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# **The difference in IFRS and FAS accounting systems and their effects on financial ratios**

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**ABSTRACT:**

Sijoittaminen on tullut helpommaksi ja lähemmäksi jokaista kuluttajaa. Enää sijoittamista varten ei tarvitse kävellä henkilökohtaisesti pankin konttoriin, odottaa päiviä kaupan toteutumista ja maksaa suuria välityspalkkioita. Sijoittaminen onnistuu vaivattomasti ja reaaliaikaisesti omalta mobiililaitteelta ja sitä voi tehdä lähes rajattomasti ajasta ja paikasta riippumatta. Sijoittaminen onnistuu myös yli maarajojen. Kansainvälinen sijoittaminen tuo kuitenkin mukanaan myös haasteita. Eri maiden toisistaan poikkeavat tilinpäätöskäytännöt luovat tilanteita, joissa kahden yrityksen välinen vertailu voi käydä liki mahdotonta. Yhtenäiset tilinpäätöskäytännöt ovatkin kehittyneet merkittävästi vuosituhannen alusta. Tilinpäätöskäytäntöjen yhdenmukaistamista ohjaavat IFRS standardit otettiin käyttöön 2006. IFRS on kuitenkin standardi pörssiyrityksille ja siten sitä eivät noudata kaikki yritykset.

Tässä tutkielmassa vertaillaan kansainvälisesti käytössä olevaa IFRS-tilinpäätöskäytäntöä ja kansallista, Suomalaista FAS-tilinpäätöskäytäntöä. Tutkimuksessa keskitytään aiempien tutkimusten pohjalta suurimmiksi eroiksi havaittuihin liikearvoon, osakeperusteisiin maksuihin, etuus-pohjaisiin eläkejärjestelyihin ja leasingvastuisiin. Erot tuodaan näkyväksi tunnuslukuanalyysin kautta, jolla pyritään tutkimaan, ovatko havaitut erot tilinpäätöskäytänteissä olennaisesti merkitseviä. Tarkasteltaviksi tunnusluvuiksi on valittu kannattavuus, maksuvalmius, vakavaraisuus ja velkaantuneisuus. Valittujen tunnuslukujen on tutkittu suurimmin vaikuttavan osakkeen tuottoihin sekä arvoon. Tutkimus suoritetaan kvantitatiivisin menetelmin Helsingin pörssin suurimpiin yhtiöihin.

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**KEYWORDS:** International Accounting Standards, Finnish Accounting Standards, Accounting standards, differences in accounting standards, financial ratio analysis,

## Contents

1	Introduction	7
1.1	Previous research	9
2	Research problem and structure	14
3	Accounting policies	17
3.1	Share-based payments	17
3.1.1	Definitions of share-based payments	17
3.1.2	Valuation of share-based payments	20
3.1.3	Recognition of share-based payments	23
3.2	Employee benefits	24
3.2.1	Definition of employee benefits	24
3.2.2	Valuation of employee benefits	27
3.2.3	Recognition of employee benefits	32
3.3	Leases	33
3.3.1	Definition of leases	34
3.3.2	Valuation of leases	36
3.3.3	Recognition of leases	38
3.4	Goodwill	38
3.4.1	Definition of Goodwill	39
3.4.2	Valuation of goodwill	40
3.4.3	Recognition of goodwill	44
4	Financial analysis	45
4.1	Profitability	45
4.1.1	Return on assets	46
4.1.2	Net profit margin	46
4.1.3	Return on equity	47
4.2	Liquidity	47
4.2.1	Quick ratio	48
4.2.2	Current ratio	48
4.3	Financial stability	48

4		
	4.3.1 Gearing	49
5	Research materials	50
5.1	Corrections related to the materials	50
	5.1.1 Share-based payments	51
	5.1.2 Employee benefits	51
	5.1.3 Leases	52
	5.1.4 Goodwill	52
5.2	Summary	53
6	Method and results	54
6.1	IFRS 2 - Share-based payments	54
6.2	IAS 19 - Employee benefits	55
6.3	IFRS 16 – Leases	56
6.4	IFRS 3 / IAS 36 – Goodwill	57
6.5	All	57
7	Conclusions	59
8	Summary	63
	References	65

## Equations

Equation 1: Lease liability.	37
Equation 2: Net present value.	42
Equation 3: Continuous growth model.	43
Equation 4: Return on assets.	46
Equation 5: Net profit margin.	46
Equation 6: Return on equity.	47
Equation 7: Quick Ratio.	48
Equation 8: Current ratio.	48
Equation 9: Gearing.	49

## Figures

Figure 1: Scope of IFRS 2.	19
Figure 2: Identification of a lease.	35
Figure 3: Companies selected.	50

## Tables

Table 1: Financial information.	7
Table 2: Research summary.	13
Table 3. Valuation methods (IFRS 2:10-13, IFRS 2:30-33, IFRS 2:34-43).	21
Table 4. Valuation example.	31
Table 5. Recognition (IAS 19:120).	32
Table 6. Forecast calculation.	42
Table 7: Summary of changes.	53
Table 8: Results of Share-based payments.	55
Table 9: Results of Employee benefits.	56
Table 10: Results of leases.	56

Table 11: Results of Goodwill.	57
Table 12: Results of all.	58
Table 13: Conclusions related to null hypothesis.	60

## 1 Introduction

Imagine making an investment decision between two listed companies. The companies operate in the same industry and in the same market. The company's share prices are the same and the total number of shares is also the same. The key figures of the companies are as follows:

**Table 1:** Financial information.

	Company 1	Company 2
Earnings per share, euro	0,7	0,58
Operating profit	52,1	39
EBITDA	54,6	44,9
Equity	335,7	318,8
Revenue	597	566,3
Total assets	683,5	635
Equity ratio	49 %	50 %
Gearing	60 %	58 %

The figures show that Company 1's operating profit is 33.6% better and earnings per share is 20.1% better. The company's gearing ratio is worse than that of the comparison company, but not significantly. Which company would you invest in?

The figures described above present the financial statements of Fiskars Corporation as of December 31, 2004 (*Fiskars Oyj Abp*, 2005). These are therefore the financial figures of the same company for the same year. The difference is that the information in the first column shows the company's financial statements in accordance with FAS (Finnish Accounting Standard) practice and the information in the second column represents the

financial statements presented in accordance with IFRS (International Financial Reporting Standards) standards.

The above example serves as a strong example of a problem that has existed in international financial and investment markets for a long time. The financial statements are not standardized, and countries have their own accounting practices and thus the financial figures of different companies cannot be directly compared. In Europe, against this problem, the IFRS has been introduced for listed companies since 2005.

However, the adoption of IFRS created incomplete information for the Finnish market, as the decision only concerned listed companies (excluding the NASDAQ First North trading venue, where the Financial Supervision Authority does not require the preparation of IFRS financial statements (Financial Supervisory Authority, 2020)) and companies that issued securities. The obligation is written in the Accounting Act (1339/1997) 7a:2 where it is stated that an entity that has issued securities to trading in a regulated market in the European Economic Area can prepare its financial statement in accordance with IFRS.

In practice this means that most non-listed companies in Finland prepare their financial statements in accordance with the FAS. This possibility of using two accounting practices that differ in their requirements significantly impairs the comparability of financial statements in Finland. The purpose in this study is to examine the differences between these two permitted accounting practices and their effect on the essential accounting ratios normally used to measure company performance and in the same time work as a practical tool for international and domestic investors.

## 1.1 Previous research

European Union (EU) regulation 1606/2002 requires all publicly traded companies in the EU to prepare their consolidated financial statements according to IFRS. It applies from 1<sup>st</sup> of January 2005. This has led to multiple studies examining the effects of IFRS implementation in EU listed companies. This reporting obligation is included in the requirements of the IFRS 1 standard, where those who switch from the previous accounting standard to IFRS standards must present how the transition has affected the entity's financial position, financial results, and cash flows. Regarding the previous studies (see e.g. Aisbitt, 2006; Ali et al., 2016; Jermakowicz et al., 2018; Lantto & Sahlström, 2009; Omrod & Taylor, 2006), it should be noted that the differences between the different standards have mainly been studied during the transition phase of the introduction of the IFRS standards with data from 2005, so that the researchers have had access to the company's own calculations of the effects of IFRS.

Several studies have been conducted on the overall effects of the transition to IFRS. In these studies, the impact of the introduction of all IFRS standards on various financial reporting indicators and ratios has been investigated. Lueg et al. (2014) studied how the transition to IFRS affects key financial ratios when adaptation is made from UK GAAP (Generally accepted accounting principles). The study found out that medians of the ratios increased significantly. Operating Income Margin (OPM) increased by 10.8% and Return on Equity (ROE) by 27.0%. Main drivers for the increases were the incomes as net income increased by 56,1%, being significant at a 0.001 p-level and operating income, which increased by 20,6% at a 0.001 p-level. In Canadian market Jermakowich et al. (2018) studied the financial statement effects of 46 companies which switched from GAAP to IFRS in 2011 and found out significant differences. They concluded that the mean Debt to equity (DTE) ratio dropped by 5,1% and mean of ROE ratio dropped by 25% when switching from Canadian GAAP to IFRS.

More detailed studies have tried to distinguish the standards that have the greatest impact on comparability. In these studies, material in accordance with IFRS 1 has been used

for the most part. The studies therefore used materials in which the companies themselves had produced the calculations due to the influence of different standards.

Aisbitt (2006) investigated the effects of IFRS adaption from UK GAAP on companies' net assets. The author used FTSE (Financial Times Stock Exchange) 100 companies for her sample and concluded that there are no significant effects after transferring from UK GAAP to IFRS. Although no significant differences were observed in the balance sheet, the study concluded that individual standards had considerable effects on individual balance sheet items. The biggest changes were caused by International Accounting Standard (IAS) 19 dealing with employee benefits and IFRS 2 dealing with Share-based payments. According to the study, the impact of the mentioned standards decreased the mean equity total by more than 10%. On the other hand, Omrod and Taylor (2006) used the same material and found on their study of 50 non-financial FTSE 100 companies that the same standards lowered company's equity by 23%. It was noted that IAS 19 was the main factor with an effect of 26% to the equity. The study also noted that the adaptation of IFRS increases the profit after tax by 39% mainly because of IFRS 3 – Goodwill standard. The writer notes that different outcomes of these studies are significant. One main factor is that Aibitts (2006) study also included financial companies that was shown to have a smaller affect in the adaption. The other main factor is that Omrod and Taylor (2006) calculated the impact off each company by its relative size, thus giving larger companies a more significant effect to the results.

Stenka et al. (2008) measured 50 non-financial FTSE 100 companies and concluded that the IFRS profits are 33,89% higher and Equity to be 9,28% lower that the corresponding UK GAAP fixture. These were mainly affected by IFRS 3, and its impairment testing (IAS 36) on profits and IAS 19 on equity.

Ali et al. (2016) studied the impact of IFRS on the profit and equity of AIM (Alternative Investment Market) listed companies' in UK. AIM is the stock exchange where companies that want to seek growth funding from the market, but who do not have the

necessary resources to list directly on the London Stock Exchange, are listed. The researchers concluded that profits reported under IFRS were higher than those reported under UK GAAP and that this was largely due to IFRS 3 with a mean change of +16,38%. In terms of equity the study concludes that there seems to be no significant change when adopting IFRS. Average mean changes of -1,71 % was noted that is mainly driven by IAS 19. The study once again calls into question the research method used by Omrod and Taylor (2006), but overall provides evidence that when moving from UK GAAP to IFRS, the standards have significant effects, especially on the company's profit. Ali et al. (2016) research also shows that the standards also have an impact on the financial statements of smaller companies.

Fifield et al. (2011) expanded his study from UK to cover also Italian and Ireland markets as he examined the change of profit and net equity when adopting IFRS from local GAAP:s in 2005. The study indicates that profits under IFRS are risen by 101,0 per cent comparative to UK GAAP, 23,6% increase to Irish GAAP and 16,5% to Italian GAAP. Closer evaluation of the UK GAAP results state that IFRS 3 lowers the profits by 31,8 per cent to the national GAAP. This questions the study results as there seems to be a contradictory. Again, in the conclusion it is stated that profits are driven by IFRS 3, again questioning the results. But the finding increases interest in IFRS 3 standard. The other results of the study are in line with previous studies. The transition to the IFRS standard is seen to increase the company's balance sheet by an average of 20% in Great Britain and 5.2% in Italy. No statistical measure was obtained from the Irish market. Other drivers researched affecting the statements include IAS 12 – income taxes, IAS 17 – leases, IAS 19, IFRS 2, IAS 10 – Events after the reporting period, IAS 16 – property, plant and equipment and IAS 38 – intangible assets standards.

Finally, there have been studies related to Finnish markets. Lantto and Sahlström (2009) analyzed the impact of newly implemented IFRS reporting standards to financial ratios in Finland. The study assessed the median change due to the average shift to the median of the FAS financial statements. The average net result increased by 10% when switching

from the national standard to IFRS, but on the other hand, there were no statistically significant results in capital. The reasons behind the change in ratios was mostly because of goodwill amortization (IFRS 3 & IAS 36), Share-based payments (IFRS 2), the difference in employee benefits accounting (IAS 19) and leases (IAS 17). More significant standards were also found, but these did not have a great material impact. These included IAS 2 - Inventories, IAS 16 - Property, Plant and equipment, IAS 32 - Financial instruments - Presentation, IAS 39 - Financial instruments – recognition and measurement and IAS 40 - Investment property.

Since the previous studies were largely made with data from 2006, they do not take into account significant reforms to IFRS over the years. One such significant reform came about with the IFRS 16 standard dealing with leases. The standard replaced the previously used IAS 17 standard in the accounting treatment of lease agreements, and it ordered all leasing agreements to be processed through the balance sheet. The standard thus mandated that the rental liabilities of operating leases previously recorded outside the balance sheet must now be recorded in the balance sheet as an asset. Numerous studies have been conducted on the effect of the standard. Morales-Diaz and Zamora-Ramirez (2018) studied the impact of IFRS 16 to previous IAS 17 standards on 642 relevant StooXX market companies. They used a model that estimated the lease liabilities by discounting future operating lease payments. The study resulted in a 9,96% increase in mean in assets and 21,4% increase in mean by liabilities. Return on assets increased by 7,64%. This can be seen to have been assumed, because the company's assets are larger than its liabilities and the repayment of the lease debt accelerates towards the end, while the lease debt is written off linearly.

To sum up the previous research and the most relevant standards a table was formed:

**Table 2:** Research summary.

Research	Country of study	Relevant standards
Aisbitt (2006)	UK	IFRS 2 & IAS 19
Omrod & Taylor (2006)	UK	IFRS 3 & IAS 19
Stenka et al. (2008)	UK	IFRS 3, IAS 19, IAS 36
Ali et al. (2016)	UK	IFRS 3 & IAS 19
Fifield et al. (2011)	UK, Ireland & Italy	IFRS 2, IFRS 3, IFRS 5, IAS 10, IAS 12, IAS 16, IAS 17, IAS 19, IAS 38 & IAS 39.
Lantto & Sahlström (2009)	Finland	IFRS 2, IFRS 3, IAS 17 & IAS 19

## 2 Research problem and structure

The purpose of this study is to find out the differences between the IFRS standards and the financial statements produced according to the FAS and to investigate whether these differences cause statistically significant differences in selected financial ratios that were previously found to be relevant in similar studies.

This study reviews the most significant differences in the chosen accounting policies. The most significant standards affecting the differences have been selected according to previous studies stated in the previous chapter. Emphasizing the previous study in Finnis market thus not all noted differences are considered in this study, as they do not appear to have a significant impact on the issue under consideration. The following topics have thus been selected for analysis:

- IAS 19 - Employee benefits
- IFRS 3 / IAS 36 - Goodwill
- IFRS 16 – Leases (Replaced IAS 17 in 2019)
- IFRS 2 - Share-based payments

In the following sections, a ratio analysis is reviewed through three different financial ratios which are presented in more detail in chapter 5. Ratios selected have been chosen because they have been found in studies to have the greatest impact on the development of the stock returns or value. Anwaar (2016) has found in her research that return on assets and net profit margin has a significant impact on stock return. Akhtegan and Elmas (2021) found that an increase in the current or quick ratio leads to an increase in the company's stock value. Suryana and Anggadini (2020) found a positive relationship between current ratio and stock price. Akhtegan's and Elmas's (2021) study also found that an increase in the debt ratio leads to a decrease in the share value. Though Dimitrov and Jain (2008) had opposite findings. According to these findings the following ratios are selected:

- Current ratio
- Quick ratio
- Gearing
- Return on assets
- Return on equity
- Net profit margin

The research questions are as follows:

1. Does the introduction of the selected standards have a statistically significant effect on the income statement and balance sheet?
2. Do these standards have an impact on the selected financial ratios?

Research questions can also be changed into null hypotheses as follows:

- H1: The implementation of the selected standards does not have a statistically significant effect on the income statement or the balance sheet.
- H2: The chosen standards do not affect the chosen financial ratios.

The study consists of Finnish listed companies that are part of the OMXH25 index that reflects the price development of Helsinki's 25 most traded shares in terms of money. The IFRS financial statements of these companies is collected from fiscal year 2022, as this is the most recent data available. Finally, these financial statements have been restated in accordance with the researcher's assumptions that are described in more detail in chapter 5. Finally, the results have been examined using the Wilcoxon Signed-Rank test.

As the Accounting Act and especially the IFRS standards are constantly evolving and changing, this study focuses on laws and standards that were adopted on or before 1 January 2023.

### **3 Accounting policies**

In the following sections, we focus on the differences in the four accounting policies we have selected, their definitions, valuations, and accounting matters from the perspective of both practices.

#### **3.1 Share-based payments**

Share-based payments are, in simplified terms, those payments that are paid on a share-based basis. These payments can be, for example, granted shares, share options or shares offered for the purchase of goods or services. There are different accounting requirements depending on how the share-based option will be settled, that is, by equity, cash or equity and cash.

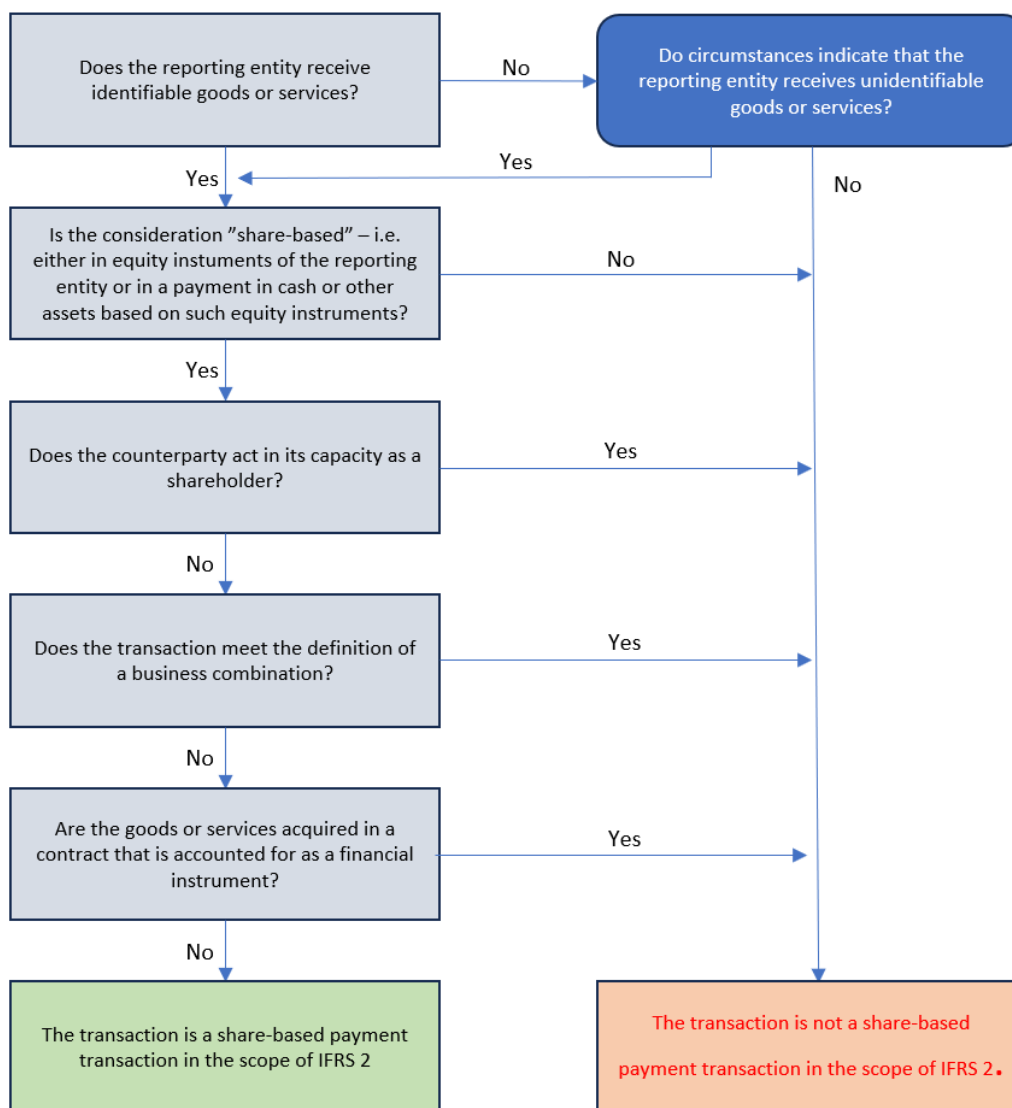
In its IFRS 2 handbook, KPMG (*Share-Based Payments - IFRS 2 Handbook, 2018*) mentions a couple of reasons for share-based payments. These consist of principal-agent theory, reward for past services and other reasons. Principal-agent theory argues that the interests between management (principals) and shareholders (agents) may be misaligned, as the management does not only pursue the interests of shareholders but also their own interests. Share-based payments as remuneration packages are given to mitigate this conflict. A reward for past services is a way for an entity to reward its employees' good services and bind them to the business. Other reasons include, but are not restricted to, receiving goods or services without affecting the entity's liquidity or preserving cash.

##### **3.1.1 Definitions of share-based payments**

IFRS 2, which has been effective since 1st January 2005, scopes on share-based payments. The standard specifies how an entity should recognize and measure equity-

settled benefits, such as options and shares granted to its employees and suppliers of goods and services (IFRS 2:2). It therefore applies to entities that receive or acquire goods and services, so that it remains indebted to the suppliers of those goods and services (Halonen, 2017 p.155). IFRS 2 further states that goods can include inventories, consumables, property, plant and equipment, intangible assets, and other non-financial assets (IFRS 2:5).

There are few exceptions to the scope. These are issuances of shares under IFRS 3 – business combinations and share-based payment within the scope of IAS 32 financial Instruments or IAS 39 Financial instruments as these should applied for commodity-based derivative contracts that may be settled in shares or right to share. The following figure illustrates the scope (*Share-Based Payments - IFRS 2 Handbook, 2018*).



**Figure 1:** Scope of IFRS 2 (Edited by the author based on Share-based payments -IFRS 2 handbook, 2018 p.17).

Other relevant definitions of share-based payments from the perspective of IFRS 2, are attributes that are materially related to them. These include the grant date, vesting condition, vesting period and measurement date. Grant date means the date on which the company and the counterparty made the agreement to agree on a share-based payment. Measurement date means the date on which an enterprise is deemed to receive a good or service related to a contract from a counterparty. Usually, a share-based payment is conditional on different vesting conditions. Vesting condition means the fulfillment of the entitlement. Vesting condition must specify the conditions related to the

service and those not related to the service. A service-related condition may be a service condition, such as a specified period of service in the entity, or a performance-based condition, which may be separately market-based or non-market-based. A market-based condition is a term that is linked to the market price of an entity's equity instruments. Non-market conditions, on the other hand, are all other performance-based conditions, such as revenue growth. Non-service conditions refer to all terms that are not related to the service in accordance with the standard. These can be, for example, ESPP (Employee share purchase plan) arrangements. The vesting condition for share-based payments ultimately gives rise to a vesting period, the period during which all the vesting conditions should be met. (IFRS 2:15-21)

FAS does not clearly define share-based payments, but in its decision 1998/2020 KILA (Kirjanpitolaautakunta, 2020b) has issued a statement regarding IFRS 2. In its decision, where it talks about share incentive schemes, it states that the allocation of shares to the employee as meant by the share incentive plan - whether it is current own shares already in the company's possession or significant new shares - falls within the scope of share issues in the corporate law. Share issues are defined in the Limited Liability Companies Act (624/2006 9:1) where it is defined that a company may issue new shares or transfer treasury shares (*share issue*). A share issue may involve the issue of shares against payment (*share issue against payment*) or free of charge (*share issue without payment*) (Limited Liability Companies Act 9:1).

So, the issue of shares can therefore be carried out free of charge or with a fee. However, it is at the company's own discretion which method of share issuance it uses in its share incentive systems. The Limited Liability Companies Act however, prohibits the use of the performance of work or services as contribution property (Limited Liability Companies Act 9:12). Therefore, in Finland, share issuance cannot be completely tied to work.

### **3.1.2 Valuation of share-based payments**

When valuing share-based payments in accordance with IFRS 2, the method of payment of the equity arrangement matters, as it also affects the valuation to be recognized in accordance with the following table 3:

**Table 3.** Valuation methods (IFRS 2:10-13, IFRS 2:30-33, IFRS 2:34-43).

Payment method	Definition	Valuation method
Stocks	Entity issues or transfers its own equity instruments in return for goods or services.	Fair value at measurement day
Cash	Entity pays cash calculated by reference to the price of its own equity instruments in return for goods or services.	Valuation at fair value at each end of the reporting period
Alternatively, cash and/or shares	Entity or the supplier may choose whether the entity settles in cash or by issuing or transferring equity instruments.	Share-based payment to fair value at measurement day  The cash portion is revaluated at fair value at each end of the reporting period.

According to the standard, fair value is determined based on market prices (IFRS 2:16). But if market prices are not available, the fair value of the instruments must be determined using valuation techniques. The standard does not specify the valuation method to be used, only that it should cover all factors and assumptions that are known and would be taken into account by market participants willing to do business with the entity in calculating the value, but at least the following (IFRS 2:B6):

- Option exercise price
- Option expiration date
- The current price of the underlying shares

- Expected share price volatility
- Expected dividends on shares and
- Risk-free interest rate for the term of the option

As examples, the standard specifically mentions the binomial model or the Black-Scholes model as a means of determining fair value (IFRS 2:B5). This study does not introduce valuation models in more detail.

The fair value of the share-based payments differs by the type of goods or service received. The basic principle is noted in IFRS 2:10:

*For equity-settled share-based payment transactions, the entity shall measure the goods or services received, and the corresponding increase in equity, directly, at the fair value of the goods or services received, unless that fair value cannot be estimated reliably. If the entity cannot estimate reliably the fair value of the goods or services received, the entity shall measure their value, and the corresponding increase in equity, indirectly, by reference to the fair value of the equity instruments granted. (IFRS 2:10)*

As in the case of employee share options where the fair value of the service cannot be reliably calculated, the fair value is the fair value of the equity instruments granted. This is done on the grant date. In the case of goods received the fair value is calculated on the measurement day. For clarity, the standard states that vesting conditions are not considered when estimating the fair value. (IFRS 2:24)

FAS has no direct mentions about the valuation of share-based payments. The Accounting Board has given a statement (Kirjanpitolautakunta, 2020a) where it states that if the payment is to be made by share issue against payment it should be recorded in the accounts according to its previous statement (KILA 1136/1991), where it stated that In FAS the valuation is based on the expenditure incurred from the arrangement.

### 3.1.3 Recognition of share-based payments

In accordance with IFRS 2, share-based payments made as equity instruments are recognized as an expense and as an increase in equity over the period. Share-based payments in cash are recognized as an expense and a liability during the settlement period. (IFRS 2:7-10) However, if the options have a vesting condition that cannot be received immediately, such as a service condition of several years, an amount corresponding to the condition to be recorded is recorded (IFRS 2:15). Moreover, IFRS 2 requires the reporting company to disclose all the information that is needed to understand the nature and the extent of the arrangement. These must be enclosed in the notes. (IFRS 2:44)

FAS makes a difference between two situations. In a situation where the company itself carries out the acquisition and transfer of its own shares to the employees, it is recorded as if they were share issues. Thus, the expense is recognized without impact on the income statement in accordance with the financing transaction when the terms of the option are finally met, but not before (Kirjanpitolautakunta, 2020b). FAS therefore does not enable the recording of service-related options during the service period. In a situation where an outside company manages the share bonus arrangement the share-based payments are recognized as a personnel cost at the stage of its final realization according to Kila 2009/2020 (2020b). Furthermore, according to Kila's statement 1998/2020 (2020a), tax liabilities that may arise with the share incentive plan may give rise to an expense that is recognized as an expense in the fiscal year in which the performance obligation arises, like payroll expenses.

FAS also obliges companies to explain the main content of current and former stock options and special rights entitling to other shares in the company's annual report. The Accounting Board's decision 1998/2020 (2020a) states that the share incentive plan must be accompanied by a note. In addition, the management code of Finnish listed companies instructs companies to record a clear and comprehensible remuneration report of the institutions for the annual general meeting. The report should show the fees

paid and due to institutions from the previous fiscal year (Arvopaperimarkkinayhdistys ry, 2019).

## **3.2 Employee benefits**

Employee benefits liabilities are those liabilities that an entity is required to pay to its employees in the future. An example of this is pension benefits.

### **3.2.1 Definition of employee benefits**

Employee benefits are dealt within the IFRS in three different standards. IAS 19 deals with the accounting and financial reporting of employee benefits. IFRS 2 - Share-based Payment deals with share-based payment transactions, such as share-based payment options that was discussed in the previous chapter. In addition, employee benefits are overseen in IAS 26, which deals with issues related to the accounting of pension funds and foundations. IAS 26 is not relevant to this study, as the sample we choose contains no pension funds or foundations, and it is not further disclosed. Next, we focus on IAS 19.

The standard defines several types of employee benefits (IAS 19:5):

1. Short-term employee benefits, which include salaries and social security contributions, annual leave, or profit-sharing contributions, payable in full within twelve months after the end of the fiscal year in which the employees render the related service.
2. Post-employment benefits, such as retirement benefits or other post-employment benefits, which become payable after the termination of the employment relationship.

3. Other long-term employee benefits, such as long-term paid absences, anniversary benefits or long-term disability benefits.
4. Termination benefits provided in exchange for the termination of an employee's employment on termination of employment before the normal retirement age by the entity or for the employee's decision to accept benefits in exchange for termination of employment.

Of the employee benefits listed above, post-employment benefits are essential, as they are of practical significance for the study because the accounting treatment of these has a significant difference between the selected standards according to previous studies. However, it is recognized that the recognition of long-term employee benefits follows the method of recognizing post-employment benefits. Short-term employee benefits, by their nature, are recognized in accrued liabilities in the balance sheet (IAS 19:11). Termination benefits are recognized as an expense and a liability as soon as the entity can no longer withdraw from the contract or when the entity recognizes the expense of a restructuring within the scope of IAS 37 that involves termination benefits (IAS 19:165). Next, we examine in more detail the post-employment benefits.

Post-employment benefits are divided in the standard into defined contribution and defined benefit plans. There are significant differences between the two arrangements in terms of accounting treatment. Defined contribution plans are, in accordance with the standard (IAS 19:28), arrangements in which the entity makes flat-rate payments to a separate entity and has no legal or constructive obligation to make additional payments if the fund does not have sufficient funds to pay all employee benefits based on current or prior periods. Defined benefit plans are all other post-financial benefits that are not defined contribution plans (IAS 19:30). In defined benefit plans the employer has the responsibility and an obligation to pay the agreed benefits to current and former

employees. This means that the risks, both actuarial and investment risks, remain to be borne by the employer.

Actuarial risk is the risk that the final benefits payable will differ from those expected (IAS 19:28). In practice, this means that there is a risk that pension liabilities that will only be realized in the future have been valued correctly in the balance sheet, and not to an understatement or an overestimation. This can happen since the actuarial calculation involves demographic assumptions. Depending on the assumptions like mortality, termination of employment and the onset of incapacity for work and financial assumptions such as the discount rate, inflation and future salary increases may be assumed for the company (IAS 19:75-98). Among other things, the discount rate used has a significant effect on the result of the calculation. Investment risk, on the other hand, means the risk that the invested assets will not be sufficient for calculated performance or may be oversized (IAS 19:28). More specifically, investment risk arises because, for example in Finland, part of TyEL payments are funded. This is due to the fact the Finnish pension system is a partially funded system for old-age and disability pensions. This means that part of the annual earnings-related pension contributions is funded and invested in future pensions, but most of the contributions are used directly to cover pensions paid in the same year. According to the Finnish Center for Pensions, an example of funding is the amount corresponding to 0.4% of the earnings for the old-age pension component (Eläketurvakeskus, 2022). However, it should be noted that the plan may also be unfunded, in which case the company manages the assets it holds and recognizes post-employment benefits as an expense for current service.

However, it is not easy to distinguish between the different arrangements. In Finland, an earnings-related pension can be managed through three separate pension schemes. Through pension fund, through a pension trust or an employment pension insurance company (Halonen, 2017 p.138). If pension is managed by a pension fund or pension trust, it should be treated as a defined benefit plan based on the criteria of IAS 19, as in an arrangement managed through the foundation, the employer has responsibility for

the profitability of the investment. On the other hand, in a pension plan managed by an insurance company, the success of the investment activity does not affect the company's payment obligations. Therefore, the pension managed by the insurance company is treated in its entirety as a defined contribution pension plan. Although the listed companies we selected for the study manage their pension insurance in Finland through insurance companies, these companies may have defined benefit pension liabilities, as they often have foreign subsidiaries whose pension plans differ from the practices of the Finnish parent company. Halonen (2017 p.135-150) therefore mentions that a company should classify all its pension plans, both voluntary and mandatory, separately as defined contribution or defined benefit. At the group level, the classification of pension plans of foreign subsidiaries requires systematicity, as pension systems in different countries can differ significantly. In addition to the Finnish partially funded system, the plans may be fully funded or unfunded plans.

The Finnish Accounting Act does not directly refer to employee benefits. However, it mentions that liabilities must be entered on the balance sheet at their nominal value or, if the debt is linked to an index or other comparison basis, at a value higher than the nominal value according to the changed comparison basis (Accounting Act 5:2-3). Furthermore in its decision 1906/2013, the Finnish accounting board (Kirjanpitolautakunta, 2013) deals with the accounting treatment of the statutory and voluntary pension commitment of the CEO and his deputy. In the statement it states that all the commitments related to the voluntary pension must be recorded as expenses and that the financial statements must take into account all foreseeable liabilities and that the main terms should be stated in the notes.

### **3.2.2 Valuation of employee benefits**

The IAS standard seeks to ensure that all future liabilities of the entity are properly recognized in the balance sheet. Consequently, the accounting treatment of defined contribution and defined benefit plans differs significantly, as defined contribution plans

terminate the company's liability for the payment of individual items and are simply recognized as an expense in the income statement (IAS 19:51-53). Under defined benefit plans, a company may be required to pay some or all of its employee pension. Defined benefit plans thus involve a considerable amount of complexity, such as actuarial calculations. Next, we explicitly address the measurement of defined benefit plans.

When calculating the pension liability, the standard notes the following things must be taken to account (IAS 19:57):

1. Calculating the surplus from the following:
  - 1.1. A reliable estimate, calculated by the projected unit credit method with actuarial techniques, of the expenses that will be paid to the company for the benefits that the employees have earned in the current or previous accounting periods.
  - 1.2. Discounting the benefit in question to its present value
  - 1.3. Subtracting the fair value of the plan's assets from the present value of the defined benefit obligation.
2. Determining the defined benefit net liability as the deficit or surplus determined in point 1, which is adjusted by the possible effect caused by the fact that the defined benefit net asset item is limited to the maximum amount of the asset item.
3. Determining the amounts to be recognized in profit or loss.
  - 3.1. Expenses based on the work performance of the season.
  - 3.2. Expenses based on previous work performance and profit or loss resulting from fulfilling the obligation.
  - 3.3. Net interest on benefit-based net debt
4. Determining the items to be recognized in other comprehensive income items that result from the redetermination of benefit-based net debt.
  - 4.1. Actuarial gains and losses

- 4.2. The return on assets belonging to the arrangement, excluding net interest.
- 4.3. In the effect of the change in the maximum amount of the asset, excluding the items included in the net interest.

Calculating the surplus is based on actuarial calculations. Actuarial calculations are complex calculations that take into account both actuarial and demographic risks, which must be unbiased and mutually compatible (IAS 19:75-79). The standard obliges that the calculations should be made using a single variant of the accrued benefit method (IAS 19:67-69). This is called Projected Unit Credit Method (PUCM), which is a reliable estimate of the expenditure that an entity will ultimately incur on the defined benefit benefits that employees have earned in return for service in the current (Current service cost) or prior periods (Past service cost). In the method, each period of employment gives rise to one additional unit of the right to the benefit, and each unit is valued separately when settling the final debt. Finally, this calculated benefit is discounted to the present value of the obligation at an interest rate that corresponds to the interest rate of high-quality corporate bonds. This will lead to a defined benefit obligation. Finally, the fair value of plan assets, the assets that are set aside for the pension liability, is deducted from the present value of the defined benefit obligation.

The adjustment of the determination of net debt based on benefits refers to a situation where a surplus like the one above has arisen. The standard mandates that this surplus should be recorded in the lesser of the following (IAS 19:64, 19:83):

1. The surplus of the defined benefit plan
2. The maximum amount of the asset, which is determined by using the market return rate of high-quality bonds issued by the company.

Next, the items that affect the profit and loss are defined. In the calculation the expenditure related to the current period and the expenditure related to previous years must

be separated. The following example serves as an example of the application of the method based on the projected unit credit method, as well as the separation of items with an impact on the profit and loss. In the example, at the end of the employment relationship, a one-time benefit equals to 1% of the final salary is paid for each year of work. The salary for the first year is 50,000 units and it is expected to increase by 5% from the previous year. 8% annual interest is used as the discount rate. Since the construction of actuarial equations is multi-complicated, they will not be focused on in more detail in this study. In the calculation, it is therefore assumed that the actuarial calculations have been made, and they have arrived at an amount that corresponds to 1% of the final salary.

**Table 4.** Valuation example.

Year	1	2	3	4	5
Benefit attributed to (euros):					
Prior years	0	608	1216	1823	2431
Current year	608 (607,75)	608	608	608	608
Total	608	1216	1823	2431	3039
Opening obligation	0	447	965	1563	2251
Interest (8%)	0	36	77	125	180
Current service cost	447	482	521	563	608
Closing obligation	447	965	1563	2251	3039

It is noticeable from the calculation in table 4 that the amount of the discount rate significantly affects the calculated items. According to the standard, the discount rate must be determined based on the market return on the balance sheet date of high-quality bonds issued by companies. If there is no deep market for bonds, the market yield of government bonds on the balance sheet date should be used. In addition, the term of the selected bond must correspond to the estimated duration of the obligation.

In the last step, the items to be recorded in comprehensive income are defined. These items result from actuarial gains or losses that arise, e.g., from abnormal salary increases for personnel or changes in the discount rate. In addition, the returns of the assets included in the arrangement are also recorded, from which the expenses and taxes resulting from the management of the assets are to be reduced. Finally, the surplus or deficit calculated in section 2 is also recorded in the items of comprehensive income.

As stated above, Finnish legislation does not contain actual instructions how to value employee benefits. Only that the pension debt must be fully covered on the balance sheet date (Halonen, 2017 p.154).

### 3.2.3 Recognition of employee benefits

When recognizing pension plans in IFRS, the first thing to consider is how the pension plan is arranged. In the case of an unfunded plan, the company recognizes the pension accrued to financial statement as an expense and a liability. In funded or partially funded schemes, the company's and employees' contributions are funded in a separate fund or unit. When an enterprise has more than one defined benefit plan, the procedure should be applied separately to each material plan.

Table 5 reflects the standard's items that affect the profit and loss as well as items related to comprehensive income and balance sheet presentation.

**Table 5.** Recognition (IAS 19:120).

Profit and loss	Comprehensive income	Liabilities	Assets
Current service cost	Actuarial gains and losses	Net defined benefit liability	Net defined plan assets
Past service cost	The return on plan assets, excluding amount included in net interest on the defined benefit liability		
Net interest on the net defined benefit liability	Any change in the effect of the asset ceiling		

In addition to this, according to IAS 19:135 an entity shall disclose information in its notes that:

1. explains the characteristics of its defined benefit plans and risks associated with them.
2. identifies and explains the amounts in its financial statements arising from its defined benefit plans.
3. describes how its defined benefit plans may affect the amount, timing, and uncertainty of the entity's future cash flows.

In Finland, pension expenses are recorded in accordance with the opinion of the Accounting Board (2013) so that expenses based on pension obligations are recorded on an accrual basis when the liability accrues, regardless of whether they are based on law or voluntary.

### **3.3 Leases**

A lease agreement is an agreement by which the owner of an object transfers control of the object or asset owned by the lessee to the lessee for consideration. The object can be an object, a building, or another commodity.

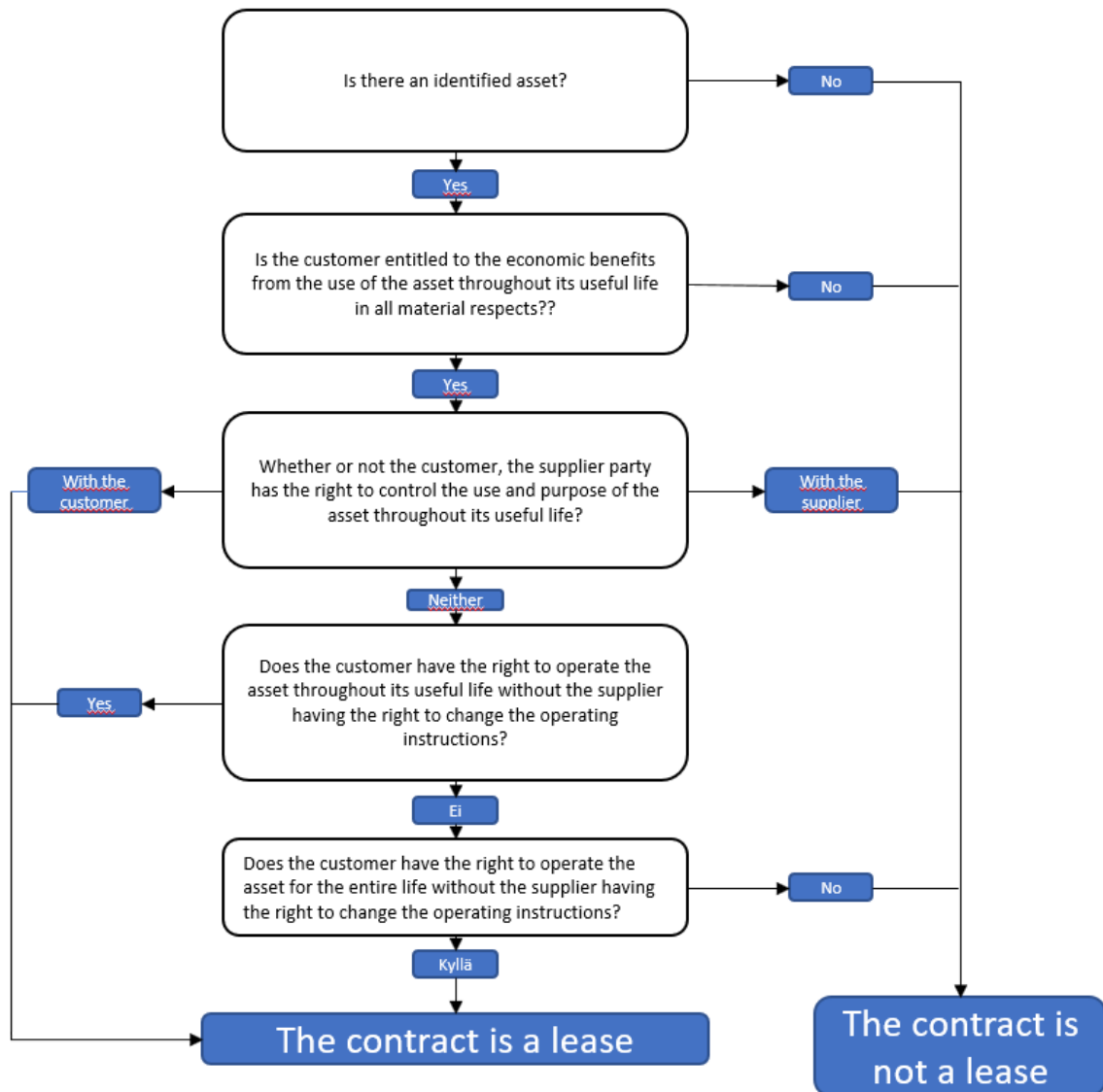
Companies use leasing because it does not tie up capital in the same way that buying an asset does. Often, leasing contracts also include servicing and maintenance of the leased product, so the company is better able to plan its budget. The company's goal is often to cover the leasing payments with the income available from the assets. This in all can lead to increasing profit ratios.

In the following paragraphs, the definitions, valuation and recording of leasing contracts are used only from the point of view of the lessee as the lessors accounting principles are not relevant for this study.

### 3.3.1 Definition of leases

According to IFRS 16:6, a lease is a contract, or part of a contract, which conveys the right to use an asset for period of time in exchange for consideration. A contract has an agreed start time and end date.

In general, there are two types of leases. A *finance lease* is a lease that transfers all the risks and rewards incidental to ownership of an asset to the lessee. Such can be considered, for example, a financial leasing agreement related to car rental, in which the lessee is liable for damages in the event of a crash. The second lease is an *Operating Lease*. It does not transfer all the inherent and material risks and rewards of the property to the lessee. Such a contract can be considered, for example, a lease. (IFRS 16:62) The following diagrams illustrate the fulfillment of the definitions of leases:



**Figure 2.** Identification of a lease (Edited by the author based on Halonen (2017 p.377))

According to the standard (IFRS 16:3-8), lease agreements concerning biological goods, forests, the search for or use of non-renewable reserves, or agreements concerning intangible rights are not treated as lease agreements. The lessee also does not need to enter lease agreements of less than 12 months or lease agreements of low value, such as lease agreements for computers, tablets, or telephones, on the balance sheet. In the case of short-term leases, the recording method must be decided by target asset category, while low-value products can be processed per lease agreement.

The Finnish Accounting Act or other regulation does not contain a separate definition of leasing. The Accounting Act does however enable the recognition of lease agreements in accordance with the IFRS listed above. This is possible if the risk and benefits based on the commodity are transferred to the lessee at the beginning of the contract period and that the method is applied to all similar contracts. (Accounting Act 5:5b)

### **3.3.2 Valuation of leases**

When the lease agreement has been determined to be a lease agreement in accordance with IFRS 16 according to the diagram above, the lessee records the lease liability on the balance sheet. This lease liability is valued at the present value of the lease payments that are not paid at that date at the commencement date, which notes the day the agreement becomes effective. The lease payments should cover all the fixed and variable lease payments, amounts to be expected to be payable under residual value guarantees, the purchase option price, if it's reasonably certain that the company will exercise that option or if terminating the lease is planned, the payments of penalties for terminating the lease is to be calculated. The final amount shall be discounted using the interest rate implicit in the lease if that rate can be readily determined. If that rate cannot be readily determined, the lessee shall use the lessee's incremental borrowing rate. Incremental borrowing rate is the rate of interest that a lessee would have to pay to borrow on a collateralized basis over a similar term an amount equal to the lease payments in a similar economic environment. (IFRS 16:26-28)

To calculate the lease liability a following formula can be used:

$$\text{Lease liability} = \sum_{t=1}^n \frac{S_t}{(1+r)^t} + \frac{JA}{(1+r)^n} \quad (1)$$

Where,

$S^t = \text{Rental expenses}$

$JA = \text{Residual value of the investment}$

$n = \text{Investment holding period}$

$r = \text{Incremental Borrowing Rate}$

Correspondingly, the fixed asset item on the balance sheet is valued based on the valuation of the lease debt above, but also adding the rents paid by the time the contract begins, any immediate expenses in the initial phase, minus any incentives, direct costs that may be for example, commissions paid on obtaining the lease and estimates of expenses arising from dismantling or restoring the object to its original condition. (IFRS 16:23-25)

After the start date of the agreement, the lease debt is valued according to the effective interest rate, i.e., the portion of the interest expense is divided so that the interest rate for the debt remaining on the balance sheet is the same throughout the lease period. Finally, the book value of the debt is determined based on the amortized acquisition cost and the interest expense is amortized over the lease term (Haaramo et al., 2018 p.232). After the starting point, the right-of-use asset is valued at acquisition cost and accumulated depreciation is deducted from it in accordance with the useful life and impairment losses (IFRS 16:30-33).

Valuation related to leases is not defined in the current FAS accounting policy. Entries are based on the lessee's invoices and valued at the invoice value.

### 3.3.3 Recognition of leases

According to IFRS 16:47-60, leases are accounted for as if the leased asset had been purchased. In this way, the asset is recognized in the balance sheet, valued in accordance with the previous paragraph. Any prepayments and initial direct costs are included in the balance sheet item. The corresponding lease liability is recognized in liabilities. In this way, the asset is depreciated annually in the income statement, and in addition, the interest expense determined by the internal interest rate is recognized separately.

As stated above in Finnish accounting practice it is possible to record the lease agreements according to IFRS, but if this option is not used, expenses are recognized in the lessee's income statement without balance sheet entries. However, Finnish Accounting Ordinance (1339/1997) states that off-balance sheet items should be noted as an off-balance sheet liability (Accounting Ordinance 2:7). This often also includes leasing liabilities, if it is necessary to present them to give a fair and balanced understanding of the entity's development, performance, and financial position (Accounting Act 3:2).

## 3.4 Goodwill

Goodwill is an intangible asset that arises in connection with acquisitions. Simplified, its amount is calculated in connection with acquisitions by deducting the price paid to the company from its book value.

Accounting for goodwill has historically been the subject of much controversy among scholars and policy makers and has been associated with considerable variation in accounting practice across countries over time (Johansson et al., 2016). The accounting treatment of goodwill is crucial because it provides a sample scope for managerial discretion, which could threaten the reliability of financial reporting (d'Arcy & Tarca, 2018). Managers may the standards opportunistically and provide incomplete information (Boennen & Glaum, 2014). Managers' opportunism or incomplete disclosures could lead

to lower-quality accounting information and value relevance, thus reducing the positive outcomes from adoption of IFRS (d'Arcy & Tarca, 2018).

### **3.4.1 Definition of Goodwill**

Goodwill is a residual in the acquisition cost calculation, i.e. the part of the acquisition cost that cannot be allocated to the target company's assets and liabilities because the content of goodwill does not meet the conditions for recognizing a separate asset (Perälä et al., 2016). Perälä mentions as such a balance sheet item e.g., the skills of the target company's workforce and personnel, the synergies of the acquirer, contingent assets and liabilities, deferred taxes, and customer relationships. The official definition of goodwill used by IFRS is recognized in IAS 36:81:

*Goodwill recognised in a business combination is an asset representing the future economic benefits arising from other assets acquired in a business combination that are not individually identified and separately recognised. Goodwill does not generate cash flows independently of other assets or groups of assets, and often contributes to the cash flows of multiple cash-generating units. (IAS 36:81)*

IFRS 3 - Business Combinations also deals with the effects of acquisitions in companies' financial statements. As these effects cannot be reliably separated from the financial statement, the IFRS 3 guidelines are excluded from this study.

Finnish legislation does not separately define the concept of goodwill, but the concept has developed with the case law and its definition is consistent with the definition IFRS and IAS.

### 3.4.2 Valuation of goodwill

According to the Accounting Act, the acquisition cost of an asset includes the direct costs incurred in its acquisition and manufacture. The provision applies to all types of assets, both fixed and variable (Leppiniemi & Kaisanlahti, 2016 p.234). In accordance with international accounting practice, direct costs incurred in connection with an acquisition may not be included in the acquisition cost. However, this dissertation does not take into account the differences in acquisition costs between accounting practices, as it is impossible to examine them without more detailed accounting information. Therefore, the following valuation refers to the valuation of goodwill after the acquisition.

Goodwill is capitalized in International Accounting Standards. However, goodwill is not amortized, but is evaluated annually in accordance with IAS 36 - Impairment of Assets or whenever there are indications of impairment. The standard states the following about the impairment test (IAS 36:90):

*A cash-generating unit to which goodwill has been allocated shall be assessed for impairment annually, and whenever there is an indication that the unit may be impaired, by comparing the carrying amount of the unit, including the goodwill, with the recoverable amount of the unit. If the recoverable amount of the unit exceeds the carrying amount of the unit, the unit and the goodwill allocated to that unit shall be regarded as not impaired. If the carrying amount of the unit exceeds the recoverable amount of the unit, the entity shall recognise the impairment loss. (IAS 36:90)*

For the purposes of the standard, the term cash-generating unit means the smallest identifiable group of assets whose cash flows are largely independent of the cash inflows from other assets and groups of assets. Carrying amount, on the other hand, refers to the amount of money that an entity estimates the asset will generate in the future, i.e., value in use, which will be discussed next. (IAS 36:6)

The actual annual impairment test is performed using the value in use method (IAS 36:6). In practice, the standard also allows the use of the fair value method, but since it is generally not possible to determine the exact fair value of goodwill, the value in use method is used as a test without exception.

The value in use method is based on calculating the net present value of cash-generating units. The value in use of all cash-generating units that include goodwill is thus discounted to their present value using cash flows and the best management forecasts. The definition of value in use and related practices are discussed in more detail in IAS 36:6. According to the standard, the cash flow forecasts used in the value in use calculation must be in line with management's forecasts and must be based on the most recent budget calculations. However, they must not take into account cash flows arising from future acquisitions or investments. The forecasts should also cover the next 5 years. According to the standard, forecasts should use the most stable and declining growth rate possible, unless otherwise can be demonstrated. The projected growth rate must also not exceed the average market growth rate unless a higher growth rate can be demonstrated.

Example model of forecast calculation:

**Table 6. Forecast calculation.**

	31.12.2 0**+1	31.12.20 **+2	31.12.20 **+3	31.12.20 **+4	31.12.20* *+5
Net sales excluding the effect of investments (Euros)	200	208	216,32	222,81	227,27
Percentage growth in net sales	4%	4%	3%	3%	2%
Expenses	100	103	105	110	120
Tax (20%)	20	21	22,26	22,56	21,45
depreciation (+)	8	8	10	9	13
Change in net working capital (-)	20	20	20	20	20
Investments (-)	150	16	17	18	19
Cash flow	-62	77	84,32	83,81	81,27

The net present value can be represented by a mathematical formula as follows:

$$NPV = \sum_{t=1}^n \frac{S_t}{(1+r)^t} \quad (2)$$

Where,

$r = \text{discount rate}$

$t = \text{timing}$

$S_t = \text{Cash flow of the cash generating unit at time } t$

In addition, the undiscounted residual value obtained by calculating using the continuous growth model should be noted.

$$P = \frac{D_0(1+g)}{r-g} \quad (3)$$

Where,

*P = Present value*

*D<sub>0</sub> = Present value at the end of the forecast period*

*g = revenue growth rate at the end of the forecast period*

*r = Discount rate*

The present value of the example calculation (see table 6) is thus 994.73. The carrying amount of goodwill in excess of this should therefore be written down through write-downs in the income statement.

According to the FAS goodwill can be capitalized (Accounting Act 5:9). According to Perälä (2016), however, there is no actual capitalization obligation and goodwill can be expensed at the time of acquisition. Normally, however, goodwill is such a significant balance sheet item that it is capitalized. According to the Accounting Act, capitalization must be removed during its useful life in a maximum of twenty years. If the accounting entity cannot reliably estimate the useful life of goodwill, it must be amortized according to plan within a maximum of ten years (Accounting Act 5:9).

Depreciation can be performed on a straight-line basis or on a residual deprivation basis. The straight-line method represents a schematic method of amortization in which goodwill is amortized over its useful life or according to plan. Depreciation is carried out on the annual balance of expenditure, always in pre-selected percentages, so that the depreciation period does not exceed the permitted 20 years. This is done taking into account §24 of the Act on the Taxation of Business Profits and Income from Professional Activity, according to which goodwill must be depreciated on a straight-line basis over a maximum period of ten years. Thus, the use of residual depreciation to remove goodwill may result in a depreciation difference for the enterprise. The straight-line method is

used as the default for the depreciation of listed companies analyzed in this study, and the concept of depreciation difference is not further explored in this study.

### **3.4.3 Recognition of goodwill**

In the IFRS, goodwill is recognized at acquisition cost and, as a result of impairment testing, an impairment loss is made annually, if necessary. No depreciation is used. IAS 1:125 states that the notes of financial statements must provide significant information about the accounting estimates and related key uncertainties used.

In FAS, the acquisition price is capitalized and depreciated annually, with a depreciation period not exceeding ten years, unless a longer depreciation period can be reliably demonstrated. In the notes of financial statements, the explanation of the depreciation period and method of goodwill must be noted.

## 4 Financial analysis

Financial statement analysis is an assessment of a company's financial condition for decision making. In decision-making situations, a company is compared to other companies and the goals set by the capital markets, and the same company is compared between different years. The strength of financial statement analysis is that it enables comparability (Kallunki, 2014 p.12). Kallunki (2014) adds that financial statement analysis plays a key role in assessing a company's financial condition and making decisions, also because it reveals the different dimensions of a company's financial condition. Based on this, it is easy to assess, for example, the company's profitability, growth, and business risks, which are essential information for decision-making. The company's various stakeholders need different information, which is available in the financial statements.

The key figure analysis utilizes several of the company's stakeholders. Investors receive analytical support to support their investment decisions. In a listed company, analyzes are often available from a number of public sources, but in investors in non-listed companies, the investor often has to perform the key figure analyzes and related valuations themselves. Other examples of users of key figure analyzes are lenders and suppliers who are interested in the solvency of a company and thus their ability to meet their short-term or long-term obligations. In the following, we will focus on key figures that focus on the company's profitability, liquidity, and solvency.

### 4.1 Profitability

The most important target for a company is to maximize its profits. But profits must be considered in relation to invested capital. The bigger the profit and the smaller the required capital the more profitable the business is, as capital is scarce and high-risk commodity. (Schmidlin, 2014 p.95)

Profitability ratios can be divided into two categories: margins and returns. Margins represent ratios of the firm's ability to translate sales into profits. Returns represent the firm's ability to measure the overall efficiency of the firm in generating returns for its shareholders.

To calculate profitability, we introduce return on assets (ROA), Net profit margin (NPM) and return on equity (ROE).

#### **4.1.1 Return on assets**

Not all assets invested in the company bring profits. That is why return on assets calculation is used. The return on assets describes this relationship between net income and assets, i.e. the profitability in correlation to the total amount of assets the owners have invested in the business. (Fields, 2011 p.92-93)

$$ROA = \frac{\text{Net income}}{\text{Assets}} \quad (4)$$

#### **4.1.2 Net profit margin**

Net profit margin is the purest profitability calculation. It tells how every euro sold turns into a profit. Low margin indicates high-risk and low margin of safety. (Goel, 2015 p.11)

$$\text{Net profit margin} = \frac{\text{Net profit}}{\text{Revenue}} \quad (5)$$

### 4.1.3 Return on equity

Return on equity (ROE) describes how much a company has returned related to its equity. The key figure thus describes profitability from the owners' point of view. The return on equity is shown by EBITDA less net financial expenses after taxes. Interest and taxes paid to debt investors are therefore deducted from the result, as they are not included in the return received by the equity investor. The denominator of the key figure is equity. (Kallunki, 2014 p.104)

$$ROE = \frac{\text{Net income}}{\text{Equity}} \quad (6)$$

The target level of return on equity is determined by the return requirement set by the owners, which is materially affected by the risk associated with the investment. The company must be able to generate a return not only on debt but also on equity. Of the return on equity, return on equity is the key figure that is most affected by possible revaluations. (Yritystutkimus (yhdistys) et al., 2017 p.68)

## 4.2 Liquidity

When calculating the firm's ability to cope with short-term obligations liquidity ratios are introduced. liquidity ratios tell about the company's possibilities to deal with its short-term and long-term debts, such as trade payables and other short-term debts, with its short-term and long-term assets. (McGowan, 2014 p.173-175)

To calculate liquidity, we introduce quick ratio and current ratio.

#### 4.2.1 Quick ratio

Quick ratio tells the ratio between liquid assets that the company holds, cash and cash equivalent plus account receivables and short-term liabilities. According to Schmidlin (Schmidlin, 2014 p.184) a good ratio is between 90% and 100% as a lower number can indicate problems in short-term financing and higher value could mean that too much capital is tied to the business.

$$\text{Quick Ratio} = \frac{\text{Cash on hand} + \text{Short-term investments} + \text{Receivables}}{\text{Current liabilities}} \quad (7)$$

#### 4.2.2 Current ratio

Current ratio expands the concept of quick ratio to cover all available funds, thus also taking inventories into account. Schmidlin (Schmidlin, 2014 p.185-186) states that the target level is 120-170%. Larger assets again indicate that the company has too much capital tied up in the business, and ratios below the target level could indicate problems in short-term liquidity.

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}} \quad (8)$$

### 4.3 Financial stability

The company's financial stability refers to the health of the company's financial structure. It describes the company's ability to meet its obligations in the long term.

To calculate financial stability, we introduce gearing.

### 4.3.1 Gearing

Gearing measures the ratio between a company's net financial position and shareholders' equity. A negative numerator indicates that a company is debt-free, but as some net debt is ideal from a risk and reward perspective, a gearing between 10-20% is ideal and gearing above 70% is considered critical according to Schmidlin (Schmidlin, 2014 p132-135).

$$\text{Gearing} = \frac{\text{Financial liabilities} - \text{cash and equivalents}}{\text{Shareholders' equity}} \quad (9)$$

## 5 Research materials

The data of the research consists of the companies of the OMX 25 index of the Helsinki Stock Exchange, cleaned of foreign and financial companies. Financial companies have been removed, as their capital structure and regulations are seen to differ significantly from a normal business company. The foreign companies have been removed in order to avoid a possible cultural influence on the presentation of the financial statements and figures. Thus, Telia, Mandatum, Nordea Bank and Sampo have been corrected out of the sample. In the end, the 21 companies shown below, in Figure 3, have been selected for the sample. The material consists of the annual reports of the selected companies for the fiscal year 2022. The material has been collected from each company's website.

- |                      |                    |                        |                     |                     |
|----------------------|--------------------|------------------------|---------------------|---------------------|
| 1. Cargotec Oyj      | 2. Elisa Oyj       | 3. Fortum Oyj          | 4. Huhtamäki Oyj    | 5. Kesko Oyj        |
| 6. Kojamo Oyj        | 7. KONE Oyj        | 8. Konecranes Oyj      | 9. Metso Oyj        | 10. Metsä Board Oyj |
| 11. Neste Oyj        | 12. Nokia Oyj      | 13. Nokian Renkaat Oyj | 14. Orion Oyj       | 15. Outokumpu Oyj   |
| 16. Qt Group Oyj     | 17. Stora Enso Oyj | 18. TietoEVRY Oyj      | 19. UPM-Kymmene Oyj | 20. Valmet Oyj      |
| 21. Wärtsilä Oyj Abp |                    |                        |                     |                     |

**Figure 3: Companies selected**

### 5.1 Corrections related to the materials

The purpose of the study is to find out the differences in the selected standards between the accounting practice according to the IFRS standard and the Finnish FAS accounting practice. Since the individual standards are treated differently in accounting practices, the differences caused by the individual standard must be corrected. The following chapters discuss the changes made to the material by variable.

### **5.1.1 Share-based payments**

In Finnish accounting practice, no expense is recorded for share-based payments, so the material is corrected for the expense recorded for the financial year, while at the same time correcting the equity effect of the recording. The tax-related effects of adjustments are recorded through the result, correcting equity, and adjusting short-term assets/liabilities.

### **5.1.2 Employee benefits**

Finnish accounting practice does not recognize the cost effect of imputed pension plans. The effects resulting from the redefinition of defined benefit pension plans and those recorded in comprehensive income are hereby corrected. Benefit-based payments are removed and the actual paid benefit-based pension payment is adjusted instead. Any changes in the result are taken into account in equity. Possible changes in expenses are also taken into account in assets or liabilities. The impact of taxes is taken into account through the result, but in addition, any changes in short-term tax liabilities are recorded in the corresponding balance sheet items.

Kojamo, QT Group and Nokian Renkaat does not have material share-based payments, so they have not been included in the sample. In addition to this, Fortum has had a significant sale of a subsidiary during the accounting period, which significantly affects the adjustments of share-based obligations. It is thus removed from the sample. In addition to this, Kesko has its own pension system, which significantly hinders the finding of share-based payment entries in the financial statements and for this reason it is excluded from the sample.

### **5.1.3 Leases**

In Finnish accounting practice, future lease contract liabilities are not capitalized on the balance sheet but are reported as off-balance sheet lease liabilities for the total amount of the liability. Thus, capitalization of assets and liabilities related to lease agreements are removed from the balance sheet. In addition, the depreciation recorded in the lease assets for the financial year is deleted. According to FAS, the lease expense is the actual amortization of the lease liabilities, so they are recorded as an expense for the financial year. Taxes are again taken into account through the result, and any changes in the balance sheet are presented in the corresponding items.

### **5.1.4 Goodwill**

In Finnish accounting practice, goodwill is recorded as an expense according to the capitalized goodwill amortization plan. Hereby, the impairment recorded in IFRS, recorded on the basis of the impairment calculation, is corrected back to material for the purpose of determining the depreciation base. An amount corresponding to a 10-year depreciation period is recorded as FAS depreciation, as that is the maximum depreciation period according to the Accounting Act (Chapter 5:9), unless the person liable for accounting can reliably demonstrate a longer effective period. Changes in profit and taxes are taken into account in equity. Possible changes in assets brought about by taxes are taken into account by adjusting short-term assets or liabilities.

## 5.2 Summary

The following table illustrates the impact of the standards on different balance sheet items. In order to facilitate the presentation of the table below, the effects of taxes have not been shown, as they are the same in all standards.

	Share-based payments	Leases	Employee benefits	Goodwill
Changes in profit/loss	Calculated share-based payments are adjusted and the actual, irrevocably incurred expense of share-based payments in the accounting period is added.	Instead of the depreciation of the lease expenses, the actual paid expense of the lease liabilities for the financial year is adjusted, i.e. the repayment amount of the lease liabilities.	The cost of the defined benefit pension plan is adjusted and the actual cost paid to the pension plan is recorded instead.	The goodwill impairment recording is corrected and a goodwill depreciation equivalent to 10 years of depreciation is added instead.
Changes in assets	Any receivable arising from the change in expense is recorded.	Leased assets are adjusted off the balance sheet through equity.	Any assets recorded in the balance sheet of pension plans are adjusted through equity.	The accounting period's depreciation through impairment testing is added to the goodwill and the depreciation for the accounting period is subtracted.
Changes in liabilities	Accrued debt arising from share-based liabilities is adjusted through equity.	The lease debt is adjusted off the balance sheet through equity.	The liabilities belonging to the pension plan are adjusted through equity.	N/A
Changes in equity	The effect of the change in profit and the share-based expense on equity is taken into account. In addition, the effect of debt adjustment is added.	The effect of the change in profit on equity is taken into account. Adjustments of lease liabilities and assets are taken into account.	The effect of the change in the profit on equity is taken into account. In addition, the effect of actuarial expenses recorded in comprehensive income is corrected. Adjustments of assets and liabilities are taken into account.	The effect of the change in the result on equity is taken into account.

**Table 7: Summary of changes**

## **6 Method and results**

Initially, the original ratios according to the IFRS standard have been calculated from the research data. After this, adjustments due to differences in the accounting practices of the selected standards have been calculated from the financial statements according to IFRS standards, which are explained in more detail in chapter 5. Finally, the effect of these adjustments on the key figures has been calculated on a percentage basis. Finally, this study presents, standard-wise, their effects on the selected ratios. The effects are presented with absolute changes in the mean and medians, standard deviation of the changes and as well as the minimum and maximum changes. The research method has been chosen due to the comparability to old studies, but also because they are seen to best describe the impact of standards on key ratios. In addition, the study presents the direct impact of the standards on the net income and the balance sheet total, so that we can get an answer to the first research question.

The Wilcoxon-Signed Paired test is used to test the statistical significance of the changes. The test has been selected for inspection because it does not require the data to be normally distributed, which cannot be ensured with sufficient certainty in the selected sample. The method also enables testing of the smaller sample selected for the study. In the following, we present the results by standard.

### **6.1 IFRS 2 - Share-based payments**

In the review of share-based payments, it was found that the standard has a statistically significant effect on all the analyzed key ratios. However, since share-based payments are not an essential part of the business, but only an incentive related to management

commitment, they were also not expected to change key figures significantly, which explains the smallness of the changes.

Looking at the biggest change, it can be noticed that a single company (Orion Oyj) had significant changes in its solvency indicators. The company's capital structure is the strongest of the comparison companies, so when the debts decrease, the ratio has a greater impact than the comparison companies.

Share-based payments n=21	IFRS Mean	IFRS Median	IFRS standard deviation	Absolute mean change	Absolute median change	Standard deviation of changes	Min change	Max change	P-value
ROA	10,63 %	7,01 %	30,79 %	0,15 %	0,09 %	0,19 %	0,01 %	0,85 %	0,001
NET PROFIT MARGIN	-1,67 %	6,66 %	35,17 %	0,20 %	0,11 %	0,22 %	0,01 %	0,95 %	0,001
ROE	16,58 %	12,81 %	54,22 %	0,33 %	0,23 %	0,32 %	0,02 %	1,09 %	0,001
QUICK RATIO	104,49 %	94,05 %	37,53 %	0,15 %	-0,04 %	1,19 %	-0,81 %	5,39 %	0,005
CURRENT RATIO	170,38 %	150,17 %	96,10 %	0,54 %	-0,06 %	3,11 %	-0,81 %	14,41 %	0,005
GEARING	25,14 %	21,27 %	28,02 %	0,03 %	0,03 %	0,21 %	-0,67 %	0,45 %	0,010
NET INCOME	-	-	-	3,03 %	1,62 %	7,03 %	-1,36 %	33,79 %	0,001
TOTAL ASSETS	-	-	-	0,00 %	0,00 %	0,00 %	0,00 %	0,00 %	N/A

**Table 8: Results of Share-based payments**

## 6.2 IAS 19 - Employee benefits

As expected, the changes affected by the Employee benefits caused significant changes. The assets recorded in the balance sheet through the standard are significant, which is why their adjustment had a significant effect.

Regarding the results, it should be mentioned that the exceptionally large corrections of a single company (Orion Oyj) have significantly affected the changes in the average, although even without the outlier the result is in the same direction. In Orion's case, it is again about their better equity ratio related to other companies, which is highlighted when looking at key ratios related to short-term liabilities and receivables, such as the Current or Quick ratio.

Employee benefits n=16	IFRS Mean	IFRS Median	IFRS standard deviation	Absolute mean change	Absolute median change	Standard deviation of changes	Min change	Max change	P-value
ROA	15,74 %	7,17 %	31,52 %	0,20 %	-0,01 %	0,56 %	-0,38 %	1,84 %	ns.
NET PROFIT MARGIN	10,07 %	7,27 %	6,98 %	10,04 %	7,27 %	7,02 %	-1,01 %	26,07 %	0,001
ROE	27,63 %	13,16 %	46,97 %	0,38 %	-0,25 %	1,91 %	-1,41 %	5,52 %	ns.
QUICK RATIO	104,59 %	93,50 %	34,35 %	5,51 %	1,63 %	10,03 %	0,23 %	42,05 %	0,001
CURRENT RATIO	174,53 %	148,98 %	102,93 %	10,76 %	2,36 %	25,09 %	0,26 %	106,06 %	0,001
GEARING	21,50 %	18,85 %	25,75 %	-2,26 %	-1,83 %	1,94 %	-6,85 %	-0,23 %	0,001
NET INCOME	-	-	-	2,78 %	0,07 %	8,20 %	-1,89 %	32,75 %	ns.
TOTAL ASSETS	-	-	-	-1,17 %	0,00 %	3,49 %	-15,55 %	0,42 %	ns.

**Table 9: Results of Employee benefits**

### 6.3 IFRS 16 – Leases

Adjustments related to lease liabilities presumably affected key ratios calculated from balance sheet items, like gearing and current ratio. As expected, the mandatory IFRS capitalization of lease rental liabilities, which are left off the balance sheet in Finnish accounting practice, increased the balance sheet on both sides. ROA was found to be statistically significant among the items that affected the income statement, but its effect was nevertheless found to be small (0.23%).

At Kesko, the biggest changes were observed in the companies under review. Measured by changes in gearing (-11.44%) and current ratio (12.85%), the standard had the biggest impact on it. As an individual matter, Kesko has a lot of leased properties, so the standard has a big change to its key ratios already by assumption.

Leases n=21	IFRS Mean	IFRS Median	IFRS standard deviation	Absolute mean change	Absolute median change	Standard deviation of changes	Min change	Max change	P-value
ROA	10,63 %	7,01 %	30,79 %	0,23 %	0,13 %	0,52 %	-0,43 %	2,32 %	0,005
NET PROFIT MARGIN	-1,67 %	6,66 %	35,17 %	-0,01 %	0,00 %	0,07 %	-0,23 %	0,13 %	ns.
ROE	16,58 %	12,81 %	54,22 %	-0,05 %	-0,02 %	0,38 %	-1,62 %	0,53 %	ns.
QUICK RATIO	104,49 %	94,05 %	37,53 %	2,65 %	1,98 %	2,78 %	-2,16 %	9,95 %	0,001
CURRENT RATIO	170,38 %	150,17 %	96,10 %	3,81 %	3,25 %	3,72 %	-3,93 %	12,85 %	0,001
GEARING	25,14 %	21,27 %	28,02 %	-1,81 %	-1,28 %	2,42 %	-11,44 %	0,50 %	0,001
NET INCOME	-	-	-	-0,21 %	0,01 %	1,08 %	-4,07 %	1,88 %	ns.
TOTAL ASSETS	-	-	-	-3,33 %	-2,23 %	4,63 %	-23,22 %	-0,33 %	0,001

**Table 10: Results of leases**

## 6.4 IFRS 3 / IAS 36 – Goodwill

During the goodwill testing, it was found that the changes in all ratios were statistically significant. Changes were reflected mostly on Net income, where the median dropped significantly (-7,72%).

The biggest changes hit Tieto Evry, whose ROE fell by 8.37% when changing from IFRS to FAS. The company has a significant goodwill in its balance sheet due to business acquisitions in proportion to the total assets, which however, have not seen a weakening of income expectations, which would cause impairment recording according to IAS 36. Therefore, the mandatory depreciation decreased its net income significantly. This also particularly affected Wärtsilä's percentage change, as 2022 net income was close to zero. This meant that the result of even the smallest change caused by the standard was significant in percentage terms.

Goodwill n=20	IFRS Mean	IFRS Median	IFRS standard deviation	Absolute mean change	Absolute median change	Standard deviation of changes	Min change	Max change	P-value
ROA	11,39 %	7,17 %	31,35 %	-0,83 %	-0,60 %	0,80 %	-2,71 %	0,61 %	0,001
NET PROFIT MARGIN	3,08 %	6,93 %	28,71 %	-1,28 %	-0,82 %	1,47 %	-5,05 %	1,14 %	0,001
ROE	17,93 %	13,16 %	55,21 %	-2,02 %	-1,52 %	2,51 %	-8,37 %	2,98 %	0,001
QUICK RATIO	106,92 %	96,26 %	36,80 %	1,05 %	0,57 %	1,13 %	0,04 %	4,52 %	0,001
CURRENT RATIO	176,11 %	154,41 %	94,91 %	1,05 %	0,57 %	1,13 %	0,04 %	4,52 %	0,001
GEARING	21,76 %	18,85 %	24,20 %	0,94 %	0,11 %	1,95 %	-0,64 %	8,14 %	0,005
NET INCOME	-	-	-	-14,31 %	-7,72 %	41,08 %	-110,90 %	117,29 %	0,005
TOTAL ASSETS	-	-	-	-0,86 %	-0,61 %	0,84 %	-2,99 %	0,42 %	0,001

**Table 11: Results of Goodwill**

## 6.5 All

When comparing the combined effect of all the investigated standards, it can be observed that the biggest findings, calculated by the median change, are weighted towards the balance sheet item-based key ratios. Although the change in the net income was found to be statistically significant, the study found that the change was not quantitatively large (-0.82%). The change in ROA was not statistically significant.

As expected, the biggest changes in solvency and indebtedness ratios were at Orion, whose current ratio improved by over 100% (133.53%). As stated above, the company's equity ratio is high, and therefore the change in liabilities especially has a large effect on the percentage change in the ratio.

All n=16	IFRS Mean	IFRS Median	IFRS standard deviation	Absolute mean change	Absolute median change	Standard deviation of changes	Min change	Max change	P-value
ROA	15,74 %	7,17 %	31,52 %	-0,39 %	-0,40 %	0,96 %	-2,08 %	1,59 %	ns.
NET PROFIT MARGIN	10,07 %	7,27 %	6,98 %	-1,20 %	-0,82 %	1,41 %	-4,83 %	0,62 %	0,001
ROE	27,63 %	13,16 %	46,97 %	-1,59 %	-1,46 %	3,19 %	-8,04 %	5,46 %	0,050
QUICK RATIO	104,59 %	93,50 %	34,35 %	9,12 %	5,08 %	12,04 %	1,68 %	53,03 %	0,001
CURRENT RATIO	174,53 %	148,98 %	102,93 %	16,14 %	6,80 %	30,83 %	0,64 %	133,53 %	0,001
GEARING	21,50 %	18,85 %	25,75 %	-2,61 %	-2,96 %	3,08 %	-7,96 %	5,67 %	0,001
NET INCOME	-	-	-	-10,73 %	-8,97 %	39,24 %	-75,06 %	117,29 %	0,025
TOTAL ASSETS	-	-	-	-4,53 %	-3,91 %	4,02 %	-18,76 %	-0,03 %	0,001

**Table 12: Results of all**

## 7 Conclusions

The purpose of the study was to find out the differences between the presentation method according to the selected IFRS standards and the Finnish accounting practice. The research was conducted using a total of 21 companies included in the OMX25 index of the Helsinki Stock Exchange. 2022 was chosen as the financial statement year, as it was the latest available financial statement material. Based on previous research results, the following standards were selected for the study:

- IAS 19 - Employee benefits
- IFRS 3 / IAS 36 - Goodwill
- IFRS 16 – Leases (Replaced IAS 17 in 2019)
- IFRS 2 - Share-based payments

At first, the study looked at the regulations of the selected IFRS standards, as well as the corresponding accounting principles of the Finnish accounting standards. Finally, we defined the calculation principles of the key ratios to be tested and briefly explained what information they provide about the company. Finally, we did the research and reviewed the results. In the following, we will summarize the answers to the null hypotheses and make a brief comparison with previous studies.

As was demonstrated in chapter 2, the following served as the null hypotheses of the study:

- H1: The implementation of the selected standards does not have a statistically significant effect on the income statement or the balance sheet.
- H2: The chosen standards do not affect the chosen financial ratios.

The first null hypothesis is rejected for all standards except IAS 19. The other selected standards had a statistically significant effect on either the income statement or the balance sheet. The second null hypothesis is also rejected for the most parts. The selected standards had a statistically significant effect on the majority of the selected ratios. Following table 14 summarizes the conclusions related to null hypothesis:

	IFRS 3/IAS 36	IAS 19	IFRS 16	IFRS 2	ALL
ROA	Rejected	<b>Approved</b>	Rejected	Rejected	<b>Approved</b>
NET PROFIT MARGIN	Rejected	Rejected	<b>Approved</b>	Rejected	Rejected
ROE	Rejected	<b>Approved</b>	<b>Approved</b>	Rejected	Rejected
QUICK RATIO	Rejected	Rejected	Rejected	Rejected	Rejected
CURRENT RATIO	Rejected	Rejected	Rejected	Rejected	Rejected
GEARING	Rejected	Rejected	Rejected	Rejected	Rejected
NET INCOME	Rejected	<b>Approved</b>	<b>Approved</b>	Rejected	Rejected
TOTAL ASSETS	Rejected	<b>Approved</b>	Rejected	<b>N/a</b>	Rejected

**Table 13: Conclusions related to null hypothesis.**

As the results show, the IFRS 2 null hypotheses were rejected for all ratios. The result is expected, because in Finnish accounting practice, share-based payments, where they are treated as shares given without payment, do not include accounting related entries. Thus, the IFRS method of recording expenses in the income statement during share programs causes such a fundamental difference between the recording methods that it has a statistically significant effect. The total assets did not change, as balance sheet corrections cancel each other out.

IFRS 16 did have a statistically significant effect on most of the ratios. As in the Finnish accounting practice, leasing liabilities are recorded as an off-balance sheet liability and related assets are not recorded on the balance sheet as in IFRS, so the change was expected. The balance sheet increases significantly when there are entries on both sides of it. At the same time, there are also such significant differences between the recording methods of the income statement that the change was expected.

The results of the effects of the IAS 19 standard are a surprise if you consider the differences in accounting practices. In IFRS, considerable balance sheet items related to pension benefits will be recorded in the balance sheet, which are not recorded at all in Finnish practice. In the study, it was precisely in connection with this item that differences in the presentation of the financial statements were observed, which may have contributed to the results.

Finally, the study shows that the IFRS 3 & IAS 36 standard has a statistically significant effect on all selected ratios. This was seen as expected, as depreciation related to goodwill is done as straight-line depreciation in Finland, and no estimated impairment entries are made. The small sample also has an impact on the research results, as the impairment in accordance with IFRS 3 & IAS 36 will not be recorded every year, in contrast to the yearly depreciation in Finnish practice. The chosen study period also has a strong influence, because in economically bad times, IFRS will most likely record impairments more often, as they are usually based on future cash flows, which could give different research results.

When we move on to examine the results of the study compared to previous studies, it should be noted that the way this study is presented differs from comparative studies in that the research results presented in this study represent a change from the IFRS standard to national accounting practice, while the comparative studies have presented their results from national practice to IFRS. Thus, the ways of presenting the research results are inverse to each other.

The results of the study were in line with previous studies, which confirms the assumptions related to IFRS standards. Analyzing the combined effect of all the studied standards, it was found that IFRS improves the ratios related to the company's profitability and decreases the ratios of solvency and financial stability. The study is thus in line with other studies, such as Lantto and Sahlström (2009) and Lueg (2014), which present similar observations. In his research, Lantto and Sahlström (2009) reports a 15.8% decrease

in ROE when switching from IFRS to FAS. In this study, a -1.46% change was observed as a combined effect of all investigated standards when switching to Finnish accounting practice, thus giving similar, but not as big results. The amount of the difference is certainly significant, but it must be noted that the most significant change in Lantto's and Sahlström's (2009) study was found to come from the IFRS 3 standard, the impact of which was not examined in this study. However, other differences were also observed, as among the individual standards, for example, the IAS 19 standard was found to have a statistically significant effect on the current ratio and gearing. Lantto's and Sahlström's (2009) research on IAS 19, on the other hand, found no statistically significant effect on the ratios.

The results of the study also correspond to findings from the accounting practice according to UK Gaap when moving to the practice according to IFRS. The increase in the net result corresponds to Omrod's and Taylor's (2006) research results, although the result of the comparative study of 39% (UK GAAP to IFRS) does not fully correspond to the -8.94% decrease observed in this study when switching from IFRS to FAS. However, Omrod and Taylor (2006) studied the effect of all standards, and part of the change is explained by the 13% increase from the IAS 40 – Investment properties standard, which was not studied in this study. Ali (2016), in turn, reported a 6.6% increase in net profit, which is more in line with what was observed in this study, although a larger number of standards were examined in the comparative study.

## 8 Summary

The study confirms the view of the previous study that the transition to the IFRS standard improves the company's profitability ratios, while at the same time weakening ratios calculated on the basis of balance sheet, such as solvency and financial stability ratios.

The IFRS regulations' way of recording, in contrast to the national FAS financial statements, a large part of the assets and liabilities at fair value is behind the biggest changes. Since the material of the study must be collected from financial statements, which, despite uniform accounting standards, are not completely standardized in terms of presentation, the study may also include uncertainty due to the quality of the financial statements.

As a further study of the study, the sampling could be more precisely focused on different industries. Since different industries often have significantly different balance sheet structures, it could be interesting to study how the effects would appear between different industries. The size of the selected sample has also increased the impact of individual companies with large changes on the research results. A further research topic could be to expand the sampling of the material. Standards that do not require mandatory entries every year, such as IAS 36 linked to goodwill, are especially sensitive to the smallness of the sample.

Naturally, the differences could also be studied through several standards. However, the author considers it a possible course of development that in the future international accounting standards will also be mandatory in the national accounting standards of different countries, because comparability is desired for the financial statements of companies in different countries, in which case comparative studies would become meaningless.

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