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"THE IMPACT OF IFRS 16 ON FINANCIAL ANALYSTS' FORECAST: EMPIRICAL EVIDENCE FROM EUROPEAN COMPANIES"

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Firma dello studente

Anh Pham Thi Thuc

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Glossary

ACCA	Association of Chartered Certified Accountants
EPS	Earnings Per Share
EBIT	Earnings Before Interest and Taxes
EBITDA	Earnings before interest, taxes, depreciation, and amortization
FASB	Financial Accounting Standards Board
IASB	International Accounting Standards Board
IASC	International Accounting Standards Committee
IAS	International Accounting Standards
IFRS	International Financial Reporting Standards
I/B/E/S	Institutional Brokers Estimate System
ROA	Return on Assets
ROE	Return on Equity

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1. Introduction, motivation, and research question

Accounting standard for leasing contracts has always been a hot debating topic among practitioners, regulators, and financial statements' users. In January 2016, the International Accounting Standards Board (IASB) published IFRS 16 Leases with an effective date of 1 January 2019. IFRS 16 is expected to provide fundamental changes in accounting for leases, especially operating lease contracts, compared to its predecessors IAS 17. The new standard requires the lessee to recognize almost all leases on the balance sheet which reflects the right of use of the assets over the lease term and the associated lease liabilities. The financial year of 2019 ended also means that the actual data on impacts of IFRS 16 adoption are now available for the public and it is necessary to perform investigation and study based on those data to provide insight in a timely manner regarding this topic.

IAS 17 Leases is considered to take the first step towards convergence of lease accounting, however, it received lots of criticism among users, as it is believed not to reflect the economic reality. Under IAS 17, companies are allowed to treat leases contracts that meet the criteria of operating leases as off-balance sheet items. Well-known examples include fleets of aircraft or rolling stock that does not meet the criteria for recognition as assets and liabilities by the lessees, and for which a lack of detailed disclosure is required in financial statements. (ACCA, 2014).

IASB estimated that an amount of USD 2 trillion of future payment for off-balance sheet leases which are undisclosed, in which the amount for the airline industry is USD 152 billion (IASB, 2016). As a result, a significant impact on financial statements is expected if those amounts are treated differently.

IFRS 16, which completes the IASB's project to improve financial reporting for leases, supersedes IAS 17 and is effective from 1 January 2019, is expected to provide a more faithful presentation of a company's financial position and promote greater transparency on financial leverage and capital investments. IASB believes it will enable investors and analysts to better assess the financial position and financial performance of a company (IASB, 2016).

But before jumping into details of IAS 17 vs. IFRS 16, and its impacts on the financial statements, it is necessary to look at a bigger picture, which is to understand why the presentation of leasing activities in financial statements is important and under concerns of conceptual framework rulers such as IASB and FASB.

Financial statements are always considered to be one of the most important sources of information for investors and analysts to picture the performance and activities of a company, especially for those which are listed. The releases of quarterly, half-year and year-end reports of firms are always hot events and catch the attention of all market participants, including financial analysts, individual and institutional investors, credit rating agencies, etc. Wall-Streets make predictions about how much earnings for this period of the firms and publish it in almost every financial publication. They expect firms to make this much profit or loss for this period, and how different that actual amounts compare to public's expectations greatly determine the volatilities of the stock prices for the coming periods. The conference call in which a firm's management explains what is represented in their annual reports is attended by significant shareholders, financial analysts, and financial press.

Due to its importance, the basis in which financial statements are prepared, or in other words, the conceptual frameworks, have been long a remarkable discussion topic. In 2013, Stephen A. Zeff published his work in the objectives of financial reporting, in which he analyzed and surveyed the successions of writing for the topic over the past 90 years. Based on his research, the view of financial statements' objectives as decision usefulness is widely promoted in modern accounting literature and have been considered by regulators including FASB and IASC when making its accounting policies, rather than the tradition accounting purposes as stewardship reporting. Decision usefulness is generally defined as providing financial information about the economic affairs of an entity to interested parties for usage in making decisions. Some authors refer to it as predicting powers of future cash flow deprived of financial reports to investors (Stephen A. Zeff, 2013).

Stated in the IASC's objective of financial statements was "to provide information about the financial position, performance, and changes in the financial position of an entity that is useful to a wide range of users in making economic decisions". These economic decisions, it added, "require an evaluation of the ability of the entity to generate cash and cash equivalents and of the timing and certainty of their generation". While such financial statements "meet the common needs of most users", they "do not provide all the information that users may need to make economic decisions since they largely portray the financial effects of past events and do not necessarily provide non-financial information" (IASC, 2006).

The IASC's list of users included investors, employees, lenders, suppliers and other trade creditors, customers, government and their agencies, and the public. The IASC said it presumed that, notwithstanding the number and range of users, most of their needs were common to all. It added, "As investors are providers of risk capital to the entity, the provision of financial statements that meet their needs will also meet most of the needs of other users that financial statements can satisfy" (IASC, 2006).

In September 2010, as part of their joint conceptual framework project, the IASB and the FASB issued "The Objective of General-Purpose Financial Reporting", and "Qualitative Characteristics of Useful Financial Information". The FASB called its document, Statement of Financial Accounting Concepts No. 8 (SFAC No. 8), "Conceptual Framework for Financial Reporting", and the IASB's document was labeled "The Conceptual Framework for Financial Reporting 2010".

Both boards had released a discussion paper in July 2006 and an exposure draft in May 2008. The boards' final statement of the objective was stated: "The objective of general purpose financial reporting is to provide financial information about the reporting entity that is useful to existing and potential investors, lenders, and other creditors in making decisions about providing resources to the entity". They added, "Those decisions involve buying, selling, or holding equity and debt instruments and providing or settling loans and other forms of credit". They stated that users' decisions depended on "the returns that they expect from these instruments" and that their "expectations about returns depend on their assessment of the amount, timing, and uncertainty of future net cash inflows to the entity" (IASC, 2006), (FASB, 2006).

IASB, and FASB and other national standard makers regularly use the term "convergence", which means the increasing compatibility of their perspective standard at a high level of quality. In Europe, the process of convergence of national accounting standards and the IFRS was accomplished in 2019, when European directives obligated EU member states to converge their national accounting standards to the international one (PWC). Another topic that is becoming important today is the ongoing convergence between the IASB and the FASB due to the respective significance of the US capital market and EU capital market (Stephen A. Zeff, 2013).

As a result, it is the purpose of this master thesis to exploit the aspect of financial statements' data as useful sources of information that facilitate the decision making process, or in other words, how the amendments in accounting frameworks for lease impacts the expectations,

and predictions over the future performance of the firms. This paper will focus on an important market participant which their opinions catch huge public attention and impact the decision makings of almost all investors: financial analysts. And as it is believed widely that the different treatments of leases would result in the possibility of impairing the decision usefulness of the financial statements and their comparability, the thesis will investigate the relationship between changes in accounting for leases for listed companies in Europe and the accuracy of financial analysts' earnings and other key financial figure forecasts, and attempt to answer the following question:

Research Question*: Does the adoption of IFRS 16 affect financial analysts' earnings or any key financial figure forecasts?*

Providing the answer to this question is important because it helps to address the purpose of IASB to create IFRS 16 in the first place: to support the decision making of analysts and investors when assessing the activities of listed companies. Previous studies illustrated that a more transparent information environment can lead to higher, rather than lower stock return synchronicity (Dasgupta, Sudipto, et al., 2010). As IFRS 16 is expected to bring faithful presentation and comparability in financial reporting, market participants, who are the end-users of those reporting, will be able to improve their predictions in key financial figures of the companies. In the past, analysts and investors when making the valuation of a company would need to make adjustments for undisclosed leases, which are varied widely in techniques and may not be accurate, and it would be helpful for the majority of them to have clear information published. Being exposed to a more complete set of information about companies' assets and leases' liabilities can alter the decisions of investors and opinions about the companies of the analysts, especially for the industry which is heavy on operating leases such as the airlines, retails, and telecommunications (IASB, 2016).

The former Chairman of the IASB Sir David Philip Tweedie, during a speech in 2008 to the Empire Club of Canada which it is often cited, says that "One of my great ambitions, before I die, is to fly in an aircraft that is on an airline's balance sheet", and he says that "almost no one in the room has ever flown in a plane that was actually on the balance sheet of the airline company". It is no exaggeration to say that an enormous amount of assets and financial liabilities have been hidden from investors for such a long time.

While it is difficult to empirically measure the impacts of IFRS 16 on supporting a greater transparent market and support decision making of investors and analysts, the releases of financial statements for European listed companies which adopted IFRS 16 for the financial year 2019 would give an impression of how the market participants react on the new changes. Theoretically, the accounting standard does not change the cash flow and underlying business of a company, therefore the business valuation of a company is unchanged. However, significant changes in the balance sheet and income statements, and in some cases, significant impact in cash flow statements, are predicted to navigate the viewpoint of analysts towards the financial performance of the companies. If the change results in the improvement of financial forecasts, it will prove to bring new insights into the importance of financial reporting in market efficiency.

The result of this thesis should be relevant to companies' management to assess how bringing all of their leases to balance sheet impact the perspectives of the public, or more specifically, financial analysts, towards the companies, and to see whether it is beneficial for companies when they provide a complete, transparent, and faithful presentation about the financial position of the company to the public. While opponent may argue that IFRS 16 is bad to companies due to expenditures incurred, it is important to have empirical evidence on whether the benefits are out weighted the costs in a way that it promotes the transparency in the market and boost market participants' confidence in making better predictions and ultimately, better decision.

2. Introduction to leasing and lease accounting standards

2.1. Introduction to leasing

Leasing is an important and widely used financing solution because it allows firms to access and use property and production equipment without being burdened by huge cash outflows from the beginning. And how the leasing assets, liabilities, and costs should be recognized in the financial statements have been hot debating topics since the first conceptual framework for leasing released, which is IAS 17, until it got superseded by IFRS 16. To understand why leasing contracts are preferred by firms and why leasing recognitions are controversial, it is necessary to mention the nature of a leasing contract.

A lease is a contractual agreement involved two counterparties which is a lessee (who lease the asset and use it) and a lessor (the owner who lends the asset). In the leasing contract, the owner of the asset transfers the right of economic use of the asset to the lessee, in returns for periodic payments and other contractual obligations fulfilled by the lessee. As can be seen, leasing is beneficial for both parties in many ways. The lessee can reduce its financial burden thanks to leasing property, machines, or equipment in which it can make periodic payments, instead of investing a big amount of capital at once. It is also more secure for the lessor, and sometimes the financial providers, to participate in a lease contract, as they only transfer the right of using the underlying asset for a pre-determined period of time while keeping the full ownership over the asset. In case of default, the lessor can just regain the possession of the asset he or she had lent. The asset, in this case, plays the role of the collateral which secures both parties in the leasing contract.

A lease contract can fall into two main categories based on parties involved and the risk associated with the contract. The first type of lease contract is operating lease. Operating lease involves two counterparties, which are lessor and lessee. In an operating lease contract, the lessor lends the possibility to use the asset to the lessee, in exchange for the pre-determined periodic payments, and most importantly, the lessor does not transfer the risks and rewards associated with the ownership of the asset to the lessee. Therefore, this type of lease is typically employed for temporary use of property or equipment, in which the lease term is normally less than the economic life of the asset, and for the assets needed to be replaced periodically. As mentioned above, technology innovation of the asset under consideration in the leasing contract is an important

characteristic for firms to consider. Operating lease, therefore, is popular for financing vehicles and machinery.

A finance lease contract, on the other hand, normally involves three parties. In a standard set up, a lessor which is usually a financial firm, buys the asset from the asset producer, on account of the lessee from whom the asset is latter in need. The lessor, in this case, plays the role of a financial intermediary who finances the project. The lessee, when enters in this type of contract, is obligated to eventually purchase the asset after a long period of time, and at the same time making the periodic payments to the lessor. This payment includes the price of the underlying assets, interests for the fund, and commission fee. The finance lease contract is preferred by banks, other financial intermediaries, and investors as they provide a stable cash inflow and interests, while the associated risks of the loans are secured by the asset itself.

Over the years, leasing contracts have quickly been widespread, and due to some reasons, it is preferred over traditional debt financing. It is obvious that bank loans are not always accessible for small and medium enterprises and the utilization of bonds is only available for a specific group of firms, while firms always need fundamental properties and equipment to facilitate its activities. Leasing has appeared as a solution to this problem. Yan (2006) in his analysis pointed out that firms that face significant asymmetric information problems prefer leasing rather than traditional debt financing because they would have to pay more for risk premium as a protection against default. Research by Sharpe and Nguyen (1995) found out that firms that are low-rated face significant asymmetric information problems, and Slotty (2009) pointed out that they have a greater exigency to leasing. Leasing is also considered to be a more flexible funding method in a way of tailoring to the cash flow generation pattern of the lessee (Kraemer-Eis, Lang, 2012).

Another reason for leasing's popularity is technology innovation. Firms prefer to lease the equipment rather than purchase them because they do not have to bear the costs associated with ownership of the asset, which is depreciation. And, over time, the asset will become obsolete due to innovation in technology. Thanks to leasing, businesses can constantly increase their productivity by switching the outdated equipment to a newer one without bearing the cost of the outdated asset.

Last but not least, in some cases, the reason why leasing is preferable is simply due to tax benefits. For example, in the USA, the fact that industries raise financing through long-term leases due to tax reasons are very common. It is almost 100% certain that the plane of a US carrier (e.g.

American Airlines, Delta Airlines, Continental Airlines) is owned by a financial institution rather than the airline company itself (Stephen A. Zeff, (2013)).

In Europe, leasing contracts also gain momentum. According to Leaseurope, €386.4 billion worth of new leasing volumes were granted in 2018 only, reaching €832.6 billion at the end of 2018, which showed an increase of 4% when compares with that figure in 2017 (Leaseurope, 2018).

Figure *1* below illustrates the growing rate of leasing volumes in Europe only. As can be seen, except for the period of global financial crisis from 2007 to 2009 and the financial downturn in 2012, new leases consistently increased at remarkable rate around 10% annually.

Figure 1: Total new leasing volumes (annual growth rates) in Europe from 2005 to 2018

Source: http://www.leaseurope.org/
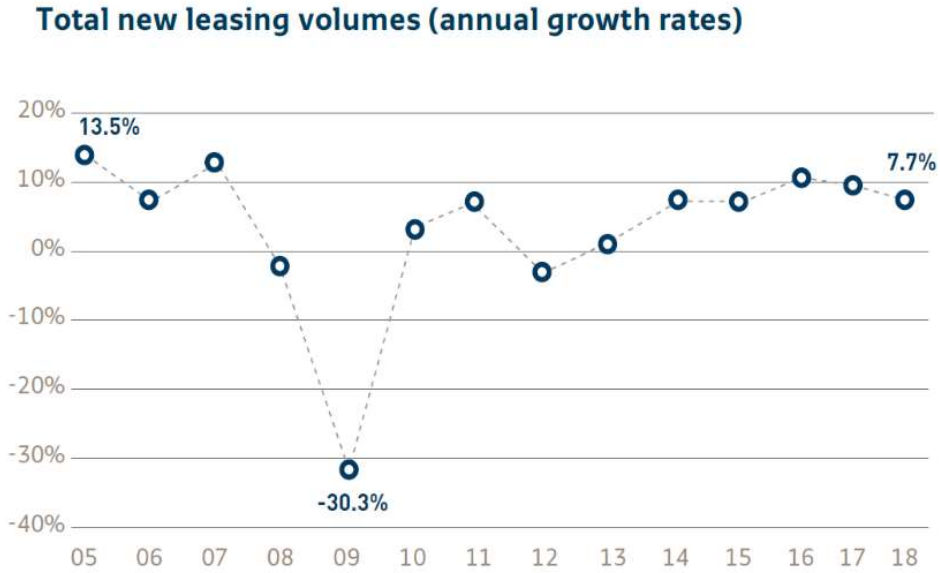
Equipment leasing, including machinery, industrial equipment, business machines, and commercial vehicles, accounted for 45% of the total amount as shown in Figure *2*. As mentioned above, it is not surprising why firms prefer to lease: the investment is less risky and cheaper in the long run, and it is easier and less expensive for them to switch to up-to-date equipment.

Figure 2: New leasing volumes per asset type in 2018 in Europe

Source: http://www.leaseurope.org/
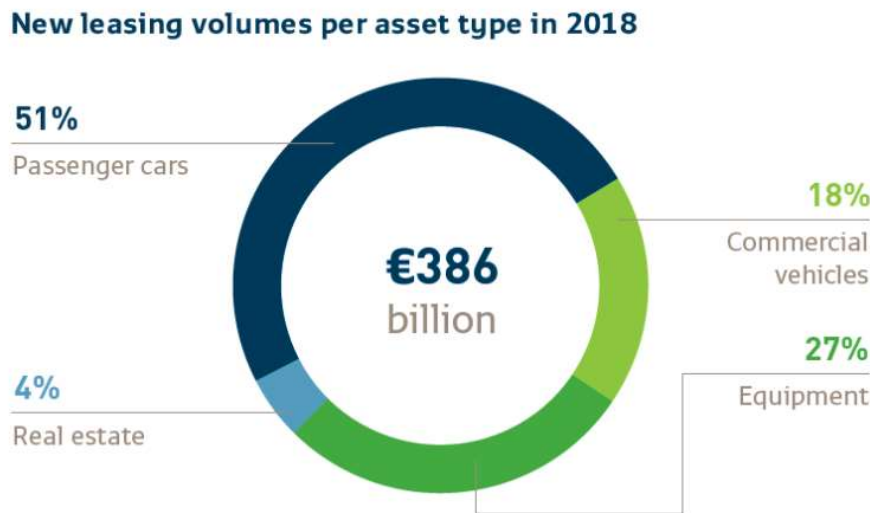
Along with the fact that leasing contracts are significantly employed in modern business activities, the framework relating to this received lots of attention from the public and has been a controversial debating topic over recent decades. The following chapters will discuss in detail the lease accounting in IAS 17, its criticism, and what have been changed in the new standard of IFRS 16 together with its expected impacts on firms' financial statements.

2.2.   IAS 17 Leases

2.2.1. IAS 17: introduction, main features and applications

The International Accounting Standard Committee (IASC), which later replaced by the International Accounting Standard Board (IASB) (in 2011), was established in 1973 with the main purpose of creating a set of accounting standards that converge and harmonize national accounting principles in Europe. The idea was that due to globalization, the was the need for an accounting framework that would make the financial statements become more understandable for stockholders in a different part of the world. IASC issued International Accounting Standards (IAS) to support this mission. In 2001, IASC changed its structure for the purpose of promoting a more efficient convergence between national accounting standards and practices and high-quality global accounting standards. IASC was changed to IASB, and the board proceeded to accept the existing IAS, and at the same time issuing new standards known as IFRS – International Financial Reporting Standards.

Before the introduction of IAS, financial statements are prepared under Generally Accepted Accounting Principle (GAAP) which is a set of accounting rules issued by each country, which could vastly differ from one nation to another due to certain characteristics relating to law, tax, regulations, etc. Financial statements prepared back then contained different disclosures, differed in formats, and applied different rules. As a result, it was extremely difficult for market participants to compare the financial statements of two companies from two different countries.

With the introduction of IAS, then later IFRS, the problem is solved. In fact, the idea of standardization for accounting rules was quickly spread among the rest of the world. In Europe, since 2005, it was compulsory for listed companies to prepare financial statements under IFRS.

The IAS 17 'Leases' is considered to be one of the most important standards due to the widespread usage of leasing contracts among firms. It was first published by IASC in 1997 and then issued by IASB in 2001, with the objective described as "prescribe, for lessees and lessors, and the appropriate accounting policies and disclosure in relation to leases". Under IAS 17, a lease is defined as an "agreement" whereby the lessor conveys to the lessee the right to use an asset for an agreed period of time in return for a payment or a series of payments.

A remarkable point of IAS 17 is that leases are classified into two categories: operating leases and financial leases, in which from this distinction, the accounting treatments are

significantly different. This difference in accounting treatment is also the reason why IAS 17 has received a lot of criticism from users. The details will be discussed in the following section.

IAS 17 deals with the accounting and financial reporting of leasing transactions for both lessees and lessors. Under IAS 17, lessees are required to categorize all leases contracts into financial leases or operating leases, in which the accounting treatments are significantly different. The classification of leases is based on whether all the risks and rewards of ownership transfer to the lessee. The leases are classified as a finance lease if the lessee has substantial risks and rewards of the ownership. IAS 17 provides indicators that the finance lease exists, and any other leases are operating leases.

As it is stated in IAS 17: A lease is classified as a finance lease if it transfers substantially all the risks and rewards incident to ownership. All other leases are classified as operating leases. Classification is made at the inception of the lease. [IAS 17.4]

Whether a lease is a finance lease, or an operating lease depends on the substance of the transaction rather than the form. [IAS 17.10]

Based on the rule, the classification can be made based on the lease contract or agreements between lessors and lessees: who own the leased assets, who bears the expenses and the running costs, is the lease cancellable, and most importantly, whether or not there is an option to purchase the leased assets of the lessees at the end of the lease term.

However, in practice, it is not always that clear to make the decision of whether a lease contract is operating or finance. The classification is subjective to the management of the firms, in which the "substance of the transaction" is to be considered rather than the "form" of the contract. Firms must evaluate whether the lease transfer "substantially all the risks and rewards incidental to ownership of an asset", and additionally, it is stated that "title may or may not eventually be transferred". This essentially means that at the end of the contract, if the transfer of the ownership of the asset occurs, the agreement is still be considered as the finance lease. The definition of an operating lease is also not transparent, as it is a "lease other than a finance lease", which could be understood as there is no possibility for the lessee to gain the ownership of the asset at the end of the leasing contract. In terms of risk and rewards associated with the asset, the standard means "risk" as the "possibilities of losses" that stem from the "idle capacity" or "technological obsolescence" as well as "variations in return" as a result of shifting economic conditions, and by "rewards", it means as the "expectation of profitable operation over the asset's economic life" and

a gain stemming from "appreciation in value or realization of a residual value". Based on this, if the risk and rewards are still under the control of the lessor, the lease contract is considered to be operating lease, otherwise, finance lease. From this perspective, a finance lease is similar to a loan in which periodic interest payments are made, while the asset plays the role of the collateral. The main difference is that the lessor (or if compared to a loan, the lender) maintains the ownership of the asset as the collateral for the duration of the contract, regardless of the transfer of the ownership of the asset (Savioli, 2008).

It is important to discuss the problems that come from classification because the accounting treatment for those two types of the lease is drastically different. If the lease is classified as a finance lease, it is recognized as an asset and liability in the balance sheet as if the lessee has purchased the asset. In the income statement, the lessee then records the depreciation expenses relating to the asset and interest expenses relating to the liabilities. On the other hand, if the lease assets are classified as an operating lease, it is treated as off-balance sheet items without recording any assets or liabilities. The lessees only have to accrue for the lease expenses during the period in the balance sheet, and the lease expense incurred during the period is recognized as operating expenses. Lessees make a limited number of disclosures in the financial statements which is an analysis of the total lease commitment as of the balance sheet date. For the lessors, they keep the assets on their own balance sheet as if those assets are not leased out.

The classification of leases that are performed at the inception of the lease can result in a significant impact on the financial statement, especially on the balance sheet for those companies which are famous for being heavy on leases such as airlines or retails industry. Figure 3 shows a survey performed by EY in June 2019 for Fortune 500 companies which pointed out that if companies in the airline industry capitalized all their leased fleets, the average impact on assets and liabilities would be 20% and 30% respectively. For retails and apparel, the figures are even more significant, with the expected changes of 20% in assets and 40% in total liabilities (EY, 2019).

Figure 3: IFRS 16 expected impacts disclosed by sectors for Fortune 500 companies – June 2019

IFRS 16 Survey for Fortune 500 companies – 30Jun2019
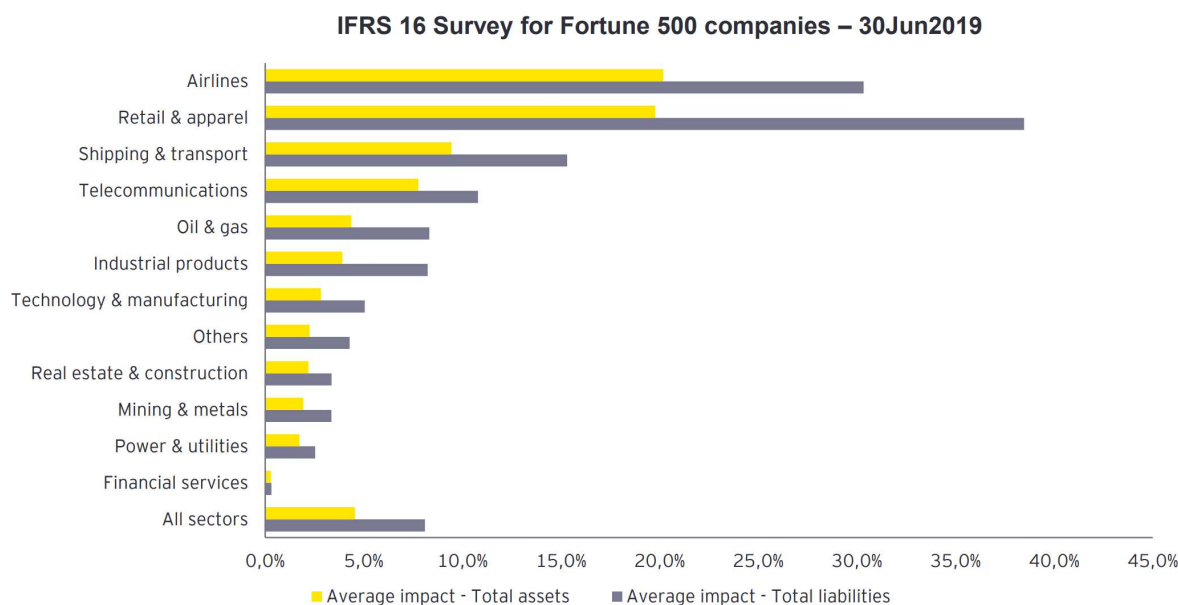
Source: IFRS year-end update – Improving the last mile visibility, EY (2019)

2.2.2. Criticism on IAS 17

The main problem with IAS 17 Leases is linked to the practice known as "off-balance-sheet financing". IAS 17 requires users to distinguish between operating leases and financial leases for different accounting treatments, and many transactions are classified as operating leases even though the risks and rewards incidental to ownership of the assets are to be transferred to the lessee. The possibility of the financing excluded from firms' balance sheet due to its classification as "operating lease" is justified under IAS 17 as it is not considered to be strict debt.

Off-balance sheet financing transactions have received a lot of attention from practitioners, financial press, regulators, and investors, and are often viewed as non-transparent accounting. In practice, firms' management employs this accounting treatment as a way of improving financial figures, financial ratios, and even hiding significant debts from financial statements end users. Several mechanisms facilitate this treatment including operating leases, leaseback transactions, synthetic leases, etc. Through these mechanisms, the followings are omitted from the balance sheet of the lessee:

- From the Asset side: the asset value due to the right of use of the asset; and

- From the Liability side: the amount that represents the obliged payments to the lessor.

As a result, the end-users of the financial statements of the firms, including creditors, investors, credit rating agencies, financial analysts, etc., need to develop models or method to evaluate the value of the off-balance-sheet amount in their decision-making process, which are greatly varied and sometimes are still not sufficient to provide a reliable estimation of the values. The issue here does not lie in the false classification of the transactions, but in the accounting treatments for the operating leases. Apparently, a market which is worth more than EUR 300 billion in Europe only is mispresented in the eyes of investors.

Supporters of off-balance sheet financing argue that the accounting treatment for these structures' benefits shareholders economically. On the other hand, critics insist that these transactions severely untransparent in a way that the full picture of the transactions is not disclosed properly to the public. In addition, the benefits resulted from these transactions are considered to be shortsighted opportunistic behavior of firms' management, that impairs wealth from other groups of stakeholders. (Altamuro, 2004).

It is not surprising that the SFAS 13, the equivalent of IAS 17 in the US, was voted to be the worst standard ever by the members of The American Accounting Association (FASB) in a financial reporting issues conference in 1996 (Reither, 1998). In a report on off-balance-sheet activity published by the US Congress in June 2005 as part of the Sarbanes-Oxley Act of 2002, SEC argued that lease-accounting standards should be rewritten. SEC staff estimated that the standards facilitated listed companies to hide undiscounted USD 1.25 trillion in future obligations off their balance sheet, and these "structuring" has led the leasing into "an industry unto itself" over the past 30 years. The report notes that "Transparency and the degree to which accounting, and disclosure standards achieve their goals can be greatly diminished by the use of structuring, even when that structuring appears to comply with the standards." (FASB, 2006).

IAS 17, on the other hand, also received lots of criticism from professional organizations, experts, and market participants.

ACCA, in a project to address criticisms of the leasing standard, concerned that numerous leases were not recognized on balance sheets despite their clear financing element. As a result, analysts have made their own adjustments, with the consequent risk of inconsistency. ACCA also pointed out well-known examples include fleets of aircraft or rolling stock that does not meet the criteria for recognition as assets and liabilities by the lessee, and for which a lack of detailed disclosure is required in financial statements (ACCA, 2014).

IAS 17 was criticized by the chairman of IASB, Hans Hoogervorst, to not reflect the economic reality. As he put it in an interview, "two very similar transactions from an economic perspective could be reported very differently, namely on the balance sheet (financial lease) and off-balance (operating lease) (Hoogervorst, 2016 Interview). In an IASB speech in 2016, Introductory comments to the European Parliament, Hoogervorst, again complained against IAS 17 due to the fact that operating lease being off-balance sheet despite they undoubtedly create real liabilities. He blamed IAS 17 accounting treatment for the bankruptcy of major retail chains during the financial crisis as they were unable to adjust quickly to reality due to significant long term operating leases commitment on their stores, which were up to 66 times greater than the reported debts, and yet they deceptively had a lean balance sheet. When mentioning the airline industry, he stated that even when in reality airlines companies' financing obligations may be very similar, the one that leases most of its aircraft fleet looks very different from its competitor that bought most of its fleet, which somehow indicated an unequal playing field between these companies (Hoogervorst, 2016 Speech).

IASB itself also pointed out the fact that IAS 17 failed to maintain the completeness, comparability and created difficulties for analysts and investors in decoding the financial statements. As most leases were not reported on lessees' balance sheet, IAS 17 did not provide a complete picture of the assets it controlled and used in its operations and the lease payments that, economically, it could not avoid. Accordingly, investors and analysts that the IASB consulted used the off-balance-sheet disclosure which was limited in content and details, to estimate the assets and liabilities arising from the operating leases, however, the methodology is varied and for many investors, they were not in a position to make the adjustments (IASB, 2016).

In response to the criticism, the IASB and the FASB have participated in a joint project for the purpose of creating a new leasing standard that would address the problems raised by users. In 2016, a report was released by IASB stating the decision that the standard would be modified, and three main issues with IAS 17 from the view of financial reports 'users are provided as below:

1.   Information reported related to operating leases lacked transparency and did not meet the needs of users of financial statements.

Being treated as operating leases mean no assets and liabilities relating to the contracts are disclosed in the balance sheet of the lessee, but only an off-balance sheet item note. It is lack of representation for the transactions and is unable to provide financial reports' users the full picture

of the activity. In addition, the disclosure requirements for operating lease are not strictly clear and is varied among companies which creates difficulties for users to compare. As a result, users need to estimate the value of the contracts, such as calculating the present value of future lease payments which required estimated variables. Obviously, the estimation is not 100% accurate, and different users will have different views on the method. It is contrasted with the intention of having a converged set of accounting framework.

2.   *The existence of two different accounting models for leases.*

IAS 17 only requires finance lease contracts to recognize lease assets and liabilities on the balance sheet, and for operating lease, only periodic payments are recorded as a rental expense on income statements when they incur. Critics argue that transactions that are very alike from the economic point of view are treated in a drastically different manner which creates difficulties for end-users of the financial statements to compare among companies.

3.   *Previous requirements for lessors did not provide adequate information about a lessor's exposure to credit and asset risk.*

In practice, for the leasing contracts involving equipment and vehicles which are classified as an operating lease, users were unable to assess the level of credit risk arisen associated with the lessees, as well as the asset risk from the lessor's retained interest in the underlying assets.

The first two issues are addressed by IASB by issuing new lease standards that require the mandatory recognition of assets and liabilities for the rights and obligations arising from the leasing transactions. IFRS 16 also requires the lessors to disclose their risk exposure to address the second issue. IFRS 16 is discussed in detail in the following section to illustrate the changes in comparison with IAS 17.

2.3.   IFRS 16 Leases

IFRS 16 developed by IASB as a new Leases Standard which would supersede IAS 17. It was the effort of IASB and FASB in a joint project to improve the accounting for leases. IASB issued IFRS 16 in January 2016 while its partner, FASB, expected to published ASC 842 (FASB Accounting Standard Codification – topic 842), an equivalent to IFRS 16, on February 25, 2016. IFRS 16 became effective for annual periods beginning on or after 1 January 2019, with or without retrospective adjustments. A company can choose to apply IFRS 16 before that date only if it also applies IFRS 15 Revenue from Contracts with Customers.

IFRS 16 specifies how an IFRS reporter will recognize, measure, present and disclose leases. The standard provides a single lessee accounting model, requiring lessees to recognize assets and liabilities for all leases unless the lease term is 12 months or less or the underlying asset has a low value (such as personal computers and office furniture). On the other hand, IFRS 16's approach to lessor accounting substantially unchanged from its predecessor, IAS 17, in which lessors continue to classify leases as operating or finance. However, the disclosure is enhanced as IFRS 16 requires lessors to disclose additional information regarding its management of risks related to residual interests in assets subject to leases.

As stated in the standard: IFRS 16 establishes principles for the recognition, measurement, presentation and disclosure of leases, with the objective of ensuring that lessees and lessors provide relevant information that faithfully represents those transactions. [IFRS 16:1].

IFRS 16 is considered to be a fundamental change in leasing standard compared to its predecessor, as IFRS 16 eliminated the classification of finance leases and operating leases. For lessees, all leases under IFRS 16 are treated in a similar way as finance leases when applying IAS 17. As another way to put it, leases that are previously treated as off-balance sheet items would be capitalized, which would expect to drastically change the balance sheet, income statement and cash flow statement for companies with material off-balance sheet leases.

Fundamental changes in accounting treatments for operating leases under IFRS 16 when compared to IAS 17 can be simplified in Table 1 as below:

Table 1: Comparison of accounting treatments for operating leases under IAS 17 and IFRS 16

IAS 17		IFRS 16	
BALANCE SHEET		**BALANCE SHEET**	
Assets	*Liabilities*	*Assets*	*Liabilities*
No entry	No entry	Right of use	Leases liabilities
INCOME STATEMENT		**INCOME STATEMENT**	
• Rental expenses recorded when incur		• ~~Rental expenses~~ • Depreciation expenses (from right of use) • Interest expenses (from leases liabilities)	

To be more specific, when applying IFRS 16, a company is required to recognize the present value of the lease payment and the present value of all unavoidable future lease payments if those payments are made over time, showing them on the balance sheet as lease assets (right-of-use assets) or include in property, plant, and equipment. Financial liabilities are also recognized presenting the company's future obligation to make payment. In addition, depreciation expenses of lease assets and interest on lease liabilities will be then recognized in income statements as depreciation expenses and financial expenses, which will create changes as previously, all operating leases expenses are classified as operating expenses under IAS 17. Regarding changes in cash flow statement, companies have to separate the total amount of cash paid into a principal portion (presented within financing activities) and interest (typically presented within either operating or financing activities) (IASB, 2016)

Regarding lessor accounting under IFRS 16, except for the treatment of the residual value guarantees provided by a lessee to the lessor, the accounting rules are nearly unchanged. IFRS 16 requires the lessor to recognize only the amount it expects to pay under residual value guarantees,

rather than the maximum amount guaranteed as required by IAS 17. In addition, the disclosure of lessor is also improved as mentioned above.

IASB expected the benefits of the new Leases Standard would greatly outweigh its costs (IASB, 2016). The new visibility of all leases will lead to better-informed investment decisions by investors, and to more balanced lease-versus-buy decisions by management. IFRS 16 will lead to improved capital allocation, which should be beneficial for economic growth (Hoogervost. H 2016).

In summary, the main points in changes of IFRS 16 compared to IAS 17 are shown in *Table 2* as below:

Table 2: Summary of main differences between IFRS 16 and IAS 17

Issue	IFRS 16	IAS 17
Definition of a lease	Right to use an asset, that is: • identified asset, and • right to control the use	In general, similar to IFRS 16, but different detailed guidance
Separating lease components	Separate component, if: • separate benefit for lessee, and • not highly dependent on, or highly interrelated with, another component	No specific guidance (except for lease of land and building)
Lessee accounting		
Balance sheet	Right-of-use asset and lease liability for almost every lease	Operating lease: No asset or liability recognized (only accruals or prepayments) Finance lease: Leased asset and lease liability
Variable lease payments	Part of the lease liability if they depend on index/rate	Not part of the lease liability
Income statement	Single approach • Right-of-use asset: depreciation • Lease liability: effective interest rate method • Variable lease payments not included in lease liability (that is, not depending on index/rate)	Operating lease: Lease payments on a straight-line basis Finance lease: Leased asset: depreciation Lease liability: effective interest rate method Variable lease payments not included in lease liability

Cash flow statement	Part of lease payment that represents principal portion: Cash flow resulting from financing activities Part of lease payment that represents interest portion: operating cash flow or cash flow resulting from financing activities (depending on entity's policy). Payments for short-term leases, for lease of low-value assets and variable lease payments not included in lease liability: operating cash flow	Operating lease: operating cash flow Finance lease: Similar to IFRS 16.

The following will discuss in detail how IFRS 16 should be applied.

2.3.1. Scope, identification, and exemptions

IFRS 16 Leases applies to all leases, including subleases, which are generally similar to IAS 17. The scope of IFRS 16 includes all contracts that convey the right to use an asset for a period of time, in exchange for consideration, except for leases of biological assets, service concession agreements, and leases to explore for or use minerals, oil, natural gas and non-regenerative resources, licenses of intellectual property granted by a lessor, and rights held by a lessee under licensing agreements for items such as films, videos, plays, manuscripts, patents and copyrights within the scope of IAS 38 Intangible Assets. [IFRS 16:3].

Lessees can optionally elect to apply IFRS 16 to leases of intangible assets other than licenses mentioned above. [IFRS 16:4]

As can be seen, IFRS 16 defined leases as a contract or a part of a contract that conveys the right to use of an asset in exchange for consideration, for a period of time. At first glance, the definition might look very straight forward. However, in practice, it can be challenging to assess whether the contract conveys the right of use of an asset or a contract for a service that is provided using the asset. (PWC, 2016). For example, a company can lease a number of trucks to transports in goods within 5 years, or choose to purchase the shipping service from a service provider within 5 years, and if in both cases, the amount of goods is specified and the shipping schedule is pre-determined, the results are identical (the company has their goods transported), however, the accounting treatments are drastically different. In addition, the definition of a lease is different from the current IFRIC 4 guidance and might result in some contracts being treated differently in the future. (PWC 2016).

IFRS 16 provides IFRS reporters with detailed guidance regarding the assessments whether a contract contains a lease or a service, or both. However, there are not a lot of distinction between a service or an operating lease emphasized in the standard. It is noted that the company should start their evaluation of whether a contract contains a lease or not by sticking to the definition of a lease, in which the company has the right to control the use of an identifiable asset for a period of time in exchange for consideration.

To reduce the burden of applying the standards, there are two exemptions for recognition and measurements which are both optional and only applicable to lessees. If a company chooses to

apply for theses exemptions, the leases are accounted for in a way that is similar to current operating lease accounting, in which leases payments are treated as an expense on a straight-line basis over the lease term, or another systematic basis.

The two exemptions are whether the leases are short term or underlying assets with low value. Short-term leases are defined as leases with a lease term of 12 months or less. The term includes the period covered by an option to extend or an option to terminate the leases. The purchase option is also considered because as all leases with purchase option is not considered as a short-term lease [IFRS 16:5, 6 & 8]. For leases with low-value underlying assets, the standard does not define a threshold for the term "low value", but the Basis for Conclusions explains that the Board had in mind assets of a value of USD 5,000 or less when new. (PWC, 2016). For example, low-value assets can be personal computers or small items of office furniture. In this case, the election is made on a lease-by-lease basis.

2.3.2. Lease term and initial recognition

IFRS 16 defines lease term as the non-cancellable period for which a lessee has the right to use an underlying asset, plus periods covered by an extension option if the exercise of that option by the lessee is *reasonably certain*; and periods covered by a termination option if the lessee is reasonably certain not to exercise that option. This definition is the same to which stated in IAS 17.

To prevent the various interpretation of the term "reasonably certain", which led to multiple approaches in practice under IAS 17, there has been long and controversial discussion on how to interpret the term. IFRS 16 provides guidance and examples to address this problem.

As stated in the standard, the principle that all facts and circumstances creating an economic incentive for the lessee to exercise the option must be considered. Some examples are provided to clarify and can be treated as a reference to IFRS reporters when considering the factors.

The assessment of whether the exercise of the option is reasonably certain should be made at the start date in which the lessee makes the underlying assets available for use. The lease term can be reassessed but in very limited circumstances, such as there is an event occurred that contractually oblige the lessee to exercise the option.

Regarding the reassessment of leases terms, although IASB supposes that a regular reassessment of the lease term would be more informative for the financial statements users, to

reduce the cost to apply the standard, IASB developed an approach similar to the one for impairment testing for the lease term reassessment, in which the reassessment should be made only if there are indicators which would somehow result in different outcome.

After defining the lease terms, the next step for firms to follow is to initially value and record the leases assets and liabilities. The most important change in IFRS 16 compared to is predecessor IAS 17 is the new lessee accounting model. Under IFRS 16, the classification of finance lease contracts (on balance sheet) and operating leases contracts (off balance sheet) no longer exists. The new leasing model requires companies to recognize a right of use asset and a corresponding lease liability for almost all lease contracts. As stated in the standard:

Upon lease commencement a lessee recognizes a right-of-use asset and a lease liability. [IFRS 16:22]

The idea is based on the principle that in economic terms, a lease contract is the acquisition of a right to use an underlying asset with the purchase price paid in installments. This approach leads to a significant increase in the recognition of financial liabilities and assets for companies which were heavily entered into leases contracts which were previously classified as operating leases.

Regarding the recognition for right-of-use, the following is stated in IFRS 16:

After lease commencement, a lessee shall measure the right-of-use asset. Under the cost model a right-of-use asset is measured at cost less accumulated depreciation and accumulated impairment. [IFRS 16:30(a)]

At the commencement day, the lease liability is initially recognized and measured at an amount equal to the present value of the lease payments during the lease term that are not yet paid [IFRS 16:26]. The right of use is initially measured at the amount of the lease liability plus any initial direct costs incurred by the lessee. Adjustments may also be required for lease incentives, payments at or prior to commencement and restoration obligations or similar. [IFRS 16:24]

The provision for the restoration costs is recognized as a separate liability.

Table 3: Initial measurement of a right-of-use asset and a lease liability

Right-of-use asset	Lease liability
Lease liability	Lease payments
	Discount rate
Lease payments made before or at commencement date	
Restoration cost	Provision
Initial direct costs	
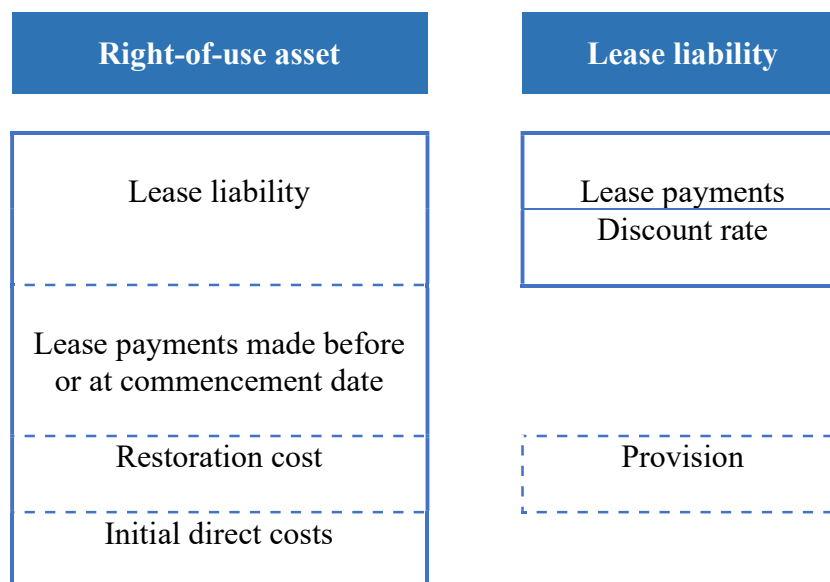
Lease payments consist fixed payments, less any incentives receivables for the lessee, and variable lease payments that depend on an index or a rate, amounts expected to be payable by the lessee under residual value guarantees, the exercise price of a purchase option and payments of penalties for terminating the lease (if the lease term reflects the lessee exercising the option to terminate the lease).

The discount rate used by the lessee is the implicit interest rate in the lease. This is defined as the rate of interest that causes the present value of lease payments and the unguaranteed residual value to equal the sum of the fair value of the underlying assets and any initial direct costs of the lessors. It is noted that determining the implicit interest rate is one of the key judgments that can substantially impact companies' financial statements. If an entity is unable to determine this rate, it can choose to use the incremental borrowing cost instead. The incremental borrowing rate is defined as the rate of interest that a lessee would have to pay to borrow, over a similar term, and with a similar security, the funds necessary to obtain an asset of a similar value to the cost of the right-of-use asset in a similar economic environment.

There are cases that lessees are obliged to return the underlying assets to the lessor in a specific condition or to restore the site where the assets located. In these cases, the lessee needs to

recognize the provision for restoration in accordance with IAS 37, Provisions, Contingent Liabilities, and Contingent Assets.

An entity can subsequently change the measurement of the provision due to revise estimation of expected restoration costs, and this change should be reflected in the right of use of the underlying assets as required by IFRIC 1, Changes in Existing Decommissioning, Restoration and Similar Liabilities.

As the purpose of this dissertation is not the detail guide for the application of IFRS 16, but somehow introduce how changes in IFRS 16 impacts firm's financial statements and market participants' decision making, it is necessary to mention the changes in presentation and disclosure in the financial reports, how the transition should be implemented by firms, and some notable points when comparing IFRS and US GAAP.

Regarding the presentation and disclosure for leases under IFRS 16, it is noted the standard is expected to impact the financial statements outlook significantly. Changes should be found in the balance sheet, income statements, statement of cash flow, and accompanying notes.

On the balance sheet, companies can choose to present the right-of-use separately or in the same line item in which the underlying asset would be presented. The lease liability is presented as a separate line or in the same line item with other financial liabilities. In case companies choose to present the right to use assets and the lease liability together with other balance sheet items, they shall disclose the carrying amount of those assets and liabilities in the notes.

Regarding the statement of profit or loss and other comprehensive income, the depreciation charge of the right of use asset is presented in the same line item in which similar expenses are shown (depreciation of property, plant, and equipment). The interest expenses of the lease liabilities are disclosed as a part of financial expenses, and then specified in the accompanying notes the amount of interest expenses on lease liabilities.

In the statement of cash flows, lease payments are treated as payments on financial liabilities. The principal payment for the lease liability is included in the cash flow resulting from financing activities. The interest payment of lease liabilities is presented as either as operating cash flow or a cash flow resulting from financing activities in accordance with the company's accounting policy. In cases of short-term leases or leases with low value, the lease liability is included as operating cash flow.

Regarding the transition from accounting for leases under IAS 17 to IFRS 16, as mentioned above, IFRS 16 allows early application but companies are required to adopt IFRS 15 Revenue from Contracts with Customers at the same time. Lessees can choose to apply a full retrospective approach or a modified retrospective approach to transition to the new standard. The selected approach has to be applied to the entire lease portfolio.

The full retrospective approach requires entities to retrospectively apply the new standard to each prior reporting period presented as required by IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors. Under this transition approach, entities need to adjust equity at the beginning of the earliest comparative period presented.

Under the modified retrospective approach, a lessee does not restate comparative information. As a result, the initial application reflects the first day of the annual reporting period in which the lessee first applies IFRS 16. The cumulative effect of the initial application is recorded as an adjustment to the opening balance of equity as of 1 January 2019.

Last but not least, as comparability is one of the fundamental principles for financial reporting standards that allows reports' users to compare the performance of firms, being aware of differences in accounting treatments for leases under IFRS and US GAAP is crucial.

The IASB and the FASB worked together on a joint project to improve the leasing accounting standards, and have reached the same conclusions in many areas of lease accounting, which includes the requirements for lessees to capitalize operating leases and to record them on the balance sheet, defining lease assets and measuring the lease liabilities. Both organizations also agree to keep substantially unchanged the accounting policies for lessors. However, when it comes to some cases of leases, the IASB and the FASB chose different approaches. While IFRS 16 introduces a single model for lease accounting applied to all leases, ASC 842 (FASB Accounting Standards Codification – ASC – topic 842) still keeps the two models, depending on whether the lease is operating lease or direct financing lease. In case the lease is classified as an operating lease, the linear basis is applied to measure the leases. On the other hand, if the leases are finance leases, the treatment is similar to IFRS 16. There are also some differences regarding the presentation of related expenses of the lease in the income statement and of the cash flows in the cash flow statement.

3. Theory and hypothesis development

3.1. Literature review

IAS 17 has been criticized for its off-balance sheet treatment for operating leases. Lots of researchers share the same belief that off-balance-sheet accounting for operating leases should be reconsidered. McGregor (1996) findings suggested that current standards (which allowed off-balance sheet treatment for operating leases) failed to account for the assets and liabilities which could be identified by the rights and obligations arising from operating leases contracts. Chu et al (2007) supposed the accounting treatment of IAS 17 for operating lease insufficiently provided information on the lease liabilities. According to Eisfeldt and Rampini (2009), leasing should be considered to be equivalent to long term debt. Those are the reasons why researchers globally have investigated the impact of operating leases capitalization on the financial statements and financial ratios as apparently, financial ratios analysis has long been used by investors and analysts to evaluate the performance of a company.

Before IFRS 16 become effective, bunches of theories and empirical research have been done to prove that operating lease, if it is recognized on the balance sheet, would have significantly change the financial pictures of a company. Those research also contributed to triggering the project of leasing accounting standard improvement of IASB.

3.1.1. The impact of capitalization of operating leases

The following research and studies' results showed evidence that a significant amount of assets, especially liabilities are hiding from investors and other financial report users, and undoubtedly, if those assets and liabilities are reported, they can somehow mitigate their decision making.

The study of Imhoff, Libe, and Wright (1991) on the capitalization of leases demonstrated that the return of assets ratio (hereafter ROA) decreased significantly for both intensive and less intensive users of leases. In addition, the study results regarding the impact on debt to earning (D/E) ratios were even more material with and an average increase of 191% for high lease usage and 47% for low lease usage, which apparently affect the decision making.

In 1998, Beattie, Edwards and Goodacre found that on average, the unrecognized leases accounted for 6% of total assets, and the unrecognized long-term liabilities can make up to 39% of total liabilities reported. The study was performed on 232 UK listed companies. Accordingly, there

were impacts on companies' key financial ratios such as ROA, Debt-to-Equity, and Asset Turnover Ratio.

A study was done on 38 listed firms on the New Zealand Stock Exchange by Bennet and Bradbury (2003) prove the same results. They used the "constructive capitalization" methods, which were developed by Imhoff et al (1991), to estimate the unrecorded assets and liabilities due to off-balance sheet operating leases. The results confirmed the previous studies with material influence on the financial statements, as 22.9% of liabilities and 8.8% of assets are kept off-balance sheet. Consequently, the financial ratios are impacted. They found that the leverage ratio increases while ROA and current ratio decreases. In addition, the study also reviewed the method used by US analysts such as rental expense multiplying, in an attempt to estimate the unreported leases assets and liabilities. They found evidence that those rules of thumbs are not accurate and reliable in an international setting.

Research on 100 Canadian listed companies performed by Durocher in 2008 showed no different results. The study tested the impact of operating leases capitalization on the financial indicators and found that a substantial amount of assets and liabilities would be recorded if operating leases are recognized. Leverage ratios such as Debt-to-Assets are proved to drastically increases, while the current ratio is found to decrease significantly.

The same research was done for companies in Germany when in 2008, Fülbier, Silva, and Pferdehirt (2008) conducted ex-ante research to simulate the consequences of off-balance-sheet leases capitalization on the financial statements of a set of listed German companies. The utilized the modified constructive capitalization approach which was originally developed by Imhoff et al as mentioned above. The results showed a significant impact due to lease capitalization for a considerable number of companies, especially for those in the fashion and retail industries. Changes in financial ratios occurred mainly in assets and liabilities relations. Besides, the impacts also can be found for profitability ratios and market multiples which are used for business valuation purposes.

Study on the companies of the S&P 500 index of 366 listed companies from various industries by Duke et al. (2009) applying the constructive lease capitalization demonstrated that the accounting standards for leases under ASC 85 (the equivalent of IAS 17 in the US, in which operating leases are treated as off-balance sheet items) allowed companies to hide billions of liabilities, enhanced retained earnings, income, and ratios. Duke et al. also indicated the motivation

for companies to use operating leases. They divided the sample into two sub-groups: companies with positive income and companies with negative income. The results showed that the top quartile of the positive income group experienced an 18% increase in income while the top quartile of the negative group showed a decline of 11% in income after lease capitalization. In addition, significant negative impacts were found on leverage and liquidity ratios.

Kostolansky and Stanko (2011) analyzed the leasing agreements of S&P 100 companies under a variety of discount rates. They extracted the data from Form 10-K information from the Management Discussion and Analysis notes, financial statements, and the leasing footnotes, and found material impacts on specific industries and companies. They found a double-digit increase or decrease in companies' specific financial ratios. The results supported the IASB's initiative to bring operating leases to balance sheet to build a more representative financial reporting.

Tahtah and Roelofsen (2016) found the same results when applying the constructive capitalization approach based on operating lease commitments in the financial statements. In addition, their study found that the impacts on financial ratios differed significantly by geographic industry location.

Fafatas and Fischer (2016) examined 22 companies in retail industries and did an additional test to confirm the results of their research in 2014 but with a wider sample (109 companies) consisting of retailers and restaurants. An average decline in EBIT/Asset ratio of 4.07% was found. Additionally, the capitalization of operating leases led to a significant decrease in profit margin, ROA and ROE.

In the same year, Öztürk and Serçemeli (2016) investigated the impact of the new lease standard IFRS 16 on the financial statement of airline companies in Turkey with a focus on the key financial ratios. The impacts on the assets and liabilities are similar to previous studies in which significant increases were found. In terms of financial ratios, D/A and D/E are found to increase substantially by 16.9% and 75.3% respectively. ROA is found to be declined by 34.4% on average, and in the case of ROE, an increase of 15.6% was recorded. The study is representative as it considered 31 firms worldwide rather than focus on a group of companies in a specific country or geographical location.

The research was done on a large scale in Europe when in 2018, Morales-Diaz performed a study on the key financial ratios of 646 European companies, with an attempt to analyze the

impact of IFRS 16. The systematic impact on the balance sheet and key ratios (leverage ratios, profitability, and coverage ratios) was found for companies in the same sectors.

3.1.2. How market participants are aware of and react to off-balance sheet lease?

Evidence from considerable empirical researches was found to support the fact that a large amount of assets and especially liabilities from operating leases are hidden from the balance sheet, and as a consequence, financial ratios including leverage, profitability, and performance ratios are significantly distorted. As a consequence, investors and analysts are not provided with a comprehensive picture of a companies' financial performance and situation, especially for those who are heavy in operating leases such as retailers or airlines. The concerns that were caught by researchers are whether market participants such as investors, analysts, business valuators, etc. are aware of the problem when evaluating the activities of a company using their financial statements.

Even though some firms might attempt to fool the shareholders and the market by using operating leases, it does not necessarily mean they managed to do so to the experts such as analysts, financial institutions a rating agency. Off-balance sheets items including operating leases are treated with more skepticism and scrutiny by market participants since the Enron scandal.

Prior literature shows that credit rating agencies take into account the operating leases disclosures when evaluating companies' credit risks. (Kraft, 2015; Lim et al., 2014; Sengupta & Wang, 2011).

Research by Altamuro et al. (2014) explained the method used by credit rating agencies to implicitly recognize operating lease assets and operating lease liability and other related effects. While S&P estimates the off-balance-sheet lease using the present value of minimum lease payment as disclosed in the operating lease note in the financial statements, Moody's apply the multiple of rent expense method in which it assigns a specific multiple for each industry. However, research by Bennet & Bradburry (2013) suggested with evidence that the method of multiplying the rental expenses are inaccurate and unreliable in an international setting.

Estimations are subject to error, however, to some extent, it helps to reduce associated costs. However, unlike credit rating agencies, who are considered to be one of the sophisticated capital market participants, adjusted for off-balance sheet operating lease when making their risk assessments, the question is whether other market participants consider the off-balance-sheet discloses in their decision making or only consider the amounts recognized in the balance sheet

and the income statement when assessing a firm. Durocher and Fortin (2009) attempted to find the answer to this question focused on bankers. Their findings suggest that bankers consider both finance and operating leases information when analyzing private business loan requests. However, significant more consideration is given to finance leases which are recorded in the balance sheet, which means operating leases information receives less attention. Bankers also believe that the specific impacts in financial ratios would have directed their judgments as their assessments are based on firms' capital structure, solvency, and liquidity.

A prior study by Spencer & Webb (2015) showed evidence that users of the financial statements appeared not to view the operating leases in the same way. Lack of disclosure relating to operating leases may lower the usefulness of the financial statements for some firms.

More recent research by Rulmont (2017) indicated the results which supported the hypothesis that the capitalization of operating lease would lead to a lower perceived Equity Value. The study also provided evidence that investment professional in Luxembourg and Belgium seems to aware of the existence of off-balance sheets leases, but not all of them utilize the capitalization method to take into account the operating leases when processing information from financial statements.

Theoretically, IFRS 16 is an accounting standard that can alter the financial statements but cannot change the underlying business of a company. However, some prior literature claims that firms with a higher level of leasing activities are more sensitive to aggregate shocks as rental payments show a major claim in the firm's cash flow. On the other hand, experts in the markets including audit firms (Deloitte, 2019; PwC, 2019; KPMG, 2019) shared the same ideas that IFRS 16 will not change the underlying cash flows of the business which lead to unchanged in equity values. However, as IFRS 16 impacts the implied financial metrics of a company which is EBITDA and net debts and therefore implied enterprise value, additional adjustments and considerations are required when doing business valuation (Deloitte, 2019). Multiple methods of valuation are needed further consideration as EBITDA multiple will look different under IFRS 16 (PwC, 2019). IASB, on the other hand, purposely improves the leasing accounting regimes with the expectation of creating a more transparent market, promote market efficiency which somehow improves the confidence of investors. IASB believed that the recognition of assets and liabilities for off-balance sheet leases will present a more genuine image of a company's financial position, which leads to transparency and comparability (IASB, 2016). Since 85% of all leases are estimated to be off-

balance sheet items, IASB is convinced that the new change will lead to superior investment decisions (IASB, 2016).

Bankers also take off-balance sheet operating leases into accounts when analyzing the firm's activities, however, lease footnotes received less attention (Durocher and Fortin, 2009). It is risky to some extent as while firms are hiding a substantial amount of leases liabilities off-balance sheet, the consideration to this claim in cash flow should be kept at a higher level of scrutiny and skepticism. Although estimations are subject to changes, however, credit rating agencies and bankers can somehow reduce associated costs by making efforts in considering off-balance sheets items. Investors, on the other hand, seems to neglect the tremendous leasing liabilities hidden off-balance sheet. There is evidence that shows that even experienced investors failed to recognize the importance of operating leases (Ge, 2016).

In summary, many previous studies find that market participants are aware of the off-balance operating leases and consider them when assessing the performance of a firm in the situation that operating lease is not sufficiently disclosed. However, the level of consideration and the method used to process the information are varied among them, which would result in changes in their judgments and decisions when the information of off-balance sheet lease are officially and accurately disclosed. The dissertation will manage to fill the gap of previous studies by investigating the reaction of the market participants, especially focus on financial analysts, after the releases of the actual impact of operating lease on the balance sheet and income statements.

3.1.3. The impact of operating lease capitalization under IFRS 16 on analysts' forecast

Financial statements are important for market participants by not only represent the historical data of the firms but also signal the firms' performance in the future. Based on their expectation about the firms, investors make an investment decision, and financial analysts form their opinions and advice. As a result, earnings forecasts are considered an indicator of the usefulness of the financial reports. The accuracy of the forecasts can help to reflect the quality of the information provided by the financial statements. Based on this, lots of studies and research have attempted to evaluate the impact of accounting policies used in the financial statements on earnings predictions as a way to see whether changes in accounting policies improve the firms' information environments.

Financial analysts have benefited from the comparability thanks to IFRS adoption, which increases their ability to forecast firms' earnings. Among papers that examined the impact of

mandatory IFRS adoption on analysts' earnings forecasts, Daske, Hail, Leuz, and Verdi (2008) found that mandatory IFRS adoption benefits the capital market. De Franco, Kothari, and Verdi (2011) show that comparability reduces earnings forecast error and forecast dispersion.

Horton and Serafeim (2010) concluded from their empirical analysis about European firms, that the accuracy of the forecasts is improved after IFRS adoption. The same result was deprived from the German markets on the research of Glaum, Baetge, Grothe, and Oberdörster (2011). Pascual Garrido-Miralles & Sonia Sanabria-García (2014) studied the impact of mandatory IFRS adoption in Spain on earnings forecasts made by financial analysts based on an empirical analysis on 369 listed Spanish firms during the period from 2003 – 2007, detected significant positive effect on the accuracy of financial analysts' earnings forecasts. A lower level of forecast errors was also found which reflected the improvement in the quality of the financial information that firms provided to analysts. It was notably noted that analysts encountered difficulties estimating the earnings of loss-making firms.

Outside Europe, a study focused on Australian firms, found that IFRS improved analysts' earnings forecasts and that in the year of IFRS adoption, there were no significant changes in forecast dispersion. Tan, Wang, and Welker (2011) confirmed in their study that the adoption of IFRS did not affect the accuracy of local analysts' forecasts, however, a greater probability that adopted IFRS firms are observed to be tracked by foreign analysts, which improved the accuracy of the predictions in the period following the adoption.

As IFRS 16 is effective from the financial year 2019, there have been no studies investigated the impact of it on financial forecasts and the usefulness of those changes remains unclear. However, regarding the changes in one specific IFRS, a study by Ahmed Abouda, Clare Roberts, Alaa Mansour Zalata (2018) on the impact of IFRS 8 "Operating segments" adoption on financial analysts' earnings forecasts showed positive results thanks to the improvement in segment disclosures. Closer to IFRS 16, which improves financial reporting by enforcing the capitalization of operating leases, a study by Brown, Lawrence D. (1983) on the US market proved that the SFAS No. 13 (on lease capitalization) significantly improved the earnings prediction of financial analysts. The result suggested that financial reports users could benefit from the additional disclosures when firms change their accounting principles.

Recent research by Ge (2016) showed different results when she found that off-balance sheet operating leases are negatively associated with future earnings. The results indicated that the

disclosed information of off-balance sheet operating leases in financial statements' footnotes has the additional explanatory power in the prediction of future earnings. However, investors seem to fail to include the operating lease activities into their analysis and decision-making processes that are shown in stock prices.

This dissertation will fill the gap of previous research by performing empirical research on official data of operating lease capitalization published by firms under IFRS 16 to investigate the impacts of this first-time adoption on financial analysts' earnings forecasts.

3.2. Hypothesis development

IFRS 16 with the fundamental changes of capitalizing almost all operating leases contracts into the balance sheet is proven by various prior literature to have substantial impacts on the balance sheet, income statement, and financial indicators. Especially, for companies in airlines or retail chain sectors that are heavy in keeping operating leases off the balance sheet, the significant changes in financial reporting are foreseen and expected. A survey recently conducted by EY (2019) showed that on average, there will be an increase of 20% in total assets and 40% in total liabilities in airline companies globally in response to the impact of IFRS 16 application.

Various literature also presented evidence that operating leases, when brought to the balance sheet, will significantly increase leverage ratio while decreasing ROA. Other ratios such as profitability are also expected but at a less severe level (Imhoff et al. (1991); Beattie et al. (1998), Bennet et al. (2003); Durocher (2008); Fülbier et al. (2008); Duke et al. (2009); Kostolansky et al. (2011); Tahtah et al. (2016); Fafatas et al. (2016); Öztürk et al. (2016); Morales-Diaz (2018)).

Although various research examines the impact of IFRS 16 on financial statements, the usefulness of those changes remains unclear. It is expected by IASB that IFRS 16 would improve transparency and comparability for financial information provided by firms, which then improves the decision making of investors and analysts (IASB, 2016). The presents of operating leases on balance sheets and its impact on income statements and cash flow statements should enable analysts to better evaluate risk and profitability towards the firms, and therefore, it is expected to enhance the quality of their predictions. On the other hand, the accuracy of financial analysts' earnings forecasts provides observable and actual measures of earning predictability by sophisticated users of financial reporting (Hope et al., 2006).

Given those prior literature above, it is reasonable to expect changes in decision making of financial analysts' opinions towards firms when operating leases data are officially published, which show the actual amounts rather than various and inaccurate estimations, recognized directly in the balance sheet and income statement rather than keeping off the attention of financial statement users, and therefore alter key financial figures and ratios. Nevertheless, how the financial analysts' response to this fundamental change under IFRS 16 is still a question which is not fully addressed via empirical analysis.

As a result, in the effort to investigate the response of the markets which are implied in the stock returns when the official data of operating leases capitalization are published for the first time, I developed a hypothesis as below:

Hypothesis 1 (H1): *IFRS 16 adoption improves the financial analysts' earnings forecasts.*

Another point to look at when considering the adoption of IFRS 16 will create difficulties when analyzing the one financial figure which is closely watched by markets significant: EBITDA. EBITDA represents earnings before interests, taxes, depreciation, and amortizations. As previously presented, along with operating leases are now capitalized and recorded as a right of use on the asset side of the balance sheet, depreciation expenses of those assets are recorded in the income statement and will be excluded when calculating EBITDA. On the liability side of the balance sheet, lease liabilities are now recorded which generates interest expenses in the income statement. Therefore, the amount is also excluded in EBITDA calculation. Before IFRS 16, those two expenses are classified as operating expenses. Significant changes in EBITDA are expected and whether financial analysts have difficulties when estimating EBITDA is still unclear. The second hypothesis which is tested in this master thesis is as below:

Hypothesis 2 (H2): *IFRS 16 adoption negatively impacts the financial analysts' EBITDA forecasts.*

4. Research design

4.1.   Sample selection

With the main objective of investigating the impact of IFRS 16 adoption on the analysts' earnings forecasts focusing European market, the study population is listed European firms included in the STOXX 600 index. The constituent of European listed companies in the STOXX 600 index in Thompson Reuter database extracted during May 2020 amounted to 509. Thereafter, 65 firms are missing financial data for the year ended 2019 due to different financial year-end, leaving 444 firms as observations in the regression.

The adoption year is the 12-month financial year ended 31 December 2019, as the effective date of IFRS 16 is the period beginning on or after 1 January 2019.

The initial sample is distributed across sixteen European countries, as shown in panel A, Table 4. As can be seen, the representation of United Kingdom firms is significant (23%) which is consistent with the sample distribution in most EU-based studies according to studies by Daske et al., (2008), and Leung and Verriest (2015).

The observations missing financial analysts' earnings forecasts data available from the I/B/E/S summary database amounted to 65. Those observations are excluded from the total sample, leaving the final sample consisting of 431 firms.

Table 4: Sample composition and size

Panel A: Initial sample composition categorized by country		
Country	Firm observations	Percent
Austria	8	2%
Belgium	14	3%
Denmark	20	4%
Finland	15	3%
France	77	15%
Germany	65	13%
Ireland	8	2%
Italy	26	5%
Norway	15	3%
Poland	8	2%
Portugal	1	0%
Spain	18	4%
Sweden	43	8%
Switzerland	47	9%
The Netherlands	28	6%
United Kingdom	116	23%
Total	509	100%

Panel B: Number of observations used in the analysis of the relationship between operating lease capitalization under IFRS 16 and financial analysts' earnings forecasts

Sample	Number of observations	Percent
Initial sample		
Less: Firm missing I/B/E/S forecasts	13	2%
Less: Missing observations	65	12%
Final number of observations used in the regression	431	85%

4.2. Empirical models

The following regression models are developed to test the impact of IFRS 16 adoption on financial analysts' earnings forecasts:

Model (1):

Analysts' Forecast Error for Earnings $(LOGDIFF)_i = \alpha + \beta_1 (LOGROUTA) + \beta_2 (LOGLNEARNCHG) + \beta_3 (LOGROESTD) + \beta_4 (LOGLNEPS) + \beta_5 (LOGEV) + \beta_6 FOLLOW + \beta_7 LOSS + \beta_8 IND + \varepsilon$

Model (2):

Analysts' Forecast Error for EBITDA $(LOGDIFF2)_i = \alpha + \beta_1 (LOGROUTA) + \beta_2 (LOGLNEARNCHG) + \beta_3 (LOGROESTD) + \beta_4 (LOGLNEPS) + \beta_5 (LOGEV) + \beta_6 FOLLOW + \beta_7 LOSS + \beta_8 IND + \varepsilon$

Model (1) is employed to test the first hypothesis, with the attempt to investigate the relationship between IFRS 16 adoption and the accuracy in the estimations of earnings from financial analysts in 2019. Model (2) is used for the purposed of testing the second hypothesis which is the relationship of IFRS 16 adoption and financial analysts' EBITDA forecast accuracy.

Table 5 below summarizes the variables in the models:

Table 5: Summary of variables definition

Variables	Definitions
Dependent variables	
Analysts' earnings forecast errors (LOGDIFF)	The natural logarithm of analysts' earnings forecast errors (DIFF), where DIFF is the absolute error in the median forecast (actual earnings – mean forecasts) scaled by stock price
Analysts' EBITDA forecast errors (LOGDIFF2)	The natural logarithm of analysts' EBITDA forecast errors (DIFF2), where DIFF2 is the absolute error in the median forecast (actual EBITDA – mean forecasts) scaled by revenue

Independent variables

IFRS 16 Right of use (LOGROUTA)	The natural logarithm of the right of use of assets. IFRS 16 adoption impacts on financial statements represented by the amount of right of use of assets categorized as non-current assets on the balance sheet of the firm. The amount is scaled by the total asset.
Standard deviation of EBITDA (LOGLNEARNCHG)	The standard deviation of 5-year EBITDA (before the forecast year). The amount is then taken natural logarithm.
Standard deviation of return on equity (LOGROESTD)	The standard deviation of 5-year ROE (before the forecast year). The amount is then taken natural logarithm.
Standard deviation of earning per share (LOGLNEPS)	The standard deviation of 5-year EPS (before the forecast year). The amount is then taken natural logarithm.
Market value of the firm (LOGEV)	The natural logarithm of Market value of the firm.
Number of analysts follow (FOLLOW)	The number of estimates at the time of the forecast
Loss (LOSS)	Dummy variable equal to 1 if the firm makes a loss in the financial year 2019, and 0 otherwise.
Industry (IND)	Dummy variable equal to 1 if the firm is in industries which are expected to be heavy on operating leases (Retail, Airlines, and Telecommunications), and 0 otherwise.

4.3. Impact of IFRS 16 measurements

The right of use of assets is chosen as the proxy for IFRS 16 impacts on the financial statements of the firms. As discussed in section 2.2, the fundamental changes of IFRS 16 compared to IAS 17 is the single accounting model for leases, in which operating leases are capitalized and accounted the same as finance leases instead of being treated as off-balance sheet items. Another way to see this change is that leases are accounted for as if the company had borrowed funds to purchase an interest in the leased assets. The initial amount of lease liability, plus any lease payment made to the lessor before the start date, plus direct cost incurred (if any), minus any lease incentives received are how the operating leases capitalization calculated. The idea follows the right of use model which reached a large consensus among professionals and regulations when IFRS 16 was formed (De Martino, 2011). In other words, those rights that the lessee has obtained by the lease contract are calculated, sometimes estimated, are recorded in the balance sheet. Along with the recognition of the right of use of the asset on the asset side, the corresponding lease liability is recorded on the liability side of the balance sheet.

Other financial figures which are altered by IFRS 16 are the depreciation expenses and interest expenses. Depreciation expenses are calculated based on the right of use of assets on a straight-line basis, if the firm follows the cost model, or as an impairment expense if the firm follows the fair value model. Interest expenses, on the other hand, are recognized based on the lease liabilities.

Before the effective date of 1 January 2019, firms who are heavy on operating leases, have disclosed the likely impact of IFRS 16 in future period financial statements. The estimated current operating lease commitment and right of use assets are chosen as a reasonable proxy to give the public an idea about the impact when the new rules take effect and were published in firms' financial statements of 2018 and sometimes press release. Impact on the income statement and cash flow is also presented, however, as that amount is significantly small compared to the right of use and lease liabilities because of the lease terms are normally long (IFRS 16 allows firms not to record a right of use of assets when the lease term is less than 1 year). For example, this paragraph is taken from the press release of Kesko Corporation on 25 March 2019:

"In the consolidated balance sheet of 31 December 2018 drawn in accordance with IFRS 16, right-of-use-assets total €2,062 million, and the corresponding interest-bearing liabilities €2,294 million, […] results in a €96 million increase in the comparable operating profit for […]

January-December 2018, as it is burdened by depreciation of right-of-use assets instead of rents. The interest costs on interest-bearing liabilities [...] amounted to €99 million for 2018. The net impact of the implementation of the standard on the Group's profit before taxes was €-2.3 million in 2018. The impact on the January-December comparable earnings per share was €-0.02/share." (Kesko, 2019)

As can be seen, IFRS 16 impacted several financial figures of the financial statements, however, right of use appeared to be the best-served proxy for the changes, as it comprehends the long-term perspective towards leasing activities of the firm, by taken into account all cost-related, lease terms, and discount rate. The right of use of the assets (ROU) is taken from firms' financial statements and then scaled by total assets of the firm at the year-end. Another problem is that ROU, after being scaled, is very small, and for some firms without any leases, the amount can be zero. To utilize the natural logarithm transformation, a common practice by adding 1 to every observation is applied (see Bellégo and Pape (2019)).

4.4. The dependent variable: analysts' forecast data

The data for analysts' earnings forecasts and EBITDA forecasts, analysts following, and actual earnings and EBITDA are extracted from the I/B/E/S International Detail History Files.

The accuracy of financial analysts' forecast is measured by the forecast errors. The amount is calculated in consistency with prior studies (Dehning, Pfeiffer, & Richardson, 2006; Lehavy, Li, & Merkley, 2011) in which the earnings error is the difference between the actual earnings per share and the mean forecast (EPS – mean forecast), scaled by the stock price at the beginning of the year.

The error metrics are calculated as below:

$$DIFFi = \left| \frac{(AEPSi - FEPSi)}{Pi} \right| \quad (*)$$

$$DIFF2i = \left| \frac{(AEBITDAi - FEBITDAi)}{Ri} \right| \quad (**)$$

(*) The earnings forecast error of firm i, $DIFF_i$ is calculated by the actual EPS of firm i ($AEPS_i$) for the financial year 2019, minus the mean forecasted earnings of firm i ($FEPS_i$) in 2019, and scaled by the close stock price of the firm in the beginning of 2020, which is P_i.

(**) The EBITDA forecast error of firm i, $DIFF2_i$ is calculated by the actual EBITDA ($AEBITDA_i$) of firm i in 2019, minus the mean forecasted of EBITDA of firm i in 2019, $FEBITDA_i$, and scaled by the revenue of the firm in 2019, which is R_i.

In addition, in order to prompt the normality of regression residuals, the natural log of the measures is used as a widely used procedure (Jonnes, 2007).

4.5. Control variables

Prior studies have identified certain variables that impact analysts' forecast errors. Since prior research indicate that large firm delivers more information about future earnings and therefore are more predictable (Hope et al., 2006), a variable to control for firm size is added to the model. Following Firth and Gift (1999) and Yu (2020), a natural logarithm of the market value of the firm at the beginning of the year is employed as a proxy for firm size (LOGEV).

The number of analysts following a firm is also incorporated to represent the information environment. According to the research by Hope et al., (2006), this factor negatively associated with analysts' earnings forecast dispersion.

The third, fourth, and fifth control factors are used to control for volatility and forecast difficulties, in which standard deviation of return on equity (ROE), EBITDA, and EPS over the preceding five years are calculated. The basis for this idea is confirmed in prior studies that forecast errors are expected to be larger for firms whose financial performance is more volatile and unstable (Hope et al., 2006).

Previous empirical studies showed that loss-making firms are more difficult and more uncertain to forecasts (Byard, Li, and Weintrop, 2006). Hope et al. (2006) also pointed out that analysts' incentives to make precise predictions for lost firms are smaller as these firms are less likely to generate trading revenue. Based on that, a dummy variable controlling for negative net income firm (LOSS) is added to the model, with the value of 1 for loss firm and 0 otherwise.

Last but not least, a dummy variable controlling for the industry (IND) is used as some industry is proved to employed more operating leases than others. As discussed in the previous chapter, the survey by EY in June 2019 for Fortune 500 companies showed the average impact on

assets and liabilities due to IFRS 16 to be the most significant for Airlines, Retails, and Telecommunications (EY, 2019). Therefore, IND is assigned the value of 1 for firms within those three industries, and 0 if not.

5. Empirical results

5.1. Descriptive statistics

Table 6 below shows the descriptive statistics of dependent and independent variables employed in the models. There are a total of 431 observations or analysts' forecasts, in which 192 companies disclosed IFRS 16 in their financial statements, which means the right of use of assets and lease liabilities are recognized in their balance sheets. It is noted that 100% of companies in Travel and Leisure (which include airline firms), Logistics, and Basic Resources industries applied IFRS 16 in 2019. Other industries having a high rate of IFRS 16 applications include Retail (92%), Automobiles (91%), Constructions (90%), and Telecommunications (83%). Banks and Financial Services, on the other hand, showed a very low rate of around 20% which is expected.

Table 6: Descriptive statistics

	Mean	Median	Minimum	Maximum	Standard deviation
Dependent variables					
DIFF	9,326.24	2,314.89	0.03*	232,375.72	22,430.23
DIFF2	696.50	2.36	0.00*	221,550.77	11,962.47
Independent variables					
ROUTA	0.02	-	-	0.34	0.05
EV	21,402	9,855.50	1,618.75	280,393.22	33,531.76
LNEPS	2.90	0.76	0.02	216.16	12.28
LNEARNCHG	803.12	220.15	2.85	25,325.08	1,924.19
ROESTD	12.10	3.71	0.02*	870.58	61.95
LOSS	0.01	-	-	1.00	0.12
IND	0.08	-	-	1.00	0.28
FOLLOW	17.28	18.00	1.00	39.00	6.81

*For observations with zero or nearly zero values, in order to do the logarithm transformation, a constant number of 1 is added to all observations in those fields, as a common and approved practice (see Bellégo and Pape (2019)).

5.2. Main results

The impacts of the adoption of IFRS 16 for listed firms in Europe on analysts' earnings and EBITDA forecast errors are examined. Regression result are presented in Table 7 and Table 8. The adjusted R-squares are 15.4% and 18.37% respectively, which suggest that these models explain a reasonable amount of the variation in financial analysts' earnings and EBITDA forecast errors.

5.2.1. The impact of IFRS 16 adoption on analysts' earnings forecast errors

The results presented in Table 7 show that the adoption of IFRS 16 in which operating leases are capitalized and presented in firms' balance sheet affect the precision of financial analysts' earning forecasts. Regarding H1, it is expected that there is a significant association between the amount of right-of-use of assets, which represent IFRS 16 major impact, and analysts' earing forecasts errors, but without a predicted sign.

Consistent with H1, the results suggest that there is a significant association between the right-of-use amount and analysts' earning forecast errors. In addition, it is indicated from the findings that the coefficient of the interaction between IFRS 16 adoption represented via right-of-use of assets is negative and significant at 5%, which suggest that a smaller analysts' earning forecast errors after the adoption of IFRS 16. In other words, the capitalization of operating leases improves the analysts' prediction on firms' earning per share. This finding supports the proposition that off-balance-sheet financing activities impair the decision usefulness of the financial statements and the estimations of financial statements' users regarding operating leases capitalization are insufficient and imprecise.

In total, the finding suggests that IFRS 16 adoption has improved the predictability of earnings. Therefore, the result support the IASB view that operating lease capitalization improves the comparability and transparency of financial statements.

Regarding control variables, as expected, the coefficients of EBITDA, and EPS volatility (LNEARNCHG, and LNEPS) are positive and significant at 1%, which suggest that the more volatile the earnings and EBITDA of the firms during previous years, the harder for analysts to make predictions for coming years. Firm size, standard deviation of ROE is all significant. However, other control variables including the number of analysts following the firms (FOLLOW), whether the firms making loss (LOSS), and industry (IND) do not show significant relationship with the earnings forecast errors.

Table 7: Regression Analysis of the relationship between right of use of assets and analysts' earnings forecast errors under IFRS 16

Variables	Expectation	Estimate
(Intercept)		10.10***
ROUTA	H1 (-)	-7.23**
Control variables		
EV		-0.48**
ROESTD		-0.17*
LNEPS		0.49***
LNEARNCHG		0.30***
LOSS		1.16
IND		0.65
FOLLOW		0.03
Number of observations		431
Adj. R-sq		15.4%
F-statistic		10.78 on 8 and 422 df
p-value		7.63e-14
Significant codes: 0'***' 0.001 '**' 0.01 '*' 0.05'.' 0.1 ' ' 1		

Note:

Table <> presents the findings of the regression analysis investigating the impact of right of use of assets under IFRS 16 on analysts' earnings forecasts errors (H1). Model (1):

$(LOGDIFF)_i = \alpha + \beta_1 (LOGROUTA) + \beta_2 (LOGLNEARNCHG) + \beta_3 (LOGROESTD) + \beta_4 (LOGLNEPS) + \beta_5 (LOGEV) + \beta_6 FOLLOW + \beta_7 LOSS + \beta_8 IND + \varepsilon$

* Statistical significance at the 10% level (two-tailed).

** Statistical significance at the 5% level (two-tailed).

*** Statistical significance at the 1% level (two-tailed).

Variable definition:

LOGDIFF is defined as the natural logarithm of DIFF, where DIFF is the squared error in a median forecast (actual earnings − mean forecast) ^2 scaled by stock price

LOGROUTA is the natural logarithm of ROUTA, where ROUTA is the right of use of assets of the firm disclosed in the balance sheet, scaled by total assets of the firm

LOGROESTD is the natural logarithm of standard deviation of five years' return on equity

LOGLNEARNCHG is the natural logarithm of the standard deviation of five years' EBITDA

LOGLNEPS is the natural logarithm of the standard deviation of five years' EPS

LOGEV is the natural logarithm of market value

FOLLOWING is the number of estimates

LOSS is a dummy variable equal to 1 if firm "i" has negative earnings and 0 otherwise.

ND is a dummy variable equal to 1 if firm "i" is in the list of industry which are expected to be heavy on leases (Travel and Leisure, Retail, Telecommunications, and Logistics)

5.2.2. The impact of IFRS 16 adoption on analysts' EBITDA forecast errors

Table 8 showed the results regarding H2 and Model (2), which examines the impact of IFRS 16 adoption on analysts' EBITDA forecast errors. Regarding H2, the right-of-use of assets as a result of operating lease capitalization under IFRS 16 is expected to have a significant association with EBITDA prediction from financial analysts.

Based on the regression result, there is a negative relationship between EBITDA forecasting errors and the right-of-use of assets, which suggests that the adoption of IFRS 16 can improve the EBITDA prediction. However, the coefficient is not statistically significant. This finding somehow suggests that the changes in depreciation expenses under IFRS 16 may confuse the analysts for the first year IFRS 16 adopted. Under IFRS 16, right-of-use of assets are recognized on the balance sheet, and along with this, the depreciation expenses from those assets are recognized in income statements, instead of only recognizing the rental expenses for leases as previous years under IAS 17. As a result, such drastic difference significantly impacts the EBITDA amount, especially for firms that are heavy on leases. Specifically, EBITDA is higher under IFRS 16 compared to IAS 17, ceteris paribus, due to the fact that the rental expenses from operating leases contract, which is included in EBITDA calculation under IAS 17, is now excluded in EBITDA calculation under IFRS 16 as those expenses are recognized in the income statements under the caption of Depreciation expenses (from right-of-use of assets) and Interest expenses (from leases liabilities)[1].

To conclude, no significant association between the right of use of assets and financial analysts' EBITDA forecasts errors is found. The result is justified by the fact that the reclassification of rental expenses under IAS 17 to depreciation expenses and interest expenses under IFRS 16 which are omitted when calculating EBITDA, may create confusion for analysts. Another reason is that this is the first year of the adoption and it will take some time for the learning curve to be improved.

For control variables, as expected, the coefficient of ROE volatility (ROESTD) is positive and significant at 1%, which suggests that the more volatile the EBITDA of the firms during previous years, the harder for analysts to make predictions for coming years. Firm size (EV) is also significant. However, other control variables including the number of analysts following the firms

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[1] Please refer to Table 1: Comparison of accounting treatments for operating leases under IAS 17 and IFRS 16

(FOLLOW), whether the firms making a loss (LOSS), and industry (IND) do not show a significant relationship with the earnings forecast errors.

Table 8: Regression Analysis of the relationship between right of use of assets and analysts' EBITDA forecast errors under IFRS 16

Variables	Expectation	Estimate
(Intercept)		-5.01***
ROUTA	H2 (+)	-0.31
Control variables		
EV		0.66***
ROESTD		0.33***
LNEARNCHG		0.05
LOSS		NA
IND		-0.33
FOLLOW		-0.01
Number of observations		340
Adj. R-sq		18.37%
F-statistic		13.79 on 6 and 335 df
p-value		5.15e-14
Significant codes: 0'***' 0.001 '**' 0.01 '*' 0.05'.' 0.1 ' ' 1		

Note:

Table <> presents the findings of the regression analysis investigating the impact of right of use of assets under IFRS 16 on analysts' EBITDA forecasts errors (H2). Model (2):

$(LOGDIFF2)_i = \alpha + \beta_1 (LOGROUTA) + \beta_2 (LOGLNEARNCHG) + \beta_3 (LOGROESTD) + \beta_4 (LOGLNEPS) + \beta_5 (LOGEV) + \beta_6 FOLLOW + \beta_7 LOSS + \beta_8 IND + \varepsilon$

* Statistical significance at the 10% level (two-tailed).

** Statistical significance at the 5% level (two-tailed).

*** Statistical significance at the 1% level (two-tailed).

Variable definition:

LOGDIFF2 is defined as the natural logarithm of DIFF2, where DIFF2 is the squared error in a median forecast (actual EBITDA − mean forecast EBITDA) ^2 scaled by revenue

LOGROUTA is the natural logarithm of ROUTA, where ROUTA is the right of use of assets of the firm disclosed in the balance sheet, scaled by total assets of the firm

LOGROESTD is the natural logarithm of standard deviation of five years' return on equity

LOGLNEARNCHG is the natural logarithm of the standard deviation of five years' EBITDA

LOGLNEPS is the natural logarithm of the standard deviation of five years' EPS

LOGEV is the natural logarithm of market value

FOLLOWING is the number of estimates

LOSS is a dummy variable equal to 1 if firm "i" has negative earnings and 0 otherwise

IND is a dummy variable equal to 1 if firm "i" is in the list of industry which are expected to be heavy on leases (Travel and Leisure, Retail, Telecommunications, and Logistics)

6. Discussion of the results

The paper examines the impact of IFRS 16 adoption on financial analysts' earnings forecast accuracy. Using the sample from more than 400 top listed firms in Europe, I examined whether the capitalization of operating leases affect financial forecast earnings for the year 2019, which is also the first year the new framework is effective. Based on the data from individual analysts' forecasts from I/B/E/S, it is illustrated from the results that the adoption of IFRS 16 helps to improve the accuracy of financial analysts' prediction on firms' earnings. The finding is consistent with prior researches which proved that mandatory IFRS adoption benefits the capital market in terms of increasing the comparability which reduces the forecast error and forecast dispersion (Daske, Hail, Leuz, and Verdi, 2008); De Franco, Kothari, and Verdi, 2011); Tan, Wang, and Welker, 2011). The result also confirmed previous research on IFRS adoption for the European market that positive effects on the accuracy of financial analysts' earnings forecasts are detected (Horton and Serafeim, 2010; Glaum, Baetge, Grothe, and Oberdörster, 2011; Pascual Garrido-Miralles & Sonia Sanabria-García, 2014). Especially, the result confirmed the research of Ge (2016) which indicated that disclosed information of off-balance-sheet operating leases has the additional explanatory power in future earnings' prediction.

The paper also takes efforts in examining the impact of IFRS 16 adoption in financial analysts' EBITDA forecasts. The hypothesis is developed not based on prior studies, but the motivation that IFRS 16 creates significant changes in EBITDA calculation. The paper expected to find a negative relationship between IFRS 16 adoption and EBITDA forecast accuracy. However, no statistic significant relationship is found which suggests little or no impacts on financial analysts' forecasts of EBITDA. This finding is somehow consistent with the suggestions and expectations from Big4 firms that when IFRS becomes effective, EBITDA will look differently and further considerations should be taken when performing business valuation using EBITDA multiple (Deloitte, 2019; PwC, 2019).

7. Conclusion and suggestions for future research

This paper details the changes in lease accounting under IFRS 16 in comparison with IAS 17 and documents an improvement in financial analysts' earnings forecast error after the adoption of IFRS 16. The analysis was performed on a sample of the largest listed firms in Europe.

The findings support the objective of IASB when releasing the new leasing accounting framework of improving the decision usefulness of financial statements and the transparency of the overall disclosure environment. The findings suggest that by capitalizing operating leases to balance sheet, IFRS 16 provides more relevant information than its predecessors, at least in terms of the predictive ability of financial analysts' earnings forecasts. The paper's result provides timely evidence about the relationship between operating lease capitalization and the predictability of earnings under IFRS 16. This evidence also expands our understanding of the impact of IFRS 16 on the quality of financial statement outcomes.

Regarding the prediction of EBITDA, as the application of IFRS 16 directly and drastically impact the calculation of EBITDA, no statistically significant association was found, which is not surprising. The result regarding this also suggests that analysts need time to improve the learning curve as this is the first year of adoption.

Certain limitations should be considered when interpreting the results of this study. First, the results may be influenced by the sample distribution due to the fact that the majority of firms are located in only three countries: France, Germany, and the United Kingdom. However, according to Armstrong et al. (2010), and Daske et al. (2013), all EU-based studies are suffered from this limitation. In addition, the impact of IFRS 16 is examined via the right-of-use of assets, however, the new standard also impacts other elements of financial statements, including lease liabilities, operating, depreciation and interest expenses, cash flow, and lease disclosures. The paper also only investigates the impact on the financial reporting of the lessees, while regarding the lessors, significant changes regarding the disclosure of the risk of underlying assets are also an opening question for further study. Moreover, this paper was performed based on the data of the first-year adoption of IFRS 16, therefore, the data of firms whose financial year-end is not 31 December 2019 are missing by the time of this analysis. Future studies taking into accounts of these samples may improve the results. It is also reasonable to expect a more thorough analysis if the period of the study is expanded, in which future studies can proceed in the next few years when

more data are available. And last but not least, despite efforts involved to reduce subjectivity, it is impossible to assure that the study is free of all subjectivity.

Future research may examine the impact of IFRS 16 on the lessors' financial statements as mentioned above. Furthermore, in this paper, only the forecasts of earnings and EBITDA are investigated. Interested researchers may perform further studies in the consequences of IFRS 16 adoption on different topics such as information asymmetry and firm values. Regarding information asymmetry, it is expected to decrease as IFRS 16 provides a more complete picture regarding the business activities of the firms compared to its predecessors, and it also helps to solve the problem of off-balance-sheet financing which has been long to be criticized for its transparency. Thanks to IFRS 16, the gaps between outsiders and firms' management and between privately informed and normal investors are shortened. Regarding the firm values, as commented from Deloitte (2019) that business valuation should not be impacted by IFRS 16, however, as financial figures such as EBITDA, total assets, total liabilities, cash flow, and financial ratios are impacted, it is worth examining whether any significant effects or any difficulties created for valuation tasks. Another topic is that if a longer period of time is studied, the result regarding EBITDA might be different compared to the result of this paper because analysts' are expected to be more experienced with the fundamental changes in EBITDA calculation under IFRS 16.

8. References

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