial ratios.

Imhoff, Wright & Lipe in 1991 and 1997, supported the results obtained by Nelson and developed the method of constructive capitalisation

and through a careful analysis of 80 US-listed companies, showed how the capitalisation of operating leases caused significant changes to key financial indicators.

Beattie, Edwards and Goodacre (1998), analysed 13 UK companies, highlighted, however, how the capitalisation of operating leases significantly influenced profit margins, asset performance, and corporate leverage.

Bennett and Bradbury (2003) tested the impact of the lease capitalisation on 38 listed companies in the New Zealand Stock Exchange. They used the constructive methodology and demonstrated how the capitalisation of the lease had a significant impact on reported liabilities and financial data, with obvious effects on leverage, liquidity and profitability. Goodacre (2003) focused on the expected impact of operating lease capitalisation on retail companies in the UK. He explained that leasing was one of the main sources of finance and on the basis of the analysis of 102 companies over the period 1994-1999, showed that operating leases, most of which land and buildings accounted for a significant percentage of total assets reported. After applying the method of constructive capitalisation, the author highlighted a major impact on nine key performance reports.

Mulford and Gram (2007) focused on the retail sector and investigated the expected impact of operational lease capitalisation. The study analysed 19 US companies in 2006 and highlighted an increase in EBITDA combined with a reduction in income from current and earnings per share. In addition, significant increases were recorded in the leverage and the reduction of ROA and ROE profit and loss coverage measures.

Durocher (2008) used a sophisticated method of constructing capitalisation to calculate the impact of operating lease contracts on the major financial reports of Canadian listed companies. The results showed a significant impact on the debt/assets ratio for all industrial sectors considered while the profitability effects were significant only for some industrial sectors including merchandising, oil and gas and financial services.

Fulbier et al. (2008) analysed the impact of operational lease capitalisation for a sample of 90 companies belonging to the three major indices: DAX 30, MDAX and SDAX for 2003 and 2004. The authors used the two alternative methods, namely constructive capitalisation and the factorial method and showed a significant impact on businesses, particularly in the fashion and retail sectors. The strongest impact was observed in leverage ratios, while the one on the profitability ratios and market multiples often used for valuation purposes was the only minor. Their results were consistent using both methods.

Duke et al. (2009) evaluated the expected impact of operating lease capitalisation for 366 companies included in Standard & Poor's 500 in 2003. They demonstrated how companies could "hedge" billions of dollars in liabilities and increase profits, incomes and relationships by lease as an operative. Strengthened by the empirical results, the authors asserted that the capitalisation proposal should be fully considered.

Beckman and Jervis (2009) showed how the American construction and engineering industry was particularly interested in the proposal. The authors found, in coherence with other studies, a greater impact on leverage than profitability and stated that a single lease capitalisation model would make sense, particularly for the analysis of financial statements. Singh (2010) analysed the expected impact for a sample of 234 companies (64 restaurants and 170 retail businesses) for the period 2006-2008. In line with previous studies, the author found relative and absolute differences between and within the two sectors in relation to financial ratios related to leverage, profitability, and interest coverage. The results showed that businesses in both sectors were dramatically affected, even if retailers were more concerned with restaurant businesses.

Grossmann and Grossmann (2010) carried out an impact analysis for 91 companies included in the top 200 Fortune 500 listed companies for 2009. The results showed significant impacts on the current ratio and the debt-to-equity ratio and a lower impact on profitability. In addition, the authors stated there may be some drawbacks arising from the capitalisation of operating lease contracts. In particular, due to the economic consequences that could arise as a result of the analysis of the financial situation of the companies, the authors also perceived the potential adverse effects this could have on companies regarding access to finance and the adherence to the covenants agreements. Win et al. (2013) focused on Spanish companies for the period 2008-2010. Spain was chosen because it was considered an interesting context because of the significant lobbying activity carried out by industry associations to change or even cancel the implementation of the reform process. The results showed that the overall impact on the financial ratios of capitalisation of operating lease contracts was statistically significant. In particular, the authors found significant changes in leverage relationships that could affect the structure of capital, debt ratios, market position and corporate image.

Fabi et al. (2014) in their study "Comparing the Effects of IASB Proposals on Lease: An Impact Assessment of EU Listed Companies" conducted a careful simulation analysis, comparing the effects of the implementation of the new accounting framework on corporate budgets quoted by the EU in 2011. They demonstrated how the recognition of assets with rights of use and the corresponding liabilities arising from operating lease contracts significantly influenced financial indicators including the D / E Ratio, particularly as regards the countries, France (+ 66%), the Netherlands (70%), the UK (67.5%) and Germany (47%), where lease is a very common form of financing rather than Italy (+ 35%) and Spain (13%).

One of the relevant recent studies (which investigated the impact of operating lease capitalisation) has been performed by Begoña Giner & Francisca Pardo (2017). Considering the Spanish listed companies during 2010-2013 years, a time of widespread financial crisis, the authors point to the main motivations that companies have to resort to operating lease contracts. Secondly, they consider the effect of including liabilities arising from operating lease contracts and related assets on selected financial ratios often used as a basis for covenant agreements. Applying the constructive capitalisation method to the collected data, the authors measure the

effects of the capitalisation of off-balance sheet leases. Their results confirm that companies funded in close contact with covenants deal mostly with an operating lease, suggesting that they will be more affected by changing accounting standards than less-cost companies. They also show that large companies and those in the retail and technology industry tend to underwrite more lease contracts and through the simulation study conclude that capitalisation has a significant impact on key accounting data.

All these studies have largely recognized a significant impact from the capitalisation of operating lease contracts on asset values and the key financial ratios including financial debt ratios. Income indicators, as Profit Margin, ROA and Asset Turnover, will be affected by the capitalisation of operating lease contracts, albeit to a lesser extent than the amounts previously considered. The impact on indicators will be more pronounced for service companies, such as airlines, hotels, retailers, media agencies and vehicle distributors. The capitalisation of operating lease contracts will probably change the stability of business within the sectors relative to financial measures, with important effects on the covenants agreements. Countries to be impacted most by new changes are those that make a wide use of the instrument like Germany, New Zealand, the United Kingdom and the United States.

The research contributes to the literature presenting evidence of Italian IAS/IFRS adopters after the definitive endorsement of IFRS 16 by European Commission.

Our study analyses the impact on Italian companies ranks before and after capitalisation and shows that capitalisation of operating lease significantly affects leverage ratios.

We set up the following hypothesis to test:

H_1: The financial indicators of operating lease companies will be significantly affected by capitalisation.

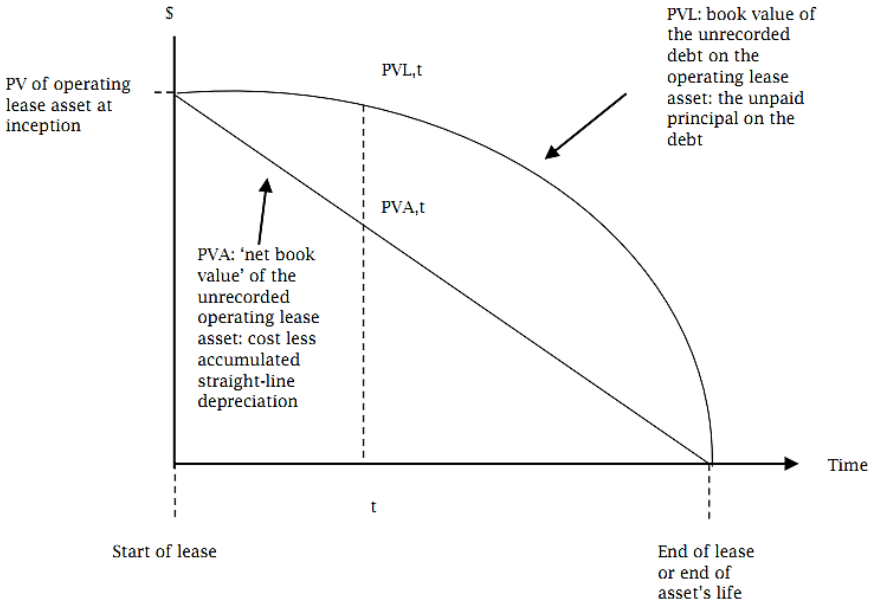
3. RESEARCH METHODOLOGY

3.1. The methodology

Academical research has used two key methods of lease capitalisation over time: the factor method or the discounted cash flow method and the constructive capitalisation. The former is very similar to each other and none of them influences income or equity. They are useful for who uses them but are coarse because the value of the lease liability is less accurate and is calculated by multiplying the annual operating lease rate per one factor depending by industry and firm-specific characteristics (Barone, Birt & Moya, 2014; Goedhart & Wesseks, 1993: Sannella, 1989; Houlihan & Sondhi, 1984).The method of constructive capitalisation developed by Imhoff, Lipe and Wright (1991) has been extensively used by literature to estimate off-balance sheet leases (eg Beattie, Edwards and Goodacre 1998, 2000, Bennett and Bradbury 2003, Durocher 2008, Fülbier, Lirio Silva e Pferdehirt 2008; Winner, Moya e Orgaz 2013). This method requires an estimation of the amount of the financial liability and the assets for the right to use that will be shown in the financial statements as if the operating lease had been accounted for at the time of initial recognition as the finance lease. General assumptions of the model presume that: (i) at the time of each lease, the carrying amount of which is equal to the value of the liability or the present value of the minimum lease payments; (Ii) the final value of assets and liabilities is zero at the end of the last payment made for the lease contract; (III) assets are depreciated using the straight-line method of depreciation; (IV) lease payments are constant over the entire duration.

The figure below shows the graphic representation of the relationship between lease assets and liabilities.

Figure 1. The relationship between lease asset and liabilities



The estimated debt is based on the value of the minimum lease payments over its lifetime. The estimated asset results from the relationship between assets and liabilities, assuming that lease assets are fully financing with debt capital. (Imhoff, Lipe & Wright, 1991). The effect on shareholders' equity depends on the tax rate on each company and on the relationship between the two balance sheet items.

Present value of future minimum lease payments:

$$PVOL = \sum_{i=1}^{n} \frac{CF_t}{(1+i)t} \quad (1)$$

Present value of assets:

$$AP = \frac{UA}{UL} = \frac{RL * \left(\frac{1-(1/(1+i)^{TL}}{i}\right)}{TL * \left(\frac{1-(1/(1+i)^{RL}}{i}\right)}, PVA = AP * PVOL \quad (2)$$

Change in equity:

$$Equity = (1-t) * (PVOL - PVA) \quad (3)$$

The model developed to test the before mentioned hypothesis aims to evaluate the impact of capitalisation of operating lease on firms' financial ratios. The comparative model examines the change of firms' financial ratios in the sample before and after capitalisation of operating lease. If there were a significant change, it can be inferred that disclosure of information on operating lease is meaningful and useful in decision making because financial ratio analysis is used as consideration in investors' decision making.

Using paired sample t-test if data is normally distributed or Wilcoxon test if data is not normally distributed we will test the hypothesis.

In order to apply the model, some assumptions are made about the interest rate, the residual and total duration, the breakdown of lease payments over the fifth year and the tax rate. After a careful analysis of the various options used in the literature, an approximate discount rate of 6%, equal to the effective annual global rate provided for by the decree of the Minister of the Treasury of 8 July 1992 and its year 2015 for operating lease contracts, which resulted from our processing of 6.2%.

Regarding the total duration, while the Myers equation is related at the start of the lease contract and the accounting implications have to be calculated on an annual basis, it is necessary to hypothesize how much the original lease period (TL) and up to (RL). Since the annual reports do not provide detail information, we have assumed, as in previous studies, a residual duration of between 40% and 50% and a total duration equal to 10 and 12 years old. As far as lease payments are concerned, lease payments are indicated in three categories of lease CFe, e = 1, 2 or 3. e = 1: lease commitments falling due within the following year; and = 2: expiration between two and five years e = 3: expiration after five years. The problem lies in the third interval since, in order to obtain annual lease payments, reference magnitude is to be divided over the years (t). The problem was solved using Bryan, Lilien and Martin (2010) methodology as a reference, taking a 5-year renewal period and obtaining constant values for the period under review.

Following the procedure of Imhoff et al. with a lease term of 10 years and a residual life of 40% (85%) and with a lease term of 12 years and a residual life of 50% (79%), it reaches an average value of assets of 82%. According to the author, the difference between the assets and liabilities values is an additional expense, partly attributable to the tax consequences of deferred taxes and, on the other hand, to the reduction of net assets using the current tax rate.

3.2. Data

Our research examines the lease capitalisation effects on financial ratios of companies listed on the Borsa Italiana's Main Market (MTA) in the year of 2015. MTA is the Italian regulated market subject to stringent requirements in line with the expectations of professional and private investors.

In 2015 MTA comprised 280 companies that represented different sectors such as energy and utilities, healthcare and biotechnology, IT and telecommunications, consumers, financial, industrial and materials, metal and mining, and clean technology. A total of 151 companies lacked operating lease information, and they have been excluded from the initial sample of 280. Further, we have excluded companies from the financial sector (62) because the high leverage that is normal for these firms probably does not have the same meaning as for non-financial firms, where high leverage more likely indicates distress. At the end, we also have excluded the companies belong to the same group or preferred stocks (27).

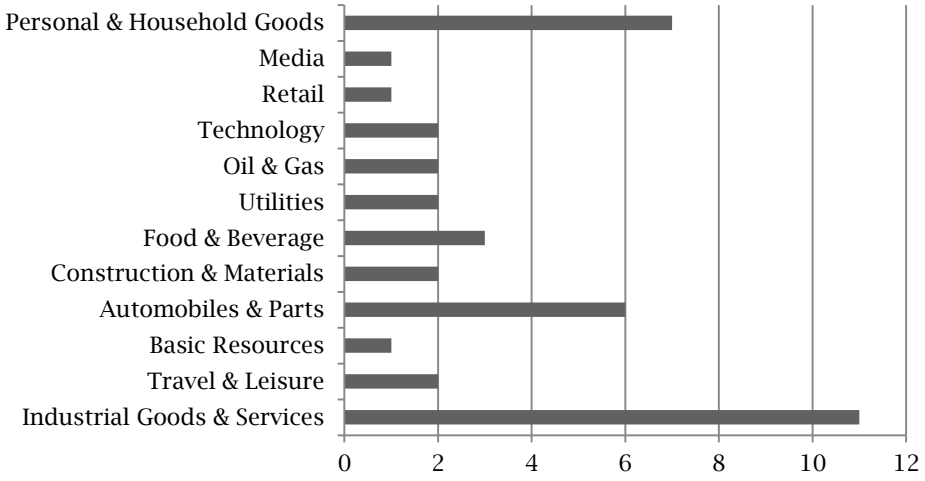
The final sample totalled 40 companies (Table 1), with the largest industry sectors being industrial and services (11), personal & household goods (7) and automobiles and parts (6) (Figure 2).

Table 1. Procedure of sampling companies

Description	
Firms listed on Italian Stock Exchange that report audited financial statements:	280
Less:	
Companies that do not take operating lease or do not disclose operating lease commitment	(151)
Financial companies	(62)
Companies belong to the same group or preferred stocks	(27)
Observed Companies	40

Note: The final sample consists of 40 non-financial Italian firms in 2015. Firms are classified into different industries using the classification provided by the Borsa Italiana's Main Market

Figure 2. Companies classification by industry



Note: Data refers to 2015

The data have been gathered by checking companies' consolidated annual reports. Consolidated annual reports are not primarily used for research purpose but they are public information and can, therefore, be seen as secondary data of high-quality information (Greener & Martelli, 2008). An advantage of using secondary data in the study is that it is time-saving and cost-effective (Bryman, 2012; Greener & Martelli, 2008).

Data regarding lease information have been downloaded from Thomson Reuters platform. For each company it has been possible to extract information about the total of future minimum lease payments under non-cancellable operating leases for each of the following periods: (i) not later than one year; (ii); later than one year and not later than five years; (iii) later than five years.

The observed sample represents 40% of the total stock market capitalisation with a value of 188,401.57 (millions of €). The sample is equally distributed in the three main indices: (1) FTSE MIB, which measures the performance of the first 40 Italian shares by size and liquidity; (2) FTSE Italia Mid Cap, which represents the 60 holdings of companies with more capitalisation, excluding the FTSE MIB components and (3) FTSE Italia Small Cap, which is the index composed of the other shares outside the above listed indices, which comply with minimum liquidity and floating requirements.

3.3. Variable definitions

Previous studies analysing the impact of constructive capitalisation on companies' financial ratios Imhoff, Lipe and Wright (1991), Beattie et al. (1998), Bennett & Bradbury (2003), Fulbier (2008), Lückerath and de Bos (2009), Fitó et al. (2013), Wong & Joshi (2015) and others have shown that the capitalisation of operating leases on the balance sheet has a major impact on the accounting ratios.

The ratios have been calculated first on the original financial reports and then related to financial ratios calculated on the updated values after capitalisation. We have separated ratios linked to the profitability performance from financial leverage and to facilitate comparison with previous studies we examined six financial ratios (Table 2).

The differences between original and updated ratios consist in PVOL (present value of operating lease) and PVA (present value of assets), impacting on other accounting variables.

In the first group of ratios, we have considered the effects of capitalisation on the income statement, due mainly to the assumptions considered in our model and previously disclosed. These ratios are used to indicate changes in the profitability and the expense structure of the companies and contributing to analyse the operating risk and are particularly relevant for valuation purposes by financial analysts and equity investors. We have calculated return on assets (ROA), return on equity (ROE), EBITDA Return on Equity (EBITDA/TOTAL EQUITY) and EBITDA Return on Assets (EBITDA/TOTAL ASSET).

The EBITDA Return on Equity ratio measures the amount of EBITDA profit generated with invested equity. Finance and depreciation costs are added back to net profit (EBITDA) to allow for a meaningful comparison between companies with varying capital structures, debt structures, geographical locations. The higher the EBITDA Return on Equity percentage, the greater the ratio of EBITDA profit to invested equity. The EBITDA Return on Assets ratio measures the amount of EBITDA profit generated in comparison to total assets. The higher the EBITDA Return on Assets percentage, the greater the ratio of EBITDA profit to the company's total assets Any change in these ratios could affect the diagnosis of a firm performance evolution.

Considering the modifications on the balance sheet, the capitalisation of operating leases will systematically result in a bigger denominator (total assets) in the case of ROA, and a smaller denominator (shareholders' equity) in the case of ROE. The impact in the numerator is not expected to be significant due to our assumption of RL/TL equivalent to 50%. Again, changes in these ratios may affect management behaviour in terms of information inductance and/or for contractual reasons, where such reasons may include compensation plans regularly connected to earnings and profitability ratios.

In the second group of ratios we have considered the effects of capitalisation on the balance sheet and we have calculated two ratios linked to financial leverage in order to measure the changes on the companies' financial position due to the increase of the lease assets and liabilities: the asset to equity ratio (A/E) and debt to equity ratio (D/E) ratios.

Many studies identify these ratios as structural risk measures for evaluating a company's operating and financial risk (Bowman, 1980); Imhoff, Lipe, and Wright (1993); Ely (1995); Gallery and Imho (1998); Beattie, Goodacre, and Thomson (2000). Rating agencies, financial analysts, and investors consider debt-related structural risk measures (leverage ratios), including interest coverage ratios as especially important. Therefore, changes in these ratios may also affect management behaviour, either because of the expected impact on users and/or due to the risk of violating specialized levels of those ratios in debt covenants (Begley,1990); Watts and Zimmerman (1986).

We expect that all ratios considered are affected by the capitalisation procedure either at the numerator or denominator level, or both.

In tables (2) we show the ratios considered in our analysis.

Table 2. Financial ratios before and after capitalisation of operating lease

Profitability Ratio	***Before Capitalisation***	***After Capitalisation***
Return on Assets (ROA)	$\frac{Net\ Income\ After\ Taxes}{Average\ Total\ Assets}$	$\frac{Net\ Income\ After\ Taxes}{Average\ Total\ Assets + \boldsymbol{PVA}}$
Return on Equity (ROE)	$\frac{Net\ Income\ After\ Taxes - Non\ controlling\ interests}{Average\ Common\ Equity}$	$\frac{Net\ Income\ After\ Taxes - Non\ controlling\ interests}{Average\ Common\ Equity + \boldsymbol{change\ in\ Equity}}$
EBITDA/Total Equity	$\frac{EBITDA}{Average\ Total\ Equity}$	$\frac{EBITDA}{Average\ Total\ Equity + \boldsymbol{change\ in\ Equity}}$
EBITDA/Total Assets	$\frac{EBITDA}{Average\ Total\ Assets}$	$\frac{EBITDA}{Average\ Total\ Asset + \boldsymbol{PVA}}$
Leverage Ratio	***Before Capitalisation***	***After Capitalisation***
Leverage (A/E)	$\frac{Total\ Assets}{Total\ Equity}$	$\frac{Total\ Assets + \boldsymbol{PVA}}{Total\ Equity + \boldsymbol{change\ in\ Equity}}$
Debt/Equity (D/E)	$\frac{Total\ Debt}{Total\ Equity}$	$\frac{Total\ Debt + \boldsymbol{PVOL}}{Total\ Equity + \boldsymbol{change\ in\ equity}}$

4. RESULTS

Results of descriptive statistical analysis after capitalisation are shown in table 3 and 4. Specifically, the minimum, maximum, mean value and standard deviation values of observed firms are highlighted by profitability indicators and leverage key indicators.

The net average rate of return of the sample is around 2.72%, with EBITDA/TA and EBITDA/TA values of 8.77 and 33.96%.

Table 3. Summary statistics of profitability indicators

Variable	***Obs***	***Mean***	***Std. Dev***	***Min***	***Max***
ROA	40	0,7560155	5,519374	-15,220	11,15777
ROE	40	2,720316	21,61652	-88,78808	53,52031
EBITDA/TA	40	8,774852	5,761597	-1,635849	20,93581
EBITDA/TE	40	33,96731	28,86569	-5,10714	139,789

Note: Data refers to 2015

Average indices show A/E values of 4.18 and D/E of 1.5, confirming the high degree of indebtedness of the companies analysed. A high asset-to-equity ratio may indicate that businesses can no longer take advantage of additional debt financing because creditors are unable to extend credit to an organization in this financial position. Additionally, if a company has a high ratio, it is more susceptible to competitors' price attacks, since it must maintain high prices to generate adequate cash flows to pay its debt.

Table 4. Summary statistics of leverage key indicators

Variables	***Obs***	***Media***	***Std. Dev***	***Min***	***Max***
AE	40	4,178343	3,6293	1,33578	22,25028
DE	40	1,519744	2,085972	0,0215397	11,0108

Note: Data refers to 2015

The comparative analysis examines the change of firms' financial ratios in the sample before and after capitalisation of operating lease.

The results confirm the expected effects, with a slight impact on ROA (-7.20%), ROE (-1.30%), EBITDA/TA (-6.02%) and EBITDA/TE (7.05%).

Table 5. Differences of profitability indicators before and after capitalisation of operating leases

Variables (mean)	***Obs***	***Before***	***After***	***% Change***
ROA	40	0,8082	0,75	-7,20%
ROE	40	2,7561	2,7203	-1,30%
EBITDA/TA	40	9,337	8,7748	-6,02%
EBITDA/TE	40	31,7301	33,9673	7,05%

Note: Data refers to 2015

Table 6. Differences of leverage key indicators before and after capitalisation of operating leases

Variable (mean)	*Obs*	*Before*	*After*	*% Change*
AE	40	3,6525	4,1783	14,40%
DE	40	1,0942	1,5197	38,89%

Note: Data refers to 2015

Relevant effects are observed for leverage ratio with an increase in A/E of 14.4% and D/E of 38.9%.

Table 7 and 8 show results in relation to stock index and industry. Regarding the first classification (stock index), significant changes are observed to the D/E ratio for the companies belonging to the FTSE MIB (+ 58.27%) and the MID CAP (+55.47 %), with a smaller impact on those in the SMALL CAP (+ 9.31%).

Table 7. Differences in profitability and leverage key indicators before and after capitalisation of operating leases by stock index

	FTSE MIB			*MID CAP*			*SMALL CAP*		
	Before	*After*	*% change*	*Before*	*After*	*% change*	*Before*	*AFter*	*% change*
Profitability indicators (Mean)									
ROA	3,05	2,82	-7,69	0,93	1,16	20,25	-1,03	-1,11	7,52
ROE	8,55	9,55	11,72	0,78	-0,6225	-180,30	-0,13	-0,09	-27,87
EBITDA/TA	11,35	10,52	-7,26	8,75	8,38	-4,20	8,02	7,53	-6,21
EBITDA/TE	40,19	45,71	13,74	28,33	28,86	1,89	27,05	27,81	2,83
Leverage indicators (Mean)									
A/E	3,77	4,58	21,06	4,19	5,08	21,29	3,06	3,18	3,91
D/E	1,15	1,82	58,27	1,11	1,74	55,47	0,95	1,04	9,31

Note: Data refers to 2015

Regarding the second classification (the industry of affiliation), relevant effects are observed in relation to D/E ratio. Significant changes are recorded for companies in the CONSUMER SERVICES (+ 179.34%) and TECHNOLOGY (39.44%) industries, with a smaller impact on CONSUMER GOODS (13.05%) and INDUSTRIAL (+ 10.92%).

Table 8. Differences in profitability and leverage key indicators before and after capitalisation of operating leases by sector

	Industrial	*Consumer Services*	*Consumer Goods*	*Technology*	*Utilities*	*Oil & Gas*
			% change			
ROA	-6,63	6,77	-2,75	1,29	-0,23	-1,66
ROE	-1,88	5,18	-1,35	1,51	0,15	1,16
EBITDA/TA	-3,38	-17,38	-6,18	-4,95	-0,33	-1,45
EBITDA/TE	1,24	55,85	2,57	0,92	0,31	0,89
A/E	3,00	84,02	5,47	4,92	4,59	3,36
D/E	10,92	179,34	13,05	39,44	1,69	8,95

Note: Data refers to 2015

To explore the nature of the impact of these variations, a descriptive analysis was carried out on some reference variables. Pearson's correlation matrix shows a remarkable positive relationship (63%) between the variable object of the study, characterized by the natural logarithm of the discounted operating lease amounts, and the natural logarithm of the assets, an expression of the corporate dimension.

Table 9. Pearson correlation matrix

	LNOLD	*LNASSETS*	*LEVERAGE*	*E.Q.*
LNOLD	1			
LNASSETS	0,6256	1		
LEVERAGE	0,3778	0,4376	1	
E.Q.	0,0874	-0,0084	0,2975	1

Note: Data refers to 2015

Thus, in the perspective of an inferential study, it was preceded to observe the dependence of variables through this multiple linear regression models:

$$LNOLD_{it} = \beta_0 + \beta_1 Size + \beta_2 Industry + \beta_3 Leverage_i + \beta_4 Earning\ Quality + \varepsilon_{it} \quad (4)$$

LNOLD = natural logarithm of discounted debts for operating lease contracts

Size = natural logarithm of the company's total business

Industry = dummy variable, an expression of the specific business sector

Leverage = leverage index (% of long-term debt on total capital)

Earning Quality = index of business revenue quality

In order to obtain normality in the error terms, we performed the natural logarithm transformation on our dependent variable (discounted debts for operating lease contracts). Moreover, the model includes size as a control variable, as previous research has shown that this variable has a significant

influence (Beattie et al., 2000; Branswikc et al., 2011; Goodacre, 2003a; Imhoff et al., 1997).

Using the least squares method, our model explains about 49% of the phenomenon and is consistent with previous studies, identifying a significant dependence on the LNOLD variation in relation to the dimensional variable represented by the LNASSETS coefficient.

Table 10. Regression analysis

LNOLD	*Coef.*	*Std. Err.*	*t*	*P>| t |*	*95% Conf. Interval*	
INDUSTRIAL	-1,5380	1,5905	-0,97	0,341	-4,786	1,710
CONSUMERSERVICES	-1,6676	1,8885	-0,88	0,384	-5,524	2,189
CONSUMERGOOD	-0,6251	1,5641	-0,40	0,692	-3,819	2,569
UTILITIES	-2,7321	2,3569	-1,16	0,256	-7,545	2,081
OILGAS	0,2405	2,3215	0,10	0,918	-4,500	4,981
BASICMATERIALS	-2,0842	2,5401	-0,82	0,418	-7,271	3,103
LNASSETS	0,7945	0,2474	3,21	0,003	0,289	1,299
LEVERAGE	1,7111	1,9886	0,86	0,396	-2,350	5,772
EQ	0,0056	0,0117	0,48	0,632	-0,018	0,029
_cons	-2,4646	2,0944	-1,18	0,249	-6,742	1,812

Note: Data refers to 2015

Table 10 presents the results for the linear regression model (LNOLD). Parameter estimate coefficients turn out with positive sign 0,2405 (OIL GAS), 0,7945 (LNASSET), 1,7111 (LN AVERAGE) and 0,0056 (EQ) and negative sign -1,5380 (INDUSTRIAL), -1,6676 (CONSUMER SERVICES), -0,6251 (CONSUMER GOOD), -2,7321 (UTILITIES), -2,0842 (BASIC MATERIALS). P-values for most variables are major than 0,05, indicating low statistical significance for all chosen regressors, except for the variable (LNASSETS) with a p-value of 0,003 indicating a high statistical significance with the dependent variable (LNOLD). The results suggest relatively low explanatory power and statistical significance of the model. Constructively capitalized operating leases seem not to have statistical significance or explanatory power to the operating lease debt. However, when we look at the results, we must take into consideration that there are several limitations in the research. It's true that the investors might take operating leases into account but not necessarily in exactly the same amounts that the method used in this study. The constructive capitalisation method is not easy to apply and in practice, it is possible that it is too complex and time consuming for the regular investor. Moreover, the estimated leasing components are partly based on assumptions, for example of the companies' borrowing rates and leased assets' lifetimes. Further, variables in this study might differ from those used by the investors in real life. This may be one of the reasons why the model fails to find significantly variable for operating leases

5. CONCLUSION

The long and complex convergence project joined by IASB and FASB, ended after ten years of activity, highlighted the need to tackle and resolve the weaknesses of the current rules with the aim of limiting the opportunistic behaviours of the managers and maximize the quality of information. Significant differences between the accounting practices of the different countries mark the contrast of two systems where the legal form of transactions differs from their economic significance and the presence of a strong lobbying activity exerts a significant influence on standard setters.

Despite that, from 1st January 2019, it will be mandatory for companies apply IFRS 16 and account operating lease in the same way as financial ones, by the record in their accounts all the elements deriving from the contract. This deep change will emerge in the recording of some $ 3.3 trillion in debt, of which 700 billion belongs to the European market.

Obviously, during this transition period, it is reasonable to expect strong pressures from industry associations, due to the lack of benefits granted. Conversely, prepares will be in favour of reform, as they will no longer have to make complicated accounting adjustments and avoid making estimating errors in the valuation processes.

The aim of this paper is to provide an empirical evidence of the impact on key financial indicators arising from the adoption of new accounting standard on Italian IAS/IFRS adopters. The constructive capitalisation method is applied to the obtained sample in order to evaluate the potential impact of lease capitalisation. In order to perform it, we have set the hypothesis: "The financial indicators of operating lease companies will be significantly affected by capitalisation". The results have confirmed the hypothesis because most of the ratios considered in the model have been significantly affected by the IFRS 16.

The findings of the research are as follows: (a) capitalizing operating leases would result in a significant increase (decrease) in the average total assets, total liabilities and debt ratio; (b) the average D/E ratio increases (+38,89%) as a result of capitalizing operating leases. Significant changes are observed to the D/E ratio for the companies belonging to the FTSE MIB (+ 58.27%) and the MID CAP (+55.47 %), with a smaller impact on those in the SMALL CAP (+ 9.31%). Regarding the industry of affiliation, relevant effects have been observed for companies in the CONSUMER SERVICES (+ 179.34%) and TECHNOLOGY (39.44%); (c) the average A/E ratio increases (+14,40%) as a result of capitalizing operating leases. Changes are observed to the A/E ratio for the companies belonging to the FTSE MIB (+ 21.06%) and the MID CAP (+21.29 %), with a smaller impact on those in the SMALL CAP (+ 3.91%).

The results support the research of Lückerath and de Bos (2009) which shows a significant difference between financial ratios before and after capitalisation of operating lease. This indicates that firms are not comparable when operating lease is ignored and certainly unfair for non-leasing firms. Comparability among companies and relevancy of

accounting ratios become problematic when operating lease is not capitalized.

The study, despite the rigor with which it was conducted, has also encountered some limitations that may have affected the results.

The study may encounter a strong criticism for using assumptions used by Imhoff et al. (1991, 1997). The examination of the lease capitalisation effects on the changes in the financial statements and ratios is only conducted for one year (2015), while the changes in the future years have not been considered. However, this limitation is common to other studies conducted on analysing impacts of lease capitalisation. Furthermore, the data collected does not include qualitative or managerial aspects of lease capitalisation decision-making by companies as this data is not publicly available.

The lack of relevant information within the audited statement has compromised the sample size and, consequently, the goodness of the analysis method. It is reflected in estimation procedure of the variables, reducing the accuracy of the calculations. For example, the discount rate used in the discounting process and the average duration of the contracts could be calculated with reference to individual companies. In addition, the focus on the Italian market, characterized by an anchor-shaped business class financing, did not allow for comparability with other countries of the Eurozone.

In the future, therefore, we would like to look for a more in-depth look at the research topic with the aim of achieving more satisfactory results. This objective will assume the availability of a more significant sample of data, historical data series, as well as greater accuracy in model predisposition, in order to capture the evolutionary dynamics of the reporting process, thus extending the time horizon. New research prospects could address the broadening of the scope of the present study, involving both listed companies from other countries and using different measures that potentially affect the content of the financial reports.

REFERENCES

1. Altman, E. I. (1976). Capitalization of leases and the predictability of financial ratios: A comment. *The Accounting Review, 2,* 408-412.
2. Altamuro, J., Johnston, R., Pandit, S., & Zhang, H. (2014). Operating leases and credit assessments. *Contemporary Accounting Research, 31(2),* 551-580. https://doi.org/10.1111/1911-3846.12033
3. Barone, E., Birt, J., Moya, S. (2014). Lease accounting: A review of recent literature. *Accounting in Europe*, *11(1),* 35-54.
4. Beattie, V., Edwards, K., & Goodacre, A. (1998). The Impact of constructive operating lease capitalisation on key accounting ratios. *Accounting and Business Research, 4,* 233-254. https://doi.org/10.1080/00014788.1998.9728913
5. Beattie, V., Goodacre, A., & Thomson, S. (2000). Operating leases and assessment of lease-debt substitutability. *Journal of Banking & Finance, 24(3),* 427-470.
6. Beckman, J. K., & Jervis, K. (2009). The FASB IASB lease accounting project: Implications for the construction industry. *Construction Accounting and Taxation, 19,* 30-35.
7. Benjamin, Y. Tai. (2013). Constructive capitalization of operating leases in the Hong Kong fast-food industry. *International Journal of Accounting and Financial Reporting, 3(1),* 128-142. https://doi.org/10.5296/ijafr.v3i1.3270
8. Bennett, B. K., & Bradbury, M. E. (2003). Capitalizing non-cancelable operating leases. *Journal of International Financial Management and Accounting, 12(2),* 101-114.
9. Bierman, H. Jr. (1973). Accounting for capitalized leases: Tax Considerations. *The Accounting Review, 48(2),* 421-424.
10. Biondi, Y., Bloomfield, R. J., Glover, J. C., Jamal, K., Ohlson, J. A., Penman, S. H., Tsujiyama, E., & Wilks., T. J. (2011). A perspective on the joint IASB/FASB exposure draft on accounting for leases. *Accounting Horizons*, *25(4),* 861-871. https://doi.org/10.2308/acch-50048
11. Bryan, S. H., Lilien, S., & Martin, D. R. (2010). The financial statement effects of capitalizing operating leases. *The CPA Journal, 80(8),* 36-41.
12. Camfferman, K., & Zeff, S.A. (2015). The international accounting standards board, 2001-2011. *Aiming for Global Accounting Standards, June 2015.* https://doi.org/10.1093/acprof:oso/9780199646319.001.0001
13. Duke, J. C., Hsieh, S., & Su, Y. (2009). Operating and synthetic leases: Exploiting financial benefits in the Post-Enron Era. *Advances in Accounting: Incorporating Advances in International Accounting, 25(1),* 28-39. https://doi.org/10.1016/j.adiac.2009.03.001
14. Durocher, S. (2008). Canadian evidence on the constructive capitalization of operating leases. *Accounting Perspectives, 7(3),* 227-256. https://doi.org/10.1506/ap.7.3.2
15. El-Gazzar, S., Lilien, S., & Pastena, V. (1986). Accounting for leases by lessees. *Journal of Accounting and Economics, 8(3),* 217-237. https://doi.org/10.1016/0165-4101(86)90004-2
16. Ely, K. M. (1995). Operating lease accounting and the market's assessment of equity risk. *Journal of Accounting Research, 33(2),* 397-415. https://doi.org/10.2307/2491495
17. Fabi, T., Laghi, E., & Mattei, M. (2014). Comparing the effects of IASB proposal on leasing: An impact assessment of EU listed companies. *Financial Reporting, 2(3-4),* 17-57.
18. Findlay, M. C. (1974). Financial lease evaluation under conditions of uncertainty: A comment. *The Accounting Review, 49(4),* 794-795.
19. Financial Accounting Standards Board/ International Accounting Standards Board. (2010). *Lease-Joint Project of the FASB and IASB.* Retrieved from the World Wide Web: http://www.fasb.org.
20. Fülbier, R. U., Silva, J. L., & Pferdehirt, M. H. (2008). Impact of lease capitalization on financial ratios of listed German companies. *Schmalenbach Business Review, 60(2),* 122-144.
21. Garrison, R. H. (1968). Methodology of lease capitalization. *The Accounting Review, 43(4),* 782-784.
22. Giner, B., & Pardo, F. (2017). Operating lease decision and the impact of capitalization in a bank-oriented country. *Applied Economics, 49(19),* 1886-1900.

23. Graham, R. C., & King, R. D. (2013). Decision usefulness of whole-asset operating lease capitalizations. *Advances in Accounting: Incorporating Advances in International Accounting, 29(1),* 60-73. https://doi.org/10.1016/j.adiac.2013.03.006
24. Grant, C. T. (2016). No more hiding lease liability: The FASB's new lease standard ends the use of multiyear leases for off-balance-sheet financing. *Strategic Finance (July),* 40-47.
25. Grant, E. B., & Witt., R. C. (1979). A look at leveraged leases under FAS no. 13. *Management Accounting (February),* 49-52.
26. Imhoff, E. A. Jr., & Thomas, J. K. (1988). Economic consequences of accounting standards: The lease disclosure rule change. *Journal of Accounting and Economics,10(4),* 277-310. https://doi.org/10.1016/0165-4101(88)90006-7
27. Imhoff, E. A. Jr., Lipe, R. C., & Wright, D. W. (1991). Operating leases: Impact of constructive capitalization. *Accounting Horizons, 5,* 51-63.
28. Imhoff, E. A. Jr., Lipe, R. C., & Wright, D. W. (1997). Operating leases: Income effects of constructive capitalization. *Accounting Horizons, 11,* 12-32.
29. Kohansal, S., Rostami, S., & Rostami, Z. (2017). The impact of corporate governance mechanisms on financial reporting transparency. *Corporate Ownership & Control, 14(3),* 25-33. https://doi.org/10.22495/cocv14i3art3
30. Lipe, R. C. (2001). Lease accounting research and the G4+1 proposal. *Accounting Horizons, 15(3),* 299-310. https://doi.org/10.2308/acch.2001.15.3.299
31. Maglio, R. (1998). *Il principio contabile della prevalenza della sostanza sulla forma.* Padua, Italy: Cedam.
32. McCullers, L.D., & Schroeder, R.G. (1978). *Accounting theory: text and readings.* New York: John Wiley & Sons.
33. Myers, J. H. (1962). *Reporting of leases in financial statements. Accounting Research Study.* AICPA.
34. Miller, M. C., & Islam, M. A. (1988). *The definition and recognition of assets.* Melbourne: AARF.
35. Morais, A. I. (2011). *Accounting for leases: A literature review.* Bamberg*:* EUFIN.
36. Mulford, C. W., & Gram, M. (2007). The effects of lease capitalization on various financial measures: An analysis of the retail industry. *Journal of Applied Research in Accounting and Finance, 2,* 3-13.
37. Murphy, M. L. (2016). Bringing leases into view. *Journal of Accountancy (April),* 23-26.
38. Naser, K. (1993). *Creative financial accounting: its nature and use.* Hemel Hempstead: Prentice-Hall International.
39. Nelson, T. A. (1963). *The impact of leases on financial analysis.* East Lansing, Michigan: Bureau of Business and Economic Research.
40. Nunung, N., Thing, H. Tan, & Juliesta, N. (2015). Capitalization of operating lease and its impact on firm's financial ratios. *Procedia-Social and Behavioral Sciences, 211,* 268-276. https://doi.org/10.1016/j.sbspro.2015.11.034
41. Paik, D. G. H., Smith, J. A. van der Lann, Lee B. B., & Yoon, S. W. (2015). The relation between accounting information in debt covenants and operating leases. *Accounting Horizons, 29(4),* 969-996. https://doi.org/10.2308/acch-51214
42. Pope, P. F., & Walker, M. (2003). *Ex-ante and ex-post conservatism, asset recognition and asymmetric earnings timeliness* (Working Paper, Lancaster University/University of Manchester).
43. Rappaport, A. (1965). Lease capitalization and the transaction concept. *The Accounting Review, 40,* 373-376.
44. Shillinglaw, G. (1958). Leasing and financial statements. *The Accounting Review, 33(4),* 581-592.
45. Spencer, A. W, & Webb, T. Z. (2015). Leases: A review of contemporary academic literature relating to leases. *Accounting Horizons, 29(4),* 997-1023. https://doi.org/10.2308/acch-51239
46. Taylor, J. (2011). The history of leasing. *Finance and Business Institute*. Retrieved from the World Wide Web: http://fbibusiness.com/history_of_leasing.htm#History.
47. Uwuigbe, U., Emeni, F. K., Uwuigbe, O.R., & Ataiwrehe, C. M. (2016). IFRS adoption and accounting quality: Evidence from the Nigerian banking sector. *Corporate Ownership & Control, 14(1-1),* 287-294. https://doi.org/10.22495/cocv14i1c1p12
48. Vatter, W. J. (1966). Accounting for leases. *Journal of Accounting Research, 4(2),* 133-148. https://doi.org/10.2307/2489949
49. Viganò, E. (1969). *L'iscrizione del leasing nei conti e nei bilanci d'impresa.* Napoli: Giannini
50. Wilkins, T., & Zimmer, I. (1983). The effect of leasing and different methods of accounting for leases on credit evaluations. *The Accounting Review, 58(4),* 749-764.
51. Wolk, H. I. (1968). Accounting for leases: A further examination of the issues. *Journal of Accounting Research, 6(1),* 153-157. https://doi.org/10.2307/2490134
52. Wolk, H. I., Francis, J. R., & Tearney, M. G. (1992). *Accounting theory, a conceptual and institutional approach* (3rd ed.). Cincinnati: South-Western Publishing CO.
53. Wong, K., & Mahesh, J. (2015). The impact of lease capitalisation on financial statements and key ratios: Evidence from Australia. *Australasian Accounting, Business and Finance Journal, 9(3),* 27-44. http://dx.doi.org/10.14453/aabfj.v9i3.3
54. Zeff, S. A. (2002). «Political» lobbying on proposed standards: A challenge to the IASB. *Accounting Horizons, 16(1),* 43-54. https://doi.org/10.2308/acch.2002.16.1.43