Copenhagen Business School, Cand.Merc., Master´s Thesis

Valuation of Football Clubs

A thesis on valuation of Danish football clubs

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Abstract

There are an increasing number of takeovers in the football industry. However, the science of valuating football clubs is not clear. Therefore, this thesis seeks to detect, which valuations methods are most optimal, when valuing Danish football clubs from the two highest leagues in Denmark. The purpose is to ease the valuation in a takeover scenario or as a stakeholder in a football club. To investigate the problem, a deductive method has been preferred. The theories of Discounted Cash Flows, multiples, and real option are therefore tested on a sample of 25 Danish football clubs. To support the tests, an analyzes of accounting differences and the Danish football industry, has been made. These analyses were based on different sources, as annual report, semi-structured interviews, articles etc. The key findings were that a general DCF approach could not be applied, while a tailored DCF approach yielded a satisfying result. In this method unstable business elements were valued with a real options approach separately. It was only performed on one club, which made the result insignificant. Lastly, a multiples method was conducted, where revenue multiples yielded partly satisfying results. However, the peer group and the sample were not perfectly comparable, and optimally the peer group should be tailored for every club in the sample. All approaches consisted of several biases and estimations, as for example estimations of financial leasing of stadiums and estimations of transfer rights. The conclusion of the thesis is that no optimal approach was detected for valuating every club in a general manner, due to several biases and high volatility in income sources from year to year. However, if tailored for the specific club, both the multiples and DCF can possibly be applied, but the results were insignificant. For future research, a further analysis of the tailored DCF approach combined with real options could be made for every club, to test its significance. Moreover, other valuation theories can be tested.

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1. Introduction

1.1 Problem Area

The football industry is a central part of the entertainment business. It is considered the most popular sport in the world (Boudway, 2018), and is important to many individuals. It is therefore an interesting industry to investigate, due to its relevance for many people. It has existed for many years, and professional football was first legalized in Britain in 1885 (Footballhistory.org, 2020). New clubs and leagues have been formed all over the world since then, and in 1978 Dansk Boldspil-Union (DBU) introduced paid football in Denmark (Total-bold.dk, 2008). The football industry has then become more globalized over the years. In 1995, it became possible to play with as many foreign players, as a club would want to, and today it might be the most globalized industry in the world, with players being transferred between clubs in different countries (Milanovic, 2010).

Football as a commercial industry have been slowly developing, since the first football tickets were sold in England back in the 1880s (Footballhistory.org, 2020). The increased globalization in the later years in football, has resulted in an increased commercialization as well, due to the sport reaching a global audience in a higher degree (Shah, 2017). The brand value has also increased due to globalization, leading to further income streams. In the 1980's the first clubs were publicly listed, with Tottenham Hotspur as the first (The Club / History / Year by year, 2020), and this tendency was especially popular in the late 1990's and early 2000's (KPMG football benchmark, 2017). In the 21st century, the development has been massive, and football clubs have turned into actual businesses. The income areas have increased from primarily sponsorships and ticket sales, to tv rights, merchandise, stadium name rights etc. (Shah, 2017). Inflation has been massive the later years, and the interest from spectators is enormous, as exemplified in bigger and bigger tv rights agreements.

While companies in general primary aims to earn money, the argument that football club's primary purpose is to create good results on the pitch could be made, as Jesper Jørgensen states "*Football clubs do not aim to earn a profit … Football clubs have a completely different business model … [They] have one goal and that is to win football matches."* (appendix 4). Whether this is true or not, it is an interesting point, which could complicate valuation models with the prerequisites that firms must be profitable, or at least aims to do so.

The economic development has resulted in, the football industry experiencing an increasing number of takeovers in both big and small clubs around the world. In Denmark, an increasing number of takeovers have also taken place with currently seven clubs owned by foreign owners, and several other clubs looking for new owners (Sauermilch, 2020). However, the football industry is a very volatile and uncertain industry. Therefore, it might be a complex procedure to estimate the right value of a football club, when being involved in a

takeover, either on the buyer side or the seller side. Considering the increasing number of takeovers combined with uncertainty, it is interesting to investigate, which methods and approaches are most optimal, to generate the right values of football clubs.

1.2 Problem Statement

The presented problem area leads down to the following problem formulation:

> *Which valuation methods are most optimal, when valuing the enterprise value of Danish football clubs in the two highest league divisions?*

- *Sub question 1: What accounting challenges occur, when comparing football clubs?*
- *Sub question 2: Which tendencies in the Danish football industry affects the valuation methods?*
- *Sub question 3: How does the DCF approach perform, when valuing the clubs in the Danish football industry?*
- *Sub question 4: How does the multiples method perform, when valuing the clubs in the Danish football industry?*

The problem statement will be examined through the sub questions. Sub question 1 and 2 will serve as foundational analyses, in which accounting challenges and key tendencies in the Danish football industry, will be examined. They will be discussed in chapter 3 and 4, respectively. Sub question 3 and 4 each aim to investigate a specific valuation approach. Sub question 3 will be discussed in chapter 6 and chapter 7, and sub question 4 in chapter 8.

1.3 Delimitation

This thesis will only focus on the valuation of Danish football clubs and the Danish market. However, foreign football clubs will be applied as peer groups in certain analysis purposes, because of the lack of information about Danish clubs. I.e, there is not enough information about traded clubs, when making multiples, hence foreign clubs will be applied in this analysis.

Every club in the two highest Danish leagues (henceforth Superliga and 1. Division) will be valued. The reason for this boundary is partly that it is assumed that these clubs will be within reach of the highest leagues, and therefore be a part of the leagues where the money in Danish football are undeniably biggest. It is also partly because many smaller Danish clubs are unions with small activities, which will not be relevant in an analysis context, and several of them does not publish annual reports. Even the 1. Division club Kolding IF does only have one accessible annual report, and will therefore not be included in this analysis, due to lack of historical numbers. However, some clubs from the third highest league (henceforth 2. Division) might release annual reports, and might have been part of the 1.

Superliga	1. Division
FCK	VFF
FCM	HBK
BIF	VBK
FCN	VEN
AaB	FCF
OB	SIK
SJE	FCR
RFC	NBK
EfB	NFC
AGF	FA
SIF	HIF
ACH	
LBK	
HOB	

Table 1.1, Source: Own creation, with data from Danskfodbold.com

Division during the latest years. Likewise, some of the current clubs from the 1. Division have just been promoted to this division, and therefore there will be some coincidence in the inclusions of some of the clubs, rather than others. It might be relevant to either switch some of the clubs around or simply add some of the clubs from the 2. Division, if they have a history of being a lot in the 1. Division. However, this has not been done to avoid the complexity. The analysis will therefore include the following 25 clubs, and the sources for the last ten years of annual reports for every club can be seen in appendix 7:

From a statistical point of view, 25 clubs might be too low to make any significant conclusions. However, it can be argued that the two highest leagues in Denmark represents the majority of the Danish football industry´s economy, hence the 25 clubs are assumed to be adequate. Additionally, it is believed that it will not make sense to compare amateur clubs from low divisions with professional clubs from high divisions, due to big economic differences and opportunities, and therefore it is believed to be valid to have a relatively low amount of observations in this specific market.

Some of the clubs are part of companies or groups with other business areas than football. This thesis will focus on the football business for two reasons. Firstly, because it will be impossible to compare the clubs, when including other businesses, due to the differentiation of businesses in the different groups or clubs. Secondly the football business is the one, which is complex to valuate, and therefore is of interest in this thesis. However, it is not always possible to separate all other business areas from the football, as conferences, etc., and therefore these types of non-football income and -cost will be kept in the analysis for every club, in order to keep comparability and avoid overcorrections. This results in a bias as parts of the analysis, will consist of non-football areas.

When analyzing the companies, ten years of annual reports have been applied, from 2009 (2009/2010) to 2018 (2018/2019). The relatively long time-period is chosen, to include the effects from a full economic cycle. This is relevant due to the clubs having variety in their financial performances over the years. Therefore, it is considered important to include both recessions as the financial crisis, which influences the 2009 reports, but also some of the recent financial years with economic growth.

Another limitation in the valuations in this thesis, is the effect from firing of a coach. A coach can potentially have a big effect on a club's strategy, transfers, turnarounds, etc. This effect will not be taking into consideration in this thesis. This is due to the complexity, partly in valuing the effect precisely, and partly in predicting whether a club will change their coach, or how many times they will change their coach in the future.

The models tested in this thesis are primary different types of DCF analysis and multiples, but with the addition of real options to the DCF. Therefore, both present value valuations, relative valuations, and real option

valuations are represented, though only some few models within these categories are applied (Petersen, Plenborg, & Kinserdal, Valuation, 2017). Other present value approaches, i.e. the EVA or APV, has not been included, as the DCF is the most used model and therefore is deemed sufficient. Liquidation models are not applied, as the clubs are assumed going concern. This thesis´ purpose is not to valuate clubs based on bankruptcy situations.

This thesis was started before the Covid-19 situation escalated in Denmark. Therefore, the analysis will ignore Covid-19's effect on the football industry. Instead the effects of Covid-19, on the Danish football industry and the thesis' results, will be elaborated on in chapter 9 after the analysis has been conducted.

1.4 Relevance

The relevance of the problem formulation is derived from several angels. The first was already mentioned in section 1.1, where the relevance originates from a substantial increase in takeovers in the football industry in general, but also in the Danish football industry.

Despite the increasing interest in football clubs from investors, no enterprise value calculations were detected among the inquired Danish clubs. Four Danish football clubs from the two highest divisions have answered emails, and 3 semi-structured interviews with football clubs were conducted. Neither of the clubs made valuations of the entire football club, but only on parts of the club, i.e. their football squads (appendix 1, 2, and 3). However, some of the clubs stated that they want to make valuations more in the future, especially in a relevant situation with a potential buyer, but that most of the general valuation methods do not apply to football clubs (appendix 1, 2, and 3). With the current development with an increase in takeovers, and an increase in Danish clubs being demanded, it might be discussed that a potential buyer can come at any time, which is also supported in the interviews (appendix 2 and 3). Therefore, it is relevant to investigate how all involved parties can value the football clubs most optimal, despite the football club's complexity. The relevance therefore originates from the lack of valuations being made by the clubs, and the lack of methods to apply on football clubs.

The target groups of this master thesis are both the buyer of football clubs, the seller of football clubs, brokers, finance providers, club administrative, and other stakeholders, who all have interests in knowing the actual value of the football clubs.

Other literature on the topic includes Markham (2013), which presents an alternative method for valuing clubs. However, it does not test a deeper DCF analysis on football clubs, but rather only includes a simple discounted cash flow. Additionally, the paper only focuses on EPL clubs, which is not necessarily relevant to the Danish clubs, given size differences. Moreover, several theses on valuation of specific Danish football

clubs do exist. Yet, none focuses on which valuation methods are the most optimal, but rather only on valuation of the specific club. In addition, the majority only focuses on valuation of the publicly listed clubs, i.e. Brøndby I.F. and F.C. København, and not on private clubs. Thus, limited research on this topic exists.

1.5 Methodology

A deductive method was the basis for this thesis. Different existing theories regarding enterprise and equity valuation, including present value- and relative valuation methods, are applied, and their applicability tested with the foundation in 25 Danish football clubs. During the thesis valuation of enterprise value and valuation will be used interchangeably.

For this thesis, the main data source are qualitative secondary data, and particularly, financial data from company financial statements and reports cf. table 1.2. The financial data from company reports was the foundation, on which the analysis and valuation was conducted. Additionally, other qualitative secondary data was collected in the form of news articles, documents, etc., with the purpose of gaining additional knowledge about the football industry. Moreover, quantitative secondary data has been applied. It consists of data from publicly traded football club's betas and WACC's collected from stock exchanges and -websites, and different football statistics, as placements in the league, match attendances, etc., collected from statistical data sources.

Both primary data, including four semi-structured interviews (3 with clubs and one with an extern football industry analyst) (appendix 1, 2, 3, and 4) and structured e-mails for every football club from our sample (appendix 5), were collected. The primary purpose of the semi-structured interviews was to gain knowledge on the application level of valuation in the football clubs. However, the interviews also gave additional information about the Danish football industry, such as financial aspects, strategic aspects, etc. The entire interviews have not been transcribed, but only the key points referred to in the thesis. The 3 club interviewees have been made anonymous, while the interview with Jesper Jørgensen from Deloitte have not. All 4 interviews were conducted in Danish, and so, to avoid misinterpretation, the transcripts have been written in Danish as well. The structured emails only gave an insight into the application level of valuation models in the clubs. However, besides the 3 clubs agreeing to participating in the semi-structured interviews, only 4 clubs answered the emails.

Neither observations nor other types of non-stimuli data was collected.

The validity (Andersen, 2014, s. 84) of this thesis is high in general, due to a lot of relevant sources, which is applicable on the Danish football industry. However, further interviews with owners of football clubs, more extern analysts, or more people directly involved in takeovers, could have increased the validity. In general,

the thesis does not consist of as many semi-structured interviews and structured emails as intended, partly due to the lack of answers in our emails, and partly due to the impact of covid-19.

The reliability (Andersen, 2014, s. 84) of the sources in this thesis are also considered acceptable, in general. Though, some sources can be discussed. In example, the interviews with the clubs from the sample might be more positive towards their own club, which decreases the reliability of the interviews. On the other hand, the interview with the extern analyst is considered neutral and therefore more reliable, yet biases might still occur. Moreover, the financial statements can contain accounting errors and irregularities, which decreases the reliability. Furthermore, some observed values, as the beta values, can vary from day to day, and therefore the reliability of the observation in this thesis is low, due to covid-19 affecting the observations.

The thesis' adequacy is also considered acceptable, besides some lack of adequacy. I.e., the number of interviews and answers on the emails are not adequate, but the number of clubs reached out to is adequate, because it is the entire sample. The sample of 25 football clubs are considered adequate, when analyzing the clubs within reach of the Superliga in the Danish football industry, because it consists of almost all clubs from the two highest divisions. However, it is not enough to make a statistical adequate conclusion, regarding the general football market.

In this thesis, there have been a hermeneutic spiral (Holm A. B., 2016, s. 83-100) process along the way. At first, there were a preunderstanding of valuation, and the methods DCF and multiples, but also a preunderstanding of the football industry, and some of the factors within the industry. In the process of analyzing football clubs deeper, further understanding and interpretation has been achieved, which have given some new angels of how to analyze the clubs. I.e., the understanding of the volatile revenue streams was achieved during the process, leading to further investigation of the Line-by-line method, which then gave a new understanding, leading to even further investigation and the real options method on FCK.

The thesis is partly influenced by positivism (Holm A. B., 2016, s. 23-43), due to the test of the different theories on 25 different clubs, which should verify, whether the models gives satisfying results or not. However, subjective assessments have been made for every single club, for instance when looking into whether their debt to associates is of financial or operational character in the analytical statement cf. section 6.1. The subjectivity is not a part of the positivism. Furthermore, the price from actual takeovers of clubs, which have a loss-making operation in the form of negative NOPAT every year, might be explained by social constructivism (Holm A. B., 2016, s. 121-142). The history of football and supporter culture in football is socially constructed, and it is the foundation of the commercialization, and might be the cause of the demand of football clubs, despite their negative operations.

	Primary Data		Secondary data
	Stimuli data	Non-stimuli data	
Qualitative data	- Semi-structured interviews	- None	- Reports - News articles - Documents
Quantitative data	- Structured e-mails/interview	- None	- Stock data - Football statistics

Table 1.2, Source: Own creation, with inspiration from Andersen (2014) p.137

1.6 Structure

This section presents the structure of the thesis, illsutrated by table 1.3. Chapter 1 presents the problem area- and formulation, while supporting those with a delimitation-, relevance-, and methodology section. Chapter 2 presents the different valuation theories applied. Chapter 3 presents and corrects some of the most complex accounting differences, which leads to the analysis of the key factors in the Danish football industry in chapter 4. Chapter 5 presents further accounting differences and a reorganization of the financial statements to prepare them for the valuations. With the analysis of the foundations for the valuations presented, the different valuation approaches are applied in chapter 6, 7, and 8. After conducting the valuations, the effects of the "Corona-crisis" on the analysis will be elaborated on in chapter 9, while the results will be discussed and perspectivated in chapter 10. Lastly, the problem statement will be answered in chapter 11.

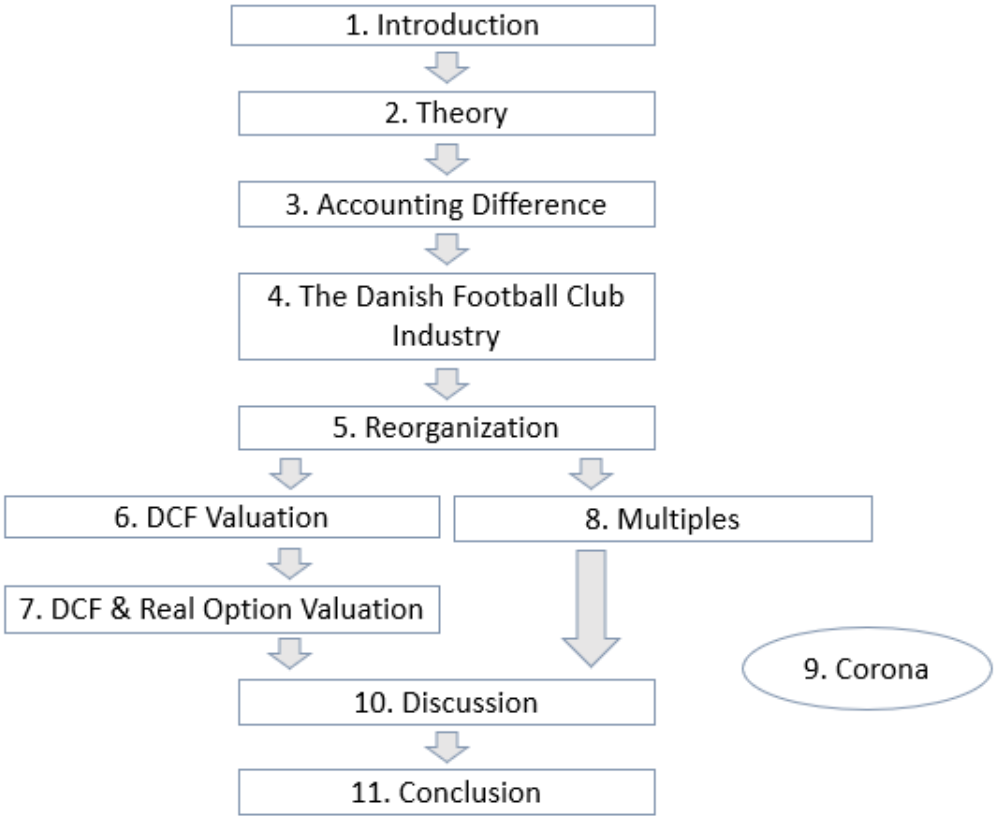

Table 1.3 - "Structure", own creation

2. Theoretical Presentation of Different Valuation Methods

This chapter will explain the theory behind the different valuation approaches used in this thesis. First off, the present value, or more precisely the discounted cash flow model, will be presented, and then ending with a presentation of the relative valuation approach, also known as multiples.

2.1 Discounted Cash Flow

The Discounted Cash Flow model (henceforth the DCF) is widely regarded as one of the most popular valuation approaches, particularly in regard to valuation of untraded assets or firm (Holm, Petersen, & Plenborg, 2013).

The fundamental idea behind the DCF, and other present value approaches, is that an asset´s value is determined by the value of its expected cash flows. In short, the DCF discounts all the future cash flows back to a present value, and the sum of the discounted cash flows is then the asset value, which can be simplified to the following equation (Petersen, Plenborg, & Kinserdal, Valuation, 2017):

$$Asset_{Value} = \sum_{t=1}^{\infty} \frac{Expected\ Cash\ Flow}{Discount\ Factor}$$

This equation suggest value as a simple relationship between expected cash flow and a discount factor. Assets with high expected cash flows is worth more than assets with lower expected cash flows, given the same discount factor. The discount rate reflects an uncertainty or risk element to the expected cash flows. Guaranteed cash flows have zero risk and a discount factor of 1. The more uncertain, risky, or volatile the expected cash flow are, the closer to zero the discount factor becomes. However, the equation assumes that all expected cash flows are the same, and are equally risky and run in infinity. This assumption does not hold true in most examples. Thus, an expanded equation with a n amount of cash flows is present:

$$Asset_{Value} = \sum_{t=1}^{n} \frac{E(Cash\ Flow_t)}{(Discount\ factor)^t} + \frac{E(Cash\ Flow_{t+1})}{(Discount\ factor)^{t+1}} + \cdots + \frac{E(Cash\ Flow_{t+n})}{(Discount\ factor)^{t+n}}$$

However, this model too has its limitations. Since most businesses expects to have different expected cash flows, which run theoretically forever, a different version, often referred to as the *Two-stage-model*, is presented:

$$Asset_{Value} = \sum_{t=1}^{n} \frac{E(Cash\ Flow_t)}{(Discount\ Factor)^t} + \cdots + \frac{E(Cash\ Flow_n)}{(Discount\ Factor)^n} + \frac{E(Cash\ Flow_{n+1})}{(Discount\ Factor - growth\ rate)} * \frac{1}{(Discount\ Factor)^n}$$

The first stage in the *Two-stage-model* is completely the same as in the second model, where a limited amount of cash flows is discounted back to the present value. This stage is often referred to as the budget or forecast period. The expected cash flows in the budget period may vary from period to period, due to anticipated developments and investments. In other words, the growth is not constant in this period. The second stage is often referred to as the terminal period. This period assumes that the growth becomes stable over time, and does not fluctuate as much, as in the budget period.

The DCF can be categorized into two different variations. A distinction is made between Going Concern vs. Asset valuation, where a single asset, as a bond, is constant, and a going concern is a developing company. Another distinction is Equity vs. Enterprise valuation, where equity valuation equals the enterprise valuation minus net interest-bearing liabilities (NIBL) (Damodaran, Damodaran On Valuation, 2006).

As the *Two-stage-model* shown above suggest, there are 3 input factors required before the equation can be used: The expected cash flows, the discount factor, and the growth rate.
The expected cash flow is the earnings that either the firm or its investors, expect to receive each period from their investments. As mentioned before, the higher cash flow an investor expects, the higher value, all

other factors being equal. The enterprise value approach uses the *free cash flow to the firm* (FCFF), and that is the cash flow after cash flow from operations and investments.

The discount factor, or discount rate, is the element added to the equation, in order to consider uncertainty or riskiness in expected cash flows. However, risk can be viewed in two ways: default risk and variation risk. The default risk reflects the likelihood that an entity will default, and thus not meet the commitments to pay interest or principal due. *Cost of debt*, r_d, is the reflection of this risk element. Often a tax element is added, since interest expenses are tax-deductible. The variation risk is the element that reflects the difference between the expected cash flows and the actual cash flows. The greater the difference, the higher the variation risk. *Required rate of return on equity*, r_e, is the reflection of the variation risk element. To capture the overall riskiness of a business, financed by both debt and equity, a weighted average of cost of debt and required rate of return on equity is used. This factor is called *weighted average cost of capital* (WACC), and is calculated by the following formula (Petersen, Plenborg, & Kinserdal, Valuation, 2017):

$$WACC = \frac{Equity}{Equity + Debt} * r_e + \frac{Debt}{Equity + Debt} * r_d * (1 - Tax_{rate})$$

WACC, or the *cost of capital* is thus calculated as a weighted average of r_e and r_d, where the weights are the capital structure. WACC is used as the discount factor, under the enterprise value approach, as it represents for the entire risk in the firm.

The final element to the equation is the growth estimate. Growth in cash flows can be estimated in various ways. One method is to analyze the historical growth. This method is, however, only useful in cases of high stability. In more dynamic industries and markets, the past can often tell us little about the future. Another method is to understand what informed sources says. For instance, the company´s management or market analysts often, particularly in traded firms, provide the public with their own expectations regarding the growth. However, biases can be a problem here regarding the managements´ or market analysts´ hidden agenda. A third method is to analyze the strategic situation, the specific firm is currently in. This method could include models such as Porter´s (2004) *five forces* or *value chain*. The drawback on this method is its complexity, and it will often be quite time consuming. (Damodaran, Damodaran On Valuation, 2006).

As a result, we end up with the two final variations of the DCF used in this thesis:

$$Enterprise_V = \sum_{t=1}^{n} \frac{E(FCFF_t)}{(1 + WACC)^t} + \cdots + \frac{E(FCFF_n)}{(1 + WACC)^n} + \frac{E(FCFF_{n+1})}{(WACC - g)} * \frac{1}{(1 + WACC)^n}$$

It should be noted that other variations of the DCF method exists. These methods include the Economic Value Added or Adjusted Present Value methodologies, among others.

2.2 Multiples

The basic idea of a multiples-valuation is that two companies or stocks with identical future cash flows and risk, should be traded at the same price (Petersen, Plenborg, & Kinserdal, Valuation, 2017). Therefore, the price of the two companies should be identical as well. When observing a price on one of the companies, the same price can be applied to value the other company using multiples. The challenge of this method is to find comparable companies. The most important factors to be comparable within are growth, risk, and profitability, where a higher growth, lower risk, and higher profitability will increase the multiples. It is also an advantage to find companies within the same business, because they will often be more comparable due to the same business risk, the same products, the same customers, the same core business etc. The 3 beforementioned factors are preferable though, if the analyst cannot find companies comparable on both the factors and the business. Other factors can also be of importance, i.e. company size.

If the analyst has comparable companies, whereas one or more of them has been traded before, the formulas for calculating the value of the relevant company are fairly simple. There are many types of multiple formulas though, but one way of categorizing them is into two main groups. One with equity based on multiples, and one with enterprise value based on multiples. The difference is that enterprise value multiples includes net interest-bearing liabilities, because interest rate costs have not been deducted in the formulas in this category. As the name implies, equity multiples only calculate the value of the equity, hence the interest rate costs are not included in the formulas for these multiples. Examples of equity multiples are (Petersen, Plenborg, & Kinserdal, Valuation, 2017):

$$\frac{Price}{Equity} \; or \left(\frac{P}{E}\right)$$

$$\frac{Market}{Book} \; or \left(\frac{M}{B}\right)$$

And examples of enterprise multiples are (Petersen, Plenborg, & Kinserdal, Valuation, 2017):

$$\frac{Enterprise\ Value}{Net\ Operating\ Profit\ After\ Tax} \; or \left(\frac{EV}{NOPAT}\right)$$

$$\frac{Enterprise\ Value}{Earnings\ Before\ Interest\ and\ Taxes} \; or \left(\frac{EV}{EBIT}\right)$$

$$\frac{Enterprise\ Value}{Earnings\ Before\ Interest, Taxes, Depreciation, and\ Amortization} \; or \left(\frac{EV}{EBITDA}\right)$$

$$\frac{Enterprise\ Value}{Revenue}\ or\ \left(\frac{EV}{Revenue}\right)$$

$$\frac{Enterprise\ Value}{Invested\ Capital}\ or\ \left(\frac{EV}{IC}\right)$$

In most of these formulas for the enterprise multiples, items from the financial statement is included (Petersen, Plenborg, & Kinserdal, Valuation, 2017). If the analyst chooses to use revenue in the multiple, more prerequisites are included than for all the other multiples, because the analyst must find companies with same taxes, depreciation, EBITDA margin and so on. If NOPAT is used, all these parameters are already included in NOPAT. Therefore, the most prerequisites are used when applying revenue, then EBITDA, EBIT, and lastly Invested Capital or NOPAT. The analyst must still make sure that the companies compared, has the same accounting policy, and places the same cost and income above NOPAT in the financial statement, if NOPAT is applied.

To get the value of the company, the analyst must calculate these multiples for comparable companies. I.e., the analyst might calculate a multiple of 10. If the multiple applied was EV/EBIT, the analyst must multiply the relevant companies' EBIT with 10, and the result is the enterprise value (Petersen, Plenborg, & Kinserdal, Valuation, 2017). It will often be a good choice to make some groups with several companies, and take an average of the different group's multiples, to avoid using just one company, which might be an outlier. This could be a group of same company size, a group from the same business, and a group with same risk, profitability, and growth. In that way diversification improves the analysis. The different enterprise values calculated from the average multiples of the different groups, could be used as an interval of the real value.

When investigating another way of calculating the formulas it becomes clear, why some of the beforementioned factors are important in the comparison (Petersen, Plenborg, & Kinserdal, Valuation, 2017):

$$\frac{EV}{NOPAT} = \left(\frac{ROIC - g}{WACC - g}\right) * 1/ROIC$$

$$\frac{EV}{EBIT} = \left(\frac{ROIC - g}{WACC - g}\right) * \frac{1}{ROIC} * (1 - t)$$

$$\frac{EV}{EBITDA} = \left(\frac{ROIC - g}{WACC - g}\right) * \frac{1}{ROIC} * (1 - t) * (1 - depreciation\ rate)$$

$$\frac{EV}{REVENUE} = \left(\frac{ROIC - g}{WACC - g}\right) * \frac{1}{ROIC} * (1 - t) * (1 - depreciation\ rate) * EBITDA\ margin$$

$$\frac{EV}{IC} = \frac{ROIC - g}{WACC - g}$$

$$\frac{P}{E} = (\frac{ROE - g}{r_e - g}) * 1/ROE$$

$$\frac{M}{B} = \frac{ROE - g}{r_e - g}$$

Where ROIC is return on invested capital(profitability), WACC is the weighted average cost of capital (Risk), g is the growth rate (growth), t is taxes, depreciation rate is depreciation/EBITDA, EBITDA margin is EBITDA/revenue, ROE is return on equity(profitability), r_e is the required rate of return on equity (risk).

This way of presenting the formulas shows what effects the multiples, and how many items the multiples, include. EV/NOPAT include most of the items, hence the formula does not have to correct for as many items (Petersen, Plenborg, & Kinserdal, Valuation, 2017).

Overall, this valuation method is fairly simple to use, and not as formula heavy as DCF. The challenge for this method is that it relies heavily on comparison with other companies, hence finding an identical company is the challenge, because of the many different factors to consider. Accounting policy, risk, growth, company size, profitability, core business and so on, all increases the complexity of finding the perfect comparison.

3. Accounting Differences

Before analyzing companies and their financials, it is important to investigate their annual reports. Their annual reports must be similar, both over time for the individual company, but also across the different clubs. If differences occur, they must be corrected, to maintain comparability between the football clubs and their valuations. If corrections are not possible, bias will occur, due to differences in the annual report. In this chapter, general problems and accounting differences across the football clubs and across the time period in the sample, will be presented first. Thereafter some specific items of extra importance from the annual reports in the football clubs, will be analyzed separately and corrected, if possible.

3.1 General challenges

The sample in this thesis consists of both publicly traded- and non-publicly traded companies. While the publicly traded companies report after the rules of IFRS, the non-publicly traded clubs report after different classes of the Danish Financial Statements Act. Four Danish clubs are publicly traded (FCK, BIF, AGF, and AAB) and report in accordance with IFRS, and OB does also report after IFRS, despite being a non-publicly traded club. SIF was publicly traded, but they are now a daughter company to a publicly traded company, and therefore they do not apply IFRS. Four clubs report after the Danish Financial Statements Act as class C companies, while the remaining 16 clubs report after the Danish Financial Statements Act as class B companies. The class B is less demanding than both the C and IFRS, thus the smaller clubs have a higher degree of flexibility, in terms of details disclosed in their annual reports. Some clubs also change the law, which they report in accordance to, during the sample period, as i.e. EFB changes from IFRS to class C in the Danish Financial Statements Act in 2015 (Esbjerg forenede Boldklubber Elitefodbold A/S, 2016), and further changes their reporting to be in accordance with class B in the Danish Financial Statements Act in 2017 (Esbjerg forenede Boldklubber Elitefodbold A/S, 2018). These different laws can result in different classifications, recognitions, and detail levels, among other things, in the financial reports across different clubs, and over time in individual clubs. This will result in bias in the results of the thesis, due to a lack of perfect comparability, because it is not possible to correct for all the differences.

Another challenge when comparing clubs and companies, in general, is that clubs apply different financial years. Some clubs apply the calendar year as their financial year, while some apply the first of July to the 30th of June. This increases complexity, when comparing the club's financial reports. Some clubs also change financial year during the sample period, as i.e. FC Roskilde changes their financial year in 2010 from a calendar year to a skewed year (FC Roskilde A/S, 2011), and back to follow the calendar year in 2016 (FC Roskilde A/S, 2017). These changes also result in some financial reports consisting of only six months, and some financial years consisting of one and a half year. This is the case for FC Roskilde, and it is corrected by multiplying 2010 (which consists of six months) with two, and dividing the 2014/2015 financial year with 1.5 in the financial statement. This is assumed to be a fair estimate. Except for this type of correction, trying to correct the years of all the clubs to be comparable, without having the knowledge of the ones creating the annual reports, might create even more bias, and it is therefore preferred to assume that the differences will not affect the results of the thesis significantly. Therefore, all these problems will not be corrected for (except for situations with changing financial years as FC Roskilde), and some cannot be corrected for, and this will generate bias to the results. However, the bias might diminish over a longer time-period.

Some few important corrections will be conducted in the following sections. However, further accounting challenges and corrections is presented in chapter 5, before the valuations.

3.2 Pension

Pension can be recognized as a net present value of future obligations on the balance sheet (Petersen, Plenborg, & Kinserdal, The analytical income statement and balance sheet, 2017). Alternatively, the firm can pay a yearly amount for a pension scheme, belonging to the coworkers in a pension fund or insurance company (Petersen, Plenborg, & Kinserdal, The analytical income statement and balance sheet, 2017). This will result in a yearly cost placed only in the financial statement. The four publicly traded clubs; FCK, AAB, BIF, and AGF all use defined contribution pension schemes (appendix 7), and this will therefore not affect their balance sheet. The majority of the remaining clubs do not inform, in their annual reports, which recognition method they apply for pensions. Therefore, it is assumed to be the standard in the Danish football industry to use defined contribution pension schemes, as some of the beforementioned biggest clubs does, hence no corrections are made and pensions will not be placed in the balance sheet, but only be a part of personal costs in the financial statement for every club.

3.3 Revenue

Revenue is perhaps the most important accounting item in relation to valuation, as it is used both as a multiple, cf. multiple section 8.2, and as the key value driver in the forecasting, which affects the DCF-valuation. The timing of recognition, and the types of income included, are both important factors, in relation to accounting differences in revenue. Hence, the different policies used by the clubs will be reviewed. Furthermore, the problems that arises because of the differences, will be discussed.

All the clubs included in the analysis recognize revenues similarly (appendix 7). Thus, little to no distortion in the timing of recognition are detected. The second factor is, which sources of income the clubs classifies as revenue. All clubs classify sponsor-, tickets sales -, matchday-, and broadcasting income as revenue. But whether transfer income is classified as revenue or not, is different from club to club. No club reporting under the IFRS is reporting transfer income as part of revenue. However, those reporting under the Danish GAAP have the flexibility to choose between disclosing it as revenue, or separately as other income. Here, only 3 out of 20 clubs, have chosen to disclose transfer income separately from revenue. While the remaining 17 clubs, under the Danish GAAP, is assumed to have classified transfer income as revenue. This causes a problem to arise as the revenue cannot be compared between clubs. It too complicates the analysis of transfer income in general, as most clubs does not specify the figure. To mitigate this problem, it was decided to move transfer income up to revenue in the forecasting, for the clubs which had not chosen to do so. For further explanation, see chapter 5. Consequently, transfer income could not be forecasted directly for every single club, but rather had to be included in the forecasting of revenue (appendix 7).

3.4 Revenue estimation

The Danish class B allows for companies not to disclose revenue, which some clubs have decided not to do. Therefore, revenue including transfer income will be estimated, as it is an important factor in the valuation analysis. The estimation is based on a simple method formula:

$$Revenue_t = \frac{Gross\ Profit_t}{Average\ Gross\ Profit\ Ratio}$$

Where the average gross profit ratio was calculated as the sum of gross profit, over the sum of revenue, plus transfer income for every club over the entire realized period. The average gross profit ratio was estimated to be 64.64%. Thus, revenue, including transfer income, was estimated to be gross profit for a given year over 64.64%. This introduces several biases in both the DCF and revenue multiple valuations. Firstly, the formula assumes that the relationship between gross profit and revenue is always defined by 64.64%, which is not always the case. Factors such as other activities, sporting performance, transfer activity, etc. can affect the ratio for better or worse. As seen in table 3.1, with the difference between disclosed revenue and estimated revenue for financial year 2018, OB have a significant higher actual revenue, than the estimated revenue the latest year, but this is also the year with the largest error for OB. This could be explained by most of the revenue generated by OB is non-sports related. Moreover, outliers affect the estimated 64.64%. Based on revenue, FCK is by far the biggest club. If they are excluded from the calculations, then the ratio is about 62%, which would then greatly affect the valuations of some clubs. Furthermore, a low gross profit is not necessarily due to a low revenue. If costs are increased, with a stable revenue, then the model would wrongly estimate a lower revenue. An example of this can be seen in LBK in 2017 (table 3.2), where the model underestimates the revenue by 34%. This is most likely due to the financial situation of the club, during that time period (Renard, 2018). Nonetheless, the model is still used, since it is argued that it would estimate revenue fairly on an average basis. All revenue estimations can be seen in the “financial statements” tab for every club (appendices 9-33).

Club	Disclosed Revenue	Estimated Revenue	Error	Error%
ACH	68.487	75.105	-6.618	-9,7%
AGF	94.271	89.330	4.941	5,2%
BIF	246.952	240.732	6.220	2,5%
EfB	-	60.636		
FA	-	2.708		
FCF	14.887	15.196	-309	-2,1%
FCK	496.971	518.843	-21.872	-4,4%
FCM	269.881	298.055	-28.174	-10,4%
FCN	132.794	137.702	-4.907	-3,7%
FCR	13.219	12.925	294	2,2%
HBK	-	17.775		
HIF	-	6.436		
LBK	14.276	12.316	1.960	13,7%
NBK	-	10.825		
NFC	-	6.927		
OB	164.510	119.977	44.533	27,1%
RFC	60.235	45.612	14.623	24,3%
SIF	74.990	79.937	-4.947	-6,6%
SIK	6.627	5.590	1.037	15,6%
SJE	-	31.392		
VBK	-	55.676		
VEN	-	36.956		
VFF	28.001	24.233	3.768	13,5%
AaB	81.077	72.095	8.982	11,1%

Table 3.1 Source: Own creation with data from appendices 7, and 9-33

FY	Disclosed Revenue	Estimated Revenue	Error	Error%	Gross Profit
2009/10	-	16.372			10.583
2010/11	-	25.691			16.607
2011/12	-	27.875			18.018
2012/13	-	30.977			20.024
2013/14	-	12.109			7.827
2014/15	-	9.640			6.232
2015/16	-	5.420			3.504
2016/17	-	37.127			23.999
2017/18	41.857	27.402	14.455	34,5%	17.713
2018	14.276	12.316	1.960	13,7%	7.961

Table 3.2 Source: Own creation with data from appendices 7, and 9-33

3.5 Stadium leasing adjustment

One of the most important assets a football club have, besides its players, is the stadium, which is the foundation of many of the income sources, as ticket sales, sponsors, F&B sales etc. Therefore, it is important that this asset is recognized correct and similar for every club, as it has a significant effect on the valuations. However, only FCK and BIF directly owns their stadiums, and thus only these two clubs have their stadiums on the balance sheet. (appendix 7). Everyone else leases the stadiums from either private corporations, or more commonly from the local municipality. This complicates the comparability between clubs. To achieve a higher degree of comparability, the stadiums must be recognized on the balance sheet for every club, because the clubs themselves are the only actual and realistic users of the stadiums now and in the foreseen future. This means that it would be more correct to place it as an asset with belonging debt, rather than as leasing.

The process of calculating the value of the stadiums is complex. In reality, only the clubs themselves can use the stadiums. No alternative calculations of the value of a stadium can be made, because it cannot be applied for anything else than football for a club within geographical reach, and therefore arguably has no value for others. There exist a few exceptions as some stadiums are applied for concerts etc., and of course the ground can be bought, and the stadiums replaced with new buildings. However, this is limited and will complicate the valuation further. The recognition of stadiums is therefore one of the most uncertain parameters in a valuation of a football club, despite it being one of the most important as well. Instead of calculating the value of the stadium, the leasing can be adjusted, though. Under the IAS 17 regulation, the clubs can choose to recognize their leases as either operating leases or as financial leases. Currently, every club are recognizing their stadiums as operating leasing, where they only have to recognize the lease payment, as an expense in the profit and loss statement above EBITDA. If, however, the lease is considered a financial lease contract, then it would be recognized on the balance sheet similarly to other assets and liabilities, and in the financial statement as an interest cost on the liability, and a depreciation on the asset (IFRS Foundation, 2020). The adjustment from operational to financial leasing is therefore considered to be the best possible correction, in order to recognize the stadiums on the balance sheet.

As of the 1st of January 2019, those reporting under the IFRS, which a total of five clubs did in their latest financial statement, must recognize any lease obligation as a financial lease agreement, according to the IFRS 16 regulation (IFRS Foundation, 2020). However, the new regulation has not been implemented in any of the financial statement used in this thesis, as 2018 and 2018/19 statement are the latest financial reports used. The method for adjusting operational leasing to financial leasing presented in IFRS 16 will therefore be applied for all the clubs, which leases their stadiums.

The adjustment will be made starting from the last financial year applied in our analysis (2018 or 2018/19) and forward in time, to be applied in the DCF budget period, where only the latest year is needed to make the forecast. Therefore, all other historical years will not be corrected. The lease agreement has been treated, as if it were acquired ultimo 2017. The information used is based on the information provided in each clubs' financial statement. A total of six club did not disclose any financial obligations in their annual reports. The clubs are FA, FCF, FCR, HIF, NFC, and NBK. Common for these clubs are that they are all smaller clubs, who have not been up in the Superliga once in the historical period. It is assumed that these clubs do not disclose their financial obligations, due to the leasing payment, if any, being very low and therefore insignificant to analyze. However, most clubs did disclose information relating to stadium lease, but not all disclose the necessary information to adjust for leasing, hence a couple of assumptions have been made in order to conduct a lease adjustment.

The first assumption is that the leasing obligation solely relates to the lease of the stadium, unless otherwise stated. I.e. HOB have explicitly stated the obligations regarding 3 leasing contracts, and the obligations regarding one rental contract separately (appendix 7). In that case, it is only the rental contract, which have been adjusted for. In the case that only a single total lease payment has been stated in the annual report, it is assumed to be only in relation to the stadium.

Secondly, it is assumed that the contract runs a significant period into the future. It could be argued that the clubs are going to use the stadiums forever, however, the lease period is set to 30 years. The specific period of 30 years is only an estimate used on every club. The stadiums will in time get old, outdated or simply might not satisfy the needs of the clubs, so they are expected to be renewed or replaced in the long run, thus an infinite period would not satisfy. Furthermore, some stadiums are due to be replaced earlier than others, e.g. AGF are publicly in the process of replacing their current stadium (Hemmer-Hansen, 2019), while others have a relatively new stadium due to live for many years. Therefore, it could be argued that some clubs should have a shorter lease period with the current leasing payment, and a longer period with a new payment corresponding to new or updated stadiums. Yet, in order to keep it simple and make it easier to compare the clubs, the same lease period with the current lease payments of 30 years have been used.

The third assumption relates to the discount rate and interest rate. The discount rate is needed to discount the future lease payments back to present value. However, it is not stated in any of the financial statement used in the analysis, since none had adopted IFRS 16 in their statements. An alternative rate could be used, in the form of the return on debt. However, this rate would be highly depending on the other types of debt, which does not necessarily have the same rate as leasing. Moreover, not every club have any interest-bearing debt to compare with. Instead, the chosen rate is assumed to be 4.5%. The rate is based on the available information from AaB´s and BIF´s 2019 statements, where they describe their adaptation of IFRS 16 (appendix

7). AaB decided to use their alternative interest rate of 4%, while BIF have chosen a rate of 5%. No other club reporting under IFRS have stated what discount rate, they have used in adopting IFRS 16 in their 2019 statements. Thus, the discount rate is assumed to be an average of AAB's and BIF's on 4.5% for every club, in lack of a better solution. It could be argued that not every club would have the same rate, yet, due to simplicity and the comparability, it was decided to use the same rate across all clubs. This rate will also be applied in the calculation of interest cost on the liability.

The fourth assumption is that the yearly lease payment (YLP), if not directly stated in the annual reports, can be calculated by one of the following formulas:

$$YLP = Monthly\ Payment * 12$$

$$YLP = \frac{Total\ Remaining\ Lease\ Obligation}{Remaining\ Years\ of\ Contract}$$

$$YLP = Total\ Remaining\ Lease\ Obligation_{t-1} - Total\ Remaining\ Lease\ Obligation_{t}$$

Not every club states the yearly lease payment, but some states an average monthly payment. In that case, the first formula is preferred. Those, who do not disclose either the yearly or monthly payment, often disclose a total remaining lease obligation, and the remaining years of the contract. The second formula is used in these cases. E.g. FCR states, translated to English, "*The company have entered into lease agreement with a notice of 3 months. The obligation amounts to 30 TDKK pr. 31.12.2018.*". In this case, the total remaining lease obligation is interpreted to be 30 TDKK, and the remaining period is 3 months, hence the yearly lease payment is calculated to be 75 TDKK. If only the total remaining lease obligation is disclosed in the financial statements, then the third formula is used, where the yearly lease payment is assumed to be the difference between the last year´s lease obligation and the current year´s. While not optimal, since the clubs could have entered into other lease agreements in between the period, it is still used, due to lack of better information. If the club does not own their stadium, and/or no lease obligation is stated in the financial statement, then nothing has been adjusted, e.g. HIF, since no information is available. Furthermore, it is assumed that the yearly lease payment is constant over the lease period.

The fifth assumptions is a constant tax rate of 22% across every club, which is the Danish corporate tax rate anno 2020 (Skatteministeriet, 2020).

The last assumption is that the remaining lease value after the 30 years is zero. In other words, the scrap value is zero. While this assumption might not hold true in practice, it makes the lease adjustment simpler.

As briefly mentioned, the method behind the lease adjustment conducted is based on the IFRS 16 standard (IFRS Foundation, 2020). The lease obligation ultimo 2017 is calculated as the net present value of all the

future yearly lease payments. As stated, the discount rate is set to 4.5% for all clubs, and the lease period is assumed to be 30 years for all the clubs, as well. Thus, the only variable remaining is the yearly lease payment, which are either stated explicitly in the financial statements, or calculated by 1 of the 3 formulas shown earlier. The lease obligation formula is:

$$NPV(Lease\ Obligation_{u2017}) = \sum_{t=1}^{30} \frac{Yearly\ Lease\ Payment}{(1+4.5\%)^t}$$

At time 0, or ultimo 2017, the lease obligation is equal to the asset value, since no payments have been paid yet. The lease asset value is depreciated linearly each year with a fixed depreciation. The depreciation is calculated by:

$$Depreciation = \frac{Lease\ Asset\ Value_{primo\ 2018}}{Lease\ Period}$$

Where the lease period is constant across every club with 30 years. The ultimo asset value for every year is then found by subtracting the constant depreciation cost, from the primo asset value. The asset value calculation is exemplified in table 3.3 below.

Year	Book value primo	Depreciation	Book value ultimo
2017 (ultimo)			
2018	32.594,07	1.086,47	31.507,60
2019	31.507,60	1.086,47	30.421,13
2020	30.421,13	1.086,47	29.334,66
2021	29.334,66	1.086,47	28.248,19

Table 3.3, Source: Own creation with data from appendix 14 (EfB)

Next, the obligation value ultimo is found by subtracting the yearly instalments, from the primo obligation value. The instalments are calculated as the difference between the yearly lease payments and interest costs. Interest costs is 4.5% of the primo obligation value. Thus, interest costs plus instalments are always equal to the yearly payment. However, the interest costs are significantly higher, than the instalments in the early period of the lease contract. Yet, the interest costs slowly decrease as the obligation is being paid off. A deferred tax asset arises, due to the temporary difference between the asset value and the obligation value. The deferred tax asset is calculated as the difference between the lease asset and lease obligation, times the fixed tax rate of 22%. The calculations are exemplified in table 3.4 below.

Year	Lease Obligation	Interest costs	Instalments	Payments	Lease Obligation	Deferred Tax Asset
2017 (ultimo)					32.594,07	
2018	32.594,07	1.466,73	534,27	2.001,00	32.059,80	(121,48)
2019	32.059,80	1.442,69	558,31	2.001,00	31.501,49	(237,68)
2020	31.501,49	1.417,57	583,43	2.001,00	30.918,06	(348,35)
2021	30.918,06	1.391,31	609,69	2.001,00	30.308,37	(453,24)

Table 3.4, Source: Own creation with data from appendix 14 (EfB)

On the P&L, the yearly lease payment, from the operating leasing, is added back to EBITDA, as the costs no longer are simply a capacity cost. Instead, it is split into a deduction in interest costs and depreciation, and the deferred tax asset is added with a positive effect on the tax item on the P&L. Thus, a temporary difference in the net result after tax occurs, since the depreciation plus the interest costs, minus the deferred tax gain is not equal to the yearly payment. Yet, this effect nullifies over time. The accumulated effect on net income is deducted from equity. In the below table 3.5, the calculations are exemplified.

Year	Depreciation	Interest costs	Regulation in deferred tax	Effect on net result after tax	Accumulated Effect
2017 (ultimo)					
2018	1.086,47	1.466,73	121,48	-430,72	-430,72
2019	1.086,47	1.442,69	116,20	-411,96	-842,68
2020	1.086,47	1.417,57	110,67	-392,37	-1.235,05
2021	1.086,47	1.391,31	104,89	-371,89	-1.606,94

Table 3.5, Source: Own creation with data from appendix 14 (EfB)

Consequently, the asset's effect is equal to the effect on the liabilities each year, since lease assets plus deferred tax asset is equal to, the Lease obligation minus the accumulated effect on equity. All the adjustments are exemplified in the below table 3.6 for the following 3 years.

Year	Lease Assets	Deferred Tax Asset	Lease Obligation	Financial Expense	Depreciation Expense	Effect on Net Income	Effect on Equity
2018	31.507,60	121,48	32.059,80	-1.466,73	-1.086,47	-430,72	-430,72
2019	30.421,13	237,68	31.501,49	-1.442,69	-1.086,47	-411,96	-842,68
2020	29.334,66	348,35	30.918,06	-1.417,57	-1.086,47	-392,37	-1.235,05
2021	28.248,19	453,24	30.308,37	-1.391,31	-1.086,47	-371,89	-1.606,94

Table 3.6, Source: Own creation with data from appendix 14 (EfB)

In summary, an adjustment is made to leasing. This is done because nearly all the clubs are leasing their stadiums, but recognizing it as operational leasing, cf. IAS 17. Consequently, they do not activate neither the asset, nor the liability on the balance sheet. Thus, the balance sheet and P&L is adjusted from the latest year and forward, to reflect the value that the stadium is estimated to have and the belonging liability. This leads to a higher degree of comparability between the clubs, who owns their stadium and the ones that lease it. This will not only affect the multiples using EBITDA, EBIT etc., but also the risk assessment primarily due to

higher interest expenses. Moreover, the WACC will too be affected, since the capital structure is changed, as the lease obligation is added, as an interest-bearing liability, and equity is also affected, but only temporary. This will cause a lower WACC, assumed the cost of debt is lower, than the required rate of return on equity, and this leads to a higher enterprise value using the DCF-method, everything else being constant.

In table 3.7 all the clubs lease figures are summarized, and they can also be seen in more detail in appendices 9-33. There is significant difference between the club's yearly lease payments, with AaB in the top with 4,250 TDKK, and HOB in the bottom with 44 TDKK. Additionally, there is no logical correlation between stadium size and lease payments, as FCM and AGF i.e. are not in the top. This could be due to support from communes etc., and it biases the calculation of the stadium's values. However, most clubs lie in the area of about 1,000-2,000 TDKK. Both LBK and OB have, however, disclosed figures above reasonable with 6,536 TDKK and 5,911TDKK respectively. In the case of OB, the annual reports states that the lease obligation relates to other properties. To get a comparable adjustment, the YLP was set to 2,102 TDKK, which is the rent expense, according to a report conducted by *Idrættens Analyseinstitut* (Bang, Alm, & Storm, 2014). Regarding LBK, the YLP was adjusted to be 2,000 TDKK, which is assumed to be closer to the actual rent expense, as the YLP have been around 2,000 TDKK in previous annual reports (appendix 7). AaB is too, in the high end, but their YLP is not adjusted, since the rent expense, according to Bang et al. (2014), is around the reported figure in the annual report. SIF is in the lower part, and an explanation might be that the commune has paid for some of the stadium, hence decreasing SIF's share of the lease payment (silkeborgif.com, 2020). This argument might also concern some other clubs in the lower part. HOB have by far the lowest YLP, but the figure cannot with certainty be denied being the actual figure, hence it is not adjusted.

Club	Disclose Figure	Yearly Lease Payment	NPV
AaB	YLP	4.250	69.228
ACH	TLO	1.350	21.987
AGF	YLP	1.700	27.691
BIF		Do not lease stadium	
EfB	YLP	2.001	32.594
FA		Do not disclose lease	
FCF		Do not disclose lease	
FCK		Do not lease stadium	
FCM	YLP	841	13.699
FCN	YLP	1.600	26.062
FCR		Do not disclose lease	
HBK	YLP	724	11.793
HIF		Do not disclose lease	
HOB	YLP	44	717
LBK	YLP*	2.000	32.578
NBK		Do not disclose lease	
NFC		Do not disclose lease	
OB	YLP*	2.102	34.246
RFC	YLP	2.000	32.578
SIF	TLO	291	4.740
SIK	YLP	294	4.789
SJE	TLO	742	12.086
VBK	TLO	1.165	18.970
VEN	TLO	663	10.796
VFF	YLP	2.918	47.531

Table 3.7, Source: Own creation with data from appendices 9-33

3.6 Sub conclusion

Several challenges occur, when investigating the accounting differences between the clubs, but only some can be corrected for. The most significant differences occur in revenue including transfer income, and leasing of the stadiums. Revenue including transfer income was not always disclosed, and has therefore been estimated for some clubs. The stadiums have been adjusted from operating leasing to financial leasing. These corrections have a significant impact on both multiples and DCF valuations, but they also introduce biases to the analysis. Furthermore, pensions and the financial years have been investigated, but no significant corrections were made.

4. The Danish Football Club Industry

As a foundation for the valuation of the football clubs, the Danish football industry will be analyzed as a whole, with the purpose of better understanding key elements behind the industry. The four key elements are the general sources of income, the growth in the industry, the business- and financial risk, and lastly the different types of ownership. While the four elements are not exhaustive, they are deemed to be sufficient to cover some of the key areas in the football industry.

4.1 Sources of income

There are overall five main revenue streams for football clubs: *Matchday*, *sponsorships*, *domestic and international broadcasting revenue*, *transfer income*, and lastly clubs can seek revenue from *other including non-football activities (appendix 2, 3, and appendix 7)*. *Matchday* revenue is defined in this thesis as revenue and income made on matchdays, which includes revenue from merchandise sales, ticket sales, food and beverages, etc. *Sponsorships* is revenue from collaboration and partnerships with other firms, most commonly in the form of shirt-sponsorships. Domestic and international *broadcasting* is the revenue from TV-rights generated by participating in the national- and international tournaments, such as UEFA Champions League and UEFA Europa League. *Transfer* is the income from selling rights of a football player to other clubs, including solidarity income. Finally, *Other* is the revenue from other activities not fit for any of the other categories, including revenue from non-football activities.

In figure 1, total revenue for the FY 2018 is split into the mentioned categories. However, a few problems arise. First of all, 23% of the total revenue cannot be specified into any of the categories, since the required information is not available in the financial reports. Only the clubs reporting under the rules of IFRS are required to specify their revenues, and only RFC and SIF have chosen to disclose the information in their latest financial statements. While OB does specify their revenue, they only differentiate between sports revenue, transfer income, and other. Thus, detailed revenue information is currently only available in 6 out of 14 clubs, which had a revenue figure disclosed. Consequently, a sixth category – *unknown* – is added to the figure. Furthermore, the clubs do not categorize their revenue in the same way. E.g. AGF does not specify their matchday revenues directly. However, the specified revenues, as stated in the financial statements, was put into one of the above-mentioned categories. In appendix 8, a table was made, to show what types of income was put into what category. (appendix 7).

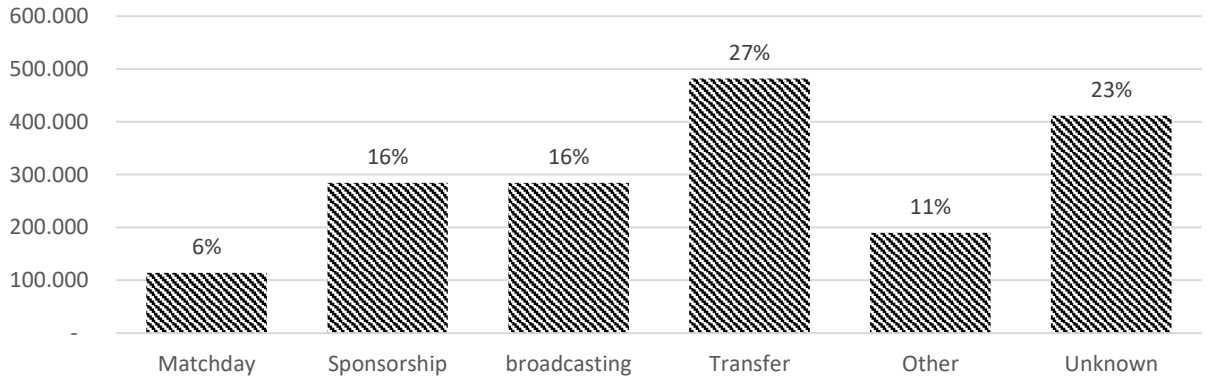

Figure 1 – "Revenue Sources" in TDKK, own creation, data from appendix 7

Transfer income is the biggest revenue source in FY 2018, with 27% of the total revenue. Furthermore, transfer income is assumed to be even higher, considering that FCN, whom have sold for roughly 7,6 mEUR (56,2 mDKK) during the 2018/19 season (Transfermarkt.com, 2020), have not specified transfer from their total revenue. Despite transfer income being the highest source of income in FY 2018, it does not have be so for every single club. Figure 2 shows each of the 8 clubs, which have disclosed both transfer income and revenue, their total transfer income for FY 2018, and the percentage of total revenue. The first thing to notice is that FCK and FCM contribute to about 72% of the total transfer income. However, transfer income makes up 60% of the total revenue in FCM, whereas the transfer income only makes up 3% in OB.

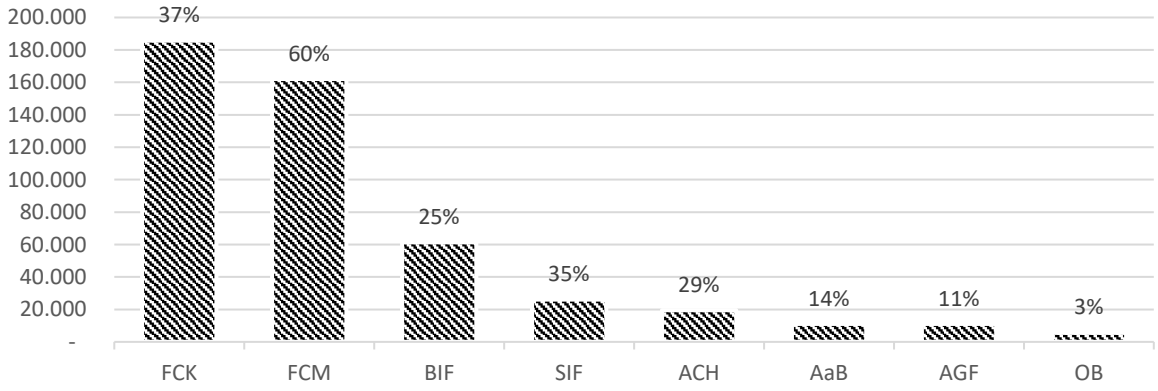

Figure 2 – "Transfer Income by Club" in TDKK, own creation, data from appendix 7

Broadcasting was the second highest source of income in FY 2018. In the Danish league system, the money earned from selling the TV-rights is split between the clubs (Divisionsforeningen, 2020; Johansen, 2019). The income from UEFAs international tournaments is "*determined partly by its sporting performance and partly by its national broadcaster´s contribution to the market pool."* (UEFA, 2019). In the 2018/19 season, FCK, BIF, FCM, and FCN all played in the qualification stages to one of the UEFA tournaments, and had income from international broadcasting, while only FCK made it through to the group stages. This is evident from the total income from broadcasting, as illustrated in figure 3, as FCK earned far more from broadcasting, than what

the others did in FY 2018. FCK started the fiscal year by reaching the round of 1/16 in the UEFA Europa League, and reached the group stages in the second half of the year (in the following season). By reaching the group stages in the Europa League, winning a single game, and drawing twice, FCK secured at least approx. 28,8 mDKK in broadcasting revenue from UEFA (UEFA.com, 2020). This is more than what AGF, AaB, RFC, and SIF earned the entire year from broadcasting. However, it must be noted that FCK, BIF, and AGF all included ticket sales in the broadcasting bucket, where the 3 others did not, as can be seen in appendix 8. Another finding from figure 3 is that SIF has a lower percentage of broadcasting income. This is most likely because SIF did only play in the Superliga for half of FY 2018, and half of the year in the 1. Division. The 1. Division have a significant lower broadcasting revenue (appendix 3).

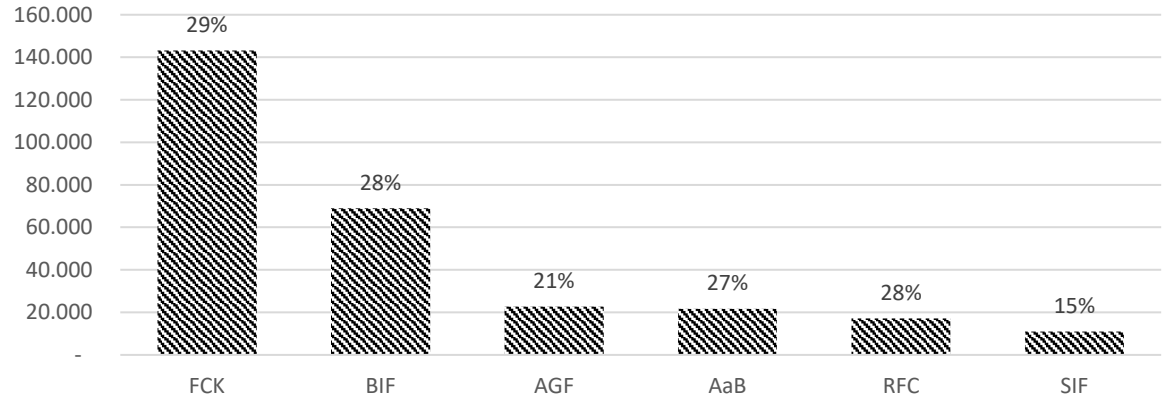

Figure 3 - "Broadcasting Income by Club" in TDKK, own creation, data from appendix 7

Sponsorship income amounted to the third highest source of income in FY 2018, just behind broadcasting revenue. Compared to transfer income and broadcasting income, sponsorship income is more evenly distributed among the six clubs, which had them disclosed in their financial statements. Yet, FCK is still leading as shown in figure 4. For many clubs, sponsorships are the main source of income, also supported by interview 3 (appendix 3).

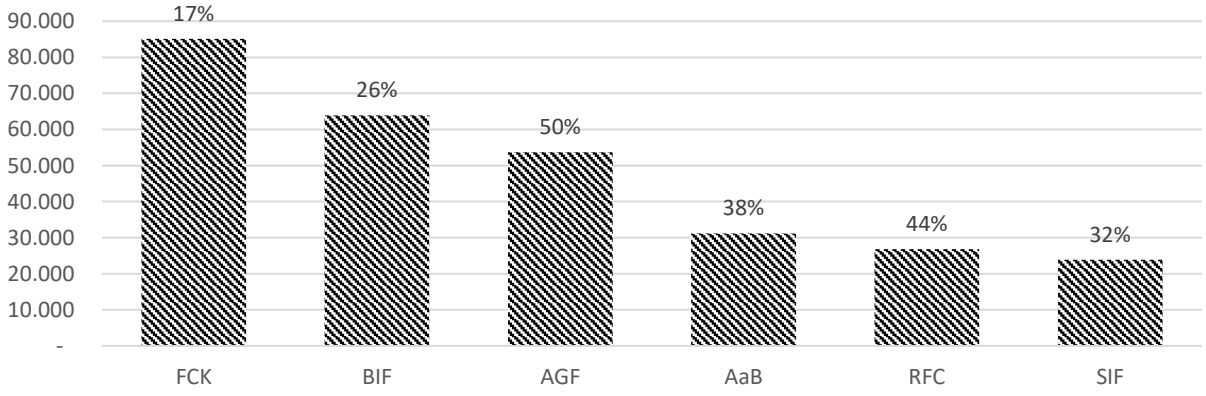

Figure 4 - "Sponsor Income by Club" in TDKK, own creation, data from appendix 7

Matchday income is one of the smallest sources of income, among the six clubs. Yet, as mentioned earlier, both FCK, BIF, and AGF have not included ticket sales in this category, which creates a misleading comparison. Nevertheless, BIF made more than what AGF, AaB, SIF, and RFC did combined. But, as figure 5 shows, match-day income also makes up more of BIFs total revenue (20%), compared to the others.

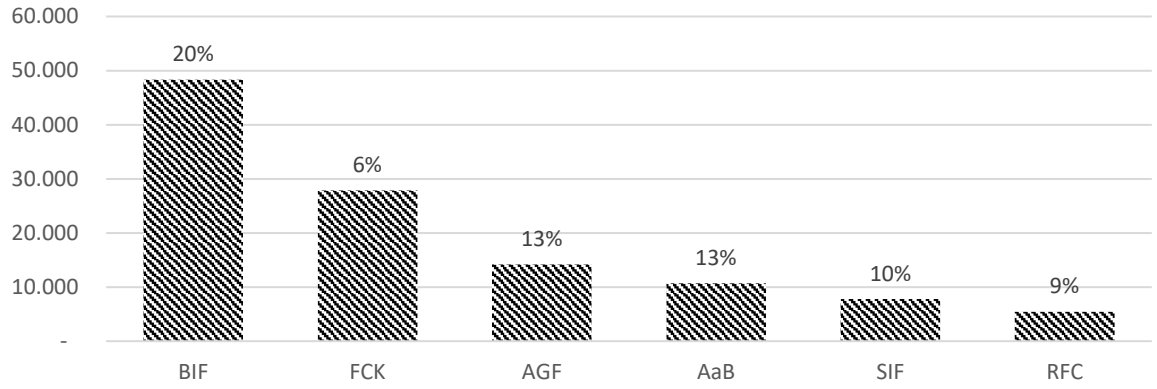

Figure 5 - "Matchday Income by Club" in TDKK, own creation, data from appendix 7

Other income including non-football activities generally makes up a small percentage, with OB as the exception cf. figure 6. 60% of the revenue generated by OB in FY 2018, came from other activities than football. Only OB, FCK, BIF, and AGF had other non-football activities specified in their financial statements. These other activities include other events, such as conferences, concerts and/or fairs, and hotels and/or property rental activities.

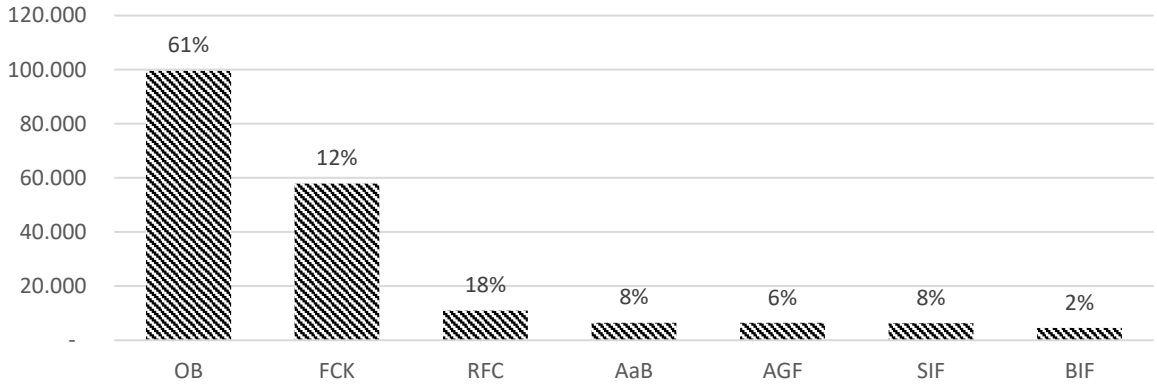

Figure 6 - "Other Income by Club" in TDKK, own creation, data from appendix 7

While only six clubs had their revenues specified in detail, an indication of what income sources the Danish football clubs generally has, and their reciprocal importance, was made. As figure 7 recaps, some sources of income are more important to one club, than it might be to other clubs. E.g. Transfer income made up 37% of FCKs revenue, while transfer income only made up 10% in AGF. The average column shows that transfer,

broadcasting, and sponsor on average, calculated from solely the six clubs, all are more or less of equal importance, while matchday- and other income are less important sources of income. The clubs, which have not disclosed their revenue in detail, are assumed to have revenue distributions relatively similar to that of AaB, SIF, and RFC. As both FCK, BIF, and AGF are significantly different in certain parameters, such as European broadcasting, transfer income, and/or number of supporters. However, it could be argued that the smaller clubs in the industry might not have much broadcasting and transfer revenue, if any at all. For several of those clubs, sponsor income is the biggest source of income. The differences in distributions indicates an importance of analyzing every single clubs' revenue in detail in a valuation. It especially complicates a general analysis of the forecasting for every club in the DCF model, and the comparability in multiples including revenue figures cf. section 2.2.

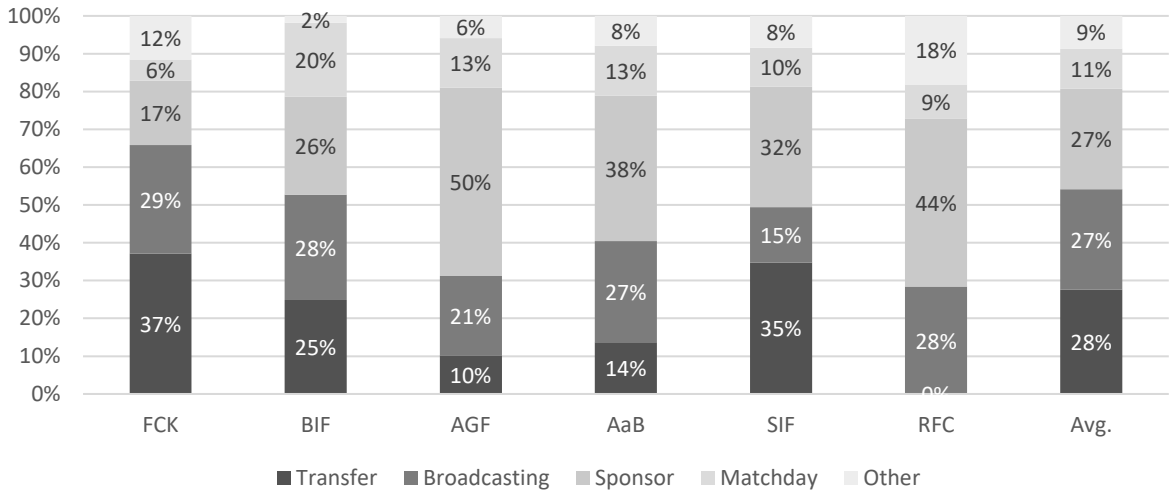

Figure 7 - "Revenue Distribution by Club" in % of total revenue, own creation, data from appendix 7

4.2 Growth in Danish club football

Growth is an important measure in evaluating the attractiveness of an industry and a company, since "*Stakeholders … have a great interest in understanding the growth potential of a firm.*" (Petersen, Plenborg, & Kinserdal, Valuation, 2017, s. 183). Furthermore, growth is an important element when calculating the enterprise value, using the DCF-methodology cf. section 2.1. The purpose with this section is to estimate the growth in the Danish football club industry, by analyzing the historical growth and other factors.

Unlike most industries, European club football has seen 20 years of continued revenue growth, according to the Union of European Football Association (UEFA), where the clubs in FY 2018 had combined revenue above 21 BEUR, excluding transfer income (UEFA, 2019). The Danish football industry have too seen a significant

increase in revenues (incl. transfer) from 1,381 mDKK in 2009 to 1,783 mDKK, which corresponds to a compounded annual growth rate[1] (CAGR) of 2.59% (appendix 7). However, splitting revenue and transfer income up, reveals that revenue have only grown by an CAGR of 0.02% from 2009-2018, while transfer income drives the overall growth with an CAGR of 18.90%. This finding is also consistent with interview 2, which states that many Danish football clubs no longer can balance their operations without transfer income cf. appendix 2. As figure 8 displays, the transfer income only started growing significantly in the last couple of years.

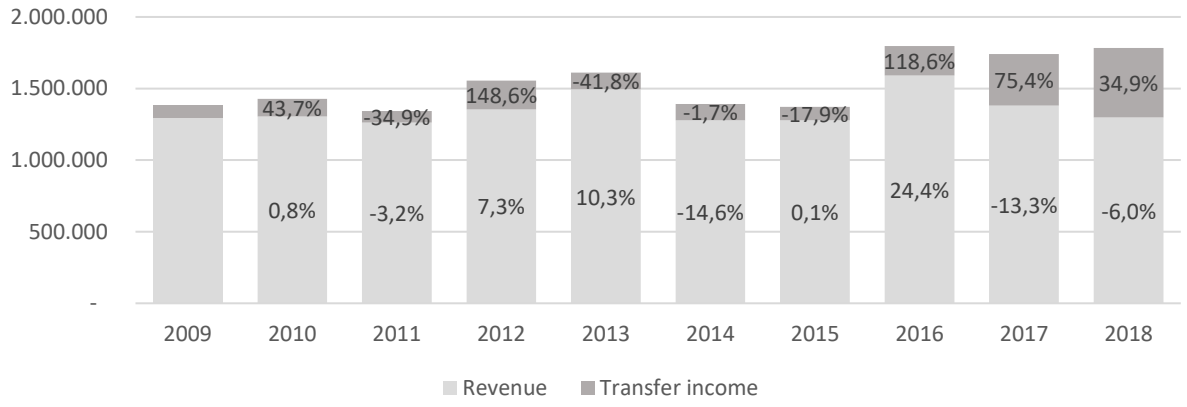

Figure 8 - "Revenue and Transfer Income by Year" in TDKK, own creation, data from appendix 7

The growth has not been continuous over the entire period. Both 2011, 2014, and 2017 saw a decrease in total revenue, with 2014 being the most significant decrease. The decrease in 2017 is most likely explained, by the fact that both VBK and SJE (appendix 7) did not disclose their total revenues in 2017 and 2018, as they did beforehand. Therefore, it is relevant to examine the revenue growth, including the estimated revenue cf. section 3.4. Figure 9 indicates that revenue (incl. transfer income) have grown by 7.1% from 2017 to 2018, when including the estimated revenues, rather than 2.5%, when the estimated revenue was not included. CAGR for revenue, including transfer income and estimated revenue, is 3.56%.

[1] CAGR is calculated as $\left(\frac{Revenue_{2018}}{Revenue_{2009}}\right)^{\frac{1}{10}} - 1$ (Hegelund, 2017)

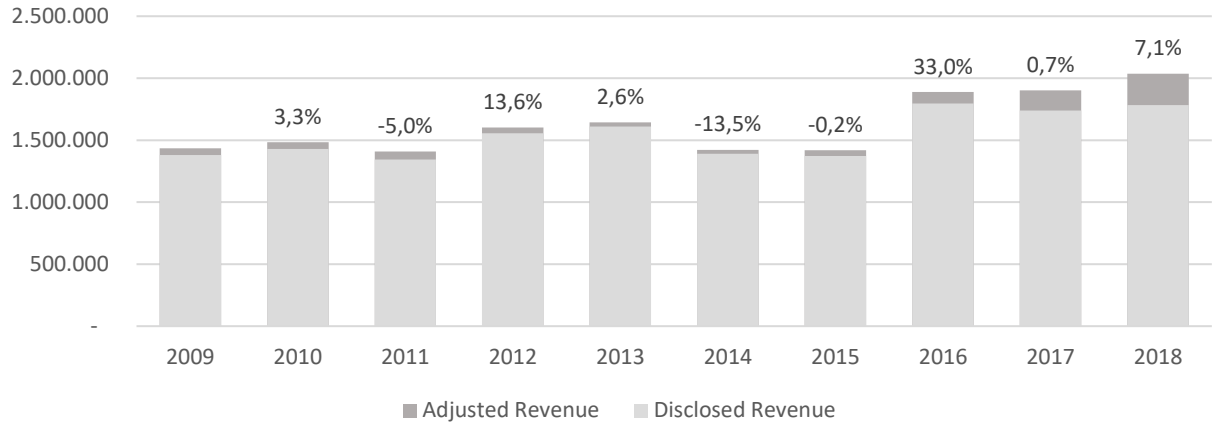

Figure 9 - "Disclosed Revenue and Estimated Revenue" in TDKK, own creation, data from appendix 7

The increase in transfer income could be explained by a general tendency in international football, where transfer income has been growing steadily over the past decade. According to UEFA, transfer income has increased to 6.037 mEUR, which is a growth of 137% since 2009, with a significant increase starting from 2014, where the period from 2009 and to 2014 were more stable. However, as illustrated in the below figure x, it is worth noticing that 75% of the transfer income is to the clubs in the "Big 5 Leagues". The big five being the first divisions in England, Spain, Germany, Italy, and France and the Rest of Europe counting the other 50 national first divisions in the European countries. UEFA explains the increased transfer income as a result of higher revenues in the bigger leagues and especially in the English Premier League, which allows the bigger clubs to spend more on transfer rights. (UEFA, 2019). And, this increased spending has a trickle-down effect where the biggest clubs buy transfer rights from smaller clubs, who then goes out and replaces the player either from their own ranks or simply by buying from a smaller club. While this effect can be difficult to prove, it can be exemplified. The English club, Liverpool FC had just lost the UEFA Champions League final back in May 2018, and consequently, they decided to buy a new goalkeeper. They bought A.S. Roma´s Alisson Becker for a record fee for goalkeepers of 540 mDKK (TV2.dk, 2018). A.S. Roma thus needed a new goalkeeper, and, with a substantial income from selling Alisson Becker, they ended up buying FCK´s goalkeeper, Robin Olsen. FCK ended up replacing Robin Olsen with ACH´s Jesse Joronen. (Transfermarket.com, 2020). Other examples of trickle-down effect can be found, where the big clubs spend significant amounts on transfers in smaller clubs, which then replaces their players from lower leagues. Thus, an increased spending in the big clubs can be argued to influence the growth in the Danish clubs. While it can be difficult to predict whether this development will continue in the future, it most likely would not stop as long as the big clubs keeps increasing their revenues and no political, legal, or other outside factors affect the transfer market. Nevertheless, if the spending of the big clubs were to stop, it would arguably have a negative effect on what growth the Danish clubs can expect.

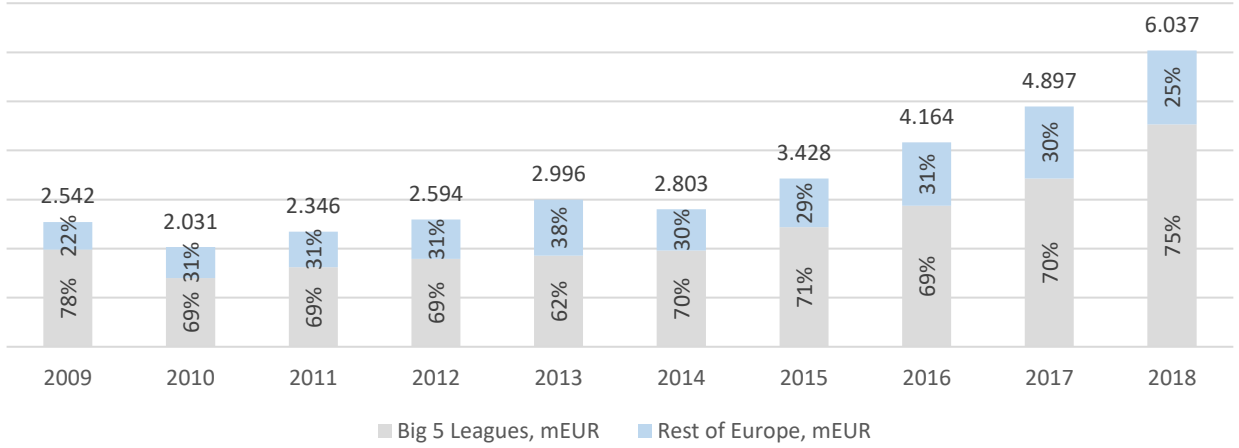

Figure 10 - "Transfer Earnings in Europe (MEUR) split between Big-5-Leauges and Rest of the Europe, own creation, data from UEFA (2020)

Further examining revenue growth (incl. transfers and estimated revenue) indicates that the overall growth in revenue, is affected by the big clubs, and especially FCK, since FCK alone contributes with between 17%-33% of the total revenue. Hence, when splitting revenue by FCK and the rest of the clubs, it reveals a less volatile growth, for the rest of the clubs, illustrated in figure 10. For the rest of the clubs, the growth is rather stable from 2014 to 2018, with a year-to-year growth between 8.5%-10.4%. Yet, the CAGR from the entire period of 2009-2018 is considerably lower, with 2.61% for the rest of the clubs and 7.28% for FCK. The high variation in FCKs revenue is likely explained by their broadcasting revenues from UEFA tournaments, which greatly variates with their sporting performance and the increasing transfer income.

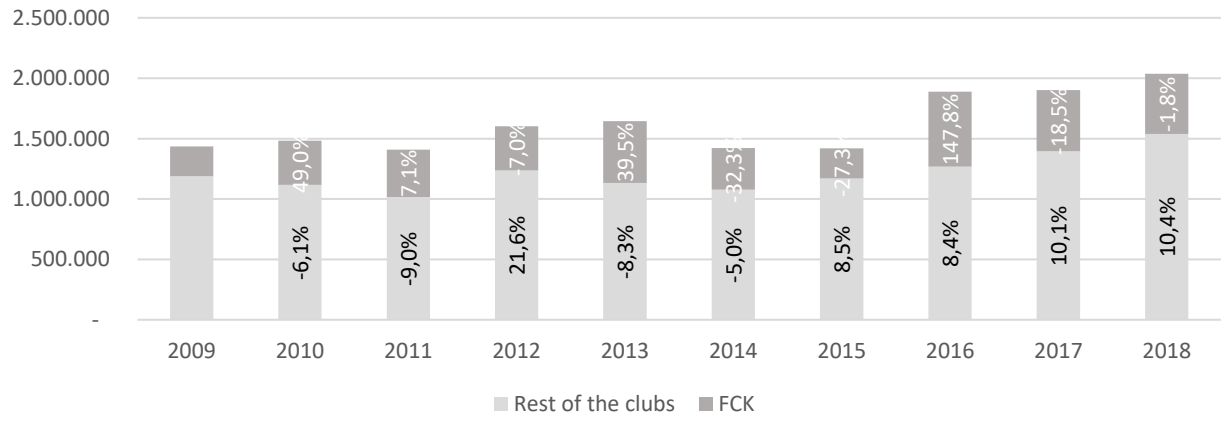

Figure 11 - "Revenue (incl. Transfer) split between FCK and Rest of the clubs" in TDKK, own creation, appendix 7

In 2019, the *Divsionsforening* made a new TV-agreement for 2021-2024. It mainly consists of an increased broadcasting revenue to the clubs, but also changes the way revenue is distributed between the clubs. With the new TV-agreement, broadcasting revenues ought to grow in the future compared to current level. Though, it can be difficult to quantify what effect, it will have on the overall growth, it will undoubtedly have

a positive effect. (Wehlast & Egelund, 2019).

A new tv rights deal is also being implemented in 21/22 in the European tournaments, which historically has resulted in increases in the revenues to the clubs (UEFA, 2020). If a Danish club can qualify to the group stages, this will also contribute to a higher growth in the future. Another unknown factor is the addition of a new UEFA tournament, which will be implemented from the 2021/22 season (UEFA, 2019). The purpose of the new tournament, UEFA Conference League, is to include more clubs in international tournaments, according to the president of UEFA, "*Inclusion competition means more matches for more clubs and more associations*" (UEFA, 2018). This might lead to more Danish clubs competing in UEFA´s tournaments, and therefore more clubs will have the chance to earn revenues from UEFA. Furthermore, fewer clubs will be included in the UEFA Europa League. Thus, reducing the chance for a Danish club to enter the group stages, and the chance to earn revenues from the UEFA Europa League, which most likely will be higher, than the revenues from the UEFA Conference League. The exact effect from the new tournament on the Danish clubs, is therefore difficult to predict and quantify.

Another uncertainty is the likelihood of a Danish club qualifying to either one of UEFA´s tournaments. It depends on, what coefficient the Danish Superliga have, compared to other countries highest leagues. If the coefficient decreases, due to poor results in international club competitions, the Danish clubs might not qualify for UEFA´s Champions League group stages in the future, thus greatly reducing the revenues a club potentially can earn from UEFA.

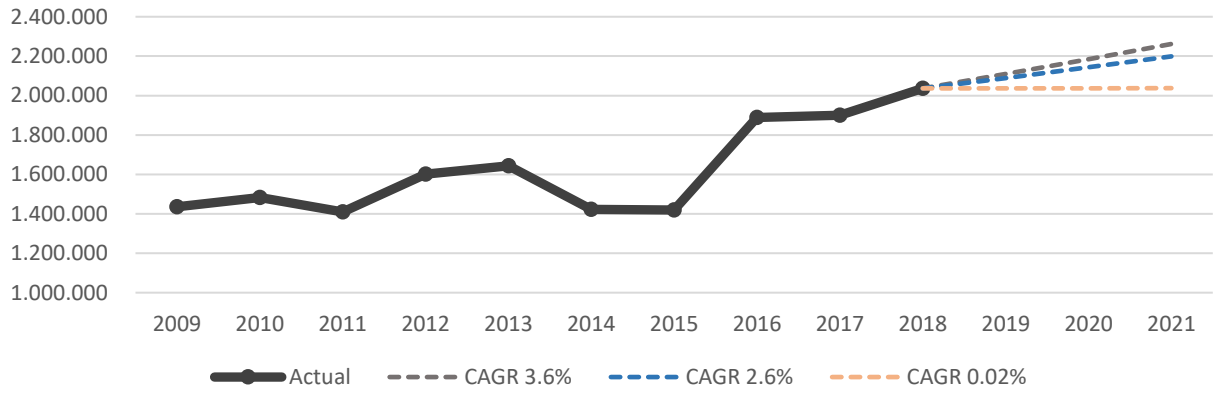

Figure 12 - "Estimated Revenue & 3 forecasted scenarios" in TDKK, own creation, appendix 7

To summarize, the Danish clubs have seen a significant growth in revenues (incl. transfer income) over the past ten years with a CAGR of 2.59%, 3.56% if including estimated revenues, and 2.61% if including estimated revenues and adjusting for FCK cf. figure 11. The growth is driven by increased transfer income in the last couple of years. Thus, the expected growth is highly depended on the future development in the international transfer market. If the trend with increasing transfer income is to continue, growth will likely be positive.

Revenue, excluding transfer income, has been stable in the same period with an CAGR of 0.02%.
When looking at the expected growth in the near future, national broadcasting revenues are expected to increase, as a new TV-agreement will result in higher revenues to both of the two best national leagues in Denmark. The international broadcasting revenue will also grow, due to a new tv-agreement, but is under great uncertainty, due to two factors. Firstly, with the implementation of a new and third international tournament, UEFA Conference League, will most likely distribute revenue to more clubs. At the same time, it will likely reduce the chance of a Danish club, reaching the UEFA Europa League group stages. Secondly, it is uncertain, how many of the Danish clubs will gain access to UEFA´s tournaments.

The long-term growth in the Danish football industry is expected to be between 2.59% and 3.56% á year, based on the historical CAGR. This is based on a continued trend in transfer activity. If the trend were to stop, then growth would likely be close to zero. The short-term growth is expected to be positively affected by new TV-agreements. However, the effects of the introduction of a new UEFA tournament is unknown.

4.3 Risk

Football is seen as a business, in which one should not buy stocks, because of the poor correlation between risk and return. Often the returns are simply not big enough to justify the risks (Hansen, 2014). In most industries and companies there are more stability, a higher bottom level, or maybe several business areas to create revenue, and thereby lower risk due to diversity, if executed right. That does often not apply in football, because of the nature of the business. The entire business depends on football results, and they are fluctuating, even when investing more than the competitors. In the following sections the business risk will be analyzed first, and thereafter the financial risks will be analyzed.

4.3.1 Business risk

The football business involves a lot of fluctuations for the individual clubs, and a lot of risks are derived from this. A significant part of the revenue streams is correlated with results on the football pitch. The fluctuation in results depends on the players. It is a relatively small number of players, who have to perform week after week. A lot can influence these few players. I.e., an important player can be injured, which will lower the value of the player, but could also affect the results (appendix 1, 2, and 3). Another problem can be lack of culture or harmony in a squad. Furthermore, the difference in skill might not always depend as heavily on the price tag on the player, as one might think.

If the results are bad, a lot of income might be lost, due to lack of placement in the league or lack of advancement in European tournaments, as the Champions League or Europe League. Especially in the European tournaments, the economic difference between advancing to group stages or not, is huge for the Danish clubs. FCK incorporates income from a European group stages in their budget (appendix 7), but it is often by a small

margin they qualify. From a logic point of view, they might fail in some of the coming years, and thereby miss out on a lot of revenue. It is few and close matches that decide, whether a big part of the revenue is realized or not. Figure 12 also illustrates that Danish clubs, besides FCK, do not often qualify, hence these clubs will often not have it as a goal (appendix 7). It will often be a bonus, rather than a risk for most Danish clubs to qualify. If a club decides to invest, to achieve European success, then the risk of missing out on income and not gaining return on the investment is significant. FCM have invested a lot in the latest years, in order to achieve both championships, but also European success (Ritzau, 2015). However, their statistics on figure 12 show that it is not easy to qualify, and gain the extra return on the investment.

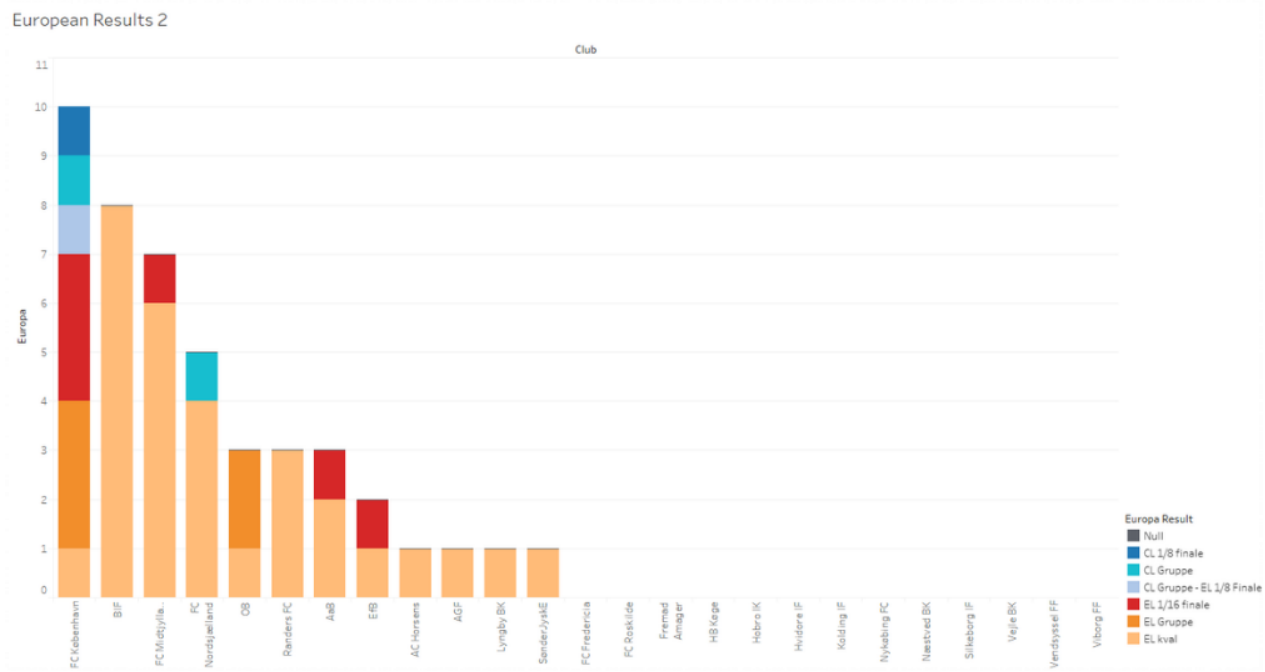

Figure 13 - "European Results the last 10 seasons by club", own creation, data from appendix 7

The same logic applies in the league. Clubs set goals for the seasons, and expect to gain certain positions in the league. If they don't gain the positions, the clubs miss out on revenue. The risk might be smaller than in European competitions, because there are more matches to decide the league. The clubs investing the most, have a better opportunity to get a higher position. The higher number of matches in a league format increases the diversity, which reduces the risk involved in losing a single match. It is proven that the size of the salaries for players have a relatively high correlation with results over time, but outliers do happen. I.e. when Herfølge won the Danish championship in 2000 (Nielsen C. G., 2017). The problem is that many clubs reach for the same positions in the league, however they cannot be shared. If ten clubs expect a top four placement, and thereby also the opportunity to play European games the following season, then only 40% of the clubs will reach their goals, if another club does not surprise and steal one of the four top positions. This intense competition creates a lot of risk in the football industry. To achieve the goals, the clubs must invest in players,

academies, and the facilities. But the certainty of getting a respectable return on these investments are slim, due to the competition. The differentiation in placements can be seen in figure 13 and 14. FCK is the most stable club, but they also invest the most (appendix 7). Considering the amount FCK invests, they should be number one more often, logically. The figures also display uncertainty. Clubs as Esbjerg and AGF have been relegated several times, despite their relatively good prerequisites. In general, these figures prove that no club can be sure of their placement.

Figure 14 - "Placement in the Superliga the last 10 seasons", own creation, data from Danskfodbold.com

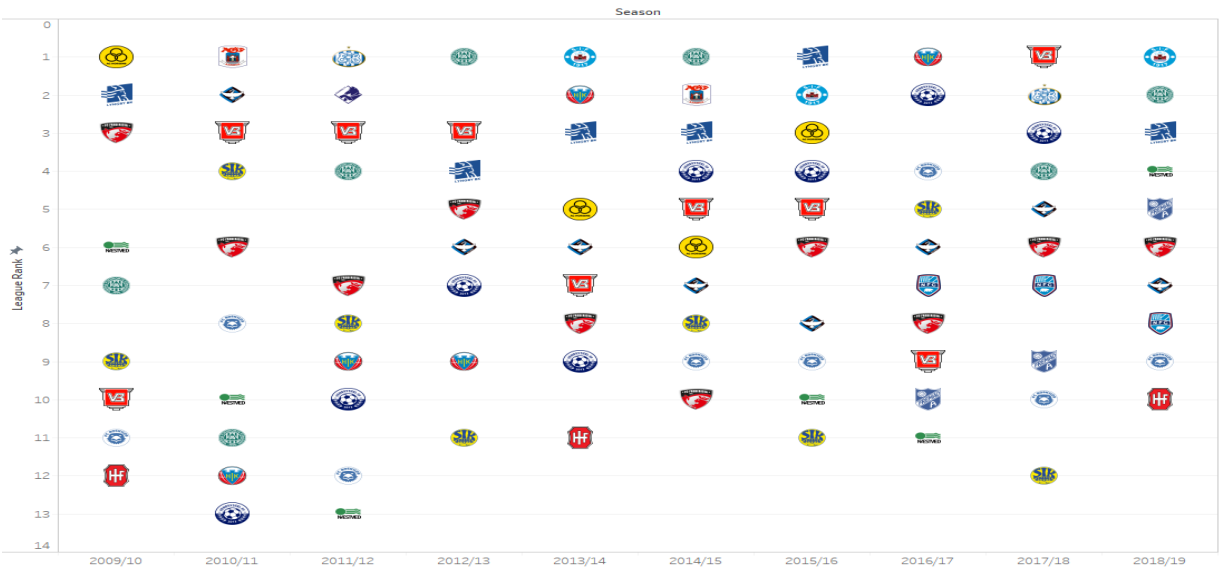

Figure 15 - "Placement in the 1. Division in the last 10 seasons", own creation, data from Danskfoldbold.com

Several revenue streams are directly correlated with the placement in leagues or European competitions, one of which is transfer income. If a club plays well, win titles, or gain a higher position than expected, the players will increase in value. If a club manages to sell players at the right time, there is a huge amount of revenue to be earned within transfers. The transfer market has had an almost explosive inflation during the last years, and is a potentially big source of revenue cf. section 4.2 and 4.1. However, according to Jesper Jørgensen the bigger revenue on transfers, will result in bigger investments in new players. Therefore, it will not yield higher returns, because football is driven by passion and desire to achieve more, which results in reinvestments, rather than dividends (appendix 4). The risk is big if a club has some bad seasons and cannot sell the players, which it heavily invested in. Players change clubs relatively often, meaning that the clubs must gain return on players within few years, or accept the loss on the investment, and try a new investment in a new player.

Achievements in leagues or European competition also results in higher attendance, which will lead to a larger sale of merchandise, and a larger sale on matchdays. The increase in attendance will also, over time, lead to better deals with sponsors etc. These parameters might not be as fluctuating, as the loss or gain from advancing in Europe or transfer income, but they do fluctuate with results. All clubs do have a lower limit of attendance for matches, because of the passion involved in football. Some fans also support the clubs in the bad periods, hence creating some constant revenue for football clubs.

The passion from fans is also a reason, why football clubs can survive with a worse economy, than many other companies. When a club is close to bankruptcy, a few rich fans might “save” the clubs by investing, even though they cannot expect to gain a return on the investment. Such events have been seen in BIF (Moses, 2013) or Lyngby (Ritzau, 2018). They were examples of poorly driven clubs, which had liquidity problems, and invested too much, to get short term success on the pitch. But they were saved by investors, which included fans (yourbusiness, 2018). This lowers risk, because some clubs simply have too big fanbases, to be in the risk of bankruptcy, even though their financials should indicate otherwise. However, some clubs do not have a big enough or rich enough fan base to avoid bankruptcy, as i.e. F.C.Vestsjælland (Ritzau, 2015). They experienced a relegation from the Superliga to 1. division in 2015, and were declared bankrupt shortly after. One bad season resulting in relegation can lead to a loss, and in this example, it was too high to continue the operation of the football club. According to interview 2 and 3, a relegation from the Superliga can cost up to 20 million, depending on the club, which is a lot for a company of the relatively small size, of many of the Danish clubs (appendix 2 and 3). The loss of a relegation is incurred, due to fewer supporters, broadcasting income etc. However, in general the support are big for the Danish clubs, as an analysis show that 9 out of 14 of the Superliga clubs in 2017, had gotten capital injections for a total amount of 690 million from the

period 2012 to 2017, with BIF topping the list (Kristensen, 2017). This strengthens the argument that Danish Superliga clubs in general are not profitable businesses, but are rather risky compared to the lack of return. It also strengthens the argument that the risk of a bankruptcy is low, due to the support.

To avoid risk, many Danish clubs have tried to create several business areas, to increase diversity and reduce risk. Nevertheless, most of them have shut down or sold daughter companies during the last 10 years, because of the lack of skill, to run different businesses. According to Jesper Jørgensen, the football clubs also risk to take away focus from their core business (appendix 4). Several clubs have tried other sport areas, as ice hockey or handball, but without success. I.e., Aab sold both college, handball, and ice hockey in the years before 2013, in order to only operate within football (Aalborg Boldspilklub A/S, 2014). Some clubs have also tried entirely different business areas with mixed success. FCK is often referred to, as an example of when the strategy is effective, because they have Lalandia, as a stabile sister company, making the entire business of PS&E less risky, if FCK should miss out on a championship or especially on European competitions. According to Jesper Jørgensen, this approach works better, because they have the right people in the different business areas, instead of the same people trying to operate both business areas at the same time (appendix 4). However, PS&E has also failed on this strategy with the company Fitness DK, which they sold recently with a loss (Larsen, 2018). According to the delimitation, this thesis will only analyze football relevant business, when the exclusion of football is possible.

4.3.2 Financial risk

Another way of analyzing risk, is by examining key figures in the Danish football industry. Several key figures will be hard to analyze, due to the football clubs' book value of some items on the balance sheet, are far from the market value. I.e., several clubs have a negative equity, but it might be because of the intangible asset "transfer rights" being too low, because of the rules of recognition in the financial reports. Furthermore, several clubs do not recognize their stadiums as financial leasing on the balance sheet. The corrections of financial leasing and transfer rights, only applies forward in time or in 2018 cf. section 3.5 and 6.4.2. This means that historical key figures, do not include these corrections. These two items will therefore be misleading historically, and several key figures are therefore not relevant to analyze. However, a few risk key figures will be examined, to investigate for relevant findings of financial risk.

The first key figure examined is the equity ratio (Petersen, Plenborg, & Kinserdal, Liquidity risk analysis, 2017).

$$Equity\ ratio = \frac{Equity}{Total\ Assets}$$

This ratio represents a company's solvency. It assesses whether companies have a sound financing structure, and a capital buffer for unforeseen events. Normally, this ratio is a relatively precise predicter for bankruptcy,

where bankruptcy firms have a ratio around 15 % or less, prior to their bankruptcy (Petersen, Plenborg, & Kinserdal, Liquidity risk analysis, 2017). Preferably, this ratio should be around 40 % for a healthy company. However, the bankruptcy logic does not apply as well on football clubs, as on other companies for several reasons. First of all, the book value of equity is far from the market value of equity in a football club (appendix 2). Furthermore, the risk of bankruptcy is relatively low on football clubs, due to passion from investors saving clubs cf. section 4.3.1. This is proven when investigating this ratio for the clubs.

Solvency	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Mean	0.23	0.11	0.21	0.17	0.05	0.15	-0.09	-0.03	-0.02	-0.16
#Negative Solvency	6	6	6	5	6	7	9	7	8	10
#Solvency under 0.15	7	7	8	8	9	10	10	10	12	12
#Clubs	22	23	23	23	23	24	24	25	25	25

Table 4.1, Source: Own creation with data from appendices 9-33

Table 4.1 presents the mean of the ratio, the number of clubs with a solvency under 0.15, the number of clubs with a negative solvency, and the number of clubs included every year, which varies due to the number of clubs with publicly available annual reports. It indicates a bad tendency with a decreasing mean over time, and more clubs with a too low solvency, but it also shows a very low level of solvency in 2018. The mean is negative, since 10 out of 25 clubs has a negative book value of equity in 2018. Almost half of the clubs have a solvency indicating a bankruptcy in 2018. These numbers indicate an extremely risky industry, where risk increases over the time-period. It is important to stress that the clubs market values of equity, might result in a completely different key figure, but these results indicate that many clubs are not able to survive a bad event. I.e. this could be a relegation from the league. However, as mentioned before, the clubs manage to find investors to help with capital injections, when needed cf. section 4.3.1.

The next key figure analyzed is the interest coverage ratio (Petersen, Plenborg, & Kinserdal, Liquidity risk analysis, 2017).

$$Interest\ coverage\ ratio = \frac{EBIT}{Net\ financial\ expenses}$$

This ratio indicates a company's ability to meet its net financial expenses, with the result created from the operations, represented by EBIT. This is an important measure, because a company must be able to pay the interest to avoid bankruptcy. The higher the ratio, the lower the risk, and it should be at least one, meaning that EBIT just covers all the interest cost. The calculations for the clubs only include financial income cash deducted from financial expenses cash, which is assumed to represent interest. It therefore does not include non-cash financials, as currency adjustments. This key figure is also problematic to analyze precisely for football clubs. Many clubs do not have loans, and many clubs have negative EBIT's, which yield some strange

calculations from a logical point of view. Many clubs also have stadiums, but the financial leasing rent expense is not included in the historical numbers, because it is recognized as operating leasing, which results in some biases in these key figures.

Interest coverage ratio	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Mean	-27.00	75.00	-5.89	-31.69	40.63	4267.39	812.75	-411.33	-57.14	78.27
#Negative ratio	15	11	13	13	12	12	15	18	15	10
#Ratio over 1.5	6	9	9	8	10	11	9	6	10	15
#Ratio over 4	5	9	9	7	6	11	8	6	8	12
#Clubs	22	23	23	23	22	25	25	25	25	25

Table 4.2, Source: Own creation with data from appendices 9-33

Table 4.2 presents the mean of the ratio, the number of clubs with a negative ratio, the number of clubs with a ratio over 1.5, the number of clubs with a ratio over 4, and the number of clubs included every year, which varies due to the number of clubs with publicly available annual reports. The mean is hard to analyze, due to some extreme outliers, either with no or very little interest, i.e. to associates, or due to very negative EBIT compared to small interest. Few clubs also have very positive EBIT's compared to very small interest. The mean therefore varies with little logic. However, a positive tendency is present in the fall of the number of clubs with a negative ratio over the period, and the number of clubs with a ratio above 1.5 increases over the period. More clubs are therefore able to generate profits from their operations, and pay their interest, and still have some profits left. However, despite the positive tendency, the levels are very disturbing. Almost half of the clubs are not able to cover their interest. In 2018, 14 clubs had a negative EBIT, which is part of the reason why clubs have a bad ratio. This ratio indicates that most of the clubs cannot survive over time, due to an inability to generate profits from their operations. It is concerning, however most of the clubs does not go bankruptcy, even though this ratio indicates otherwise.

The last key figure examined is the current ratio (Petersen, Plenborg, & Kinserdal, Liquidity risk analysis, 2017).

$$Current\ ratio = \frac{Current\ assets}{Current\ liabilities}$$

This ratio indicates a company's ability to pay off its short-term liabilities with its short-term assets. Normally, a ratio around 2 is considered an indicator of low short-term liquidity risk. If it is below 1, it indicates high liquidity risk, since the assets cannot cover the liabilities, if the company would have to pay the liabilities right away. The transfer rights, which is not included as a current asset, can be discussed to be a factor, if a club gets in short-term liquidity problems. If the transfer window is open, some clubs might relatively easy be able to sell players. This could help cover current liabilities. However, this both requires demand for the players,

and an open transfer window. Therefore, the key figure will be calculated as normal. Furthermore, if a club is in a bankruptcy situation, players might wait for the club to not pay the salaries, and thereafter a player can change club for free, which is better economically for the player. This situation happened to LBK, when they were close to bankruptcy in 2018 and lost four players (Ritzau, 2018). This proves that a club cannot necessarily count on the profits from selling players, if a bankruptcy situation is relevant.

Current Ratio	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Mean	1.31	1.32	1.33	1.25	1.12	1.28	1.28	1.14	1.08	1.19
#Ratios under 1	11	8	8	9	11	12	13	14	15	13
#Ratios over 1	11	15	13	14	12	13	12	11	10	12
#Ratios over 2	4	4	2	3	3	4	3	4	5	5
#Clubs	22	23	23	23	23	25	25	25	25	25

Table 4.3, Source: Own creation with data from appendices 9-33

Table 4.3 presents the mean of the ratio, the number of clubs with a ratio under 1, the number of clubs with a ratio over 1, the number of clubs with a ratio over 2, and the number of clubs included every year, which varies due to the number of clubs with publicly available annual reports. The tendency of the mean of the ratio for all clubs, are relatively close to zero. It does not move a lot from year to year, however it has decreased over time. A few clubs also have had a ratio under one over the period, but it could partly be due to the number of clubs included, which increased a little over time. The level in 2018, with a mean above one, is a positive sign, but it is not significantly different from one. Half the clubs have a ratio under one, and half have a ratio above one, indicating that clubs are balancing on the edge of being able to cover short-term liabilities. This ratio indicates that football clubs are a little less risky in liquidity risk, compared to the other key figures. However, half the clubs have a risky ratio, and several clubs are only just above one, indicating that the liquidity risk is also relatively high in the industry. A few clubs lie above two, which is more optimal.

The analysis indicates that football clubs are risky, and bankruptcy threatened, both when investigating the risk of their solvency, ability to generate profits from operations, and their liquidity. The analysis also confirms that football clubs' primary purpose are results on the pitch, rather than financials. Otherwise, the football companies could not survive with these key figures. It is passion from fans and investors that make these types of companies possible, despite their bankruptcy indicating financials. These findings match the findings from the analysis of the business risk, where the return from all the revenue streams were risky, because of correlation with results on the pitch. The return did not match this risk, but the clubs in general still avoided the bankruptcy risk, due to passion from fans and capital injections.

4.4 Ownership

The high risks in football can also be seen as high opportunities. I.e. if a club advances in European competitions cf. section 4.1. These opportunities might be one of the reasons, some investors are tempted to buy football clubs, in order to get a return, even though the football industry does not yield acceptable returns compared to the risk (Hansen, 2014). In general, that is the argument, when investors want to buy companies across all types of industry. They want a return. However, the football industry is different, because Danish football clubs often demand investment from owners to continue the operations, rather than yielding a return (Kristensen, 2017). The owners probably still want a return, and some owners and investors might invest with the belief that they are able to gain a return. But there are several other reasons, why investors choose to buy football clubs. The last years has seen an increase in takeovers of football clubs, both in the world, but also in Denmark (Sauermilch, 2020). This section will firstly present a framework, and thereafter analyze the types of owners, and their motives for buying football clubs in the Danish football industry.

The motives of the owners or potential buyers are important. When football is rarely a profitable investment, it indicates that other motives exists. KPMG makes four divisions of motives for buying football clubs (KPMG Football Benchmark, 2020). The divisions of motives are strategical capital (political owners), economic capital (global owners), cultural capital (local owners), and social capital (supporter owners).

The strategic capital is about positioning yourself or your other companies (KPMG Football Benchmark, 2020). Football clubs have large audiences, and make it possible for owners to get PR or brand-building for themselves or their other companies. Football clubs can then function as commercial or communication, and thereby increase value, revenue, etc. for other business areas etc. for the owners. Potential buyers might also see opportunities to get a broader network of influential people through football clubs.

The economic capital is about money (KPMG Football Benchmark, 2020). It includes takeovers where the buyer believes in the possibility of gaining dividends and capital growth, even though several sources does not believe that football clubs yields this. At least not in Denmark (Hansen, 2014). The growth in European football is high cf. section 4.2. Therefore, buyers might try to buy a club, which catches in on this growth, and raises its value remarkably. This could be due to the promotion to a higher league with higher income streams, which especially in England, will give an incredibly high return (BBC, 2019). Another economic reason for takeovers is, when clubs buy other clubs, because they believe that the skill of running a club might give advantages, when operating several clubs. The action of clubs buying clubs, might also be with other motives than economic, if a club simply want to use another club for its talents etc. Lastly, some buyers want to use the negative results for tax considerations, when having to coordinate tax between their other profit-making firms, and the football club.

The cultural capital and social capital probably overlap each other in part (KPMG Football Benchmark, 2020). Some football clubs are considered local and part of a community. Therefore, owners might buy to give back to the community. Lastly, fans might buy the club to save them, or because they want the best for the club. Their motivation often consists purely of passion.

Several of these motives for owning football clubs exists in Denmark. It is not always possible to label a take-over with a single motive, because not all motives are made public. However, some qualified conclusions can be drawn, for some of the ownerships in Denmark. BIF is a listed company, and is owned more than 50% by Jan Bech Andersen, whose motive is social capital. He has saved the club on several occasions, with a total amount of cash between 250 to 300 million, and is a declared fan who keeps helping the club economically (Okke & Larsen, 2020). He does that despite having no sights of a possible return. According to Jesper Jørgensen, Jan Bech Andersen and several other owners in Danish football clubs, are owners with their heart, and BIF is an example of a club that probably would not exist, if Jan Bech Andersen or someone similar was not there as a supporter (appendix 4). PS&E, which owns FCK, is also a listed company, and have few owners, who own the majority of the shares. Erik Skjærbæk owns 29.8%, Karl Peter Sørensen owns a little over 20%, and Lars Seier owns 22.55% (Ritzau, 2020). Presumably, they have all invested primarily with economic capital as a motive. They believe that PS&E, including FCK, can be a profitable business, probably because of the consistent participation in European tournaments, but also because of the other business areas in PS&E. Lars Seier, however, is also a declared fan, and have partly invested because of social capital (Friis & Lauridsen, 2019). AGF is also listed, and the majority is owned by Aarhus Elite, which is owned by local business men (Nielsen Ø. K., 2007). This ownership is probably cultural capital, and suggests a local cooperation, and a sight for AGF's influence on the community in Aarhus. The local business men have supported AGF with money (Ritzau, 2017).

There are also several examples of foreign investors in Denmark in the last years. In FCM, the majority of the shares are owned by Matthew Benham, who already owns the English club, Brentford FC. He argues that he can take advantage of the skill of running several clubs, and sharing skills and experience will convert FCM to a profitable club (BBC, 2014). He therefore also invested, because of the economic capital in FCM, but with another reasoning for why he might succeed, than the before mentioned Danish owners. On a rumor basis, FCM have been reported to be interested in buying a sister club, where some of FCM's talents could play to improve their football skills (Kristiansen, 2020). This is only a rumor, but still shows yet another economic motive for buying a club. FCN is owned almost a 100% by Tom Vernon (Lisby, 2015). He owns a football academy in Africa, and wanted a club, which can develop these talents among Danish talents, and be sold

with a profit (Lisby, 2015). His motives were strategic, for supporting his academy. It is also economic, because he probably believes, it could be profitable to sell these young players in a transfer market with high inflation (Poli, Ravenel, & Besson, 2019). Several other clubs have also been bought by foreign investors, whose motives are probably not cultural or social, i.e. VBK, HBK, FA, and NBK (Sauermilch, 2020). The motives of these owners are unknown, but these clubs are all in the 1. division, and are not especially profitable at the moment. Sønderjyske, Aab, Silkeborg IF, BIF, Esbjerg FB, and Randers IF all have publicly said that they are interested in foreign investors as well (Sauermilch, 2020).

There is in general a tendency to more foreign investors getting interested in Danish clubs, and they believe that they can make a profitable business, despite football clubs historically prove otherwise. The reasons for this development might be that Danish clubs are cheap, and the Danish leagues is one of the cheapest to buy clubs from, if the goal is to get into the European tournaments. Another reason might be Denmark's rumor for creating good talents, and therefore earning big amounts of transfer income on these young players. (Sauermilch, 2020).

All the different motives for buying football clubs creates a bias, when trying to compare valuation of football clubs in, i.e. multiples. The price might vary a lot depending on the motives. Sometimes supporters try to save football clubs. Moreover, clubs might demand specific types of owners cf. appendix 3. Additionally, politics can be a motive etc. The motives for owning a football club complicates the matter of making valuations. The type of valuations in this thesis is based on a buyer, wanting to investigate the actual value of a football club, if the owner wanted a return, as in most other industries.

4.5 Sub conclusion

In conclusion, there are several different income sources, and their distribution and importance vary from club to club. This complicates a general valuation of all clubs. The industry has seen a significant growth in the last ten years. Especially, growth in the transfer market have dominated the industry in the last couple of years. The overall revenue growth in the Danish football industry including revenue estimations, transfer income, and excluding FCK, as an outlier, is 2.61%. The business risk is high in the industry, due to the income sources being dependent on uncertain football results, which rarely yields satisfying returns compared to risk. However, passionate fans or investors lower the risk of bankruptcy. The risk is also apparent in the key figures, indicating high bankruptcy risk in the industry, but also strengthening the argument of football clubs being able to survive under these conditions. Lastly, there exists several motives for owning football clubs, also being supported by the growth attracting more investors for economic reasons, but also the fans investing money for social reasons. The different types of motives for ownership complicates valuations further,

because it reduces the comparability in multiples, due to the takeover prices varying, depending on the motive.

5. Reorganization of Financial Statements

Before the different valuation methods can be tested on the sample of football clubs, all the annual reports had to be reorganized into a comparable format. This involved creating a spreadsheet, including all the different accounting items both on the P&L side, as well as on the balance sheet for the past ten years. The reorganized statements for each club can be found in appendices 9-33, in the "*Financial Statement*"-tab. This chapter will explain how and why key items were handled differently, than what the clubs themselves did.

The P&L and balance statement is drawn up with 3 purposes in mind. First, all clubs should fit into it, and the information had to be comparable. Comparability in the statements was necessary, to enable better comparison between results from the different valuation methods. Secondly, football specific items should be visible. This would allow for deeper analysis. Thirdly, transitory items should not affect the forecast. Reorganizing several items was needed to live up to the purposes, since the clubs does not all follow the same accounting standards, cf. chapter 3.

A total of 12 clubs have at least once not disclosed anything above gross profit in the period, whereof half have not done so a single time in the period. Moreover, it differs what the clubs place over and under gross profit, and in what detail it is described. This meant that the P&L had to be completely comparable for all clubs, at the gross profit level. Those not disclosing items above gross profit, typically only had personnel expenses, amortizations, financial income and expenses, tax, and in some cases other income/expenses, which were not defined further or were value adjustments, included in their P&L statement. Thus, all other items had to be moved above gross profit[2]. This includes transfer activity, operating costs, and fixed costs. Fixed costs were defined as costs not fluctuating with the activities of the company, including costs such as administrative cost, sales & marketing costs, rent expenses, etc. Net transfer activity was split into transfer income, transfer expenses, and amortization on transfer rights. The IFRS clubs reported net transfer activity as income minus expenses, thus not including amortizations. The amortizations on transfer rights were then reported as part of the amortization and depreciations (appendix 7). Those not reporting according to IFRS, mainly had transfer income reported as other operating income, and transfer expenses under other operating expenses. Some clubs chose not to specify transfer activities. Furthermore, transfer income was viewed

[2] It must be noted that moving fixed costs above gross profit goes against the traditional meaning of gross profit, as a profit after variable costs. Nevertheless, it was found necessary to live up to the purpose of comparability.

an equal part of the operating revenue stream, compared to other ordinary revenue streams, such as sponsor income or ticket sales, hence it was put right below revenue in the P&L (appendix 2).

It was chosen to split revenue and operating costs into sports-related and non-sports-related. This was done due to the analytical purpose. The definition of sports-related items is that they must be dependent on the football performance. Thus, including revenue from matchday revenue, broadcasting revenue, and revenue from sponsor. Sports-related expenses is mostly matchday expenses. It should be noted that player wages and bonuses are not included in sports-related operating costs, but rather in personnel costs below gross profit. Non-sports-related items includes activities with no relation to normal football activities, such as revenue and expense from other business areas involving conference activities, real estate, etc. These were not possible to exclude completely from the analysis without risking overcorrecting, because of the different information levels for every club cf. section 1.3.

Special items were split between special items above EBITDA and extraordinary items below EBIT. It was assessed in detail for every club. An item was defined as a special item, if it was either recurring and/or part of the core operation. (Petersen, Plenborg, & Kinserdal, Financial Statement Analysis, 2017, s. 625-630). The key is whether the items should be included in the forecast, where special items should be included, and transitory extraordinary and non-core items should not. i.e. FCK had costs in relation to a trail involving the former chairman, amounting to expenses of 14,200 TDKK in 2017 and 692 TDKK in 2018 (PARKEN Sport & Entertainment A/S, 2019). These expenses were regarded as not part of the core operation, thus placed as extraordinary, which then would not affect the forecast. Another example of a special item was present in AaB, where the club had lost a trial back in 2013, regarding payment of pension and vacation allowance. In the annual report, the cost was spilt between personnel expenses (11,000) and financial expenses (6,000). Due to the nature of this specific case (Steffensen, 2014), the expenses were smoothed backwards, so an expense of 2,200 were placed as a special item in the years 2009-2013, since it did not just relate to a single year. Another example of a special item occurred in BIF in 2012 and 2014. BIF had write-downs of 172,594 TDKK and 99,023 TDKK respectively. Those write-downs were directly related to the stadium, thus arguably being part of the core operation. Consequently, they were moved from amortizations to special items. However, it was decided not to smooth the write-downs, because it might lead to an overcorrection, due to the high amounts (Petersen, Plenborg, & Kinserdal, Financial Statement Analysis, 2017, s. 633-634). In the case of FCK and their significant write-downs of their investment in Fitness DK Holding A/S, the costs were moved to extraordinary items, despite it being recurring in the historical period. This was done, since FCK sold their investment in the company back in 2018 (Larsen, 2018). Therefore, it is argued that the write-downs should not affect the forecast, hence the costs were moved to extraordinary items.

Financial items were split between cash and non-cash items. If not explicitly stated in the financial reports as

either, it was decided to be cash. The most common example of non-cash was rate adjustments. This was done to separate financial expenses cash, and thus calculating an approximate interest rate on financial liabilities. I.e. used in section 6.4.3 to calculate the WACC and in section 4.3.2 to calculate financial risk. For those reporting under IFRS regulations, other comprehensive income and other transactions recognized directly on equity has been ignored, since these transactions are mostly non-recurring (Petersen, Plenborg, & Kinserdal, Financial Statement Analysis, 2017, s. 87). These other comprehensive income transactions seen in the annual reports were often value adjustment of derivatives or other financial items. They were often insignificant or found difficult to forecast, hence they are not included in neither the reorganization of financial statement nor the forecast.

All items related to associates, both income, expenses, and balance sheet items, were individually assessed to be either operating or financing. This classification meant separating football-related investment and debt from other types of investments and debt. Thus, operating related associates were defined as investments in associates or debt to associates, with a football-related activity. The argument is that investments and debt in football-related activities, will create synergies with the core operation and/or are core football activities, which simply are conducted in associates. Financial investments and debt are deemed not part of core football activities, thus not conducting important activities, or creating synergies, but rather are simply interest-bearing items. In the reorganized financial statements, the profits from operating investments were moved to *Other Income/expenses*, hence viewed as part of the core operation. Profit from financial investments were moved to *Financial – Profits from Associates*, and were regarded as financial items. The items; "Investments in associates" were split between operating and financing. "Debt to associates" were similarly split. An example of this were FCMs investment in the football club, FC Maamobi Ltd. Consequently, all items related to this investment were deemed operating, as it was believed to create synergies with the core operation in FCM. FCKs investments in holiday resort, Lalandia A/S, or OBs investments in Live Culture ApS and Kai Thor A/S were all assessed to be financial activities, as it was believed that neither had any relation with the core activities of a football club. In the cases where the activity of the associate was not clear, it was assumed to be financial activities.

Two clubs, HOB and SIF, had changed company structure in the historical period. As of 01.07.2016, Hobro IK A/S acquired the operation of the football club (Hobo IK A/S, 2017). Previously, the football activities were situated in an unknown entity, most likely an amateur association, which are not required to publish an annual report. Consequently, financial data prior to 2016 could not be obtained for the club. Likewise, SIF moved its football activities from the parent company, Silkeborg IF Invest A/S, to the current company, Silke-

borg IF A/S as of 01.01.2016 (Silkeborg IF A/S, 2017). Unlike HOB, the previous financial data could be obtained for SIF, hence the financial data prior to the financial year 2015 is adjusted figures. The financial year 2015 were adjusted in the annual report. The figures were adjusted by removing investments in associates and related items from the balance sheet, as well as the profit and loss statement. The difference between assets and liabilities were subtracted from the equity. This meant that the financial data for SIF in the period 2009-2014 is not completely accurate, however, it was assumed to be close to the actual figures.

FA and VEN had their first financial year during the historical period in 2014 and 2010/11, respectively. Therefore, is was not possible to obtain financial data for the clubs, prior to their first financial year.

To summarize, several changes and corrections are made to secure comparability and ease analysis purposes. In the financial statement, an alternative gross profit has been created to ensure comparability on a gross profit level. Furthermore, revenue and direct cost are divided into sport and non-sport. Some items are divided between operating special items and non-operating extraordinary items. Financial items are divided into cash and non-cash. Moreover, the investments and debt to associates from the balance sheet are labelled as either operating or financial, and belonging profits/loss from associates are placed above EBIT, if regarded operating. Additionally, other comprehensive income has not been analyzed, because it will not add enough value to the analysis, because it consists of non-recurring elements. Lastly, corrections have been made for clubs, which has changed company structure over the period.

6. DCF valuation

The DCF model will be applied in a general approach in the Danish football industry, to test whether it is an optimal valuation model to apply. First, the approach for developing the analytical statement will be presented. Secondly, the revenue driven value drivers, which will be used to create the budgets for the football clubs, will be presented. Thirdly, a cash flow statement based on the forecast years are created, and inputs to the DCF analysis are presented. Thereafter the DCF are calculated for every club, and the results will be evaluated with a sensitivity analysis. Lastly, an alternative DCF approach with Line-by-line value drivers are applied, to investigate different approaches to the DCF on the Danish Football industry.

6.1 The Analytical statement

Before the DCF can be conducted, the financial statement and balance sheet must be rearranged for the analysis purpose. The foundation for the analysis is understanding that the operating income and operating cost are the drivers of value creation, and it is the core operating activity in the company that should create profits. Therefore, the financial statement shall separate operating income/cost from financial income/cost,

and the balance sheet shall separate operating assets/liabilities from financial assets/liabilities (Petersen, Plenborg, & Kinserdal, The analytical income statement and balance sheet, 2017). Some of the rearranging of the financial statement has already been done cf. chapter 5. Appendices 9-33 presents the rearranged financial statement and balance sheets for all clubs in the "forecast revenue driven" tab.

In the rearranged financial statement, it is important that every operating income- and cost item is placed above EBIT, because EBIT is the operating earnings before tax and interest. The tax, however, should also be considered for both the operating items and the financial items. Therefore, an effective tax rate has been calculated for every year with the formula (Petersen, Plenborg, & Kinserdal, The analytical income statement and balance sheet, 2017):

$$Effective\ tax\ rate = \frac{tax}{Profit\ before\ tax}$$

This percentage are multiplied with EBIT and the result is deducted (assigned) from EBIT, if EBIT is positive (negative), hence getting NOPAT, which is EBIT after tax. The same effective tax rate shall be applied on the net financial expenses- or income. It will often be net financial expenses, hence creating a tax shield, minimizing the cost of interest rates (Petersen, Plenborg, & Kinserdal, The analytical income statement and balance sheet, 2017). Several clubs will not have this tax shield, because they do not make a profit, and therefore rarely pay tax. Eventually this will yield the same profit after tax as before the rearrangement, but now the operating and financial part of the financial statement has been completely separated, by also assigning the operating part of the tax to EBIT, and the financial part of the tax to the net financial result.

The rearranged balance sheet will consist of net operating assets on one side, and total equity and net interest-bearing liabilities (NIBL) on the other side, where:

$$Net\ operating\ assets = operating\ assets - operating\ liabilities$$

$$NIBL = interest\ bearing\ liabilities - interest\ bearing\ assets$$

Net operating assets and NIBL plus total equity will yield an identical sum on both sides of the balance sheet, which corresponds to invested capital. Invested capital is capital invested in the operation of the company, which requires a return (Petersen, Plenborg, & Kinserdal, The analytical income statement and balance sheet, 2017). The logic is that net operating assets is bought to create future income, hence the invested capital requires a return. Every item on the clubs' balance sheets has been analyzed, and interest-bearing assets has been deducted from interest-bearing liabilities, while non-interest-bearing liabilities has been deducted from operating assets.

Some items do not clearly belong to either the operating or financial part, and should be placed differently, depending on the business or the firm's activity (Petersen, Plenborg, & Kinserdal, The analytical income statement and balance sheet, 2017). The entire rearranged balance sheet will be examined in the following, but the focus is on items which can be discussed, to be placed as both an operating and a financial item.

All the intangible assets (including transfer rights, goodwill, and other intangible assets) are classified as non-current operating assets. Tangible assets are also all placed as non-current operating assets.
Under financial assets, the deposits are placed as a non-current operating asset. Other long-term receivables can be of both an operating and a financial nature, however the notes in the annual reports does not specify the necessary information to place it correct. Therefore, it is placed as a non-current operating asset for every club to be consistent. Investment in associates consist of both investments in securities, associates, jointly owned companies, etc. The placement of this item depends on the nature of the company invested in. If the company has anything to do with the core activity and business of the club, then it will be placed as a non-current operating asset. If it does not have anything to do with the core business, it is deducted from the interest-bearing liabilities, because it is labelled as an item with interest attached. This decision is made separately for every club, but will often result in a placement in the NIBL. I.e., FCK has Lalandia placed here, and their activity has nothing to do with football, and therefore it will be placed in NIBL. AGF has all activity from the stadium in a separate business, and this is incorporated as operating, because it does include some football relevant business, even though it might consist of both football and non-football related business. Several clubs have had daughter companies during the period, which is now closed. Their placement will be of small importance, because they often represent a relatively small size (exceptions as Fitness DK in FCK exist), and it is therefore a trade-off between removing it correctly and risking an overcorrection. They would not be removed, due to the risk of correction wrong items on the balance sheet.
From current assets, inventories and all sorts of receivables will be placed as current operating assets. They all require returns and have no interest attached. Items as deferred tax, prepayments, and assets intended for sale are also receivables. Clubs might also place some receivables different from each other. Some might place tax under "other receivables" or as prepayments. This would not be a consistency issue in the analytical statements, because they are all placed as current operating assets. Securities are investment which are not operating, but their purpose is to collect profit via interest etc. They are placed in NIBL, where they will be deducted from the debt. Cash are assumed to be in a bank account, hence creating interest, and will therefore also be placed in NIBL and deducted from debt.

All items within equity and minority interest keep their normal place as equity and minority on the liability side of the balance sheet.

Long-term liabilities, including loan from commune, subordinated loan capital, leasing debt, and mortgage and credit institutions are placed as interest-bearing liabilities and financing liabilities. Debt to associates is the same argument as with investment in associates. It will be analyzed from club to club, whether the associates' activities are part of the club's core activity or not. If it is, then they will be placed as current operating liabilities and deducted from the operating assets. If they are not part of the core activity, they will be placed as interest-bearing liabilities. Deferred tax, provisions, and deposits are not regarded interest-bearing. Therefore, they are placed as operating debt, and deducted from operating assets. Deferred tax could also be placed as equity, if a club invests an amount big enough for the deferred tax to never actually be paid (Petersen, Plenborg, & Kinserdal, Specific topics in accounting flexibility, 2017). Then one could argue that deferred tax would be another form of equity. However, some clubs do pay their deferred tax, hence it will be placed as operating debt for every club. Other liabilities can consist of several items. Often other liabilities will primarily, or entirely consist of items, which are not interest-bearing. However, the notes in the club's annual reports are often not detailed enough to determine exactly what this item consists of. To be consistent, other liabilities will therefore be assumed not to have interest rates attached, hence it will be placed as operating debt for every football club.

The short-term part of the long-term items will be placed the same way as the long-term items with the same arguments as above. Corporate tax can be both operating or interest-bearing liabilities, depending on whether the clubs pay interest from tax or not (Petersen, Plenborg, & Kinserdal, The analytical income statement and balance sheet, 2017). Firstly, the notes are not detailed enough for every club to find out, whether they have interest attached or not. Secondly, some clubs might place guilty corporate tax under *other liabilities*. Therefore, it is most consistent to place it as an operating debt under *other liabilities*, to make sure it is placed similarly for every club. Therefore, Corporate tax is assumed to be an interest free financing source. Prepayments from customers, deferred revenue, trade payables, contract obligations, transfer obligations, guilty purchase price for purchase of contract rights, are all placed as *operating debt*, because they per definition have no interest attached. Proposed dividends are placed as equity.

Another item that can be placed as both an operating or interest-bearing item is pension, which can be argued to be interest bearing, because pensions can be measured as a net present value of future obligations, hence creating interest (Petersen, Plenborg, & Kinserdal, The analytical income statement and balance sheet, 2017). However, this is only if the pensions are defined benefit pension schemes. In this thesis pensions are operating, because they are assumed to be defined contribution pension schemes, which results in a yearly payment placed in the financial statement cf. section 3.2.

6.2 Revenue Driven Forecasting

This section will present the revenue driven forecasting method and the historical value drivers used to forecast the analytical statements. The calculations are present in appendices 9-33 for each club. Before presenting the value drivers, the budget-period length will however be determined. The length, or amount of years explicitly forecasted, generally depends on the complexity and dynamics of the industry (Petersen, Plenborg, & Kinserdal, Forecasting, 2017). The football club industry is considered both highly complex and dynamic with many variables, such as sporting performance, transfer income, international participation. Hence, the longer the budget period, the more uncertainty is involved, cf. appendix 4. A short period of 3-years was chosen, as it was considered impossible to predict sporting results, due to their fluctuation, as discussed in section 4.3, and thus difficult to forecast financial results beyond a short time horizon.

The next part of forecasting was to build a financial value driver template, which was able to forecast certain key financial items in the P&L statement and the balance sheet. Thereafter a cash flow statement resulting in FCFF was conducted. The main purpose of the template was to make it simple with a minimum of value drivers, and compatible with every clubs' analytical statements. The different items were generally all forecasted in the same manner, starting with calculating the historical value drivers, then estimating the forecasted value drivers, and lastly multiplying the forecasted value drivers with the given line item. (Koller, Goedhart, & Wessels, Valuation, 2015, s. 238).

The first value driver in the forecasting model is *Revenue Growth*. All the following value drivers are either directly or indirectly calculated using revenue, hence it is referred to as the *Revenue Driven forecasting method* (Petersen, Plenborg, & Kinserdal, Forecasting, 2017). Revenue is included transfer income, since some clubs are not disclosing transfer income, but rather have it included in revenue. To make the template compatible to every club, the historical revenue growth is calculated by the following formula:

$$Revenue\ Growth_t = \frac{(Revenue_t + Transfer\ Income_t) - (Revenue_{t-1} + Transfer\ Income_{t-1})}{Revenue_{t-1} + Transfer\ Income_{t-1}}$$

Where *Revenue* is both sports-related revenue and non-sports-related revenue for simplicity, and *t* is the current year. The estimated revenue growth in the forecasting period is calculated as an average of the past revenue growth. The revenue in the forecasted period, is then calculated by the following equation:

$$\widehat{Revenue}_t = Revenue_{t-1} + (1 + \widehat{Revenue\ Growth})$$

Where "^" indicates an estimated figure. Again, revenue included transfer income. The second value driver, in forecasting the P&L statement, was *EBITDA Margin*. The ratio was calculated as operating profit, before special items, interest, tax, amortizations and depreciations divided by revenue. EBITDA margin were then

forecasting the operating expenses, both transfer expenses, direct and indirect costs, personnel costs, and other expenses and income, in relation to the revenue. Then EBITDA, before special items, was forecasted by multiplying the estimated margin with the revenue. *Special items* were the third value driver. Again, simply calculated as a percentage of revenue. Special items could have been included in forecasting EBITDA, however, to avoid distortion in the expense-to-revenue relationship, special items were excluded and estimated separately. Before the P&L statement could be finished, the balance sheet must be forecasted.

The first part of forecasting the balance sheet is to forecast *tangible and intangible* assets. It is forecasted as a percentage of revenue. *Inventories*, *receivables,* and *operating debt* were all 3 forecasted separately, as a percentage of revenue, as well. Hereafter, operating assets can be forecasted. Operating assets is obtained by adding tangible and intangible assets together with inventories and receivables. The final value driver is NIBL, which is forecasted as a percentage of Invested Capital. Invested capital can be forecasted in the balance sheet, as operating asset minus operating debt. Once, NIBL have been forecasted, the P&L statement could be finished. *Depreciations and amortizations* were not forecasted using revenue, but rather forecasted as a percentage of the prior year´s total tangible and intangible assets. While revenue could have been used directly, it was decided to use tangible and intangible assets, to avoid depreciations to be disproportioned in relation to assets. EBIT is obtained by subtracting depreciations from EBITDA. *Tax on EBIT* were forecasted using the effective tax rate, which is calculated as tax expenses over profits before tax. Thus, NOPAT is gained by subtracting tax on EBIT from EBIT. Next, the interest rate was calculated in the historical period, as the sum of profits from associates, financial income and expenses, and other net non-cash financial income over NIBL. The interest rate value driver is then including both financial income and expenses before tax. *Net Financial Expenses after tax* were forecasted by the following formula:

$$NFE_{after\ tax} = -(Interest\ Rate * NIBL) * (1 - Effective\ Tax\ Rate)$$

However, without the lease adjustment included in neither NFE nor NIBL, as lease is adjusted for separately in the 3 forecast years. Leasing is incorporated after the forecast has been implemented. The adjustments made are; the original lease payments are added back above EBITDA, the new lease depreciation and interest cost is deducted, the lease asset has been added, the lease tax asset has been added, the lease liability has been added, and the lease effect on equity has been added. With NFE, the *Net Income* could be calculated, simply by subtracting NFE from NOPAT, and thus the profit and loss statement were finished. The final part of the balance sheet was to calculate *Total Equity*, which is calculated as the prior total equity plus retained earnings. *Retained Earnings* was obtained as net income minus dividends. (Koller, Goedhart, & Wessels, Valuation, 2015, s. 235-250; Petersen, Plenborg, & Kinserdal, Forecasting, 2017).

The forecasted value drivers will be calculated, as an average of the historical value drivers. Different combinations will be applied in the calculations of averages, to conduct different scenarios of the forecasted value drivers. The base case scenario is the "middle" scenario, consisting of the 3 of the 9 last years, where the club performed medium based on NOPAT. This was chosen as the base case, to avoid outliers in the clubs´ performances. The remaining scenarios are presented in section 6.7.

6.3 Cash flow statement

The next step is to establish the cash flow statements based on the forecasted analytical statements. The cash flow statement is needed, due to the importance of determining the right cash flows in the clubs. This is one of the main ingredients in the DCF cf. section 2.1. The cash flows represent the actual cash received and paid in the company, hence some items as i.e. impairments must not be included. A cash flow statement always starts with an operating element, then an investment element, and lastly a financial element (Petersen, Plenborg, & Kinserdal, Introduction to financial statements and bookkeeping, 2017). It can have different setups, and i.e. begin with EBIT, NOPAT, or revenue in the operating element.

A standardized cash flow statement setup is applied for every club, to minimize bias, and it is shown in appendices 9-33. NOPAT is preferred in the beginning of the cash flow statement, hence in the beginning of the operating element. If EBIT was negative, then the positive tax added to calculate NOPAT is assumed to be used right away, instead of being converted to deferred tax. Depreciation and amortization, including the financial leasing depreciation, have been added, because it should not have been subtracted in the first place, due to it being a non-cash item. In 2019, the first year of the forecast period, all deferred tax from previous years has been added, because it is assumed that deferred tax is being used. The last part of the operating element consists of the change in the operating assets and -debt, compared to the last year. I.e., a decrease in operating assets as inventories, indicates that more inventory has been sold during the year, which means that cash has been received. In other words, a decrease in operating assets compared to last year, will result in a positive cash effect. Hence, a decrease in operating debt will have a negative effect in the cash flow statement, because the club will then have paid some of the debt, during the year. The change in the financial leasing deferred tax asset is added to operating assets, because it is not assumed to be used in the first year, as all other deferred tax is. Adding all these elements result in the cash flow after net working capital or the cash flow from operation (Petersen, Plenborg, & Kinserdal, Introduction to financial statements and bookkeeping, 2017).

Next step is subtracting any investments in the non-current tangible- and intangible assets, from the cash flow from operations. This Is done by subtracting this year's non-current operating assets (consisting of both tangible- and intangible assets) from last year's non-current operating assets, hence if this year's assets are

higher, it will have a negative effect, because a higher item indicates that investment has been made, during the year. Since financial leasing is only incorporated in the budget period, the leasing asset for 2018 is added in the cash flow statement as well, in order to get the change in leasing, rather than only adding it in 2019, since it is not a new investment. Depreciation and amortization have also impacted the balance item to fall, and therefore must be added back, in order to get the rightfully change in investments. Subtracting the investment from the cash flow from operation, results in the FCFF (Petersen, Plenborg, & Kinserdal, Introduction to financial statements and bookkeeping, 2017), which is also the cash flows needed in the DCF cf. section 2.1.

The last step is the financial element of the cash flow statement. First, the change in NIBL is added, including the financial leasing obligation, by subtracting last year from the relevant year. The financial leasing in 2018 is manually added in the first forecast year of the cash flow statement, because it should not appear as new debt. Thereafter, the net financial expenses/income after tax Is also added. There is, however, only one forecast of financial expenses/income, for both cash and non-cash, and it will all be assumed to be cash, and is included in the cash flow statement. This results in FCFE (Petersen, Plenborg, & Kinserdal, Introduction to financial statements and bookkeeping, 2017). In the DCF, it is assumed to be spend as either new investments in projects with NPV's equal to zero, or to be paid out as dividends in the forecast period. In our model it is assumed to be dividends, to get a cash surplus of zero (Petersen, Plenborg, & Kinserdal, Valuation, 2017). This assumption is made, because the owner should have the opportunity to receive the cash as dividends, to decide for themselves, whether they can find a better investment elsewhere. It might not always be realistic that football clubs pay it out as dividends, because they often do not make profits cf. appendix 7, and if they do, they will often reinvest it in the squad or their surroundings, according to Jesper Jørgensen (appendix 4). Some clubs do, however, pay dividends to their owners, i.e. FCK (Parken Sport & Entertainment, 2019). If a club ends up with a negative cash flow, it will correspond to a capital injection from the owners instead, which might be realistic in some cases, when comparing to the actual capital injections in the past cf. 4.4.

6.4 Estimating WACC

In section 4.3 the risk in the football industry was analyzed. It was concluded that the risk for losing on investments is high in the industry for several reasons, as variation in results, injuries, competition etc. However, it was also concluded that the risk for bankruptcy is not as high, as it should be, because of the passion from fans, who wants to save clubs. This risk in the industry and in the specific football club shall be incorporated into the valuation of the football clubs. In the DCF analysis, risk is represented by the rate, in which the FCFF are discounted back in time. This rate is called Weighted average cost of capital (WACC). The WACC

represents the risk for the specific club and consists of several parameters. These parameters and the calculation of WACC will be analyzed in this section. The calculations of WACC can be seen in appendices 9-33 in the "DCF" tab.

The WACC consists of an average between the cost of equity and the cost of NIBL. In other words, the WACC consist of the required rate of return from the investors, investing equity and the lenders of interest-bearing liabilities into the firm. This can also be inferred from the formula (Petersen, Plenborg, & Kinserdal, Cost of capital, 2017):

$$WACC = \frac{NIBL}{NIBL + Equity} * r_d * (1 - t) + \frac{Equity}{NIBL + Equity} * r_e$$

Where

- NIBL is the market value of the net interest-bearing liabilities
- Equity is the market value of equity
- r_d is the required rate of return on NIBL
- r_e is the required rate of return on equity
- t is the corporate tax rate

In the first part of the formula, the cost of NIBL is calculated by finding the share of NIBL on the total investment from equity and NIBL, and multiplying it with the cost of debt, which is corrected for tax, because interest expenses are tax deductible. In the second part of the formula, the cost of equity is calculated by finding the share of equity on the total investment from equity and NIBL, and multiplying it with the cost of equity. Each of the five parameters in the formula will be examined and analyzed in the following, to apply the WACC on every football club.

6.4.1 NIBL

It is important to notice that it is the NIBL, which should be applied, meaning that cash, i.e., must be withdrawn from the debt. Secondly, it should only consist of debt, which has interest attached. The NIBL is however already calculated in section 6.1, and the NIBL for the latest financial year in the analysis, will be applied in the calculation. It must be market values, but the club's debts are assumed to be market values already. The remaining debt from a loan will stand on the balance sheet as a market value, and the cash and securities will also be represented on the balance sheet with market value. The values of the stadiums are incorporated in NIBL in the latest applied annual report cf. section 3.5.

6.4.2 Equity

The market value of the equity cannot be assumed to be equal to the equity on the balance sheet. Many of the clubs have negative equity, partly because of negative results for the year, but also because of misleading financial reports. According to interview 2, the book value of equity does not represent the market value of equity cf. appendix 2. It states that the value of the transfer rights is way too low, because football clubs must insert the value of the transfer, when a player was bought minus depreciations. The club cannot activate the value of players that the club developed themselves, nor the current value that a player might have. Consequently, the balance sheets are arguable misleading for every club. Other than the value of transfer rights, the remaining assets on the balance sheet, are assumed to close to the actual market value. It is complex to calculate a market value of buildings, and only a few clubs have them, and they will therefore not be investigated further, but assumed to be market value. The majority of the clubs primarily has short-term assets, besides transfer rights, which can fairly be assumed to be market values, as well, due to the short timeframe (appendix 7). To get the assumed market value of equity, the value of transfer rights must therefore be updated. Then the value of short term and long-term liabilities will be withdrawn from the new and higher value of total assets. The residual will be the market value of the equity; hence the formula is:

$$\begin{aligned} &Market\ value\ of\ equity \\ &\quad = (Total\ assets + lease\ asset + deferred\ lease\ tax\ asset \\ &\quad - book\ value\ of\ transfer\ rights + market\ value\ of\ transfer\ rights) \\ &\quad - (short\ term\ liabilities + long\ term\ liabilities + lease\ debt) \end{aligned}$$

Where proposed dividends are included in the short-term liabilities, because dividends correspond to liabilities to be paid soon, rather than equity.

The only missing information in this formula is the market value of the transfer rights. This is complex to calculate right, because it depends on supply and demand. A player's value can fluctuate from game to game depending on his level on the pitch, and depending on which clubs are interested amongst other parameters (appendix 1, 2, and 3). Some clubs are willing to pay more than others, and it is not possible to calculate the precise market value of the entire squad, as an extern analyst. The method applied in this thesis, is to use the squad values from Transfermarkt from the 2018/2019 season, which generally matches the applied annual reports best on the date. This will generate some bias, because some clubs have a financial year following the actual year, opposite from the Danish football season. Transfermarkt does not nearly give a true picture of the value either, because several players might be underpriced or overpriced (appendix 3), but on average it will yield a closer estimate, than the book values. Transfermarkt tries to give updated values, based on

players current level, and even though the values are not precise, it is better than a relatively old book value (player values updates quickly) including depreciations.

As an example of the calculation, FCN will be applied. FCN have total assets of 80,593.26, deferred lease tax asset of 97.14, lease asset of 25,193.48, long-term liabilities of 0, lease obligation of 25,635.02, short-term liabilities of 26,692.65, and a book value of transfer rights of 8,759.748. All the numbers are in thousands DKK and from FCN's last financial year, 2018. According to Transfermarkt, FCN's squad value in the 2018/2019 season was 31,550 thousand euro (Transfermarkt, 2020). The currencies should match, and 7.47 was the exchange rate from euro to DKK on the date 31/12-2018, which match the date of most balance sheet for the clubs (valutakurser.dk, 2020). This exchange rate is applied on all clubs. For FCN it gives a value of the squad of 235,679 TDKK. Compared to FCN's before mentioned book value of transfer rights, this number is a lot higher. It could be argued that FCN might be one of the clubs with the biggest deviation between book value and market value. This is partly because, they are among the top-3 selling clubs in Denmark (Transfermarkt, 2020), and partly because a lot of their squad consists of own talents, which corresponds to internally generated intangible assets, and those cannot be capitalized (appendix 1, 2, and 3). Therefore, they do not show on the balance sheet (Petersen, Plenborg, & Kinserdal, Specific topics in accounting flexibility, 2017). I.e., FCN recently sold a talent for 50 million DKK, and his value was not even capitalized as an intangible asset (Jacobsen, 2020). This even suggests that Transfermarkts value are also too low, but it is a believed to be a better estimate than the book value. On the other side, FCN might have the most underrated transfer rights, and therefore the biggest bias. All numbers are inserted in the above-mentioned formula for the market value of equity:

$$(80{,}593.26 + 25{,}193.48 + 97.14 - 8{,}759.748 + 235{,}679) - (26{,}692.65 + 0 + 25{,}635.02) = 280{,}475\ TDKK$$

FCN's market value of equity is estimated to 280,475 TDKK. FCN's book value of equity is 53,900.61, and they were one of the clubs with a positive equity. However, this difference is substantial, and it shows the importance of correcting the equity, as the market value of the squad might be a lot different, than the book value. This correction is made for every club and the market value of equity for each club is shown in table 6.1.

Club	Market Equity (TDKK)
ACH	73,078
AGF	156,037
BIF	264,211
EfB	66,563
FA	27,3
FCF	33,061
FCK	850,298
FCM	384,381
FCN	280,819
FCR	20,833
HBK	38,379
HIF	20,267
HOB	52,29
LBK	37,598
NBK	26,76
NFC	27,642
OB	96,103
RFC	73,9
SIF	92,225
SIK	15,968
SJE	65,394
VBK	53,315
VEN	62,139
VFF	54,581
AaB	168,001

Table 6.1, Source: Own creation with data from appendices 9-33

6.4.3 Required rate of return on debt

The required return on debt corresponds to the interest rate, which the individual club must pay to its lenders of debt. Normally the following formula will be applied (Petersen, Plenborg, & Kinserdal, Cost of capital, 2017):

$$r_d = (r_f + r_s) * (1 - t)$$

Where

- r_d= required rate of return on debt
- r_f= the risk-free interest rate
- r_s=is the credit spread (risk premium on NIBL)
- t = is the corporate tax rate

While some risk-free interest rates and the corporate tax rate can be found easily, the credit spread cannot be found as straightforwardly. Optimally, Bloomberg would have been used to find every clubs credit rating,

and with the credit rating, a relevant spread could have been attached to each club. However, there was no access to Bloomberg, and therefore a completely different method is applied, and the above-mentioned formula is not used in the analysis.

Two alternative methods will be applied instead. The first and preferred approach will be to calculate the weighted average between the club's interest rates and the size of the loans, to which the interest rates are attached. However, only FCK and OB reported all their loans and the attached interest rates, hence this approach will only be applied for these two clubs. For the rest of the clubs, the analytical statements will be applied to calculate the return on debt. In the analytical statement, the financial expenses have been divided into cash and non-cash cf. section 6.1. Some clubs might have some non-relevant costs inside the financial expenses consisting of cash, but with the division into cash and non-cash, financial expenses cash is assumed to be an acceptable approximation of the true interest costs. Nevertheless, it will create some bias. These financial expenses are divided with the interest-bearing liabilities, hence not the NIBL, to calculate the actual interest rate (required rate of return on debt) each year. In the analytical balance sheet, the interest-bearing liabilities consist of bank and credit institutions, debt to associates (non-operating), leasing debt, and investments in associates (non-related to operations). The formula will be:

$$required\ rate\ of\ return\ on\ debt = -\left(\frac{financial\ expenses_t}{(\text{interest bearing liabilities}_{t-1} + \text{interest bearing } liabilitie_t)/2}\right)$$

Where the financial expenses are divided with an average between primo (ultimo last year) and ultimo (the current years financial) for each year, and it does not include financial leasing, because it has not been calculated back in time. After calculating this for each historical year (except the first where no average with last year could be calculated), the median is applied as the required rate of return. The median is chosen instead of the average of each year's rate, because there are some outliers, because the financial expenses sometimes consist of something irrelevant to this analysis. Lastly, the recognition of the financial leasing calculated in section 3.4 is only incorporated in the forecast years, and therefore the historical years will miss the weight of the 4.5% interest rate, on the amount of the leasing debt to the stadium. In the years with no debt or financial expenses, it is however possible to place 4.5 % as those years rates, because it can be assumed that 100 % of the interest-bearing liabilities that year, would have been the leasing debt. This will stabilize the interest rates on average, but for some clubs with little debt or few years with debt, it will affect the results a lot, and result in a median on the 4.5 %.

For FCN, the calculations give the following results cf. table 6.2:

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018
Interest rate	1.33%	4.5%	0.03%	0.22%	4.5%	4.5%	5.10%	3.23%	58.86%
Median	4.5%								
Average	9.14%								

Table 6.2, Source: Own creation with data from appendices 9-33

In 2011, 2014, and 2015 FCN either had no debt or no financial expenses, and therefore 4.5 % has been inserted. This obviously affect the median very much, because it is exactly 4.5 %. Without adding these 3 years, the median would have been 2.28 %, but the 4.5 % is applied. The biggest bias with this method is the risk of several clubs getting a rate of 4.5 %, hence not showing the difference between different clubs. However, as mentioned in section 3.5, when calculating the financial leasing of the stadiums, several Superliga clubs applies around 4.5 % as internal rates, and therefore 4.5 % might not be the worst estimate, when lacking the information's necessary to calculate the correct rates for each club. Especially the clubs from the 1. division might be extra biased, because lenders might attach a different risk to those clubs, and no rates have been found in their annual reports, as an indicator. The table also shows an average for FCN, which is extremely high, because of a high rate in 2018. This result supports the choice of applying the median.

The required rate of return on debt for every club is listed below cf. table 6.3:

Club	r_d
AaB	4.50%
ACH	4.50%
AGF	4.50%
BIF	6.57%
EfB	5.01%
FA	4.50%
FCF	4.50%
FCK	1.41%
FCM	6.36%
FCN	4.50%
FCR	2.15%
HBK	6.83%
HIF	0.97%
HOB	4.50%
LBK	6.19%
NBK	3.37%
NFC	2.68%
OB	4.55%
RFC	5.17%
SIF	10.73%
SIK	4.50%
SJE	5.44%
VBK	4.28%
VEN	13.57%
VFF	4.15%

Table 6.3, Source: Own creation with data from appendices 9-33

This method yields some relatively stable results with two high outliers. Some of the smaller clubs, as FCR, HIF, NFC, and NBK have low rates, but it might be due to the primary amount of debt being subordinated loan capital.

6.4.4 Required rate of return on equity

The required rate of return on equity is probably the most complex parameter to estimate. The method applied for the calculation is using the CAPM formula, which define the investors' required rate of return as (Petersen, Plenborg, & Kinserdal, Cost of capital, 2017):

$$r_e = r_f + \beta_e * (r_m - r_f)$$

Where

- r_e is the required rate of return on equity

- r_f is the risk-free interest rate
- β_e is the systematic risk on equity (levered beta)
- r_m is the return on the market portfolio

This formula states that the required rate of return on equity, must give at least the same return as the risk-free interest rate. On top of the risk-free interest rate, the return consists of the levered beta times the market risk premium; $(r_m - r_f)$. The levered beta indicates the systematic risk on equity of the company, where systematic risk is the risk that cannot be diversified, because it is the risk of the specific company. Unsystematic risk is market risk, which can be diversified by investing in several companies, and therefore make it less risky if one company should fail to give satisfying returns. By multiplying the levered beta with the market risk premium, the systematic risk is priced, and the additional risk to the risk-free interest rate is taken into consideration, when calculating the required return based on the risk (Petersen, Plenborg, & Kinserdal, Cost of capital, 2017). A higher levered beta gives a higher systematic risk, and a higher required rate of return on equity is demanded. The 3 parameters; $r_f, \beta_e, and\ r_m$ are found in the following.

The risk-free interest rate expresses how much an investor can earn without taking any risk (Petersen, Plenborg, & Kinserdal, Cost of capital, 2017). Normally, a government bond will be a good representation of the risk-free rate, because government bonds are considered risk-free. A zero-coupon bond Is preferred, because they do not have reinvestment risk, and the maturity is better established (Petersen, Plenborg, & Kinserdal, Cost of capital, 2017). Furthermore, the government bond chosen should have the same duration as the cash flows. Normally, a 10-year zero coupon government bond will be used as a proxy for this. However, it can also be argued that the club valuated should have an infinite lifetime, and therefore a government bond with a longer period attached. This thesis will, however, apply a rate of 0.9 %, observed in an analysis where 73 respondents, consisting of finance and economics professors, analysts, and managers, from Denmark, inform which risk free rate they apply (Fernandez, Apellaniz, & Acin, 2020). The 73 answers from the survey are assumed to consist of the right risk-free rates on average, because all answers are Danish, and therefore should consist of Danish government risk-free returns. The market risk premium can also be observed in the analysis with 73 respondents (Fernandez, Apellaniz, & Acin, 2020). The average market risk premium reported is 6.1 %, and this will also be applied for every club in this analysis.

The most complex parameter to estimate in the CAPM, is the levered beta for each club. The levered beta for each club is estimated based on an estimation of unlevered beta from comparable firms. This method assumes an efficient capital market, and sufficient trading (liquidity) of the peer groups shares (Petersen, Plenborg, & Kinserdal, Cost of capital, 2017). It could be argued that these assumptions are not met, but the peer group is publicly traded. The peer group though, is pretty much given and cannot be improved, if the

assumptions do not hold, due to the lack of the number of publicly traded football clubs with sufficient information. The peer group will be examined further later.

The steps in the method are the following. First, a peer group which meets the assumptions must be found. Secondly, the levered beta for every peer is calculated. Thirdly, the unlevered beta (beta asset) is calculated for each comparable firm to adjust for financial risk. Fourthly, an average of the peer groups unlevered betas is calculated. Finally, the levered beta for the football club, which is analyzed, is calculated based on the average unlevered beta from the comparable firms, to insert the specific club's financial risk in the beta. In other words, the point is to lever an unlevered beta from comparable firms, with the specific clubs' financials. (Petersen, Plenborg, & Kinserdal, Cost of capital, 2017).

The peer group applied consists of peers, where it is possible to find a levered beta. It is possible to find a 5 year monthly beta (which is assumed to be levered) on most publicly listed football clubs on Yahoo Finance, and the numbers applied in this analysis was observed on the date; 24-03-2020 (Yahoo Finance, 2020). Several other sources were sought through, to investigate the differentiation in the betas, which can vary a lot from source to source. However, it was only possible to find all the football clubs in one other source, which gave results close to the ones found on Yahoo Finance (Financial Times, 2020) Furthermore, the observations took place, when the betas might have been affected the most by Covid-19. When checking Yahoo Finance again late in the process of this thesis, the betas were a lot higher. The betas might therefore be biased, because they were only found on few sources and on a perhaps biased date, and the true betas could be higher, than the relatively low betas found on Yahoo Finance.

To calculate the unlevered beta for every club in the peer group, the ratio debt/equity is also observed on Yahoo Finance (Yahoo Finance, 2020). However, out of all publicly listed football clubs identified in the analysis, only the following twelve clubs gave all the information needed (levered beta and debt/equity):

Publicly listed clubs	Levered beta (Yahoo)	Debt/equity (Yahoo)	Beta unlevered
Aalborg Boldspilklub A/S (CPSE:AAB)	0.23	25.16%	0.18
AFC Ajax NV (ENXTAM:AJAX)	0.41	58.30%	0.26
AGF A/S (CPSE:AGF B)	0.24	11.46%	0.22
Borussia Dortmund GmbH & Co. (XTRA:BVB)	0.04	3.82%	0.04
Celtic plc (AIM:CCP)	0.10	10.39%	0.09
Juventus Football Club S.p.A. (BIT:JUVE)	1.56	168.36%	0.58
Manchester United plc (NYSE:MANU)	0.77	108.40%	0.37
Olympique Lyonnais Groupe SA (ENXTPA:OLG)	0.64	113.99%	0.30
PARKEN Sport & Entertainment A/S (CPSE:PARKEN)	0.63	141.86%	0.26
S.S. Lazio S.p.A. (BIT:SSL)	1.04	138.77%	0.44
Silkeborg IF Invest A/S (CPSE:SIF)	0.11	192.28%	0.04
Sport Lisboa e Benfica - Futebol, SAD (ENXTLS:SLBEN)	1.04	127.00%	0.46

Table 6.4, Source: Own creation with data from appendices 9-33 & Yahoo Finance

Preferably, the peer group should have been bigger to get more significant results, but it was not possible to identify more peers with the necessary information. It would also have been preferred, to have mostly or only Danish or Scandinavian peers, but this was not possible, and therefore every club possible has been identified instead. Their unlevered beta in the scheme are calculated by the formula (with Juventus as an example) (Petersen, Plenborg, & Kinserdal, Cost of capital, 2017):

$$\frac{\beta_{levered}}{(1+\frac{debt}{book\ value\ of\ equity})} = \beta_{unlevered}$$

$$\frac{1.56}{(1+168.36\%)} = 0.58$$

Normally, NIBL should be applied instead of just debt, as it is done in the WACC formula, but on Yahoo Finance, only the debt/equity is informed, and it will be used as an estimate for NIBL/equity. However, this will obviously generate a bias in the results. A solution could be to investigate their annual reports and calculate the NIBL, but it was not possible to find all the annual reports, and there were some significant language barriers as well. Furthermore, the market values would have been preferred in the calculations, but the values from Yahoo Finance are book values, which will result in bias, because the market value of equity will be applied for the Danish clubs. This is chosen because book values of equity, will result in some Danish clubs (especially from the 1. division) getting negative beta calculations and some also negative WACC's, which is not intuitively right. It happens partly because of the equity being too small or even negative, when the market value of football players is not incorporated. The average of the unlevered betas for the peer group is 0.2691, which will be the unlevered beta applied to calculate the clubs levered beta. However, this is a very low beta, and therefore another beta was calculated without outliers, to get some differentiation in the results, even though the peer group will be even smaller, which is a minus. The outliers removed are Borussia Dortmund (too low), Celtic (too low), Silkeborg (too low), and Juventus (too high). This gives an unlevered beta without outliers on 0.3101. Going forward, the clubs WACCs will be calculated with outliers included, because of the already few numbers of peers. However, both of the betas could have been chosen with the minimal difference.

FCN will be used as an example of the calculation of the levered beta. The formula used is (Petersen, Plenborg, & Kinserdal, Cost of capital, 2017):

$$\beta_{unlevered\ for\ peers} * \left(1+\frac{NIBL}{market\ value\ of\ equity}\right) = \beta_{levered\ for\ company}$$

$$0.2691 * (1 + \frac{-17{,}270 + 25{,}635.02}{280{,}475}) = 0.277$$

Where NIBL and equity includes the effect from the financial leasing correction cf. section 3.5, the market value of equity is the same as calculated earlier, and it is in TDKK. For comparison, it is assumed that the peer group for betas also either own their stadiums or has financial leasing in their annual report, because they are up to date, with IFRS 16. With a beta under one, FCN has a lower systematic risk than the market portfolio, but higher risk than the peer group. The NIBL was found in section 6.1. FCN has a negative NIBL, because they almost have a debt of zero, meaning that cash and securities (which is withdrawn from debt in NIBL) will lead to a negative number. The clubs levered betas are the following:

Club	Beta
AaB	0.307
ACH	0.321
AGF	0.264
BIF	0.296
EfB	0.475
FA	0.626
FCF	0.265
FCK	0.409
FCM	0.242
FCN	0.277
FCR	0.322
HBK	0.337
HIF	0.362
HOB	0.300
LBK	0.588
NBK	0.263
NFC	0.263
OB	0.886
RFC	0.408
SIF	0.313
SIK	0.309
SJE	0.412
VBK	0.409
VEN	0.333
VFF	0.503

Table 6.5, Source: Own creation with data appendices 9-33

It is noted that every club in the sample have a beta below one. The low betas seem contradicting with the high risks found in section 4.3. However, it was too stated that the football clubs rarely go bankrupt, which could be an argument for low betas. Yet, it is too worth noticing that the analysis consists of several biases, i.e. the peer group´s betas were observed higher on a later date, etc.

Lastly, two more parameter must be added to the CAPM. This is the liquidity premium and the company specific risk premium, such that CAPM changes to (Petersen, Plenborg, & Kinserdal, Cost of capital, 2017):

$$r_e = r_f + \beta_e * (r_m - r_f) + liquidity\ premium + company\ specific\ risk\ premium$$

This will increase the required rate of return, and therefore the WACC, and the increased WACC will result in a lower value of the firm, when the DCF is calculated. The reason for adding the liquidity premium is that there will be a liquidity problem connected to converting shares or assets into cash. The harder it is to turn shares into cash (sell the shares), the more illiquidity is connected to the shares, and the higher a liquidity premium must be (Petersen, Plenborg, & Kinserdal, Cost of capital, 2017). The publicly traded football clubs are regarded more liquid, because it is easier to sell their shares. Therefore, they will have a low liquidity premium compared to the rest of the clubs in the analysis. However, even publicly traded football clubs are more illiquid than many other shares, according to Jesper Jørgensen (appendix 4), and they should probably also have some premium attached to their CAPM calculation. There are five publicly traded clubs (Nasdaq, 2020). FCK, BIF, and AGF are traded the most, when observing the number of trades on a random day on Nasdaq (Nasdaq, 2020). These 3 clubs will therefore have a liquidity premium of 1%, which arguably could even be higher. SIF and AAB almost has zero trades, and will therefore get a liquidity premium of 3% (Nasdaq, 2020). The observations were done during Covid-19, which might bias the number of trades, because the calculations are assumed to be before the corona crisis.

The liquidity premium for all the non-publicly traded clubs in this thesis, will be 5%. This is chosen, because of several sources reporting a level of liquidity premium between 3-5% for illiquid firms. Additionally, according to section 4.3, football clubs might have a high risk. Danish football clubs are also very small firms in general, and are therefore placed in the high end of the 3-5%. (Petersen, Plenborg, & Kinserdal, Cost of capital, 2017). Some of the sources states that the discount is often between 25-50% of the final value of the firm, which corresponds to a liquidity premium of 3-5% on the CAPM, which was the chosen approach in this thesis (Patterson, 2017; Damodaran, The Cost of Illiquidity, 2020). It is important not to make both the liquidity premium on CAPM and the discount on the final value, because the discount will then be doubled.

The company specific premiums are added, due to a specific risk to the company. This will be added, due to the risk mentioned in section 4.3, where it is concluded that there is extra risk in the football industry, due

to big competition in the league placements etc. This risk should be included in the valuation of the football clubs. This is also supported by to Jesper jørgensen (appendix 4 and 6). It means that the company specific premium will be based on an analysis of the individual football club's ability, to be consistent in its league placements. In that way, clubs which are often placed lower in the league, will get a higher risk premium, because of the economic consequences of relegations or low placement, which affect matchday revenue, sponsorships, broadcasting revenue etc. cf. section 4.1. The clubs will be placed in one of four categories based on their average placement in the last ten seasons, with the latest season being 2018/2019. The four categories will be "Clubs within top 6", "Clubs placed from 6.1-12", "Clubs placed from 12.1-18", and "Clubs placed from 18.1-24 or lower". If a club has been in 2. division, the year will be included in the average with number 25. These groups reflect the advantages and disadvantages of different placements in the upcoming league structure in 2020, where 12 clubs will be in the Superliga, with the top 6 having to play 10 games against each other, in the end of the season (Dalgaard, 2018). All else equal, this structure would indicate a relatively big difference in becoming 6^{th} or $7\text{-}12^{th}$, because of the greater opponents etc., which should generate more revenue on different parameters. The clubs averaging a top 6 in the 1. division should also be closer to a promotion to the Superliga, while the clubs in the lower 6 of the 1. division should be closer to 2. division. The four groups should therefore indicate risk of relegations, and risk of missing out on promotions or European tournaments. A few biases should be mentioned, i.e. the 7^{th} placed in the Superliga has a chance to get in a European competition in a match against a top 6 team, after the season has finished. Furthermore, it can be discussed how big the difference is, between ending as 6^{th} or 7^{th} in the 1. division. Lastly, a few seasons consisted of a different number of total teams than 24, which skew the distribution a bit. But the four categories are assumed to be a relatively good split. The clubs are ranked with the following league placement averages and are placed in the following groups:

Club	National Rank	Specific Risk Premium	Liquidity premium
FCK	1.6	1%	1%
FCM	3.3	1%	5%
BIF	4.3	1%	1%
FCN	5.1	1%	5%
AaB	6.2	2%	3%
OB	6.9	2%	5%
SJE	7.7	2%	5%
RFC	8.2	2%	5%
EfB	8.8	2%	5%
AGF	9.9	2%	1%
SIF	10.5	2%	3%
ACH	11.6	2%	5%
LBK	12.4	3%	5%
VFF	14.7	3%	5%
HOB	16.0	3%	5%
HBK	16.7	3%	5%
VBK	16.7	3%	5%
VEN	17.8	3%	5%
FCF	18.5	4%	5%
SIK	21.4	4%	5%
FCR	21.8	4%	5%
NBK	22.6	4%	5%
NFC	23.3	4%	5%
FA	23.5	4%	5%
HIF	24.7	4%	5%

Table 6.6, Sourec: Own creation with data from appendices 9-33

The clubs in group 1 will get a company specific risk premium of 1%, because they are consistently in the top 6. The clubs in group 2 will get a premium of 2%. Group 3 will get a premium of 3%, and group 4 will get a premium of 4%.

With the approach to finding all parameters in CAPM examined, the required rate of return for FCN is therefore the following:

$$0.9\% + 27.71\% * (6.1\%) + 5\% + 1\% = 8.59\%$$

The required rate of return based on CAPM for all clubs are:

Club	r_e
AaB	7.77%
ACH	9.86%
AGF	5.51%
BIF	4.71%
EfB	10.80%
FA	13.72%
FCF	11.52%
FCK	5.39%
FCM	8.38%
FCN	8.59%
FCR	11.86%
HBK	10.95%
HIF	12.11%
HOB	10.73%
LBK	12.49%
NBK	11.51%
NFC	11.51%
OB	13.30%
RFC	10.39%
SIF	7.81%
SIK	11.78%
SJE	10.42%
VBK	11.40%
VEN	10.93%
VFF	11.97%

Table 6.7, Source: Own creation with data appendices 9-33

6.4.5 Results on WACC

With all the parameters examined, it is now possible to calculate the WACC for every club. The best approach would be to calculate the WACC differently for every forecast year, because of the changing capital structure for the 3 forecast years. However, it is chosen to only calculate one WACC for every club based on the latest financial report applied. This was chosen, because if a WACC should be calculated for every year, the future value of the intangible assets should be forecasted, which might generate even more bias, than applying the same WACC for every year would.

The WACC for every club, with and without the outliers in the beta peer group, is presented below:

Club	WACC
AaB	7.25%
ACH	8.83%
AGF	5.55%
BIF	4.75%
EfB	7.80%
FA	7.86%
FCF	11.63%
FCK	3.93%
FCM	8.76%
FCN	8.44%
FCR	10.19%
HBK	9.82%
HIF	9.19%
HOB	9.98%
LBK	8.31%
NBK	11.70%
NFC	11.71%
OB	6.50%
RFC	8.22%
SIF	7.89%
SIK	10.72%
SJE	8.27%
VBK	8.63%
VEN	10.86%
VFF	7.89%

Table 6.8, Source: Own creation with data appendices 9-33

In general, the WACCs are relatively low considering the high risk in the industry. According to Jesper Jørgensen, the WACCs should in general be at least 10-15% (appendix 4). Several biases exist in the calculations, i.e. the peer group consists of book value of equity, not market value, etc. However, these WACCs will be assumed to be the best estimate, and will be applied in the DCF.

6.5 Estimating Growth

Growth is another input factor in the DCF calculations, cf. section 2.1. It should represent the growth of the analyzed company in a steady state, and is applied as an input factor in the terminal year of the DCF calculation. There are several ways to calculate growth in a company. It could be growth in revenue, EBIT, net earnings, free cash flow, invested capital, etc. However, in this thesis, the sustainable growth rate will be examined for the clubs, because it is preferred as the growth rate, due to the fact that it takes both operations, financial leverage, and payout ratio into consideration. All calculations are presented in appendices 9-33 in

the "forecast revenue driven" tab. The formula for the sustainable growth rate is (Petersen, Plenborg, & Kinserdal, Growth Analysis, 2017):

$$g = (ROIC + (ROIC - NBC) * \frac{NIBL}{BVE}) * (1 - PO)$$

Where:

- ROIC is return on invested capital after tax (NOPAT/Average invested capital)
- NBC is net borrowing cost after tax in percent (Net financial expenses including profits from associates and tax divided by NIBL)
- NIBL is net interest-bearing liabilities
- BVE is book value of equity
- PO is the payout ratio, where proposed dividend is assumed to be the actual dividend for the year (proposed dividend / net profit after tax)

ROIC is positively correlated with sustainable growth rate, and it represents the pace of the growth, while keeping a constant financial leverage (Petersen, Plenborg, & Kinserdal, Growth Analysis, 2017). The financial leverage contributes positively to the growth, if the spread between ROIC and NBC Is positive. The payout ratio indicates how much of the growth can be reinvested, and how much must be paid out as dividends. This growth rate is assumed to be a reasonable choice for the DCF. However, when calculating this for the clubs in the last ten years, the average for the years gets very unrealistic, as a steady state growth. i.e. FCN gets an average of –225.42%. FCK gets an average of -106.76%, and when correcting for one year with an incredible high dividend it becomes 33.64%, which is arguably too high. BIF gets an average of -33.13%, and AGF gets an average of –64.89%. These examples indicate that this cannot be applied as a sustainable growth rate, because the results are too drastic. A steady growth rate should be close to the growth in the economy, because a too high growth rate results in a company growing more than the economy in eternity, and a too low growth rate results in a company growing less than the economy for eternity, and therefore becoming small. It is important to note that the calculations are without the incorporation of financial leasing, which was only estimated for the budget period cf. Section 3.5. A significant liability will therefore be missing in the calculation of the growth for the historical years in several clubs, due to the value of the stadium not being incorporated. Whether the incorporation of leasing would have stabilized the results completely is doubtful though, because the results for FCK and BIF are still drastic, and their stadiums are incorporated in the balance sheet. Due to the volatile nature of football clubs, cf. section 4.3, it is not possible to calculate a steady realistic growth rate, based on the ten years of financial performance for the individual club. Therefore, another simplistic method will be applied.

To get a lower and more steady growth rate for all clubs, a very general assumption will be applied, instead of calculating an individual growth rate. According to section 4.2, the CAGR in total revenue including transfers was 2.61% from 2009 to 2018 for the entire sample of Danish clubs, without including FCK, which is an outlier. 2.61% will be applied as a growth rate for every club, including FCK, because their CAGR is way too high to apply in a DCF analysis, where it would result in FCK growing faster, than the entire economy. Even though this assumption of applying 2.61% for every club is too general and simple, it is the best choice, in order to stabilize the growth for the clubs. All other individual calculations will give some drastic results, which will reduce the quality of the analysis.

6.6 Calculating the DCF

When the FCFF in the forecasting period, WACC, and growth estimates have been obtained for each company, the enterprise value (EV) can be computed using the DCF method, which can be summarized to the following formula, cf. section 2.1:

Where:

$$EV_{2018} = \underbrace{\frac{FCFF_{2019}}{1+WACC} + \frac{FCFF_{2020}}{1+WACC}}_{\text{Budget Period Value}} + \underbrace{\frac{FCFF_{2021}}{WACC-g} * \frac{1}{(1+WACC)^2}}_{\text{Terminal Period Value}}$$

EV = Enterprise Value

$FCFF_y$ = The free cash flow to the firm year y.

$WACC$ = The weighted average cost of capital.

g = growth estimate in the terminal period

The growth estimate is set to 2.61% for every club, as discussed in the previous section. The WACC is company specific, and further assumed to be the same for each year in the forecasting period, under the assumption of unchanged capital structure, cf. section 6.4. The FCFF is too company specific and calculated in section 6.3. The DCF calculations for each club can be found in appendices 9-33 in the "DCF" tab.

The EV is computed using the same approach for each company. Below is the approach exemplified with the DCF valuation of AaB cf. figure 15. The FCFF is estimated to be 34,199.74 TDKK in AaBs first forecasted year, 3,325.01 TDKK in the second year, and 3,360.8 TDKK in the terminal period. The two FCFF in the budget period is discounted back to present value (PV) using the WACC of 7.25%, which gives a discount factor of 0.932 and 0.869 in the respective years. Thus, the sum of the discounted FCFF in the budget period is

34,779.92 TDKK. The terminal value is computed to be 63,065.07 TDKK, consequently, the EV of 97,845.00 TDKK is found, by adding the budget period value and the terminal period value.

DCF-Valuation (in tDKK)	Budget Period		Terminal Period
	2019	2020	2021
FCFF	34.199,74	3.325,01	3.360,80
WACC	7,25%	7,25%	
Discount Factor	0,932	0,869	
PV (FCFF)	31.889,05	2.890,88	
PV (FCFF) - Budgetperiod	34.779,92		
+ Terminal value	63.065,07		
= Enterprise Value (EV)	97.845,00		
- NIBL	(23.328,03)		
= Estimated value of equity	74.516,97		

Figure 16 - "DCF calculation of AaBs Enterprise Value" in TDKK, own creation, data from appendix 10

The terminal period is worth nearly twice the budget period, and this is no surprise, as the budget period is only consisting of two years, whereas the terminal period is the value of the company´s FCFF in perpetuity. If the budget period were longer, then it would be worth relatively more, everything else being constant. In the specific case of AaB, the budget period is, however, worth a relatively high amount. This is due to the first year having a significant higher FCFF, compared to the that in the terminal period. If all the FCFF would be somewhat similar, then the terminal value would be even higher compared to the budget value, given positive FCFF.

The estimated market value of the equity can be calculated, assuming that NIBL are too given as a market value, by subtracting the company´s NIBL from the EV (Petersen, Plenborg, & Kinserdal, Financial Statement Analysis, 2017, s. 305). The estimated market value of AaB is found to be 74,516.97 TDKK.

6.7 Sensitivity Analysis

The DCF is based on several different input factors, and none of which are necessarily completely accurate. Thus, a sensitivity analysis is conducted in this section. The aim is to test, what input factors have the greatest effect on the EV. The sensitivity analysis will serve as a foundation, on which the DCF results and method will be discussed. The analysis will be conducted, with the AaB valuation as a case example.

Both WACC and Growth are important input factors in the DCF. A lower WACC will increase the present value of the future cash flow. Growth is the estimated rate in which the cash flows are expected to increase in perpetuity. The higher a growth, the higher the terminal value. In figure 16, the EV have been calculated with different levels of both WACC and growth, all else being constant. The specific range of values of both WACC

and growth are chosen to illustrate the sensitivity. In the clubs, the WACC ranges from ca. 4% to just below 12%, and growth is constant across the clubs with 2.61%, cf. section 6.5. The base case of AaB is an EV of 97,845 TDKK, with a WACC of 7.25% and a growth of 2.61%. The figure shows that EV ranges from 353,125 TDKK with a WACC of 3% and a growth of 2%, to an EV of -269,247 TDKK based on a WACC of 5% and a growth of 6%. This indicates big EV ranges, based on relatively small changes, and this is a general problem with valuing football clubs, according to Jesper Jørgensen (appendix 4).

Revenue Driven (EV)		Growth						
	97.845	-7%	0%	2%	4%	6%	8%	10%
WACC	3%	68.016	141.934	353.125	-280.450	-69.258	-27.020	-8.918
	5%	60.990	96.554	137.198	340.421	-269.247	-66.024	-25.380
	7%	55.834	76.802	93.576	132.715	328.412	-258.678	-62.982
	9%	51.854	65.605	74.585	90.749	128.465	317.046	-248.697
	11%	48.663	58.306	63.817	72.476	88.063	124.432	306.279
	13%	46.029	53.115	56.796	62.114	70.469	85.509	120.602
	15%	43.804	49.195	51.801	55.355	60.489	68.557	83.078
	17%	41.889	46.101	48.027	50.545	53.979	58.938	66.732

Figure 17 - "WACC & Growth sensitivty based on AaBs EV" in TDKK, own creation, data from appendix 10

Besides a significant range of different EVs, the figure hints a relationship between WACC and growth. As figure 17 demonstrates, the EV is exponentially increasing, when WACC – growth is nearing zero. This is particularly a problem when valuing clubs with a low WACC, as it potentially can lead to an extreme over/under valuation, if either the WACC or the growth is wrongly estimated. In the AaB example, the difference between a WACC – g of 3% results in an EV of around 130,000 TDKK. Lowering the WACC – g to 1% yields an EV of around 330,000 TDKK, which indicates that there is a significant difference, when the figure nears zero. Moreover, once growth > WACC, then EV becomes negative. However, this scenario is regarded as unlikely, as the growth is not expected to be higher than 2-4%, based on the historical growth cf. section 4.2, and as WACC for the sample is averaging about 8.5%.

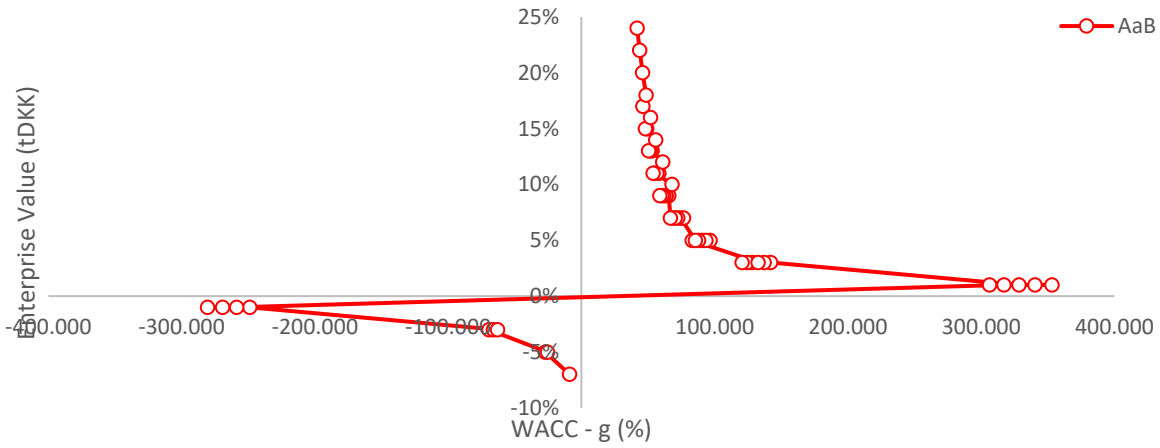

Figure 18 – "Relationship between WACC and Growth" in TDKK, own creation, data from appendix 10

To further examine the sensitivity in the DCF method, and the value drivers used to forecast the financial figures, six different case scenarios were created. The scenarios were split into two methods. The "10-5-3" method and the "B-M-W" method. The "10-5-3" method based the forecasted value drivers on the averages of either the past 10, 5, or 3 years historical value drivers. The "B-M-W" method ranked the last 9 years, where the best 3 years were categorized as "Best", the middle years were categorized as "Middle", and the worst were categorized as "Worst". After investigating different parameters to rank performance in "B-M-W", NOPAT was chosen, due to NOPAT representing core operations after tax. The above figures and the EV of 97,845 TDKK was built on the "Middle" case scenario. see appendices 9-33 in the "revenue driven forecast" tab.

Figure 18 shows the different enterprise values, when using one of the "B-M-W" scenarios with AaB as the case example. In this example, the best-case scenario yields the highest EV of 417,123 TDKK. NOPAT had recognized 2014, 2016, and 2017 as the best years. In the first half of 2014, AaB secured the "double" with winning both the Superliga and the Danish national cup tournament. In the second half of 2014, the club reached the UEFA Europa League group stage (Aalborg Boldspilklub A/S, 2015). The sporting success can easily be seen in their financial statement, where the club had the highest NOPAT in the historical period. 2014 were such a high-performance year financially that if the forecasted value drivers had it included, the EV would be 4-5 times higher, than in the middle-case yielding an EV of 97,845 TDKK. The worst case yields a negative EV of -132,331 TDKK. This illustrates the high volatility in AaBs financial results. This is also apparent in figure 19, where the 3 "10-5-3" scenarios and their respective EV are displayed. A significant difference is seen in the EV, when basing the forecasted value drivers on the average of either the last 3, 5, or 10 years. The last 3 years have been mediocre both sporting-vise and financially in AaBs case, hence a negative EV of -8,106 TDKK. However, if 2014 and 2015 are included into the averages, then the EV is 132,702 TDKK. Including all the realized figures yields a negative EV of -69,216 TDKK. Again, this shows a high sensitivity in the results, and the high influence, which assumptions have on the EV, when determining the level of the forecasted value drivers. The results confirm that a medium case, which were applied in section 6.6, might be the most optimal to apply, as the base case to avoid outliers, i.e. AaB winning the league and participating in a European competition.

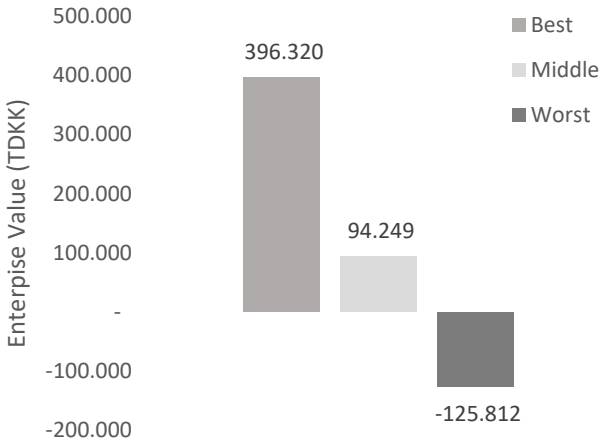

Figure 19 - "B-M-W scenarios" in TDKK, own creation, data from appendix 10

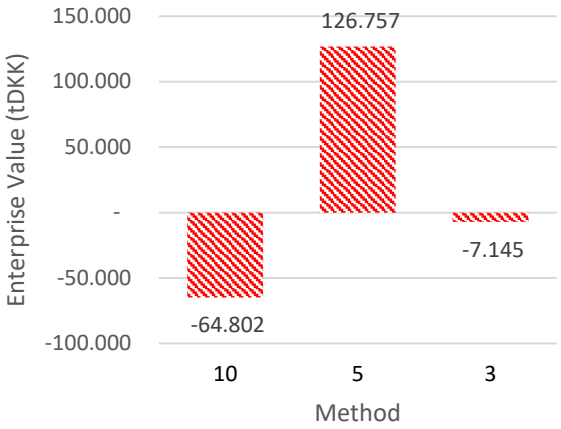

Figure 20 - "10-5-3 Scenarios" in TDKK

6.8 DCF results

Each clubs' EVs based on both the "B-M-W" and "10-5-3" method is presented in figure 20. Out of the 150 valuations, 88 yielded in negative enterprise values, 58 yielded in positive, and four were left empty due to lack of financial years. All the calculations are done in appendices 9-33.

Revenue Driven Forecasting Method						
Club	**B**	**M**	**W**	**10**	**5**	**3**
AaB	417.123	97.845	(132.331)	(69.216)	132.702	(8.106)
ACH	428.392	(189.543)	(703.182)	(374.693)	(204.439)	308.745
AGF	(1.105.487)	(1.714.617)	(645.463)	(1.514.352)	(1.252.264)	(593.622)
BIF	(3.947.601)	(83.718)	(13.515.835)	(6.536.734)	(8.103.099)	(3.357.418)
EfB	360.358	(314.991)	(381.788)	(219.865)	(204.829)	(243.407)
FA	58.611		13.553		(8.437)	(46.362)
FCF	369	(22.650)	(41.396)	(27.209)	(10.608)	(6.782)
FCK	(40.096.806)	12.006.590	(85.678.612)	(25.108.462)	(22.573.718)	(102.394.123)
FCM	1.760.202	(1.283.487)	(2.839.658)	(1.469.826)	(1.236.543)	664.996
FCN	2.706.710	123.893	(50.322)	54.852	(32.968)	212.945
FCR	(11.413)	(19.857)	(41.385)	(24.420)	(39.913)	(41.385)
HBK	363.023	25.747	(26.917)	26.668	26.116	182.140
HIF	133.556	114.158	(11.178)	28.574	11.779	75.592
HOB	1.182.874		(15.142)		43.997	(93.916)
LBK	305.641	(1.499.289)	(435.531)	(879.111)	(3.673.232)	(1.973.907)
NBK	(105.568)	25.915	41.961	43.299	18.297	(2.461)
NFC	9.743	(3.782)	(34.734)	(5.331)	(21.920)	(25.698)
OB	74.004	(321.193)	(73.042)	(103.979)	(258.266)	(94.047)
RFC	(4.068)	(143.035)	(73.162)	(14.254)	67.538	(87.085)
SIF	(516.734)	(1.160.676)	(437.144)	(716.723)	(946.980)	(1.129.556)
SIK	10.673	7.302	(80.310)	3.337	6.733	(11.149)
SJE	111.470	26.494	(24.628)	46.629	52.043	73.737
VBK	559.082	(785.389)	(236.103)	(505.113)	(462.823)	27.968
VEN	436.520	101.605	43.650	155.485	241.373	481.268
VFF	86.009	12.392	(11.413)	6.246	33.982	21.679

Figure 21 - "Enterprise Values (TDKK) based on different scenarios", own creation, data from appendices 9-33

There are two empty valuations in FA and HOB in the middle case scenario. Both clubs began reporting their financial statements from around 4-5 years ago. Thus, it was decided that they only had a best-case- and a worst-case scenario. The 10-year average based scenario was removed, since neither had more than five years of data. The 58 positive results are mainly distributed in the best-case scenario column, with a total of 18 clubs yielding positive EVs out of 25 clubs. Only 3 clubs yielded positive EVs in the worst-case scenario. The middle-case scenario was more evenly split with 10 positive and 13 negatives. With most of the valuations resulting in negative EVs, it indicates that most clubs do get negative forecasted cash flows, when basing the value drivers on historical performance, especially in the worst-cases. This generally supports the notion that football clubs are not meant to generate positive cash flows, as Jesper Jørgensen claims in interview 4: "*Football clubs do not have the objective to earn money*" cf. appendix 4. Nevertheless, they can do so in the best cases, as can be seen in several cases (appendix 7). Furthermore, the "10-5-3" method yielded more evenly distributed positive vs. negative EV between the 3 scenarios, however, with substantial more negative results than positive. Again, this supports the fact that most of the football clubs, do not generate positive cash flows over longer periods. Yet, it is interesting that some are able to do so.

Another interesting fact is that four clubs did not have any scenario with a positive EV, and only VEN did not have a scenario yielding a negative EV. The four clubs all get solely negative EV, due to their poor financial performance in the realized period. They all have only got a single year with a positive NOPAT, hence the model does not expect them, to generate positive cash flows in the future. However, 3 of the clubs, AGF, BIF, and, SIF have got a positive NOPAT in their latest year, yet only AGF ended the year with a positive FCFF. One could argue that it might be a positive trend, and that they possibly could generate positive cash flows in the budget period. This trend would not be visible in the model, since it is only a single year, and in neither case is it an extremely positive figure. The counter argument is that all the clubs have a high degree of volatility in their financial performance, which means that it would be as likely that the following year would be a poor financial year. Furthermore, the financial performance is closely tied with the sporting performance cf. section 4.3. Hence, the single positive financial year could be a lone case, if the clubs do not perform well in the league.

9 clubs had a difference of more than 1 billion DKK between their highest EV and their lowest EV, with FCK as the top scorer with more than 114 billion in difference between their highest EV (12.000.000 TDKK) and their lowest (-102.000.000 TDKK). It is arguably the biggest problem with the model. The extreme differences in a large portion of the clubs, supports the fact that the DCF model's results is highly sensitive. The direst case, as mentioned, is that of FCK. One reason behind this could be that FCK have the lowest WACC of all the clubs. This problem was discussed in section 6.7, where the closer to zero the WACC – growth figure gets,

the more sensitive the results of the DCF model. This might explain some of the more extreme differences in a few cases, but not all. I.e. FCM have got a difference of nearly 4,600,000 TDKK between their highest EV and lowest EV, but their WACC is significantly higher than FCKs with around 8.7%. Thus, their difference is most likely not explained by the WACC – growth being close to zero. Digging deeper into the FCM "middle" case, reveals challenges with the revenue driven model. The "middle" case forecasts a yearly growth in revenue of 30%, yet with an EBITDA-margin of just 6%, the NOPAT is negative every year. As revenue is growing at a rapid rate, so too is the non-current operating assets, as it is calculated as a fixed percentage of revenue. The cash flows recognize significant investments, which, together with negative NOPATs, results in increasingly negative FCFF, and so the DCF model predicts a terminal value of -1,202,000 TDKK, despite the club nearly doubling its revenue. Interestingly, if the revenue growth is set to 0%, the DCF model yields a significant better, while still negative, EV of -400,000 TDKK. The problem could therefore perhaps be mitigated by a different forecasting method, than the revenue driven method.

Another problem with the model is that there was no logical order between cases. The figure shows, that BIF, FCK, and NBK have a lower best-case than the middle-case, and seven others have a middle-case lower than the worst-case. This concern is perhaps, due to the same problem with the revenue driven model. This supports the need to investigate a different value driver method.

Another major concern, regarding the DCF results, is the relative volatile EVs that the model yields no matter the scenario. The volatility is partly due to the varying levels of the income sources over the period cf. section 4.1. This is exemplified by the fact that the average EV/Revenue multiple, based on the club's highest EV, was 8.8, and the average based on the lowest EV was -21.0. The highest multiple was HOB in the best-case with 52.7x revenue, and FCK had the lowest with -206.0x revenue. Again, the low multiple in FCK could partly be explained by the low WACC – growth. However, in the case of HOB, the high EV can be explained by another problem with the current method. Using the best-case scenario, HOB is forecasted to have a revenue growth rate of 147%, which causes the revenue to increase significantly from 22,438 TDKK in the realized 2018/19 year, to 338,866 TDKK in the terminal year 2021/22. While it is technical possible that HOB could end up in such a scenario, it seems unlikely. Other such examples of extreme growth are seen in the best-case of FCN and VEN. This problem is that it does not always make sense to use historical averages, as the basis of future value drivers. This indicates that the method is too simplistic, and does not consider the high volatility in the football industry.

In conclusion, the 25 Danish football clubs have been valuated using the DCF. The future cash flows have been forecasted based on different scenarios, which in turn results in different EVs. It was found that the revenue driven method used to forecast the future cash flows, might not be ideal, hence another method

should be tested. Furthermore, it was found that the majority of the different scenarios yielded negative EVs. Another finding is that the historical based method does not include, the possibility that a club might generate positive cash flows in the future, despite not having done so in the realized period. Lastly, it was found that the method in some cases yielded extreme enterprise values, both positive and negative, which leads to the conclusion that the method of forecasting is too simplistic, due to the football clubs being volatile. Therefore, other methods of forecasting will be tested, before the DCF model is rejected as an optimal model.

6.9 Line-by-line forecasting

In this section, a different value driver method is presented to test, whether it will improve the DCF valuation method. The "Line-by-line" method is based on the notion that the balance sheet items in the budget can be forecasted, using the year-by-year growth. Thus, the P&L statement are forecasted identically to the revenue driven method. However, the balance sheet is forecasted without relation to the P&L statement, with equity as the only the exception. The idea is that the clubs can have a volatile development in revenue, without it affecting the balance sheet.

The value drivers that are different compared to the revenue driven method, is tangible assets, inventory, receivables, and operating debt. They are all calculated using the same formula as the revenue growth value driver. In the historical period, the value drivers are calculated using the following formula:

$$Value\ Driver = \frac{Figure_t - Figure_{t-1}}{Figure_{t-1}}$$

Where the *figure* is e.g. non-current operating assets, and *t* is the current year. The items in the financial statements are then forecasted by using the calculation:

$$Figure_{t+1} = Figure_t * (1 + Value\ Driver)$$

The results are presented in figure 21, where all the different scenarios are included:

Line-by-Line Forecasting Method						
Club	**B**	**M**	**W**	**10**	**5**	**3**
AaB	(135.594)	248.299	(82.920)	(45.024)	(299.914)	(585.033)
ACH	(4.918.920)	(205.227)	(569.393)	(986.235)	(2.560.976)	(4.313.115)
AGF	(2.290.185)	(1.123.102)	(1.220.258)	(1.698.427)	(1.787.312)	(353.723)
BIF	(4.482.197)	(1.130.818)	(6.252.274)	(3.614.649)	(5.091.520)	(2.902.588)
EfB	228.859	(371.691)	(243.436)	(180.074)	(218.766)	(70.324)
FA	79.589		3.330		2.192	(30.645)
FCF	(27.603)	(9.177)	(28.135)	(14.266)	(16.422)	(19.468)
FCK	12.318.618	6.705.845	(28.847.921)	2.846.573	(710.432)	(43.815.027)
FCM	(33.636.727)	451.851	(4.680.425)	(3.390.400)	(12.879.125)	(38.501.278)
FCN	(3.992.087)	(32.512.556)	11.479	(5.055.460)	(8.884.911)	(42.300.195)
FCR	(10.653.814)	(74.264)	1.477	(781.724)	(57.711)	1.477
HBK	376.754	28.064	(13.312)	32.313	33.534	176.546
HIF	120.992	69.426	3.578	28.085	13.068	14.034
HOB	1.461.456		(16.639)		92.961	(30.962)
LBK	243.215	(4.490.423)	(488.562)	(1.254.365)	(4.994.487)	(3.414.205)
NBK	(130.940.949)	27.347	41.597	(2.121.310)	(19.506.085)	59.896
NFC	6.792	(51.236)	(342.364)	(69.067)	(142.921)	(294.249)
OB	(104.188)	(48.832)	(260.403)	(133.243)	(227.285)	(315.488)
RFC	12.855	31.293	(95.356)	8.559	73.144	(127.707)
SIF	(191.892)	42.334	(322.402)	(528.025)	(119.364)	808.521
SIK	2.198	83.494	(80.263)	(3.603)	19.509	14.939
SJE	12.311	36.813	(84.446)	(8.466)	10.692	23.289
VBK	604.706	(748.902)	(217.949)	(479.297)	(510.659)	(102.921)
VEN	(23.591.862)	(112.828)	(11.785)	(1.655.927)	(7.773.488)	(10.771.763)
VFF	136.611	95.270	22.571	68.189	36.179	26.893

Figure 22 - "Enterprise Values (TDKK) based on different scenarios and Line-by-Line method", own creation, data from appendices 9-33

The Line-by-line method yielded more negative and highly volatile, enterprise values, than the revenue driven method, with a total of 95. This leaves 51 positive EV results. The "B-M-W" scenario is split 50/50 in the best-case and in the middle-case, between positive and negative results. However, the worst-case yields 6 positive results, compared to the 3 in the revenue driven method. In addition, only 6 clubs have a best-case higher than the middle-case and higher than the worst-case. In conclusion, the "B-M-W" scenario method does not work with the line-by-line forecasting.

Both forecasting methods agree that both AGF and BIF should not yield a positive EV in any case, but the line-by-line method have a total of six clubs, which do not yield a positive result in any case, compared to the four in the revenue driven method. VFF and HIF both only yield positive EV, where only VEN did in the previous method. 13 clubs have more than 1 billion DKK in difference, between the highest EV and the lowest EV, with NBK having the largest difference of 131,000,000 TDKK in difference, despite having the second highest

WACC. Additionally, the EV are similarly extreme, when looking at the EV/revenue multiple, where the average in the highest cases are 8.5x and -580.0x in the lowest cases.

The line-by-line forecasting method is more negative in its EV results, compared to the revenue driven forecasting method. There seems to be no logic between the best-, middle-, and worst-case scenarios. Lastly, the method yields a more volatile and extreme EV, compared to the revenue driven method. Thus, it can be concluded that the line-by-line forecasting method is arguably worse, compared to the revenue driven method. The forecasting issue was not solved with this new method, and this indicates that averages of historical value drivers does not work, due to the volatile industry. Therefore, a deeper analysis of the clubs is necessary, to correct the forecasted value drivers based on future expectations, rather than only historical performance.

6.10 Sub conclusion

To conclude the DCF results, neither forecasting method presented any satisfying enterprise values. When the model provides slightly realistic enterprise values in one scenario, it also yields completely unrealistic values in other scenarios. The model is too simplistic in its approach to the forecasting, when basing its value drivers on averages of the past financial results, which are highly volatile. Instead more consideration to future expectations might be necessary to incorporate. Additionally, the differences in the income stream distributions investigated in section 4.1, supports the conclusion that more detailed analysis of the clubs are needed. The income sources are differently distributed from club to club, and varies from year to year. Furthermore, the DCF models proves to be sensitive to changes in WACC, growth, and scenarios, and the risk and growth also consist of several biases cf. section 6.4 and 6.5. This complicates the precision of the results.

7. DCF and Real Option valuation

As concluded, the DCF model does not provide satisfying results for the Danish football industry, when applying a general approach, because of the volatile development within every football clubs value drivers from year to year. Several calculations of value drivers have been tested, but only focusing on averages of the historical value drivers, will result in illogical results. Therefore, it will be investigated whether the DCF approach provides better results, when analyzing the value drivers and budget of a football club in depth. Due to limitations, it is only possible to make a detailed analysis of one club, but the method is assumed to apply for every club. FCK will be applied, partly due to their detailed financial report, and partly due to their results being most volatile, which makes it a good case to test a detailed DCF on. Firstly, the financial statement will be corrected, by removing the volatile revenue and cost streams, to stabilize the historical value drivers. This

will lead to a financial statement with an assumed stable element left. Secondly, the DCF approach will be applied on this stable element, where the value drivers for the budget period will be analyzed in depth. After calculating the value of the stable element with the DCF model, the volatile elements removed from the financial statement, will then be valued by an alternative version of real options, to add the value of the uncertain revenue streams to the DCF value.

7.1 Correction of the financial statement

The first step is to find the stable elements of FCK, and remove the unstable elements from the financial statement, to correct the historical value drivers. The corrections are present in appendix 9 in the "Revenue Correction", "Cost Correction", and "Corrected Financial Statement" tabs. The most unstable elements are found by investigating the sport-related revenue and cost cf. section 4.1. The two most volatile elements in FCK are their participation in European tournaments and their transfers (appendix 7). It can be discussed what parts of their European participation are steady or not. I.e., FCK have been in a European competition 9 out of 10 seasons. Especially the UEFA Champions League gives a high variation in financial results, and FCK qualified 3 times, meaning that it affects several years, and will be removed. FCK are relatively steady in their participation in Europe League, but it is still connected to a lot of uncertainty with the qualification matches cf. section 4.3. The revenue generated from the European competitions vary a lot from year to year. Therefore, Europe League are also removed, though it could arguably also have been kept as a stable element, due to the number of participations.

FCK's transfer are also very volatile, mainly with a positive tendency, following the general inflation in transfer prices cf. section 4.2. However, in 2015 FCK sold for much less, than the development in the inflation, after some bad seasons without championships. This proves the volatility in transfer prices as well. FCK will always be able to sell its players for a price though, which makes it a stable element. Due to the extreme inflation in transfers, it is complex to find a reasonable amount to remove in the historical period. In 2009 FCK sold for approximately 10,000 tDKK, and in 2018 FCK sold for approximately 180,000 tDKK. The extreme nature of this item makes it hard to handle. The process in this thesis will be, not to remove it from the financial statement, but instead analyze it in depth in section 7.2. Some over-normal volatile profit could arguably have been relevant to remove, but it was deemed too complex to do without risking overcorrection bias. The two chosen elements (Champions League and Europe League) will be valued in a corrected real options model in section 7.4. If analyzing another club than FCK, it is important to investigate their volatile income sources separately, because the distribution of importance of different income sources varies from club to club cf. section 4.1. Some might have relegation as a volatile element. Some clubs might have their placement in the league, and therefore broadcast money, as a volatile element, but this is not the case for FCK. The broadcast price money is relatively steady, compared to the size of FCK as a company, when ending in the

top placements in the league, and the probability of FCK ending low in the league are close to zero percent, when investigating the historical period. The highly different sizes of the club's matter, when investigating the clubs in depth.

To correct the financial statement for FCK's European participation, the sport-related revenue and sport-related operating cost is investigated. Firstly, the revenue is corrected. According to the specifications in FCK's annual reports, their revenue is divided into the following items cf. table 7.1:

in TDKK	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Ticketing and Broadcasting Income	83,726	219,196	130,879	95,634	232,222	97,047	61,809	334,168	178,866	143,231
Sponsor Income	104,033	83,965	97,965	90,768	97,735	99,248	94,806	104,752	101,773	85,095
Merchandise income	18,762	20,456	19,479	14,292	14,561	13,426	11,789	16,086	15,538	16,562
F&B, conference, etc.			52,946	24,382	24,303	16,035	12,987	22,038	22,354	11,288
Total sports-related revenue	**235,676**	**353,938**	**362,381**	**292,712**	**439,774**	**284,142**	**231,974**	**542,608**	**388,103**	**311,233**

Table 7.1, Source: own creation with data from appendix 9 & appendix 7

The European price money to FCK are assumed to lie in "ticketing and broadcasting income", where the variations are highest. There are also variations in especially "F&B, Conference, etc." and "Non-sports-revenue" from 2010 to 2011, and it is because of the segment, Parken Venues, being merged with FCK in 2012 (Parken Sport & Entertainment, 2013). It is an argument to why 2009 and 2010 should have less influence on the budget years in section 7.2. FCK's price money from every season are found in Euro from UEFA, and are calculated to DKK with an exchange rate on 7.43 (valutakurser.dk, 2020) cf. table 7.2:

Season	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
Beyond Group stage tEUR	180.0	3,000.0						1,889.0	500.0	
Group Stage tEUR	1,862.0	18,248.0	1,544.6	3,186.8	21,492.0	2,530.9	-	34,098.0	7,235.4	8,585.9
Financial year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total in TDKK	13,834.7	136,920.0	33,766.1	23,677.9	159,685.6	18,804.3	-	253,348.1	67,794.3	67,508.3

Table 7.2, Source: Own creation with data from appendix 9 and appendix 7

The price money from the group stage will be added to the financial year from the first part of the season, while the price money from beyond the group stage, will be added to the following financial year. This is an assumption, and it is a problem encountered, when the club's financial years does not follow the football seasons. By withdrawing the amount calculated from "ticketing and broadcasting income", the following revenue are found cf. table 7.3:

in TDKK	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Ticketing and Broadcasting Income	69,891	82,276	97,113	71,956	72,536	78,243	61,809	80,82	111,072	75,723
Sponsor Income	104,033	83,965	97,965	90,768	97,735	99,248	94,806	104,752	101,773	85,095
Merchandise income	18,762	20,456	19,479	14,292	14,561	13,426	11,789	16,086	15,538	16,562
F&B, conference, etc.			52,946	24,382	24,303	16,035	12,987	22,038	22,354	11,288
Total sports-related revenue	**221,841**	**217,018**	**328,615**	**269,034**	**280,088**	**265,338**	**231,974**	**289,26**	**320,309**	**243,725**

Table 7.3, Source: Own creation with data from appendix 9 and appendix 7

It is more stable, but still variating, and further correction is needed. Another revenue stream from European matches are tickets sold, and it should also be corrected and removed in the "ticketing and broadcasting income".

Financial year (in TDKK)	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
#Home matches CHL		3	1		3			3		
#Home matches EL	3	1	3	3		3			5	4
#Home matches qual.	3	2	2	2		2	2	3	3	4
#Attendance qual.	41,391	46,292	30,719	29,677		37,096	22,246	44,296	45,586	44,347
#Attendance Group Stages (CHL & EL)	46,78	12,3741	84,708	51,801	109,969	36,203		91,787	95,973	92,798
Estimated Ticket price group	200	400	200	200	400	200	200	400	200	200
Estimated Ticket price qual.	150	150	150	150	150	150	150	150	150	150
Estimated Revenue from European Ticketing	15,564.65	56,440.20	21,549.45	14,811.75	43,987.60	12,805.00	3,336.90	43,359.20	26,032.50	25,211.65
"Ticketing & Broadcasting Income" corrected	**54,326.69**	**25,835.76**	**75,563.47**	**57,144.31**	**28,548.84**	**65,437.75**	**58,472.10**	**37,460.66**	**85,039.22**	**50,511.00**

Table 7.4, Source: Own creation with data from appendix 9 and appendix 7

In table 7.4, the revenue from tickets sold to European matches has been estimated, by matching the European matches to the fiscal years, and multiplying the number of spectators for all the matches with an approximate ticket price. The ticket price varies depending on, whether the match is from the qualification (150 DKK), the Europe League group stages and beyond (200 DKK), or the Champions League group stage and beyond (400 DKK). The numbers are found from earlier matches, however prices variate between opponents, sections on the stadium etc. (fck.dk, 2018). This is therefore arguably not the perfect prices to apply. When withdrawing the estimated total revenue from European ticket sale, from the "ticketing and broadcasting income", which is also corrected for European price money, it seems that the years with Champions League group stage participation (2010, 2013, and 2016) are now too low. The years after FCK's Champions League participation are too high. It seems that the correction gives some biased and volatile results, indicating that the revenue streams from Europa ticket sales cannot be calculated and withdrawn this simplistic. The revenue from a group stage should perhaps be withdrawn in the following fiscal years instead, when considering the high remaining revenue, in the following years. This approach does not yield satisfying and stable results, hence another approach to calculate the European ticket sales will be applied.

It is complex to find the normal level of revenue from European ticket sales, hence a calculation of every other revenue stream in "ticketing and broadcasting income", will be estimated instead, to find the residual, corresponding to Europe revenue streams. The number of concerts and events in the stadium, Parken, in every year has been investigated, to derive whether the variations come from other activities. However, besides the variations in F&B revenue, the number of events from every year cannot describe the remaining variations in "ticketing and broadcasting income", i.e., why 2017 are much higher, than every other year (Parken Sport & Entertainment, 2020). If it is not possible to find the reason for the variations, then the normal level of revenue from tickets sold in the Superliga will be investigated cf. table 7.5 in TDKK.

Financial year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Season	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
Home Attendance pr. season	311,720	294,394	264,181	270,743	267,244	262,618	275,241	267,308	246,829	310,678
Average Home Attendance	309,381	303,057	279,288	267,462	268,994	264,931	268,930	271,275	257,069	278,754
Ticket revenue from the Superliga	41,766	40,913	37,704	36,107	36,314	35,766	36,305	36,622	34,704	37,632
Rest incl. europe tickets, concerts, etc.	28,125	41,363	59,409	35,849	36,222	42,477	25,504	44,198	76,367	38,091
Rest incl. europe tickets	2,621	15,860	33,906	10,345	10,719	16,974	-	18,694	50,864	12,587
Corrected "ticketing and broadcasting income"	67,270	66,416	63,207	61,611	61,818	61,269	61,809	62,126	60,208	63,135
Total corrected "sport related revenue"	**190,065**	**170,837**	**233,597**	**191,053**	**198,417**	**189,978**	**181,391**	**205,002**	**199,873**	**176,080**

Table 7.5, Source: Own creation with data from appendix 9 and appendix 7

The number of spectators per season is found (Danskfodbold.com, 2020), and an average number of total spectators per financial year is calculated, since the number of spectators from one season influences two financial years. For the first financial year (2009), the season before (2008/09) was applied to calculate the average. This is multiplied by an average ticket price of 135 DKK, to find the total ticket revenue from the Superliga matches every year. In reality, the ticket price varies over the years, but the 135 DKK are assumed to be an approximate average. Moreover, free tickets are given to sponsors, and those were not detected either. Withdrawing the revenue from Superliga tickets from the corrected "ticketing and broadcasting income" leaves a revenue consisting of Europe, concerts etc. This amounts to 25,504 TDKK in 2015, and it is the only year, where FCK does not participate in a European group stage. Therefore, this amount is assumed to be the correct revenue stream of the rest of the parameters without Europe. The corrected "ticketing and broadcasting income" for every year is calculated by adding 25,504 TDKK, to the ticket revenue from the Superliga every year. This means that "rest incl. Europe tickets" consists of the revenue sorted out, and assumed to be correlated with Europe. It is probably not completely true that the European ticket sale revenue should vary that much, and other non-identifiable income might be included, but it is assumed to be true. This European residual will be removed from the financial statement, to stabilize the revenue, and it will be valued in the real options instead, together with the European price money.

It leaves a more stable corrected revenue in total. Yet, the procedure can be discussed. A parameter like season pass to the stadiums have not been taken into consideration, etc. It is therefore biased to make this correction, and to make the right correction, one should have more detailed information on revenue for every year.

When removing the revenue streams from European participation, the cost must also be removed. However, the cost of participating is either very small, or not possible to identify. Personnel cost, transfer expenses, and depreciation from transfer rights will probably be higher, when participating in Europe over time. This will not be corrected, because there is no clear connection to their participation in Europe a specific year. Besides, the transfers are corrected separately later. The only other highly volatile cost is "other expenses", but it is not informed, what this item consists of, and it does not have a natural link to their participation in

Europe. The rest of the costs are relatively stable over the period, and the costs related to participation in European competitions is assumed to be "match costs" under "sport-related operating cost".

in TDKK	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Match costs	11,586	14,099	11,777	13,126	16,089	14,027	10,889	13,348	14,638	16,205
Corrected match costs	8,586	11,099	8,777	10,126	13,089	11,027	10,889	10,348	11,638	13,205

Table 7.6, Source: Own creation with data from appendix 9 and appendix 7

FCK did not participate in a European group stage in 2015, and the level is a couple of millions lower, than the previous and following years. The correction is assumed to be 3,000 TDKK, which is withdrawn from every year cf. table 7.6. This is the only correction made in the costs.

With these corrections incorporated in the financial statement, the analytical statements will be created the same way as in section 6.1. See the appendix 9 "Corrected forecast" tab, for the corrected analytical statement.

7.2 Adjusting the value drivers

To conduct a more thorough DCF analysis, each value driver had to be adjusted and tailored to the specific situation in FCK based on the corrected statements, including only the stable elements in FCK. The value drivers were based on the revenue driven method, as it proved to yield slightly better results, compared to the line-by-line method. However, a couple of the value drivers were changed and calculated differently, and a new value driver was added. Moreover, the last 8 years of historical years were applied, rather than 10, due to the merge with Parken Venues, cf. section 7.1. The value drivers and the forecasting are present in appendix 9 in the "corrected forecast" tab. Furthermore, the value drivers can be seen last in this section cf. table 7.7

The historical revenue growth was based on the same value driver as previously, cf. section 6.2. Yet, unlike in the simple forecasting method used earlier, transfer income and non-sports related revenue are forecasted separately. With the revenue correction conducted in the preceding section, sports-related revenue proved to be far more stable in the realized period. The 2011-2018 period had an average growth rate of 1.53%, and a CAGR of -3.5%. Nevertheless, a significant higher growth rate was chosen in all 3 forecast years, due to a few underlining factors affecting the sports related revenue. It is already known that FCKs attendance in the Superliga had increased to 310,678 for the entire 2018/19 season, which is the second highest in the historical period, and significantly above the last couple of seasons. (Danskfodbold.com, 2020). Furthermore, the 2018/19 season ended with FCK as the Superliga winner, which further suggest that the revenue would be higher compared to the 2018 level, as FCK finished the 2017/18 season with a fourth place. (PARKEN Sport & Entertainment A/S, 2019). Based on these two facts, it is argued that the sports-related revenue will grow with approx. 10% in 2019 compared, to the 2018 level. The revenue growth in 2020 is too set to a 10% rate,

which is based on the assumptions that FCK would finish with a top-2 placement in the Superliga in the 2019/20 season, and the attendance would be at the same level as the 2018/19 season. Additionally, a new sponsor agreement with the main sponsor, Carlsberg, (Parken Sport & Entertainment A/S, 2020) is allegedly worth 30,000 TDKK á year (Thorsen, 2020). Additionally, a new sponsor agreement with Adidas have too been signed (Parken Sport & Entertainment A/S, 2020), which further indicates a revenue growth compared to the previous years. This adds to the argument that the revenue will be higher than previous levels, all other things being constant. The revenue growth in 2021 is too expected to increase, however only with 5%, rather than 10%. The argument is that the new broadcasting agreement, (Wehlast & Egelund, 2019), which starts from 2021, will have an overall positive effect on the broadcasting revenue in FCK. But this does not justify that revenue would grow with 10% again. In addition, it is assumed that FCK would again achieve a top-2 placement in the Superliga and the attendance would be constant.

Unlike earlier methods, the non-sports-related revenue is forecasted separately. The non-sports-related activities mostly includes the operation of property rental. A more thorough analysis would dig deeper into the specific properties, and the current and future market situation. But this thesis does not focus on non-sport related activities, and therefore it is assumed that it will be around the average of the last 8 years of 62,000 TDKK in the forecast years.

Transfer income is too forecasted separately. The realized period shows that transfer income has been increasing significantly, not only in FCK, but also in the overall market cf. section 4.2. The CAGR in transfer income for FCK is 25.5% over the 2011-2018 period. 2018 ended with the highest transfer income in FCK history with 185,738 TDKK (PARKEN Sport & Entertainment A/S, 2019). While it is possible that the transfer income would indeed increase in the period, it remains uncertain. Furthermore, transfer income is driven solely by selling players to other clubs. Whether FCK do develop the right talent, and have them perform at an attractive level, is assumed to be uncertain. The ability to sell to the right buyer and with the right timing is also believed to affect the transfer income, but can be difficult to predict accurately in each individual case. Other factors, such as injuries influences transfers. Furthermore, while the trend in transfer income is clearly increasing, the argument that it already had topped in 2018 for FCK, could too be made. Nevertheless, it is already known that FCK sold a significant number of players at the end of the 2018/19 season, with Transfermarkt.com estimating the total fees to 26.5 mEUR, hence it is likely that the transfer income would be at least at the same level as 2018. Though, the precision of the transfermarkt.com values could be argued, and whether the fees are paid in the financial year or over more years. Yet, it remains uncertain whether FCK would be able to sell the same number of players in the forecasted period, and for the same prices as well. Yet, it is assumed that FCK would have a constant transfer income of 185,000 TDKK in the forecasting years.

Transfer expenses are forecasted via the added value driver *Transfer Expenses / Transfer Income*. While the figure fluctuated from -0.7% to -129.5% in the realized period, it averages -41.1%, with an increasing trend in the last years. Transfer expenses is a similar story to the transfer income, with high uncertainty involved. Thus, it is simply set at a constant of -37% throughout the forecast period, which corresponds to the 2018 level.

With both non-sports-related revenue and net transfer income forecasted separately, the previous value driver of EBITDA-margin would no longer work. Consequently, the value driver is changed to *Variable- and Fixed Costs / Revenue,* where revenue is both sport- and non-sport, but not transfer income, because it fluctuates too much historically. The same argument applies for all value drivers including revenue. EBITDA before Special Items in the budget period is then calculated using the following formula:

$$EBITDA_{before\ Special\ Items} = \underbrace{(Revenue + Net\ Transfer\ Income)}_{\text{Earnings}} + \underbrace{\left(Revenue + \frac{Variable\ \&\ fixed\ costs}{Revenue}\right)}_{\text{Costs}}$$

Where the first part of the equation is the forecasted earnings, consisting of both revenue and net transfer income, and the last part is the costs forecasted using the value driver. Costs being the direct costs, total capacity costs, personnel costs, and both other income and -expenses. The value driver fluctuates between -0.87x and -1.13x, and averages -0.98x. While 2018 was indeed the highest in the period, it is worth noticing that the absolute costs were lower in 2018, compared to the previous two years. Setting the value driver to -1.00x in all the forecasted years leaves the absolute costs, at the approximate same level as the most recent 2016-2018 period.

Special Items / Revenue and *Interest Rate* are both unchanged, compared to the revenue driven method. Special Items were relative stable in the historical period, hence a simple average was deemed adequate to forecast the figures. While Interest rates were fluctuating substantially in the realized period with anything between 49% and -12%, a simple average was too used in this case. The average was 4.17%, which was believed to be an acceptable level in the forecasting period. It should be positive, meaning FCK receive net financial income, over time, since FCK had large profits from associates recurring in the realized period, and it is expected to happen again. Though, the NFE might be negative in in some years.

The value driver, *Depreciations and Amortizations in percentage of tangible and intangible assets*, did not fluctuate much in terms of percentage, but the absolute figure is quite sensitive to a change of a single percentage. The average rate in the historical period was 6.6%, but as the trend in the past 3 years were above

the average, and with regards to the development in transfer rights, a slightly higher percentage of 7.5% was chosen. With 7.5%, the actual depreciations were on a similar level compared to 2018.

The *Efficient Tax Rate* was set to 22%, which is the Danish corporate tax rate (Skatteministeriet, 2020), despite FCK having a negative efficient tax rate in the realized period.

The first value driver relating to the balance sheet is the *(In-)Tangible Asset Growth*. It was found that the non-current operating assets did not follow the development in revenue, when analyzing both its composition and development throughout the realized period, because it was stable, while revenue was fluctuating. Hence, it was decided to change the original value driver to a year-to-year growth-based value driver, identical to the Line-by-line method. The average was 1.47% from 2011-2018. Despite this, the value driver was set to 5.0% in the first forecast year, 2019. This rate was chosen, as transfer rights are expected to increase, due to record transfer expenses in 2018 (PARKEN Sport & Entertainment A/S, 2019), and a 2019 summer transfer window with high investments as well. For instance, with the acquisition of Pep Biel, who allegedly was the club's record transfer acquisition (Ritzau, 2019). The growth rate in the forecast years 2020 and 2021, is estimated to be 1.47%, which corresponds to the average growth rate in the period 2011-2018. It is assumed that FCK would not continue to invest at the 2018 and 2019 level again in 2020, 2021, and all eternity, because FCK expect to keep players for longer durations in the future (Thøgersen, 2020). Amortizations and investments in the stadium are assumed to even out over time, and this will therefore not affect the estimate.

The size of *inventories / Revenue* was insignificant, and therefore the average in the realized period of 3.17% was adequate. *Receivables / Revenue* was set to 80%, despite the average rate being higher with 112%. The 80% is chosen, since it corresponds to the 2018 level of 79.6%. The reasons for the lower receivables are that FCK does not have any receivables from the previous associate, Fitness DK, any longer (Parken Sport & Entertainment, 2019).

Operating Debt / Revenue was steadily increasing every year from 2013 with 97% to 2018 with 206%. Hence, the average of 138% was deemed not to make sense in the forecasted period, as operating debt seemed to be correlated with operating assets, which had also been increasing over the period. Thus, the value driver was set to 200% in all 3 forecast years, which was the 2018 level. The final value driver, *NIBL / Invested Capital*, had variated insignificantly since 2011, therefore the average rate of 40.34% seemed fittingly, as the value driver in the forecast years. Furthermore, the absolute NIBL ended in a similar level to the 2018 level, which is viewed as logical, as debt to the associate Fitness DK is no longer relevant after it was sold during 2018, hence it should be considerably lower than the period 2015-2017.

In conclusion, as the previous simple forecasting methods was deemed insufficient for forecasting, a slightly more advanced method has been used to forecast FCKs future cash flows. The method included changing a couple of value drivers, as well as adding one. The main difference between the applied method in this case, and the two former methods, is that the current method is forward looking and goes deeper into a few key value drivers. The value drivers are present in appendix 9. The analysis of FCK's value drivers could have been much deeper and improved, but this method was preferred, due to limitations. Optimally, a strategic analysis of FCKs intern and extern factors, and a financial statement analysis consisting of a profitability-, risk-, and liquidity analysis, would have been performed. This would have given a better fundament for determining the forecasted value drivers. However, some of the analysis for the entire industry has supported the understanding of FCK as well, and thereby supported an improvement in the value drivers.

Value Drivers	Realized Period					Forecast Period		
	2014	2015	2016	2017	2018	2019	2020	2021
Revenue Growth	-4,3%	-4,5%	13,0%	-2,5%	-11,9%	10,0%	10,0%	5,0%
Transfer Expenses / Transfer Income	-60,8%	-129,5%	-24,5%	-30,3%	-36,9%	-37,0%	-37,0%	-37,0%
Variable and fixed cost / Net Revenue	-0,87	-0,92	-1,03	-1,02	-1,13	-1,00	-1,00	-1,00
Special Items / Net Revenue	0,5%	0,0%	0,0%	0,0%	0,0%	-0,1%	-0,1%	-0,1%
Interest Rate (NFE before tax)	-7,0%	-5,3%	-5,3%	-5,6%	49,5%	4,2%	4,2%	4,2%
Depreciation and Amortization in percent of tangible and intangible	5,0%	4,9%	7,2%	6,8%	8,1%	7,5%	7,5%	7,5%
Effective Tax	-1,1%	20,4%	-17,8%	-14,1%	-12,4%	22,0%	22,0%	22,0%
(In-)Tangible Assets Growth	5,7%	5,5%	0,9%	5,1%	-2,6%	5,0%	1,5%	1,5%
Inventories / Net Revenue	2,7%	2,8%	2,9%	2,1%	2,8%	3,2%	3,2%	3,2%
Receivables / Net Revenue	116,7%	162,9%	145,0%	136,2%	79,6%	80,0%	80,0%	80,0%
Operating Debt / Net Revenue	139,1%	146,6%	150,2%	170,4%	206,7%	200,0%	200,0%	200,0%
NIBL / Invested Capital	34,0%	46,1%	44,7%	51,9%	41,8%	40,3%	40,3%	40,3%

Table 7.7, Source: Own creation with data from appendix 9

7.3 DCF valuation of FCKs stable elements

The FCFF could be forecasted, after the value drivers were adjusted. Using the DCF, a present value of the stable elements' future FCFF is computed to an EV of -188,124 TDKK, based on a WACC of 4.5% and a growth rate of 2.61% cf. figure 22. A negative value was calculated in both the budget period and terminal period, where the terminal period consisted of the highest amount with -151,057 TDKK. The DCF calculations are presented in appendix 9 in the "Corrected Forecast" tab.

in TDKK	Budget Period		Terminal Period
	2019	2020	2021
FCFF	(47.485,92)	8.751,84	(2.979,15)
WACC	4,50%	4,50%	4,5%
Discount Factor	0,957	0,957	
PV (FCF)	(45.441,07)	8.374,97	
PV (FCF) - Budgetperiod	(37.066,10)		
+ Terminal value	(151.057,93)		
= Enterprise Value (EV)	**(188.124,03)**		

Figure 23 - "DCF valuation of the stable element" in TDKK, own creation, data from appendix 9

The basis areas of FCK thus yields a negative value. However, it is expected to generate a positive NOPAT in the forecast years. The NOPAT and change in net working capital are not enough to cover the investments made, during the period. While the stable elements might be slightly profitable in the forecasted years, it needs additional cash flow to keep the current level of investments in assets, and particularly in transfer rights and properties. This leads to the conclusion that FCK is not worth anything, without the opportunities that comes with competing in the international UEFA tournaments.

Yet, it must be noted that the result is highly sensitive, to small adjustments in the assumptions and their corresponding value drivers. I.e., increasing transfer income in the terminal period with 15,000 TDKK would increase the EV with 373,746 TDKK. This scenario is not unlikely, as transfer income have been increasing over time, and a 15,000 TDKK increase is arguably not a significant transfer. Changing the depreciation value driver from 7.5% to 8.1%, the rate in 2018, would reduce the EV with -357,386 TDKK. Both cases are realistic assumptions. Moreover, the sensitivity problem is also present in the low WACC compared to the growth rate. The problem causes the terminal value to be extremely sensitive to changes, as previously reflected on, in section 6.8. A 1% increase in WACC increases the EV 28%, or 53,605 TDKK, as the terminal period is worth less with an increase in WACC, but it would too reduce the extreme differences a few changes could have. Going back to the two examples, a 15,000 TDKK increase in transfer income in 2021 would “only” increase the EV with 241,984 TDKK, and the 8.1% depreciation rate would affect it with -235,758 TDKK. Thus, a high uncertainty is particularly related to the terminal value. A few small differences in the assumptions, could potentially have a substantial effect on the EV. WACC and growth could have been analyzed more in depth. I.e. the peer group applied to calculate the unlevered beta could have been tailored to FCK. This would improve the accuracy in the result, and perhaps reduce the sensitivity.

7.4 Real option valuations of FCK's unstable elements

The last part of the in-depth valuation of FCK, consists of valuating the elements, which were removed from the financial statement in the DCF analysis. These elements are the value of FCK participating in the Champions League group stage and the Europe League group stage. These valuations will be based on the real options model (Koller, Goedhart, & Wessels, Flexibility, 2015). However, due to the nature of the elements valuated, it will not be a normal real option valuation. The real options can be seen in appendix 9 in the "Real options" tab.

A project which would normally be valued by a real option model with a decision tree could be the development of new medicin. There are a few directly measurable investments, the option to continue or to stop the process at several points in the development, measurable positive cash flows, and an end period. This would fit into the real option valuation model. However, the process of making a real option model on FCK's future participation in a European group stage, will differ from this approach. It could be argued whether real option is the right name for this alternative method. The approach will still consist of a "tree" of cash flows from participating or not participating in a group stage every year, however the name; "decision tree" is an overstatement, because FCK does not decide, whether they will participate in a group stage, but they have to perform in order to advance. If an option should be incorporated, it would be the option to invest more in the squad, to increase the likelihood of advancing. Nonetheless, the investments in the squad are not removed from the DCF, and no initial investments will be applied in the model. Even though FCK probably invest more, because of Europe, it is also impossible to find the true amount that FCK invests due to Europe, since their transfer spending's follow inflation, rather than just European participation. One year without Europe might not change their spending a lot. Additionally, there are no end of this "project", because they can keep achieving or missing Europe every year in the future.
The real option model will therefore not consist of any true option, but rather an opportunity of advancing in a European group stage. It will not consist of initial investments either, but it will consist of cash flows from every period, and an end year. The end year is a substantial assumption, and the problematic of not incorporating European group stages in eternity, will later be highlighted in more detail.

Before presenting the real option trees, some parameters must be presented for the two valuations of respectively participation in Champions League group stages and in Europe League group stages. Firstly, a period corresponding to the period in the DCF are chosen, meaning the years 2019, 2020, and 2021. However, 2021 corresponds to all eternity in the DCF (terminal period), and not in this model. The argument for the relevance of this relatively short period, are that it is based on the current squad. It is assumed that, in a sale situation of the club, the current squad and its probability of advancing in Europe, would be the focus, when presenting a real option value of a European group stage. 3 years are arguably a realistic lifetime for a Danish

football squad. Secondly, the WACC applied for discounting the values are the same, as the one applied in the DCF, hence 4.5 %. Thirdly, the probability of advancing to the group stages are based on FCK's number of advancements in the historical period. FCK have been in Champions League 3 times, and in Europe League 6 times. Thus, the probabilities for advancing is set to 30% for Champions League and 60% for Europe League.

A conditional probability has also been added. If FCK advances one year, then the probability of advancing the following year will increase, due to a more experienced squad and vice versa. It might be argued that the dependent probability would result in a negative correlation between advancing two years in a row instead, because FCK would sell more players, when advancing in Europe. Yet, the positive correlation between advancing one year after advancing the last year, will be applied. It was not possible to calculate a relevant probability, based on the history of the football clubs. FCK has only missed Europe in 2015 in the last ten years, and they qualified both the year before and after. If any dependent probabilities should be inferred from this, then the probabilities would be too high, because they almost always qualify, the year after advancing. If investigating any other Danish clubs, which have advanced the last ten years, the dependent probability would almost be zero, since only OB has managed to qualify the year after advancing once. A dependent probability of 5% will, however, be added to the model in both an advancing- and not-advancing scenario, to exemplify how it would be incorporated. I.e., if FCK qualifies for Champions League in 2019, then the probabilities applied in 2020 will be 35 % for advancing and 65 % for not advancing, instead of 30% and 70%.

The last parameter, to insert in the model, are the cash flows. In table 7.8, approximations of actual cash flows of European price money in the historical period are presented, and the "2021/22" column are estimates of price money. The middle field consisting of 350 in the "2018/19-2020/2021" column is also an estimate.

Seasons	2012/13-2014/15	2015/16-2017/18	2018/19-2020/21	2021/22
Total price money in Europe mDKK	1324	1978	2744	3400
FCK price money in CHL mDKK	160	250	350	450
FCK price money in EL mDKK	20	54	64	75

Table 7.8, Source: Own creation with data from UEFA (2020)

The change in total price money for all participants are represented by changes in broadcasting deals, and a new deal is meant to be applied in 2021/22 cf. section 4.2. The last 3 deals have seen an increase in price money of approximately 700 mDKK, and therefore the new deal in 2021/22 is estimated to have an increase of approximately 700 mDKK, as well. The start of the new tournament, Conference League (UEFA, 2019), will be ignored in the calculations of price money and FCK's real options, due to the uncertainty regarding price

money etc. for this tournament. FCK's Champions League price money increased with approximately 100 MDKK between their participations in 2013/14 and 2016/17, and this increase is assumed to follow the same trend, as the increase in the broadcasting deals. This leads to estimates of Champions League price money of 350 MDKK in 2019 and 2020 and 450 MDKK in 2021. It was not possible to find a similar correlation, between the Europe League price money increases and the total price money increases, but FCK did already qualify once, during the duration of the current broadcasting deal. Therefore, the price money applied in 2019 and 2020 are 64 MDKK, corresponding to their actual incurred price money. The price money applied in 2021 are the estimated 75 MDKK, which are purely based on the increase between the last two broadcasting deals. All these cash flows are inserted as cash flows in the model.

Besides price money, an average of the 10 years of "rest incl. Europe" of 17,012 TDKK, excluding 2009 and 2017 as two outliers, from table 7.5 in section 7.1, will be added to the cash flow every year. This represents all the revenue removed from the financial statement, which was not price money, but assumed to be ticket sales etc. from European matches. It is assumed to be the same for Europe League and Champions League every of the 3 analyzed years, even though there would probably be a difference, based on a higher attendance in Champions League. Lastly, a negative cash flow stream is also incorporated. The cost of participating in a group stage was estimated in section 7.1 to 3,000 TDKK, and this amount is assumed fixed for every year and tournament, and it will be withdrawn from the other cash flows.

With all parameters examined, the two trees are presented cf. table 7.9, 7.10, 7.12, 7.13:

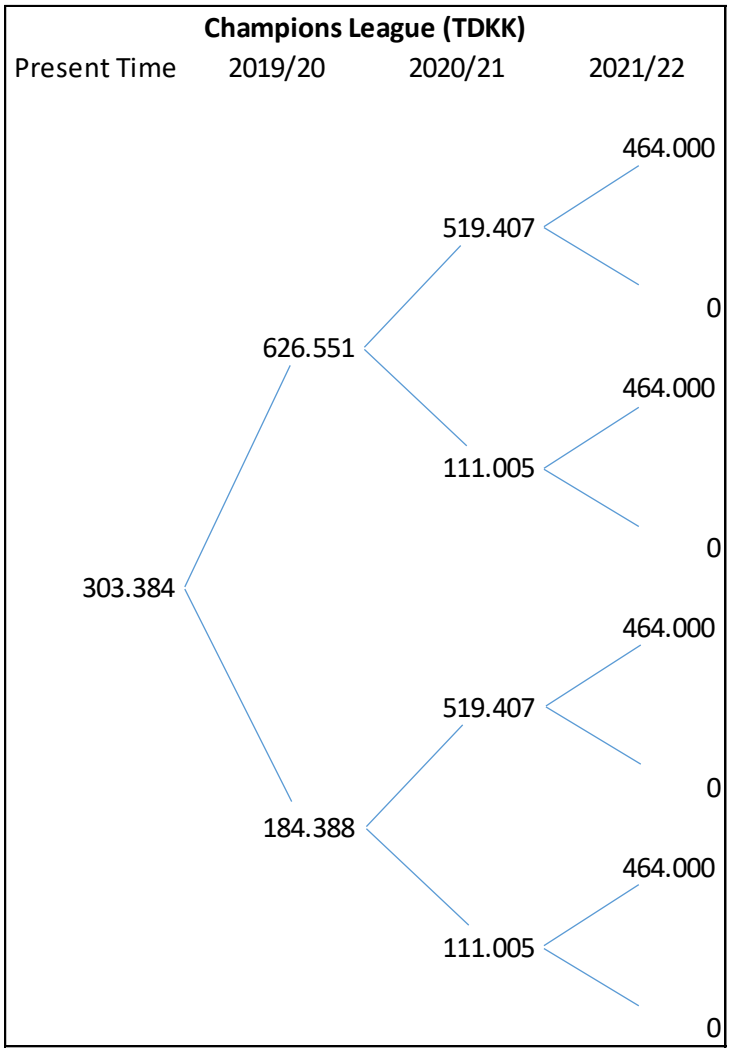

Table 7.9, Source: Own creation with data from appendix 9

Parameters (CHL)	
WACC	4,50%
Prob_UP	30%
Prob_DOWN	70%
Cash Flow 2019	364.000
Cash Flow 2021	464.000
Dependent prob	5%
Dependent prob	5%

Table 7.10, Source: Own creation with data from appendix 9

Sensitivity (CHL)	
Prob_UP	PV (TDKK)
10%	62.642
20%	183.013
30%	303.384
40%	423.755
50%	544.126
60%	664.497
70%	784.868
80%	905.239
90%	1.025.610
100%	1.145.981

Table 7.11, Source: Own creation with data from appendix 9

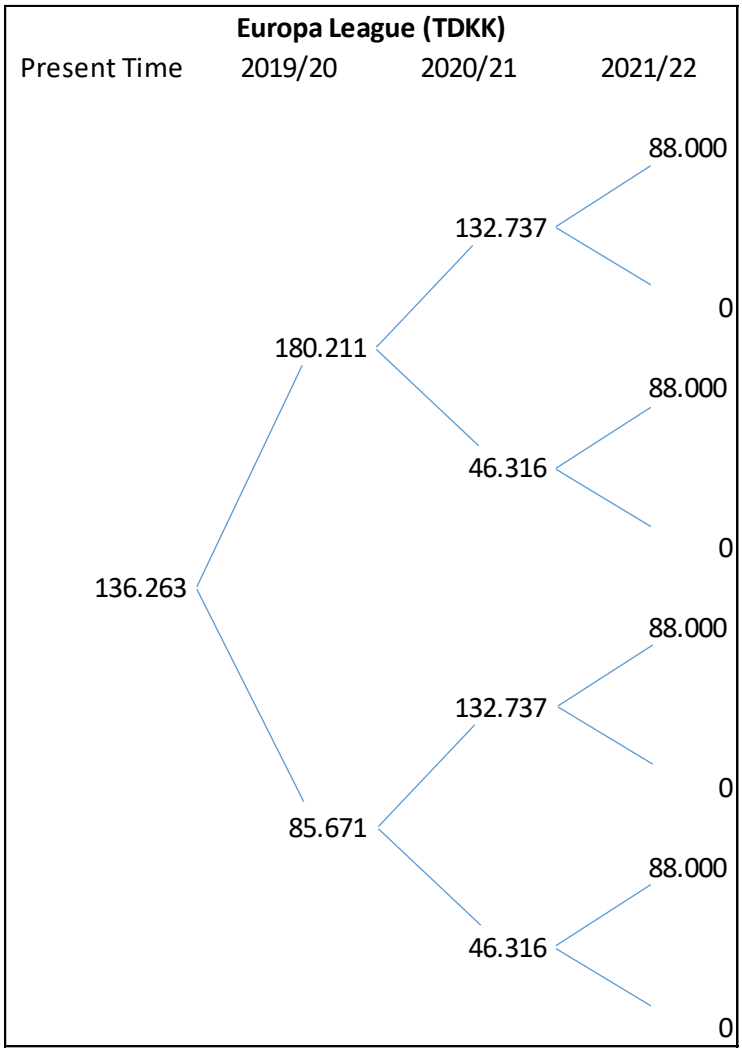

Table 7.12, Source: Own creation with data from appendix 9

Parameters (EL)	
WACC	4,50%
Prob_UP	60%
Prob_DOWN	40%
Cash Flow 2019	78.000
Cash Flow 2021	88.000
Dependent prob	5%
Dependent prob	5%

Table 7.13, Source: Own creation with data from appendix 9

Sensitivity (EL)	
Prob_UP	PV (TDKK)
10%	12.903
20%	37.575
30%	62.247
40%	86.919
50%	111.591
60%	136.263
70%	160.935
80%	185.607
90%	210.280
100%	234.952

Table 7.14, Source: Own creation with data from appendix 9

The value in "present time" of the two trees amounts to 439,648 TDKK, and adding that to the DCF value of -188,124 TDKK, equals a total EV of FCK of 251,523.53 TDKK. This result indicates a positive EV for FCK, and a more realistic value compared to the ones presented in section 6.8. However, it might still be low compared to the share value. Considering that FCK earns more on transfers and Europe, this also indicates that several clubs without those revenue streams, would rightly get negative DCF values, which corresponds to the conclusion that football clubs does not yield satisfying returns compared to risk cf. 4.3. Without the European group stage price money, FCK would have a negative value, but correcting the transfers slightly, changes the DCF value drastically, as mentioned in section 7.3. As seen from the sensitivity analysis presented for the real option trees in table 7.11 and 7.14, the probability of advancing can also influence the value of the real options, though not as drastic as the parameters in the DCF.

One problem with the results is that the real option model presented, only consists of 3 years, and lacks a terminal value factor, as the DCF, which makes them incomparable. The value of the real option should be

higher, due to FCK potentially qualifying more years after 2021. This issue arises, because it is not a project with an end period, which real option valuations normally have. A solution to this could be to incorporate a terminal value factor in the real option, but this would generate too high a value for the real options, due to the price money combined with a relatively high likelihood of advancing. Another solution could be to normalize the level of the real option value, and insert it in the terminal year in the DCF models cash flow. This would possibly generate too drastic results in the DCF, because it is not possible to give a factually good estimate, on a value low enough to insert into the DCF. It would probably be problematic to incorporate the value of the European group stage in eternity, due to the relatively high nature of this revenue source.

7.5 Sub conclusion

A combination of a thorough DCF analysis on the stable elements, and an alternative real option valuation on the unstable elements has proved to yield better results, than earlier tested methods. Nevertheless, several biased estimations are applied, including estimations of the unstable income sources. Therefore, the analysis is still not perfect, and the results do contain several biases. This is also supported by a high degree of sensitivity in EV, when changing different inputs. A higher WACC will change the value substantially, and FCK's WACC is estimated to be low, compared to the high risk in the industry cf. section 4.3. Furthermore, the development in transfers has a high effect on the DCF results, and the growth in transfers are an essential part of the growth in the industry cf. section 4.2. The accuracy of the analysis could have been improved further, by conducting a strategic analysis of FCKs intern and extern factors, and a financial statement analysis consisting of a profitability-, risk-, and liquidity analysis. Whether this method is optimal remains inconclusive, because only 1 club has been analyzed. This analysis could be tailored for every clubs different varying income sources, to test whether it is optimal for the industry, as a whole. This was not done due to limitations.

8. Multiples

An alternative to the DCF methods is the relative valuation method, called multiples cf. section 2.1. While the DCF focuses on the individual club, multiples will be a comparison method. In the following sections, the multiples method will be tested, to investigate, whether it is an optimal approach to valuating Danish football clubs. First, the peer group applied will be presented. Secondly, the applied multiples and calculation methods are examined. Thirdly, bias in the analysis are evaluated, and lastly, the results will be elaborated on. All peers and calculations are presented in appendix 9-33 under the "Multipler" tab.

8.1 Peer group

The first important precaution with multiples is to ensure that comparable firms are applied in the analysis. If the peer group are not comparable on several parameters as growth, rentability, risk, industry, company size etc., then the analysis will be more biased. Therefore, the most optimal solution would be to compare the Danish clubs with other traded Danish clubs of the same size. Some clubs might also be optimal to compare with foreign clubs, which has the same strategy. I.e., FCN focuses on a team based on talents, and therefore some sort of comparison with another talent focused club, such as AFC Ajax, could be relevant. FCK's strategy is based on playing European competitions season after season, and they could be compared to other dominating clubs from leagues on approx. the same level, who also play European season after season. Unfortunately, it is complex to find football clubs operating the exact same way, which has been bought. Every club from the sample will be valued with the same multiples, and FCK and FCN will for example not get their own peer groups. It is not possible to find that many different clubs, and apply them as perfect peers for every club from our sample.

The first clubs investigated are the Danish clubs, which changed ownership. A club needs to be bought by more than 50% by the new owner, to be relevant to this analysis, because It must be a takeover of the control of the club. Those Danish takeovers might be the most straight forward clubs to compare, with the sample of clubs valuated in this thesis. There are several Danish clubs, which has been taken over in the last years cf. section 4.4. Unfortunately, it was not possible to find the necessary information on all of the takeovers. Some clubs do not inform everything to the public. Information's, such as the percentage of the club bought, or the price of the shares bought, were not always available. In fact, the only two Danish clubs, which made all necessary information public were FCM and FCN, whose takeovers were described in section 4.4. This is a very small number of companies for such an analysis, and it will not give significant results, if only two clubs are applied for the multiples. Therefore, further takeovers from foreign countries will be applied as well.

It would be preferred to stay as close to Denmark, both i.e. geographically and in league size. However, it was not possible to find takeovers with enough public information for any nearby country. England is the nearest country, where several takeovers were publicly available. Clubs from the Premier League in England significantly different in size and revenue (BBC, 2019), and would probably not be comparable to Danish clubs. Clubs from the Championship in England might be a little better to compare with, but are arguably still different compared to most Danish teams. Nevertheless, a lot of takeovers in the Championship has publicly available information. A reason for all these takeovers might be that investors see an opportunity to promote the clubs to the Premier League, with all the money a promotion would generate (BBC, 2019). Because of the potential huge returns an investment in a Championship club could give, the clubs might not be comparable to the Danish clubs. Yet, they will be included in the analysis, because of the lack of other clubs. The Championship club takeovers included are Leeds, Charlton, West Bromwich, Aston Villa, Wolverhampton, and Nottingham Forrest.

One more takeover was found in the Italian club A.S. Roma, and included in the analysis. This club is too big to be comparable to the Danish clubs, especially the clubs from the 1. Division. Though, due to the lack of takeovers of football clubs, which gave all necessary information, every club possible was applied. This will generate bias. This gives a total number of 9 clubs, which is probably not enough to give truly significant results. It would have been more optimal to have a lot of clubs, and sort them in different groups based on geography, company size, 1. Division, etc., to make some differentiation in the analysis. It would also be optimal with groups with different characteristics, such as talent focus, focus on European characteristics, etc. All these groups would have given a differential result, and some different angles on the analysis. With the 9 clubs available it might be an opportunity to make a group with Danish clubs, a group with championship clubs, and a group with other European clubs. However, with only two Danish clubs, and only A.S. Roma as another European club, this division into groups is not relevant, and therefore all the clubs will be considered peer group 1 instead, cf. table 8.1.

It has been chosen to include publicly traded clubs all over Europe into the analysis as a second peer group, to increase the number of peers. These clubs have not necessarily been involved in a takeover, and it is therefore not optimal. The clubs share price from the date of their latest publicly available annual reports are used in the analysis. This means that the calculated value of the clubs, are based on the share price and number of shares on a given time, and not the negotiated price between a buyer and a seller, where the buyer takes over more than 50% and gets the controlling influence. This only corresponds to the value of equity, and therefore the NIBL for every club in this peer group will be assumed to be market value, and is added to the equity, to get their EV. Again, it was not possible to gain information on all the publicly traded

football clubs, due to lack of information publicly revealed, or due to other issues, such as language barriers. The clubs, which ended up in this group in the analysis, were AaB, AFC Ajax, AGF, AIK Fotboll, Borussia Dortmund, BIF, Celtic, Juventus, Manchester United, Olympique Lyonnais, Parken Sport & Entertainment, and Silkeborg IF Invest cf. table 8.2. Some consists of other business areas than football, which biases the analysis further. An approach to divest the irrelevant business areas, could be to calculate the percentage of the football business' revenue, compared to the group's total revenue, and apply this as the percentage of the share price, as well. This approach is not preferred, due to the risk of overcorrection. I.e. the football business in Parken Sport & Entertainment might have a percentage of 30%, but due to passion revolving around football from fans cf. section 4.4, the true football percentage of the total share price might be above 30%.

The following clubs will therefore be applied in the analysis divided into two peer groups:

Clubs involved in takeovers (Peer group 1)	**Source(s) concerning the takeover**	**Source concerning financials (revenue, EBIT etc.)**
FCM (Denmark)	(Ritzau, 2014)	(FC Midtjylland A/S, 2015)
FCN (Denmark)	(Lauridsen & Chor, 2015)	(F.C. Nordsjælland A/S, 2015)
Leeds (England)	(ritzau, 2014)	(Companies House, 2020)
Charlton (England)	(Guardian staff, 2014)	(Companies House, 2020)
West Bromwich (England)	(Khan & Clover, 2016)	(Companies House, 2020)
Aston Villa (England)	(Brown, 2016) and (Odell & Massoudi, 2016)	(Companies House, 2020)
Wolverhampton (England)	(BBC, 2016)	(Companies House, 2020)
Nottingham Forrest (England)	(Aarons, 2017)	(Companies House, 2020)
A.S. Roma (England)	(BBC, 2011)	(Orbis, 2020)

Table 8.1, Source: Own creation with sources present in the table

Publicly traded clubs (peer group 2)	Date for observation and source concerning share price	Source concerning shares and financials (annual reports)
Aalborg Boldspilklub A/S (Denmark)	28-12-2018 (Børsen, 2020)	(Aalborg Boldspilklub A/S, 2019)
AFC Ajax NV (Netherlands)	02-07-2019 (Euroinvestor, 2020)	(AFC Ajax NV, 2019)
AGF A/S (Denmark)	27-06-2019 (Euroinvestor, 2020)	(AGF A/S, 2019)
AIK Fotboll AB (Sweden)	30-12-2019 (Avanza, 2020)	(AIK Fotboll AB, 2019)
Borussia Dortmund GmbH & Co. Kommanditgesellschaft auf Aktien (Germany)	01-07-2019 (Euroinvestor, 2020)	(Borussia Dortmund, 2019)
Brøndbyernes IF Fodbold A/S (Denmark)	28-12-2018 (Euroinvestor, 2020)	(BRØNDBYERNES IF FODBOLD A/S, 2019)
Celtic plc (Scotland)	01-07-2019 (Euroinvestor, 2020)	(Celtic PLC, 2019)
Juventus Football Club S.p.A. (Italy)	01-07-2019 (Euroinvestor, 2020)	(Juventus Football Club S.p.A., 2019)
Manchester United plc (England)	01-07-2019 (Euroinvestor, 2020)	(MANCHESTER UNITED plc, 2019)
Olympique Lyonnais Groupe SA (France)	01-07-2019 (Yahoo Finance, 2020)	(Olympique Lyonnais, 2019)
PARKEN Sport & Entertainment A/S (Denmark)	28-12-2018 (Euroinvestor.dk, 2020)	(Parken Sport & Entertainment, 2019)
Silkeborg IF Invest A/S (Denmark)	16-01-2019 (Euroinvestor.dk, 2020)	(Silkeborg IF Invest A/S, 2019)

Table 8.2, Source: Own creation with sources present in the table

8.2 The Calculations and multiples applied

In the analysis, several multiples could be applied, cf. section 2.2. The preferable multiple would be NOPAT, because all the operation after tax in the clubs, would then be valued and compared across the clubs. However, because of the majority of the clubs having negative EBIT and NOPAT, the multiples will not make sense, since negative multiples give negative values. Because of the lack of profitable clubs, revenue will be used as the primary multiple, despite all the items in the income statement not being included, when using

revenue. However, results from EBIT multiples will also be presented later, to illustrate the problematics mentioned.

In the presentation of the calculations and the method for the clubs involved in a takeover, FCM will be used as an example. First, the price of 100% of FCM must be calculated, based on the price from the takeover of FCM. In 2014, Matthew Benham bought 60% of FCM for a price of 58,000 TDKK (BBC, 2014). It is assumed that the last 40% of the shares would be priced as the first 60%, and hence use the following formula to calculate the price of a 100% of the club:

$$58{,}000 * (1 - 60\%) + 58{,}000 = 81{,}200\ TDKK$$

Thus, the price for 100% of the shares is 81,200 TDKK. With the value of the firm calculated, it is straightforward to calculate a multiple by dividing revenue, or EBIT, etc. with the value of the company cf. section 2.2. First, some precautions must be made. It must be financials from the same year as the takeover, hence financials from the annual report 2014 has been used for FCM. Secondly, the same currency must be applied on the financials and the price of the clubs. Therefore, the numbers for a few clubs has been corrected with an exchange rate from the given point in time that the takeover happened. I.e., A. S. Roma's takeover price has been recalculated to USD, by using the exchange rate applied on their financials found at Orbis (Orbis, 2020). Lastly, the financials must include the same items as all the clubs being evaluated, and all the clubs in the multiple analysis. This means that when using revenue, transfer income has been added to the revenue, if it was not already there, because this correction was done for the sample valuated as well. Some bias is created from this, due to some clubs not dividing the transfer result into income and cost, hence a few clubs have transfer cost included. Secondly, clubs with other business areas than football, should be corrected. However, no other business areas were detected for the clubs involved in takeovers. If extraordinary cost or income are above EBIT, it should be moved down. If gain or loss on sale of assets is above EBIT, it should be moved under EBIT as well, as for the clubs valued from the sample. Lastly, the financial leasing calculated in section 3.5, will not be included in the calculations, to insure comparability above EBIT. It is assumed that the peer group, consisting of takeovers, will not include financial leasing in their numbers. The annual reports from foreign clubs, rarely gave enough information to make all the necessary corrections. The primary correction that was possible to make, was to include transfer income in the revenue. FCM had a revenue of 88,017 TDKK and an EBIT of -50,915 TDKK in 2014, which gave multiples of:

$$\frac{EV}{Revenue} = \frac{81{,}200}{88{,}017} = 0.92x$$

$$\frac{EV}{EBIT} = \frac{81{,}200}{-50{,}915} = -1{,}59x$$

For the publicly traded clubs, Silkeborg IF Invest A/S will be applied as an example. Note, that the Danish clubs in this peer group is not necessarily the exact same corporate entities, as the ones in the sample. This is due to the entire group of the companies being included, hence it was not possible to find a share price for the football part of the group only. Firstly, the date for the latest public financials was applied. To ensure comparability, the share price from the same date was applied. For Silkeborg IF Invest, the price per share was 16.7 DKK on the 16/1/2019, which was close to the date for the latest annual report. In the annual report it appeared that 9,901,598 shares were outstanding. Number of shares outstanding times share price equals a total equity of 165,357,687 DKK. Then, Silkeborg IF Invests NIBL was calculated to 8,048,000 DKK, and added to the equity for a total EV of 173,405,000 DKK. This number is assumed to be the true value of the Silkeborg IF Invest, and from now on, the same method is applied as for the clubs involved in takeovers. It must be noted that AaB A/S gave a negative value of the company, due to adding a negative NIBL larger than the value of the equity. The same corrections will be made to the revenue, and EBIT, to make It comparable. The multiples for Silkeborg IF Invest are then:

$$\frac{EV}{Revenue} = \frac{165{,}357}{127{,}136} = 1.30x$$

$$\frac{EV}{EBIT} = \frac{165{,}357}{20{,}455} = 8.08x$$

All the peer groups multiples and the mean and medians are presented for both the Revenue- and EBIT multiple in table 8.3, 8.4, 8.5, and 8.6:

Multiples for the clubs involved in takeovers:

Club (Year)	%shares bought	Price for x #shares	Price for 100% of the shares	Revenue (T)	EV/REV	EBIT (T)	EV/EBIT	Currency
FCM (2014)	60%	58.000	81.200	88.017	0,92	-50.915	-1,59	DKK
FCN (2015)	97,41%	100.000	102.590	80.774	1,27	-706	-145,31	DKK
Leeds (2014)	75%	24.750	30.938	24.898	1,24	-18.234	-1,70	GBP
Charlton (2014)	100%	14.000	14.000	14.458	0,97	-5.440	-2,57	GBP
West Bromwich (2016)	88%	175.000	196.000	101.140	1,94	1.018	192,53	GBP
Aston Villa (2016)	100%	60.000	60.000	106.752	0,56	-30.243	-1,98	GBP
Wolverhampton (2016)	100%	45.000	45.000	37.210	1,21	7.615	5,91	GBP
Nottingham Forrest (2017)	100%	50.000	50.000	35.513	1,41	-8.265	-6,05	GBP
AS roma (2011)	67%	101.605	135.134	207.947	0,65	-34.212	-3,95	USD

Table 8.3, Source: Own creation with data from appendices 9-33

Peer Group 1	EV/REV	EV/EBIT
Mean	1,130	3,920
Median	1,209	-1,984

Table 8.4, Source: Own creation with data from appendices 9-33

Multiples for publicly traded clubs:

Club	Share price	#shares	EV	Revenue (T)	EV/REV	EBIT (T)	EV/EBIT	currency
Aalborg Boldspilklub A/S	117	330.649	(7.055)	81.077	-0,087	-22.192	0	DKK
AFC Ajax NV	18,43	18.333.333	259.883	199.495	1,303	68.193	4	EUR
AGF A/S	0,28	328.621.000	49.268	141.705	0,348	10.332	5	DKK
AIK Fotboll AB	1,99	21.839.994	5.295	184.566	0,029	-3.703	(1)	
Borussia Dortmund GmbH & Co.	8,62	92.000.000	729.638	451.046	1,618	29.369	25	EUR
Brøndbyernes IF Fodbold A/S	0,78	312.225.190	270.365	246.952	1,095	11.210	24	DKK
Celtic plc	1,625	94.202.000	128.676	83.410	1,543	11.520	11	GBX
Juventus Football Club S.p.A.	1,5	1.007.766.660	1.946.870	621.456	3,133	-15.329	(127)	EUR
Manchester United plc	14,3859	40.526.000	788.554	652.921	1,208	49.985	16	GBP
Olympique Lyonnais Groupe SA	3,29	58.177.169	393.941	297.800	1,323	22.200	18	EUR
PARKEN Sport & Entertainment A/S	79,6	9.875.200	1.770.868	970.590	1,825	137.666	13	DKK
Silkeborg IF Invest A/S	16,7	9.901.598	173.405	127.136	1,364	20.455	8,48	DKK

Table 8.5, Source: Own creation with data from appendices 9-33

Peer Group 2	EV/REV	EV/EBIT
Mean	1,225	-0,379
Median	1,313	9,824

Table 8.6, Source: Own creation with data from appendices 9-33

The peer group, consisting of clubs involved in a takeover (Peer group 1), has an average revenue multiple of 1.13x and an average EBIT multiple of 3.92x, which is affected by two outliers. The other peer group, consisting of publicly traded clubs (Peer group 2), has an average revenue multiple of 1.23x, and an average EBIT multiple on -0.38x. Medians can be considered, to avoid the outliers. Peer group 1 has a median revenue multiple of 1.21x, and a median EBIT multiple of -1.98x, which is more precise, because it avoids the outliers. Peer group 2 has a median of 1.31x, and a median EBIT multiple of 9.82x. Considering how complex it is to compare football clubs, because of different strategies, size, competition, owners, strategies etc., the revenue multiples are within a reasonable interval, and also have revenue averages close to each other. Especially peer group 1 has a relatively small interval on the revenue multiple between 0.56x and 1.94x. It could be fair to conclude that a revenue multiple around 1 would be a reasonable choice. According to Jesper Jørgensen, the revenue multiple in England is also in this interval, as he believes that it might be around 1.4x (appendix 4). However, the peer groups are relatively small, and there are many biases, hence the results are not nearly as significant, as the averages and intervals might indicate.

8.3 Biases

There are several biases in the analysis, some of which have already been mentioned. Firstly, several of the Danish clubs do not report revenue in their annual reports. A revenue has been estimated for those clubs cf. 3.4, but it is biased. The revenue also consists of different income sources and different distributions of income sources cf. section 4.1, which could affect the price. Even though several clubs do not report revenue, the EV/revenue multiple are the most applied multiple in the analysis, because of negative EBIT from

most football clubs. Therefore, earnings are considered, but not the profitability of the clubs. Moreover, the future earnings are not considered, but only one year of revenue, thus not incorporating the expectations for the clubs, as the DCF and real option does. Another bias is that these multiples are all taken from the year, where the takeover happened, which are different years. These years can randomly be a single good year for a specific club, or a randomly bad year compared to the other financial years. Especially, the publicly traded clubs without a takeover are biased. I.e. Silkeborg IF Invest A/S includes other business areas than football. Because the share price is based on the entire company, this leads to bias, which is not corrected, due to the risk of overcorrection. FCK and SIF from the sample are corrected for other business areas, but when using their company as a multiple in this analysis, the same correction cannot be made. Furthermore, football clubs are different in size (clubs from the Danish 1. Division are especially too small, compared to the peer group), results, strategy, owners etc. Thus, suggesting multiples cannot be applied in the industry. This is supported by interview 1 and 4 (appendix 1 and 4). Lastly, a bias from the different motives of buying football clubs also matters cf. section 4.4. The realized prices from the takeovers can be based on various different motives, where the price might variate correlated with motives.

8.4 Presentation of results on multiples

All results are presented in table 8.7 and 8.8.

	Enterprise Value / Revenue (TDKK)			
Club	Avg. Takeover	Median Takeover	Avg. Traded	Median Traded
AaB	91.623	98.051	99.313	106.436
ACH	77.395	82.825	83.891	89.908
AGF	122.010	130.570	132.251	141.736
BIF	279.073	298.652	302.496	324.192
EfB	68.523	73.330	74.274	79.601
FA	3.060	3.275	3.317	3.555
FCF	16.823	18.003	18.235	19.543
FCK	561.611	601.013	608.748	652.409
FCM	304.984	326.381	330.582	354.292
FCN	150.067	160.595	162.662	174.329
FCR	14.939	15.987	16.192	17.354
HBK	20.086	21.496	21.772	23.334
HIF	7.273	7.783	7.883	8.449
HOB	25.357	27.136	27.485	29.456
LBK	32.266	34.529	34.974	37.482
NBK	12.233	13.091	13.259	14.210
NFC	7.828	8.377	8.485	9.093
OB	185.908	198.951	201.511	215.964
RFC	68.070	72.846	73.783	79.075
SIF	84.744	90.689	91.856	98.445
SIK	7.490	8.015	8.118	8.700
SJE	35.475	37.964	38.453	41.210
VBK	62.918	67.332	68.199	73.090
VEN	41.763	44.693	45.268	48.515
VFF	31.643	33.863	34.299	36.759

Table 8.7, Source: Own creation with data from appendices 9-33

	Enterprise Value / EBIT (TDKK)			
Club	Avg. Takeover	Median Takeover	Avg. Traded	Median Traded
AaB	-87.002	44.027	8.400	-218.005
ACH	54.144	-27.400	-5.227	135.671
AGF	30.195	-15.280	-2.915	75.661
BIF	43.948	-22.240	-4.243	110.122
EfB	-33.178	16.790	3.203	-83.137
FA	-45.820	23.187	4.424	-114.813
FCF	904	-458	-87	2.266
FCK	222.789	-112.743	-21.510	558.255
FCM	260.554	-131.854	-25.156	652.886
FCN	48.193	-24.388	-4.653	120.759
FCR	-21.267	10.762	2.053	-53.290
HBK	3.393	-1.717	-328	8.503
HIF	-2.382	1.205	230	-5.968
HOB	-31.439	15.910	3.035	-78.779
LBK	-49.767	25.185	4.805	-124.703
NBK	-561	284	54	-1.406
NFC	-9.085	4.598	877	-22.765
OB	-164.732	83.363	15.904	-412.778
RFC	-31.376	15.878	3.029	-78.620
SIF	31.834	-16.110	-3.073	79.768
SIK	1.823	-923	-176	4.569
SJE	-41.463	20.983	4.003	-103.897
VBK	6.257	-3.166	-604	15.678
VEN	-13.925	7.047	1.344	-34.893
VFF	-16.646	8.424	1.607	-41.710

Table 8.8, Source: Own creation with data from appendices 9-33

While the EBIT multiple yields some varying results, which indicates the negative operations of several football clubs, as the DCF presented. Due to negative EBITs, the revenue multiples are more interesting. They indicate a relatively realistic model for valuating football clubs, compared to real world prices. First of all, there is a good link between the values of bigger and smaller clubs with FCK, FCM, BIF, FCN, OB, and AGF being the most valuable clubs, and clubs as FCR, SIK, NFC, NBK, and FA from the 1. Division being the least valuable clubs. Even though, especially AGF, BIF, and OB generates highly negative NOPATs, the model indicates that their value is still relatively high, due to other factors that indicate their size in Danish football, not only revenue, but also brand, fanbase, etc. This contradicts the results of the DCF, as it indicates, which clubs are likely to generate positive cash flows in the future, based on their past primarily, where AGF, OB, and BIF performs poorly. Besides the logic link between big and small, the level of the results might also have some logic attached. I.e., almost 100% of FCN was bought for 100,000 TDKK in 2015, and their values lies between 150,067 to 174,329 TDKK, according to the revenue multiples presented cf. table 8.7. Taking

FCN's positive development, the latest years, into consideration (appendix 7), this might be a relatively realistic price, when comparing to the actual market price. Another Danish takeover presented was FCM, which was bought for 58,000 TDKK in exchange for 60% of shares in 2014 cf. section 8.2. Their value lies between 304,984 to 354,292 TDKK, and their development have been relatively massive from negative NOPAT's every year, to highly positive NOPAT's every year the latest years (appendix 7). Therefore, it also seems logic that their value should have increased drastically from their market price in 2014, and the results from the revenue multiples might not be to unprecise. It is important to state that football clubs clearly have a value, according to demand in the real world, despite their very negative results from the annual reports, in general (appendix 7). Football clubs are still bought, and some reasons for owning clubs are presented in section 4.4. Therefore, multiples might be a better model for valuating football clubs than DCF, because they take the true supply and demand into consideration, rather than trying to calculate a value based on financial performance only. This will often indicate a negative value for Danish football clubs. It might be due to football club's nature, which is not necessarily to generate returns, but rather results.

8.5 Sub Conclusion

The revenue multiples provide fewer volatile results, than the DCF approaches. The results from the revenue multiples are satisfying, since the values are not too extreme, and they probably represent the actual demand of football clubs more precisely, than the DCF. Though, football clubs might not always be a good investment, due to an unsatisfying relation between risk and return cf. section 4.3. Furthermore, the different average and median revenue multiples lie within a reasonable level, and consist of only a few outliers in the peer group. However, the method is based on uncertainty, due to lack of comparability between clubs. Some of the important biases are that the motives for ownership, might have an impact on price cf. section 4.4, which could not be corrected in the analysis, but might explain, why clubs are bought despite poor financials. Moreover, some clubs in the peer group includes other business areas than football, while the peer group does not consist of a satisfying number of clubs either. Additionally, the analysis is only made for one specific year of revenue, and this year might not represent a normal year for a club, and it does not consist of future expectations either. Therefore, the method is too simple, and even though the results seem satisfying, they might not be significant enough to justify this method. If more peers and information were accessible, an analysis with a tailored peer group for every club might be relevant, but even this might be biased, due to many factors of incomparability between clubs.

9. Corona

The current world situation is being heavily affected, by what have come to be known as the "Corona-crisis" during the process of writing this thesis. The Danish football industry is too affected by this situation, and so, it is relevant to examine what impact the current situation have on the football industry. This section will discuss the effects on valuing football clubs and, thus, serve as a supplement to the analysis conducted in this thesis. Nevertheless, it must be noted that by the time of writing this, new information is being revealed nearly on a weekly basis, which means that this section might be outdated by the publication of the thesis.

Governments all over the world have suspended football until further notice, including in Denmark (Divisionsforeningen, 2020). Consequently, no professional football has been played since the early march. Currently, it is planned to start the Superliga and 1. Division in ultimo May, without spectators until ultimo august (Ritzau, 2020).

The situation has already affected the clubs economically, since they have not been able to generate any income from matchday. More importantly, one of the main income sources in broadcasting, cf. section 4.1, is too affected, as it has not been allocated yet. Moreover, the clubs with other activities, such as concerts, conference, and/or other sports activities, are likewise not generating any income. Executive Director in EfB, Brain Knudsen, have said that the club is currently losing millions as a consequence (Dehn, 2020). The effects on sponsor- and transfer income is unknown. Whether sponsors would continue to invest at the same degree in football clubs is uncertain. Some sponsors might priorities differently in the future, and the loyal sponsors could potentially have been declared bankrupt. With clubs being affected heavily on their liquidity, transfer activity might decrease. This might cause the prices of transfer rights to fall in the short-term, which affects the clubs, when they must sell and buy players. The net effect is however, under extreme uncertainty. Whether transfer prices will return to a normal level, within a few years is uncertain.

While the clubs have no, or little, opportunity of generating income, most are then forced to focus on cutting expenses. Furthermore, the Danish government will compensate several items, to a certain extent, as i.e. wages and some of the losses the clubs made during the matches without spectators (Batchelor & Gram, 2020; Ritzau, 2020). Moreover, the players in several clubs have accepted a temporary pay cut (Ritzau, 2020), and fans of the different clubs are supporting economically, by keeping season pass or buying items from the clubs (Vestergaard, 2020). However, some clubs are still under economic pressure, due to the lack of short-term liquidity. I.e. HOB have publicly announced that they could potentially face bankruptcy (Dehn, 2020).we

The lack of income will affect all valuation models in this thesis. With no income from match days and broadcasting for several months, the revenue multiples will be highly affected, hence all clubs will decrease in EV cf. chapter 8. In DCF all inputs are affected as well. The growth in the football industry will probably decrease, affecting the growth rate cf. section 6.5. Whether the growth rate in the terminal period should be reduced is uncertain, as it depends on the recovery of the society. Every value driver must also be reconsidered, especially for the coming years in the budget period, where earnings must be reduced cf. section 6.2. Cost must also be reduced, due to the companies cutting in their cost. Assets might be reduced, due to less investments, while some clubs might be forced to increase their debt. The short-term liquidity risk will also increase risk, hence WACC must be higher, especially in the first years of the budget period cf. section 6.4. The real option will also be affected for several clubs, however the one presented in this thesis only consists of European participation in FCK cf. section 7.4. Several of those possible earnings will not change, but a future broadcasting deal could be lower than expected. It is important to state that the effects might vary from club to club, depending on size etc. However, every club will probably have lower values.

10. Discussion & Perspectivation

The most important finding is that football clubs are volatile, and therefore a simple DCF cannot be applied. Another important finding is that revenue multiples yield satisfying results, but they might be too biased. However, when analyzing the DCF in depth, it might be possible to tailor the DCF to fit the individual club. Further analysis of the value drivers in the tailored DCF indicates improvements, but the results are not significant.

The findings in the DCF analysis shows that a general DCF valuation approach was not optimal, when analyzing Danish football clubs, due to volatile historical financial performance and highly sensitive results. This argument applies with both revenue driven value drivers and line-by-line value drivers. The revenue fluctuates greatly from year to year, due to variations in different income sources. This complicates the forecasting methods and introduces a high amount of uncertainty. Furthermore, a large part of the clubs had a negative cash flow in nearly every year, which resulted in negative EVs for a significant part of the clubs. However, these negative results might not mean that a club is worth nothing, due to other factors as opportunities, value adjustments on transfer rights, or other items etc. While the argument that the clubs are not worth anything could be made, it was believed not to be the case, since some of the clubs had indeed been traded in the past, possibly due to several motives for ownership. Moreover, the results are very sensitive to several parameters, such as WACC, which are complex to estimate, especially in an industry, where key

figures indicate a high risk of bankruptcy, but clubs manage to survive under these conditions. This approach consisted of many limitations, such as a very general approach to the forecasting period, rather than a thorough analysis of the different clubs. Furthermore, there were limitations in several estimations, where lack of information or resources led to many assumptions. I.e., the beta value is based on a few other clubs' betas from a specific date, and this can be biased. Revenue were also estimated for several clubs, where a higher information level in financial reports would make the analysis more precise. Likewise, has the financial leasing value of stadiums been estimated under several assumptions. Different scenarios and forecasting methods were tested, but without any real success. Thus, a deeper analysis of a single club was conducted to test whether it would improve the DCF results.

The test of a thorough DCF analysis on a single club did yield more satisfying results, when removing unstable income streams, and valuating them with an alternative real option method, rather than the DCF. The result was much less extreme, but it is still very sensitive to small chances in parameters, i.e. WACC or transfer income. Nonetheless, the method is considered more optimal than the simple DCF, but the results are insignificant, due to it has only been tested on one club. This is a limitation, but with further resources this method should be tested on more clubs, before it potentially can be concluded to be optimal. It should be tailored for every club, because it varies, which income sources are volatile. It also contains various biases and is a highly complex method. Besides the assumptions, when making estimations as in the simple DCF approach, it also consists of further assumptions, when splitting stable from unstable business, and making predictions of the value drivers in the budget period. It does also lack a terminal or eternity element in the real option, which only values a club's unstable business for a few years.

Lastly, the revenue multiples did prove to be the most optimal method, when compared to value of actual takeovers and demand in practice, while the DCF results reflects theories of risk and return, and that companies must yield economic returns. Football clubs does not necessarily have the purpose of generating profits, which might be represented by these radically different results from multiples than DCF. The more positive results might also be a result of different motives for owning clubs. These revenue multiples yielded realistic results, based on the takeovers taking place in the real world. However, this means that clubs, generating negative EBIT´s year after year, still have positive values. This method is very simple and is therefore object to many biases and limitations. I.e., it has a limited peer group, where not every club are comparable with the sample, and especially the small clubs in Denmark does not fit peers. Some peers, from the peer group with listed companies, even have other business areas than football. Furthermore, the values are calculated based on a single year´s revenue, which could be a biased year, and it does not take

the future into consideration. Moreover, the different motives for owning football clubs might affect price, and therefore the multiples in the peer group.

A general limitation in this thesis is the sample size with 25 clubs, which consist of companies of much different sizes and potential. Even though the number of clubs has been approved with the argument that it consists of almost all clubs, within reach of the top division in Denmark, it is still a relatively small number of clubs. Furthermore, the data accessible is limited, i.e. if we have had every club's revenue or precise betas for every club etc., the analysis would have been better. If information about the takeover price on certain Danish clubs had been public, the multiples peer group would also have been both bigger, but also matching the small Danish clubs better.

The finding in this thesis resembles the findings in Markham (2013), where it was found that the DCF analysis was "*unsuitable for universal and dependable valuation of clubs.*" (Markham, 2013, s. 27). While Markham (2013) only made a simple valuation without forecasting, this thesis did make a more complex DCF valuation with forecasting of different scenarios, to test it more thoroughly. Markham (2013) did too investigate the revenue multiple, with the conclusion that "*the technique is far too simplistic.*" (Markham, 2013, s. 27). While the revenue multiple approach used in this thesis is too simplistic, especially compared to the DCF, the approach was overall found to be better, than the general DCF approach. This thesis generally tested the DCF and multiples approach more in depth than Markham (2013). While Markham (2013) rejects the DCF and multiples immediately and with little investigation, this thesis test the methods in depth, and also concludes that a very general approach to the models does not fit the industry. However, this thesis tries to expand and adjust the methods to fit the football industry, rather than rejecting their relevance completely, resulting in a combination of different methods, as DCF and real options. This further analysis results in a different conclusion, where the adjusted DCF and the multiples cannot be rejected completely, but a further investigation of them are required.

For future research, the general DCF and multiple analyses could be expanded to focus on more than just Denmark, hence incorporating a bigger sample size than the current 25 clubs. A bigger peer group in the multiples will also increase significance of the results. Moreover, the multiples could be expanded to incorporate averages of many years of revenue for a club, to avoid incorporating values from one biased year with a very volatile and high revenue stream. Cost elements could also be incorporated in the multiples. However, it cannot simply be done by applying another multiple, because of the negative EBITDA's for many clubs, and therefore another approach of adding the cost elements to the value must be analyzed. Completely different methods or different capital value-based methods, can also be incorporated as sup-

plement. Brand value is also interesting to investigate more in depth, as clubs as BIF and AGF, which generated some of the worst EBIT's over the time period, still might be worth more than many other clubs, due to the number of fans and therefore their brand. Due to limitations these further analyses have not been executed.

The thorough DCF and real option analysis of FCK could also be expanded to be applied on every club to increase the sample size, but it could also be expanded by making a deeper strategic analysis and financial statement analysis, including profitability, risk, and liquidity, specifically for every club. I.e., an analysis of FCK's ROIC, profit margin, and asset turnover ratio could be of interest, when investigating profitability. Such an analysis would increase the significance, and enhance the ability to make a precise conclusion to the DCF and real option method. Furthermore, the real option could be enhanced. I.e., the eternity element of the DCF's terminal value could be added to the real option, or the result of the real option could be added to the terminal value element in the DCF analysis, to make sure that the income streams in the real options can also be achieved in eternity. However, dependent on how big the values in the real option is, this incorporation can be difficult, because results can be too drastic when incorporation the unstable and extreme income sources for eternity. Therefore, a larger analysis must be made of how to incorporate the terminal element rightly.

11. Conclusions

The purpose of this thesis is to answer the following problem formulation:

"Which valuation methods are most optimal, when valuating Danish football clubs in the two highest divisions?"

No optimal method to valuate every club in a general manner was found. The valuations must be tailored for the individual clubs. Of the approaches examined, the revenue multiples were the most promising approach, when applied in a general manner for every club. However, the peer groups should be tailored for every club, because the Danish football clubs are different in size, strategy etc. If a club is analyzed by the DCF approach, the analyzes must also be tailored. Every clubs' volatile elements must be determined and valuated separately from the stable elements of the business.

Two overall valuation approaches were tested on 25 Danish football clubs in the form of a present value approach and a relative valuation approach. The present value approach was firstly tested with two simple discounted cash flow methods and then a more complex discounted cash flow method, with the inclusion of a real option value. The relative valuation approach was mainly tested with the use of a revenue multiple and an EBIT multiple.

The financial statements from all the 25 clubs were reorganized, adjusted stadium leasing was estimated, and revenue was estimated for those clubs, not disclosing it in their annual reports. Moreover, several items in the annual report are not recognized to the market value, and some items have been estimated, as transfer rights. This was done before the analysis could be conducted, with the aim of making the results comparable between the clubs. Furthermore, the Danish football industry was analyzed with the focus on four key elements: sources of income, growth in revenue, risk, and ownership. It was found that the clubs do have several sources of income and with varying importance from club to club, which complicates a general analysis for all clubs. The growth analysis showed that the industry had been growing in the last 10 years, however with fluctuations from year to year. It was found that the main driver behind the growth was increasing transfer income, which is also a varying income source from club to club. The risk in the clubs is very high, partly due to the uncertainty in the income sources. The business risk creates the uncertainty, and represents the risk of whether transfer money, price money etc. can be incurred, by performance on the pitch. Furthermore, financial risk indicates a future bankruptcy for many football clubs, but football clubs manage to survive under these conditions. This is partly due to the many motives of owning football clubs, which makes football clubs attractive, despite not always being profitable.

After analyzing the industry and adjusting the financial reports, the next step was testing different valuations. A simple approach to the DCF was tested first on all 25 clubs, where an average of different combinations of the historical years value drivers was applied to create the budget periods. Both value drivers based on a revenue-driven approach and a Line-by-line approach was applied. These tests yielded extremely volatile results, and this method was therefore rejected as an optimal model. However, it did yield many negative results as well, which were considered realistic, because many clubs have negative operations many years. This was realistic due to a connection to the high uncertainty in income sources, and the high risk compared to the possible return in the industry.

Thereafter, a more complex approach to the DCF was tested on only one club, due to limitations. This was necessary, because of the volatility in income sources. The revenue varies, not only from year to year, but the volatile sources of income also vary from club to club. Therefore, a tailored model was analyzed. FCK was chosen, and their unstable business areas were removed from their P&L statement, to make a DCF on the stable business only. Furthermore, the value drivers were predicted more thoroughly with an analysis of a single club´s future, to gain more precise value drivers in the budget period. Then, the unstable business was valued by an alternative version of a real options model, and the value were added to the DCF. This method yielded a much less extreme result and a more satisfying result. Whether this approach is optimal does, however, remain inconclusive, due to the insignificance of only testing it on one club.

The last approach tested, were the multiples, which was tested on all 25 clubs. The revenue multiple and EBIT multiple were tested, but the EBIT multiple gave unrealistic results, because it was negative for many clubs, and this indicated that no further multiples were needed, due to the many negative items in the clubs. The revenue multiples were simple and gave more satisfying results, because they were much less extreme. The results were also all positive, because all clubs have revenue, and this works against the logic found in the DCF analysis. Compared to the actual takeover prices that happens in practice, the results seem realistic. While the DCF purely investigates the future return opportunity, the multiple might incorporate the value that is represented by the different motives for owning football clubs. Therefore, positive valuations are realistic despite negative operations. The revenue multiples method is therefore considered partly optimal in a general manner, if the purpose is to find the value represented by actual demand, rather than based on possible economical return compared to risk. It is however only partly optimal, because the analyses consisted of too many biases. Especially, the lack of a comparable peer group for every club in the sample is an issue. Optimally, a tailored peer group should be generated for every club, as i.e. a peer group for clubs from the 1. Division, and a tailored peer group for FCN’s talent-based strategy.

The overall answer to the problem formulation is therefore, that it remains inconclusive. A general DCF method could be rejected. An adjusted and thorough DCF method seemed more optimal, but the results were insignificant, due to only one observation. Lastly, the revenue multiples approach seemed optimal to value clubs based on actual demand, and not purely on satisfying return compared to risk, but this method consisted of too many biases. To make a more conclusive answer, the adjusted DCF and the revenue multiples must be corrected for some of its biases, and the adjusted DCF should also be tested on more clubs.

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