

Valuation inputs for Norway

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1 Consensus estimates

To choose parameters relevant for valuations, there are different methods available. A common method is to look at other people *also* doing valuations, and asking what parameters they use. It is common for industry organization to survey their members, and publish the resulting estimates.

In this note we summarize the results of such a survey for valuations of Norwegian companies.

What can one ask for in such a survey?

General parameters usable in a typical valuation:

- The risk premium of the stock market.
- The risk free interest rate
- Input relevant for growth assumptions, such as inflations, and growth in corporate earnings.
- Should we adjust for liquidity/company size?
- Is there a *control* premium?

Who does it make sense to ask about this?

Persons doing valuations professionally.

This case: Members of the Norwegian Association of Financial Analysts. – Forening for Finansfag (earlier NFF-Norske Finansanalytikeres Forening)

This study is done annually. In this lecture note we discuss these, with an emphasis on the latest numbers, but also mentioning some older examples.

2 What people do valuations professionally

We can get an idea of the jobs where people do valuations by their indication of what kind of business their company is in:

- Bank
- Asset Allocation
- Corporate Finance
- Trading in financial markets
- Private Equity
- Accounting/Auditing
- Financial Advising
- Other

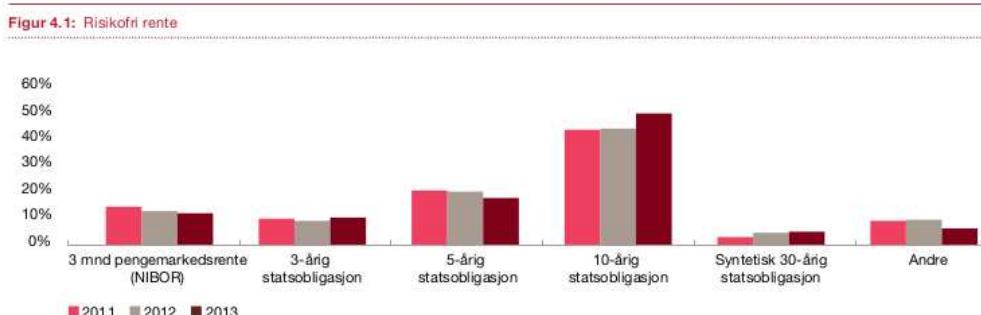
3 Summary - 2022

- Market risk premium: 5%
- Risk free interest rate:
 - Interest on Norwegian Government debt with 10 year maturity, or “normalized risk free rate”
 - Typical risk free interest rate: 3%–5% (most common 3.5%).
- Small stock premium: Yes (86%).
- Control premium: Yes, between 20%-30%.
- Inflation expectation: 2%
- Long term growth in nominal earnings (for terminal value): 2%.
- ESG - does it matter?
 - Majority add to cost of capital for weak ESG companies
- What are the major risk factors the next year?
 - Energy prices
 - Inflation
 - House price falling (household debt)

4 Which Risk Free interest rate should one use?

Common argument in valuations: Valuing long term cash flows. Should therefore use an interest rate that is risk free for long term investments. So what do the professionals use? The usual choice is the most liquid long term treasury rate – the ten year rate. Historically, that is the most common, and is the picture in the survey from 2014 shown in figure 1.

Figure 1 Choice of risk free interest rate – 2014 survey



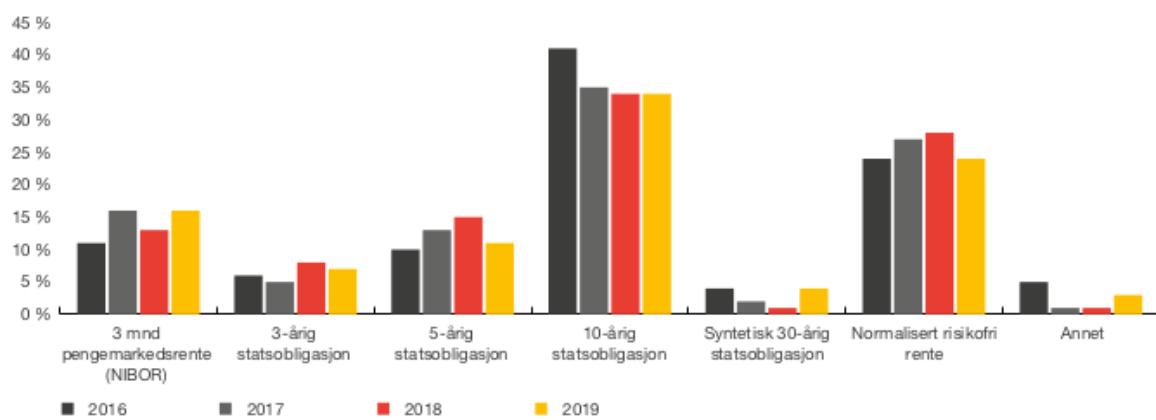
What interest rate to use as a long term interest rate. 2014 surveys

However, in recent years, with central bank rates around zero, analysts do not view the treasury rates as the most relevant. Instead, they recommend a hypothetical “normalized risk free rate,” as seen in the numbers in Figure 2.

In the most recent, 2022 survey, we note that as interest rates are increasing, there is a market increase in the number using the 10 year rate.

Figure 2 Risk free rate choice – 2019 Survey

Panel A: Interest rate recommendation

Figur 4.1: Risikofri rente

Panel B: The “Normalized interest rate”

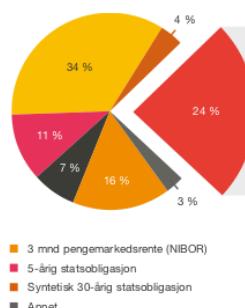
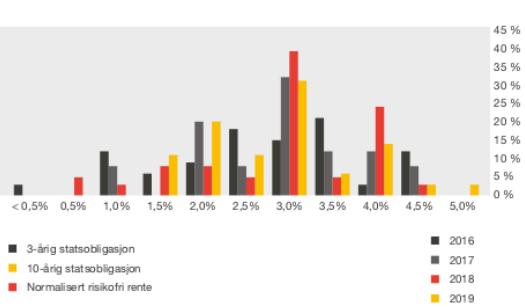
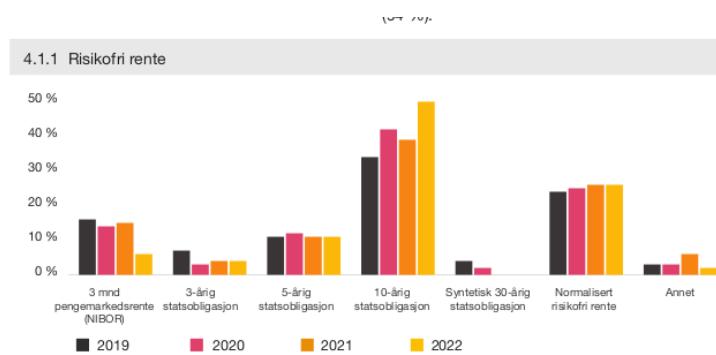
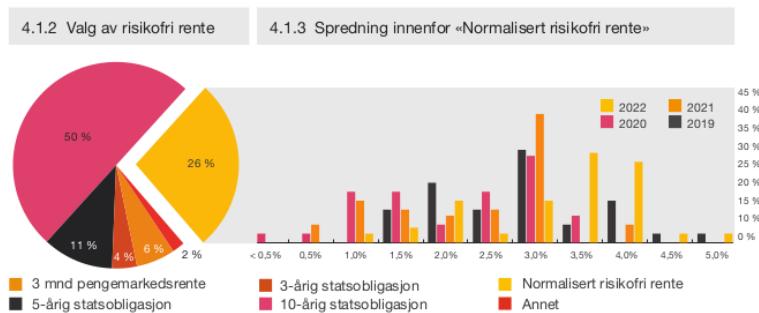
Figur 4.2.1: Valg av risikofri rente 2019**Figur 4.2.2: Spredning innenfor normalisert risikofri rente**Normalized risk free interes rate. From the 2019 survey.

Figure 3 Risk free rate choice – 2022 Survey

Panel A: Interest rate recommendation



Panel B: Breaking down the “normalized interest rate”



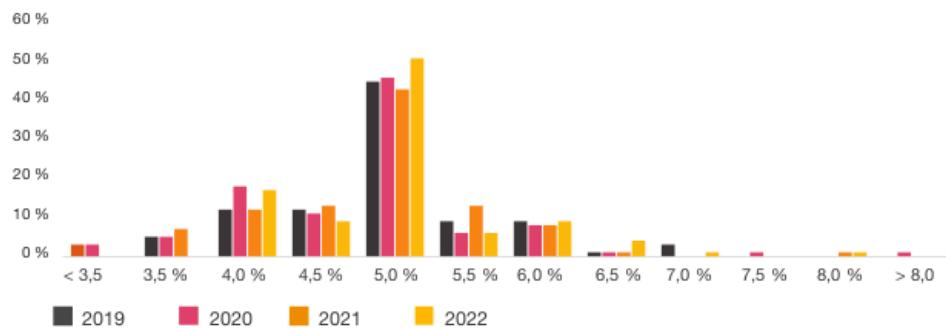
5 What is the equity market risk premium in Norway?

The short answer is 5%, a number which has been remarkably stable over the history of this survey.

Figure 4 Risk premium, distribution

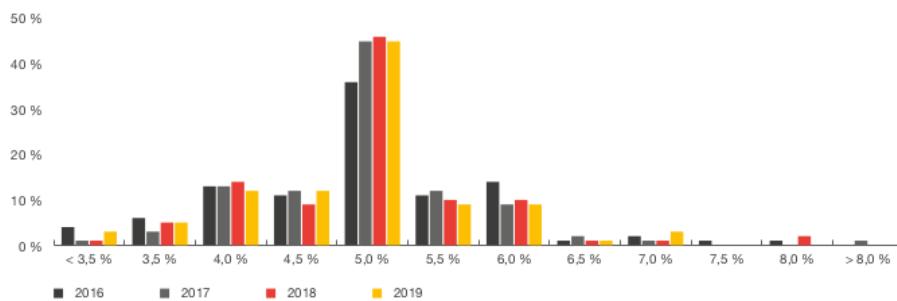
Panel A: 2022 survey

4.2.3 Markedsrisikopremie



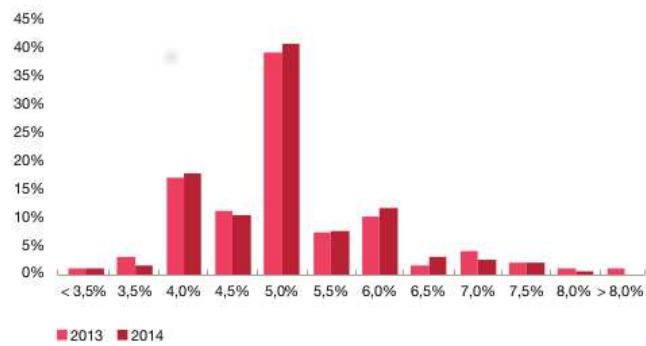
Panel A: 2019 survey

Figur 4.5: Markedsrisikopremie



2014 survey

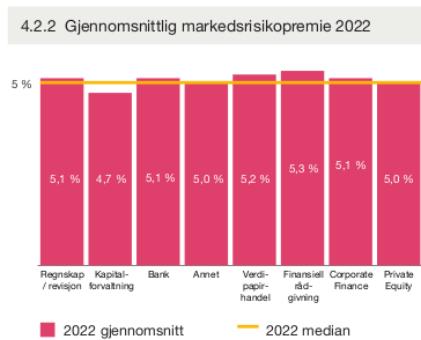
Figur 4.2: Markedsrisikopremien 2013 og 2014



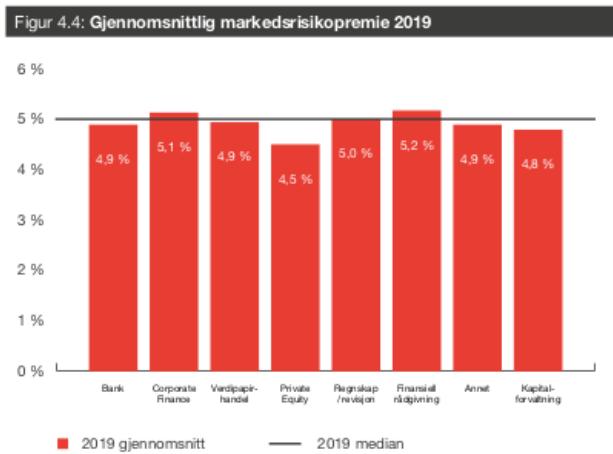
To squeeze a bit of more information out of this, figure 5 shows the average risk premium by job type. So, both private equity types and accountants seem to prefer a slightly higher risk premium, while asset allocators and traders have the lowest risk premium.

Figure 5 Risk premium by type

Panel A: 2022



Panel B: 2019

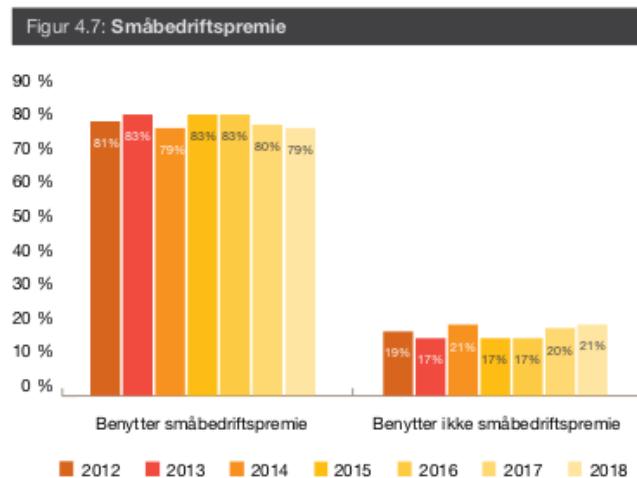


From the 2014 survey. Jobs in: Bank, Asset Allocation, Corporate Finance, Trading in financial markets, Private Equity, Accounting/Auditing, Financial Advising, Other.

6 “Small stocks” / liquidity premium

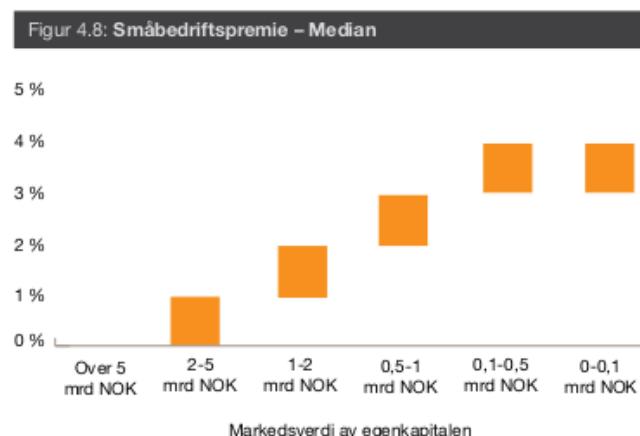
Stock of small, illiquid stocks are argued to be more risky, as they are harder to trade (necessary to move price substantially before finding a counterparty.) It is therefore common to add a “small stock premium” to the cost of capital, depending on the size of the firm. First question, should we add a small stock premium? Figure 6 shows that a clear majority adds a small stock premium.

Figure 6 “Liquidity premium” / “Small Stock premium”: Should be used?



The next question is how much to add. Figures 7 and 8 shows a couple of different views of this.

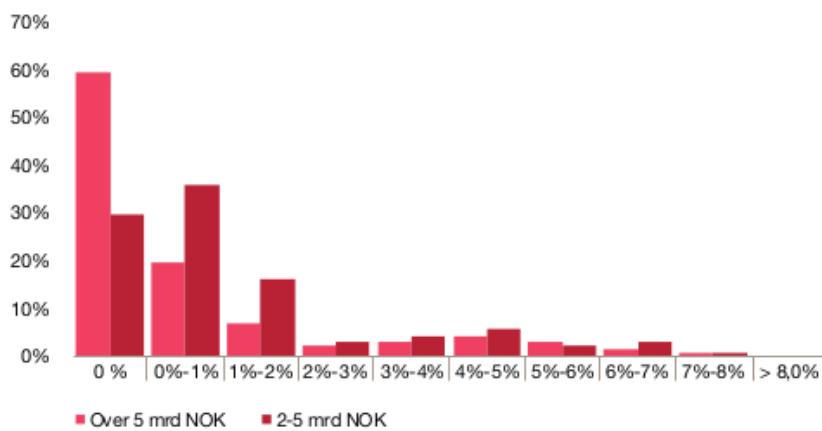
Figure 7 Liquidity premium by company size



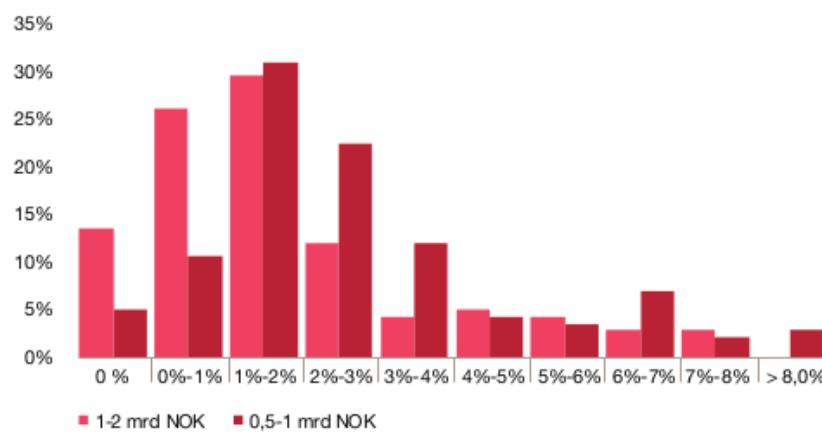
From the 2018 study.

Figure 8 Liquidity premium by company size

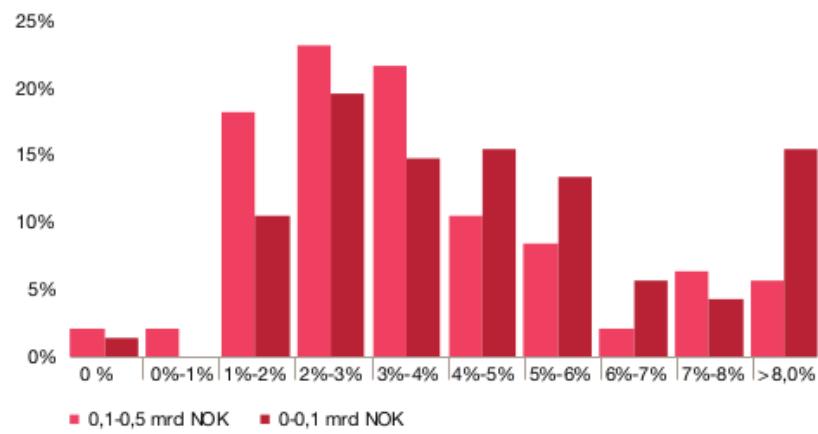
Figur 4.14: Markedsverdi over 5 mrd og 2-5 mrd



Figur 4.15: Markedsverdi 1-2 mrd og 0,5-1 mrd



Figur 4.16: Markedsverdi 0,1-0,5 mrd og 0-0,1 mrd

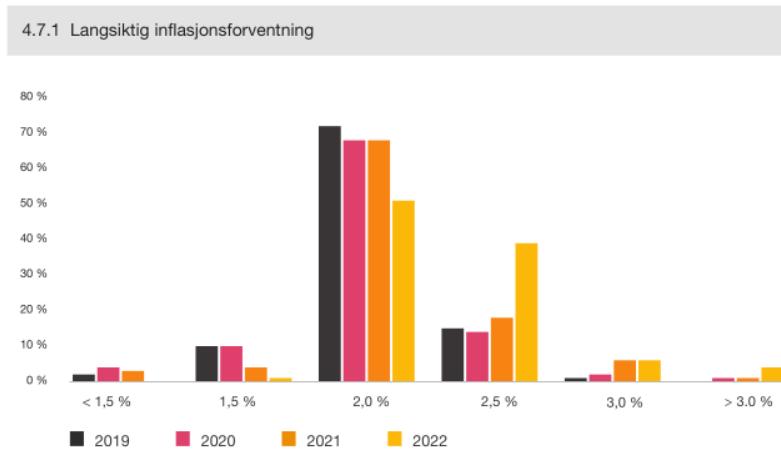


7 Inflation Expectation

Inflation expectations are going up.

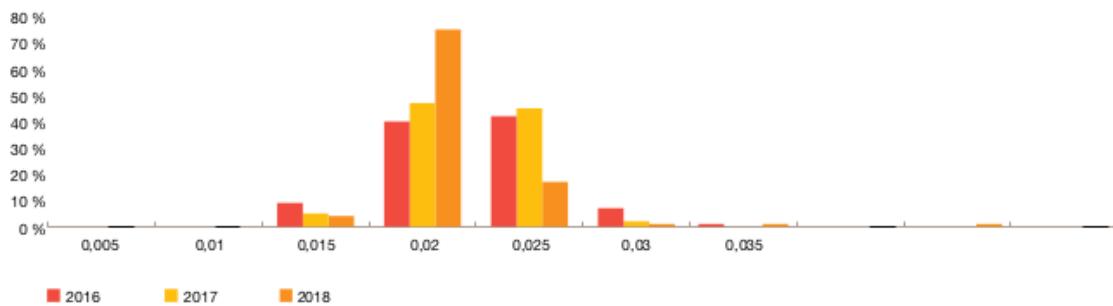
Figure 9 Inflation expectation

2022



2018

Figur 4.13: Langsiktig inflasjonsforventning



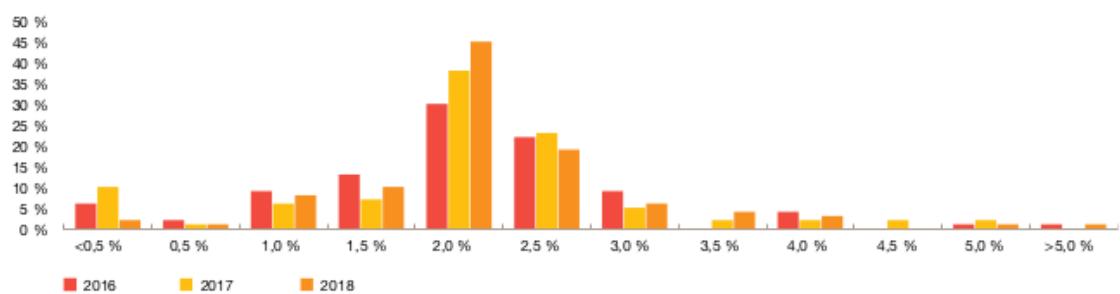
8 Expected earnings growth

Long term expected growth figure (used for terminal value). 2%.

Figure 10 Earnings Growth

Panel A: 2018

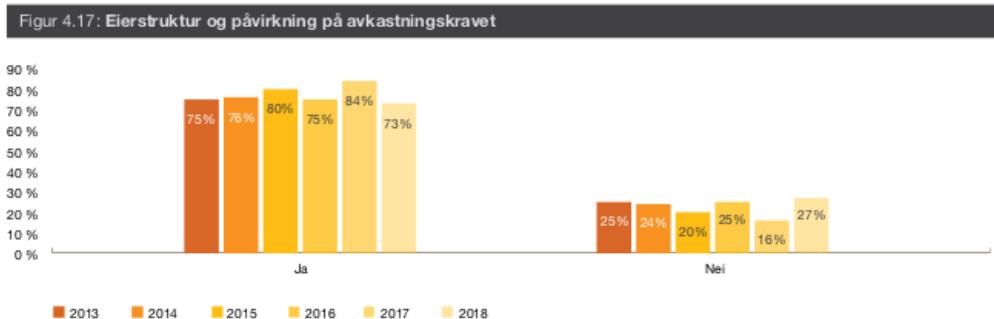
Figur 4.14: Vekstrate i terminalleddet



9 Ownership structure

Ownership structure can affect the corporation in several ways. Start with the general question of whether ownership matters.

Figure 11 Does ownership structure affect required cost of capital?



From the 2018 study.

9.1 State Ownership

At the Oslo Stock Exchange a particular concern is that many of the companies have a large ownership by the Norwegian state. In governance terms, are the state the right owners?

- Dis-interested owners?
- Political concerns?

The short answer is that the majority does not think state ownerships should affect the chosen cost of capital.

Figure 12 Does state ownership in particular affect required cost of capital?



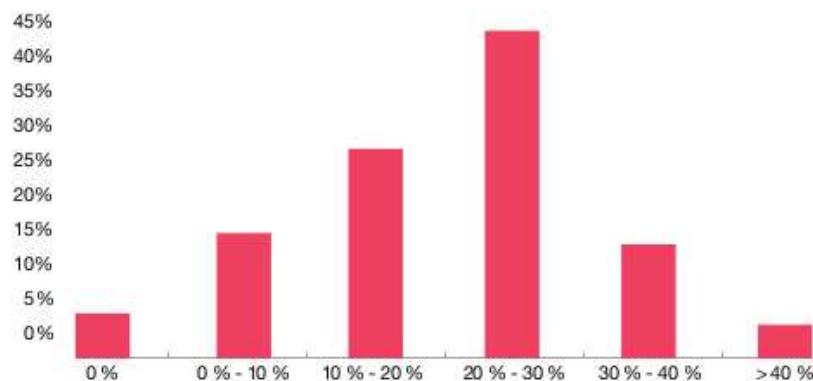
2018 study.

9.2 Corporate control premium

Another issue is whether we should adjust for a large owner with control.

Figure 13 Corporatel Contro premium? – Distribution

Figur 4.17: Kontrollpremie på Oslo Børs ved kjøp av alle aksjene i et selskap



**45% ville benyttet en
kontrollpremie på 20% - 30%**

From the 2014 study.

10 Estimating an implicit risk premium

Idea: Dividend discount model

$$P_0 = \frac{E[D_1]}{r - g}$$

If we observe the current stock price P_0 , and estimate $E[D_1]$ and g , we can solve for r .

This can be done for the market as a whole, where P_0 is the level of a broad stock market index, D_1 the dividend yield for the market, and g the growth of the the market.

Alternatively, we can do this on a stock by stock basis

$$P_{i,0} = \frac{E[D_{i,1}]}{r_i - g_i}$$

where now $P_{i,0}$ is the price of stock i , D_i dividend of stock i , r_i a company-specific cost of capital, and g_i assumed growth for that company.

Now, r_i changes from company to company, but if we are willing to assume a model for how the company sets its risk adjustment, we can use these numbers to also calculate an implicit market risk premium.

To be specific, we assume the companies use the CAPM.

$$r_i = r_f + \beta_i(E[r_m] - r_f)$$

Across companies, $(E[r_m] - r_f)$ is constant.

If we for each company estimate the β_i , we can calculate an *implicit market risk premium* as the average of estimated $(E[r_m] - r_f)$ across companies.

This is what has been done, using the largest companies at the OSE, those in the OBX index.

Figure 14 Implicit Risk premium - 2022 study

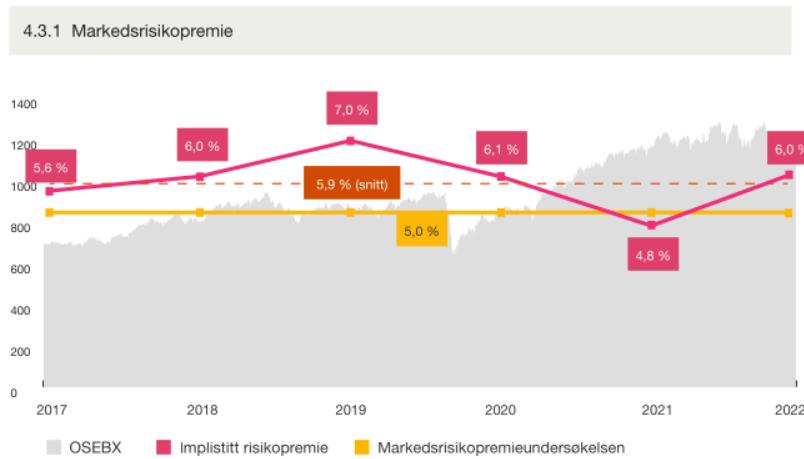


Figure 15 Implicit Risk premium - 2013-2014 study

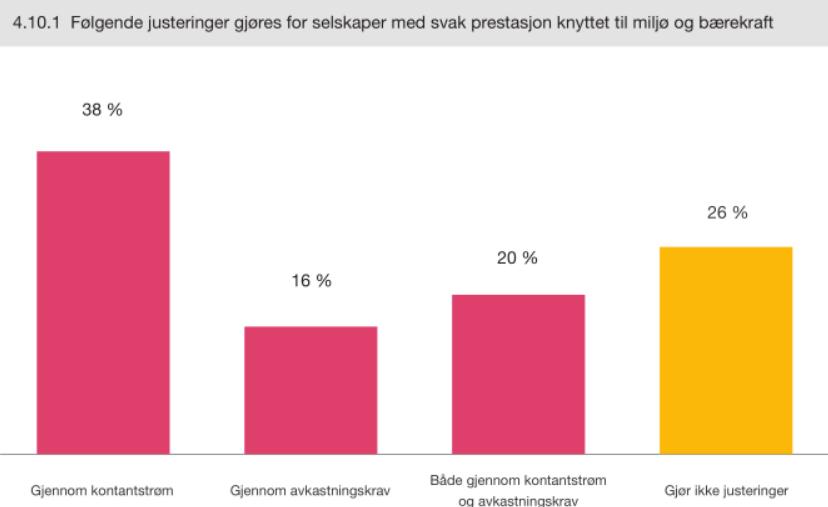


From the 2013-2014 study.

11 Adjust for environment issues?

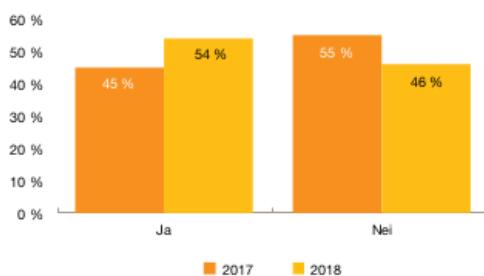
Figure 16 Adjust for environment?

2022 Survey



2018

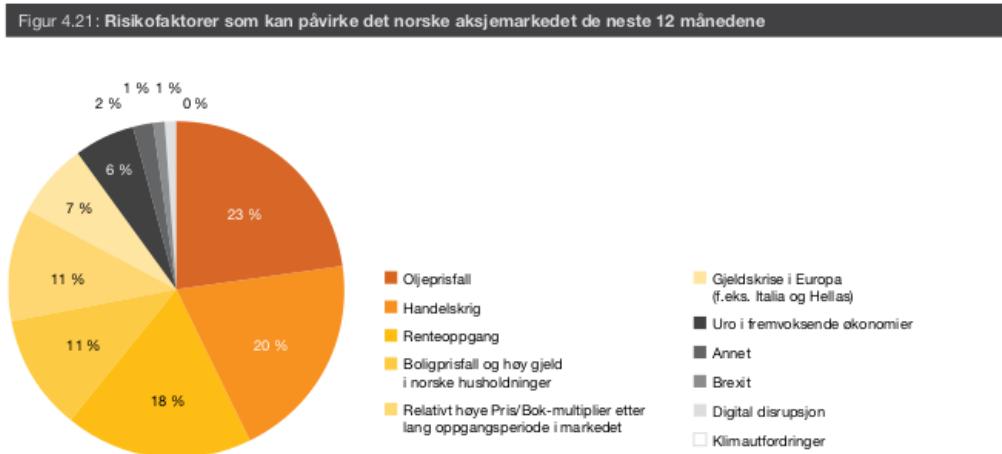
Figur 4.19: Bør det benyttes et påslag i avkastningskravet for selskaper med svak performance knyttet til miljø og bærekraft?



12 What risks do people foresee?

Figure 17 What are the risks going forward?

2018



From the 2018 study

13 Summaries

The key figures, year by year (latest first).

13.1 2022

- Market risk premium: 5%
- Risk free interest rate:
 - Interest on Norwegian Government debt with 10 year maturity, or “normalized risk free rate”
 - Typical risk free interest rate: 3%–5% (most common 3.5%).
- Small stock premium: Yes (86%).
- Control premium: Yes, between 20%-30%.
- Inflation expectation: 2%
- Long term growth in nominal earnings (for terminal value): 2%.
- ESG - does it matter?
 - Majority add to cost of capital for weak ESG companies
- What are the major risk factors the next year?
 - Energy prices
 - Inflation
 - House price falling (household debt)

13.2 2019

- Market risk premium: 4.9%
- Risk free interest rate:
 - Interest on Norwegian Government debt with 10 year maturity, or “normalized risk free rate”
 - Typical risk free interest rate: 3% or lower.
- Small stock premium: Yes.
- Control premium: Yes, between 20%-30%.
- Inflation expectation: 2%
- Long term growth in nominal earnings (for terminal value): 2%.
- Is ownership structure important for cost of capital
 - In general: yes – majority of 73%
 - Specific: State ownership – majority (59%) does not affect cost of capital.
- What are the major risk factors the next year?
 - Trade war
 - Oil price fall
 - High multiples (possible overvaluation)

13.3 2018 survey

- Market risk premium: 5%
- Risk free interest rate: Interest on Norwegian Government debt with 10 year maturity. Typical risk free interest rate: 3% or lower.
- Small stock premium: Yes.
- Control premium: Yes, between 20%-30%.
- Inflation expectation: 2%
- Long term growth in nominal earnings (for terminal value): 2%.
- Is ownership structure important for cost of capital
 - In general: yes – majority of 73%
 - Specific: State ownership – majority (59%) does not affect cost of capital.
- What are the major risk factors the next year?
 - Oil price fall
 - Trade war
 - Interest rate increase

13.4 2017 survey

- Market risk premium: 5%
- Risk free interest rate: Interest on Norwegian Government debt with 10 year maturity.
- Small stock premium: Yes.
- Control premium: Yes, between 20%-30%.
- Inflation expectation: 2%
- Growth in nominal earnings: 2%.
- Is ownership structure important for cost of capital
 - In general: yes – majority of 84%
 - Specific: State ownership – only a minority (23%) argues that large state ownership fraction increases cost of capital.

13.5 2013-2014 survey

- Market risk premium: 5%
- Risk free interest rate: Interest on Norwegian Government debt with 10 year maturity.
- Small stock premium: Yes.
- Control premium: Yes, between 20%-30%.
- Inflation expectation: 2.5%
- Growth in nominal earnings: 2.5%.
- Is ownership structure important for cost of capital
 - In general: yes – majority of 75%
 - Specific: State ownership – only a minority (31%) argues that large state ownership fraction increases cost of capital.
- Implicit market risk premium 5.6%.