BCA House View Matrix

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Periodical

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WEEKLY REPORT

China's Environmental Reforms Drive Steel & Iron Ore

Environmental reforms in China continue to reduce steelmaking capacity. The shuttering of illegal induction facilities in China also is tightening markets. Although official Chinese steel output is higher, this likely reflects the fact that output from illegal induction mills went unreported – and thus uncounted – while production from legal mills is increasing to fill the gap left by closures.

Steelmakers' profits are surging, which means demand for iron ore in China will remain stout at least through 1H18. Copper has been well bid since June 2017, following supply disruptions and strong demand growth driven by the global economic upturn. We expect it will get an additional lift in 1H18, as wiring and plumbing in construction projects now absorbing steel in China get underway. Later, global growth will make up for any slowdown in China.

Our analysis indicates the global steel market will be tightening in 1H18, as it already is doing in China. Consistent with this, we are opening a tactical long position in Mar/18 steel rebar futures on the Shanghai Futures Exchange, which are quoted in RMB/ton. We are including a 10% stop loss on this recommendation.

- **Energy:** Overweight. Our once-out-of-consensus oil view is now the consensus, so we are taking profits on Brent and WTI $55 vs. $60/bbl call spreads on May- and July-delivery oil at tonight's close. These positions were up 109.2% and 123.5% at Tuesday's close. Any sell-offs will present an opportunity to re-establish length along these forward curves.
- **Base Metals:** Neutral. Copper will remain well bid this year as the global economic recovery rolls on. A large number of contract renegotiations at mines is an additional upside risk to copper prices this year.
- **Precious Metals:** Neutral. Given our expectation of four rate hikes by the Fed, it is difficult to get too bullish gold. However, any indication the central bank is tilting dovish – particularly if we fail to see higher inflation this year – will rally the metal.
- **Ags/Softs:** Underweight. Markets will tread water until Friday's USDA WASDE. We remain underweight, except for corn.

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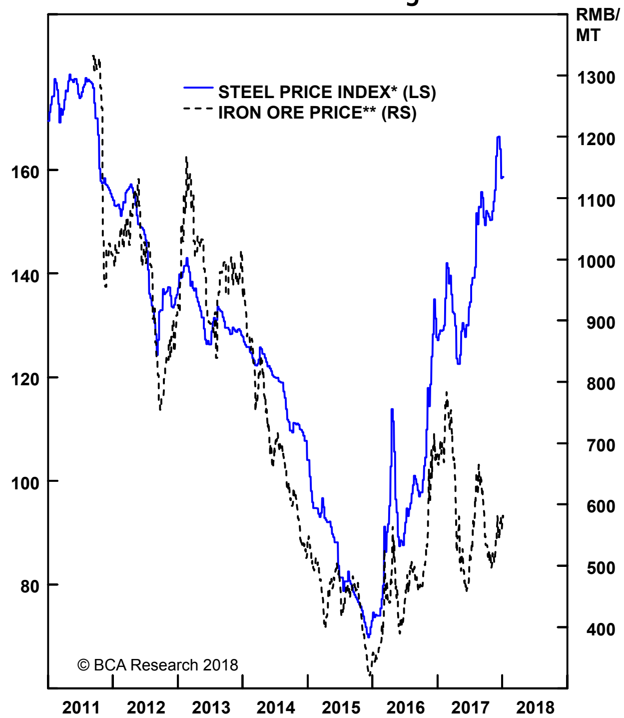
Feature

China's environmental policy actions have reduced world steel-making capacity by 100 mm MT between 1H16 and 1H18. This is most visible in Chinese steel prices, which gained more than 30% in 2017, following an almost 80% increase in 2016. The total gain in steel prices since the start of Beijing's focus on steel-market reforms is a resounding 135%.

Iron ore prices posted similar gains to steel in 2016 but diverged sharply in 2017, slumping more than 40% between mid-March and mid-June – ending almost 8% lower year-on-year (yoy) (**Chart of the week**). Soaring steel prices pushed profit margins at Chinese mills higher, which, of course, fed through to demand for iron ore, the critical steel-making ingredient in China, toward year-end: Iron ore prices were up 20% in the last two months of 2017.

CHART OF THE WEEK

Iron Ore And Steel Prices Diverged In 2017



*MYSPIC STEEL COMPOSITE PRICE INDEX FROM MYSTEEL.COM.; 2005=100.
**SOURCE: CHINA IRON & STEEL ASSOCIATION, AVERAGE CHINA IMPORT PRICE 62% GRADE.

How Did We Get Here? A Recap Of China's Steel Sector Reforms

As part of its reforms aimed at reducing air pollution by eliminating outdated, excess industrial capacity, Beijing pledged to eliminate 100-150 mm MT of steel capacity over the 2016-2020 period. To date it has shuttered an estimated 100 mm MT of capacity.

In addition to these reforms Beijing pledged to shut down smaller induction furnaces in China, which melt scrap steel, and produce steel of shoddy quality. These induction furnaces are estimated to account for 80-120 mm MT worth of annual capacity, although their actual output is far less: They produced an estimated 30-50 mm MT in 2016, according to S&P Global Platts.[1] This is less than 7% of China's total crude-steel output.

Production cuts from induction mills are not evident in official data – China's crude steel production figures have continued to rise amid these cuts, as we discussed in previous research (**Chart 2**).[2] Data from the International Iron and Steel Institute shows global steel output was at a record high for the first 11 months of 2017, increasing by more than 5% yoy. Likewise, crude steel output

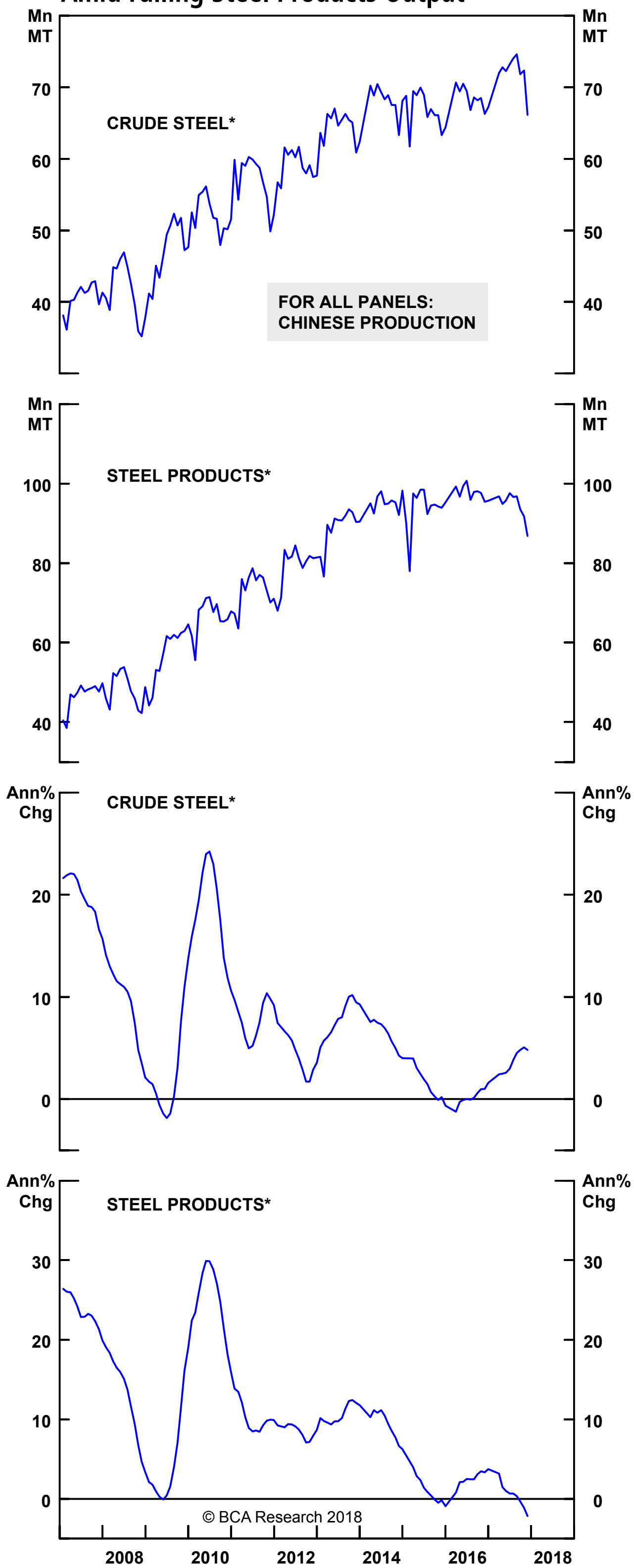
1 Please see "Will China's induction furnace steel whac-a-mole finally come to an end?" published by S&P Global Platts March 6, 2017.

2 Please see BCA Research's *Commodity & Energy Strategy Weekly Report* "Slow-Down In China's Reflation Will Temper Steel, Iron Ore In 2018," published September 7, 2017, available at ces.bcaresearch.com.

Examination of Chinese steel data makes it clear that China's steel market is in fact tighter than what can be inferred from the crude production figures.

CHART 2

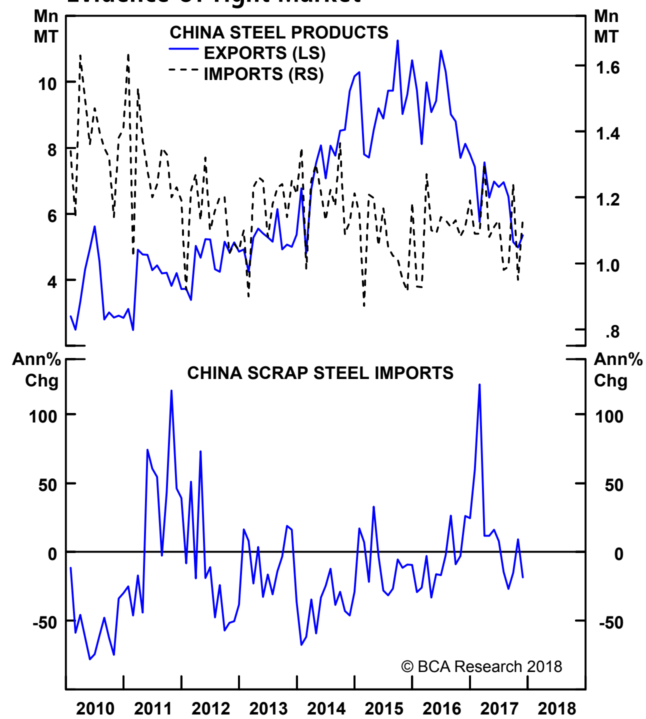
Record Chinese Production Of Crude Steel Amid Falling Steel Products Output



*BASED ON 12-MONTH MOVING TOTALS.
SOURCE: CHINA STAT. INFO & SERVICE CENTRE, BCA RESEARCH.

CHART 3

China Trade Data Evidence Of Tight Market



SOURCE: CHINA GENERAL ADMINISTRATION OF CUSTOMS.

from China – which accounts for 50% of global output – peaked in August: Output over the same period was the highest on record, increasing by 5.28% compared to the same period in 2016.

This production paradox can be put down to the fact that many Chinese induction furnaces are illegal, and, as a result their output is not accounted for in official production data. As legal steelmakers ramped up their output to offset declines from the closed down induction furnaces, official crude production figures climbed.

In fact, further examination of Chinese steel data makes it clear that China's steel market is in fact tighter than what can be inferred from the crude production figures (**Chart 3**). The following observations point to a strained market:

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1. While China's crude steel production has been paving new record highs, China Stat Info data reveals a contradictory picture about steel products. Output of steel products in the March to November period of 2017 came in 3.46% lower yoy, marking the first yoy decline for that period since 1995!

   While crude steel produced by induction furnaces would not be included in official crude steel figures, the metal would eventually be used to manufacture steel products – wires, rods, rails and bars, and are represented in this data. Thus the decline in steel products indicates that lower crude supply has weighed down on the output of steel products.

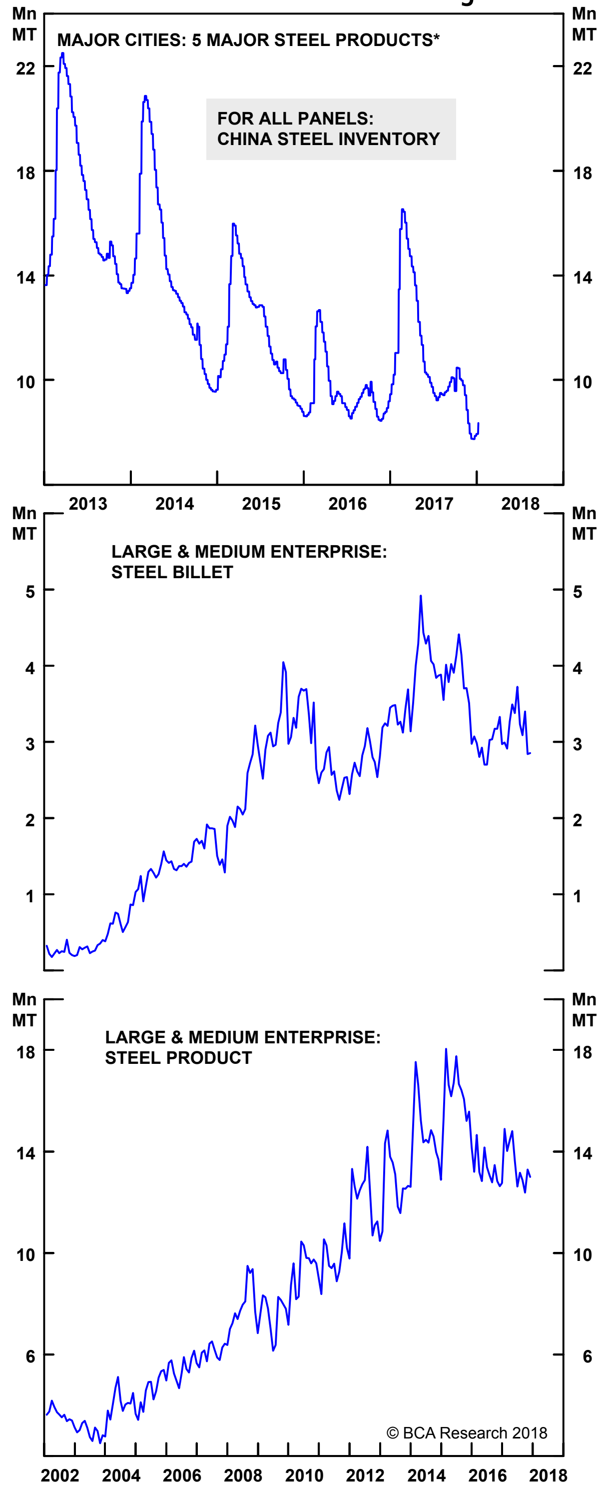
2. China's steel exports have been on a downtrend. In theory, this can be due to either an increase in domestic demand or a decrease in foreign demand. Given the healthy state of the global economy, and what we know about steel production in China, we are believers in the former theory.

   China's exports of steel products are down 30% yoy in the first 11 months of 2017. Aside from the 3.04% yoy decline in 2016, these mark the first annual declines in exports since 2009. In face of lower domestic supply, China has likely reduced its exports in order to satisfy demand from local steel users.

3. China's scrap steel imports fell in 2H17. Unlike blast furnaces which use iron ore as the main input in steelmaking, the

CHART 4

Steel Inventories In China Are Falling



* INCLUDES COLD ROLLED, HOT ROLLED, MEDIUM PLATE, WHORL STEEL AND WIRE ROD.
SOURCE: CHINA IRON & STEEL ASSOCIATION.

China steel inventories are falling. In fact steel product inventories in major industrial cities are at record lows.

shuttered illegal steelmakers use scrap steel which they melt in an induction furnace. Coincident with the elimination of these furnaces, China's imports of scrap steel fell 14.35% yoy in 2H17. This is further evidence of reduced demand for the scrap steel from these furnaces.

4. China steel inventories are falling. In fact steel product inventories in major industrial cities are at record lows (**Chart 4**). This is a symptom of a tight market with demand outpacing supply, contradicting China's crude steel production figures.

Furthermore, according to World Steel Association (WSA), capacity utilization in the 66 countries for which they collect data increased by 3.12 percentage points yoy for the July to November 2017 period to average 72.64%, up from the 69.52% average in the same period of 2016. These observations are evidence that despite the increase in official crude steel production figures, the actual output has in fact fallen and supply is tighter.

Whether steel prices will remain buoyed by tight supply hinges on whether China is successful in permanently shuttering excess capacity and shoddy steel producers, or if induction furnace operators are able to circumvent these policies and bring illegal steel back to the market.

China's Reforms To Dominate Steel Market, At Least This Winter

Following the conclusion of the mid-December Central Economic Work Conference, Chinese authorities announced the "three tough battles" for the next three years, which they see as crucial for future economic prosperity. These battles are summarized as (1) preventing major risks, (2) targeted poverty alleviation, and (3) pollution control. The International Energy Agency (IEA) estimates that air pollution has led to ~1 million premature deaths while household air pollution caused an additional 1.2 million premature deaths in China annually.[3] Because of this, improving China's air quality is a chief social and health target for China.

This will mean that measures to reduce pollution and clear China's skies will be critically important to the steel sector. According to the Ministry of Environmental Protection, China has pledged a 15% yoy reduction in the concentration of airborne particles smaller than 2.5 microns in diameter – known as PM2.5 – in 28 smog-prone northern cities. The steel industry, which is mostly concentrated in the northern China region of Beijing-Tianjin-Hebei, is one of the top sources of air polluting emissions in that region. In fact, industrial emissions – most notably from the steel and cement sectors – are reportedly responsible for 40-50% of these small airborne particles.

China's winter smog "battle plan" will target these polluting industries by mandating cuts on steel, cement, and aluminum production during the smog-prone mid-November to mid-March months, as well as restricting household coal use, diesel trucks and construction projects. Steel production cuts target a range between 30-50%, which, according to Platts estimates, will take 33 mm MT

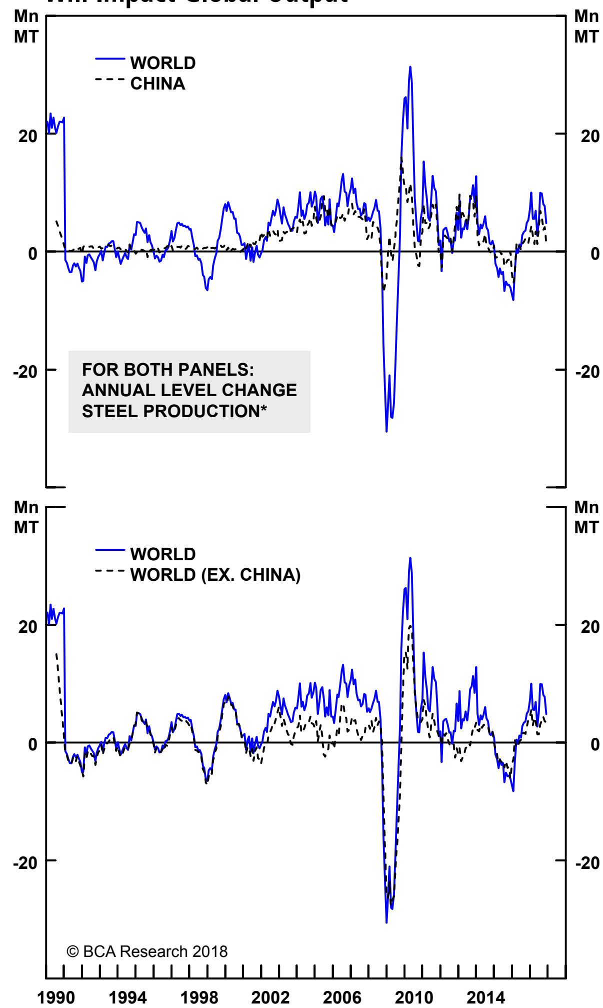
3 Please see IEA World Energy Outlook 2016 Special Report titled "Energy and Air Pollution," available at iea.org.

of steel production – equivalent to ~3.9% of China's projected 2017 crude steel output – offline during the winter. In fact, according to China's environment minister, Li Ganjie, "these special campaigns are not a one-off, instead it is an exploration of long-term mechanisms."[4] Thus, these cuts may become a recurring event in China's steel sector.

China's official crude steel figures are beginning to show the impact of these cuts with November crude production falling 8.6% month-on-month (mom) and growing by just 2.2% yoy – significantly slower than the 7.6% yoy average experienced since July. As a consequence, although crude production in the rest of the world grew in line with previous months, global steel output fell almost 6% month-on-month in November, while yoy production grew 3.7% -- a significant deceleration from the average 6.6% yoy rate witnessed since the beginning of 2H17 (**Chart 5**).

CHART 5

Lower Chinese Steel Production Will Impact Global Output



SOURCE: WORLD STEEL ASSOCIATION AND BCA RESEARCH.

Risks to this outlook come from weak compliance with these cuts. There are recent reports of evasions by aluminum and steel producers in Shandong. Nonetheless, given China's focus on these reforms, we do not foresee widespread violations.

Another risk comes from the demand side. As part of its environmental agenda, Beijing announced plans put off the construction of major public projects in the city – road and water projects – until springtime. The suspension is not intended to impact "major livelihood projects" such as railways, airports, and affordable housing.

Construction is the largest end user for steel – according to WSA more than half of global steel is used for buildings and infrastructure – a slowdown in the construction sector would weigh on steel demand.[5] If other major construction zones adopt a similar policy, the impact of lower steel supply will be offset by weak demand, muting the overall effect on the steel market.

4 Please see "*Provincial China officials used fake data to evade aluminium, steel capacity curbs – China Youth Daily*," published on December 26, 2017, available at reuters.com.

5 Please see "Steel Markets" at worldsteel.org.

The likelihood the global economic recovery and expansion persists through 2018 suggests steel markets could remain well bid in 2H18.

Bottom Line: We expect to see lower steel production and exports from China in the coming months. Given Xi Jinping's resolve to improve air quality, we expect compliance to environmental reforms among steelmakers to be strong this winter. This, along with lower output from induction furnaces in China, indicates the market could be tighter than is commonly supposed at least in 1H18. The likelihood the global economic recovery and expansion persists through 2018 suggests steel markets could remain well bid in 2H18, particularly if, as we expect, growth ex-China picks up the slack resulting from any slowdown in China. However, we will need to see what the actual reforms for the industry look like following the National People's Congress in March 2018.[6]

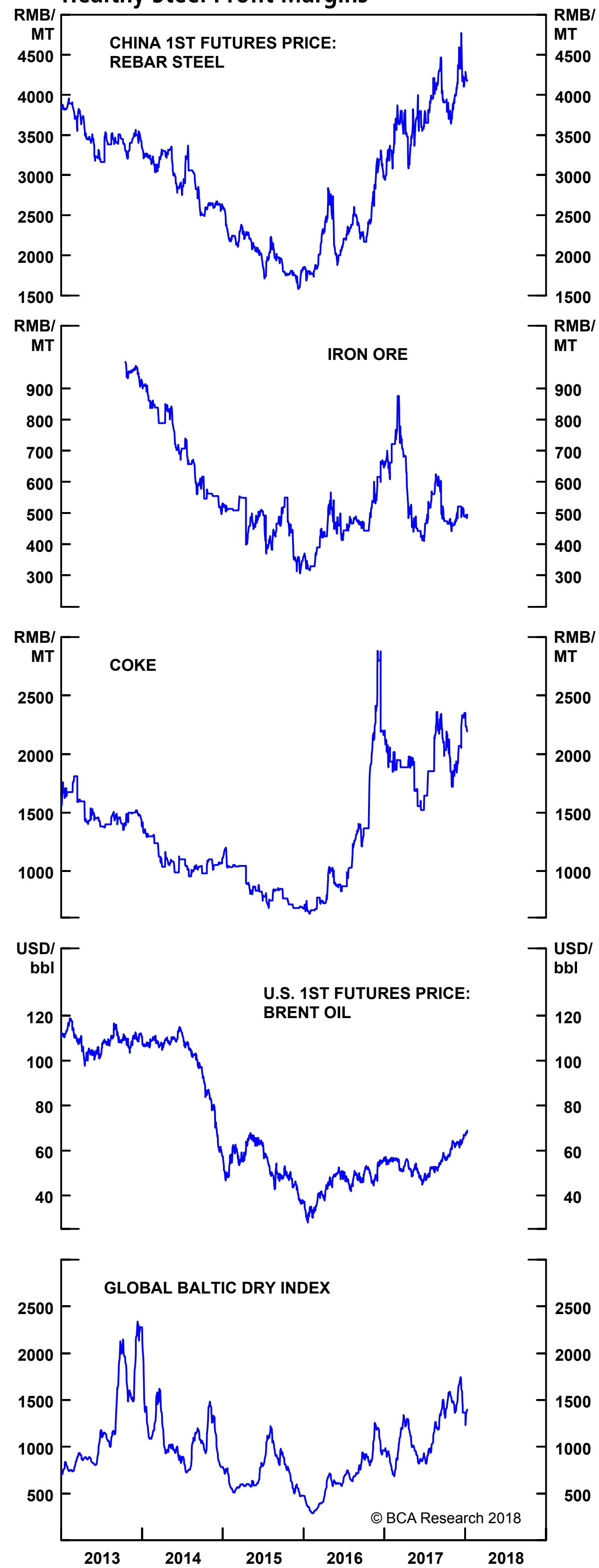
Steel Profit Margins Spur Iron Ore Demand

Given steel's exceptional price gains over the past two years, and iron ore's lackluster performance in 2017, profit margins at China's steel producers reached multi-year highs (**Chart 6**). Ordinarily, this would normally encourage steel production, which would flood the market with supply and push prices down. However, China's environmental reforms will cap output from the country's most productive steelmaking region in coming months. Consequently, unless there are mass policy violations by steel producers this winter, we do not anticipate a swift price adjustment lower.

Instead, steel producers are preparing to run on all cylinders when production restrictions are

CHART 6

Healthy Steel Profit Margins



6 For additional discussion, please see "Shifting Gears in China: The Impact On Base Metals," in the November 9, 2017, issue of BCA Research's *Commodity & Energy Strategy*. It is available at ces.bcaresearch.com.

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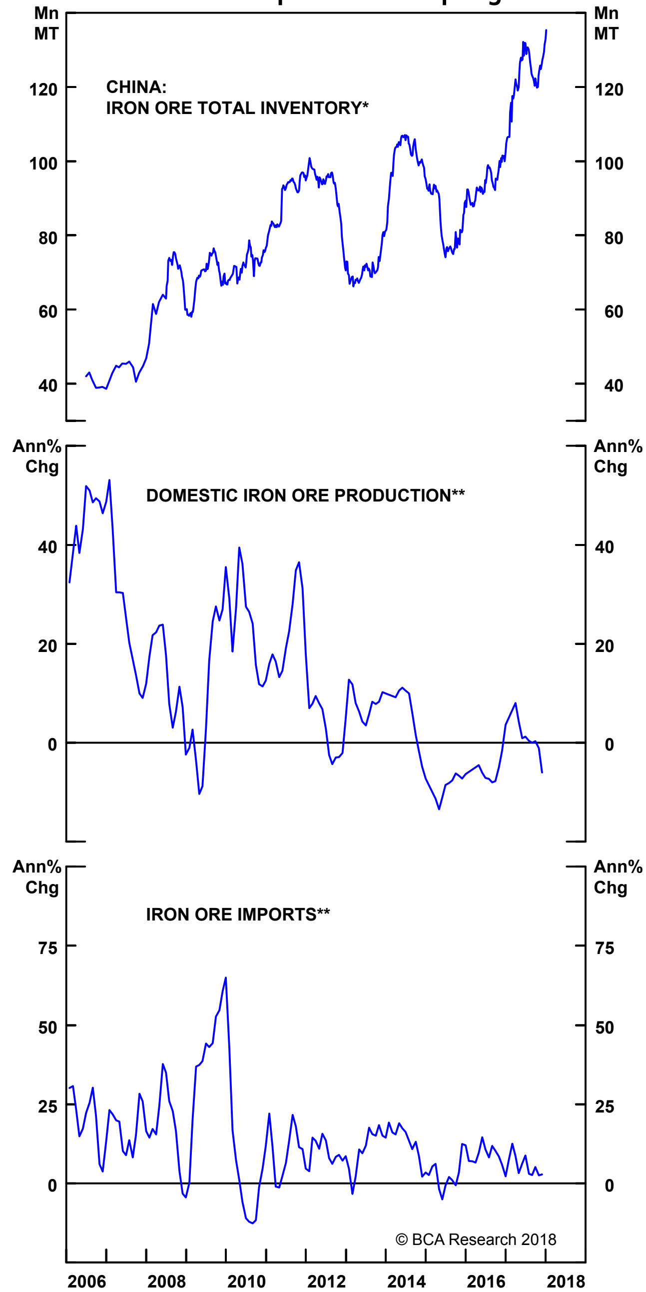
lifted in the spring. As such, they are filling iron ore inventories and taking advantage of weaker iron ore prices, before the iron ore market catches up with steel. China's iron ore imports reached an all-time record in September, while the latest data shows a 19% month-on-month (mom) jump in imports, corresponding with a 2.8% yoy increase (**Chart 7**).

This runs counter to what we expect during a period of muted steel production. Especially in an environment of healthy iron ore inventories, as China is in currently. Although Chinese inventories came down from mid-year peaks, they resumed their upward trend in 4Q17. This coincides with the steel winter capacity cuts, and is likely due to reduced demand for the ore from steel mills. There are two theories to explain this phenomenon:

1. Chinese steelmakers are taking advantage of lower iron ore prices and locking in higher profit margins, in anticipation of higher iron ore prices once steel production picks up again in the spring.

2. Amid the winter cuts, China's steelmakers are demanding high-grade iron ore, imported from Brazil and Australia. This will help them ensure that they are able to maximize their output without violating environmental policies.

CHART 7
Steel Producers Stocking Up On Iron Ore In Preparation For Spring



*SOURCE: ANTAIKE INFORMATION DEVELOPMENT.
**SERIES SHOWN SMOOTHED EXCEPT LAST DATA POINT.

Environmental Consciousness Widens Iron Ore Spreads

A consequence of the steel winter capacity cuts is stronger demand for higher grade raw materials to cut down on the most polluting phases of steel production. Higher-grade iron ore, which is defined by its purity or iron content, is more efficient for blast furnaces to use, allowing them to produce more steel from each tonne of iron ore they consume, maximizing output and profit. This is especially true in a tight steel market, with healthy profit margins: Steelmakers are able to afford the higher grades and are favoring productive efficiency.

A consequence of the steel winter capacity cuts is stronger demand for higher grade raw materials to cut down on the most polluting phases of steel production.

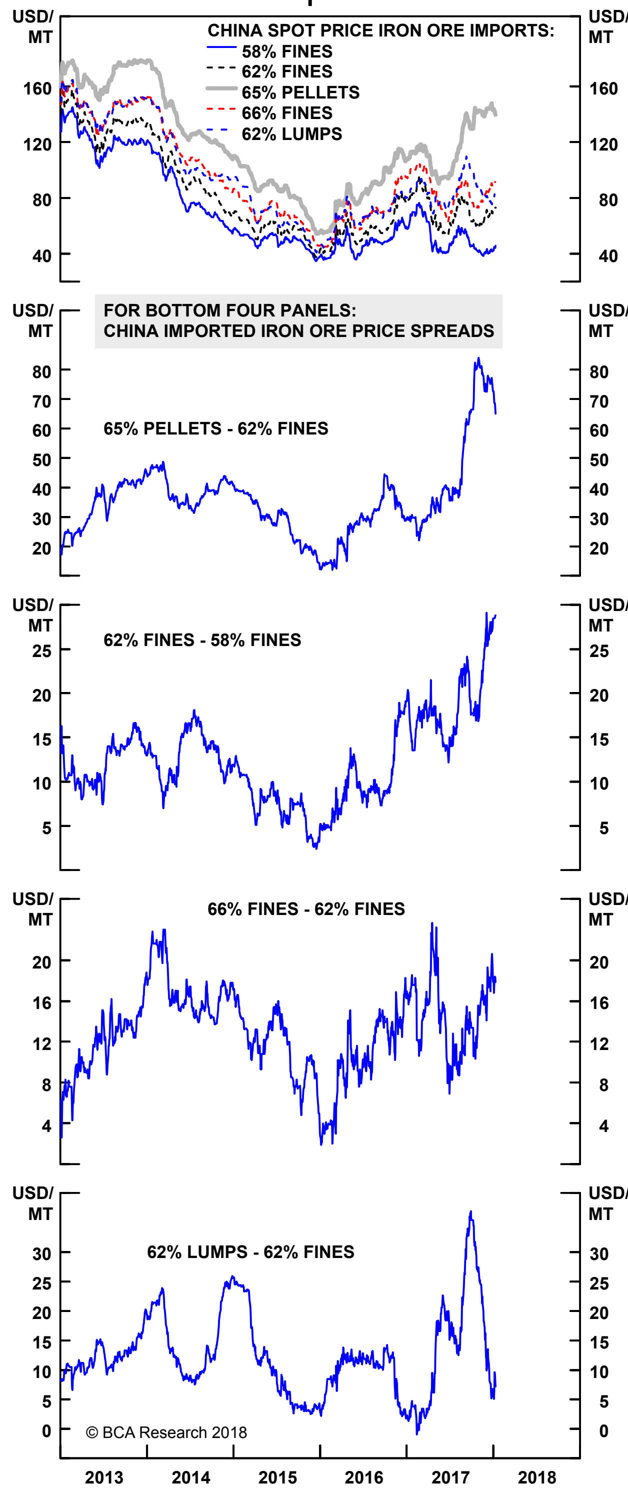
The discount for lower grade iron ore fines – 58% iron content – as well as the premium for higher grade 65% iron content have widened (**Chart 8**). This is because mills have found a way to legally circumvent the winter environmental restrictions, and still remain compliant. Furthermore, purer ores are less polluting, which helps serve China's environmental agenda.

In addition, the premiums for iron ore pellets and iron ore lumps have also widened. Unlike lumps and pellets which can be fed directly into blast furnaces, fines require a sintering process which is highly polluting. Thus, China's environmental reforms have increased demand for higher grade, less polluting ores.

An additional factor that could be driving up spreads is higher metallurgical coke prices (**Chart 6**). Higher grade iron ore contains less silica and thus requires less met coke to purify the ores. According to anecdotal evidence from China, Carajas fines from Brazil – which have the highest iron ore content and lowest silica content– are reportedly in high demand.[7]

Furthermore, China's imports show a decline in iron ore from India – which is of the lower grades. In the July to October period, imports fell 11.26% yoy with October imports falling almost 25% yoy and 30% mom. This is consistent with the theory that steel makers are shunning lower grade ores. On the other hand, imports from Brazil and Australia are expected to remain strong (**Chart 9**). The latest Australian Resources and Energy Quarterly forecasts

CHART 8
Wide Iron Ore Price Spreads



SOURCE: BEIJING CUSTEEL E-COMMERCE CO.

7 Please see "High-medium grade iron ore fines spread widens to all-time high of $23.55/dmt," published August 22, 2017, available at platts.com.

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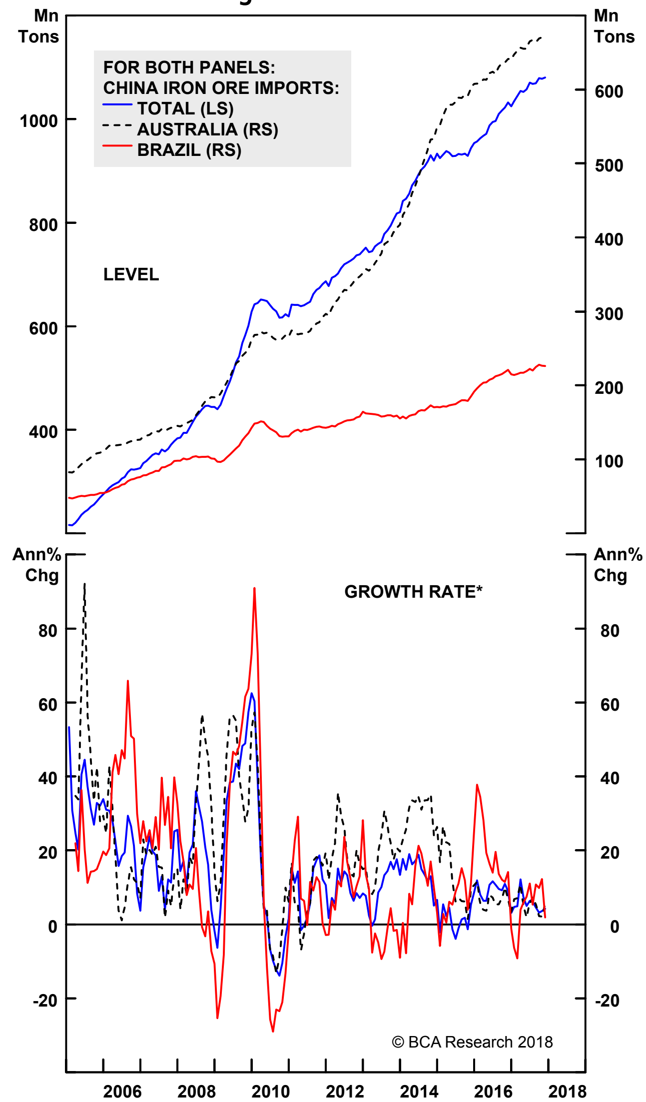
Australian and Brazilian iron ore exports to grow 5.4% and 4.2% respectively in 2018, while Indian exports are projected to fall 57.5% yoy.

Bottom Line: In an effort to keep production high and profit from strong steel prices in face of the winter production cuts, steel producers are turning to higher-grade iron ore, pushing up the spread between high vs. low grade ores. The extent to which steel producers are able to successfully keep production going on the back of higher-grade ores will dampen the impact of the winter production cuts on the steel sector. Given that China's environmental focus is a long term plan, we expect these spreads to remain wide, rather than reverting back to their historic average.

CHART 9
Environmental Concerns Will Support Demand For High Grade Iron Ore



*SERIES SHOWN AS 3-MONTH MOVING AVERAGES.
SOURCE: CHINA CUSTOMS GENERAL ADMINISTRATION.

Steel Prices And Copper Markets

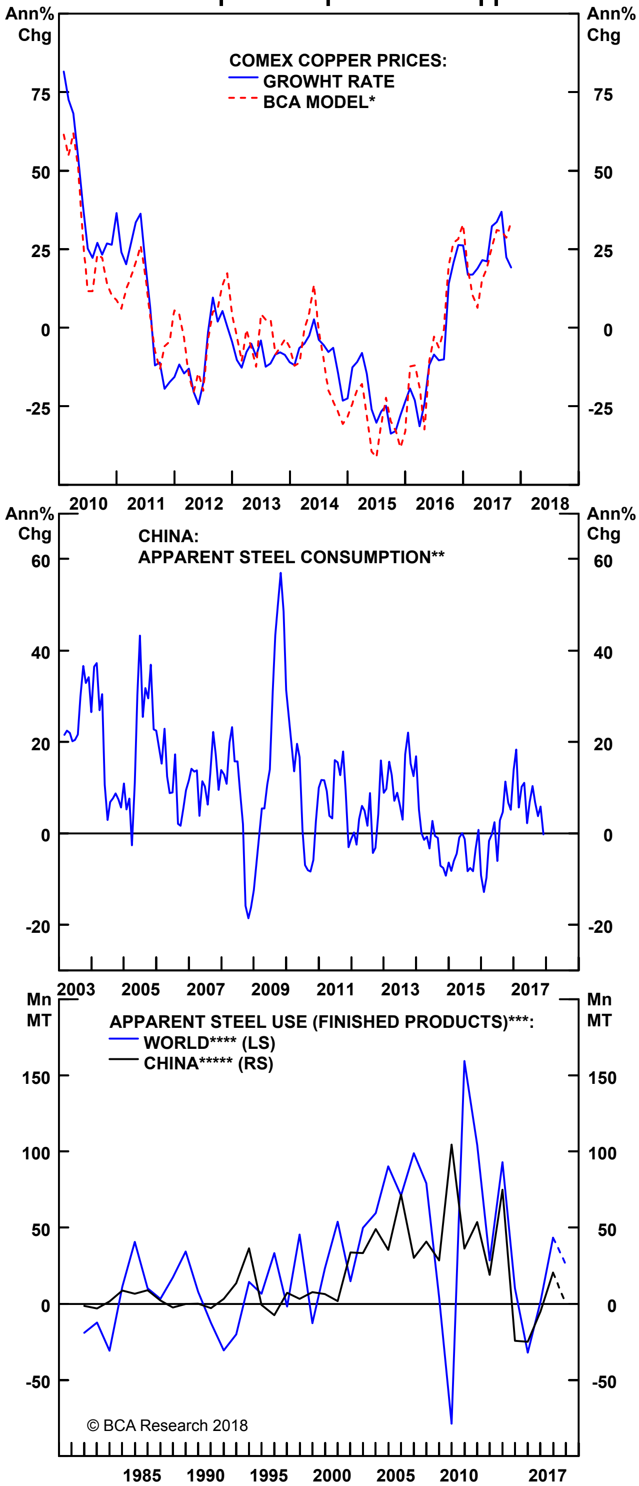
The copper market had a roller coaster fourth quarter. Prices for the red metal were on a general uptrend since May, and first peaked in early September at \$3.13/lb before bottoming at \$2.91/lb by the second half of that month. Shortly thereafter, copper prices peaked at a new high of \$3.22/lb by mid October – their highest in more than three years. Fears of a slowdown in China following messaging from the 19th Communist Party Congress caused the metal to lose almost 10% of its value, when it bottomed for the second time in early December. In fact, this coincided with a 4.65% decline in the price on December 5. While there is no clear justification for this fall, it can be put down to a mix of factors including a ~10 th MT increase in LME inventories, worries about a China slowdown, as well as a liquidation of positions ahead of the new year. Nonetheless, copper has since regained these losses to end the year at \$3.28/lb.

In our modelling of copper, we find that steel consumption is significant in forecasting future copper price behavior. More specifically, China's steel consumption has a significant positive relationship with copper prices 6 months into the future (**Chart 10**). This can be explained by the importance of the construction sector as an end user of both materials. However, each metal

Steel consumption in China is a useful leading indicator of copper markets when demand side fundamentals are dominating steel and copper markets.

CHART 10

Steel Consumption Helps Predict Copper Prices



*AS A FUNCTION OF CHINA APPARENT STEEL CONSUMPTION, U.S. TWIB CHINA PMI AND COPPER NET SPECULATIVE POSITIONS.
**BCA CALCULATIONS REFLECT DOWNWARD REVISIONS TO ACCOUNT FOR INDUCTION FURNACE CLOSURES BASE EFFECT.
***SERIES SHOWN AS YEAR-ON-YEAR LEVEL CHANGE; NOTE: 2017 ESTIMATES AND 2018 FORECASTS ARE BASED ON BCA RESEARCH CALCULATIONS.
****SOURCE: WORLD STEEL ASSOCIATION AND BCA RESEARCH.
*****NATIONAL BUREAU OF STATISTICS OF CHINA.

goes into the construction site at different time frames. While steel products are used in the construction of the structures, and thus are needed at the beginning of the project, copper is used in the electrical wiring and plumbing, and is thus needed later (6 months or so) in the project.

This is in line with our findings that steel is most significant with a six-month lag – reflecting the average time period between which the structure is built and the plumbing and wiring are needed. Steel consumption in China is a useful leading indicator of copper markets when demand side fundamentals are dominating steel and copper markets.

Government stimulus and a solid construction sector boosted China's steel demand in 2017. However, according to the WSA Short Range Outlook, demand for steel will moderate this year on the back of reflation in China, partially offset by strong global growth. WSA notes that the closure of induction furnaces skewed up steel demand growth figures to 12.4% yoy, and instead cite a more reasonable estimate along the lines of 3% yoy steel demand growth from China in 2017, bringing the global steel demand growth rate to 2.8%. While steel demand outside of China grew by an estimated 2.6% in 2017, they foresee it reaching 3% in 2018. In contrast, they expect flat demand from China in 2018, bringing world steel demand growth to 1.6% in 2018 (**Table 1**).

TABLE 1
Steel Demand (yoy Growth Rates)

	2016	2017 (F)	2018 (F)
WORLD	1.0	2.8*	1.6
WORLD EXCLUDING CHINA	0.8	2.6	3.0
CHINA	1.3	3.0*	0.0

*NOT ACCOUNTING FOR THE STATISTICAL BASE EFFECT OF THE CLOSURE OF INDUCTION FURNACES IN CHINA IN 2017, GROWTH RATES FOR STEEL DEMAND IN CHINA WOULD BE 12.4%, AND A CORRESPONDING 7.0% FOR WORLD DEMAND GROWTH.
SOURCE: WORLD STEEL ASSOCIATION SHORT RANGE OUTLOOK, OCTOBER 2017.

Moderating demand from China and the stability (or lack thereof) of the supply-side will dominate the copper market this year. On the demand side, China's steel market offers insight about the future direction of the red metal.

Bottom Line: Given China's appetite for steel has remained healthy to date and is projected to maintain its 2017 level this year, we do not expect a demand-induced plunge in copper prices in the 6 month horizon.

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Investment Views And Themes

ENERGY	BASE METALS	PRECIOUS METALS	AGS & SOFTS
OVERWEIGHT	NEUTRAL	NEUTRAL	UNDERWEIGHT
THEME #1: Saudi-Russia Production Pact Could Endure			
Market Will Test Commitment to Pact			
THEME #2: Low-Cost Iron Ore Producers Continue Their Market-Share Battle			
Avoid/Short Outright Length In Iron Ore And Steel			
THEME #3: Favor Relative-Value In Base Metals			
Neutral Overall For Complex			
THEME #4: Fed Tightening Bearish For Gold			
U.S. Monetary Policy Is Critical For Gold			
THEME #5: Argentina Re-Emerges As Key Ags Exporter			
Argentina Will Increase Grain Exports			
THEME #6: Elevated FX Risk			
Commodities Quickly React To FX Shifts			
THEME #7: Oil Inventories Will Draw			
Elevated Storage Levels Will Come Down In 2018			
THEME #8: Stay With Relative Value Trades In Ags/Softs			
Oversupply Favors Relative-Value Trades			
THEME #9: Global Inflation Will Lift			
Fiscal And Monetary Stimulus Will Lift Inflation			
THEME #10: Strategically Neutral Natgas			
Lower Production, Colder Temps Are Transitory			
THEME #11: Renewables Changing Energy Markets			
Renewables – mostly wind and solar PV – continue to transform markets			

Recommendations

SHOPPING LIST	NEW, PENDING AND CLOSED TRADES
	> We are taking profits on our Brent and WTI \$55 vs. \$60/bbl call spreads recommendations on May- and July-delivery oil at tonight's close. > We are opening a tactical long position in Mar/18 steel rebar futures on the Shanghai Futures Exchange, which are quoted in RMB/ton. We are including a 10% stop loss on this recommendation.

Strategic Recommendations

POSITION	INCEPTION LEVEL	INITIATION DATE	RETURN	STOP	COMMENTS
ENERGY					
LONG MAY/18 $55/BBL BRENT CALLS	$4.54 PREMIUM	SEP 21/17	109.2%	-$2.0/BBL	WE ARE CLOSING THIS TRADE AT TONIGHTS CLOSE
SHORT MAY/18 $60/BBL BRENT CALLS	$2.26 PREMIUM	SEP 21/17			WE ARE CLOSING THIS TRADE AT TONIGHTS CLOSE
LONG DEC/18 $55/BBL BRENT CALLS	$6.06 PREMIUM	SEP 21/17	61.9%	-$2.0/BBL	ICE FUTURES EUROPE COMMODITIES
SHORT DEC/18 $60/BBL BRENT CALLS	$3.75 PREMIUM	SEP 21/17			ICE FUTURES EUROPE COMMODITIES
LONG JUL/18 $55/BBL WTI CALLS	$3.00 PREMIUM	OCT 19/17	123.5%	$1.0/BBL	WE ARE CLOSING THIS TRADE AT TONIGHTS CLOSE
SHORT JUL/18 $60/BBL WTI CALLS	$1.38 PREMIUM	OCT 19/17			WE ARE CLOSING THIS TRADE AT TONIGHTS CLOSE
LONG DEC/18 $55/BBL WTI CALLS	$3.68 PREMIUM	OCT 19/17	77.5%	$1.0/BBL	NYMEX
SHORT DEC/18 $60/BBL WTI CALLS	$1.95 PREMIUM	OCT 19/17			NYMEX
LONG JUL/18 WTI	$54.33/BBL	NOV 2/17	35.6%	$0.35/BBL	NYMEX
SHORT DEC/18 WTI	$52.98/BBL	NOV 2/17			NYMEX
LONG S&P GSCI INDEX	2405.7	DEC 7/17	7.8%		TOTAL RETURNS
PRECIOUS METALS					
LONG SPOT GOLD	$1230.25/OZ	MAY 04/17	6.6%	-10.0%	
BASE METALS					
AGS & SOFTS					
LONG CORN	349.5 CENTS/BUSHEL	OCT 5/17	1.8%	-10.0%	CHICAGO BOARD OF TRADE
SHORT WHEAT	440.75 CENTS/BUSHEL	OCT 5/17			CHICAGO BOARD OF TRADE
OTHER					
LONG 10-YEAR U.S. TIPS	0.49 BPs	JUL 27/17	0.9%	-5.0%	

NOTE: THE RECOMMENDATIONS ARE INITIATED BASED ON THE CLOSING PRICE ON THE THURSDAY WE PUBLISH. THE STOP-LOSSES AND UPSIDE TARGETS ARE BASED ON CLOSING PRICES. THE MARK-TO-MARKET CALCULATIONS ARE BASED ON TUESDAY CLOSES.

Tactical Trades

TRADES	INCEPTION LEVEL	INITIATION DATE	RETURN	STOP	COMMENTS
ENERGY					
PRECIOUS METALS					
BASE METALS					
LONG MAR/18 STEEL REBAR FUTURES	TBD	JAN 11/18	TBD	-10%	SHANGHAI FUTURES EXCHANGE. RETURNS CALCULATED IN RMB/MT
AGS & SOFTS					
OTHER					

Trade Recommendation Performance In 3Q17

TRADES OPEN IN 2017 Q3	INCEPTION LEVEL	INITIATION DATE	CLOSING DATE	REALIZED P&L (%)	TYPE OF TRADE
ENERGY					
LONG MAY/18 $55/BBL BRENT CALLS / SHORT MAY/18 $60/BBL BRENT CALLS	2.28	SEP 21/17		6.6	STRATEGIC
LONG DEC/18 $55/BBL BRENT CALLS / SHORT DEC/18 $60/BBL BRENT CALLS	2.31	SEP 21/17		4.3	STRATEGIC
LONG DEC/17 $50/BBL WTI CALLS / SHORT DEC/17 $55/BBL WTI CALLS	1.06	JUN 15/17		123.6	STRATEGIC
PRECIOUS METALS					
LONG SPOT GOLD	1230.25	MAY 5/17		4.3	STRATEGIC
BASE METALS					
SHORT DEC/17 COPPER	3.14	SEP 7/17		6.0	TACTICAL
OTHER					
LONG 10-YEAR U.S. TIPS	0.49	JUL 27/17		0.35	STRATEGIC
Q3 OPEN TRADES AVERAGE RETURN				**24.2**	

TRADES CLOSED IN 2017 Q3	INCEPTION LEVEL	INITIATION DATE	CLOSING DATE	REALIZED P&L (%)	TYPE OF TRADE
ENERGY					
LONG DEC/17 $65/BBL BRENT CALLS / SHORT DEC/17 $45/BBL BRENT PUTS	-1.16	MAY 11/17	SEP 21/17	100.9	STRATEGIC
LONG DEC/17 $55/BBL BRENT CALLS / SHORT DEC/17 $60/BBL BRENT CALLS	1.10	MAY 4/17	SEP 21/17	23.6	STRATEGIC
LONG DEC/17 $50/BBL BRENT CALLS / SHORT DEC/17 $55/BBL BRENT CALLS	1.11	JUN 22/17	SEP 21/17	224.3	STRATEGIC
Q3 CLOSED TRADES AVERAGE RETURN				**116.3**	

Summary Of Trades Closed In 2016

AVERAGE RETURN BY MARKET	REALIZED P&L (%)
ENERGY	**95.1**
PRECIOUS METALS	**-0.65**
BASE METALS	**-0.53**
AGS / SOFTS	**-1.0**
OTHERS	**6.2**

Trades Closed In 2017

TRADE	INCEPTION LEVEL	INITIATION DATE	CLOSING DATE	REALIZED P&L (%)	TYPE OF TRADE
LONG GOLD SPOT	1128.13	DEC 15/16	JAN 5/17	4.7	TACTICAL
LONG DEC/17 NICKEL / SHORT DEC/17 ZINC	3.98	DEC 28/16	JAN 16/17	-5.1	TACTICAL
LONG DEC/17 WTI / SHORT DEC/18 WTI	0.04	JAN 12/17	JAN 25/17	-225.0	STRATEGIC
LONG DEC/19 BRENT / SHORT DEC/19 WTI	0.07	FEB 6/17	FEB 23/17	1771.4	TACTICAL
LONG DEC/17 WTI / SHORT DEC/18 WTI	-0.11	FEB 9/17	FEB 23/17	972.7	STRATEGIC
LONG JUL/17 $50/BBL WTI CALLS / SHORT JUL/17 $55/BBL WTI CALLS	1.54	MAR 23/17	APR 11/17	99.4	TACTICAL
LONG AUG/17 $50/BBL WTI CALLS / SHORT AUG/17 $55/BBL WTI CALLS	1.76	MAR 23/17	APR 11/17	74.4	TACTICAL
LONG SEP/17 $50/BBL WTI CALLS / SHORT SEP/17 $55/BBL WTI CALLS	1.89	MAR 23/17	APR 11/17	61.3	TACTICAL
LONG DEC/17 WTI / SHORT DEC/18 WTI	-0.12	MAR 13/17	APR 13/17	583.3	STRATEGIC
LONG JUL/17 WHEAT / SHORT JUL/17 COTTON	5.73	MAR 13/17	APR 20/17	-7.1	TACTICAL
LONG DEC/17 $65/BBL BRENT CALLS / SHORT DEC/17 $45/BBL BRENT PUTS	-0.47	APR 20/17	MAY 4/17	-327.7	STRATEGIC
LONG DEC/17 BRENT / SHORT DEC/18 BRENT	0.19	MAR 23/17	MAY 4/17	-263.2	STRATEGIC
LONG JUL/17 CORN / SHORT JUL/17 SUGAR	18.47	JAN 12/17	MAY 18/17	18.78	TACTICAL
LONG JUN/17 $1,200/OZ GOLD PUTS / SHORT JUN/17 $1,150/OZ GOLD PUTS / LONG JUN/17 $1,275/OZ GOLD CALLS / SHORT $1,325/OZ GOLD CALLS	21.00	FEB 23/17	MAY 25/17	-100.0	TACTICAL
LONG DEC/17 BRENT / SHORT DEC/18 BRENT	-0.21	MAY 11/17	JUN 8/17	-523.8	STRATEGIC
LONG DEC/17 WTI / SHORT DEC/18 WTI	0.24	JUN 1/17	JUN 8/17	-533.3	STRATEGIC
LONG S&P GSCI INDEX	401.60	APR13/17	JUN 19/17	-10.0	STRATEGIC
LONG DEC/17 $65/BBL BRENT CALLS / SHORT DEC/17 $45/BBL BRENT PUTS	-1.16	MAY 11/17	SEP 21/17	100.9	STRATEGIC
LONG DEC/17 $55/BBL BRENT CALLS / SHORT DEC/17 $60/BBL BRENT CALLS	1.10	MAY 4/17	SEP 21/17	23.6	STRATEGIC
LONG DEC/17 $50/BBL BRENT CALLS / SHORT DEC/17 $55/BBL BRENT CALLS	1.11	JUN 22/17	SEP 21/17	224.3	STRATEGIC
SHORT DEC/17 COPPER	3.14	SEP 7/17	OCT 12/17	0.7	TACTICAL
LONG DEC/17 $50/BBL WTI CALLS / SHORT DEC/17 $55/BBL WTI CALLS	1.06	JUN 15/17	OCT 19/17	84.9	STRATEGIC
AVERAGE RETURN				92.1	

Commodity Prices And Plays Reference Table

	LATEST PRICE*	4-WEEK % CHG	13-WEEK % CHG	52-WEEK % CHG
COMMODITY INDEXES				
Continuous Commodity Index	422.5	3.9	2.4	-0.5
GSCI Commodity Index	448.4	5.9	12.5	14.8
Bloomberg Commodity Index	88.1	5.1	4.2	2.1
ENERGY				
CCI Energy Sub-Index	473.9	4.5	8.4	8.8
WTI Crude Oil (US$/bbl)	62.9	8.8	23.5	21.1
Natural Gas (US$/mmbtu)	2.96	5.7	2.1	-5.1
Gasoline (US$/gallon)	1.86	5.7	11.7	15.3
Heating Oil (US$/gallon)	1.98	10.4	24.0	29.9
BASE METALS				
CRB Base Metal Index	931.9	6.1	5.4	12.6
LMEX Index	3344.4	6.5	3.3	23.7
Aluminium (US$/mt)	2143.3	7.7	0.5	24.8
Copper (US$/mt)	7059.5	6.4	5.3	26.7
Lead (US$/mt)	2554.5	2.4	0.5	22.1
Nickel (US$/mt)	12642.0	13.1	15.1	22.3
Tin (US$/mt)	19976.0	2.6	-4.2	-5.6
Zinc (US$/mt)	3350.5	7.1	0.0	26.6
PRECIOUS METALS				
CCI Precious Metal Sub-Index	807.5	7.4	1.5	3.9
Gold (US$/oz)	1311.0	5.1	1.5	11.2
Silver (US$/oz)	17.0	7.6	-1.3	1.6
Platinum (US$/oz)	971.0	9.8	5.0	-0.5
Palladium (US$/oz)	1108.0	10.0	17.6	45.8
SOFT COMMODITIES				
CCI Grains & Oilseed Sub-Index	288.7	1.6	0.0	-1.9
CCI Livestock & Meats Sub-Index	362.8	6.0	8.6	7.4
GSCI Agricultural Index	281.8	2.2	1.0	-6.0
COMMODITY PLAYS				
Global Mining Stock Index	1330.5	14.1	9.5	25.4
Global Non-Gold Mining Stock Index	1471.7	17.7	15.2	41.2
Global Gold Mining Stock Index	981.8	7.9	-1.1	5.5
Global Energy Index	1930.2	8.0	9.5	8.2
Global Basic Materials Index	1601.2	9.2	10.2	31.2
Global Coal Index	2800.0	15.3	11.9	27.4
Global Water Index	4600.1	0.4	0.3	15.7
Global Alternate Sources Index	91.0	6.1	2.2	15.6
C$/US$	0.80	3.2	0.4	6.0
A$/US$	0.78	4.0	0.6	6.4
NOK/EUR	0.10	2.2	-2.9	-6.4
ZAR$/US$	0.08	10.2	11.0	10.7

*ALL INDEXES ARE IN US$. JANUARY 9, 2018.
NOTE: STARTING NOVEMBER 8, 2016. WE REMOVED THE DJ-AIG COMMODITY INDEX AND REPLACED IT WITH THE BLOOMBERG COMMODITY INDEX.

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