The Effect of Leases Standard (IFRS 16) on Off – Balance Sheet Financing: An Empirical Study

Mohamed Mohamed Abo Elazm Elsayed, Mohamed Ahmed El Essely, Lotfy El Refaey Farag, Mona Atef Ganna

Demonstrator of Accounting, Accounting Department, Faculty of commerce
Tanta University, Tanta, Egypt

Professor of Financial accounting, Faculty of commerce Tanta University, Tanta, Egypt

Associate Professor of Accounting, Faculty of commerce Tanta University, Tanta, Egypt.

Associate Professor of Accounting, Faculty of commerce Tanta University, Tanta, Egypt.

*Corresponding author mohamed_6480@commerce.tanta.edu.eg

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Mohamed Mohamed Abo Elazm Elsayed

Demonstrator of Accounting, Accounting Department, Faculty of commerce Tanta University, Tanta, Egypt

Mohamed Ahmed El Essely

Professor of Financial accounting, Faculty of commerce Tanta University, Tanta, Egypt

Lotfy El Refaey Farag

Associate Professor of Accounting, Faculty of commerce Tanta University, Tanta, Egypt.

Mona Atef Ganna

Associate Professor of Accounting, Faculty of commerce Tanta University, Tanta, Egypt.

Abstract:

PurposeThis study aims to examine the effect of the lease standard IFRS 16 and its Egyptian translation, EAS 49, on off-balance-sheet (OBS) financing, which is considered one of the most critical problems facing the financial statements users.

Design / methodology / ApproachThe researcher used both a qualitative and quantitative approach to analyze 43 companies' annual financial statements that were listed on the Egyptian stock market during the period from 2019 to 2022. Descriptive analysis, the T-test, and linear regression analysis are the three statistical techniques that have been applied. The methodology's objective was to investigate the relationship between independent variables (right-of-use asset (ROU) and lease liability) and dependent variables (assets, liabilities, debt-to-assets ratio (D/A), and debt-to-equity ratio (D/E)). These variables were used as a proxy for measuring how IFRS 16 (EAS 49) affects off-balance sheet financing.

Findings: The empirical study found that the application of IFRS 16 (EAS 49) has a positive, significant effect on OBS financing. These findings are consistent with the majority of previous studies.

Originality / Value / Recommendation Due to the lack of research that has discussed leases, the requirements, and their impact on OBS financing, especially in the Egyptian environment, this is due to the newness of lease standards. The study contributes to the literature and empirical research by illustrating how IFRS 16 eliminates OBS financing that leads to increased transparency and accuracy of financial statements. Therefor It is necessary for specialized professional organizations to arrange courses for accountants and auditors to

develop the knowledge of their members. And Companies must comply with current international standards to enhance the quality of accounting reports.

Key words: Lease, IAS 17, IFRS 16, and OBS financing.

1.1. Introduction

In the current condition of market economic development, companies need to use various highly developed assets. A business may have problems funding these assets, especially at the beginning of its operations (Kryatova *et al.,* 2021).

A lease allows companies to obtain the required machines and fixed assets for use in their operations without a substantial cash outflow. So, companies prefer leasing over traditional financing tools. because it can have potential working capital advantages and helps an entity manage its cash flows more efficiently (Kryatova *et al*., 2021).

Therefore, lease contracts are considered OBS financing, which leads to beneficial debt ratios. Besides that, leases are favorable because they are less expensive than traditional loans and other funding methods (Hansson & Pettersson, 2020).

A key problem in accounting for leased assets is the determination of whether lease transactions should be classified as financial or capital (leases assets (ROU) and liabilities (lease Liability) should be kept on-balance sheet) versus operating leases (OBS) (Dhaliwal & Neamtiu, 2011).

The (IASC) issued Lease Standard IAS 17 to determine whether lease assets must be recorded on the balance sheet or not to overcome a critical problem known as (OBS) financing. The main question is: does IAS 17 achieve its objectives?

1.2. Research Problem and Questions

According to IAS 17, all leases were classified into two main types: finance leases operating leases (Kryatova *et al*., 2021). Therefore, Both the lessor, who owns the asset, and the lessee, who is acquiring the right to use it, must distinguish between operating and financial leases. (Segal & Naik, 2019).

Rather than focusing on the definition of an operating lease, IAS 17 defined it as any lease that is not a financing lease. A financial lease and an operating lease are very different from one another. If a lease agreement essentially transfers to the lessee all risks and benefits associated with ownership, it is classified as a financial lease (IAS 17.4). Operating leases are classified for all other lease contracts. (Pășcan & Chindriș, 2020).

When a company recognized its leases as operating leases, the rental payments for the operating leases were recorded on the income statement as operating expenses, and the leased asset was not recorded on the balance sheet.

On the other hand, finance leases that are treated as an 'in substance' purchase by the lessee and a sale by the lessor are less popular because the lessee is required to recognize the leased assets at fair value and then depreciate this asset. Also, the lessee was required to record the respective liabilities at the present value of lease payments at the time of inception and capitalize interest on the lease liability (Ricci Junior, 2019). (Ricci Junior, 2019).

Questions had been raised in recent decades about whether financial statements had started to lose their relevancy because the managers of business organizations had the freedom to use the accounting technique to be used in the company; for example, Companies manipulated the classification of lease transactions to classify financing leases as operating leases to avoid the recognition of lease liabilities. (Hansson & Pettersson, 2020).

Operating leases for many companies were the largest type of OBS financing. Concerns regarding the OBS nature of operating lead to a lack of objectivity and transparency of financial information (Stancheva & Velinova, 2019). In order to record right of asset (ROU) and (Lease Liability) arising from lease contracts (with few exceptions), the IASB and FASB collaborated to create a new accounting standard applicable to lessees. It was expected that this would resolve the problems with IAS 17 and enhance the financial statements' comparability and transparency. So IASB issued IFRS 16 in 2016. (Liviu-Alexandru, 2018).

The research problem can be summarized in the following main question

Does standard (IFRS 16) eliminate OBS operating leases?

The primary question could be answered by the following sub-questions
1. How IFRS 16 have an effect on the total assets that have been reported in the balance sheet?
2. How IFRS 16 have an effect on the total liabilities that have been reported in the balance sheet?
3. How IFRS 16 have an effect on the leverage ratios (D/A and D/E)?

1.3. Research Objective

The key objective of this research is to investigate the effect of Leases standard (IFRS 16) on OBS Financing.
The following sub-objectives can be used to achieve this main objective
1. Evaluate the effect of IFRS 16 on balance sheet items.
2. Evaluate the effect of IFRS 16 on the leverage ratios (D/A and D/E).

1.4. Research Importance
The research has both academic and practical importance
- In the academic sense: this study contributes to lease accounting because the IASB issued (IFRS 16) instead of (IAS 17) to minimize OBS financing which led to improve the quality of financial Reporting.
- In practical view: it is critical to use "IFRS 16," which affects OBS financing, which affects comparability, transparency and relevancy of financial information presented in financial statements, which helps investors assess the credibility of firms.

1.5. Research Methodology
The researcher will depend upon both qualitative and quantitative approaches. Qualitative approach in analyzing the problem (analysis the problem of off-balance sheet financing), explaining its causes (within using the leases standards), and predicting the effect of IFRS 16 on both the balance sheet and the transparency of financial reporting. and quantitative approach

in on examining of 43 companies' balance sheet that were listed on the Egyptian Stock Exchange before and after issuing Leases Standard IFRS16 by using statistical techniques.

2. Literature Review

2.1. *Previous studies examined the effect of IFRS 16 (EAS 49) on assets and liabilities*

The researcher studied and analyzed a number of 32 studies that examined the impact of IFRS 16 (EAS 49) on the amount of assets and liabilities. The results of these studies in this section can be divided into three sections: *The first* recognized the existence of a significant increase in the total assets and liabilities as a result of IFRS 16 implementation, and this result was concluded by a 66 % of these studies, the most prominent of which are Duke (2009), Fitó *et al*. (2011), Tai (2013), Pérez *et al*. (2014)., Wong &Joshi (2015), Sacarin (2017), Maali (2018), Magli *et al*. (2018), Gouveia (2019), Hansson & Pettersson (2020), Susanti *et al*. (2021), Bohusova *et al*. (2022), Fahad & Scott (2022), Jakobsen & Fugllien (2022), Górowski *et al*. (2022), Rompotis & Balios (2023)., Henderson *et al*. (2023), Legenzova & Žilaitytė (2023) & Rudžionienė & Tamonytė (2025).

The Second section clarified that, the amount of assets and total liabilities recorded increased but not significantly, this result was concluded by a 31 % of these studies, the most prominent of which are Fülbier (2008), Branswijck *et al*. (2011), Kostolansky & Stanko (2011), Morales & Zamora (2018). Zamora &Morales-Díaz (2018), Yu (2019), Matern (2020), Dong (2022), Morozova (2023) & Putra, & Khaddafi (2024).

On the contrary, the third group suggested that, the amount of liabilities decreased, this result was concluded by a 3 % of these studies, the most prominent of which is Nasser and Alrashedy (2022), they interpreted it as the impact of the IFRS16 application varying according to whether the firm is a lessor or a lessee and the quantity of the operating lease.

2.2. *Previous studies examined the effect of IFRS 16 (EAS 49) on D/A*

The researcher studied and analyzed a number of 27 Studies examined the effect of IFRS 16 (EAS 49) on D/A. The results of these studies in this section can be divided into three sections: *The first* recognized the existence of a significant increase in the D/A ratio due to the application of the IFRS 16, and this result was concluded by a 45 % of these studies, the most prominent of which are Durocher (2008), Pérez *et al*. (2014), Maali (2018), Hansson and Pettersson (2020), Susanti et al. (2021), Górowski *et al*. (2022), Rudžionienė *et al*. (2022), Rompotis and Balios (2023), Henderson *et al*. (2023), Dayag (2023), van Wyk & Enslin (2025), & Rudžionienė & Tamonytė (2025).

The Second section clarified that, the D/A changed (increased) but not significantly, this result was concluded by a 51% of these studies, the most prominent of which are Singh, A. (2012), Fitó *et al*. (2011), Wong &Joshi (2015), Öztürk & Serçemeli (2016), Morales & Zamora (2018), Zamora & Morales-Díaz (2018), Magli *et al*. (2018), Gouveia (2019), Yu (2019), Matern (2020), Bohusova *et al*. (2022), Fahad & Scott (2022), Rompotis (2023).

On the contrary, the third group suggested that, the D/A ratio decreased, this result was concluded by a 4% of these studies, the most prominent of which is Nasser & Alrashedy (2022).

2.3. Previous studies examined the effect of IFRS 16 (EAS 49) on D/E

The researcher studied and analyzed a number of 16 Studies examined the effect of IFRS 16 (EAS 49) on D/E. The results of these studies in this section can be divided into three sections: The first recognized the existence of a significant increase in the D/E ratio as a result of the implementation of the IFRS 16 standard, and this result was concluded by a 57% of these studies, the most prominent of which are Imhoff *et al.* (1991), Fitó *et al.* (2011), Tai (2013), Pérez *et al.* (2014), Wong & Joshi (2015), Maali (2018), Górowski *et al.* (2022), Henderson *et al.* (2023), Dayag (2023)

The Second section clarified that, the D/E changed (increased) but not significantly, this result was concluded by a 31% of these studies, the most prominent of which are Fülbier *et al.* (2008), Branswijck *et al.* (2011), Susanti *et al.* (2021), Almubaydeen *et al.* (2022), Rompotis (2023). On the contrary, the third group suggested that, the D/E ratio decreased, this result was concluded by a 12% of these studies, the most prominent of which is Nasser & Alrashedy (2022), & Rompotis & Balios (2023)

The researcher finds that most of previous studies indicated that assets, liabilities, and Leverage ratios (D/A and D/E) significantly increased as a result of operating lease capitalization.

3. Theoretical Framework

3.1. Leases

Since leases enable companies to buy and use buildings and other assets without incurring significant costs, leasing is an essential and common financing solution. Alam (2021).

3.1.1. Definition of Leases

Contracts that consist of three main elements—lessor, lessee, and identifiable asset—are either leases or contain leases. The agreement must provide the lessee with the right to use a specified asset for a certain period of time in exchange for a predetermined payment.

3.1.2. Benefits of Leases

In many cases, leasing benefits both the lessor and the lessee. (Pham, 2020; Musumeci & O'Brien, 2019).
Benefits of leases from the lessee's viewpoint include capital investment savings, tax benefits, OBS financing, no obsolescence risk, and effective cash flow planning. But from the perspective of the lessor, it includes security, tax benefits, quick returns, and consistently guaranteed revenue or regularly assured income.

3.1.3. Classification of Leases

Depending on the parties and level of risk involved, leasing contracts can be classified into two primary types. Operating leases are the first type of leasing transactionIn an operating lease arrangement, the lessor grants the lessee the right to use the asset in exchange for regular periodic payments, but the risks and rewards of asset ownership are not transferred to the lessee by the lessor.

The second type is a financial lease. If the risks and benefits of asset ownership are significantly transferred, a lease may be classified as financial. (KPMG, 2021)

3.2. Leases' standards

Recently, the accounting principles that apply to leasing operations have been modified. IASB issued a new lease standard IFRS 16 in January 2016, that replaced IAS 17 and was effective on or after January 1, 2019. In the US GAAP, the FASB issued an equivalent standard (ASC Topic 842), which replaced Topic 840 with a similar mandatory application date.

The Egyptian Accounting Standards EAS. In general, EASs comply with IFRSs. The implementation of EAS 49 (leasing standard) was planned to be implemented in 2020, but had been postponed to 2021 due to the covid-19 pandemic

3.2.1. IAS 17

Although IAS 17 is considered as the initial step towards the convergence of lease accounting, it had received a heavily criticism from academics and users because it did not accurately reflect the financial situation. Lessees are able to structure transactions lease to ensure OBS treatment for the leased assets because IAS 17 requires them to follow specific rules to determine who bears the risks of ownership (Dhaliwal *et al.,* 2011). Therefore, IAS 17 gave flexibility in deciding whether to classify their leases as operational or financial leases (Spånberger & Rista, 2020).

One of IAS 17's primary focus topics is the classification of leases and the accounting changes that follow from the difference in classification. The standards additionally distinguish between operating and financial leases, defining a financial lease as one that transfers "substantially all of the risks and benefits incidental to ownership of an asset," regardless of whether the title may or may not eventually be transferred.

Many leasing agreements were categorized as operating leases since IAS 17 required users to differentiate between operational and financial leases in accounting practices, even if the lessee received the asset's risks and rewards. This indicated that the financial statements and reports of the corporations were not transparently represented by IAS 17. Therefore, the main issue with IAS 17 was OBS financing, which is essentially funding that does not show on a company's balance sheet. (Cape, J. 2019).

According to financial statement users, the IASB identified three main problems with IAS 17. (Pham, 2020).

1. Transparency was lacking in the information provided on operating leases.
2. Two different types of lease accounting were available.
3. Users were unable to determine the credit risk involved in leases that were classified as operating leases.

In response to the criticism, the IASB and (FASB) collaborated to solve the issues stated by users. To solve thses problems, the IASB's new lease requires companies to record assets and liabilities for rights and obligations generated by leases (Montinaro, 2018).

3.2.2. IFRS 16

IASB issued IFRS 16 as a new lease standard In January 2016 to replace IAS 17, which became effective on January 1, 2019. This standard is expected to significantly affect companies' balance sheet, financial performance, and ratios (Pham, 2020).

IFRS 16 defined the principles for "lease recognition, measurement, presentation, and disclosure." The primary objective of IFRS 16 was to "ensure a complete recognition of assets and liabilities resulting from lease contracts on financial statements," which allows users of financial statements to evaluate how leases would affect an entity's financial position, performance results, and cash flows (Montinaro, 2018).

The main change was that the lessee would not need to differentiate between operating and financing leases. As a result, all leases should be recorded as asset and liability on the balance sheet with the exception of low value leases (less than $5,000) and lease with lease terms less than a year. Recognition of lease asset (right of use) increased fixed assets which is an input for liquidity ratios. On other hand recognition of lease liability increased liabilities which is a component of liquidity and leverage ratios. Income statement was also effect, lessee recorded interest expenses on lease liability which consider financial expense and the right of use depreciation expense rather than recognition lease payments as operating expenses (Ricci Junior, 2019).

As with IAS 17, IFRS 16 provides the scope of its application. IFRS 16 was applied to all leases except for leases to explore for or use non-regenerative resources such as minerals, service concession arrangements, leases of biological assets (IAS 41), , licenses of intellectual property, and rights held by a lessee under licensing agreements (including motion picture films, manuscripts,plays, etc.)

At the commencement of the lease, the lessee measures the right of use and the lease liability. This is the date on a lessor makes an asset available to a lessee for use (Sieverding, 2018).

Initial measurement: according to IFRS 16 if lease contract classified as financial leases, at commencement of the lease term lessees had to recognize financial leases as assets and liabilities in their balance sheet (KPMG 2021).

The lease assets (ROU) are equal to the lease liability plus prepaid lease payments, less any incentives obtained under the lease, plus any initial direct costs, plus an estimate of the costs the lessee will incur in order to disassemble and remove the underlying asset.

lease liability at the commencement date, the lessee used present value of the future lease payments to calculate the liabilities. The lease payments must be discounted at an interest rate that is implicit [1] in the contract, as IAS 17. If implicit rate cannot be determined, the lessee should use an incremental borrowing rate (Sieverding, 2018) and (Pham, 2020).

subsequent measurements, After the lease commenced, a lessee measured the right-of-use asset. According to the cost model, a right-of-use asset is valued at its carrying amount. A lessee also measured the lease obligation to represent the increasing carrying amount to reflect lease liability interest, reducing the carrying amount to reflect lease liability payment, and remeasuring the carrying amount to reflect any lease modification.

Lease accounting: Financial Statement of Lessors, most users believed that the accounting practices for lessors had no significant faults and should not be changed.

3.2.3. *Effects of IFRS 16 on companies' financial statements*

The implementation of the new leasing standard IFRS 16 had an impact on financial statements of lessee and lessor.

- Balance sheet:

For companies that have been using an OBS method to recognize a large number of leases, IFRS 16 will result in a significant increase in both assets and liabilities. (IASB 2016).

- Income Statement

It is expected that IFRS 16's implications on an company's income statement would be less significant than those on the balance sheet. The key difference is how expenses are classified, firms must differentiate between operating expenses such as depreciation and amortization of the asset, and finance expenses such as Interest payments on all leases (Montinaro, 2018).

3.3. *Off-Balance Sheet Financing*

The type and source of financing have an effect on the company's financial structure, so, the company is always looking for sources of funding that yield a return higher than the cost of obtaining them. So the choice of an appropriate sources of financing for the company's operations and investments is one of the most difficult decisions taken by the management of the firm (Kangarluei *et al.,* 2012).

The firm has two options: the first is funding from traditional sources that are recorded on its balance sheet, such as the owner's equity and debt, which is called (in – House) or (on-balance sheet financing). The second is looking for any other financing methods or innovative financial arrangements that allow it to be funded without affecting the financing structure; this process is known as OBS financing.

OBS activities have received a lot of attention over the past decade. However, very few studies have been done in this area (research gab). (OBS) instruments are double-edge financial instruments (Mills & Newberry, 2005).

The advantages of OBS activities are financing tools for firms because they can use these transactions to keep certain forms of debt off the balance sheet because a balance sheet with less debt looks attractive to investors and lenders. Also, a firm with a large amount of debt on its balance sheet will pay more interest to lenders. In addition, OBS activities are used to transfer risk and tax advantages to certain types of OBS arrangements (Mills & Newberry, 2004).

The disadvantage of OBS activities is insufficiencies in accounting standards in recognition, measurement, and disclosure of OBS items. OBS items are used in profit management and to manipulate the company's balance sheet by keeping debts off the balance sheet, which have a negative effect on the quality of accounting information (Cornaggia *et al*. 2013).

3.3.1. *Definition of Off-balance Sheet Financing*

OBS Financing is a practice of keeping certain items (assets and liabilities) away from the balance sheet. One reason for doing this is to maintain various financial ratios such as D/A ratio, working capital, quick ratio, etc (Cornaggia *et al*. 2013).

(Adrian & Shin, 2011) defined OBS financing as "arrangements, activities, or financial commitments that result in financing for the company's operations or guaranteeing its sources of supply or future services without this reflecting on the size of the debts presented in the balance sheet.

According to the previous definitions, researchers generally agree on the main characteristics of OBS items, such as the disappearance of assets and liabilities in the balance sheet, but they may appear in the accompanying notes and explanations to those statements. OBS activities are one of the creative accounting techniques that may be used to mislead users of financial statements. (Al-Awawdeh & Al-Sakini, 2017).

3.3.2. Off-balance sheet activities

Companies structure transactions very carefully following the objective not to break accounting rules and at the same time they avoid recognizing the economic obligations in the balance sheet. Several activities and arrangements can take multiple forms including (Copp & Cronin, 2014) and (Cornaggia *et al*. 2011).

a. Research and development transactions (R&D),
b. limited partnerships,
c. lease transactions,
d. Securitizations,
e. Special Purpose Entities (SPEs)
f. accounting for the sale of receivables non-recognition of liabilities resulting from non-payment of receivables in case of default)
g. Agreements and commitments leading to obligations.
h. Modern financial instruments "Financial Derivatives"
i. Using Creative Accounting, which has many methods such as: smoothing income, and managing profits.

Until the Enron debacle, these transactions received little attention. This firm did not record billions of dollars of debt (Powers *et al*., 2002). Subsequent failures in companies such as WorldCom and Adelphia indicated a serious breakdown in the audit process, and the financial reporting process (Lander & Auger, 2008).

3.3.3. Motives and reasons for OBS financing

Some possible reasons for OBS financing are increasing the company's ability to borrow, the cost of borrowing, keeping reported numbers attractive, improving the company's debt ratio, management incentives, and tax advantages.

3.3.4. Risks of OBS financing

Off-balance sheet financing is frequently used by management to improve the appearance of the balance sheet and decrease the reported D/E ratio, which typically results in an increase in the price of their shares. Supporters of off-balance sheet financing want higher stock prices, even if it means keeping shareholders in the dark (Kangarluei *et al*., 2012).

The risks of using OBS are low-quality financial reports (The debt holders' balance sheet is the most relevant and reliable source of information for verifying management's compliance with the agreed levels of debt. Based on the debts stated on the balance sheet, the debt ratio may be

acceptable. However, when we include the OBS commitments, this ratio might be very dangerous. If the debt holders become aware of this fact, they may put the firm in default).

Misleading investors and financial statement users (OBS liabilities that are not explicitly documented as debts cause investors to make poor decisions. as the investors are unable to realize the debt's true worth). And weakness of the financial market efficiency (Because the share cannot reflect all of the firm's information, low-quality financial reports reduce money market efficiency.

 (Kangarluei *et al*., 2012). and (Al-Awawdeh & Al-Sakini, 2017).

3.4. *The expected effect of IFRS 16 on OBS Financing*

Companies can manipulate their contracts by categorizing them as operating leases instead of finance leases under IAS 17 to lower their obligations and enhance their financial ratios. This misleads users and has an impact on financial performance.

In response to this problem, the IASB developed IFRS 16, which stated that all lease contracts must be included in the balance sheet to improve transparency, enable comparability, and provide clear and accurate information to be used for decision-making. This is required to provide users of the financial statements with an accurate and understandable view of the business's financial statements (Stancheva & Velinova, 2019).

The accounting for leases changed significantly with the implementation of IFRS 16. By capitalizing on operating leases, this standard eliminates OBS financing. As a result, the lessee can only apply one accounting model for leases, which is to recognize the leased asset as a right-to-use and to record the obligation resulting from this contract as part of the company's liability in the balance sheet.

According to a study performed by Deloitte in 2017, the worldwide telecommunications industry may have right-of-use assets worth up to $125 billion, with the potential to increase debt by 15 to 20%. Price-Waterhouse-Coopers (2016) also expected debt increase of nearly 21% for the telecommunications sector and 47% for the airline sector, with an average of 22% for all the major industries taken together.

Key financial ratios, particularly leverage ratios such as debt to assets (D/A) and debt to equity (D/E), and current ratio. return on total assets, return on equity, these ratios reflect the changes on the balance sheet most significantly. These ratios are the most important since they depend on total assets, total liabilities, and equity. So, it will have a significant effect if you add the leased items as assets and liabilities (Joubert *et al.,* 2017).

3.5. *Measure the effects of IFRS 16 on OBS*

Many researchers began examining the expected effects of the changes in financial statements and financial ratios after the IASB issued IFRS 16 in January 2016, which can be summarized in table (3-1) and table (3-2)

Table 3.1: Expected effects of IRFS 16 on financial statements items

Financial Statement	Financial Statement Items	Effect
Income Statement	Operating Expenses	Decreased
	Operating Profit	Increased
	Financial Expense	Increased
	Depreciation Expenses	Increased
	Profit Before Tax	Not affected
Balance Sheet	Total Assets	Increased
	Total Liabilities	Increased
	Owner's Equity	Not affected
Statement of Cash Flow	Operating Activities	Increased
	Investing Activities	Not affected
	Financing Activities	Decreased

Table 3.2: Expected effects of IRFS 16 on f financial ratios

Ratio	Category	Effect
Leverage	Long-term solvency	Increased
Current ratio	Liquidity	Decreased
Asset turnover	Profitability	Decreased
EBIT (Earnings before interest and taxes)/ Operating Profit	Profitability	Increased
EBITDA	Profitability	Increased

Source: Öztürk & Serçemeli, (2016). and developed by researcher.

Researcher can assess the effect of IFRS 16 on OBS financing through assessing the volume of assets and liabilities that will be recorded as a result of applying IFRS 16 (EAS 49). In addition, the impact can be assessed using financial ratios such as leverage (D/A and D/E). The impact of this change will be measured using actual financial statement data for the years 2019, 2020, which before the implementation of EAS 49, & 2021, 2022, which after the implementation of EAS 49.

4. Empirical Study

This study depends on the examination of the financial statements, especially the balance sheet (statement of financial position), of a sample of companies listed on the Egyptian Stock Exchange before and after issuing Lease Standard IFRS 16. All these companies apply the Egyptian accounting standards (EAS). In general, EASs comply with IFRSs. to bring them in line with international reporting standards. EAS 49 (leasing contracts) were planned to be implemented in 2020 but had been postponed to 2021 due to the COVID-19 pandemic. EAS 49 Lease Standard was issued according to IFRS 16 to replace EAS 20.

4.1. *The objective of an empirical study*
In order to test and evaluate the study's hypotheses regarding how the new lease standard IFRS 16 will affect OBS financing, the empirical study aims to examine how 43 companies listed on the Egyptian Stock Exchange will be affected in terms of total assets, total liabilities, and leverage ratios (D/A and D/E)..

This study's sample size consisted of 43 companies with 172 observations over the 2019–2022 fiscal years. 14 distinct sectors comprised the sample. Also, the Oriental Weavers Company is used as a case study in the research to examine the effects of IFRS 16 on total assets, total liabilities, D/A, and D/E.

4.2. Research Hypotheses

As a result of analyzing the literature review, the hypotheses will be generated using the following alternative forms

H_1: *Recording of the ROU assets has a significant effect on total assets.*

H_2: *Recording of the ROU assets has a significant effect on total liabilities.*

H_3: *Recording of the ROU assets has a significant effect on D/A ratio.*

H_4: *Recording of the ROU assets has a significant effect on D/E ratio.*

H_5: *Recording of the lease liability has a significant effect on total assets.*

H_6: *Recording of the lease liability has a significant effect on total liabilities.*

H_7: *Recording of the lease liability has a significant effect on D/A ratio.*

H_8: *Recording of the lease liability has a significant effect on D/E ratio.*

4.3. The variables of the study

First step: Calculating Variables

Independent Variables
Measuring the effect of IFRS 16 through determining the right of use assets and lease liabilities.

Dependent Variables
Measuring the OBS financing through calculating the total assets, total liabilities, leverage ratios such as (D/A) and (D/E).

Second step: A comparison of the impacts of independent variables on the dependent variables before and after the implementation year of IFRS 16 (EAS 49), which corresponds to IFRS 16.

4.4. Study Models

The hypothesis of the study was tested using the linear regression model, so the study models may be represented by the following equations

Model 1: $T\ Ass_{it} = \beta_0 + \beta_1\ ROU_{it} + \varepsilon_{it}$

Model 2: $T\ Liab_{it} = \beta_0 + \beta_2\ ROU_{it} + \varepsilon_{it}$

Model 3: $D/A_{it} = \beta_0 + \beta_3\ ROU_{it} + \varepsilon_{it}$

Model 4: $D/E_{it} = \beta_0 + \beta_4\ ROU_{it} + \varepsilon_{it}$

Model 5: $T\ Ass_{it} = \beta_0 + \beta_5\ Lease\ liab_{it} + \varepsilon_{it}$

Model 6: $T\ Liab_{it} = \beta_0 + \beta_6\ Lease\ liab_{it} + \varepsilon_{it}$

Model 7: $D/A_{it} = \beta_0 + \beta_7\ Lease\ liab_{it} + \varepsilon_{it}$

Model 8: $D/E_{it} = \beta_0 + \beta_8\ Lease\ liab_{it} + \varepsilon_{it}$

Where

T Ass$_{i\ t}$: Total Assets for firm i for year t. It is calculated using the natural logarithm of the company's assets at the end of the period.

ROU$_{i\ t}$: Right of use assets for firm i for year t. It is calculated using the natural logarithm of the company's right of use assets at the end of the period.

T Liab$_{i\ t}$: Total Liabilities for firm i for year t. It is calculated using the natural logarithm of the company's liabilities at the end of the period.

D/A$_{i\ t}$: Debt to assets ratio for firm i for year t.

D/E$_{i\ t}$: Debt to Equity ratio for firm i for year t.

Lease liab$_{i\ t}$: Lease liabilities for firm i for year t. It is calculated using the natural logarithm of the company's lease liabilities at the end of the period.

$\varepsilon_{i\ t}$: Represent the random Error

$(\beta_1:\beta_8)$: Represent the regression coefficients or the slope of the model.

β_0 : Represent the intercept term, the value of the dependent variable that is anticipated when the independent variable equals zero.

4.5. Statistical Analysis of Data

The purpose of data analysis is to evaluate hypotheses by examining the data from selected firm-year observations. Three statistical techniques were used to examine the study hypotheses: descriptive statistics, paired T-tests, and linear regression analysis.

The descriptive analysis provides a summary of the main features of the data set. The paired T-test is a statistical method for comparing data set values before and after the implementation year of (EAS 49) 2020, which corresponds to IFRS 16. Finally, the objective of linear regression analysis is to analyze the relationship between independent and dependent variables.

4.5.1. Descriptive Statistics of Total Sample Study

Descriptive statistics for the variables used to test the hypotheses are presented in this section. In the next table (4-1)

Table 4.1: Descriptive Statistics

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
(assets) (After)	86	17.2845	25.4591	22.0027	1.6294
(assets) (Before)	86	16.9339	24.7294	21.6907	1.6143
(Liab) (After)	86	16.6579	25.1812	21.3931	1.71607
(Liab) (Before)	86	16.6755	24.3353	21.0021	1.75771
(ROU) (After)	81	10.3701	20.5458	16.8769	2.0587
(ROU) (Before)	86	0	18.0588	3.4462	6.5577
Lease liab. (After)	81	10.4535	20.6258	17.0547	2.1483
Lease liab. (Before)	86	0	18.6994	3.9847	6.9152
A (After)	86	.17201	.90206	.57985	.18970
A (Before)	86	.17204	.90269	.53923	.19201

E (After)	86	.20774	9.21036	2.11516	1.91629
E (Before)	86	.20779	9.27606	1.80607	1.79686

4.5.2. Paired T-test

The paired t-test is comprised of three tables. The first table is Paired Samples Statistics, previously mentioned in table (4-1), Paired Samples Correlations, and Paired Samples Test. Paired Samples Statistics measures the (mean, sample size, standard deviation, and standard error) for each variable entered. The sample size is 172, split into two groups before and after 2020, for a total sample size of 86. For every pair of variables supplied, Paired Samples Correlations gives the bivariate Pearson correlation coefficient (using a two-tailed test of significance).

Table 4.2 provides the paired samples correlations for each pair of variables of the study.

Table 4. 2: paired samples correlations for each pair of variables

Paired Samples Correlations					
		N	Correlation	Significance	
				One-Sided p	Two-Sided p
Pair 1	Ln (assets) (After) & Ln (assets) (Before)	86	.981	<.001	<.001
Pair 2	Ln (Liab) (After) & Ln (Liab) (Before)	86	.966	<.001	<.001
Pair 3	LN (right of use) (After) & LN (right of use) (Before)	81	.153	.087	.174
Pair 4	Ln Lease liab. (After) & Ln Lease liab. (Before)	81	.211	.029	.059
Pair 5	D/A (After) & D/A (Before)	86	.831	<.001	<.001
Pair 6	D/E (After) & D/E (Before)	86	.832	<.001	<.001

The paired samples correlations table provides the correlation between each pair of variables after and before EAS 49 (IFRS 16) implementation. Assets and liabilities have a significant positive correlation (r = 0.981 and 0.966, respectively). Lease liabilities and right of use assets are positive correlate (r = 0.153 and 0.211, respectively). Finally, D/A and D/E are both significant positive correlates (r = 0.831 and.832).

To study if the effect of applying new lease standard is significant or not, Paired sample T test applied for this purpose, and the results shown in Table (4-3)

Table 4. 3: Paired Sample Test

		T	Df	Significance Two-Sided p
	Paired sample test			
Pair 1	Ln Total Assets (After) – Ln Total Assets (Before)	9.058	85	<.001
Pair 2	Ln Total liab (After) - Ln Total liab (Before)	7.988	85	<.001
Pair 3	Ln right of use (After) - Ln right of use (Before)	17.748	80	<.001
Pair 4	Ln Lease liab. (After) - Ln Lease liab. (Before)	16.663	80	<.001
Pair 5	D/A (After) - D/A (Before)	3.389	85	.001
Pair 6	D/E (After) - D/E (Before)	2.648	85	.010

According to Table (4-3), applying IFRS 16 has a significant change on the study variables: Assets, Liabilities, Lease liability, Right of use, D/A, and D/E. For each of these variables (P) less than 5% with 95 % confidence limits.

4.5.3. Regression Analysis

Linear regression analysis analyzes the relationship between a dependent variable and an independent variable.

In this part, the researcher analyzes and discusses the results of the statistical analysis of the regression models in order to test the validity of the study hypotheses, as follows:

Test the research Hypotheses
H_1: *Recording of the ROU assets has a significant impact (increase) on total assets.*

Table 4.4: The effect of ROU on total assets

Variable	Before		After	
ROU	Value	Sig.	Value	Sig.
F-Test	0.990	0.323	23.419	<0.001
T- test	0.995	0.323	4.839	<0.001
R square	0.012		0.229	

This table shows that value of F-test value after implementation new lease standard equals 23.419 with the significance level <0.001, while the value of F-test before implementation EAS 49 (IFRS 16) equals 0.990 with significance level 0.323. Therefore, this model is valid for study, and the model's results may be trusted. T- value after implementation EAS 49 equals 4.839.

Also, the value of R square after implementation EAS 49 equals 0.229, This means that 22.9% of the average change in the total assets of the sample refers to the average change in the independent variable (ROU).

H2: Recording of the ROU assets has a significant impact (increase) on liabilities.

Table 4.5: The effect of ROU on lease liability

Variable	Before		After	
ROU	Value	Sig.	Value	Sig.
F-Test	1.329	0.252	29.080	<0.001
T-Test	1.153	0.252	5.393	<0.001
R square	0.016		0.269	

This table shows that value of F-test value after implementation new lease standard equals 29.080 with the significance level <0.001, while the value of F-test before implementation EAS 49 (IFRS 16) equals 1.329 with significance level 0.252. Therefore, this model is valid for study, and the model's results may be trusted. T- value after implementation EAS 49 equals 5.393.

Also, the value of R square after implementation EAS 49 equals 0.269, This means that 26.9% of the average change in the total liabilities of the sample refers to the average change in the independent variable (ROU).

H3: Recording of the ROU assets has a significant impact (increase) on D/A ratio.

Table 4. 6: The effect of ROU on D/A ratio

Variable	Before		After	
ROU	Value	Sig.	Value	Sig.
F-Test	1.497	0.225	5.078	0.027
T-test	1.223	0.225	2.253	0.027
R square	0.018		0.06	

This table shows that value of F-test value after implementation new lease standard equals 5.078 with the significance level 0.027 which less than 5%, while the value of F-test before implementation EAS 49 (IFRS 16) equals 1.497 with significance level 0.225. Therefore, this model is valid for study, and the model's results may be trusted. T- value after implementation EAS 49 equals 2.253.

Also, the value of R square after implementation EAS 49 equals 0.06, This means that 6 % of the average change in the D/A of the sample refers to the average change in the independent variable (ROU).

H4: Recording of the ROU assets has a significant impact (increase) on D/E ratio.

Table 4.7: The effect of ROU on D/E ratio

Variable	Before		After	
ROU	Value	Sig.	Value	Sig.
F-Test	2.648	0.107	17.348	<0.001
T-Test	1.627	0.107	7.902	<0.001
R square	0.031		0.171	

This table shows that value of F-test value after implementation new lease standard equals 17.348 with the significance level <0.001 which less than 5%, while the value of F-test before implementation EAS 49 (IFRS 16) equals 2.648 with significance level 0.107. Therefore, this model is valid for study, and the model's results may be trusted. T- value after implementation EAS 49 equals 7.902.

Also, the value of R square after implementation EAS 49 equals 0.171, This means that 17.1% of the average change in the D/A of the sample refers to the average change in the independent variable (ROU).

H_5: Recording of the lease liability assets has a significant impact (increase) on assets.

Table 4. 8: The effect of lease liability on total assets

Variable	Before		After	
Lease liability	Value	Sig.	Value	Sig.
F-Test	0.099	0.754	21.070	<0.001
T-Test	0.314	0.754	4.59	<0.001
R square	0.001		0.211	

This table shows that value of F-test value after implementation new lease standard equals 21.070 with the significance level <0.001 which less than 5%, while the value of F-test before implementation EAS 49 (IFRS 16) equals 0.099 with significance level 0.754. Therefore, this model is valid for study, and the model's results may be trusted. T- value after implementation EAS 49 equals 4.59.

Also, the value of R square after implementation EAS 49 equals 0.211, This means that 21.1% of the average change in the total assets of the sample refers to the average change in the independent variable (Lease liability).

H_6: *Recording of the lease liability assets has a significant impact (increase) on liabilities.*

Table 4. 9: The effect of lease liability on total liabilities

Variable	Before		After	
Lease liability	Value	Sig.	Value	Sig.
F-Test	0.032	0.859	24.858	<0.001
T-Test	0.179	0.859	4.986	<0.001
R square	0.000		0.239	

This table shows that value of F-test value after implementation new lease standard equals 24.858 with the significance level <0.001 which less than 5%, while the value of F-test before implementation EAS 49 (IFRS 16) equals 0.032 with significance level 0.859. Therefore, this model is valid for study, and the model's results may be trusted. T- value after implementation EAS 49 equals 4.986.

Also, the value of R square after implementation EAS 49 equals 0.239, This means that 23.9% of the average change in the total liabilities of the sample refers to the average change in the independent variable (lease liability).

H_7: Recording of the lease liability assets has a significant impact (increase) on D/A ratio.

Table 4- 10: The effect of lease liability on D/A ratio

Variable	Before		After	
Lease liability	Value	Sig.	Value	Sig.
F-Test	0.765	0.384	4.154	0.045
T-Test	-0.357	0.384	2.038	0.045
R square	0.009		0.047	

This table shows that value of F-test value after implementation new lease standard equals 3.167 with the significance level 0.045 which is less than 5%. So, this model is valid for study, and the model's results may be trusted. T- value after implementation EAS 49 equals 2.038.

Also, the value of R square after implementation EAS 49 equals 0.047, This means that 4.7 % of the average change in D/A of the sample refers to the average change in the independent variable (lease liability).

H_8: Recording of the lease liability assets has a significant impact (increase) on D/E ratio.

Table 4. 11: The effect of Lease liability on D/E ratio

Variable	Before		After	
Lease liability	Value	Sig.	Value	Sig.
F-Test	0.043	0.836	14.138	<0.001
T-Test	-0.207	0.836	3.76	<0.001
R square	0.001		0.144	

This table shows that value of F-test value after implementation of the new lease standard equals 14.138 with the significance level < 0.001 which is less than 5%. So, this model is valid for study, and the model's results may be trusted. T- value after implementation EAS 49 equals 3.76.

Also, the value of R square after implementation EAS 49 equals 0.144, This means that 14.4 % of the average change in D/E of the sample refers to the average change in the independent variable (lease liability).

Through the previous results, H$_1$, H$_2$, H$_5$, *and* H$_6$, *of the study can be accepted*, which say that: There is a positive significant effect of ROU and lease liability as proxies for implementing IFRS 16 (EAS 49) on the total assts and total liabilities.

This is consistent with the majority of findings from previous studies, only Nasser and Alrashedy (2022) found that the volume of liabilities decreased, they interpreted it as the impact of the IFRS16 application varying according to the quantity of the operating lease and whether the firm is a lessor or a lessee.

Through the previous results, H$_3$ *and* H$_7$ *of the study can be accepted*, which says that there is a positive significant effect of ROU and lease liability as proxies for implementing IFRS 16 (EAS 49) on D/A ratio. This is consistent with the majority of findings from previous studies such as Maali (2018), Hansson and Pettersson (2020), and Susanti et al. (2021) indicated that D/A increased significantly.

Through the previous results the H$_4$ *and* H$_8$ *of the study can be accepted*, which says that there is a positive significant effect ROU and lease liability as proxies for implementing IFRS 16 (EAS 49) on D/E ratio. This is consistent with the majority of findings from previous studies such as Fitó *et al*. (2011), Tai (2013), Wong & Joshi (2015), & Maali (2018), indicated that D/E increased significantly.

4.6. Case Study

The researcher conducts a case study of the Oriental Weavers Company to measure how the new leasing standard IFRS 16 (IAS 49) affects the assets and liabilities and financial leverage ratios (D/A and D/E) as a proxy of OBS financing. Data is collected from the annual consolidated financial statements for the years 2019 to 2022, and the researcher calculates the change in assets, liabilities, and owner's equity, as well as financial ratios such as D/A and D/E, by calculating the difference between the average values before and after the standard was implemented.

The researcher analyzed the financial data of Oriental Weavers Company from 2019 to 2022 as follows:

Table 4.12: The results of analyzing Oriental Weavers Company
The amounts in the table are rounded to the nearest thousand dollars.

	2019	2020	2021	2022	Mean (Before)	Mean (After)	Change
Total Assets	11,476,915	12,664,166	14,166,536	19,175,134	12,070,541	16,670,835	38%
Total Liabilities	3,924,882	4,733,615	5,909,553	7,919,881	4,329,249	6,914,717	60%
Equity	7,552,034	7,930,551	8,256,983	11,255,252	7,741,293	9,756,118	26%
ROU (Lease Assets)	0	0	331,134	371,455	0	351,295	100%
Lease Liability	0	0	355,907	414,054	0	384,981	100%
D/A	0.341981	0.37378	0.417149	0.413029	0.357881	0.415089	16%
D/E	0.519712	0.573286	0.715704	0.703661	0.546499	0.709683	30%

The findings of the case study show that, after the implementation of the new lease standard IFRS 16 (IAS 49), the mean of assets and liabilities significantly increased by 38% and 60%, respectively. So, increased proportion of total liabilities is more than total assets,

Also, the mean of D/A significantly increased by 16%, because D/A equals total liabilities divided by total assets, and both total liabilities and total assets increase, but the increase in total liabilities (60%) is greater than the increase in total assets (38%), so D/A increases.

In additions, the mean of D/E significantly increased by 30%, because D/E equals total liabilities divided by total equity, and both total liabilities and total equity increase, but the increase in total liabilities (60%) is greater than the increase in total equity (26%), so D/E increases.

Because the increase in total assets (the denominator of D/A) is greater than the increase in total equity (the denominator of D/E), and the numerator in both is the same, the increase in D/E is greater than the increase in D/A. So all hypotheses will be accepted.

5. Conclusion, Recommendations, and Suggestion for Future Research

5.1 Research Conclusion

This study aims to investigate the effects of the new lease standard IFRS 16 (EAS 49) on OBS finance. This objective can be achieved by the empirical study. The researcher The researcher begins by selecting a sample, determining study variables, and collecting data. then illustrates the type of data used in this research. Three statistical techniques were used to evaluate the data and test the study hypotheses. First, the descriptive analysis summarizes the main features of the data. Second, the T-test is a statistical technique that is used to compare the average of values in a data set and also test the correlation, which determines the strength and significance of the relationship between the study variables. The third regression analysis aims to explore the relationship between dependent variables and independent variables.

5.2 Recommendations

According to the study's results, it can be concluded that the study's results should be in the interests of those who make decisions, specially make decisions about leases, who create and use annual reports in the decision-making process.

The following recommendations may contribute to improving the financial statements' transparency and quality.

- The researcher recommends that academic institutions should teach Egyptian Accounting Standard No. (49) in order to educate students with the accounting rules of this standard and how to apply them.
- modifying Egyptian Accounting Standard No. (49), to take into account the world's change as a result of the Covid-19 epidemic.
- Modifying Egyptian Accounting Standard No. (49) to eliminate gaps in the standard, such as "unspecified" low-value leasing contracts.
- It is necessary to improve management behaviors by developing ethical skills in increasing the level of disclosure regarding lease contracts in an appropriate manner for investors.

- It is necessary for specialized professional organizations to arrange courses for accountants and auditors in order to develop the culture and knowledge of their members and educate students about the Egyptian Accounting Standard No. (49)'s accounting regulations and how to apply them.
- Application of Standard IFRS 16 (EAS 49) related to lease, with its great benefits and importance in increasing the quality of information.
- Overcoming difficulties to use the new standard IFRS 16 (EAS 49) by holding conferences and issuing scientific journals to learn how to use it optimally.
- Companies must comply with current international standards to enhance the quality of accounting information which leads to improving the company's financial reports.
- Continuous improvement of international accounting standards in order to identify and correct problems in current standards and provide error-free accounting standards.

5.3 Suggestions for future research

The researcher suggests that there are some related future researches, the most important of which are the following:

- The effect of applying the EAS (49) on improving the transparency and quality of the financial Statements.
- The effect of implementation IFRS 16 (EAS 49) on borrowing and lending cost.
- The effect of IFRS 16 (EAS 49) on the determinants of decision-making for capital structure and financing.

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