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The impact of the new lease accounting standards -IFRS 16- on corporate real estate decisions: especially on real estate transactions.

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List of Abbreviations

AEX	Amsterdam Exchanges Index
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CRE	Corporate Real Estate
CREM	Corporate Real Estate Management
EBIT	Earnings before Interest and Taxes
EVA	Economic Value Added
FASB	Financial Accounting Standards Board
FTE	Full Time Employee
IAS	International Accounting Standards (previous term of IFRS)
IASB	International Accounting Standards Board
IFRS	International Financial Reporting Standards
KPI	Key Performance Indicator
NOGA	General Classification of Economic Activities
NOPAT	Net Operating Profit after Taxes
OLR	Operating Lease Rate
ROA	Return on Assets
ROC	Return on Capital
ROE	Return on Equity
ROIC	Return on Invested Capital
RoU	Right of Use
SEC	Securities and Exchange Commission
WACC	Weighted Average Cost of Capital

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Executive Summary

The real estate industry is divided into at least two sectors: the real estate investment sector and the corporate real estate sector. Whether we like it or not the mindset is very different in those sectors. The capital market doesn’t value the corporate real estate sector as it doesn’t grasp how corporate real estate professionals contribute to the general performance of companies and therefore create value to the shareholders. Having said that and with continuous pressure from the shareholders to add value, many companies ended up with outsourcing non-core activities, including corporate real estate management activities, hoping to improve the overall performance. The creation of shared services and outsourcing strategies have been a huge trend over the last few decades. Krumm (2003) conclude in his paper that several companies are building up internal competencies again to manage their real estate resources (S. 9-10). This can be considered as an indicator that shareholders value the importance of managing corporate real estate resources at the strategic level.

Historically, CRE profession has focused on managing the physical property for the business. CRE professionals were charged with the basic task of acquiring, maintaining, and disposing of real estate throughout the life cycle of the real estate portfolio. Although this remains the core tasks of CRE professionals, the business landscape has evolved and so the role of the CRE professionals. It is now more than just managing the facilities and taking orders from business leaders. CRE professionals are becoming strategic partners of their business leaders and are changing the view of CRE discipline from a cost centre to a value creator. The CRE is now broad and very dynamic; it touches a wide range of property types, and many functions fall under this discipline (CORNET Global; the Global Association for Corporate Real Estate, 2015, S. 2).

The relatively surprising changes in the technological, socio-cultural, political-legal and economic framework have different effects on companies and make real estate decisions, among others, such as locations and site selection, workplace strategies, space use optimisation obsolete within a shorter period of time. To add value to the company, corporate real estate strategies must be aligned to core business strategies. Companies must understand how their operating decisions related to real estate assets support or disturb their business activities. (Pfnür, 2019, S. 38-43) (Lindho, 2012, S. 1-2) (CORNET Global; the Global Association for Corporate Real Estate, 2015, S. 12-13).

Real estate decisions have direct financial impacts on corporate performance as well as indirect influences through accommodating core business activities (Krumm, 2003, S. 9). Several studies in the past demonstrate the financial impact of real estate decisions, such as buy-versus-lease, on the value of the company (Allen, 1993, S. 9-11) (Brounen, 2005 , S. 10-15) (Liow K. &., 2004, S. 11-14). Strange to note that the value creation from managing corporate real estate portfolios is still expressed in terms of net present value and cost per sqm or per FTE instead of shareholder value, e.g. economic value added (EVA) (Krumm, 2003, S. 1-2).

The concept of EVA as an important measure of shareholder value is replacing the traditional measures of accounting profits, return on assets (ROA) or return on equity (ROE) as they are often inconsistent with wealth maximisation. EVA as defined by Stern Stewart & Company in 1991 is as follow:

$$EVA = \text{Operating Profit} - (\text{capital employed} \times \text{average cost of capital})$$

Therefore, wealth maximization depends on company's ability to generate NOPAT, the magnitude of its capital employed and its WACC (Liow K. &., 2004, S. 3).

To highlight the value creation of managing corporate real estate assets at a strategic level this research is aiming at expressing the financial contribution in EVA terms as a first step toward improving the perception of corporate real estate profession within the capital market industry. The change in the IFRS reporting standards relative to lease commitments - IFRS 16 - is taken as an opportunity to analyse the impact on the capital employed and debt-to-equity ratio of listed companies in the SIX index.

1. Introduction

The International Accounting Standards Board (IASB) and the US-based Financial Accounting Standards Board (FASB) have worked together on a project since 2005 to improve transparency around lease obligations. They responded to the concerns of financial analysts and investors about the lack of information to properly compare companies that use debt to buy assets with those that rely on leasing to gain control over equivalent assets (IFRS Foundation, 2016, S. 3). The IASB and FASB are aligned on the requirements for transparency and have both recently issued new accounting standards that significantly change lease accounting. The two standards differ in terms of the income statement treatment of leases (IFRS Foundation, 2016, S. 2) (PWC, 2016, S. 7). This paper is focusing only on the new standard, IFRS 16, issued by the IASB. Companies that are preparing financial statements according to IFRS are required to apply IFRS 16 starting from 1st of January 2019.

The introduction of the new accounting treatment of lease agreements is forcing corporates to review their leasing strategies and manage their resources more efficiently. Real estate lease agreements represent, for the majority of non-real estate companies, the most important category of leasing followed by machinery and equipment. Real estate values have increased a lot since the decrease of borrowing rates. Corporates are re-evaluating their capital commitment to real estate, focussing on maximising returns on investment. Decisions regarding corporate real estate strategies e.g. sale-and-lease back decisions, real estate costs, facility management strategies, lease data management, transaction management and portfolio management etc…are attracting more and more attention of the executive suite (CEOs and CFOs). Corporate real estate leaders will be challenged more on their abilities to control real estate costs and structuring the lease agreement to obtain the right accounting treatment while aligning real estate strategies to business objectives.

The significance of off-balance sheet lease commitments varies between industry, countries or regions and companies. The US Securities and Exchange Commission (SEC) estimated that US public companies may have approximately US$ 1.25 trillion of off-balance lease commitments (IFRS Foundation, 2016, S. 3). While the IASB estimated that publicly traded companies in Europe and USA reporting under IFRS and FASB may have approximately US$ 3.3 trillion volume of lease commitments which are off-balance sheet (IFRS Foundation, 2016, S. 5) (Cushman & Wakefield, 2016, S. 5).

1.1. Problem statement and research objective

The advantage of improving financial performance measures by clearing the corporate balance sheets with off-balance-sheet accounting practices disappears. The new lease accounting standards - IFRS 16 - is obliging companies to recognize nearly all leases on the balance sheet starting from the 1st of January 2019. Real estate leases are oft quoted the second largest cost position after employee costs and the main category of lease contracts followed by equipment and machinery. Therefore, this change is expected to influence some of the Corporate Real Estate Management (CREM) practices. Landlords, on the other side, may need to accept shorter lease periods which might result in difficult negotiation patterns in real estate transactions. The purpose of this research is to answer the following questions:

- ❖ Based on the recognized present value of lease commitments disclosed in the annual reports of 2018. What is the impact of IFRS 16 on the return on invested capital (ROIC)?
- ❖ How Corporate Real Estate executives are reacting to this change with respect to Transaction Management?
- ❖ Are landlords willing to please corporate clients by offering lease contracts with a minimum balance sheet impact?

1.2. Scope of research

Wealth maximization as mentioned earlier depends on 3 factors: the ability to generate profit, the magnitude of capital invested and the cost of capital. The change to lease accounting doesn’t impact a company’s ability to generate return since financial accounting is just a matter of presentation. Financial accounting has only an indirect influence on the terms and conditions of loans as the cost of capital is mainly capital market driven. Traditionally global companies tend to have huge value of assets which allow them to benefit from easy access to debt financing. Therefore, the scope of this research is limited to the analysis of how the new lease accounting standards – IFRS 16 – influence the balance sheet structure by checking the impact on the capital employed and debt-to-equity ratio. Based on this impact on the balance sheet and performance measurements, this research is also checking how IFRS 16 influences corporate real estate transactions and leasing decisions. The main focus remains on the real estate aspect instead of conducting a technical analysis of financial accounting impact.

1.3. Research design and approach

This research is structured as follow: Chapter 2 allows a basic understanding of the introduced accounting system - IFRS 16 - for those unfamiliar with this new lease accounting rules. Followed by a summary of past researches in Chapter 3. Chapter 4 describes the methodology used in the empirical study. Analysis, results and summary of findings are presented in chapter 5. Chapter 6 concluded with a discussion of practical implications and opportunities for further research.

2. IFRS 16 and its impact on the financial statements

2.1. The impact on the balance sheet

The previous lease accounting model, known under IAS 17, was based on a duel accounting system that distinguishes between operating and finance leases. Operating leases were not reported on the lessee's balance sheet and were treated similarly to service agreements (IFRS Foundation, 2016, S. 3). The lessee reported straight-lined rental expenses in his income statement. Therefore, the volume of the financial commitments over the lease period remained invisible.

Financial leases are leases that are economically considered as owning the underlying asset, e.g. leases with purchase options. When a lease is assessed as financial lease, it was reported on the lessee's balance sheet by recognizing the present value of lease payments as asset and the equivalent as financial liability (IFRS Foundation, 2016, S. 3, 42-43).

The most important effect of this new lease accounting standard is the elimination of the current dual classification system for lessee's lease agreements as either operating or finance leases. IFRS 16 introduces instead a single accounting treatment requiring lessees to recognize right-of-use assets (RoU) and lease liabilities for all leases with a minimum term of 12 months (IFRS Foundation, 2016, S. 3). This brings the previous off-balance leases, currently classified as operating leases, on the balance sheet in a comparable way to the current finance lease accounting. As a result, all leases will be considered as finance leases. For companies with significant off-balance sheet lease commitments, there will be a change in key financial metrics derived from the company's reported assets and liabilities (IFRS Foundation, 2016, S. 42-43) such as leverage ratios, return on assets (ROA), return on equity (ROE) and return on invested capital (ROIC). The figure I below illustrates the IFRS 16 impact on the balance sheet.

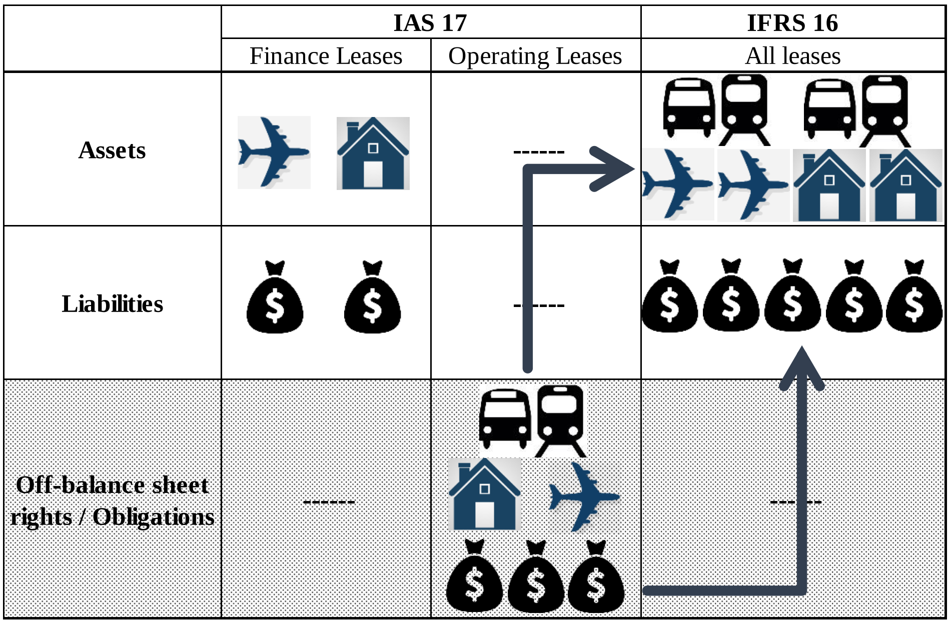

Figure I: IFRS 16 impact on the Balance Sheet (IFRS Foundation, 2016, S. 4)

2.2. The impact on the income statement

Under IFRS 16, the nature of operating lease expenses is changing from straight line operating expenses to a depreciation charge for lease assets (included within the operating costs) and an interest expense on lease liabilities (included within finance costs). Therefore, all lease expenses will be treated as finance lease expenses. The depreciation charge is usually straight lined over the lease period and the interest expense reduces over the life of the lease as lease payments are made. As the lease end date approaches, the interest expenses will be close to zero (IFRS Foundation, 2016, S. 44-49). Figure II below illustrates the accounting change on the profit and loss statement.

	IAS 17		IFRS 16
	Finance Leases	Operating Leases	All leases
Revenue	**X**	**X**	**X**
Operating Costs	------	rental costs	------
EBITDA			↑↑
Depreciation and amortisation	Depreciation	------	Depreciation
operating profit			↑
Finance costs	Interests	------	Interest
Profit before taxes			↔

Figure II: IFRS 16 impact on the Profit and Loss Statement (IFRS Foundation, 2016, S. 4)

2.3. The impact on cash-flow statement

IFRS 16 has no impact on the cash-flow statement as it doesn't influence the total amount of cash agreed under the lease agreement. However, it does influence the presentation of cash-flow category related to former operating leases. Under IAS 17, the cash outflow relative to lease payments used to be part of cash outflow from operating activities. Applying the IFRS 16 rules means that cash outflow is now part of the cash-flow from financing activities. Therefore, the operating cash outflow will be reduced with a corresponding increase of cash outflow from financing activities (IFRS Foundation, 2016, S. 50). Figure III below illustrates the accounting change on the cash flow statement.

	IAS 17		IFRS 16
	Finance Leases	Operating Leases	All leases
Cash inflow from operating activities	**X**	**X**	**X**
Cash outflow from operating activities	rental costs	rental costs	------
1- Net Cash-flow from operating activities	**X**	**X**	↑
Cash inflow from investing activities	**X**	**X**	**X**
Cash outflow from investing activities	**X**	**X**	**X**
2- Net cash-flow from investing activities	**X**	**X**	↔
Cash inflow from financing activities	**X**	**X**	**X**
Cash outflow from financing activities	**X**	**X**	Principal & Interest
3- Net Cash-flow from financing Activities	**X**	**X**	↓
Total Cash-Flow 1+2+3	**X**	**X**	↔

Figure III: IFRS 16 impact on the Cash-Flow Statement

3. Review of past research

3.1. Research from Deloitte Real Estate Advisory in collaboration with the Dutch government buildings agency, Einhoven University of Technology and REDEPT

This research covers lease accounting challenges for corporate real estate operational decisions. It develops an understanding of the role of financial accounting in the strategic and operational decision-making processes of corporate real estate departments. The authors analyse the potential impact of IFRS 16 on the 23 Dutch listed corporations from the AEX index. They provide insight on the possible impact of IFRS 16 from the data available in the financial reports and extract the magnitude of CRE-related lease obligations. Following these financial analytics, a series of interviews with CRE leaders are conducted. Eight CRE executives that are responsible for 50% of the approximately € 15 billion CRE-related operational leases and 74% of the on-balance sheet recognized property and land of the AEX listed corporations are interviewed. The purpose of the interviews is to figure out the CRE executives’ opinions on IFRS 16 and to what extent they will apply changes to their daily practices for Data Management, Transaction Management, Portfolio Management and other CRE related decisions (Sjuul Baltussen, 2014, S. 9-10).

The CRE-related impact on balance sheet liabilities seems to be significant, especially for corporations with a high retail lease exposure like Ahold and Safeway. These corporations have no other choice than leasing the space required to drive their business model. The allocation by industry of the peer group demonstrates that, in particular, the industries – industrials, consumer services and oil and gas – could be substantially impacted by the magnitude of the new lease accounting regulations - IFRS 16 - if the size of their balance sheet is not big enough. However, the authors point out that even if the IFRS 16 impact is negligible there could be additional capital requirements to comply with Basel III regulations concerning risk-weighted assets. They expected corporations that are more impacted than their peers to be challenged more on their financing arrangement (“lease versus buy decision”, long-term versus short-term lease decisions and floating versus fixed rate contracts) from various stakeholders.

The authors conclude that of the € 6 billion of the discounted lease obligations, more than € 5 billion is not strategically managed. They also conclude that it is due to the fact that these corporations were not equipped with centralized data management systems. They lack detailed lease administration data, especially on discount rate, purchase options, subleases, service contracts and renewal options. Gathering and analysing the information from different places takes considerable time and effort because not all of the required data are available in the numerous decentralized locations.

With respect to transaction management and depending on the financial health of the company, there will be some companies more inclined than others to modify their typical lease contracts to reduce the operating lease liability reported on their balance sheet (Sjuul Baltussen, 2014, S. 17). Reducing the balance sheet impact can be done through adjustments to the following factors:

• the discount rate;

• making premium payments to reduce the base, considering renewal options;

• distinguishing service components from the lease contract; and

• dealing differently with incentives.

The authors expect these to be the management buttons to pay additional attention to in future lease negotiations. For companies with CREM divisions that operate at the strategic level implement already those tools and seem to have already the right transaction management process in place. They argue that IFRS 16 lease accounting may influence transaction management and thus will impact decision-making but probably not the actual decision to undertake the transaction (Sjuul Baltussen, 2014, S. 17-18). Depending on the nature of the asset, IFRS 16 lease accounting may change some aspects of the lease agreements, hence having a “less negative” effect on the financial statements. For those type of assets, the lease transaction will be structured for the purpose of achieving a particular accounting treatment.

With respect to portfolio decision-making processes, they vary depending on whether the assets are core (essential to the business), key (important but not critical), captive (low strategic value) or fluid (former high strategic value – now low). The authors conclude that IFRS 16 lease accounting won’t change portfolio decision-making processes for core assets as the financial impact is at all times subordinate to the strategic importance of those assets. Long leases are used to secure the strategic positions of those strategic assets in case buying is not an option (e.g. highly specialized factories or retail locations) (Sjuul

Baltussen, 2014, S. 18). However, for low value real estate assets category, IFRS 16 lease accounting is expected to impact some of the portfolio decision-making processes. This will be reflected in the location management aspect for which labour costs will be balanced against tax benefits. According to the observation of the authors, IFRS 16 lease accounting may not change the position of the CREM divisions within an organization and their daily work. The strategic involvement of CRE leaders will depend on how important the accounting issue of a real estate decision-making. Therefore, the authors conclude that the IFRS 16 lease accounting won’t give a seat for CRE leaders within the corporate board. It will only require a new level of detailed information because every lease, no matter the size or length, would need to be accounted for and scrutinized over its term (Sjuul Baltussen, 2014, S. 18). Nevertheless, the IFRS 16 lease accounting may be seen as a catalyst to implement change as it allows a good understanding of the corporate resources which is critical to develop successful strategies. They express their views as follow:

“Such knowledge creates confidence among business units which are then more willing to cooperate and depend upon the CREM division to make value-adding decisions. It also ensures that CREM can communicate its contribution to the company in a language that the top decision makers understand. This “language” will get far more important should, as is argued, the relationship between the CRE executive and the corporate CFO change due to the proposed IFRS lease accounting rules. As a result, CRE will attract more attention, and new questions about CRE and its strategy will be asked. CRE managers will, therefore, have the potential to shape future successes for organizations. Furthermore, the transparency and structure of the proposed IFRS 16 lease accounting guidelines provide the opportunity for CREM divisions to revise their CRE strategy and operating decisions to be able to reach the strategist stage” (Sjuul Baltussen, 2014, S. 18).

3.2. Research from the accounting and finance department of the University of Adelaide, Adelaide, Australia

This research goes back to 2016 and is financial accounting analytics driven. The authors examine how capitalizing operating leases under IFRS 16 affects the financial statements and value relevance of financial information. Since investors make decisions based on information disclosed in the financial reporting, the authors assume that the changes in the lease accounting standards will impact the decision-making process of investors (WeiXu, 2017, S. 5). Their research is based on two hypothesises. They formulate the first hypothesis to test whether operating leases capitalised according to IFRS 16 affect the financial position.

H1. *Capitalising operating leases in compliance with IFRS 16 has a significant impact on financial statements as it provides extra information content for investors.*

They formulate the second hypothesis to test if the lease accounting changes - IFRS 16 - result in a change of market price, using both the residual income model and the return-earning model.

H2. *Capitalising operating leases in compliance with IFRS 16 has a significant impact on value relevance.*

The sample size of this research consists of 165 listed companies in the Australian stock exchange. The companies are broken down per industry sector. The accounting information and key financial ratios are sourced from World scope and Thomson Reuters databases, while the market value and return index are collected from the Data Stream database.

The authors select seven financial ratios to test the impact of capitalising operating leases. These ratios are selected as they reflect the financial strength and operational performance and have been widely used in previous researches (Beattie, 1998, S. 12-20) (Duke J. C., 2009, S. 10). The ratios used are the following: profit margin, return of equity (ROE), return of assets (ROA), return on capital (ROC), asset turnover, interest cover and Gearing ratios.

The authors test the first hypothesis by comparing means, medians and relative rankings of the pre- and post-adjusted figures for significant change. They focus on the change in assets, liabilities and interest-bearing debts. Regarding the test of the second hypothesis they applied the t-test and non-parametric tests including the two-tailed sign test and the Wilcoxon signed rank test. Right-tailed t-tests are used to test for significant increase in assets and liabilities, while two-tailed tests are used for key financial ratios.

The authors results show that the test findings are in line with the results of the previous researches but relatively insignificant for the changes on the balance sheet. Regarding the income statement, both the earnings before interest and taxes (EBIT) and the interest expense increase after the capitalisation of operating leases but the interest expenses are more affected than the EBIT as the interest cover ratio decreased significantly. (Beattie, 1998, S. 14-20) (Bennett, 2003, S. 9-12) (Duke J. C., 2009, S. 10-11) (Duke J. C., 2006, S. 6-8) (Goodacre, 2003, S. 8-16). Regarding the key financial ratios, the change is significant after capitalisation. The debt-to-equity gearing ratio increases by 41.87 %, and the asset turnover ratio is reduced by nearly 9 %. Both ratios of return on assets and return on capital used increase significantly while the return on equity ratio is not significantly affected. with the exception of return on equity, the changes of medians of financial ratios are all statistically significant at the 1 per cent level. The Wilcoxon signed rank test indicates that the ranking of the firms on return on equity does not suffer a major change after the capitalisation of operating leases. The results of both, the sign tests and the Wilcoxon signed rank tests, are consistent. Each of the above tests consistently supports the first hypothesis and therefore it cannot be rejected (WeiXu, 2017, S. 13).

The return-earnings models and residual income models are used to test for value relevance of the additional transparency. In Summary, the results of both models do not support the value relevance of capitalising operating leases. The changes of earnings (earnings) do not materially affect the market value (returns). Therefore, the above tests do not support the second hypothesis and this later can be rejected. Nevertheless, the tests show that the change on book value of equity is value-relevant. From the perspective of enhancing information transparency for investment decisions, the authors believe that IFRS 16 enhances the transparency of accounting practices by reducing the ability to use complex lease agreements to shift material information from financial statements (WeiXu, 2017, S. 19).

3.3. Research from the international review of retail, distribution and consumer sector

This research is conducted in 2003 and addresses the role of leasing in the UK retail sector as a major source of financing. The main motivation of the author Alan Goodacre is derived from the collapse of the major international firms Enron and WorldCom in 2002. Through his research he documents the importance of leasing in the UK retail sector and its potential impact on the balance sheet. The author argues that the quality of accounting information misleads investors and other stakeholders as it ignores the impact of off-balance sheet lease obligations on debt capacity of a company (Goodacre, 2003, S. 2).

The sample size of this study constitutes of 102 food retail and general retail companies extracted from Datastream and cross-checked with FT Sequencer database. The analysis period covers basic financial data from the balance sheet and income statements as well as operating lease data from 1994 until 1999. Nine key performance ratios are analysed to assess the impact of capitalizing operating leases. These ratios are chosen to allow a good comparison with previous researches. They are an operating margin, three return on capital measures, an asset turnover, an income gearing and three capital gearing measures. The impact of operating lease capitalization on relative performance is assessed by measuring the correlation between pre- and post-capitalization ratios (Goodacre, 2003, S. 7-9).

The results of the analysis show that companies in the food retail sub-sector have relatively higher operating lease liabilities (mean: £ 287 million) than the general retail sub-sector (mean: £ 222m). The author uses the long-term debt as an indicator for the magnitude of these off-balance sheet lease commitments. On average, retailing companies have a mean debt level of £ 67 million but there is a large difference between the food and non-food retail sub-sectors. Companies in the food retailing record a debt level of £ 173 million while non-food retailers only have £ 41 million of long-term debts. To assess the financial risk, a lease-debt ratio (long-term element of operating lease liabilities / on-balance sheet long-term debt) is used. The lease–debt ratio is 1.6 for food retailers, 5.1 for general retailers and 3.3 overall. These figures are significant to consider that operating lease finance is important than long-term finance in the retail sector (Goodacre, 2003, S. 11). Another indicator for the importance of operating lease finance in the retail sector used by the author is the finance lease liabilities. The operating lease-to-finance lease rates (OLR) for this research are 27 for food retailers, 41 for other retailers and 37 for all. On average, the level of operating lease finance is approximately 37 times the level of finance leases.

On average, the value of operating leased assets is estimated at £ 182 million. This represents a major proportion of the reported total assets of 16% for food retailers and 37% for other retails and 28% for overall retail sector. Based on these figures the author concludes that operating leased assets are also important in the retail sector in the same manner as their corresponding liabilities are. Therefore, their exclusion from the balance sheet is misleading for the performance measurements (Goodacre, 2003, S. 13).

On the income statement side, the positive effect on operating profit (EBIT) is + 14% for food retailers, + 30% for other retailers and + 23% for all on average. The impact on net profit (profit after tax) depends on the stage reached in the life of the underlying assets. The author assumes that the depreciation and interests are higher than OLR thus the net profit is lower in the first years of lease contracts. This situation is reversed in the late years of the lease contracts meaning net profit is higher as depreciation and interests become lower than OLR. The results of this study show a decrease in the net profit (mean) of approximately 4% for food retailers, 9% for non-food retailers and 7% for all retail sector (Goodacre, 2003, S. 13). The average impact on net profit seems to be negligible but the author states that the effect could be drastic for retailers relying a lot of operating lease.

Regarding the impact on performance ratios, all ratios are significantly different after capitalisation for the retail sector as a whole. Return on asset and asset turnover decreased while operating margin and the 3 leverage ratios increased. The significant change is on leverage ratios as the net debt to equity ratio increased from 17% to 157% after capitalisation. Return on equity increased while ROIC and interest cover decreased. The author concludes that capitalizing operating leases has a major impact on the performance measurements. He expresses it as follow:

“This could have important economic consequences in decision contexts where performance is judged against an absolute benchmark, such as loan covenant restrictions or executive compensation schemes… Gearing is grossly understated. Many retail firms have large long-term commitments to make operating lease rental payments and this will lead to more volatile profits, higher risk that will also be reflected in more volatile equity returns… Thus, great care is needed in the assessment of company performance." (Goodacre, 2003, S. 15).

To assess the impact of operating lease capitalization on relative performance, both Spearman rant and Pearson correlation coefficients are used and similar results are obtained for food and non-food retail sub sectors. Moderate to high positive correlations are observed on 3 Return on assets and profit margin measures. Low positive correlations are observed on asset turnover and interest cover as well as gearing ratio (according to ILW[1] definition). Very low correlation on gearing (according to Ashton[2] definition) and net debt to equity ratio. Based on those results, the author considers that lease capitalisation influences the relative performance of all nine ratios and particularly on leverage ratios. He explains the low correlation through the level of operating lease ratio within the retail sector. Some companies have a higher operating lease ratio than others and therefore more "hidden gearing" and inflated Return on assets ratios (Goodacre, 2003, S. 16).

The author also addresses company manager's response to the capitalisation of operating lease issue by seeking shorter lease periods and greater flexibility. He undertakes a set of calculations based on assumptions to get a sense of impact on company performance. The results show similar patterns in the impact. The use of rolling lease contracts allows more flexibility however significant amounts of assets and liabilities will be reported and all performance ratios continue to be significantly impacted (Goodacre, 2003, S. 24).

[1] Imhoff, E.A., Lipe, R.C. and Wright, D.W. (1991) 'Operating leases: impact of constructive capitalization', Accounting Horizons, 5(1), March: 51–63.
[2] Ashton, R.K. (1985) 'Accounting for finance leases: a field test', Accounting and Business Research, 15, Summer: 233–8.

3.4. Summary of past empirical studies

The Findings from the first empirical research conducted on listed companies in the AEX (Sjuul Baltussen, 2014) can be summarised as follow:

- Retail companies are the most impacted by the IFRS 16 lease accounting change followed by industries such as industrials, consumer services and oil and gas.
- IFRS 16 lease accounting combined with Basel III regulations concerning risk-weighted assets could be a source of challenge for companies that are short in their debt-to-equity ratios.
- IFRS 16 won't influence the actual decision to undertake the transaction but it might influence the transaction management process and the lease negotiation tactics to obtain the desired accounting treatment.
- CRE leaders will pay more attention to elements such as the discount rate, upfront payments, renewal options, distinguishing service components from lease components, incentives.
- IFRS 16 lease accounting influence on portfolio decision making processes will depend on whether the underlying asset is business critical or not. The financial accounting treatment is subordinate to business needs. For low value assets or back office locations, the decision-making process will be based on balancing between labour costs and tax benefits.
- IFRS 16 lease accounting won't change the position of the CRE departments within the company but it will serve as a catalyst for better communication between CRE executives and CEOs and CFOs. It is up to CRE executives to demonstrate their ability to support business growth through articulating the value add in financial language.

The Findings from the second empirical research conducted on listed companies in the Australian stock exchange (WeiXu, 2017) can be summarised as follow:

- Relatively insignificant changes on the balance sheet. Regarding the profit and loss agreement, the interest cover ratio decreased significantly compared to the positive impact of operational profit or EBIT.

- ❖ Significant changes on the key financial ratios, particularly on the debt-to-equity ratio (+ 41.87%) and the asset turnover (-9%). With the exception of the return on equity ratio, the medians of all other financial ratios changed significantly at 99% statistically confidence level.
- ❖ The results of this empirical research are in line with the previous researches and support the first hypothesis. Therefore, it concludes that IFRS 16 provides extra information content and impacts the financial statements.
- ❖ The results of the residual income model and the return-earning model do not support the value relevance of IFRS 16. Therefore, the second hypothesis is rejected as capitalising operating leases didn't have a significant impact on the enterprise value. Nevertheless, there has been a significant impact on the equity book value.
- ❖ IFRS 16 enhances the information transparency by reducing the complexity of adjusting information from the financial statements without improving the quality of investment decisions.

The Findings from the third empirical research conducted on the retail sector in the UK (Goodacre, 2003) can be summarised as follow:

- ❖ The retail sector relies a lot on operating lease as a major source of finance. The off-balance sheet operating lease liability is much higher (3.3 times higher) than the level of on-balance sheet debt. Thus, operating lease liabilities are significantly more important than long-term debt.
- ❖ IFRS 16 enhances the information transparency by reducing the complexity of adjusting information from the financial statements without improving the quality of investment decisions.
- ❖ The use of finance lease on the other hand is negligible as they represent on average 1-to-37 times the level of operating leases. Operating leases related to real estate assets represent a major asset category reported in the balance sheet; 16% for food retails, 37% for non-food retail subsector and 28% for general retail sector.
- ❖ The average estimated impact on operating profit is an increase of about 23% and a decrease in profit after tax of 7%. Capitalizing operating lease liabilities impact the majority of performance measurements, on gearing ratios in particular.

- Important economic consequences could result when benchmarking performance measurements, such as loan covenant restrictions, investment decisions or executive compensation schemes.
- The ranking of companies changes markedly for asset turnover, interest cover and the three capital-based gearing ratios.
- The major implication of off-balance sheet operating lease liabilities is the misjudgement of financial risk.

Overall, the key features of these three empirical studies are summarised in Table 1. The impact of operating lease capitalisation does alter the financial statements and key performance ratios, particularly leverage factors. The retail sector is the most impacted sector as it relies a lot on leasing to 1) conduct business and 2) as a source of financing.

Empirical Study	Country	Sample Size	Features examined	Findings	Conclusions
Sjuul Baltussen, T. Schelle, R. Appel-Meulenbroek, B. van Egmond, M. Hesselink, L. van Leersum, (2014)	The Netherlands	23 dutch listed companies on the AEX	• The potential impact of IFRS 16 on balance sheet, income statements and performance KPIs based on the constructive capitalization method of Imhoff et al. (1991). • The position of CRE divisions in the Joroff model based on questionnaires. • The vision of CRE executives on IFRS 16 implications on data management, transaction & portfolio management and others based on structured interviews.	• Retail companies are the most impacted followed by industrials, consumer services and oil & gas. • Leverage is the most impacted performance KPI. • IFRS 16 impact in addition to Basel III capital requirements constitute real challenges for low performing companies. • The impact on CRE operational decisions depend on whether the underlying asset is business critical or not. • The position of CRE divisions is changing but better interaction with the excutive management is expected.	The impact depends on: • The position of the company on the Joroff model (strategic management level of CRE assets). • The size of company's operating lease portfolio relative to its balance sheet. • The company's sensitivity to financial statements presentation, due to its CRE strategy.
Wei Xu, R. A. Davidson, Chee Seng Cheong, (2017)	Australia	165 listed companies in the S&P/ASX200	• The potential impact of IFRS 16 on balance sheet, income statements and performance KPIs based an improved model of the constructive capitalization method of Imhoff et al. (1991). • H1 tests the impact on financial positions. • H2 tests the impact on value relevance.	• Insignificant impact on the balance sheet. Significant impact on key performance ratios: (+ 41.87%) on debt-to-equity and (-9%) on asset turnover. • Enhancement of information transparency without improvement of investment decisions.	• H1 is supported: IFRS 16 provides extra information content and impacts the financial statements. • H2 is rejected: IFRS 16 doesn't impact the enterprise value.
Alan Goodacre, (2003)	UK	102 food and non-food retail companies	• IFRS 16 impact is tested on 9 performance ratios: operating margin, 3 return on capital measures, asset turnover, income gearing and 3 capital gearing measures.	• The value of operating lease assets represents 16% of total assets reported for food retailers and 37% for non food retailers. • The net debt-to-equity ratio increased from 17% to 157% after capitalisation. • Operating lease-to-finance lease ratio (OLR) is 27 for food retailers, 41 for other retailers and 37 for overall. • The lease–debt ratio is 1.6 for food retailers, 5.1 for general retailers and 3.3 overall. • Off-balance leased assets in proportion of total assets represent 16% for food retailers, 37% for non-food and 28% for overall retail sector.	• IFRS 16 impacts the majority of performance measurements, particuarly on gearing ratios. • Off-balance lease liabilities are an important source of financing in the retail sector. • The use of rolling lease contracts offer some flexibility without improving financial performance ratios. IFRS 16 impact is drastic on retailers that rely more on operating lease as a source of finance and a way to conduct business.

Table I: Summary of empirical studies relative to the impact of operating lease capitalisation, IFRS 16, on performance measurements and CRE decisions

4. Empirical study

4.1. Methodology

This research adopts the methodology used by (Sjuul Baltussen, 2014, S. 9-10) for two main reasons. On the hand it is the single research I found that links the financial accounting impact of IFRS 16 to corporate real estate strategies and the resulting CRE operational decisions. On the other hand, the sampling frame used (Amsterdam Exchange Index -AEX- listed companies) can be applied on listed companies on the Swiss Stock Exchange - SIX - which allows good comparison among countries and across industry sectors. So far, no historical analysis of the IFRS 16 impact on the SIX listed companies has been found.

The analysis of the data takes several steps. First, a sample selection and an industry group classification based on NOGA Codes is used as the basis of the analysis. In a second step, the estimated "Right of Use" (RoU) assets and the corresponding liabilities are analysed to demonstrate the magnitude of the IFRS 16 impact on the return on capital employed (ROIC) and gearing (debt-to-equity ratio). This research is focusing only on those two KPIs as they are the best indicators for value creation according to EVA concept. The theoretical model of (Imhoff, 1991) has been the basis of several studies in the past and so does this empirical research. (Imhoff, 1991, S. 2-3) method is a good measure of the changes in balance sheet, income statement and key performance indicators (KPIs). The accuracy of the information extracted from the notes of the financial reports has some limitations as no segregation is possible for real estate lease commitments only. Therefore, the analysis of the financial impact of IFRS 16 doesn't provide a precise picture on the alignment of CRE transaction and leasing decisions to company business strategies.

The third step of this research is conducted in the form of non-structured interviews with two CRE leaders of companies belonging to the sample. Due to confidentiality issues, no formal interviews have been possible to go through, however CRE executives have provided comments on how IFRS 16 might change some daily transaction and leasing management practices.

4.2. Sample selection and data collection

119 companies are listed in the Swiss stock exchange SIX and are the basis of this analysis. Companies that doesn't disclose the category of the underlying assets of their operating lease commitments are excluded from the sample selection. Further companies that clearly use operating leases for assets other than real estate are also excluded. The final sample consists of 98 listed companies.

The financial year of 2018 is selected as the basis of this analysis. It is the first-year during which listed companies publish their estimates for the volume of "Right-of-Use" (RoU) assets and the corresponding liabilities to be recognized in the balance sheet per the 1st of January 2019. Sample selection and industry breakdown of the sample are presented in Tables II and III below.

Sampe Selection	Total
Initial Sample	119
less: companies without access to financial reports	5
less: companies without specifying the nature of operating lease underlying assets	11
less: companies with operating lease commitments from other assets than real estate	5
Final Sample: Companies with RE assets as main underlying asset of lease commitments	98

Table II: Sample Selection

Industry Sector acc. to NOGA Classification	Definition of NOGA Classification	# of Companies
C. Manufacturing	The physical or chemical transformation of materials, substances, or components into new products. As a general rule, manufacturing involves the transformation, substantial alteration or reconstruction of raw materials, or products of other manufacturing activities, into new products. Ex: Roche, NIBE Industrier, VW, Danone, Lonza, KTM Industries	56
K. Financial and Insurance activities	Banking, insurance, reinsurance and pension funding activities, as well as activities to support financial services. It also includes activities of holding assets, such as activities of holding companies and the activities of trusts, funds and similar financial entities. Ex: Partners Group, Scor, Swiss Life, UBS, Zürich Versicherung	21
J. Information and Telecommunication	The production and the distribution of information or cultural products. The provision of the means to transmit or distribute these products, as well as data or communications, IT activities and the processing of data and other information service activities. The main activities include publishing, software publishing, motion picture and sound recording activities, radio and TV broadcasting, programming and telecommunications activities, information technology activities and other information service activities. Ex: Swisscom, Tamedia, Temenos	8
F. Construction	It includes general construction and specialised construction activities for buildings and civil engineering works. It covers new work, repair, additions and alterations, the erection of prefabricated buildings or structures on the site as well as construction of a temporary nature. Ex: Arbonia, Implenia	3
H. Transportation and Storage	This section includes the provision of passenger or freight transport, by rail, pipeline, road, water or air. It includes also associated activities such as terminal and parking facilities, cargo handling, storage, etc. Renting of transport equipment with driver or operator, postal and courier activities are also part of this section. Ex: Kühne + Nagel, Panalpina Welttransport	3
G. Wholesale and Retail Trade	Wholesaling and retailing activities as the final steps in the distribution of merchandise. It includes the trade without transformation, of any type of goods, and rendering services incidental to the sale of merchandise. Usually includes activities such as sorting, grading and assembling of goods, mixing (blending) of goods, bottling, packing, breaking bulk and repacking for distribution in smaller lots, storage. Ex: Dufry, Zur Rose Group	2
B. Mining and Quarrying	The extraction of minerals occurring naturally as solids (coal and ores), liquids (petroleum) or gases (natural gas). Extraction is usually done through underground or surface mining, well operation, seabed mining, etc. Ex: Anglo-American Plc.	1
Q. Human Health and Social Work Activities	The provision of a wide range of activities, starting from health care provided by trained medical professionals in hospitals and other facilities, over residential care activities that still involve a degree of health care activities to social work activities without any involvement of health care professionals. Ex: SHL Telemedicine Ltd	1
R. Art, Entertainment and Recreation	The provision of a wide range of activities to meet varied cultural, entertainment and recreational interests of the general public, including live performances, operation of museum sites, gambling, sports and recreation activities. Ex: Highlight Event and Entertainment AG	1
N. Administrative and Support Service Activities	It included a variety of activities that support general business operations. Ex: Lastminute	1
M. Professional, Scientific and Technical Activities	It includes specialised professional, scientific and technical activities. These activities require a high degree of training, and make specialised knowledge and skills available to users. Ex: SGS	1

Table III: Industry groups according to NOGA Classification[3]

The annual reports of 2018 are the source of the data collected and analysed in this research. The following data is collected from the consolidated balance Sheet:

[3] NOGA Classification, https://www.kubb-tool.bfs.admin.ch/en

- *<u>On the asset side:</u>* Cash, current assets, fixed assets, intangible assets as well as total assets. The "RoU" assets are part of fixed assets category.
- *<u>On the liabilities side:</u>* current liabilities and non-current liabilities which correspond to short-term liabilities and long-term liabilities. Lease commitments are part of the long-term or non-current liabilities
- *<u>On the equity side:</u>* shareholder's equity. This research adjusts the equities in the balance sheet to reflect the controlled shareholder's equity only. Non-controlled equity interests are excluded as the purpose of this study is to analyse the performance of the controlled business only.

Data collected from the consolidated income statements are EBIT and Taxes. The RoU assets and the corresponding lease liabilities are collected from the notes disclosed relative to the present value of lease commitments to be recognized in 2019.

Two ratios are chosen to analyse the impact of IFRS 16 on the financial strength and operational performance of a company or an industry group. These ratios have been widely used in the previous studies including other ratios. This research limits the analysis to the ROIC and gearing ratio as they are best indicators of the general profitability of the company given certain risk associated with the capital structure. Furthermore, they are the main factors that influence shareholder's value creation according to EVA concept. ROIC and gearing ratios are defined in table IV below:

Financial Measures	Formula
Invested Capital	Equal to Fixed Assets + Intangible Assets + Current Assets - Current Liabilities - Cash
Earning Before Interests And Taxes (EBIT)	Equal to Operating Income - Operating Expenses - Depreciation & Amortisation
Net Operating Profit After Taxes (NOPAT)	Equal to EBIT - Taxes
Return on Invested Capital (ROIC)	Equal to (NOPAT / Invested Capital) x 100
Gearing Ratio	Equal to (Total Liabilities / Total Shareholder's Equity) x 100

Table IV: Financial Ratios; Definition and Formulas

To benchmark the industry sectors of the SIX index it makes more sense to build industry clusters. Hence, the final sample of 98 companies is divided into 3 industry clusters given the size of each industry group. Group I represent the manufacturing sector with 56 companies. Group II represent the financial and insurance sector with 21 companies. Group III represent the remaining industry sectors with 21 companies.

To analyse the magnitude of the IFRS 16 impact on the balance sheet, the recognized RoU is expressed in terms of total assets and liabilities for each industry group. The mean and the median of the calculated ROIC and gearing ratio are compared before and after the recognition for all 3 groups.

5. Analysis and results

5.1. Testing the impact of capitalising operating lease commitments, IFRS 16, on financial statements and performance measurements

5.1.1 Effects on the balance sheet

The diagram IV below represents the relationship between the present value of future lease commitments and the portion of it recognized in the balance sheet starting from the financial year of 2019. The total future lease commitments for companies listed in the SIX index, per the end of 2018, is CHF 52.68 billion and 87.89% of it is capitalized. This is in line with the estimates of IFRS Foundation (IFRS Foundation, 2016, S. 15) and the commercial real estate service provider (Cushman & Wakefield, 2016, S. 3) which state mention figures around 85%.

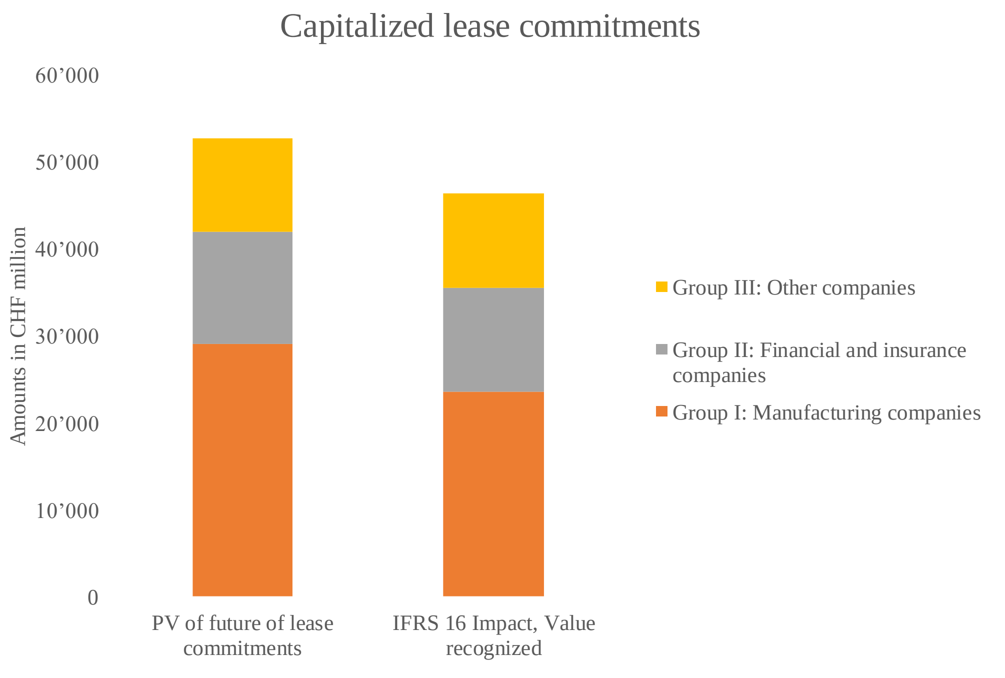

Figure IV: The portion of total lease commitments recognized per 2019

Capitalizing operating lease commitments doesn’t impact significantly the structure of the balance sheet. The present value of capitalized future lease commitments for all industry groups combined represents 1.10% of total assets and 1.30% of total liabilities. This is significantly lower than the findings of the previous research who record changes up to 9%. The changes in total assets and total liabilities for companies listed in AEX are 7% (Sjuul Baltussen, 2014, S. 11). While the changes in companies listed in the

Australian stock exchange are 4.20% on total assets and 8.82% on total liabilities (WeiXu, 2017, S. 11-12). Part of this difference can be explained by the fact that previous figures were just estimates while the 2018 figures used in this empirical research are based on accurate data. Another explanation can be linked to the figures related to the industry group II. Nearly all previous studies, including (WeiXu, 2017, S. 6) exclude companies in this sector because of the nature of their operations and the financial regulations. The diagram V below illustrates the balance sheet impact of capitalizing future lease commitments by companies the figures of pre and post recognition:

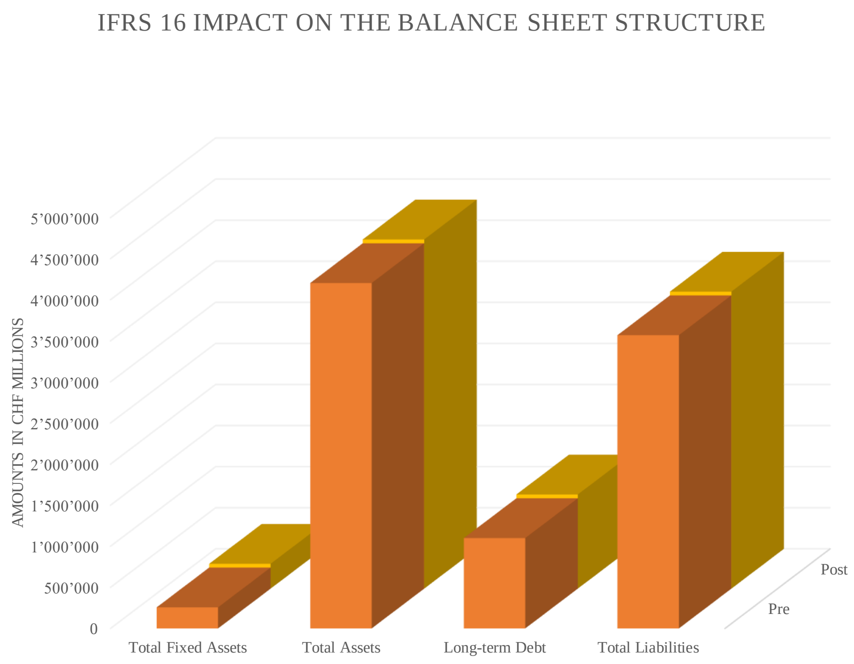

Figure V: IFRS 16 Impact on the balance sheet structure of the whole sample

The business structure of companies in the financial sector is based on investing consumers money in all types of assets to generate more return. In today's economic circumstances where the interest rates are negative, financial companies are struggling with their investment strategies. They lack investment opportunities and as a result their cash balance starts to increase. In other words, financial companies are left with uninvested capital that is losing value over time. Per the closing of the financial year 2018, financial companies record around CHF 170 billion of uninvested capital. The total cash balance of financial companies in the SIX index is around CHF 200 billion. Compared to the cash balance of manufacturing companies it represents 2.6 times (CHF 76.67 billion) and 15.17 times the cash balance of companies in other sectors (CHF 13.18

billion). The size of the balance sheet of companies in the financial industry is significantly higher than other sectors. It is nearly 3 times the size of the balance sheet of companies in the manufacturing sector with CHF 2.9 trillion versus CHF 1 trillion. As a result, the impact of additional assets tends to be negligible for financial industry group with 0.40% versus 2.19% for manufacturing industry group. This is in line with the observation of the first research (Sjuul Baltussen, 2014, S. 13).

The major balance sheet impact lies within the industry group III with 7.98% of total assets and 13.43% of total liabilities. Very interesting to note that the impact is higher on liabilities but very difficult to explain if the reason lies within the lease terms, the assessment method adopted by the different companies in this group or the industry structure. Group III include sectors that are judged as the most impacted sectors by IFRS 16 (Cushman & Wakefield, 2016, S. 7) (IFRS Foundation, 2016, S. 46-49). The analysis of companies listed in AEX shows that retailers, airlines as well as travels & leisure are most impacted (Sjuul Baltussen, 2014, S. 13-14). This is due to the fact that these sectors often rely a lot on leasing to conduct business. The diagram VI below illustrates the impact of IFRS 16 per group sector by comparing pre and post RoU figures:

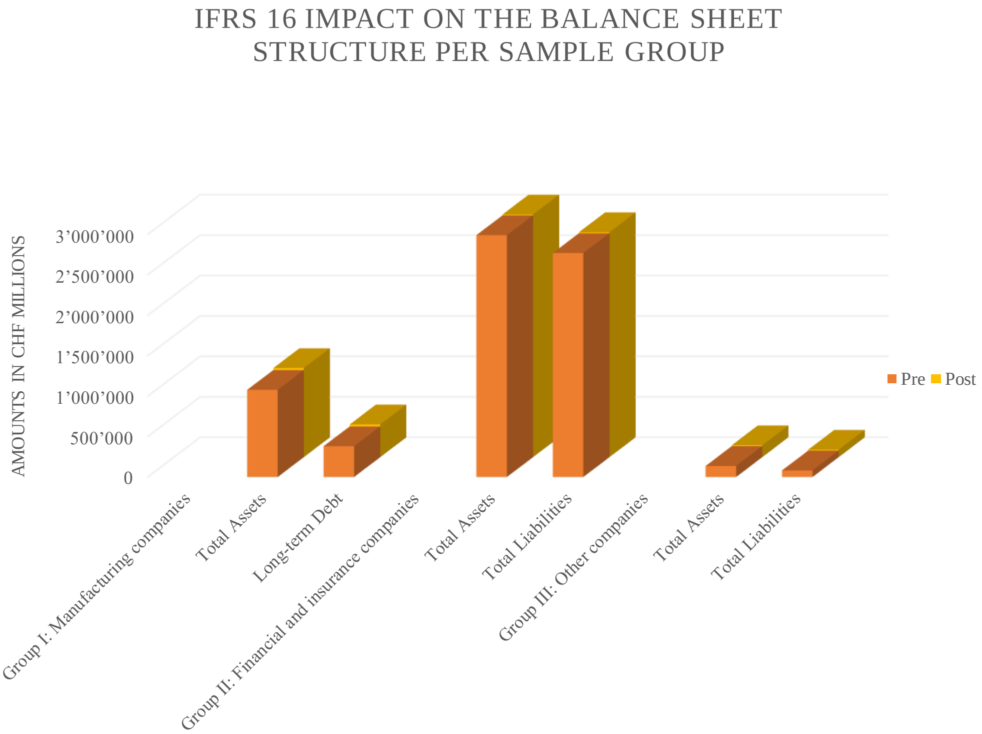

Figure VI: IFRS 16 impact on the balance sheet structure per sample group

5.1.2 Effects on key financial ratios: ROIC and Leverage

The impact of IFRS 16 on the financial ratios is tested by comparing the means, median of the pre- and post- adjusted figures for significant change. The table V below summarizes the findings for all industry groups. Overall, the capitalisation of lease commitments increases the invested capital of the total sample by 13.92 %. Since the capitalisation doesn’t impact the income statement hence the NOPAT remains the same, the ROIC decreases then by 12.22 %. Post capitalisation, the ROIC observed is 50.05% and decreased to 43.93% after capitalisation. This change is relatively higher than the impact observed in Australia with 9.74% only (WeiXu, 2017, S. 12). The retail sector in the UK records a higher impact with 19.57% decrease in ROIC after capitalisation (Goodacre, 2003, S. 14).

Financial Positions *in CHF million*	PV of future of lease commitments	5 Impact, Value rec Value recognized	IFRS 16 Impact in % of lease Commitments	Pre	Post	Change	Change in %
Group I: Manufacturing companies	29'064	23'566	81.08%				
Total Fixed Assets				161'786	185'352	23'566	14.57%
Total Assets				1'077'047	1'100'613	23'566	2.19%
Long-term Debt				380'196	403'762	23'566	6.20%
Total Liabilities				719'346	742'912	23'566	3.28%
Total Shareholder's Equity (controlled)				412'866	412'866	0	0.00%
Invested Capital				428'540	452'106	23'566	5.50%
NOPAT				49'624	49'624	0	0.00%
RoIC							
RoIC mean				11.58%	10.98%	-0.60%	-5.21%
RoIC median				9.65%	9.20%	-0.46%	-4.76%
Gearing (leverage) Ratio							
Gearing mean				174.23%	179.94%	5.71%	3.28%
Gearing median				132.42%	137.33%	4.91%	3.71%
Group II: Financial and insurance companies	12'832	11'889	92.66%				
Total Fixed Assets				46'005	57'895	11'889	25.84%
Total Assets				2'989'813	3'001'702	11'889	0.40%
Long-term Debt				678'369	690'258	11'889	1.75%
Total Liabilities				2'768'263	2'780'152	11'889	0.43%
Total Shareholder's Equity (controlled)				199'660	199'660	0	0.00%
Invested Capital				-170'638	-158'749	11'889	-6.97%
NOPAT				107'767	107'767	0	0.00%
RoIC							
RoIC mean				-63.16%	-67.89%	-4.73%	7.49%
RoIC median				9.39%	8.70%	-0.69%	-7.32%
Gearing (leverage) Ratio							
Gearing mean				1386.49%	1392.44%	5.95%	0.43%
Gearing median				137.38%	155.55%	18.17%	13.23%
Group III: Other companies	10'794	10'853	100.55%				
Total Fixed Assets				48'320	59'174	10'853	22.46%
Total Assets				135'937	146'790	10'853	7.98%
Long-term Debt				40'718	51'571	10'853	26.65%
Total Liabilities				80'785	91'638	10'853	13.43%
Total Shareholder's Equity (controlled)				53'936	53'936	0	0.00%
Invested Capital				74'658	85'511	10'853	14.54%
NOPAT				9'041	9'041	0	0.00%
RoIC							
RoIC mean				12.11%	10.57%	-1.54%	-12.69%
RoIC median				9.59%	9.17%	-0.42%	-4.34%
Gearing (leverage) Ratio							
Gearing mean				149.78%	169.90%	20.12%	13.43%
Gearing median				136.93%	148.50%	11.56%	8.45%
Total: Group I + II + III	52'689	46'309	87.89%				
Total Fixed Assets				256'112	302'420	46'309	18.08%
Total Assets				4'202'797	4'249'106	46'309	1.10%
Long-term Debt				1'099'282	1'145'591	46'309	4.21%
Total Liabilities				3'568'394	3'614'702	46'309	1.30%
Total Shareholder's Equity (controlled)				666'462	666'462	0	0.00%
Invested Capital				332'560	378'868	46'309	13.92%
NOPAT				166'432	166'432	0	0.00%
RoIC							
RoIC mean				50.05%	43.93%	-6.12%	-12.22%
RoIC median				9.49%	8.93%	-0.56%	-5.88%
Gearing (leverage) Ratio							
Gearing mean				535.42%	542.37%	6.95%	1.30%
Gearing median				136.93%	148.50%	11.56%	8.45%

Table V: Testing IFRS 16 impact on financial statements and ratios for total sample

The impact seems to be significant and given the pressure on wealth maximization, it is expected to see company executives reviewing their CRE-related decisions in order to figure out how this negative influence can be minimized. By comparing the ROIC mean and median of the 3 industry groups, interesting patterns can be observed for each group. Companies in the manufacturing sector seem to have a proportionate impact as the ROIC decreases (mean: -5.21%, median: -4.76%) in the same level as the capital employed increases (+5.50%). It can be therefore concluded that CRE strategies and business strategies are aligned in the manufacturing sector. It can be also concluded that manufacturing companies value the importance of CRE divisions at the strategic level. Therefore, those companies might be less interested in reviewing their CRE related strategies and focusing on business related activities as usual.

Industry group II shows an average increase in ROIC of 7.49% which is not surprising. As mentioned above the volume of employed capital decreases when the cash balance increases which explains the positive impact on ROIC. Nevertheless, there are companies within this sector that are making huge losses from their operational activities which explains the negative impact on the median (-7.32%) recorded. GAM Holding, for example, records a loss of CHF 929.1 million in 2018 and by looking at its balance sheet structure, the company relies more on leasing than owning real estate properties. The volume of lease commitments recognized (CHF 80 million) constitute more than 3 times the volume of its fixed assets (CHF 24.1 million). Even though the main issue in this industry group lies within the negative interest rates and lack of investment opportunities it might be beneficial to review CRE related strategies to create shareholder value.

The most ROIC impact is recorded within the industry Group III but vary in the magnitude as there is a significant difference between the mean (-12.69%) and the median (-4.34%). Different sectors and balance sheet structures are included in this group. This difference can be illustrated by analysing the ROIC change of specific companies within this group. The highest impact observed on ROIC is by Implenia AG with a decrease of 48.84% post capitalisation. The lowest impact is by Anglo-American plc and Tamedia AG which record (-1.45%) and (-2.19%) respectively. The main explanation lies within the operating lease rate and the size of the balance sheet. Comparing Implenia AG to Tamedia AG it can noted that both companies have similar balance sheet sizes, with CHF 2.86 billion and CHF 2.94 billion of total assets volume respectively. However, Implenia AG relies more on operating leases than Tamedia AG. Implenia AG recognizes CHF 160 million of RoU assets in 2018 while Tamedia AG records only CHF 46 million. This is equivalent to a ratio of more than 3 times operating lease volume.

IFRS 16 might affect debt covenants and could result in a non-compliance when linked to a company’s financial statements (Sjuul Baltussen, 2014, S. 13). It is very common to see clauses in financial arrangements that exempt companies from additional covenants in case of change in accounting standards. Companies are therefore allowed to carry on with the standards applicable at the time the financing agreement in executed (IFRS Foundation, 2016, S. 59). Auditors, analysts and rating agencies might be, however, sensitive to financing agreements entered into after the introduction of IFRS 16 and in some cases it could end up with a downgrade in rating (Sjuul Baltussen, 2014, S. 12).

Concerning the debt-to-equity ratio, also known as leverage or gearing ratio, a general observation can be made when comparing the figures found in previous empirical researches. This ratio is important as it determines the financial health and default risk of a company. It can be stated that the majority of companies listed in the SIX index operate in high risk modus. The diagram VII below shows the results of the analyses for all sample groups. (WeiXu, 2017, S. 12) in his research shows a gearing ratio of 76.80%. 46 companies out of 98 record a debt-to-equity ratio higher than 80%. It is alarming to see total liabilities that are 13 times the shareholder equity value as it is the case with industry group II recording a gearing ratio of 1392.44% after IFRS 16 impact in 2018. Banks and insurance companies might be challenged on their regulatory capital requirements as they are reporting an extremely low equity value (Cushman & Wakefield, 2016, S. 12). The gearing ratio of the whole sample is 542.37% in 2018 meaning more than 5 times the equity value. Companies are definitely exceeding the range determined in their debt covenants and financial consequences could be expected anytime (Sjuul Baltussen, 2014, S. 12). Even if IFRS 16 impact is not the main reason behind this excess, it shouldn’t be surprising to see rating agencies downgrading the credibility of some companies over the coming years.

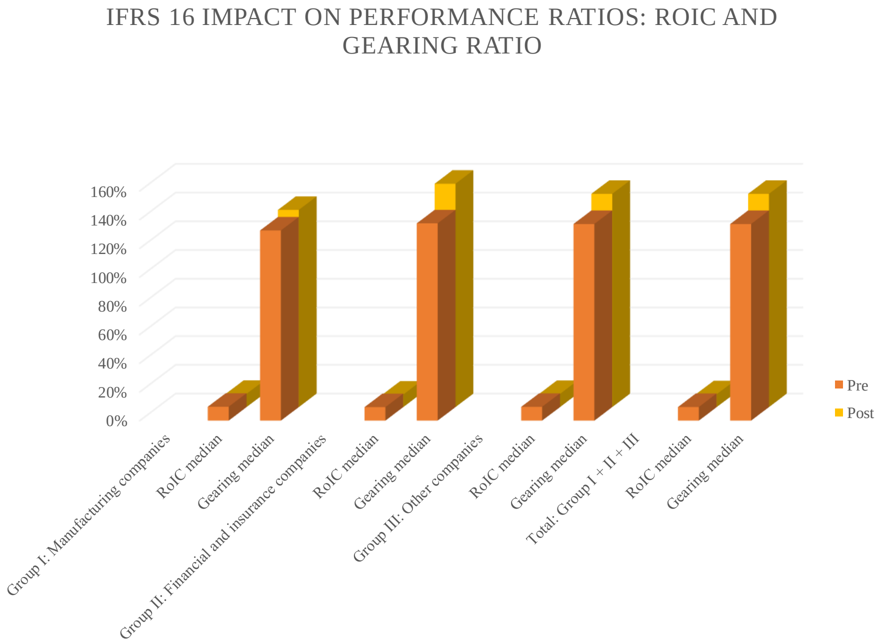

Figure VII: IFRS impact of ROIC and debt-to-equity ratio for all sample

5.2. Testing the impact of capitalising operating lease commitments, IFRS 16, on real estate transactions and leasing

Structuring a corporate real estate transaction requires a deep understanding in several areas such as legal and technical review of the property, negotiation skills, financing arrangements, accounting implications, as well as contracting covenants. The introduction of IFRS 16 accounting standards can have real impacts on corporate real estate activities as lease liabilities appear in the company financial statements. According to a survey conducted jointly by CFO Research and IBM in 2014, 2/3 of Company executives are less willing to carry on unproductive or underutilized real estate assets when they consider the impact those leases have on the balance sheet (CORNET Global; the Global Association for Corporate Real Estate, 2015, S. 48). Buying, selling, or leasing properties can represent both a significant financial opportunity and sizable financial risk for a company. That's why it is important for corporate real estate professionals to understand the financial implications of those transactions and balance between the desired financial accounting treatment and business objectives (CORNET Global; the Global Association for Corporate Real Estate, 2015, S. 49).

5.2.1 Effects on the rental structure

- *Definition of a lease:* IFRS 16 determines whether a contract contains a lease component or not depending on whether the lessee controls the use of the underlying asset over a period of time. Contracts often include service components and lease components. IFRS 16 accounting requirements apply only to lease components in the contract. Therefore liabilities related to service components won't be reported on the balance sheet (IFRS Foundation, 2016, S. 11) (Cushman & Wakefield, 2016, S. 21). Based on the comments collected from the interviews there is no appetite for the time being to segregate service components from lease components. It is also not intended to switch to serviced spaces as this is not compatible with business requirements. Overall, it can be concluded that control of leased space is more important than reducing the financial accounting impact of IFRS 16 through minimizing lease components in favour of service components.

- *Turnover rental payments:* the lease payments that need to be reported in the balance sheet exclude turnover based elements of rental payments. Most commercial real estate service providers expect turnover rental payments to become more popular particularly for retailer companies as they are the most impacted (Cushman & Wakefield, 2016, S. 20). CRE professionals interviewed are not ambassadors of the retail sector therefore no conclusions can be made relative to use of turnover rental payments. Applied to the industry sectors they represent; turnover rental payments are not an option as they are not compatible with the business structure they work for.

- *Rental review:* lease payments to be reported also depend on the rental review mechanism in place. Current rent is the basis of calculating the total lease liabilities to be reported for contracts linked an index (e.g. CPI review). Each time there is a change in rental liabilities due to an index change, there should be a reassessment of rental commitments to be reported. The advantage of fixed rental adjustments is that no reassessment of rental liabilities is required. All future adjustments are clear and reported from day 1 of the execution of the lease (Cushman & Wakefield, 2016, S. 18). There is no clear preference among the CRE professional interviewed to change the negotiation patterns toward one rent review mechanism or another. Most of rental contracts in Switzerland are CPI linked and there is no appetite from companies at this stage for fixed rental adjustments. This can be due to the fact that we live in low inflationary period.

- *Coworking spaces and serviced offices:* traditional working styles are now being replaced by emerging trends, such as coworking platforms, due to the uncertainty around the global economy and the changing life style of the millennials. Those agreements are service agreements by nature but because most of the time companies occupy a dedicated space they are considered as leases since the occupier controls the space. To avoid IFRS 16 impact, companies should not own control over the space they lease from coworking providers. In other words, the company employee would occupy a different seat each time he is using coworking platform. CRE professionals interviewed clearly mention that coworking platforms are difficult to implement as a workplace strategy. Nearly every global company went through a transformational journey to become agile and line.

Adopting coworking strategies is part of the transformational agenda however, obtaining business, HR and IT buy-in are extremely difficult. At this stage, none of the interviewed CRE professionals believe in the popularity of coworking spaces where coworking providers retain control of the space.

5.2.2 Effects on the lease period

- *Short-term leases:* IFRS 16 doesn't require the capitalisation of leases with a minimum non-cancellable period of less than 12 months. This exemption might be beneficial to smaller companies in the first place however no material difference is expected (Cushman & Wakefield, 2016, S. 9) (IFRS Foundation, 2016, S. 19). So far, no trend is noted by the interviewed CRE professionals on adopting short-term leasing strategies. Furthermore, short-term leases are not applicable in most locations because of the capital requirements to establish presence in a market. They probably make sense for small representative office locations.

- *Landlord incentives:* the minimum non-cancellable term is influenced by factors such as customisation, the extent of tenant improvements, break penalties and landlord incentives. Upfront landlord incentives reduce, on one hand, the lease liabilities on the balance sheet and lease payments on the income statements. On the other hand, they might extend the minimum lease period as they make renewal options more certain. Commercial real estate service providers expect upfront lease incentives to be favoured over blended incentives (Cushman & Wakefield, 2016, S. 16). CRE professionals were asked if they are changing their negotiation patterns since the implementation of IFRS 16. Based on the comments obtained, there are no indicators of change in negotiation patterns just for the purpose of obtain a certain financial accounting treatment. The focus is more on lease flexibility, business driven factors and letting market conditions.

The table VI below summarizes the comments obtained from the interviews conducted with 2 CRE leaders representing 1) life Science industry and 2) Insurance company.

Subjects discussed	Questions	Comments from CRE leader of company 1 in Life Science sector	Comments from CRE leader of company 2 in Insurance sector
Balancing between the impact on the financial statements and the operational benefits from longer lease periods: • The minimum non-cancellable term is influenced by factors such as customization, the extent of tenant improvements, break penalties and landlord incentives. Upfront incentives reduce, on one hand, lease liabilities on the balance sheet and lease payments on the P&L. On the other hand, they might extend the minimum lease period as they make renewal option more certain.	Are you changing your negotiation patterns with respect to the structure of the lease term since the implementation of IFRS 16? Are you moving toward shorter leases to obtain the desired accounting treatment? Or is it simply business as usual?	I have not received any direction that our company guidelines for "terms to be achieved" because of IFRS 16. We still seek lease flexibility and maximum incentives. I would say lease flexibility more than perhaps higher incentives.	The lease term as such is influenced by many different factors and IFRS16 has become a factor, which is considered as well. • Investment on the tenant side • Business needs for flexibility (growth or reduction plans) • Location (how difficult was it to find the location, how important is it to keep) • Market situation • Subleasing possibility • Space division/flexibility • IFRS16-implications • Possibility to bring Coworking-solutions into the mix
Balancing between the impact on the financial statements and the administrative burden: • The liability on the balance sheet and the lease payments on the P&L will be assessed according to the rent review mechanism in place. For index-based rent adjustments there have to be a regular reassessment of lease liabilities on the balance sheet and rental payments on the P&L over the lease period. For fixed rental adjustments, the liability and rental payments will include, from day 1 of the lease term, all the future adjustments and as a result there will be no regular assessments required.	Are you changing your negotiation patterns with respect to rent review mechanism since the implementation of IFRS 16? Do you prefer fixed rental adjustments over index-based adjustments?	Not to my knowledge at this stage.	In Switzerland we will not adjust the negotiation patterns for now. Rent increases because of CPI-indexation were quite low or non-existent. Lease liabilities will be reassessed in case of rent changes.
Reviewing corporate real estate leasing strategies: • The principal impact of IFRS 16 is the recognition of all leases on the balance sheet. It makes nearly no difference between owning and leasing a property, as both result in a liability on the balance sheet and a depreciation and interests in the P&L.	Are you shifting your real estate portfolio toward more own vs lease? If not, what are the drivers?	We still keep lease strategy	Currently no change is planned, but the option to buy could be considered more often going forward. Especially for very large office buildings with long-term leases the buy-option could be more favourable. However, there is not always the possibility to buy the offices (especially for smaller leased assets like small offices, storage spaces, car parking spaces).
The use of Exemptions: • The IFRS 16 standard allows some exemptions which remain off-balance such as rental payments related to turnover, service contracts where the occupier does not have control of the use of the asset (ex.: serviced office where the landlord has the right to substitute the area demised to the tenant), shorter leases with a term less than 12 months and low value leases where the underlying asset has a value of less than $5,000.	which experience have you made so far with those exemptions? How easy to implement? can you evaluate the level of awareness and understanding of IFRS 16 impacts among landlords and brokers? Are landlords willing to please corporate clients by offering lease contracts with minimum financial accounting impacts?	Flexible working is not something we do on a large scale yet, but this may change I do not see this an item that is under the scope of negotiation. Time will tell if this changes Landlords and Property Fund seek long leases to hold the value of their assets. Short leases, increase property yields and reduces values. As I understand in order to avoid the impact leases would have to be less than 12 months, I consider it highly unlikely that LL will change their position.	So far, landlords or brokers did not seem very familiar with the implications of IFRS 16. One of the reason could be that mostly larger multi-national companies follow the IFRS-rules and smaller companies tend to follow local accounting principles. So far, we did not see this. However, smart landlords could use it as a differentiator.

Table VI: Summary of Interviews with CRE leaders

5.2.3 Effects on the real estate transaction decisions

- *Own versus lease:* nearly in every big project, corporate real estate professionals discuss whether it is better to own or lease a property. It is the most debated question with the business leaders. To provide the best answer to that question, a CRE professional needs a prudent estimate of how long the property is likely to be occupied along with a keen understanding of company's goals, strategy, situation, and location (CORNET Global; the Global Association for Corporate Real Estate, 2015, S. 44). With the introduction of the new lease accounting standards IFRS 16, it makes nearly no difference, at least from financial accounting point of view, between owning and leasing a property. Both end up being reported in the balance sheet and income statement. The results obtained from the interviews are diverse. One CRE professional doesn't expect any change in real estate transaction strategies. The company still desires the flexibility in leasing over owning. The other CRE professional mentions that owning might be an option in projects that involve long term lease periods and large spaces. It can be concluded that leasing versus owning decisions depend more on the industry structure.

- *Sale and lease back:* the traditional motivation from undertaking a sale and lease back transaction is to free up capital from property and invest it in the business itself as it may produce a higher rate of return than capital invested in a property. It is also an alternative financing source that allows an occupier to benefit fully from the value of the property without owning it. Again, the introduction of IFRS 16 make those benefits obsolete if not worse as it reduces equity value.

  The sale and lease back transaction conducted by Givaudan in 2018 can be taken as an example to illustrate the change in the accounting treatment. Based on the information disclosed by the company in the annual report 2018, the group sold and leased back its Zurich Innovation Centre (ZIC) for an amount of CHF 173 million. The group committed for a liability of CHF 29 million for construction costs during 2019. The gain realised on the sale of CHF 25 million has been recognized in other operating income in 2018. The total lease back commitment is CHF 184 million over a duration of 30 years[4].

[4] (Givaudan, 2018, S. 165, 173)

The effect that this transaction has on the balance sheet and income statement is summarized in the Table VII below. The accounting treatment applied to this sale and lease back transaction is the IAS 17, since the transaction is completed during 2018.

	Accounting Treatment		Net effect
in CHF million	**IAS 17 (1)**	**IFRS 16 (2)**	**(2)-(1)**
Balance Sheet			
Assets			
Properties			
Start of the year	0	202	
Depreciation	0	-6.73	
End of year	0	195.27	195.27
Cash	-7.10	-7.10	0
Liabilities			
PV of Lease rental costs			
Start of the year		202	
Interest of the year		2.84	
Amount paid		-7.10	
End of year	0	197.74	197.74
Net Assets	-7.10	-9.57	**-2.47**
Shareholder's equity			
Profit and Loss accounts			
Operating lease rentals expenses	-7.10	0	7.10
Depreciation	0	-6.73	-6.73
Profit from sale	25	25	0
Operating profit (EBIT)	-7.10	-6.73	**0.37**
Interest of the year	0	-2.84	-2.84
Profit before tax	-7.10	-9.57	**-2.47**

Table VII: Accounting effects under IAS 17 and IFRS 16 for the Givaudan ZIC sale and lease back transaction

Under the IFRS 16, the CHF 202 million (Sale price of CHF 173 million and CHF 29 million of construction costs) would be capitalized like any other owned real estate property and depreciated over its useful life period (in this case it's the lease period of 30 years). The total liabilities of CHF 202 million would be also recorded in the first year and reducing over time as capital is amortised. The cash position is not affected therefore the CHF 7.10 million cash out is similar under both lease accounting systems (IFRS 16 and IAS 17). In the profit and loss statement, a depreciation of CHF 6.73 million would be recorded instead of operating lease costs of CHF 7.10 million. As a result, the operating profit or EBIT would increase by CHF 0.37 million. An assumption relative to the indexation of the rental costs of 1% p.a. fixed adjustment is made to simplify this illustration. So, the interest part of the rental costs of CHF 2.84 million would be recorded and thus reducing the profit after interest and before taxes by CHF 2.47 million. Over time and toward the end of the lease period this situation is reversed leading to a higher profit after interests and before taxed. This is due to the fact that depreciation and interests would be higher than operating lease rental as lease end date approaches. The accounting advantage of the IAS 17 accounting system for this transaction are clear: CHF 173 million extra cash for the business and CHF 25 million profit on sale while generating less taxes and without impacting the shareholder's equity.

Givaudan reports a debt-to-equity ratio of 149.46% in 2018. If this sale and lease back transaction was capitalized the debt-to-equity ratio would be 154.91%. This is a significant change in the risk measurement of the company.

Comparing this sale and lease back transaction to a flexible lease transaction, the following assumptions are made to simulate the effects on the income statement. The CF effect is depicted in the diagram, Figure VI, below:

• Total area of the Zurich Innovation Centre[5]: 12,000 sqm lettable area

• Market rent[6]: 460 CHF/sqm p.a.

• Service charges and overhead property costs[7]: 150 CHF/sqm p.a.

• Lease period: 5 years fix, renewable thereafter

• Rental adjustment: 2% annual fixed indexation. This is away above the current CPI level which is close to 0.7%[8]. To compensate for any shortage in rental costs, it is preferred to use higher indexation rate.

• Rent at renewal: negotiable at the level of the previous fixed period. Taking into consideration the life cycle of the property.

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[5] (Givaudan, 2018, S. 1-2), ZIC, Fact Sheet, https://www.givaudan.com/file/161431/download

[6] (CBRE Switzerland, 2018, S. 1-2), Marketview Snapshot, Zurich Office Q4 2018, https://www.cbre.com/research-and-reports/Zurich-Office-MarketView-Snapshot-Q4-2018

[7] Equivalent to 1/3 of rental costs; sale and lease back are usually triple net leases

[8] (Trading economics, 2019), CPI Switzerland: 0.7%, April 2019, https://de.tradingeconomics.com/switzerland/consumer-price-index-cpi

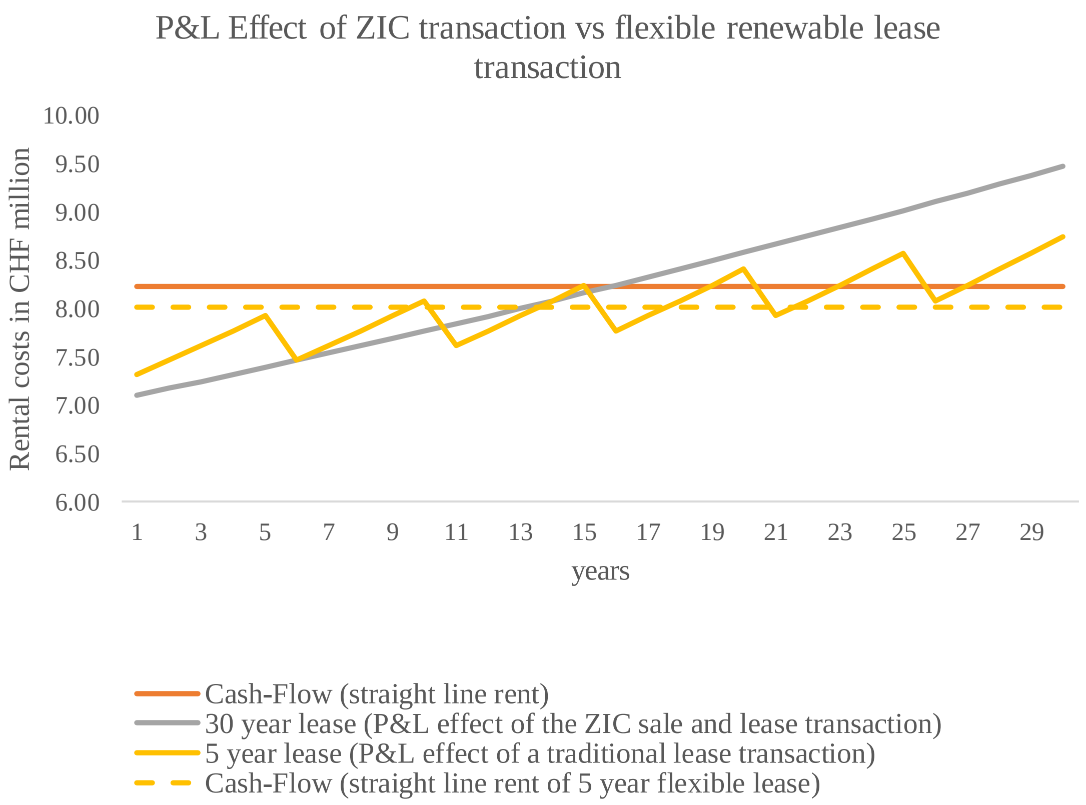

Figure VIII: comparing the P&L Effect of the ZIC sale and lease transaction to a flexible lease transaction

This sale and lease back transaction definitely created non-financial value by securing a long-term occupation of a modern space and leveraging the innovation and research capabilities of Givaudan. Regarding financial value, the transaction conducted doesn’t reduce rental commitments over the lease period. The straight line rent of the sale and lease back transaction (CHF 8.23 million p.a.) is slightly higher than the one of a flexible lease transaction over an equivalent period (CHF 8.01 million p.a.). The financial value expected from a sale and lease back transaction would be to benefit from a lower rent compared to a current market level particularly for such a long-fixed term.

Comparing both transactions has a lot of limitations. Several assumptions are made because of the absence of details on the lease terms. Benchmarking rental level of this built-to-suit project to the available market data is also weak. It is important to note that CHF 29 million construction costs, equivalent to 14.35% of total investment volume, are company specific investments. From letting perspective, property investors transfer the vacancy risk to the occupier and charge rental premium in return. This factor is taken into consideration in the modelling of the rental costs. The fixed rental adjustment mechanism in place drives the rent above market very quickly. That is why an assumption is made to bring the rent back to market level at renewal time. This explains why the rental level drops after each fixed term.

Ignoring the company specific investments of CHF 29 million, the straight-line rent would drop to the level of CHF 7.11 million p.a. over the whole lease period. Therefore, it can be concluded that the higher the lower the specific construction investments the higher the financial value it can be derived from sale and lease back transactions.

5.3. Summary of findings

With the introduction of IFRS 16, the presentation of the financial reports is changing and becoming more transparent. The use of operational leases as a hidden source of long-term debt disappears. Shareholders, investors and analysts have better reporting quality and it's up to them to take this extra information into consideration in their decision-making processes.

The impact of IFRS 16 on companies in Switzerland is very negligible compared to the findings in the UK, Australia and the Netherlands. The balance sheet impact depends in the first place on the size of the balance sheet, the industry structure in which the company operates as well as the operating lease rate (OLR). Sectors such as retail, travel and leisure are sensitive to the financial reporting standards as they rely more on leasing to conduct business. The impact noted on performance measurement is more important on gearing ratio than ROIC. Low performing companies might face difficulties with capital requirements of Basel III, and soon Basel IV, once rating agencies and capital providers press a new audit button.

Since the size of the balance sheet of companies listed in SIX is huge enough, the financial accounting treatment remains subordinate to business requirements. No major change in the corporate real estate transactions and leasing practices is expected in Switzerland. Hence no change in the strategic position of CRE divisions within companies. Nevertheless, a change can be noted in corporate real estate transactions relative to strategic and business critical assets. Sale and lease back transactions for assets that involve specific investments may be challenged more in the future by various stakeholders.

The table VIII below summarizes the main finding of this empirical research.

Empirical Study	Country	Sample Size	Features examined	Findings	Conclusions
IFRS 16 impact on balance sheet and performance ratios: ROIC and debt-to-requity ratio. How IFRS 16 is changing corporate real estate transaction management practices	Switzerland	98 companies listed on the SIX	• The potential impact of IFRS 16 on balance sheet, ROIC and debt-to-equity ratio based on information disclosed in the financial reports	Different findings compared to previous researches: • significantly low impact on the balance sheet structure, +1.10% of assets and +1.30% of liabilities versus + 7% of assets and liabilities for companies listed in the AEX. • Balance sheet size of companies in the financial sector is 3 times bigger than companies in the manufacturing sector. • Cash balance increases due to lack of investment opportunities for financial companies. • IFRS 16 is not changing the position CRE divisions. CRE decisions are mainly business driven. Balancing between financial accounting impact and business strategies doesn't seem to be important yet. Similar findings with previous researches: • IFRS 16 impact on the balance depends on its structure • Significant impact on ROIC and gearing ratio. • The concept of value creation is not common in the corporate real estate sector. CRE professionals still manage corporate RE resources from cost reduction perspective.	• IFRS 16 impact depends on the size of the balance sheet and the industry structure. • Gearing ratio is the most impacted performance measure. • The IFRS 16 impact is negligible however it can turn out to be a serious issue in conjunction with the coming Basel IV regulations concerning risk-weighted assets. • Too early to say if the introduction of IFRS 16 is changing CRE operational decisions. Probably this depends on the strategic level of property portfolio and involvement of the main stakeholder's (e.g. lenders and shareholders) in the decision making process. • Introducing the concept of value creation in structuring corporate real estate transactions is one way for CRE professionals to align CRE strategies to business strategies.

Table VIII: Summary and conclusions from the current empirical research

6. Conclusions

6.1. Discussion of practical implications

The objectives of the present empirical research are to document in a systematic way the financial accounting impact on performance measurements, how this influence some CRE transactions and leasing practices and if new negotiation patterns with the landlord observed. Overall, it can be concluded that the financial accounting is negligible in Switzerland. No major pattern in corporate real estate transactions and leasing practices is expected with the new lease accounting standards. It is business as usual for the majority of CRE leaders unless there is an issue with the performance measurements of the company triggering the risk of downgrade in rating.

One of the main implications of the analysis is that ignoring the financial risk impact, especially of Gearing measure might impact company ranking. It is more likely for companies with high leasing ratios and low balance sheet sizes to optimize their real estate portfolio in order to get rid of low value assets. For real estate investors, it means that they need to adjust their leasing offers according to the financial performance of their corporate tenants. CRE transactions and leasing strategies differ depending on whether the asset is business critical or not.

6.2. Outlook

Finally, the results demonstrate implications for researchers concerned with investigating on how economic value is created or destroyed in the corporate real estate profession. An important question for both CRE leaders and real estate investors is whether the introduction of IFRS 16 standards will develop synergies between the two sub-sectors. The answer depends on the understanding of financial accounting principles and the concept of economic value add (EVA) from both sides. For the time being, it is not expected to see any change in the negotiation patterns with landlords in Switzerland. The size of balance sheets of swiss companies is huge enough to absorb the financial accounting impact of IFRS 16. Therefore, landlords can still enjoy the current market lease practices.

Based on the present research, contributing to value creation from corporate real estate transaction can be done through the following factors:

- A good understanding of financial accounting principles in general and IFRS 16 standards in particular.
- Balancing between financial accounting treatment benefits and business requirements depending on the nature of the real estate asset. Strategic assets should be owned instead of leased.
- Monitoring the magnitude of capital employed and debt-to-equity ratio.

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Attachments

Ehrenwörtliche Erklärung

Ich versichere hiermit, dass ich die vorliegende Arbeit mit dem Thema „The impact of the new lease accounting standards -IFRS 16- on corporate real estate decisions: especially on real estate transactions" selbstständig verfasst und keine anderen Hilfsmittel als die angegebenen benutzt habe.

Alle Stellen die wörtlich oder sinngemäss aus veröffentlichten oder nicht veröffentlichten Schriften entnommen sind, habe ich in jedem einzelnen Falle durch Angabe der Quelle (auch der verwendeten Sekundärliteratur) als Entlehnung kenntlich gemacht.

Die Arbeit hat in gleicher oder ähnlicher Form noch keiner anderen Prüfungsbehörde vorgelegen und wurde auch noch nicht veröffentlicht.

Zürich, 20.08.2019

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[Signature]