

# Nordic Semiconductor ASA

Full Rating Report

## LONG-TERM RATING

**BBB**

## OUTLOOK

**Stable**

## SHORT-TERM RATING

**N3**

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## RATING RATIONALE

Our 'BBB' long-term issuer rating on Norwegian semiconductor company Nordic Semiconductor ASA reflects the company's strong balance sheet and low financial leverage. The rating also takes account of the company's strong position in growing niche markets within wireless communication technology, and the Internet of Things (IoT) in particular, including products that help monitor various kinds of environmental impact. Nordic Semiconductor has strong customer relationships with world-leading technology companies.

The rating is constrained by the semiconductor sector's historical earnings volatility. Demand for consumer products has declined since the end of the pandemic-induced boom. Moreover, inventory adjustments by customers are amplifying the current negative cycle. However, lower demand has meant that the period of supply constraints on silicon wafers has ended. The rating is also constrained by the need to invest heavily in research and development (R&D) to maintain market share and customer relationships. We also adjust our indicative credit assessment down by one notch to reflect the company's small size relative to the major semiconductor companies, which could affect its ability to develop new technologies in an R&D-intensive sector.

## STABLE OUTLOOK

The stable outlook reflects our view that Nordic Semiconductor's financial leverage will remain low. The company has made a prepayment of USD 100m to a new supplier to reduce the risk of the long-term undersupply of wafers, without taking on new debt. We believe that the company's niche markets will continue to grow at least in line with the broader semiconductor market.

### POTENTIAL POSITIVE RATING DRIVERS

- Secular growth of target markets, leading to greater revenue diversity.
- Increased economies of scale, leading to EBITDA margins above 30%.

### POTENTIAL NEGATIVE RATING DRIVERS

- Stronger competition leading to lower market share and revenues.
- EBITDA margin below 10%.
- Net debt/EBITDA above 1.5x.

Figure 1. Nordic Semiconductor key credit metrics\*, 2019–2025e

USDm	2019	2020	2021	2022	2023e	2024e	2025e
Total revenues	288	405	611	777	680	768	899
NCR-adjusted EBITDA	22	68	119	202	95	132	169
NCR-adjusted EBITDA margin (%)	7.5	16.9	19.5	26.0	14.0	17.2	18.8
NCR-adjusted FFO	19	63	100	164	83	109	137
NCR-adjusted net debt	-63	-207	-254	-352	-205	-317	-437
Total assets	302	486	570	753	783	878	1,005
NCR-adjusted net debt/EBITDA (x)	-2.9	-3.0	-2.1	-1.7	-2.1	-2.4	-2.6
NCR-adjusted EBITDA/net interest (x)	-20.0	270.3	247.1	-43.9	-30.3	-72.4	-57.4
NCR-adjusted FFO/net debt (%)	-29.9	-30.3	-39.3	-46.6	-40.4	-33.5	-30.7
NCR-adjusted FOCF/net debt (%)	24.3	-8.2	-13.2	-18.5	2.1	-23.1	-19.1

Based on NCR estimates and company data. e—estimate. FFO—funds from operations. FOCF—free operating cash flow. All metrics adjusted in line with NCR methodology. \*Negative values are due to net cash position.

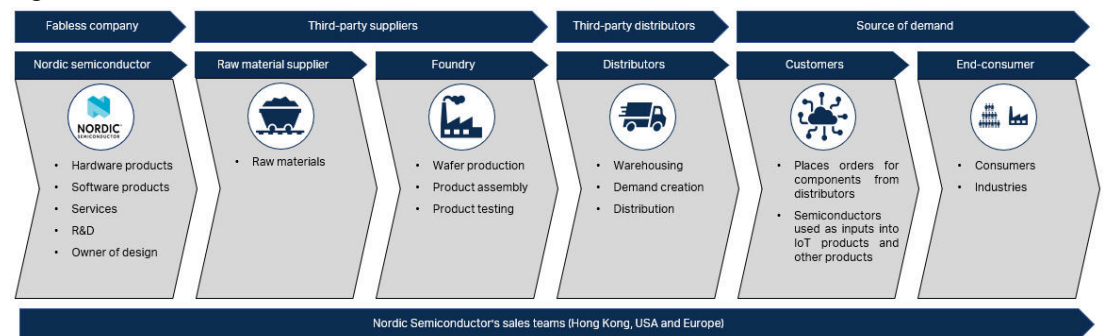
## ISSUER PROFILE

Nordic Semiconductor was established in 1983. The company specialises in wireless communication technology that powers IoT. It has been a pioneer in Bluetooth Low Energy (BLE) technology, a more durable technology than traditional Bluetooth. The company counts several major IT companies as customers, including Alibaba, Amazon, Google and Microsoft. It delivers technology for a wide range of products, including wireless PC peripherals, gaming, sport and fitness devices, mobile phone accessories, consumer electronics, toys, healthcare and automation.

Nordic Semiconductor is a 'fabless' semiconductor company, which means that production is outsourced, while the company mainly focuses on R&D and owns the design of products. Warehousing and distribution are also outsourced, although the company has its own global sales teams. Nordic Semiconductor has more than 1,500 employees, about 75% of whom work in R&D. Production and distribution are mainly based in Asia, while research and development take place in several locations in Europe and the US.

The company's shares have been listed on Oslo Stock Exchange since 1996. It mainly has institutional shareholders, the largest of which is the Government Pension Fund of Norway.

Figure 2. Illustration of Nordic Semiconductor's value chain



Source: company.

## BUSINESS RISK ASSESSMENT

Business risk assessment 'bb'

Nordic Semiconductor operates in a growing, albeit cyclical, market. We believe that the current weak market conditions are transitory and that the company's new product offering and continued strong customer relationships will boost revenues going forward. We see the focus on growing niches as positive, but also believe that the company is more vulnerable than peers due to its comparatively small size and weaker margins.

### Strong long-term demand, cyclical weakness in 2023

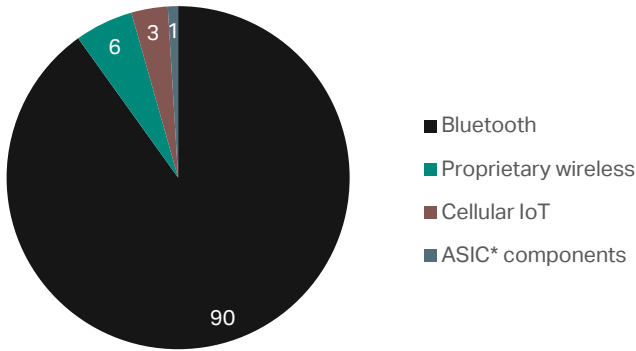
Operating environment 'bb+'

As a fabless semiconductor company, Nordic Semiconductor focuses on R&D, often in co-operation with end-customers. In this sense, customers might be said to be outsourcing their R&D to Nordic Semiconductor, resulting in new products, new features, faster time to market, improved usability and longer durability.

About half of the company's revenues in the first quarter 2023 stem from the weak consumer market (see Figure 4), while the market for connected healthcare devices currently has the strongest growth. In total, revenues were down by 21% year on year. The global semiconductor market grew by a moderate 3% in 2022, while Nordic Semiconductor's revenues increased by 27%. Most revenues stem from the BLE market, in which Nordic Semiconductor was a pioneer. However, about 40% of R&D is used to develop positions in Cellular IoT, Wi-Fi and related technologies. In general, IoT offers a large and growing market.

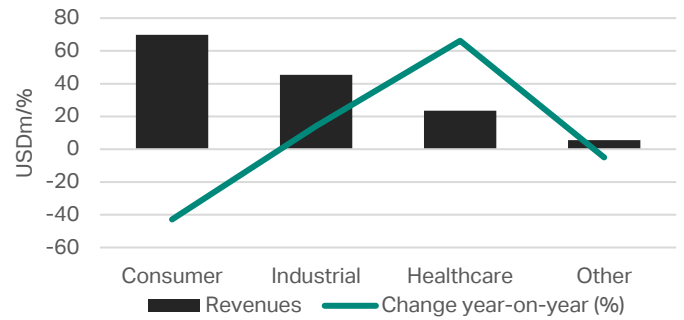
The number of connected IoT devices grew by 22% annually between 2015 and 2020 and is expected to grow by approximately 12% annually between 2020 and 2030. Growth is being driven by strong megatrends like smart homes, industrial IoT and platform ecosystems. This technology is at the heart of several systems monitoring such things as resource utilisation, power management and pollution. The longer durability of products using low-energy solutions also supports sustainability.

Figure 3. Distribution of revenue by technology (%), Q1/23



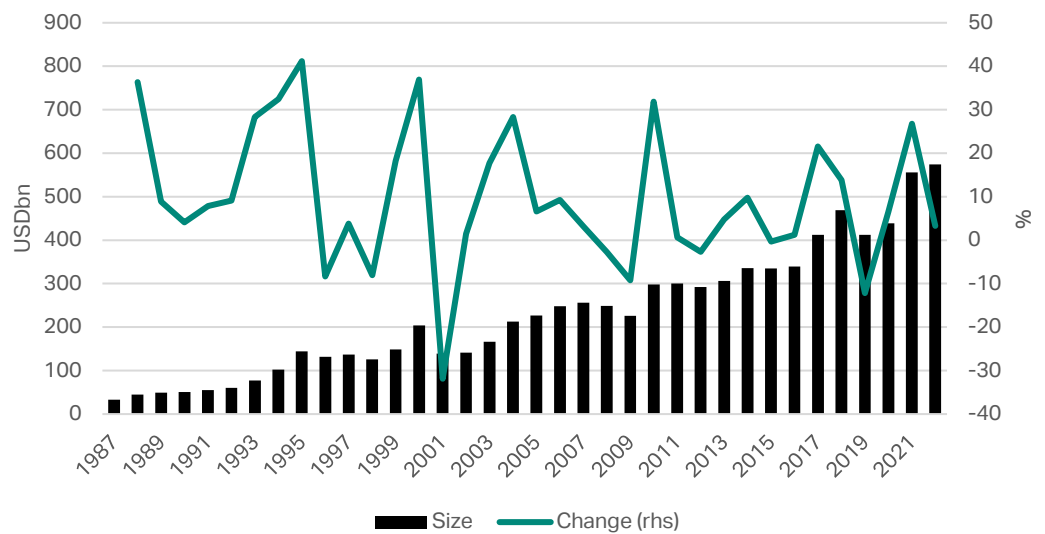
Source: company. \*Application Specific Integrated Circuit.

Figure 4. Distribution of revenues by end-product market, Q1/23



Source: company

Figure 5. Size of global semiconductor market, 1987–2021



Source: Statista, Semiconductor Industry Association.

The broader semiconductor market grew by 6% annually between 2015 and 2020, and by 7% annually over the past 20 years. Figure 5 illustrates that this industry is relatively cyclical and was significantly boosted by the COVID-19 pandemic. There is also a risk of disruptions in the company's niches, which is one reason why the company is putting R&D efforts into different technologies.

**Strong customer relationships drive market leadership in connectivity**

Nordic Semiconductor is focusing on low-energy connectivity solutions, which is a small but growing segment of the semiconductor market. This is illustrated by stronger revenue growth in 2022 than the peer group, illustrated in Figure 7 (26% vs 23%). In BLE technology, the company has a market share of more than 40% of end-product certifications (see Figure 6). While traditional Bluetooth and BLE can be regarded as substitutes to a certain extent, the narrower bandwidth of BLE prohibits certain areas of application.

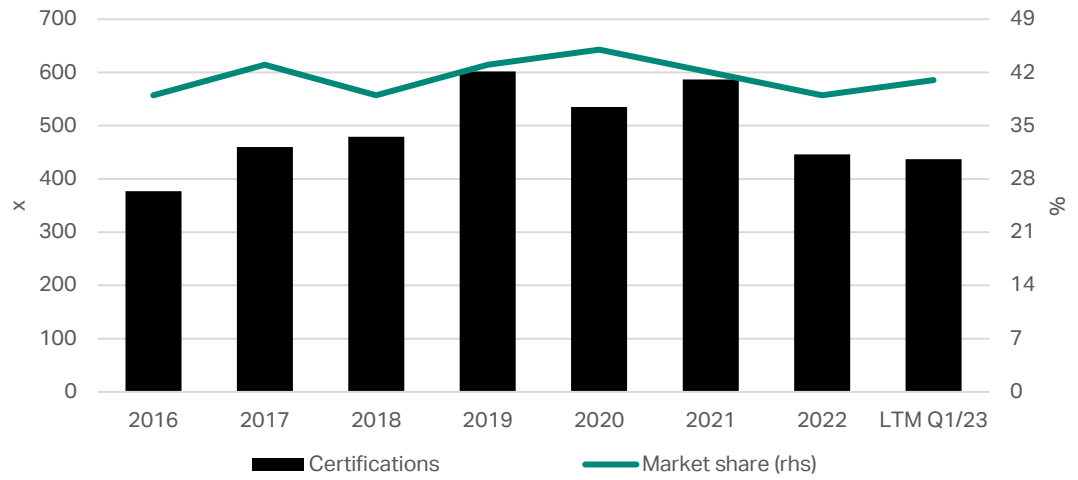
However, we view BLE as more technologically advanced and forward-looking than traditional Bluetooth for most IoT applications. We also regard the market-leading position and strong customer relationships in BLE as a platform for achieving strong positions in other technologies. Nordic Semiconductor recently launched a third generation of Bluetooth Low Energy System-on-chip (nRF54 Series), which has processing capabilities that make it suitable for the growing market for products with artificial intelligence capabilities.

The company expects a total addressable market of USD 15–20bn in 2026 and is targeting USD 2bn in revenues for that year, which equates to a market share of 10–13%. However, the company is relatively small, with less than 0.2% of global share of the semiconductor market. The fabless model has lower barriers to entry and the market is crowded. Nevertheless, significant R&D investment requirements

Market position 'bbb-'

and customers' cost of switching supplier remain significant barriers to entry. Silicon wafer shortages are an additional stumbling block for new entrants.

Figure 6. Nordic Semiconductor's number of BLE certifications and share of BLE market\*



Source: company. \*End-product certifications

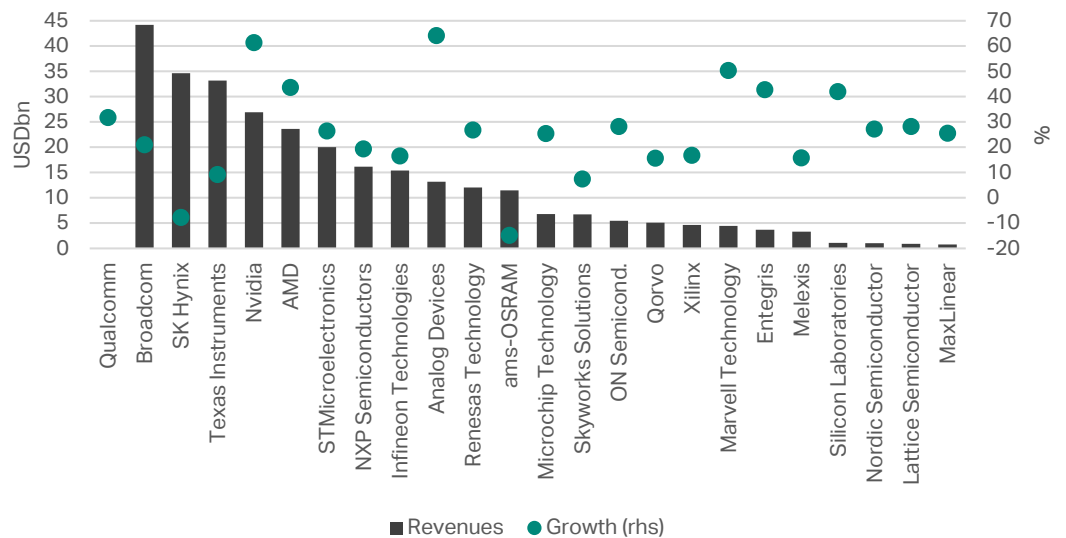
We believe that Nordic Semiconductor's greatest advantages are its pioneering position in BLE, its long-standing customer relationships and joint R&D projects. The joint development of products makes it difficult for large customers to switch to another supplier. We view the company's integration into products of leading technology companies and demand-driven development as favourable in terms of following industry trends and avoiding speculative elements of future technologies.

**A big fish in a small pond, a small fish in a big ocean**

BLE is Nordic Semiconductor's main product line and more than 40% of revenues come from the company's 10 largest BLE customers. We believe that revenues from cellular IoT, Wi-Fi and other technologies will increase relative to BLE, leading to stronger diversification of revenues from a range of technologies and products over time.

Size and diversification 'b+'

Figure 7. Semiconductor companies' revenues and growth, 2022



Source: company data

Nordic Semiconductor's sales are geographically diversified and the company has increasing diversification in customer segments, including consumer electronics, wearables, building and retail products, and healthcare, with more than 6,000 customers in total. However, we regard its small size

compared with the major players as a risk factor, given the need to invest heavily in R&D to keep up with customers' need for new products and features.

We consider the dependency on a major Taiwan-based wafer manufacturer a risk factor, particularly given current geopolitical conditions. Moreover, the manufacturer could prioritise larger accounts in the event of production constraints. We believe, however, that this factor is at least partly mitigated by Nordic Semiconductor's access to an alternative US wafer manufacturer from 2024 onwards.

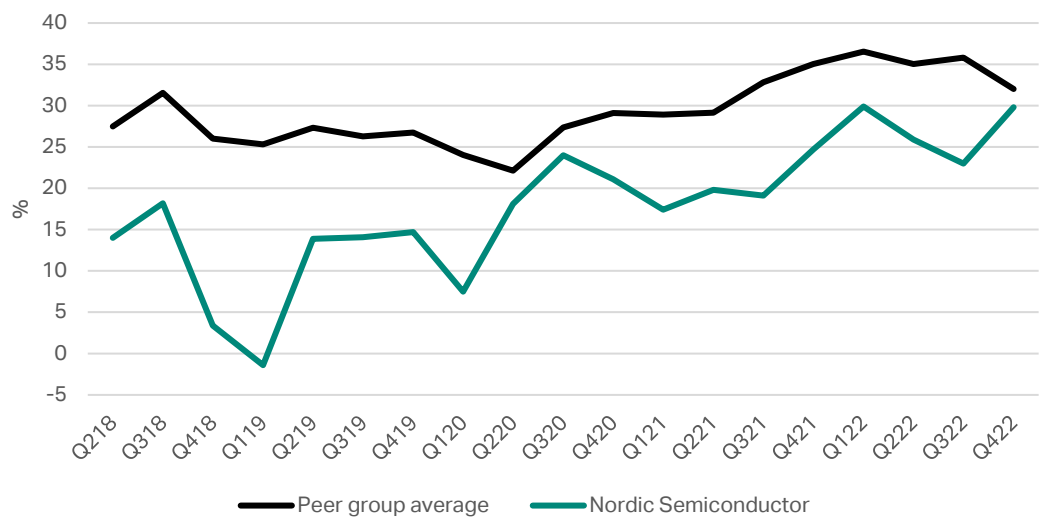
**Lower margins than peer group average**

Operating efficiency 'bb'

The lower supply of raw materials and higher costs of wafers, assembly and shipping in recent years forced Nordic Semiconductor to prioritise high-margin products and high-value customers. Together with the general price increase, this had a positive impact on margins in 2022. However, the positive product mix effect was transitory, and lower volumes and operational leverage are having a negative impact on the EBITDA margin in 2023. The EBITDA margin in the first quarter 2023 was as low as 10%, vs. 29.9% in the first quarter 2022, and the guidance for the second quarter is also subdued. This has triggered a greater focus on the company's cost control.

We do not believe that the company will meet its old EBITDA target of 25% in 2026, not least because its USD 2bn revenue target will be challenging, given that the USD 1bn target in 2023 has been suspended (we expect 0.7bn in revenues). Moreover, increased sales of lower-margin cellular chips will result in a negative mix effect from 2024 onwards. However, we still expect that higher volumes will boost the EBITDA margin from 14% in 2023 to 19% in 2025.

**Figure 8. EBITDA margins, Nordic Semiconductor and peer group average, Q218–Q422**

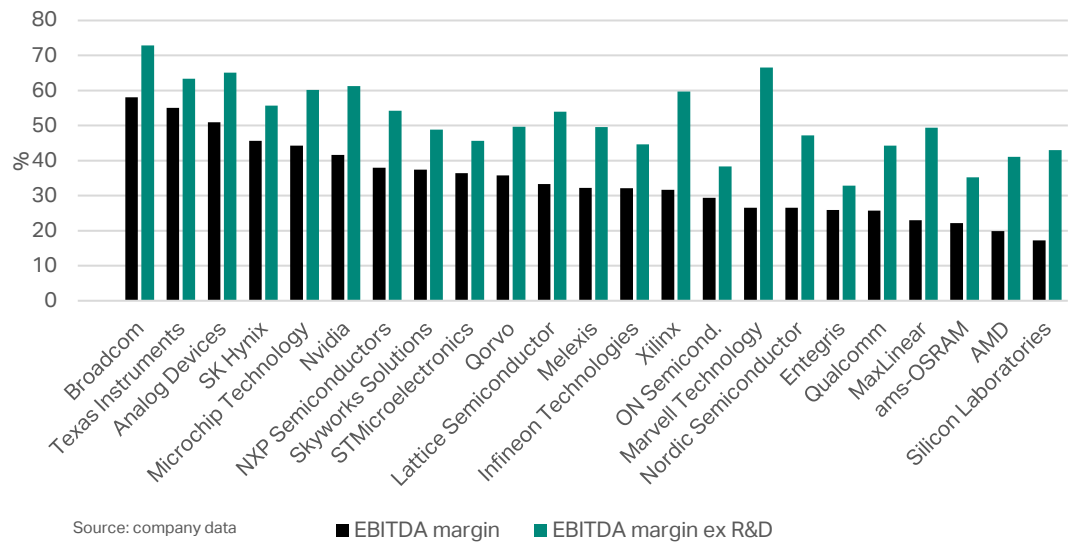


Source: data from 20 semiconductor companies.

Economies of scale are particularly evident in R&D. Nordic Semiconductor's R&D spending corresponded to 21% of revenues in 2022, down from 23% in 2021, signalling a strong commitment to continue investing 15–20% of revenues in R&D going forward. We believe this is essential to sustain a strong relationship with customers and remain competitive. The company's relative level of R&D spending in 2022 was somewhat above average for the sector (the 25 semiconductor companies in Figure 9), at 17% of revenues.

The relatively high level of R&D costs only partly explains Nordic Semiconductor's EBITDA margin of 26% in 2022 being significantly below the peer group average of 38% (the unweighted average was 34%). We believe that the company's smaller scale results in lower profitability and higher volatility in margins than larger peers, making Nordic Semiconductor more vulnerable to increased competition. We address our concerns about scale in a R&D-intensive sector in more detail in our peer calibration adjustment below.

Figure 9. EBITDA margin of semiconductor companies, 2022



Financial risk assessment 'a+'

**FINANCIAL RISK ASSESSMENT**

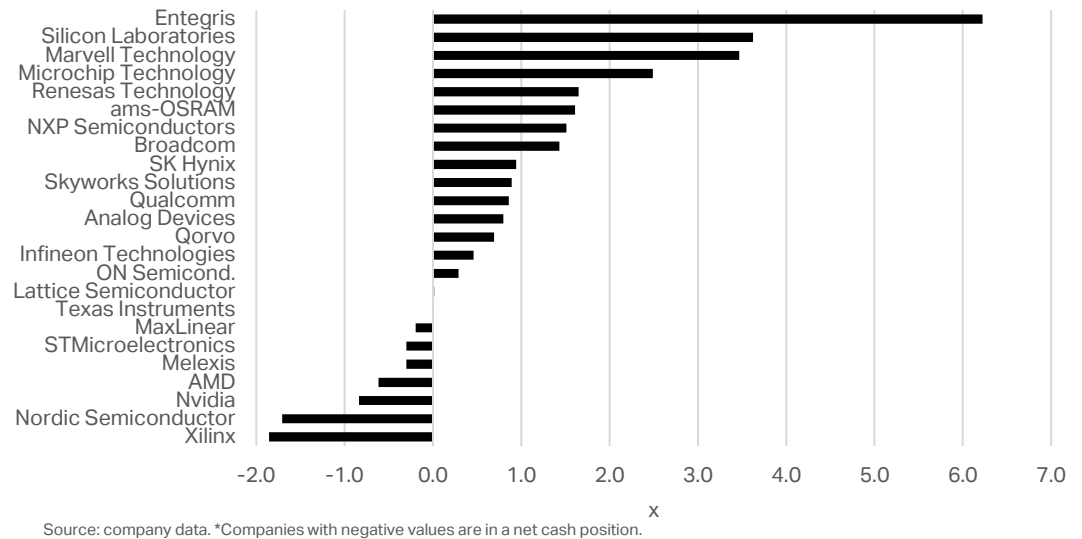
Our financial risk assessment reflects Nordic Semiconductor's robust balance sheet and net cash position, as well as strong operating cash flow. Our assessment is constrained by the need to hold cash to be able to sustain long-term relationships with major customers.

Ratio analysis 'aa'

**Pristine financial ratios, with net cash position**

At year-end 2022, Nordic semiconductor was debt-free and maintained a healthy cash balance. We believe that the company will remain in a net cash position, giving the company among the lowest gearing compared with peers going forward.

Figure 10. NCR-adjusted net debt/EBITDA\* of semiconductor companies, 2022



Our base case forecast assumes:

- revenue growth of -13% in 2023, 13% in 2024 and 17% in 2025;
- an unadjusted EBITDA margin of 14% in 2023, 17% in 2024 and 19% in 2025;
- capital spending of USD 33m in 2023, USD 35m in 2024, and USD 36m in 2025; and
- zero dividend payments in the 2023–2025 period.

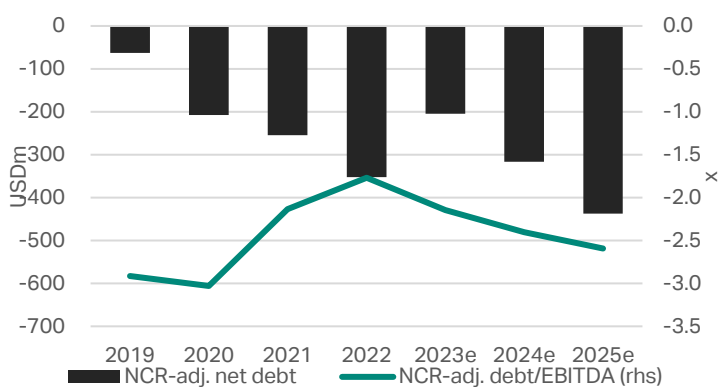
We expect this to lead to negative credit metrics, due to a net cash position and zero interest-bearing debt in the 2023–2025 period.

Figure 11. NCR's adjustments to Nordic Semiconductor's reported credit metrics, 2019–2025e

USDm	2019	2020	2021	2022	2023e	2024e	2025e
EBITDA	33	77	125	206	102	138	175
Write-down of damaged materials				3			
Capitalised development expenses	-11	-8	-6	-6	-6	-6	-6
NCR-adj. EBITDA	22	68	119	202	95	132	169
Net interest	2	1	0	5	4	2	4
Financial costs from leasing	-1	-1	-1	-1	-1	-1	-1
NCR-adj. net interest	1	-0	-0	5	3	2	3
NCR-adj. EBITDA	22	68	119	202	95	132	169
NCR-adj. net interest	1	-0	-0	5	3	2	3
Current taxes	-4	-5	-19	-43	-16	-27	-38
NCR-adj. FFO	19	63	100	164	83	106	134
Changes in working capital	-14	-29	-41	-75	-71	-14	-31
Capital expenditures	-31	-25	-31	-31	-22	-25	-26
Capitalised development expenses	11	8	6	6	6	6	6
NCR-adj. FOCF	-15	17	34	65	-4	73	83
Cash and cash equivalents	89	238	277	377	244	356	477
Adjustment of restricted cash	-2	-4	-2	-2	-2	-2	-2
NCR-adj. cash and equivalents	87	234	275	374	242	353	474
Gross debt	0	0	0	0	0	0	0
Long-term lease liabilities	20	21	14	15	30	30	30
Short-term lease liabilities	4	6	6	6	6	6	6
Retirement benefit obligations	0	0	1	1	1	1	1
NCR-adj. total debt	24	27	20	22	37	37	37
NCR-adj. cash and equivalents	-87	-234	-275	-374	-242	-353	-474
NCR-adj. net debt	-63	-207	-254	-352	-205	-317	-437

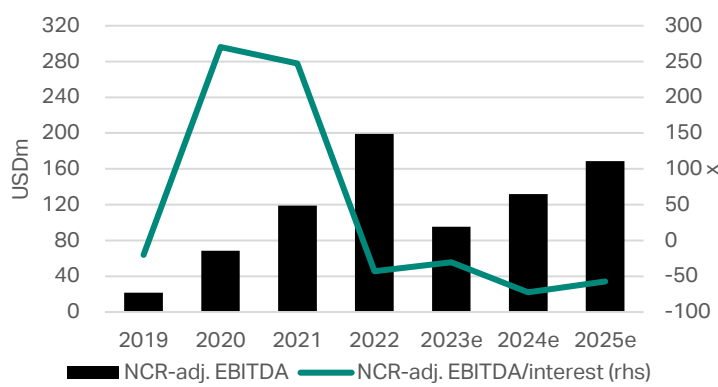
Based on company data. FFO—Funds from operations. FOCF—Free operating cash flow. e—estimate.

Figure 12. Nordic Semiconductor NCR-adj. net debt and net debt/EBITDA, 2019–2025e



Based on company data. e—estimate. All metrics adjusted in line with NCR methodology.

Figure 13. Nordic Semiconductor NCR-adj. EBITDA and EBITDA/net interest, 2019–2025e



Based on company data. e—estimate. All metrics adjusted in line with NCR methodology.

**Required to be in a net cash position**

Risk appetite 'a'

Nordic Semiconductor's is dependent on strong relationships and joint projects with major US-based corporations, which usually require it to have a strong cash balance, typically two years of R&D spending, to finance projects. This is the main reason why we believe the company will be in a net cash position over the next three years. However, although this may be regarded as a soft requirement, the need to hold cash to maintain sustainable business relationships is also a constraint on our financial risk assessment.

Nordic Semiconductor has a USD 150m sustainability-linked credit facility that expires in June 2025, with a 2-year extension option. The facility has a covenant requiring an equity ratio of at least 40%. The company's target is to maintain this above 50%. The equity ratio was 77% as of 31 Mar. 2023.

To maintain or amend the capital structure, Nordic Semiconductor may purchase up to 10% of its own shares on the market, pay dividends to shareholders, pay back capital to shareholders or issue new shares. The company has not paid dividends since 2011 and has mainly repurchased shares to fulfil employee incentive schemes.

Nordic Semiconductor has made only small acquisitions historically, mainly with the aim of obtaining technology and R&D capabilities. For example, in March 2023 the company completed the acquisition of US memory technology specialist Mobile Semiconductor, which currently has 10 employees. We believe that the company will continue to make similar acquisitions.

Nordic Semiconductor is exposed to credit risk related to both its distributors and certain end-customers. Its main counterparties are leading international distributors of electronic components based in Asia. The company has historically not suffered any significant credit losses.

The company is exposed to currency risk, as sales revenues and direct production costs are almost entirely in USD, while operating expenses are in NOK and EUR. The company publishes its accounts in USD, with profits translated into NOK for tax purposes. We note that Nordic Semiconductor does not use any financial instruments to hedge currency risk. A 1% increase in the USD/NOK exchange rate would translate into USD 0.5m in additional profit before tax, all other things being equal.

#### ADJUSTMENT FACTORS

Adjustment factors  
lower rating one notch

We adjust our indicative credit assessment down by one notch to reflect the company's small size relative to the major semiconductor companies in an R&D-intensive sector. We consider the company's liquidity and ownership as neutral rating factors.

#### Liquidity

Liquidity adequate

We assess Nordic Semiconductor's liquidity position to be adequate, with surplus liquidity sources amounting to USD 428m. The company is in good standing with its banks and has good access to the capital markets. As of the end of the first quarter 2023, the company had not used any of its revolving credit facility.

We estimate the following primary funding sources for the 12 months ending 31 Mar. 2024, totalling USD 443m:

- USD 62m in funds from operations (FFO), accounting for 75% of estimated NCR-adjusted FFO for the next 12 months;
- USD 150m in committed available credit facilities; and
- USD 231m in unrestricted cash and equivalents as of 31 Mar. 2022.

We estimate the following uses of funds for the 12 months ending 31 Mar. 2024, totalling USD 15m:

- USD 8m in committed capital spending; and
- USD 7m in repayment of lease instalments.

#### Environmental, social and governance factors

ESG factors adequate

We believe Nordic Semiconductor's environmental, social and governance (ESG) efforts are supportive of the company's overall competitive position. The main ESG issues that could affect the rating are factors that could contribute to loss of revenue, increased operating costs, increased capital spending, a decline in the value of assets, decreased access to funding or loss of operating rights. In this context, we believe that the company's main ESG-related credit risks relate to greenhouse gases (GHG), resource utilisation, corruption, and employee safety and relations.

Nordic Semiconductor incorporated ESG targets in its incentive programmes in 2021. The company is a signatory of the UN Global Compact. Suppliers are evaluated annually for potential risks regarding ESG-related issues based on the Responsible Business Alliance (RBA) risk assessment model. Nordic



Semiconductor requires all tier 1 manufacturing partners to sign an agreement to comply with the RBA Code of Conduct and for them to also require the same of their suppliers.

**Figure 14. Nordic Semiconductor ESG considerations**

Issue	Risk	Mitigating efforts	Results and targets for 2023
CO <sub>2</sub> and other GHG	New regulations and increased taxation could reduce operating efficiency. Regulatory requirements could increase capital spending.	In 2020, Nordic Semiconductor initiated a renewable energy programme, aimed at reducing GHG emissions (net-zero target for Scopes 1 and 2).	55%/22% reduction in GHG emissions (Scope 2/3) per full-time employee in 2022. Targeted reduction of GHG emissions in 2023 by 50% for Scope 2.
Resource utilisation	Increased demand for environmentally friendly design. Risk of loss of customers.	In 2021, a programme to reduce the use of plastic through recycling was established. Requires compliance with the Hazardous Substances Specification for suppliers.	Ambitious targets for use of recycled plastic and environmentally friendly materials.
Corruption and fraud	Reputational risk, risk of loss of business and bribery fines. Risk of black-market sales.	Review and revision of anti-corruption policy in 2021. 90% of employees participated in compliance and integrity webinars in 2021.	Zero confirmed incidents of corruption in last three years.
Employee safety and relations	Reduced operating efficiency due to loss of key personnel or sick leave. Headline risk.	Employee turnover target of <5%. A third-party whistleblower channel is available. RBA has a reporting channel for workers to provide feedback.	Employee turnover in 2022 (2021) was 6.6% (5.6%). Women account for 14% (12.5%) of management roles. Women make up 43% (43%) of shareholder-elected Board members.

Source: company.

**Peer calibration**

We have lowered the rating by one notch to reflect Nordic Semiconductor's small size relative to the major semiconductor companies. This is a particular risk factor in a R&D-intensive industry, where Nordic Semiconductor's R&D spending is dwarfed by players that may choose to compete head on in the same niches, possibly with new proprietary technology. The larger scale and diversity of global peers also means they have greater capital and flexibility to spend on new technologies in a rapidly developing sector.

**OWNERSHIP ANALYSIS**

Nordic Semiconductor has a dispersed ownership structure. Excluding Accelerator Ltd., the major shareholders are primarily institutional investors. The company's shares are listed on Oslo Stock Exchange, and under normal circumstances it has good access to the equity market. The company's last share issue was a USD 125m private placement in September 2020.

Peer calibration negative

Ownership neutral

Figure 15. Nordic Semiconductor ownership structure, 1 May 2023

OWNER	SHARE OF VOTES AND CAPITAL (%)
State Street Bank and Trust Comp.	12.1
Accelerator Ltd	9.1
Folketrygdfondet	9.1
Smallcap World Fund Inc.	6.3
Verdipapirfondet DNB Teknologi	4.1
The Bank of New York Mellon	2.0
Robeco Capital Growth Funds	1.8
State Street Bank and Trust Comp.	1.8
Morgan Stanley & Co.	1.7
JP Morgan Chase Bank. London	1.6
<b>Top 10 owners</b>	<b>45.5</b>
Other	54.5

Source: company.

### ISSUE RATINGS

Nordic Semiconductor has no outstanding debt instruments or other interest-bearing debt. If the company issues senior unsecured debt, we would likely rate such instruments in line with the 'BBB' issuer rating, reflecting the company's flat debtor hierarchy.

### METHODOLOGIES USED

- (i) [Corporate Rating Methodology](#), 8 May 2023.
- (ii) [Rating Principles](#), 24 May 2022.
- (iii) [Group and Government Support Rating Methodology](#), 18 Feb. 2022.

**Figure 16. Nordic Semiconductor key financial data, 2019–Q1 2023**

USDm	2019	2020	2021	2022	LTM/ Q1/23
<b>INCOME STATEMENT</b>					
Total revenue	288	405	611	777	739
Gross profit	147	214	327	437	405
EBITDA	33	77	125	206	166
EBIT	9	46	87	162	120
Net financial items	0	-3	0	6	11
Pre-tax profit	10	43	87	167	131
Net profit	7	38	71	122	33
<b>BALANCE SHEET</b>					
Property, plant and equipment	27	28	34	36	35
Intangible assets	45	56	49	2	10
Other non-current assets	27	29	25	38	40
Non-current assets	99	114	109	26	124
Cash and cash equivalents	91	243	279	102	210
Other current assets	129	159	209	377	233
Total current assets	220	402	488	297	321
Total assets	318	516	597	674	554
Total equity	232	402	458	584	592
Long-term borrowings					
Retirement benefit obligations	20	21	14	15	14
Long-term lease liabilities	0	0	1	1	1
Non-current liabilities	20	21	15	16	14
Current liabilities	66	92	124	177	158
Total equity and liabilities	318	516	597	776	764
<b>CASH FLOW STATEMENT</b>					
Pre-tax profit	10	43	87	167	131
Adjustment for non-cash items	24	52	50	50	-71
Cash flow before changes in working capital	33	95	137	217	60
Changes in working capital	-14	-29	-41	-75	-79
Operating cash flow	20	66	96	143	-19
Cash flow from investing activities	-31	-38	-31	-31	-39
Cash flow from financing activities	-1	124	-27	-11	-12
Cash and cash equivalents at start of year	104	91	243	277	304
Cash flow for the year	-13	152	37	100	-70
Cash at year-end	91	243	279	377	233

Source: company. LTM—last 12 months.

**Figure 17. Nordic Semiconductor rating scorecard**

<b>Subfactors</b>	<b>Impact</b>	<b>Score</b>
Operating environment	20.0%	bb+
Market position	10.0%	bbb-
Size and diversification	10.0%	b+
Operating efficiency	10.0%	bb
<b>Business risk assessment</b>	<b>50.0%</b>	<b>bb</b>
Ratio analysis		aa
Risk appetite		a
<b>Financial risk assessment</b>	<b>50.0%</b>	<b>a+</b>
<b>Indicative credit assessment</b>		<b>bbb+</b>
Liquidity		Adequate
ESG		Adequate
Peer calibration		-1 notch
<b>Stand-alone credit assessment</b>		<b>bbb</b>
Support analysis		Neutral
<b>Issuer rating</b>		<b>BBB</b>
Outlook		Stable
<b>Short-term rating</b>		<b>N3</b>

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