SpareBank 1

SR-BANK

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Abstract

This thesis carries out a fundamental valuation of SpareBank1 SR-Bank utilising an alternative discounted free cash flow to equity method presented by Aswath Damodaran. The objective of this thesis was twofold; primarily the valuation of a regional bank in the light of the contemporary banking Crisis of March 2023 and the subsequent challenge of valuing banks, alongside the application of the proposed alternative method. The following question was put forth to scope the thesis:

"What is the share price target for Sparebank1 SR-Bank?"

Key findings from the strategic analysis were the coming contraction of the economic cycle. This means more challenging times for SpareBank1 SR-Bank as retail and corporate clients will experience a more challenging economic environment with high inflation and interest rates and potentially lower GDP. Further, pressure from an economic contraction can increase the price-sensitivity of customers, leading to an increase in customer mobility and subsequently lowering the net interest margin of banks and increasing competition.

The accounting analysis identified SpareBank1 SR-bank as having a solid market position and strong credit quality and capitalisation. However, the bank has high exposure to specific segments like real estate and is limited by geographic location rendering it more exposed to the oil and gas sector. Moreover, the bank has shown a strong return on equity, although somewhat driven by a higher reliance on market funding to drive growth, which carries more risk. The risk appears controlled, and the bank benefits from the funding.

The fundamental valuation executed the alternative method, which has proven logical and successful in targeting the core of banking, providing a pathway to the free cash flow to equity without getting disorientated by the unique characteristic of banks and debt.

The alternative discounted free cash flow to equity valuation resulted in a base, bull, and bear case representing different scenarios of the key finding from the strategic and accounting analysis. The most likely scenario forecasts a slowdown in growth as we enter an economic contraction, followed by more competition and a lower net interest margin and return on equity. Nevertheless, SR-Bank will still perform relatively well with a stable capital requirement and a strong position. The result is a share price target of Kr 137.55 and a 16% upside as of 14.07.2023.

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List of Abbreviations

SRB - Sparebank1 SR-Bank

NOK – Norwegian Krone

DDM – Dividend Discount Model

FCFE – Free Cash Flow to Equity

DCF – Discounted Cash Flow

FCFF – Free Cash Flow to Firm

TV – Terminal Value

CET1 – Common Equity Tier 1

RWA – Risk-Weighted Assets

CapEx – Capital Extenditures

COE – Cost of Equity

CAPM - Capital Asset Pricing Model

P/E – Price to Earnings

P/B – Price to Book

GDP – Gross Domestic Product

AI -Artificial Intelligence

CAGR – Compounded Annual Growth Rate

1. Introduction

1.1. Background and motivation

Company valuation is a crucial aspect of finance, as it enables investors and business owners to determine a company's intrinsic value and assess its potential for future growth. Valuation of companies serves various purposes, including mergers and acquisitions, initial public offerings, and equity investments. However, valuing a company can be complex and requires a deep understanding of financial analysis and modelling.

At the core of valuation is understanding a business and translating that understanding to monetary value. The financial crisis of 07-08 led to a surprise of the risk involved in banks, which affected the financial systems and the world economy. Analysts had failed to value banks and financial institutions correctly. Over 15 years later, in March 2023, three medium banks in the U.S. failed over five days, leading to a global decline in bank stock prices[1]. Again, analysts had failed to value these companies correctly.

This apparent difficulty in correctly valuing banks motivated this thesis to explore the area of bank valuation. Aswath Damodaran, a finance professor at Stern School of Business and an avid valuation enthusiast, has published papers on the topic. In his 2013 paper “Valuing Financial Services Firms, " he proposed an alternative approach by changing the traditional Free Cash Flow to Equity model [2].

This thesis aims to apply the alternative method to Sparebank1 SR-Bank (SRBNK) in Norway. SRBNK was selected because it was a regional bank operating in south-Norway, where the author resides. The proximity provided a more profound knowledge about the region and, by extension, the bank's market. Moreover, this thesis will thoroughly investigate the strategic external factors and the competitive situation facing SRBNK. Finally, an accounting analysis is performed, which in conjunction with the strategic analysis, will provide forecasts that are applied to the model.

1.2. Objective

The central thesis objective is to conduct a realistic and thorough valuation of the Norwegian financial group Sparebank1 SR-Bank (SRB). The result of the valuation will conclude in a share price target. The following question is defined to guide and scope the thesis:

"What is the share price target for Sparebank1 SR-Bank?"

By staying faithful to the methods applied and using well-justified estimates and assumptions, the resulting target price should stand on its own without influence from consensus estimates. As a supplementary comparison, a relative valuation method is also utilized.

Unless explicitly specified otherwise, the thesis presents all numbers in Norwegian Kroner (NOK), as SRB operates in Norway and uses NOK as its currency. Furthermore, SRB is listed on the Oslo Stock Exchange and traded in NOK.

1.3. Thesis Structure

The thesis is linear in its approach. First, chapter 1 presents a general introduction and states the thesis objective. Secondly, Sparebank1 SR-Bank and the Norwegian banking industry are presented. The valuation theory is then put forward in Chapter 3, focusing on the traditional free cash flow to equity method and the justification for an alternative approach. Chapter 4 presents the strategic analysis of SRBNK, which creates the basis macroeconomic and market overview to support the cash flow forecasting. Chapter 5, Accounting Analysis, focuses on trend analysis and key metrics based on the financial statements from SRBNK and a selected group of competitive banks. Next is Fundamental Valuation, which begins with forecasting cash flows and terminal growth for the base, pessimistic and optimistic cases. Furthermore, the required rate of return is calculated before the fundamental valuation is finally presented. Chapter 6 finishes with a sensitivity analysis for the base case to provide a more nuances view on the change of critical factors of the model. After the fundamental valuation, relative valuation is presented in Chapter 7, before chapter 8 summarises and concludes the thesis.

Chapter 1	• Introduction
Chapter 2	• Presentation of Sparebank1 SR-Bank
Chapter 3	• Valuation theory
Chapter 4	• Strategic analysis
Chapter 5	• Accounting analysis
Chapter 6	• Fundamental Valuation
Chapter 7	• Relative Valuation
Chapter 8	• Conclusion

Figure 1: Thesis Structure

2. Presentation of Sparebank 1 SR-Bank

2.1. Sparebank 1 SR-Bank

Sparebank 1 SR-Bank is Norway's second-largest financial group in market value on Oslo Stock Exchange, trailing only behind DNB Bank. The company offers a diverse range of financial services and banking solutions to the Norwegian market, catering to retail and corporate clients and operating in the capital markets sector. In this chapter, we will look closely at SRBNK's history and current operations and delve into the company's organizational structure, core values and vision for the future.

2.1.1. History

The roots of SRBNK go back to 1839, when Egersund Sparebank, which later became a part of SRBNK, was created due to a demand for a savings bank from the local population who got their revenue from fishing. About ten years later, an agricultural revolution took place in Rogaland, giving rise to the demand for the farmers to receive credit to improve food production. Finnøy Sparebank was a reaction to this and offered credit. In the 1900s, multiple local banks originated to purchase the use rights of waterfalls to provide electricity to the local communities.

In 1976, 13 saving banks, including Egersund Sparebank and Finnøy Sparebank, came together to form Sparebanken Rogaland resulting in 1.5 billion NOK in assets under management and 350 employees, and we see the initiation of the modern version of SRBNK. Furthermore, an alliance, Sparebank 1, was created in 1996 for SR-Bank (former Sparebanken Rogaland), Sparebank Nord Norge, Sparebanken Vest and Sparebank Midt Norge to strengthen their position by cooperating under the brand Sparebank 1, and jointly develop financial products and services.

In 2012, SRBNK became a public limited company to strengthen its position by issuing capital to provide value for the region. In subsequent years, SRBNK has proven itself a solid organization capable of returning value to its clients and investors. Approaching 2023, SRBNK is focusing on strengthening its position in South Norway and currently has about 40% of its business outside of Rogaland.

2.1.2. Corporate Structure

SRBNK is a part of the Sparebank1 alliance, a cooperation between 12 individual banks under the joint name Sparebank1. The alliance supplies its members with the development and delivery of products. Additionally, SRBNK has several subsidiaries, shown in Figure 2 below, with the respective ownership stake of SRBNK listed.

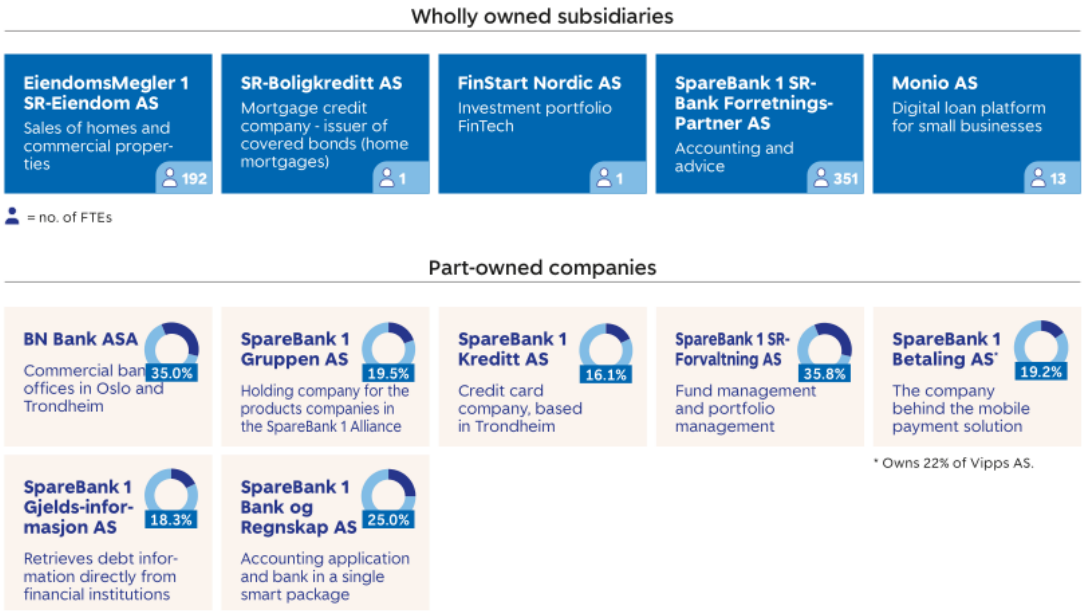


Figure 2: SpareBank1 SR-Bank Group. Source: SR-Bank

The corporate structure shown in Figure 3 includes the main areas of operation for SRBNK; Retail, Small-Medium-Enterprises & Agriculture, Large Corporations and Capital Markets. In 2022, the net income before tax was 42%, 44% and 14% from Retail, Large Corporations and SME+A, respectively.

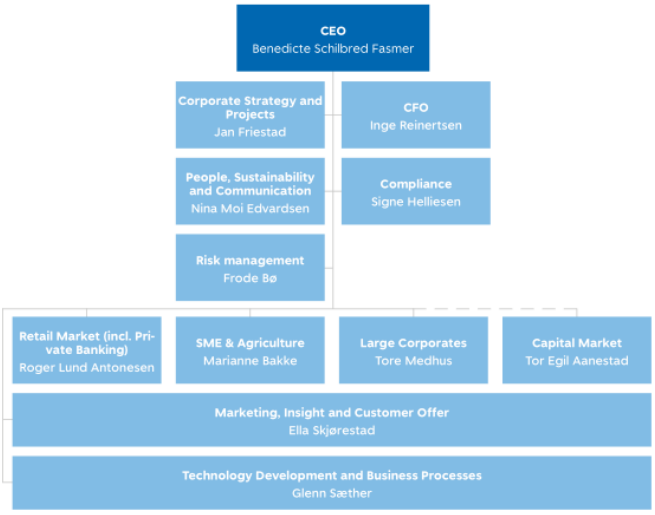


Figure 3: SRBNK Corporate Structure. Source: SRBNK

2.1.3. Vision and values

SRBNK's strategy is to be future-oriented and the first choice for customers in Southern Norway. The vision tells us that the entirety of Southern Norway is their potential market, and when looking at the market areas in terms of income, they are active in all areas of retail, small, medium, and large companies.

Figure 4: SRBNK's Foundation and strategy. Source: SRBNK

2.2. The banking industry in Norway

When Norway became an independent country in 1812, the country was in an economic crisis with no central bank, high inflation and multiple currencies in circulation. As a result,

the new government implemented multiple actions to facilitate a more robust fiscal system, leading to the creation of the Norwegian central bank, Norges Bank, in 1816 and the Ministry of Finance taking a more central role in overseeing economic development [3]. With much effort, the multiple currencies in circulation were eventually replaced with the Norwegian Krone (NOK), and the currency became more stable for national and international trade.

Commercial and savings banks arose outside the central bank to credit businesses and retail clients. While commercial banks had a limited liability company structure, provided credit to institutions and organizations, and paid the profits to its shareholders in terms of dividends, a savings bank had nonprofit structures, provided interest-bearing saving accounts and credit accounts for retail clients, and used its profit to either strengthen its own equity or nonprofit purposes, often locally [4]. The structure of central, commercial and savings banks was encouraged in the Western world as an effective way of economic development and was a part of positive economic growth.

As seen in the figure below, a consolidation of Norwegian banks occurred in the latter half of the 1900s, as Norway entered an economic boom with the advent of oil & gas production, leading to more significant capital needs. Moreover, with more regulatory requirements and a need for more equity, consolidations were executed with the added benefits of economics of scale. The consolidation and consequent banking alliances that formed led to many banks merging their commercial and savings branches, with the larger banks providing capital to both businesses and retail clients.

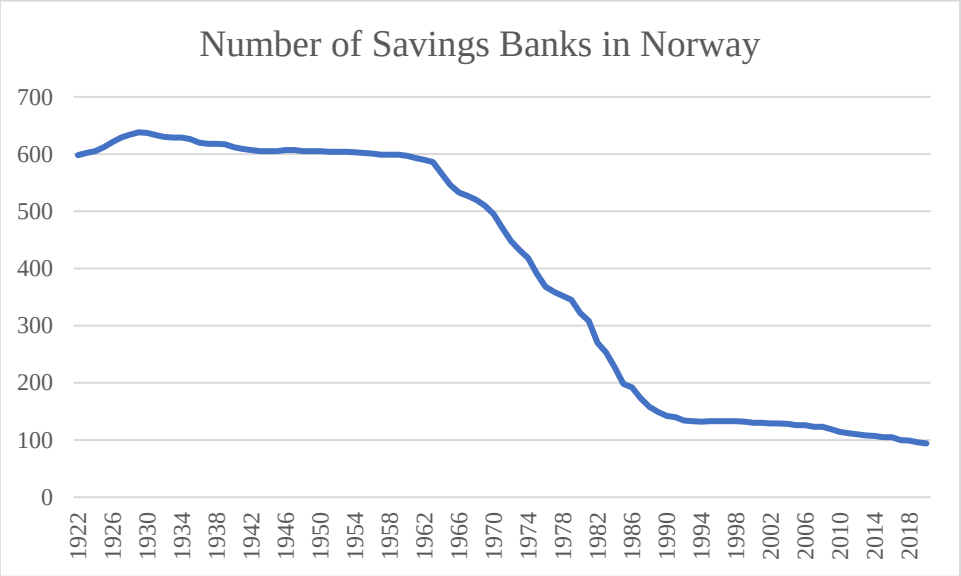


Figure 5: Number of Savings Banks in Norway (Source: Sparebankforeningen)

This transition takes us to a banking landscape more like today. The consolidation led to some of the larger banks still dominant today, such as DNB, Sparebank1 and Eika alliance. However, as the banking industry matured, regulations became a more significant part of the business. Today, an operating bank has to have a concession to practice banking. Furthermore, as banks are crucial players in the capital markets, and thus on GDP growth and other macroeconomic factors, regulatory requirements have increased to keep banks from taking on too much risk, which can have drastic and long-term impacts on the economy as seen in various financial crises [3].

Simplistically, banks' potential to profit comes from the difference in the interest income from clients' loans and the interest cost to the client's bank deposits. Today, Norway is one of the wealthiest countries in the world when measured by GDP per capita, enabling banks to have a significant potential client base with high capital [5]. There are multiple reasons why Norway has reached and still maintains this position, but the large number of oil reserves discovered during the latter half of the 1900s was the primary catalyst. In addition, the economic and political decisions made by Norway as a social democracy have led the residents of Norway to earn increasing purchasing power and economic stability [6]. Today, potential banking clients, retail and businesses are in a solid and stable economic position, enabling banks to operate healthily by managing their equity and loans.

Figure 6: Purchasing Power of Norwegians (yellow line) vs Europe (blue line). Source: SSB, OECD

As the history of SRBNK detailed, the bank went through the same changes and is today a financial group with a history of consolidation. The market focus of the bank is no longer primarily on retail and small businesses but on large corporations. Furthermore, SRBNK went public on the Oslo Stock Exchange in 2012. This change displays a shift from a traditional savings bank to a modern commercial bank.

3. Valuation theory

In finance, valuation involves the assessment of an asset or company to determine its worth, typically expressed in monetary terms or a specific price [7]. Various valuation methods are available, each with its unique approach, advantages, disadvantages, and practical applications. Valuation is applied in different areas, such as acquisition, corporate finance, and portfolio management, to ascertain an asset's value through careful considerations [7-9]. By establishing the actual price, informed decisions can be made, such as a company investing in a new plant or divesting a subsidiary, or an investor buying or selling a company. This chapter details fundamental valuation, specifically free cash flow to equity, as the thesis focuses on applying an alternative method published by Damodaran. The chapter outlines the discounted cash flow model with free cash flow to equity before discussing the challenges in the application to bank valuation and presenting an alternative approach. As a supplement to the fundamental valuation, relative valuation is presented to provide a second approach for comparison.

3.1. Fundamental Valuation

Fundamental valuation involves quantifying relevant information, including cash flows, growth, and risk, to determine a value. When performed comprehensively, this process can be pretty demanding, resulting in a more time-consuming endeavour. Discounted Cash Flow Analysis (DCF) is the most widely respected and utilized approach among the methods used in fundamental valuation and forms the basis for most valuations.

3.1.1. Discounted cash flow analysis

Discounted Cash Flow (DCF) analysis provides a framework for determining the present value of future cash flows generated by an asset [9]. DCF analysis considers various factors, including cash flow projections, growth prospects, risk assessments, and the anticipated lifetime of the asset. Estimations about the future are crucial to calculating today's asset value correctly. These estimates are based on assumptions by the analyst regarding future cash flows, the period of the cash flows, and the respective risk of the cash flows. A

fundamental financial principle is applied when dealing with future cash flows: Present Value (PV). The PV of one NOK today is worth more than one NOK in the future. There are several reasons why the PV of one NOK will be lower than one NOK in the future. Opportunity cost, inflation and uncertainty all play a role [7]. Opportunity cost considers that the money can be invested in other assets, yielding a return on the investment more significant than the initial purchase. Inflation tends to decrease the purchasing power of money over time, such that the same amount of money today has less purchasing power in the future. Finally, the future is uncertain, and there is always some risk associated with future cash flows as one is not guaranteed to receive them. Therefore, a cash flow must be discounted by a factor that encapsulates the return requirement or risk of the cash flow. As mentioned above, there is always uncertainty and risk in the future, and in order to compare a PV with others, the cash flow must be discounted by a risk factor that represents the inherent risk of that specific cash flow. The PV formula below is therefore critical in DCF:

$$Present\ Value\ (PV) = \sum_{n=1}^{N} \frac{CF_n}{(1+r)^n}$$

CF = Cash Flow
n = Period
r = Discount Rate (Rate of Return)

Equation 1: Present Value

The CF for period n transforms the future monetary value into PV. Therefore, by setting the discount rate higher, the lower the PV of the CF will be. Similarly, increasing the period n will increase the value of the denominator, which again decreases the PV of the CF if the CF remains the same.

One can utilize a DCF analysis to estimate the fundamental value of an asset or a company. When applying DCF to a company, one can employ Free Cash Flow to Equity (FCFE) or Free Cash Flow to Firm (FCFF). If executed correctly, the two methods should give the same valuation. Furthermore, one must use nominal or real values in the valuation and be consistent. If one prepares an estimation of future cash flows using nominal values, it is imperative that the required return, r, also is in nominal terms. If not, inflation is accounted for in one part of the equation but not in the other, as shown in the formula below. This thesis conducts its valuation in nominal terms.

$$Nominal\ interest\ rate = Real\ Interest\ Rate + Inflation\ Rate$$

Equation 2: Nominal Interest Rate

3.1.2. Terminal value

The period or periods of the cash flows are vital in a DCF valuation. A company or asset can have different periods with different cash flows. Moreover, the further one estimates cash flows into the future, the more significant the uncertainty. It might also be that the respective asset has a limited lifetime, meaning that the cash flows stop after a certain period. In the latter case, the period and respective CF stops at a specific time, and the potential remaining value of the asset is calculated as the remaining value from selling or liquidating the remaining asset at that time.

However, if one looks at a company, the lifetime might span decades or centuries, transferred to new owners by shares in the limited liability company. The company does not stop providing cash flows when the owner sells or dies. It lives on as a legal entity. Terminal value (TV) is a way of capturing this phenomenon quantitatively. The most prominent use of TV when looking at a company with an unlimited lifetime is the following:

$$Terminal\ Value_t = \frac{CF_t \times (1 + g)}{(r - g)}$$

CF_t = Cash Flow in year t
g = Stable growth rate
r = Discount Rate (Rate of return)

Equation 3: Terminal Value with a stable growth rate

The formula derives by considering the cash flow of each period with a stable growth rate, g, where the CF grows annually, leading to compounding interest:

$$Cash\ Flow = CF \times (1 + g) + CF \times (1 + g)^2 + \cdots + CF \times (1 + g)^n$$

Equation 4: Cash Flow with a stable growth rate

If we discount each period with a discount rate, we will end up with the present value of the cash flow, which is the terminal value formula in a different form:

$$Terminal\ Value = \frac{CF \times (1+g)^0}{(1+r)^1} + \frac{CF \times (1+g)^1}{(1+r)^2} + \frac{CF \times (1+g)^2}{(1+r)^3} + \cdots + \frac{CF \times (1+g)^{n-1}}{(1+r)^n}$$

Equation 5: Terminal Value

The formula above is a geometric series, and by setting $a = \frac{CF}{(1+r)}$ and $r = \frac{(1+g)}{(1+r)}$, Equation 5 turns into Equation 3 [10].

However, this formula alone is only valid if the growth and discount rates are the same for the entirety of a company's lifetime. In most cases, this is not true, and finding the

growth rate and discount rates for different periods is at the core of valuation. As mentioned earlier, the uncertainty grows larger the further into the future one attempts to forecast these values. To account for this uncertainty, one typically opts for a limited time horizon to meticulously evaluate these values. Following the limited time horizon, they apply the terminal value, considering a stable growth rate and discount rate.

3.1.3. Free cash flow to equity

When evaluating a company's cash flow, one can calculate different types of cash flows. As this thesis intends to find the value of SRBNK as a potential stockholder, the relevant cash flow is Free Cash Flow to Equity (FCFE). After accounting for costs such as investments, repayment of the debt, and taxes, FCFE estimates the profit available for equity holders, which is the basis for the valuation [8].

Note that the free cash flow for equity does not necessarily have to be paid out in dividends. Share buy-backs and reinvestments are also an option. If the company sees opportunities to improve the share value by retaining cash to invest in the firm for future growth, reinvestment is an option. In the case of reinvestment, the future return on the amount invested should be higher than the return on equity; else, it is more profitable for equity holders to receive the cash in dividends. The table below depicts the traditional calculation of FCFE:

Table 1: Free Cash Flow to Equity

Net Income
- (Capital expenditures – Depreciation)
- (Change in non-cash working capital)
+ (New debt issued – Debt repayments)
= Free Cash Flow to Equity

Now, for a bank, the standard calculation of FCFE, as shown above, is more complicated, if not impossible, to depict from official financial statements. To understand why, let us first examine capital expenditures (CapEx). CapEx is capital invested by a company to maintain, upgrade or create assets [11]. In other words, in order to maintain and grow future returns, certain investments are required – this is called capital expenditures.

When companies purchase assets, they often consider the concept of depreciation in their accounting practices. Depreciation represents the gradual decline in the value of

an asset over its expected lifetime [12]. For example, if a company buys a car for 1,000,000 NOK with a projected lifespan of ten years, it can account for the decrease in its value over time. If the car's value depreciates by 10% annually, the depreciation expense will be recorded accordingly. To illustrate, after the first year, the car's value will be 900,000 NOK, with a depreciation of 100,000 NOK. In the subsequent year, the value will decrease to 810,000 NOK, with a depreciation of 90,000 NOK. This depreciation reflects the car's actual value to its productivity. However, it is essential to note that depreciation is primarily an accounting method and does not directly impact the cash flow. When evaluating the cash flow, only the actual cash statement will reflect the asset's value without considering depreciation. For this reason, CapEx is subtracted, and depreciation is added back when calculating cash flows, as seen in the second line in Table 1.

The following line, "Change in non-cash working capital," lists the difference in short-term assets and liabilities, excluding cash. In other words, what non-cash capital is available to a company for short-term use [13]. The assets are in the forms of posts such as accounts receivable and finished goods, while the liabilities are, for example, accounts payable. We gain insight into the company's cash flow by analyzing these changes. A positive change in non-cash working capital implies investments in current assets or a reduction in current liabilities, resulting in a positive cash outflow, as the cash has been spent on increasing assets or reducing liabilities. Conversely, a negative change indicates a negative cash inflow. The result is deducting this line to reach the cash flow.

Finally, the last line states the change in debt. The new debt, which is then cash available to the company, is added, while paid debt, which is cash used by the company, is deducted.

Starting with the net income for a period, then adding and subtracting the lines discussed above, shown in Table 1, thus resulting in the cash available to investors, FCFE.

As stated at the beginning of this thesis, performing these calculations for banks results in some difficulties we can now explore after an introduction to the individual posts. The challenge lies in identifying capital expenditures and non-cash working capital. Both posts include debt, which can be considered an asset to a bank as they can take deposits, a form of debt the bank has to the depositor, and provide loans to clients.

Capital requirements are in place to ensure that a bank has specific equity concerning its assets under management, which requires a bank to invest in its equity in order to grow. According to Damodaran, much of the bank reinvestment is categorized under operation expenses, which muddies the waters when working with the standard FCFE template presented [7].

In order to use an FCFE model for a bank, Damodaran provides multiple templates for evaluating banks in his 2009 paper "Valuing Financial Service Firms", one of which is a redefinition of FCFE to account for the challenges presented [2] :

$$FCFE_{Financial\ Service\ Firm} = Net\ Income - Reinvestment\ in\ Regulatory\ Capital$$

Equation 6: FCFE, Financial Service Firm. Source: Aswath Damodaran

The premise of the equation is that banks have, at their core, a relatively straightforward operating system where the capital ratio sets the limit for the loans. The capital ratio can be calculated by studying the regulatory requirements and the bank's historically aggressive or conservative approach to the limit, thus the required reinvestment in regulatory capital. This paper will use the FCFE for financial firms method as a starting point for a valuation model. We will return to the inputs required for the valuation model, such as return on equity, discount rate and growth rate, and the factors that affect them in subsequent chapters, before laying out the entire model in Chapter 6.

3.1.3.1. Equity required rate of return

As discussed briefly, to compare the present value of cash flows, the CF must be discounted with a required rate of return, which encapsulates the risk involved in the specific asset generating the CF. Since we are dealing with FCFE, the Cost of Equity (COE) is the applied discount rate.

Specifically, COE represents the risks associated with owning equity in a company, and the Capital Pricing Asset Model (CAPM) is utilized to estimate the COE. CAPM is a model with four assumptions: no transactional costs, symmetrical information for investors, correct market price, and a portfolio can be diversified to exclude the company-specific risk [14]. The latter assumption is also explained as owning a fraction of all assets in the investment universe: the market portfolio. When dealing with stocks, S&P500 can be used as a proxy for the market portfolio if dealing with a company in America listed in USD. We will return to the approach to the market portfolio for this thesis later.

Although the CAPM model is based on unrealistic assumptions, the model application deals with the relationship between risk and expected return satisfactorily, even with realistic approximations. The risks are further divided into two types, systematic and unsystematic risk. Unsystematic risk is the inherent risk of an individual company or sector and can be diversified away by investing in assets with a negative risk correlation. As it can be diversified, an investor cannot expect compensation for taking on unsystematic risk. Examples of unsystematic risk are business risk, where poor management leads to adverse or unexpected developments, and regulatory risk, where regulation changes negatively affect the company. The second risk type, systematic risk, deals with macro-level risk that cannot be removed by diversification, hence systematic. Inflation, monetary rate and economic growth are systematic risks affecting all companies and are thus labelled market risks. Having no means to remove this risk, we should be paid for taking it. With these explanations, the CAPM model for a stock is as follows:

$$r_e = r_f + \beta(R_M - R_f)$$

Equation 7: CAPM model

Where r_e = equity risk or Cost of Equity, r_f = risk-free rate, R_M = market risk, β = beta.

The CAPM model says that the equity risk or COE is the sum of the risk-free rate and a beta multiplied by the market risk premium, the difference between the market risk and risk-free rate. The beta measures a company's exposure to systematic risk [14]. One can interpret the CAPM model as adjusting the required rate of return to the exposure against systematic risk.

3.1.3.1.1. Risk-free rate

The risk-free rate is another theoretical phenomenon used in the CAPM model, which is applicable in practice, although it is not truly risk-free. In theory, the risk-free rate is an investor's return from an investment without risk [15]. If an investor is to take on risk, it should include a higher return, as the CAPM model agrees. So how do we determine the risk-free rate if no such thing exists? We turn to the best alternative, government-issued bonds. As governments control money printing, they have low default risk. However, a bond can include coupons, where interest is paid during the holding period, which requires reinvesting the coupon to achieve the expected return. Reinvesting includes reinvestment risk, where the investor might be unable to reinvest

the cash flows from coupons[7]. To eliminate as much risk as possible, 'default-free' government bonds with zero coupons are the primary contender for a risk-free rate proxy.

When applying CAPM and the risk-free rate in a DCF method, the duration of the selected bond should be the same as the cash flow period, as time and risk are linked. Furthermore, the currency of the DCF and bond should be the same to avoid currency risk, which consists of exchange rates between currencies changing over time.

3.1.3.1.2. Beta

As mentioned, the beta of the CAPM model is a factor which measures the exposure of a company to market risk. The average beta value is one, and a company with this value will fluctuate with the market concerning macroeconomic news. The closer to zero, the lesser the company will fluctuate, and conversely, with a value higher than one, the more it will fluctuate. For this reason, beta is closely related to the volatility of a stock and is a relative measure of market risk.

Mathematically, the beta is calculated as follows:

$$\beta_i = \frac{Cov(R_i, R_M)}{\sigma^2(R_M)}$$

Equation 8: Beta of security i

, where $Cov(R_i, R_M)$ describes the joint relationship between two variables, in this case, the individual price change in the company, i, and the market M [14]. A positive covariance displays a movement together, zero as independent, and negative as inverse. $\sigma^2(R_M)$ is the variance of the market, again reinforcing the notion that only the risk of the individual company does not depend on its own risk, systematic risk, but only on the market risk. The beta is inherently backwards-facing, as it uses historical data to calculate. Furthermore, companies and the economy changes in size, markets and maturity, making it a potential pitfall when using a beta in forecasting when the company is different looking forward compared to what is captured in the historical beta. Real-world betas often apply linear regression for a company and a proxy for the market, such as the S&P500. The slope of the line then is a measure of beta.

3.1.3.1.3. Marked risk premium

The market risk premium is the extra expected return from being invested in the market: the difference between market return and the risk-free rate. Like the beta, the historical

market premium is often captured by looking backwards, calculating the average return of the stock market over a period and subtracting the average historical risk-free rate for the same period [14]. Damodaran presents estimating an implicit equity risk premium to turn to the future:

$$Value\ of\ index = \frac{Expected\ dividends\ next\ period}{Required\ return\ on\ equity - Expected\ growth\ rate}$$

Equation 9: Implied Equity Premium

The formula equals the Dividend Growth Model but looks at the market or index instead of a specific company. Considering the market has already priced in all available information, we can access the index value, expected dividends or earnings, and the expected growth rate. Equation 9 can then be solved for the required return on equity, giving us the market's implied equity premium by subtracting the risk-free rate.

3.2. Valuation formula

The entirety of Chapter 3 presents the theory of valuation, specifically for a shareholder in a company. Two critical formulas of present value and terminal value are combined with a DCF to lay the formula of PV of Equity listed in the figure below. Furthermore, specifics of the inputs to the formula have been explored to highlight the considerations required to apply them in a valuation more accurately. The formula below is central to the valuation of SRB in this thesis, and we will return to it when applying it in subsequent chapters.

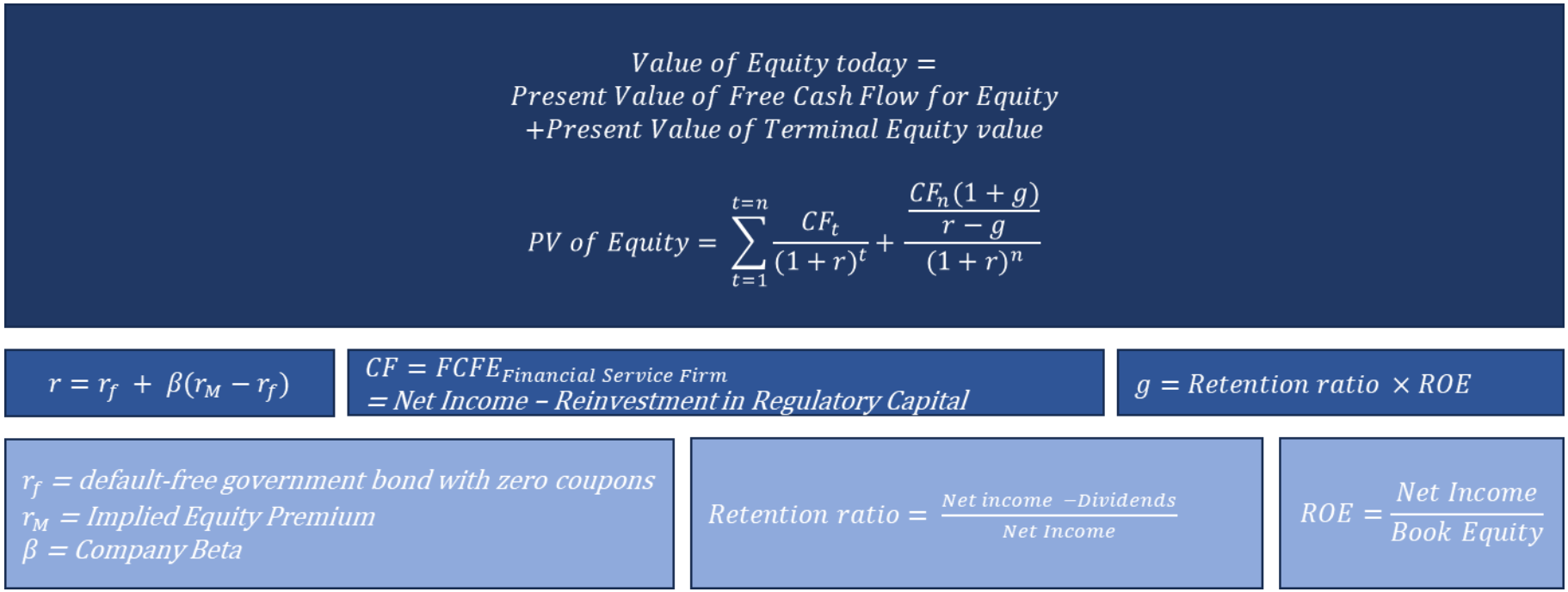


Figure 7: Intrinsic Valuation Formula

3.3. Relative Valuation

Relative valuation compares similar companies based on normalised key multiples[7]. By comparing key ratios, we understand what the market pays for underlying drivers. One can apply relative valuation to the firm and the equity, which is the focus of this thesis.

Applying relative valuation is helpful, as it is a quick and straightforward method compared to fundamental valuation, requiring fewer assumptions and thus less deep research. It serves as a valuable supplement to gain insight on a higher level.

First, we find some similar companies to which the comparable analysis is applied. Ideally, one would want companies with identical profiles, such as risk and growth. However, in the real world, we must find a group which is as similar as possible while accounting for variation in these prospects.

Regarding the challenges of bank valuation, the most suiting multiples for comparable analysis of banks are the Price-to-Earnings multiple and Price-to-Book multiple, as they are equity-based [7].

The Price-to-Earnings (P/E) ratio is the price per share divided by the earnings per share. We gain grounds for comparison as each value is divided by the number of outstanding shares. The PE ratio indicates how much one has to pay for every NOK the company generates in earnings. Although simple to execute, one must be wary of the differences which affect the number. The share price is forward-looking, pricing in expected growth, payout ratios, cost of equity, and return on equity for the company, all of which affect the future cash flow available to investors. Differences in these factors thus affect the PE ratio of the companies.

Equation 10:Price to Earnings

$$PE\ ratio = \frac{Price\ per\ share}{Earnings\ per\ share}$$

Similarly to the PE ratio, the Price-to-Book (P/B) ratio takes the price per share and divides it by the book value of the equity per share. The same factors that influence the PE ratio also apply to this multiple. The formula is inherently intuitive, stating the price an investor pays for the equity.

Equation 11: Price to Book

$$PB\ ratio = \frac{Price\ per\ share}{Book\ value\ of\ equity\ per\ share}$$

4. Strategic analysis

Strategic factors, such as the macroeconomic landscape and market competition, affect a company such as SRBNK and should be accounted for when estimating the future of the business. Estimating the future cash flows is the cornerstone of the valuation methodology, and thus looking at the strategic analysis of SRBNK is a crucial element to be examined in this chapter. The banking industry is closely connected to macro factors such as gross domestic product (GDP), inflation, and interest rates and has undergone significant regulatory changes. By exploring the current state and potential future of macroeconomics and external forces in the banking industry, we can apply them to SRBNK to assess its position, risk, and opportunities and, more precisely, estimate possible future cash flows.

First, a PESTEL analysis is applied to identify external factors that we can bring into the CF estimation and spot potential challenges and opportunities. Next, a study of the competition is done with Porter's 5 forces. Each analysis concludes with a summary of the findings and presents the current and expected development concerning SRBNK.

4.1. External factors – PESTEL

The PESTEL analysis inspects the themes of politics, economics, social, technological, environmental and legal with the banking industry and SRBNK in mind. Areas which can affect the company are presented with a discussion on the particular influence. Figure 8 displays the six themes and subsequent points of interest. The different themes have various states of importance for different industries and different periods. This analysis, therefore, emphasizes what is deemed most important in the current valuation of SRBNK. Finally, political and legal themes have been combined to discuss topics with much overlap.

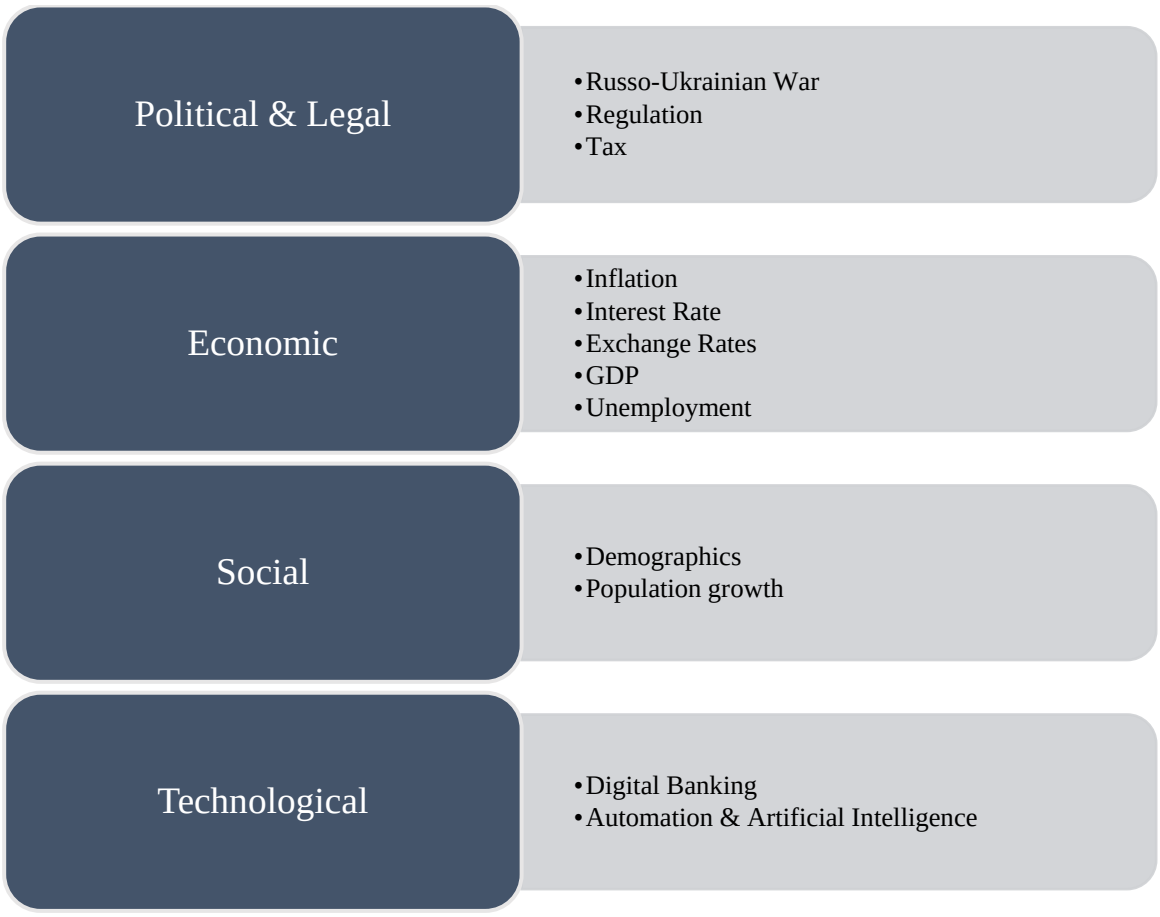


Figure 8: PESTEL Themes

4.1.1. Political and Legal

Russo-Ukrainian War

In February 2022, Russia invaded Ukraine, escalating the Ukrainian crisis to a war with a profound impact on the political landscape, not only within the region but also globally. The conflict, characterized by territorial disputes and military engagements, has heightened tension between Russia and Ukraine, leading to significant geopolitical ramifications. In terms of politics, this war has strained international relations, triggering the global community's strong sanctions on Russia [16]. From a macroeconomic perspective, the Russo-Ukrainian war has reverberated across various sectors, including the banking industry. The war has disrupted trade flows, causing a disruption in supply chains and impacting the availability of key commodities. Higher energy prices and heightened uncertainty in geopolitical relationships have exacerbated the perceived risk in the financial markets.

Furthermore, increased energy prices and reduced exports from Russia and Ukraine have led to a worldwide increase in inflation and interest rates and, consequently, a potential lowering of GDP in the coming years. For SRBNK, this is a complicated picture. Increased inflation,

interest rate, and potentially lower GDP can lead to a client base with a tightened budget and a contraction of the economic cycle [17]. On the other side, an increased energy cost can positively affect the revenue of Norwegian energy companies. With a majority of SRBNK's retail and business clients located in Rogaland, a region with a large oil and gas sector, the effect might be more subtle. The specific economic topics are further discussed in the economic part of the PESTEL analysis.

Regulation – Basel III

Capital adequacy regulation ensures banks maintain sufficient capital relative to their assumed risks [18]. Following the banking crisis in the late 1980s and early 1990s, capital requirements were increased to address undercapitalization issues. As a result, Norway implemented the new Basel framework – a minimal requirement on banking framework developed by the Basel Committee on Banking Supervision and consists of central banks and authorities responsible for banking regulation.

The capital requirements applied to SRBNK are depicted in Table 2 below and are a ratio of the bank's equity to its risk-weighted assets (RWA), resulting from the latest regulatory requirement, Basel III, introduced in Norway from 2013 to 2019.

First, the minimum requirement is a 4.5% flat rate required as a baseline. Next, at 2.5%, the conservation buffer covers losses from cyclical systemic risk and adds an extra buffer to the minimum requirement in economic downturns. The systemic risk buffer, at 4.5%, guards against risk not covered by the two mentioned requirements: interconnectivity, such as similar portfolios, poses a systematic risk. The countercyclical buffer is adjusted based on the economic cycle. It is higher in upturns and lower in downturns, regulated by the authorities. In December 2021, the countercyclical buffer was increased from 1% to 2%, with a final increase in 2022 to 2.5% by March 2023, resulting in a maxed-out countercyclical buffer. Next, additional requirements can be set by the financial authorities on an individual bank level if they deem the current capital requirement fails to capture the underlying risk in the bank. SRBNK is currently subject to a 1.6% Pilar 2 requirement.

A temporary addition of 0.5% was added in 2022 to be active while the authorities assess SRBNK's application for risk model changes[19]. Finally, a capital margin of 1.25% is required. This first set of requirements is called the Common Equity Tier 1. Hybrid capital is not required to be in equity but has to carry low risk and be available short term. SRBNK has it is hybrid capital in three months NIBOR. As it is low risk and relatively available, it does not

qualify as debt or equity in the technical term and is thus labelled hybrid capital. The requirement for hybrid capital is 1.5% and gives us the Tier 1 Capital of the bank. Subordinated loan capital is similar to hybrid capital but is linked to more risky assets. Standard models are applied to calculate the risk concerning subordinate loan capital if no Internal-Rating-Based (IRB) models are developed and approved by the authorities. With the addition of the subordinated loan requirement of 2%, we have the bank's Capital Requirement. Indeed, one more requirement can be given to banks deemed systematically important to the overall economy due to their size and importance in the financial system. SRBNK was recently appointed a systematically important bank and will require an additional 1% increase in capital requirement by the 12th of May 2024.

Table 2: Capital Requirements, SRBNK

Minimum requirement	4,50 %
Conservation buffer	2,50 %
Systemic risk buffer	4,50 %
Countercyclical buffer (2% until March 23)	2,50 %
Pilar 2	1,60 %
Temporary Pilar 2 addition	0,50 %
Capital margin requirement	1,25 %
CET 1 capital (ren kjernekapitaldekning)	**17,35 %**
Hybrid capital	1,50 %
Tier 1 Capital (Kjernekapitaldekning)	**18,85 %**
Term subordinated loan capital (Ansvarlig kapital)	2 %
Capital Requirement (kapitaldekning)	**20,85 %**
Systematically Important bank (by 12.05.24)	1 %
New Capital Requirement (kapitaldekning)	**21,85 %**

Norwegian banks' CET1 capital ratios have significantly improved since the financial crisis and with the advent of Basel III, leaving them better capitalized to deal with potential losses.

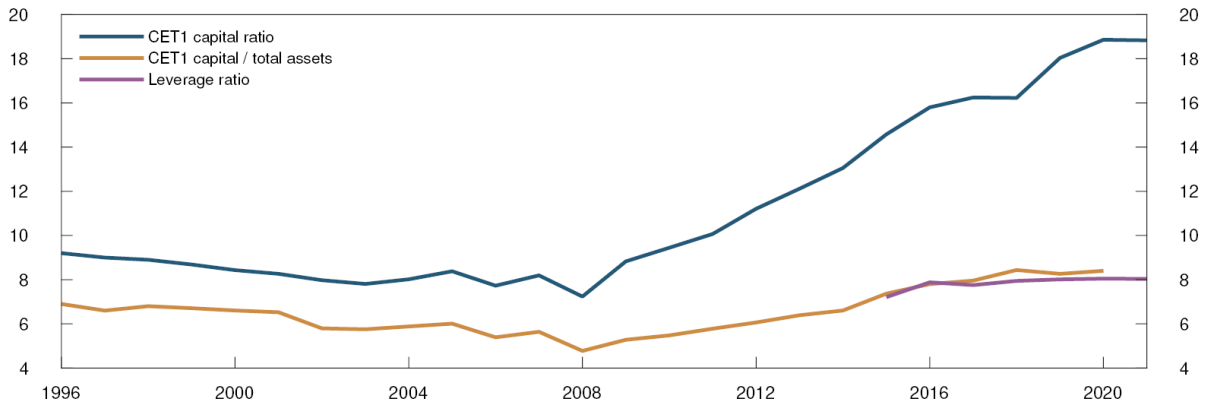


Figure 9: CET1 capital ratio, Norwegian banks overall, Percent. Souce: Finanstilsynet

The CET 1 capital ratio is a ratio of CET1 and RWA:

$$CET1\ ratio = \frac{CET1}{RWA}$$

Equation 12: CET1 ratio

, where RWA is:

$$Risk\ weighted\ assets\ (RWA) = \sum_{\forall i} Exposures_i \times\ Risk\ weight_i$$

Equation 13: Risk-weighted assets

, where exposure is the amount invested in an asset, and the risk weight is a factor, which is higher for riskier investments, leading to the bank holding more capital for riskier investments.

As mentioned in the alternative approach, the capital requirements will determine the reinvestment needs for the valuation. To grow, a bank must increase its equity to meet capital requirements.

Tax Rate

The Norwegian Parliament decides the corporate tax rate of Norwegian companies. The Norwegian Parliament is selected in a general election every 4th year, and the political composition in the Parliament thus affects the tax rate. The corporate tax affects both the corporate clients of SRBNK and SRBNK directly. SRBNK operates in the banking sector under the financial activity tax [20]. The current corporate tax is 22% but has been subject to historical change, while the financial tax rate is 25%. The energy sector is also subject to a different marginal tax rate of 78%, which has been stable since its introduction in 1975.

The corporate tax level, in isolation, is in line with the Nordic countries and the Organisation for Economic Co-Operation and Development (OECD) at its current level. However, a holistic perspective must be taken when considering tax rates, including wealth, inheritance, and capital gain. Although the corporate tax has gained a broader political agreement, spearheaded by the EU's proposed standard corporate tax rate, the other tax rates are still up for political debate and disagreement in Norway [21, 22]. While the left-progressive side is generally for higher wealth, inheritance and capital gain taxes, the right-conservative is generally for lowering. The political picture is, of course, more nuanced, but there is an ongoing relocation of wealthy business owners from Norway to countries where they are less heavily taxed, such as Switzerland [23, 24]. The current political opposition is critical to tax rates that make it more challenging to own businesses, and this will most likely be a prominent topic in the coming 2025 election.

4.1.2. Economic

Inflation

Inflation is another crucial factor affecting banks. The inflation rate influences interest rates, which, in turn, impacts borrowing costs for individuals and businesses. Banks carefully monitor inflation trends to adjust their interest rates and maintain profitability while managing risks. The principal interest rate, set by the central bank, profoundly impacts banks' profitability and competitiveness. Banks may experience compressed net interest margins in a low-interest-rate environment, affecting their ability to generate income from loans. Conversely, higher interest rates can improve banks' profitability but may also dampen loan demand.

Since the mid-90s, the Norwegian inflation rate has remained stable relative to the target rate of 2% until recently. However, with the economy gaining momentum after a decade of monetary and fiscal policies, supply chains got disrupted with the Russian invasion of Ukraine in February 2022, leading to widespread inflation in the world economy, including Norway.

With inflation (dark blue and blue line in the figure below) way above the target rate (red line), the future is uncertain concerning inflation. The primary tool available to directly counteract inflation is the policy rate, which will play into the future of Norwegian banks.

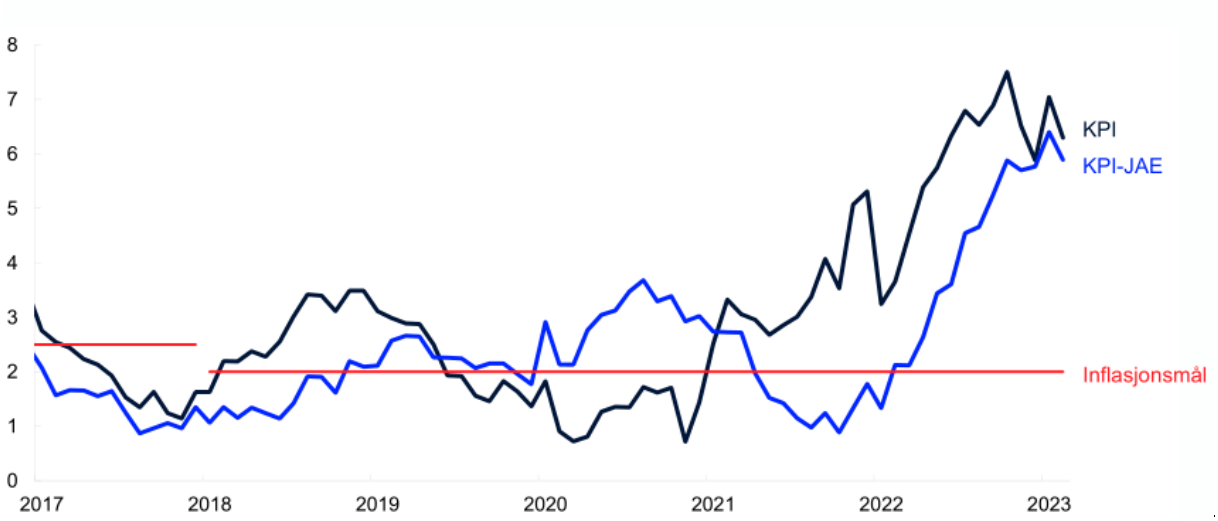


Figure 10: Inflation Rate in Norway. Source: Norges Bank

Interest Rates

After the 2008 Financial crisis, the interest rates decreased in Norway and globally as a fiscal stimulus to boost the economy. However, with the increasing inflation rate discussed earlier, the central banks have raised interest rates to combat the rising inflation, and at the time of writing, the current policy rate of Norges Bank is 3.25%, with an outlook of raising it by another 0.5 percentage points within a year. Increasing the interest rates makes money more expensive, which in theory can reduce spending and put upward pressure on prices – inflation. The reality is usually more complicated, and increasing interest rates too much can also break GDP growth. Norges Bank carefully monitors vital indicators such as inflation, unemployment rates, GDP growth, and housing prices to select a policy rate that yields an acceptable outcome.

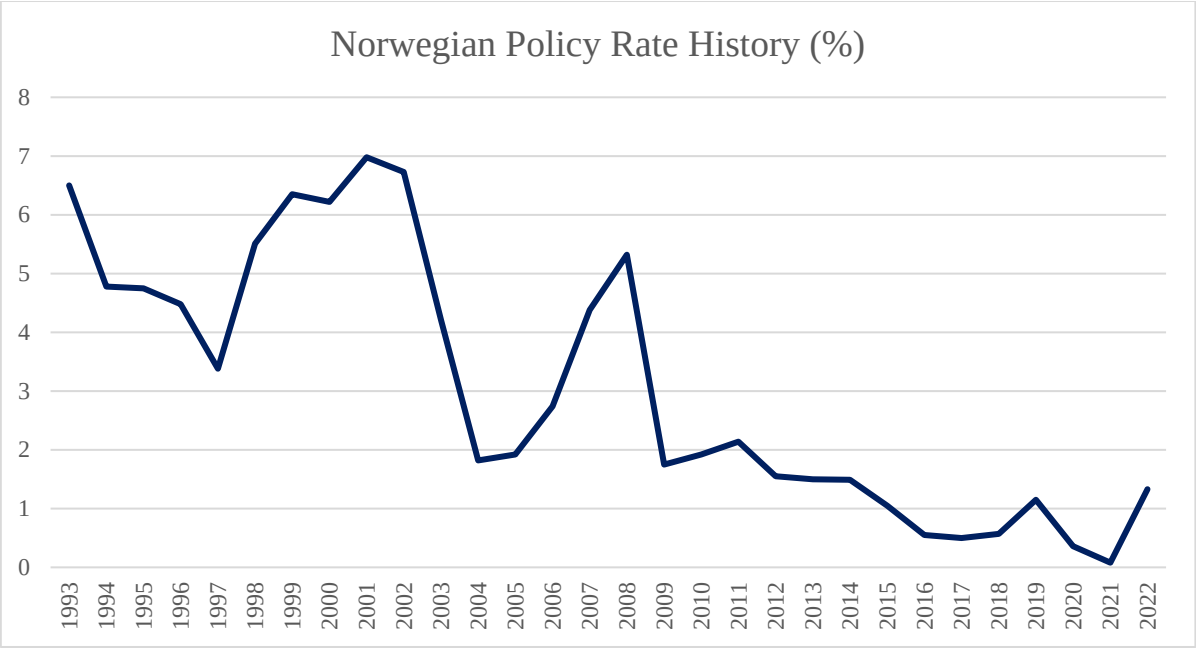


Figure 11: Norwegian Policy Rate History. Source: Norges Bank

Exchange Rates

The Norwegian Krone (NOK) has devalued against currencies such as the Euro and US Dollar over the last decade. While a weaker NOK means more expensive holidays and increased prices on imported goods for the average Norwegian citizen, it is also favourable for Norwegian export.

When the NOK is weak, Norwegian export means higher income for goods and services when paid USD and Euro are exchanged for NOK. The reason for the weaker NOK over a more extended period is complicated. The petroleum-heavy economy might attract less international investments if the market expects a gradual phasing out of petroleum energy [25]. Furthermore, the Norwegian Oil Fund is purchasing international stocks and real estate for enormous amounts each day. An exchange of over a billion NOK into other currencies daily will put downward pressure on the NOK. Finally, political stability in budget and taxation benefits international investments in Norway. As previously described, there is disagreement on the correct taxation approach in the political sphere. Moreover, the new implementation of a resource rent tax in aquaculture introduced insecurity in the markets, as one of the parties that formed the government changed its policy from being against a resource tax to suddenly being in favour.

Predictability is critical for long-term investors and the markets, and sudden changes and insecurities about future directions make investors turn to other, more predictable avenues.

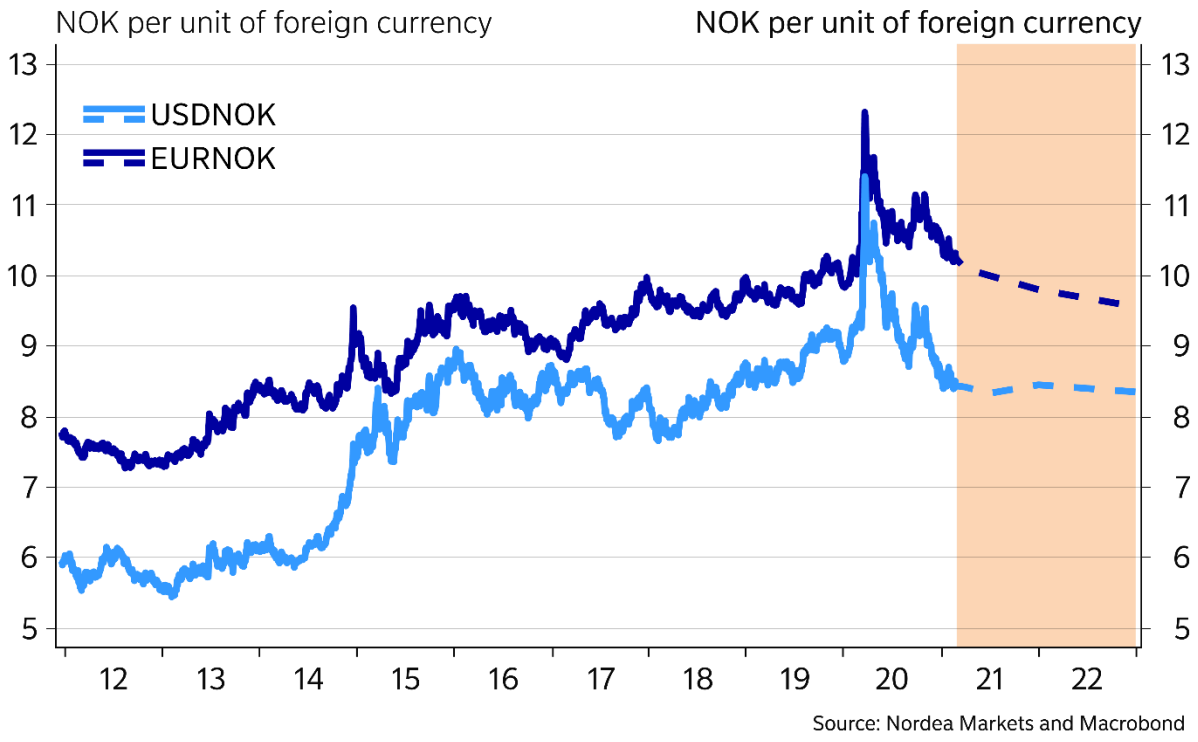


Figure 12: USD/NOK & EUR/NOK exchange rates

GDP

Economic growth is a crucial driver of the banking sector. As the economy expands, banks experience increased lending opportunities, which can lead to higher profitability. Additionally, economic growth stimulates business activity and consumer spending, driving demand for financial services such as loans and investment products. Figure 13 below shows that Norway has demonstrated resilient and stable growth over the last 60 years. The crisis' has been short-lived, and GDP has primarily remained positive, contributing to overall economic strength and prosperity. However, it is worth noting that the trend has fallen and stabilized at a lower level in the last decade. The current level reflects a mature oil & gas sector in Norway.

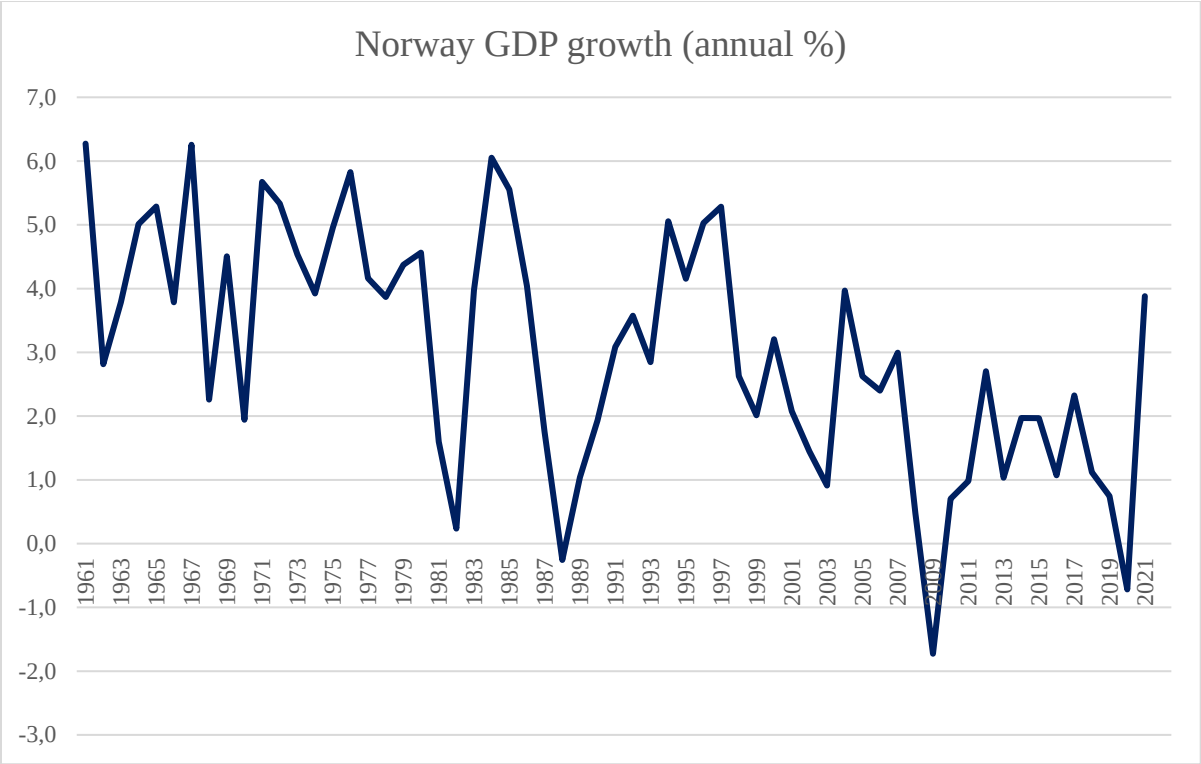


Figure 13: GDP growth (annual %) - Norway. Source: Worldbank

The Norwegian economy displayed resilience in 2022, maintaining steady growth despite high inflation and interest rates while benefiting from high oil prices and a low unemployment rate. However, the growth decreased, and in April 2023, the growth went negative, indicating a slowdown in the Norwegian economy [26].

Unemployment

The unemployment rate is important for banks due to both the income of potential retail clients and the corporate clients' need for employees. As displayed in Figure 14, the unemployment rate is relatively low compared to the historical rate. As of April 2023, the unemployment rate is at 3.5%, unchanged over the last three months, indicating a stagnation of previously increased demand for labour [27]. A low unemployment rate can put upward pressure on salaries, further contributing to inflation. A more stable unemployment rate is a positive sign when at a relatively low percentage.

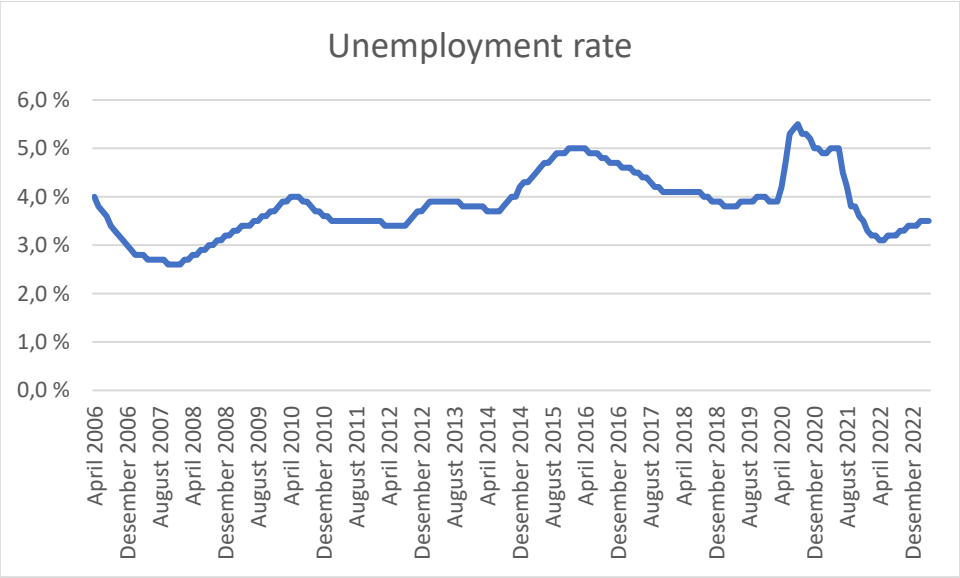


Figure 14: Norwegian Unemployment Rate. Source: SSB

4.1.3. Social

Demographics and population growth

Demographics are important to banks, as different age groups are in different economic and social situations bringing about different needs. By monitoring and learning about the demographic groups and changes, as well as their wants and needs, banks can position and tailor specific services and marketing to the correct demographic. By examining the age groups of the areas where SRBNK is active, we can assess potential changes or coming changes regarding shifting demographics.

One example of these changes is the "elderly wave" in Norway, where the number currently reaching pension age consists of more people than the group replacing them in the workforce. When reaching pension, this retail group will deplete their pension funds. They have also paid much or all of their mortgages, making them less profitable due to a lack of interest rates and commission payments.

The overall population and its changes in the last ten years are listed in Table 3 below. The population has grown 9% in the last ten years, but the demographic changes are more nuanced than the simple total. The demographic changes mentioned above are confirmed by the increase in the 45+ age group. The 67-79 age group has grown exceptionally by 43%, mainly increasing the group entering pension and leaving the workforce. Moreover, the 45-66 and 20-44 groups are not growing at the same pace, leaving a vacuum of positions at companies. This paper will not delve into the vast and complicated consequences of the population changes but merely observe some key points which can affect SRBNK. First,

the most profitable age groups of 45-66, where people are working and spending their money, often carrying a considerable mortgage but with a stable job and income, is shrinking. The groups coming to replace them have also shrunk, with the 0-5 groups decreasing by over 10%. The result is a lesser pie to share between the competition of banks.

Table 3: Population changes in Norway last ten years. Source: SSB

Age Group	Population	2022 - 2023	2018 - 2023	2013 - 2023
0	51 991	-8 %	-9 %	-14 %
1-5	284 679	0 %	-7 %	-10 %
6-12	444 025	0 %	-2 %	4 %
13-15	201 018	3 %	8 %	6 %
16-19	259 714	2 %	0 %	-1 %
20-44	1 824 742	1 %	3 %	6 %
45-66	1 530 972	1 %	4 %	10 %
67-79	645 483	2 %	15 %	43 %
80-89	200 377	3 %	13 %	11 %
90+	45 983	-1 %	3 %	12 %
Total	**5 488 984**	**1 %**	**4 %**	**9 %**

SRBNK operates in Rogaland, Vestland, Agder, Oslo and Viken, with a population of about 3,3 million, or 60% of Norway [28]. The area has grown about ten per cent in the last ten years, just about the same as the rest of Norway. Looking at the population in the operating counties of SRBNK, Viken and Oslo are ahead, with 12%, with Agder, Rogaland and Vestland falling below with 8%, 7% and 5%, respectively, during the last ten years. Looking at the demographic groups within the counties, Rogaland, Vestland and Agder share similar distribution, which displays a healthy amount of people in each group.

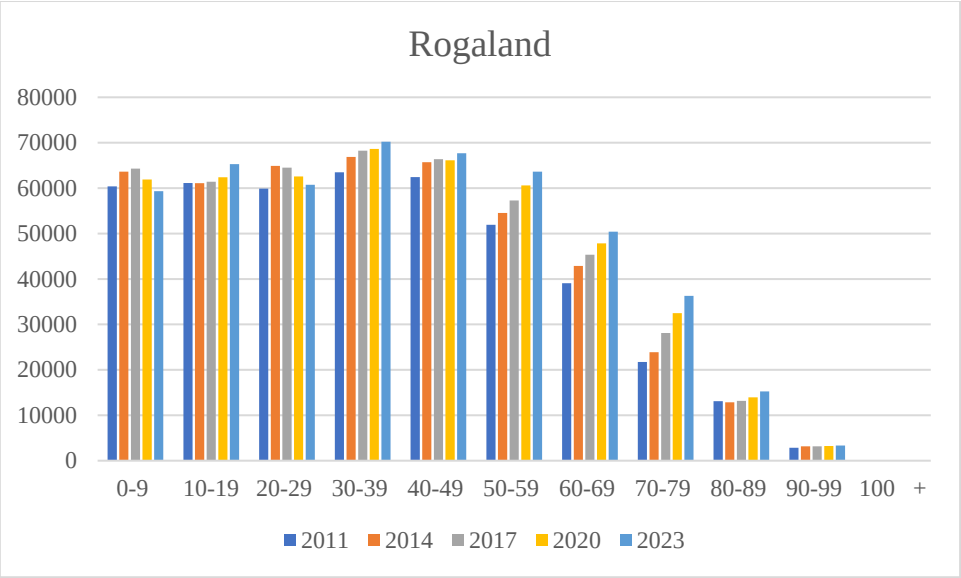


Figure 15: Age demographics, Rogaland. Source: SSB

Oslo and Viken differ. While Oslo has a larger age group between 20 and 39 and a lower group between 0 and 19, Viken displays the opposite. This result is likely because Viken and Oslo are nearby counties, and families tend to move to Viken, which has lower house prices and is less urban. Finally, Viken is the largest county where SRBNK is present, with a population of about 1,2 million. Next is Oslo with about 700 thousand, followed by Vestland, Rogaland and Agder with 640, 485 and 307 thousand respectively.

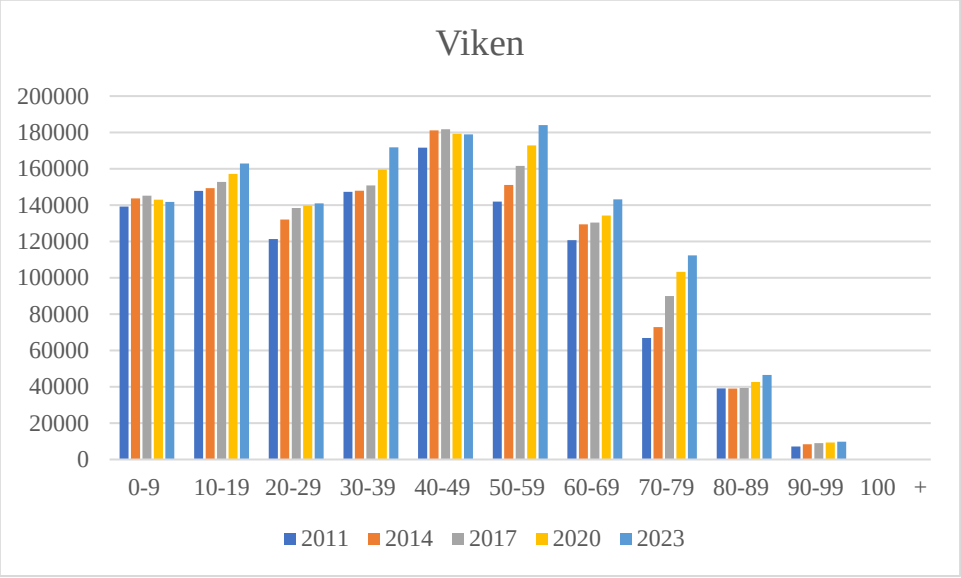


Figure 16: Age demographics, Viken. Source: SSB

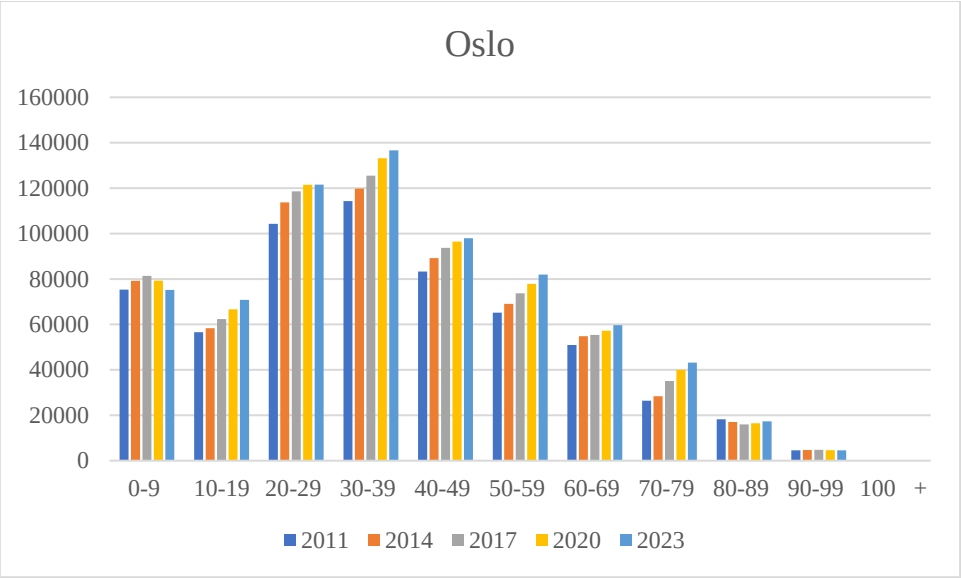


Figure 17: Age demographics, Oslo. Source: SSB

4.1.4. Technological

Digital banking and AI

Digitalization has affected most industries since the advent of the personal computer, smartphone, and internet. Digital banking has grown prominent in banking, allowing clients to perform tasks online or in an app. As a result, customer service has shifted from traditional human service in the local bank office to improving the digital experience. This shift requires a change in focus, investing, and operating. Solid, secure, and user-friendly systems must be created, which requires investments in information technology, software engineers, user-interface experts, and analytics. These computer-science-focused areas have become an increasingly more significant and essential part of banking, leaving those that cannot keep up behind. Although potentially disruptive, digital banking is also an opportunity to create better solutions that can be available to all clients regardless of geography.

Artificial Intelligence (AI) and advanced analytics is the second area that has increased as a result of digitalization and the availability of data. Data gathered about clients and potential clients can be used to create sophisticated models which can be applied to all areas of banking. Tailored offers of pensions, mortgages, and fees can be provided to the clients, providing a better experience and helping the bank correctly price products to a specific individual based on the available data.

4.1.5. Conclusion

By looking at the macroeconomic factors, it appears the economic cycle is on the brink of contraction. The economic cycle is a fluctuation between economic expansion and contraction. In the US, 12 (and a half) cycles have occurred since 1945, and with the world economy becoming more globalized and connected, the connectivity of these cycles is more prominent than before [29]. Increasing inflation and interest rates and a weakening of the economy all point to the start of a contraction.

The result of a contraction paired with increased inflation, such as we have today, is called stagflation. Stagflation is hard to control by monetary policy, as the central bank has to fight inflation while not exacerbating the economic slowdown. Predicting how it will play out is impossible, but a situation with increasing interest rates to reduce inflation resulting in a compromise of low, but not too low, growth and a high, but not too high inflation is not unthinkable.

Norway thus finds itself at the start of an economic contraction, and we can see the unemployment rate stop falling and reaching a current standstill. With further contraction, it will most likely start rising.

Although an economic contraction is coming, Norway has no debt issues, as they invested large amounts of oil and gas tax income in a sovereign fund. Norway is operating with a cap of 3% spending from this fund in their yearly budget and is even now spending less than that not to push inflation up. This buffer means that if the country needs increased income, they do not have to increase tax or debt, leading to a stable tax rate excluding political shifts.

For SRBNK, this means more challenging times ahead as retail and corporate clients will experience a tighter budget. Furthermore, the demographic shift means that a more significant part of SRBNK's retail clients will enter pensions without a similar-sized group replacing them.

Digital banking enables banks to compete for clients regardless of geographical location. Online marketing, digital banking and apps mean that well-developed user experiences and great marketing can target clients where traditionally local presence was limited.

In conclusion, SRBNK is facing similar external factors as other banks. The economic cycle will affect the entire industry. However, an economic contraction might trigger individuals to reassess their bank relationships. Having a solid digital strategy and solutions can position SRBNK to compete. As a bank makes money on the spread between deposits and loans, the spread can be increased by either increasing the interest rate on borrowing or lowering the interest rate on deposits. As interest rates increase and clients' potential reassessment of the bank becomes available, SRBNK can compete on mortgage interest rates while lowering their deposit interest rate to an appropriate level. A deeper examination of SRBNK spread will take place in Chapter 5.

4.2. Competitive position - Porter's five forces

Porter's five forces is a method used to understand an industry and company's competitive space and position [30]. Five parts form the analysis; competition, entry barriers, the power of suppliers, the power of customers and the threat of substitutes.

4.2.1. Competition

The competitive composition of SRBNK can be defined broadly to include all companies that offer the same or similar products in the market in which SRBNK operates. The product offering of SRBNK if primarily deposits and loans, in which banks are the most direct competitor. A large number of banks, in the range of 140, operate in Norway [31]. Just over one-third are independent banks, while the rest are part of the Eike or Sparebank1 alliances. Many independent banks are small, but giants like DNB and Santander are exceptions. The top ten banks had a market share of deposits of 61.4% as of 2021, with DNB holding a staggering 38.1% [32]. DNB and the two large alliances will consequently have much power in dictating the interest rate, as it can be difficult for smaller banks to compete on price margins over time. The large banks and alliances benefit from economies of scale and enjoy widespread brand recognition, making it harder for smaller and newer banks to take market share.

SRBNK also offers other services, like insurance and real estate brokerage. This broadens the competitive space in some areas, including insurance real estate brokerage companies. This extended offering in shared by most large competitors like DNB, which further points bank with a similar offering being the main competition.

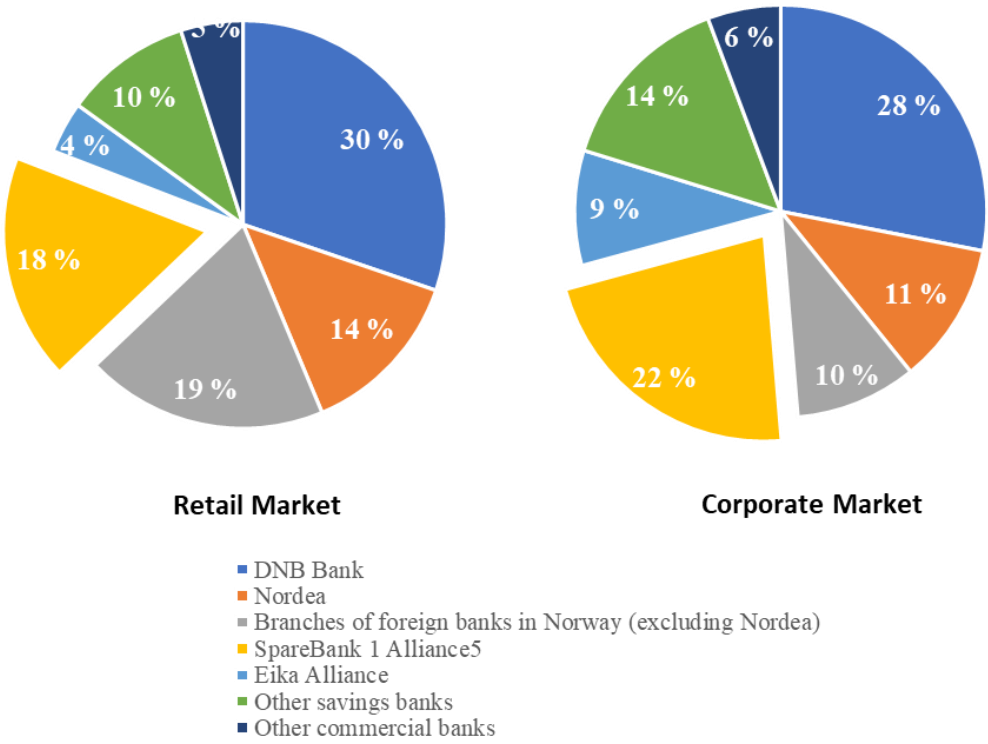


Figure 18: Market share of Retail and Corporate loans. Source: Norges Bank

The banking industry has been around for a long time and can be labelled a mature company in the industry-life cycle depicted in Figure 19. The products and market are established, and industry growth depends on economic growth [33]. Limited growth leads the company to focus on lowering operation costs, as the margin is hard to grow by investing in growth. Mature companies earn more stable revenue with more stable margins. With a limitation on growth, the competitive space often becomes concentrated, as seen by the number of banks available in Norway. The high concentration and limited growth can pressure the margins if competing banks offer lower interest rates to gauge customers.

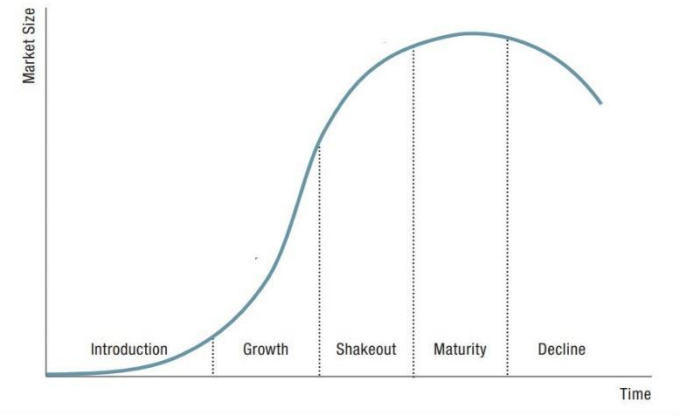


Figure 19: Industry life Cycle

4.2.2. Entry Barriers

Starting a bank is far from straightforward. The barrier to entry for a bank is high straight out of the gate with heavy regulation, a concession, minimum starting capital of 5 million euro and requirements of adequate board, CEO and critical personnel [34]. If the authorities approve and the bank provides the necessary starting capital, the newcomer is met by a mature industry with prominent players and alliances benefitting from economic of scale, robust brand recognition, and established positions.

4.2.3. Power of suppliers

As already alluded, critical players in the banking industry have extreme market power due to their size and position. A report published by the Norwegian Competition Authority in 2015 listed silent cooperation between banks as likely. Net margins in the industry have risen as banks have reduced the interest rate available to customers to less than the reduction they have received from financing. This result is somewhat counter intuitive in a mature industry, as discussed, but is likely a result of the current composition of banks collectively making more money by following the interest rates set by prominent players like DNB than they would make by competing with lower interest rate offerings. DNB and a handful of other banks typically publicly announce their intended interest change following changes to principle rate changes by Norges Bank, enabling the industry to follow at a similar level. Not only is it hard to put up a fight with the likes of DNB as a small bank, but DNB can most likely squeeze the smaller bank by offering rates at a level where the competing bank will go out of business while DNB makes enough income from other areas to stay alive. Following

this thinking, keeping the large margin available to the industry and staying in business is more sensible. As of 2023, no action has been taken by the authorities to interfere in this situation. On the contrary, DNB recently acquired Sbanken, who held a 2% market share of deposits in 2021. After an initial denial by the Norwegian Competition Authorities, an appeal overruled the decision, and the acquisition was approved in March 2022 [35].

4.2.4. Power of Customers

Fortunately, the customer also has power as they can choose which bank to use. Regulations ensure that switching banks is easy and cheap, enabling clients to switch at will, with the bank performing the account transfers[36]. Nevertheless, the same 2015 report concerning supplier power states that customer mobility is low. The report suggests improving awareness of the regulations on customer bank exchange while acknowledging that customers are simply happy with their bank relations.

4.2.5. The threat of substitute products

There are few substitutes for the products supplied by banks, which is evident by the similar product offerings. Regulation and interaction with established systems like the bond-market for corporate clients prevent the products from differentiating. The homogenous product offerings support the customer power, as the customer has little to lose in terms of product when switching banks. Customer satisfaction in terms of price, service and ease of use differentiates banks.

Norsk Kundebarometer is an annual market research that surveys Norwegian's relationship with their bank. The survey has focused on the most prominent players in individual large banks and the two large bank alliances. Table 9 below shows the result of the last survey, displaying a rather large gap between the top and bottom banks in terms of customer satisfaction and loyalty. Especially of note is the fact that DNB scores worst in both categories.

Table 4: Customer Satisfaction of Banks. Source: Norsk Kundebarometer

Rank	Company	Satisfaction	Loyalty
1	Sbanken	85 %	84 %
2	Handelsbanken	80 %	83 %
3	Eika	76 %	79 %
4	Sparebank 1	74 %	80 %
5	Nordea	73 %	77 %
6	Danske bank	70 %	74 %
7	DNB	65 %	70 %

4.2.6. Conclusion

The Norwegian banking industry is in a mature state with a large number of competing banks and a high barrier to entry. However, a select few large banks and the two alliances make up most of the market. With a shared interest between banks to keep the net interest margin from decreasing, silent cooperation occurs in the market. Similar product offerings paired with the ease of customer bank exchange leave the price, service and user-friendliness as the primary differentiators between banks. Nevertheless, customer mobility remains low. The result of interest rates finally rising from a decade with low rates, increased inflation, and signs of declining economic growth might escalate customers' price sensitivity, triggering a change in the industry. If such a change happens, it can trigger more fierce competition on interest rates to attract new customers, leading to an end of the silent cooperation.

As a result, the competitive situation currently favours large banks and alliances, including SRBNK. However, the potential for a change in customer perception can shift the situation to banks losing their power to the customers. The table below shows the current situation with a black X. The red X indicates a potential shift.

Table 5: Competitive Situation Summary

	Competition	Entry Barriers	Power of Suppliers	Power of Customers	Substitute Products
Low			**X**		X
Medium	X		X	X	
High	**X**	X		**X**	

5. Accounting analysis

This chapter investigates the historical financial statements of SRBNK and a select competitive group to gain insights into the performance, operation, and financial situation. The analysis examines 2013 to the end of 2022. The period was chosen because of SRBNK's entrance on the Oslo Stock Exchange in 2012, so we have the complete history of the banks' performance since going public. Furthermore, a more extended history allows for a better understanding of the key figures in different economic environments, providing information about changing internal and external factors on performance. First, a trend analysis is applied, where an examination is done on the income statement and balance sheet over the period. Then, a key metric analysis on credit quality, profitability, liquidity and solvency is done. This chapter combines the points discussed so far in this thesis with the actual numbers of the business. The unity of financial data with the strategic analysis and related information gives us the confidence to forecast the cash flow. The chosen companies for comparison are listed below, and it was a matter of selecting Norwegian banks that compete in the same geographical area and are publicly traded. The overview of SRBNK's income statement and balance for the period is listed on the following two pages for reference. The financial statements are all annual financial statements provided by the company, and the numbers listed are as of the end of each annual year.

Table 6: Comparable Companies

	Market Cap	AUM (mill.)
SRBNK	*32.7b*	*345 931*
Sparebanken Vest	*11,2b*	*263 812*
Sparebanken Øst	*1,0b*	*44 078*
Sandnes Sparebank	*1,8b*	*32 221*
DNB	*304,7b*	*3 236 431*

Table 7: Income Statement Sparebank 1 SR-Bank (2011-2022)

Sparebank 1 SR-Bank (in NOK mill)	2011 31.12.2011	2012 31.12.2012	2013 31.12.2013	2014 31.12.2014	2015 31.12.2015	2016 31.12.2016	2017 31.12.2017	2018 31.12.2018	2019 31.12.2019	2020 31.12.2020	2021 31.12.2021	2022 31.12.2022
Income Statement	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Interest Income	5 287	5 300	5 644	6 137	5 752	5 563	5 747	6 274	7 743	6 953	6 186	9 399
Interest Expenses	(3 531)	(3 558)	(3 525)	(3 733)	(3 159)	(2 692)	(2 585)	(2 835)	(3 756)	(2 811)	(2 196)	(4 883)
A) Net Interest Income	**1 756**	**1 742**	**2 119**	**2 404**	**2 593**	**2 871**	**3 162**	**3 439**	**3 987**	**4 142**	**3 990**	**4 516**
Net Interest Income Growth %	-	*(0,8 %)*	*21,6 %*	*13,4 %*	*7,9 %*	*10,7 %*	*10,1 %*	*8,8 %*	*15,9 %*	*3,9 %*	*(3,7 %)*	*13,2 %*
Comission Income	834	1 105	1 452	1 370	1 605	1 511	1 597	1 519	1 516	1 501	1 801	1 836
Comission Expenses	(71)	(76)	(72)	(78)	(78)	(72)	(79)	(87)	(111)	(111)	(90)	(87)
Other Operating Income	429	437	444	440	5	4	6	5	11	6	6	21
B) Net Comission and Other Income	**1 192**	**1 466**	**1 824**	**1 732**	**1 532**	**1 443**	**1 524**	**1 437**	**1 416**	**1 396**	**1 717**	**1 770**
Net Comission and Other Income Growth %	-	*23,0 %*	*24,4 %*	*(5,0 %)*	*(11,5 %)*	*(5,8 %)*	*5,6 %*	*(5,7 %)*	*(1,5 %)*	*(1,4 %)*	*23,0 %*	*3,1 %*
Dividend	21	25	33	36	17	110	11	12	31	57	30	70
Income from Ownership Interest	209	265	355	506	422	384	425	366	875	663	676	453
Net Income from Financial Instruments	89	288	167	236	(135)	160	198	191	221	(21)	331	233
C) Net Income from Financial Investments	**319**	**578**	**555**	**778**	**304**	**654**	**634**	**569**	**1 127**	**699**	**1 037**	**756**
Net Income from Financial Instruments Growth %		*81,2 %*	*(4,0 %)*	*40,2 %*	*(60,9 %)*	*115,1 %*	*(3,1 %)*	*(10,3 %)*	*98,1 %*	*(38,0 %)*	*48,4 %*	*(27,1 %)*
D) Sum Net Revenue (A + B + C)	**3 267**	**3 786**	**4 498**	**4 914**	**4 429**	**4 968**	**5 320**	**5 445**	**6 530**	**6 237**	**6 744**	**7 042**
Net Revenue Growth %	-	*15,9 %*	*18,8 %*	*9,2 %*	*(9,9 %)*	*12,2 %*	*7,1 %*	*2,3 %*	*19,9 %*	*(4,5 %)*	*8,1 %*	*4,4 %*
Compensation & Benefits	(828)	(1 082)	(1 196)	(1 202)	(945)	(1 166)	(1 263)	(1 297)	(1 472)	(1 436)	(1 722)	(1 788)
Other Operating Costs	(805)	(806)	(823)	(854)	(918)	(866)	(904)	(932)	(1 006)	(950)	(992)	(1 038)
E) Sum Operating Costs	**(1 633)**	**(1 888)**	**(2 019)**	**(2 056)**	**(1 863)**	**(2 032)**	**(2 167)**	**(2 229)**	**(2 478)**	**(2 386)**	**(2 714)**	**(2 826)**
Operating Profit before Loan Write-downs (D+E)	**1 634**	**1 898**	**2 479**	**2 858**	**2 566**	**2 936**	**3 153**	**3 216**	**4 052**	**3 851**	**4 030**	**4 216**
Write-down on loans and guarantees	(139)	(137)	(132)	(257)	(420)	(778)	(543)	(324)	(235)	(2 030)	(192)	(5)
Operation Profit before Tax	1 495	1 761	2 347	2 601	2 146	2 158	2 610	2 892	3 817	1 821	3 838	4 211
Income Tax	(414)	(400)	(487)	(506)	(400)	(403)	(524)	(596)	(693)	(231)	(682)	(834)
Tax Rate %	*28 %*	*23 %*	*21 %*	*19 %*	*19 %*	*19 %*	*20 %*	*21 %*	*18 %*	*13 %*	*18 %*	*20 %*
Net Income	**1 081**	**1 361**	**1 860**	**2 095**	**1 746**	**1 755**	**2 086**	**2 296**	**3 124**	**1 590**	**3 156**	**3 377**
Net Income Growth %		*25,9 %*	*36,7 %*	*12,6 %*	*(16,7 %)*	*0,5 %*	*18,9 %*	*10,1 %*	*36,1 %*	*(49,1 %)*	*98,5 %*	*7,0 %*

Table 8: SRBNK Balance Sheets 2011-2022

Sparebank 1 SR-Bank (in NOK mill)	2011 31.12.2011	2012 31.12.2012	2013 31.12.2013	2014 31.12.2014	2015 31.12.2015	2016 31.12.2016	2017 31.12.2017	2018 31.12.2018	2019 31.12.2019	2020 31.12.2020	2021 31.12.2021	2022 31.12.2022
Balance Sheet	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Cash and receivables from the central bank	263	1 314	1 265	1 847	931	1 079	207	717	104	68	78	76
Loans to and receivables from credit institutions	723	1 087	1 253	2 222	2 984	4 334	1 608	1 696	3 142	12 589	5 366	11 939
Loans to customers	100 588	108 758	119 525	140 920	154 357	156 372	171 237	190 878	205 688	216 966	228 578	251 272
Certificates and bonds	19 850	18 677	21 065	15 261	19 533	21 024	31 909	29 340	32 792	39 921	56 266	53 989
Financial derivatives	3 716	4 578	4 923	7 340	6 135	4 315	5 541	5 268	5 933	8 672	5 053	18 612
Shares, ownership stakes and other securities	631	671	938	626	441	596	717	868	920	908	1 001	848
Business to be sold	85	85	85	22	168	22						
Investments in ownership interests	4 389	4 964	4 710	4 727	4 792	4 460	3 953	3 713	4 180	4 523	4 894	5 242
Intangible assets	54	43	39	20	61	89	96	95	273	298	458	454
Deferred tax asset									420	1 015	598	1 075
Fixed assets	401	363	362	327	404	495	572	798	1 087	994	979	923
Right-of-use assets									398	346	334	314
Other assets	442	1 003	2 820	1 614	2 243	622	778	688	958	749	797	1 186
Total assets	**131 142**	**141 543**	**156 985**	**174 926**	**192 049**	**193 408**	**216 618**	**234 061**	**255 895**	**287 049**	**304 402**	**345 930**
Total assets Growth %	-	*7,9 %*	*10,9 %*	*11,4 %*	*9,8 %*	*0,7 %*	*12,0 %*	*8,1 %*	*9,3 %*	*12,2 %*	*6,0 %*	*13,6 %*
Debt to credit institutions	4 782	4 522	3 742	6 139	4 343	2 674	2 335	1 433	2 264	4 144	2 634	**3 428**
Loans state administration regarding exchange sche	7 395	7 299	6 429	-								
Deposits from customers	64 042	67 594	71 667	81 489	89 444	85 914	95 384	98 814	103 106	118 170	137 664	148 100
Securities issued	36 338	40 691	52 328	63 253	71 979	79 183	90 497	103 485	116 164	127 163	122 276	135 353
Financial derivatives	2 010	2 282	2 013	3 317	3 739	2 515	3 787	3 889	4 530	6 825	3 203	15 771
Payable taxes	130	209	377	206	637	681	487	896	1 228	835	232	1 345
Deferred tax asset	329	631	671	821	654	360	393	124				
Lease liabilities									395	365	359	336
Pension commitments											277	251
Impairment provisions on financial liabilities											153	138
Other liabilities	1 384	1 455	1 698	1 334	880	1 147	1 082	884	1 249	1 000	830	858
Senior non-preferred debt											7 465	9 301
Subordinated loan capital	4 975	4 223	4 004	2 964	3 459	2 646	2 764	2 951	2 125	2 154	2 130	2 161
Total Liabilities	**121 385**	**128 906**	**142 929**	**159 523**	**175 135**	**175 120**	**196 729**	**212 476**	**231 061**	**260 656**	**277 223**	**317 042**
Total liabilities Growth %	-	*6,2 %*	*10,9 %*	*11,6 %*	*9,8 %*	*(0,0 %)*	*12,3 %*	*8,0 %*	*8,7 %*	*12,8 %*	*6,4 %*	*14,4 %*
Share capital	3 180	6 385	6 394	6 394	6 394	6 394	6 394	6 394	6 394	6 394	6 394	6 394
Share premium reserve	625	1 587	1 587	1 587	1 587	1 587	1 587	1 587	1 587	1 587	1 587	1 587
Allocated dividend	299	384	409	512	384	575	1 087	1 151	1 407	1 407	1 535	1 790
Fund for unrealised gain	43	72	162	59	163	52	43	60				
Hybrid capital							150	550	1 850	1 850	1 850	1 700
Other equity	1 183	4 209	5 504	6 851	8 386	9 680	10 628	11 843	13 596	15 155	15 814	17 418
Miscellaneous pre listing	4 427											
Total Equity	**9 757**	**12 637**	**14 056**	**15 403**	**16 914**	**18 288**	**19 889**	**21 585**	**24 834**	**26 393**	**27 180**	**28 889**
Total Equity Growth %		*29,5 %*	*11,2 %*	*9,6 %*	*9,8 %*	*8,1 %*	*8,8 %*	*8,5 %*	*15,1 %*	*6,3 %*	*3,0 %*	*6,3 %*
Total liabilities and equity	**131 142**	**141 543**	**156 985**	**174 926**	**192 049**	**193 408**	**216 618**	**234 061**	**255 895**	**287 049**	**304 403**	**345 931**
Total liabilities and equity Growth %	-	*7,9 %*	*10,9 %*	*11,4 %*	*9,8 %*	*0,7 %*	*12,0 %*	*8,1 %*	*9,3 %*	*12,2 %*	*6,0 %*	*13,6 %*

5.1. Trend Analysis

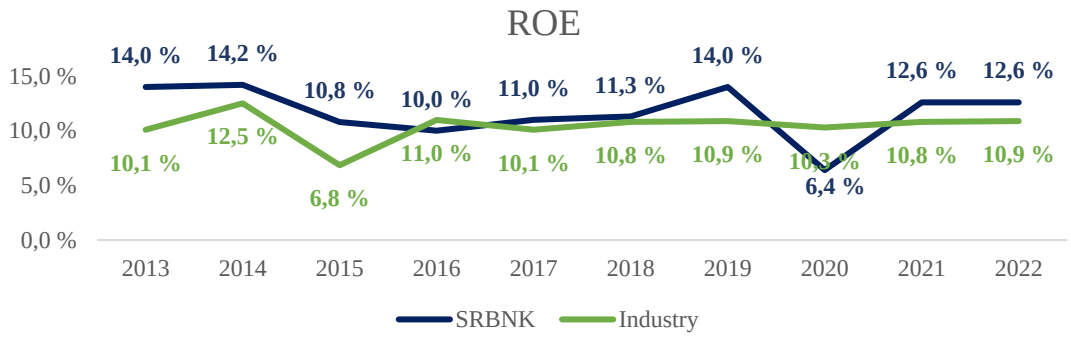
Starting with the Net Income, SRBNK has achieved a compounded annual growth rate (CAGR) of 11%. We can see the cyclical nature of SRBNK and the effects of external factors on net income growth rates. After two consecutive years of increased growth in 12 and 13, we see a decline in growth, reaching negative and low growth in 15 and 16 as the oil price dropped substantially, affecting the clients of SRBNK. We notice significant growth in the normalised period of 17-21. The increase is primarily driven by an increase in interest income growth and a decrease in interest income cost, with an average yearly growth of 2.6% and -1.8%, respectively. This can result from the silent cooperation discussed in the strategic analysis. The result was an average of 6.6% yearly net income revenue growth, and combined with controlled growth in operating cost, acted as the main force behind the increased net income.

2022 saw a rapid decline in net income growth, primarily driven by a significant increase in revenue cost of 122%, with an accompanying 52% increase in interest revenue. We also saw a negative growth in income from finances, and a low income growth in commission, with operating costs remaining low. Ending with a net income level substantially higher than pre-covid levels but with a looming change of scenery. Looking at the net income in isolation is of little help as an equity investor. To link the net income to equity, we divide the net income by equity:

Equation 14: Return on Equity

$$Return\ on\ Equity = \frac{Net\ Income}{Shareholders'\ Equity}$$

The Return on Equity (ROE) is a measure of return generated by the company for each NOK invested in the company by shareholders[14].



Overall, the ROE of SRBNK is trending above the industry, decreasing in 15 and 16 before increasing again to stabilise at around 12.6%, except for 2020. The decrease is linked to increased capital requirements, forcing SRBNK to reinvest its profits into equity to adhere to higher Tier 1 capital requirements. Still, SRBNK grew its ROE above the industry while building the capital requirements. Given the need to increase its equity, the bank has proven a track history of stable ROE. The current level is slightly lower than before the new requirements, but SRBNK is back to its original position above the industry.

On the point of equity, we turn to the balance sheet. The balance sheet lists the assets, liabilities and equity of the company. By far, the largest post under assets is loans to customers. SRBNK grew its loans to customers by an 8.7% compounded annual growth rate each year with positive growth, although we can see a decrease in growth rate in the last few years, with 2022 being the anomaly. The deposits from customers and securities issued make up the largest posts for liabilities. Deposits from customers had positive growth in the entire period, with a CAGR of 8%, and made up 47% of liabilities in 2012 versus 53% in 2011. Securities issued have had positive growth over the entire period, with a CAGR of 13%. With the more significant increase in growth for securities issued, this post now carries 43% of the liabilities, up from 30% in 2011. This shows that SRBNK has increased its debt exposure to the security market for funding. When issuing securities in terms of bonds, SRBNK, in practical terms, borrow money from investors with an obligation to pay it back with interest. Much the same way as the bank makes money on the spread between interest given to customer deposits and interest received from customer

loans, it can make money by issuing bonds and loaning them out at a higher rate than it pays back on the bond [37].

The difference between assets and liabilities is the equity. With increasing capital requirements, SRBNK has increased its equity substantially during the period. As equity works as a buffer between assets and liabilities, an increase in equity improves the banks' ability to take losses without going bankrupt.

5.2. Analysis of key metrics

5.2.1. Credit Quality

Credit quality is the debt a company has and its ability to pay this debt [38]. By inspecting the loan portfolio of SRBNK, we look at the banks' exposure from an internal point of view with information from the annual reports. External rating companies also assess a bank's credit quality, and we will use Moody's report of SRBNK to get an external examination.

The lending distribution of SRBNK's lending is shown in Figure 20 below. 61% is retail lending, which consists mainly of mortgages but includes car loans and other loans. This leaves 39% of the portfolio in corporate loans, distributed in several segments. The distribution between retail and corporate has been stable around the current level since 2011 and will most likely continue in the future. To diversify, SRBNK has actively worked on diversifying its corporate portfolio in terms of risk[19]. This includes reducing oil and gas exposure and distributing loans to sectors with different risk factors so that significant variations decrease over time. This approach works similarly to the CAPM model; diversifying makes a company less volatile. A few sectors are still noticeably large, specifically real estate, with a 15% overall loan share. The service sector is also significant, with 8% and shipping and transport is 5%. A large post in real estate increases the banks' exposure to a sector with risk factors that probably overlap with the housing market. SRBNK has a relatively diversified lending portfolio but can benefit significantly from an even better distribution by reducing specific large sector exposures.

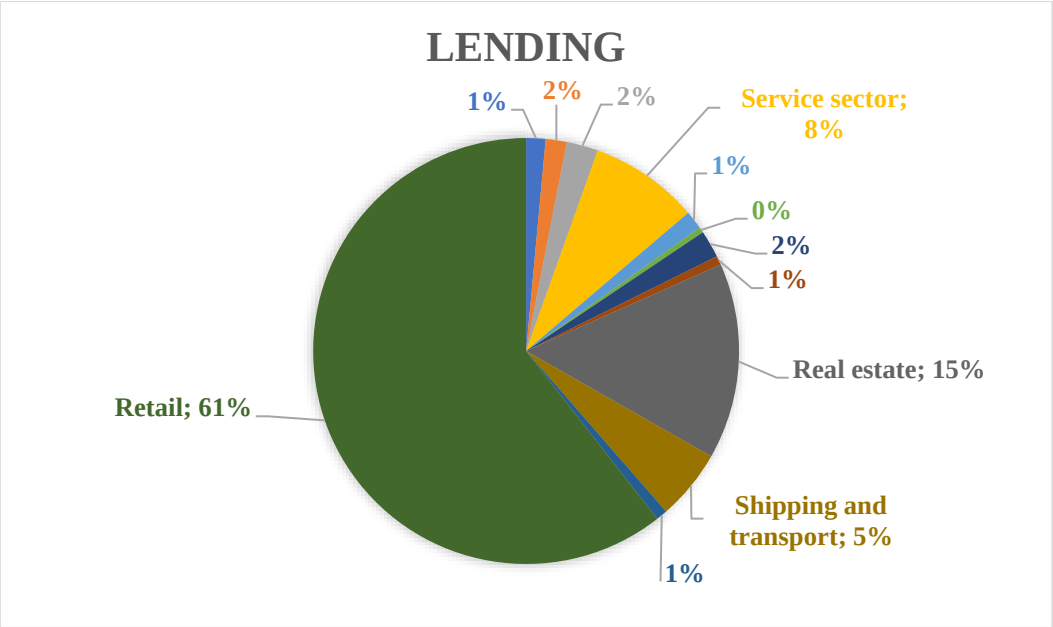


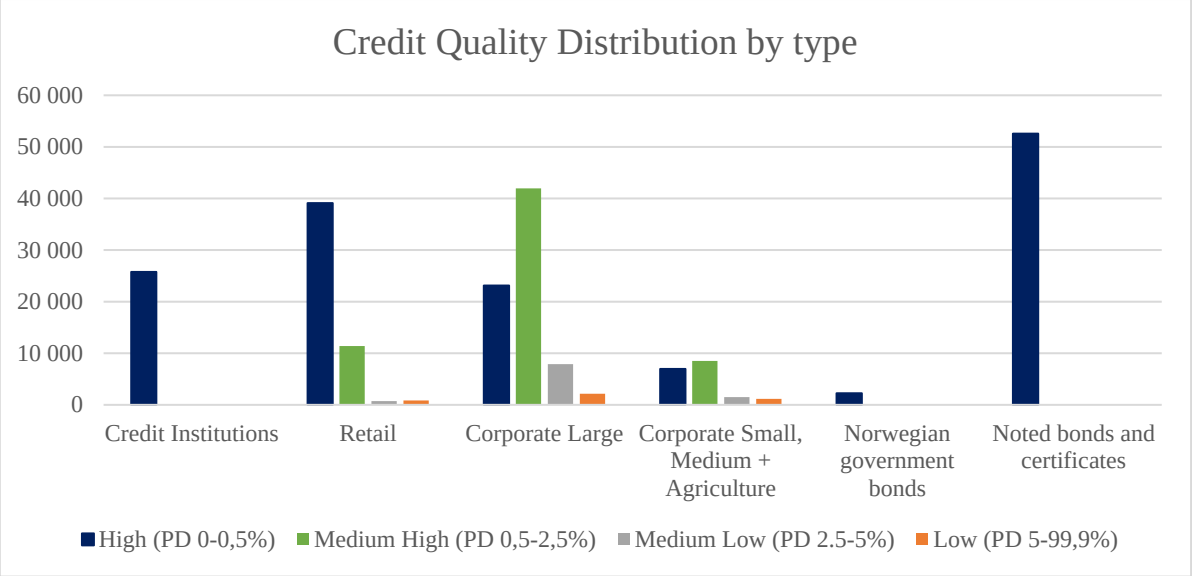
Figure 20: Lending portfolio of SRBNK

The lending portfolio serves as an overview of the underlying risks. SRBNK is classifying their credit into rating levels listed in the table below. The ratings correspond to the S&P rating system listed in the same table. The S&P ratings will be used in this text, as they are easier to read than the internal ratings of SRBNK. AAA is the top rating a credit can receive, equivalent to a default risk of 0-0.5%. The corresponding risks can be seen in the table for reference.

Table 9: SRBNK's internal risk credit rating

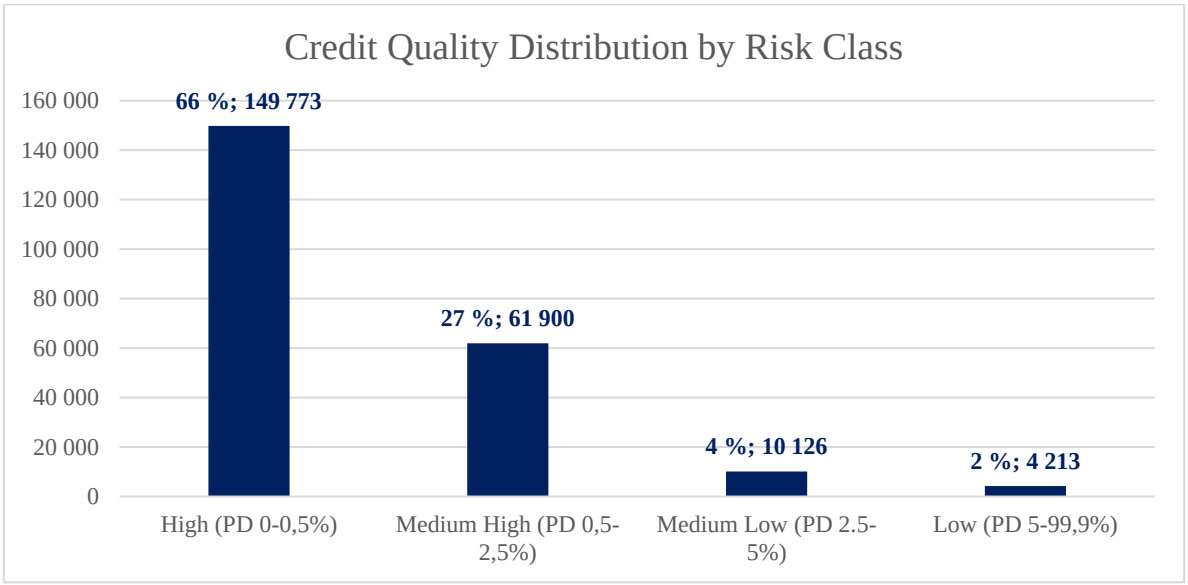
Bankens risikoklassifisering	S&P rating
PD 0,00 - 0,50 %	AAA til BBB-
PD 0,50 - 2,50 %	BB+ til BB-
PD 2,50 - 5,00 %	B+
PD 5,00 - 99,99 %	B og lavere

Starting with retail, 75% are rated AAA, 22% BB+ and only 3% at or below B. Next, the large corporations have only 41% at AAA, with 56% at BB2 and 13% below. This highlights large corporate as both the largest and riskiest area, confirming the need to focus on diversification and risk management. SMD+A share a similar distribution but with much less volume. Finally, the bond market is all rated AAA.



The overall distribution shows SRBNK to have 66% on their volume in AAA, 27% in BB+ and 6% below. For an external view of the risk, we consult Moody's report on SRBNK as of the 13th of December 2022 [39]. Moody's report of the weighted macro profile is very strong and with a positive outlook. The strong market position capital buffer is complemented but is balanced against the geographic concentration and more prominent exposure to oil & gas and real estate. Furthermore, the report points out the same finding we found in the trend analysis on the increased dependence on market funding, which exposes them to investor sentiment changes.

Figure 21: Credit Quality Distribution by Type



5.2.2. Profitability

Portability is the banks' possibility to generate returns, which can then be distributed to shareholders. As we have argued, ROE is probably the best indicator for an equity investor to consider. ROE was discussed in the trend analysis, but viewing the ROE in the context of the equity share can be insightful.

Equation 15: Equity Share

$$Equty\ Share = \frac{Equity}{Equity + Debt}$$

If an organisation makes a high return on equity but is generating this based on a large amount of risky debt, the ROE is exposed to risk and potential decline in the future, where the organisation can get into debt issues. When comparing the equity share with the industry, we see that SRBNK has gradually declined from 9% in 2013 to 8.4% in 2022. Although below the industry average, SRBNK has reduced its equity share to align with DNB and Sparebanken Vest at 8.0% and 8.3%, respectively. Sparebanken Øst and Sandes Sparebank are increasing the average with their values at 10.9% and 10.5%, respectively, in 2022. The change in equity share is another proof of SRBNK and the banking industry's more prominent exposure to market funding. If we compare look closer at ROE, this picture becomes more apparent, as Sandnes Sparebank and Sparebanken Øst have an ROE of 8.5% and 6.7%, with DNB sitting at 13.8 and Sparebanken Vest at 14.6%. This showcases the clear connection between equity share and ROE. SRBNK has chosen to take on more risk to generate more returns. With a strong credit quality rating, this move appears to pay off risk-reward-wise but does pose a more considerable risk.

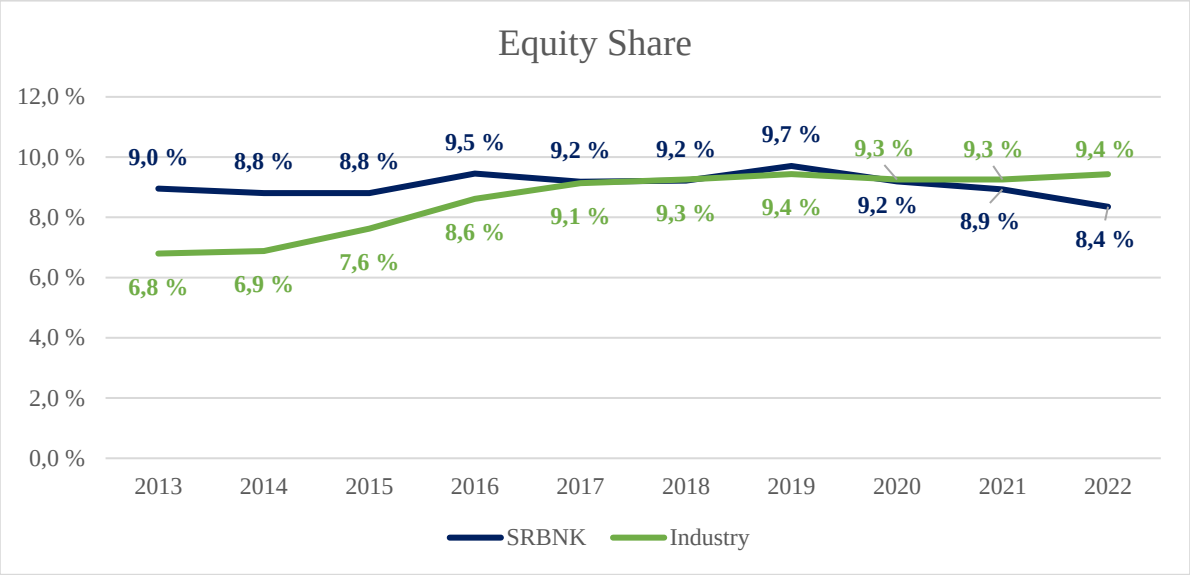


Figure 22: Equity Share, SRBNK vs Industry

The net interest margin is critical to a bank's profitability. By dividing the net interest income by interest revenue, we see the spread between what the bank pays and what it earns in interest. Increasing the net interest margin means the banks generate a larger net income.

Equation 16: Net Interest Margin

$$Net\ Interest\ Margin = \frac{(Interest\ Income - Interest\ Costs)}{Interest\ Revenue}$$

The variability is lower on this key indicator, with Sandnes Sparebank being the highest with 1.61% in 2022 and DNB the lowest with 1.21%. SRBNK did trend above the industry average from 2013 to 17 but declined after the oil crisis and recently improved to just above the average. As discussed in the strategic analysis, the silent cooperation between banks supports the notion of this indicator staying at the same level unless stronger customer mobility kicks in. With less competition on interest rates, lower variability is also expected, with DNB managing to profit from a lower margin due to its massive size.

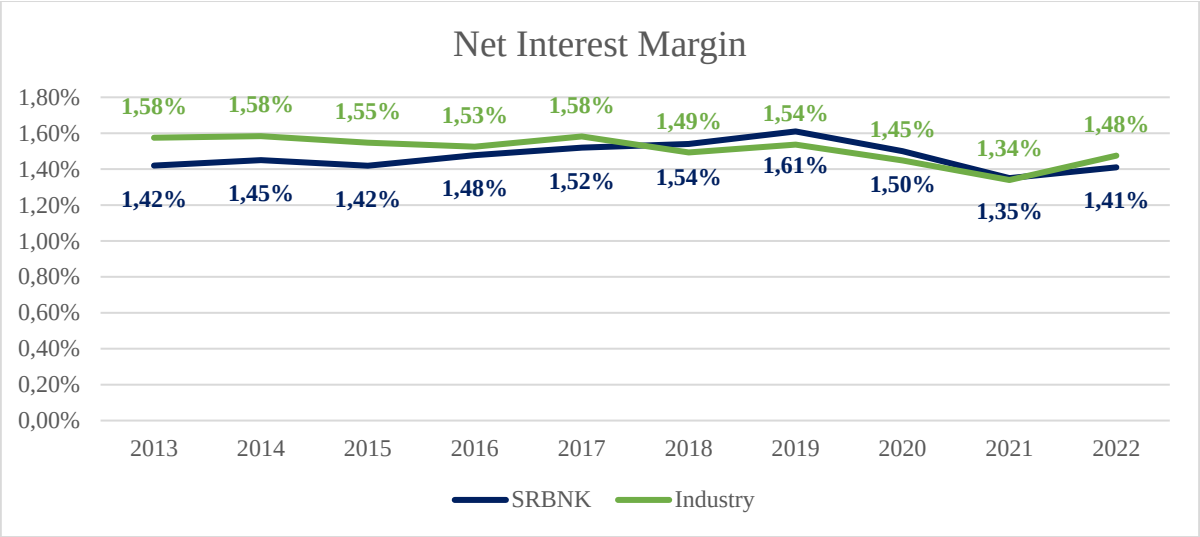


Figure 23: Net Interest Margin, SRBNK vs Industry

So far, the income side of profitability has been studied. The second part of the equation is cost. Controlling costs while increasing revenue is imperative for healthy growth.

Equation 17: Cost to Income

$$Cost\ to\ Income = \frac{Operating\ Costs}{Operating\ Income}$$

We see the signs of a mature industry with a long track record in this metric, with most of the industry trending around 40%, indicating a soft wall around this area. SRBNK's management reports significantly focusing on reducing costs as they improve their revenue.

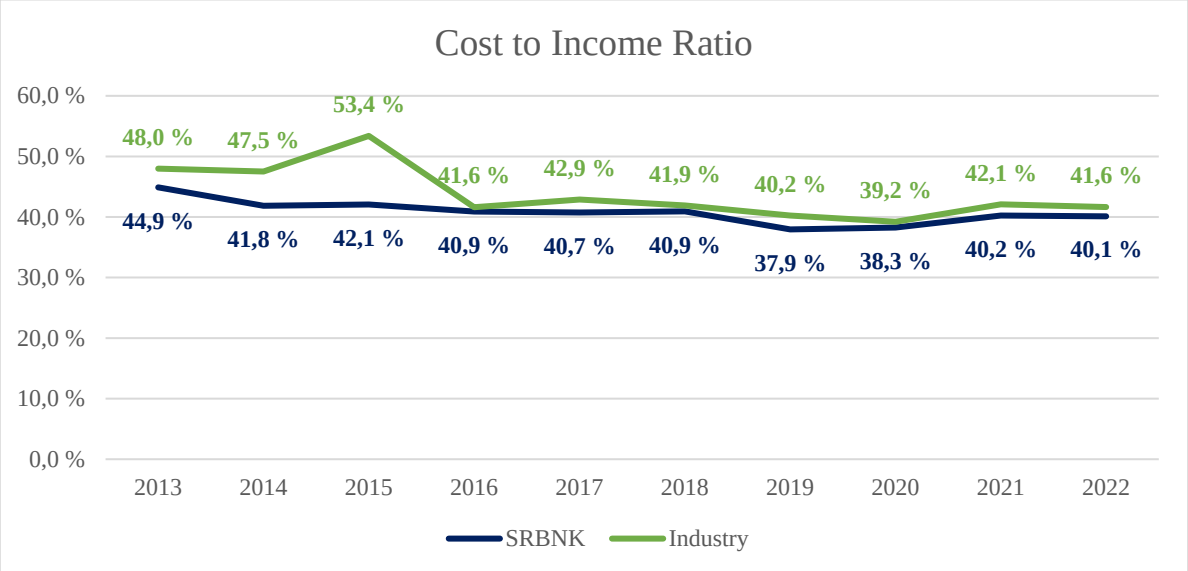


Figure 24: Cost to Income Ratio

5.2.3. Liquidity

Liquidity is the possibility to convert assets into cash quickly. A bank's financing sources heavily influence liquidity. As deposits are the primary financing source of a bank, we will look at the loan-to-deposit ratio.

Equation 18: Loan to deposits

$$Loan\ to\ Deposit = \frac{Deposits}{Net\ loans}$$

SRBNK is trending above the industry for the entire period on this indicator. A closer look at the individual banks reveals that DNB has the largest loan-to-deposit ratio at 73.5% in 2022. Sparebanken Vest is at the lowest end with 42.8%, and the remaining two at about 50%. SRBNK is the second highest of the group at 58.9%. This situation again shows that some banks are utilizing bonds as a capital source at a higher point than others. As discussed earlier, this increases the risk.

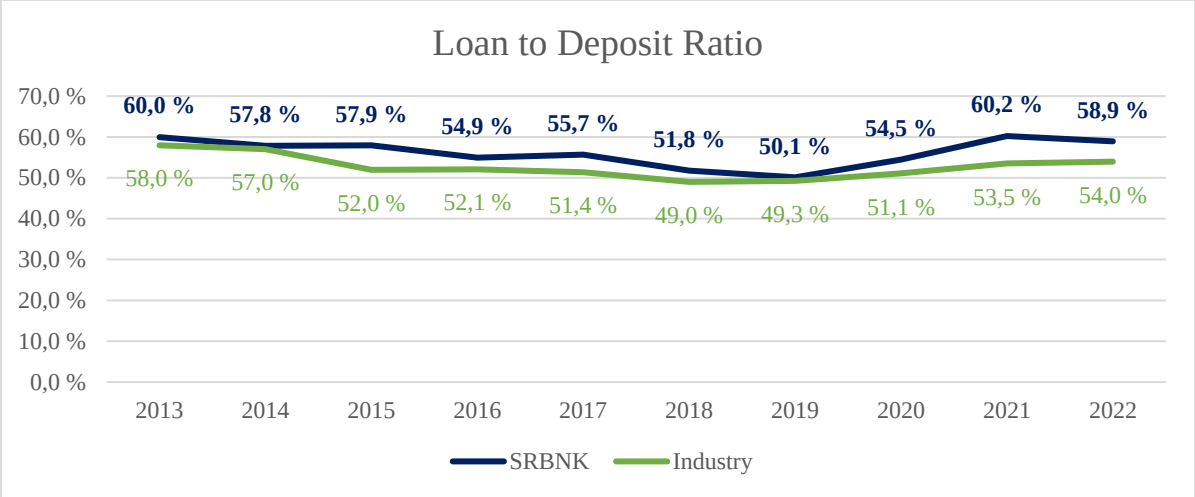


Figure 25: Loan to Deposit Ratio

5.2.4. Solvency

Solvency measures a bank's ability to meet its debt obligations. The strategic analysis has discussed this topic at length, focusing on SRBNK's capital ratio. Here, we will quickly compare SRBNK's position to the industry to look for note differences. SRBNK trended below the industry average until 2019, falling back under in 2022. Individual requirements such as Pilar 2 and the requirement for systematically important banks provide different requirements for different banks. This is reflected in the capital ratios.

Furthermore, risk models such as the standard method and IRB discussed in Chapter 4 also lead to significant differences. Sparebanken Øst is sitting at 21.9% in 2021 due to negative

loan growth. The bank also complains about applying the IRB method, where it is forced to value its portfolio riskier than they want, further increasing its capital ratio. The management of SRBNK mentions no such challenges, and if adjusting for the anomaly of Sparebanken Øst, the bank finds itself on normal levels.

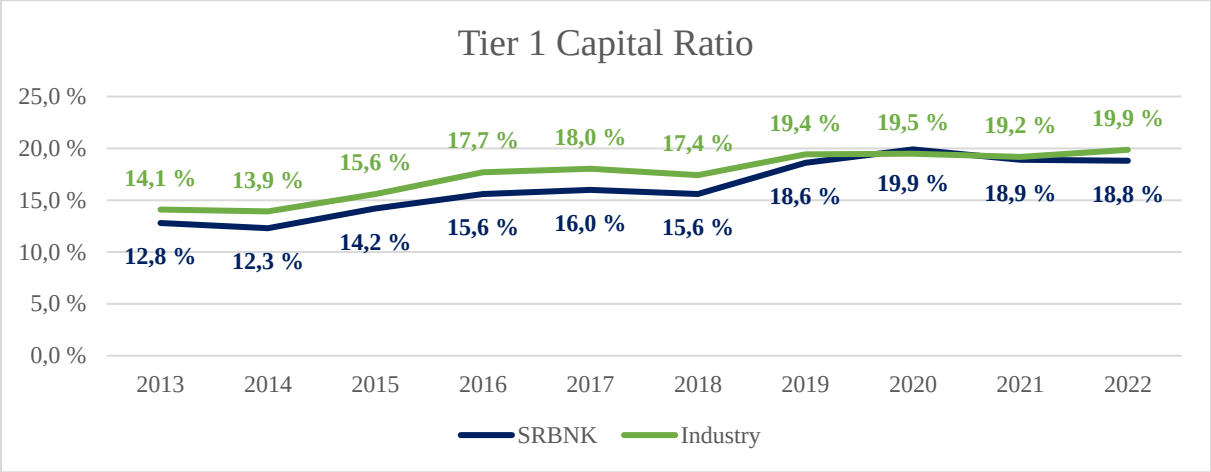


Figure 26: Tier 1 capital ratio, SRBNK vs Industry

6. Fundamental Valuation

6.1. Cash Flow Forecast

6.1.1. Risk-weighted assets

SRBNK generates income by generating more revenue on the available assets than it pays out to deposits and bond payments. This is done by exposing the assets to risk to gain excess return. Risk-weighted assets (RWA), as presented in Chapter 4, is the factoring in of the risk applied to the assets, of which the total RWA forms the basis for calculating the capital requirement ratios. The historical correlation between lending and RWA for SRBNK is 78.5%, which makes a sound argument for using lending growth as a proxy for RWA.

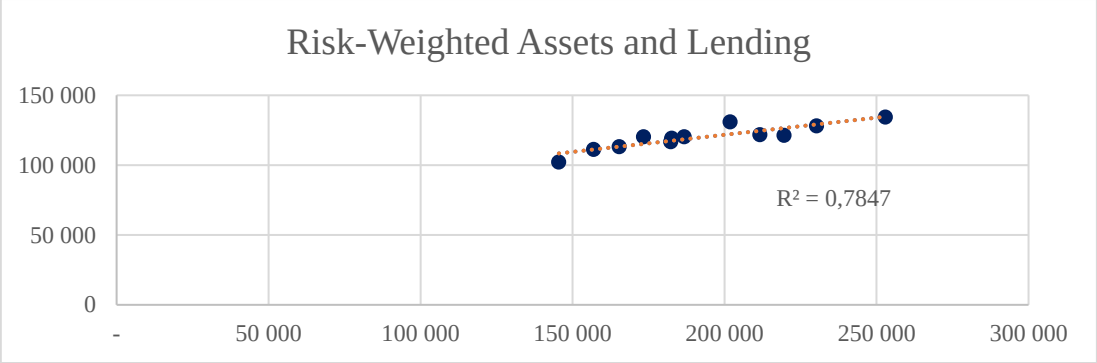


Figure 27: Correlation between RWA and Lending for SRBNK

When we look at lending growth in the context of the cyclical variations discussed in the trend analysis of the accounting analysis, we see that lending growth follows the same pattern, falling during the oil crisis in 2016, then building back up, and ending on a solid note in 2022, with a compounded annual growth of 4.8% from 2014 to 2022.

Table 10: Historical Lending Growth

(mill.)	2014	2015	2016	2017	2018	2019	2020	2021	2022
Lending	**173 403**	**182 640**	**182 362**	**186 765**	**201 898**	**211 696**	**219 599**	**230 289**	**252 957**
Lending growth		*5,3 %*	*(0,2 %)*	*2,4 %*	*8,1 %*	*4,9 %*	*3,7 %*	*4,9 %*	*9,8 %*
Risk-Weighted Assets	**120 189**	**119 124**	**116 651**	**120 160**	**130 869**	**121 744**	**121 262**	**127 981**	**134 324**

The consequence of entering an economic contraction with higher inflation and interest rates, lower GDP, and worsening unemployment is a decline in lending growth, as corporations and retail customers will have a more challenging time dealing with the interest rates and higher costs. The Porter analysis presented a scenario where the contraction will trigger more customer awareness and switching of banks, breaking the silent cooperation between banks and putting downward pressure on the margins. Depending on how SRBNK deals with such a scenario, the lending can grow, stay or decline, but such a shift will heighten the competition in a mature industry with many competing banks. Finally, the population will age in the long term, and the growth will decline as fewer people enter lucrative demographics. SRBNK can compensate for this by continuing its market share growth in Oslo and Viken, but high growth is limited in the long run as more prominent factors such as GDP growth and population come into play. Accordingly, the forecasted lending growth is set to decline in 2023 and continue to fall to 2% before slowly increasing again.

Table 11: Lending Growth and RWA Forecast

(mill.)	2023E	2024E	2025E	2026E	2027E
Lending	**263 075**	**268 337**	**276 387**	**287 442**	**296 066**
Lending growth	*4,0 %*	*2,0 %*	*3,0 %*	*4,0 %*	*3,0 %*
Risk-Weighted Assets	**139 697**	**142 491**	**146 766**	**152 636**	**157 215**

6.1.2. Tier 1 Capital Ratio

SRBNK has fully incorporated the Basel III framework and will carry a more stable period in capital regulations, as the banking industry in Norway has drastically improved its capitalisation.

Table 12: Tier 1 Capital Ratio History

	2014	2015	2016	2017	2018	2019	2020	2021	2022
Tier 1 Capital Ratio	**12,34 %**	**14,17 %**	**15,63 %**	**16,04 %**	**15,85 %**	**18,58 %**	**19,90 %**	**18,88 %**	**18,76 %**

The final adjustment is the 1% addition applied to SRBNK for now being a systematically important bank, leaving SRBNK with a requirement of 18.35% in 2023, including a maxed-out countercyclical buffer of 2.5%. The management has a target rate of 18.85 for 2023, which implies an extra buffer of 0.5%. For this reason, 18.85% is the forecasted value for 2023 and 2024, whereas, in 2025, it is reduced by 1% to 17.85%, as the countercyclical buffer will decline as the contraction fades. Furthermore, additional requirements can be expected, as seen by the history. The Pilar 2 addition is set on an individual level, and seeing as SRBNK has lowered its equity share over the years, this post can potentially increase. An additional 0.35% and a further 0.5% are added to 2026 and 2027, respectively.

Table 13: Tier 1 Capital Ratio Forecast

	2023E	2024E	2025E	2026E	2027E
Tier 1 Capital Ratio	**18,85 %**	**18,85 %**	**17,85 %**	**18,00 %**	**18,50 %**

6.1.3. Tax rate

The corporate tax rate is set to **20%,** which is in line with the discussion in Chapter 5, where it was argued that the corporate tax is at a level in line with Europe. As a result, the net income will not suffer from increased tax levels in the forecast.

6.1.4. Reinvestments and equity

The alternative method does not include estimating each line on a financial statement and then transforming them to FCFE. It is rather about finding a stable way of predicting FCFE for a bank, which in this case leaves out multiple lines traditionally forecasted in a FCFE model as a bank requires little or no investment in equipment or R&D to grow. Although a bank requires little reinvestment in traditional FCFE items, it must continue to grow its Tier 1 Capital, per the definition of Tier 1 Capital, to grow its loans. Consequently, the difference in Tier 1 Capital from one year to the next is the required reinvestment by a bank. We started by estimating the RWA, which, multiplied with the Tier 1 Capital ratio, gives us the forecasted Tier 1 Capital requirement. The difference in Tier 1 Capital in the current and last year is the required reinvestment by the bank. The reinvestment is added to the equity from last year to give the equity of the current year. Furthermore, the reinvestment is subtracted from net income to yield the free cash flow to equity.

Table 14: FCFE bank

	1	2
Risk-Weighted Assets	100	105
Capital ratio	20,00 %	20,00 %
Tier 1 Capital	20	21
Change in Tier 1 Capital	-	1
Equity	**30**	**31**
ROE	**10,00 %**	**10,00 %**
Net Income	**3**	**3**
Investment in Tier 1 Capital	-	1
FCFE	**-**	**2**

6.1.5. ROE and Net Income

SRBNK has shown a strong historic ROE, and the management has proclaimed a 13% target. The bank's focus on cost efficiency has shown itself in a solid downtrend with a stabilisation of around 40%, constantly focusing on keeping costs down while increasing revenue. The net revenue margin is a crucial insight into the bank’s revenue-generating ability.

Table 15: Historic ROE

	2014	2015	2016	2017	2018	2019	2020	2021	2022
ROE	**14,20 %**	**10,80 %**	**10,00 %**	**11,00 %**	**11,30 %**	**12,00 %**	**6,40 %**	**12,60 %**	**12,60 %**

The forecast accounts for SRBNK experiencing a slight drop in the margin as the customer becomes more price-sensitive in the future. Overall, the forecasted ROE gradually decreases to 11% in 2024, then increase back up and stabilise at 12%. The long-term ROE for the terminal value is set to 10%, as in the long run, growth is limited by regionality and increased competition.

Table 16: ROE Forecast

	2023E	2024E	2025E	2026E	2027E
ROE	**12,00 %**	**11,00 %**	**11,50 %**	**12,00 %**	**12,00 %**

6.1.6. Cash flow summary

The table below summarises the forecasted cash flow estimated in this chapter.

Table 17: SRBNK FCFE Base Case

Base-case						
SRBNK	**2022A**	**2023E**	**2024E**	**2025E**	**2026E**	**2027E**
Risk-Weighted Assets	134 324	139 697	142 491	146 766	152 636	157 215
Capital ratio	18,76 %	18,85 %	18,85 %	17,85 %	18,00 %	18,50 %
Tier 1 Capital	25 199	26 333	26 860	26 198	27 475	29 085
Change in Tier 1 Capital	-	1 134	527	($662)	1 277	1 610
Equity	**28 889**	**30 023**	**30 549**	**29 887**	**31 164**	**32 775**
ROE	**12,05 %**	**12,00 %**	**11,00 %**	**11,50 %**	**12,00 %**	**12,00 %**
Net Income	**3 481**	**3 467**	**3 302**	**3 513**	**3 586**	**3 740**
Investment in Tier 1 Capital	-	1 134	527	($662)	1 277	1 610
FCFE	**-**	**2 333**	**2 776**	**4 175**	**2 310**	**2 129**

6.2. Terminal growth

When applying the terminal value formula, we use a terminal growth, g, which is the rate at which the net income will grow forever. The growth in the economy limits terminal growth, as a growth larger than the growth of the economy would result in the company outgrowing the world over time, which is impossible. In the long run, SRBNK operates in a mature market with geographic restrictions to South Norway in a healthy competitive market. This results in a growth rate with GDP set to **2%**.

6.3. Scenario analysis

The base case presented is what is judged as the most likely outcome in this evaluation. However, a forecast includes multiple variables with uncertainty. Two additional cases are presented to showcase the outcomes in cash flows from scenarios in which certain variables play out in other ways discussed earlier as options. The Bull-case takes the optimistic approach concerning these variables, while the Bear-case takes a pessimistic view. Nevertheless, both cases are potential outcomes.

6.3.1. Bull-case

The Bull-case contains the path where the contraction is softer than expected. SRBNK continues to take market share in South Norway, with the largest growth in Oslo and Viken. Price sensitivity for customers remains the same, and SRBNK can capitalize on changing interest rates to improve its net margin, increasing the ROE to 13%. Terminal growth is set at 2.5%, at the higher end of GDP growth, and the terminal ROE at 12%. The Free Cash Flow to equity is lower than the base-case until 2027 due to the required reinvestment needs of larger growth, but it will turn into a larger return in the future, as will be evident in the terminal value presented later.

Table 18: SRBNK FCFE Bull Case

Bull-case						
SRBNK	**2022A**	**2023E**	**2024E**	**2025E**	**2026E**	**2027E**
Risk-Weighted Assets	134 324	142 518	149 216	155 185	167 600	181 007
Capital ratio	**18,76 %**	**18,85 %**	**17,85 %**	**17,85 %**	**18,00 %**	**18,50 %**
Tier 1 Capital	25 199	26 865	26 635	27 700	30 168	33 486
Change in Tier 1 Capital	-	1 665	($230)	1 065	2 467	3 318
Equity	**28 889**	**30 554**	**30 325**	**31 390**	**33 858**	**37 176**
ROE	**12,05 %**	**12,50 %**	**12,70 %**	**12,90 %**	**13,00 %**	**13,00 %**
Net Income	**3 481**	**3 611**	**3 880**	**3 912**	**4 081**	**4 402**
Investment in Tier 1 Capital	-	1 665	($230)	1 065	2 467	3 318
FCFE	**-**	**1 946**	**4 110**	**2 847**	**1 613**	**1 083**

6.3.2. Bear-case

In this Bear-case the contraction hits harder than expected. Lending growth goes negative before stabilizing at a lower point than the historical average. The hard

contraction triggers a more significant price sensitivity and mass customer mobility. This puts downward pressure on the net margin, and SRBNK loses some customers to fiercer competition. ROE declines to 9%. The terminal growth is at 1.5%, sat the lower end of GDP growth and terminal ROE at 9%. The opposite effect from the bull-case will occur in this scenario regarding FCFE. Due to limited growth, and subsequent lower reinvestment need, the FCFE will be larger leading up to 2027, resulting in a lower terminal value and overall valuation.

Table 19: SRBNK FCFE Bear Case

Bear-case						
SRBNK	**2022A**	**2023E**	**2024E**	**2025E**	**2026E**	**2027E**
Risk-Weighted Assets	134 324	139 697	136 903	135 534	136 889	139 627
Capital ratio	**18,76 %**	**18,85 %**	**17,85 %**	**17,85 %**	**18,00 %**	**18,50 %**
Tier 1 Capital	25 199	26 333	24 437	24 193	24 640	25 831
Change in Tier 1 Capital	-	1 134	($1 896)	($244)	447	1 191
Equity	**28 889**	**30 023**	**28 127**	**27 883**	**28 330**	**29 521**
ROE	**12,05 %**	**11,00 %**	**10,50 %**	**10,00 %**	**9,00 %**	**9,00 %**
Net Income	**3 481**	**3 302**	**2 953**	**2 788**	**2 550**	**2 657**
Investment in Tier 1 Capital	-	1 134	($1 896)	($244)	447	1 191
FCFE	**-**	**2 169**	**4 849**	**3 033**	**2 102**	**1 466**

6.3.3. Summary

The scenario analysis explores two possible options with different development of the circumstances discussed in this thesis. The base case is judged most likely, but there is a range of uncertainty, which these two additional scenarios capture. All three cases will be carried out for a total valuation to compare the scenarios and the potential valuation range.

6.4. Required Rate of Return

6.4.1. Cost of Equity

The Cost of Equity presented in Chapter 3 is the discount rate used to transform future FCFE and the terminal value to present value.

6.4.2. Risk-free rate

The risk-free rate is set to the 10-year Norwegian government bond with zero coupon, which is **3.659%**, published by Norges Bank.

6.4.3. Beta

The beta of SRBNK is found by running a regression of SRBNK and the Oslo Stock Exchange (OBX). A backwards-facing beta is judged appropriate, as SRBNK is a mature company. The most prominent changes are the increased capital requirements. By running a regression from the start of 2018 to the end of 2022, the volatility reflects the inclusion of the Basel III framework. The regression was performed by calculating the monthly return of SRBNK and OBX, including dividends. The regression was then run across the 50 data points for OBX and SRBNK, as shown in Figure 28 below.

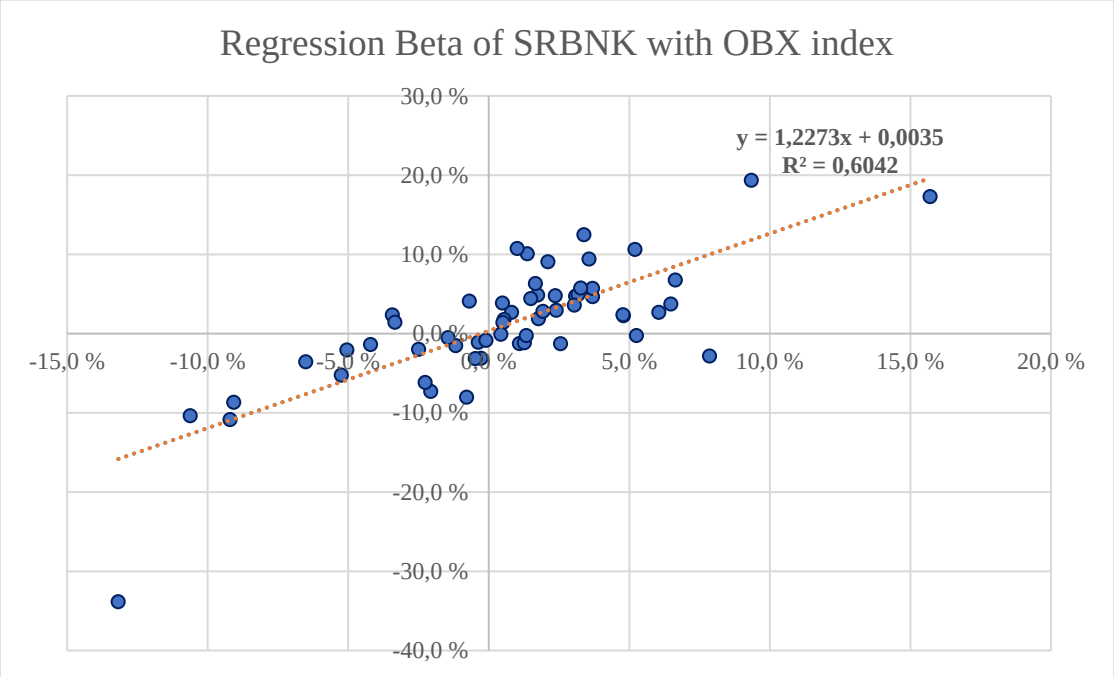


Figure 28: Regression beta SRBNK

The beta was 1.23, with a standard error of 0.13, leaving the beta in the 95% confidence interval of 0.95 and 1.48. As 1 indicates a neutral exposure to market risk, it is evident that the beta of SRBNK should be higher than 1, with its dependence on macroeconomic factors. SRBNK is also improving their portfolio by diversifying demographically and in industry. Nevertheless, the bank is still limited to South Norway and its industry, which will cap the available diversifying level. The R^2 for the regression was 0.6, meaning that 60% of the volatility is market driven. As a result, a beta of **1.227** is a suited value for a company with higher market volatility, limited to the extent possible by diversification in a limited space.

6.4.4. Marked risk premium

Damodaran published the calculated implied equity risk presented in Chapter 3, and with an update on the 14th of July, the value for Norway was **5.00%** [40]. In addition, PwC and the Finance Society Norway performed a yearly survey of the perceived market risk premium of its more than one thousand members, of which the result was 5.00%[41].

6.4.5. Summary

With the input values required selected, the ROE can be calculated.

Equation 19: Calculation ROE for SRBNK

$$ROE_{SRBNK} = r_f + \beta \times r_{Equity\ risk\ premium} = 3.659 + 1.227 \times 0.05 = 0.0976$$

Resulting in a ROE value of **9.76%**.

6.5. Valuation

6.5.1. Present value of FCFE and terminal value

We are now equipped with all the necessary information to calculate the fundamental value of SRBNK. To transform the FCFE values to present value, they are discounted at the required return on equity:

Equation 20: PV on FCFE

$$PV = \frac{FCFE_1}{(1+ROE)} + \frac{FCFE_2}{(1+ROE)^2} + \frac{FCFE_3}{(1+ROE)^3} + \frac{FCFE_4}{(1+ROE)^4} + \frac{FCFE_5}{(1+ROE)^5}$$

The terminal value represents the value of the company in steady-state growth. As a result of steady-state growth, there is a relationship between stable ROE, the stable growth rate and the stable payout ratio.

$$Stable\ growth\ rate, g = Retention\ Ratio \times Return\ on\ Equity$$

With the Stable Payout Ratio being 1- the retention ratio, we get:

Equation 21: Stable Payout Ratio

$$Stable\ Payout\ Ratio = 1 - \frac{g}{Stable\ ROE}$$

To find the FCFE for the terminal value, we thus take the Net Income and multiply it by the growth rate and the payout ratio to get FCFE:

Equation 22: Applied TV formula

$$TV = \frac{FCFE_5 \times g}{(COE - r)} = \frac{Net\ Income_5 \times (1+g) \times Stable\ Payout\ Ratio}{(COE - g)}$$

Finally, the TV is discounted back to get the present value:

Equation 23: Applied PV of TV

$$PV\ of\ TV = \frac{TV}{(1+COE)^5}$$

6.5.1.1. Base-case

Table 20 displays the present value of the FCFE from the forecasting chapter paired with the Net Income.

Table 20: Present Value of FCFE Base Case

Base-case						
	2022A	**2023E**	**2024E**	**2025E**	**2026E**	**2027E**
Net Income	**3 481**	**3 467**	**3 302**	**3 513**	**3 586**	**3 740**
PV @ COE = 9,76%		**2 132**	**2 318**	**3 187**	**1 611**	**1 358**

The calculations are carried out as presented at the start of this chapter. The table below shows the present value of the free cash flow to equity, and the terminal value is 35 201 million NOK. Divided by outstanding shares, we get a share **price target of 137.66 NOK** per share, which is an **8% upside** compared with the closing price of 14.07.2023.

Table 21: Share Value Base-case

Inputs		PV		Share Value	
COE	9,76 %	PV of FCFE	10 515	Number of share outstanding (mill.)	255,71
Terminal Growth	2,0 %	Terminal Value	39 325	**Value per share**	**137,66**
Terminal ROE	10 %	PV of TV	24 686	Share value 14.07.2023	127,10
Terminal Payout ratio	80 %	**PV of FCFE and TV**	**35 201**	**Upside**	**8 %**

6.5.1.2. Bull-case

Table 22: Present Value of FCFE Bull Case

Bull-case					
	2023E	**2024E**	**2025E**	**2026E**	**2027E**
Net Income	**3 611**	**3 880**	**3 912**	**4 081**	**4 402**
FCFE	**1 946**	**4 110**	**2 847**	**1 613**	**1 083**
PV @ COE = 9,76%	**1 773**	**3 412**	**2 153**	**1 112**	**680**

The present value of the FCFE and terminal value is 40 011 million NOK. Divided by outstanding shares, we get a share **price target of 156.47 NOK** per share, a **23% upside** from the current price.

Table 23: Share Value Base-case

COE	9,76 %	PV of FCFE	9 128	Number of share outstanding (mill.)	255,71
Terminal Growth	2,5 %	Terminal Value	49 196	**Value per share**	**156,47**
Terminal ROE	12 %	PV of TV	30 882	Share value 14.07.2023	127,10
Terminal Payout ratio	79 %	**PV of FCFE and TV**	**40 011**	**Upside**	**23 %**

6.5.1.3. Bear-case

Table 24: Present Value of FCFE Bear Case

Bear-case					
	2023E	**2024E**	**2025E**	**2026E**	**2027E**
Net Income	**3 302**	**2 953**	**2 788**	**2 550**	**2 657**
FCFE	**2 169**	**4 849**	**3 033**	**2 102**	**1 466**
PV @ COE = 9,76%	**1 976**	**4 025**	**2 293**	**1 449**	**920**

The present value of the FCFE and terminal value is 27 742 million NOK. Divided by outstanding shares, we get a share **price target of 108.49 NOK** per share, a **15% downside** from the current price.

Table 25: Share Value Bear-case

COE	9,76 %	PV of FCFE	10 663	Number of share outstanding (mill.)	255,71
Terminal Growth	1,5 %	Terminal Value	27 207	**Value per share**	**108,49**
Terminal ROE	9 %	PV of TV	17 079	Share value 14.07.2023	127,10
Terminal Payout ratio	83 %	**PV of FCFE and TV**	**27 742**	**Downside**	**-15 %**

6.5.1.4. Summary

The fundamental valuation using the alternative approach to free cash flow from equity resulted in a share price target for Sparebank1 SR-Bank at 138 NOK. The target is 16% above the current price as of 14.07.2023, which indicates the stock is undervalued. Two alternative scenarios are presented, which result in an interval in the share price:

Table 26: Share Price Target of SRBNK

Share Price Targets		
Bear-case	**Base-case**	**Bull-case**
kr 108	**kr 138**	**kr 156**
-9%	+16%	+33%

6.6. Sensitivity analysis

A sensitivity analysis measures the models' robustness. By changing the values of COE to the levels in the top row and, similarly, the terminal growth rate to the value in the first column, the model goes through all the calculations in this chapter. The resulting share price target is listed in the cells of the intersection between the COE and g value. A sensitivity analysis is important to gauge the possible outcomes given different inputs to the model. The Cost of Equity and Terminal Growth rate was selected as these are two vital values in the valuation. A higher COE value generates a higher return on equity, yielding a more positive outcome, and conversely, a lower value gives a lower outcome. The same is true of the terminal growth value. By looking at the change in both these variables, we can get a sense of the possible outcomes of the changing value of these variables simultaneously. The range used in the analysis is from the closest round number up and down from the value used in the base-case. COE ranges from 7.5 to 11.5 in intervals of 0.5 and the terminal growth from 1 to 3 in intervals of 0.25.

6.6.1. Terminal growth and ROE

The results from the analysis are displayed in Table 27, with the base-case in bold. We can see a clear connection between COE, terminal growth, and share price. When terminal growth is at 1% and COE at 11.5, we get a share price of only 105, an 18% decline from the current price. At the other spectrum, we find a share price of 230 when terminal growth is 3 and COE 7.5, which is an increase of 81%

Table 27: Sensitivity analysis, g and COE

		COE								
	138	7,50 %	8 %	8,50 %	9 %	**9,76 %**	10 %	10,50 %	11 %	11,50 %
Terminal Growth Rate	1,00 %	170	158	147	138	126	122	116	110	105
	1,25 %	176	162	151	141	129	125	118	112	106
	1,50 %	181	167	155	145	131	128	120	114	108
	1,75 %	188	173	160	149	134	130	123	116	110
	2,00 %	195	178	165	153	**138**	133	126	119	112
	2,25 %	202	185	170	157	141	137	128	121	114
	2,50 %	211	191	175	162	145	140	131	124	117
	2,75 %	220	199	182	167	149	144	135	126	119
	3,00 %	230	207	188	172	153	148	138	129	122

Table 28 is the same analysis but shows the upside and downside from the current price in percentage. This view shows up more about the distribution of risk in the case. 70% of the values are at the same or above the current price, while only 30% are below.

Furthermore, the upside far outweighs the downside, with a potential upside of 81% and a limited downside of 18%. These ranges do not provide the upside and downside for the case presented, as the entire case would change dramatically, given the extreme changes to these input values. Nevertheless, it is an indication which can be consulted.

Table 28: Upside and Downside of sensitivity analysis

		COE								
	8 %	7,50 %	8 %	8,50 %	9 %	9,42 %	10 %	10,50 %	11 %	11,50 %
Terminal Growth	1,00 %	34 %	24 %	16 %	9 %	3 %	-4 %	-9 %	-13 %	-18 %
	1,25 %	38 %	28 %	19 %	11 %	5 %	-2 %	-7 %	-12 %	-16 %
	1,50 %	43 %	32 %	22 %	14 %	8 %	0 %	-5 %	-10 %	-15 %
	1,75 %	48 %	36 %	26 %	17 %	11 %	3 %	-3 %	-8 %	-13 %
	2,00 %	53 %	40 %	30 %	20 %	**13 %**	5 %	-1 %	-7 %	-12 %
	2,25 %	59 %	45 %	34 %	24 %	16 %	8 %	1 %	-5 %	-10 %
	2,50 %	66 %	51 %	38 %	27 %	20 %	10 %	3 %	-3 %	-8 %
	2,75 %	73 %	57 %	43 %	31 %	23 %	13 %	6 %	-1 %	-6 %
	3,00 %	81 %	63 %	48 %	36 %	27 %	16 %	9 %	2 %	-4 %

7. Relative Valuation

7.1. Comparable Companies

The selection process included the choice between quality and quantity. As more banks would improve the statistical significance, the quality would decrease as few banks operate in the same areas and are publicly traded. The resulting number of banks for comparison landed on the same banks used in the industry for Chapter 5.

Table 29: Comparable companies for relative valuation

As of 31.12.2022	Share Price average 2022	Earnings Per Share	Book Value Per Share	P/E	P/B	ROE	Market cap
Sparebank1 Sr-Bank	125	13	106	9,67	1,17	12,60 %	32.5b
Sandnes Sparebank	97	8	100	12,02	0,97	8,50 %	1.8b
Sparebanken Vest	98	10,29	76	9,49	1,29	14,60 %	11.6b
DNB	199	21	167	9,40	1,19	13,80 %	306b
Sparebanken Øst	54	4	61	13,97	0,87	6,70 %	1b
Industry				**11,22**	**1,08**	**10,90 %**	
SRBNK				**9,67**	**1,17**	**12,60 %**	

7.2. P/E

Table 30 depicts the P/E ratio for each comparative bank, with an average calculation to be used for price target calculation. By comparing the P/E ratio of the industry with SRBNK, we see that SRBNK is below the average but close to DNB and Sparebanken Vest. A lower PE ratio indicates less expected future growth than companies with a higher value. The large size of SRBNK and DNB makes it harder to grow rapidly in a mature market and might be the reason for the value.

Table 30: P/E industry average

P/E	Sandnes Sparebank	Sparebanken Vest	DNB	Sparebanken Øst
P/E	12,0x	9,5x	9,4x	14x
Average	**11,2x**			

By multiplying the industry average P/E ratio with SRBNK's earnings per share value, we get a value of 144,5 NOK. The value is 14% above the share price as of 14.07.2023.

Table 31: Share price based on PE ratio

SRBNK		
P/E (industry average)		11,2x
EPS	kr	12,9
Estimated Share Price	**kr**	**144,5**
Upside		14 %

7.3. P/B

The average industry P/B value is 1.1, slightly below the value of SRBNK. The same companies that have a higher P/B ratio are the same that have a lower P/E ratio, indicating that the ROE is higher, which we can see is correct from Table 29. A higher ROE gives the equity holders a higher return on their equity position and contributes to a higher PB ratio.

Table 32: P/B industry average

P/B	Sandnes Sparebank	Sparebanken Vest	DNB	Sparebanken Øst
P/B	1,0x	1,3x	1,2x	0,9x
Average	**1,1x**			

When multiplying the industry average P/B value with SRBNK's Book Value Per Share, we get a share target price of 116,9 NOK, 8% below the closing share price as of 14.07.2023.

Table 33: Share price calculation based on PB ratio

SRBNK		
P/B (industry average)		1,1x
Book Value Per Share	kr	106,3
Estimated Share Price	**kr**	**116,9**
Downside		-8 %

8. Conclusion

The objective of this thesis was twofold; primarily the valuation of a regional bank in light of the contemporary banking crisis of March 2023 and the subsequent challenge of valuing banks, alongside the application of an alternative method presented by Aswath Damodaran.

A necessary understanding of the industry, competition and macro-picture was acquired by carrying out a strategic analysis of the banking sector and specifically the regulation requirements, of which is the foundation of the alternative method. An accounting analysis applied the insights from the strategic analysis to the financial statements, key figures and trends to gain a deeper understanding of the underlying operations and numbers of SpareBank1 SR-Bank. The culmination of the strategic and accounting analysis provided a narrative based on numbers and insights, concluding in a forecast of the cash flows.

The fundamental valuation executed the alternative method, which has proved logical and successful in targeting the core of banking, providing a pathway to the free cash flow to equity without getting disorientated by the unique characteristic of banks and debt.

The alternative discounted free cash flow to equity valuation resulted in a base, bull and bear case, with the base and bull case showing a 16% and 33% upside, respectively, and the bull case a downside of 9%. Of the different cases, the base case was judged as most likely. A supplementary relative valuation indicated a potential upside of 14% according to PE and an 8% downside according to PB.

To conclude the thesis objective, the base case is the most robust and likely and is used to answer the thesis question.

***Question:** What is the share price target for Sparebank1 SR-Bank?*

***Answer:** Kr 137.55*

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Appendix

Appendix 1 – Trend and Key Metric Calculations

ROE	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
SRBNK	*14,0 %*	*14,2 %*	*10,8 %*	*10,0 %*	*11,0 %*	*11,3 %*	*14,0 %*	*6,4 %*	*12,6 %*	*12,6 %*
Sparebanken Vest	*11,7 %*	*13,7 %*	*11,0 %*	*13,1 %*	*11,0 %*	*11,9 %*	*13,5 %*	*12,3 %*	*14,0 %*	*14,6 %*
Sparebanken Øst	*12,5 %*	*16,7 %*	*9,3 %*	*11,2 %*	*10,6 %*	*10,8 %*	*8,7 %*	*11,5 %*	*8,9 %*	*6,7 %*
Sandnes Sparebank	*3,1 %*	*5,8 %*	*-7,4 %*	*9,5 %*	*8,0 %*	*8,8 %*	*9,6 %*	*9,0 %*	*9,7 %*	*8,5 %*
DNB	*13,1 %*	*13,8 %*	*14,5 %*	*10,1 %*	*10,8 %*	*11,7 %*	*11,7 %*	*8,4 %*	*10,7 %*	*13,8 %*
Industry	10,1 %	12,5 %	6,8 %	11,0 %	10,1 %	10,8 %	10,9 %	10,3 %	10,8 %	10,9 %

Internal Credit Quality 2022	High (PD	Medium	Medium I	Low (PD
Net Lending:				
Credit Institutions	100,0 %			
Retail	74,9 %	21,9 %	1,4 %	1,6 %
Corporate Large	30,2 %	54,7 %	10,3 %	2,8 %
Corporate Small, Medium + Agriculture	38,4 %	47,0 %	8,3 %	6,5 %
Financial Investments				
Norwegian government bonds	100,0 %			
Noted bonds and certificates	99,9 %	0,03 %		0,1 %
Sum lent assets	**66 %**	**27 %**	**4 %**	**2 %**

Internal Credit Quality 2022	High (PD	Medium	Medium I	Low (PD
Credit Institutions	25 760			
Retail	39 107	11 413	732	836
Corporate Large	23 117	41 948	7 887	2 166
Corporate Small, Medium + Agriculture	6 961	8 525	1 507	1 170
Norwegian government bonds	2 247			
Noted bonds and certificates	52 581	14		41

Internal Credit Quality 2022	Credit Ins	Retail	Corporate	Corporat	Norwegi	Noted b
High (PD 0-0,5%)	25 760	39 107	23 117	6 961	2 247	52 581
Medium High (PD 0,5-2,5%)		11 413	41 948	8 525		14
Medium Low (PD 2.5-5%)		732	7 887	1 507		
Low (PD 5-99,9%)		836	2 166	1 170		41

Equity Share	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
SRBNK	*9,0 %*	*8,8 %*	*8,8 %*	*9,5 %*	*9,2 %*	*9,2 %*	*9,7 %*	*9,2 %*	*8,9 %*	*8,4 %*
Sparebanken Vest	*6,1 %*	*6,2 %*	*7,0 %*	*8,0 %*	*8,0 %*	*8,3 %*	*8,6 %*	*8,3 %*	*8,4 %*	*8,3 %*
Sparebanken Øst	*8,1 %*	*7,9 %*	*8,6 %*	*8,9 %*	*10,1 %*	*9,4 %*	*9,8 %*	*10,1 %*	*9,8 %*	*10,9 %*
Sandnes Sparebank	*7,1 %*	*7,4 %*	*7,6 %*	*9,8 %*	*10,4 %*	*10,9 %*	*10,7 %*	*10,1 %*	*10,5 %*	*10,5 %*
DNB	*5,9 %*	*6,0 %*	*7,3 %*	*7,8 %*	*8,0 %*	*8,5 %*	*8,7 %*	*8,5 %*	*8,4 %*	*8,0 %*
Industry	6,8 %	6,9 %	7,6 %	8,6 %	9,1 %	9,3 %	9,4 %	9,3 %	9,3 %	9,4 %

Net Interest Margin										
SRBNK	*1,42 %*	*1,45 %*	*1,42 %*	*1,48 %*	*1,52 %*	*1,54 %*	*1,61 %*	*1,50 %*	*1,35 %*	*1,41 %*
Sparebanken Vest	*1,67 %*	*1,68 %*	*1,55 %*	*1,49 %*	*1,53 %*	*1,49 %*	*1,59 %*	*1,42 %*	*1,29 %*	*1,59 %*
Sparebanken Øst	***1,87 %***	***1,81 %***	***1,72 %***	***1,54 %***	***1,54 %***	***1,45 %***	***1,51 %***	***1,46 %***	***1,34 %***	***1,49 %***
Sandnes Sparebank	***1,45 %***	***1,54 %***	***1,59 %***	***1,75 %***	***1,96 %***	***1,73 %***	***1,72 %***	***1,64 %***	***1,56 %***	***1,61 %***
DNB	*1,31 %*	*1,31 %*	*1,33 %*	*1,32 %*	*1,30 %*	*1,30 %*	*1,33 %*	*1,27 %*	*1,17 %*	*1,21 %*
Industry	1,58 %	1,58 %	1,55 %	1,53 %	1,58 %	1,49 %	1,54 %	1,45 %	1,34 %	1,48 %

Cost to Income Ratio										
SRBNK	*44,9 %*	*41,8 %*	*42,1 %*	*40,9 %*	*40,7 %*	*40,9 %*	*37,9 %*	*38,3 %*	*40,2 %*	*40,1 %*
Sparebanken Vest	*51,2 %*	*54,5 %*	*51,1 %*	*39,2 %*	*43,6 %*	*40,9 %*	*36,5 %*	*35,8 %*	*33,7 %*	*32,2 %*
Sparebanken Øst	*42,0 %*	*34,7 %*	*44,7 %*	*39,6 %*	*38,7 %*	*38,2 %*	*38,5 %*	*35,0 %*	*40,2 %*	*44,4 %*
Sandnes Sparebank	*52,9 %*	*58,9 %*	*80,9 %*	*46,8 %*	*45,0 %*	*44,7 %*	*43,7 %*	*44,5 %*	*51,5 %*	*49,9 %*
DNB	*45,7 %*	*41,9 %*	*36,9 %*	*40,9 %*	*44,2 %*	*43,8 %*	*42,2 %*	*41,5 %*	*43,0 %*	*40,1 %*
Industry	48,0 %	47,5 %	53,4 %	41,6 %	42,9 %	41,9 %	40,2 %	39,2 %	42,1 %	41,6 %

Loan to Deposit Ratio										
SRBNK	*60,0 %*	*57,8 %*	*57,9 %*	*54,9 %*	*55,7 %*	*51,8 %*	*50,1 %*	*54,5 %*	*60,2 %*	*58,9 %*
Sparebanken Vest	*55,5 %*	*56,0 %*	*49,6 %*	*48,9 %*	*47,0 %*	*45,6 %*	*47,1 %*	*45,5 %*	*44,7 %*	*50,0 %*
Sparebanken Øst	***48,7 %***	***46,7 %***	***47,0 %***	***46,8 %***	***45,1 %***	***42,4 %***	***43,2 %***	***41,9 %***	***44,6 %***	***42,8 %***
Sandnes Sparebank	***63,0 %***	***59,9 %***	***50,0 %***	***50,8 %***	***50,6 %***	***50,7 %***	***49,2 %***	***49,7 %***	***50,6 %***	***49,6 %***
DNB	*64,7 %*	*65,4 %*	*61,2 %*	*62,0 %*	*62,8 %*	*57,4 %*	*57,5 %*	*67,3 %*	*74,2 %*	*73,5 %*
Industry	58,0 %	57,0 %	52,0 %	52,1 %	51,4 %	49,0 %	49,3 %	51,1 %	53,5 %	54,0 %

ier 1 capital ratio (Kjernekapitaldeknin	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
SRBNK	*12,8 %*	*12,3 %*	*14,2 %*	*15,6 %*	*16,0 %*	*15,6 %*	*18,6 %*	*19,9 %*	*18,9 %*	*18,8 %*
Sparebanken Vest	*13,2 %*	*13,6 %*	*15,0 %*	*16,5 %*	*16,7 %*	*16,5 %*	*19,2 %*	*19,7 %*	*18,6 %*	*19,5 %*
Sparebanken Øst	***16,5 %***	***15,9 %***	***18,3 %***	***19,2 %***	***19,4 %***	***18,2 %***	***19,5 %***	***19,7 %***	***19,9 %***	***21,9 %***
Sandnes Sparebank	*14,6 %*	*13,2 %*	*13,8 %*	*17,5 %*	*18,1 %*	*17,3 %*	*18,2 %*	*18,5 %*	*17,2 %*	*18,4 %*
DNB	***12,1 %***	***13,0 %***	***15,3 %***	***17,6 %***	***17,9 %***	***17,7 %***	***20,8 %***	***20,1 %***	***21,0 %***	***19,6 %***
Industry	14,1 %	13,9 %	15,6 %	17,7 %	18,0 %	17,4 %	19,4 %	19,5 %	19,2 %	19,9 %

Capital Ratio	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
SRBNK	*14,1 %*	*14,5 %*	*16,7 %*	*17,5 %*	*17,9 %*	*17,6 %*	*20,4 %*	*21,7 %*	*20,5 %*	*20,3 %*
Sparebanken Vest	*14,3 %*	*15,6 %*	*16,9 %*	*18,7 %*	*18,7 %*	*18,3 %*	*21,2 %*	*21,9 %*	*20,9 %*	*21,4 %*
Sparebanken Øst	*18,4 %*	*18,2 %*	*20,3 %*	*21,2 %*	*21,4 %*	*19,9 %*	*21,3 %*	*21,3 %*	*21,8 %*	*24,0 %*
Sandnes Sparebank	*16,6 %*	*14,8 %*	*15,9 %*	*19,7 %*	*20,0 %*	*18,6 %*	*19,6 %*	*19,8 %*	*18,5 %*	*20,7 %*
DNB	*14,0 %*	*15,2 %*	*17,8 %*	*19,5 %*	*20,0 %*	*19,9 %*	*22,9 %*	*22,1 %*	*24,0 %*	*21,8 %*
Industry	15,8 %	15,9 %	17,7 %	19,8 %	20,0 %	19,2 %	21,2 %	21,3 %	21,3 %	22,0 %

Appendix 2 – Deposits, lending, segment Calculations

Sparebank 1 SR-Bank (in NOK mill)	2011 31.12.2011	2012 31.12.2012	2013 31.12.2013	2014 31.12.2014	2015 31.12.2015	2016 31.12.2016	2017 31.12.2017	2018 31.12.2018	2019 31.12.2019	2020 31.12.2020	2021 31.12.2021	2022 31.12.2022

Deposits	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Geographically												
Rogaland	49 912	53 721	54 698	61 230	63 507	63 080	69 700	71 401	73 309	80 363	79 961	89 204
		7,6 %	*1,8 %*	*11,9 %*	*3,7 %*	*(0,7 %)*	*10,5 %*	*2,4 %*	*2,7 %*	*9,6 %*	*(0,5 %)*	*11,6 %*
Agder	2 705	3 095	3 550	5 665	7 272	6 784	8 532	8 027	8 962	10 602	12 623	12 837
		14,4 %	*14,7 %*	*59,6 %*	*28,4 %*	*(6,7 %)*	*25,8 %*	*(5,9 %)*	*11,6 %*	*18,3 %*	*19,1 %*	*1,7 %*
Vestland	5 557	5 094	6 391	6 957	8 485	8 617	9 660	11 398	11 649	13 557	20 050	19 358
		(8,3 %)	*25,5 %*	*8,9 %*	*22,0 %*	*1,6 %*	*12,1 %*	*18,0 %*	*2,2 %*	*16,4 %*	*47,9 %*	*(3,5 %)*
Oslo/Viken	-	-	-	-	-	-	-	3 335	5 479	10 636	14 938	16 860
									64,3 %	*94,1 %*	*40,4 %*	*12,9 %*
Utland	635	704	2 160	2 204	4 605	1 023	2 072	1 669	1 856	1 382	8 071	7 499
Øvrige	5 233	4 980	4 868	5 433	5 576	6 410	5 420	2 984	1 851	1 630	2 021	2 342
Sum Deposits Geographically	**64 042**	**67 594**	**71 667**	**81 489**	**89 445**	**85 914**	**95 384**	**98 814**	**103 106**	**118 170**	**137 664**	**148 100**
		5,5 %	*6,0 %*	*13,7 %*	*9,8 %*	*(3,9 %)*	*11,0 %*	*3,6 %*	*4,3 %*	*14,6 %*	*16,5 %*	*7,6 %*
Market Share (SSB, Finans Norge)	3,7 %	3,7 %	3,7 %	3,8 %	4,1 %	3,7 %	3,9 %	3,9 %	3,9 %	4,0 %	4,3 %	
Segments												
PM	31 445	34 311	36 190	39 545	42 101	42 908	44 258	45 650	48 375	53 399	57 862	61 627
	49,1 %	*50,8 %*	*50,5 %*	*48,5 %*	*47,1 %*	*49,5 %*	*46,2 %*	*46,2 %*	*46,9 %*	*45,2 %*	*42,0 %*	*41,6 %*
BM	32 557	33 248	35 474	41 942	47 341	43 741	51 525	53 164	54 731	64 771	79 802	86 473
	50,9 %	*49,2 %*	*49,5 %*	*51,5 %*	*52,9 %*	*50,5 %*	*53,8 %*	*53,8 %*	*53,1 %*	*54,8 %*	*58,0 %*	*58,4 %*
Sum Deposits Segments	**64 002**	**67 559**	**71 664**	**81 487**	**89 442**	**86 649**	**95 783**	**98 814**	**103 106**	**118 170**	**137 664**	**148 100**
Sectors, BM & SMB												
Aquaculture, fisheries	161	131	265	252	351	460	464	485	269	457	421	621
Industry	942	1 080	1 527	1 403	1 426	1 305	1 144	1 262	1 195	1 499	1 852	1 446
Agriculture/forestry	1 019	1 116	1 078	1 121	1 146	1 166	1 200	1 173	1 206	1 309	1 464	1 600
Service sector	8 234	7 406	8 685	9 496	12 243	9 440	8 754	9 845	11 591	14 337	17 071	16 949
Wholesale and retail trade, hotels and restu	1 977	2 096	1 963	2 210	2 599	2 529	2 262	2 427	2 538	3 753	3 631	3 286
Energy, oil and gas	1 233	962	1 513	2 135	2 529	1 226	739	1 205	1 331	1 679	1 520	1 844
Building and construction + Power and wate	1 418	1 598	1 915	2 030	2 090	1 968	2 754	2 267	2 329	3 324	4 128	4 877
Real estate	4 600	5 900	4 954	6 883	7 078	5 640	6 249	6 918	6 517	6 559	7 195	7 735
Shipping and transport	1 149	1 001	1 452	1 369	1 662	2 084	1 989	2 203	2 265	1 952	2 007	3 996
Public sector and financial services	11 824	11 958	12 122	15 043	16 217	17 923	25 970	26 135	25 490	29 902	37 742	41 282
Finansielle tjenester							-	-	-	-	2 771	2 835
Sum Deposits Sectors	**32 557**	**33 248**	**35 474**	**41 942**	**47 341**	**43 741**	**51 525**	**53 920**	**54 731**	**64 771**	**79 802**	**86 471**
		2,1 %	*6,7 %*	*18,2 %*	*12,9 %*	*(7,6 %)*	*17,8 %*	*4,6 %*	*1,5 %*	*18,3 %*	*23,2 %*	*8,4 %*

Lending	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Geographically												
Rogaland	71 256	76 872	82 983	103 117	111 268	109 307	117 332	124 680	129 687	133 239	132 570	138 937
Agder	8 872	9 650	10 757	13 102	13 719	13 985	15 848	16 994	19 271	21 079	37 940	23 941
Vestland	12 660	14 026	16 302	19 683	24 007	24 118	26 651	28 013	31 585	34 775	21 897	41 468
Oslo/Viken	-	-	-	-	-	-	-	11 791	18 043	19 177	26 824	37 567
Utland	738	733	5 541	1 999	2 610	2 502	2 619	3 794	4 264	3 120	4 724	3 909
Øvrige	7 842	8 229	4 690	3 719	3 586	7 726	10 104	6 833	4 264	7 791	6 344	7 135
Sum Lending Geographically	**101 368**	**109 510**	**120 273**	**141 620**	**155 190**	**157 638**	**172 554**	**192 105**	**207 114**	**219 181**	**230 299**	**252 957**
Lending growth		*8,0 %*	*9,8 %*	*17,7 %*	*9,6 %*	*1,6 %*	*9,5 %*	*11,3 %*	*7,8 %*	*5,8 %*	*5,1 %*	*9,8 %*
Risk-weighted capital	102 107	*111 206*	*113 075*	*120 189*	*119 124*	*116 651*	*120 160*	*130 869*	*121 744*	*121 262*	*127 981*	*134 324*
		8,9 %	*1,7 %*	*6,3 %*	*(0,9 %)*	*(2,1 %)*	*3,0 %*	*8,9 %*	*(7,0 %)*	*(0,4 %)*	*5,5 %*	*5,0 %*
Interest Income from client lending	4 594	4 602	5 013	5 558	5 298	5 035	5 160	5 680	7 034	6 304	3 990	4 516
Interest income rate	*4,5 %*	*4,2 %*	*4,2 %*	*3,9 %*	*3,4 %*	*3,2 %*	*3,0 %*	*3,0 %*	*3,4 %*	*2,9 %*	*1,7 %*	*1,8 %*
Segments												
PM	92 287	100 786	105 595	109 939	115 397	115 348	118 413	122 756	128 635	137 074	143 307	153 198
	63,4 %	*64,2 %*	*63,9 %*	*63,4 %*	*63,2 %*	*63,3 %*	*63,4 %*	*60,8 %*	*60,8 %*	*62,4 %*	*62,2 %*	*60,6 %*
BM	53 198	56 194	59 770	63 464	67 243	67 014	68 352	79 142	83 061	82 525	70 807	81 020
	36,6 %	*35,8 %*	*36,1 %*	*36,6 %*	*36,8 %*	*36,7 %*	*36,6 %*	*39,2 %*	*39,2 %*	*37,6 %*	*30,7 %*	*32,0 %*
SMB	-	-	-	-	-	-	-	-	-	-	16 175	18 739
											7,0 %	*7,4 %*
Sum Lending Segments	**145 485**	**156 980**	**165 365**	**173 403**	**182 640**	**182 362**	**186 765**	**201 898**	**211 696**	**219 599**	**230 289**	**252 957**
		7,9 %	**5,3 %**	**4,9 %**	**5,3 %**	**-0,2 %**	**2,4 %**	**8,1 %**	**4,9 %**	**3,7 %**	**4,9 %**	**9,8 %**
Sectors, BM & SMB												
Aquaculture	416	597	541	596	903	755	860	1 709	2 508	2 909	3 594	3 714
Industry	1 686	2 135	3 403	2 650	3 093	2 914	3 633	3 037	3 043	2 881	3 766	4 049
Agriculture/forestry	3 773	4 141	4 326	4 458	4 443	4 549	4 833	5 183	5 324	5 481	5 576	6 042
Service sector	6 827	7 650	7 545	7 859	8 113	8 441	8 593	12 142	11 326	14 421	16 100	21 023
Wholesale and retail trade, hotels and restu	2 487	2 975	2 877	2 529	2 578	2 885	2 984	3 249	3 460	3 339	3 180	3 520
Energy, oil and gas							3 856	3 134	3 921	2 544	1 195	1 087
Building and construction							4 079	4 074	4 116	4 421	4 152	5 268
Power and water supply	4 022	3 804	3 100	3 520	3 437	3 533	606	683	841	1 129	1 412	1 708
Real estate	23 749	24 306	25 740	27 164	27 568	27 269	27 042	31 713	33 668	31 430	33 608	37 660
Shipping and transport	6 553	6 451	7 297	8 239	9 666	9 766	9 849	12 162	12 111	11 372	11 958	13 525
Public sector and financial services	1 068	1 949	2 277	1 877	2 209	1 898	1 869	1 896	2 404	2 180	2 451	2 163
	2 728	2 351	2 829	4 341	5 330	4 780						
Sum Lending Sectors	**53 309**	**56 359**	**59 935**	**63 233**	**67 340**	**66 790**	**68 204**	**78 982**	**82 722**	**82 107**	**86 992**	**99 759**
Market, SSB	1 063 744	1 066 423	1 085 919	1 134 244	1 200 346	1 215 287	1 302 836	1 370 527	1 475 639	1 530 176	1 603 636	1 792 597
Market Share	5 %	5 %	6 %	6 %	6 %	5 %	5 %	6 %	6 %	5 %	5 %	6 %

Appendix 3 – RWA & Lending correlation foundation

	2014	2015	2016	2017	2018	2019	2020	2021	2022
Risk-Weighted Assets	**120 189**	**119 124**	**116 651**	**120 160**	**130 869**	**121 744**	**121 262**	**127 981**	**134 324**
		(0,9 %)	*(2,1 %)*	*3,0 %*	*8,9 %*	*(7,0 %)*	*(0,4 %)*	*5,5 %*	*5,0 %*
Lending	**173 403**	**182 640**	**182 362**	**186 765**	**201 898**	**211 696**	**219 599**	**230 289**	**252 957**
Deposits	**81 489**	**89 445**	**85 914**	**95 384**	**98 814**	**103 106**	**118 170**	**137 664**	**148 100**
Lending + Deposits	254 892	272 085	268 276	282 149	300 712	314 802	337 769	367 953	401 05

Lending + I	Deposits	Lending	Risk-Weigh
209 527	**64 042**	**145 485**	102 107
224 574	**67 594**	**156 980**	111 206
237 032	**71 667**	**165 365**	113 075
254 892	**81 489**	**173 403**	120 189
272 085	**89 445**	**182 640**	119 124
268 276	**85 914**	**182 362**	116 651
282 149	**95 384**	**186 765**	120 160
300 712	**98 814**	**201 898**	130 869
314 802	**103 106**	**211 696**	121 744
337 769	**118 170**	**219 599**	121 262
367 953	**137 664**	**230 289**	127 981
401 057	**148 100**	**252 957**	134 324

Appendix 4 – Beta regression statistics

Regression Statistics	
Multiple R	0,776719969
R Square	0,603293911
Adjusted R Square	0,596081073
Standard Error	0,048404024
Observations	57

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0,195968242	0,195968242	83,64168326	1,23747E-12
Residual	55	0,128862224	0,00234295		
Total	56	0,324830467			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	0,004527901	0,006500701	0,696524998	0,489033482	-0,008499796	0,017555598	-0,008499796	0,017555598
-0,020634891	1,216173416	0,132979325	9,145582718	1,23747E-12	0,949676893	1,482669938	0,949676893	1,482669938

	95% CI	**67% CI**	**Value**	**67% CI**	**95% CI**
Beta	**0,95**	**1,08**	**1,22**	**1,35**	**1,48**