Trading Strategy

Commodity Strategy, February 2, 2016

Shale to fail

Survival of the fittest

We see zero chance of OPEC agreeing to cut production this year

US shale oil is the new Chinese steel industry – full of zombies

Short-term upside, but long-term downside in crude oil prices

Handelsbanken Capital Markets

Contents

Martin Jansson
+46 (0)8 701 2343
nija03@handelsbanken.se

With the oil price hovering at around USD 30/bbl and few signs of a rebound, shale producers are tightening the screws. A majority of them are now EBITDA-negative and few investors are placing fresh capital in shale oil. The entire high-yield energy sector is eerily silent and we believe it is the calm before the storm. When oil prices were surging, bankers with wheelbarrows of cash were running to shale oil producers and saying, “Hey, here’s debt, take it on.” Those days are past and bankruptcy receivers are taking over from here.

Summary

With the oil price hovering at around USD 30/bbl and few signs of a rebound, shale producers are tightening the screws. A majority of them are now EBITDA-negative and few investors are placing fresh capital in shale oil. The entire high-yield energy sector is eerily silent and we believe it is the calm before the storm. When oil prices were surging, bankers with wheelbarrows of cash were running to shale oil producers and saying, "Hey, here's debt, take it on." Those days are past and bankruptcy receivers are taking over from here.

Buying oil at a false alarm

Short-term upside; long-term downside

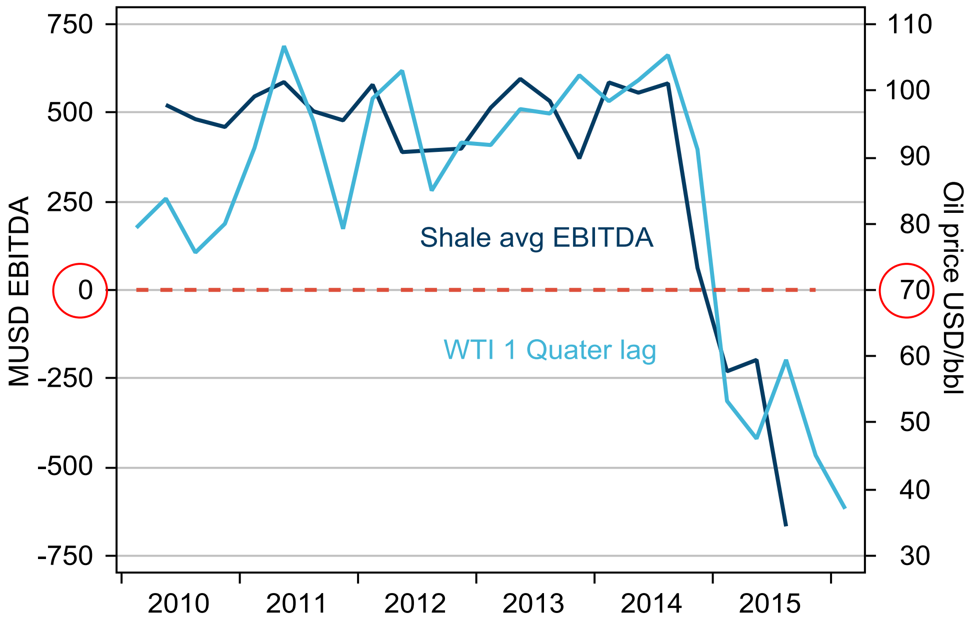
We foresee a price spike risk in the near term (Q1) as markets focus on shale oil bankruptcies. In the longer term (12 month), shale oil continues to lower breakevens and any oil price spike will be met by increased shale oil activity under protection from short paybacks on investments and the ability to sell production on a steep contango forward curve. Accordingly, we expect the oil price to land in the low USD 30/bbl range at the end of 2016, and we believe oil will trade lower in 2017 than in 2016.

US shale oil is the new Chinese steel industry

US shale is full of zombies

We believe that negative earnings and breaking loan covenants indicate that the shale oil industry has started its final financial countdown, which will intensify the attention on the distressed energy assets. However, bankruptcies do not mean the days are numbered for production. This is particularly true in the US where seeking protection from bankruptcy means debt holders will rid themselves of payments, but the oil market will not eliminate production. In this way, we view the US shale oil fields as being similar to Chinese steel mills – full of zombies.

Shale is bankrupt; requires USD 70/bbl to break even before recent cost cuts



Sources: Bloomberg, Macrobond, Handelsbanken Capital Markets

Structural supply boom

Latest oil rout was driven by structural supply

Recent price declines are not driven by demand, but rather by structural supply forces. Over the past six weeks, oil futures for deliveries in five years have fallen even harder than spot prices. In our view, this is a sign that the latest rout was not driven by fading oil consumption. If demand were weak, that time spread would widen rather than narrow.

Three supply sources under the microscope in 2016

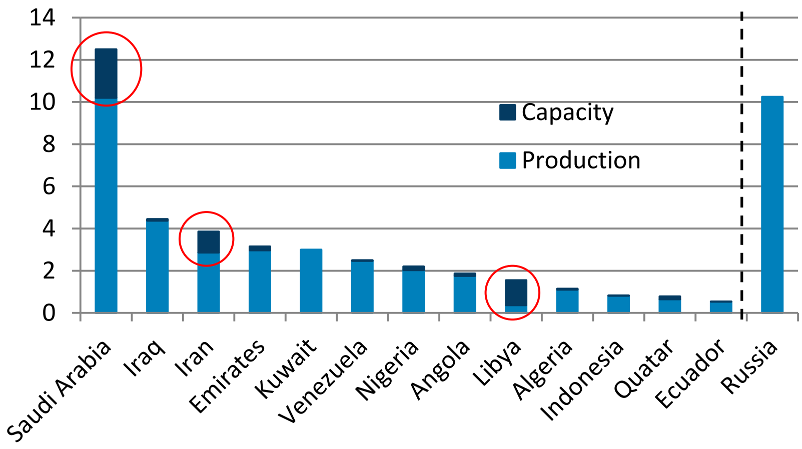
For 2016, we believe three sources of oil are critical for the oil market balance and the rebalancing act necessary to stabilise prices. With little faith in lower production from OPEC countries and conventional oil, the rebalancing must come from shale oil producers.

No expectations of OPEC cuts

OPEC production cuts are not on the cards, in our view

We believe there is zero chance of OPEC, with or without Russia, reaching an agreement to cut production in 2016. The supply risk is rather on the upside given that Libya currently is producing at low levels, Iran is about to ramp up its idled production and Saudi Arabia still has spare capacity. It could be a breakneck curve for oil prices once Iran starts to fight for the market share in Europe, which Saudi Arabia and Russia grabbed during the sanctions on Iran.

Production risk on the upside in OPEC for 2016



Sources: Bloomberg, Macrobond, Handelsbanken Capital Markets

Prospects of expanding supply in OPEC

Oil reserves in the core of OPEC are still low-hanging fruits for producing low-cost barrels, and the lower oil prices mean improved prospects for developing the resource bases of single-source economies, as well as for international oil companies desperately needing to lower average production costs in their portfolios. Low-cost barrels are currently found mainly in Iran, Iraq and Mexico.

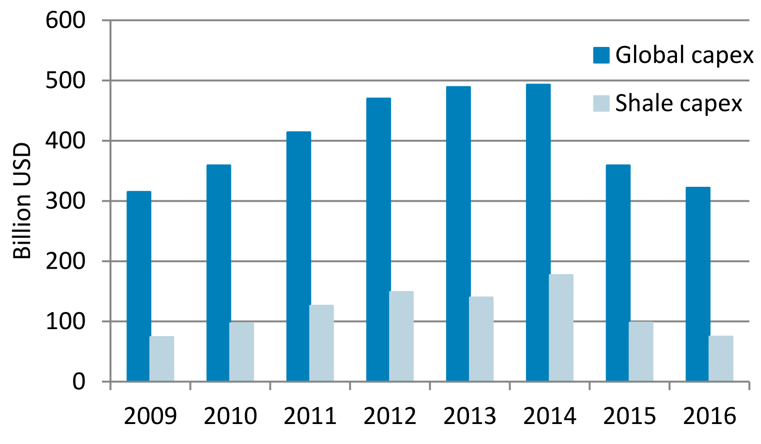
Capex tailwind in conventional oil

Boom legacy projects still to come on stream ahead

After 15 years of a boom market, a number of large, conventional projects are still slated to come on stream over the next few years, regardless of oil prices. These fields have three things in common: 1) they would never have been developed in today's price environment; 2) they all have too many incurred costs to be halted; and, 3) opex is surprisingly low, meaning that production will generate positive cash flows. Norway's Johan Sverdrup is one example of such a field, albeit at the extreme, that is scheduled to come on stream in 2019 at a operating cost of about USD 5/bbl. Eni´s Goliat in Barents Sea is another example, with first production in 2015.

Here, we think the similarities to the end of mining boom will be striking. Coal and iron ore producers, as well as most base metal producers, continued to add new supply years after prices peaked.

Decade of booming oil capex will bring new production on stream



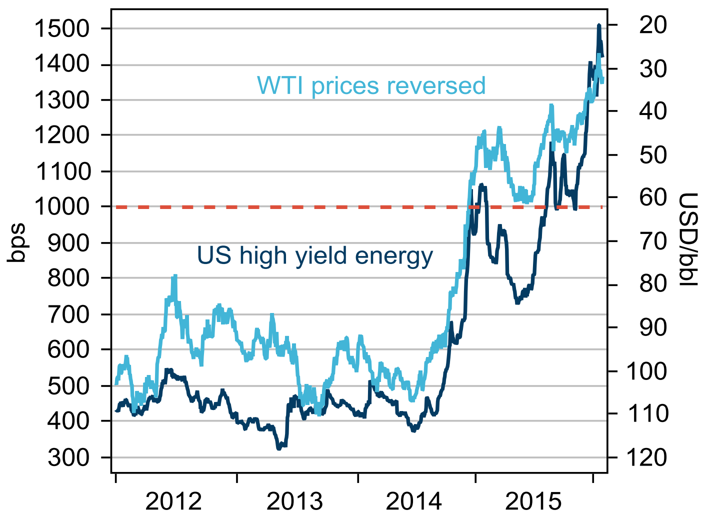
Sources: Bloomberg, Macrobond, Handelsbanken Capital Markets

Negative earnings in shale oil are not enough

Negative EBIT margins among marginal producers normally mean that commodity prices have reached bottom. With a long-term surplus in the oil market, we argue that more capacity will need to be cold-stacked and cannibalised, and there is no room for shale oil as a growing supply source in 2016 – and perhaps not even in 2017 – as the global oil market remains oversupplied by around 2 million bbl/d, corresponding to 50% of total shale oil output

Credit squeeze, global oil glut to rebalance shale oil production

US high yield energy bond index spreads



Sources: Bloomberg, Handelsbanken Capital Markets

Shale oil supply must rebalance by defaults

The US energy industry had 26 bankruptcies last year, a larger number than in the five previous years combined. Yields on speculative-grade energy debt rose to 12% and more than 70% of high-yield bonds traded at distressed rates. We think the countdown to a full-scale credit blowout has already been underway for a long time. The window for rising equity should be closed for most players, as dated oil futures dropped from USD 70/bbl to USD 45/bbl in the last twelve months. In our view, banks will ultimately be forced to pull the plug on debtor companies and start to write off assets in the sector.

Shale oil is a ticking bomb

The entire shale oil industry is in very poor shape with EBIT and EBITDA deeply under water. Our screening of 61 US shale oil producers provides harsh results. In our view, US shale producers will not be able to survive at an oil price of less than USD 50/bbl, and any investments in shale oil would be made reluctantly until the price reaches about USD 60/bbl. With loan maturities still far out into the future, we view loan covenant compliance as a hinge issue in 2016.

What did the "North Dakota cowboys" do in 2015?

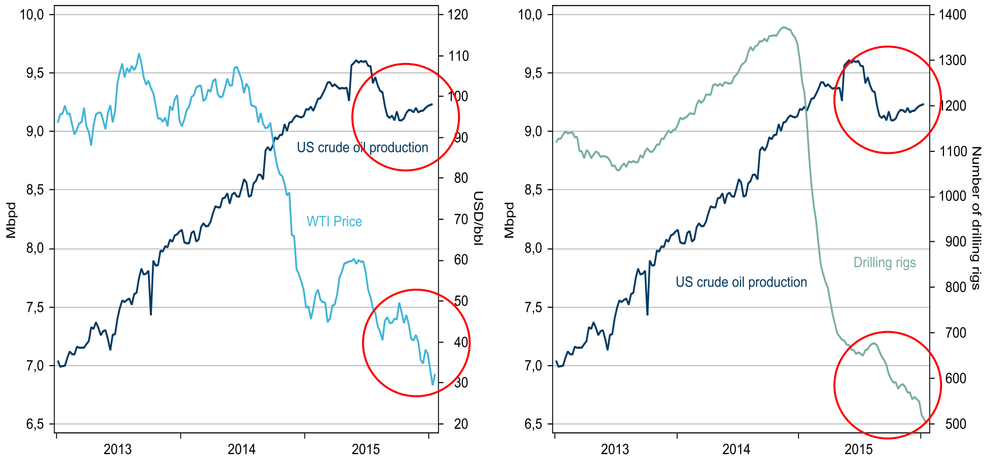
Since September 2015 US shale oil production has surprised on the upside and started to grow, contrary to expectations of a continued decline in the wake of lower oil prices. Creating a producing shale oil well consists of two independent steps: drilling and completion (fracking). Capex split between those are roughly 1/3 drilling and 2/3 completion.

Short term strategy

Shale oil completions heading in opposite direction from declining drilling rig counts

Increases in well completions are driving rebounding shale oil production, and these completions will likely diverge even more from declining drilling rig counts in 2016 for two key reasons. E&Ps will be working through their backlogs of drilled but uncompleted wells, as capital migrates away from fixed drilling contracted in 2014 and 2015, before the oil price slump. At the same time, due to technological improvements, fewer rigs will be needed to drill the same number of wells, meaning that completion spending will absorb a greater share of E&P budgets.

US oil output is out of touch with oil prices and drilling rigs



Sources: Bloomberg, Macrobond, Handelsbanken Capital Markets

Fracking surge due to mismatch between longer-term drilling and short-term service contracts

While some observers believe the US well build-out was a speculative play on oil prices, we believe the key driver was the mismatch between longer-term drilling and short-term completion service contracts. If it were not for drilling commitments, E&Ps would not have sunk millions of dollars into drilling wells that do not produce in the short term, which are poor investments based on the time value of money.

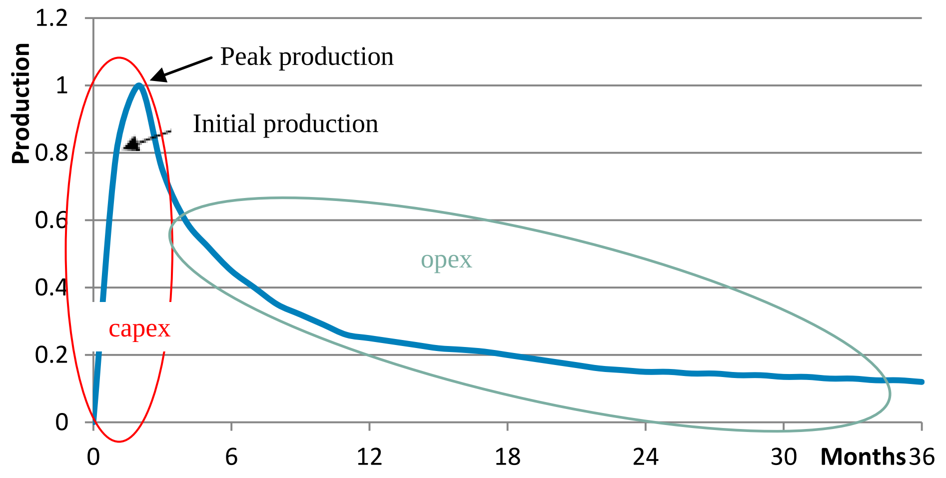
From a capital budget standpoint, drilled but uncompleted wells (DUCs) are costs already paid for in 2014 and 2015. Tapping DUCs improves spending efficiency for cash squeezed shale oil producers.

Conceptual production curve

What makes shale oil so different from traditional oil is the production profile of a well. After one year, production in a typical shale oil well decreases by 75% and after two years by 85%.

Sharp, quick fall in peak production for typical shale oil wells

Conceptual production curve



Sources: Handelsbanken Capital Markets

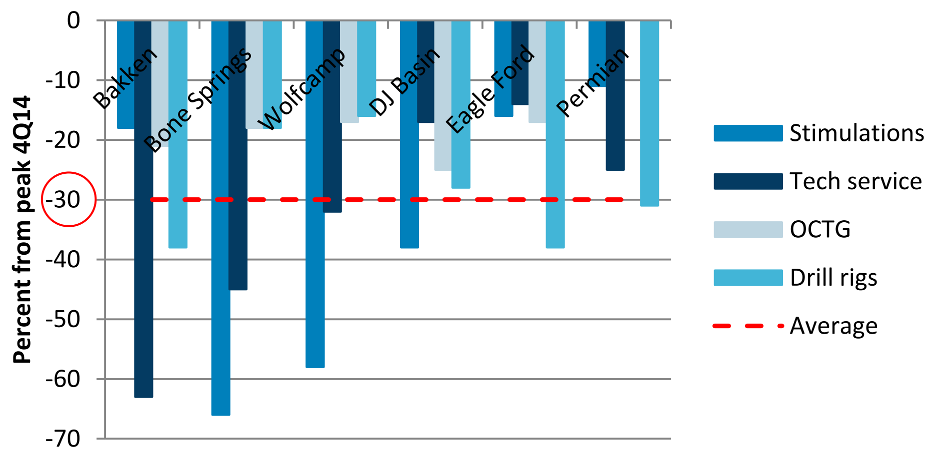
The glut of horizontal drilled but uncompleted shale oil wells could take over a year to work through in some shale regions. The inventory of uncompleted wells in the Marcellus fields, in the US Chesapeake area, would take about a year, if 50% of new wells were from DUC inventories. Even if 100% of all new wells brought to market came from DUC inventories, it would take until the second half of 2016 to exhaust the abnormal backlog.

Survival of the fittest

Activity, not pricing, to drive supplier sales in 2016

Price declines across various service lines from rigs to stimulation work have been harsh. In the major oil-producing basins pricing has fallen by 30% on average since the peak in Q4 2014. While any type of pricing recovery or traction may not come until a sustainable oil price recovery, the worst may have passed. In 2016, we believe supplier sales will largely be driven by activity rather than pricing.

Shale cost reductions



Sources: Spears and Associates, Handelsbanken Capital Markets

Distressed energy bonds

Lenders do not want to see negative EBIT/EBITDA

In our view, it does not look as though debt maturities will be the driving factor behind most bankruptcies or restructurings in 2016. Loans (bonds and banks) to shale oil producers have maturity dates that are a couple of years out, but the risk there is covenant compliance and borrowing base cuts. Bank loan covenants are often unique for each company and are thus difficult to screen for a large universe of companies. However, we take a pragmatic stance on the issue and believe that negative EBIT/EBITDA is definitely not what lenders want to see.

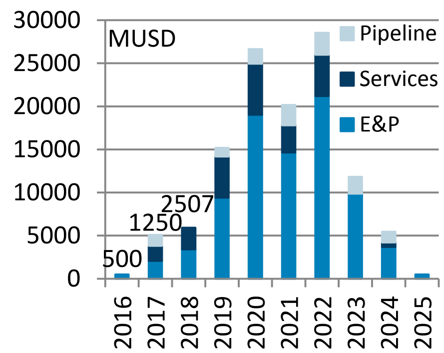
At least 280 bonds issued by US energy companies with an aggregated face value of USD 145bn were trading with a spread of over 1,000bp at the end of January. The number is up from 180 bonds valued at USD 88bn in early December as oil prices dropped to USD 30/bbl. By comparison, the BofA Merrill Lynch U.S. High Yield Energy Index shows about USD 200bn of debt, meaning that more than 70% of the US high-yield market is currently distressed.

Breathing room in 2016

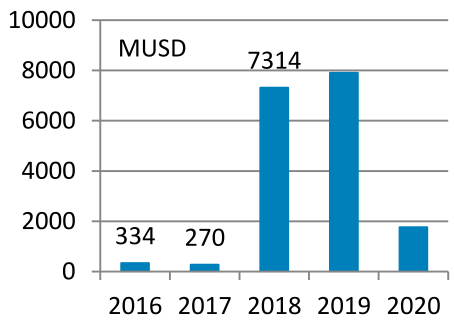
Bond maturity in 2016 is almost zero: 1 of 280

If we look only at the companies with bonds trading at distressed levels, then the amount that needs to be refinanced in 2016 is fairly minimal. Only one of the more than 280 bonds has a scheduled maturity date in 2016. Chesapeake Energy (E&P) has a USD 500m bond maturity in March, which it can easily repay with the USD 5.7bn in liquidity it had at the end of Q3 2015.

Shale oil bond maturity



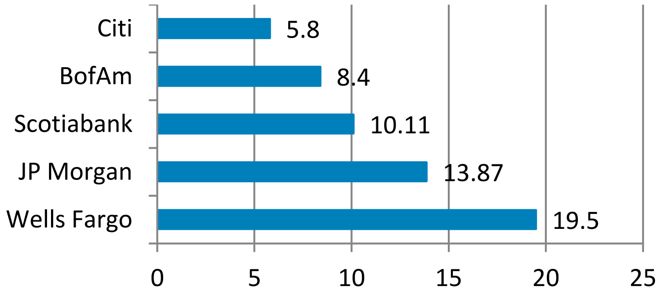
Shale oil bank loan maturity



Sources: Bloomberg, Macrobond, Handelsbanken Capital Markets

The non-investment grade revolving credit lines of banks to the US energy sector are also important but are somewhat more difficult to pull together, given the nature of the bank market. The top four book runners for US non investment-grade energy revolver credit are Wells Fargo, JP Morgan, Scotiabank and Bank of America. They hold about 55% of the total market share.

US energy high yield/non-investment grade debt holders (%)

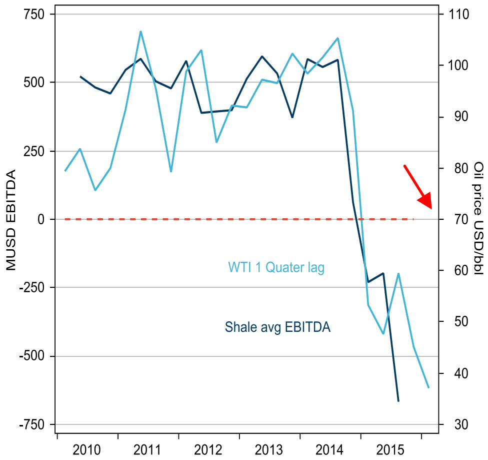


Sources: Bloomberg, Macrobond, Handelsbanken Capital Markets

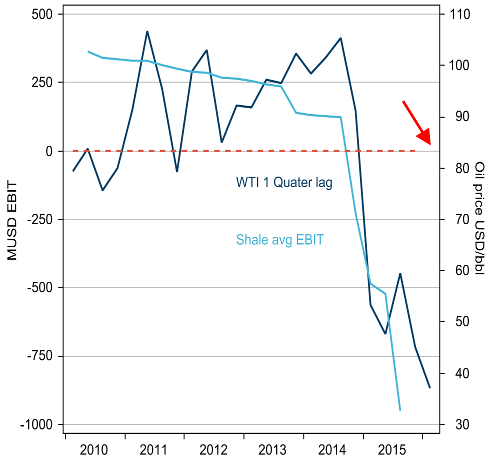
Not even bankruptcy will stop the oil glut

Breaking loan covenants and negative earnings mean that the shale oil industry has started its final countdown. While that is financially true, it does not automatically mean production losses and a big step closer to the oil market re-balancing. Some people think that if a company goes bankrupt, everything just stops, but the recent downturn in the mining industry shows that it is a slow process.

Average shale oil EBITDA (cash cost)



Average shale oil EBIT



Sources: Bloomberg, Macrobond, Handelsbanken Capital Markets

Bankruptcy laws in the US allow individuals and corporations to get out of debt either by selling off a debtor's assets and repaying creditors (liquidation) or by undergoing a court-supervised reorganisation of the debtor's finances. Shale oil E&Ps emerge very differently compared to most other companies, as the assets are concentrated within the geological reserve base in the ground. Those are normally booked at low values as they are explored by the company.

Chapter 11 allows debtors to reorganise their financial affairs. The reorganisation process may last months or even years depending on its size and complexity. In the meantime, the operator could sustain production without paying debt holders. If the company runs out of cash to cover opex, a financially stronger producer could step in and continue to produce from those reserves.

Coal exemplifies “bankruptcy boost”

We use the example of US coal miners' bankruptcies to illustrate this issue. While a bankruptcy can trim output by forcing the closing of mines that were kept afloat by subsidies from a parent company, economic mines can usually stay open. Data from past restructurings (2014-15) show that steps taken in bankruptcy sometimes even boost production, by attracting new owners or improving the returns from individual mines. As such, bankruptcies did not deliver a speedy drop in coal supply.

Research disclaimers

Handelsbanken Capital Markets, a division of Svenska Handelsbanken AB (publ) (collectively referred to herein as 'SHB'), is responsible for the preparation of research reports. SHB is regulated in Sweden by the Swedish Financial Supervisory Authority, in Norway by the Financial Supervisory Authority of Norway, in Finland by the Financial Supervisory of Finland and in Denmark by the Danish Financial Supervisory Authority. All research reports are prepared from trade and statistical services and other information that SHB considers to be reliable. SHB has not independently verified such information and does not represent that such information is true, accurate or complete. Accordingly, to the extent permitted by law, neither SHB, nor any of its directors, officers or employees, nor any other person, accept any liability whatsoever for any loss, however it arises, from any use of such research reports or its contents or otherwise arising in connection therewith.

This report has not been given to the subject company, or any other external party, prior to publication to approval the accuracy of the facts presented. The subject company has not been notified of the recommendation, target price or estimate changes, as stated in this report, prior to publication.

In no event will SHB or any of its affiliates, their officers, directors or employees be liable to any person for any direct, indirect, special or consequential damages arising out of any use of the information contained in the research reports, including without limitation any lost profits even if SHB is expressly advised of the possibility or likelihood of such damages.

The views contained in SHB research reports are the opinions of employees of SHB and its affiliates and accurately reflect the personal views of the respective analysts at this date and are subject to change. There can be no assurance that future events will be consistent with any such opinions. Each analyst identified in this research report also certifies that the opinions expressed herein and attributed to such analyst accurately reflect his or her individual views about the companies or securities discussed in the research report.

Research reports are prepared by SHB for information purposes only. The information in the research reports does not constitute a personal recommendation or personalised investment advice and such reports or opinions should not be the basis for making investment or strategic decisions. This document does not constitute or form part of any offer for sale or subscription of or solicitation of any offer to buy or subscribe for any securities nor shall it or any part of it form the basis of or be relied on in connection with any contract or commitment whatsoever. Past performance may not be repeated and should not be seen as an indication of future performance. The value of investments and the income from them may go down as well as up and investors may forfeit all principal originally invested. Investors are not guaranteed to make profits on investments and may lose money. Exchange rates may cause the value of overseas investments and the income arising from them to rise or fall. This research product will be updated on a regular basis.

No part of SHB research reports may be reproduced or distributed to any other person without the prior written consent of SHB. The distribution of this document in certain jurisdictions may be restricted by law and persons into whose possession this document comes should inform themselves about, and observe, any such restrictions.

Please be advised of the following important research disclosure statements:

SHB employees, including analysts, receive compensation that is generated by overall firm profitability. Analyst compensation is not based on specific corporate finance or debt capital markets services. No part of analysts' compensation has been, is or will be directly or indirectly related to specific recommendations or views expressed within research reports.

From time to time, SHB and/or its affiliates may provide investment banking and other services, including corporate banking services and securities advice, to any of the companies mentioned in our research.

We may act as adviser and/or broker to any of the companies mentioned in our research. SHB may also seek corporate finance assignments with such companies.

We buy and sell securities mentioned in our research from customers on a principal basis. Accordingly, we may at any time have a long or short position in any such securities. We may also make a market in the securities of all the companies mentioned in this report. [Further information and relevant disclosures are contained within our research reports.]

SHB, its affiliates, their clients, officers, directors or employees may own or have positions in securities mentioned in research reports.

According to the Bank's Ethical Guidelines for the Handelsbanken Group, the board and all employees of the Bank must observe high standards of ethics in carrying out their responsibilities at the Bank, as well as other assignments. The Bank has also adopted Guidelines concerning Research which are intended to ensure the integrity and independence of research analysts and the research department, as well as to identify actual or potential conflicts of interests relating to analysts or the Bank and to resolve any such conflicts by eliminating or mitigating them and/or making such disclosures as may be appropriate. As part of its control of conflicts of interests, the Bank has introduced restrictions ("Information barriers") on communications between the Research department and other departments of the Bank. In addition, in the Bank's organisational structure, the Research department is kept separate from the Corporate Finance department and other departments with similar remits. The Guidelines concerning Research also include regulations for how payments, bonuses and salaries may be paid out to analysts, what marketing activities an analyst may participate in, how analysts are to handle their own securities transactions and those of closely related persons, etc. In addition, there are restrictions in communications between analysts and the subject company. For full information on the Bank's ethical guidelines please see the Bank's website www.handelsbanken.com/About the bank/Investor relations/Corporate social responsibility/Ethical guidelines.

Handelsbanken has a ZERO tolerance of bribery and corruption. This is established in the Bank's Group Policy on Bribery and Corruption. The prohibition against bribery also includes the soliciting, arranging or accepting bribes intended for the employee's family, friends, associates or acquaintances.

For company-specific disclosure texts, please consult the Handelsbanken Capital Markets website: www.handelsbanken.com/research.

When distributed in the UK

Research reports are distributed in the UK by SHB.

SHB is authorised by the Swedish Financial Supervisory Authority (Finansinspektionen) and the Prudential Regulation Authority and subject to limited regulation by the Financial Conduct Authority and Prudential Regulation Authority. Details about the extent of our authorisation and regulation by the Prudential Regulation Authority, and regulation by the Financial Conduct Authority are available from us on request.

UK customers should note that neither the UK Financial Services Compensation Scheme for investment business nor the rules of the Financial Conduct Authority made under the UK Financial Services and Markets Act 2000 (as amended) for the protection of private customers apply to this research report and accordingly UK customers will not be protected by that scheme.

This document may be distributed in the United Kingdom only to persons who are authorised or exempted persons within the meaning of the Financial Services and Markets Act 2000 (as amended) (or any order made thereunder) or (i) to persons who have professional experience in matters relating to investments falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (the "**Order**"), (ii) to high net worth entities falling within Article 49(2)(a) to (d) of the Order or (iii) to persons who are professional clients under Chapter 3 of the Financial Conduct Authority Conduct of Business Sourcebook (all such persons together being referred to as "**Relevant Persons**").

When distributed in the United States
Important Third-Party Research Disclosures:

SHB and its employees are not subject to FINRA's research analyst rules which are intended to prevent conflicts of interest by, among other things, prohibiting certain compensation practices, restricting trading by analysts and restricting communications with the companies that are the subject of the research report.

SHB research reports are intended for distribution in the United States solely to "major U.S. institutional investors," as defined in Rule 15a-6 under the Securities Exchange Act of 1934. Each major U.S. institutional investor that receives a copy of research report by its acceptance hereof represents and agrees that it shall not distribute or provide research reports to any other person

Reports regarding fixed-income products are prepared by SHB and distributed by SHB to major U.S. institutional investors under Rule 15a-6(a)(2). Reports regarding equity products are prepared by SHB and distributed in the United States by Handelsbanken Markets Securities Inc. ("HMSI") under Rule 15a-6(a)(2). When distributed by HMSI, HMSI takes responsibility for the report. Any U.S. person receiving these research reports that desires to effect transactions in any equity product discussed within the research reports should call or write HMSI. HMSI is a FINRA Member, telephone number (+1-212-326-5153).

Contact information

Capital Markets

Debt Capital Markets

Tony Lindlöf	Head of Debt Capital Markets	+46 8 701 25 10
Per Jäderberg	Head of Corporate Loans	+46 8 701 33 51
Måns Niklasson	Head of Acquisition Finance	+46 8 701 52 84
Ulf Stejmar	Head of Corporate Bonds	+46 8 463 45 79

Trading Strategy

Claes Måhlén	Head, Chief Strategist	+46 8 463 45 35
Johan Sahlström	Chief Credit Strategist	+46 8 463 45 37
Ola Eriksson	Senior Credit Strategist	+46 8 463 47 49
Martin Jansson	Senior Commodity Strategist	+46 8 461 23 43
Nils Kristian Knudsen	Senior Strategist FX/FI	+47 22 82 30 10
Andreas Skogelid	Senior Strategist FI	+46 8 701 56 80
Pierre Carlsson	Strategist FX	+46 8 463 46 17

Macro Research

Jan Häggström	Chief Economist	+46 8 701 10 97
Sweden		
Petter Lundvik	USA, Special Analysis	+46 8 701 33 97
Gunnar Tersman	Eastern Europe, Emerging Markets	+46 8 701 20 53
Helena Trygg	Japan, United Kingdom	+46 8 701 12 84
Anders Brunstedt	Sweden	+46 8 701 54 32
Eva Dorenius	Web Editor	+46 8 701 50 54
Finland		
Tiina Helenius	Head, Macro Research	+358 10 444 2404
Janne Ronkanen	Senior Analyst	+358 10 444 2403
Denmark		
Jes Asmussen	Head, Macro Research	+45 467 91203
Rasmus Gudum-Sessingø	Denmark	+45 467 91619
Bjarke Roed-Frederiksen	China and Latin America	+45 467 91229
Norway		
Kari Due-Andresen	Head, Macro Research	+47 22 39 70 07
Knut Anton Mork	Senior Economist, Norway and China	+47 22 39 71 81
Nils Kristian Knudsen	Senior Strategist FX/FI	+47 22 82 30 10
Marius Gonsholt Hov	Norway	+47 22 39 73 40

Regional Sales

Copenhagen	
Kristian Nielsen	+45 46 79 12 69
Gothenburg	
Per Wall	+46 31 743 31 20
Gävle	
Petter Holm	+46 26 172 103
Helsinki	
Mika Rämänen	+358 10 444 62 20
Linköping	
Fredrik Lundgren	+46 13 28 91 10
London	
Ray Spiers	+44 207 578 86 12
Luleå/Umeå	
Ove Larsson	+46 90 154 719
Luxembourg	
Snorre Tysland	+352 274 868 251
Malmö	
Ulf Larsson	+46 40 24 54 04
Oslo	
Petter Fjellheim	+47 22 82 30 29
Stockholm	
Malin Nilén	+46 8 701 27 70

Toll-free numbers	From Sweden to N.Y. & Singapore	From Norway to N.Y. & Singapore	From Denmark to N.Y. & Singapore	From Finland to N.Y. & Singapore	Within the US
	020-58 64 46	800 40 333	8001 72 02	0800 91 11 00	1-800 396-2758

Svenska Handelsbanken AB (publ)

Stockholm
Blasieholmstorg 11
SE-106 70 Stockholm
Tel. +46 8 701 10 00
Fax. +46 8 611 11 80

Copenhagen
Havneholmen 29
DK-1561 Copenhagen V
Tel. +45 46 79 12 00
Fax. +45 46 79 15 52

Helsinki
Aleksanterinkatu 11
FI-00100 Helsinki
Tel. +358 10 444 11
Fax. +358 10 444 2578

Oslo
Tjuvholmen allé 11
Postboks 1249 Vika
NO-0110 Oslo
Tel. +47 22 39 70 00
Fax. +47 22 39 71 60

London
3 Thomas More Square
London GB-E1W 1WY
Tel. +44 207 578 8668
Fax. +44 207 578 8090

New York
Handelsbanken Markets Securities, Inc.
875 Third Avenue, 4th Floor
New York, NY 10022-7218
Tel. +1 212 326 5153
Fax. +1 212 326 2730
FINRA, SIPC