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## THE EFFECT OF THE IFRS 16: CONSTRUCTIVE CAPITALIZATION OF OPERATING LEASES IN THE TURKISH RETAILING SECTOR

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### ABSTRACT

The new International Financial Reporting Standard (IFRS) 16 issued by the International Accounting Standards Board will significantly change accounting for leases. The most important issue is that operating leases beyond one year will be capitalized, which means Off-The-Balance Sheet (OBS) financing via operating lease is effectively eliminated. "IFRS 16: Leases" will fundamentally change the way that leases are accounted for and reported in financial statements. This paper tries to illustrate the impact of IFRS 16 on financial statements and financial ratios. The study is an ex ante research, simulating a predicted outcome of the new lease standard, which will be in effect after 1 January 2019. For this purpose, this research is applied to the Turkish retailing companies whose shares are publicly traded in the Istanbul Stock Exchange. The study uses the constructive capitalization method for these companies. The results indicate that new standard will have a statistically significant effect on some of the financial ratios tested (debt/asset, debt/equity, return on assets (ROA) and return on equity (ROE)) for 2010 – 2013.

**Keywords :** IFRS 16, Operating Leases, Accounting for Leases, Lease Capitalization, Turkish Listed Retailing Companies

**JEL Classification :** C1; G1; M1

### 1. INTRODUCTION

Accounting for leases has been discussed since 1970's among academics, standard setters, corporate management, and financial statements users. The leasing standard issued by the Financial Accounting Standards Board's Statement No. 13, *Accounting for Leases*, issued in 1976, set the rules for accounting for leases; non-cancellable leases that meet one or more of the following four criteria must be capitalized by the lessees: (1) there is a transfer of ownership of the lease asset from the lessor to the lessee at the end of the lease term, (2) there is a "bargain purchase option," (3) the length of the lease term is 75% or more of the asset's expected economic life, or (4) the present value of minimum future lease payments is 90% or more of the asset's fair value at the inception of the lease agreement. Internationally, the International Accounting Standards Board issued IAS 17, *Leases*, which requires the lessees to recognize both an asset and a liability for a lease that transfers substantially all risks and rewards incidental to the ownership of the asset. Even though the two standard-setting bodies differ in their specific requirements, they both adopt the "ownership" approach in deciding whether a lease contract should be capitalized. Over the years, companies have strived to structure most lease contracts to bypass the capitalization criteria so that capitalization of assets and liabilities on the balance sheets are not required. (FASB, IASB, Tai (2013)). As a result, a change in the IAS 17 deemed necessary and the new standard was issued by IASB.

IAS 17 Leases, which was adopted by the International Accounting Standards Board (IASB) in April 2001, had originally been issued by the International Accounting Standards Committee in December 1997. IAS 17 Leases replaced IAS 17 Accounting for Leases that was issued in September 1982. In December 2003 the IASB issued a revised IAS 17 as part of its initial agenda of technical projects. Finally, IASB announced IFRS 16 in January 2016, which will be applied for leases starting from 1 January 2019.

With the adoption of IFRS 16, capitalization of almost all lease contracts will become mandatory. The distinction between operating leases and finance leases does no longer exist for long term lease contracts. Under the new standard, lessees are required to capitalize all lease contracts as assets and liabilities. The long-standing off-balance sheet treatment of operating leases is now prohibited. After the adoption of this standard, companies with significant operating leases are likely to experience an increase in assets, increase in liabilities, and decrease in equity, which may affect their financial ratios significantly. This study tries to demonstrate the expected changes in some of the financial ratios such as debt-to-assets, debt-to-equity, return-on-assets, return-on-equity ratios. This research examines Turkish retailing sector companies whose shares are traded in the Istanbul Stock Exchange, and demonstrates how the companies' key financial ratios are affected as if the new standard was implemented.

## **2. LITERATURE REVIEW**

There are several studies examining the expected change of the new leasing standard which effectively eliminated the distinction between operating and finance lease.

The first study about lease capitalization of operating leases is the paper of Imhoff, Lipe and Wright (1991). This paper not only proposes capitalization of operating leases, but it also provides detailed guidance how to demonstrate the effect of operating leases on assets, liabilities and net income. Their guidance is also used in this paper as explained below.

Fülbier, Silva and Pferdehirt (2008) simulate general lease capitalization and its consequences on the financial statements of a set of listed German companies. They conducted ex ante research, indicating the consequences of a possible future accounting reform. Their sample comprised 90 companies belonging to the three major German indices DAX 30, MDAX, and SDAX. They collected Datastream/Worldscope data from consolidated financial statements for the years 2003 and 2004 and investigate the capitalization impact on key financial ratios. Their simulation model is based on a modified constructive capitalization approach originally developed by Imhoff, Lipe, and Wright (1991; 1993, 1997). Their results show a material capitalization impact for a considerable number of companies, especially for the fashion and retail industry groups. Changes in financial ratios occur primarily in assets and liability relations, but they observe minor effects for the profitability ratios and market multiples often used for valuation purposes.

Kostolansky and Stanko (2011) analyzed the leasing arrangements of the Standard and Poor's 100 (S&P 100) companies by extracting Form 10-K information from the Management Discussion and Analysis note, the financial statements, and the leasing footnotes and they found a material impact on specific firms and on specific industries. Double digit increases and decreases in firm specific financial ratios will occur. Their findings also support the IASB initiative to capitalize operating leases, ultimately creating a more representative balance sheet. They agree with the Board that these leasing arrangements should be represented on the balance sheet if that statement is to reflect the firm's full set of obligations. The results of their study indicate that those firms and industries that heavily utilize operating leases will be heavily affected by the change in lease accounting.

Tai (2013) selected two Hong Kong-based fast food restaurant chains, Fairwood Holdings Limited (Fairwood) and Café de Coral Holdings Limited (CDC) for analysis. His research results indicate that the two major fast-food restaurant chains in Hong Kong will experience significant adverse effect resulting from deteriorating return-on-assets and debt-to-equity ratios when their long-term leases are capitalized. This potentially devastating consequence could reflect negatively on the companies' stock prices, cost of capital, executive compensation, and even their ability to carry on as a going concern.

Lee, Paik and Yoon (2014) use publicly available data ranging from 1990 to 2011 to explore the effects of capitalizing operating leases on the immediacy to debt covenant violations of U.S. companies. To investigate

this research questions, they use eight financial ratios that are included in debt covenants, such as solvency, liquidity, and interest coverage ratios. They investigate the effect of operating lease capitalization on these ratios for two consecutive years. Their results provide evidence that the capitalization of leases will not always cause deterioration of financial ratios. As expected, for some firms, capitalization significantly deteriorates firms' financial ratios. Furthermore, some firms cross the initial covenant threshold and violate their debt covenants because of the negative effect of capitalization of operating leases on their financial ratios. However, they also find evidence that, for other firms, capitalization improves financial ratios and helps reduce the risk of debt covenant violation. This significantly different effect on financial ratios is determined by the characteristics of each financial ratio and where firms are positioned in terms of their ratios at a starting point (before the capitalization of leases).

Paik, Smith, Lee, and Yoon (2015) suggest that the proposed capitalization of Off Balance Sheet leases (operating leases) may not result in firms violating loan covenants but will make the balance sheet a more complete source of information for debt contracting by removing the need for constructive capitalization of OBS leases. They used logistic regression models to investigate the relation between OBS leases and the use of income-statement- or balance-sheet-based ratios in covenants. The potential for these changes to negatively affect the accounting ratios included in debt covenants leading to covenant violations is an area of concern. They argue that lenders constructively incorporate OBS leases when determining the financial constraints of the borrowing firm and this influences the type of accounting ratios to use in debt covenants: income-statement- or balance-sheet-based ratios.

Joakim Ericson and Robin Skarphagen (2015) examined how capitalization of operating leasing would affect financial ratios of Swedish publicly traded companies, for this purpose 55 large cap companies on Stockholm NASDAQ OMX between 2010–2013 were studied. The constructive capitalization model, which was first introduced by Imhoff et al. (1991) and later modified by Fülbier et al. (2008), have been used. They found that a new lease standard without operating leasing would have a significant effect on the tested financial ratios (D/A, E/A, PM, ROA, ROE).

Wong and Joshi (2015) examined the lease capitalization effect on financial statements and financial ratios of Australian companies listed on the Australian Stock Exchange (ASX) in the year of 2010. The top 170 companies are chosen because they represent different sectors such as energy and utilities, health care and biotechnology, IT and telecommunications, consumers, financial, industrial and materials, metal and mining, and clean technology, and they have a market capitalization value greater than \$1000 million. In their study, the results have shown a significant effect of lease capitalization on financial statements for the selected Australian companies. However, the changes in the financial statements (total assets, total liabilities, and total equity) are not as significant as the changes found in prior studies. The financial ratios such as D/E ratio, D/A ratio and ROA will change significantly under lease capitalization. However, the change in ROE is insignificant.

### **3. DATA AND METHODOLOGY**

This part of the study explains sample selection and measurement of the research.

#### **3.1. SAMPLE SELECTION**

The study examines the effect of the lease capitalization on financial statements and financial ratios of retailing sector companies listed on the Istanbul Stock Exchange (Borsa Istanbul-BIST). The retailing sector comprises 13 companies as of December 31, 2014. During our sample selection process, we collected companies' lease and financial statement data for the "2010-2014 period". 6 companies of 13 retailer companies excluded from the sample because of lack of operating lease information.

#### **3.2. MEASUREMENT METHOD**

##### **3.2.1. Lease Capitalization Method**

The research in this study applies the constructive lease capitalization method developed by Imhoff et al (1991). This method is widely accepted and used in prior studies that examined the effect of lease

capitalization on financial statements and financial ratios such as Beattie et al (1998), Bennet and Bradbury (2003), Duke et al. (2009), Singh (2010 and 2011), Branswijck et al. (2011) and Wong and Joshi (2015). For the purpose of lease capitalization there is another method called heuristic method, but applying of heuristic method causes significantly higher unrecorded lease asset and liability amounts than constructive capitalization method. Prior studies such as Bennet and Bradbury (2003) evidenced that the heuristic method overstates the unrecorded lease assets or liabilities.

### 3.2.2. Estimating Unrecorded Lease Assets/Liabilities

While applying the constructive capitalization method, we first used audited annual financial statements and relevant footnotes. We extracted actual operating lease expenses from selected companies' financial statements for the period of 2010 – 2014 and non-cancelable future operating lease payments for the next 10 years. In the second step we calculated the present value of the operating lease expenses as of January 1, 2010. In order to estimate present value of operating lease expenses (also present value of operating lease expenses is equal to the amounts of the unrecorded lease assets and liabilities as of January 1, 2010) it is inevitable to use assumptions. We used following assumptions because of two reasons; first, due to lack of specific data for the remaining lease lives, second, due to lack of implicit interest rates (implicit interest rates are necessary for the present value calculation). We used following assumptions that are consistent with the Imhoff et al. (1991) and these assumptions have also been used by prior researchers working on the estimation of lease capitalization.

- At the inception of the lease, the book value of the leased asset is equal to the book value of the lease liability.
- At the end of the lease, the book value of the asset and liability are zero.
- All cash flows occurred at the end of the year.
- Compound interest (9%) rate of government bonds issued on December 14, 2009 used as discount rate.
- The asset is depreciated using straight-line method of depreciation and expected useful life is 15 years.
- Lease payments are constant over the lease term.

Using the lease expenses and discount rate, results of the estimated unrecorded assets and liabilities are shown in Table 1.

**Table 1: Present Value of Lease Expenses as of January 1, 2010**

Years	Yearly Lease Expenses (TL)	9% Present Value Factor	Present Value of Lease Expenses (TL)
2010	359,575,583	0.9174	329,885,856
2011	442,807,120	0.8417	372,701,894
2012	557,316,657	0.7722	430,350,716
2013	650,516,090	0.7084	460,841,998
2014	788,713,553	0.6499	512,609,693
2015 to 2024	155,683,658*	4.1710**	649,362,324
<b>Total Estimated Unrecorded Lease Assets and Liabilities</b>			<b>2,775,752,481</b>

\* Total future lease expenses (1,556,836,580 TL) / 10 years

\*\* This factor is the present value of a 15-year annuity at 9% less the present value of a 5-year annuity at 9%, based on assumed 155,683,658 TL at the end of each year from 2015-2024.

The result of Table 1 suggests that the PV of retailing sector company's total unrecorded lease assets and liabilities are equal to 2,775,752,481 as of January 1, 2010. If the lease capitalization be implemented by the retailing sector companies, impact on the presentation on balance sheet is shown below;

**RETAILING SECTOR COMPANIES BALANCE SHEET  
AS OF JANUARY 1,2010 (TL)**

<b>ASSETS</b>		<b>LIABILITIES</b>	
Unrecorded Lease Assets	2,775,752,481	Unrecorded Lease Liabilities	5,128,133,605
		Deferred Interest Expense	<u>- 2,372,381,124</u>
		Unrecorded Lease Liabilities (Net Amount)	2,775,752,481

### 3.2.3. Estimating Depreciation Expenses and Interest Expenses

The capitalized lease assets should be depreciated during its useful life. In order to estimate the depreciation expense of the capitalized lease assets we used the assumptions of Imhoff et al.(1991), the useful life of capitalized lease assets are 15 years and straight-line method of depreciation will be applied. According to these assumptions, yearly depreciation rate is estimated as 7% (1/15 years) and yearly depreciation expense is estimated as 183,716,832 TL (2,775,752,481 TL\*7%).

After the capitalization process, lease liabilities should be reported on the liabilities part of the balance sheet and reported net lease liability should be equal to the amount of the capitalized lease assets on the assets part of the balance sheet. As mentioned before, the amounts of lease assets and liabilities should be equal at the capitalization date and both should be equal to zero at the end of the lease. But between capitalization date and end of the lease, reported amounts of both lease assets and lease liabilities will not be equal to each other. Imhoff et al. (1991) showed that, the share of interest expense in the early payments is much larger than the principal, whereas the depreciation expense reduces the carrying amount of the leased asset at a much higher rate than the decrease of the principal of the lease liability. As a result of this, amount of the net lease liability will be higher than the amount of the net book value of the lease assets till the end of the lease. For example, at the end of 2010, depreciation expense of 2010 is 183,716,832 TL and net book value of the lease assets on the balance sheet should be 2,572,035,649 TL (2,775,752,481 – 183,716,832). On the other hand, the lease payment in 2010 should be 341,875,574 TL, lease expense should be 248,017,723 TL (2,755,752,481 TL \* 9%), principal payment (also decrease in net lease liabilities) should be 93,857,850 TL (342,875,574 TL – 248,017,723 TL). This situation causes a higher decrease in lease assets than lease liabilities during the useful life.

### 3.2.4. Estimating Net Income

The lease capitalization has a significant effect on the net income figures. In this study, the operating lease expenses are removed from the income statement and replaced by depreciation and interest expenses which mentioned above. In order to adjust the tax effect, we used Turkish corporate income tax rate (20%) to achieve the adjusted net income after tax and calculate the adjusted total equity.

### 3.3. ANALYSIS

Research hypotheses to be tested for each year of the term 2010-2014 are given below as

$H_1$  : Lease capitalization has a significant impact on total assets

$H_2$  : Lease capitalization has a significant impact on total liabilities

$H_3$  : Lease capitalization has a significant impact on total equity

$H_4$  : Lease capitalization leads to a significant increase in the D/A ratio

$H_5$  : Lease capitalization leads to a significant increase in the D/E ratio

$H_6$  : Lease capitalization leads to a significant increase in the ROE ratio

$H_7$  : Lease capitalization leads to a significant increase in the ROA ratio

Collected and calculated data were analyzed by using software IBM SPSS version 20 and Microsoft Excel 2016. Univariate statistical tests were performed because of small sample size (n=7).

#### 4. FINDINGS AND DISCUSSIONS

Both histogram and descriptive statistics of research variables were examined (but not displayed here) and it was determined that distribution of each variable is right-skewed. Kolmogorov-Smirnov and Shapiro-Wilk normality tests were performed and null hypothesis of normality was rejected at 1% significance level for all but one variable.

Nonparametric Wilcoxon matched-pairs signed-ranks test was used to test the null of research hypotheses because of nonnormality evidence for the population, for each year of the term 2010-2014.

For each of the first two research hypotheses, the null hypothesis of no difference was rejected for 2010 (p-values are 4.7% and 1.6% respectively) and 2011 (p-values are 7.8% and 1.6%). Null hypothesis of  $H_1$  and  $H_2$  couldn't be rejected for the term 2012-2014. Null hypothesis of no difference between medians of total equity under the new and existing lease accounting standards couldn't be rejected at any year of the term 2010-2014.

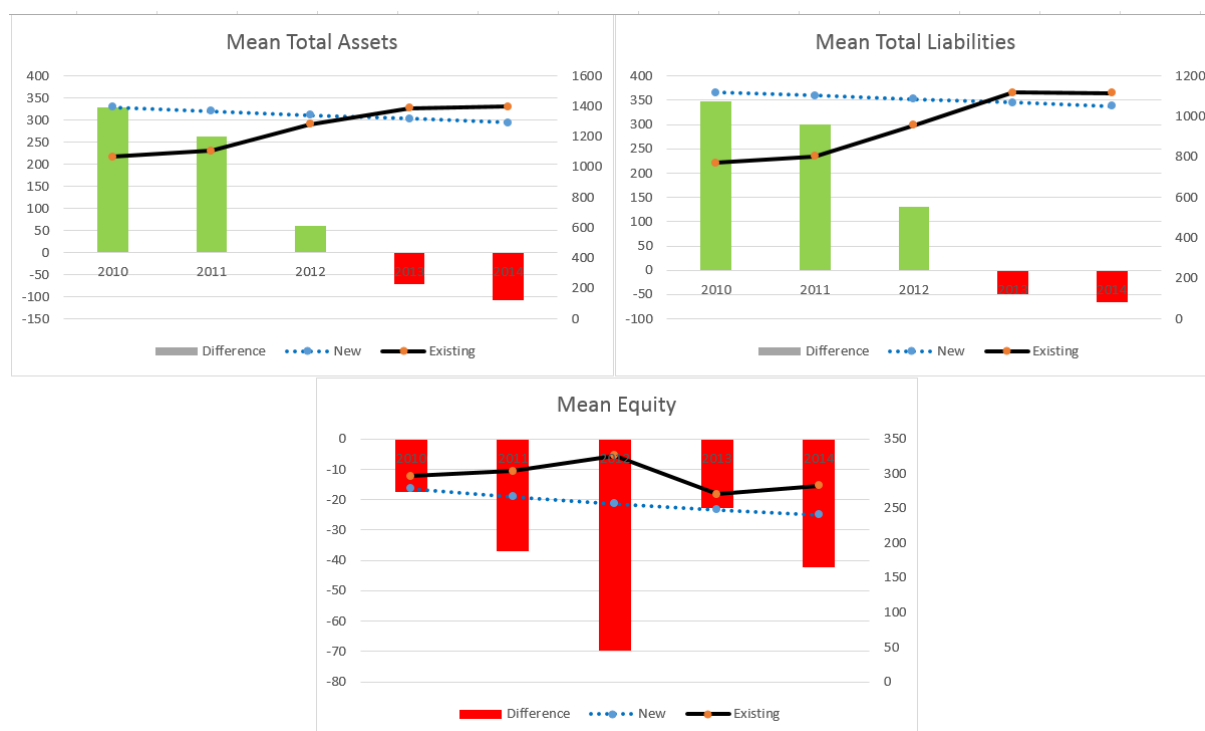
Mean financial statements and the p-values (significance) of Wilcoxon matched-pairs signed-ranks tests are given in the Table 2. Figure 1 shows the line graphs of mean total assets, mean total liabilities and mean equity under the new and existing accounting standards and the difference between them.

**Table 2: Comparison of mean financial statements under the new and existing lease accounting standards**

Year	Mean	New	Existing	Difference	% Change	Significance (2-tailed)
2010	Total Assets	1396.30	1066.72	329.58	30.90	0.047**
	Total Liabilities	1117.63	770.52	347.11	45.05	0.016**
	Total Equity	278.66	296.21	-17.55	-5.92	0.219
2011	Total Assets	1370.05	1107.58	262.47	23.70	0.078*
	Total Liabilities	1103.02	803.56	299.46	37.27	0.016**
	Total Equity	267.03	304.02	-36.99	-12.17	0.297
2012	Total Assets	1343.81	1282.71	61.1	4.76	0.375
	Total Liabilities	1087.09	956.36	130.73	13.67	0.297
	Total Equity	256.72	326.35	-69.63	-21.34	0.219
2013	Total Assets	1317.56	1389.64	-72.08	-5.19	0.297
	Total Liabilities	1069.73	1118.95	-49.22	-4.40	0.688
	Total Equity	247.84	270.69	-22.85	-8.44	0.297
2014	Total Assets	1291.32	1399.61	-108.29	-7.74	0.297
	Total Liabilities	1050.80	1116.96	-66.16	-5.92	0.688
	Total Equity	240.52	282.65	-42.13	-14.91	0.297

Results summarized in Table 2 show that lease capitalization will not have a significant impact on mean total equity. Also, while there is a significant difference between medians of the new and existing lease accounting standards for the years 2010 and 2011, there is no significant difference between them for the years through 2012-2014. Both the direction of changes in the financial statements are positive, increase in total assets (30.90% at 2010 and 23.70% at 2011) and total liabilities (45.05% at 2010 and 37.27% at 2011).

**Figure 1: Mean of the Financial Statements for the Term 2010-2014 and the Difference between the New and Existing Lease Accounting Standards**



Mean financial ratios and one-tailed p-values (significance) of Wilcoxon matched-pairs signed-ranks tests are given in the Table 3. Figure 2 shows the line graphs of mean financial ratios (D/A, D/E, ROE and ROA) under the new and existing accounting standards and the differences between them.

The null hypothesis of  $H_4$  couldn't be rejected at any year. There is no evidence pointing lease capitalization has an impact on median D/A.

The null hypothesis of  $H_5$  was rejected for each year through 2010-2013 but not for 2014. As earlier studies pointed, the median D/E ratio will increase after capitalizing the leases. Minimum and maximum observed percentage of the changes are 213.21% and 615.24% respectively.

The null hypothesis of  $H_6$  was rejected only for the years of 2010 (p-value is 6.3%) and 2013 (p-value is 3.9%). While the increase in the ROE at 2013 is similar to earlier studies, sample of 2010 has an evidence that lease capitalization will have decreasing unexpected effect on ROE.

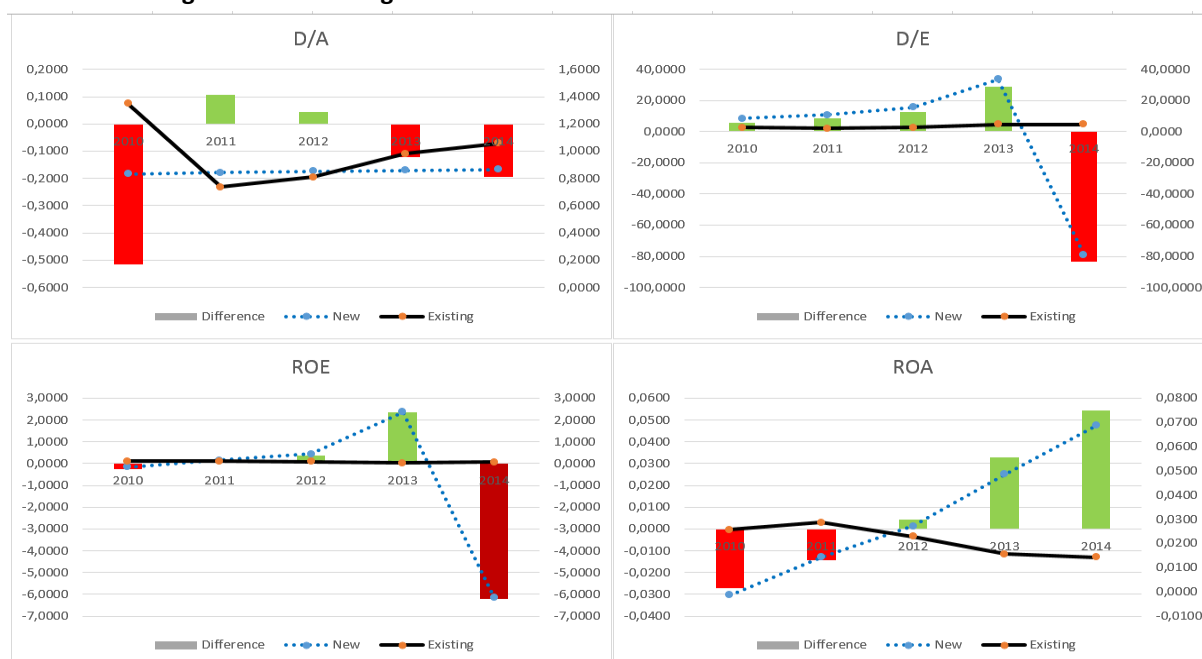
The null hypothesis of  $H_7$  was rejected for the years of 2013 (p-value is 3.1%) and 2014 (p-value is 1.6%). Lease capitalization has an increasing impact on ROA at years 2013 and 2014. There is no evidence for the years 2010-2012.

It should be noted that the sample size is quite small ( $n=7$ ). Findings of this study could be examined by taking the sample size into account. Another research can be done in a different sector of Turkey by using more observations (larger sample) to determine more generalizable findings.

**Table 3: Impact of Lease Capitalization on Financial Ratios**

Year		New	Existing	Difference	% Change	Significance (1-tailed)
2010	D/A	0.8329	1.3500	-0.5171	-38.30	0.133
	D/E	8.3671	2.6714	5.6957	213.21	0.008***
	ROE	-0.1543	0.1029	-0.2572	-249.95	0.063*
	ROA	-0.0014	0.0257	-0.0271	-105.45	0.969
2011	D/A	0.8429	0.7371	0.1058	14.35	0.203
	D/E	10.7386	1.9929	8.7457	438.84	0.008***
	ROE	0.1486	0.1086	0.0400	36.83	0.422
	ROA	0.0143	0.0286	-0.0143	-50.00	0.125
2012	D/A	0.8514	0.8086	0.0428	5.29	0.148
	D/E	15.5700	2.6300	12.9400	492.02	0.008***
	ROE	0.4386	0.0900	0.3486	387.33	0.156
	ROA	0.0271	0.0229	0.0042	18.34	0.328
2013	D/A	0.8586	0.9814	-0.1228	-12.51	0.234
	D/E	33.7900	4.7243	29.0657	615.24	0.023**
	ROE	2.3700	0.0214	2.3486	10974.77	0.039**
	ROA	0.0486	0.0157	0.0329	209.55	0.031**
2014	D/A	0.8657	1.0586	-0.1929	-18.22	0.188
	D/E	-78.8643	4.7143	-83.5786	-1772.87	0.469
	ROE	-6.1471	0.0557	-6.2028	-11136.09	0.500
	ROA	0.0686	0.0143	0.0543	379.72	0.016**

**Figure 2: Mean Financial Ratios for the Term 2010-2014 and the Difference between the New and Existing Lease Accounting Standards**





## 5. CONCLUSION

The introduction of the new lease standard brings dramatic changes for accounting for leases. The new standard, IFRS 16, effectively eliminates the distinction between operating and finance lease, which will result in capitalization of lease contracts and end off-the-balance sheet financing for long term leases. The purpose of this study is to demonstrate the effect of the new accounting standard about leases, namely IFRS 16. For this purpose, we tested the effect of the new standard on the Turkish retailing companies. The constructive capitalization model, which was first introduced by Imhoff et al. (1991) and later modified by Fülbier et al. (2008) was used in this study.

We found that the new lease standard would have a significant effect on the total assets and total liabilities in the years 2010 and 2011. This result is expected because of the capitalization of operating leases. After 2011, the effect of lease capitalization appears to be insignificant. This is a result of our assumptions of the calculations, since it is assumed that there are no additional operating leases after 2010.

Debt-To-Asset ratio is not significantly affected by lease capitalization. This is expected for 2010 because in 2010 the amount of leasehold and lease obligation is the same. But it is interesting to see that this ratio is not affected, because the decrease in the lease asset and lease obligation is not equal to each other. On the other hand, debt-to-equity ratio is significantly affected by lease capitalization between 2010-2013. This is expected because there is a significant increase in the liabilities. The effect of lease capitalization on ROA and ROA is insignificant for the most of the years analyzed, it is not possible to derive a conclusion from these results.

This research examines Turkish retail sector companies; and through constructive capitalization, demonstrates how the companies' key financial ratios are affected if the new standard is implemented. However, it should be taken into consideration that the sample was small and there was limited explanation in the footnotes related to operating leases.

As a matter of fact, this study can be expanded for different sectors in İstanbul Stock Exchange. Further research can be applied to a larger sample. Another research can be conducted after the application of IFRS 16 to compare the results of capitalization of the operating leases.

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