Department of Business and Management

Chair of Financial Statement Analysis

IFRS 16

An analysis of the impact on the financial statements

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Dedico questo lavoro alla mia famiglia. Non riuscirei ad immaginare una fonte di ispirazione migliore. Spero che queste poche parole possano far trasparire l'immenso amore che mi lega a voi.

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Introduction

In January 2016, the IASB (International Accounting Standard Board) published a document in which it highlighted the major issues related to the accounting of leasing contracts. Until the 2018 financial year, listed companies accounted for expenses arising from leasing contracts in accordance with the provisions of IAS 17. This accounting principle provided for a double accounting method depending on how the lease was classified: operating lease and financial lease. The operating lease provided for the recording of the lease expense among the operating expense of the income statement (in fact identifying the lease contract as a simple lease contract), while the accounting of the financial lease required the recognition of leased assets and leased liabilities directly in the financial statements, with the consequential recording of interest and depreciation. The main problem was that the possibility of choosing the classification of leasing was left to the company: once the categories of leasing had been defined, in fact, the companies could enter into ad hoc contracts to ensure that a leasing was recognized in one way or another. The ambiguity that was generated did not affect the balance sheet of the companies only at a formal level: the possibility of indicating or not in the balance sheet some assets and liabilities had a clear impact on the measurement of business performance and published results. As was pointed out during the discussion, the lease accounting method was used as a tool to reduce and mask the amount of debt by some companies. The problem of off-balance sheet debt (resulting from the classification of the related leasing contracts as operating leases) has made the comparability of companies' financial statements more complex, if not impossible. To meet this need, more qualified investors, such as rating agencies, have developed advanced methodologies for assessing the real weight of leases on company balance sheets (e.g. the multiples method presented below). It is therefore in this context that the accounting innovation strongly promoted by the IASB is introduced. The introduction of the new IFRS 16 standard was preceded by the publication of some preliminary documents (so-called "Exposure Drafts") and by a period of consultation with representatives of the world's standard setters, the main rating agencies and the companies themselves. The discussion period ended with the official publication of IFRS 16 and its adoption by companies for the year 2019. The changes introduced by the IASB mainly concern the classification of leases: the differentiation into operating leases and financial leases, in favour of a single category of leases, has been eliminated. IFRS 16 requires that all leased assets be recognised in the financial statements under the item "right of use", while the corresponding payment obligations (calculated as the present value of future payments) are indicated under current/non-current lease liabilities. In order to meet the needs of companies, low-impact leases (with a value of less than $ 5 000 or with a duration of less than 12 months) may be excluded from the obligation to be reported asleased assets and so accounted in the Balance Sheet. At the same time, it is necessary to record in the Income Statement the values related to depreciation and interest expense. On the basis of the accounting innovation introduced by the IASB, this paper aims to verify and analyse the effects of IFRS 16 on the financial statements of eight companies operating within the Oil and Energy Industry. As has been noted during this discussion, the adoption of the new accounting standard has a different impact depending on the industry: for example, companies operating within the Retail and Arilines industry are those with a greater impact on the financial statements. The reasons for this evidence are to be found in the greater weight that leases accounted for using the operating method and therefore off-balance-sheet. The companies chosen to evaluate the effects of IFRS 16 are: Enel, Gazprom, Eni, Bp plc, Equinor, Petroleo Brasileiro, Lukoil and Novatek. Following a careful analysis of the quarterly reports (as at 31/12/2019) published by the various companies, the firms that provided sufficient information to reconstruct and measure the main effects of the recognition of new leases were chosen.

In order to obtain the most complete results achievable, the impact analysis was carried out taking into consideration the Balance Sheet, the Income Statement, the Cash Flow Statement and the most indicative metrics (Lease Intensity ratio, Debt to Equity ratio, Return on Assets ratio, Net Financial Position, Interest Coverage ratio and Current Ratio). In order to measure the effects of the transition from IAS 17 to IFRS 16, the quarterly data that already incorporated the adjustments to IFRS 16 were first reported. Subsequently, by analysing the notes included in the reports, it was possible to reconstruct the financial statements so as to exclude the effects of the accounting adjustment. On the basis of this information, the changes on all the financials indicated were calculated.

From the study conducted, it emerged that the impact of the adjustment on the industry is not particularly heavy: the result obtained, as regards the median of the increase in debt, is 11.03%, a figure certainly higher than the 4% found by the analysis Pwc (PWC, 2016). In this regard, it should be noted that eight companies do not represent a statistically significant sample; anyway, it is not the final aim of this work to analyse the impact of the IFRS 16 on the whole industry. Continuing with the analysis of the results, there is an average decrease in the value of equity of about -0.23%. This figure is consistent with the preliminary analysis carried out by the IASB, according to which equity decreases due to the more than proportional increase in liabilities with respect to assets. As regards the results observed on the Income Statement, the adaptation to IFRS 16 involves a reduction in operating expenses, and therefore a corresponding increase in EBITDA. In particular, the average reduction in operating expenses was -3.69%, while the average increase in EBITDA was 6.87%. Subsequently, the effect on depreciation is examined: the capitalisation of leasing expenses leads to an increase in depreciation of approximately

15.25%. The cumulative effect of the reduction in operating expenses and the increase in depreciation on EBIT resulted in an average increase of 2.15%. The transition from IAS 17 to IFRS 16 implies an increase in interest expenditures linked to lease contracts of approximately 17.32%. It was considered appropriate to exclude the possible effects of the new accounting standard on taxation because this depends on the tax framework of the country in which the company operates, and therefore falls outside the specific scope of this report. Continuing with the analysis, there was a zero effect on EBT due to the compensation between the reduction in operating expenses and the increase in depreciation and interest expenses.

Since IFRS 16 does not affect the company's ability to generate a profit, the transition from the old to the new accounting standard does not affect the net cash flow, but only the distribution of the cash generated by the various activities. In particular, the cash flow from operating activities shows an average increase of 7.88%, caused by the increase in depreciation (which is part of the calculation of the cash flow from operations); the cash flow from investing does not change, with the exception of Enel, which shows an increase of 0.62%, Eni, whose change amounts to 1.80% and BP, whose value is 1.97%. This result is in clear contrast with the analysis published by the IASB (International Accounting Standard Board, 2016) according to which the cash flow from investing activities does not change. The reason for this is that some companies report a lower share of capital expenditures in the transition to IFRS 16. Finally, the cash flow from financing activities decreased on average by 30.45%, following the recognition of lease payments.

The analysis concludes with the presentation of the impact of the capitalisation of leasing contracts on the ratios indicated above. First of all, the average lease intensity ratio is 6.48% (while the median is 5.80%); in general, the companies most affected by the adaptation to IFRS 16 are Lukoil and Petroleo Brasileiro (10.32% and 15.69% respectively). This result translates into a significant increase in the debt to equity ratio, the average calculated is 170.41%, while the median is 25.26%. The reasons for this marked difference are to be found in the increase in Lukoil's debt to equity ratio of about 1201.22%, due to the variation from 0.37% (IAS 17) to 4.87% (IFRS 16). Consistently with the increase in assets, due to the recognition of new assets within the right of use item, the Return on Assets decreased on average by 1.46%. As regards Net Financial Position, there was an increase (the average was 22.72%) due to the increase in lease liabilities. The Interest Coverage ratio decreased by 10.2% because the percentage increase in interest expense was higher than the increase in EBIT. Finally, the average current ratio is affected by an average negative change of 5.15% following the increase in current liabilities.

These are the main findings of the analysis of the impact of IFRS 16 on the companies indicated.

Chapter 1 - Leasing Contracts

A lease is a contract between the lessee and the lessor, in which one party (the lessor) agrees to rent an asset, owned by the other party (the lessee), in exchange of a stream of periodic payments. Generally, there are little or no upfront payments, whilst, the contract specifies what happens at the end of the leasing period. The lessee has the option to purchase the asset, to return the asset or to extend the leasing. The obligation for maintenance and the related costs can be charged to the lessee.

1.1. Legal Framework

In Italy, leasing contracts do not fall under a specific category and are therefore not regulated directly by the Italian Civil Code. The legislation on leasing refers to that of the atypical contract and is the result of a combination of two other contracts: sale with reservation of title (art. 1523 c.c.) and lease contract (art. 1571 c.c.). The article on the sale under reservation of title states that the buyer acquires ownership of the property in question only upon payment of the last installment, but assumes the risks from the time of delivery (ex art. 1523 c.c.); article 1571, on the other hand, regulates rent as the contract by which one party undertakes to make the other party enjoy an asset for a given time, for a certain amount of money (ex art. 1571 c.c.).

1.2. Leasing Types

Until 2016 (year in which the IASB, International Accounting Standard Board, developed the new IFRS 16), lease contract was defined in IAS 17. The old IAS 17 defined two types of leasing: financial leasing and operating leasing. The definition of the main types of leasing is preliminary to the analysis of the accounting issues and therefore of the reasons that led to the reform of the related accounting principle. The main difference between the two types of leasing is the accounting treatment of the operation: it is called financial leasing if the asset is recorded on the balance sheet, otherwise it is considered as operating.

1.2.1. Operating Leasing

In the operating leasing, the risks and rewards are not transferred to the lessee, so the costs related to the use of the asset are accounted as operating costs and are not recorded on the balance sheet. It is considered as a rent contract with a number of related services. The lessor is responsible for the maintenance of the asset and retain its ownership at the end of the payments. Because of the nature of the contract, the duration of the leasing is the same as (or less than) the economic life of the asset, for this reason, at the end of the contract, there is no provision for the purchase. In general, companies use operating leases when they need to use a highly obsolescence and standardized asset, but do not want to purchase it. The main difference with financial leasing is, indeed, the absence of a final purchase of the asset, which therefore remains the property of the lessee. Since there is no final purchase of the asset, the fee is not calculated based on the cost of the asset but is paid only for the enjoyment of the asset itself. The obsolescence of the leased object is therefore on the lessor.

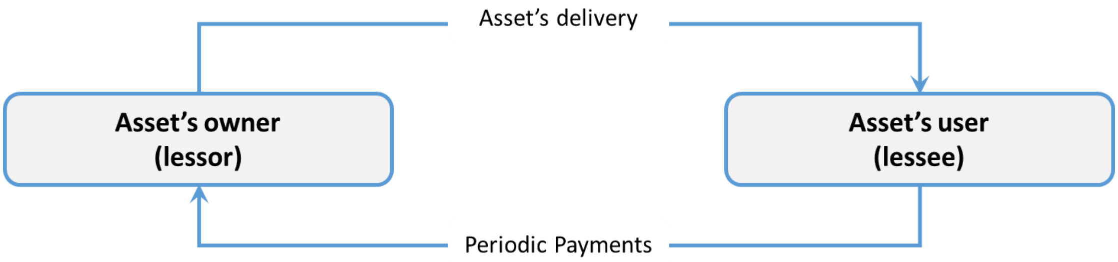

Figure 1 Operating leasing - main operations

Advantages

The main advantages associated with operating leasing are listed below:

- you have the opportunity to take advantage of an asset with high obsolescence, without the need to purchase it;
- since no purchase is made, the user does not pay the entire value of the asset, but only part of it (this is because, usually, the rental period does not cover the useful life of the asset);
- certainty of the cost of using the asset: the rent paid includes the rent and all the ancillary services (the risks associated with the asset are all borne by the lessor);

1.2.2. Financial Leasing

Unlike operating leases, finance leases require the leasing company to purchase an asset created ad hoc by the company that produces it, based on the specific needs of the user. Subsequently, the lessee receives the asset against payment of a periodic fee. At the end of the leasing contract there is a purchase option, which may or may not be exercised, by paying the final rent; in this case the lessee becomes the owner of the asset. Alternatively, the lessee may recede from the contract by returning the property to the lessor. Since this type of lease involves purchase, the risks and expenses associated with maintenance are charged to the user of the asset. The main difference between the two forms of leasing is that financial leasing is identifiable as a form of technical financing in which the user purchases an asset through periodic payments.

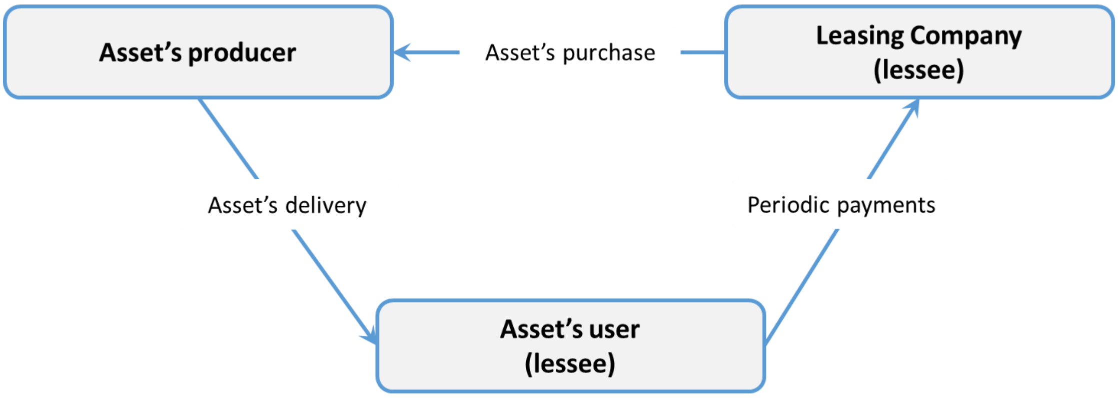

Figure 2 Financial leasing - main operations

Advantages

The main advantages associated with financial leasing are listed below:

- the possibility to finance the purchase of an asset, made according to specific needs;
- the possibility to purchase an asset through leasing allows companies to use the liquidity for other investments and not to worsen their net financial position.
- tax advantages linked to the deductibility of the royalties paid;

Contract's terms	***Operating leasing***	***Financial leasing***
Purpose	Use of the asset	Finance the asset's purchase
Asset's feautures	Standardized assets with high obsolescence	Ad hoc built assets
Length	Less than economic life of the asset	Same as economic life of the asset
Risks related to the asset's usage	Charged to the lessor	Charged to the lessee
Maintenance costs	Included in the periodic payments	Not included in the periodic payments
Options at the end of the contract	Renewal of the contract	Renewal of the contract or buy-back of the asset

Table 1: Differences between Operating and Financial Leasing

1.3. Accounting Procedures

The accounting procedure varies according to the accounting standards followed (OIC or IAS/IFRS) and the type of lease in question. It is important to note that, following the IASB's reform of the international accounting standards, as of January 1, 2019, all listed companies must apply the IFRS 16 accounting standard that governs the method of accounting for leases. This topic, which is a central part of this work, will be dealt with in detail below. For the time being, the accounting methods required by the OIC and the old IAS 17 will be presented. National accounting standards require the application of the capital method for both types of leasing, while international accounting standards require accounting by financial method for financial leasing, and by capital method for operating leasing.

1.3.1. Capital Method

The capital method focuses on form rather than substance: the asset is in fact recorded in the balance sheet of the company that formally owns it. From an accounting point of view, the recognition of operating leases is rather straightforward, since the transaction is considered to be a lease agreement: both parties record rental income and expenses and, as a balancing entry, receivables and payables to customers or suppliers. The asset, and its depreciation, is recorded only in the financial statements of the lessor. In the case of finance leases accounted using the capital method, at the time of buy-back the asset must be recognised in the lessee's balance sheet. The Notes to the Financial Statements indicate the corresponding transaction accounted for using the financial method.

The following is an example of capital accounting (Sarcone, 2011):

Accounting for periodic instalments	***DEBIT***	***CREDIT***
Periodic instalments	*X*	
VAT credit	*X*	
Accounts Payable		*X*
Accounts Payable	*X*	
Bank Account		*X*

Table 2: Example of Capital Accounting (Sarcone, 2011)

That is the case in which the company decides to purchase the asset at the end of the leasing contract.

Purchase of the asset	***DEBIT***	***CREDIT***
Asset	*X*	
VAT credit	*X*	
Accounts Payable		*X*
Accounts Payable	*X*	
Bank Account		*X*

Table 3: Example of Asset's purchase (Sarcone, 2011)

Then, the memorandum accounts must also be updated in order to record a lower residual amount to be paid.

Notes to the Financial Statements

The Italian Civil Code states, ex article 2427 point 22, that the notes to the financial statements must indicate "*financial leasing transactions involving the transfer to the lessee of the majority* *of the risks and rewards inherent in the assets, on the basis of a specific summary showing the present value of the instalments of rent not yet due, determined using interest rates equal to the effective financial charge inherent in the individual contracts, the effective financial charge attributable to them and attributable to the year, and the total amount for which the assets covered by the lease would have been recorded at the end of the year if they had been considered fixed assets, with separate indication of depreciation, adjustments and write-backs that would have been inherent in the year".* The legislator requires that the companies that account for leasing according to the capital method, indicate in the Notes to the Financial Statements the same operation accounted for with the financial method. This requirement is necessary to make the economic situation of the company more transparent. However, the OIC has intervened to integrate and define more clearly the indications to be presented in the Notes to the Financial Statements. To do this, the following should be disclosed:

- the value of leased assets, calculated as the present value of instalments not yet due. This value is determined using an interest rate that takes into account all financial charges;
- the financial expense for the year, obtained by breaking down the instalment into principal and interest shares;
- the depreciation for the year;
- the residual debt, calculated as the difference between the value of the leased asset and the capital instalments already paid;
- the effect on the economic result and shareholders' equity.

1.3.2. Financial Method

The financial method is applied by companies that prepare their financial statements in accordance with IAS/IFRS. It is the method chosen by IAS 17 prior to the reform of IFRS 16. The financial method gives priority to substance over form and therefore requires that the asset is recorded in the financial statements of the user, provided that the leasing operation is essentially a purchase in instalments. The criteria, indicated by IAS 17, necessary to define a lease as "financial" are illustrated below:

1. transfer of ownership, if the contract includes an automatic transfer of ownership clause from the lessor to the lessee;
2. purchase option, if the contract contains a buy-back provision;
3. the term of the contract, if the length of the leasing contract covers the greater part of the useful life of the asset;
4. the present value of the rents at the date of conclusion of the contract is lower than the market value of the asset at the time of redemption;

5. the nature of the asset, if the asset is built ad hoc and therefore usable only by the lessee.

If the contract contains only one of these elements, then the contract should be accounted for using the financial method.

The accounting procedure has the following steps:

a. accounting for the purchase of the asset;
b. accounting for periodic instalments;
c. recording of depreciation;
d. recording of the buy-back.

Accounting for the purchase of the asset

Since the leasing contract, in this case, is treated as a purchase, the first entry concerns the recognition of the asset in the lessee's balance sheet. The value recorded in the financial statements is the lower between the fair value and the present value of the periodic payments, which is calculated as follows:

$$PV\ (payments) = initial\ instalment + \sum_{t=0}^{n} \frac{payments}{(1+i)^t} + \frac{buy\ back}{(1+i)^t}$$

The discount rate is the rate that equals the present value at fair value (also considering any direct costs already quantifiable at the beginning of the contract). Alternatively, the lessor's loan rate is used.

Accounting for leased asset	*DEBIT*	*CREDIT*
Asset	*X*	
Accounts Payable		*X*

Table 4: Accounting for leased asset

Accounting for periodic instalments

The periodic instalments are composed of a capital portion (which reduces the debt, which therefore appears in the Balance Sheet) and an interest portion (recorded in the Income Statement).

Recording of periodic instalments	*DEBIT*	*CREDIT*
Accounts Payable	*X*	
Interest Paid	*X*	
Bank Account		*X*

Table 5: Recording of periodic payments

Recording of depreciation

At the end of the year, the lessee will recognise depreciation on the basis of the asset's useful life if he intends to buy back the asset, otherwise the depreciation period is the shorter of the lease term or the asset's useful life. Depreciation is regulated by IAS 17 in paragraph 27, it varies according to the tangible or intangible nature of the asset: "*A finance lease gives rise to depreciation expense for depreciable assets as well as finance expense for each accounting period. The depreciation policy for depreciable leased assets shall be consistent with that for depreciable assets that are owned, and the depreciation recognised shall be calculated in accordance with IAS 16, Property, Plant and Equipment and IAS 38, Intangible Assets. If there is no reasonable certainty that the lessee will obtain ownership by the end of the lease term, the asset shall be fully depreciated over the shorter of the lease term and its useful life* (IASB, 2017)".

Recording of depreciation	***DEBIT***	***CREDIT***
Depreciation	*X*	
Accumulated depreciation		*X*

Table 6: Recording of depreciation (Sarcone, 2011)

Recording of the buy-back

When the lease is accounted for using the finance method, the leased asset is recognised in the lessee's accounts as if it had been purchased.

Recording of buy-back	***DEBIT***	***CREDIT***
Asset	*X*	
Accounts Payable		*X*
Account Payable	*X*	
Bank Account		*X*

Table 7: Recording of buy-back (Sarcone, 2011)

Differences

Operating lease		**Balance Sheet**	
		Bank Account	X
		Income Statement	
Periodic Payments	X		

Table 8: Example of Operating lease accounting (Sarcone, 2011)

Financial lease		**Balance Sheet**	
Asset	X	Bank Account	X
		Accumulated Depreciation	X
		Residual Debt	X
		Income Statement	
Interest Paid	X		
Depreciation	X		

Table 9: Example of Financial lease accounting (Sarcone, 2011)

From the above examples, it is clear that there are differences between the two methods. The financial method is able to give a more complete and precise representation of the economic situation of the company, because it focuses on the substance of the transaction. The financial impact of the lease is demonstrated by the recognition of the residual debt and asset in the balance sheet and the financial expenses in the income statement of the lessor. In addition, the leased asset is also included in the assets section, so that the assets in the balance sheet will increase by the net book value of the asset itself. This information is not present, however, in the accounting with the capital method, which is limited to recording periodic payments for the use of the leased asset. The lack of information may cause difficulties in understanding the company's actual debt exposure, generating misinterpretations by stakeholders.

Chapter 2 - Downsides of IAS 17

In 2008 the IFRIC (Internatioal Financial Reporting Committee – the interpretative body of the IASB) developed and issued official interpretations about IASB standards, in order to reduce the freedom of interpretation. In this chapter, we will focus on the IFRIC Interpretation 4 “Determining whether an Arrangement contains a Lease”. Despite the attempt of the Board, in practice, there is still a discretion that generates the problem of "off-balance sheet financing". The latter consists of a form of financing of which there is no trace in the balance sheet because it is not considered as a formal debt; these topics will be dealt with in the Section 2.2. Both the US standard FAS 13 and IAS 17 are considered incomplete because they leave the choice of classification of the lease (operating or financial) to the author of the financial statements. As explained above, the distinction between the two types of leasing is clear and objective at a theoretical level, however, in practice, the choice to account for an operation as an operating or financial lease follows the criterion of the transfer of risks and benefits associated with the ownership of the asset.

2.1. IFRIC 4

The reason behind the release of this Interpretation is that sometimes two parties can enter into an agreement that includes a transaction or a series of related transactions that, while not taking the legal form of a lease, conveys a right to use an asset (an item of property, plant and equipment) in exchange for a payment or a series of payments (G.U.U.E., 2008). According to the IFRIC 4, this Interpretation provides guidance on determining whether such agreements are or contain leases that should be accounted for in accordance with IAS 17 (G.U.U.E., 2008). The issues dealt with by the Interpretation are:

- how to determine whether an arrangement is, or contains, a lease as defined in IAS 17;
- when the determination or reassessment that an arrangement is, or contains, a lease should be made;
- if an arrangement is, or contains, a lease, how payments for the lease should be separated from payments for any other elements in the arrangement.

Determining whether an arrangement is, or contains, a lease

Determining whether an arrangement is, or contains, a lease should be based on the substance of the arrangement and requires you to check whether:

- fulfilment of the arrangement depends on the use of one or more specified assets (the asset);

- the arrangement conveys the right to use the asset.

IFRIC 4 establishes two requirements. First, an agreement is classified as a lease only if the asset specified, explicitly or implicitly, is fundamental to the performance of the agreement. For example, if the supplier is obliged to supply a specified quantity of goods or services and has the right and ability to supply those goods or services using other activities not specified in the arrangement, then the fulfilment of the arrangement does not depend on the specified activity and the agreement does not contain a lease. An asset is intended to be implicitly specified if the supplier owns or leases an asset with which it fulfils an obligation, and it is not economically advantageous to fulfil it through alternative assets. The second requirement identifies the right to control the asset as a condition for the lessee to have the right to use it: "an agreement conveys the right to use an asset if the agreement gives the buyer (lessee) the right to control the use of the underlying asset". The right of control over the use of the underlying asset depends on the fulfilment of at least one of the following conditions (G.U.U.E., 2008):

- the acquirer has the ability or the right to operate the asset or to manage others to operate it in a manner that the acquirer determines while obtaining or controlling more than an insignificant amount of the output or other benefit of the asset;
- the acquirer has the ability or right to control physical access to the underlying asset while obtaining or controlling more than an insignificant amount of the output or other benefit of the asset;
- the facts and circumstances indicate that it is a remote possibility that one or more parties other than the purchaser will acquire more than an insignificant amount of output or other benefit that will be produced or generated by the asset during the period of the agreement, and the price the purchaser will pay for the output is neither contractually fixed per unit of output nor equal to the market price per unit of output current at the time of distribution of output.

Assessing and/or reassessing if an agreement is or contains a lease

The check that an arrangement contains a lease shall be made at the beginning of the arrangement; a new check whether the agreement contains a lease shall be made after the start of the arrangement only if one of the following conditions is met (G.U.U.E., 2008):

- there is a change in the terms of the contract, unless this change only concerns the renewal or the extension of the contract;
- a renewal option is exercised or there is an extension of the contractual terms, unless the renewal or extension terms had already been included in the leasing agreement;
- there is a change in determining whether the fulfilment depends on a specified asset;

- there is a substantial change in the asset.

Separating lease payments from payments for any other elements

If an agreement contains a lease, the parties shall apply the requirements of IAS 17 to the element of the lease contract, and that agreement must be classified as a finance lease or an operating lease in accordance with IAS 17. For the purpose of applying the requirements of IAS 17, the payments and other amounts required by the arrangement shall be separated at the inception of the agreement or upon revision of the agreement into payments for the lease and payments for other items on the basis of their fair values (G.U.U.E., 2008).

2.2. Off-Balance Sheet Financing

In practice, it is possible that some financial leasing contracts (which transfer the risks to lessee) are accounted for as operating leases. This practice makes the representation of the company's financial statements incorrect, preventing investors and stakeholders from clearly knowing the economic and financial situation of the company: the value of the asset acquired through leasing is not indicated, as well as the total liability due to the lessor. Moreover, it should be considered that also the accounting with the operating method creates misinterpretations, as the availability of the asset is not recorded in the balance sheet. According to an analysis by S. Lim, S. Mann, V. Mihov (Lim, et al., 2003), the impact of off-balance sheet financing is limited to maintaining a higher debt rating; the bond yield seems to incorporate the effect of moving debt off the balance sheet because the market considers the debt regardless of its accounting treatment.

In order to better understand these considerations, consider that we are discussing about a market that is worth €384 billion in 2017, an increase of 16.30% compared to the previous year (Lease Europe, 2017). IAS 17 has been criticized for not reflecting the real economic situation of the company. A typical example of leasing manipulation in order to provide a different representation of economic data comes from the Enron scandal (Eavis, 2016). Well-known examples include fleets of aircraft (Gritta & Lippman, 2010): leasing has always been a key source of finance in the airline industry. In the 1960-1970s, many airlines used financial leasing instead of buying vehicles. It is called "off-the-balance sheet financing," as the obligations under this type of lease appeared only in the footnotes of the balance sheets. In those years, the lease agreements were mainly long-term. In 1976, the Financial Accounting Standards Board issued SFAS No. 13 in which it introduced the obligation of reporting the "off-the-balance sheet financing" assets as both a leashold asset and a long-term liability recorded under the long-term debt. In order to avoid the new leasing discipline, the airline industry saw a change in the financing structure of the airlines: the new leases became shorter-term operating leases, which were not reported in the balance sheet. When the firm leases an asset, no liability is recorded on the balance sheet, even though the company has entered into a lease contract and is, therefore, legally obligated to make lease payments in the future. In this regard, S. Lim goes on saying that "ratings agencies and finance textbooks agree that long-term lease obligations represent debt, regardless of the accounting treatment". "If leased assets were brought onto the balance sheet over our 27 year sample period, average debt-to-capital ratios would increase by 50-75%" (Biond, et al., 2011). It is worth noticing that off-balance sheet recording is a legal way of accounting, but it needs to be used carefully.

2.2.1. Synthetic Lease

Another way in which firms can hide leased assets is the synthetic lease: it consists in the creation of a special purpose entity (SPE) whose aim is to provide the parent company with an operating lease. The parent company uses the spe in order to keep debt off the books and "to deduct interests and depreciation as if they had bought and mortgaged the place" (Lubove & MacDonald, 2002). From a financial accounting point of view, the synthetic lease is considered as an "operating lease" rather than as a "capital lease." If the lease is a capital lease, the lessee's payments must be capitalized and recorded on the balance sheet as long-term debt. On the other hand, if the lease is classified as an operating lease, the lessee accounts it as an expense during the period in which it is incurred. The long-term nature of the lease obligation is merely reported in a footnote to the lessee's financial statements.

"In short, an investment in a synthetic lease transaction is a high-stakes gamble in the game of form over substance. The bet is that financial accounting standards will honor the transactional form of a lease at the same time that the federal income tax law will perceive that the tenant has made an investment in a depreciable asset with borrowed funds" (Weidner, 2000). Off-balance sheet financing allows companies to maintain ratios in order to comply with the debt covenants.

With the scope of addressing the concerns identified by the professionals, on January 13, 2016, the IASB, in collaboration with the FASB (Financial Accounting Standard Board - the body that regulates accounting standards in the United States) published a new accounting standard, IFRS 16, which regulates the accounting of lease agreements for listed companies. The new publication contains an introduction, which clearly indicates the three causes that led the Boards to reformulate the accounting principle relating to leasing. Specifically:

- The information provided is not sufficient to provide a transparent representation of the financial and economic situation of the company. Some users tried to estimate the present value of future lease payments in order to capitalize operating leasing "because, in their view, the financing and assets provided by leases should be reflected on the statement of financial position. Other users were unable to make adjustments - they relied on data sources such as data aggregators when screening potential investments or making investment decisions. These different approaches created information asymmetry in the market" (International Accounting Standard Board, 2016);

- The possibility of managing two similar economic operations, such as operating and financial leasing operations, through two different models, which generate equally different results, reduces the comparability between the financial statements of different companies;
- The requirements for the lessor did not provide sufficient information to identify the correct exposure to credit risk and asset risk (generated by the lessor's retained interest in the underlying asset).

The Bords decided to solve the first two challenges by adopting a new approach to leasing accounting (a contract is classified as lease contract if it has a duration of more than 12 months and the underlying asset is "not of low value" – the exemption for leases of low value assets will be dealt later). The new accounting standard IFRS 16 states that the lessee records the assets and liabilities on the basis of the rights and obligations deriving from the lease contract. The IASB believes that in this way, the financial statements can provide a more truthful and transparent representation of the assets and liabilities of lessee and financial leverage. With regard to the third issue, however, the boards have requested enhanced disclosure by lessors of information about their risk exposure.

Chapter 3 - IFRS 16

The IASB has introduced the new IFRS 16 standard to provide guidance on the best way to recognise, measure and present lease contracts. The main objective is to ensure that lessee and lessor publish all relevant information in order to make the presentation in the financial statements clearer and more truthful, "so that users of financial statements are able to assess how the impact of leases on financial position, performance position and cash flows of an entity" (International Accounting Standard Board, s.d.).

IFRS 16 deletes the dichotomy in classifying leases as financial or operating leases by requiring that all leases be treated in the same way and as IAS 17's financial lease contracts. Thus, all leased assets are now capitalised by recognising the present value of the lease payments as an asset (the so-called right of use asset). If such payments are made over a period of time, the enterprise will recognise a financial liability that represents its obligation to pay future lease payments.

3.1. Mcgregor's Report

In this section, the analysis will mainly focus on the actions taken by the Boards to define new guidelines for the accounting of leasing contracts.

In 1996, IASB and FASB brought together representatives of international standard setters, with the aim of highlighting the issues of IAS 17 and formulating a new proposal that would overcome the obvious critical aspects. A working group, called G4+1[1], was set up and published a first discussion paper named: "Accounting for Leases: A New Approach". Recognition by Lessees of Assets and Liabilities Arising under Lease Contracts."

In particular, two weaknesses were highlighted, as mentioned above:

- the failure to recognise assets and liabilities under operating leases;
- lease agreements with similar characteristics may be accounted for in different ways, with consequences on the performance indicators declared in the financial statements.

The paper, also known as McGregor's Report, proposed the removal of the distinction between operating leases and financial leases, and outlined a new approach to identify as assets and liabilities all rights and obligations arising from a lease agreement. The so-called "new approach" established that, in the case of leasing contracts longer than one year, the lessee indicated among the assets the right to use the leased asset, and among the liabilities the obligation to pay linked

[1] The group was composed of representatives of the international accounting standard boards from Australia, Canada, United Kingdom, New Zeland and USA.

to the use of the asset; the lessor, instead, had to record in the balance sheet two assets: the right to receive periodic payments, and the residual value of the asset.

3.2. Consultation Process

Later, in 2000, the G4+1 published a new document "Leases: Implementation of a new approach" which provided proposals and guidelines on how to implement in practice the approach introduced in 1996.

In March 2009 the Boards published a joint Discussion Paper “Leases: Preliminary Views”. The Discussion Paper set out the Boards’ preliminary views on lessee accounting, proposing the elimination of double accounting method for leasing contracts, thus taking up the concept already expressed in previous documents. Feedback on the Discussion Paper generally supported the ‘right-of-use’ model for lessees, by which a lessee would recognize a right-of-use asset and a lease liability at the commencement date of the lease.

The document focuses on the adoption of a "right of use" rather than a "risk and reward" approach. The choice of the right of use approach is functional to the overcoming of the issues exposed; in fact, the Boards have considered this approach as the best, among the examined, to overcome the problems of the previous standards:

- the recording of assets and liabilities in the balance sheet;
- the possibility of applying the model to all leasing contracts;
- the possibility of improving the comparability of the financial statements;

3.2.1. Exposure Drafts

In August 2010, the first Exposure Draft was published, developed taking into account the comments received following the publication of the Discussion Paper. With the publication of this document, the Boards wanted to rationalize the new way of interpreting the lease: the definition of the lease remains the same as already given in IAS 17 but the new accounting rules for the recognition of assets and liabilities, both for the lessee and for the lessor, have been defined. Leasing is identified as a financing operation, thus eliminating the dual method of accounting for transactions.

After the publication of ED 2010, the Boards received and analyzed comments from various stakeholders in order to develop a new ED that would also take into account the contributions of external players. In the new document there is still the principle of "right of use" and the obligation to recognize the leasing contract in the financial statements.

In order to determine whether a contract contains a lease, it is therefore necessary to verify the presence of two elements:

- The performance of the contract depends on the exclusive use of a specific good granted to the lessee. The underlying asset must be identified identifiable precisely, in particular when there is a complex agreement in which the specific asset needs to be distinguished from the other items covered by the contract. This is the case, for example, where a contract contains an agreement for the provision of services and leasing. In this case, the subject of the lease agreement shall be identified and recognised in the financial statements separately from the additional component of the service;
- The right of use of the asset granted to the lessee. This is the case when the lessee has the power to take decisions concerning the asset and to obtain the relative benefits for the entire duration of the contract.

3.3. IFRS 16

Finally, in January 2016, the IASB published the new accounting standard. The company assesses whether or not to apply the requirements of IFRS 16 by identifying whether the contract is (or contains) a lease. In the document issued by the IASB, the definition of a lease remains unchanged from that in IAS 17, but the guidelines necessary to identify the presence of the lease are supplemented. As already defined in the ED, the main change in IFRS 16 concerns the concept of right of use: the contract is associated with a lease contract if the customer has "the right to control the use of an identified asset for a period of time" (Deloitte , 2016); short-term leases (leases of 12 months or less) and leases of low-value assets (such as personal computers and office furniture) are not considered by IFRS 16.

3.3.1. Off Balance Sheet Leases

With the definition of the new accounting standard, the IASB has tried to solve the problem of off-balance sheet financing. IFRS 16 should amend the balance sheet, income statement and cash flow statement for companies with significant off-balance sheet leasing contracts. What follows is an analysis of how the IFRS 16 address the off-balance sheet leases issue.

Operating Leases

The main difference recorded consists in the accounting for the operating lease. In fact, with the application of IFRS 16, the entity is obliged to comply with the following indications in the financial statements:

- Indicate in the balance sheet the assets and liabilities covered by the lease contract, calculated at the present value of unavoidable future lease payments;
- Recognize the depreciation of lease assets and interest on lease liabilities in the income statement, for the entire duration of the lease contract;

- Indicate in the Cash Flow Statement the total cash paid, specifying the principal amount (presented within financing activities) and the interest amount (typically presented within either operating or financing activities).

Finance Lease

Regarding the finance leases, IFRS 16 does not change what was already required by IAS 17, from an accounting point of view. The main difference concerns the accounting treatment of the guaranteed residual values. When a lease is entered into, lessee agrees to pay the lessor the difference between the fair value of the asset at the end of the lease and the guaranteed residual value (if this is greater than fair value). IFRS 16 requires lessee to recognize in the financial statements the amount due at the end of the contract to the lessor, while IAS 17 required the recognition of the "maximum amount that could, in any event, become payable". In this case, there are two differences between IAS 17 and IFRS 16 (KPMG, 2017):

- Under IFRS 16, the lessee has the obligation to record in the balance sheet only the expected amount payable. The IAS 17, on the contrary, required the lessee to record the maximum exposure under the guarantee, not the expected amount payable.
- IFRS 16 provides the possibility to remeasure the lease liability when there is a change in the expected amount to be paid under the residual value guaranteed. IAS 17 did not provide anything like that, because "the lessee's lease liability always includes the maximum amount payable" (KPMG, 2017).

Lessor Accounting

Regarding the accounting of the lease by the lessor, the Boards did not consider useful to make changes with respect to IAS 17; this is because the feedback provided by many investors and analysts revealed that the costs of changing the method of accounting for the lessor would have easily outweighed the benefits arising from the changes introduced. Therefore, according to IFRS 16, the lessor continues to account for leasing in the two ways (differentiating between operating and financial leasing). The innovation introduced, compared to IAS 17, lies in the enhancement of the information to be disclosed to stakeholders regarding the risks deriving from residual interests in leased assets.

3.4. Impact Analysis

In order to provide a more detailed review of the impact of the application of the new standard on leasing accounting, PWC (PWC, 2016) has published a document summarizing the effects on debt and EBITDA by industry. This paper will explore and analyze different industries characterized by a different use of leasing (Airlines, Retail, Healtcare, Pharmaceutical, Utilities, Telecommunications). Retail industry faces a median increase in debt of 98% while the increase in EBITDA is approximately 41%. The extractive and oil industry shows a median increase in debt of 4% while the median increase in EBITDA is 3%.

According to the IASB's analysis, out of 30.000 listed companies, approximately 14.000 published information about off-balance sheet leases, whose future payments amounted to approximately US $2.86 trillion, for a present value of approximately US $ 2.18 trillion. Interestingly, the use of off-balance-sheet leasing is more concentrated in some industries such as retail, airlines and shipping. IASB analysis shows that for 28% of the airline industry companies, the ratio between the current value of off-balance-sheet leasing payments and total assets is over 50%, with an average of 22.7% of the entire industry.

Industry sector		Present value of future payments for off balance sheet leases / total assets *by number of companies*															
		<1%		1%-5%		5%-10%		10%-20%		20%-50%		50%-100%		>100%		Total	
Airlines	22.7%	---		2	4%	4	8%	13	26%	17	34%	8	16%	6	12%	50	100%
Retailers	21.4%	---		6	3%	11	5%	37	18%	77	38%	60	30%	13	6%	204	100%
Travel and leisure	20.7%	---		5	7%	11	16%	11	16%	16	23%	15	22%	11	16%	69	100%
Transport	11.6%	---		10	20%	5	10%	17	33%	14	27%	3	6%	2	4%	51	100%
Telecommunications	6.1%	3	5%	21	38%	17	30%	10	18%	5	9%	---		---		56	100%
Energy	5.5%	7	7%	43	44%	22	22%	16	16%	8	8%	2	2%	1	1%	99	100%
Media	5.5%	---		14	29%	13	27%	8	17%	5	10%	8	17%	---		48	100%
Distributors	4.3%	1	4%	6	23%	9	35%	5	19%	5	19%	---		---		26	100%
Information technology	3.0%	3	5%	31	54%	10	17%	8	14%	6	10%	---		---		58	100%
Healthcare	2.9%	8	15%	20	36%	7	13%	4	7%	10	18%	2	4%	4	7%	55	100%
Others	2.2%	35	11%	159	52%	51	17%	26	9%	29	9%	4	1%	2	1%	306	100%
Total	**5.4%**	**57**	5%	**317**	31%	**160**	16%	**155**	15%	**192**	19%	**102**	10%	**39**	4%	**1,022**	100%

Figure 3: Off balance sheet by Industry sector (International Accounting Standard Board, 2016)

Exemptions

As already mentioned in paragraph *3.3 – IFRS 16*, IFRS 16 provides for some exemptions: companies are not obliged to capitalize low value assets (assets with a value lower than US $ 5000) or whose duration is less than 12 months. In the event that the lease contract is subject to exemption, the company will only recognise the expenses relating to the contract as operating expenses, therefore in the same way in which the off-balance sheet leases were treated with IAS 17. The IASB has provided for the possibility of exempting certain categories of leases to benefit small businesses. Indeed, even if the amounts are insignificant, small enterprises benefit from not having to prove the insignificance of the leases; otherwise they would incur higher costs than large enterprises. Low-value assets typically covered by the exemptions are office furniture, personal computers and mobile phones.

3.4.1. Benefits

Benefits for Investors

The purpose of the IASB, by defining IFRS 16, is to improve the quality of financial reporting of companies that have material off balance sheet leases. The capitalisation of these leases leads to a better representation of a company's financial position and more truthful information on indebtedness. All this is aimed at improving the decision-making capacity of investors and analysts, and more generally, of all stakeholders. Under the IAS 17, indeed, some investors used to adjust the company's balance sheet for off balance sheet leases, adopting different techniques. In order to provide a more comprehensive analysis of the impact of IFRS 16, a brief overview of the techniques used by Moody's and Standard & Poor's is presented below.

Moody's

In June 2015, Moody's updated its methodology for capitalizing off-balance sheet leases. This technique is based on the possibility of substitution between leasing and debt: in order to consider in the balance sheet all those contracts that were classified as off-balance sheet, Moody's analysts simulate the purchase of the leased asset through the use of debt. The balance sheet is adjusted for the higher of the value resulting from multiplying the value of the periodic lease payment by a conventional multiple and the present value of the total lease payments (calculated using the marginal financing rate) (Moody's, 2018). Subsequently, the accrued leasing payment is broken down into a capital portion (used to calculate depreciation) and an interest portion. On the basis of these data, the Income Statement is adjusted in the sections on interest and operating expenses. In the same way, the Cash Flow Statement is adjusted by inserting the depreciation quota in the capital expenditures.

Standard & Poor's (Standard & Poor's, 2013)

S&P starts from the calculation of the present values of the periodic payments; the discount rate is calculated as the ratio between the financial charges of the current year and the average debts of the current year and the previous one. The present value of the payments is then added to the liabilities and assets, to take into account the right of use of the asset. Subsequent reclassifications include:

- operating expenses are reduced by the average of periodic payments between the current year and the previous year;
- interest expenses are calculated by applying the discount rate to the average of the present value of the payments;
- depreciation is calculated by subtracting interest from operating expenses;
- finally, the investment expenditure is adjusted by adding the sum of the depreciation expenses.

With the introduction of IFRS 16, the IASB has pursued the objective of eliminating the need to adjust the financial statements of companies. The disclosures in the notes are not sufficient; as we have seen, the techniques used to capitalize operating leases are quite complex, and most users of financial statements do not have the ability or the tools to perform such an analysis. The new standard, therefore, aims to reduce this information asymmetry, preventing the classification of off-balance sheet leases and thus increasing the flow of information needed by investors. The IASB expects that the latter type of investor will benefit most from the introduction of IFRS 16. In order to better clarify the importance of the information that is available to stakeholders, a comparison between the reports based on IAS 17 and IFRS 16 is proposed below (International Accounting Standard Board, 2016). The two companies in this example belong to the airline industry, which is characterized by intensive use of PPE. Airline 1 leases less than 10% of aircraft while airline 2 leases about 70%. The information necessary to have a complete overview of the two companies is reported: total on balance sheet PPE, Long-term liabilities, Equity and the ratio of long-term liabilities to equity. As can be seen from the image, using the information resulting from the application of IAS 17, Airline 1 has a higher financial leverage than the second company. By using the information available through the application of IFRS 16, the situation is reversed: the application of IFRS 16 brings to light in the financial statements all those leased assets that were previously considered off-balance sheet, so Airline 2 has a higher financial leverage.

	Airline 1 (leases <10% of aircraft)		**Airline 2** (leases 70% of aircraft)	
	Reported on balance sheet (IAS 17)	If all leases on balance sheet (IFRS 16)	Reported on balance sheet (IAS 17)	If all leases on balance sheet (IFRS 16)
Property, Plant and Equipment	16.908	19.926	15.748	24.020
Long-term Liabilities	13.232	16.567	9.615	18.320
Equity	6.719	6.402	5.604	5.171
Long-term Liabilities to eqity	2,0:1	2,6:1	1,7:1	3,5:1

Table 10: Off balance sheet leases

Changes in the lease portfolio

With the application of IAS 17, a change in the term of the lease had evidence in the financial statements only in the case of a financial lease or a change from an operating lease to a financial lease. By introducing the new standard, the IASB expects that there will be indications in the financial statements regarding the change in the duration of the lease contract, in fact "any change in a company's lease portfolio is reflected on its balance sheet" (International Accounting Standard Board, 2016). Similarly, in the case of sale and leaseback transactions under IAS 17, the company that sells an asset and then takes it back through leasing has the possibility to bring it off-balance sheet, even if economically the situation has not changed (the company continues to use the asset). By introducing IFRS 16, the IASB expects to reduce the number of sale and leaseback transactions because the economic incentive to use it has been eliminated through the recording on the balance sheet of the leased asset.

Benefits for Companies

Companies will also benefit from improving the quality of the information available. The need to reclassify the off-balance-sheet lease was reflected in an inaccurate calculation of the company's economic and financial situation. Consequently, the IASB states that the application of the new standard will lead to more accurate results than the reclassification under IAS 17. Many companies use a system of reclassification of their financial statements (for management reasons) similar to those already seen for rating agencies. Off-balance-sheet leasing transactions are treated in the same way as long-term debt. Therefore, the application of IFRS 16 will provide an even more precise management tool since the management information will be aligned with the accounting information. Together with the improving in management processes, companies will benefit from cost reduction related to the simplified measurement of some leases and the exemption for the cases we have already discussed.

To simplify the leasing valuation process, the IASB decided to adopt a more flexible approach. Among the payments deriving from the lease liabilities are, indeed, considered only the unavoidable payments and those accessory payments considered optional ("the company is reasonably certain to make"). All future payments linked to the sale of leased assets are excluded.

To have a better understanding of what is meant by optional payments, an example is given below. Suppose a company acquires a leased asset for five years with an option to extend the contract for another three years. If the business is performing as expected at the end of the five-year period, the company exercises the option, otherwise the contract is terminated. Based on IFRS 16, the company reports data for the five-year contract, which is substantially different from an eight-year contract. Economically, the two transactions are similar, but the accounting treatment must be different (the duration of the contracts is different). Despite this, the IASB has provided that, if the company decides to exercise the option, the two transactions are aligned in accounting terms by indicating the extension of the lease term.

3.4.2. Costs

The introduction of the new standard brings several benefits, as we have already seen, for both investors and companies. We will now focus on the increase in the costs incurred by companies, in particular, in adapting to the new request for information.

The costs of implementation identified by the IASB are mainly three:

- Set up of systems and processes;

- determining the discount rate;
- communication and education.

The impact on costs depends on the size of the company's lease portfolio, the contractual terms of existing leases and the system used to account for leases by applying IAS 17.

Change in systems and processes

Although the information required under IFRS 16 is similar to that required by IAS 17, companies may incur new costs related to compliance with IFRS 16 arising from the need to obtain new information, not only for the purpose of publishing it in the notes to the financial statements.

Leasing contracts often contain two components, the right to use an asset and the right to receive a service. In the accounting according to IAS 17, the separation of the lease component from the service component was also required, but with IFRS 16 it will become fundamental because the two components will have a different accounting treatment. However, the IASB, in order to meet the needs of the companies and to avoid that the adaptation to the new standard is excessively expensive, has provided that companies can choose whether to separate the two components (and capitalize only the portion of the lease) or whether to account for the lease as a whole.

Discount rate

The calculation of the discount rate to evaluate the present value of the lease payments involves an increase in the costs of the companies. The reason is that each leasing contract implies a different discount rate. In any case, these data are already available within the set of the information required by IAS 17. The IASB has decided to receive the feedback of the companies and to allow, at the time of the first application of IFRS 16, the use of the marginal rate of financing for each portfolio of similar leases.

Communication and education

Companies with material off balance sheet leases will bear more costs in educating the staff; in particular companies that have finance leases under IAS 17 will incur in less costs because the accounting under IFRS 16 is similar to that required by IAS 17. Moreover, in some specific industry, the IASB expects that the procedure of education could be more complex due to the difficulties in assessing if the contract contains a lease or not. The IASB expects companies to incur additional costs in a limited number of cases. Some additional costs arise from the reassessment of certain leases. IFRS 16 requires that an audit be carried out on leases in progress only when the company has taken actions that may have modified the terms of the lease contract (discount rate, length of the contract, amount of lease payments) - for example, in the case of contract extension options.

3.5. Effect on Financial Statements

The application of the new standard will have impact on the Financial Statement of companies. First, we are going to focus on the different effects on the Balance Sheet and on the Income Statement, then an analysis on the changes that will affect the Cash Flow Statement and the Key Financial Metrics will be presented. Finally, it is worth to analyze what could be the other effects influencing the firms.

3.5.1. Effects on Balance Sheet

The Effects on the Balance Sheet are broken into effects on Assets and Liabilities and effects on Equity. In general, if a company has a significant amount of leased assets, with the application of the new standard the assets will increase as well as the financial liabilities. Because the amount of assets (right of use) decreases faster than the amount of financial liabilities, equity decreases.

Effects on the Balance Sheet	
Non-current non-financial **Assets**	*Increase*
Current/Non-current financial **Liabilities**	*Increase*
Equity	*Decrease*

Table 11: Effects on the Balance Sheet

Effects on assets and liabilities

As already analysed in paragraph 3.3, IFRS 16 introduces new accounting requirements. Assets (right to use an asset) that are part of a leasing contract must be accounted for in the balance sheet as non-current non-financial assets. Among the liabilities, it is necessary to recognise the obligation to pay among the current/non-current financial liabilities, according to the duration of the contract. The table below summarises and highlights the main differences between the application of IAS 17 and IFRS 16.

	IAS 17		**IFRS 16**
	Finance Leases	Operating Leases	All Leases
Assets	X	-	X
Liabilities	X	-	X
Off Balance sheet	-	X	

Table 12: Differences between IAS 17 and IFRS 16

Effects on Equity

As mentioned above, accounting in accordance with IFRS 16 reduces equity. The value of the right of use of leased assets is depreciated on a straight-line basis, while the value of the corresponding liabilities decreases on the basis of the payments made, including interest. Therefore, even if assets and liabilities are the same at the beginning and end of the lease period, during the contract the assets are usually lower. This implies that the equity decreases in order to restore the equality "Total Asset = Total Liabilities". The extent of the change in equity depends on a number of variables including the terms of the lease and the relationship between liabilities and equity.

3.5.2. Effects on Income Statement

Since the costs associated with leasing are capitalized, the operating profit will certainly be higher[2]. IFRS 16 requires that only costs arising from interest paid on leased assets are shown in the income statement under interest expenses. In this way, all the balance sheet ratios calculated before interest expense (operating profit, EBITDA, EBIT) will be higher. The greater the amount of the company's off-balance sheet leases, the greater the change.

Throughout the duration of the contract, the costs recognized are the same (applying IFRS 16 and IAS 17). However, the expenses accounted under IFRS 16 in each period are different from those recognised under IAS 17; the reason for this difference is that by applying IAS 17 the expenses are usually constant over the life of the contract "a company recorded operating lease expenses typically on a straight-line basis"(IFRS 16 document). In the case of IFRS 16, instead, depreciation is calculated on a straight-line basis while interest decreases with the decrease in lease liabilities. Therefore, the sum of depreciation and interest expense made in the first half of the contract is higher than the straight-line expense under IAS 17. In the second half the opposite occurs: the sum of depreciation and interest expense is lower.

EBITDA

IFRS 16 requires that entire leasing costs should not be recognised in the income statement, but only interest and depreciation costs. By applying IFRS 16, the IASB expects EBITDA to be higher than the application of IAS 17 (which instead considers the entire lease instalment as an operating expense). EBITDA is a margin that is very often used by investors in business valuation, therefore, through the definition of the new standard, the IASB has helped to make it easier for investors to compare different companies.

EBIT

The effectiveness of using a balance sheet index calculated as a result before interest and taxes to measure a company's profitability depends on the industry. The IASB has analyzed different industries to verify the impacts on operating profit margins that occur in the transition from IAS

[2] According to IAS 17, the expenses deriving from the costs for assets recorded as operating leases were indicated in the Income Statement as operating costs.

17 to IFRS 16. As is well known, with the capitalisation of the leasing required by the new standard, the results before interest and taxes (EBIT or Operating Profit) will increase due to the elimination from the income statement of the operating portion of the leasing fee. However this increase will have lower magnitude than the increase in EBITDA because of the presence of the depreciation. Obviously, the impact on the indices varies according to the size of the off-balance sheet leases. According to IASB estimates, in a sector such as Healthcare, the increase in EBIT measured is approximately 0.2% of total revenues. In industries that make greater use of leasing as an off-balance sheet financing tool (Airlines, Retailers), the change is about 1.35%.

Effects on the Income Statement			
	IAS 17		**IFRS 16**
	Finance leases	**Operating leases**	**All leases**
Revenues	-	-	-
Operating costs	-	X	*Decrease*
EBITDA			*Increase*
Depreciation	X	-	X
EBIT			*Increase (less than EBITDA)*
Interest Expenses	X	-	X
EBT			*No change*

Table 13: Effects on the Income Statement

Industry sector	EBITDA (in millions of US$)		Profit before interest and tax / total revenue		Increase in profit margin % before interest and tax (percentage points)
	Reported (IAS 17)	If all leases on balance sheet (IFRS 16)	Reported (IAS 17)	If all leases on balance sheet (IFRS 16)	
Airlines	51,624	73,849	6.33%	7.69%	1.36 (=136 basis points)
Retailers	270,403	347,716	6.01%	6.66%	0.65
Travel and leisure	50,299	63,279	11.80%	13.15%	1.35
Transport	71,177	87,580	10.00%	10.70%	0.70
Telecommunications	399,328	434,452	13.18%	13.80%	0.62
Energy	688,370	745,273	8.11%	8.42%	0.31
Media	118,156	128,959	17.70%	18.29%	0.59
Distributors	29,350	35,047	3.70%	3.94%	0.24
Information technology	298,655	312,392	18.28%	18.50%	0.22
Healthcare	254,616	265,181	15.41%	15.63%	0.22
Others	1,162,512	1,228,643	10.63%	10.83%	0.20
Total	**3,394,490**	**3,722,371**	**10.19%**	**10.58%**	**0.39**

Figure 4: EBITDA and profit changes (International Accounting Standard Board, 2016)

Effects on taxes

The adoption of the new standard on leasing accounting can also have an impact on taxes; the extent of the change depends on the specific legislation of each country. However, as it is not a central theme in this document, for an in-depth analysis of this issue, please refer to specific studies.

3.5.3. Effects on Cash Flow Statement

A change in an accounting policy does not affect the company's ability to generate cash. Therefore, the IASB does not expect IFRS 16 to affect an enterprise's cash flow but only the way in which expenses are classified. The principal part of the lease instalment and the interest part can be included in financing activities[3]. The transition from the old to the new standard therefore implies a decrease in the cash from financing activities; moreover, since according to IAS 17 operating expenses were indicated among the operating activities, moving to IFRS 16, there will be a positive change in the cash from operating activities. The table below summarizes the changes in the cash flow statement.

Effects on the Cash Flow Statement	
Cash flow from **Operating** Activities	*Increase*
Cash flow from **Financing** Activities	*Decrease*
Cash Flow	*No change*

Table 14: Effects on the Cash Flow Statement

Disclosures

The IASB wanted to enhance the disclosure of information requested by the IAS 17. IFRS 16 requires an enterprise to provide a detailed analysis of expenses arising from leasing contracts. Unlike IAS 17, it is necessary to disclose leased assets by class and total cash outflows. If there are complex features with variable payment terms, options, etc., the IASB requires this information to be specified.

3.5.4. Effects on Key Financial Metrics

Adopting the new standard will reflect in the change of the key financial metrics in the case of lease that previously were classified as operating leases, because some assets and liabilities that before were not recorded on the balance sheet are now recognized.

In order to assess the impact of the application of the IFRS 16, the following ratios have been considered:

Ratios	Formula	Effect
Lease Intensity	$\frac{Lease\ Expenses}{Total\ Liabilities}$	-

[3] Otherwise, interest expenses can be shown in the Cash Flow from Operating, according to IAS 7 – Cash Flow Statement

Debt to Equity	$\frac{Debt}{Equity}$	*Increase*
Return on Assets	$\frac{Net\ Income}{Total\ Asset}$	*Increase*
Net Financial Position	$Long\ Term\ Debt + Short\ Term\ Debt - Cash$	*Decrease*
Interest Coverage	$\frac{EBIT}{Interest\ Expense}$	*Decrease*
Current Ratio	$\frac{Current\ Assets}{Current\ Liabilities}$	*Decrease*

Table 15: Effects on Key Financial Ratios

Lease Intensity

It is the measure of the expected impact of IFRS 16 on companies' results. It has been taken into consideration following Morales-Diaz & Zamora-Ramirez (Morales-Dìaz & Zamora-Ramìrez, 2017) paper; it is the measure of the off-balance sheet financing of the firm and it is useful in order to compare results.

Debt to Equity

It is the measure of the the leverage of the company, and it is used to evaluate how much debt is the company using against equity. As we have seen before, the application of the IFRS 16 will result in increasing the debt due to the recording on balance sheet of all those operating leases that were treated off balance sheet (applying the IAS 17). At the same time, the equity will decrease because of the effect of the new asset and liabilities[4]. The final impact of the new accounting method on the ratio is the increase in the value.

Return on Assets

Roa is used in order to assess the profitability of the all the assets. Since in literature there is not a consensus on how to calculate this index, there can be a lot of variability in results. As Morales-Diaz & Zamora-Ramirez highlighted, Roa can be calculated starting from EBIT, some authors used EBT while others used to adjust the formula for excluding extraordinary items. However, in the paper mentioned, the formula is adjusted for excluding the interests (since the financial structure should not be considered when assessing the return that the company is able to get from the assets). Since the adjusted net income is expected to increase (the increase of the depreciation will be offset due to the removal of the operating expenses), as well as the total assets. So, the final result is an increase in the ratio.

[4] As noted in the Section 3.5.1 – Effects on Balance Sheet, the value of the leased asset will decrease quicker than the value of the linked liabilities due to the effect of the interests; this will result in a decrease of the equity.

Net Financial Position

The net financial position is the measure of the indebtedness of the firm and it's calculated as the the long/short term debt minus cash and cash equivalents. It is one of the most analyzed index because it is used to evaluate the financial health of a company. The application of the new accounting standard IFRS 16 means that the long-term debt will increase, so the NFP will get worse. This result is strongly related to the debt covenants topic that will be dealt with in the section 3.5.5 – Other Effects.

Interest coverage

The interest coverage ratio is used when assessing the ability of the firm to repay its interests on debt. The lower the ratio, the harder is the debt repayment. Interest coverage is always taken into account when evaluating the performance of a firm because it measures how much the company's earnings (EBIT or EBITDA) can repay its outstanding debt. It is one of the most used indicators by the investors. The application of the IFRS 16 can lower or rise the index, depending on which effect is the grater: the EBIT/EBITDA will increase as well as the interest expenses.

Current ratio

The current ratio is used to check the company's ability to pay its short term obligations (payables, current portion of long term debt, taxes payables) with its current assets (cash, receivables, inventory). The aim of the ratio is to highlight if the firm can repay its short term debt with its most liquid assets. However, switching from IAS 17 to IFRS 16, should result in increasing the current liabilities while the current assets remain the same. This means that the current ratio will decrease.

3.5.5. Other Effects

The adoption of IFRS 16 has other effects that are not directly observable in the financial statements. Among these, two particularly interesting effects are the effects on the cost of debt and on covenants.

Effects on the cost of borrowing

As we have already discussed in paragraph 3.4.1 Benefits, some users (including rating agencies) estimate the capitalization of off-balance sheet leases to calculate the leverage of those companies that have material off-balance sheet. Banks use credit ratings as a benchmark to identify the appropriate funding rate. Improving the information available for the complete valuation of the assets and liabilities of companies, including also those operating leases that were previously off-balance sheet, will make the rate setting operations more transparent. The IASB expects that rates will not vary substantially for all large companies whose financial statements are constantly analysed; on the contrary, the lending rates that will be most affected will be those of borrowers that are not rated by credit rating agencies. However, any change will be a consequence of the improvement of the decision-making process and of the reduction of the market asymmetries in this context.

Industry sector	Long-term financial liabilities (in millions of US$)			Long-term financial liabilities to equity ratio		
	Reported on balance sheet (IAS 17)	If all leases on balance sheet (IFRS 16)	Common market practice (annual lease expense × 8)	Reported on balance sheet (IAS 17)	If all leases on balance sheet (IFRS 16)	Common market practice (annual lease expense × 8)
Airlines	114,818	234,202	292,617	123%	251%	314%
Retailers	378,698	810,171	997,201	48%	103%	126%
Travel and leisure	135,423	218,914	239,261	118%	191%	209%
Transport	124,107	192,282	255,331	54%	84%	111%
Telecommunications	808,574	981,218	1,089,562	79%	96%	106%
Energy	1,017,236	1,305,094	1,472,458	42%	54%	60%
Media	340,330	396,094	426,749	102%	119%	128%
Distributors	174,509	199,601	220,083	91%	104%	115%
Information technology	280,487	337,293	390,382	31%	37%	43%
Healthcare	437,284	491,649	521,808	58%	65%	69%
Others	2,629,476	2,936,211	3,158,519	64%	71%	76%
Total	**6,440,942**	**8,102,729**	**9,063,971**	**59%**	**74%**	**82%**

Figure 5: Long-term financial liabilities by industry sector (International Accounting Standard Board, 2016)

Effects on debt covenants

The operating method allowed companies to enter into leasing contracts without exceeding the limits imposed by the debt covenants. With the transition to IFRS 16, all operating leases will be shown in the balance sheet, so the net financial position will deteriorate. The extent of this change will depend primarily on the industry. As we analyzed, the industries that will be most penalized are those in which the use of operating leases had a significant weight. Within the individual industries, the impact on companies will depend on the weight of operating leases compared to financial ones. With the change in the balance sheet ratios, it could happen that many companies will not comply with the debt covenants (if the banks have not entered into agreements linked to the adjusted balance sheet for off balance sheet leases).

Chapter 4 - Empirical Analysis

After having provided a brief introduction of the accounting innovations introduced by the IASB with IFRS 16, this chapter will focus on the practical consequences found in the analysis of quarterly results published by companies. It has been chosen to analyse the data for the first quarter of the year because 2019 is the first year in which companies that prepare their financial statements in accordance with IFRS are obliged to comply with IFRS 16. Therefore, the first quarterly results are actually the first data containing evidence of the real impact of the new standard on leasing. The analysis was carried out on the basis of eight companies that operate in the Utilities industry:

- Enel;
- Gazprom;
- Eni;
- BP plc;
- Equinor;
- Petroleo Brasileiro (Petrobras);
- Lukoil;
- Novatek.

The four companies are characterised by a similar impact of the application of IFRS 16; anyway, the comparative analysis will be presented in the paragraph about the conclusions.
In order to highlight the impact of the new standard on the company's financial statements, a comparative analysis has been carried out between the results for the year ended 31 March 2019 and the results adjusted to take account of accounting in accordance with IFRS 16. The results of IFRS 16 at 31/03 have been extrapolated from the quarterly reports communicated by the companies, while the values of IAS 17 are the result of a personal revision on the basis of the notes and information contained in the publication of the reports themselves.

4.1. Enel

Enel S.p.A. is today one of the leading companies in the utilities sector, operating all over the world, while the main market is Italy. In 2018 it reported revenues of € 75,672 million, an increase of approximately +1.4% compared to 2017 (Enel, 2018). The main market is Italy (approximately 51% of revenues) followed by Iberia (approximately 26% of revenues) and South America (approximately 19%). The net result for 2018 was € 4,789 million (+26.73% compared to 2017). The net result was affected by disposals (Slovak Power Holding, Slovenské Elektràrne). Actually, Enel has a market capitalization of € 59.84 billion (Borsa Italiana - Enel, 2019). Enel

has four Global Business Lines (Thermal generation and Trading, Infrastructure and Networks, Enel Green Power and Enel X) and two Local businesses (End-users market and Services). The Thermal generation and Trading accounts for 6.83%, Infrastructure and Networks for 47%, Enel Green Power for 28.18%, Enel X for 0.76%; End-users market weights 17.86% on total Gross profit, while Services line weights 0.52%. finally, Other services are accounted for -1.39%.
The following results presented are in Euros (EUR) (Enel, 2019).

Effects on the Balance Sheet

As regards the effects of the adoption of the new accounting standard on the results of the first quarter of the financial statements, an analysis of the budget items concerned is proposed below.

- **Assets**

The Assets' value results in an increase of € 1 356 million due to the recording on the Balance Sheet of the Right of Use assets. In the financial statements, the right of use of the assets is indicated directly among the Non-Current Assets - Property, Plant and Equipment. This item accounts for approximately 0.78%% of total assets with a value of € 1 356 million (a value that is certainly low, in line with the results obtained from the PWC study on the relevance of leasing by industry).

- **Liabilities**

Liabilities arising from the use of leased assets are classified both as long term and short term. Lease Liabilities are recorded under Non-Current Liabilities - Long term Borrowings; part of the quarterly change (59.43%) in this item is attributable to the application of IFRS 16, approximately € 1 156 million. Similarly, Current Liabilities - Short term Borrowings also increased due to the new liabilities recorded in the financial statements. The change is € 3 603 million, of which € 204 million (5.66%) derives from IFRS 16.

- **Equity**

The increase in liabilities due to the recognition of obligations linked to leasing is not offset by the increase in assets. In order to restore balance sheet parity, equity fell by € 4 million, from € 50 119 million to € 50 114 million. The effect of IFRS 16 has been explained in paragraph 3.5.1 - Effects on Balance Sheet, however, a brief explanation is provided.The main reason for this decrease is that, by applying the new accounting standard, the value of the Right of Use of the assets decreases on the basis of depreciation (usually on a straight line basis), while the Lease Liabilities decrease with the payment of the instalments which also include interest, and which are usually not constant.

Effects on Balance Sheet				
(€ million)	**IAS 17**	**IFRS 16**	**Delta %**	**Effect**
Non-current Assets	131.555	132.911	1,03%	*Increase*
Current Liabilities	44.561	44.765	0,46%	*Increase*
Non-current Liabilities	77.860	79.016	1,48%	*Increase*
Equity	50.119	50.115	-0,01%	*Decrease*
Debt	72.659	74.019	1,87%	*Increase*

Table 16: Effects on Balance Sheet of Enel

Effects on the Income Statement

The following table (Enel, 2019) shows the effect of the application of IFRS 16 in the first quarter of 2019 on the Income Statement.

Electricity purchases	5,519	4,377	1,142	26.1%
Consumption of fuel for electricity generation	1,130	1,111	19	1.7%
Fuel for trading and gas for sale to end users	3,928	3,619	309	8.5%
Materials	342	326	16	4.9%
Personnel	1,174	1,091	83	7.6%
Services, leases and rentals	4,107	4,005	102	2.5%
Other operating expenses	704	800	(96)	-12.0%
Capitalized costs	(474)	(384)	(90)	-23.4%
Total	**16,430**	**14,945**	**1,485**	**9.9%**

Figure 6: Effects of IFRS 16 on Income Statement of Enel

- **Operating Expenses**

First, costs increased in 2019 (compared to the first quarter of 2018). Ignoring all the causes that contributed to this increase (which are not useful for the analysis carried out), the change from IAS 17 to IFRS 16 contributed to this difference. The detail of the costs incurred shows an increase of about 2.5% for expenses relating to "Services, lease and rentals", as reported in the notes, a reduction of about € 61 million is the direct consequence of the recognition of some assets as financial leases and no longer as operating leases. The result of this reduction in operating costs translates, as we have already seen, into an increase in EBITDA (which in this case is offset by other factors).

- **EBITDA**

The decrease in operating expenses generates an increase in EBITDA of the same amount. In particular, the adoption of the accounting standard IFRS 16 has an incidence of 1.40% on the EBITDA.

- **Depreciation**

In 2019, the value of "Depreciation, amortization and impairment losses" increased by approximately 4.5% (€ 68 million). Approximately € 56 million of this increase is due to the depreciation of leased assets. The write-off of operating expenses resulting from the leasing contract translates into an increase in EBITDA and therefore EBIT.

- **EBIT**

The increase on EBIT linked to the decrease of the operating expenses is mitigated by the increase in Depreciation. The net effect on EBIT is therefore about € 5 million (given by the difference between operating costs and depreciation). EBIT before IFRS 16 is € 2 976 million, while EBIT after IFRS 16 is € 2 981 million.

- **Interest expenses**

Finally, the interest portion, which according to IAS 17 was considered in the payment included in the operating expeses, is now recorded directly under interest expenses. In the first quarter of 2019, there was an increase in financial expense of approximately € 311 million, of which € 12 million is attributable to the interest share of leased assets.

- **EBT**

According to the preliminary analysis on the effects of IFRS 16 on the Income Statement, the transition from IAS 17 to the new accounting standard does not affect the pre-tax result and the final result. However, it should be noted that in the case of Enel, EBT has a negative change of approximately € 7 million. This difference is due to the fact that the decrease in operating expenses is more than offset by the increase in depreciation and interest expenses. Similarly, EAT also reported a negative change of €5 million, due to the €2 million decrease in taxes. In any case, the change in taxation on the application of IFRS 16 is not part of the analysis carried out in this context.

Effects on Income Statement				
(€ million)	**IAS 17**	**IFRS 16**	**Delta %**	**Effect**
Operating Expense	16.548,0	16.487,0	-0,37%	*Decrease*
Depreciation	1.367,0	1.423,0	4,10%	*Increase*
EBITDA	4.343,0	4.404,0	1,40%	*Increase*
EBIT	2.976,0	2.981,0	0,17%	*Increase*
Interest Expense	659,0	671,0	1,82%	*Increase*
EBT	2.278,0	2.271,0	-0,31%	*Change*

Table 17: Effects on Income Statement of Enel

Effects on Cash Flow Statement

Based on the impact analysis carried out in paragraph *3.5.3 - Effects on Cash Flow Statement*, it was found that the Cash Flow from Operating as well as the Cash Flow from Investing increased while the Cash Flow from Financing decreased.

- **Cash Flow from Operating Activities**

With the application of IFRS 16, the portion of the lease payment is eliminated from the operating expenses, therefore the Cash Flow from Operating increases. Finally, the increase resulting from the addition of depreciation (as non-cash items) of approximately € 56 million must be taken into account. The net effect on the Cash Flow from Operating Activities therefore depends on the amount of the depreciation recognized and frome the decrease in EBT (approximately € 7 million). Final impact on the ability to generate cash from operations is an increase of € 49 million.

- **Cash Flow from Investing Activities**

As we can see from the analysis of the other companies, the impact of IFRS 16 on Cash Flow from Investing is related to the reduction of interest expenses. In particular, the Enel's case shows that there is an increase of € 12 million in Cash Flow from Investing Activities.

- **Cash Flow from Financing Activities**

The Cash Flow from Financing Activities decreased due to the increase in interest expenses and lease payments. This will result in decreasing the cash from financing of 4,29%.

- **Effects on Net Cash Flow**

The final impact of the adaptation to the new accounting standard on the Net Cash Flow is nil; as the IASB proposed[5], the IFRS 16 will not change the ability of the firm to generate cash, the

[5] Please refers to section 3.5.3 – Effects on Cash Flow Statement

only effect on the Cash Flow Statements is to alter the distribution of the cash generation among the activities.

Effects on Cash Flow Statement				
(€ million)	**IAS 17**	**IFRS 16**	**Delta %**	**Effect**
Cash Flow from Operations	2.329	2.378	2,10%	*Increase*
Cash Flow from Investing	-1.936	-1.924	0,62%	*Increase*
Cash Flow from Financing	1.421	1.360	-4,29%	*Decrease*
Net Cash Flow	1.814	1.814	0,00%	*No Change*

Table 18: Effects on Cash Flow Statement of Enel

Effects on Key Financial Ratios

The following paragraph proposes the analysis of the ratios previously presented in the paragraph 3.5.4 – Effects on Key Financial Metrics.

- **Lease Intensity Ratio**

The lease intensity is the ratio between lease expenses and total liabilities. In the case of Enel, the calculated value is 1.10% and indicates a low impact of leasing on liabilities. This result confirms the analysis carried out by PWC on the values found in the different industries in which the low impact of leasing in the Utilities sector was highlighted.

- **Debt to Equity Ratio**

The analysis of Enel's metrics reveals that the ratio between Net Debt and Equity is about 95.97% (adjusted for IFRS 16). The change from the value calculated with IAS 17 is approximately 2.92% (the Debt-to-Equity according to IAS 17 is 93.24%). In this context, the reasons why the value of this ratio is so high will not be analysed; what falls within the scope of this report is only the extent of the change. In any case, for a more detailed comparison of the differences between the results of the various companies, see the Conclusions.

- **Return on Assets**

As already discussed, there are various methods of calculating RoA; the adjusted RoA used by Morales-Díaz, José and Zamora-Ramírez envisages not taking interest expenditure into account when calculating RoA, as the performance measurement index should not be influenced by the company's financing choices. In this case the RoA is 1,72% before taking into account IFRS 16 effects, and 1,72% after the impact of the new standard. The decrease is due to the increase in Total Assets that is not completely offset by the increase in EBIT.

- **Net Financial Position**

The application of IFRS 16 implies an increase in the debts deriving from the recognition of the new Lease Liabilities which determines an increase in the Net Financial Position. The increase in numbers is € 1 360 million (about 2.91%).

- **Current Ratio**

The change in the Current Ratio of € 204 million (from € 3 576 million to € 3 780 million) is driven by the increase in Current liabilities due to the recognition of € 204 million of short-term lease liabilities.

Effects on Key Financial Ratios				
	IAS 17	**IFRS 16**	**Delta %**	**Effect**
Lease Intensity		1,10%		
D/E	93,24%	95,97%	2,92%	*Increase*
ROA	1,72%	1,71%	-0,61%	*Decrease*
NFP	46.733	48.093	2,91%	*Increase*
Interest Coverage	4,52	4,44	-1,62%	*Decrease*
Current Ratio	-3.576	-3.780	-5,70%	*Decrease*

Table 19: Effects on Key Financial Ratios of Enel

4.2. Gazprom

Gazprom is the largest Russian oil company operating in the Utilities industry. Its main activities are the exploration, extraction, processing, transportation and sale of natural gas, condensed gas and oil; in recent years the company has also entered the electricity sector. Gazprom is the company with the largest gas reserve in the world and the largest gas transmission system, about 172 000 km. Sales in 2018 stood at RUB 8 224 177 million (approximately € 111 272 million), up 25.63% on 2017. Profit before taxes increased by 82% compared to the previous year, at 31/12/2018 it was RUB 1 852 562 million (about € 25 065 million). The Gazprom Group operates in more than 20 countries worldwide and serves more than 130 markets, although the main one is Russia. It holds about 71% of Russian natural gas reserves and 16% of world reserves, while its production is about 69% of total Russian gas production and 12% of world gas production. In order to reduce costs, Gazprom has adopted a strategy of maximum vertical integration: all services are carried out by Gazprom, geological exploration, extraction, processing and transport to the consumer (Gazprom, 2018).

The analysis on Gazprom has been conducted on quarterly data available from quarterly results report. It is worth pointing out that the financials published by Gazprom did not explicitly show

the impact of the introduction of IFRS 16, so it has become necessary to conduct a detailed review of all the notes in the statements in order to highlight which are the impacts.
The following results presented are in Russian Rubles (RUB) (Gazprom, 2019).

Effects on the Balance Sheet

In this section, the main effects on the Balance Sheet of the IFRS 16 adoption will be presented.

- **Assets**

Consistently with what has been analysed in the previous paragraphs, the application of the new accounting standard implies the recording in the financial statements of the new assets acquired through leasing contracts. Non-current assets include the item "Right of Use", valued at RUB 210 573 million. Together with the increase in the right of use assets, it is found that the Property, Plant and Equipment decreases due to the recognition of some assets as leased asset (in the right of use item); the value of PPE under IAS 17 was RUB 13 844 548, while under IFRS 16 it changes to RUB 13 803 466. Among current assets, there are no deltas to highlight. The final effect on the Total Assets is an increase of RUB 169 491 million, the weight of the Right of Use on the Total Assets is approximately 0.99%, that is a result in line with the evidence emerged regarding the impact of leasing on the Utility industry.

- **Liabilities**

In the same way as the assets, also the Liabilities have an increase in value. The after-IFRS 16 value relating to the Lease Liabilities was found following the recognition in the Balance Sheet of the obligations deriving from the leasing contracts. The amount recognised under Liabilities amounts to RUB 208 593 million and is classified under non-current liabilities. The adoption of IFRS 16 led to a decrease in Other Non-Current Liabilities (with an increase of 4.63%). The impact of Lease Liabilities (also measured by the Lease Intensity Ratio) is 2.94%.

- **Equity**

As Total Liabilities increased more than Total Assets, there was a decrease in Total Equity of RUB -39 102 million. This result is consistent with the theoretical analysis proposed by the IASB in the IFRS 16 impact analysis document, presented in paragraph 3.5.1 - Effects on Balance

Sheet; for a detailed breakdown of the reasons, please refers to that section.

Effects on Balance Sheet				
(RUB million)	**IAS 17**	**IFRS 16**	**Delta %**	**Effect**
Non-current Assets	16.893.846	17.063.337	1,00%	*Increase*
Current Liabilities	2.371.026	2.371.026	0,00%	*Decrease*
Non-current Liabilities	4.509.473	4.718.066	4,63%	*Increase*
Equity	14.184.751	14.145.649	-0,28%	*Decrease*
Debt	4.576.166	4.784.759	4,56%	*Increase*

Table 20: Effects on Balance Sheet of Gazprom

Effects on the Income Statement

In order to provide a comprehensive overview of the changes that will result from the transition from IAS 17 to IFRS 16, the following is an analysis of the Income Statement. Also in this case the logic followed was the same: starting from the Income Statement items at 31/03/2019 (accounted for following the IFRS 16 standard), the corresponding values "IAS 17" have been calculated. The information about the impact of the new accounting standard where not disclosed explicitly, so it has been necessary to reconstruct the values from the footnotes of the Statements.

- **Operating Expenses**

Operating expenses have been reduced to take into account the capitalisation of Rental Expenses: the value under IAS 17 is approximately RUB 1 621 394 million, while the value adjusted for IFRS 16 is RUB 1 609 564 million, with a change of RUB -11 830 million (-0.73%) due to Rental Expenses. It is clear that the application of the accounting principle reduces operating expenses.

- **EBITDA**

Due to the reduction in operating expenses, EBITDA increased with a change corresponding to the elimination of Rental Expenses.

- **Depreciation**

As a result of the reduction in operating expenses, rental expenses are capitalized, and are therefore calculated in the increase in assets. The increase in Non-Current Assets (specifically Right of Use) translates into an increase in Depreciation. The value computed under IAS 17 is RUB 164 807 million, while the IFRS 16 value is RUB 172 652 million; that means a change of 4.76%.

- **EBIT**

Despite the increase in the Depreciation, EBIT increased by approximately 0.88% (the positive change is RUB 3 985 million). The reason for this increase is that the increase in the Depreciation is more than offset by the decrease in operating expenses. This result is consistent with the findings of the IASB; the transition to IFRS 16 implies that operating expenses are broken down into a depreciation portion and an interest portion[6].

- **Interest expenses**

The transition from IAS 17 to the new accounting standard led to an increase in interest expense of 6.13%. the positive change in RUB 3 985 million fully offset (together with the increase in depreciation) the reduction in operating expense.

- **EBT**

The application of IFRS 16 has no impact on the EBT; the result of the preliminary analysis carried out in paragraph 3.5.2 - Effects on Income Statement, showed that the new accounting standard does not affect the company's ability to produce earnings. As we can see, the increase in EBIT is offset by an increase in Interest Expense, which makes the EBT IFRS 16 equal to the EBT IAS 17.

Effects on Income Statement				
(RUB million)	**IAS 17**	**IFRS 16**	**Delta %**	**Effect**
Operating Expense	1.621.394,0	1.609.564,0	-0,73%	*Decrease*
Depreciation	164.807,0	172.652,0	4,76%	*Increase*
EBITDA	619.584,0	631.414,0	1,91%	*Increase*
EBIT	454.777,0	458.762,0	0,88%	*Increase*
Interest Expense	65.006,0	68.991,0	6,13%	*Increase*
EBT	711.926,0	711.926,0	0,00%	*No Change*

Table 21: Effects on Income Statement of Gazprom

Effects on Cash Flow Statement

On the basis of the information in the financial statements and in the quarterly report, it was possible to reconstruct in detail the extent of the changes in the Cash Flow Statement due to compliance with IFRS 16.

- **Effects on Cash Flow from Operating Activities**

The calculation of the cash flow from operating activities starts from EBT and then all non-cash items (depreciation) are added. Regarding the analysis of changes in the Operating Cash Flow, it should be noted that the Cash Flow before the change in Net Working Capital increased by 1.08% (from RUB 729 095 million to RUB 736 940 million). Adjusted Net Working Capital IFRS 16

[6] Section 3.5.2 – Effects on the Income Statement

did not change compared to that calculated on the basis of IAS 17, therefore the final change in Cash Flow from Operating Activities was RUB 7 845 million. The extent of the variation is due to the increase of the depreciation.

- **Effects on Cash Flow from Investing Activities**

There are no changes due to the impact of IFRS 16.

- **Effects on Cash Flow from Investing Activities**

The analysis carried out showed that the Cash Flow from Financing Activities decreased by approximately RUB -7 845 million. This decrease is due, on the one hand, to the increase in the principal portion of debt relating to lease liabilities (RUB -11 830) and, on the other hand, to the reduction in interest expenses (RUB 3 985 million).

- **Effects on Net Cash Flow**

According to paragraph 3.5.3 - Effects on Cash Flow Statement, IFRS 16 has a zero effect on Net Cash Flow. The analysis carried out on Gazprom also showed the same conclusion; the following table summarises the values of the Cash Flow.

Effects on Cash Flow Statement				
(RUB million)	**IAS 17**	**IFRS 16**	**Delta %**	**Effect**
Cash Flow from Operations	677.075	684.920	1,16%	*Increase*
Cash Flow from Investing	-667.573	-667.573	0,00%	*Decrease*
Cash Flow from Financing	244.367	236.522	-3,21%	*Decrease*
Net Cash Flow	253.869	253.869	0,00%	*No Change*

Table 22: Effects on Cash Flow Statement of Gazprom

Effects on Key Financial Ratios

This paragraph analyses the effects of IFRS 16 on ratios presented in paragraph 3.5.4 - Effects on Key Financial ratios.

- **Lease Intensity Ratio**

Lease Intesity is measured as $\frac{Lease\ Expenses}{Total\ Liabilities}$ and measures the impact of lease expenses on Total Liabilities. Gazprom presents a Lease Intensity of 2.94%.

- **Debt to Equity Ratio**

To measure the Debt to Equity Ratio, the Net Debt ($Net\ Debt = Lt\ Debt + St\ Debt - Cash$) was first calculated. The value before IFRS 16 is 20.06%, while the adjusted value for IFRS 16 is 21.59%. The increase of 7.63% is due to the recognition of the new obligations (Lease Liabilities) among the debts.

- **Return on Assets**

RoA is a measure of performance in relation to the ability of the company's assets to produce an economic return. In this case, an increase of 0.07% was observed. The reasons for such a modest increase lie in the fact that the increase in EBIT is almost completely offset by the increase in Assets (mainly due to the Right of Use).

- **Net Financial Position**

The Net Financial Position corresponds to the Net Debt used to calculate the Debt to Equity Ratio. With the application of IFRS 16 we observe an increase in the Net Financial Position of approximately 5.02%, deriving from the increase in the Lt Debt.

- **Interest Coverage**

The Interest Coverage Ratio identifies Gazprom's ability to repay interest on debt. The value calculated before the application of IFRS 16 is 7.00, the adjusted value for IFRS 16 is 6.65. The negative change of 4.954% is due to the fact that the increase in EBIT is more than offset by the increase in Interest Expense.

- **Current Ratio**

With the introduction of the new accounting standard there is no change in Gazprom's Current ratio since there are no new Current Assets or Current Liabilities recognized.

Effects on Key Financial Ratios				
	IAS 17	**IFRS 16**	**Delta %**	**Effect**
Lease Intensity		2,94%		
D/E	20,06%	21,59%	7,63%	*Increase*
ROA	2,159%	2,160%	0,07%	*Increase*
NFP	4.154.209	4.362.802	5,02%	*Increase*
Interest Coverage	7,00	6,65	-4,95%	*Decrease*
Current Ratio	1,76	1,76	0,00%	*Decrease*

Table 23: Effects on Key Financial Ratios of Gazprom

4.3. Eni

Eni is an Italian multinational company that operates in the oil, natural gas, chemicals and green chemistry sectors. Eni's Business model focuses on the production and distribution of energy sources in the most efficient and sustainable way possible. It is currently active in 67 countries.

In 2018 it achieved extraordinary results: the group adjusted operating profit increased by 94% (Eni, 2018); the most significant weight in profits is held by exploration and production activities, about 92% of the total; the profitability of the upstream[7] segment increased by 110% compared to 2017. Gas and energy production represent 4.6% of profits, about € 543 million (an increase of about 154% compared to 2017). In June 2019 Eni had a capitalisation of € 50.88 billion (Borsa Italiana - Eni, 2019).

The following results presented are in Euros (EUR).

Effects on the Balance Sheet

On the basis of the results published by Eni, it was not possible to reconstruct the financial statements at 31/12/2018 incorporating the effects of the adoption of IFRS 16; however, the report on the quarterly results contains sufficient data to provide an overview of the changes that occurred at 31/03/2019. In order to facilitate comparison with the results of previous years, the company has published quarterly data accounted for in accordance with IAS 17, providing in the notes data including the effect of IFRS 16.

- **Assets**

Based on what has already been presented, with the accounting of the lease according to IFRS 16, there is an increase in Fixed Assets due to the recognition of the Right of Use. Prior to the recognition under IFRS 16, fixed assets amounted to € 72 449 million, with the IFRS 16 adjustment increasing to € 78 053 million; the increase was € 5 604 million (7.74%). The weight of the new assets recognized in the financial statements was 4,38%; this figure is certainly higher than that calculated in the case of Gazprom, an index that Eni had a greater weight of off-balance-sheet leases. Current Assets do not change, while Non-Current Assets, and consequently Total Assets, change due to the increase due to the Right of Use.

- **Liabilities**

As shown in the balance sheet, the Liabilities increased by € 5 818 million following the recognition of the new obligations. Of this € 5 818 million, € 882 million is due to an increase in Short-term Lease Liabilities, while € 4 936 million is due to the recording of Long-term Lease Liabilities. The final impact of lease liabilities on the balance sheet is 7.75%, a value that will be analyzed in detail below among the key financial ratios.

- **Equity**

[7] The Business segments in oil and gas industry are divided into three main section: Upstream, Midstream and Downstream. The Upstream segment identifies the extraction, processing and purifying activities on the raw gas and the refining activities on the crude oil; the Downstream segment is relative to the distribution and sale of consumers products like gasoline, kerosene, diesel oil and lubricants; the Midstream involves the transportation and storage activities (British Petroleum, 2018).

The consequence of the change in Total Assets and Total Liabilities is a decrease in the total value of Equity of € 214 million. For an analysis of the reason for this change, please refer to paragraph 3.5.1 - Effects on Balance Sheet.

Effects on Balance Sheet				
(€ million)	**IAS 17**	**IFRS 16**	**Delta %**	**Effect**
Non-current Assets	79.784	85.388	7,02%	*Increase*
Current Liabilities	31.095	31.977	2,84%	*Increase*
Non-current Liabilities	38.037	42.973	12,98%	*Increase*
Equity	52.990	52.776	-0,40%	*Decrease*
Debt	38.080	43.898	15,28%	*Increase*

Table 24: Effects on Balance Sheet of Eni

Effects on the Income Statement

The analysis continues with the presentation of the changes in the Income Statement data. In the case of Eni, the income statement including the changes due to the application of the new standard is not explicitly shown, however, the quarterly results report contains details of the changes in the items concerned.

- **Operating Expenses**

Since the data in the publication relating to the first quarter of 2019, it can be seen that the adaptation to IFRS 16 led to a decrease in operating expenses due to the decrease in rental expenses. In this case, operating expenses decreased from € 13 668 million to € 13 416 million, a variation of € -252 million (- 1.84%).

- **EBITDA**

The decrease in operating expenses increased EBITDA by the same amount (€ 252 million).

- **Depreciation**

Depreciation increased by about € 195 million due to the increase in Fixed Assets (Right of Use), there was a change of 11.66%.

- **EBIT**

EBIT increased by 2.32% from € 2 461 million to € 2 518 million. The change of €57 million is due in part to the reduction in operating expenses and in part to the increase in depreciation.

- **Interest expenses**

The effect of the adjustment to IFRS 16 leads to a 35.19 % increase in Eni's interest expense. Considering the increase in depreciation and the € 57 million change in interest expense, the reduction in operating expense is balanced, so the final effect on EBT is zero.

- **EBT**

In paragraph 3.5.3 - Effects on Income Statement, a general analysis of the effects of the application of IFRS 16 on the Income Statement was presented; it was assumed that the EBT would not change, as the IFRS does not affect the company's ability to generate cash. The analysis carried out for Eni did not show any change in EBT. However, it is important to note that the quarterly report shows a change in taxes directly related to the application of IFRS 16. This increase, equal to € 25 million, has a negative impact on Net Profit. However, the analysis of the effects on taxation is not part of the objectives of this discussion; here we just want to point out that the change on the net result depends on a change in taxes.

Effects on Income Statement				
(€ million)	**IAS 17**	**IFRS 16**	**Delta %**	**Effect**
Operating Expense	14.407	14.155	-1,75%	*Decrease*
Depreciation	1.672,0	1.867,0	11,66%	*Increase*
EBITDA	4.133,0	4.385,0	6,10%	*Increase*
EBIT	2.461,0	2.518,0	2,32%	*Increase*
Interest Expense	162,0	219,0	35,19%	*Increase*
EBT	2.299,0	2.299,0	0,00%	*No Change*

Table 25: Effects on Income Statement of Eni

Effects on Cash Flow Statement

In the case of Eni, the quarterly report presents the impacts due to the adoption of IFRS 16 on the items that are included in the Cash Flow Statement. It was therefore possible to reconstruct in a precise manner the variations on the individual activities that generate/drain resources. As can be seen from the analysis carried out below, the adaptation to the new accounting standard does not affect the resources generated but affects the distribution of activities.

- **Effects on Cash Flow from Operating Activities**

The adjustment to IFRS 16 implies an increase in Net Working Capital due to the increase in Other Current Liabilities and Payables, respectively € 11 million and € 128 million. The effect of the increase in the NWC, together with the increase in Net Profit, generated a change in the Cash Flow from Operations of € 189 million, for a total of € 2 097 million. In this case, the transition to IFRS 16 accounted for 9.91%.

- **Effects on Cash Flow from Investing Activities**

Capital Expenditures are € 2 280 million according to IAS 17. With the IFRS 16 adjustment, there was a negative change of € 41 million (final value € 2 239 million). The final effect, therefore, is a reduction in the Cash Flow from Investing, which accounts for 1.8%.

- **Effects on Cash Flow from Financing Activities**

With the increase in the capitalisation of off-balance sheet leases, the portion of expenditure related to operating leases is now recognised as long term and short-term debt as Lease Liabilities. This increase is reflected in the increase in Cash Flow from Financing of approximately -110%, from € 210 million to € 440 million.

- **Effects on Net Cash Flow**

As already analysed in the section on the impact on cash flow, the adaptation to IFRS 16 does not affect the company's ability to generate cash. Consistent with this result, the Net Cash Flow has not changed.

Effects on Cash Flow Statement				
(€ million)	**IAS 17**	**IFRS 16**	**Delta %**	**Effect**
Cash Flow from Operations	1908	2097	9,91%	*Increase*
Cash Flow from Investing	-2280	-2239	1,80%	*Increase*
Cash Flow from Financing	-210	-440	-109,52%	*Decrease*
Net Cash Flow	-582	-582	0,00%	*No Change*

Table 26: Effects on Cash Flow Statement of Eni

Effects on Key Financial Ratios

The following analysis concerns the effects of the new accounting standard on the key financial ratios presented in paragraph 3.5.4 - Effects on Key Financila Ratios.

- **Lease Intensity Ratio**

As already mentioned, the Lease Intensity ratio measures the weight of the new debt (resulting from the Lease Liabilities) in relation to the Total Liabilities. For Eni a value of 7.75% has been calculated.

- **Debt to Equity Ratio**

The value of D/E under IAS 17 is 21.25%. The adoption of IFRS 16 accounted for approximately 50%, the new value is 32.36%. Compared to Gazprom, the increase in the ratio was greater due to the higher weight of the Lease Liabilities, measured by the Lease Intesity ratio.

- **Return on Assets**

The Return on Assets was affected by a negative change of 2.17% due to the increase in Assets, which was not offset by the increase in EBIT (it changes from 2.01% to 1.97%). This result indicates that with the adoption of IFRS 16, the assets recorded in the balance sheet have a greater weight on the total compared to other companies, for example Gazprom (the weight of the Right of Use for Eni is 4.38%, the weight of the Right of Use for Gazprom is 1.05%).

- **Net Financial Position**

The Net Financial Position, measured as net debt, increased by 51.67%. This change of € 5 818 million is directly attributable to the increase in debt resulting from the Lease Liabilities.

- **Interest Coverage**

The ability to bear interest on debt through the operating result, as measured by the interest coverage ratio, deteriorated by 24.31%. In this case, the change (from 15.19 to 11.50) depends on the more than proportional increase in interest expense compared with EBIT.

- **Current Ratio**

As regards the current ratio, there was a decrease of 8.01% due to the increase in current liabilities (€ 882 million). However, current resources are more than sufficient to meet current liabilities (the difference is € 10,136 million).

Effects on Key Financial Ratios				
	IAS 17	**IFRS 16**	**Delta %**	**Effect**
Lease Intensity		7,75%	52,29%	*Increase*
D/E	21,25%	32,36%	-2,17%	*Decrease*
ROA	2,01%	1,97%	51,67%	*Increase*
NFP	11.259	17.077	-24,31%	*Decrease*
Interest Coverage	15,19	11,50	-2,76%	*Decrease*
Current Ratio	1,35433	1,31698	52,29%	*Increase*

Table 27: Effects on Key Financial Ratios of Eni

4.4. BP plc

BP plc is a British company that operates in 78 countries around the world, operating in the energy and oil sectors. Its main activities are the exploration, extraction, transformation, production and transport of natural resources. BP's mission is to "provide customers with fuel for transport, energy for heat and light, power for industry, lubricants to keep engines moving and the petrochemicals products used to make everyday items such as paints, clothes and packaging"

(British Petroleum, 2018). Born as British Petroleum, it changed its name in the 2000s following the merger with Amco, becoming one of the major players in the oil industry. In recent years it has developed an investment plan for the production of renewable energy (bioenergy, Biofuel, solar energy and wind energy). In 2018 it reported profits of $ 9 383 million, an increase of 177% over the previous year (2016 had been closed with a loss of about $ 999 million). The largest share of revenues, about 91% comes from the Downstream segment (British Petroleum, 2018).
The following results presented are in American Dollars (USD) (British Petroleum, 2019).

Effects on the Balance Sheet

An analysis of the main effects on the financial statements of the transition from IAS 17 to IFRS 16 is given below. In order to identify the impact of the new accounting standard, the data for the first quarter of 2019 extrapolated from the notes to the quarterly report were used. Subsequently, an accurate analysis was carried out to calculate the individual changes for each balance sheet item.

- **Assets**

With the application of IFRS 16, there is an increase in non-current assets of approximately $9 600 (4.55%). The quarterly report identifies this change within Property, Plant and Equipment; it is clear that the increase is due to the recording of new assets (Right of Use). As far as Current Assets are concerned, there were no changes in the balance sheet items. The weight of the new assets on the total assets is approximately 3.27%, a figure that is in line with the weight of the assets (IFRS 16) of the industry.

- **Liabilities**

The recognition of the new payment obligations due to the leasing determines an increase in the Total Liabilities of approximately $ 10 294 million. The new liabilities are composed of a part of Long-term Lease Liabilities and a part of Short-term Lease Liabilities. In particular, the Non-Current Liabilities increase from $ 110 478 million to $ 118 673, the variation of $ 8 195 million (7.42%) depends solely on the new Lease Liabilities; the Current Liabilities, however, suffer an increase of $ 2 099 (3.03%) million due to the recognition of new leases.

- **Equity**

As assets and liabilities increase, equity decreases in order to restore parity in the balance sheet. Equity fell by $ -694 million (-0.67%) from $ 104 030 million to $ 103 336 million.

Effects on Balance Sheet				
($ million)	**IAS 17**	**IFRS 16**	**Delta %**	**Effect**
Non-current Assets	210.984	220.584	4,55%	*Increase*
Current Liabilities	69.173	71.272	3,03%	*Increase*
Non-current Liabilities	110.478	118.673	7,42%	*Increase*
Equity	104.030	103.336	-0,67%	*Decrease*
Debt	126.637	136.931	8,13%	*Increase*

Table 28: Effects on Balance Sheet of Bp

Effects on the Income Statement

The analysis of the changes in the Income Statement was carried out in the same way as that of the Balance Sheet: the following data on the changes was extracted from the quarterly financial statements.

- **Operating Expense**

The adaptation to the accounting standard IFRS 16 involves a reduction in Operating expenses deriving from leasing contracts recorded as operating leases. In the specific case of BP, IAS 17 operating expenses amount to $57 882, of which approximately $600 is attributable to the Lease Expense. The negative change amounts to -1.04%. As shown in the analysis carried out in paragraph 3.5.2 - Effects on Income Statement, the effect of the decrease in operating expense is totally offset by the increase of both the depreciation and the interest expense related to IFRS 16 assets.

- **EBITDA**

Earnings before taxes, depreciation and amortization totaled $10,125 million, an increase of 6.30% due to a decrease in operating expenses of $600 million.

- **Depreciation**

With the adaptation to IFRS 16, operating expenses are capitalized, therefore a part of those expenses appears in the Income Statement as Depreciation. Analysis of British Petroleum's data shows that the increase in depreciation is approximately $500 million (12.62%), a figure very close to the 11.66% recorded for Eni. As for Gazprom, on the other hand, depreciation increased only by 1.27%, an indication that off-balance-sheet leases weigh less.

- **EBIT**

Also in the case of BP there was an increase in EBIT due to the decrease in operating expenses, which was no longer offset by the increase in deprecistion. The change observed is 1.80%, corresponding to approximately $ 100 million.

- **Interest expenses**

In the case of BP, interest expenses range from $782 million to $882 million; this change of $100 million represents a 12.79 % increase.

- **EBT**

As already widely discussed[8], the application of IFRS 16 does not give rise to any difference in the final value of the EBT/EAT[9]. The increase in EBIT is in fact sterilised by the increase in interest expense deriving from lease liabilities, which rose from $ 782 million to $ 882 million. As can be seen, the reduction in operating expenses of $ -600 million is totally offset by the increase in depreciation of $ 500 million and interest expense of $ 100 million.

Effects on Income Statement				
(€ million)	**IAS 17**	**IFRS 16**	**Delta %**	**Effect**
Operating Expense	57.882	57.282	-1,04%	*Decrease*
Depreciation	3.961,0	4.461,0	12,62%	*Increase*
EBITDA	9.525,0	10.125,0	6,30%	*Increase*
EBIT	5.564,0	5.664,0	1,80%	*Increase*
Interest Expense	782,0	882,0	12,79%	*Increase*
EBT	4.782,0	4.782,0	0,00%	*No Change*

Table 29: Effects on Income Statement of Bp

Effects on Cash Flow Statement

The analysis of the changes in the Cash Flow Statement revealed that not only the cash flow from operating activities and the cash flow from financing showed changes, but also the cash flow from investing. The same result was also found in Eni's analysis, and contrasts with the evidence suggested by the IASB, according to which the cash flow from investing does not change. In any case, a detailed description of each type of Cash Flow is presented below.

- **Effects on Cash Flow from Operating Activities**

[8] Please, refer to section 3.5.2 Effects on Income Statement for a more detailed analysis about variations in EBT/EAT.

[9] Eni was a different case in which the variation of EAT was driven by changes in taxes.

According to the estimate presented in BP's quarterly report, the transition from IAS 17 to IFRS 16 implies a positive change in the cash generated by operating activities: with the reduction in operating expenses, approximately $ 500 million have an impact on cash flow from operations.

- **Effects on Cash Flow from Investing Activities**

Continuing the analysis of the cash flow statements, it should be noted that approximately $ 100 million (of the $ 600 million of the operating expense) are included in the cash flow from investing under IAS 17. With the transition to IFRS 16, the cash flow from investing activities underwent a positive change of $ 100 million, corresponding to approximately 1.97%.

- **Effects on Cash Flow from Financing Activities**

Interest expenses as well as lease payments are classified under cash flow from financing activities. The negative change of $600 million fully offsets the positive change of $500 million in cash flow from operations and $100 million in cash flow from investing. The change in percentage terms is -62.50%.

- **Effects on Net Cash Flow**

The final effect on the net cash flow is nil; this result is consistent with the above[10]. In order to provide a realistic representation of the results, it should be noted that the calculation of the net cash flow also includes the "adjustment for currency" with a value of approximately $ 32 million. In any case, the final value of the net cash flow amounts to $ -1 212 million. Finally, as already shown in the analysis of the other companies, the effect of the adjustment to IFRS 16 on the Cash Flow Statement is only to redistribute the cash generation capacity among the various assets.

Effects on Cash Flow Statement				
(€ million)	**IAS 17**	**IFRS 16**	**Delta %**	**Effect**
Cash Flow from Operations	4.796	5.296	10,43%	*Increase*
Cash Flow from Investing	-5.080	-4.980	1,97%	*Increase*
Cash Flow from Financing	-960	-1.560	-62,50%	*Decrease*
Net Cash Flow (adjusted for currency)	-1.212	-1.212	0,00%	*No Change*

Table 30: Effects on Cash Flow Statement of Bp

Effects on Key Financial Ratios

The following is an analysis of the changes that have affected the key financial ratios.

- **Lease Intensity Ratio**

[10] Please refers to section 3.5.3 – Effects on Cash Flow Statement

As regards British Petroleum, the weight of the obligations deriving from the leasing contract was 5.42%. This result is higher than that calculated for Enel and Gazprom (1.10% and 3.11% respectively). It is clear, therefore, that BP had a relatively larger quantity of assets accounted for under operating leases.

- **Debt to Equity**

The Debt to Equity ratio calculated before the adoption of IFRS 16 is 43%; the transition to the new accounting standard has a double effect on this ratio, on the one hand the Equity decreases, on the other hand the Net Debt increases. The final impact is a positive variation of 23.84% (from 43% to 53.25%).

- **Return on Assets**

One of the consequences of the increase in Assets, due to the capitalization of new leasing contracts and those that were previously accounted for according to the operating method, is the reduction of the Return on Assets. From the analysis of the data accounted for in compliance with IAS 17, RoA is 1.96%, while after the IFRS 16 adjustment, the value found is 1.93%. This reduction of 1.53% is solely due to the 3.38% increase in assets.

- **Net Financial Position**

The change in Net Financial Position observed for British Petroleum amounts to $10 294 million due to the increase in Long-term and Short-term Lease Liabilities. The change in percentage terms is 23.01%.

- **Interest Coverage**

The Interest Coverage Ratio varied from 7.12 to 6.42, with a negative change of 9.74%. The decrease in the ratio is due to the increase in interest expense.

- **Current Ratio**

With the recognition of new liabilities related to leasing contracts, the Current Ratio decreased by 59.56%. The negative change of $ 2 099 million depends on the recording of the short-term Lease Liabilities for $ 2 099 million which are not offset by a corresponding increase in current assets.

Effects on Key Financial Ratios				
	IAS 17	**IFRS 16**	**Delta %**	**Effect**
Lease Intensity		5,42%		
D/E	43,00%	53,25%	23,84%	*Increase*
ROA	1,96%	1,93%	-1,53%	*Decrease*
NFP	44.734	55.028	23,01%	*Increase*
Interest Coverage	7,12	6,42	-9,74%	*Decrease*
Current Ratio	1,051	1,020	-2,95%	*Decrease*

Table 31: Effects on Key Financial Ratios of Bp

4.5. Equinor

Equinor is a Norwegian oil company founded in the 1970s under the name Statoil. In 2007, Statoil merged with the oil and gas division of Norsk-Hydro, becoming StatoilHydro. In 2018 the company changed its name to Equinor. Currently, the company operates in about 36 countries, most of the extracting activities are conducted in Norway, Northern Europe, North America and Brazil. Equinor's activities relate to the extraction, processing, transportation and sale of crude oil, natural gas, petroleum, and chemical products. In recent years, Equinor has expanded its business into the production of solar, wind, and hydrogen energy. The company has total revenues in 2018 of $ 79 301. The activity related to the processing and sale of crude oil accounts for 51.64%, the sale of natural gas accounts for 18.36%, the processing and sale of liquids extracted from natural gas accounts for 9.04%, the sale of refined products accounts for 16.55%, the other revenues account for 4.41% (Equinor, 2018).
The following results presented are in American Dollars (USD) (Equinor, 2019).

Effects on the Balance Sheet

In order to give the measure of the impact of the IFRS 16 on Equinor's Balance Sheet it has been conducted an analysis on the quarterly results published by the company. The outcome of the analysis is presented below.

- **Assets**

Following the recognition of the new assets under IFRS 16, the value of Total Assets increases due to the value of the Right of Use. The amount of the increase of the Non-Current assets is $ 4 483 million and it weighs for 3.67% on the value of the Total Assets. There are no increases in Current Assets.

- **Liabilities**

With the adoption of IFRS 16, Lease liabilities increased by $ 3 632 million (approximately 6.27% of Total Non-Current Liabilities). At the same time, Current Liabilities also increase because of the recognition of new Lease Liabilities ($1 135). New bonds account for about 6.18% of total liabilities.

- **Equity**

The increase in Total Liabilities is higher than the increase in Total Assets, so there is a decrease in total equity of about $284 million. This result is consistent with the findings of the IASB in its preliminary analysis.

Effects on Balance Sheet				
($ million)	**IAS 17**	**IFRS 16**	**Delta %**	**Effect**
Non-current Assets	89.245	93.728	5,02%	*Increase*
Current Liabilities	18.120	19.255	6,26%	*Increase*
Non-current Liabilities	54.309	57.941	6,69%	*Increase*
Equity	45.401	45.117	-0,63%	*Decrease*
Debt	34.204	38.971	13,94%	*Increase*

Table 32: Effects on Balance Sheet of Equinor

Effects on the Income Statement

The analysis of the effects on the Income Statement was carried out in the same way as the analysis of the Balance Sheet: the quarterly results provided by the company were used as the basis for calculating the changes attributable to the application of IFRS 16 (based on the notes in the company's reports).

- **Operating Expense**

The introduction of the new accounting standard resulted in a reduction in operating expenses of approximately $305 million, due to the capitalisation of operating expenses related to leasing. In the case of Equinor, the negative change is 3.09% (from $9 867 million to $9 562 million).

- **EBITDA**

The reduction in operating expenses generates an increase in the same amount as EBITDA, which varied from $6,615 million to $6,920 million (an increase of 4.61%). This result is consistent with the theoretical analysis presented in paragraph 3.5.2 - Effects on Income Statement and with the results obtained for other companies.

- **Depreciation**

One of the effects of the adoption of IFRS 16 concerns the increase in depreciation: the recognition of new assets in the item Right of Use implies the recognition of the related depreciation. For Equinor, depreciation goes from $1,924 million to $2,188 million; the change is about $264 million.

- **EBIT**

The increase in depreciation partly reduces the effect of the reduction in operating expenses. The net change in EBIT is in fact $ 41 million (0.87%).

- **Interest expenses**

Equinor's interest expense increased by $41 million as a result of the adoption of IFRS 16. This increase is due to the payment of interest related to lease payments, which are now shown separately.

- **EBT**

As we have already said, the final effect of the introduction of the IFRS on the result before taxes is null and void. Also in the case of Equinor, there were no changes with respect to what was analysed in paragraph 3.5.2 - Effects on Income Statement.

Effects on Income Statement				
($ million)	**IAS 17**	**IFRS 16**	**Delta %**	**Effect**
Operating Expense	9.867	9.562	-3,09%	*Decrease*
Depreciation	1.924,0	2.188,0	13,72%	*Increase*
EBITDA	6.615,0	6.920,0	4,61%	*Increase*
EBIT	4.691,0	4.732,0	0,87%	*Increase*
Interest Expense	-190,0	-149,0	21,58%	*Increase*
EBT	4.881,0	4.881,0	0,00%	*No Change*

Table 33: Effects on Income Statement of Equinor

Effects on the Cash Flow Statement

On the basis of the analysis carried out on the Equinor data, it emerged that the application of IFRS 16 only affects the Cash Flow from Operating Activities and the Cash Flow from Financing Activities, leaving the Cash Flow from Investing Activities unchanged. This result, consistent with the IASB's analysis of changes in Cash Flow Statements, is due to the fact that the adjustment to the new accounting standard implies a reduction in rental expenses (which were included in Cash Flow from Financing), an increase in depreciation (which affects Cash Flow from Operations) and an increase in interest expense (the effect of which is observable in Cash Flow from Financing).

- **Effects on Cash Flow from Operating Activities**

The effect of the adoption of IFRS 16 is a change of $264 million in the net cash before change in the NWC. The final change in the Cash Flow from Operating Activities is an increase from $ 4 870 million to $ 5 134 million.

- **Effects on Cash Flow from Investing Activities**

There were no changes in the Cash Flow from Investing Activities following the introduction of IFRS 16.

- **Effects on Cash Flow from Financing Activities**

The Cash Flow from Financing Activities decreased from $ -897 million to $ -1 161 million, the total change was $ -264 million (-29.43%).

- **Effects on Net Cash Flow**

The net effect on the Cash Flow is zero; as mentioned above, the application of IFRS 16 does not affect the company's ability to generate resources.

Effects on Cash Flow Statement				
($ million)	**IAS 17**	**IFRS 16**	**Delta %**	**Effect**
Cash Flow from Operations	4.870	5134	5,42%	*Increase*
Cash Flow from Investing	-4882	-4882	0,00%	*Decrease*
Cash Flow from Financing	-897	-1161	-29,43%	*Decrease*
Net Cash Flow (adjusted for currency)	-939	-939	0,00%	*No Change*

Table 34: Effects on Cash Flow Statement of Equinor

Effects on Key Financial Ratios

The following is an analysis of the changes that have affected the key financial ratios.

- **Lease Intesity Ratio**

The lease intensity ratio measured for Equinor is 6.18%. This ratio measures the importance of the lease liabilities with respect to the total liabilities; the measured value is consistent with that found for the other companies.

- **Debt to Equity Ratio**

Under IAS 17, the D/E measured for Equinor is 40.56%. With the introduction of IFRS 16 we are witnessing the recording of new debts (lease liabilities) in the balance sheet and the reduction in the value of equity; both these changes cause an increase in the ratio. The new measured value of 51.38% leads to a change of 23.25%.

- **Return on Assets**

The value of the Return on Assets deteriorates slightly (about -2.82%) due to the increase in assets. The value of IFRS 16 is 3.87% against 3.98% of IAS 17.

- **Net Financial Position**

The IFRS 16 adjustment implies an increase in the Net Financial Position of approximately $ 4 767 million (25.89%) due to the increase in the Lease Liabilities.

- **Interest Coverage**

Unfortunately, it was not possible to determine the precise value of the Interest Coverage Ratio because the quarterly financial statements do not indicate the precise amount of interest expense, but only the figure relating to net interest expense.

- **Current Ratio**

The Current Ratio worsens by 5.89%, from 1,578 to 1,485.

Effects on Key Financial Ratios				
	IAS 17	**IFRS 16**	**Delta %**	**Effect**
Lease Intensity		6,18%		
D/E	40,56%	51,38%	26,68%	26,68%
ROA	3,98%	3,87%	-2,82%	-2,82%
NFP	18.414	23.181	4.767	25,89%
Interest Coverage	-	-	-	-
Current Ratio	1,578	1,485	-0,093	-5,89%

Table 35: Effects on Key Financial Ratios of Equinor

4.6. Petroleo Brasileiro

Petrobras was founded in 1953 by the government of Brazil. Currently it is about 53% owned by the Brazilian government. The activities in which the company operates are the exploration and extraction of crude oil, natural gas and natural gas liquids, refining, transport and sale of products. Other sectors in which it operates are Biofuels, electricity and chemical fertilizers. Currently, Petrobras' market capitalization is about $94,356 billion. At 31/03/2019 total revenues amounted to $21,229 million, of which 15% came from the sale of natural gas, 53.62% from exploration

and production, 76% from refining, transportation and marketing and 29% from distribution, while eliminations produced a loss of 74.15% (Petrobras, 2018).
The following results presented are in American Dollars (USD) (Petrobras, 2019).

Effects on the Balance Sheet

In order to calculate the effects of the adoption of IFRS 16 on the financial statements of Petroleo Brasileiro, the results published in the company's quarterly report were analysed. The main changes are summarized below.

- **Assets**

The value of the total assets increased following the recording of the right of use for a value of $ 26 575 million (corresponding to 12.65% of the total non-current assets); with regard to the current assets, there were no changes due to IFRS 16. Therefore, total assets increased by the change in non-current assets, which corresponds to an increase of 10.91%.

- **Liabilities**

Based on the analysis carried out on the balance sheet of Petroleo Brasileiro, the increase in non-current liabilities of $ 21 167 million (from $ 119 084 million to $ 140 251 million) is noted. The change relates to the recognition of the present value of future payments related to leasing contracts. With regard to current liabilities, an increase of 18.56% has been calculated. It should be noted that the lease liabilities recorded among current liabilities range from $ 622 million to $ 6 030 million. The variation of the lease liabilities is of $ 26 575 million.

- **Equity**

Total equity does not change. This result is in contrast with what was analysed in paragraph 3.5.1 - Effects on Balance Sheet. The reason why there is no change in the value of equity is that liabilities increase by the same amount as assets.

Effects on Balance Sheet				
($ million)	**IAS 17**	**IFRS 16**	**Delta %**	**Effect**
Non-current Assets	183.469	210.044	14,48%	*Increase*
Current Liabilities	23.729	29.137	22,79%	*Increase*
Non-current Liabilities	119.084	140.251	17,77%	*Increase*
Equity	74.173	74.173	0,00%	*Decrease*
Debt	86.300	112.875	30,79%	*Increase*

Table 36: Effects on Balance Sheet of Petrobras

Effects on the Income Statement

As for the analysis of the Balance Sheet, also for the Income Statement, the changes in the quarterly data as at 31/03/2019 have been calculated on the basis of the notes indicated in the quarterly report.

- **Operating Expense**

Operating expenses classified in accordance with IFRS 16 decreased compared to operating expenses under IAS 17. The magnitude of the change of approximately $ 1 661 million depends on the capitalisation of expenses related to lease payments. The reduction in operating expenses was calculated as the sum of the increase in depreciation and the increase in interest expense.

- **EBITDA**

The direct consequence of the reduction in operating expenses is the increase in EBITDA for the same amount.

- **Depreciation**

Since leased assets are recognised in the financial statements, there was an increase in depreciation of approximately $1 328.

- **EBIT**

EBIT increased less than EBITDA (9.83% - EBIT, 28.76% - EBITDA). The increase in the value of EBIT is directly linked to the decrease in operating expenses.

- **Interest expenses**

Following the adoption of IFRS 16, interest expense increased by € 333 million (approximately 22.61%). The sum of the increase in interest expense and depreciation is equal to the reduction in operating expense; therefore, the final effect on EBT is zero.

- **EBT**

EBT does not change; this result is consistent with both the analysis presented in chapter 3 and the analysis carried out on the company's financial statements.

Effects on Income Statement				
($ million)	IAS 17	IFRS 16	Delta %	Effect
Operating Expense	15.454	13.793	-10,75%	*Decrease*
Depreciation	2.388,0	3.716,0	55,61%	*Increase*
EBITDA	5.775,0	7.436,0	28,76%	*Increase*
EBIT	3.387,0	3.720,0	9,83%	*Increase*
Interest Expense	1.473,0	1.806,0	22,61%	*Increase*
EBT	1.690,0	1.690,0	0,00%	*No Change*

Table 37: Effects on Income Statement of Petrobras

Effects on the Cash Flow Statement

On the basis of the information contained in the quarterly report of Petroleo Brasileiro, it was possible to reconstruct the Cash Flow Statement by discerning the effects of the adoption of IFRS 16. Subsequently, the changes were calculated in order to trace the major impacts of the transition from IAS 17 to IFRS 16. The results of the analysis carried out on the Cash Flow Statement are presented below.

- **Effects on Cash Flow from Operating Activities**

On the basis of the available data, it has not been possible to calculate with precision the variation of the cash flow from operating before the net working capital, therefore the variation of the cash flow from operating activities is introduced directly. The reduction in operating expenses had a positive impact of 28.19% on cash flow from operations, which went from $ 4 711 million to $ 6 039 million

- **Effects on Cash Flow from Investing Activities**

In the case of Petroleo Brasileiro, the cash flow from investing activities does not change, in line with what is presented in paragraph 3.5.3 - Effects on the Cash Flow Statement.

- **Effects on Cash Flow from Financing Activities**

The change of -16.57% in the cash flow financing activities depends on the fact that the operating lease payments that were previously indicated in the cash flow from operating, with the adoption of IFRS 16 are included in the cash flow from financing.

- **Effects on Net Cash Flow**

The net effect of the changes in cash flows is zero: the increase in cash flow from operating activities is completely offset by the reduction of the cash flow from financing. Therefore, the only effect of IFRS 16 is to distribute the sources of generation of resources differently, leaving the final result unchanged.

Effects on Cash Flow Statement				
($ million)	**IAS 17**	**IFRS 16**	**Delta %**	**Effect**
Cash Flow from Operations	4.711	6.039	28,19%	*Increase*
Cash Flow from Investing	-1.211	-1.211	0,00%	*Decrease*
Cash Flow from Financing	-8.015	-9.343	-16,57%	*Decrease*
Net Cash Flow (adjusted for currency)	-4.538	-4.538	0,00%	*No Change*

Table 38: Effects on Cash Flow Statement of Petrobras

Effects on Key Financial Ratios

After having presented the main effects on financials deriving from the introduction of IFRS 16, an analysis of the changes in the key financial ratios identified in paragraph 3.5.4 - Effects on Key Financial Ratios is proposed below.

- **Lease Intensity Ratio**

The Lease Intesity ratio is the index that measures the impact of lease liabilities on total liabilities. The impact of IFRS 16 on the company Petroleo Brasileiro is 15.96%, and is the highest index measured among the companies analyzed.

- **Debt to Equity Ratio**

The ratio of net debt to equity observed on the data reclassified according to IAS 17 is 94.47%. The effect of IFRS 16 on this ratio is an increase of 37.93%; the new value is 130.30%. This result indicates that the adjustment to the new accounting principle and the consequent increase in liabilities (deriving from the recognition of new lease liabilities) has a profound impact on the financial structure of Petroleo Brasileiro. This evidence is consistent with the high incidence of lease liabilities found in the analysis of the lease intensity ratio.

- **Return on Assets**

As for the other companies, the value of the RoA decreases slightly, going from 1.56% to 1.53%. the negative variation of -2.15% is linked to the fact that the increase in EBIT corresponds to an increase in the assets more than proportionally.

- **Net Financial Position**

The increase in lease liabilities observed has a negative effect on the net financial position. The value measured according to IAS 17 is $ 70 071 million, while the value IFRS 16 is $ 96 646 million. The increase of $ 26 575 (37.93%) indicates, once again, that the company in question had a significant share of off-balance-sheet leases accounted for using the operating method.

- **Interest Coverage**

The value of the interest coverage ratio measured before considering the effects of IFRS 16 is 2.30; according to Damodaran's indications for non-financial firms with a market capitalization greater than $5 billion, an interest coverage ratio of less than 2.5 is equivalent to a BB+ rating (Damodaran, 2019). With the introduction of IFRS 16, this ratio deteriorates to 2.06 (for a BB rating).

- **Current ratio**

The value of the current ratio varies from 1,412 to 1,150 due to the greater increase in current liabilities compared to current assets (which do not change following the introduction of IFRS 16). The negative variation recorded is -18.56%.

Effects on Key Financial Ratios				
	IAS 17	**IFRS 16**	**Delta %**	**Effect**
Lease Intensity		15,69%		
D/E	94,47%	130,30%	37,93%	*Increase*
ROA	1,56%	1,53%	-2,15%	*Decrease*
NFP	70.071	96.646	37,93%	*Increase*
Interest Coverage	2,30	2,06	-10,42%	*Decrease*
Current Ratio	1,412	1,150	-18,56%	*Decrease*

Table 39: Effects on Key Financial Ratios of Petrobras

4.7. Lukoil

Lukoil is one of the largest energy multinationals in the world (operating in more than 30 countries) and the second largest in Russia after Gazprom. It was founded in Russia in 1991 following the merger of three state-owned oil companies. Lukoil's activities are divided into: exploration, extraction, production, transport and sale of oil, natural gas and derivatives and production of electricity. As regards the impact of the activities carried out on sales, gasoline accounts for 38%, diesel fuel for 25%, fuel oil for 11%, jet fuel for 6%, vacuum gasoil for 3%, lubricants for 1% and others for 16%. In 2018 Lukoil achieved revenues of RUB 8 036 million, an increase of 35.4% compared to 2017, while EBITDA of RUB 1 115 million increased by 34.1% compared to the previous year (Lukoil, 2018).
The following results are presented in Russian Rubles (RUB) (Lukoil, 2019).

Effects on the Balance Sheet

The data presented below are related to the analysis carried out on the results published in the quarterly financial statements of the oil company Lukoil. The impact analysis of IFRS 16 was carried out using as a basis the data as at 31/03/2019 and comparing them with the values obtained on the basis of IAS 17[11].

- **Asset**

The change (approximately RUB 187 214 million) is due to the inclusion of the new item relating to the right of use of leased assets. Non-current assets increased by 4.52% compared to IAS 17. The change in total assets only depends on the change in non-current assets, since current assets do not change.

- **Liabilities**

According to the data, there is an increase of approximately RUB 33 776 million in current liabilities due to the recognition of payment obligations linked to leased assets. The impact of new liabilities on the total is 1.91%. Similarly, non-current liabilities are subject to a change of 21.41% (from RUB 693 765 million to RUB 842 285 million). The weight of new liabilities on the total is 8.41%.

- **Equity**

On the basis of what has been analysed so far, it has been highlighted that the introduction of IFRS 16 has a greater impact on liabilities than on assets. In the case of Lukoil, however, the adaptation to the new accounting standard has a greater effect on the assets; therefore, there is an increase in equity. The change is 0.12% (RUB 4 918 million).

Effects on Balance Sheet				
(RUB million)	**IAS 17**	**IFRS 16**	**Delta %**	**Effect**
Non-current Assets	4.137.914	4.325.128	4,52%	*Increase*
Current Liabilities	890.429	924.205	3,79%	*Increase*
Non-current Liabilities	693.765	842.285	21,41%	*Increase*
Equity	4.051.866	4.056.784	0,12%	*Increase*
Debt	1.049.578	1.231.874	17,37%	*Increase*

Table 40: Effects on Balance Sheet of Lukoil

[11] The values based on IAS 17 were obtained following analysis of the notes contained in the report.

Effects on the Income Statement

The analysis of the impact of IFRS 16 of Lukoil continues with the presentation of the main changes in the Income Statement.

- **Operating Expenses**

As a result of the capitalisation of lease payments costs, operating expenses fell by approximately -11.43%, corresponding to RUB -14,094 million (from RUB 123,263 million to RUB 109,169 million).

- **EBITDA**

The reduction in operating expenses leads to an increase (of the same amount) in EBITDA. In this case, the change is 4.96%.

- **Depreciation**

With the capitalisation of lease payments and the recognition of the right of use associated with leased assets, depreciation expenses increase. The impact of the adjustment of IFRS 16 on depreciation is an increase of 12.58%, corresponding to an increase in monetraic terms of RUB 11 605 million).

- **EBIT**

As a result of the reduction in operating expenses and the increase in depreciation, operating income increased by 1.30%. EBIT increased from RUB 191 738 to RUB 194 227.

- **Interest Expense**

The application of IFRS 16 contributes to the increase in interest expense: the new lease liabilities recognised in the financial statements are part of long-term/short term payables, and as such generate interest. In this specific case, interest expense increased by RUB 2,489 million (approximately 26.92%).

- **EBT**

Finally, in accordance with the assumption that IFRS 16 does not affect the company's net result, EBT does not change, as does EAT.

Effects on Income Statement				
(RUB million)	**IAS 17**	**IFRS 16**	**Delta %**	**Effect**
Operating Expense	123.263,0	109.169,0	-11,43%	*Decrease*
Depreciation	92.225,0	103.830,0	12,58%	*Increase*
EBITDA	283.963,0	298.057,0	4,96%	*Increase*
EBIT	191.738,0	194.227,0	1,30%	*Increase*
Interest Expense	9.245,0	11.734,0	26,92%	*Increase*
EBT	192.586,0	192.586,0	0,00%	*No Change*

Table 41: Effects on Income Statement of Lukoil

Effects on the Cash Flow Statement

Following the analysis of the changes that occurred at the end of the Income Statement, the analysis of the impacts verified on the Cash Flow Statement is presented below.

- **Effects on Cash Flow from Operating Activities**

The transition to IFRS 16 implies an increase in cash flow from operations, which is affected by a change of 5.01% in RUB 11 605. The increase is due to the change in depreciation.

- **Effects on Cash Flow from Investing Activities**

Also in the case of Lukoil, there were no changes in the cash flow from investing activities, in accordance with what is indicated in the notes to the quarterly report.

- **Effects on Cash Flow from Financing Activities**

The effect of the adoption of IFRS 16 on cash flow from financing is reflected in the reduction from RUB -158 202 million to RUB -169 807 million. The change in RUB -11,605 million (-7.34%) is due to the inclusion of lease payments in cash flow from financing.

- **Effects on Net Cash Flow**

Considering the exchange rate adjustment of approximately RUB 22 million, the net effect on net cash flow is zero. Once again, this result is perfectly consistent with the findings of chapter 3.5 - Effects on Financial Statements.

Effects on Cash Flow Statement				
(RUB million)	**IAS 17**	**IFRS 16**	**Delta %**	**Effect**
Cash Flow from Operations	231.719	243.324	5,01%	*Increase*
Cash Flow from Investing	-99.551	-99.551	0,00%	*Decrease*
Cash Flow from Financing	-158.202	-169.807	-7,34%	*Decrease*
Net Cash Flow (adjusted for currency)	-48.156	-48.156	0,00%	*No Change*

Table 42: Effects on Cash Flow Statement of Lukoil

Effects on Key Financial Ratios

Lukoil's analysis ends with the presentation of the main effects of the transition from IAS 17 to IFRS 16 on the ratios indicated in paragraph 3.5.4 - Effects on Key Financial ratios.

- **Lease Intensity Ratio**

The lease intesity ratio measured for Lukoil amounts to 10.32%, an indicator that the company accounted for significant leases using the operating method. In any case, the figure is slightly higher than that of the other companies, but lower than that of Petroleo Brasileiro (15.69%).

- **Debt to Equity Ratio**

The value of the debt to equity ratio is particularly low (0.37% considering accounting through IAS 17). Since the weight of the new lease liabilities is quite significant (as demonstrated by the value of the lease intensity ratio), it is natural to expect a substantial increase in the debt to equity. The value calculated for the D/E IFRS 16 is 4.87%, with an increase of 1201.22%.

- **Return on Assets**

The ratio that measures the ability of assets to produce a return shows a negative variation of -1.96% (from 3.40% to 3.34%) due to the increase in assets following the recognition of the right of use.

- **Net Financial Position**

Since there is an increase in liabilities, due to the registration of new lesase liabilities, the net financial position worsens, increasing from RUB 605 048 million to RUB 753 604 million. The change expressed in percentage terms is 24.55%.

- **Interest Coverage**

Lukoil has a quite solid interest coverage ratio (16.55) (Damodaran, 2019); however, the transition from IAS 17 to IFRS 16 causes a decrease in the value of the interest coverage ratio (from 20.74 to 16.55).

- **Current Ratio**

The current ratio changed by 3.65% as a result of compliance with IFRS 16. This decrease (from 1.68 to 1.62) occurs because in the financial statements the value of current liabilities increases (about 3.79%) while the value of current assets remains unchanged.

Effects on Key Financial Ratios				
	IAS 17	**IFRS 16**	**Delta %**	**Effect**
Lease Intensity		10,32%		
D/E	0,37%	4,87%	37,93%	*Increase*
ROA	3,40%	3,34%	-2,15%	*Decrease*
NFP	605.084	753.604	37,93%	*Increase*
Interest Coverage	20,74	16,55	-10,42%	*Decrease*
Current Ratio	1,68	1,62	-18,56%	*Decrease*

Table 43: Effects on Key Financial Ratios of Lukoil

4.8. Novatek

Novatek was founded in 1994 in Russia. It is one of the largest natural gas companies in the world. In 2018 it has a capitalisation of approximately $ 51.9 billion and an EBITDA of RUB 415 million, up 61.91% compared to 2017. Revenues from liquid gas in 2018 amounted to RUB 451 million, an increase of 35.6% compared to the previous year. Sales of petroleum products account for 42%, crude oil for 29%, stable condensed gases for 12%, LPG for 9%, light hydrocarbon for 8% (Novatek, 2018).
The following results are presented in Russian Rubles (RUB) (Novatek, 2019).

Effects on the Balance Sheet

The following table shows the main effects on the balance sheet of the adoption of IFRS 16. The data presented for accounting in accordance with IAS 17 are the result of a revision carried out on the basis of the notes contained in the quarterly report.

- **Asset**

Regarding the assets, the transition to IFRS 16 resulted in an increase in non-current assets following the recognition of rights of use for a value of RUB 8 455 million. The new item on the balance sheet accounts for 0.52% of total assets. There were no changes in current assets.

Therefore, total assets increased by the same amount as non-current assets, and the final change was 0.53%.

- **Liabilities**

Total liabilities increased by approximately RUB 8 691 million as a result of the recognition of lease liabilities. According to the analysis carried out, current liabilities increased by 1.68% (corresponding to RUB 1 991 million) while non-current liabilities increased by 2.99% (corresponding to RUB 6 700 million).

- **Equity**

With the introduction of IFRS 16, liabilities increase more than assets (the difference is RUB 236 million, therefore, in order to restore balance sheet parity, equity must decrease by RUB 236 million).

Effects on Balance Sheet				
(RUB million)	**IAS 17**	**IFRS 16**	**Delta %**	**Effect**
Non-current Assets	1.228.468	1.236.923	0,69%	*Increase*
Current Liabilities	118.277	120.268	1,68%	*Increase*
Non-current Liabilities	224.200	230.900	2,99%	*Increase*
Equity	1.266.782	1.266.546	-0,02%	*Decrease*
Debt	239.550	248.241	3,63%	*Increase*

Table 44: Effects on Balance Sheet of Novatek

Effects on the Income Statement

To analyse the effects of the new accounting principle for leasing, quarterly data published by Novatek were used.

- **Operating Expenses**

Following the capitalisation of lease expenses, operating expenses decreased by -0.36% (approximately RUB 598 million).

- **EBITDA**

The direct consequence of the reduction in operating expenses is an increase in EBITDA of the same amount. EBITDA varied from RUB 65 855 million to RUB 66 453 million; the change in percentage terms was 0.91%.

- **Depreciation**

The value of the depreciation increases due to the recognition of new assets that will be depreciated on a straight-line basis. The change in RUB 485 million (6.93%) partially offsets the effects of the reduction in operating expenses.

- **EBIT**

The net effect of the application of IFRS 16 on EBIT is an increase of 0.03%. The change from RUB 336 517 million to RUB 366 630 million is approximately RUB 113 million. With regard to EBIT, it should be noted that this result was achieved thanks to the positive effect of the gain on disposal of interests in subsidiaries and joint ventures of RUB 308 578 million.

- **Interest Expense**

As a result of the recognition of new liabilities in the financial statements, interest expense increased by 11.56%, from RUB 978 million to RUB 1 091 million.

- **EBT**

Since there is no effect of IFRS 16 on taxation, the EBT does not show any change.

Effects on Income Statement				
(RUB million)	**IAS 17**	**IFRS 16**	**Delta %**	**Effect**
Operating Expense	168.251	167.653	-0,36%	*Decrease*
Depreciation	7.002,0	7.487,0	6,93%	*Increase*
EBITDA	65.855,0	66.453,0	0,91%	*Increase*
EBIT	366.517,0	366.630,0	0,03%	*Increase*
Interest Expense	978,0	1.091,0	11,55%	*Increase*
EBT	431.582,0	431.582,0	0,00%	*No Change*

Table 45: Effects on Income Statement on Income Statement

Effects on the Cash Flow Statement

In order to give as precise an indication as possible of the impact of the transition from the old to the new accounting standard on Novatek's financials, the following analysis of the cash flow statement is presented.

- **Effects on Cash Flow from Operating Activities**

The main effect of the accounting adjustment on the cash flow from operating activities is related to the increase in depreciation. The net cash before changes in net working capital is subject to an increase of RUB 485 million (approximately 0.88%). There were no changes in net working capital.

- **Effects on Cash Flow from Investing Activities**

There were no changes in cash flow from investing activities.

- **Effects on Cash Flow from Financing Activities**

The cash flow from financing activities showed a negative change of -10.77%, equal to RUB -485 million. The change is due to the recognition of expenses relating to lease payments among the items that make up the cash flow from financing.

- **Effects on Net Cash Flow**

There were no changes in net cash flow; since IFRS 16 does not alter Novatek's ability to generate cash, the result obtained is consistent with theoretical analysis.

Effects on Cash Flow Statement				
(RUB million)	**IAS 17**	**IFRS 16**	**Delta %**	**Effect**
Cash Flow from Operations	61.118	61.603	0,79%	*Increase*
Cash Flow from Investing	-10.100	-10.100	0,00%	*Decrease*
Cash Flow from Financing	-4.504	-4.989	-10,77%	*Decrease*
Net Cash Flow (adjusted for currency)	39.530	39.530	0,00%	*No Change*

Table 46: Effects on Cash Flow Statement of Novatek

Effects on Key Financial Ratios

The results obtained in relation to the impact analysis on the ratios indicated in paragraph 3.5.4 - Effects on Key Financial Ratios are as follows.

- **Lease Intensity Ratio**

The weight of the new liabilities, recorded in the financial statements following the introduction of IFRS 16, amounts to 2.47%. This figure is in line with the analysis carried out on other companies (the average figure calculated is 6.48%).

- **Debt to Equity**

The ratio of calculated net debt to Novatek's equity is 7.05%; this value results from an increase of 10.81%, the value recorded under IAS 17 is 6.36%.

- **Return on Assets**

RoA is down by -0.49% due to the increase in the value of assets more than proportional to the increase in EBIT.

- **Net Financial Position**

The net financial position increased by RUB 8 691 million (10.79%) from RUB 80 576 million to RUB 89 267 million. The reasons for this change are to be found in the increase in long-term/short term liabilities, due to the recognition of new liabilities for RUB 8 691 million.

- **Interest Coverage**

The interest coverage ratio went from 374.76 to 336.05. The reasons for this high value are because in the first quarter of 2019, Novatek acquired a gain on disposal of interest in subsidiaries and joint ventures for a value of RUB 308 578 million. Excluding the effect of this gain, an IAS 17 interest covcerage of 59.24 was calculated, while the corresponding IFRS 16 value amounted to 55.04; the negative change was -7.09%.

- **Current Ratio**

Due to the fact that current liabilities increase by 1.68% while current assets do not vary, the current ratio decreases by 1.66%.

Effects on Key Financial Ratios				
	IAS 17	**IFRS 16**	**Delta %**	**Effect**
Lease Intensity		2,47%		
D/E	6,36%	7,05%	10,81%	*Increase*
ROA	22,78%	22,66%	-0,49%	*Decrease*
NFP	80.576	89.267	10,79%	*Increase*
Interest Coverage	374,76	336,05	-10,33%	*Decrease*
Current Ratio	3,219	3,166	-1,66%	*Decrease*

Table 47: Effects on Key Financial Ratios of Novatek

Conclusions

The IASB decided to publish IFRS 16 to try to solve the problems that plagued the old IAS 17. Accounting for the lease in accordance with the previous standard gave the possibility, when preparing the financial statements, to classify the lease as an operating lease or a finance lease. As we have seen, the possibility of choosing how to account for a lease (capitalisation of the financial lease in the financial statements or inclusion of the lease payments among the operating expenses of the operating lease), gave the companies a tool to conceal the real amount of debt incurred. The problem of off-balance sheet financing also had a direct impact on the market: the difficulty of comparing the financial statements of certain companies because of the information asymmetry that was generated, made the market less efficient. In an attempt to limit the discretion of companies with regard to the classification of leases, the IASB has intervened by defining IFRS 16. The publication of the new accounting standard was preceded by an intense period of discussion between the IASB itself, national supervisory bodies, rating agencies and representatives of companies and investors. IFRS 16 therefore removes the discretion to classify leases.

The analysis presented so far was carried out on the basis of the data published in the quarterly reports, and aimed to identify and measure the impact of the adoption of IFRS 16 on eight different companies (Enel, Gazprom, Eni, Bp, Equinor, Petroleo Brarasileiro, Lukoil and Novatek). The companies were chosen on the basis of the availability of the data necessary to reconstruct the changes due to the transition from IAS 17 to the new standard.

The evidence that emerged from the analysis carried out shows that the incidence of new debts (recorded as lease liabilities), deriving from compliance with IFRS 16, is about 4% for companies operating in the mining industry (PWC, 2016). The data found indicate that companies with a lower lease intensity ratio experience a lower increase in debt, and therefore have a lower impact from compliance with IFRS 16. This is for example the case of Enel, which with a lease intensity ratio of 1.10%, recorded an increase in debt of 1.87%, while the values found for Petroleo Brasileiro are respectively 15.69% for the lease intensity ratio and 30.79% for the increase in debt. The measure of the increase in liabilities following the recording of leases in accordance with IFRS 16 indicates the weight of off-balance sheet leases that the company accounted for using the operating methodThe direct consequence of the increase in debt (and the reduction in equity) is the increase in the debt to equity ratio; in line with the results of the increase in debt, Enel is the company with the smallest change (about 2.92%), while for Petroleo Brasileiro the measured value is 15.69%. At the same time, the change in operating expenses is an indicator of the weight that lease payments had on the net result; in this case, Novatek is the company with the lowest value (approximately -0.36%), while Lukoil suffers a negative change of -11.43%. It is interesting to note that Novatek is the company with the second lowest lease intensity ratio, while Lukoil is characterised by the second highest value. According to the IASB (International Accounting Standard Board, 2016), the reduction in operating expenses implies an increase in depreciation and interest expenses; the same result was observed in the empirical analysis carried out on the above companies. For Petroleo Brasileiro there was a positive variation in depreciation of about 55.16%, while the lowest increase recorded was 4.10% of Enel. At the same time, the smallest change in interest expenses was recorded by Enel (1.82%), while the largest increase was sustained by Eni (35.19%). Given the assumption that the net result for the quarter is not affected by the adjustment to the new accounting standard (except for reasons related to the change in taxation, the analysis of which does not fall within the scope of this thesis), the company that has shown the greatest increase in EBIT is Petroleo Brasileiro (9.83%), while Novatek reported an increase of 0.03%. inally, there is a difference with respect to that indicated by the IASB: in the preliminary analysis shared by the International Board, there was no change in the cash flow from investing activities, while the in-depth analysis shows an increase of 1.80% for Eni and 1.97% for Bp. As far as cash flow from operations is concerned, Novatek is the company with the smallest variation (0.79%); on the contrary Petroleo Brasileiro recorded the biggest increase (28.19%). The changes in cash flow from financing range from -3.21% for Gazprom to -109.52% for Eni, due to the fact that cash flow from financing varies from € -440 million to € -210 million. As already mentioned, the company's ability to generate cash does not vary, so the net cash flow does not change.

In conclusion, even if it is not possible to draw up a classification of the company according to the impact suffered as a result of the transition to IFRS 16, three categories can still be identified on the basis of the calculation of the tertiles of the results obtained in relation to the lease intesity ratio:

- Low impact – Enel, Novatek and Gazprom show minimal changes, so it can be concluded that the adaptation to IFRS 16 did not mean major changes in the economic and financial performance. The fluctuation in the lease intensity ratio ranges from 1.10% to 2.94%, while the increase in debt ranges from 1.87% to 4.86%.
- Medium impact – Eni, Bp, and Equinor show a moderate increase in indices, and fall within the second tertile. The levels of the lease intensity ratio within this category range from 5.42% to 7.75%, while the level of the increase in debt is between 8.13% and 15.28%.
- High impact – Petroleo Brasileiro and Lukoil suffer a clear deterioration of the balance sheet indicators (the increase in debt ranges from 17.37% to 30.79%); the value of the lease intensity varies from 10.32% to 15.69%. in general, these two companies have

shown to have a large amount of off-balance sheet leasing, so the adoption of IFRS 16 has had a great impact.

This document represents an attempt to give a punctual measure of the effects produced by the transition from IAS 17 to IFRS 16, by analysing the quarterly data published by the companies. In any case, in order to obtain even more precise and exhaustive information, it is necessary to wait for the publication of the financial statements for the entire year contained in the annual reports.

Appendix

Enel			
Balance Sheet			
(€ million)	**31/03/2019 IAS 17**	**31/03/2019 IFRS 16**	**IFRS 16**
ASSETS			
Non Current Assets			
Property, Plant and Equipment	98.172	98.172	
Goodwill	14.365	14.365	
Equity investments	2.052	2.052	
Other non current assets	16.966	16.966	
Right of Use of leased Assets	0	1.356	
Total Non Current Assets	**131.555**	**132.911**	1.356
Current Assets			
Cash and cash equivalents	13.421	13.421	
Inventories	2.814	2.814	
Trade Receivables	15.476	15.476	
Other current assets	9.274	9.274	
Total Current Assets	**40.985**	**40.985**	
TOTAL ASSETS	**172.540**	**173.896**	1.356
LIABILITIES			
Non Current Liabilities			
Long term Borrowings	49.772	49.772	
Provisions and deferred tax liabilities	17.004	17.004	
Other non current liabilities	11.084	11.084	
Long Term Lease Liability	0	1.156	
Total Non Current Liabilities	**77.860**	**79.016**	1.156
Current Liabilities			
Short term Borrowings	10.382	10.382	
Trade Payables	12.505	12.505	
Other current liabilities	21.674	21.674	
Short Term Lease Liability	0	204	
Total Current Liabilities	**44.561**	**44.765**	204
TOTAL LIABILITIES	**122.421**	**123.781**	1.360
Equity	**50.119**	**50.115**	-4
TOTAL EQUITY AND LIABILITIES	**172.540**	**173.896**	1.356

Enel

Income Statement			
	31/03/2019 IAS 17	**31/03/2019 IFRS 16**	**IFRS 16**
Revenues	20.891,0	20.891,0	
Operating Expense	16.548,0	16.487,0	61,0
EBITDA	**4.343,0**	**4.404,0**	61,0
Depreciation	1.367,0	1.423,0	56,0
EBIT	**2.976,0**	**2.981,0**	5,0
Interest Expense	659,0	671,0	12,0
Net income (expense) from hyperinflation	24,0	24,0	
Share of Income (losses) of equity investm(	-63,0	-63,0	
EBT	**2.278,0**	**2.271,0**	-7,0
Taxes	623,0	621,0	-2,0
Minority Interests	394	394	
EAT	**1.261,0**	**1.256,0**	-5,0

Gazprom

Balance Sheet			
(RUB millions)	**31/03/2019 IAS 17**	**31/03/2019 IFRS 16**	**IFRS 16**
ASSETS			
Non Current Assets			
Property, Plant and Equipment	13.844.548	13.803.466	-41.082
Goodwill	107.797	107.797	
Investmnts in JV	1.207.254	1.207.254	
Long term accounts receivable and prepayments	854.486	854.486	
Long term financial assets	393.413	393.413	
Other non current assets	486.348	486.348	
Right of Use		210.573	
Total Non Current Assets	**16.893.846**	**17.063.337**	**169.491**
Current Assets			
Cash and cash equivalents	1.053.729	1.053.729	
Short term financial assets	52.459	52.459	
Accounts receivable and prepayments	1.172.988	1.172.988	
Inventories	746.871	746.871	
VAT recoverable	127.096	127.096	
Other Current Assets	1.018.261	1.018.261	
Total Current Assets	**4.171.404**	**4.171.404**	
TOTAL ASSETS	**21.065.250**	**21.234.741**	**169.491**
LIABILITIES			
Non Current Liabilities			
Long term borrowings, promissory notes	3.268.078	3.268.078	
Provisions	417.528	417.528	
Deferred tax liabilities	766.920	766.920	
Other non current liabilities	56.947	56.947	
Lease liabilities	0	208.593	
Total Non Current Liabilities	**4.509.473**	**4.718.066**	**208.593**
Current Liabilities			
Accounts Payable and provisions	1.308.088	1.308.088	
Current Profit tax payable	61.329	61.329	
Taxes other than on profit and fees payable	369.837	369.837	
Short term borrowings, promissory notes and current portion of long term borrowings	631.772	631.772	
Lease liabilities			
Total Current Liabilities	**2.371.026**	**2.371.026**	
TOTAL LIABILITIES	**6.880.499**	**7.089.092**	**208.593**
Equity	**14.184.751**	**14.145.649**	**-39.102**
TOTAL EQUITY AND LIABILITIES	**21.065.250**	**21.234.741**	**169.491**

Gazprom

Income Statement	31/03/2019 IAS 17	31/03/2019 IFRS 16	IFRS 16
Revenues	2.291.821,0	2.291.821,0	
Net loss from trading	6.595,0	6.595,0	
Impairment loss on financial assets	44.248,0	44.248,0	
Operating Expense	1.621.394,0	1.609.564,0	-11.830,0
EBITDA	**619.584,0**	**631.414,0**	**11.830,0**
Depreciation	164.807,0	172.652,0	7.845,0
EBIT	**454.777,0**	**458.762,0**	**3.985,0**
Interest Expense	65.006,0	68.991,0	3.985,0
Interest Income	258.223,0	258.223,0	
Other Non Operating Expenses	63.932,0	63.932,0	
EBT	**711.926,0**	**711.926,0**	
Taxes	152.413,0	152.413,0	
EAT	**559.513,0**	**559.513,0**	

Balance Sheet			
(€ million)	31/03/2019 IAS 17	31/03/2019 IFRS 16	IFRS 16
ASSETS			
Non Current Assets			
Property, Plant and Equipment	61.795	61.795	
Inventoriy - compulsory stock	1.465	1.465	
Right of Use	0	5.604	5.604
Intangible Assets	3.180	3.180	
Equity investments	6.239	6.239	
Other investments	934	934	
Other financial assets	1.289	1.289	
Deferred tax assets	4.048	4.048	
Other Lt Assets	834	834	
Total Non Current Assets	**79.784**	**85.388**	**5.604**
Current Assets			
Cash and cash equivalents	10.254	10.254	
Accounts receivable and prepayments	17.038	17.038	
Inventories	4.630	4.630	
Other financial activities held for trading	6.675	6.675	
Other current financial assets	308	308	
Current tax assets	678	678	
Other Current Assets	2.530	2.530	
Total Current Assets	**42.113**	**42.113**	
Assets Held for Sale	**301**	**301**	
TOTAL ASSETS	**122.198**	**127.802**	**5.604**
LIABILITIES			
Non Current Liabilities			
Lt Debt	19.125	19.125	
Lease Liabilities	0	4.936	4.936
Provisions for contingencies	11.922	11.922	
Provisions for employee	1.178	1.178	
Deferred tax	4.317	4.317	
Other Lt Liabilities	1.495	1.495	
Total Non Current Liabilities	**38.037**	**42.973**	**4.936**
Liabilities associated with assets held for sale	**76**	**76**	
Current Liabilities			
Payables	16.567	16.567	
Tax payable	3.037	3.037	
Current portion of lt debt	4.276	4.276	
St Debt	2.388	2.388	
Other current liabilities	4.827	4.827	
Lease liabilities		882	882
Total Current Liabilities	**31.095**	**31.977**	**882**
TOTAL LIABILITIES	**69.208**	**75.026**	**5.818**
Equity	**52.990**	**52.776**	**-214**
TOTAL EQUITY AND LIABILITIES	**122.198**	**127.802**	**5.604**

Income Statement			
	31/03/2019 IAS 17	**31/03/2019 IFRS 16**	**IFRS 16**
Net sales	18.540	18.540	
Cogs + Operating Expense	14.407	14.155	-252
EBITDA	**4.133**	**4.385**	**252**
Depreciation	1.672	1.867	195
EBIT	**2.461**	**2.518**	**57**
Interest Expense	162	219	57
EBT	**2.299**	**2.299**	**0**
Taxes	1.179	1.204	25
EAT	**1.120**	**1.095**	**-25**

BP

Balance Sheet			
($ million)	31/03/2019 IAS 17	31/03/2019 IFRS 16	IFRS 16
ASSETS			
Non Current Assets			
Property, Plant and Equipment	135.025	144.625	9.600
Intangible Assets	16.505	16.505	
Goodwill	12.277	12.277	
Investment in JV	8.701	8.701	
Investments in associates	19.073	19.073	
Other investments	1.269	1.269	
Trade and Other receivables	2.111	2.111	
Derivative financial instruments	5.265	5.265	
Deferred tax	3.593	3.593	
Loans	642	642	
Prepayments	814	814	
Defined benefit pension plan surpluses	5.709	5.709	
Total Non Current Assets	**210.984**	**220.584**	**9.600**
Current Assets			
Cash and cash equivalents	21.256	21.256	
Loans	340	340	
Derivative financial instruments	3.004	3.004	
Trade and other receivables	24.490	24.490	
Inventories	21.426	21.426	
Prepayments	1.082	1.082	
Current tax receivables	965	965	
Other investments	134	134	
Total Current Assets	**72.697**	**72.697**	**0**
TOTAL ASSETS	**283.681**	**293.281**	**9.600**
LIABILITIES			
Non Current Liabilities			
Lt Debt	54.510	54.510	
Other payables	13.898	13.898	
Derivative financial instruments	5.294	5.294	
Deferred tax	9.770	9.770	
Retirement benefits	8.686	8.686	
Accruals	547	547	
Provisions	17.773	17.773	
Lease liabilities	0	8.195	8.195
Total Non Current Liabilities	**110.478**	**118.673**	**8.195**
Current Liabilities			
St Debt	11.480	11.480	
Trade and other payables	46.749	46.749	
Derivative financial instruments	2.340	2.340	
Taxes payable	2.348	2.348	
Provisions	2.332	2.332	
Accruals	3.924	3.924	
Lease liabilities	0	2.099	2.099
Total Current Liabilities	**69.173**	**71.272**	**2.099**
TOTAL LIABILITIES	**179.651**	**189.945**	**10.294**
Equity	**104.030**	**103.336**	**-694**
TOTAL EQUITY AND LIABILITIES	**283.681**	**293.281**	**9.600**

BP

Income Statement

	31/03/2019 IAS 17	31/03/2019 IFRS 16	IFRS 16
Revenues	67.407	67.407	
Operating Expense	57.282	57.282	
Lease Expense	600		-600
EBITDA	**9.525**	**10.125**	**600**
Depreciation	3.961	4.461	500
EBIT	**5.564**	**5.664**	**100**
Interest Expense	782	882	100
EBT	**4.782**	**4.782**	
Taxes	1.783	1.783	
EAT	**2.999**	**2.999**	

Equinor

Balance Sheet

($ millions)	31/03/2019 IAS 17	31/03/2019 IFRS 16	IFRS 16
ASSETS			
Non Current Assets			
Property, Plant and Equipment	66.418	66.418	
Intangible Assets	10.614	10.614	
Equity accounted Investments	2.801	2.801	
Pension assets	947	947	
Financial investments	2.885	2.885	
Derivative financial instruments	1.033	1.033	
Prepayments and financial receivables	1.072	1.072	
Deferred tax	3.475	3.475	
Right of Use		4.483	4.483
Total Non Current Assets	**89.245**	**93.728**	**4.483**
Current Assets			
Cash and cash equivalents	6.618	6.618	
Derivative financial instruments	1.444	1.444	
Trade and other receivables	8.680	8.680	
Inventories	2.686	2.686	
Financial investments	9.157	9.157	
Total Current Assets	**28.585**	**28.585**	**0**
TOTAL ASSETS	**117.830**	**122.313**	**4.483**
LIABILITIES			
Non Current Liabilities			
Finance Debt	22.766	22.766	
Deferred tax	9.369	9.369	
Pensions liabilities	3.907	3.907	
Provisions	17.131	17.131	
Derivative financial instruments	1.136	1.136	
Lease Liabilities		3.632	3.632
Total Non Current Liabilities	**54.309**	**57.941**	**3.632**
Current Liabilities			
St Debt	2.266	2.266	
Trade and other payables	9.172	9.172	
Taxes payable	5.974	5.974	
Derivative financial instruments	708	708	
Lease Liabilities		1.135	1.135
Total Current Liabilities	**18.120**	**19.255**	**1.135**
TOTAL LIABILITIES	**72.429**	**77.196**	**4.767**
Equity	**45.401**	**45.117**	**-284**
TOTAL EQUITY AND LIABILITIES	**117.830**	**122.313**	**4.483**

Equinor

Income Statement			
	31/03/2019 IAS 17	**31/03/2019 IFRS 16**	**IFRS 16**
Revenues	16.482	16.482	
Operating Expense	9.867	9.562	-305
EBITDA	**6.615**	**6.920**	**305**
Depreciation	1.924	2.188	264
EBIT	**4.691**	**4.732**	**41**
Interest expense	-190	-149	41
EBT	**4.881**	**4.881**	
Taxes	3.168	3.168	
EAT	**1.712**	**1.712**	

Petrobras

Balance Sheet			
($ millions)	31/03/2019 IAS 17	31/03/2019 IFRS 16	IFRS 16
ASSETS			
Non Current Assets			
Property, Plant and Equipment	155.432	155.432	
Intangible Assets	2.785	2.785	
Investments	2.891	2.891	
Judical deposit	7.332	7.332	
Marketable securities	52	52	
Others	2.886	2.886	
Trade and Other receivables	5.301	5.301	
Advances to suppliers	543	543	
Deferred tax	2.651	2.651	
Right of Use		26.575	26.575
Other tax assets	3.596	3.596	
Total Non Current Assets	**183.469**	**210.044**	**26.575**
Current Assets			
Cash and cash equivalents	9.361	9.361	
Marketable securities	1.121	1.121	
Class Action agreement	2.862	2.862	
Trade and other receivables	4.962	4.962	
Inventories	8.459	8.459	
Assets held for sale	2.424	2.424	
Recoverable income taxes	757	757	
Others	2.198	2.198	
Other recoverable income taxes	1.373	1.373	
Total Current Assets	**33.517**	**33.517**	**0**
TOTAL ASSETS	**216.986**	**243.561**	**26.575**
LIABILITIES			
Non Current Liabilities			
Finance Debt	75.580	75.580	
Other payables	988	988	
Income tax payable	543	543	
Deferred tax	658	658	
Pensions and medical benefits	22.124	22.124	
Provisions for legal proceedings	4.096	4.096	
Provisions for decommissioning costs	15.095	15.095	
Lease liabilities		21.167	21.167
Total Non Current Liabilities	**119.084**	**140.251**	**21.167**
Current Liabilities			
St Debt	3.230	3.230	
Trade and other payables	5.880	5.880	
Pensions and medical benefits	853	853	
Provisions for legal proceedings	3.394	3.394	
Taxes payable	376	376	
Other taxes payable	3.121	3.121	
Others	2.303	2.303	
St benefits	1.817	1.817	
Liabilities related to assets held for sale	1.015	1.015	
Dividends payable	1.118	1.118	
Lease liabilities	622	6.030	5.408
Total Current Liabilities	**23.729**	**29.137**	**5.408**
TOTAL LIABILITIES	**142.813**	**169.388**	**26.575**
Equity	**74.173**	**74.173**	**0**
TOTAL EQUITY AND LIABILITIES	**216.986**	**243.561**	**26.575**

Lukoil

Balance Sheet			
(RUB millions)	31/03/2019 IAS 17	31/03/2019 IFRS 16	IFRS 16
ASSETS			
Non Current Assets			
Property, Plant and Equipment	3.734.148	3.734.148	
Goodwill	40.311	40.311	
Investmnts in JV	219.759	219.759	
Deferred income tax	32.303	32.303	
Long term financial assets	72.531	72.531	
Other non current assets	38.862	38.862	
Right of Use		187.214	187.214
Total Non Current Assets	**4.137.914**	**4.325.128**	**187.214**
Current Assets			
Cash and cash equivalents	444.494	444.494	
Short term financial assets	27.111	27.111	
Accounts receivable and prepayments	425.986	425.986	
Inventories	459.125	459.125	
Prepaid taxes	91.776	91.776	
Other Current Assets	49.654	49.654	
Total Current Assets	**1.498.146**	**1.498.146**	
TOTAL ASSETS	**5.636.060**	**5.823.274**	**187.214**
LIABILITIES			
Non Current Liabilities			
Long term borrowings, promissory notes	382.405	382.405	
Provisions	46.335	46.335	
Deferred tax liabilities	262.506	262.506	
Other non current liabilities	2.519	2.519	
Lease liabilities		148.520	8,41%
Total Non Current Liabilities	**693.765**	**842.285**	**148.520**
Current Liabilities			
Accounts Payable and provisions	589.928	589.928	
Current Profit tax payable	160.787	160.787	
Other current liabilities	22.466	22.466	
Provisions	40.003	40.003	
Short term borrowings, promissory notes and current portion of long term borrowings	77.245	77.245	
Lease liabilities		33.776	1,91%
Total Current Liabilities	**890.429**	**924.205**	**33.776**
TOTAL LIABILITIES	**1.584.194**	**1.766.490**	**182.296**
Equity	**4.051.866**	**4.056.784**	**4.918**
TOTAL EQUITY AND LIABILITIES	**5.636.060**	**5.823.274**	**187.214**

Lukoil

Income Statement			
	31/03/2019 IAS 17	**31/03/2019 IFRS 16**	**IFRS 16**
Revenues	1.850.933,0	1.850.933,0	0
Operating Expense	123.263,0	109.169,0	-14.094,0
Other costs	1.443.707,0	1.443.707,0	0
EBITDA	**283.963,0**	**298.057,0**	**14.094,0**
Depreciation	92.225,0	103.830,0	11.605,0
EBIT	**191.738,0**	**194.227,0**	**2.489,0**
Interest Expense	9.245,0	11.734,0	2.489,0
Interest Income	5.984,0	5.984,0	0,0
Other Non Operating Income	4.109,0	4.109,0	0,0
EBT	**192.586,0**	**192.586,0**	**0,0**
Taxes	42.796,0	42.796,0	
EAT	**149.790,0**	**149.790,0**	

Novatek

Balance Sheet			
(RUB million)	31/03/2019 IAS 17	31/03/2019 IFRS 16	IFRS 16
ASSETS			
Non Current Assets			
Property, Plant and Equipment	415.090	415.090	
Investmnts in JV	464.987	464.987	
Long term loans and receivables	279.244	279.244	
Other non current assets	69.147	69.147	
Right of Use		8.455	8.455
Total Non Current Assets	**1.228.468**	**1.236.923**	**8.455**
Current Assets			
Cash and cash equivalents	81.002	81.002	
Assets held for sale	73.683	73.683	
Short term bank deposits	15.536	15.536	
Current income tax prepayments	7.475	7.475	
Prepayments and other current assets	89.893	89.893	
Trade and other receivables	99.584	99.584	
Inventories	13.618	13.618	
Total Current Assets	**380.791**	**380.791**	
TOTAL ASSETS	**1.609.259**	**1.617.714**	**8.455**
LIABILITIES			
Non Current Liabilities			
Debt	158.363	158.363	
Deferred tax	51.545	51.545	
Retirement benefits	8.589	8.589	
Other non current liabilities	5.703	5.703	
Lease liabilities		6.700	6.700
Total Non Current Liabilities	**224.200**	**230.900**	**6.700**
Current Liabilities			
Debt	3.215	3.215	
Trade and other payables	77.972	77.972	
Tax payable	18.451	18.451	
Other taxes payable	18.639	18.639	
Lease liabilities		1.991	1.991
Total Current Liabilities	**118.277**	**120.268**	1.991
TOTAL LIABILITIES	**342.477**	**351.168**	**8.691**
Equity	**1.266.782**	**1.266.546**	-236
TOTAL EQUITY AND LIABILITIES	**1.609.259**	**1.617.714**	**8.455**

Novatek

Income Statement			
	31/03/2019 IAS 17	**31/03/2019 IFRS 16**	**IFRS 16**
Revenues	234.106	234.106	
Operating Expense	168.251	167.653	-598
EBITDA	**65.855**	**66.453**	**598**
Depreciation	7.002	7.487	485
Gain on disposal of interests in subsidiaries and joint ventures	308.578	308.578	
Other operating loss	914	914	
EBIT	**366.517**	**366.630**	**113**
Interest expense	978	1.091	113
Interest Income	4.330	4.330	
Change in fair value of non-commodity financial ir	10.115	10.115	
Foreign exchange loss	19.375	19.375	
Share of profit of joint ventures	70.973	70.973	
EBT	**431.582**	**431.582**	
Taxes	45.324	45.324	
EAT	**386.258**	**386.258**	

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Table of Tables and Figures

Summary

In January 2016, the IASB (International Accounting Standard Board) published a document in which it highlighted the major issues related to the accounting of leasing contracts. Until the 2018 financial year, listed companies accounted for expenses arising from leasing contracts in accordance with the provisions of IAS 17. This accounting principle provided for a double accounting method depending on how the lease was classified: operating lease and financial lease.

Main Downsides of IAS 17

The operating lease required the recording of the lease expense among the operating expense of the income statement (in fact identifying the lease contract as a simple lease contract), while the accounting of the financial lease required the recognition of leased assets and leased liabilities directly in the financial statements, with the consequent recording of interest and depreciation. The main problem concerned the fact that the possibility of choosing the classification of the leasing was left to the company; once defined the categories of leasing, in fact, the companies could stipulate some contracts ad hoc in order to make that a leasing was recognized in one or in the other way. This generated a problem relating to the impossibility of comparing the balance sheets of the different companies because of the difficulty of identifying the real debt. Some rating agencies have developed complex models for calculating the debts arising from leasing contracts which, however, lead to truthful but inaccurate results.

Off Blance Sheet Financing

Another way in which companies exploited the ambiguity of accounting for leasing contracts was through synthetic leases. The synthetic lease consists in the creation of a special pourpose entity with the sole purpose of granting the main company leased assets; in this way it is the spe that bears the debt resulting from the acquisition of the new assets.

Off-balance sheet financing allows companies to maintain ratios in order to comply with the debt covenants.

The Way to IFRS 16

The first step in the innovation of IAS 17 was taken in 1996 with the publication of the so-called McGregor's Report. The document proposed the removal of the distinction between operating and financial lease and indicated a new approach to define the rights and obligations linked to leasing contracts as assets and liabilities. The new approach, established that, in the case of lease contracts that lasted more than one year, the lessee indicated the right to the use of the assets among the non-current assset, and among the liabilities, all the debts deriving from the leasing contract. In March 2009, the Board published a joint Discussion Paper "Leases: Preliminary Views" in which it outlined the new approach to be followed. Basically, the Board took up the concept expressed in the McGregor's Report and proposed the elimination of the double method of accounting for leasing. The document focuses on the adoption of a "right of use" rather than a "risk and reward" approach. The choice of the right of use was judged as the most efficient in overcoming the criticalities that afflicted the old IAS 17:

- the recording of assets and liabilities in the balance sheet;
- the possibility of applying the model to all leasing contracts;
- the possibility of improving the comparability of the financial statements;

Thus, the IASB has initiated a period of discussion with representatives of global standards setters, major rating agencies and the companies themselves. The evidence gathered (and published through the Exposure Drafts) served as guidelines for the definition of IFRS 16.

IFRS 16

With the publication of the new standard, the IASB has tried to solve the problem of off-balance sheet financing. The main differences introduced are shown below.

Operating Leases

The changes introduced by IFRS 16 mostly affect those contracts accounted for using the operating method. The changes introduced are:

- indication in the balance sheet of the assets and liabilities linked to a leasing contract. Liabilities are calculated as the present value of future payments;
- recognition of the depreciation deriving from the new assets and of the interest expense deriving from the new liabilities;
- indication in the Cash Flow Statement the total cash paid, specifying the principal amount (presented within financing activities) and the interest amount (typically presented within either operating or financing activities).

Finance Lease

As far as financial leasing is concerned, IFRS 16 does not introduce any particular innovations compared to IAS 17. The only difference relates to the treatment of guaranteed residual values: when a lease contract is entered into, lessee agrees to pay the lessor the difference between the fair value of the asset at the end of the contract and the guaranteed residual value. With IFRS 16, lessee is required to indicate in the financial statements the amounts due precisely at the end of the contract, while with IAS 17, it was necessary to recognise the maximum amount that could be due.

The benefits that the IASB expects to generate with the introduction of IFRS 16 are in two categories: benefits for investors and benefits for companies.

Benefits for Investors

The purpose of the IASB, by defining IFRS 16, is to improve the quality of financial reporting of companies that have material off balance sheet leases. The capitalisation of these leases leads to a better representation of a company's financial position and more truthful information on indebtedness. All this is aimed at improving the decision-making capacity of investors and analysts, and more generally, of all stakeholders. Under the IAS 17, indeed, some investors used to adjust the company's balance sheet for off balance sheet leases, adopting different techniques. With the introduction of IFRS 16, the IASB has pursued the objective of eliminating the need to adjust the financial statements of companies. The new standard, therefore, aims to reduce this information asymmetry, preventing the classification of off-balance sheet leases and thus increasing the flow of information needed by investors. In order to better clarify the importance of the information that is available to stakeholders, a comparison between the reports based on IAS 17 and IFRS 16 is proposed below. The two companies in this example belong to the airline industry, which is characterized by intensive use of PPE. Airline 1 leases less than 10% of aircraft while airline 2 leases about 70%. The information necessary to have a complete overview of the two companies is reported: total on balance sheet PPE, Long-term liabilities, Equity and the ratio of long-term liabilities to equity. As can be seen from the image, using the information resulting from the application of IAS 17, Airline 1 has a higher financial leverage than the second company. By using the information available through the application of IFRS 16, the situation is reversed: the application of IFRS 16 brings to light in the financial statements all those leased assets that were previously considered off-balance sheet, so Airline 2 has a higher financial leverage.

	Airline 1 (leases <10% of aircraft)		**Airline 2** (leases 70% of aircraft)	
	Reported on balance sheet (IAS 17)	If all leases on balance sheet (IFRS 16)	Reported on balance sheet (IAS 17)	If all leases on balance sheet (IFRS 16)
Property, Plant and Equipment	16.908	19.926	15.748	24.020
Long-term Liabilities	13.232	16.567	9.615	18.320
Equity	6.719	6.402	5.604	5.171

Long-term Liabilities to eqity	2,0:1	2,6:1	1,7:1	3,5:1

Table 48: Off balance sheet leases

Benefits for Companies

Companies will also benefit from improving the quality of the information available. The need to reclassify the off-balance-sheet lease was reflected in an inaccurate calculation of the company's economic and financial situation. Consequently, the IASB states that the application of the new standard will lead to more accurate results than the reclassification under IAS 17. Many companies use a system of reclassification of their financial statements (for management reasons) similar to those already seen for rating agencies. Off-balance-sheet leasing transactions are treated in the same way as long-term debt. Therefore, the application of IFRS 16 will provide an even more precise management tool since the management information will be aligned with the accounting information. Together with the improving in management processes, companies will benefit from cost reduction related to the simplified measurement of some leases and the exemption for the cases we have already discussed.

To simplify the leasing valuation process, the IASB decided to adopt a more flexible approach. Among the payments deriving from the lease liabilities are, indeed, considered only the unavoidable payments and those accessory payments considered optional ("the company is reasonably certain to make"). All future payments linked to the sale of leased assets are excluded.

Costs

The introduction of the new standard brings several benefits, as we have already seen, for both investors and companies. We will now focus on the increase in the costs incurred by companies, in particular, in adapting to the new request for information.

The costs of implementation identified by the IASB are mainly three:

- Set up of systems and processes – new costs related to compliance with IFRS 16 arising from the need to obtain new information;
- determining the discount rate – new costs related to the determination of the discount rate to be applied to future lease payments;
- communication and education – new costs related to the procedure of education of the staff that could be more complex due to the difficulties in assessing if the contract contains a lease or not.

The impact on costs depends on the size of the company's lease portfolio, the contractual terms of existing leases and the system used to account for leases by applying IAS 17.

Main Effects

The main effects of the transition to IFRS 16 are indicated as follows.

Effects on the Balance Sheet

The implementation of IFRS 16 lead to an increase in current assets due to the recognition of the right of use related to leased assets; in the meantime, the current/non-current liabilities rise following the recording of new lease liabilities. Finally, the equity decreases because usually the lease liabilities are grater in the amount than the right of use assets (assets are depreciated on a straight-line basis while liabilities decrease with the lease payments that include the interest expenses).

Effects on the Income Statement

The main effects observed on the income statement are related to the decrease of the operating expenses (since the lease payments are now split into depreciation and interests), the increase of the depreciation and the increase of the interest expenses. It follows that the EBITDA will rise as well as the EBIT (it increases less proportionally than EBITDA). The effect on the EBT and EAT is null since IFRS does not affect the companies' profits. However, in same cases it has been observed a decrease in EAT due to the change in taxes, anyway the effects of IFRS 16 on taxation are excluded since it does not fall within the scope of this study.

Effects on the Cash Flow Statement

Following the application of the IFRS 16, the cash flow from operations rises due to the increase of the depreciation while the cash flow from financing decreases because the principal part of the lease instalment and the interest part are included in financing activities. The IASB indicated that the cash flow from investing is not affected, however the empirical analysis seems to contradict this statement. Finally, there is no change in net cash since IFRS 16 does not affect the ability of the firms to generate cash.

Effects on the Key Financial Ratios

The analysis continues with the study of the impact of the IFRS 16 on the main financial ratios (lease intensity ratio, debt to equity ratio, return on assets, net financial position, interest coverage ratio and current ratio). The lease intensity ratio (measured as the new lease liabilities divided by the total liabilities) gives the measure of the impact of the new accounting standard on the firm. The debt to equity ratio increases since there is new lease debt; the return on assets decreases due to the fact that the increase in the EBIT is not offset by an equal increase in assets. The net financial position increases because of the increase in debt while the interest coverage ratio decreases due to the greater increase in interest expense than the increase in EBIT. Finally, the current ratio decreases because current liabilities rise while current assets don't.

Impact Analysis

What follows is an impact analysis conducted on the financials of eight companies chosen within the oil and energy industry: Enel, Gazprom, Eni, Bp, Equinor, Petrobras, Lukoil and Novatek. The data used to carry out the examination of the IFRS 16 impact are from the quarterly results.

Enel

Enel S.p.A. is today one of the leading companies in the utilities sector, operating all over the world, while the main market is Italy. The impact of IFRS 16 on Enel implies an increase in non-current assets of 1.03%, following the recognition of the right of use for a value of € 1 356 million. In general, the increase is below the average of 4.79% calculated on the basis of the results of other companies. At the same time, total liabilities increased by 1.11%, resulting in an equity reduction of approximately -0.01% (a result lower than the average of -0.23%). The impact on debt is an increase of 1.87%, while the average for other companies is 11.95%). The impact analysis on the income statement shows a reduction in operating expenses of -0.37 (against an average of -3.69%), an increase in depreciation of 4.10% (against an average of 15.25%) and an increase in interest expense of 1.82% (against an average of 17.32%). The consequences of these changes are an increase in EBITDA of 1.40% (compared to an average of 2.15%) and an increase in EBIT of 0.17% (compared to an average of 2.15%). As already mentioned, IFRS 16 does not alter the net result (except in cases where there is a change in taxation due to the introduction of IFRS 16). The main effects on cash flow concern the increase in cash flow from operations of 2.10%, the increase in cash flow from investing of 0.62% and the reduction in cash flow from financing of -4.29% (the average values are respectively +7.88%, +0.55%, -30.45%). The analysis of the company ends with the presentation of the changes observed on the main ratios presented during the discussion. The lease intensity measured for Enel amounts to 1.10%, which is generally low compared to the average of 6.48%, indicating that the impact of the application of IFRS 16 on Enel is quite modest. The change in the debt to equity ratio was 2.92% (compared to a median of 25.26%), further evidence that the weight of off-balance-sheet leases was not particularly high. The return on assets decreased by -0.61%, while the average value calculated was -1.46%. The net financial position increased by 2.91% against an average change of 22.72%, while the interest coverage ratio decreased by -1.62% (the average change was -10.20%). Finally, the current ratio fell by -5.70%, slightly more than the average of -5.15%.

Gazprom

Gazprom is the largest Russian oil company operating in the Utilities industry. Its main activities are the exploration, extraction, processing, transportation and sale of natural gas, condensed gas and oil; in recent years the company has also entered the electricity sector. The analysis of the effects of the adaptation to IFRS 16 on Gazprom showed an increase in assets of 1%, lower than the average of 4.79%. Liabilities varied by 3.03%, while Equity decreased by -0.28% (a value in line with the average decrease of -0.23%). Total debt increased by 4.56%, while the average increase recorded was 11.95%. The reduction in operating expenses of -0.73% is lower than the average (-3.69%); this reduction generates an increase of 1.91% in EBITDA (compared to an average increase of 6.87%). Depreciation increased by 4.76% (the average recorded was 15.25%); the effect on EBIT was an increase of 0.88% (the average value was 2.15%). Finally, interest expenses increased by 6.13%, while the average change was 17.32%. Consistently with the analysis carried out by the IASB, there was an increase in cash flow from operations of 1.16% (the average is 7.88%) and a reduction in cash flow from financing of -3.21% (the average value is -30.45%); at the same time the cash flow from investing is unchanged, as well as the net cash flow. The analysis of the ratios showed a value of 2.94% of the lease intensity (lower than the 6.48% of the average of the other companies); the debt to equity ratio increases following the increase in the net debt, the change is 7.63%, against an increase in the median of the other companies of 25.26%. Return on assets increased by 0.07%, while the average was -1.46%. In this regard, it should be noted that Gazprom is the only company with an increase in RoA due to the more than proportional increase in the value of EBIT (compared to assets). The net financial position increased by 5.02% (the average is 22.72%), while the interest coverage ratio decreased by -4.95% (with an average of -10.20%). The current ratio, on the other hand, remains unchanged, with an average variation of -5.15%.

Eni

Eni is an Italian multinational company that operates in the oil, natural gas, chemicals and green chemistry sectors. Eni's Business model focuses on the production and distribution of energy sources in the most efficient and sustainable way possible. It is currently active in 67 countries. The alignment of IFRS 16, in the case of Eni, implied an increase in non-current assets of 7.02%. The corresponding lease liabilities increased by 12.98%, while current libailities increased by 2.84%. The average comparison values are: 4.79% for non-current assets, 5.11% for current liabilities and 9.42% for non-current liabilities. As a result of the change in assets and liabilities, equity fell by 0.40%. The effect measured on operating expenses amounts to -1.75% (-3.69% is the average value), while the increase in depreciation is 11.66% (against an average value of 15.25%). The result of these adjustments is an increase in EBIT of 2.32%, compared to an average value of 2.15%, while EBT does not vary. Subsequently, the effects on the cash flow statement were analysed (remembering that the net cash flow does not vary). The cash flow from operations increased by 9.91% (7.88% is the average increase), the cash flow from investing increased by 1.80% (against the average of 0.55%). Cash flow from financing decreased by

109.52% (from € -210 million to € - 440 million), compared to the average of -30.45% and a median of -13.67%. Finally, the lease intesity ratio measured is 7.75% (the average is 6.48%), the debt to equity ratio increased by 52.29% (while the median is 25.26%), the return on assets decreased by -2.17% (the average calculated is -1.46%). With the recognition of new debts, the net financial position increases by 51.67% (against an average of 22.72%), the interest coverage ratio drops by -24.31% (the average is -10.20%). Finally, the current ratio varied by -2.76%, compared to an average reduction of -5.15%.

BP

BP plc is a British company that operates in 78 countries around the world, operating in the energy and oil sectors. Its main activities are the exploration, extraction, transformation, production and transport of natural resources. With the application of IFRS 16, non-current assets increase by 4.55%, while current liabilities vary by 3.03% and non-current liabilities by 7.42% (average changes are respectively 4.79%, 5.11% and 9.42%). The consequence of the more than proportional increase in liabilities compared to assets is an equity reduction of -0.67% (against an average of -0.23%). Regarding the income statement, the reduction in operating expenses of -1.04% (-3.69% is the average reduction) implies an increase in EBITDA of 6.30% (with an average value of 6.87%). The 12.62% increase in depreciation (average 15.25%) impacted the 1.80% increase in EBIT (compared to an average change of 2.15%). Finally, interest expense increased by 12.79%, a value lower than the average of 17.32%. With regard to the cash flow of Bp, there was an increase of 10.43% (the average value was 7.88%); the cash flow from investing increased by 1.97% (against the average 0.55%) and the cash flow from financing decreased by -62.5% (average value -30.45%). The analysis of the ratios showed a value of the lease intesity of 5.42% (the average is 6.48%), a change in the debt to equity ratio of 23.84%, the reduction in the return on assets is -1.53% (the market average is -1.46%), the net financial position increases by 23.01% (while the average is 22.72%). Finally, the interest coverage ratioand the current ratio fell respectively by -9.74% and -2.95% (the average values are respectively -10.20% and -5.15%).

Equinor

Equinor is a Norwegian oil company founded in the 1970s under the name Statoil. Currently, the company operates in about 36 countries, most of the extracting activities are conducted in Norway, Northern Europe, North America and Brazil. Equinor's activities relate to the extraction, processing, transportation and sale of crude oil, natural gas, petroleum, and chemical products. In recent years, Equinor has expanded its business into the production of solar, wind, and hydrogen energy. The introduction of IFRS 16 has led to an increase in non-current assets of 5.02% (the average for other companies is 4.79%), in non-current liabilities of 6.69% (9.42% is the average measured) and in current liabilities of 6.26% (against an average of 5.11%). The effect on the financial statements of IFRS 16 was a reduction in equity of -0.63% (with an average value of -0.23%). As a result of the capitalisation of expenses relating to leasing contracts, operating expenses decreased by -3.09% (compared to an average of -3.69%), depreciation increased by 13.72% (the average value is 15.25%) and interest expense increased by 21.58% (for an average value of 17.32%). The change in EBIT is about 0.87%, while the average calculated taking into account the other companies is 2.15%. cash flow from operations increased by 5.42% (the average is 7.88%), cash flow from investing did not show any change, while cash flow from financing decreased by -29.43%. There is no effect on net cash flow, since IFRS 16 does not affect the ability of companies to produce a result. The lease intesnity ratio is 6.18%, lower than the average of 6.48%. The debt to equity ratio of 26.68% is slightly higher than the median ratio of 25.26%; the return on assets falls by -2.82% (the average measured is -1.46%). The consequence of the recognition of new debts is an increase in the net financial position of 25.89% (with an average of 22.72%). The current ratio declined by -5.89%, while the average for other companies was -5.15%. It was not possible to calculate the interest coverage ratio because the value of the interest expense is not reported in the quarterly financial statements.

Petrobras

Petrobras was founded in 1953 by the government of Brazil. Currently it is about 53% owned by the Brazilian government. The activities in which the company operates are the exploration and extraction of crude oil, natural gas and natural gas liquids, refining, transport and sale of products. Following the introduction of IFRS 16, Petrobras' debt increased by 30.79% (the average measured for other companies is 11.95%. Non-current assets increased by 14.48%, while current liabilities increased by 22.79% and noncurrent liabilities by 17.77% (the averages found are respectively 4.79%, 5.11% and 9.42%). Equity does not change because assets increase by the same value as liabilities. Operating expenses decreased by -10.75%, depreciation increased by 55.61% and interest expense by 22.61% (the average values estimated are respectively -3.69%, 15.25% and 17.32%). The impact of IFRS 16 on EBITDA is 28.76%, while EBIT varies by 9.83%. Cash flow from operations increased by 28.19% (the average increase is 7.88%), while cash flow from financing decreased by -16.57% (with an average of -30.45%). There were no changes in the cash flow from investing. The lease intensity ratio is 15.69% (the calculated average is 6.48%), while the debt to equity ratio increases by 37.93% (the median is 25.26%). The return on assets varies by -2.15%, the net financial position by 37.93% and the interest coverage ratio by -10.42% (the average changes are -1.46&, 22.72% and -10.20% respectively). Finally, the current ratio varies by -18.56% (the average value is -5.15%). The changes highlighted indicate that the adoption of IFRS 16 had a significant impact on Petrobras' financial statements, a symptom that the weight of off-balance-sheet leasing was high.

Lukoil

Lukoil is one of the largest energy multinationals in the world (operating in more than 30 countries) and the second largest in Russia after Gazprom. It was founded in Russia in 1991 following the merger of three state-owned oil companies. Lukoil's activities are divided into: exploration, extraction, production, transport and sale of oil, natural gas and derivatives and production of electricity. The increase in non-current assets following the IFRS 16 adaptation is 4.52%, non-current liabilities vary by 21.41% while current liabilities decrease by 3.79%; equity decreases by 0.12%. Average values found are as follows: non-current assest 4.79%, current liabilities 5.11%, non-current liabilities 9.42% and equity -0.23%. The positive change in equity is due to the greater increase in right of use compared to lease liabilities. The change in operating expense is -11.43%, depreciation is +12.58% and interest expense is +26.92% (the average values are respectively -3.69%, +15.25%, +17.32%). The combined effects of these changes led to an increase in EBITDA of 4.69% (average value 6.87%) and an increase in EBIT of 1.30% (average value 2.15%). The cash flow from operations increased by 5.01%, while the cash flow from financing decreased by -7.34%; the average values found are respectively +7.88% and -30.45%. There are no effects on the cash flow from investing and net cash flow. The lease intensity ratio measured is 10.32%, a value higher than the average of 6.48%. The change in the returno on asset is -1.96%, the net financial postion varies by 24.55%, the interest coverage ratio decreases by -20.19% and the current ratio drops by -3.65%. Average changes were -1.46% for RoA, +22.72% for NFP, -10.72% for interest coverage and -5.15% for the current ratio, respectively. The debt to equity ratio is analysed separately because it shows a change of 1201.22% due to the increase from 0.37% to 4.87% due to the high value of equity compared to other liabilities (equity accounts for approximately 70% of totalquity and liabilities).

Novatek

Novatek was founded in 1994 in Russia and it is one of the largest natural gas companies in the world. The compliance with IFRS 16 produces the following results on the balance sheet, income statement, cash flow statement and ratios analysed. Non-current assets increased by 0.69%, non-current liabilities by 2.99% and current liabilities by 1.68% (the average changes were respectively +4.79%, +9.42% and +5.11%). Total debt increased by 3.63% (compared to an average increase of 11.95%) while equity fell by -0.02% (the average value is -0.23%). Operating expenses decreased by -0.36%, depreciation increased by 6.93% and interest expense rose by 11.55% (the average values found were -3.69%, +15.25% and +17.32% respectively). EBITDA changed by 0.91% (compared to an average change of 6.87%), while EBIT increased by 0.03% (the average is 2.15%). Cash flow from operating activities increased by 0.79%, cash flow from financing decreased by -10.77% (the average variations calculated for other companies are +7.88% for CFFO and -30.45% for CFFF). There are no changes with regard to the cash flow from investing activities and the net cash flow. The lease intensity ratio measured is 2.47%, a value lower than the average of 6.48%. The debt to equity ratio increased by 10.81%, the return on assets decreased by -0.49%, while the net financial position increased by 10.79% (the values calculated for other companies are: +25.26% the median for the D/E, -1.46% the average for the RoA, +22.72% for the NFP). The interest coverage ratio fell by -10.33% (the average is -10.20%), while the current ratio fell by -1.66% (against an average of -5.15%).

Conclusions

In conclusion, even if it is not possible to draw up a classification of the company according to the impact suffered as a result of the transition to IFRS 16, three categories can still be identified on the basis of the calculation of the tertiles of the results obtained in relation to the lease intesity ratio:

- Low impact – Enel, Novatek and Gazprom show minimal changes, so it can be concluded that the adaptation to IFRS 16 did not mean major changes in the economic and financial performance. The fluctuation in the lease intensity ratio ranges from 1.10% to 2.94%, while the increase in debt ranges from 1.87% to 4.86%.
- Medium impact – Eni, Bp, and Equinor show a moderate increase in indices, and fall within the second tertile. The levels of the lease intensity ratio within this category range from 5.42% to 7.75%, while the level of the increase in debt is between 8.13% and 15.28%.
- High impact – Petroleo Brasileiro and Lukoil suffer a clear deterioration of the balance sheet indicators (the increase in debt ranges from 17.37% to 30.79%); the value of the lease intensity varies from 10.32% to 15.69%. in general, these two companies have shown to have a large amount of off-balance sheet leasing, so the adoption of IFRS 16 has had a great impact.

This document represents an attempt to give a punctual measure of the effects produced by the transition from IAS 17 to IFRS 16, by analysing the quarterly data published by the companies. In any case, in order to obtain even more precise and exhaustive information, it is necessary to wait for the publication of the financial statements for the entire year contained in the annual reports.