TRANSITION TO THE NEW LEASE ACCOUNTING MODEL (IFRS 16) AND COMPANIES' PERFORMANCE EVIDENCE FROM ITALIAN LISTED COMPANIES

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ABSTRACT

The paper presents an empirical analysis on the implementation of the new lease accounting model provided by IFRS 16. It takes into consideration the theoretical framework related to off-blanche sheet leases and the application of the methodological approaches that provided controversial results about the potential effects on companies' financial statement and performance deriving from the leases capitalization. More specifically, by analyzing the transition period from the IAS 17 to IFRS 16, this paper aims to measure the effective impacts resulting from the implementation of the new lease accounting model requirements on companies' financial structure, economic and financial performance and on market reactions. The findings presented in the empirical section enrich the academic debate on lease accounting and harmonization and, they are of a great interest also for practitioners, regulators and policy makers.

Keywords: Off-Balance Sheet Financing, Lease Accounting, IFRS 16, Companies' Performance.

JEL Classification: M4, M41, M48.

INTRODUCTION

Accounting information is expected to present a certain qualitative characteristic such as relevance, verifiability, comparability, consistency and faithful representation. In achieving these qualitative characteristics, several approaches have been put forward to record and measure financial statement items. On January 2016, IASB issued a new lease accounting model (IFRS 16) which has been then implemented in the fiscal year started on January 1st, 2019. The new lease accounting standard replaced previous IAS 17, under which finance leases were recognized in the balance sheet but operating lease fees were only recorded in the income statement within the operating expenses.

Due to the fact that the recognition of some forms of lease contracts was not required on the companies' balance sheet, in the last decades, there has been a notable increase in the use of operating leases, through which companies deliberately keep away assets and liabilities for their financial statements, so called "*off-balance sheet financing*" (Abdel-Khalik, 1981; Imhoff & Thomas, 1988; Imhoff et al., 1991; Reason, 2005; Duke et al., 2009). Therefore, based on IAS 17 requirements investors started developing several methods in order to trace the real financial conditions of the target company, often creating discretionary judgment and market distortions. Under the new IFRS 16 instead is required, for the lessee, to recognize on the financial statements lease liability for future payments to the lessor, regardless of the classification between finance and operating leases. Consequently, the implementation of IFRS 16 requirements produces relevant changes in the companies' financial structure and on profitability. The aim of this research is to investigate how the implementation of IFRS 16 has affected Italian listed companies' financial statements, key

profitability ratios and the implications for their users. This work is involved within the theoretical framework related to off-balance sheet financing, in which previous empirical studies have commonly used slightly varying estimation models based on constructive capitalization model (Imhoff et al., 1991) to estimate the potential effect of leases capitalization. Within this stream of literature, several contexts have been investigated such as North America (Mulford & Gram, 2007; Durocher, 2008; Duke et al., 2009), Europe (Fülbier et al., 2008; Branswijck et al., 2011; Morales-Diàz & Zamora-Ramìrez, 2018a, 2018b) and Australia (Wong & Joshi, 2015), all demonstrating significant effects on the financial statements, primarily through an increase in total assets and total liabilities.

This study investigates the actual post-implementation impacts of IFRS 16 on listed companies' financial statements, measuring the extent of changes in companies' financial structure and key profitability ratios. This research aims to answer the following research questions: To what extent has the implementation of IFRS 16 requirements affected listed companies' financial structure and profitability? What has been market reactions following the mandatory adoption of IFRS 16 requirements?

Therefore, in order to provide evidence of the impacts resulting from the adoption of the new lease accounting model, an empirical analysis has been conducted on a sample composed by 167 Italian listed companies. The results show statistically significant changes in companies' financial structure and income statement accounting metrics. Also, with reference to the companies' profitability statistically significant results are obtained, especially for operating profitability. Finally, interesting findings are provided with reference to the effect on companies' market value measured through a commonly used market multiple (EV/EBITDA).

The content of this research is relevant for practitioners and financial statements' preparers due to its analysis of IFRS 16 consequences on financial structure and profitability. In this regard, the findings are also of a great interest for companies' top management since – providing evidence of the actual impacts deriving from IFRS 16 requirements – they are useful for facilitating the decision-making process between asset acquisition or entering in a lease contract.

It also contributes to academic fields of lease accounting and harmonization of financial reporting. Due to the complexity of IFRS 16 (Tysiac, 2013; Altamuro et al., 2014) and taking into consideration the general difficulties of implementing new accounting standards (Jermakowicz & Gornik-Tomaszewski, 2006), this study contributes by examining the actual companies' reported numbers in the financial statements figured out during the transition from IAS 17 to IFRS 16.

Moreover, the results of the empirical analysis appear to be interesting also for regulators and policy makers giving them the opportunity to analyze several aspects of the new lease accounting standard in order to mitigate the effects on companies' financial statements deriving from its implementation, without undermining the relevance of improving transparency and financial statement comparability. In this regard, the study appears to be of a great interest also for national regulators and policy makers, specifically for those countries in which the local general accepted accounting principles do not provide a specific standard for leases (such as Italy). Assuming the accounting harmonization perspective, for these countries, knowing the real impacts deriving from the implementation of the new IFRS 16 in the international context, appears to be useful also for the development of new national accounting standard on lease.

The remainder of the paper is organized as follows. The first section provides the analysis of the theoretical framework and literature review, through which hypotheses are proposed. The second section covers the sample selection, data source and methodology; then, results and discussion are illustrated. Finally, conclusions and limitations are presented.

LITERATURE REVIEW

Prior Empirical Studies on Off-Balance Sheet Leases

The oldest study analyzing the consequences of operating leases capitalization on companies' economic and financial performance is the one provided by Nelson (1963), through which has been demonstrated how the capitalization of off-balance sheet leases (as leases presenting operating nature), significantly increases the reliability of the economic and financial ratios. Within the lease accounting debate, using similar approach, Imhoff et al. (1991) proposed the constructive capitalization model to measure the potential impact on economic and financial performance resulting from the recognition and evaluation of operating leases on companies' financial statement. This approach has been then widely used in the academic literature to measure the monetary effects of operating leases capitalization, affecting assets, liabilities and net income. The contribution provided by the Imhoff et al. (1991), considering that assets were usually between 60% and 80% of the unrecorded liability, and it estimates the amount of assets that would have been recognized on the balance through the capitalization of all operating lease contracts. However, the authors' first empirical analysis focused exclusively on the balance sheet impact, assuming a negligible effect on the income statement. In order to overcome this limitation, in 1997, the authors proposed a new empirical approach including any potential impact also on the income statement.

The empirical approach proposed by Imhoff et al. (1991, 1997) has been widely used within the lease accounting literature, and some authors used it to analyse industries specificity, such as retail sector (Mulford & Gram, 2007), utilities and banking sector (Duke et al., 2009), and restaurant businesses (Singh, 2011). In this regard, the study conducted by Mulford & Gram (2007) suggests that excluding operating leases from the balance sheet produces a material distortion of the companies' financial position, followed by an underestimation of the Earnings Before Taxes (EBT).

Thus, even if applying different versions of the Imhoff et al. (1991, 1997) model, prior research mainly demonstrated that operating leases under IAS 17 – being an off-balance sheet financing – improve company's profitability, while worsening company's liquidity and debt exposure to third parties. Same conclusions have been reached also in different accounting systems, such as United States, Canada, New Zealand and Europe, underling the relevance of the accounting harmonization process. In this regard, Grossmann & Grossmann (2010) using a sample composed by the top 200 companies of the Fortune 550 (in 2009), demonstrate that applying the constructive capitalization model without discounting 60 companies would have increased their current liabilities by less than 5%, while 21 companies would have increased them by at least 10%. With discounting, 70 of the companies would have effects of less than 5% for current liabilities, but 13 would have increases of at least 10%. Analysing total liabilities, the effect was less than 5% for 50 companies but at least 10% for 29 companies. Similar conclusions have been reached also by Bennet and Bradbury (2003), which using a sample of New Zealand companies found that the capitalization of operating leases not only presents negative impacts on leverage ratios, but also generate a decline in company's liquidity and profitability. Durocher (2008) applying a refined constructive capitalization model in which some companies' specific assumption such as interest rate, total/expired/remaining life of leased assets and tax rate have been included in the analysis, provided evidence that capitalizing operating leases would lead to a recognition of material increase in the assets and liabilities. More specifically, this contribution

demonstrates an increase in the debt-to-asset ratio of 62.2% for all industries in the sample, and a significant impact on ROA, ROE and EPS for the following three industries: merchandising and lodging, oil and gas, and financial services. In the same field of research, Jesswein (2009) using a sample composed by 595 US non-financial sector companies, demonstrated a material impact on companies' financial structure and profitability as a consequence of the operating lease capitalization. More precisely, the author shows a decline in ROIC equal to 28.6% and a strong decrease in the coverage ratio equal to 78.4%, while the debt ratio increases by 72.7%. Similar results have been obtained by Singh (2010). In the same area, Wong & Joshi (2015) using a sample composed by top Australian listed companies on ASX, demonstrated that the changes in financial statement (in terms of total asset, total liabilities and equity) are not so relevant as the variations found in previous empirical research (Beattie et al.,1998; Bennet and Bradbury, 2003). They also demonstrated that D/E ratio, D/A ratio and ROA suffered a significant change deriving from lease capitalization, while the variation in ROE was insignificant. These results are in line with the perspective assumed by Graham & King (2011) who pointed out that the right-to-use leased asset value is strongly correlated with current and future return of assets.

Off-Balance Sheet Leases in the European Context

The constructive capitalization model has been used also within the European context. Beattie et al. (1998), using a sample composed by British companies, analysed the impact of lease capitalization on several accounting ratios, demonstrating a significant impact on profit margin, return on assets, asset turnover and gearing. In the same context, Goodacre (2003) focusing his analysis only on the retail sector over the period 1994-1999 provided evidence on the level of off-balance sheet leases. Specifically, the author demonstrated that the level of off-balance sheet operating lease liability is much higher (around 3.3 times) than the level of on-balance sheet long-term debt. Moreover, his empirical study confirmed that the capitalization of operating leases would have a major impact on key accounting ratios, on companies' rating, on interest coverage and capital-based gearing measures. The findings obtained in the previously mentioned research are partially confirmed also by Fülbier et al. (2008) and Branswijck et al. (2011), which using samples composed by listed companies in Germany, Belgium and Netherlands, demonstrated that the effect of decreasing in profitability and increasing in debt position due to the capitalization of leases is more significant negative and positive in some industries, such as: fashion and retail businesses in Germany, manufacturing in Belgium and Netherlands. Therefore, based on the existing literature, it seems that the impact of the operating leases capitalization could be influenced by an effect of belonging to different industries (Mulford & Gram, 2007; Duke et al., 2009; Singh, 2010). In the European context, the contributions conducted by Fitò et al. (2013) and Pardo Pèrez et al. (2015), provide results in line with previously mentioned literature, highlighting a decline in profitability and liquidity and an increase in companies' debt position.

In the same area of research, the contribution provided by Fafatas & Fischer (2016) focused on the effect of the operating lease capitalization on profitability ratio for capital intensive companies characterized by greater numbers of operating lease contracts. Their findings show an average decline in the EBIT/Assets ratio of 407 basis points (4.07%) and a strong decline in ROA and ROIC ratios. Using a case study approach (Pegasus Airline Company operating in Turkey), Öztürk et al. (2016) demonstrated that from the constructive capitalization model for lease contracts capitalization emerged an increase in D/E and D/A equal to 75.3% and of 16.9%, respectively and, a decline in ROA equal to 34,4%.

Within this broad literature, empirical studies have not always provided univocal

results. In fact, differently from the aforementioned research, Sari et al. (2016), using a sample composed by Turkish companies, confirmed the results related to the worsening the level of indebtedness due to the leases' capitalization, while provided evidence of a positive effect on operating profitability. Similar results have been obtained by Cordazzo & Lubian (2015) and Maglio et al. (2017) contributions which analyses Italian listed companies. Therefore, studies presenting contrary results on profitability appear to be very limited.

The most recent contributions (Morales-Diàz and Zamora-Ramìrez, 2018; Giner et al., 2019; Joubert et al., 2017; Veverkovà, 2019) focus directly on the effect of IFRS 16 on companies' financial statement and, using the theoretical models provided by the literature, illustrated the potential impact of lease capitalization on different accounting metrics and on companies' economic and financial performance. Nevertheless, most of the research focusing on IFRS 16 are mainly theoretic and the results only describe the pattern in which financial statement metrics and profitability ratios would potentially increase or decrease from changes in lease accounting regulation. Nowadays, there are no empirical studies measuring the real impact deriving from the adoption of the new lease accounting model. Therefore, aiming at analyzing the post-implementation impacts of IFRS 16 on companies' financial structure, economic performance and profitability, the following hypotheses are proposed:

H1a: the implementation of IFRS 16 requirements caused a statistically significant impact on companies' financial structure and income statement accounting metrics.

H1b: the implementation of IFRS 16 requirements caused a statistically significant impact on companies' key profitability ratios.

Previous literature presents several studies that analyzed industries specificity, suggesting that some industries lease more than others, since operating leases was considered as an alternative to capital investment. More precisely, companies characterized by a more flexible structure, such as retail industry and real estate goods (retail shop and business locations) are often leased. These industries have been usually considered as that which is most affected from the adoption of the new IFRS 16 (Altamuro et al., 2014; Durocher, 2008; Fitò et al., 2013; Fülbier et al., 2008; Mulford & Gram, 2007) along with hotels and transportation (Fitò et al., 2013). In this regard, it has also been demonstrated that companies operating in the primary and secondary business do not make greater use of operating lease contracts compared to the tertiary industry (Sharpe & Nguyen, 1995; Shanker, 1997; Adams & Hardwick, 1998; Callimaci et al., 2011). Therefore, aiming at testing if the effect of the adoption of IFRS 16 are affected by industry specificities, the following hypothesis is proposed:

H1c: the adoption of IFRS 16 generates a statistically significant different impacts on companies' accounting metrics and key profitability ratios based on the industry in which companies operate.

Market Reactions

Sakai (2010), using a sample composed by Japanese companies, investigated market reaction related to the movement of finance leases disclosure from footnotes to the body of financial statements, and he demonstrated no reactions from financial market. In the same filed of research, Cotten et al. (2013) analysed whether or not credit ratings reflect the debt characteristics of operating leases, showing that the debt treatment of operating leases produces significantly lower coverage ratios and lower synthetic ratings than current treatment. As previously illustrated, the existing literature suggests that the operating leases capitalization has an impact on debt position in the same measure as the lease liabilities are recorded for finance leases. Then, its recognition in the balance sheet is necessary in order to

avoid distortions in the rating phase of the debt by the rating agencies. Beattie et al. (2006a, 2006b) compared the perspective of users and prepares on a range of issue proposed in the G4+1 "*Lease accounting discussion paper*" and, based on their results, users and preparers considered that the recognition of all leases on the balance sheet will lead to recognition of borrowing covenants, reduction in credit ratings for some companies and improvement of users' evaluation of long-term financial commitments, improving at the same time companies' comparisons.

Similar conclusions have been reached by the Durocher and Fortin (2009), which using users' perspective and examining private bankers' preferences on the issue of capitalizing all noncancelable lease contracts, highlight how these operators take into account both capital and operating lease information, but they attribute grater relevance to finance leases. Their study also demonstrated that the capitalization of operating leases would have a significant impact on key financial indicators of a sample composed by Canadian private companies. Bankers perceive that these changes in financial ratios would affect their assessment of borrower's capital structure/solvency, liquidity, ability to repay, and risk rating. Dhaliwal et al. (2011) support the proposal of the IASB and the FASB to eliminate the classification between the operating and finance lease and to capitalize the operating leases. Specifically, they investigated whether off-balance sheet assets and liabilities associated with operating leases have the same risk-relevance for explaining ex ante measures of risk as a firm's on- balance sheet items. Based on their results, the lower risk relevance assigned by investors to operating lease transactions is consistent with two alternative interpretations: firstly, investors believe that, compared to finance lease, operating leases expose the lessee to lower (but significant) ownership risk; secondly, investors believe that properly classified operating leases expose the lessee to no ownership risk, but they find it difficult to distinguish the "*true*" operating leases from the misclassified transactions that are in substance finance leases. Therefore, assuming investors perspective and aiming at testing the market reaction to the adoption of IFRS 16, the following hypothesis is proposed:

H2: the adoption of IFRS 16 caused a statistically significant impact on companies' market value.

Sample Selection

The analysis has been conducted on a sample composed by 167 Italian companies listed at the end of 2019. Companies belonging to financial industry (banks, insurances and other financial institutions) were excluding from the sample due to their specific characteristics and peculiarities in the financial statement structures and accounting principles used. Moreover, taking into consideration that the aim of this study is to provide empirical evidence on the post-implementation effects of IFRS 16, all companies not presenting lease contracts at the end of 2019 were excluded from the sample.

In order to conduct the analysis, financial statement data reported on the consolidated financial statements at the end of 2019 have been collected, year that by definition fully incorporates the impact of the first-time adoption of the new lease accounting model. More specifically, data relating to the transition process have been hand-collected from the notes of companies' public financial statements. All additional economic and financial statement data have been gathered from Datastream and Thomson Reuters Eikon databases in Table 1.

Table 1
SAMPLE SELECTION

Criteria	
Borsa Italiana's Main Market (MTA) Less:	245
Exclusion banks and financial services industries companies	(59)

Companies without lease contracts	(2)	
Companies presenting financial statements in infra-annual periods (different from December 31)	(6)	
Companies that have not published yet their financial statements using the Legislative Decree 18/2020 - Crura Italia	(11)	
Sample	167	
Sample distribution by industries (Super Sector Classification - Borsa Italiana)		
	Frequency	Percent
Chemical	4	2,40%
Consumer Goods	39	23,35%
Consumer Services	23	13,77%
Healthcare	8	4,79%
IT	13	7,78%
Manufacturing	55	32,93%
Oil & Gas	6	3,59%
Public Utilities	15	8,98%
Telecommunications	4	2,40%
Total Sample	167	100%

Variables' Description and Research Design and Descriptive Statistics

As illustrated, the scope of the analysis is to empirically demonstrate the impacts on accounting metrics and on key profitability ratios resulting from the implementation of the new lease accounting model. Thus, taking into consideration the existing literature in order to test hypotheses H1a, H1b and H1c, several variables have been structured in a way as to identify the pre-implementation IFRS 16 variables (not including any impact deriving from the IFRS 16 requirements) and post-implementation IFRS 16 variables (including the impact deriving from the IFRS 16 requirements). Then, hypotheses are tested through the comparison between the mean of the two variables, representing accounting metrics and ratios in the pre and post-implementation of the new lease accounting standard.

A t-test is a type of inferential statistics used to determine if a significant difference between the mean of two groups exists. Mathematically, it sets the problem by assuming that the mean of the two groups distribution is equal (H0: the mean of the two groups is equal), contrary to the alternative hypothesis (H1: the mean of the two groups is different). If the t-test rejects the null hypothesis (H0), it indicates that the groups are highly probably different. In order to test the proposed hypotheses, a paired sample t-test model has been implemented, comparing the mean of the two variables that represent two measurement taken into two different moments (pre and post-implementation of IFRS 16).

Financial Structure Variables

In order to test hypothesis H1a (the implementation of IFRS 16 requirements caused a statistically significant impact on companies' financial structure and income statement accounting metrics) the following ratios and accounting metrics have been involved in the paired sample t-test model: D/E_ratio – D/E_ratio'; D/A_ratio – D/A_ratio'; EBITDA – EBITDA'; EBIT – EBIT'; EBT – EBT'; dep_exp – dep_exp'.

In order to test the post-implementation impact of companies' financial structure the level of indebtedness has been included in the statistical model (Nelson, 1963; Imhoff et al., 1991; Grossman & Grossman, 2010; Singh, 2010; Fitò et al., 2013; Wong & Joshi, 2015; Öztürk et al., 2016). The variable D/E_ratio is calculated as the ratio between total non-current liabilities and total equity as resulting before the adoption of IFRS 16, while the

variable D/E_ratio' represents the level of indebtedness as resulting post-implementation of the new lease accounting model, capturing the effect of the transition from the IAS 17 to IFRS 16. Moreover, with the aim of providing a more in- depth evidence of the impact on the level of debt, the empirical analysis has been conducted also considering the leverage on total assets (Durocher, 2008; Singh, 2010; Konstolansky & Stanko, 2011; Cornaggia et al., 2013; Öztürk et al., 2016). More precisely, the variable D/A_ratio is computed as the ratio between the total non-current liabilities over total assets as resulting before the adoption of IFRS 16. The same variable D/A_ratio' has been then calculated considering non-current liabilities and the total assets as resulting post-implementation of IFRS 16, capturing the effect of the transition from IAS 17 to IFRS 16.

As regard the post-implementation effect on the income statement, several accounting metrics has been included in the paired sample t-test model. Specifically, following the existing literature (Fafatas & Fischer, 2016), the EBITDA, EBIT, EBIT and dep_exp represent the income statement accounting metrics as resulting before the adoption of the new lease accounting standard, while EBITDA', EBIT', EBIT' and dep_exp' are the same variables as resulting post-implementation of IFRS 16, capturing the effect of the transition from IAS 17 to IFRS 16.

Profitability Variables

As far as hypothesis H1b is concerned (the implementation of IFRS 16 requirements caused a statistically significant impact on companies' key profitability ratios), according to the existing literature (Nelson, 1963; Imhoff et al., 1991; Bettie et al., 1998; Goodacre, 2003; Durocher, 2008; Jesswein, 2009; Kostolansky & Stanko, 2011; Fitò et al., 2013; Wong & Joshi, 2015; Fafatas & Fisher, 2016; Öztürk et al., 2016; Morales-Dìaz & Zamora-Ramìrez, 2018) the following profitability ratios have been included in the paired sample t-test model: ROE - ROE'; ROA – ROA'; ROS – ROS'; ROT – ROT'; COV – COV'.

Through hypothesis H1b, the impact of the new lease accounting model on companies' profitability is measured. In this regard, the ROE represents the ratio as resulting before the adoption of IFRS 16, while the ROE' has been then computed taking into account the net income and net total equity as resulting after the implementation of the new lease accounting standard, capturing the transition effect from IAS 17 to IFRS 16. The ROA is calculated through the ratio between the Earnings Before Taxes (EBT) and total assets as resulting before the adoption of IFRS 16, while ROA' was then computed considering the Earnings Before Taxes (EBT) and the total asset (total_asset') as resulting in the IFRS 16 post-implementation. Going more in-depth on the operating profitability the Return of Sales (ROS) and the Asset turnover (ROT) have been included in the model. The ROS is computed as the ratio between the Earnings Before Interest and Taxes (EBIT) and the total sales (sales) as reported before the adoption of IFRS 16. The same ratio (ROS') has been computed considering EBIT and sales as resulting after the implementation of the new lease accounting model.

Finally, the Coverage Ratio (COV) has been considered as the ratio between Earnings Before Interest, Taxes, Depreciation & Amortization (EBITDA) and the total interest expenses (interest_expense) as reported before the adoption of IFRS 16, while COV' has been then computed considering the Earnings Before Interest, Taxes, Depreciation & Amortization (EBITDA') and the total interest expenses (interest_expense') as resulting from the post-implementation of IFRS 16. 3.3.

Market's Reaction Variables

In order to test hypothesis H2 (the adoption of IFRS 16 caused a statistically

significant impact on companies' market) a market-based valuation perspective is assumed. To proceed a company's valuation the market multiple method is used, and specifically, the asset side multiple EV/EBITDA has been included in the analysis. The numerator represents the Enterprise Value of the company (market capitalization plus the net financial position), while the denominator considers the EBITDA margin. More specifically, the EV_EBITDA variable represents the multiple before the adoption of IFRS 16, while EV_EBITDA' represents the post-implementation IFRS 16 variables, including companies' market capitalization and net financial position over the EBITDA as resulting after the implementation of the new lease accounting model in Table 2.

Table 2
VARIABLES DESCRIPTION - PAIRED SAMPLE MODEL

FINANCIAL STRUCTURE	D/E_ratio	It is calculated as the ratio between non-current liabilities and total equity pre- implementation of the IFRS 16.
	D/E_ratio'	It is calculated as the ratio between non-current liabilities and total equity post- implementation of the IFRS 16
	D/A_ratio	It is calculated as the ratio between non-current liabilities and total assets pre- implementation of the IFRS 16.
	D/A_ratio'	It is calculated as the ratio between non-current liabilities and total assets post- implementation of the IFRS 16.
ECONOMIC PERFORMANCE	EBITDA	It represents the Earnings Before Interest, Taxes, Depreciation & Amortization pre-implementation of the IFRS 16.
	EBITDA'	It represents the Earnings Before Interest, Taxes, Depreciation & Amortization post-implementation of the IFRS 16.
	EBIT	It represents the Earnings Before Interest and Taxes pre-implementation of the IFRS 16.
	EBIT'	It represents the Earnings Before Interest and Taxes post-implementation of the IFRS 16.
	EBT	It represents the Earnings Before Taxes pre-implementation of the IFRS 16.
	EBT'	It represents the Earnings Before Taxes post-implementation of the IFRS 16.
	dep-exp	It represents the total amount of depreciation expenses pre-implementation of the IFRS 16.
	dep_exp'	It represents the total amount of depreciation expenses post-implementation of the IFRS 16.
PROFITABILITY	ROE	It is calculated as the ratio between the net income and the total equity. It represents the Return on Equity pre-implementation of the IFRS 16.
	ROE'	It is calculated as the ratio between the net income and the total equity. It represents the Return on Equity post-implementation of the IFRS 16.
	ROA	It is calculated as the ratio between the Earnings Before Taxes and total assets. It represents the Return on Asset pre-implementation of the IFRS 16.
	ROA'	It is calculated as the ratio between the Earnings Before Taxes and total assets. It represents the Return on Asset post-implementation of the IFRS 16.
	ROS	It is calculated as the ratio between the EBIT and the total sales. It represents the Return on Sales pre-implementation of the IFRS 16.
	ROS'	It is calculated as the ratio between the EBIT and the total sales. It represents the Return on Sales post-implementation of the IFRS 16.
	ROT	It is calculated as the ratio between total sales and total asset. It represents the Asset Turnover pre-implementation of the IFRS 16.

	ROT'	It is calculated as the ratio between total sales and total asset. It represents the Asset Turnover post-implementation of the IFRS 16.
	COV	It is calculated as the ratio between the EBITDA and total interest expenses. It represents the Coverage ratio pre-implementation of the IFRS 16.
	COV'	It is calculated as the ratio between the EBITDA and total interest expenses. It represents the Coverage ratio post-implementation of the IFRS 16.
MARKET VALUE	EV_EBITDA	Plus, net financial position) and EBITDA. It is used as a proxy for companies' market value pre-implementation of the IFRS16.
	EV_EBITDA'	It is calculated as the ratio between Enterprise Value (market capitalization plus net financial position) and EBITDA. It is used as a proxy for companies' market value post-implementation of the IFRS16.

Table 3 below presents the descriptive statistics of all accounting metrics and key profitability ratios included in the paired sample t-test model.

TABLE 3
DESCRIPTIVE STATISTICS - PAIRED SAMPLE MODEL

Variable	Mean	Median	Std. Dev.	Min.	Max.
D/E_ratio	0,7993	0,5556	1,5599	-8,2496	14,8178
D/E_ratio'	1,0405	0,7289	1,7059	-7,3392	15,7954
D/A_ratio	0,2477	0,2166	0,1541	0,0130	0,7371
D/A_ratio'	0,2928	0,2679	0,1567	0,0135	0,7393
EBITDA	591152403	46610000	2220489067	-16705000	17480000000
EBITDA'	617372106	55154000	2258388176	-13979000	17704000000
EBIT	282733093	27097000	962834261	-289282000	6857000000
EBIT'	285302824	27181000	962331953	-271742000	6878000000
EBT	211365839	21358000	701667109	-295047000	6251000000
EBT'	205434024	21105000	673127265	-279046000	5746000000
dep_exp	323698852	20324000	1341094660	106000	10623000000
dep_exp'	347348824	5808000	621155530	-181000	6397000000
ROE	-0,0307	0,0837	1,1739	-12,5153	3,0243
ROE'	-0,4424	0,0783	5,7854	-73,3702	2,9689
ROA	0,0176	0,0405	0,2646	-3,0755	0,3494
ROA'	0,0102	0,0380	0,2941	-3,5333	0,3223
ROS	-0,0700	0,0786	2,4857	-31,6904	4,2184
ROS'	-0,0690	0,0785	2,4829	-31,6539	4,2194
ROT	0,7716	0,7260	0,4746	0,0437	2,8359
ROT'	0,7145	0,6819	0,4375	0,0440	2,6732
COV	23,1469	9,0947	73,7841	-133,6400	790,3556
COV'	13,3530	8,5893	22,6627	-60,3333	218,2235
EV_EBITDA	10,0153	7,3914	15,1463	-57,1961	114,1754
EV_EBITDA'	7,2973	7,3511	23,1957	-247,8768	69,8385

RESULTS AND DISCUSSION

Whole Sample Results

From Table 4 it can be seen that the mean difference between the paired ratios related to the level of indebtedness are both statistically significant ($p<0.000$), demonstrating that both variables have been affected by the implementation of IFRS 16, thus supporting hypothesis H1a. Specifically, the mean of the D/E_ratio' is greater than the mean D/E_ratio, demonstrating that the increase of the leverage over equity, equal to 30,16% in relative terms, is due to the adoption of the new lease accounting requirements. This finding is in line with previous results obtained by Morales-Dìaz & Zamora- Ramìrez (2018) in their study conducted on a sample composed by Spanish companies in the period antecedent to the adoption of IFRS 16. In this regard, it is interesting to point out that the results confirm an increase in the D/E ratio, but a lower extent than the ones obtained by Öztürk et al. (2016)

which using a case study approach recorded an increase in the D/E ratio equal to 75,3%; Singh (2012) who, conducting the analysis on a sample composed only by restaurant and retail firms, obtained an increase in the leverage on equity equal to 107,6%; and, Mulford & Gram (2007) who obtained an increase in the leverage on equity of 256.61%. Therefore, the result demonstrates that the transition to IFRS 16 as increased companies' level of indebtedness, but in a lower extent than that demonstrated in the empirical studies provided during the period antecedent to mandatory adoption of the new IFRS 16. Moreover, the results presented in Table 4 show a statistically significant mean difference also for the leverage over total assets. Specifically, the variable D/A_ratio' is increased by 18,21% (mean) in relative terms due the implementation of the new lease accounting model. Therefore, both ratios provide evidence of an increase in the level of indebtedness, with a relative minor impact on the leverage over total asset, partially due to the reported equity reduction, as expected, after the adoption of IFRS 16. In fact, for companies having material off-balance sheet leases, it was expected that the implementation of IFRS 16 would result in an increase in the leverage due to the increase in the lease assets and lease liabilities and due to the simultaneous reduction of the reported equity (IASB, 2016). As far as the income statement accounting metrics are concerned, the results demonstrate a statistically significant ($p<0.000$) increase in the EBITDA, equal to 4,43% (mean) in relative terms due to the implementation of IFRS 16 requirements, while the mean difference between the variables EBIT and EBT is not statistically significant. Therefore, the changes of those accounting metrics cannot be attributable to the transition from IAS 17 to IFRS 16. In addition, the result of the analysis conducted on depreciation expenses (dep_exp) presents a statistically significant mean difference ($p<0.01$). Specifically, it has been demonstrated an increase in the amount of depreciation expenses equal to 7,30% (mean) in relative terms, attributable to the transition from IAS 17 to IFRS 16.

As far as the income statement accounting metrics are concerned, the results obtained for the EDITDA is in line with previous empirical research and with the predictions provided by IASB' Effect Analysis (2016), while the findings obtained for EBIT and EBT does not meet the expectations. In this regard, the effect Analysis 2016 envisaged an increase in the profit measure due to the implementation of IFRS 16 as this excludes interest on lease liabilities, whereas – applying the IAS 17 – the entire expenses related to the off-balance sheet leases are included (within the operating income). Thus, this findings must be analysed also taking into consideration the fact that depreciation of the lease asset is typically recognised on a straight-line basis while the interest expenses generally decrease over the lease term as the lease liability decreases. As a consequence, after the adoption of IFRS 16, it was expected that the sum of the interest expenses and the depreciation charges during the first half of the lease term is generally higher than the straight-line expense of off- balance sheet leases recognised applying IAS 17. The opposite is, then, expected during the second half of the lease term (i.e., the sum of the interest expense and the depreciation charges during the second half of the lease term is generally expected to be lower than a straight-line expense for off-balance sheet leases).

Through hypothesis H1b, the effect of the implementation of IFRS 16 on companies' profitability is tested. In relation to ROE, the result of the paired sample model shows that the mean of the post- implementation ratio (ROE) is lower than the mean of the ratio as resulted before the adoption of the new lease accounting model, but since this mean difference is not statistically significant the decreasing in the Return on Equity cannot be attributed to the transition from IAS 17 to IFRS 16. This result is in line with previous empirical research (Bettie et al., 1998) pointing out that the ROE is not significantly affected by the capitalization of off-balance sheet leases. Indeed, also in the pre- implementation phase the expectation on changes in ROE (or ROCE) were controversial, since the impact of the new

lease accounting model depends on the effect on profit and loss. In fact, only in case of no impact on profit and loss is recognized, ROE would be greater due to the reduction on the reported equity after the transition to IFRS 16.

As regard the operating profitability measured through ROA, results show a statistically significant decrease ($p<0.05$), equal to 42,37% (mean) in relative terms. The mean of the post-implementation ratio (ROA') is lower than the mean of the profitability ratio as resulted before the adoption of IFRS16 (Imhoff et al., 1991; Kostolansky & Stanko, 2011; Wong & Joshi, 2015; Öztürk et al., 2016). Considering the non-statistically significant effect on the EBIT, the recognition of the right of use in the asset side leads to an increase in total operating assets, and the combined effects of the two-accounting metrics produce a decline in the operating profitability due to the transition from IAS 17 to IFRS 16. Table 4 provides statistically significant result also for capital turnover (ROT), measuring the effectiveness of the company to manage the invested capital to produce revenues. In this regard, the mean of the post-implementation ratio (ROT') is lower than the mean of the ratio before the adoption of IFRS 16 and, since the mean difference is statistically significant ($p<0.001$) the decreasing in the capital turnover, equal to 7,39% (mean) in relative terms, is attributable to the transition from IAS 17 to IFRS 16. At this point of the investigation, it is interesting to underline that operating performance can be measured also through the use of "*key performance indicators (KPIs)*", which are defined at managerial accounting level as a measurable value that demonstrates how effectively a company is achieving key business objectives. Companies use KPIs at a multiple level to evaluate their success at reaching targets, considering some high-level KPIs focusing on the overall performance, and some others low-level KPIs focusing on processes in departments such as sales, marketing, HR, and others. The conducted analysis focuses exclusively on the key profitability ratios emerging from the financial statements' analysis, and therefore at financial accounting level.

Finally, Table 4 shows a statistically significant decrease ($p<0.05$) for the coverage ratio (COV), equal to 42,31% (mean) in relative terms, demonstrating the deterioration in the companies' ability to meet future financial obligations in terms of interest payments (Morales-Dìaz & Zamora-Ramìrez, 2018).

Table 4
T-TEST PAIRED SAMPLE MODEL RESULTS

	Mean	**t-test**	**df**	**Std. Deviation**
D/E_ratio - D/E_ratio'	-0,2411	-5,899*** (0,000)	166	0,5283
D/A_ratio - D/A_ratio'	-0,0451	-7,323*** (0,000)	166	0,0796
EBITDA - EBITDA'	-26219703	4,477*** (0,000)	166	75676780
EBIT - EBIT'	-2569731	1,171 (0,243)	166	2194557
EBT - EBT'	59318118	1,509 (0.133)	166	50812938
dep_exp - dep_exp'	-23649972	2,894** (0,004)	166	866126212
ROE - ROE'	0,4117	0,999 (0,319)	166	5,3253
ROA - ROA'	0,0075	2,513* (0,013)	166	0,0384
ROS - ROS'	-0,0010	-1,054 (0,294)	166	0,0127
ROT - ROT'	0,0570	6,405*** (0,000)	166	0,1151
COV -COV'	9,5974	2,157*	161	4,4487

		(0,032)		

†, *, **, *** indicate p-value < 0.1, p-value < 0.05, p-value < 0.01, p-value < 0.001, respectively.

Industry Analysis

Some authors argued that the impact of the implementation of IFRS 16 requirements might depend on belonging to different industries. In order to measure the industries effect, the paired sample analysis has been conducted taking into consideration the industries in which companies operate.

Chemical

The results for chemical industry present a statistically significant increase ($p<0.05$) in the leverage on asset due to the transition to IFRS 16, while no statistically significant results have been obtained for the income statement accounting metrics. As far as the profitability ratios are concerned, Table 5 shows a statistically significant decrease ($p<0.1$) only for Asset Turnover (ROT).

Consume goods

With regard to consumer goods industry, Table 5 presents statistically significant increase for both leverage on equity ($p<0.01$) and the leverage on asset ($p<0.001$), demonstrating the impact on companies' financial structure. Moreover, for this industry, Table 6 presents the statistically significant increase ($p<0.01$) in the EBITDA, in line with the expectations of the pre-implementation phase of the new lease accounting standard. With reference to profitability ratios, consumer goods industry records a statistically significant decrease in ROA ($p<0.05$) and in ROT ($p<0.001$), while a statistically significant increase in the ROS ($p<0.05$).

Table 5
PAIRED SAMPLE MODELS - FINANCIAL STRUCTURE RESULTS INDUSTRY ANALYSIS

		Mean	t-test	df	Std. Deviation	Lower	Upper
Chemical	D/E_ratio	-0,0929	-2,031	2	0,0792	-0,2896	0,1039
	D/E_ratio'		(0,179)				
	D/E_ratio	-0,0160	-4,924*	2	0,0033	-0,0300	0,0020
	D/E_ratio'		(0,039)				
Consumer goods	D/E_ratio	-0,2659	- 3,370**	38	0,4928	-0,4257	-0,1062
	D/E_ratio'		(0,002)				
	D/E_ratio	-0,0547	-4,302***	38	0,0794	0,0804	0,0289
	D/E_ratio'		(0,000)				
Consumer services	D/E_ratio	0,3336	-2,474*	22	0,6468	-0,6133	-0,0539
	D/E_ratio'		(0,022)				
	D/E_ratio	0,0553	-4,651***	22	0,0570	-0,0799	-0,0306
	D/E_ratio'		(0,000)				
Healthcare	D/E_ratio	-0,4994	-1,444	7	0,9785	-1,3174	0,3186
	D/E_ratio'		(0,192)				
	D/E_ratio	0,0877	-1,694	7	0,1465	0,2102	0,0347
	D/E_ratio'		(0,134)				
IT	D/E_ratio	0,2063	-3,543**	12	0,2100	-0,0682	0,0234
	D/E_ratio'		(0,004)				
	D/E_ratio	-0,0458	-4,451***	12	0,0371	-0,0682	0,0234
	D/E_ratio'		(0,001)				

Manufactoring	D/E_ratio	-0,2106	-2,682** (0,01)	54	0,5825	-0,3681	-0,0532
	D/E_ratio'						
	D/E_ratio	-0,0426	-3,299** (0,002)	54	0,0957	-0,0685	-0,0167
	D/E_ratio'						
Oil & Gas	D/E_ratio	0,0868	-2,273† (0,063)	6	0,1010	-0,1802	0,0066
	D/E_ratio'						
	D/E_ratio	-0,0143	-3,863** (0,008)	6	0,0098	0,0233	-0,0052
	D/E_ratio'						
Public Utilities	D/E_ratio	0,1581	-2,262* (0,04)	14	0,2707	-0,3080	-0,0082
	D/E_ratio'						
	D/E_ratio	-0,0075	2,581* (0,022)	14	0,0112	-0,0137	-0,0013
	D/E_ratio'						
Telecommunication	D/E_ratio	-0,1770	-2,322 (0,103)	3	0,1525	-0,4197	0,0656
	D/E_ratio'						
	D/E_ratio	-0,0578	-1,250 (0,300)	3	0,0462	-0,2050	0,0894
	D/E_ratio'						

†, *, **, *** indicate p-value < 0.1, p-value < 0.05, p-value < 0.01, p-value < 0.001, respectively

Consumer Services

The statistically significant impact on the financial structure is confirmed also for consumers services industry. Table 5 presents the increase in the leverage on equity ($p<0.05$) and in the leverage on asset ($p<0.001$), while Table 6 shows not statistically significant impact on the income statement accounting metrics. As far as the profitability ratios are concerned, the empirical analysis confirms a statistically significant increase for ROS ($p<0.05$) and a decrease in ROT ($p<0.01$).

Healthcare

Healthcare industry does not present any statistically significant results for companies' financial structure and profitability ratios, and negligible results have been obtained with reference to the income statement accounting metrics. These findings are partially explained by the small number of companies included in the sample and are partially due to the characteristics of this industry in entering in a relative few number of lease contracts.

IT

With reference to IT industry, Table 5 presents statistically significant increase in both leverage on equity ($p<0.01$) and leverage on asset ($p<0.001$), demonstrating the considerable impact on companies' financial structure. Interesting results have been obtained also for the profitability analysis, in which it is showed a significant decrease in the ROE ($p<0.01$) and in the ROA ($p<0.01$) and in the ROT ($p<0.001$), suggesting heavy negative impacts due to the transition to IFRS 16. Differently, negligible results have been achieved for the income statement accounting metrics.

Manufacturing

The statistically significant impact on the financial structure is confirmed also for manufacturing industry. Table 5 presents an increase in the leverage on equity ($p<0.01$) and in the leverage on asset ($p<0.01$), while Table 6 shows a statistically significant decrease in the EBITDA ($p<0.05$). With regard to profitability analysis, weak statistically significant decreases in the ROA ($p<0.1$) and in the ROT ($p<0.05$) have been achieved.

Table 6
PAIRED SAMPLE MODEL - MARKET REACTIONS (MARKET VALUE) RESULTS

	Mean	t-test	df	Std. Deviation	Lower	Upper
EV_EBITDA	2,7180	2,213** (0,028)	166	15,8744	0,2927	5,1433
EV_EBITDA'						

ϯ, *, **, *** indicate p-value < 0.1, p-value < 0.05, p-value < 0.01, p-value < 0.001, respectively

Oil & Gas

Oil & Gas industry presents a negligible impact on the leverage on equity ($p<0.1$), but statistically significant decrease ($p<0.01$) in the leverage on asset, demonstrating also for this industry the considerable impact on companies' financial structure. Instead, negligible results have been obtained with reference to the income statement accounting metrics and to the profitability analysis.

Public Utilities

For public utilities industry both the leverage on equity and the leverage on asset are statistically significant at the same level ($p<0.05$), demonstrating the increase in the companies' level of indebtedness. On the contrary, negligible results have been obtained for the income statement accounting metrics and for profitability analysis.

Telecommunications

Finally, no statistically significant results have been obtained for telecommunications industry. This is probably due to the small number of companies composing the sample.

Market Reactions

Through hypothesis 2 the impact deriving from the implementation of IFRS 16 on companies' market value is tested. From Table 6, it can be observed that the mean difference between the pre and post- implementation EV/EBITDA multiple is statistically significant ($p<0,05$), supporting H2. More precisely, the transition to IFRS 16 has caused a reduction in the EV/EBITDA equal to 27,31% (mean) in relative terms. In a previous research conducted by Deloitte (2016) it had been estimated a decrease in the market multiple equal to 5% with a peak of up to 25% considering companies having a large number of operating lease contracts. Similar results have been obtained in a research conducted by Uppsala University, which using a sample composed by 279 Swedish listed companies, records a decline in the EV/EBITDA equal to 9,9% (whole-sample basis). In line with previous research, the findings demonstrate a decline in the companies' market multiple, but the magnitude of this decline is greater than the one obtained from previous research.

CONCLUSIONS AND LIMITATIONS

The issuance of the new lease accounting standard (IFRS 16) closes a long and complex process of accounting policies reviewing, and despite the recognition of all benefits deriving from the capitalization of all off-balance sheet leases, cost related to the adoption of the new lease accounting standard have been highlighted by several parties involved in the development and implementation process.

The aim of this paper is to analyze theoretical and empirical implications on financial

statements of Italian listed companies deriving from the implementation of IFRS 16. The results demonstrate univocally an increase in the level of indebtedness, even if to a lesser extent than suggested by previous research basically carried out using theoretical models through the authors hypothesized the effect generated by the capitalization of operating leases (Mulford & Gram, 2007; Öztürk et al., 2016; Morales-Dìaz & Zamora-Ramìrez, 2018a, 2018b).

The income statement metrics under analysis show a positive impact through an increase in the EDITDA margin due to the transition process, even if this positive effect has necessary to be analyzed consistently with the increasing in the amount of depreciation expenses, which counterbalance the overall effect.

The empirical analysis provides also interesting findings for key profitability ratios. In this regard, results demonstrate that the ROE has not been affected from the transition process, contrary to the operating profitability (ROA), the effectiveness in the management of invested capital (ROT) and the coverage ratio (COV). Relevant findings are also presented with reference to the impact on companies' market value due to the implementation of IFRS 16, demonstrating a statistically significant decrease in the EV/EBITDA market multiple.

This paper contributes to the existing literature in several aspects. First of all, it enriches lease accounting empirical studies by providing the actual consequences deriving from the capitalization of operating leases due to the mandatory adoption of IFRS 16. Therefore, the content of this analysis – providing a clear picture of the effects on the companies' financial statement – is of a great interest also for practitioners (including companies' top management), supporting them in the decision- making process between leasing and/or assets' acquisition.

Finally, the findings of this research are interesting for regulators and policy makers, providing opportunities for analyzing consequences and costs related to the implementation of the new lease accounting model, through which the impacts deriving from the recognition of all contracts under lease definition can be mitigated. In this regard, the investigation appears to be useful also for national regulators and policy makers in order to facilitate the developing process of a national lease accounting principle, specifically for all countries where this is not yet present (such as Italy).

The paper present also some limitations that can be addressed through further research. First of all, the empirical analysis has been conducted on Italian listed companies and in order to deepen the debate on the effects deriving from the implementation of IFRS 16 it would be useful to conduct similar empirical analysis on other European countries. In addition, this study focuses only on quantitative aspects, neglecting all qualitative issues related to the adoption of IFRS 16. Further qualitative research is also interesting to enrich the literature on lease accounting.

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