

# Nordic Iron Ore

Materials  
Sweden

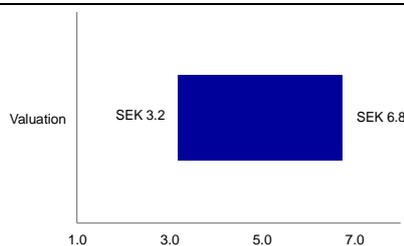
## KEY DATA

Stock country	Sweden
Bloomberg	0612616D SS
Reuters	NIO.ST
Share price (close)	SEK 3.66
Free Float	
Market cap. (bn)	EUR 0.01/SEK 0.07
Website	www.nordicironore.se
Next report date	01 Feb 2019

## PERFORMANCE



## VALUATION APPROACH



Source: Nordea estimates

## ESTIMATE CHANGES

Year	2018E	2019E	2020E
Sales	n.a.	n.a.	n.a.
EBIT (adj)	n.a.	n.a.	n.a.

Source: Nordea estimates

### Nordea Markets - Analysts

**Christian Kopfer**  
Senior Analyst, Sector Coordinator

**Carl Ragnerstam**  
Analyst

## Preparing for the next chapter

Nordic Iron Ore (NIO) is a junior mining and exploration company striving to produce a high-grade product with an average Fe grade of 69%. We estimate that NIO's Blötberget property will be able to produce ~17 million tonnes of concentrate and generate revenue of SEK 13bn during the life-of-mine.

### All necessary concessions and permits in place

NIO has all exploitation concessions and permits needed to set up a producing mine. The key exploitation concession for the Blötberget property was granted in 2011 and runs for 25 years, enabling NIO to move forward with its mining project and to start construction. The only thing still pending is a feasibility study, which we expect to be completed in 2019.

### Structural demand for high-grade iron ore

NIO is striving to produce a high-grade iron ore concentrate with an average Fe grade of 69%. The premium for high-grade iron ore has existed for several years and has been trending upwards since 2014, partly owing to increased demand for the product, mainly from China, as high-grade iron ore has less of a negative environmental impact.

### Close proximity to a deepwater port

One prerequisite for a mine to function efficiently is that proper infrastructure for transportation of the product is secured. In the case of NIO, the Ludvika mines are strategically located in central Sweden with existing infrastructure in relatively close proximity to several ports in Gävle, Oxelösund, Uddevalla and Lysekil. In addition, NIO has signed a letter of intent with the Austrian logistics company Cargo Austria AG (a subsidiary of ÖBB) for future transportation of iron ore products to the deepwater port located in Oxelösund.

### Valuation indicates a fair value range of SEK 3.2-6.8

We use a sum-of-the-parts valuation combined with a sensitivity analysis to derive an equity value per share of SEK 3.2-6.8 for Nordic Iron Ore. We value the Blötberget property at SEK 0.5bn, applying a DCF-based valuation approach. Adding our valuation for the Håksberg and Väsman properties, we arrive at a total risk-adjusted value of SEK 0.7bn. In addition, we assume that Blötberget will be financed using 75% equity and 25% debt. Including new equity, we derive a fair equity value range of SEK 3.2 to 6.8 per share. Our sensitivity analysis shows that a USD 1 change in the underlying iron ore price affects the equity value by SEK 0.2 per share.

## SUMMARY TABLE - KEY FIGURES

SEKm	2014	2015	2016	2017	2018E	2019E	2020E
Total revenue	n.a.	n.a.	n.a.	n.a.	0	0	0
EBITDA (adj)	-6	-7	-8	-9	-9	-15	-18
EBIT (adj)	-11	-7	-8	-9	-9	-15	-18
EBIT (adj) margin	n.a.	n.a.	n.a.	n.a.	n.m.	n.m.	n.m.
EPS (adj)	n.a.	n.a.	n.a.	n.a.	-0.54	-0.04	-0.05
EPS (adj) growth	n.a.	n.a.	n.a.	n.a.	n.a.	93.4%	-40.7%
DPS (ord)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EV/Sales	n.a.	n.a.	n.a.	n.a.	n.m.	n.m.	n.m.
EV/EBIT (adj)	n.a.	n.a.	n.a.	n.a.	n.m.	n.m.	n.m.
P/E (adj)	n.a.	n.a.	n.a.	n.a.	n.m.	n.m.	n.m.
P/BV	n.a.	n.a.	n.a.	n.a.	0.7	1.0	1.1
Dividend yield (ord)	n.a.	n.a.	n.a.	n.a.	0.0%	0.0%	0.0%
FCF Yield bef acq & disp	n.a.	n.a.	n.a.	n.a.	-54.9%	-38.3%	-61.0%
Net debt	-20	-13	13	-2	35	-825	158
Net debt/EBITDA	3.2	1.8	-1.7	0.3	-3.9	54.6	-8.7
ROIC after tax	-13.8%	-7.4%	-7.1%	-8.4%	-7.7%	-3.5%	-1.5%

Source: Company data and Nordea estimates

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# Factors to consider when investing in Nordic Iron Ore

While Nordic Iron Ore (NIO) is still a junior mining company which has yet to initiate production of iron ore, several factors make the company interesting. In particular, we find that the geographical location of the Blötberget project and the significant existing infrastructure will limit operating expenses. Moreover, all the necessary permits to initiate production have been secured and operations could be started as early as in 2022. However, as with other junior mining companies, there are several risks to consider, perhaps the most significant of which relates to liquidity.

## All mining concessions and permits in place

There are many permits needed for mining activities regarding prospecting, as well as others such as environmental and building permits, all of which need to be secured before construction and mining/exploration can begin. Each permit has different requirements that need to be fulfilled. At present, NIO has all the necessary permits in place for the initial project in Blötberget and should be able to produce iron ore of verified high quality.

NIO's exploitation concession at Blötberget runs for 25 years

NIO's application for a mining licence for the Blötberget area was granted in 2011. The mining concession runs for 25 years with the possibility of being extended. This means the company has secured a very important part, enabling it to proceed towards initiating mining and production. There is still a final feasibility study in progress, however, which the company expects to be completed in early 2019. We base our forecasts on mining operations being initiated in 2022.

Infrastructure from previous mining operations in place

## Previously active mine brings infrastructure

All concessions besides those covered by the Väsman field, and parts of Håksberg, are so-called 'brownfields', which means that extraction has previously taken place. This means there is already infrastructure in place, such as drilled shafts underground. While the installations above ground will not be used, the substantial historical documentation and the infrastructure are of importance for the resumption of prospecting at Blötberget. Consequently, lower capital investments will be needed in order to initiate construction of the mines. Moreover, the previously drilled shafts will assist the company in beginning extraction earlier than would otherwise be viable.

High-grade iron ore reduces cost in steelworks and coal consumption in the steel production process

## Premium-quality concentrate yields a higher price

High-grade iron ore is generally sold at a premium to lower-grade ore, which stems from the fact that high-grade iron ore can help production costs in steelworks production processes, and coal used in steel plants declines due to less fuel being used to melt non-ferrous minerals. Moreover, high-grade iron ore also has environmental advantages over low-grade iron, in terms of reducing carbon dioxide and other emissions. Even though the future price level of iron ore is uncertain, particularly for low-grade iron ore, the factors mentioned above could favour high-grade iron such as the 69% concentrate that NIO plans to produce.

## Attractive geographical location

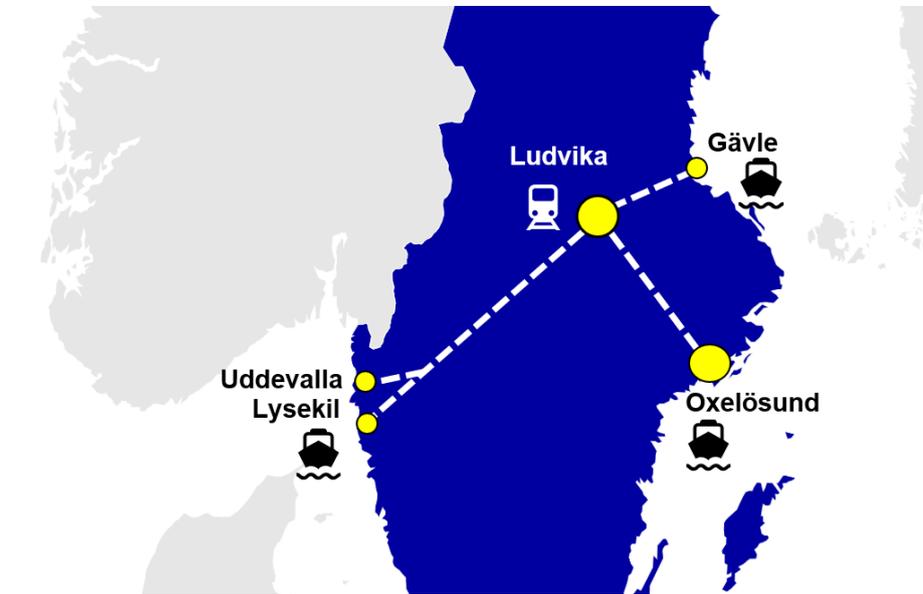
A favourable location is imperative for having cost-effective mining activities, as location determines the cost of transport, and the availability of the necessary infrastructure, such as water, railways, electricity and roads. Moreover, proximity to other general services, for example housing, telecommunications, medical care and schooling, is important for the company and its employees.

Nordic Iron Ore's mine operations will take place close to the town of Ludvika, which will provide access to these infrastructural resources, essential for the process of mining and transporting iron ore products. As such, we believe this will limit the company's capex needs outside the core mining activities, adding to the future cash flow potential.

Letter of intent signed with a logistics company

Since the company intends to sell its products internationally, links to rail transportation are essential. Hence, it is positive that Nordic Iron Ore has signed a letter of intent with Rail Cargo for transportation from the beneficiation plant to Oxelösund. Moreover, the proximity of the railways connected to Ludvika will provide it with viable options for different routes, as shown below.

#### LUDVIKA MINES' INFRASTRUCTURE



Source: Company data and Nordea

Blötberget will be able to produce 2.7 Mt of iron ore and 1.3 Mt of concentrate per year, on average, until 2034

#### Production set to initiate in 2022

We base our estimates on the Blötberget project. We forecast that Blötberget will be able to produce 2.7 million tonnes (Mt) of iron ore and 1.3 Mt of concentrate per year, on average, until 2034, when we expect closure and a natural fade. This implies total revenue for the mines of USD ~1.5bn or ~SEK 14bn (at a USD/SEK rate of 9.0), based on production of 17 Mt of concentrate, at a real price of USD 80 per tonne. We further estimate that NIO's revenue will ramp up during the first two years of the mine until 2024 and peak around 2030. Further, we forecast accumulative free cash flows over the mine's lifetime of approximately SEK 2.9bn. However, we forecast a total capital need of SEK 2bn until first ore, of which we believe NIO should be able to finance SEK 0.5bn (25%) through debt and SEK 1.5bn (75%) through raising equity.

# Risks

The mining industry is characterised by high volatility and operational as well as market-driven risks. Pre-revenue mining stocks such as Nordic Iron Ore offer potential for considerable profit but are often associated with high risk. Moreover, exploration and prospecting do not guarantee results, while they demand substantial amounts of invested capital. Some of the most important risks are highlighted below.

As iron contracts are decided quarterly, price volatility can have a direct impact on revenue potential

## Price volatility of commodities

Commodities are known as one of the more volatile asset classes, where prices can differ substantially from day to day and quarter to quarter. As iron contracts are decided quarterly in accordance with spot prices, short-term shifts in iron prices will directly impact the revenue Nordic Iron Ore can generate from potential deposits. There are numerous factors as to why there is volatility in commodity prices, which includes but are not limited to:

- The economic cycle and the effect it has on economic activity, predominantly in major industrialised and industrialising countries
- Increasing supply from production, disinvestment and scrap
- Speculative positions taken by investors
- Increased or decreased taxes, tariffs and other regulation
- Availability of substitute materials

The price of iron ore has fluctuated considerably during the past five-year period. The average volatility during this time amounts to 23% but peaked at 35% due to decreased demand for steel in Asia. As the final product for iron is steel – which is heavily used in construction and building – prices have a strong correlation with economic cycles. During downturns, iron ore pricing could be affected more than other metal commodities.

Success in exploration and prospecting is certainly not guaranteed

## Exploration risks

Exploration and prospecting for natural resources are activities associated with high uncertainty. While costs in this stage can be profound, success is certainly not guaranteed and there is a risk that no economically minable resources, or only small amounts, are identified. As Nordic Iron Ore is a junior mining company, it has not yet started extracting minerals and is still in the process of exploring and prospecting, making it vulnerable to these risks.

While Blötberget and Håksberg are so-called brownfield sites, meaning there has been previous exploration in the area, the Väsman field is unexplored, decreasing the reliability of measured, indicated and inferred mineral assets in comparison, resulting in no guarantee that the underlying assets conform to the estimates provided from exploration. Nordic Iron Ore therefore needs to explore further to provide more accurate estimates.

Mine development is partly dependent on accurate estimates

## Risks related to mineral estimates

Estimates of mineral reserves are one of the main factors used as the basis for planning mining operations. For instance, feasibility studies are used to assess the need for capital and costs for initiating operations, based on estimates. Therefore, mine development is, to a certain degree, dependent on them being accurate.

As estimates are based on probabilistic analysis of relatively small data samples collected from drill holes, they are subject to ample uncertainty. Subsequently, there is a risk that the measured, indicated or inferred iron ore partly or entirely does not exist, is not economically minable, or is in other ways not as valuable as previously thought. For Nordic Iron Ore, this risk is somewhat mitigated by the fact that mineral extraction has previously taken place at Blötberget and Håksberg, as it proves the historical existence of economically minable iron in the fields.

Valuation methods are affected by volatile commodity prices

### **Pricing and profitability**

Valuation techniques for mining stocks often measure the value of the company's mineral resources in relation to its enterprise value. As the value of these resources depends on volatile market pricing, mining stocks can also be volatile.

As previously explained, estimates of the size of deposits are associated with uncertainty. This creates additional issues in making financial projections. Furthermore, planning during development is usually based on recommendations from feasibility reports. It is within these reports that the capex needs of a project are estimated. If results from the feasibility report are inaccurate, the economic profitability of a project might differ from expectations. Moreover, delays may occur in mine development, incurring more costs as time passes. There are several other factors affecting the profitability and estimates of a mining project including:

- A difference in tonnage and iron content in the iron ore reserves
- Inaccuracies of estimates for beneficiation, ie the reachable iron content in processed products
- Quality and size of data on which estimates are made
- Potential delays in the development and construction of projects, possibly due to geographical conditions proving to be more challenging than expected

The lack of cash flow results in a need for external funding

### **Funding risk**

Mine development can take years until ore extraction can be initiated, during which time the need for investments can be significant. The lack of cash flow during this period therefore results in a need for projects to be funded by other means. Nordic Iron Ore's ability to raise new capital will be dependent on a multitude of different factors, for instance:

- Iron price movements
- Financial market conditions
- Operational performance
- The company's financial position

The re-opening of the Ludvika mines is highly dependent on capital investments, both to fund exploration but even more so, the potentially imminent development of mining operations at Blötberget. If any of the factors mentioned above were to turn unfavourable, the company's ability to complete these projects would likely be limited.

# Valuation

We use a sum-of-the-parts valuation combined with a sensitivity analysis to derive an equity value per share of SEK 3.2-6.8 for Nordic Iron Ore. We value the Blötberget property at SEK 0.5bn applying a DCF-based valuation approach. Adding our valuation for the Håksberg and Väsman properties, we arrive at a total risk-adjusted value of SEK 0.7bn. In addition, we are assuming that Blötberget will be financed through 75% equity and 25% debt. Including new equity, we derive a fair equity value range of SEK 3.2 to 6.8 per share. Our sensitivity analysis shows that a USD 1 change in the underlying iron ore price impacts the equity value by SEK 0.2 per share.

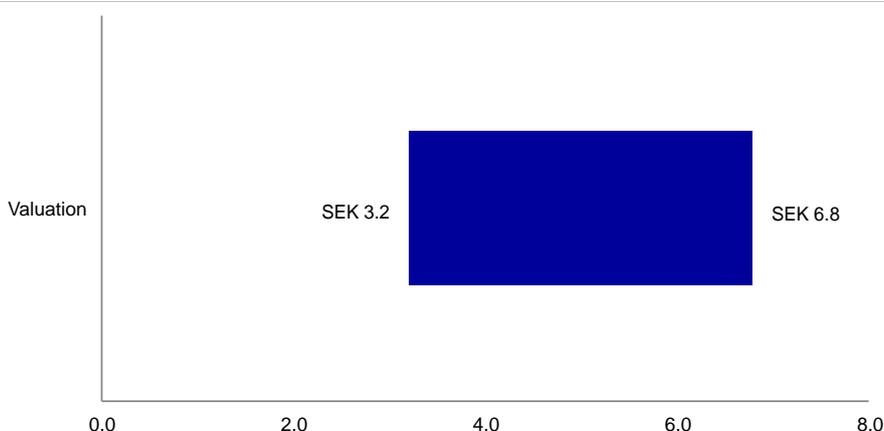
We estimate NIO's equity value range at SEK 3.2-6.8 per share

Given the phase that NIO is in at the Blötberget property and that a feasibility study into constructing a producing mine is in the final stages, we find a DCF-based valuation approach the most appropriate method for Blötberget.

Based on our earnings outlook in combination with a WACC of 10%, we arrive at a base-case value of SEK 0.5bn for Blötberget, equal to approximately USD 3 per tonne of M&I and Inferred resources. We believe it is fair to apply this resource multiple to the Håksberg and Väsman properties with a risk weight of 50% and arrive at approximately SEK 0.2bn for these assets.

Given our assumption that 75% of the future capital required will be financed through equity and 25% through debt, we arrive at a fair equity value range of SEK 3.2-6.8.

## EQUITY FAIR VALUE RANGE PER SHARE, SEK



Source: Company data and Nordea estimates

### Income or cash flow-based method

Income or cash flow-based valuation approaches are widely used for mineral development properties such as NIO's; properties where a mineral resource has been identified via a pre-feasibility or feasibility study but is not yet financed or under construction. Such projects could typically be on a site where a previous production mine has been operating, as is the case for NIO.

### DCF valuation of Blötberget

A common way of valuing a business is by using a discounted cash flow analysis (DCF). The core of the DCF analysis is to discount free cash flows at the weighted cost of capital (WACC) to arrive at their present value. The WACC takes into account the equity and debt investors of a company and is therefore dependent on the capital structure of a company.

DCF is one of the most common ways to value a business

One of the main benefits of a DCF is that it offers a structured way to arrive at the intrinsic value of a business. The DCF can be broken down into three different steps: 1) discount a company's free cash flow at WACC to derive the company's total EV; 2) identify which parts of the total EV relate to debt holders and non-equity claims; and 3) deduct all components that are not related to the equity holders' claim to derive the equity value for the company. Once the total equity value of the company has been calculated, the share price can be computed by dividing the total equity value by the total number of the company's outstanding shares.

#### OPEX 2022-34, USD PER TONNE

Mining	22.2
Processing	6.5
Railway	9.2
Port handling	6.5
Other	4.7
G&A	4.0
<b>Total</b>	<b>53.2</b>

Source: Company data and Nordea estimates

#### WACC BREAKDOWN

Equity	75%
Debt	25%
Tax rate	22%
Cost of equity	8.8%
After tax cost of debt	5.5%
Small cap premium	2.0%
<b>WACC</b>	<b>10.0%</b>

Source: Company data and Nordea estimates

Our DCF valuation is based on Blötberget being able to produce roughly 35 million tonnes (Mt) of iron ore and 17 Mt of high-grade concentrate during the life-of-mine, implying an average process weight recovery of 47% during the run-of-mine and yielding total revenue of approximately SEK 13.7bn.

Operating costs mainly relate to mining operations, accounting for 37% of total operating costs. We estimate this to increase by 2% per year during the run-of-mine. We estimate the capex needed to set up the mine at USD 200m in initial capex and around USD 30m in sustaining capex during the mine's lifecycle.

Given a cost of equity of 8.8%, a cost of debt of 5.5%, and a small cap risk premium of 2.0%, we estimate a WACC of 10% based on 75% equity and 25% debt financing.

The accumulated free cash flow (FCF) over the mine's estimated 13 years of operations totals roughly SEK 3bn, to which we apply our calculated WACC and calculate an NPV for Blötberget of SEK 0.5bn. This corresponds to an IRR of just shy of 15% and an EV/resources multiple of approximately USD 3 per tonne of M&I and Inferred resources.

#### DCF BREAKDOWN FOR BLÖTBERGET

<b>Product prices (USD/t)</b>			
62% delivered to China, Qingdao	79.2	<b>WACC</b>	10%
Premium per % for 65% vs 62%	5.7	<b>Life-of-mine</b>	13 years
69% delivered to China, Qingdao	110.9		
Premium per % for 69% vs 62%	4.5		
<b>Shipping costs (USD/t)</b>			
	22.2		
<b>Net price FOB Oxelösund</b>			
	88.7		
<b>Mined resources (Mt)</b>			
Ore	34.7		
- Process weight recovery (%)	49%		
Concentrate (69%)	16.8		
<b>Accumulative numbers of expected life of mine, SEKm</b>			
Revenues	13,669		
Opex	-7,880		
<b>EBITDA</b>	<b>5,788</b>		
<b>Capex</b>			
- Project capex	1,803		
- Sustaining capex	276		
<b>FCF</b>			
	<b>2,945</b>		
<b>NPV</b>			
- USDm	55		
- EV/Resource (SEK/t)	2.7		
<b>IRR (%)</b>			
	14.6%		

Source: Company data and Nordea estimates

#### Comparable transactions and relative valuation

A comparable transactions approach is built on finding the value of a company's business by comparing M&A transactions and benchmarking them against one another. A relative valuation approach is similar to this, calculating specific multiples and benchmarking against peers, ie other businesses that are similar to the company being valued. Some common multiples used for mining companies are: EV/resources (USD/tonne of resources), EV/reserves (USD/tonne of reserves), EV/operating cash flow, EV/EBIT, EV/earnings and EV/NPV.

Relative valuation is easy to apply and makes it quick to find the equity value

One of the main benefits of this approach is that it can be easily applied, which makes it quick to arrive at the equity value. This is particularly the case for junior mining companies where limited information about resources is available, which can make it difficult to estimate future cash flows. However, there are also several negative aspects to this approach, such as it being difficult to find peers with similar mining projects or peers in the same phase of their mining projects as the company being valued. This might result in a subjective judgment when selecting peers that could result in an unfair value of the business.

We choose not to use a comparable transactions or relative valuation approach

### Håksberg and Väsman valuation using EV/resources

In NIO's case, we choose not to use a comparable transactions or relative valuation approach as our primary valuation method, because the differences are too big between Håksberg/Väsman and other listed iron ore projects/resources.

We use an EV/resources multiple to value Håksberg and Väsman

Instead of a comparable transactions or relative valuation approach, we apply the calculated EV/resources multiple retrieved for Blötberget and apply it to the Håksberg and Väsman properties. We believe this is a fair valuation approach, as there should be meaningful synergies between Blötberget and Håksberg/Väsman, as a significant part of the Blötberget infrastructure, including the mill, could be used. These factors suggest that Håksberg/Väsman should enjoy a higher resource multiple. However, on the other hand, the capital required for these properties is more uncertain than for Blötberget.

Furthermore, we apply risk weights of 50% to both Håksberg and Väsman given the early stages at which these potential projects are. Finally, we apply discount factors of 0.6, which is driven by WACC of 10% compounded for five years, as we assume these properties potentially could be in production five years after Blötberget.

In all, this gives us a total EV of SEK 0.2bn for Håksberg/Väsman, equal to SEK 0.5 per share if we take into account the financing structure of 75% equity.

### VALUATION SUMMARY FOR HÅKSBERG AND VÄSMAN

	EV/resource		Contained Fe, M&I&I Mt	Discount factor	EV SEKm	Value per share SEK
	USD/t	Risk weight				
Håksberg	3.1	50%	10.3	0.6	77	0.2
Väsman	3.1	50%	19.7	0.6	147	0.3
Shares outstanding millions						442

Source: Company data and Nordea estimates

We use a SOTP approach to value NIO's business

### Sum-of-the-parts

To arrive at the value of NIO's equity, which we use as a basis for our sensitivity analyses, we apply a SOTP approach to the values calculated for the Blötberget, Håksberg and Väsman properties. This results in an adjusted EV for Blötberget, Håksberg and Väsman of SEK 0.5bn, SEK 0.8bn and SEK 0.2bn, respectively.

We estimate that NIO's net cash position in 2019 will amount to approximately SEK 1.5bn, based on our forecast of 75% equity financing. At a share price of around SEK 3.50, that would imply the number of shares should increase to around 442 million by the end of 2019.

### SOTP SUMMARY

DCF	WACC (%)	Price USD/t	Opex USD/t	Capex USD	NPV USD	NPV SEKm	IRR (%)
Blötberget	10%	110.9	53.2	231	55	495	14.6%
		EV/resource		Contained Fe, M&I&I Mt	Discount factor	EV adj. SEKm	Value per share SEK
		USD/t	Risk weight				
Blötberget		2.7	100%	20.5	-	495	1.1
Håksberg		2.7	50%	10.3	0.6	77	0.2
Väsman		2.7	50%	19.7	0.6	147	0.3
Net cash 2019E (SEKm, SEK)					1,478	3.3	
Minorities (SEKm, SEK)					0.0	0.0	
<b>Total Equity Value (SEKm, SEK/share)</b>					<b>2,197</b>	<b>5.0</b>	
Shares outstanding millions end-2019E					442		

Source: Company data and Nordea estimates

We derive our value range for NIO's equity by looking at changes in the price premium for iron ore

Our first sensitivity analysis is based on changes in Blötberget's parameters of capex, opex and net product price of 69% iron ore, which are the key determinants for NIO's EV. The sensitivity analysis shows that the equity value varies materially, depending on the magnitude of the change in the respective parameter.

#### SHARE PRICE SENSITIVITY FOR BLÖTBERGET NET PRODUCT PRICE, OPEX AND CAPEX, USD PER TONNE, USD AND %

		Net product price delta FOB Oxelösund (USD/t)						
		-10.0	-5.0	-1.0	0.0	1.0	5.0	10.0
Opex and sustaining capex delta (%)	-3.0%	4.6	5.5	6.2	6.4	6.5	7.3	8.2
	-2.0%	4.1	5.0	5.7	5.9	6.1	6.8	7.7
	-1.0%	3.7	4.6	5.3	5.5	5.6	6.4	7.3
	0.0%	3.2	4.1	4.8	5.0	5.1	5.9	6.8
	1.0%	2.7	3.6	4.3	4.5	4.6	5.3	6.3
	2.0%	2.2	3.0	3.7	3.9	4.1	4.8	5.7
	3.0%	1.6	2.5	3.2	3.3	3.5	4.2	5.1

Source: Company data and Nordea estimates

Our second sensitivity analysis shows the sensitivity to changes in the assumed equity issue price along with changes in the cost of capital.

#### SHARE PRICE SENSITIVITY FOR BLÖTBERGET WACC AND RIGHTS ISSUE SHARE PRICE, SEK AND %

		WACC (%)						
		11.5%	11.0%	10.5%	10.0%	9.5%	9.0%	8.5%
Rights issue share price (SEK)	6.4	7.6	8.0	8.4	8.8	9.2	9.6	10.1
	5.4	6.5	6.8	7.1	7.5	7.8	8.2	8.6
	4.4	5.4	5.6	5.9	6.2	6.5	6.8	7.1
	3.5	4.3	4.5	4.7	5.0	5.2	5.5	5.7
	2.4	3.0	3.2	3.3	3.5	3.6	3.8	4.0
	1.4	1.8	1.9	1.9	2.0	2.1	2.2	2.4
	0.4	0.5	0.5	0.6	0.6	0.6	0.7	0.7

Source: Company data and Nordea estimates

We consider our fair value range of SEK 3.2-6.8 to capture a meaningful amount of changes in sensitive parameters.

#### Peer group

Below, we summarise information about NIO's peers and the company itself. In total, we use eight peers, all of which are pre-revenue junior miners looking to construct and develop iron ore producing mines. The peer group companies estimate their resources according to either the JORC framework, which is considered a global standard for estimating mineral resources, or National Instrument 43-101 (NI 43-101), a Canadian framework for resource estimation broadly comparable to JORC. In addition, similar to NIO, these peers all aim to produce a high grade of iron ore product.

#### PEER GROUP

Name	Ticker	Location	Metal	Product	Framework	Revenue 12M (LC)
Oceanic Iron Ore Corp.	FEO CN EQUITY	Canada	Fe	Fe 66.5% pellets	NI 43-101	0
Alderon Iron Ore Corp.	IRON CN EQUITY	Canada	Fe	Fe 65.2% concentrate	NI 43-101	0
Black Iron Inc.	BKI CN EQUITY	Canada/Ukraine	Fe	Fe 68% concentrate	NI 43-101	0
Kogi Iron Ltd.	KFE AU EQUITY	Australia/Nigeria	Fe	High grade fines	JORC 2012	0
Iron Road Ltd.	IRD AU EQUITY	Australia	Fe	Fe 67% concentrate	JORC 2012	0
Zanaga Iron Ore Ltd.	ZIOC LN EQUITY	Congo	Fe	Fe 68% pellet feed concentrate	JORC 2012	0
Flinders Mines Ltd.	FND AU EQUITY	Australia	Fe	Fe 58.5% fines	JORC 2012	0
Beowulf Mining Plc.	BEM LN EQUITY	Sweden	Fe	Fe 71% concentrate	JORC 2012	0
<b>Nordic Iron Ore</b>	<b>NIO SS EQUITY</b>	<b>Sweden</b>	<b>Fe</b>	<b>Fe 69% concentrate</b>	<b>JORC 2012</b>	<b>0</b>

Source: Bloomberg, Thomson Reuters and Nordea

Most of the peers are domiciled in Canada or Australia

Most of the peers have their mining projects domiciled in either Canada or Australia, which is quite logical considering that, apart from South America, these two countries represent a large portion of the world's iron ore reserves. One peer, Beowulf Mining, has its mining project domiciled in Sweden and two, Kogi Iron and Zanaga Iron Ore, have mining projects in Africa.

Moreover, the market cap and EV of the peers are between USD 2m and USD 131m and USD 3m and USD 190m, respectively, compared with NIO's market cap and EV of USD 9m each. The contained Fe measured and indicated resources of the peers are 33-767 Mt compared with NIO's 48 Mt.

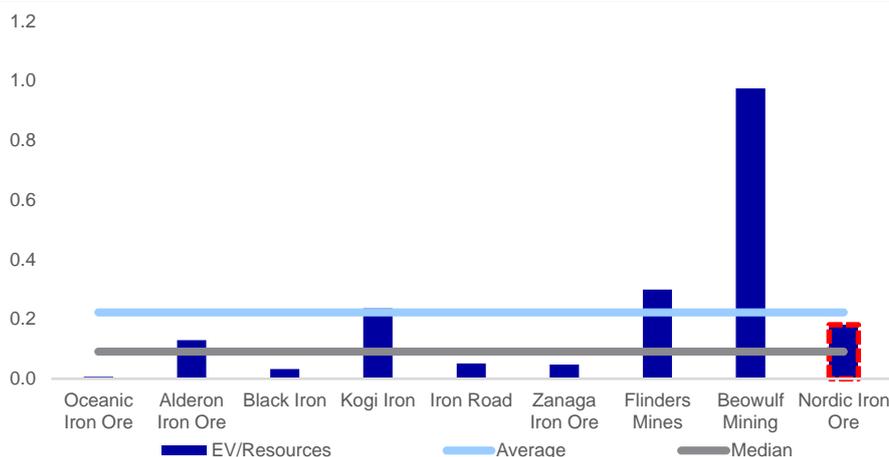
We compare and benchmark the peers using an EV/resources multiple, which we argue is the best one to use, as it takes into consideration the capital structure of the companies and the resources on which the mines' revenue and cash flow will depend.

Based on this approach, we derive a range for the EV/resources of USD 0.01-0.97 per tonne with an average of USD 0.22 per tonne and a median of USD 0.09 per tonne. We calculate NIO's multiple at USD 0.18 per tonne, implying it is trading at a discount of 18% to the average and a premium of 99% to the median. This also implies that NIO's multiple is trading in the higher percentile of the peer group, which could relate to its favourable geographical location. Looking at peers active in the same region as NIO, Beowulf (operations in northern Sweden) is also trading at a high multiple, an EV/resource of USD 0.97 per tonne. The lowest EV/resources for NIO's three different projects is Blötberget, at USD 0.14 per tonne and the highest is Väsman at USD 0.24 per tonne. The higher value for Blötberget should not come as a surprise, as it is there that NIO has the largest amount of measured and indicated iron ore resources, while Väsman has the least.

We use our calculated EV/resources multiples to benchmark against NIO

Given the geographical and resources spread, as well as the difference between the projects amongst peers and in comparison with NIO, we do not derive an equity value range based on a multiples or comparative transactions approach. Instead, we use it for benchmarking. We can conclude from this that NIO is trading at the upper end of the scale versus peers but lower in relation to those peers active in the same geographical region as NIO.

#### PEER GROUP'S EV/RESOURCES



Source: Bloomberg, Thomson Reuters and Nordea estimates

#### PEER GROUP FUNDAMENTALS

Name	Market Currency	Market Cap (LC)	Market Cap (USDm)	EV (LC)	EV (USDm)	Contained Fe, Mt		Exposure (%)		EV/Resource (USD/t)	
						M&I	Inferred	M&I	Inferred	Framework	
Oceanic Iron Ore Corp.	CADm	3	2	4	3	446	72	86%	14%	NI 43-101	0.01
Alderon Iron Ore Corp.	CADm	44	34	65	49	378	154	71%	29%	NI 43-101	0.13
Black Iron Inc.	CADm	9	7	9	7	204	57	78%	22%	NI 43-101	0.03
Kogi Iron Ltd.	AUDm	72	53	62	46	193	49	80%	20%	JORC 2012	0.24
Iron Road Ltd.	AUDm	37	28	39	28	550	166	77%	23%	JORC 2012	0.05
Zanaga Iron Ore Ltd.*	GBPm	31	40	29	37	767	326	70%	30%	JORC 2012	0.05
Flinders Mines Ltd.	AUDm	177	131	258	190	636	168	79%	21%	JORC 2012	0.30
Beowulf Mining Plc.	GBPm	27	35	25	32	33	9	79%	21%	JORC 2012	0.97
										<b>Average</b>	<b>0.22</b>
										<b>Median</b>	<b>0.09</b>
<b>Nordic Iron Ore</b>	<b>SEKm</b>	<b>80</b>	<b>9</b>	<b>79</b>	<b>9</b>	<b>48</b>	<b>21</b>	<b>70%</b>	<b>30%</b>	<b>JORC 2012</b>	<b>0.18</b>
<b>Property breakdown</b>	<b>EV (USDm)</b>	<b>M&amp;I</b>	<b>Inferred</b>	<b>EV/Resource (USD/t)</b>							
Blötberget	3.1	22.4	4.3	0.14							
Håksberg	1.7	9.2	4.2	0.19							
Väsman	4.0	16.8	12.6	0.24							
<b>Total</b>	<b>8.8</b>	<b>48.5</b>	<b>21.1</b>	<b>0.18</b>							

\*resources adjusted 50% due to ownership structure

Source: Bloomberg, Thomson Reuters and Nordea estimates

# Company overview

Nordic Iron Ore is an exploration company, founded in 2008 and listed on Nasdaq First North Stockholm in 2018. The company's main target is to reopen two previously operated mines in the Ludvika municipality and start development of a third target. Currently in its first phase, the company is finishing a feasibility report for Blötberget, with intent to begin construction during 2020. Nordic Iron Ore's strategy is to prospect and develop high-quality iron ore products and to produce niche iron products in the form of concentrates with high iron content, which can subsequently be sold at a premium price.

Nordic Iron Ore AB (NIO) is a Sweden-based mining and prospecting company founded in 2008, listed on Nasdaq First North since October 2018. Its focus is on mine development with the intention to construct and start a producing mine of high-quality iron ore.

NIO's mission is to own iron ore deposits and to produce high-quality products

NIO's mission, on its own or together with partners, is to own iron ore deposits through concessions, develop them into mining operations and produce high-quality products with high iron content. Currently, it owns the rights to four exploitation concessions, all located in close proximity to each other in the Ludvika municipality, central Sweden.

## CONCESSIONS AND PERMITS

Name	Areal (ha)	Minerals	Valid from	Valid to
<b>Mining concessions</b>				
Blötbergsgruvan #1	126,4	Iron, lanthanum, lantanide, apatit	30/08/2011	30/08/2036
Blötbergsgruvan #2	38,7	Iron, lanthanum, scandium, apatit, yttrium	14/08/2017	14/08/2042
Södra Väsmanfältet #1	115,4	Iron	20/12/2017	20/12/2042
Håksbergsgruvan #1	136,3	Iron, copper, gold, molybdenum	15/12/2011	15/12/2036

Source: Company data and Nordea

The company aims to reopen mining operations in the Ludvika mines

The company is focusing on reopening mining operations at the Ludvika mines, divided into Blötberget and Håksberg, as well as prospecting and developing Väsmanfältet, located between the two. The deposits at the sites stretch along a ~25 km-long zone of mineralisation, running from the south of Blötberget to the north of the Håksberg field. The former two are brownfields, meaning that mining operations have previously taken place there. Brownfields typically require lower startup costs, as some infrastructure is already available underground as well as above ground.

The company wants to initiate extraction from Blötberget in 2021

There are four main types of iron ore products: lumps, fines and concentrates, and processed products from these can include pellets and sinter in order to feed the iron ore into the furnaces. The company's operations will mainly focus on yielding high-quality iron products in the form of concentrate, with an average iron content of around 69%. Pellets or sinter can be made from fines, also called concentrates, before adding to the iron-making processes.

The intention is to sell these fines to customers in Europe, China and the Middle East, which will then produce iron pellets, sinter and finished steel products to sell to the end-customer.

## NIO: BUSINESS MODEL



Source: Company data and Nordea

NIO is conducting a feasibility study at Blötberget, which is planned to be finished during H1 2019. The company then aims to initiate mining operations there in 2021, as the first phase of the Ludvika mines.

### Company history

The group has all the necessary permits required to initiate mining activities at Blötberget

NIO is a mining development company founded in 2008, with the aim of operating in the Ludvika mines as well as exploring the Väsman field. The group has acquired all the necessary permits for the initial project in Blötberget, to start production.

Mining and exploration in the Ludvika area has taken place since the 17th century. In more recent times, Gruv AB Vulcanus and Stora Kopparberg Bergslags AB have been involved, among other companies. Similar to the intention of NIO, the majority of operations have been focused on iron production. Production was carried out until the Blötberget mine closed in 1979. Since then, the area has been controlled by several companies through exploration permits, until NIO was formed in 2008. For the first time since mining and exploration started in the area, the mineralised field is controlled by a single stakeholder.

In total, there are 216.2 Mt of measured, indicated and inferred iron ore in the Ludvika mines

After the permits were transferred to NIO, measurements of iron quality were carried out according to the Joint Ore Reserves Committees standards established in 2012 (JORC 2012). An approximately 25 km-long mineral zone of iron-rich deposits has been identified, running from Blötberget, southwest of Ludvika, to the north section of the Håksberg field. At present, the group controls measured and indicated mineral resources of ~128 Mt (with an iron content of between 34.8% and 41.7%) and inferred mineral resources of 61.2 Mt (with an iron content between 33.4% and 36.1%).

### COMPANY EVENTS

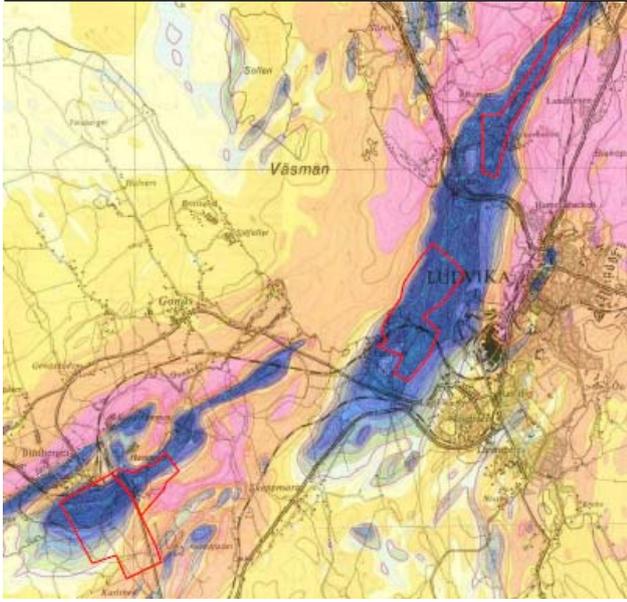
Year	Event
2008	The company was founded
2008	Exploration permits received from Archelon Mineral AB, IGE Nordic AB and Kopparberg mineral AB
2010	Acquisition of three more exploration permits for Håksberg
2011	Granted exploitation concessions for Blötberget and Håksberg
2011	Initiation of Preliminary Economic Assessment
2013	New internal study suggests development in 3 steps, with start in Blötberget
2014	Environmental permit granted for Blötberget and Håksberg.
2014	Two new share issues, raising SEK 58.0m
2014	Pilot tests of metallurgic beneficiation indicated a possibility to create a product with high iron content
2015	New share issue, raising SEK 18.0m
2015	New application for exploitation concession for South Väsman Field
2016	Signed letter of intent with Rail Cargo, regarding logistics between the Ludvika mines and harbour in Oxelösund
2017	New share issue, raising SEK 18.3m
2017	DMT gave final update on resource estimates, increasing previous amounts by around 15%
2017	Approved exploitation concession for Södra Väsman field
2018	Listed on Nasdaq First North

Source: Company data and Nordea

### The Ludvika mines

NIO's projects in the Ludvika mines consist of Blötberget, Håksberg and Väsmanfältet

The Ludvika mines, consisting of potential mines Blötberget, Håksberg and Väsmanfältet, are located approximately 217 km northwest of Stockholm, in the Ludvika municipality in Dalarna County, central Sweden. The region is known for its rich mining and steelmaking history, with notable former and current production areas including the Grängesberg iron ore mine, Zinkgruvan sulphide mine, Garpenberg sulphide mine and Falun sulphide mine.

**SGU GEOPHYSICAL SURVEY OF THE LUDVIKA MINES**

Source: Company data

**LOCATION OF THE LUDVIKA MINES**

Source: Nordea

NIO's operations will stretch from the southwest to northwest of the town of Ludvika, which offers general services such as medical care, telecommunications, banking, housing, hotels, vehicle repair and schooling. Moreover, this provides NIO with access to infrastructure such as roads, railroads and power grids, as well as tier-one service providers and contractors. The mines will also be planned close to the beneficiation plant in Skeppsmora.

NIO has signed a letter of intent for transport to Oxelösund harbour

Blötberget does not have its own railway terminal at present, but there are plans to include railway tracks to connect it to its beneficiation plant. There are railway stations in Grängesberg and Ludvika, approximately 9km and 7 km, respectively, from the planned mineral beneficiation plant in Skeppsmora. The railway line that passes through Ludvika and runs close to the project offers connections to three port towns, namely Gävle (180 km), Oxelösund (270 km) adjacent to the Baltic Sea, and Lysekil (410 km), on the Swedish west coast. The company has stated that the intended primary route for transportation will be by rail to the port in Oxelösund, as the company has signed a letter of intent with an Austrian transportation company, Rail Cargo, for logistics on this route. Moreover, the company has also signed a letter of intent with Oxelösund Port, which has agreed to receive ore trains for trans-shipment into vessels or for intermediate storage. Only smaller investments are required, for which the port will assume responsibility.

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**THE LUDVIKA MINES' REGIONAL NETWORKS**


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Source: Company data and Nordea

### Blötberget

As a brownfield project, there is infrastructure in the mines that can be utilised in reopening operations

Blötberget is located southwest of Ludvika, where NIO owns two mining concessions, granted in 2011 and 2017, covering 165 hectares of land. The area of the first concession, Blötbergsgruvan 1, consists of five mineralised bodies: Kalvgruvan, Flygruvan, Hugget, Belstamalmen and Sandellmalmen. The second concession, Blötbergsgruvan 2, covers two mineralised areas: Guldkannen and Carlsvard. Geophysical surveys and historical drilling holes at Blötberget indicate that the mineralised zones at the concession areas run to a depth of approximately 850 metres below surface.

There is available data from 20,559 metres of drilling

Iron ore extraction at Blötberget has a long history, dating back to the 17th century. In more recent times, Gruv AB Vulcanus and Stora Kopparberg Bergslags AB have operated at the site, reaching annual production of 300,000 tonnes of iron products. In 1979, mining was suspended due to low iron prices and the subsequent lack of profitability. Mining at Blötberget was abandoned until 2008 when NIO took over exploration permits. At the time of suspension, there were 25 Mt of mineral resources. As a brownfield site, Blötberget has some existing infrastructure such as shafts which the company can utilise to reopen the operations.

In between 1942 and 1977, previous owners systematically drilled around 456 holes, totalling 50,270 metres. NIO drilled 29 deep core holes totalling 14,523 metres in depth from 2012 to 2014, and re-assayed 31 of the historical drilling holes totalling 6,036 metres. The latest calculations show an estimated mineable tonnage of 45.4 million, indicated resources of 9.6 Mt and inferred resources of 11.8 Mt of iron ore. These resources contain ores with average respective iron content (Fe) of 41.7%, 36.2% and 36.1%, consisting of magnetite and hematite.

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**MINERAL ASSETS IN BLÖTBERGET**


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Data measured as meters drilled		Measured		Indicated		Inferred	
Historical re-assayed	Since 2011	Mt	Fe (%)	Mt	Fe (%)	Mt	Fe (%)
6,036	14,920	45.4	41.7	9.6	36.2	11.8	36.1

Source: Company data and Nordea

Tests of ore samples from Blötbergsgruvan were performed in 2016 to optimise recovery – a process where gangue minerals are removed from the ore to achieve purer products. The tests were conducted on 20 tonnes of iron ore and showed potential to create products with average Fe content of around 69% – considered premium products. The standard iron content in products is around 62%.

NIO aims to start production in Q2 2021

The company has all the required permissions to initiate construction of the new facilities and mining infrastructure at Blötberget. A feasibility report for the mine is set to be finished in Q2 2019, while NIO aims to commence construction of the mine in 2020. Upon completion, the company expects Blötberget to supply enough iron ore to produce around 1.3 Mt of refined products annually.

### Life-of-mine plan for Blötberget

The company has created a life-of-mine plan (LOMP) for Blötberget, providing a long-term plan for the mine, consisting of four different stages:

- Pre-production development
- Production ramp-up
- Steady-state production
- Closure

During the first stage, pre-production development, preparations are made for enabling the start of ore extraction, including gaining access to the ore bodies, installing ventilation, power and dewatering systems, as well as completion of the hoisting systems. NIO intends to use external contractors to complete the pre-production phase of the mine development.

Any ore extracted during this stage will be crushed underground with secondary crushing and grinding and then stockpiled at the surface. Furthermore, development of the main access ramp from the surface to the 420-metre level is critical, and it is imperative that advancement can be maintained at a high rate in that particular phase.

Key milestones in months 15, 18 and 21

The stage is scheduled to take approximately 27 months, with key milestones in months 15, 18 and 21:

- Gaining access to the first ore body at the 180-metre level, Sandell, at 15 months of development
- Reaching the historical infrastructure in the 18th month
- Accessing the ore body at the 340-metre level, Hugget, expected in month 21

As the mine has been partially developed at the 320-metre level during past production, there is an opportunity to begin early extraction once development has reached this depth.

However, due to uncertainties in surveying the existing infrastructure and gradual access to ore, production is likely to begin at a lower extraction rate. At this point, the mine has reached the second stage. The production ramp-up is the period at which extraction is expected to start but has not reached the estimated yearly capacity of ~3.0 Mt. The stage is estimated to last 18 months, during which extraction is initiated at the first ore body.

Possible production of 3 Mt per year

The full width of the ore is accessible from 380 metres and below, which is the reason why full production cannot be initialised when operations first begin. When the 380-metre level has been reached and ore reserves at that level are fully accessible, production of an estimated 3.0 Mt a year – or 10,000 tonnes daily – can be achieved. At this point, the third and final stage, steady-state production, of the LOMP is initialised.

Development, ie tunnelling activities, is naturally most intensive during the early years. However, during steady-state production there is still a need to develop the mine further to maintain the production rate. An annual development rate of approximately 3,000 metres is needed each year. Steady-state production at Blötberget is estimated by management to last for ten years, from year 3 to year 13, and then production falls during years 14 and 15 due to decreasing volumes of ore available for extraction.

### Håksberg

Håksberg is located to the north of Väsmanfältet and Ludvika, where NIO owns concessions covering 136.3 hectares of land. Like Blötberget, Håksberg is a brownfield site and was mined until 1979 when it was closed due to a lack of profitability. Before its closure, it had a yearly output of around 250,000 tonnes of iron products.

No recent drilling, but historical evidence offers promising indications

No recent drilling has been done at Håksberg, and there were no measured iron ore resources as of 2018. However, samples from historical drilling holes that have been analysed have shown indicated deposits of 25.4 Mt and inferred deposits of 11.6 Mt of iron ore, with average Fe content of 36.4% and 36.0%, respectively. Furthermore, the mine had calculated mineral assets of 14.5 Mt of measured and 22 Mt of indicated iron ore deposits before it closed the first time, which suggests a possibility of further findings at deeper levels. These estimates, however, were not made according to the current reorganised mineral resource estimation standards and are not comparable with Blötberget's mineral resource estimation, according to the JORC 2012 code.

**MINERAL ASSETS IN HÅKSBERG**

Data measured as meters drilled	Measured		Indicated		Inferred		
		Mt	Fe (%)	Mt	Fe (%)	Mt	Fe (%)
Historical re-assayed	Since 2011						
1,320	N/A	N/A	N/A	25.4	36.4	11.6	36.0

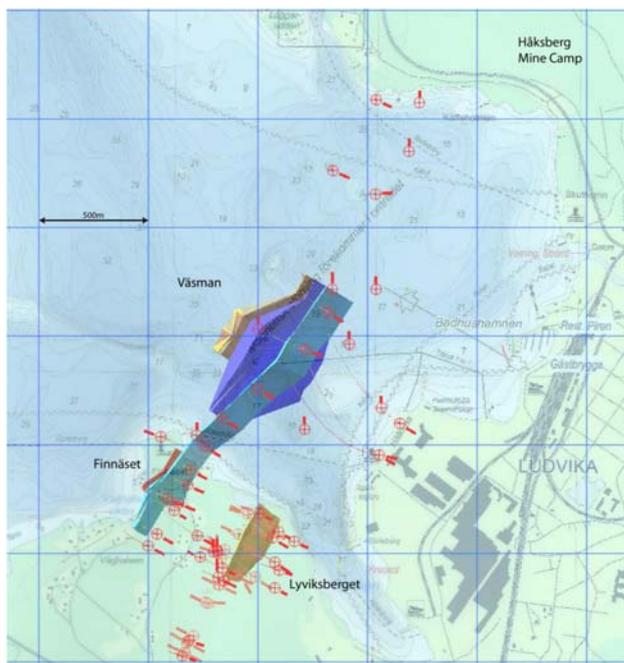
Source: Company data and Nordea

**Väsmanfältet**

NIO received an exploitation concession for Väsmanfältet in December 2017

Väsmanfältet is a 3 km-long mineral field located between Blötberget and Håksberg, beneath the Väsman lake west of the town of Ludvika. The field is covered by the Södra Väsmanfältet 1 exploitation concession awarded in December 2017. In contrast to the other two projects, Väsmanfältet is less well-defined, but its proximity to the other two projects offers it close connections to roads and electricity.

**MINERALISED ZONES AT FINNÄSET VÄSMAN**



Source: Company data, Thomas Lindholm GeoVista

Exploration of Väsmanfältet is still in its early stages, with results generally based on relatively shallow holes of around 300 metres deep, drilled in 2012, but also historical samples.

Collectively, the historical samples and drilling at Väsman, Finnäset and Lyviksberget have shown amounts of 5.1 Mt measured, 42.9 Mt indicated and 37.8 Mt of inferred iron ore, mainly consisting of magnetite. Estimates from these samples provide average Fe grades of 36.7%, 34.8% and 33.4%, respectively, for the iron ore located in Väsmanfältet.

**MINERAL ASSETS IN VÄSMANFÄLTET**

Data measured as meters drilled	Measured		Indicated		Inferred		
		Mt	Fe (%)	Mt	Fe (%)	Mt	Fe (%)
Historical Re-assayed	Since 2011						
1,430	6,850	5.1	36.7	42.9	34.8	37.8	33.4

Source: Company data and Nordea

There is evidence suggesting that additional tonnage is probable

Based on conclusions and recommendations in a technical report published in 2013, the results give a promising indication that significant additional tonnage is likely to be discovered with further investigation. The report estimates that further diamond drilling of 9,000-10,000 metres is necessary to investigate the unexplored parts of the area.

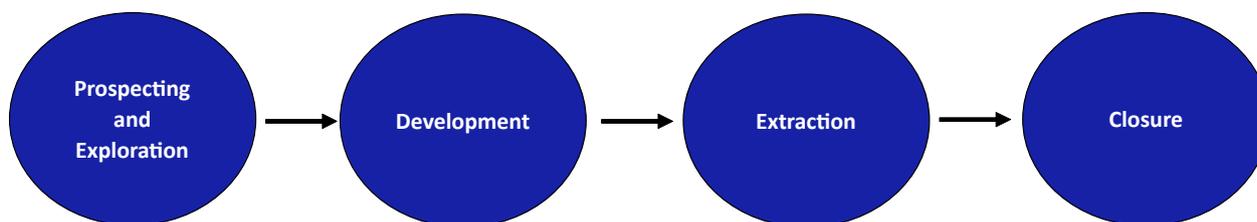
# The lifecycle of a mine

The different stages a mining company goes through can be illustrated as a lifecycle, which begins with exploration, moves on to development and exploitation, and ends with closure either after permits expire or the company decides to discontinue operations.

Nordic Iron Ore is in the process of finalising the prospecting and exploration stage for Blötberget

Nordic Iron Ore (NIO) is currently in the early stages of the lifecycle, with Blötberget being in the final months of the prospecting and exploration phase, while Håksberg and Väsmanfältet are still at an earlier part of this stage, verifying the extent of the mineralisation. To elaborate on this further, we offer an overview of the four stages that are generally attributed to a mining company below.

## THE LIFECYCLE OF A MINE



Source: University of Arizona Superfund Research Program

### Prospecting and exploration

Prospecting and exploration are the predecessors to what may develop into a full-scale mining project. This consists of the search for mineralisation and identification of mineral zones and their properties through various analysis methods. Depending on the extent of the mineralisation, the mineable and processing properties could be time-consuming and years may pass before a company is able to proceed to the next step.

Prospecting is the search for mineral resources through exploration techniques, including core drilling analysis, surface and airborne magnetic surveys, surface and underground geophysical techniques and satellite photography.

During exploration, analysis is used to find mineral resources

Subsequently, mining exploration is where additional expert analysis is used in order to determine the size and richness of the resources uncovered during the prospecting process. Such analysis of geological confidence and technical and economic evaluation allow experts to label the reserve a 'mineral resource', which enables the company to better estimate the economic value of the reserve and the mining costs. A mineral resource is a concentration of potentially valuable material that occurs naturally in the earth. The testing that is carried out during exploration determines the resource based on the geological confidence with regards to amount and quality. The resource can be categorised as inferred, indicated or measured.

When the amount and quality can be estimated with only a low confidence level, based on limited sampling, it is categorised as an inferred mineral resource. Further sampling may add a reasonable confidence level on the amount, quality, density, shape, and physical characteristics of the mineral, which entails the classification of an indicated mineral resource. If additional sampling and reliable and detailed exploration enable the same characteristics to be accurately estimated with a high level of confidence, it is subsequently classified as a measured mineral resource.

The likelihood of a deposit leading to mining activities depends on which category it falls into. While an inferred mineral source will not be prioritised, a measured resource is more likely to be pursued.

A mineral reserve is the part of a mineral resource that is profitable to mine

As an additional specification of the mineral resource, an ore reserve is the part of the mineral resource that can be economically profitable to mine and is divided into two categories. Following the classification of a deposit as being either an inferred, indicated, or measured mineral resource, it is subsequently labelled a 'probable' or a 'proved' ore reserve. This classification is based on what is known about the mineral resource through sampling, combined with further consideration of additional factors,

such as mining, metallurgic, economic, environmental, marketing, legal, political, and social factors.

Accordingly, with a combination of some information available about the concentration of the ore, an indicated reserve, and some uncertainty in the modifying factors, the deposit can be labelled a probable ore reserve. Mining operations developed from probable ore deposits have a chance of success but still carry financial risk. In contrast, if the concentration of the ore is defined as a measured mineral resource, combined with limited uncertainty about the modifying factors, it is classified as a proved ore reserve. This is the highest confidence category of the deposit estimates, implying high potential that the reserves can be extracted and sold at a profit.

The last step of the prospecting and exploration stage is a feasibility study

Following the completion of the prospecting and exploration stage, a feasibility study is performed to formally determine whether it is economically worth developing the mineral deposit into a mine. Consequently, the data gathered in this early stage will indicate if there is any potential to mine for valuable minerals, which is imperative for continuing to the development stage.

Development includes addressing mining technology, construction details and environmental management

### Development

If the indicated potential during the prospecting and exploration stage is strong, the project may proceed to the development stage, the purpose of which is to enable the deposit to be exploited and mined. At this stage, development of the mine site is put in place to ensure that the mine is productive without later interruption during its lifetime. This includes pre-development planning, budgeting, permit requests and other preparations. Specific areas that may be addressed consist of 1) the mining technology that will be used; 2) the construction of roads, processing facilities, and employee housing; and 3) the implementation of proper environmental management systems, which are required before extraction can begin.

Moreover, plans are adjusted according to which method of mining is deemed appropriate. There are three main mining methods:

- Surface mining
- Underground mining
- Solution mining

The two most common methods of mining are surface and underground mining. While their use mainly depends on the type of ore and its location, it also takes into consideration issues of safety, technology, economics, and environmental impacts.

Surface mining removes soil and rock from on top of the mineral deposit. It may begin as soon as the pre-development steps are complete. For example, coal mining is commonly done via varieties of surface mining.

Underground mining is more expensive and complex than surface mining

Underground mining is usually more expensive and complex than surface mining, as it uses shafts and tunnels to access deeply-buried mineral deposits, while the overlying rock is left in place. Therefore, this method requires a lot of additional planning, as the integrity of the mine needs to be considered.

Solution mining is performed by pumping a leaching solution such as an acid into the ground, which then dissolves the solid minerals into liquid. This liquid containing the minerals is then pumped out of the ground and the mineral can then be recovered. Solution mining is a technique commonly used for mining copper, uranium or salt in locations that are too deep for surface or underground mining.

Prospecting, exploration and development continue to take place even after a mine enters the extraction phase

### Mineral extraction

Given a successful development stage, the company is finally able to move on to the extraction stage, where the actual mining takes place. More exploration and development may occur during this stage, as a result of an increase in reserves prospects. The process for NIO, the company will be to remove the mineral in large quantities, and subsequently break this up into smaller pieces, which are then enriched by a process whereby the minerals to a certain degree are separated from the gangue or side rock. The purpose is to develop fines with high iron content.

Smelting is the final step in production, where the concentrate is melted and prepared for steel-making processes. This step is not applicable for NIO, as it intends to sell its enriched product for shipment to pelletisers and steel mills.

Even before the mine is opened, there is a plan for the closure stage

### **Closure**

The mining organisation begins planning for closure and reclamation early on; even before a mine is allowed to open, a reclamation plan must be set in place for its closure. The strict regulations are related to land preservation and environmental aspects, as the mining operator is required to describe the processes it will use to attempt to restore or redevelop the land that has been mined. The factors that are considered when planning for closure include: protection of public health and safety, addressing environmental damage, returning the land to its original state or an acceptable new use, and sustaining social and economic benefits brought by the mine.

The cost of closing a mine depends on numerous factors such as age, location, type, and size of mine, amount of waste, geological characteristics, and type of mineral being extracted.

# Executive management

Mining requires specialised skills as well as a well-rounded management team, which we believe NIO's executive management offers, given its combined mining experience of close to 100 years and a managing director with extensive experience in finance.

## EXECUTIVE MANAGEMENT



**Lennart Eliasson**

**Position**

CFO and managing director

**Other appointments**

Board member of the subsidiary Ludvika Gruvor AB.

**Background**

Mr Eliasson was born in 1956 and holds an MBA from Uppsala University. He has worked as a chartered accountant at KPMG where he was a partner and worked as a specialist in financial analysis and valuation issues. Following this, he worked for ten years as an adviser, primarily for the acquisition of venture capital and market quotations.

**No. of shares**

20,000 shares and 49,998 warrants.



**Paul Marsden**

**Position**

Technical and marketing advisor

**Other appointments**

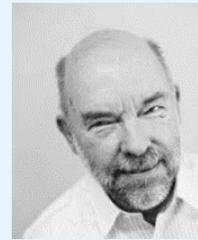
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**Background**

Mr Marsden was born in 1957 and holds a BSc. in Geology from Aston University in Birmingham, UK. He is also a chartered engineer (CEng.) and scientist (CSci.). He has over 35 years' experience in the development of iron ore and steel industry projects globally. His expertise is in mineral processing, alternative iron-making processes and global iron ore markets.

**No. of shares**

17,740 shares.



**Hans Thorshag**

**Position**

Technical director

**Other appointments**

Board member of HT Mineral AB and partner in Mining and Milling in Bergslagen Handelsbolag.

**Background**

Mr Thorshag is a mining engineer with a degree from the Royal Institute of Technology in Stockholm, Sweden. He was born in 1950 and has more than 37 years' experience from the mining industry as a project manager, production manager and mining specialist at companies such as LKAB, Boliden, Midroc Gold and Lundin Mining. Also, he is a nominated Qualified Person in accordance with SveMin's regulatory framework.

**No. of shares**

10,000 shares and 20,000 warrants.



**Markus Karlsson**

**Position**

Project director

**Other appointments**

Owner of Karlsson Mining Consultant.

**Background**

Mr Karlsson was born in 1973 and studied at the Helsinki School of Engineering. He has more than 25 years' experience in mine development and operations from companies including LKAB, Northland Resources, Arcelor Mittal, Northern Iron and Newcrest Mining Ltd.

**No. of shares**

-

# Board of directors

NIO's board consists of four members from various backgrounds bringing different experience, which we consider a good fit for steering the mining company to achieving its true potential.

## BOARD OF DIRECTORS

		
<b>Tomas Olofsson</b>	<b>Jonas Bengtsson</b>	<b>Michael Mattsson</b>
<b>Position</b> Chairman of the board.	<b>Position</b> Board member.	<b>Position</b> Board member.
<b>Other appointments</b> Managing director of Lemont AB, owner, partner and board member of Ludvika Holding AB, Grytänge Invest AB, Matojo AB, Fastighets AB Morgårdshammar, Datorama AB, Abacus Sales AB, A. Rentall AB och Mecapto AB.	<b>Other appointments</b> Chairman and owner of Jonas Bengtsson Invest AB and board member of Bengtssons Tidnings AB, Origo Capital AB and several property companies.	<b>Other appointments</b> Chairman of the board in Copperstone Resources AB, board member of Endomines AB and Net Trading Group AB.
<b>Background</b> Mr Olofsson was born in 1968 and is an entrepreneur with 20 years of experience from the engineering industry. He has built and developed a number of industrial, staffing and real estate companies.	<b>Background</b> Mr Bengtsson was born in 1969 and holds an MBA from Stockholm University. He is a partner at BTAB Invest and has 15 years' experience in the financial sector and the development of small and medium-sized industrial and property companies.	<b>Background</b> Mr Mattsson was born in 1973 and holds an MSc. from the Stockholm School of Economics. He has a background as a professional investor, entrepreneur and corporate finance advisor.
<b>No. of shares</b> 2,929,398 shares (incl. corporate holdings) and 5,419,913 warrants.	<b>No. of shares</b> 374,361 shares directly and 5,728,166 shares through corporate holdings and 11,815,052 warrants.	<b>No. of shares</b> 746,799 shares directly and indirectly and 1,642,385 warrants.
		
<b>Gösta Bergman</b>		
<b>Position</b> Board member		
<b>Other appointments</b> Chairman of the board in OptiMobile AB and owner of Advokatfirman Bergman & Partners AB.		
<b>Background</b> Mr Bergman was born in 1950 and holds an LLB from Stockholm University. He has been a business lawyer since 1978 with experience from companies including Ericsson, Unisys, Ovako Steel and as chairman of the board of Grängesberg Iron AB.		
<b>No. of shares</b> -		

Source: Company data

# Shareholders

NIO's three largest shareholders as of November 2018 were Bengtssons Tidnings AB, Tomas Olofsson and Copperstone Resources AB. Of these, Bengtssons Tidnings AB is the largest shareholder, owning roughly 29% of the total 20 million NIO shares.

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## TOP-10 SHAREHOLDERS AS PER NOVEMBER 2018

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Shareholder name	Number of shares	% of total
Bengtssons Tidnings AB	5,728,166	28.8%
Tomas Olofsson	2,929,398	14.7%
Copperstone Resources AB	1,951,228	9.8%
Michael Mattsson	746,799	3.8%
Emil Nilsson	558,000	2.8%
Gunther & Wikberg	449,343	2.3%
Garden Growth Ind AB	435,000	2.2%
Nord Fondkommission AB	392,450	2.0%
Jonas Bengtsson	374,361	1.9%
Väsman Invest	327,005	1.6%
<b>Total</b>	<b>19,909,775</b>	<b>100%</b>

Source: Bloomberg

# Market outlook

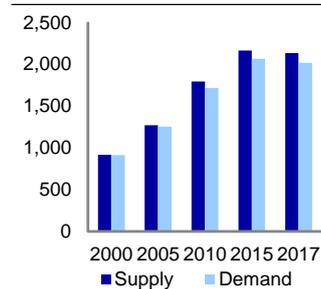
NIO is engaged in the planned production of high-grade iron ore and is hence exposed to developments in the iron ore market. Over the past years, the price of 62% iron ore has traded down. However, premiums for high-grade products have increased materially due to a firm demand development, primarily in China, driven by tougher environmental regulations. We see several factors that should continue to support a strong demand development for high-grade ore, which bodes well for NIO.

NIO's exposure to the iron ore market is obviously significant, as it is engaged in prospecting and exploring for iron ore and is planning to initiate production at Blötberget.

The dynamics of the iron ore market are complex with several factors impacting prices, among them:

- Demand from steel production
- Iron ore supply
- Transportation costs
- Mine operating costs
- Exploration and project pipeline

**IRON ORE MARKET, Mt**



Source: Wood Mackenzie and Nordea

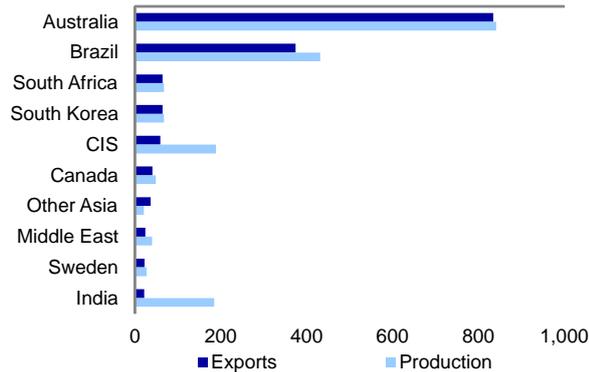
## The iron ore market size is increasing

Demand for minerals, in general, is impacted by a nation's prosperity and economic development. The World Steel Association claims that this is owing to the increased need for infrastructure investments, among other things, which require mineral inputs such as iron ore in their production processes.

The iron ore market has grown in recent decades and demand for iron ore more than doubled during 2000-17, according to Wood Mackenzie. It claims that this can be explained by the growth of the emerging economies, led by China, since demand for iron ore is closely linked to steel production which in turn is linked to economic growth. However, there has also been a significant increase in the supply of iron ore, and currently the supply of iron ore exceeds the demand for it.

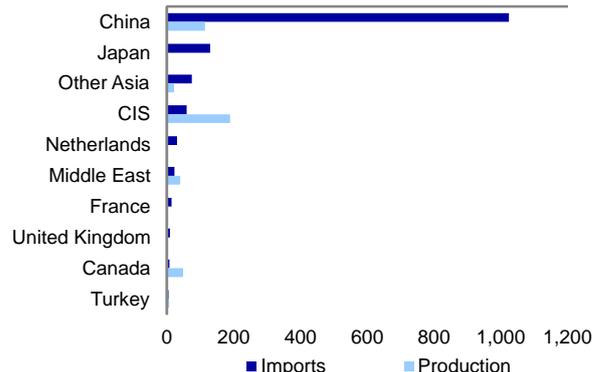
The biggest net importing country of iron ore by far is China, which imported more than 1,000 million tonnes (Mt) during 2017. Another big net importer of iron ore is Japan which imported around 130 Mt in 2017. However, Japan's steel production has been flat to slightly declining in recent years; its production of crude steel in 2012 was 107 Mt versus 105 Mt in 2017. On the supply side, Australia and Brazil stand out as the biggest exporters of iron ore. Australia produced and exported some 842 Mt and 835 Mt of iron ore in 2017, respectively. Western Australia is rich in iron ore resources, with big players such as Rio Tinto, with its Pilbara iron ore mine, as well as BHP Billiton, which has several mines located in the region. The world's largest producer and exporter of iron ore is the Brazilian company Vale, which produced roughly 367 Mt of iron ore in 2017, according to the company's latest annual report.

**TOP TEN IRON ORE EXPORT COUNTRIES 2017, Mt**



Source: World Steel Association and Nordea

**TOP TEN IRON ORE IMPORT COUNTRIES 2017, Mt**



Source: World Steel Association and Nordea

**EU (28) IRON ORE EXPORT REGIONS 2017, Mt**

EU (28)	33.8
Africa and Middle East	6.3
Other Europe	1.9
NAFTA	1.1
CIS	0.1
China	0.1
Other America	0
Japan	0
Other Asia	0
Oceania	0
<b>Total exports</b>	<b>43.3</b>

Source: World Steel Association and Nordea

Sweden is the largest iron ore producer in the EU, producing roughly 27 Mt of iron ore in 2017. Consequently, Sweden is also the largest exporter of iron ore in the EU, exporting some 23 Mt of iron ore in 2017. The biggest export region for the EU producing countries is to other states within the EU, followed by Africa and the Middle East. Our view is that NIO will be exporting most of its products within these regions, as there is good demand and it is convenient from a logistics and trading perspective. Particularly, exports to other EU member states would be advantageous for NIO from a trade perspective, as the trade terms are, of course, better than those to any other regions.

NIO expects to produce iron ore at an average grade of Fe 69%

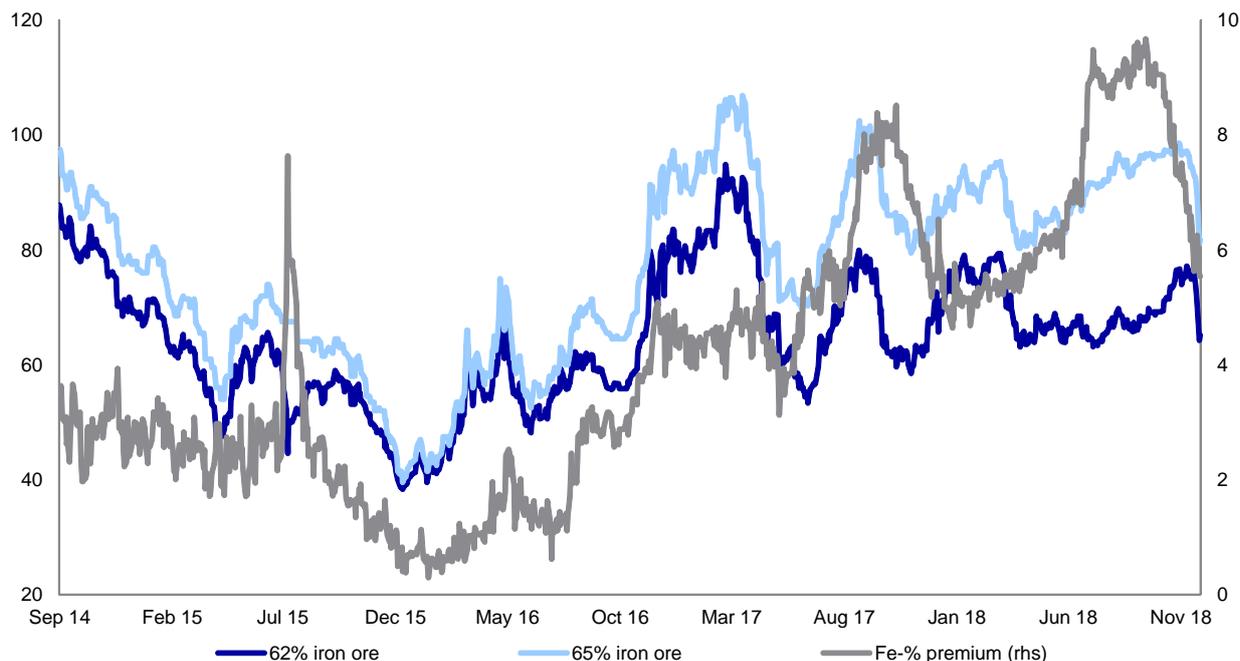
**Flight to quality causes high-grade premiums to increase over time**

NIO is striving to be able to produce iron ore products with an average iron content of 69%. High-grade iron ore products (usually with Fe content of 65% or above) are traded at a premium to lower-grade ore. The newly traded 65% Fe index is gaining as the basis for pricing of high-grade iron ore and is hence the one we have chosen to primarily rely on in terms of how high-grade products are priced.

This premium has strengthened in recent years, and 65%-grade iron ore is currently trading at around a USD 6 premium per Fe percentage on top of 62%. If we apply this unit premium to NIO's planned 69% products, the absolute premium would be USD 42 per tonne (USD 6 x (69%-62%) \* 100).

During Q3 2018, the prices of low- and high-grade iron ore diverged substantially, and were trading at a spread of more than USD 9 per Fe percentage in September. However, this spread decreased in Q4, primarily due to weaker seasonal Chinese demand, returning to around the two-year average. Overall, 65% and 62% iron ore prices varied between USD 80-100 and USD 60-80 over the course of 2018, as shown in the graph below.

**65% VS 62% PRICE EVOLUTION AND FE PERCENTAGE PREMIUM, USD PER TONNE AND %**



Source: Bloomberg and Nordea

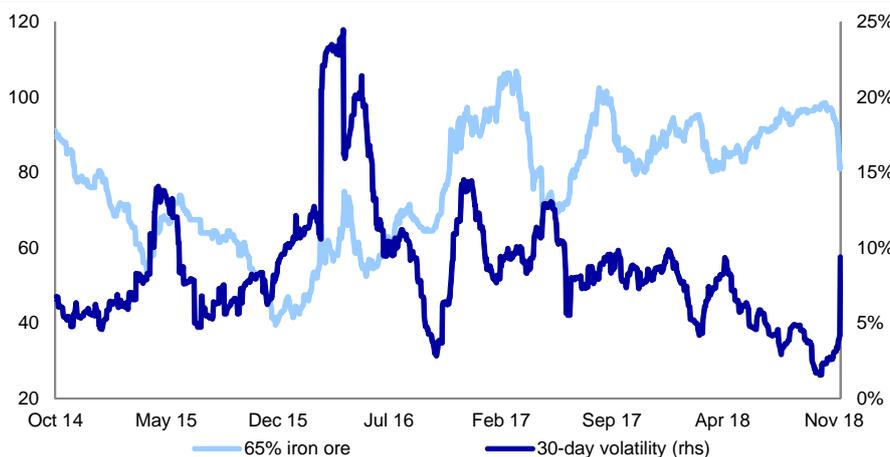
**AVERAGE 30-DAY VOLATILITY**

2018	20%
2017	31%
2016	35%
2015	18%
2014	13%
2013	7%
<b>Total</b>	<b>23%</b>

Source: Bloomberg and Nordea

Looking at the iron ore price trend, it is apparent to us that it has been quite volatile over the past five years. We calculate average 30-day volatility for the period of 9%, which is quite high. The volatility for 65% iron ore peaked during Q1 2016, which relates to the weaker demand for steel coming from primarily Asia. However, price volatility has gone down since 2016 towards more historical levels and averaged 3.5% during 2018. Demand for steel is stabilising again, resulting in a more stable iron ore price, we believe.

**EVOLUTION OF 65% IRON ORE PRICE AND 30-DAY VOLATILITY, USD PER TONNE AND %**



Iron ore price volatility peaked during 2016

Source: Bloomberg and Nordea

**Steel consumption going up, per capita consumption going down**

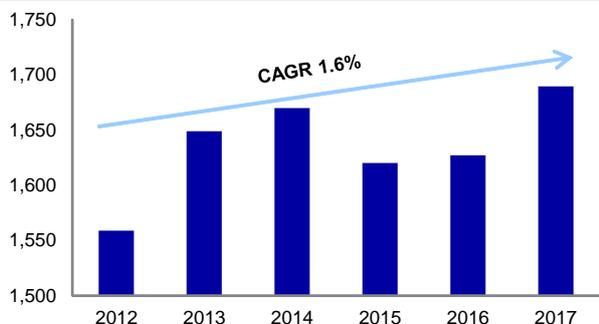
China is the world's largest steel producer

Global steel production in general has displayed a CAGR of 1.6% since 2012 and the World Steel Organisation estimates the growth for 2018 and 2019 to be 1.8% and 0.7%, respectively. Moreover, Asia accounts for the lion's share of global steel production, with Japan and India two major producers, after China.

Particularly India has shown strong growth in its steel production recently and our view is that future infrastructure investments in the country, announced by India's Ministry of Steel, will result in this trend continuing. Further, estimates provided by Accenture in collaboration with the OECD imply that global steel consumption will show a CAGR of 1% in the period 2018-2034. The estimated 1% CAGR is not big in itself, which is also

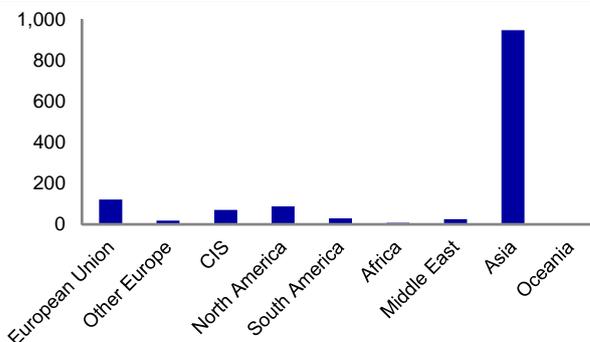
reflected in steel consumption per capita, which Accenture estimates will decrease during the same period owing to shared services (eg automotive) becoming more popular, reducing the demand for steel. However, the global population is increasing, and is, according to the UN, expected to increase in future decades as well, which will increase overall demand for steel. If that is the case, it will benefit demand for iron ore too.

**GLOBAL STEEL PRODUCTION, Mt**



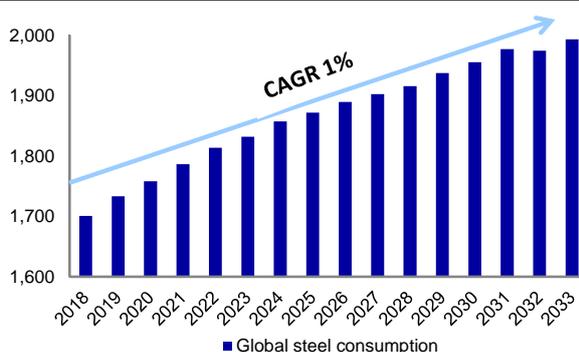
Source: World Steel Association and Nordea

**GLOBAL STEEL PRODUCTION PER REGION 2017, Mt**



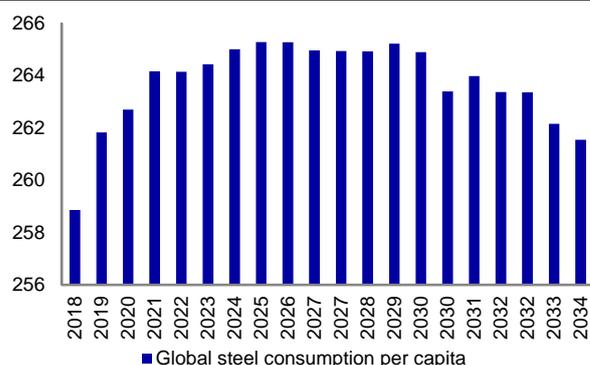
Source: World Steel Association and Nordea

**GLOBAL STEEL CONSUMPTION, Mt**



Source: Accenture Strategy, OECD and Nordea

**GLOBAL STEEL CONSUMPTION PER CAPITA, Mt**



Source: Accenture Strategy, OECD and Nordea

**TOP 10 STEEL PRODUCERS 2017, Mt**

	Tonnage
China	832
Japan	105
India	101
United States	82
Russia	71
South Korea	71
Germany	43
Turkey	38
Brazil	34
Italy	24
<b>Total world</b>	<b>1,689</b>

Source: www.worldsteel.org and Nordea

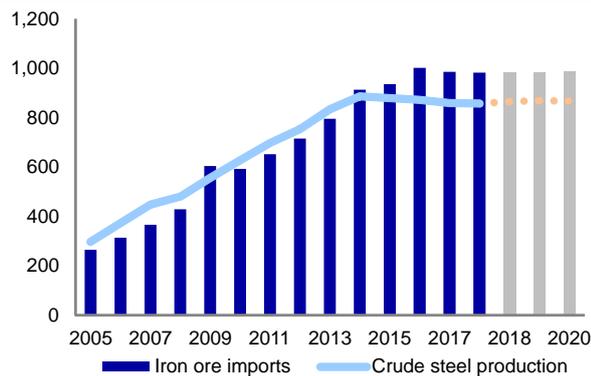
**Environmental demands – an opportunity for high-grade iron ore**

Demand for and the price of iron ore are highly dependent on global steel production, which has been shaky in recent years. China is by far the largest producer of steel, turning out some 832 Mt in 2017. However, the Chinese government has shut down several steel manufacturers in recent years due to their inefficiency, contribution to air pollution and direct negative impact on the local environment, while the productivity and utilisation of the remaining steel plants are improving, which requires a higher-quality iron ore feed to the furnaces.

This has primarily impacted the price of lower-grade (62% Fe or below) iron ore, which traded below USD 40 per tonne in 2015 after falling from a price above USD 130 per tonne in 2013. It has been recovering lately, and 2018 was a good year; low-grade ore is now trading at around USD 70 per tonne. Further, the commodity research unit (CRU) does not expect any decline in Chinese demand for iron ore in the years ahead; rather, it expects demand to stabilise.

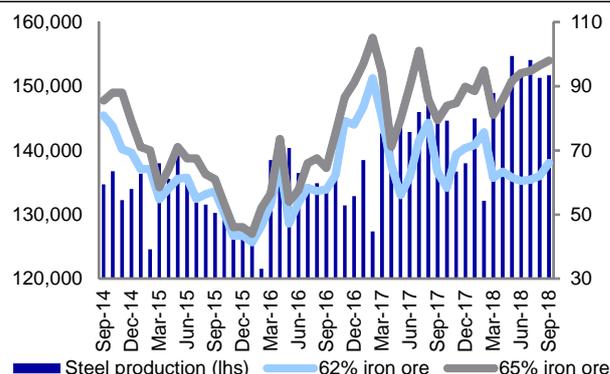
As can be seen in the graph to the right below, iron ore prices correlate quite well with the development in Chinese steel production, which we believe is related to the fact that China has become increasingly important for global steel production and therefore has a larger impact on the global iron ore price as its production levels fluctuate.

**CHINESE IRON ORE DEMAND AND STEEL PRODUCTION, Mt**



Source: CRU and Nordea

**CHINA STEEL PRODUCTION VS 62% AND 65% IRON ORE PRICES, Mt AND USD/TONNE**



Source: Bloomberg and Nordea

India is expected to ramp up infrastructure investments

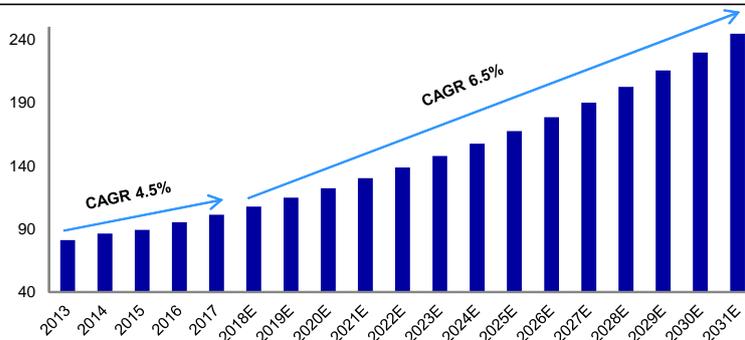
**India ramps up its infrastructure investments**

India's infrastructure as well as its affordable housing investments might accelerate in the coming years, as the government has announced that it will increase infrastructure spending by 21%, or USD 87bn, during 2018-19. 25% of this increase is earmarked for railways, which will likely increase demand for crude steel and support prices for iron ore. Further, India's Ministry of Steel estimated in the National Steel Policy 2017 that domestic demand for steel would increase at a CAGR of 6.5% up to 2031.

This implies that India's steel production will increase going forward; the World Steel Association estimates it will see a CAGR of 6.5% in the period 2018-31. In addition, in order to improve productivity and reduce imports of expensive coking coal, India will need to increase consumption of higher-grade iron ore. All in all, we believe demand from India for high-grade iron ore products is set to increase meaningfully in the long term.

India's steel production is expected to go above 200 Mt by 2031

**INDIA'S STEEL PRODUCTION, Mt**



Source: World Steel Association and Nordea

Higher coking coal prices have increased demand for high-grade iron ore

**Rising coking coal prices might favour iron ore**

Apart from the closure of several steel manufacturers in China, one explanation for the increased demand for high-grade iron ore is that the price of coking coal has increased significantly recently. Coking coal is used to melt iron in the blast furnace, and as its price has increased significantly, manufacturers are now looking more for high-grade iron ore which requires less coal in the smelting process.

Coking coal prices spiked at the beginning of 2017, which was related to supply issues in Australia, one of the largest coking coal suppliers. Since then, the price of the raw material has come down but is still at substantially higher levels than in 2015-16. Looking at the import prices of future contracts for China, we see indications that the market expects prices to increase in the future. Should the prices of coking coal increase, this could have a positive impact on the price for high-grade iron ore, since that would boost demand for it in the blast furnace process, and increase the expected premium NIO could get for its product.

**CHINA COKING COAL IMPORT PRICE, USD PER TONNE**



Coking coal prices have increased since 2017

Source: Bloomberg and Nordea

**Iron ore pellets becoming more common**

Iron ore pellet demand has increased due to higher coking coal prices

NIO is planning to produce iron ore that will serve as an input in the pellet production process – pellets are used in blast furnaces in steel manufacturing. Therefore, NIO is exposed to future market prices of iron ore pellets. The increasing price of coking coal has led steel manufacturers to use iron ore pellets in their blast furnace melting process to a larger extent. One of the main benefits of using iron ore pellets instead of crude iron production is that it improves production efficiency and reduces carbon dioxide emissions and hence the negative impact on the environment.

Producing good-quality pellets requires high-quality iron ore, which has resulted in a price increase for pellet contracts. We believe this will increase demand and potentially have a positive impact on the price of high-grade iron ore further, which naturally would benefit NIO.

**IRON ORE PELLET SPOT PRICE FE 65%, USD PER TONNE**



Iron ore pellet prices have increased sharply since 2016

Source: Bloomberg and Nordea

# Estimates

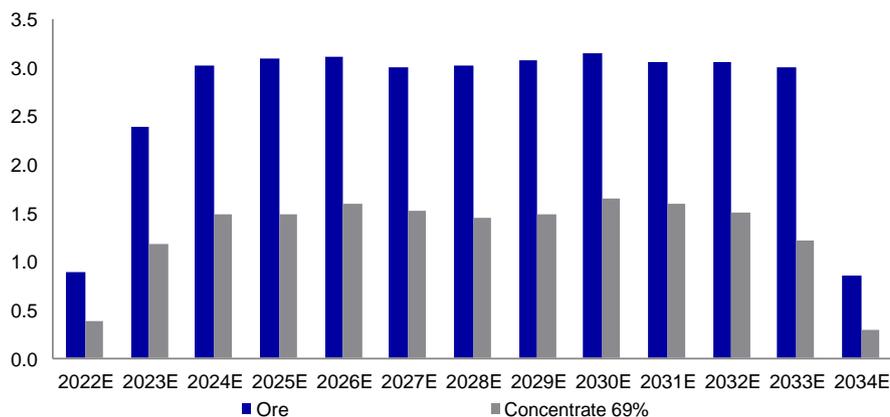
We base our estimates on the Blötberget project. We forecast that Blötberget will be able to produce 2.7 million tonnes of iron ore and 1.3 million tonnes of concentrate per year, on average, until 2034. This implies a lifetime of the mine of 13 years. We forecast accumulative free cash flows over the mine's lifetime of approximately SEK 2.9bn. Finally, we forecast a total capital need of SEK 2bn until first ore, of which we believe NIO should be able to finance SEK 0.5bn (25%) through debt and SEK 1.5bn (75%) through raising equity.

We estimate average iron ore and concentrate production of 2.7 Mt and 1.3 Mt, respectively

## Production estimates

2019 and 2021 are pre-production years and we do not expect any output during this time. During pre-production, we expect capex spending to peak, as the mine and mill are being constructed. During the first year of production, 2022, we estimate the mine will produce ~0.9 million tonnes (Mt) of ore, yielding ~0.4 Mt of concentrate. We expect a fairly rapid ramp-up reaching full production capacity as early as 2024, with average yearly iron ore production of 2.7 Mt and concentrate production of 1.3 Mt. During the entire life of the mine, we expect that NIO will be able to produce some 35 Mt of iron ore and 17 Mt of concentrate, with an average iron ore grade of 69%. Based on estimated measured and indicated resources of roughly 48 Mt, that would imply that 73% will be extracted from the ground. The concentrate is a blend of Hematite and Magnetite, with an overweight of the latter. That would imply that the process weight recovery, ie the output of concentrate in relation to the output of ore, averages 47%.

### MINE PRODUCTION, Mt and %



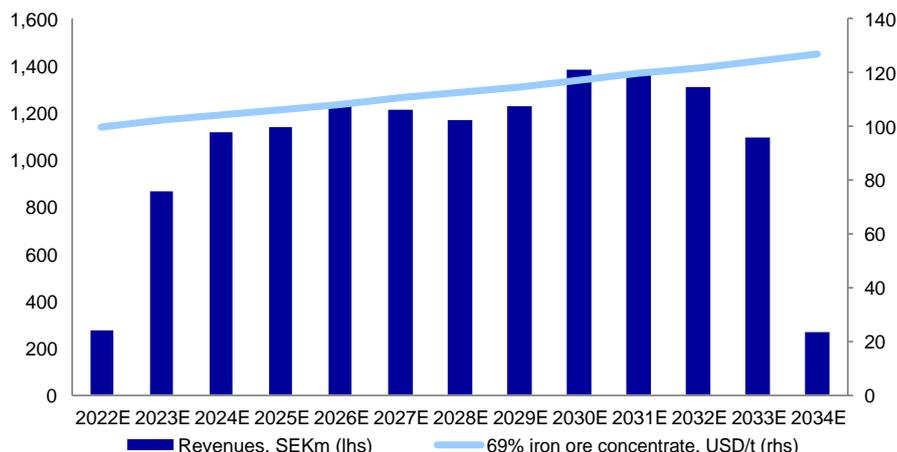
Source: Company data and Nordea estimates

## Revenue and iron ore price estimates

We estimate NIO's revenue to peak by 2030

We estimate that the total revenue for the lifecycle of the mine is USD ~1.5bn or ~SEK 14bn (at USD/SEK of 9.0), based on a production of 17 Mt concentrate, at a real price of USD 80 per tonne. We further estimate that NIO's revenue will ramp up during the first two years of the mine until 2024. We believe that revenue will peak around 2030, alongside production volume. As the mine is approaching its closure in 2034E, revenue will naturally fade.

## REVENUE AND 69% IRON ORE ESTIMATES, SEKm AND USD PER TONNE



Source: Company data and Nordea estimates

We estimate the price received for NIO's 69% iron ore product by basing it on the standard grade (62%), and applying a unit premium. The premium is based on a combination of average unit premium observed for different concentrate types (Brazilian Fines Index, CFR Qingdao) 65% and 66% versus 62%.

All in all, we are basing our price estimates on real unit premiums of USD 4.0. Given a 62% concentrate price deck of real USD 70 per tonne, we calculate a gross price (pre-transportation costs) of real USD 98 per tonne for a 69% concentrate. Then finally, deducting assumed shipping costs of real USD 20 per tonne, we arrive at a net real price of USD 78 per tonne from 2020E-21E.

## IRON ORE PRICE ESTIMATES, USD PER TONNE

	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E	2034E
62% delivered to China, Qingdao	70.0	70.0	71.4	72.8	74.3	75.8	77.3	78.8	80.4	82.0	83.7	85.3	87.0	88.8	90.6
Premium per % for 65% vs 62%	5.0	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.9	6.0	6.1	6.2	6.3	6.5
65% delivered to China, Qingdao	85.0	85.0	86.7	88.4	90.2	92.0	93.8	95.7	97.6	99.6	101.6	103.6	105.7	107.8	110.0
Premium per % for 66% vs 65%	4.0	4.0	4.1	4.2	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2
66% delivered to China, Qingdao	89.0	89.0	90.8	92.6	94.4	96.3	98.3	100.2	102.2	104.3	106.4	108.5	110.7	112.9	115.1
Premium per % for 69% vs 66%	3.0	3.0	3.1	3.1	3.2	3.2	3.3	3.4	3.4	3.5	3.6	3.7	3.7	3.8	3.9
<b>69% delivered to China, Qingdao</b>	<b>98.0</b>	<b>98.0</b>	<b>100.0</b>	<b>102.0</b>	<b>104.0</b>	<b>106.1</b>	<b>108.2</b>	<b>110.4</b>	<b>112.6</b>	<b>114.8</b>	<b>117.1</b>	<b>119.5</b>	<b>121.9</b>	<b>124.3</b>	<b>126.8</b>
Premium per % for 69% vs 62%	4.0	4.0	4.1	4.2	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2

Source: Bloomberg and Nordea Estimates

## Opex structure

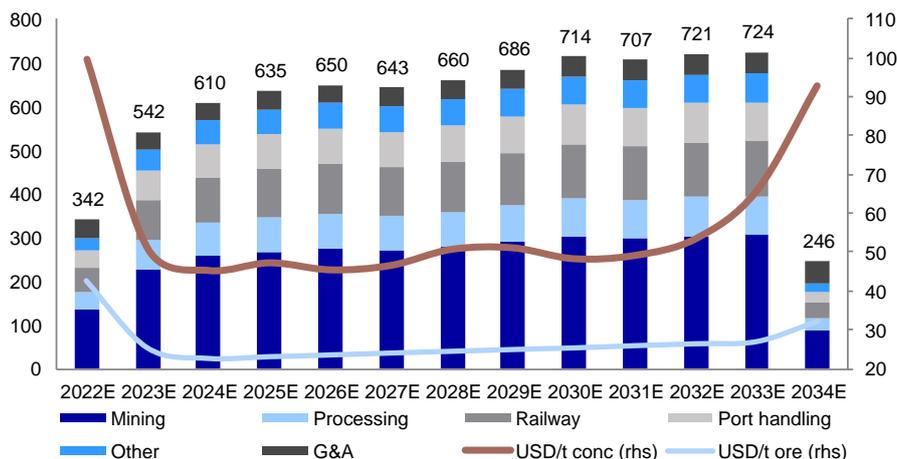
Opex expected to increase as production ramps up

We estimate NIO's total opex over the mine's lifecycle at SEK 7.9bn; we base our estimates on opex relating to mining, processing, railway, port handling, G&A and other. The largest opex is related to mining with total expenditure during the mine's lifetime of SEK 3.3bn accounting for some 42% of the total. The mining costs are comprised mainly of production drives including rock support, long-hole drilling and blasting. The second-largest expenditure is related to railway transportation, with a total cost of SEK 1.4bn during the period. We estimate the transportation cost mainly in conjunction with the shipment from Ludvika to the deep water port at Oxelösund.

As NIO's production increases, economies of scale will be achieved, which should drive down opex per tonne. We estimate that the cost per tonne of iron ore concentrate will decline from USD 100 per tonne in 2022 to USD 45 per tonne in 2024, a decrease of more than 50%, owing to increases in mine production. As the mine approaches the end of its lifecycle, we estimate that the cost per unit will increase again, to reach a level of USD 66 per tonne by 2033.

Of the total operating costs, we forecast around 7% to be fixed (or some SEK 40-45m annually), eg overhead/central costs, while the remainder (ie more than 90%) should be at least semi-variable, hence volume dependent.

**OPEX STRUCTURE ESTIMATES, SEKm AND USD PER TONNE**



Source: Company data and Nordea estimates

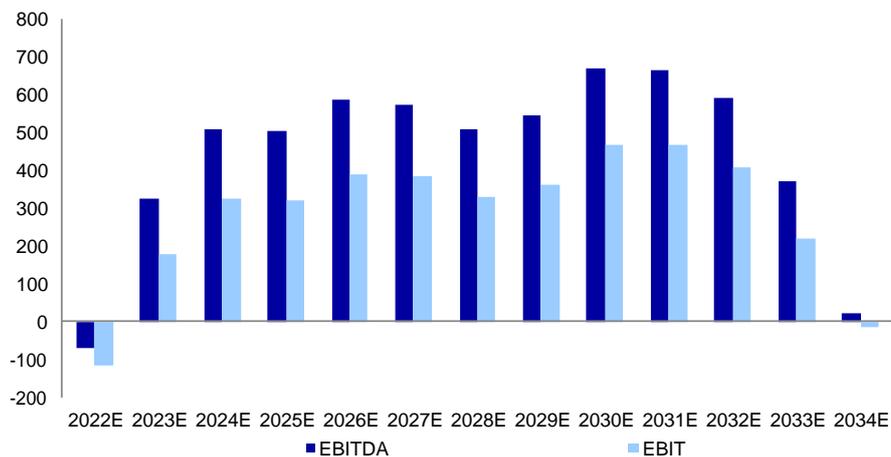
**EBIT and EBITDA outlook**

During the first production year, we estimate that NIO's EBIT and EBITDA will be negative, as well as the final year of the mine's lifecycle, which is natural due to certain proportions of fixed costs. We forecast EBITDA to increase from approximately SEK 320m in 2023 and reach roughly SEK 670m in 2030 as the mine reaches its peak production.

With regards to depreciation charges, we estimate that the mine's total capex (mentioned further below) will be depreciated accordingly with the pace of production volumes.

Hence, we forecast EBIT to increase from SEK ~180m in 2023 to around SEK 470m in 2030. During 2028E-29E, we see earnings being temporarily lower due to the mining sequence whereby we forecast temporarily lower concentrate volumes.

**EBIT AND EBITDA ESTIMATES, SEKm**



Source: Company data and Nordea estimates

**Project and sustaining capex**

We estimate te project capex at USD 200m and sustaining capex at USD ~30m

We estimate that the total capex needs for the mine are roughly USD 230m, of which we estimate USD 200m will be used during the initial two years of the project, the so-called 'pre-production' years, and USD ~30m will be used during the rest of the mine's lifetime. The sustaining capex we estimate will be fairly evenly spread out throughout the mine's lifetime.

We estimate that the largest portion of the project capex relates to process plant costs, USD 68m, followed by mining costs. The process plant costs relate to main and ancillary equipment, where the cost for main equipment amounts to roughly USD 25m and ancillary USD 3m. The mining costs primarily relate to the development of the mine, such as dewatering and ventilation. We expect much of the sustaining capex to

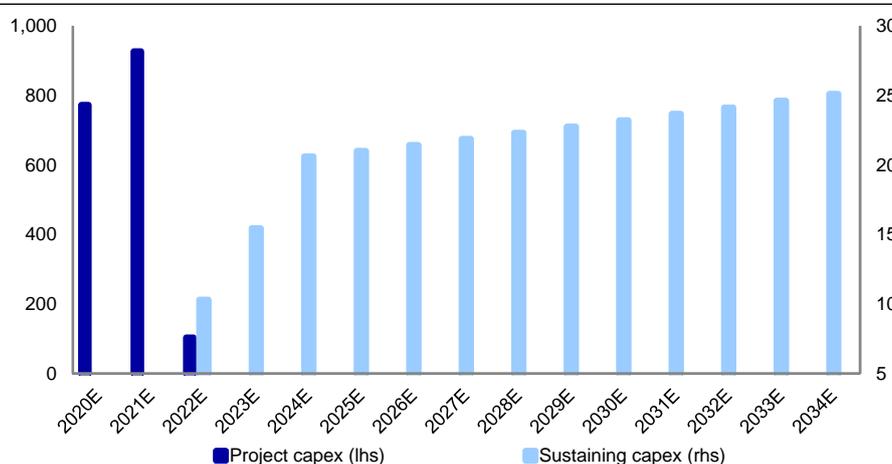
come from maintenance of the mine, with estimated capex of USD 18m. For 2019, we estimate that NIO will need to raise an additional USD 10m to finance its capex need.

#### PROJECT AND SUSTAINING CAPEX BREAKDOWN, USDm

	Project capex	Sustaining capex
Mining	55	18
Surface handling	13	0
Rail Terminal	13	0
Site civils	14	0
Surface buildings	14	0
Surface Electrical Power	6	0
TMF & pipeline	8	6
Process plant	68	1
Environmental & land acquisition	6	3
Mine Closure	0	3
Shipping & logistics in Sweden	4	0
<b>Total</b>	<b>200</b>	<b>31</b>

Source: Company data and Nordea estimates

#### CAPEX OUTLOOK, SEKm



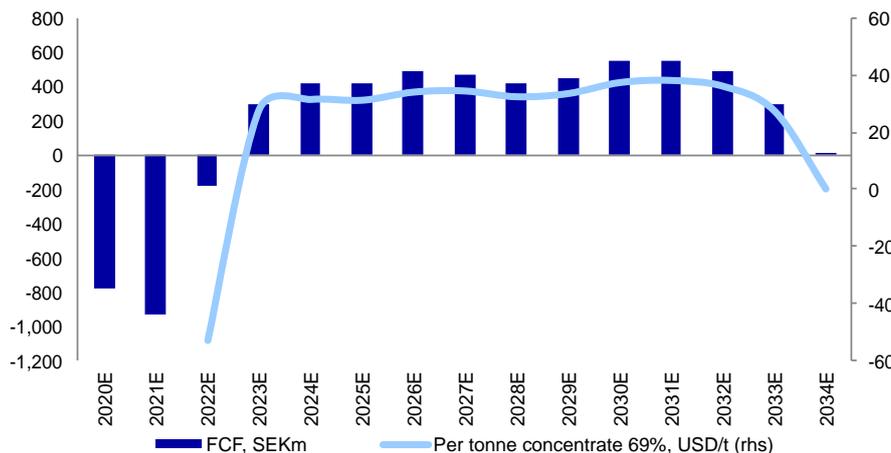
Source: Company data and Nordea estimates

#### Free cash flow

During 2020-22, we estimate FCF to be negative, as that is the most capex-intensive period. We forecast accumulative negative FCF of USD 210m (SEK -1.9bn) during 2020E-22E, as we expect the first production to commence in 2022.

We expect FCF to be positive from 2023, when we expect the mine to reach 1.2 Mt of concentrate volumes. We then expect FCF to stay positive throughout the mine's lifetime. Over the mine's life, including the construction period, we estimate the total FCF for Blötberget at approximately USD 0.3bn or SEK 2.9bn.

**ESTIMATED FCF, SEKm AND USD PER TONNE**



Source: Company data and Nordea estimates

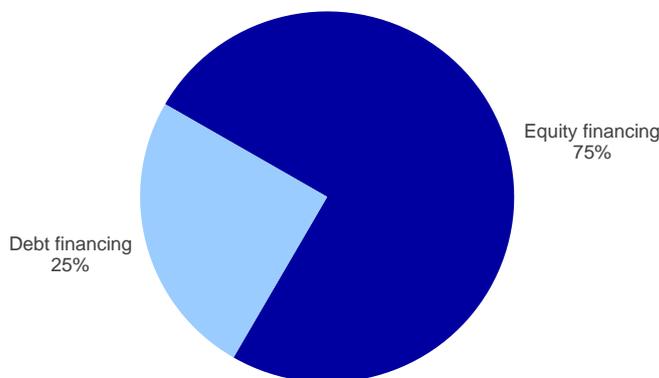
**Financing structure**

We expected NIO to finance its project capex with 75% equity and 25% debt

We believe it is reasonable, for a company of NIO's size and with the Blötberget project's characteristics, that most of the capital needed should be financed through equity. Still, we believe it is reasonable that some of the capex required could be raised through debt. With 25% of the total capital need financed through debt, this implies some SEK 500m in debt, or 1.5x 2023E EBITDA, which we believe is reasonable.

Therefore, the remainder, or some SEK 1.5bn, should be financed through raising equity, preferably during the course of 2019.

**FINANCING STRUCTURE 2019E, %**



Source: Company data and Nordea estimates

# Historical performance

NIO has managed to raise more than SEK 200m of equity capital in the past seven years, demonstrating its capacity to raise funding. Moreover, the company has been in a net cash position since 2017, with a stable capex burn rate since 2011, which we deem necessary for the company to be properly prepared to start up a producing mine.

RIGHTS ISSUES, SEKm	
Year	Issue amount
2011	21
2012	63
2013	0
2014	59
2015	15
2016	0
2017	17
9M2018	32
<b>Total</b>	<b>207</b>

Source: Company data and Nordea

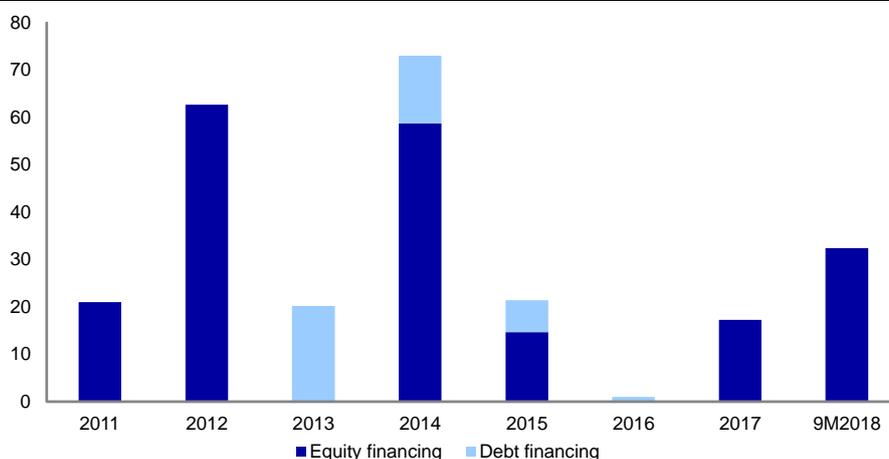
NIO estimates it needs USD 250m in additional capital for the producing mine

## Funding

In the past, NIO has primarily funded its operations through equity financing. Over the past seven years, it has raised equity capital amounting to some SEK 207m. The biggest equity injections came in 2012 and 2013, when it managed to raise SEK 63m and SEK 59m, respectively. Note that NIO was a private company until Q3 2018, so the equity capital raised before this came from private investors and government agencies. For example, Swedish state-owned private equity fund Inlandsinnovation invested in the company in 2014. In conjunction with NIO's listing on First North in Q3 2018, it raised roughly SEK 32m in equity capital. It intends to use the additional capital to finalise the feasibility study at Blötberget. In 2012, the company experienced a setback when its intended listing on First North failed, because the stock's liquidity could not be fully secured. The company still managed to secure its capital needs for that year via private investors though.

To start work around the producing mine, NIO has estimated it needs a USD 200m capital for the initial two pre-production years of the mine, and an additional USD 50m as sustained capital for the producing 15 years of the mine. Although NIO's debt financing has previously been quite small in relation to its equity financing, it says it is looking for both equity and debt capital to finance its future capital needs. Given NIO's ability to raise equity capital before, we believe it should be able to again raise the capital needed.

## NIO: FUNDING HISTORY, SEKm



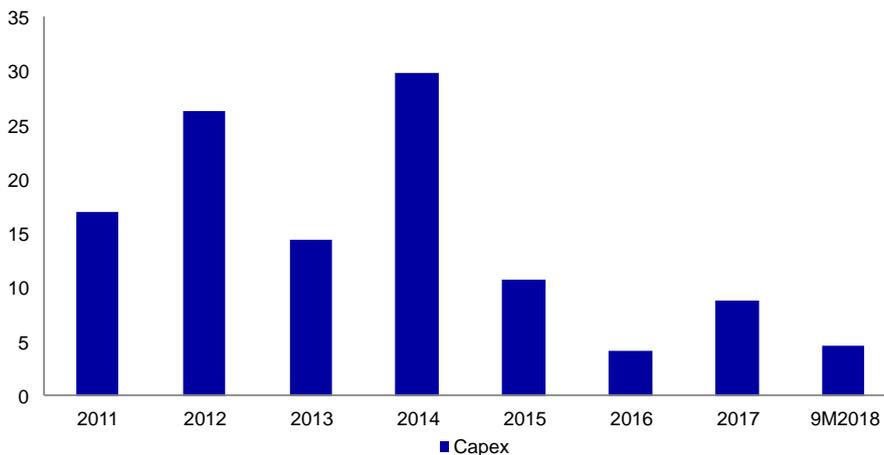
Source: Company data and Nordea

NIO's capex peaked in 2014

## NIO's capex need should increase

NIO's capex has decreased since 2014, but we expect it to increase in the coming years as the construction of the producing mine ramps up. Capex peaked in 2014, mainly due to a deep core drilling campaign at Blötberget that included more than 7,100 metres of drilling. In 2012, capex was also at high levels owing to deep core drilling campaigns, including 14,260 metres of drilling primarily at Blötberget and Väsmanfältet. We interpret these high capex levels as having been necessary and consider them positive in having now put NIO in a good position to take the next step in its Ludvika mines project.

**HISTORICAL AND CURRENT CAPEX, SEKm**



Source: Company data and Nordea

**Current net cash of SEK 21m**

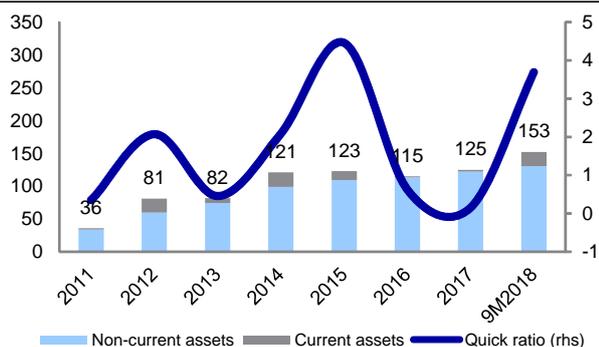
NIO had a cash position of SEK 21.2m as of Q3 2018

NIO's ability to raise capital has ensured that it has always had good liquidity. The company's cash position improved significantly during 2018, from SEK 2.4m at the beginning of the year to SEK 21.2m by the end of Q3. This can primarily be explained by the rights issue that took place in Q3. The company's net working capital (NWC) was at a low in 2017 of SEK -18.4m, which was related to a short-term loan of SEK 15.8m to one of its debtors that was to mature in November 2018 but was instead netted towards the shares and a convertible.

NIO's quick ratio has been improving since 2016

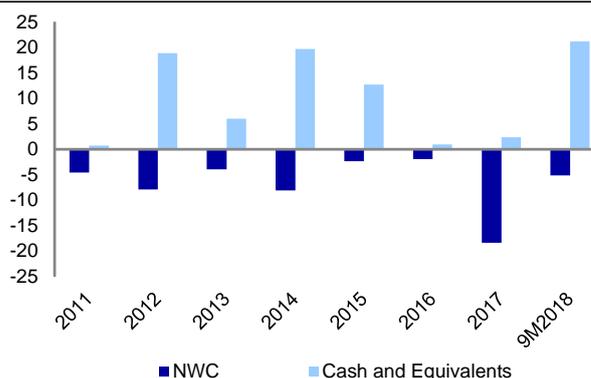
Moreover, NIO's liquidity has improved during 2018, with a quick ratio of 3.7 in Q3. The quick ratio peaked during 2015, reaching levels above 4 because the company amortised its short-term debt and repaid some of its account payables, as reflected in its cash flow statement reporting cash flow for 2015 of SEK -7m, down from SEK 13.7m in 2014. Moreover, the quick ratio reached a low during 2017, owing to the aforementioned loan of SEK 15.8m; it was due to mature in November 2018 and was thus treated as short-term debt for the company.

**CURRENT/NON-CURRENT ASSETS VS QUICK RATIO, SEKm**



Source: Company data and Nordea

**NWC VS CASH AND EQUIVALENTS, SEKm**



Source: Company data and Nordea

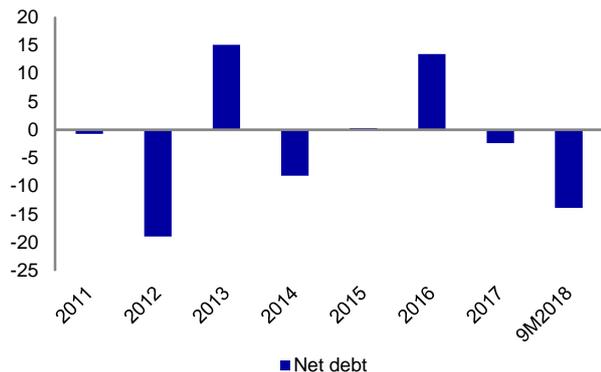
NIO has reported a net cash position since 2017

Since 2017, NIO has been in a net cash position and for the past seven years has only reported net debt twice: in 2013 and 2016. NIO's current and historical net cash position further demonstrates its ability to raise capital as the need arises. As of Q3 2018, NIO's net cash position was SEK -13.9m, which is the lowest since 2012, when the net cash position was SEK -18.9m.

The company's debt-to-equity was high in 2013, explained by increased borrowing

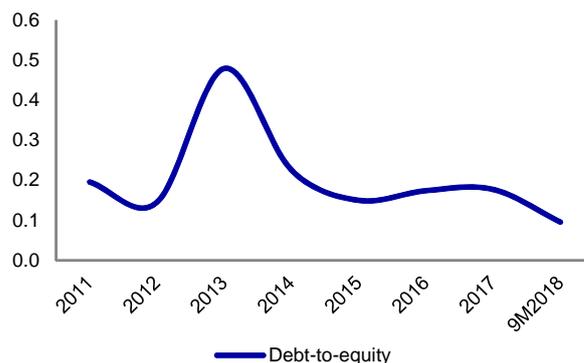
NIO's average debt-to-equity ratio since 2011 has been 0.21; at its highest, it reached 0.38 for the full-year 2013 and at its lowest 0.14 for 2012. The peak in 2013 was because the company increased its long-term debt by roughly SEK 10.2m and its short-term debt by roughly the same amount, SEK 10m. The long-term debt was a loan granted from a private equity fund and the short-term debt related to convertible debt, set to mature in 2014. Since 2014, NIO's leverage has been stable with a debt-to-equity ratio between 0.10-0.23. In Q3 2018, debt-to-equity went as low as 0.10.

**NIO: NET DEBT, SEKm**



Source: Company data and Nordea

**NIO: DEBT-TO-EQUITY RATIO**



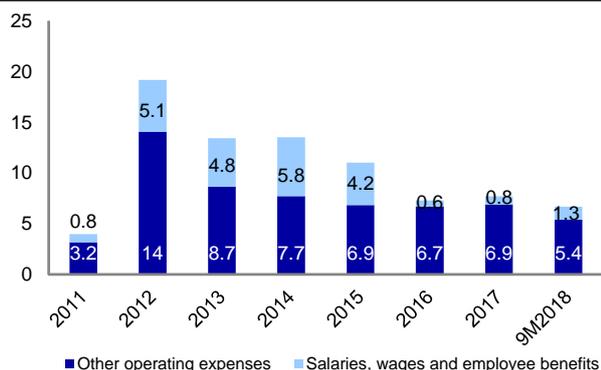
Source: Company data and Nordea

**Costs**

The biggest expense for NIO relates to prospecting

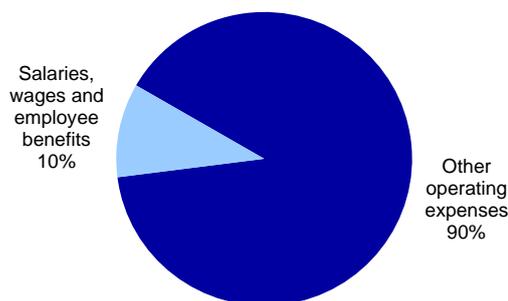
The biggest cost for junior miners usually relates to prospecting, and NIO is no exception. At year-end 2017, NIO reported prospecting expenses (under other operating expenses) of 90% of total operating costs, or SEK 6.9m. Staff-related costs (reported under salaries, wages and employee benefits) have gradually been decreasing since 2012, from SEK 5.1m to SEK 0.8m as of year-end 2017. NIO's operating costs reached a high during 2012, when total operating costs amounted to some SEK 19.2m. The high costs stemmed from the aforementioned deep core drilling campaign at Blötberget and Väsmanfältet.

**NIO: COST DEVELOPMENT, SEKm**



Source: Company data and Nordea

**NIO: OPERATING COST STRUCTURE AS OF 2017, %**



Source: Company data and Nordea

**NIO has improved its balance sheet**

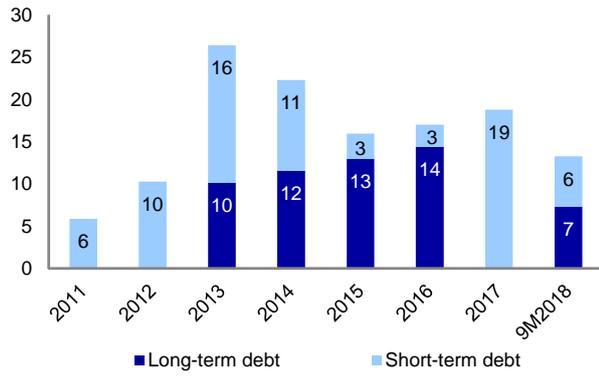
NIO has low leverage, with total shareholder equity of SEK 139m as of Q3 2018

NIO's balance sheet is categorised by low leverage, with a large equity portion. As of the end of Q3 2018, total shareholder equity amounted to SEK 139m, up from SEK 106m at the end of 2017. Moreover, liabilities have been decreasing since 2013, going from SEK 26m to SEK 13m as of the end of Q3 2018.

The debt structure has gone from short- to long-term since 2011

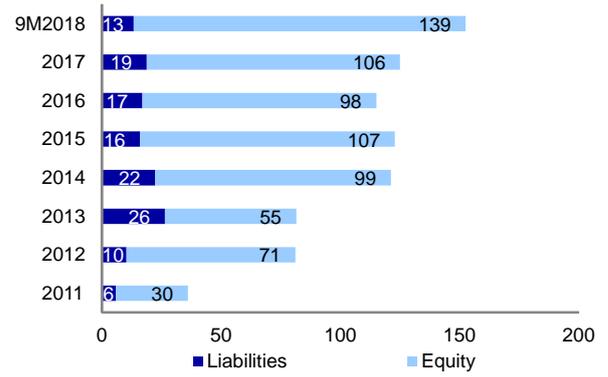
The company's debt structure evidently changed from 2011 to Q3 2018. The current debt structure has more than 50% long-term debt compared with 80% in 2016. Notably, the short-term debt peak of SEK 19m in 2017 was related to a loan to one of the company's largest debtors, later restructured in Q3 2018. We believe the structure of NIO's balance sheet will be similar in the future to today's and that it will increase in size as the company raises more capital, primarily through the equity capital markets.

**NIO: DEBT STRUCTURE, SEKm**



Source: Company data and Nordea

**NIO: BALANCE SHEET STRUCTURE, SEKm**



Source: Company data and Nordea

# Sustainability

The high-grade iron ore that NIO is planning to extract should enable steel manufacturers worldwide to operate in a more environmentally-friendly way. Furthermore, NIO aims to minimise its impact on the environment, local residents and society at large, and to contribute to sustainable development. The company plans to certify its operations according to the international ISO 14001 standard in the future.

Mining has a direct and tangible impact on the environment, which can have long-term effects

## Sustainability

Mining is a long-term business which entails long-term commitments to the local communities and environment in which the operations take place. Simultaneously, as a result of mining activities, there are direct impacts on the environment, which are accompanied by certain risks. As such, any policies put in place to ensure sustainable mining activities should mitigate the negative impact of these activities to some extent and thus are worthwhile considering prior to an investment in a mining company, we argue. While Nordic Iron Ore does not currently have a producing mine in place, we argue that the overall environmental and social impacts of iron ore mining should be addressed from the outset, as should the company's formal strategy for minimising its negative impacts in the future.

## Environmental and social impacts over the lifecycle of a mine

Each phase of the lifecycle of a mine, as previously explained, has varying impacts on the natural environment. Therefore, we argue that it is imperative that mining companies assess the environmental impacts of each phase and devote efforts and resources accordingly.

Environmental and social impacts of mining should be considered throughout the lifecycle of a mine

A.T. Kearney breaks down the impacts from mining activities into environmental and social impacts, with three categories in each area. The categories of environmental impacts are water, sea and land, while the categories of the social impacts are social-economic, health and safety and quality of life. A summary of the categories and their subcategories is shown below.

### ENVIRONMENTAL AND SOCIAL IMPACTS FROM MINING ACTIVITIES

	Category	Key subcategories
Environmental impact	 Water	<ul style="list-style-type: none"> <li>Acidity and toxicity (acid mine drainage)</li> <li>Shortage and limited access</li> <li>Sedimentation</li> </ul>
	 Land	<ul style="list-style-type: none"> <li>Biodiversity</li> <li>Waste</li> <li>Heavy metal levels spillage</li> </ul>
	 Air	<ul style="list-style-type: none"> <li>Energy and CO2 use and emissions of nitrogen oxide and sulfur oxide</li> <li>Mining or blasting dust</li> <li>Road dust</li> </ul>
Social impact	 Social-economic	<ul style="list-style-type: none"> <li>Job creation</li> <li>Education and skills development</li> <li>Infrastructure and housing</li> </ul>
	 Health and safety	<ul style="list-style-type: none"> <li>Number of deaths (at mine; on road)</li> <li>Number of injuries (at mine; on road)</li> <li>Illness (respiratory, cancer and HIV, for example)</li> </ul>
	 Quality of life	<ul style="list-style-type: none"> <li>Visual impact on landscape</li> <li>Vibration Noise</li> </ul>

Source: A. T. Kearney Analysis

The earlier sustainability initiatives are put into place, the better

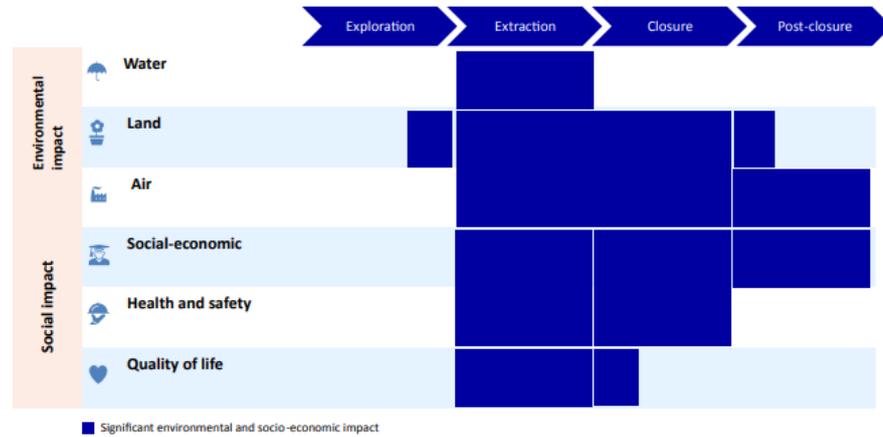
During the first stages of the lifecycle, the direct impacts on the environment may not be as apparent as in the subsequent stages; nonetheless, these early stages lay the groundwork for establishing responsible operations down the road. The earlier sustainability initiatives are put into place, the more likely they are to be successfully integrated into the development of a project.

Communication and collaboration with local communities are important for successful initiatives

To increase the chances of successful initiatives, the company should establish and continuously maintain collaboration and communication with local governments and communities; this helps to ensure the proposed mine delivers sustainable value to various stakeholders.

During the exploration phase, however, there is intense activity, which requires more sustainability efforts than any other phase across the lifecycle. While there may be significant job creation, sustainable practices should be carefully maintained to minimise strain on local communities, particularly with respect to pollution and safety.

**IMPACT OF ACTIVITIES THROUGHOUT THE LIFECYCLE OF A MINE**

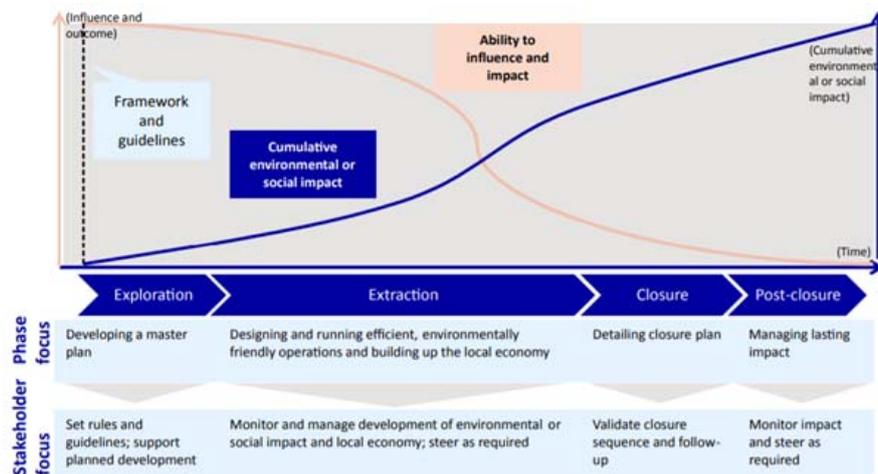


Source: A.T. Kearney Analysis

A responsible mining company is characterised by investing in the community

The need for sustainable practices does not cease after a mine is closed. As such, a responsible mining company is characterised as continuing to invest in community development, infrastructure and socio-economic programmes in order to generate benefits for the community long after mining activities end. Apart from reclamation efforts, a mining company may also continue to play a role in fuelling local economic growth, which could be done by building infrastructure or schools.

**INFLUENCE AND IMPACT BY MINING PHASE**



Source: A.T. Kearney Analysis

**Iron ore mining affects air, water and land**

Air emissions are primarily a result of exhaust gases from diesel-powered vehicles and other equipment needed to sustain mining operations

Iron ore mining in all its phases – from excavation to beneficiation (improving the value of the ore) to transportation – presents environmental risks and results in direct impacts on the environment. These are related to emissions to air and water, as well as soil contamination. Pollutants and residue related to mining are significant and often contain metals; as such, mining activities can significantly interfere with nature. Moreover, emissions into air are primarily a result of exhaust gases from diesel-powered vehicles and other equipment needed to sustain the mining operations. Water pollution can be in the form of residual chemicals from wet treatment, as well as leakage from mining tunnels, which may contain residues of explosives, soot and waste oil. Contamination of soil may be in the form of waste oil and dust, which could contain metals. Simultaneously, mining activities consume large amounts of energy during these processes.

Environmental impacts are mainly related to sulphide oxidation

The long-term environmental impacts of mining operations from iron ore exploitation are mainly related to sulphide oxidation in the residual sand derived from the mineral processing, as well as from the unwanted gangue materials. The sulphide oxidation can give rise to acidic and metallic leachate. As a consequence, the company is subject to environmental laws and prohibitions, as well as the associated risks in the event of contamination in the area of operation.

Turning iron ore into steel involves high carbon dioxide emissions; this has prompted reforms in China

Steel is the final product of iron ore, and production results in heavy emissions of carbon dioxide. However, with increasingly efficient input of raw materials, steel plants can become more efficient and increase productivity, thereby resulting in reduced emissions. In China, the world's largest steel consumer, this trend is visible. China has applied a more coercive environmental policy: as of 2017, Chinese authorities recalled one-third of all iron ore mining licences, in line with the government's stricter environmental policy. A number of small and inefficient steel plants in the country, with an estimated capacity of around 100 Mt, had to shut down. This has increased the demand for high-quality iron ore, and this is an opportunity that NIO aims to use to its advantage. These new reforms are expected to lead to a shift in focus in the steel industry – instead of reducing environmental impacts by reducing production, environmental impacts can be reduced through efficiency upgrades and environmental adjustments by using high-quality iron ore. Moreover, the steel industry has long been working to streamline steel production; it reduced emissions by 60% between 1960 and 2014. Further improvement areas can still be explored, including modernisation, digitisation and automation of production.

Nordic Iron Ore has all of the required environmental permits for Blötberget and Håksberg

### Internal policies and Swedish regulation

Nordic Iron Ore operates under Swedish and EU law; all applicable permissions are in place for Blötberget and Håksberg, including environmental permits. The company seeks to use up-to-date technology to secure effective production, while minimising the environmental impacts.

In order to carry out permanent mining operations, permits are required under Swedish environmental regulations, which impose requirements for air and water discharges, noise and waste management and hazardous substances. An application for a permit is accompanied by a comprehensive environmental impact assessment, for the purpose of identifying and describing the direct and indirect damage that the planned activity can cause to humans, animals, plants, land, air, water, climate, landscape and cultural environments. Nordic Iron Ore was granted one such permit in 2014, which enables the company to operate the Blötberget and Håksberg mines and operate the facilities needed for the mining activities. The licence is conditional upon the operations being commenced within ten years of issuance. Moreover, this was accompanied by a ruling that requires a restoration fund, with the first major payment of approximately SEK 15m as soon as the permit is activated by the commencement of construction work.

The company aims to minimise its impact on the environment, as stated in its code of conduct

Nordic Iron Ore aims to minimise its impacts on the environment, local residents and society at large and to contribute to sustainable development. Accordingly, issues related to the environment and sustainability are central to the planning of the business. The company aims to certify its operations according to ISO 14001, which is an international standard that specifies requirements for an effective environmental management system. Furthermore, the company seeks to use Dalarna county's environmental objectives as guiding principles. Additionally, the company has established a sustainability policy, a personnel policy, an environmental policy and a code of conduct. The code of conduct specifically aims to:

- Minimise the impact on the physical environment in the business area
- Minimise emissions to air and water
- Create a secure work environment

Other than this, the company does not disclose a more elaborate strategy to achieve sustainable operations. We argue that this is an area in which the company could improve, as it would allow for a fairer assessment of its sustainability efforts as the project develops.

## Peers

The peer group we deem appropriate for NIO is presented below. All peers are in similar pre-revenue phases to NIO: developing iron ore projects and coming close to starting up their mining projects.



Source: [oceanicironore.com](http://oceanicironore.com)

### Oceanic Iron Ore Corp

Oceanic Iron Ore Corp is focused on the development of the Ungava Bay iron properties. These properties cover three project areas, namely Hopes Advance, Morgan Lake and Roberts Lake, which are located along the northern extension of the Labrador Trough in the Nunavik Region of northern Quebec. The company is currently focusing on continuing its development of the Hopes Advance project by means of a feasibility study and environmental assessment, as well as securing a strategic partner. The company has conducted an NI 43-101 compliant pre-feasibility study showing promising results, with estimated proven and probable reserves of 1,359 Mt with an iron grade of 32%.



Source: [alderonironore.com](http://alderonironore.com)

### Alderon Iron Ore Corp

Alderon Iron Ore Corp is a development-stage company conducting iron ore evaluation activities related entirely to its Canadian properties located in western Labrador in the province of Newfoundland and Labrador. These properties are collectively referred to as the Kamistiatusset, or 'Kami', property. The company has recently carried out a resource estimation compliant with NI 43-101 and the estimated measured and indicated resources amount to some 380 Mt.



Source: [blackiron.com](http://blackiron.com)

### Black Iron Inc.

Black Iron is a Canadian iron ore exploration and development company advancing its 100% owned Shymanivske Project located in Kriviy Rih, Ukraine, to production. Matt Simpson joined Black Iron as CEO in 2010 and has led the company from a grassroots story to a development one, overseeing the company's advancement of the Shymanivske Project to almost shovel ready. The project is located 330 km southeast of Kiev, Ukraine, and is close to two other iron ore mines owned by ArcelorMittal and Metinvest/Evraz Steel. The measured and indicated resources amount to roughly 200 Mt and have been estimated according to NI 43-101.



Source: [ironroadlimited.com.au](http://ironroadlimited.com.au)

### Iron Road Ltd

Iron Road Limited is an Australian mineral resources company with advanced iron ore projects in South Australia. The company's flagship Central Eyre Iron Project (CEIP) and smaller scale Gawler Iron Project have iron ore deposits located in the Gawler Craton region. The company expects CEIP to produce iron concentrate amounting to 20 Mt per year, with total measured and indicated resources of approximately 550 Mt estimated according to JORC 2012 and 2004. To secure infrastructure to the mine, Iron Road is in need of a strategic partner for financing. The Gawler project has potential production of one to two Mt per year, according to the company. Infrastructure for the project is almost secured, with railroad and port access.



Source: [flindersmines.com](http://flindersmines.com)

### Flinders Mines Ltd

Flinders Mines Limited is an Australian Stock Exchange listed (ASX: FMS) emerging iron ore mining company located in Perth, Western Australia, focused on the development of its Pilbara Iron Ore Project (PIOP). It was first listed as Flinders Diamonds Limited (ASX code: FDL) on 20 February 2002. The company changed the name of the holding company to Flinders Mines Limited, effective on 5 May, 2008. The PIOP is located in the Pilbara region of Western Australia, approximately 60 km northwest of the town of Tom Price. The mineral resources of the PIOP have been estimated in accordance with the JORC 2012 code and amount to 1,042 Mt with an iron grade of 55.6%.



Source: [kogiiron.com](http://kogiiron.com)

### Kogi Iron Ltd

Kogi Iron Limited is focused on the exploration and development of its Agbaja Plateau Iron Ore Project located in Kogi State, Republic of Nigeria, West Africa. The company's wholly owned subsidiary in Nigeria, KCM Mining Limited, has secured a community development agreement and mining licences have been granted for the mining of iron ore and its conversion into cast steel for steel making.



Source: [beowulfmining.com](http://beowulfmining.com)

### **Beowulf Mining Plc**

Beowulf Mining Plc ('Beowulf') is a Nordic focused, multi-commodity, exploration and development company with assets in Sweden and Finland. Most of the company's projects are in early-stage exploration, but in Kallak, Sweden, it has a project with considerable resource and technical work completed to date. The company currently has an application for an exploitation concession for Kallak North located in the north of Sweden. The company claims a high grade of magnetite concentrate can be produced with an iron grade of 71% with low levels of deleterious elements. The company also has graphite exploration prospects in Finland.

### **Zanaga Iron Ore Ltd**

Zanaga Iron Ore Company Limited (ZIOC) is an iron ore exploration and development company, incorporated in the British Virgin Islands. The company was listed on AIM in November 2010 and trades under the symbol 'ZIOC'. The company's flagship asset is its 50% less one share interest in the Zanaga Iron Ore Project located in the Republic of Congo. Glencore Plc holds the other 50% plus one share interest and has effective management control of the Zanaga project. The Zanaga project has some 760 Mt of measured and indicated resources according to JORC 2012.



Source: [zanagairon.com](http://zanagairon.com)

# Reported numbers and forecasts

## INCOME STATEMENT

SEKm	2010	2011	2012	2013	2014	2015	2016	2017	2018E	2019E	2020E
<b>Net revenue</b>	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0	0	0
Revenue growth	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
of which organic	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
of which FX	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
EBITDA	0	-19	-13	-18	-6	-7	-8	-9	-9	-15	-18
Depreciation and impairments PPE	0	0	0	0	0	0	0	0	0	0	0
EBITA	0	-19	-13	-18	-6	-7	-8	-9	-9	-15	-18
Amortisation and impairments	0	0	0	0	-5	0	0	0	0	0	0
EBIT	n.a.	-19	-14	-19	-11	-7	-8	-9	-9	-15	-18
of which associates	0	0	0	0	0	0	0	0	0	0	0
Associates excluded from EBIT	0	0	0	0	0	0	0	0	0	0	0
Net financials	0	0	-3	-2	-4	-2	-1	-1	-1	-1	0
Changes in value, net	0	0	0	0	0	0	0	0	0	0	0
<b>Pre-tax profit</b>	0	-19	-16	-21	-15	-9	-9	-10	-10	-16	-18
Reported taxes	0	0	0	0	0	0	0	0	0	0	-4
Net profit from continued operations	0	-19	-16	-21	-15	-9	-9	-10	-10	-16	-22
Discontinued operations	0	0	0	0	0	0	0	0	0	0	0
Minority interests	0	0	0	0	0	0	0	0	0	0	0
Net profit to equity	0	-19	-16	-21	-15	-9	-9	-10	-10	-16	-22
<b>EPS</b>	n.a.	n.a.	-2.07	n.a.	n.a.	n.a.	n.a.	n.a.	-0.54	-0.04	-0.05
DPS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
of which ordinary	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
of which extraordinary	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

## Profit margin in percent

EBITDA	n.a.	n.m.	n.m.	n.m.							
EBITA	n.a.	n.m.	n.m.	n.m.							
<b>EBIT</b>	<b>n.a.</b>	<b>n.m.</b>	<b>n.m.</b>	<b>n.m.</b>							

## Adjusted earnings

EBITDA (adj)	0	-19	-13	-18	-6	-7	-8	-9	-9	-15	-18
EBITA (adj)	0	-19	-13	-18	-6	-7	-8	-9	-9	-15	-18
EBIT (adj)	0	-19	-14	-19	-11	-7	-8	-9	-9	-15	-18
<b>EPS (adj)</b>	<b>n.a.</b>	<b>n.a.</b>	<b>-2.07</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>-0.54</b>	<b>-0.04</b>	<b>-0.05</b>

## Adjusted profit margins in percent

EBITDA (adj)	n.a.	n.m.	n.m.	n.m.							
EBITA (adj)	n.a.	n.m.	n.m.	n.m.							
EBIT (adj)	n.a.	n.m.	n.m.	n.m.							

## Performance metrics

CAGR last 5 years											
Net revenue	n.a.										
EBITDA	n.m.										
EBIT	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.m.	n.m.	n.m.	n.m.	n.m.
EPS	n.a.										
DPS	n.m.										
Average last 5 years											
Average EBIT margin	n.a.										
Average EBITDA margin	n.a.										

## VALUATION RATIOS - ADJUSTED EARNINGS

SEKm	2010	2011	2012	2013	2014	2015	2016	2017	2018E	2019E	2020E
P/E (adj)	n.a.	n.m.	n.m.	n.m.							
EV/EBITDA (adj)	n.a.	n.m.	n.m.	n.m.							
EV/EBITA (adj)	n.a.	n.m.	n.m.	n.m.							
EV/EBIT (adj)	n.a.	n.m.	n.m.	n.m.							

## VALUATION RATIOS - REPORTED EARNINGS

SEKm	2010	2011	2012	2013	2014	2015	2016	2017	2018E	2019E	2020E
P/E	n.a.	n.m.	n.m.	n.m.							
EV/Sales	n.a.	n.m.	n.m.	n.m.							
EV/EBITDA	n.a.	n.m.	n.m.	n.m.							
EV/EBITA	n.a.	n.m.	n.m.	n.m.							
EV/EBIT	n.a.	n.m.	n.m.	n.m.							
Dividend yield (ord.)	n.a.	0.0%	0.0%	0.0%							
FCF yield	n.a.	-54.9%	-38.3%	-61.0%							
Payout ratio	n.a.	n.a.	0.0%	n.a.	n.a.	n.a.	n.a.	n.a.	0.0%	0.0%	0.0%

Source: Company data and Nordea estimates

**BALANCE SHEET**

SEKm	2010	2011	2012	2013	2014	2015	2016	2017	2018E	2019E	2020E
Intangible assets	0	34	60	74	99	109	113	122	122	122	122
of which R&D	0	0	0	0	0	0	0	0	0	0	0
of which other intangibles	0	34	60	74	99	109	113	122	122	122	122
of which goodwill	0	0	0	0	0	0	0	0	0	0	0
Tangible assets	0	0	0	0	0	0	0	0	9	610	1,571
Shares associates	0	0	0	0	0	0	0	0	0	0	0
Interest bearing assets	0	0	0	0	0	0	0	0	0	0	0
Deferred tax assets	0	0	0	0	0	0	0	0	0	0	0
Other non-IB non-current assets	0	0	0	0	0	0	0	0	0	0	0
Other non-current assets	0	0	0	0	0	0	0	0	0	0	0
Total non-current assets	0	34	60	74	99	110	114	122	131	732	1,693
Inventory	0	0	0	0	0	0	0	0	0	0	0
Accounts receivable	0	1	2	1	3	1	1	0	0	0	0
Other current assets	0	0	0	0	0	0	0	0	0	0	0
Cash and bank	0	1	19	6	20	13	1	2	-35	1,325	342
Total current assets	0	2	21	7	22	13	2	3	-35	1,325	342
Assets held for sale	0	0	0	0	0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
<b>Total assets</b>	<b>0</b>	<b>36</b>	<b>81</b>	<b>82</b>	<b>121</b>	<b>123</b>	<b>115</b>	<b>125</b>	<b>96</b>	<b>2,058</b>	<b>2,035</b>
Shareholders equity	0	30	71	55	99	107	98	106	96	1,558	1,535
Of which preferred stocks	0	0	0	0	0	0	0	0	0	0	0
Of which equity part of hybrid debt	0	0	0	0	0	0	0	0	0	0	0
Minority interest	0	0	0	0	0	0	0	0	0	0	0
Total Equity	0	30	71	55	99	107	98	106	96	1,558	1,535
Deferred tax	0	0	0	0	0	0	0	0	0	0	0
Long term interest bearing debt	0	0	0	10	0	0	14	0	0	0	0
Pension provisions	0	0	0	0	0	0	0	0	0	0	0
Other long-term provisions	0	0	0	0	0	0	0	0	0	0	0
Other long-term liabilities	0	0	0	0	0	0	0	0	0	0	0
Convertible debt	0	0	0	0	0	0	0	0	0	500	500
Shareholder debt	0	0	0	0	0	0	0	0	0	0	0
Hybrid debt	0	0	0	0	0	0	0	0	0	0	0
Total non-current liabilities	0	0	0	10	12	13	14	0	0	500	500
Short-term provisions	0	0	0	0	0	0	0	0	0	0	0
Accounts payable	0	6	10	2	11	3	3	19	0	0	0
Other current liabilities	0	0	0	3	0	0	0	0	0	0	0
Short term interest bearing debt	0	0	0	11	0	0	0	0	0	0	0
Total current liabilities	0	6	10	16	11	3	3	19	0	0	0
Liabilities for assets held for sale	0	0	0	0	0	0	0	0	0	0	0
<b>Total liabilities and equity</b>	<b>0</b>	<b>36</b>	<b>81</b>	<b>82</b>	<b>121</b>	<b>123</b>	<b>115</b>	<b>125</b>	<b>96</b>	<b>2,058</b>	<b>2,035</b>
<b>Balance sheet and debt metrics</b>											
Net debt	0	-1	-19	15	-20	-13	13	-2	35	-825	158
Working capital	0	-5	-8	-4	-8	-2	-2	-18	0	0	0
Invested capital	0	29	52	70	90	107	112	104	131	732	1,693
Capital employed	0	30	71	65	110	120	113	106	96	2,058	2,035
ROE	n.m.	n.m.	-32.0%	-33.0%	-19.6%	-8.9%	-9.0%	-10.1%	-9.9%	-1.9%	-1.4%
ROIC	n.m.	n.m.	-33.3%	-30.3%	-13.8%	-7.4%	-7.1%	-8.4%	-7.7%	-3.5%	-1.5%
ROCE	n.a.	-64.0%	-19.1%	-28.4%	-10.1%	-6.1%	-6.9%	-8.5%	-9.4%	-0.7%	-0.9%
Net debt/EBITDA	n.m.	0.0	1.4	-0.8	3.2	1.8	-1.7	0.3	-3.9	54.6	-8.7
Interest coverage	n.a.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.
Equity ratio	n.m.	83.6%	87.3%	67.6%	81.6%	87.0%	85.2%	84.9%	100.0%	75.7%	75.4%
Net gearing	n.m.	-2.7%	-26.8%	27.2%	-19.9%	-11.9%	13.7%	-2.3%	36.4%	-53.0%	10.3%

Source: Company data and Nordea estimates

**CASH FLOW STATEMENT**

SEKm	2010	2011	2012	2013	2014	2015	2016	2017	2018E	2019E	2020E
<b>EBITDA (adj) for associates</b>	<b>0</b>	<b>-19</b>	<b>-13</b>	<b>-18</b>	<b>-6</b>	<b>-7</b>	<b>-8</b>	<b>-9</b>	<b>-9</b>	<b>-15</b>	<b>-18</b>
Paid taxes	0	0	0	0	0	0	0	0	0	0	-4
Net financials	0	0	-3	-2	-4	-2	-1	-1	-1	-1	0
Change in provisions	0	0	0	0	0	0	0	0	0	0	0
Change in other LT non-IB	0	0	0	0	11	1	-13	0	0	0	0
Cash flow to/from associates	0	0	0	0	0	0	0	0	0	0	0
Dividends paid to minorities	0	0	0	0	0	0	0	0	0	0	0
Other adj to reconcile to cash flow	0	12	-6	6	-22	-5	13	1	0	0	0
<b>Funds from operations (FFO)</b>	<b>0</b>	<b>-7</b>	<b>-22</b>	<b>-15</b>	<b>-21</b>	<b>-13</b>	<b>-9</b>	<b>-9</b>	<b>-10</b>	<b>-16</b>	<b>-22</b>
Change in NWC	0	3	3	-4	7	-1	0	2	-18	0	0
<b>Cash flow from operations (CFO)</b>	<b>0</b>	<b>-4</b>	<b>-18</b>	<b>-19</b>	<b>-14</b>	<b>-14</b>	<b>-9</b>	<b>-7</b>	<b>-28</b>	<b>-16</b>	<b>-22</b>
Capital expenditure	0	-17	-26	-14	-30	-11	-4	-9	-9	-601	-961
<b>Free cash flow before A&amp;D</b>	<b>0</b>	<b>-21</b>	<b>-44</b>	<b>-33</b>	<b>-44</b>	<b>-25</b>	<b>-13</b>	<b>-16</b>	<b>-37</b>	<b>-617</b>	<b>-983</b>
Proceeds from sale of assets	0	0	0	0	0	0	0	0	0	0	0
Acquisitions	0	0	0	0	0	0	0	0	0	0	0
Free cash flow	0	-21	-44	-33	-44	-25	-13	-16	-37	-617	-983
Dividends paid	0	0	0	0	0	0	0	0	0	0	0
Equity issues / buybacks	0	0	0	0	0	0	0	0	0	1,477	0
Net change in debt	0	21	63	20	57	18	1	17	0	0	0
Other financing adjustments	0	0	0	0	0	0	0	0	0	0	0
Other non-cash adjustments	0	1	0	0	0	0	0	0	0	0	0
Change in cash	0	1	18	-13	14	-7	-12	1	-37	1,360	-983

**Cash flow metrics**

Capex/D&A	n.m.										
Capex/Sales	n.a.	n.m.	n.m.	n.m.							

**Key information**

Share price year end (/current)	n.a.	3	4	4							
Market cap.	n.a.	68	1,613	1,613							
Enterprise value	n.a.	103	787	1,771							
Diluted no. of shares, year-end (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.6	440.6	440.6

Source: Company data and Nordea estimates

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**Completion Date**

11 Jan 2019, 09:14 CET

Nordea Bank Abp	Nordea Bank Abp, filial i Sverige	Nordea Danmark, Filial af Nordea Bank Abp, Finland	Nordea Bank Abp, filial i Norge
<b>Nordea Markets Division, Research</b> Visiting address: Aleksis Kiven katu 7, Helsinki FI-00020 Nordea Finland  Tel: +358 9 1651 Fax: +358 9 165 59710  Reg.no. 2858394-9 Satamaradankatu 5 Helsinki	<b>Nordea Markets Division, Research</b> Visiting address: Smålandsgatan 17 SE-105 71 Stockholm Sweden  Tel: +46 8 614 7000 Fax: +46 8 534 911 60	<b>Nordea Markets Division, Research</b> Visiting address: Grønjørdsvej 10 DK-2300 Copenhagen S Denmark  Tel: +45 3333 3333 Fax: +45 3333 1520	<b>Nordea Markets Division, Research</b> Visiting address: Essendropsgate 7 N-0107 Oslo Norway  Tel: +47 2248 5000 Fax: +47 2256 8650