



Svenska Cellulosa- Fudging Your Lumbers

SCA's paper profits will not make the trees grow faster.

PLEASE READ IMPORTANT DISCLAIMER – PAGE 4

January 25, 2024 – Viceroy are short **Svenska Cellulosa AB** (STO:SCA-B) (“SCA”). SCA has massively inflated its forest assets on paper. It's valuation methodology has relied on short-term price fluctuations, interest rate fluctuations, and mark-to-market assumptions for numerous unrealistic inputs to massively inflate SCA's forestry assets.

SCA appears to have aggressively overharvested inventory and has brought forward expected forestry volume yields, possibly to justify aggressive valuations on mega long-term asset cycles. SCA has recently been reprimanded for overharvesting and early-harvesting violations on various occasions.

A paper revaluation of SCA's assets will not make SCA's trees grow faster. Investors can choose to ignore this, but will still have to accept the cash yield which SCA produces.

Free cash flow analysis	2018	2019	2020	2021	2022	Q3 2023*
Cash Flow From Operations	3,505	3,297	3,704	5,974	6,325	4,053
Capex	(3,086)	(2,289)	(2,665)	(5,111)	(5,961)	(2,740)
add: Strategic Capex	1,967	903	1,253	3,723	4,351	1,511
Maintenance Capex	(1,119)	(1,386)	(1,412)	(1,388)	(1,610)	(1,229)
FCF (excl. strategic capex)	2,386	1,911	2,292	4,586	4,715	2,824
*Annualized						

Valuation	Yield	Cap	Downside
Bull	5%	56,480	-43.1%
Base	6%	47,067	-52.6%
Bear	7%	40,343	-59.3%

Figures 1 & 2 – Viceroy Analysis

We believe SCA presents >50% downside risk.

This report will also touch on various environmental, biological, and macroeconomic threats which we believe will further deteriorate SCA yields.

Viceroy's investigation is ongoing, and we anticipate producing further SCA reports, as well as a review of SCA's 2023 results, in the near term.

Background

SCA is a Swedish forestry and forest product company that owns assets primarily in the North of Sweden. The company has been a beneficiary of the rally in forest product prices as well as a 2019 valuation change in how they value their forest assets.

Sweden is divided into its 3 traditional lands: Norrland (North Sweden), Svealand (Middle Sweden) and Gotland (South Sweden). SCA's forest assets are located in Norrland, which results in a slower growth rate for their plantations due to lower temperatures, sunlight hours and rainfall.

The company and Swedish forestry at large have benefitted from recent supply constraints owing to the Russia-Ukraine war and ensuing sanctions. However, supply chains and prices have normalized over 2023, depressing SCA revenues and EBITDA against 2021-2022 and back in line with prior periods.

Industry-wide environmental headwinds have also recently come to light with the Swedish University of Agricultural Sciences (SLU) research showing a massive previously undocumented increase in multi-damaged forests in the country. SCA also faces scrutiny from Forest regulators, and has recently been reprimanded on various occasions for early/over harvesting.



The Mark-To-Market Valuation

SCA's cash yields cannot not support enormous paper revaluations gains SCA attributes to its forest assets.

In 2019, SCA adopted a market approach to valuing its forest assets as opposed to a DCF. This accounting change has inflated the paper value of SCA's forest assets by over 100% in 2019 alone, and over 300% to date.

- SCA's mark-to-market approach uses market value transaction data from sales of, mostly, non-productive land (i.e. hobby, environmentalism, gaming). The valuation metric applied from these sales is SEK per m³fo (forest cubic meter).
 - Only 135 forest transactions where SCA owns forest took place in 2022
 - The average transaction sizes are between 60ha – 137ha over the last 4 years
 - SCA owns 2.6m ha of forests.
- A miniscule sample of productive forestry asset transactions present within this miniscule number of Swedish forest land transactions suggest values are comparable, however, SCA fails to mention that it makes up a material volume of these transactions, and that its valuations materially benefit from propping up this market.

SCA's purchases and divestments of forest land in Sweden					
Purchase	2018	2019	2020	2021	2022
Volume, thousand m ³ fo	197	429	288	467	448
Price, SEK/m ³ fo	286	334	294	379	453
Divestment	2018	2019	2020	2021	2022
Volume, thousand m ³ fo	192	959	319	255	602
Price, SEK/m ³ fo	268	264	259	198	386

The vast majority of the transactions included in the supporting data are acquisitions conducted by private individuals. The relatively few transactions between legal entities indicates, however, that forest owned by legal entities has an added value compared with forest owned by private individuals.

Figures 3 & 4 – SCA 2022 Annual Report

- Despite having the same, inflated market data sources: SCA's mark-to-market SEK/m³fo base is still about 10% higher than its competitors because it chose to geographically identify as a Southern-Northern plantation.
- We note that Covid brought an unusually large increase to the transaction values of private forest land in 2019-2021. This has started to reverse in 2023.

SCA appears to conduct its own forest surveys to determine the density of m³fo per hectare (i.e. density). This is then applied to SCA total productive land to determine its total m³fo (volume) of productive assets.

- SCA's reported m³fo/ha is 35% higher than its peers in Northern Sweden.
- We believe SCA has vastly overstated the volume of its forest assets, which is the primary biological volume input against mark-to-market sales data.

SCA has a worrying degree of autonomy when it comes to conducting its own forest survey which is done with no auditors. While this is industry practice, it is concerning considering the value dislocation SCA produces against peers.

We note that there is no alternative use for this land other than pine plantation. Any valuation that ignores yield is not suitable.



The DCF Valuation

SCA retains a DCF approach to determine the value of biological assets (i.e. lumber). The difference between biological asset values and the mark-to-market valuation of the total forest assets is apportioned to land value.

$$\text{Land Value} = \text{Total Forest Asset Value (Mark-to-market)} - \text{Biological Asset Value (DCF)}$$

This DCF is implicitly also used to justify the absurd mark-to-market valuations and is similarly reliant on broken biological and valuation inputs to do so.

- SCA's DCF valuation is extremely sensitive to its discount rate because its discount rate is extremely low at 2.65%, Viceroy would consider this to be excessively low, even in 2022 when the Swedish policy rate ended at 2.5%.
 - This is currently below the which is significantly below the current Swedish policy rate of 4%, and represents a massive disconnect from the cost of capital of established peers.
 - A 10bp reduction in the discount rate will increase the value of biological assets by ~400bps.
 - In comparison, the current Swedish Federal Rate is 4%, and the 10-Year Government Bond rate is 2.33%.
- The DCF is also extremely sensitive to the price of wood, which has fallen in 2023 against volatility in 2022 due to regional supply uncertainty stemming from Russia's invasion of Ukraine. This has also negatively impacted interim 2023 revenues.
- SCA does not appear to present any sensitivity analysis to demonstrate the impact of harvesting rates on its DCF.
 - We note that SCA has inexplicably brought forward harvest rates by a significant amount at the same time as it amended accounting policies.
 - Given SCA's assets rotate on a 100-year asset maturity cycle, and the average vintage of plantations is 30-50 years, this suggests that SCA plans to harvest its forests earlier than expected. SCA does not speak to the consequences of this.

A Free Cash Flow Alternative

A paper revaluation of SCA's assets will not make SCA's trees grow faster. SCA similarly cannot mark-to-market 2.6m hectares of its forest land to sporadic, 60–140-hectare hobby forest land transactions.

Even without the balance sheet valuation concerns, investors must accept the cash yield which SCA produces.

Accordingly, we present a normalized free cash flow valuation below:

Free cash flow analysis	2018	2019	2020	2021	2022	Q3 2023*
Cash Flow From Operations	3,505	3,297	3,704	5,974	6,325	4,053
Capex	(3,086)	(2,289)	(2,665)	(5,111)	(5,961)	(2,740)
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Figures 5 & 6 – Viceroy Analysis

We believe these valuations are conservative as they do not take into consideration:

- The continued deflation of prices throughout 2023 to the norm from 2021-2022 volatility.
- The major, developing environmental and biological risks which will impact future SCA forest yields in both size and quality.
- The risk that SCA is overharvesting its plantation to deliver higher yields temporarily.
- The reputational and financial risk of regulatory intervention.



Attention: Whistleblowers

Viceroy encourage any parties with information pertaining to misconduct within Svenska Cellulosa AB, its affiliates, or any other entity to file a report with the appropriate regulatory body.

We also understand first-hand the retaliation whistleblowers sometimes face for championing these issues. Where possible, Viceroy is happy act as intermediaries in providing information to regulators and reporting information in the public interest in order to protect the identities of whistleblowers.

You can contact the Viceroy team via email on viceroy@viceroyresearch.com.

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1. Mark-to-Market Valuations

Prior to 2019, forest assets were valued at a discounted present value of the estimated sales revenue with deductions for harvesting costs, per IAS 41. In accordance with IAS 16 (Property, Plant and Equipment), land was recorded at acquisition cost and not depreciated.

Since 2019, SCA has valued both land and biological forest assets through a market approach:

New transaction-based method for valuing forest assets

In light of the price level of forest land in a number of large and recently completed forest land transactions, SCA has reviewed the method and assumptions for valuation of the company's forest assets in its balance sheet. The review shows that a large number of forest transactions take place in areas where SCA owns forest assets, that the value of larger forest assets is generally in line with the values of smaller and mid-sized forest assets, and that the value is significantly higher than the previous carrying amount.

Figure 7 – SCA 2019 Q4 Interim Report

This accounting change has inflated the paper value of SCA's forest assets by over 100% in 2019 alone, and over 300% to date.

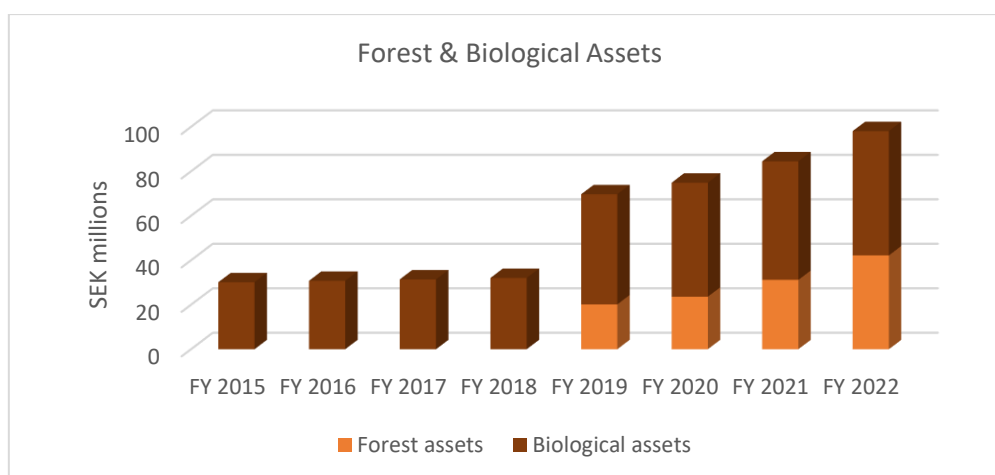


Figure 8 – Viceroy Analysis

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SCA's purchases and divestments of forest land in Sweden

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Figure 9 – SCA 2022 Annual Report



Despite having the same, inflated market data sources: SCA's mark-to-market SEK/m³fo base is still about 10% higher than its competitors because it chose to geographically identify as a Southern-Northern plantation.

Average of Svefa (Weighted by SCA Holdings) & Ludvig Values SEK/m ³ fo			
	2020	2021	2022
Svefa & Ludvig value (SEK/m ³ fo)	302.45	333.79	374.68
SCA claimed value (SEK/m ³ fo)	312	368	418
Delta (overstatement) SEK/m ³ fo	9.55	34.21	43.32
Delta (overstatement) %	3.11%	9.75%	10.93%

Figure 10 – Viceroy Analysis

Peer Density Comparison

Compared to peers and market data, SCA appears to overestimate its forest asset density by 20% to 36%.

SCA appears to conduct its own forest surveys to determine the density of m³fo per hectare (i.e. density). This is then applied to SCA total productive land to determine its total m³fo (volume) of productive assets.

Harvesting increasing by 25 percent
 SCA endeavors to manage its forests in an active and long-term manner to increase growth and harvesting potential. The regular inventories and harvesting calculations conducted by the company indicate that harvesting can increase to 5.4 million solid cubic meters under bark (m³sub) in 2025 and the company is gradually approaching this level. In the longer term, harvesting can increase further. Contorta pine, which has a much higher

Figure 11 – SCA Annual Report 2022

SCA's reported m³fo/ha is 35% higher than its peers in Northern Sweden. Analysis of forest holdings by SCA, Holmen, Stora Enso and Sveaskog shows that SCA's m³fo/ha in North Sweden is 36.1% higher than the weighted average of its peers. SCA claims an average m³fo/ha 23.3% higher than Holmen, its competitor with the next highest claimed figure.

Forest cubic meters per hectare peer comparison				All figures in m ³ fo/ha	
	2018	2019	2020	2021	2022
SCA	117.50	124.50	126.00	128.00	130.00
Holmen		107.56	107.56	108.85	108.70
Stora Enso	84.72		84.82	89.53	91.62
Sveaskog*	77.85	78.36	91.12	91.45	92.74
Average of peers**	81.29	92.96	94.50	96.61	97.69
Weighted average of peers***	79.46	79.66	93.70	94.41	95.50

* Northern sweden concentrated but not reported or clean cut
 ** Unweighted, excluding SCA
 *** Weighted by holdings ('000s ha) in Norrland, excluding SCA

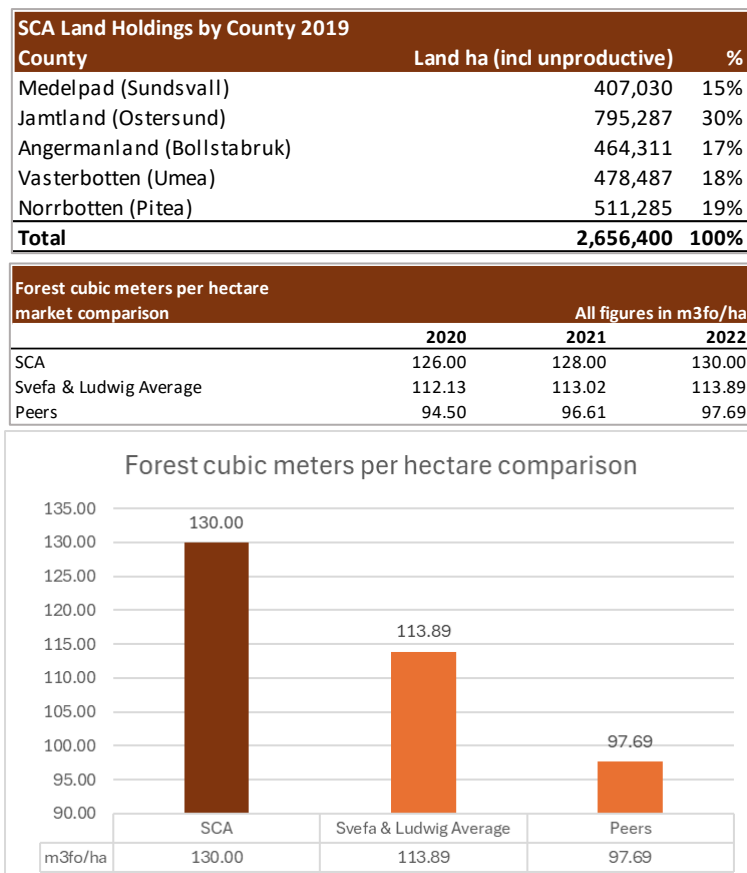
Figure 12 – Forest cubic meters per hectare peer comparison

These results are the opposite of what we should expect as we will explore in our section on forest location later. For now it is strange that SCA outpaces the competition by such a large margin.



Market data comparison

Data from Svefa and Ludvig & Co., the two sources of market data listed in SCA's reports, further supports our view that SCA systematically inflates the value of its forest assets. We weighted these m3fo/ha values against SCA's forest holdings by hectare in the relevant counties.



Figures 13, 14 & 15 – SCA land holdings by county, market comparison per hectare comparisons

Once again SCA m3fo/ha values exceed those of market data for reasons that are not clear.

We believe SCA has vastly overstated the volume of its forest assets, which is the primary biological volume input against mark-to-market sales data. Our adjustments to peer and market densities and prices are as follows.

m3fo adjustment		
Multiplier to make SCA match wieghted industry average		0.73x
Multiplier to match Holmen		0.84x
Multiplier to match Svefa & Ludvig Composite		0.87x
Weighted industry average comparison		
Forest asset valuation adjustment based on SEK/m3fo		
SCA Forest Assets	m m3fo	260
Adjusted to peer comps	m m3fo	191
SCA claimed market price	SEK/m3fo	366
Svefa & Ludvig market price	SEK/m3fo	336.97
Adjusted value	SEKm	64,361.59
SCA claimed value	SEKm	97,882.00
Delta	SEKm	-33,520.41



Holmen comparison		
Forest asset valuation adjustment based on SEK/m3fo		
SCA Forest Assets	m m3fo	260
Adjusted to Holmen comps	m m3fo	217.39
SCA claimed market price	SEK/m3fo	366
Svefa & Ludvig market price	SEK/m3fo	336.97
Adjusted value	SEKm	73,254.81
SCA claimed value	SEKm	97,882.00
Delta	SEKm	-24,627.19
Svefa & Ludvig Composite comparison		
Forest asset valuation adjustment based on SEK/m3fo		
SCA Forest Assets	m m3fo	260
Adjusted to Svefa & Ludvig comps:	m m3fo	226.02
SCA claimed market price	SEK/m3fo	366
Svefa & Ludvig market price	SEK/m3fo	336.97
Adjusted value	SEKm	76,163.91
SCA claimed value	SEKm	97,882.00
Delta	SEKm	-21,718.09

Figure 16 – Viceroy SCA Forest Asset value adjustment

We first adjusted SCA's timber volume per hectare (m3fo/ha) to peers, Holmen (who have the next highest m3fo/ha to SCA) and a composite of Svefa and Ludvig & Co. figures. This figure is then applied to SCA's productive land holdings and valued based on the Svefa and Ludvig & Co. market prices weighted by SCA property location¹.

Average of Svefa (Weighted by SCA Holdings) & Ludvig Values SEK/m3fo			
	2020	2021	2022
Svefa & Ludvig value (SEK/m3fo)	302.45	333.79	374.68
SCA claimed value (SEK/m3fo)	312	368	418
Delta (overstatement) SEK/m3fo	9.55	34.21	43.32
Delta (overstatement) %	3.11%	9.75%	10.93%

Figure 17 – Svefa and Ludvig & Co. pricing comparison

We also have serious concerns about the validity of the market approach to valuation. While it may seem strange to analyze the results of a methodology we believe is inappropriate, we think that SCA management needs to answer the discrepancy in its m3fo figures compared to peers and market data.

¹ SCA FM report 2019



Market approach vs Income approach

Viceroy question whether there are enough representative transactions in Sweden to form a basis for valuation. We note the following:

- Using SCA's statistics for market data the forest land market processed only ~18k ha in sales in 2022. These transactions are being used to justify the value of 2m ha of SCA's productive forest land.

Market Data Analysis		2019	2020	2021	2022
Market data					
No. of transactions	n	251	219	176	135
Average price	SEK/m ³ fo	292	312	368	418
Average estate size	ha	67	61	75	137
Total estates transacted	ha	16,817	13,359	13,200	18,495

Figure 18 – Market Data Analysis

- It is unclear whether SCA accounts for a large number of these transactions and whether they remove themselves from the data. Assuming a uniform m³fo/ha across SCA's portfolio we can calculate that SCA purchased ~3.3k ha and divested ~4.5k ha in 2022².

SCA's purchases and divestments of forest land in Sweden					
Purchase	2018	2019	2020	2021	2022
Volume, thousand m ³ fo	197	429	288	467	448
Price, SEK/m ³ fo	286	334	294	379	453
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The vast majority of the transactions included in the supporting data are acquisitions conducted by private individuals. The relatively few transactions between legal entities indicates, however, that forest owned by legal entities has an added value compared with forest owned by private individuals.

Figure 19 – SCA Annual Report 2022

- Most forest land transactions are small deals between individual buyers. These buyers typically have no interest in forestry activities. According to Ludvig & Co., only 9% of transactions in 2023 involved privately owned companies³.

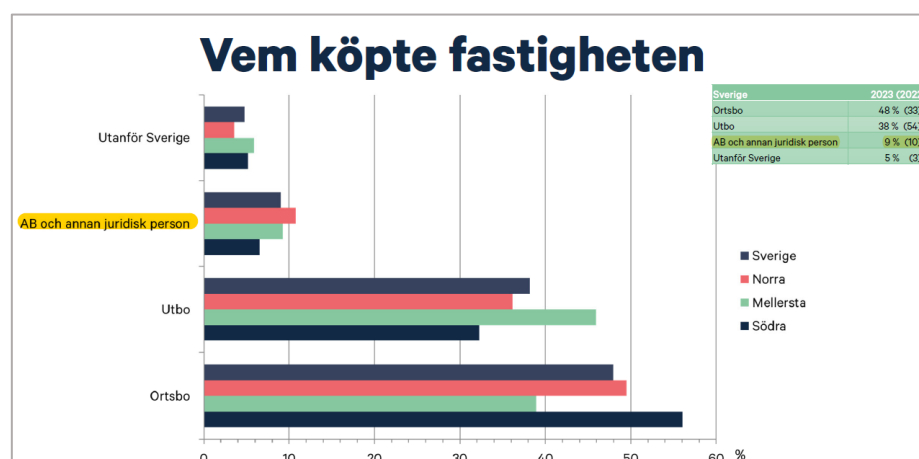


Figure 20 – Breakdown of forest land purchases in 2023 by Ludvig

- The process for legal entities purchasing forest land is complicated and requires the buyer to sell the equivalent area somewhere else to preserve the balance between individual and corporate ownership⁴.

² We acknowledge that acquired land would have a higher m³fo/ha and divested land would have a lower m³fo/ha.

³ <https://kunskap.ludvig.se/rapport-skogsmarkspriser-halvar-2023>

⁴ <https://blogg.ludvig.se/att-kopa-skog>



Valuation process

The valuation process used by SCA essentially boils down to 2 inputs:

1. Forest land transaction data – this is public data which is then compiled by Ludvig & Co and Svefa.
2. Forest survey data – this is created by SCA from a forest survey which they conduct themselves periodically.

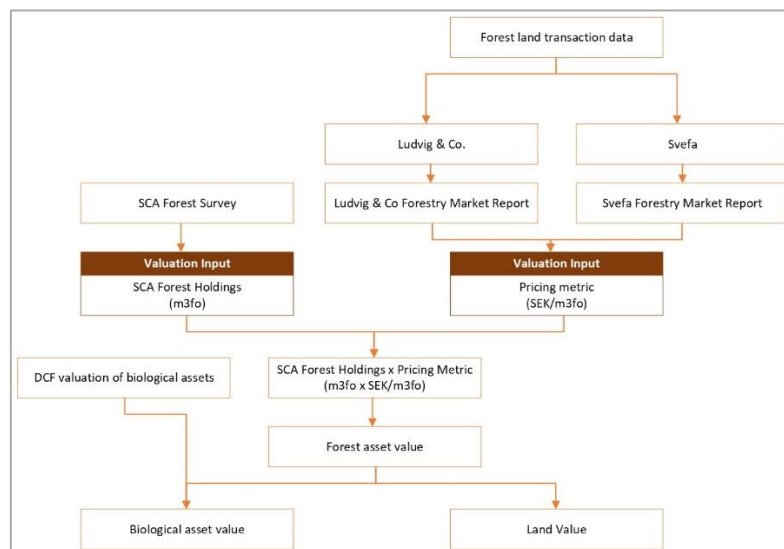


Figure 21 – SCA Valuation methodology

One of these inputs is fully independent of SCA – the transaction data – while the other is entirely within their control.

SCA conducts its own forest surveys every 6-8 years to measure the volume of its forest assets, which it abbreviates to FTAX. While SCA does undergo internal and regulatory audits, these are associated with compliance with national standards and not focused on valuation.

Given the discrepancy in valuation with peers and market data, SCA's level of autonomy should raise concerns among investors. There is no standard forest inventory survey that is audited by a third party: timber companies' use of LIDAR and satellite imaging to evaluate purchases emphasizes this point.

SCA has a worrying degree of autonomy when it comes to conducting its own forest survey which is done with no auditors. While this is industry practice, it is concerning considering the value dislocation SCA produces against peers.

Internal and regulatory audits are primarily associated with compliance with national forestry standards and are not focused on m3fo as a valuation metric.

- **Forest inventory (abbreviated in Swedish to "FTAX")**
SCA uses forest inventories for detailed follow-up of the development of the forest status. FTAX is an inventory of spot checks of the company's forest and is carried out every six to eight years. The result is used in following-up the forest status and as inputs in the company's harvesting calculations. SCA conducted its first FTAX in 1947. The latest survey was completed in 2019 and was the tenth to be performed (FTAX 10).
- **Harvesting calculation (AVB)**
Every six to eight years, SCA carries out impact analyses of different strategies for harvesting and forest management. The calculations have a time horizon of 100 years to ensure long-term sustainability. Internally, the impact analyses are referred to as Harvesting calculations (abbreviated in Swedish to "AVB") and lead to decisions on the size of harvesting and direction for the period until the next AVB is performed. The latest calculation was completed in 2020 (AVB 20).

Figure 22 – Monitoring and evaluation of our operations at SCA Skog 2022⁵

⁵ https://www.sca.com/siteassets/skog/scas-skogar/ansvarsfullt-skogsbruk/uppfoljning-certifierat-skogsbruk/uppfoljning-och-utvardering-sca-skog_2022_-en.pdf



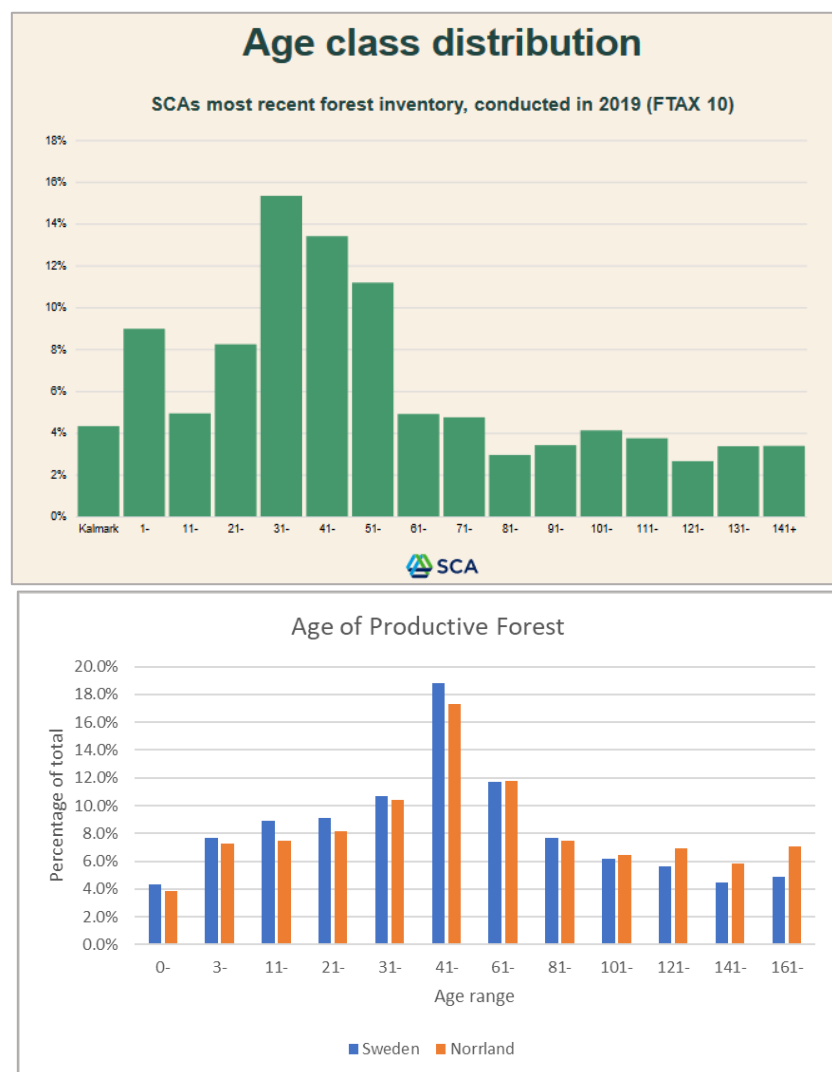
2. Evaluating forest assets

There are 2 possible reasons why SCA's forest survey is reporting a higher m3fo/ha than peers. For the sake of clarity, we will go through both. Either:

- SCA's trees are older than the peer group and geographical average (they aren't).
- SCA's trees grow faster than the peer group and geographical average (they don't).

Forest age

Typically, the older a forested area is the greater the timber volume it contains. In fact, SCA's forests are almost exactly in line, if not slightly younger, than forests in Norrland and Sweden as a whole⁶.



Figures 23 & 24 – SCA Forest Age graph and Sweden/Norrland age graph⁷

Note: There is a misalignment between the age ranges product by SLU and those produced by SCA.

The key takeaway is that SCA's forests are not older than those of the general population and that age cannot be the factor in their increased m3fo.

⁶ <https://www.slu.se/centrumbildningar-och-projekt/riksskogstaxeringen/statistik-om-skog/skogsdata/>

⁷ https://www.sca.com/siteassets/skog/scas-skogar/ansvarsfullt-skogsbruk/uppfoljning-certifierat-skogsbruk/uppfoljning-och-utvardering-sca-skog_2022_-en.pdf



Forest location

Understanding forest location is important: in short, forests in the North grow slower and are worth less and the further North they are, the less they are worth. This is supported by market data showing the stark premium that southern and central forests command relative to those in northern Sweden.

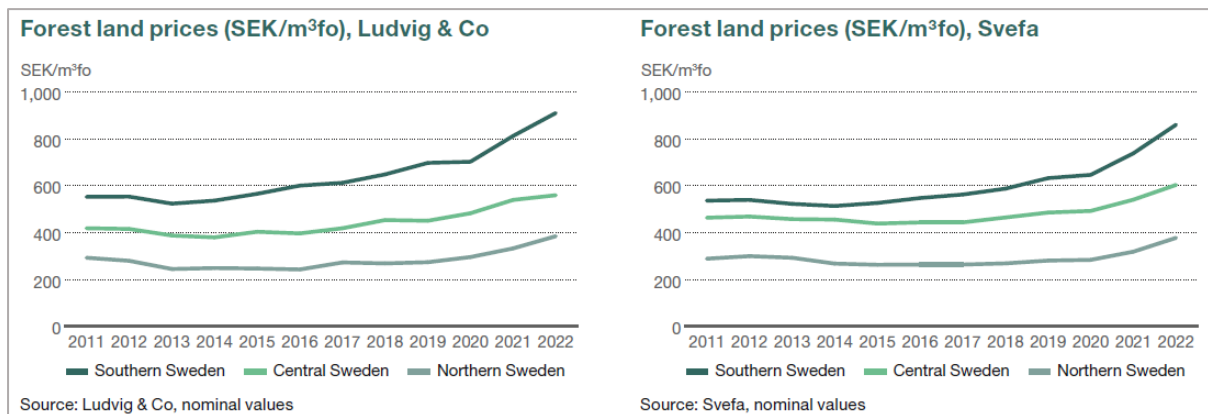


Figure 25 – SCA Annual Report 2022

Of its competitors SCA has by far the highest concentration of its land in the North of Sweden to the point that the diagram in its annual report doesn't even show the whole country.

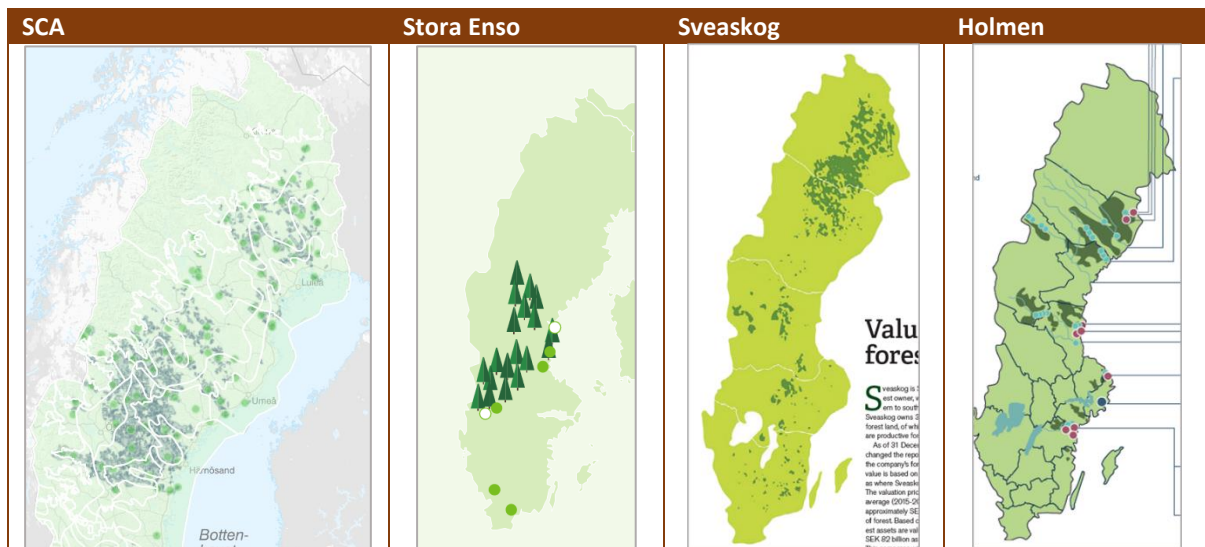


Figure 26 – Forest location comparison

We also note that SCA's forests are concentrated in some of the driest areas in Sweden, again not ideal for forest growth.

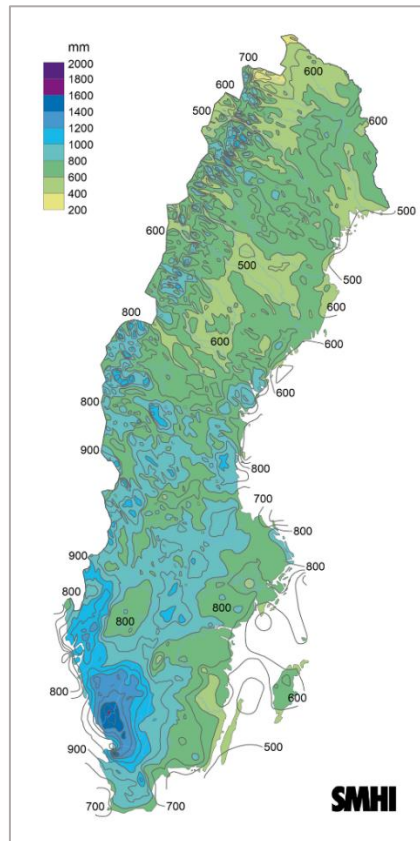


Figure 27 – Sweden rain map for 2023⁸

Once again, forest location does not explain why SCA's m3fo/ha significantly deviates from peers and if anything, their location should result in a lower m3fo/ha figure than peers.

⁸ <https://www.smhi.se/data/meteorologi/kartor/medel/arsnederbord-medel>



3. Discounted Cash Flow

SCA retains a DCF approach determine the value of biological assets (i.e. lumber). The difference between biological asset values and the mark-to-market valuation of the total forest assets is apportioned to land value.

$$\text{Land Value} = \text{Total Forest Asset Value (Mark-to-market)} - \text{Biological Asset Value (DCF)}$$

This DCF is implicitly also used to justify the absurd mark-to-market valuations and is similarly reliant on broken biological and valuation inputs to do so. SCA's balance sheet is extremely sensitive to these inputs.

TD3:1 Sensitivity analysis		Change in value, before tax	
SEKm	Change in assumption	2022	2021
Total forest assets			
Market price based on market statistics ¹⁾	Price change 5% on a total volume of 267 (261) million m ³ fo	4,894	4,225
Forest holding's standing timber volume ¹⁾	3 million m ³ fo (approx. 1%)	1,099	972
Biological assets as a share of forest assets²⁾			
Discount rate	Reduction by 0.1%	2,188	2,132
Wood price	Increase of 10%	11,584	10,154
Felling cost	Increase of 10%	-3,179	-3,053
Volume	Increase of 10%	5,749	5,196

Figure 28 – SCA 2022 Annual Report

This section will speak to SCA's DCF inputs (and lack thereof).

Discount Rates

SCA's DCF valuation is extremely sensitive to its discount rate because its discount rate is extremely low at 2.65%, Viceroy would consider this to be excessively low even in 2022 when the Swedish policy rate ranged between 0% and 2.5%.

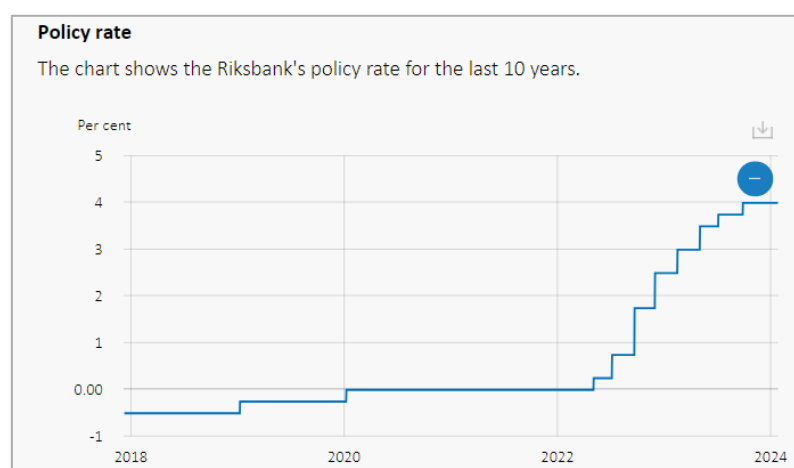


Figure 29 – Sweden Policy Rate⁹

This is currently below the which is significantly below the current Swedish policy rate of 4%.A 10bp reduction in the discount rate will increase the value of biological assets by ~400bps.

⁹ <https://www.riksbank.se/en-gb/statistics/interest-rates-and-exchange-rates/policy-rate-deposit-and-lending-rate/>



Wood Price

The DCF is also extremely sensitive to the price of wood, which has fallen in 2023 against volatility in 2022 due to regional supply uncertainty stemming from Russia's invasion of Ukraine. This has also negatively impacted interim 2023 revenues.

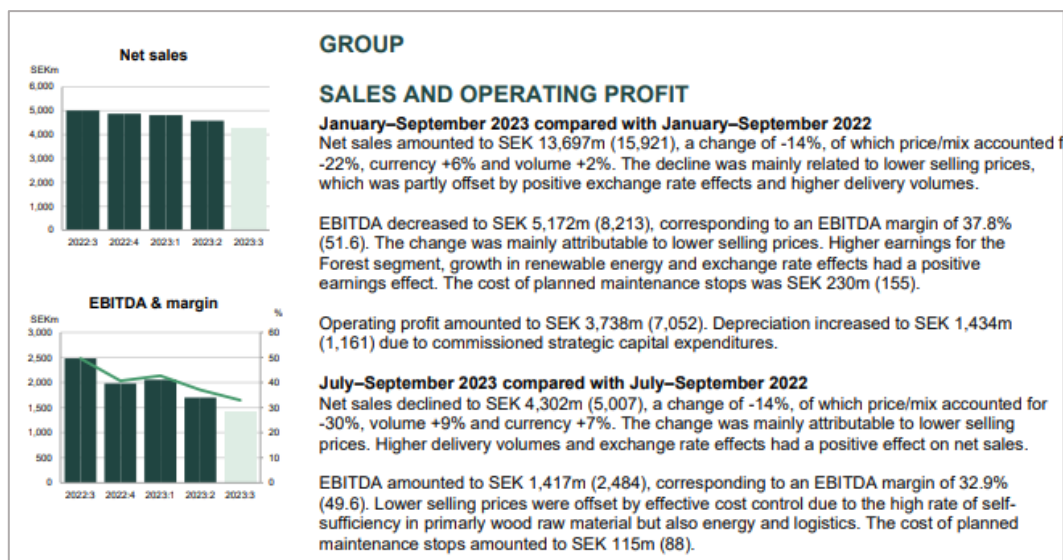


Figure 30 – SCA Q3 2023 Interim Report

In the 9 months to September 2023 SCA state the price/mix impacted sales by 30% y/y. We expect this to significantly impact biological asset values, which are dependent on price.

Harvest rates

SCA does not appear to present any sensitivity analysis to demonstrate the impact of harvesting rates on its DCF. We note that SCA has inexplicably brought forward harvest rates by a significant amount at the same time as it amended accounting policies.

The company changed its harvest rate forecasts in 2022 from the previous forecast in 2018, before the accounting change. The charts below show an increase in both volume and timing. It's worth noting that SCA's harvest rates have not kept pace with their cutting plan.

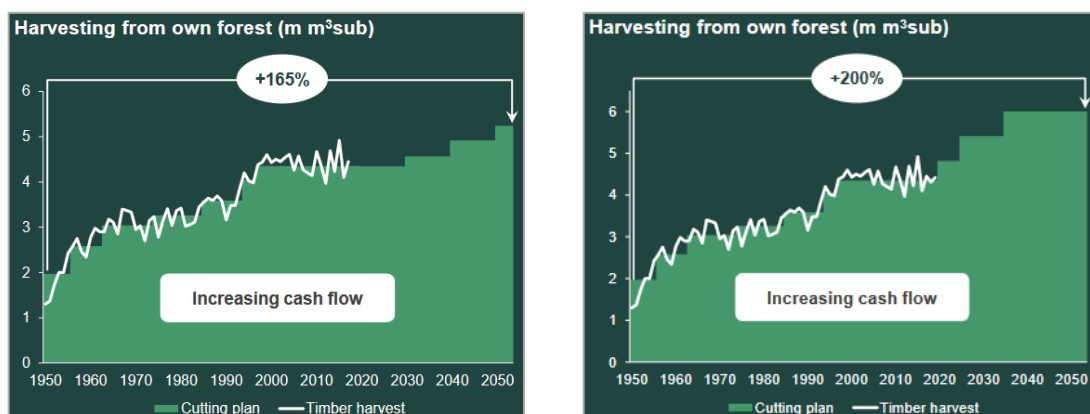


Figure 31 – SCA Capital Markets Day Presentation 2018 & 2020, respectively



The plan was to increase harvest rate from 4.3m m3sub (~5.4m m3fo) to 5.4m m3sub (~6.8m m3fo) in 2025 forecasting a SEK 300-400m increase in cash flow per year¹⁰. There are a few problems with this:

- SCA's harvesting rate has been flat for the past 20 years.

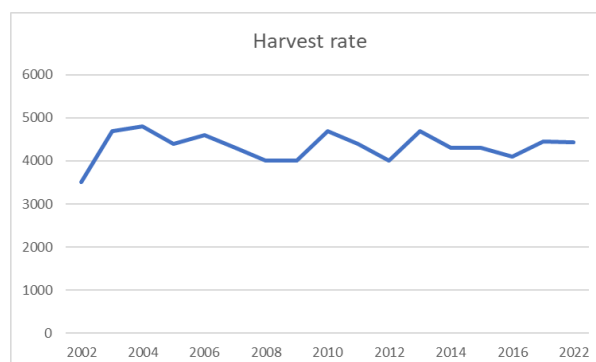


Figure 32 – SCA Harvest Rate

- This requires either overharvesting as a percentage of standing stocks or an unrealistic expectation of growth. We believe it is the former.
- Assuming a linear increase in harvesting and a constant percentage of available growth harvested of ~58%, SCA must increase growth by ~9% per annum assuming no new purchases of land.

		2019	2020	2021	2022	2023	2024	2025
Value January 1, Sweden	m m3fo	245.0	249.0	252.0	256.0	266.8	271.0	275.6
Available growth	m m3fo	9.2	9.1	9.1	9.1	10.0	10.9	11.7
Harvesting	m m3fo	-5.2	-5.9	-5.2	-5.3	-5.8	-6.3	-6.8
Net forest growth	m m3fo	4.0	3.2	3.9	3.8	4.2	4.6	4.9
Value December 31, Sweden	m m3fo	249.0	252.2	255.9	259.8	271.0	275.6	280.5
Holdings in Baltic region	m m3fo			5.0	7.0	0.0	0.0	0.0
Value December 31	m m3fo	249.0	252.2	260.9	266.8	271.0	275.6	280.5
% of available growth harvested		57%	65%	57%	58%	58%	58%	58%
% of starting value harvested		2.1%	2.4%	2.1%	2.1%	2.2%	-2.3%	-2.5%

Figure 33 – Growth Forecast Analysis – Viceroy Analysis

Harvest age

SCA cannot bring forward its yield due to the location of its forests and their composition.

The minimum permitted age for felling is dictated by the forestry act and depends on forest location, composition, and classification (ståndortsindex). The classification is determined by species, average height, and age at chest height¹¹. The minimum permitted age differs based on which counties the land is in. SCA's forests are largely in Norrbotten, Västerbotten, Jämtland and Västernorrland and are dictated by the following table¹².

¹⁰ <https://www.sca.com/sv/media/pressmeddelanden/2020/ny-avverkningsplan-faststalld-okad-avverkning-och-hogre-kassaflode/>

¹¹ Note: to avoid confusion this means the age of the part of the tree at a person's chest height, not the age of a tree of chest height.

¹² <https://www.skogsstyrelsen.se/lag-och-tillsyn/skogsvardslagen/>



Tabell 4. Se 3 kap. 3 §. Lägsta tillåtna ålder för förnygringsavverkning i bestånd vars virkesförråd till minst hälften består av tall och/eller gran. Tabellen gäller vid avverkning i Norrbottens, Västerbottens, Jämtlands och Västernorrlands län.

Gran, stådortsindex	G28	G24	G20	G16	G12
Tall, stådortsindex	T28	T24	T20	T16	T12
Alder, år	65	70	80	90	100

Table 4. See ch. 3. Section 3. Minimum permitted age for regeneration felling in stands whose timber supply consists of at least half of pine and/or spruce. The table applies to felling in Norrbotten, Västerbotten, Jämtland and Västernorrland counties.

Spruce, standortsindex	G28	G24	G20	G16	G12
Pine, standortsindex	T28	T24	T20	T16	T12
Minimum felling age	65	70	80	90	100

Figure 34 – Swedish Forest Management Act (Skogsvårdslagen)

SCA does not publish information on the classification of its assets. Data produced by the Swedish University of Agricultural Science and the Mistra Digital Forest Program maps Sweden's forests based on their standard for both pine and spruce and it clearly shows SCA's forests will generally have a higher minimum permitted age of felling¹³.

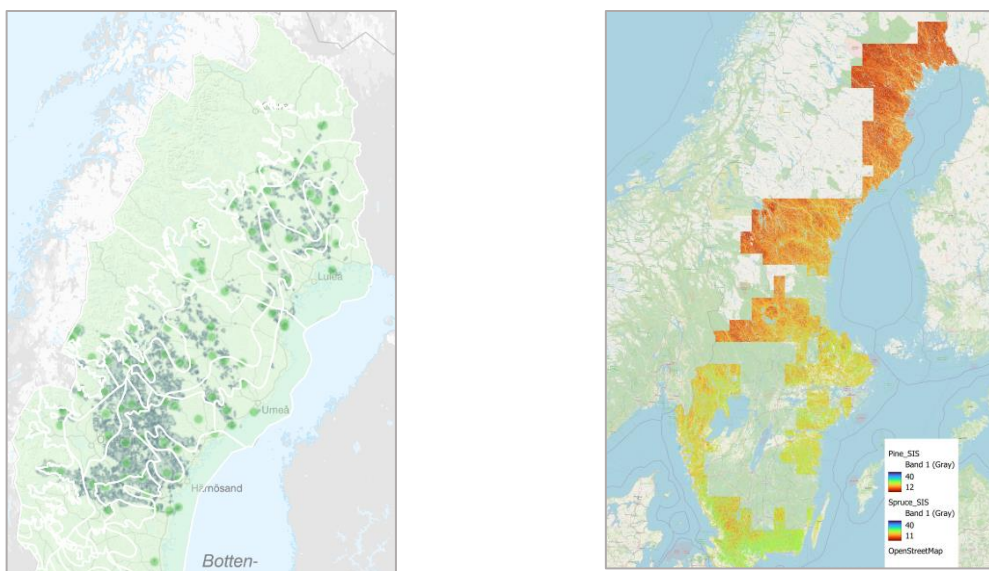


Figure 35 – SCA holdings map and Pine and Spruce SIS Map

Note: the SIS numbers in the map above refer to the number classification in table XX above.

The reason for these classifications and restrictions is due to the increased time it takes for a tree to reach full maturity: a blanket harvesting age across the country would result in uneven deforestation as we move North.

¹³ Data is available at <https://internt.slu.se/nyheter-originalen/2022/4/ny-karta-utvarderas/>. A GIS program is required to process the image files.



5. Environmental threats

The research concerns damage to forests and was developed in conjunction with several forestry companies including SCA, Holmen and Sveaskog.

- 40% of young forests in Sweden's four Northern counties have suffered at least one sort of damage. The following table shows the number of damaged shoots per hectare with the colors signifying no damage, light damage, and severe damage in darkening order.

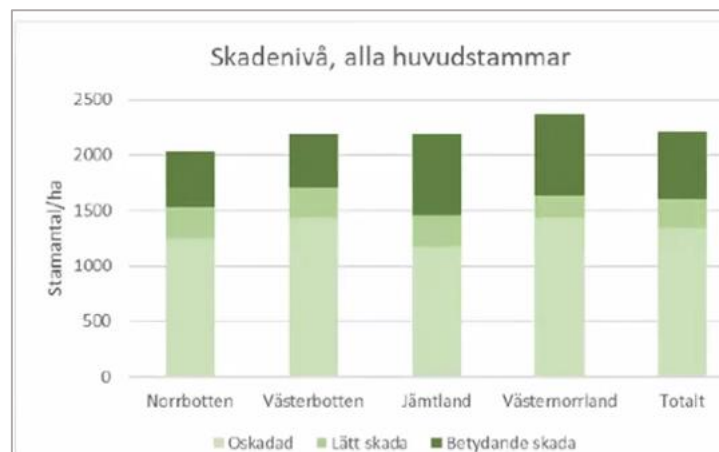


Figure 38 – SLU Multidamaged Forest Presentation

- Pines are the hardest hit with 48% of pine trunks showing some damage, and 28% have significant damage. It is suggested that this has happened due to a lack of biodiversity with owners overly favoring pine.
- A quarter of the young forest between 10 and 30 years old is "severely thinned out with large production losses as a result". 7% of the surveyed area has less than 1,000 main trunks per hectare, with 61% of the surveyed area having less than 2,000 main trunks per hectare.
- These problems are expected to cause yearly growth to reduce by 7m m3fo per year.
- Both SCA and Holmen said it was impossible to fully identify all infected trees due to lack of visibility.
- There is a lack of understanding of whether cutting down the infected trees or even the entire stand can eliminate the infection due to spores remaining in the ground.

These issues are extremely severe and widely known about in the Swedish forestry industry but have yet to gain traction in the financial sphere despite their implications for current-day valuation.



7. Conclusion

A paper revaluation of SCA's assets will not make SCA's trees grow faster. SCA similarly cannot mark-to-market 2.6m hectares of its forest land to sporadic, 60–140-hectare hobby forest land transactions.

Even without the balance sheet valuation concerns, investors must accept the cash yield which SCA produces.

Accordingly, we present a normalized free cash flow valuation below which we stress is conservative:

Free cash flow analysis	2018	2019	2020	2021	2022	Q3 2023*
Cash Flow From Operations	3,505	3,297	3,704	5,974	6,325	4,053
Capex	(3,086)	(2,289)	(2,665)	(5,111)	(5,961)	(2,740)
add: Strategic Capex	1,967	903	1,253	3,723	4,351	1,511
Maintenance Capex	(1,119)	(1,386)	(1,412)	(1,388)	(1,610)	(1,229)
FCF (excl. strategic capex)	2,386	1,911	2,292	4,586	4,715	2,824

*Annualized

Valuation	Yield	Cap	Downside
Bull	5%	56,480	-43.1%
Base	6%	47,067	-52.6%
Bear	7%	40,343	-59.3%

Figures 39 & 40 – Viceroy Analysis