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Valuation of Aktia Bank Abp

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I hereby declare that I have compiled the thesis independently and all works, important standpoints and data by other authors have been properly referenced and the same paper has not been previously presented for grading. The document length is 10,830 words from the introduction to the end of conclusion.

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ABSTRACT

Motivation of the paper relies on the ongoing money laundering scandal on major Nordic banks and its impact on the smaller banks in the region. The paper focuses on finding the intrinsic value for a regional bank, operating in Coastal Finland with a client base of 310,000 clients. The bank mainly serves private clients but also offers services for small- and medium-sized companies. Aktia's main income drivers are daily banking services, secured lending, asset management, and life insurance.

The aim of the research is to find a fair value for the Aktia Bank Abp company and whether it is over- or undervalued compared to the market price. The research objective is to find the fair value by quantitative methods using multiples method and by using a Dividend Discount Model (DDM). In addition, a ratio analysis will be conducted.

The main results of the paper can be concluded so that Aktia is overvalued compared to its rivals. The key financial ratios used in the analysis for banks provide information that Aktia is efficiently managed in terms of expenses, and its profitability is average when compared to a peer group. Annual development of the loan portfolio and financial ratios has been positive during the last five financial years. The bank's high dividend payout ratio could limit its future growth. Historical performance on some ratios is non-comparable due to accounting standard changes.

Keywords: Bank valuation, multiples valuation, dividend discount model, CAPM, Aktia Bank

INTRODUCTION

The company Aktia Bank Abp, referred as Aktia in the paper, was chosen for valuation since it is a smaller regional bank with only two active analysts following the company. Another reason why the company was chosen for valuation is to find if the money laundering scheme tied to bigger banks in the Nordics has also affected the smaller banks in the region. The personal aim of this paper is to develop the author's skills in valuation and analysis methods for banks. The aim of the research is to find a fair value for the bank and whether it is over- or undervalued, compared to the market price. The research objective is to find the fair value by using multiples method based on the year's 2018 actual data and 2019 analyst consensus estimations, and by using a Dividend Discount Model, a variation of the discounted cash flow method, suitable for banks.

The actuality of this study is supported by consolidation in the banking industry. Regional banks are becoming rarer in the sector as banks have merged to increase the economies of scale benefits and independence from the economy by having a wider business mix.

The author has set three research questions:

1. What is the fair value of Aktia based on the Dividend Discount Model?
2. What is the fair value of Aktia based on multiples valuation model, and how does it differ from the peer group?

The methods used in the paper are quantitative analysis combining two different methods. The first is the market-based valuation, where a dividend discount model will be used. The second is a market-based approach where the company's selected multiples are compared to a selected peer group. Possible problems that might arise with the data and methods is that the two different ways of valuation can provide vastly different results. The market-based approach needs a proper peer group, this could be problematic to find since Finland is a small market, especially when considering the variety of publicly listed banks. As bank valuation differs from valuation of non-financial company, it could bring problems if the scholarly articles on the subject were scarce.

In Chapter 1, the theoretical discussion will be given. The chapter is divided into four parts. The author will lay out the philosophical grounds on why companies are valued. The chapter also considers what the meaning of value for different stakeholders is and why one cannot use the same valuation methods for banks as used for typical non-financial companies. In the Chapter, the author will also introduce the various theories used in bank valuation and reasoning of the selected methods for empirical research.

In Chapter 2, information on the selected company will be given. The chapter is divided into two different parts. The first subchapter provides information on the company's history and present and its accounting methods. The second part of the chapter will be focusing on analyzing the financial performance of the bank by further inspecting the loan portfolio and by using ratio analysis.

In Chapter 3, the methodology will be laid out, and the empirical research will be conducted by using the selected methods. The chapter is divided into three different subchapters. The first one will be focusing on the income-based approach, where the dividend discount model will be used. The second will be based on the market-based approach, where the multiples method will be used; the second subchapter is divided into two parts, where the peer group will be first introduced. The empirical research will be then carried out in the latter part using the proposed peer group's financial data. The third subchapter will provide a discussion on the empirical results where the author will give answers to research questions.

1. THEORETICAL BASES FOR BANK VALUATION

The first chapter introduces the conceptual framework on bank valuation, discusses how financial companies differ from non-financial companies. The chapter also introduces the theoretical background of the methods selected for the empirical research done in the paper. The chapter is divided into four subchapters, and a conclusion will be given at the end of the chapter.

1.1. Meaning of value

Valuation in the finance industry is determining the fair value of an asset or a company (Hitchner, 2010). Investor's expectation from investment is that the compensation for the risk is higher than the original cost that they invested in (Koller et al., 2010). Thus, there is a need to define fair value for an asset. There are multiple uses for valuation in the industry. According to Hitchner (2010), financial planning and reporting, investment evaluation for company merger/acquisition and buyout agreements, being the most used purposes.

There are two different fair values that we can consider. The first one is an investor's fair value. Investor's fair value is the original investment and risk premium that they expect to generate. Malkiel & Fama (1970) introduced the efficient market hypothesis, which argues that market prices always reflect all the information that is provided in the companies' financial statements. But since valuation does not provide accurate quantitative expression, due to too many variables affecting the future cash flows, but is somewhat relied on subjective implications, there will always be market errors. These market errors pave the way for investors to find intrinsic value.

The second is the accounting value, which is typically used for financial reporting purposes. Accountants follow the set guidelines when estimating fair accounting value. In the United States, the accountants follow FAS 157, and in the European Union, accountants follow IFRS 13 guidelines.

“Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.” (Financial Accounting Standards Board, FAS 157).

According to Hitchner (2010), investor’s fair value is called intrinsic value. Intrinsic value is different from the accountants’ fair value. While there are differences in these abovementioned fair value types, Damodaran (2013) argues that for financial service firms the gap between investor’s fair value and fair accounting value can be non-existing since most of the assets are marketable and most of the time reflect the actual market value of these assets. A practical example in bank valuation of the abovementioned term differences would be the asset-based valuation method introduced by Deev (2011), which is used for in-house accounting and tax purposes. Then again, market-based valuation could be used by analysts in the finance industry to make, for example, stock recommendations for clients.

1.2. Approaches to bank valuation

There are two main problems in bank valuation when compared to a typical non-financial company and its valuation. The first being, the definition of what is considered debt and what is considered equity differs from a non-financial company. Banks have clearly defined accounting standards where almost only common equity, retained earnings, and disclosed cash reserves are considered Tier 1 capital (Bank of International Settlements 2019). Tier 2 capital can also include hybrid financial products and subordinated debt. For banks, lending to the customers is considered an asset, while interest-bearing deposits from the customers are considered debt. The meaning of debt is much broader than for a typical company, and this is why debt cannot be considered only as a capital source for a bank.

The second is that the definition of cash flows is hard for financial companies. For a bank, the cash flow statement typically has low capital expenditures, which is problematic if we need to define the reinvestment rate when considering the growth in the future. When we inspect free cash flow calculations for valuation purposes, common variations include Free Cash Flow to Equity (FCFE) and Free Cash Flow to Firm (FCFF). These typically include capital expenditures and working capital in the calculations. If we calculated working capital, we would need current assets and current liabilities. A balance sheet of a bank is not divided into current and non-currents assets and

liabilities. Thus the calculation of free cash flow is, if not impossible, impractical and could provide misleading information when analyzed.

There are various ways used in the valuation of banks, but there is no commonly used framework for bank valuation (Eva, 2010). According to Deev (2011), the typical valuation methods used in the industry and research are an asset-based valuation, relative valuation, income approach valuation, and contingent claim valuation. In an asset-based valuation, the bank's equity value is calculated by total assets minus debt that is outstanding. This approach is mainly used for the justification of a bank's intangible assets. The asset-based approach could be used for accounting purposes (Hrdy, 2018). Notably, the asset-based approach for banks requires the bank's inside information. Even though it would be theoretically possible to use an asset-based approach in the industry, it remains troublesome in practice.

Income approach predicts future cash flows and discounts the cash flows to a present. There are several different income approaches used in bank valuation, for example, a variation of free cash flow to equity (FCFE), dividend discount model (DDM), and residual income model. While income approaches are the most used in academic research, it is notable that these approaches have subjective implications (Dayag & Trinidad, 2019). According to Hrdy (2018), the income approach is the most suitable way to find the intrinsic value of a bank since it also calculates potential prospective profits of the company. The residual income model focuses on finding equity by an income-based approach. The book value of equity currently in the company is summed with expected excess returns and then discounted to the present value.

Contingent claim valuation is based on statistical mathematics and uses option pricing models, such as the Black-Scholes-Merton model, to measure the value of a bank.

1.3. Income-based valuation

Intrinsic valuation methods are so-called income approaches where the future profits are also taken into account when calculating the fair market value for a company. Discounted Cash Flow (DCF) model is the most commonly used non-financial company valuation method to find a company's intrinsic value. In the DCF model, a company is valued by discounting its future cash flows after taxes with the implication of it being unleveraged to retrieve the intrinsic value for a company.

After this, the company is releveraged to provide the estimate. Copeland et al. (1994) argue that it is nearly impossible to value a bank's assets to derive value for its equity. Since we are valuing a bank, where the estimation of cash flows is hard, and according to Damodaran (2012), dividends are the only stable cash flow that we can calculate precisely for a bank. Thus, one cannot use the traditional discounted cash flow method as it would not provide accurate results; this leads us to the Dividend Discount Model (DDM), which is a modified DCF model.

Dividend discount model (DDM) is an income-based approach where the main implication is that the company's profits are transferred directly to dividends, which are paid out of the company, and these dividends are discounted to the present value with applicable discount factors, such as using the Capital Asset Pricing Model (CAPM) to derive a fair value for a company.

The model has different variations where the simplest one is a Gordon Growth Model, which assumes that the growth rate of dividends is constant over time. All the different variations of DDM have an assumption that a listed company's lifetime is infinite. While this assumption is only theoretical and empirical evidence could prove otherwise, it is necessary for the DDM to yield results. There are also multi-stage dividend discount models, which use varying growth rates for multiple time periods, and then to calculate the terminal value for the last year, it uses again, Gordon Growth Model. These discounted values are then summed together to derive the fair value for a company. Two-stage DDM could be used for banks that are currently growing quickly compared to the market. For example, in developing countries. Then again, the general model can be used for well-capitalized banks that pay out dividends. Damodaran (2013) and Deev (2011) have introduced the following general model for DDM, which can be applied for publicly listed banks:

$$\text{Per share equity value} = \sum_{t=1}^{t=\infty} \frac{DPS_t}{(1 + r_a)^t} \quad (1)$$

where

DPS – Expected dividend per share

t – period

r_a – Cost of equity

As previously mentioned in this chapter, Damodaran (2012) argues that dividends are the only tangible cash flow that we can calculate for financial service companies. Therefore, the author thinks the dividend discount model is the most commonly used method for finding an intrinsic market value for banks in the industry and scholarly research. DDM is supported for commercial

bank valuation by Hrdy (2018), Damodaran (2012), Leister (2015), and Massari et al. (2014, p. 107)

According to Charumathi & Suraj (2014) and Leister (2015), DDM is an appropriate method to use only when a bank has had a consistent dividend yield in its history. Since Aktia's dividend payout policy has been and will be in the future to pay out 60–80% of its annual profits, there should be no problem arising from inconsistency in dividend yield. DDM has proven to be an inappropriate valuation model for banks in Nairobi Stock Exchange and BSE Bankex. Both pieces of research have discussed possible reasons for it being an inefficient market, discounting factors being wrong, and/or information differentials (Charumathi et al. 2014; Olweny 2011). While the DDM method is highly used, it is criticized by many analysts for being too simple to derive an accurate value for a bank. (Damodaran, 2012). The author's opinion is that by using a variation of the general model that takes the capital ratio requirement and dividend payout ratio of a bank into account, one can value a bank's equity.

1.4. Market-based valuation

The market-based valuation method, where companies' multiples are compared is based on the idea that similar assets are priced on the same level. The meaning of similar should be highlighted because, according to Hrdy (2018), multiples valuation is not a suitable valuation method to use if the peer group is not proper. There is a need to define the drivers that reflect the company that is valued. For banks, these are typically the size of the bank, region, jurisdiction, and the value drivers of the bank itself. A company's operating region, in the case of banks, can have a substantial effect on the value of a company since financial institutions typically operate under an involved jurisdiction. Finding a correspondent bank by its value drivers can be hard as the business models usually mix retail banking, corporate banking, investment banking, and life insurance, in different proportions. To find a fair intrinsic value for a company using market-based valuation, one has to compare companies and key ratios of those abovementioned companies.

The second important aspect with market-based valuation is that we have to choose the correct multiples to derive the fair value from comparable companies. For financial companies, it is not recommended to use entity multiples as these could provide inconsistent results. (Damodaran 2012; Schreiner 2009) The author of the research has chosen to use price to earnings ratio (P/E),

and price to book value ratio (P/BV). The formulas and the multiples' importance will be introduced in Chapter 3. Forte et al. (2017) argue that one could also use share price to customer deposits multiple for commercial banks effectively. The author has left this out since this was the only source that has suggested the use of the abovementioned multiple.

For a non-financial company, one could use in addition to the abovementioned, for example, EV/Sales, EV/EBITDA, EV/EBIT, and P/S (Price-to-sales). Sales cannot be measured for financial companies traditionally. Thus we have to leave those with sales in the equation out. In addition to the previous problem, enterprise value contains a calculation of debt, and as previously mentioned in the chapter, determining what is debt for financial institutions is complicated, so we have to leave EV multiples also out. To maximize our accuracy and comparability, we are using only equity-based multiples.

The advantage of using the market-based approach is that it is not relying on subjective implications but uses actual data. The disadvantage of using a market-based approach is the finding of an equal peer group with as many as possible companies to exclude possible anomalies in the multiples. According to Forte, Gianfrante & Rossi (2017), P/E and P/BV multiples are the best for relative valuation of a bank. While we could argue that multiples valuation is not based on subjective implications, it should be noted that recently in addition to trailing multiples using the actual financial data of the company, there are also forward multiples in use that use either analyst's estimates or a company's estimates for the future financial data. This means that forward multiples are based on subjective implications.

According to Schreiner (2009), since relative valuation captures only a specific time of a company, valuation should combine multiple methods instead of solely relying on a market-based approach. Damodaran (2012) points out the problem in his book that relative valuation can be affected negatively by possible market errors. Forte et al. (2017) argue that due to opacity being high for financial service firms, there is a higher probability than for a typical non-financial company, of misvaluation of financial companies' shares. This could lead to possible problems in the usage of relative valuation. The previous comprehends Schreiner's view on the methods of valuation; research should always use more than one method to maximize the accuracy of results.

All in all, by the arguments and theoretical background laid out in this chapter, the author has chosen to use the Dividend Discount Model (DDM) together with a market-based approach. This

is due to DDM being the scholarly standard for intrinsic bank valuation. To maximize the accuracy of the research results, the author will also use market-based multiples valuation in addition to DDM.

2. INFORMATION ABOUT AKTIA BANK ABP

In the second chapter, the author will introduce the company by its history, business areas, accounting standards, and financial performance. The chapter is divided into two parts. The first part gives an overview of the bank, and the second part will introduce Aktia's financial performance in more detail, a conclusion will be provided at the end of the chapter.

2.1. Overview of the bank

Aktia is a small regional bank operating in coastal Finland and some of the growing cities in Finland. The bank serves around 310,000 clients (Aktia 2019a). Aktia offers products and services for both corporate customers and private customers. Aktia Bank Abp consists of four subsidiaries: Aktia Life insurance Ltd, Aktia Fund Management Company Ltd, Aktia Asset Management Ltd, and Aktia Finance Ltd (Aktia 2019c). The subsidiaries provide additional services and products in addition to the essential banking services of the main company itself. Aktia was founded in 1825 (Aktia 2019a). According to Aktia (2019b), around 45% of the shares are owned by non-profit organizations. During the year 2017, Aktia's Chief Executive Officer changed from Martin Backman to Juha Hammarén. Differing from typical bigger banks, Aktia does not have its own trading division. The author's opinion is that this lowers the bank's risks to invest in but also makes the possibilities of profitability growth lower.

Aktia's financial statements have been prepared under the International Financial Reporting Standards (IFRS). In the year 2018, Aktia adopted IFRS 9 from the previous, International Accounting Standards (IAS), IAS 39 standard. This change changed the methods of reporting and of calculation for expected credit losses (also called ECL under IFRS 9). The financial reporting method change did not have a significant effect on the quantity of credit loss provisioning, but the annual comparison of the provisioning amounts has been affected negatively because of reporting method changes. The main difference with these two standards is that IFRS 9 records credit loss allowance immediately on initial recognition whereas, with IAS 39, the impairment is recorded when a credit loss has been realized (Gornjak, 2017). Aktia has not adjusted the previous years'

income statement and balance sheet numbers according to IFRS 9 standard, which makes the information uncomparable.

Aktia has used the internal method (IRB) for defining its capital requirements for household risk exposure since March 2015. Around half of Aktia’s risk exposure is calculated with IRB and the rest with standardized methods. The main difference between these two methods is that the standardized approach depends on external ratings on the calculation of risk weighting. In contrast, the IRB approach uses the bank’s internal system to calculate credit risk and weights (Bank for International Settlements, 2018). IRB approach is granted by the Finnish Financial Supervisory Authority (FIVA) for Aktia.

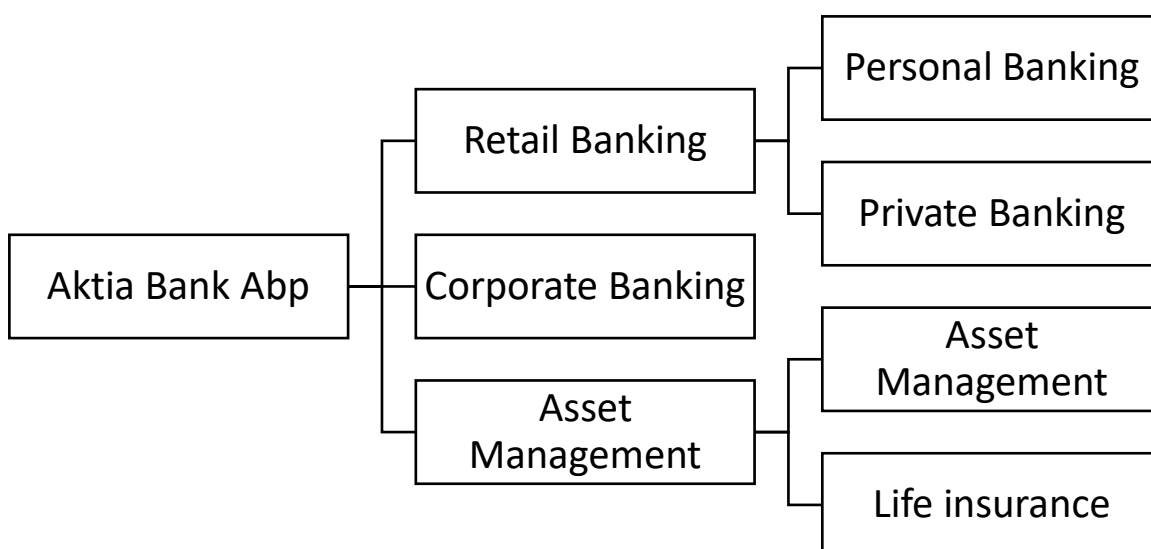


Figure 1. Aktia’s business areas.
Source: Aktia annual report, 2019

The bank’s dividend policy is to pay out 60-80% of its yearly net profit. In the annual report of the year 2017, Aktia set its financial strategy for the next five years until the year 2022. The plan contains information that the common equity tier 1 capital ratio (CET1) will be kept 1.5-3% over the minimum capital requirement. The cost-to-income rate will be improved to 0.61, return on equity (ROE) target is set at 11%. According to the Bank for International Settlements (2019), CET1 consists of the bank’s common stock. It is used, if needed, in crises to upkeep the liquidity of a bank. The requirement was introduced since the financial crisis of the years 2007-2009 indicated problems in the capital adequacy of banks. The minimum CET1 capital requirement for

Aktia is at 10.3%. In the year 2018, the CET1 capital ratio of Aktia was at 17.5% (Aktia, 2019c). If the planned strategy is implemented, Aktia's CET1 capital ratio should be around 13% in the year 2022. The decreased amount of CET1 could be perceived negatively by investors and credit agencies as it could be perceived so that the company is not well-capitalized.

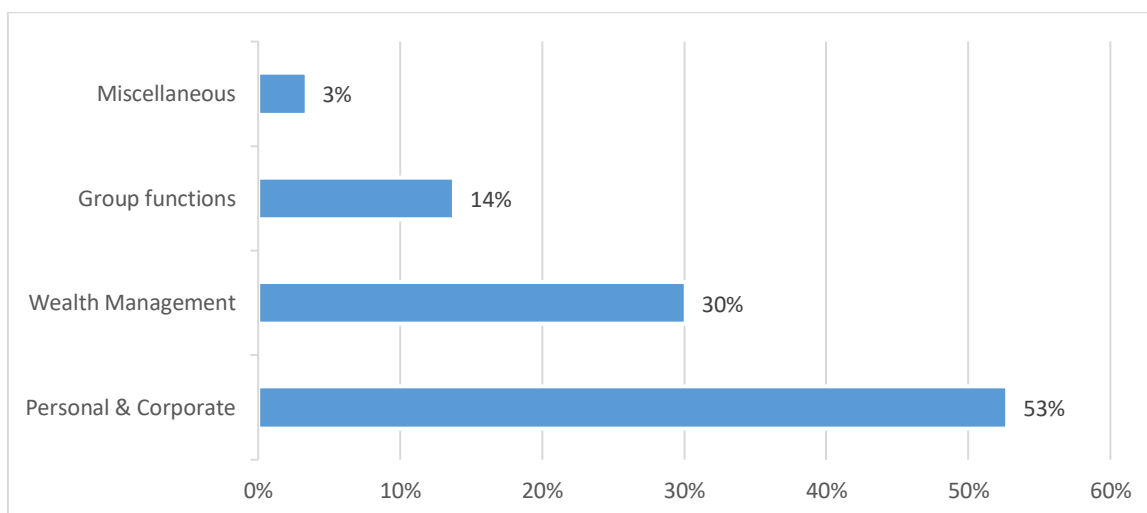


Figure 2. Aktia's segmented operating income relative to total operating income in 2018.

Source: Aktia annual report, 2019

Group functions consist of treasury business and staff functions; this segment governs the company's liquidity management and also oversees sales, IT, and product development. The income of the group functions segment derives from the interest income of the liquidity portfolio. Under the Wealth Management segment are Aktia's private banking, life insurance, and asset management. Personal & Corporate banking provides day-to-day banking products, investment products, and financing for private and company clients. The miscellaneous segment comprises of one-time expenses and revenues. For example, in the year 2018, the divestment from Aktia Real Estate Agency was allocated to the miscellaneous section.

2.2. Financial performance of the bank

According to Isidro & Grillo (2012), the most significant income-generating unit of eurozone's regional banks is the sale of financial services. In the year 2018, Aktia's commission income accounted for around 46% of the total revenue, which complements the research of Isidro et al. (2012). Net interest income was the second biggest income source and accounted for around 41% of the total revenue. According to the annual report of Aktia (2015), in the year 2014, net interest

income was the most significant source relative to total revenue. Net interest income has been affected negatively in the last five years by the lowering interest rate base, which is set by the European Central Bank. A positive sign is that while, during recent years, interest income has fallen, Aktia has been able to increase its commission income to counterbalance its total operating income. According to the annual reports from the year 2014 to 2018, Aktia has increased its financial service fees, lowered the employee amount by increasing automation in its processes, and closed service offices to upkeep the profit.

According to the Bank of Finland (2019) report, Aktia has a 4% market share of household loans in Finland and a 3% market share of deposits (non-MFI). The market is dominated both in loans and deposits by two big banks; OP Financial Group and Nordea. In the year 2008, Aktia had a 3% market share in loans and 3% in deposits (Finance Finland, 2008). Aktia has been able to expand its presence on the household loan market in Finland after the financial crisis.

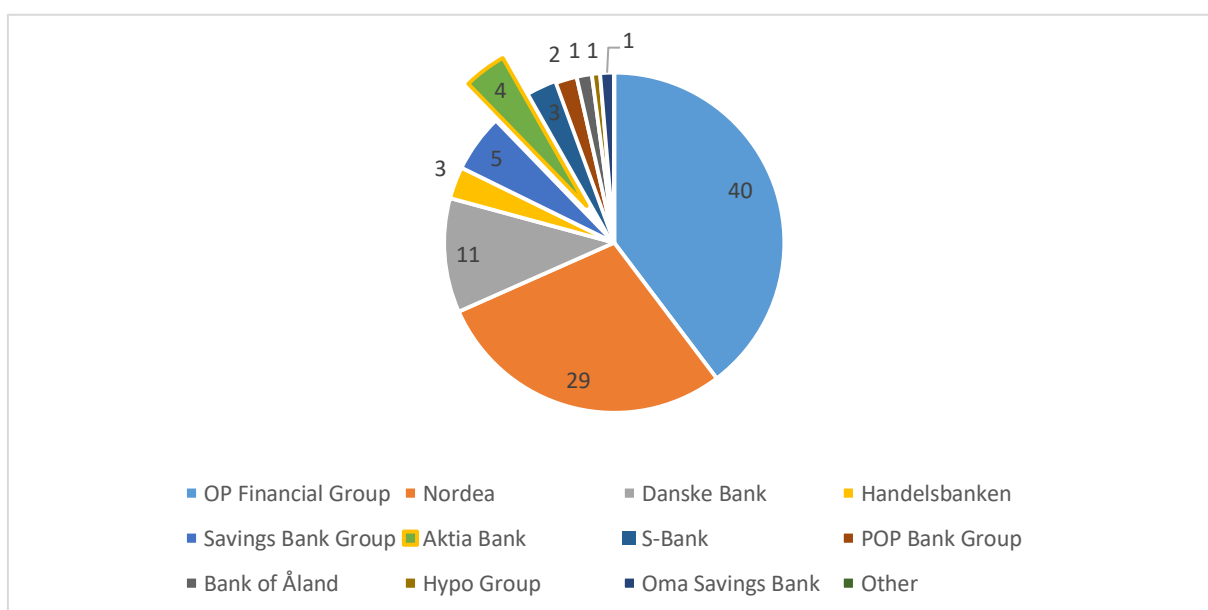


Figure 3. Housing loans to households in Finland by market share
Source: Bank of Finland, 2019

Aktia’s loan portfolio mainly consists of collateralized household loans at 78%, while corporate loans constitute 12% of the portfolio, and the rest, 10%, are housing company loans. In the year 2018, the amount of total lending to customers was at 6,106 million euros. Aktia’s non-performing loan rate of the entire loan book in the year 2018 was 0.6%. In contrast, the average non-performing loan percentage for banks in Finland stood at 1.7% in the year 2017 (IMF 2018). This is a positive sign of the company’s credit risk control since according to European Banking

Authority (2019), smaller banks tend to have a higher percentage of non-performing loans compared to bigger banks in the Euro area. The author thinks that this is due to the corporate loans having a higher default rate than private customer loans and since the loan portfolio mainly comprises of household loans for private customers, the non-performing loans rate is lower than the average.

Table 1. Aktia’s loan portfolio during the financial years 2014 – 2018 and its annual growth rate, absolute numbers in millions of Euros.

Type of loan	2014	2015	2016	2017	2018
Housing companies	251	222	340	491	605
Business credit	420	414	543	592	708
Secured lending	5229	4453	4077	4655	4 757
Secured lending for non-profit organizations	42	43	45	42	37
Total loan portfolio	5942	5132	5005	5780	6105
Total loan portfolio, annual growth rate	(6%)	(14%)	(3%)	16%	6%

Source: Aktia annual reports 2014 – 2018, Author’s calculations

Notes:

1. Housing companies mean Finnish limited liability housing companies (Kiinteistöosakeyhtiö or asunto-osakeyhtiö in Finnish)

As we can see from Table 1, the loan portfolio reduced from 2014 to 2016 significantly. The reason for the decrease is that Aktia used to broker mortgages for some of the smaller savings banks in Finland and the POP Bank group. Brokered mortgages were accounting-wise recorded under the bank’s loan portfolio in Aktia Mortgage Bank Abp, which is nowadays part of Aktia Bank Abp (Aktia 2015;2016;2017). The absolute or relative number of brokered mortgages was not published annually, which affects the annual comparability of the loan portfolio negatively. We cannot determine the total number of the non-brokered loan portfolio and then compare it to the existing portfolio. The brokered mortgages have been gradually transferred to the distributing banks during the years 2014 – 2017 (Aktia 2017). The author’s opinion is that while the portfolio growth lacks consistency when compared annually, it can be said that after the transfer period,

annual growth development has been positive, while the author questions if 16% annual growth is sustainable. Since the transfer period, Aktia’s loan portfolio has grown, and relative to total lending, housing companies, and business credit have increased the most.



Figure 4. Share price benchmarking Aktia (Red) versus N Banks EUR GI (Blue) from 12/2014 to 11/2019, Price-adjusted closing prices.
Source: Aktia, 2019d

The share price benchmark shows that Aktia’s share has performed poorly compared to its Northern rivals included in the N Banks EUR PI index. The index contains publicly listed Nordic retail and investment banks (Nasdaq 2019). During the year 2019, the share price has dropped in a similar style as has the benchmark. This change in the share price is most probably due to the money-laundering scandal decreasing the value of the big banks, such as Danske Bank, Swedbank, and Nordea (Bloomberg 2019; Financial Times 2019). These banks constitute a significant portion of the consolidated banking industry in the Nordic market. The author’s opinion is that the scandal might have also affected smaller regional banks’ valuation levels negatively. During the writing of the research, Aktia announced that it will reduce 92 jobs and close multiple service locations as part of its service model update to minimize expenses (Aktia 2019e). This announcement can be seen in the market price as the latest fluctuation upwards. Figure 4 is price-adjusted, meaning that possible dividends and corporate events are calculated into the price.

Table 2. Aktia’s key financial ratios annually and the year’s 2018 peer group average for comparison.

Ratio	2014	2015	2016	2017	2018	2018 PGA
ROE	8%	8%	8%	7%	9%	10%

ROA	0.5%	0.5%	0.5%	0.4%	0.6%	0.8%
CET1 capital	15%	21%	20%	18%	18%	16%
Cost-to-income	0.68	0.69	0.70	0.76	0.68	0.61
EPS	0.76	0.75	0.72	0.57	0.81	-
Dividend payout	61%	69%	81%	96%	75%	41%

Source: Author's calculations

Notes:

1. PGA means Peer Group Average, calculations of each ratio average are appointed in Appendix 1.
2. The peer group consists of the companies mentioned in Table 6.
3. EPS/2018 PGA is left blank since EPS is not comparable due to differences in outstanding shares.

Benchmarking Aktia's selected financial ratios against historical and PGA performance gives an informative view of the financial performance of the company. What comes to the profitability ratios, as can be seen from Table 2, during the studied period Return on Equity (ROE) has been increasing slightly. This increase is due to a decrease in equity, which is mainly due to a decreased amount of cash and derivative instruments on the asset side of the balance sheet. ROE's historical development is positive while it still lacks compared to its peer group. If Aktia can fulfill its strategy on achieving an 11% ROE, it would, on the light of the 2018 data, be the second-highest relative to the peer group.

ROA is a profitability measurement ratio that can be used to define how efficiently the company generates income from its assets. Bigger banks typically have a higher Return on Assets (Almazari 2013; Molyneux & Thornton 1992). Since a bank's ROA is size-dependent and Aktia is a medium-sized bank relative to the chosen peer group, we could consider that the bank's performance relative to PGA and relative to historical performance is average.

Aktia's CET1 capital ratio has been decreasing since 2015, while it is still above the PGA. As previously mentioned in this chapter, a part of the bank's financial strategy is to lower the CET1 capital ratio to 13%, which would be under the PGA. A higher capital adequacy ratio affects profitability positively by reducing the cost of borrowing for the bank (Berger 1995; Ghosh et al.

2003). It could be counter-argued that a very high capital adequacy ratio would affect the profitability negatively.

The cost-to-income ratio is used to define a bank's operational efficiency. Aktia's cost-to-income ratio is a positive sign of the company's performance. It has come down by 10% relative to the base year in 2014. This decrease is mainly due to total operating expenses decreasing, of which the most significant change has been in employee expenses during the studied period while operating income has stayed on the same level. Employee expenses have been decreasing since the employee count has been declining; this is part of the company's strategy, previously discussed at the beginning of the chapter. Aktia's performance against the PGA is also positive. A higher cost-to-income ratio affects a bank's profitability negatively and can be a sign of lousy cost management (Hess et al. 2004; Ghosh et al. 2003). It should be noted that variation between countries can be high because the cost-to-income ratio is affected by market competition circumstances, meaning that in a highly competitive market, the average cost-to-income ratio is higher.

Earnings per share (EPS) is a good indicator of the actual profit development during the years since it is also diluted if a company uses equity funding as its primary source of funding. While it cannot be compared against a peer group because of the differences in share amounts, it is a good indicator of historical profit development for an investor. During the year 2017, Aktia's EPS was significantly lower than on any other year; it was affected negatively by an increase in IT expenses and a significant decrease in income from financial transactions. The IT expenses increase were due to a new banking system that was implemented while the reduction in revenue from financial transactions was mainly due to decreased sales gains from the liquidity portfolio, 2.6 million euros less than during the previous year, and a one million euro investment value write-down on a subsidiary. EPS during the other years have been consistent.

The dividend payout ratio has been consistent during the years, excluding the financial year of 2017, for the reason of the abovementioned one-time expenses. One of the prerequisites for the Dividend Discount Model to work is a consistent dividend payout ratio, previously discussed in Chapter 1.3. Aktia's dividend payout ratio is the highest of the whole chosen peer group. Investors typically expect dividend cash flows, but the company should also reinvest some of its earnings for investments in growth. It raises the question of why the bank pays out such a significant percentage of its retained earnings as it diminishes the future growth potential. Looking at the

history of Aktia, during the year 2013, the dividend payout target was at 40 – 60 % of the annual profit. Since then, the CEO and the financial strategy has changed.

Notably, the annual comparability of most of the ratios used in Table 1 is affected negatively by the accounting change. The author found two negatives of the bank's financial performance. The first one being a low ROE relative to the PGA and the second one being too high dividend pay-out ratio since it can reduce the future growth possibilities. The author's opinion is that the annual performance of the bank has gotten better during the years during the studied period, which is a positive sign, this combined with overall average performance based on Table 1, Table 2 and Figure 4 relative to its peer group is strong and can be seen as a positive note of the company's performance. In terms of financial ratios, the company's performance has gotten better but is still below average.

3. METHODOLOGY AND EMPIRICAL RESEARCH

In the third chapter, the author will introduce the methodology in more detail and will do empirical research. The first part of the chapter will be devoted to the dividend discount model, and the second part of the chapter will be about the market-based approach, where multiples valuation is used. At last, in the third part, the author will discuss the results of empirical research.

3.1. Dividend Discount Model

In the Dividend Discount Model, the equity value is derived from the present amount of future dividends. It is notable that the general model, introduced in Chapter 1.3, is a relatively simplistic way of equity value calculation. Still, it can be argued that as we are also using the market-based approach of comparable companies, the mean of the two models should yield a good understanding of the Aktia's intrinsic value since we are taking into account both prospective returns and the market situation. The author will use a variation of this general model in empirical research. For the calculations of DDM, we need several inputs that we must define before we can put the model together to derive the fair intrinsic value for Aktia's share. We need to calculate estimations for the cost of equity, dividend payout ratios, and the expected growth during stable growth.

Since we are using a discount rate in the income-based approach, we need to calculate the cost of equity for the company. For the calculation of the cost of equity, we are using the capital asset pricing model, also referred to as CAPM. The CAPM comprises of the risk-free rate, beta value, and industry risk premium variables. For the bank's beta value, the author has chosen to use a non-regression beta value. Due to a strict jurisdiction overlay of the banking sector, banks are very similarly structured in terms of capital, and this is why standard errors in the beta regression value estimations can provide misleading results when compared to a standard beta (Damodaran 2013). Also, according to Fama & French (2004) empirical research, the linear relationship between regression beta values and independent stock yields is not consistent. Therefore, the author chose to use the non-regression one. A different approach to beta value could be taken; one could also

use the arithmetic mean of coefficient beta values of a bank’s various business segments (Hrdy 2012, as cited by Hrdy 2018).

The CAPM model has met various criticism; for example, Fama & French (2004) argued that the primary theoretical assumption of the model is investors only caring about the mean and variance of the possible returns, thus disregarding other measurements of risks. While CAPM presents a simplified world with its assumptions, it provides an essential tool for finance to measure the relation of risk and return (Perold 2004). The author will use the following single-factor CAPM formula, also used by King (2009), for the calculation of the cost of equity:

$$r_a = r_f + \beta_a(r_m - r_f) \tag{2}$$

where

r_a – Cost of equity

r_f – Risk-free rate

β_a – Bank beta value

r_m – The expected return of the market

Table 3. CAPM inputs to retrieve the cost of equity.

Risk-free rate	-0.45%
Bank beta value	0.88
The expected return of the market	9.12%
Cost of equity	8%

Source: Author’s calculations

Notes:

1. The risk-free rate is assumed to be the 10-year German government bond rate; the price was taken on the 13th of September in the year 2019.
2. The expected return of the market is the average annual, end of the year, price-adjusted, performance of OMX Helsinki Cap GI between the years 2000 – 2017, see appendix 3.
3. The bank beta value was calculated from Damodaran’s beta value database. It is computed as a weighted average with a 2/3 weight of European regional bank and a 1/3 weight of European life insurance, see Appendix 2.

The risk-free rate in the Euro-zone is typically considered to be the yield of the German 10-year government bond. Notably, the European Central Bank has published Euro short-term rate, also called €STR, since the 2nd of October in the year 2019. The objective of €STR is to provide an

alternative, theoretically risk-free reference rate by combining various rates (European Central Bank, 2019c). According to a survey made by Fernandez et al. (2017), the majority of responders do not use German government bond yields as a risk-free rate in the Euro-zone because of the negative interest rate. This outcome of the survey creates a problematic situation for the CAPM calculations in this paper. It questions its reliability in a negative-interest environment. Even the newly released €STR has a lower yield than the German 10-year bond yield, so it would not be suitable for the usage. Albeit the questionable reliability, the author's opinion is that it can be used in this case, as there seems to be no better option at the time.

The expected return of the market, used in the CAPM, is based on OMX Helsinki Cap GI. The usage is justified as it is a benchmark index in Finland, and it is a price-adjusted index. Price adjustment affects the yearly comparability positively and yields a more accurate average yield of the market when calculated. The index comprises of all the shares listed on the Helsinki Stock Exchange with a maximum weight of 10% (Nasdaq 2019b).

The author will derive the dividend payout ratio from the estimated future earnings. For the estimation of future growth on profits, we will use a so-called fundamental growth model. Another way of finding a growth rate could be by analyzing the historical growth rates of the company. While past results do not guarantee future growth rates, Damodaran (2013) argues that the historical method is an adequate method for financial companies. The fundamental growth rate will be calculated as the following:

$$\text{Expected Growth Estimate} = ROE \times (1 - \text{Dividend Payout Ratio}) \quad (3)$$

We will calculate the Expected Growth Estimate for Aktia based on the bank's 2018 financial year data, where the ROE and Dividend Pay-out ratio is taken from:

$$\text{Expected Growth Estimate}_{Aktia} = 9.4\% \times (1 - 75\%) \approx 2.4\%$$

Since the Expected Growth formula calculates how much of the equity is reinvested, it also considers the capital ratio restrictions, which in turn drive how much a bank can expand. We will use the calculated growth estimate for calculating the dividend payout ratio estimate. Stable growth ROE is calculated based on Aktia's annual historical 4-year average to minimize possible

abnormalities in ROE; the average is 7.96%. Dividend payout ratio during the stable growth will be calculated as the following:

$$\text{Dividend Payout Ratio Estimate} = 1 - \frac{\text{Expected Growth Estimate}}{ROE_{\text{Stable Growth}}} \quad (4)$$

$$\text{Dividend Payout Ratio Estimate}_{Aktia} = 1 - \frac{2.4\%}{7.96\%} \approx 70.5\%$$

The financial strategy of Aktia also supports the calculated dividend payout ratio estimate for Aktia. In the annual report of 2018, the payout ratio has been set to be from 60% to 80% of the yearly profit (Aktia 2019c). The dividend payout ratio estimate will be used as a variable for the calculation of Aktia's equity value by using a variation of the Gordon Growth Model. The equity value in stable growth will be calculated in the following way:

$$\text{Equity value}_{\text{Stable Growth}} = \frac{NP_t \times (1 + GE_N) \times PRE}{r_a - GE_N} \quad (5)$$

Where

NP_t – Net profit in a period t

GE_N – Normalized growth estimate

PRE – Payout Ratio Estimate

r_a – Cost of Equity

Normalized Growth Estimate is derived from the historical data. The author has calculated a 4-year average of annual growth estimates; the average is 1.45% using the formula 2. This calculation of averages is done to minimize possible abnormalities in the data, which could affect the final calculation negatively in terms of credibility. For the estimate of the equity value, the author has chosen to forecast the year's 2019 net profit by using a 4-year annual growth average and apply it to the 2018 net profits. The calculation can be seen in more detail in Table 4.

Table 4. Estimated net profit for the year 2019 using historical normalized growth rate.

	2014	2015	2016	2017	2018	Mean	2019E
Net profit, 1,000EUR	55,031	52,001	49,309	39,341	56,004		
Difference, %	-	-6%	-5%	-20%	42%	2.86%	
Net profit estimate,							57,608

1,000EUR	
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Source: Thomson Reuters Eikon database (2019), author's calculations

It should be noted from the Table 4 that the volatility during the recent financial years has been significantly high. This volatility questions the reliability of the usage of normalized growth rate as it influences the estimate for the year 2019 negatively. The author's opinion is that while the volatility has been high, the estimate of 2.86% is still proper to use and realistic.

$$Equity\ value_{Stable\ Growth_{Aktia}} = \frac{57,608,000\text{€} \times (1+1.45\%) \times 70.5\%}{7.97\% - 1.45\%} \approx 631.79\text{ m€}$$

From the previous calculation, we can derive the fair value per share by dividing the calculated equity value by the outstanding share amount per 22nd of November in the year 2019.

$$Equity\ value\ per\ share_{Aktia} = \frac{Equity\ value}{Shares\ outstanding} = \frac{631,785,724\text{€}}{6,9172,437} \approx 9.1\text{€} \quad (6)$$

When the equity value is divided by the outstanding shares, as calculated above, the model yields an estimate of the share price. This estimate considers the future earnings possibilities of Aktia. Still, as noted in Chapter 1, the model is somewhat based on subjective assumptions and provides a simplified assessment. Therefore, to increase the accuracy of the results, the author uses an arithmetic mean of both methods used in the paper to arrive at the intrinsic value estimate.

Table 5. Two-variable sensitivity analysis of share price impact.

		Growth Estimate						
		0.60 %	0.90 %	1.20 %	1.50 %	1.80 %	2.10 %	2.40 %
Cost of equity	Share price							
	9.1 €							
	5 %	13.4 €	14.4 €	15.6 €	17.0 €	18.7 €	20.7 €	23.1 €
	6 %	10.9 €	11.6 €	12.4 €	13.2 €	14.2 €	15.4 €	16.7 €
	7 %	9.2 €	9.7 €	10.2 €	10.8 €	11.5 €	12.2 €	13.1 €
	8 %	8.0 €	8.3 €	8.7 €	9.2 €	9.6 €	10.2 €	10.7 €
	9 %	7.0 €	7.3 €	7.6 €	7.9 €	8.3 €	8.7 €	9.1 €
	10 %	6.3 €	6.5 €	6.8 €	7.0 €	7.3 €	7.6 €	7.9 €
	11 %	5.7 €	5.9 €	6.1 €	6.3 €	6.5 €	6.7 €	7.0 €
	12 %	5.2 €	5.3 €	5.5 €	5.7 €	5.9 €	6.1 €	6.3 €
13 %	4.8 €	4.9 €	5.0 €	5.2 €	5.3 €	5.5 €	5.7 €	

Source: Author's calculations

Notes:

1. The likely area is denoted by grey highlighting.

In the sensitivity analysis, we can further analyze how different growth rate estimates and cost of equity affect the share price estimation based on the previous methods of dividend discount model shown in the chapter. As we can see from the sensitivity analysis, the growth rate has a relatively bigger effect on the estimate than the cost of equity. The best scenario for the company would be a low cost of equity in addition with a high growth rate.

3.2. Market-based valuation

In the market-based valuation method, the author has chosen to use the multiples method where a peer group is chosen, and fair value is derived for Aktia from the arithmetic mean of market values.

3.2.1. Selecting the peer group

The author started to gather the peer group that fit under the set criteria. The first criterion was that the bank's market capitalization needs to be under 1000 million euros. The second criterion set in place; the bank has to be a regional bank. The third criterion; operating in a Nordic country. The fourth criterion, a publicly listed company. As discussed earlier in the paper, in Chapter 1.4, jurisdiction plays a vital part when selecting a peer group; this is why only Nordic banks will be chosen. Another factor is the size and risk level of a bank that can affect comparability. Typically, regional banks are considered lower-risk investments relative to multinational banks. The same risk level argumentation is also used by Damodaran (2013) when determining the cost of equity factor-beta value in the DDM.

Table 6. Information on the selected peer group.

stock ticker	company name	operating country	market capitalization (millions, EUR)
ALBAV.HE	Ålandsbanken Abp	Finland & Sweden	224.24
OMASP.HE	Oma Säästöpankki Oyj	Finland	210.42
SYDB.CO	Sydbank A/S	Denmark & Germany	841.08
SPNO.CO	Spar Nord Bank A/S	Denmark	951.18
SVEG.OL	Sparebanken Vest	Norway	321.27

Source: Thomson Reuters Eikon database (2019)

The selected peer group consists of listed Nordic regional banks. In the best scenario, the author would have chosen only regional banks from Finland, but as is the operating environment, there were only three publicly listed regional banks in Finland. To improve our results, the author has decided to broaden the peer group by adding some matching banks, two of them being from Denmark and one from Norway.

Ålandsbanken Abp is a regional bank headquartered in Finland; the company operates in the biggest cities of mainland Finland, Åland islands, and in three cities in Sweden. The bank offers services for both private and corporate customers; there are around 90,000 customers (Bank of Åland 2019). The main difference, when compared to Aktia, is that it does not have a life insurance business. It is notable that Aktia controlled 10% of the total shares of Ålandsbanken in the year 2011 but has since disposed of its aforementioned direct investments (Aktia 2012).

OmaSäästöpankki Oyj is a regional bank headquartered in Finland; it operates in central Finland. The bank caters around 136,000 clients, mainly focusing on private customers and SMEs (OmaSäästöpankki 2019). The main difference when comparing to Aktia is the operating region and clientele. The bank also has a life insurance business. OmaSäästöpankki was listed on the Helsinki Stock Exchange in the fourth quarter of the year 2018.

Sydbank A/S is a regional bank headquartered in Denmark; the bank operates in Denmark and Northern Germany. In Northern Germany, the bank only offers private banking for wealthy clients. Sydbank focuses mainly on SME's and private clients; in the year 2018, the company had around 340,000 individual customers in Denmark (Sydbank 2018). Sydbank does not have its own life insurance business, but commission sells its business partners' life insurances. The main differences are, when compared to Aktia, that the client base of Sydbank focuses more on corporate customers than private clients, Sydbank doesn't have its own life insurance business, and the operating country's jurisdiction is different on banking.

Spar Nord Bank A/S is a regional bank headquartered and operating in Denmark. According to Spar Nord Bank (2019), it has 352,000 private customers, making it the biggest bank by client amount in our peer group. The bank's primary focus is on individual and corporate customers in Northern Denmark. (Spar Nord Bank 2019) The main differences, when comparing to Aktia, are jurisdiction differences. Spar Nord does not have its own life insurance business but does have, differing from Aktia, a trading division (Aktia 2019c; Spar Nord Bank 2019).

Sparebanken Vest is a regional bank headquartered in Norway and operating in three counties in Western Norway; its client base consists of 75% of private customers. The bank has around 281,600 individual customers (Sparebanken Vest 2019b). The bank has its own life insurance business. It also offers a non-life insurance business through its subsidiary Frende Forsikring AS (Sparebanken Vest 2019a). The main difference, when compared to Aktia, is the operating country. Sparebanken Vest also does real estate agency business, which is different from Aktia. The bank also offers services for more prominent corporations in addition to private clients.

What comes to the jurisdiction differences when comparing the banks, the author views, the main principles of accounting and risk regulation are still the same, so that the comparability is not affected negatively. All of the banks in the peer group prepare their financial statements according to International Financial Accounting Standards (IFRS) and apply Basel accords to their risk management. The author argues that these are the two most essential rules that make the chosen peer group comparable.

Holthausen et al. (2012) argue that, for a multiples valuation, the value drivers and risk model of a company are important factors that should match in a peer group. The peer group has its disadvantages when analyzing the comparability since some of the banks offer life insurance, non-life insurance, and some banks don't provide any of these. This product difference changes the risk model and value drivers of a bank, thus affecting the comparability negatively. The author's opinion is that as only a small part of the total revenue comes from life insurance; the banks can be compared.

The most significant difference affecting the revenue between the countries, apart from jurisdiction, is in the author's opinion, the interest rates set by central banks since Denmark and Norway have their own monetary policies apart from ECB's. In 2019 October Denmark's CIBOR 3-month average Offered rate was -0.43% (European Central Bank 2019a). Norway's NIBOR 3-month average Offered rate stood at 1.81% (Oslo Stock Exchange 2019). Euro-zone's EURIBOR 3-month average Offered rate was -0.41% (European Central Bank 2019b). Typically, for a Euro-zone regional bank, around half of the revenue comes from net interest income (Isidro et al. 2012). When the central bank's nominal interest rate drops, a commercial bank's interest income is typically affected negatively. According to Lopez et al. (2018), the negative interest rates have affected bank profits only slightly adversely since it has been counterbalanced by loan portfolio

increase and positive growth in non-interest income. Although, the research noted that the non-interest income counterbalance might not be sustainable on a longer time frame. It is notable that both Danish banks, Sydbank and Spar Nord Bank, in the chosen peer group have adapted to negative deposit rates even for private clients (Bloomberg 2019). It eases the deposit expenses relative to interest income for banks; thus, banks' profitability is affected positively.

3.2.2. Multiples meaning and calculations

As discussed earlier, in Chapter 1.4, we will use the P/E and P/BV equity multiples to find a fair value for Aktia. The following formulas will be used to retrieve the peer group companies' selected trailing multiples:

$$\text{Price to earnings ratio (P/E)} = \frac{\text{Share Price}}{\text{Earnings per share}} \quad (7)$$

$$\text{Price to book value ratio (P/BV)} = \frac{\text{Share Price}}{\text{Book value per share}} \quad (8)$$

Price to earnings ratio is affected mainly by three variables; the cost of equity, future earning possibilities, and the dividend payout ratio. One could argue that the P/E ratio is a sign of a company's riskiness since a bank that has a high cost of equity, a low dividend payout ratio, and low future earning possibilities will trade at a lower rate.

A higher P/E ratio could indicate that the company is overvalued or that the market expects positive growth in the earnings per share, and vice versa. P/E ratio is typically volatile for banks if compared annually. The ratio is highly dependent on economic cycles since banks usually provision future loan losses while being profitable (Deev 2011; Damodaran 2013). During the economic expansion, a bank which provisions less has a higher profit, but counterintuitively during the economic contraction, the same bank will report a lower profit than, for example, a bank which can use its loan loss provisions that had been created during the expansionary time (Huizinga & Laeven 2012). Therefore, a P/E ratio comparability can be altered negatively for banks and thus should not be used individually for conclusions. To combat the volatility of profits, the International Accounting Standards Board has introduced IFRS 9 accounting standard, discussed earlier in Chapter 2. It came into force on the first of January in the year 2018 in the European Union countries.

P/BV ratio is also affected by the same variables as the P/E ratio. According to Damodaran (2013) and Schreiner (2009), it is also highly influenced by the return on equity. Price to book ratio

essentially compares a company's market value of equity to its accounting book value of equity. Therefore, it could be argued that the P/BV ratio considers the future cash flows of a company since, in an efficient market, the market value of equity contains the future earnings possibilities of a company. This would partly defeat the argument laid out by Schreiner (2009), discussed earlier in Chapter 1.4, that multiples approach only considers a specific snapshot of time and would not include future earnings possibilities. It should still be noted that a company's share price is commonly taken from one particular day and time, so it could be impacted by news on the markets that could create short-time market errors in the market value of a company.

While a lower P/BV ratio relative to the peer group could indicate that a company is undervalued, it can also mean that investors expect the company to underperform in the future and vice versa. Due to the peer group using the same accounting standards, the ratio provides good comparability among the chosen peer group. Both abovementioned ratios are influenced by return on equity.

Table 7. Presenting the calculated multiples for each bank and the calculation of the mean and median of selected multiples.

Company name	Multiples and year			
	P/E 2018	P/E 2019E	P/BV 2018	P/BV 2019E
Ålandsbanken Abp	10.07	9.01	0.95	0.94
Oma Säästöpankki Oyj	7.85	6.91	0.68	0.66
Sydbank A/S	7.51	7.61	0.55	0.54
Spar Nord Bank A/S	9.03	7.39	0.77	0.79
Sparebanken Vest	7.70	7.56	0.20	0.90
Arithmetic mean	8.43	7.69	0.63	0.77
Median	7.85	7.56	0.68	0.79
Aktia	9.63	10.13	0.99	0.95

Source: Thomson Reuters Eikon database (2019), author's calculations

Notes:

1. Aktia's multiples are not calculated into the arithmetic mean.
2. The share price is the closing price per 13th of September in the year 2019.
3. Forward multiples for the year 2019 are expectations and not actual data. The earnings, and book value variables are analyst estimates' consensus provided by the Thomson Reuter Eikon database.

While P/E multiples' ranges are consistent, P/BV has a higher variation and thus could be interpreted that these contain some outliers. Outliers might be true, but the author wants to point

out that it is essential to understand what P/BV multiple reflects in bank stock, this is mentioned previously in the chapter. Therefore, the author argues that outliers should not be deleted but kept in the calculations. The author's opinion is that the results are thus consistent and that the values are comparable. Notably, the P/BV multiple of Sparebanken Vest is expected to grow from 0.2 to 0.9. Since the values in Table 3 are consistent, we can derive fair values from the calculated means by using fair value comparables.

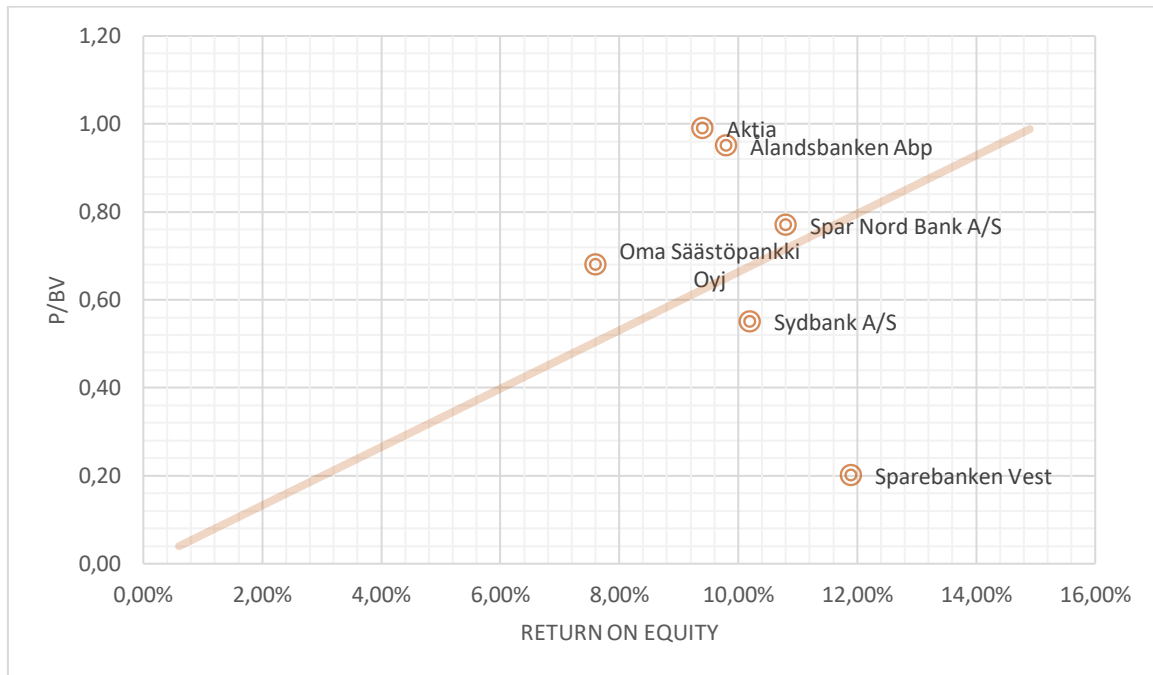


Figure 5. Scatter graph on ROE and P/BV variables.
Source: Author's calculations

ROE and P/BV are good variables to compare as both consider equity book value. Typically, a high P/BV in addition to low ROE relative to the peer group could mean that the company is overvalued. This stems from the investor's wanting to invest in companies with higher ROE. It is notable that all the Finnish companies are above the trend line in the figure 5, which would mean that these could be overvalued. One reason for this could be country market competition differences.

Fair value (Fv) comparables are calculated as the following:

$$\text{Fv P/E} = \text{Mean peer value of P/E multiple} \times \text{Company's earnings per share} \quad (8)$$

$$\text{Fv P/BV} = \text{Mean peer value of P/BV multiple} \times \text{Company's book value per share} \quad (9)$$

Table 8. Deriving the fair value, per share, for Aktia from the peer group's arithmetic mean of each multiple.

	P/E 2018	P/E 2019E	P/BV 2018	P/BV 2019E	Mean 2018	Mean 2019
Aktia Share Price EUR	8.51	8.51	8.51	8.51	8.51	8.51
Fair value EUR	6.83	6.36	5.40	6.66	6.12	6.51
Δ Aktia/Fv, %	25 %	34 %	58 %	28 %	39 %	31 %

Source: author's calculations

Notes:

1. The actual share price was Aktia's closing share price per 13th of September in the year 2019, forward multiples for the year 2019 also use this share price.
2. The year's 2019 fair value calculations for earnings and book value variables use the normalized growth estimate introduced in Chapter 3.1.

3.3. Discussion of the empirical results

In this part of the paper, the author will provide a discussion on the empirical findings of the research concerning the Dividend Discount Model and Multiples method. The author will give his answers and analysis to the research questions set up in the introduction part of the paper.

According to the market-based multiples valuation for both years, Aktia's shares are overvalued. This is affected more by the high P/BV value relative to the market in the year 2018. The author gives a more significant weight for the actual data of the year 2018, while the year's 2019 expectations provide noteworthy information for discussion.

According to the income-based approach, where DDM was used, Aktia's fair value is 9.10€ per share, which indicates that the company is undervalued. These results are contrary to the multiples method.

Table 9. Combining two different valuation approaches and deriving the mean fair value.

	Multiples method, 2018	Multiples method, 2019E	Dividend Discount Model	Mean; Multiples 2018, DDM	Mean; Multiples 2019E, DDM

Aktia share price, EUR	8.51	8.51	8.51	8.51	8.51
Fair value, EUR	6.12	6.51	9.10	7.22	7.77
Δ Aktia/Fv, %	39%	31%	-6%	12%	10%

Source: author's calculations

Notes:

1. The actual share price was Aktia's closing share price per 13th of September in the year 2019.

The average fair per-share value of the two different models is presented in Table 9 and is 7.22€ for the year 2018. When both methods are combined and calculated to a mean, the fair value reflects the actual market price quite accurately. The market seems to give a 12% premium relative to the calculations the author has made. The fair value is projected to increase by 2.6% from the year 2018 to 2019.

The author's opinion is that one driver for the high market share price can be the major shareholders in Aktia's case. The non-profit organizations that mainly consist of old savings banks of each operating location, since changed to registered associations, that used to be small local banks, but since Aktia was formed to a commercial bank in the year 1993, each savings bank received a share of Aktia. Nowadays, these non-profit organizations' mission is to enrich and sponsor the local way of life and to upkeep the savings bank tradition (Sparbanksstiftelserna 2019). The author's opinion and hypothesis are that the non-profit organizations are not motivated to sell their assets due to the abovementioned mission, which in turn elevates the share price and lowers the liquidity of the company.

The reason why the two different methods, multiples method and DDM, can vary so much from each other could be that DDM takes into account the future earnings possibility, while the multiples method concerns a small timeframe of a company. This would support Schreiner's (2009) argument on the disadvantage of the multiples method, previously discussed in Chapter 1.4. The author also argues that the subjective assumptions made on the DDM can provide a reason why the two models offer such different fair value estimates. Countering Schreiner's view, it should be noted that, at least theoretically, a market share price takes into account future earnings possibilities. One theory for this is the efficient market hypothesis, previously discussed in Chapter 1.1.

One reason for the two different methods providing vastly different returns could be that market prices are currently down due to the money-laundering scheme that has come to publicity; this has been discussed earlier in Chapter 2.2. Investors could be afraid to invest in the Nordic banking sector due to the ongoing investigations which can yield fines for the banks involved in the money-laundering, as the penalties can have a negative effect on the profits. While this might be the case, one could also argue that the smaller regional banks that we have included in our market-based valuation approach, are mostly dealing with private and small company clients, these smaller clients could also be dealing with money-laundering but not in the same scale.

CONCLUSION

The research aimed to find a fair value for Aktia and whether it is over- or undervalued on the market.

The paper used two different conventional valuation methods used in the valuation of banks. The first one was the income-based approach, DDM, where the discount rate was retrieved by using one-stage CAPM, and the model itself used a constant growth assumption. The second method was a market-based approach, multiples method where the peer group companies' chosen multiples, P/E, and P/BV were both then calculated to the arithmetic mean. The mean of the multiples was then multiplied with Aktia's financial data to provide a share price estimation. In the multiples method, the author decided to use multiples based on 2018 actual financial data and based on the estimate of the year's 2019 financial data.

The paper's main results are that the income-based approach, DDM, yielded that Aktia's fair value estimation is at 9.1€; this would mean that Aktia is undervalued relative to the market, based on the share price retrieved on 13th of September. The model used a cost of equity of 7.97% and a constant growth rate of 1.45%. The market-based approach yielded an estimation of Aktia being overvalued for both years in contrary to DDM. Based on the year's 2018 financial data, multiples method estimation was that the Aktia's market price was trading at a 39% market premium. When these methods were combined, the models yielded a result that was closer to the current market pricing. For the fair value based on the 2018 financial data multiples and DDM, the fair value estimation was at 7.22€ per share, which would mean a 12% market premium over the fair value.

Ratio analysis showed that Aktia is managed efficiently but lacks relative to the PGA. The profitability is on the medium-level when compared to its peer group. Yearly development can be seen as positive as Aktia has been able to improve its profitability during the studied period. The author's opinion is that Aktia's dividend payout ratio is too high and not intended to grow the bank. The accounting standard change from IAS 39 to IFRS 9 introduced a negative side of Aktia's

reporting, financial data 2018 and after, is not comparable to pre-2018 financial data. Thus the ratio analysis should not be given full trust.

The bank's loan portfolio is mainly based on secured loans for private persons. The lending risk for these types of loans is low, and this can also be seen in the non-performing loan rate that is lower than the Finnish average for banks. The loan portfolio has been growing significantly during the recent years but the transition of brokered mortgages to POP Bank group has affected the portfolio negatively. Non-performing loan rate has stayed on a low level without fluctuations for the past five years.

The author's recommendation for further research on the subject of valuation, based on this research paper brought up two questions:

- 1) Would share price moving-averages yield more consistent and accurate results for multiples valuation?
- 2) Empirical research on how non-profit organizations as significant shareholders in a company affect the liquidity in the market place and the valuation of a corporation?

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APPENDICES

Appendix 1. Calculation of the 2018 PGA ratios

Ratio	Company					Arithmetic mean
	Ålandsbanken Abp	Oma Säästöpankki Oyj	Sydbank A/S	Spar Nord Bank A/S	Sparebanken Vest	
ROE	9.80 %	7.60 %	10.20 %	10.80 %	11.90 %	10 %
ROA	0.41 %	0.70 %	0.83 %	1.10 %	0.88 %	0.78 %
CET1	13 %	18.40 %	17.30 %	14 %	14.90 %	16 %
Dividend payout	47.20 %	17.90 %	53.18 %	47 %	38.08 %	41 %
Cost-income	77 %	62.20 %	66 %	60 %	41.60 %	61%

Source: Thomson Reuters Eikon Database (2019), Author's calculations

Appendix 2. Beta values for financial services companies

Category	U.S.	Europe	Emerging markets	Global
Large money center banks	0.77	1.50	0.94	0.82
Small/regional banks	0.93	0.66	0.44	0.89
Thrifts	0.71	1.25	1.01	0.99
Brokerage houses	1.20	0.67	0.96	0.81
Investment banks	1.30	NA	NA	1.30
Life insurance	1.58	1.38	0.66	1.10
Property and casualty insurance companies	0.91	1.18	0.68	0.77

Source: Damodaran (2013)

Appendix 3. OMX Helsinki Cap GI price-adjusted end of the year return for the years 1999 – 2017

Year	Difference	Absolute
1999	N/A	6190.17
2000	-21.46 %	4861.47
2001	-18.16 %	3978.48
2002	-13.47 %	3442.56
2003	24.91 %	4299.93
2004	19.27 %	5128.65
2005	34.48 %	6897.18
2006	29.94 %	8962.17
2007	8.14 %	9691.93
2008	-47.35 %	5103.28
2009	43.97 %	7347.29
2010	30.25 %	9569.99
2011	-24.93 %	7183.87
2012	15.46 %	8294.5
2013	31.63 %	10918.38
2014	10.58 %	12073.16
2015	15.92 %	13995.23
2016	13.28 %	15853.93
2017	11.73 %	17712.85
Average	9.12 %	8628.60

Source: Nasdaq (2019a), author's calculations

Appendix 4. Formulas used for key financial ratios in Table 2

$$\text{Return on Equity (ROE)} = \frac{\text{Net profit}}{\text{Average equity}}$$

$$\text{Return on Assets (ROA)} = \frac{\text{Net profit}}{\text{Average Assets}}$$

$$\text{CET1} = \frac{\text{CET1 capital}}{\text{Risk-weighted assets}}$$

$$\text{Dividend payout} = \frac{\text{Annual dividends paid out}}{\text{Net profit}}$$

$$\text{Earnings Per Share (EPS)} = \frac{\text{Net profit}}{\text{Average shares outstanding}}$$

$$\text{Cost to income} = \frac{\text{Operating expenses}}{\text{Operating income}}$$