

# COMMODITY MARKET ANALYSIS & OUTLOOK



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# GLOBAL MACROECONOMIC OUTLOOK – KEY THEMES

## Global outlook:

- Global growth expectations have continued to rise, but the peak is likely near.
- Strong global GDP growth to last well into 2019:
  - +3.9% in 2018.
  - In line with consensus
- Solid recovery in global trade (+5% in 2017) expected to continue, underpinned by the technology sector.
- Lower risk of a serious intensification of protectionism resulting in a tit-for-tat trade war.

## Regional growth:

- US: Moderate growth of +2.4% in 2018; onset of a mild recession to occur in 2H19 or 1H20.
- Euro: Prospects continue to improve; +2.5% growth in 2018.
- China: Somewhat more pessimistic on the overall growth outlook than consensus; +6.4% growth in 2018.

## Monetary policy:

- Higher oil prices have pushed inflation rates upwards, although these are still below most central banks' targets.
- As a result, monetary policy divergence should accelerate:
  - US: Three rate hikes in 2018 (March, June, September). Market prices a fourth rate hike in December (Probability: 44%).
  - Euro: Inflation in the euro area to be sufficiently weak to motivate another 3m extension (at €15bn/m) from September to December 2018. Rate hikes in June and September 2019.

## SG Forecasts

	2017	2018	2019	2020	2021	2022	IMF 2018
<b>Real GDP</b>							
World (PPP weights)	3.7	3.9	3.6	3.4	3.9	3.9	3.9
US	2.3	2.4	1.2	0.5	2.5	2.2	2.9
Euro Area	2.5	2.5	1.5	0.6	1.3	1.5	2.4
UK	1.7	1.2	0.7	0.9	1.0	1.1	1.6
China	6.9	6.4	6.0	5.7	6.0	5.8	6.6
Japan	1.7	1.4	1.3	0.8	1.2	1.3	1.2
<b>CPI</b>							
World (PPP weights)	3.3	3.4	3.1	3.0	3.1	3.1	
US	2.1	2.0	1.6	2.3	2.6	1.9	
Euro Area	1.5	1.5	1.3	1.3	1.4	1.5	
UK	2.7	2.7	1.7	1.5	1.4	1.4	
China	1.5	2.6	2.0	1.4	2.0	2.2	
Japan	0.5	1.2	1.6	2.7	2.1	2.0	
<b>FX</b>							
EURUSD	1.14	1.26	1.33	1.36	1.34	1.36	
EURGBP	0.88	0.90	0.94	0.95	0.96	0.97	
USDCNY	6.77	6.40	6.57	6.77	6.60	6.43	
USDJPY	111.9	109.4	111.5	117.7	119.5	118.1	
USDINR	65.21	64.97	65.67	66.04	66.55	67.54	
USDBRL	3.21	3.28	3.41	3.48	3.51	3.54	
USDCLP	658.6	605.8	615.7	604.2	598.6	598.6	
AUDUSD	0.76	0.81	0.84	0.81	0.80	0.80	
USDRUB	58.7	58.6	61.6	63.9	64.9	65.0	
<b>Key Rates</b>							
US	1.06	1.88	2.13	1.50	1.94	2.49	
Euro Area	0.00	0.00	0.12	0.14	0.56	1.54	
UK	0.29	0.71	1.13	1.00	1.00	1.00	
China	2.44	2.60	2.51	2.02	2.40	2.50	
<b>10y Govt. Bond Yield</b>							
US	2.3	2.8	2.7	2.6	3.5	3.8	

Source: SG Cross Asset Research/Economics

# INDUSTRIAL METALS – SUMMARY

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## KEY POINTS

- **Synchronized global economic growth is positive for base metals** – they tend to perform well during US rate-hike cycles.
- Stronger global economic growth underpinning metals demand growth **amid tightening markets for most metals**. Demand is expected to remain robust **on increased infrastructure spending** in **China** and the **rest of the world**.
- **Supply constraints due to mine closures** (resource exhaustion) and disruptions due to strikes, export policies and bad weather. Greater environmental/regulatory scrutiny in China could force plant closures.
- Global supply/demand for **most metals moving towards balance/deficit**, resulting in a draw down of inventories. However, deficits have a material impact on price only when inventory levels are low.
- **Downside price risks** include slower growth in China and greater than expected production, including restarts of idled capacity.
- **Upside price risks** include stronger than expected demand, policy induced supply restraints in Asia, environmental constraints, and impending labor contract negotiations.

## REASONS TO BE POSITIVE

- **Robust metals demand growth** - underpinned by synchronised global economic growth
- Will the US swing towards protectionism slow global trade growth? Probably yes, but doubt it will make a significant difference. **A tit-for-tat trade war between the US and the ROW is in our view still a tail risk** - 20% probability.
- China – 19th Party Congress reiterated the importance of “quality” over “quantity” growth. In the transition from rapid growth to high-quality development, **China should improve its economic structure and foster new growth drivers. Winter cuts and closure of illegal capacity** (aluminium), together with stricter **environmental monitoring. Outside the OBOR initiative** – expected at \$150bn next 5 yrs.
- **Rising cost curve - Reductions in overcapacity** are resulting in higher raw materials prices – most notably **coal and steel**, key energy inputs for the metals and mining and smelting industry. A large portion of this shift is likely to be **permanent**.
- **More supply needs to be incentivized** - Supply challenges support long-run prices. Amid rising cost floor, prices to remain elevated to stimulate mine investment and incentivize output
- **Urbanization** - UN 5 billion people will live in cities by 2030, compared to 3.4bn now.
- **EV Revolution** - boost to demand for copper, aluminium, nickel and zinc.
- **Energy Storage**

# PCA – DRIVERS OF THE ASSET CLASS – SYSTEMIC VS. IDIOSYNCRATIC RISK



## PCA explained

Principal Component Analysis (PCA) is a statistical tool that allows us to break down commodity price returns and isolate the major explanatory variables. SG has developed a PCA model, specifically for commodity markets, that uses 23 different non-fundamental variables. These include measures of inflation, currency changes, credit spreads, implied volatility, equity and changes in equity indices. These variables are simplified into three principal components through the PCA process. Each component is a linear combination of the original 23 variables that can be mapped to a “real world” factor by examining and interpreting the underlying weightings of these variables. The first factor is defined as a macro-related factor, the second a currency factor, and the third an interest rate or liquidity factor. Each of the three factors is linearly regressed against each commodity to determine the explanatory power each factor has on the variance of that commodity. The residual, or that which is not explained by the regression process, is attributed to fundamentals (specific commodity supply & demand dynamics).

Source: SG Cross Asset Research/Commodities

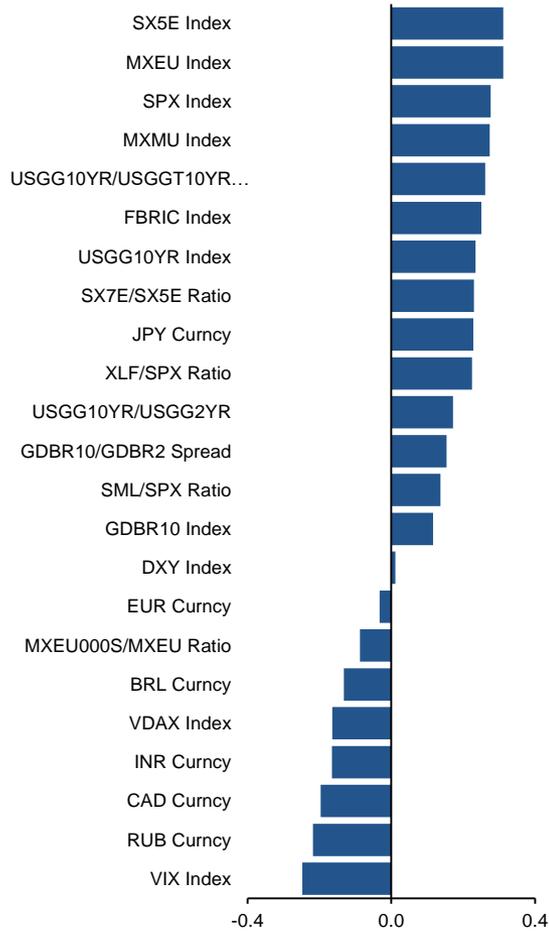
# PCA – INDIVIDUAL COMMODITIES – SYSTEMIC VS. IDIOSYNCRATIC RISK

	April-2018				March-2018			
	Macro	Dollar	Liquidity	Fundamental	Macro	Dollar	Liquidity	Fundamental
Aluminium	0.02%	2.67%	1.82%	95.48%	0.75%	12.15%	0.41%	86.69%
Copper	0.04%	16.48%	0.67%	82.81%	1.45%	22.64%	1.80%	74.11%
Lead	0.77%	13.38%	0.46%	85.40%	0.09%	10.38%	0.88%	88.66%
Nickel	0.97%	14.95%	0.14%	83.94%	3.04%	20.70%	3.61%	72.65%
Zinc	1.15%	14.76%	0.21%	83.88%	0.00%	17.11%	0.94%	81.95%
Gold	16.07%	34.90%	5.11%	43.92%	5.05%	37.83%	1.81%	55.31%
Silver	3.79%	28.60%	2.62%	64.99%	1.73%	39.13%	0.45%	58.69%
Crude Oil (WTI)	9.29%	17.67%	0.55%	72.48%	6.57%	28.84%	0.43%	64.16%
Brent	10.11%	14.84%	0.54%	74.52%	6.99%	26.13%	0.93%	65.95%
Heating Oil	7.62%	12.68%	0.96%	78.75%	5.31%	23.57%	1.09%	70.03%
Gasoline	8.17%	11.81%	1.27%	78.75%	6.71%	21.28%	2.67%	69.33%
Gasoil	6.69%	8.71%	2.02%	82.58%	6.27%	12.45%	2.23%	79.05%
Natural Gas	0.18%	1.33%	0.29%	98.20%	0.26%	1.16%	0.04%	98.54%
Corn	1.23%	0.99%	4.94%	92.84%	0.01%	0.14%	0.13%	99.72%
Wheat	0.01%	0.75%	0.47%	98.77%	0.23%	0.06%	0.10%	99.61%
Soybeans	0.30%	4.02%	1.53%	94.15%	0.06%	2.85%	2.39%	94.70%
Cotton	11.48%	4.30%	14.19%	70.02%	8.78%	0.05%	0.19%	90.98%
Sugar	3.63%	3.66%	2.88%	89.84%	3.48%	0.04%	0.03%	96.45%
Coffee	0.98%	2.30%	0.79%	95.94%	1.08%	5.63%	1.26%	92.03%
Cocoa	1.07%	3.48%	1.62%	93.83%	0.39%	0.70%	0.12%	98.79%
Live Cattle	2.70%	0.10%	0.15%	97.06%	0.25%	1.19%	0.61%	97.95%
Lean Hogs	5.64%	0.12%	0.08%	94.15%	6.43%	0.05%	0.08%	93.44%
<b>BCOM</b>	<b>1.74%</b>	<b>33.07%</b>	<b>0.42%</b>	<b>64.77%</b>	<b>0.76%</b>	<b>49.16%</b>	<b>0.00%</b>	<b>50.08%</b>
<b>AVERAGE</b>	<b>4.18%</b>	<b>9.66%</b>	<b>1.97%</b>	<b>84.20%</b>	<b>2.95%</b>	<b>12.91%</b>	<b>1.01%</b>	<b>83.13%</b>

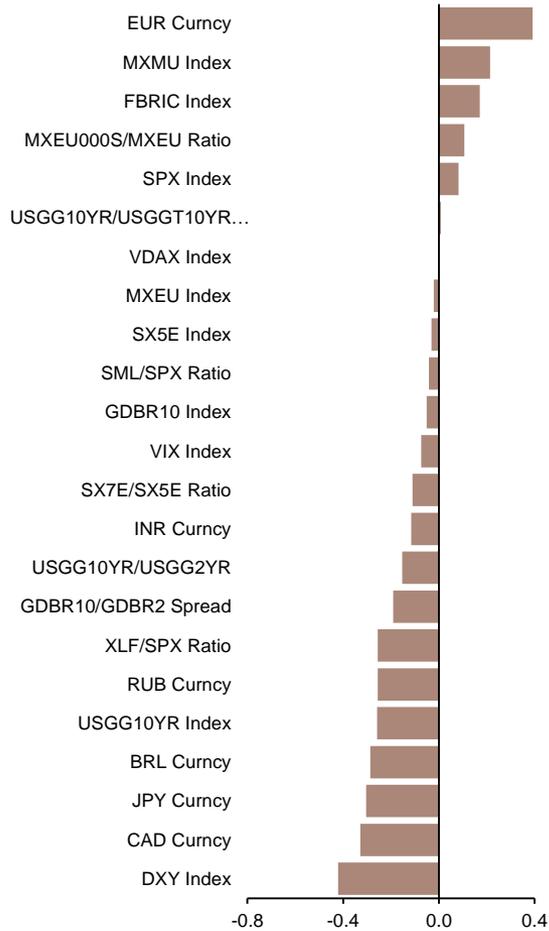
Source: SG Cross Asset Research/Commodities

# PCA – PRINCIPAL COMPONENTS (EIGENVECTORS)

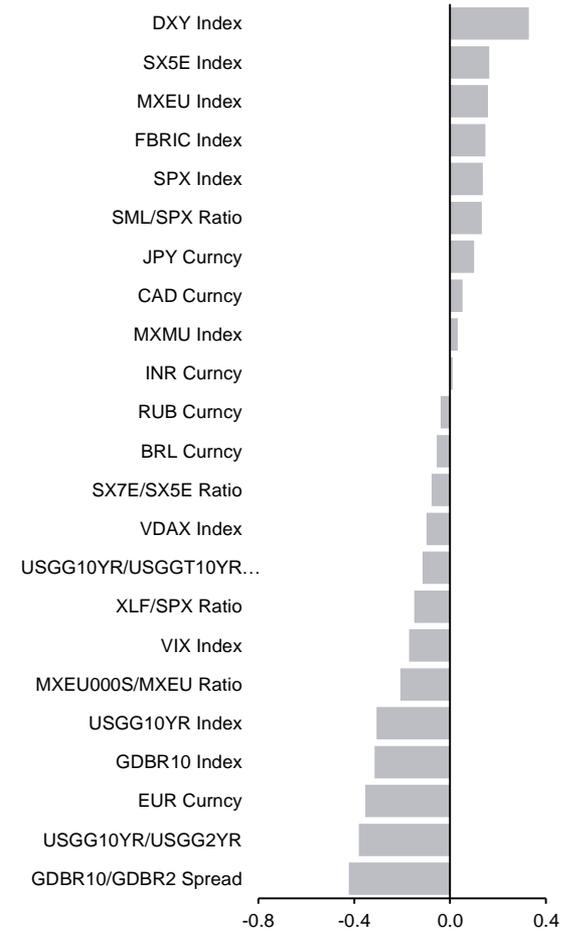
## PC1 – Macro



## PC2 – Dollar



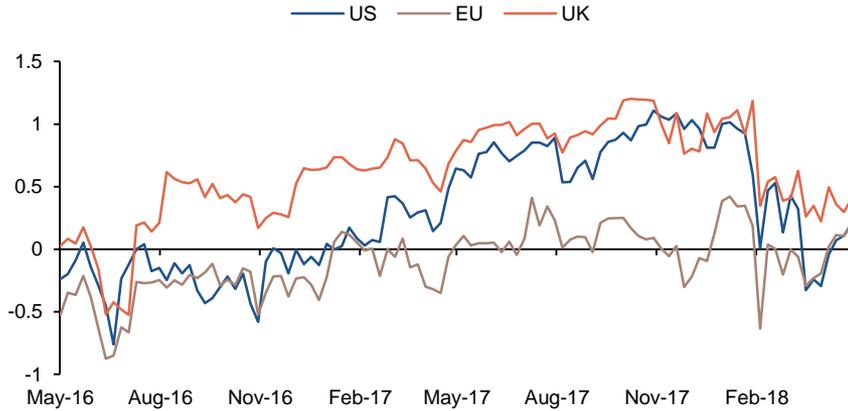
## PC3 – Liquidity



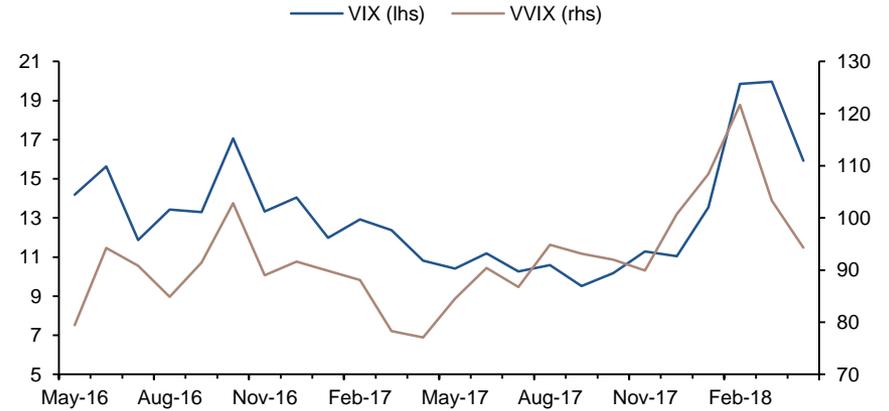
Source: SG Cross Asset Research/Commodities

# PCA – FCI, V(V)IX, EPU & ETF FLOWS – INDICATORS OF SYSTEMIC RISK

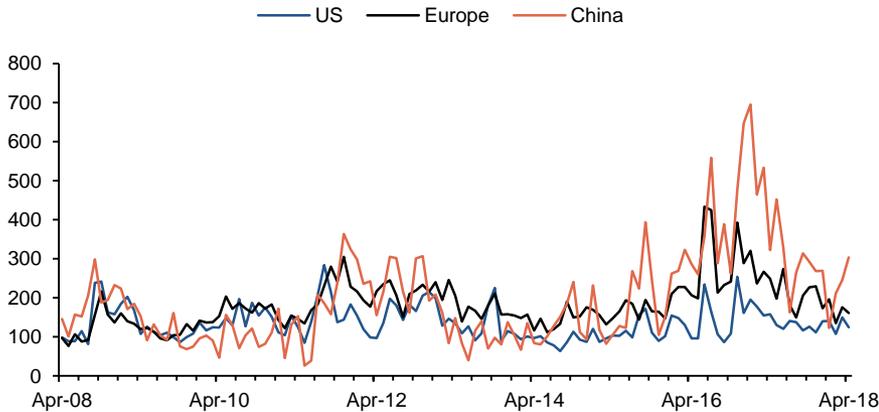
## Financial Conditions Indices (FCI) – Bloomberg



## VIX & VVIX Indices



## Economic Policy Uncertainty (EPU) Indices – monthly changes



## Gold & Silver ETF Holdings (total known)



Source: SG Cross Asset Research/Commodities

# SPIKES IN THE VIX AND THE VVIX – IMPACT ON COMMODITIES

	Avg	VIX High Count: 22				VVIX High Count: 21				VIX and VVIX High Count: 15			
		Average	Min	Max	% Lower	Average	Min	Max	% Lower	Average	Min	Max	% Lower
CL	-0.5%	-5.4%	-35.0%	18.5%	64%	-4.2%	-35.0%	9.3%	57%	-7.2%	-35.0%	9.3%	67%
CO	0.1%	-5.7%	-36.6%	10.3%	68%	-3.8%	-36.6%	9.5%	52%	-7.0%	-36.6%	9.5%	73%
NG	-2.6%	-3.9%	-31.0%	18.8%	77%	-3.0%	-16.4%	18.8%	71%	-2.6%	-15.7%	18.8%	73%
XB	0.6%	-5.4%	-42.7%	8.9%	59%	-3.5%	-42.7%	8.9%	48%	-5.9%	-42.7%	8.9%	60%
HO	0.1%	-4.7%	-31.2%	10.6%	64%	-3.7%	-31.2%	7.3%	57%	-6.0%	-31.2%	7.3%	67%
GO	0.2%	-4.6%	-30.0%	8.4%	64%	-2.8%	-30.0%	8.4%	52%	-5.4%	-30.0%	8.4%	67%
LP	0.4%	-3.9%	-33.6%	17.6%	68%	-2.2%	-33.6%	17.6%	62%	-4.1%	-33.6%	17.6%	73%
LA	-0.4%	-3.6%	-16.1%	9.1%	73%	-3.2%	-16.1%	9.3%	71%	-4.3%	-16.1%	6.1%	73%
LL	0.5%	-3.8%	-27.0%	21.4%	64%	-2.2%	-27.0%	12.7%	52%	-4.7%	-27.0%	11.5%	67%
LX	0.0%	-4.2%	-31.1%	10.3%	68%	-2.0%	-31.1%	13.5%	57%	-4.5%	-31.1%	10.3%	73%
LN	-0.4%	-3.9%	-25.6%	19.0%	59%	-2.8%	-25.6%	19.0%	48%	-3.3%	-25.6%	19.0%	47%
GC	0.5%	-1.6%	-18.1%	12.8%	59%	0.0%	-18.1%	13.7%	52%	-0.7%	-18.1%	12.8%	53%
SI	0.4%	-4.3%	-25.9%	10.5%	73%	-1.7%	-23.6%	16.6%	67%	-3.3%	-23.6%	10.5%	73%
PL	0.0%	-5.5%	-20.7%	5.3%	68%	-2.6%	-20.7%	11.1%	57%	-4.8%	-20.7%	5.3%	67%
PA	1.2%	-3.1%	-24.9%	18.3%	59%	-0.5%	-15.9%	18.3%	57%	-1.5%	-15.9%	18.3%	60%
C	-0.2%	-1.6%	-22.8%	31.0%	55%	0.4%	-17.3%	31.0%	43%	-0.9%	-17.3%	31.0%	53%
W	-0.6%	-1.6%	-18.6%	22.7%	50%	0.2%	-16.1%	22.7%	38%	-1.3%	-16.1%	22.7%	47%
KW	-0.4%	-1.8%	-19.5%	19.0%	55%	0.3%	-17.5%	19.0%	43%	-1.1%	-17.5%	19.0%	53%
S	0.8%	-1.8%	-17.9%	14.4%	55%	0.9%	-12.4%	14.4%	38%	-0.7%	-12.4%	14.4%	53%
SM	1.5%	0.1%	-19.9%	24.8%	55%	2.3%	-9.5%	18.0%	38%	0.8%	-9.5%	18.0%	53%
BO	-0.2%	-3.2%	-22.3%	12.3%	68%	-1.0%	-22.3%	12.3%	57%	-2.4%	-22.3%	12.3%	67%
SB	-0.1%	-0.8%	-21.7%	14.6%	50%	-1.5%	-21.7%	14.6%	57%	-1.6%	-21.7%	14.6%	53%
KC	-0.4%	0.4%	-22.9%	40.1%	59%	1.5%	-13.0%	40.1%	67%	2.2%	-13.0%	40.1%	60%
CC	0.5%	-2.1%	-21.6%	17.1%	64%	0.3%	-21.6%	17.1%	52%	-0.3%	-21.6%	17.1%	60%
CT	0.4%	0.7%	-23.4%	20.1%	41%	1.9%	-23.4%	20.1%	33%	0.8%	-23.4%	20.1%	40%
LC	-0.3%	-1.9%	-12.0%	8.7%	59%	-3.0%	-12.0%	4.4%	67%	-3.4%	-12.0%	4.4%	73%
FC	0.1%	-1.4%	-10.8%	6.9%	59%	-2.5%	-10.8%	6.1%	67%	-3.3%	-10.8%	6.1%	73%
LH	-1.0%	0.1%	-14.4%	17.0%	41%	-0.4%	-14.4%	17.0%	48%	-0.8%	-14.4%	17.0%	47%
<b>Avg</b>	<b>0.0%</b>	<b>-2.8%</b>	<b>-24.2%</b>	<b>16.0%</b>	<b>61%</b>	<b>-1.4%</b>	<b>-22.0%</b>	<b>15.4%</b>	<b>54%</b>	<b>-2.8%</b>	<b>-22.0%</b>	<b>14.7%</b>	<b>62%</b>
<b>DXY</b>	<b>0.1%</b>	<b>1.3%</b>	<b>-2.7%</b>	<b>8.7%</b>	<b>32%</b>	<b>0.8%</b>	<b>-3.9%</b>	<b>8.7%</b>	<b>38%</b>	<b>1.7%</b>	<b>-2.4%</b>	<b>8.7%</b>	<b>27%</b>

Based on rolling 12-month standard deviations

Source: SG Cross Asset Research/Commodities

# POSITIONING ANALYTICS –THE DATA

RIGHT CLICK on a cell for graphing functions

CLA Comdty	Search	New CFTC Tickers	Commitments of Traders Report							
All Data	Crude Oil, Light Sweet								Release Date: 05/12/17	
US CFTC	UK ICE	NYSE Liffe	Futures Commit	Chg	F & O Commit	Chg	Futures Traders	Chg	F & O Traders	Chg
<b>Non-Commercial</b>										
Long			655196	24504	630677	16513	186	10	242	13
Short			326445	68897	243071	58126	132	12	155	24
Spreading			678535	-24451	1222728	50480	191	-2	287	17
Net Position			328751	-44393	387606	-41613				
Bullish (%)			100.7		159.5					
<b>Commercial</b>										
Long			832830	76076	1128368	95322	108	0	114	-4
Short			1172624	6010	1539618	30951	119	-5	130	-4
Net Position			-339794	70066	-411250	64371				
Bullish (%)			-29		-26.7					
<b>Total</b>										
Long			2166561	76129	2981772	162314	389	9	484	25
Short			2177604	50456	3005417	139557	370	6	459	20
Net Position			-11043	25673	-23645	22757				
Bullish (%)			-5		-8					
Total OI and # Traders			2276413	60882	3117237	151157	473	21	547	33
<b>Non-Reportable</b>										
Long			109852	-15247	135464	-11158				
Short			98809	10426	111820	11600				
Net Position			11043	-25673	23644	-22758				
Bullish (%)			11.2		21.1					
Total Net Long			339794	-70066	411250	-64371				

RIGHT CLICK on a cell for graphing functions

CLA Comdty	Search	New CFTC Tickers	Commitments of Traders Report							
All Disaggregated Data	Crude Oil, Light Sweet								Release Date: 05/12/17	
US CFTC	UK ICE	NYSE Liffe	Futures Commit	Chg	F & O Commit	Chg	Futures Traders	Chg	F & O Traders	Chg
<b>Producer/Merchant/Processor/User</b>										
Long			431647	38360	506595	43347	62	-3	65	-5
Short			646442	18428	706511	24396	76	-6	82	-5
Net Position			-214795	19932	-199916	18951				
Bullish (%)			-33.2		-28.3					
<b>Swap Dealers</b>										
Long			223062	17974	200338	19330	25	0	23	0
Short			348061	-32160	411673	-26090	23	1	26	0
Spreading			178121	19742	421434	32645	41	3	48	2
Net Position			-124999	50134	-211335	45420				
Bullish (%)			-35.9		-51.3					
<b>Managed Money</b>										
Long			299622	68	318815	6545	63	0	85	3
Short			183771	47222	150001	40835	66	8	63	10
Spreading			370795	-17685	486355	2531	76	1	98	3
Net Position			115851	-47154	168814	-34290				
Bullish (%)			63		112.5					
<b>Other Reportables</b>										
Long			355574	24436	311861	9967	123	10	157	10
Short			142674	21675	93071	17291	66	4	92	14
Spreading			307740	-6766	736373	47949	115	-3	189	14
Net Position			212900	2761	218790	-7324				
Bullish (%)			149.2		235.1					

Source: Commodity Futures Trading Commission

## CFTC definitions:

### ■ Producer/Merchant/Processor/User

A “producer/merchant/processor/user” is an entity that predominantly engages in the production, processing, packing or handling of a physical commodity and uses the futures markets to manage or hedge risks associated with those activities.

### ■ Swap Dealer

A “swap dealer” is an entity that deals primarily in swaps for a commodity and uses the futures markets to manage or hedge the risk associated with those swaps transactions. The swap dealer’s counterparties may be speculative traders, like hedge funds, or traditional commercial clients that are managing risk arising from their dealings in the physical commodity.

### ■ Money Manager

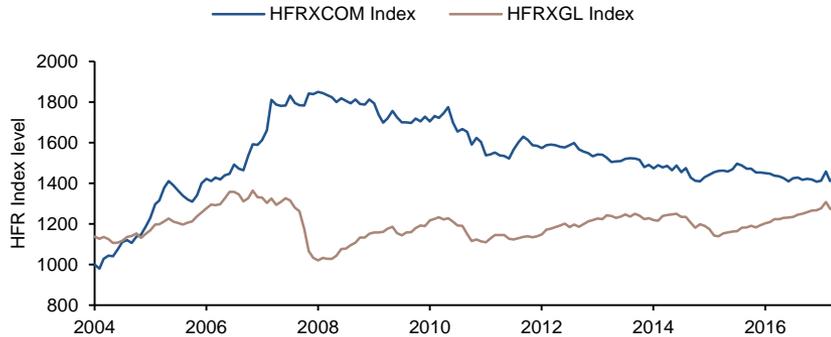
A “money manager,” for the purpose of this report, is a registered commodity trading advisor (CTA); a registered commodity pool operator (CPO); or an unregistered fund identified by CFTC.7 These traders are engaged in managing and conducting organized futures trading on behalf of clients.

### ■ Other Reportables

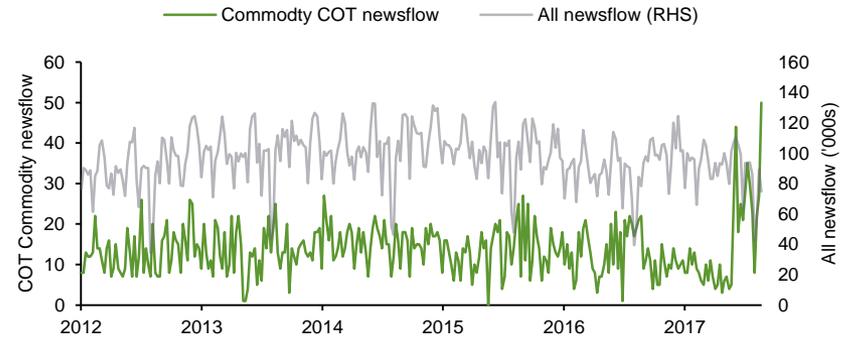
Every other reportable trader that is not placed into one of the other three categories is placed into the “other reportables” category.

# POSITIONING ANALYTICS – PERFORMANCE ANALYSIS (MONEY MANAGERS)

## HFRXCOM Index vs. HFRXGL Index



## COT Commodity Positioning Newsflow indicator



## MM performance (returns) based on net futures position

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	AVG	TOTAL
WTI	36.5%	22.8%	27.6%	8.2%	5.3%	-15.5%	11.6%	-49.5%	-48.0%	13.8%	6.2%	14.0%	2.7%	33%
Brent					22.7%	6.0%	9.9%	-61.2%	-50.9%	30.3%	14.6%	12.1%	-2.1%	-17%
Gasoline	31.9%	-92.6%	76.9%	9.1%	20.7%	22.4%	4.9%	-54.8%	-5.8%	-5.2%	-5.5%	5.2%	0.6%	7%
H. oil	28.6%	-40.0%	34.8%	8.3%	14.4%	-10.1%	-14.0%	38.2%	46.8%	-0.7%	-2.8%	6.2%	9.1%	110%
Gasoil					20.7%	6.9%	-1.2%	-21.7%	39.8%	33.4%	19.1%	10.2%	13.4%	107%
Nat. gas	50.8%	30.7%	55.4%	53.8%	50.0%	23.8%	-14.0%	8.4%	49.7%	21.0%	-26.5%	-7.2%	24.6%	296%
Corn	1.2%	-16.0%	5.8%	27.8%	5.8%	23.9%	5.0%	-16.9%	-14.5%	-11.2%	-11.3%	-1.6%	-0.2%	-2%
Wheat	48.7%	-48.6%	-18.6%	37.5%	-13.9%	6.5%	31.7%	-6.5%	-21.9%	25.5%	-6.7%	-9.3%	2.0%	24%
K. wheat	-36.6%	-43.6%	-20.8%	28.3%	2.8%	-22.2%	-0.1%	-16.7%	10.0%	-2.7%	-8.2%	-11.2%	-11.2%	-134%
Soybeans	45.9%	-18.8%	28.6%	24.4%	-6.0%	25.6%	10.1%	-1.8%	-19.3%	12.8%	-18.9%	-1.4%	6.8%	81%
Beanoil	41.2%	-34.3%	-5.5%	36.5%	-16.9%	-10.9%	22.6%	-24.2%	15.6%	12.4%	-2.2%	6.8%	3.4%	41%
Soymeal	47.8%	-10.0%	37.5%	35.7%	-13.6%	39.6%	18.7%	16.0%	6.9%	1.3%	-6.2%	15.5%	15.8%	189%
Cotton	14.8%	53.4%	29.9%	77.5%	-21.9%	8.8%	8.9%	-27.9%	-1.0%	11.7%	12.4%	4.7%	14.3%	171%
Coffee	-7.3%	-13.1%	19.2%	55.9%	-8.1%	-46.3%	-36.4%	40.8%	-33.9%	4.8%	-16.1%	-4.2%	-3.7%	-45%
Sugar	18.8%	-21.4%	73.7%	42.3%	-9.9%	-14.6%	-3.6%	7.2%	35.8%	14.0%	-9.5%	24.5%	13.1%	157%
Cocoa	20.0%	22.1%	26.5%	-22.9%	16.9%	-2.8%	17.3%	9.8%	8.8%	-25.2%	2.1%	24.1%	8.1%	97%
Gold	22.1%	8.4%	24.2%	25.0%	13.9%	4.1%	-30.3%	0.4%	-2.0%	3.9%	11.2%	2.8%	7.0%	84%
Silver	4.8%	-19.1%	49.4%	61.9%	4.2%	6.5%	-12.8%	15.0%	1.9%	15.7%	-12.2%	-4.7%	9.2%	111%
Palladium				77.6%	-10.1%	4.7%	6.8%	11.9%	-33.7%	23.7%	47.1%	-5.7%	13.6%	122%
Platinum				18.8%	-18.6%	7.9%	-10.4%	-11.4%	-29.8%	4.0%	-9.4%	-7.0%	-6.2%	-56%
Copper	-34.2%	87.9%	-46.8%	27.9%	-4.5%	-11.3%	14.8%	3.1%	26.6%	2.9%	25.4%	-4.6%	7.3%	87%
L. cattle	-4.4%	-28.9%	-10.8%	15.2%	2.2%	-4.0%	-4.9%	21.6%	-15.3%	-5.1%	9.5%	-8.3%	-2.8%	-33%
F. cattle	4.5%	-21.7%	-10.4%	19.9%	11.7%	-14.8%	6.4%	29.6%	-20.2%	14.8%	17.0%	-6.8%	2.5%	30%
L. hogs	-12.2%	-12.3%	41.3%	1.2%	1.2%	2.4%	-5.3%	-1.6%	-27.5%	-0.9%	7.7%	-20.2%	-2.2%	-26%
AVG	16%	-10%	21%	30%	2%	3%	1%	-3%	-5%	9%	2%	2%		
TOTAL	323%	-195%	418%	670%	42%	61%	14%	-75%	-109%	208%	42%	37%		
HFRXCOM	13%	15%	-3%	-5%	-10%	2%	-2%	-4%	-2%	0%	-1%	99%		

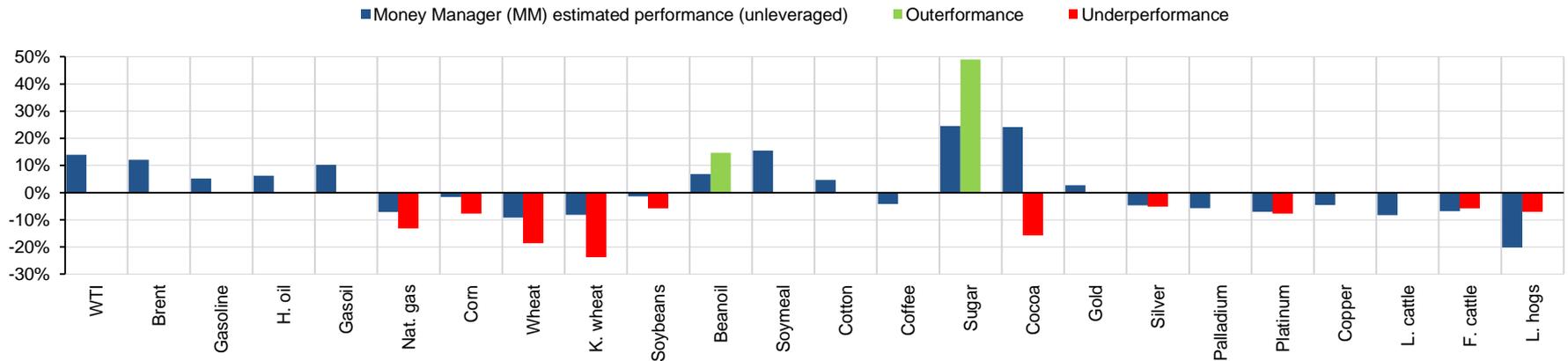
## MM performance (returns) based on net traders positions

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	AVG	TOTAL
WTI	31.9%	58.3%	9.8%	6.8%	18.5%	-40.0%	11.6%	-33.9%	-3.9%	25.1%	-7.2%	14.0%	7.6%	91%
Brent					12.1%	-4.0%	5.4%	16.3%	-9.3%	30.3%	8.0%	12.1%	8.9%	71%
Gasoline	30.5%	-92.6%	76.9%	15.6%	20.7%	22.4%	4.9%	-54.8%	-4.1%	13.0%	7.8%	5.2%	3.8%	46%
H. oil	21.6%	-33.3%	-8.2%	4.7%	14.4%	-3.2%	-10.7%	13.3%	21.7%	12.0%	-10.5%	6.2%	2.3%	28%
Gasoil					20.7%	6.9%	14.5%	48.9%	46.7%	-13.2%	18.6%	10.2%	19.2%	153%
Nat. gas	-12.6%	-13.6%	14.1%	20.2%	23.2%	27.1%	17.5%	-24.7%	42.0%	28.5%	-14.8%	-6.4%	8.4%	101%
Corn	1.2%	10.4%	24.4%	39.4%	5.8%	-1.9%	18.9%	14.8%	-12.7%	-7.6%	-8.1%	4.0%	7.4%	89%
Wheat	37.1%	10.3%	14.3%	24.2%	-3.9%	5.5%	31.2%	1.0%	-39.3%	32.3%	-10.1%	-7.0%	8.0%	96%
K. wheat	-41.3%	-43.6%	-17.2%	52.0%	24.3%	24.5%	-33.9%	-0.1%	5.3%	14.3%	10.7%	4.2%	-4.1%	-49%
Soybeans	45.9%	-18.8%	24.9%	20.8%	-13.3%	23.9%	10.1%	13.7%	-3.2%	11.7%	-19.2%	-0.2%	8.0%	96%
Beanoil	41.2%	13.1%	-13.7%	36.5%	-14.3%	-12.9%	20.9%	9.6%	8.8%	13.8%	0.8%	6.0%	9.2%	110%
Soymeal	47.8%	1.0%	37.5%	34.0%	-13.6%	39.6%	18.7%	16.0%	1.7%	14.4%	-9.0%	15.5%	17.0%	204%
Cotton	1.7%	48.5%	29.9%	77.5%	-16.3%	1.8%	12.8%	11.0%	-3.1%	11.7%	12.4%	4.7%	16.0%	193%
Coffee	19.1%	-11.2%	19.0%	29.8%	5.3%	-67.1%	-36.4%	49.3%	-6.2%	13.3%	-11.9%	-4.2%	-0.1%	-1%
Sugar	18.0%	-14.2%	73.7%	42.5%	-9.9%	-5.4%	8.6%	14.3%	30.5%	16.4%	-6.0%	13.2%	15.1%	182%
Cocoa	20.0%	22.3%	12.6%	-35.2%	10.0%	-18.2%	1.4%	9.8%	8.8%	-5.0%	-1.8%	16.8%	3.5%	42%
Gold	22.1%	-0.6%	24.2%	25.0%	13.9%	4.1%	-11.5%	-1.2%	-7.7%	5.5%	11.2%	2.8%	7.3%	88%
Silver	-11.7%	1.1%	49.4%	61.9%	4.2%	18.6%	11.3%	5.7%	-7.0%	15.7%	3.6%	0.7%	12.8%	154%
Palladium				77.6%	-41.6%	10.0%	6.8%	11.9%	-16.7%	17.2%	47.1%	-5.7%	11.8%	107%
Platinum				18.8%	-18.6%	8.3%	-10.4%	-11.4%	-16.0%	-4.2%	11.9%	0.5%	-2.3%	-21%
Copper	-25.4%	97.7%	47.6%	28.2%	11.3%	-18.9%	10.8%	14.4%	32.5%	9.1%	25.4%	-4.6%	19.0%	228%
L. cattle	6.8%	13.4%	-8.1%	15.2%	-6.1%	-14.1%	1.9%	21.6%	-12.7%	19.9%	9.5%	-13.7%	2.8%	34%
F. cattle	0.4%	3.7%	-5.4%	17.7%	-1.2%	-3.1%	6.6%	29.6%	-1.5%	-11.1%	14.8%	-6.8%	3.6%	44%
L. hogs	4.6%	25.5%	71.5%	-1.2%	8.7%	3.8%	4.5%	-1.6%	-7.1%	17.4%	3.9%	-6.5%	10.3%	123%
AVG	13%	4%	24%	28%	0%	0%	5%	7%	2%	12%	4%	3%		
TOTAL	259%	78%	477%	612%	6%	8%	115%	174%	48%	281%	87%	61%		
HFRXCOM	13%	15%	-3%	-5%	-10%	2%	-2%	-4%	-2%	0%	-1%	99%		

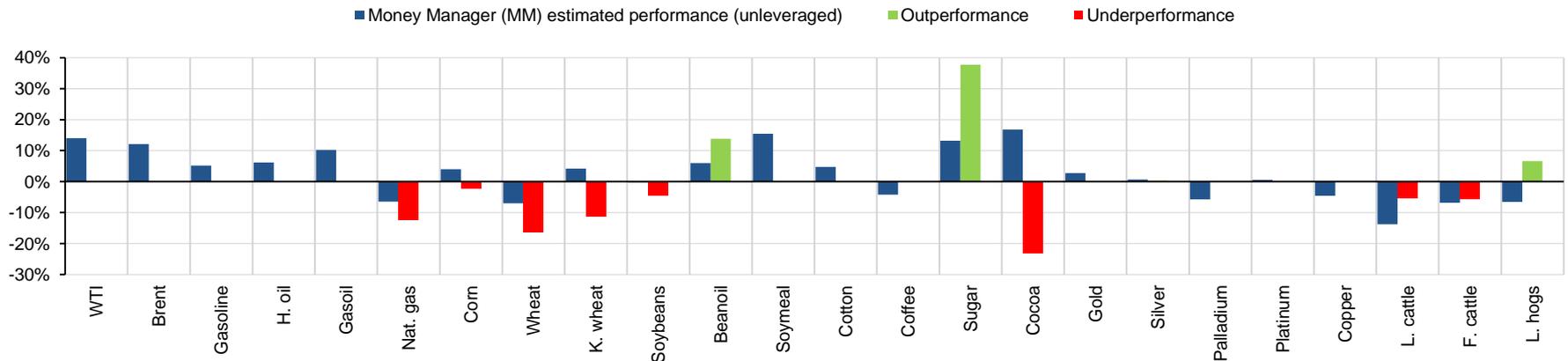
Source: SG Cross Asset Research/Commodities

# POSITIONING ANALYTICS – ESTIMATED YTD PERFORMANCE OF MONEY MANAGERS

## MM performance (returns) based on net futures position

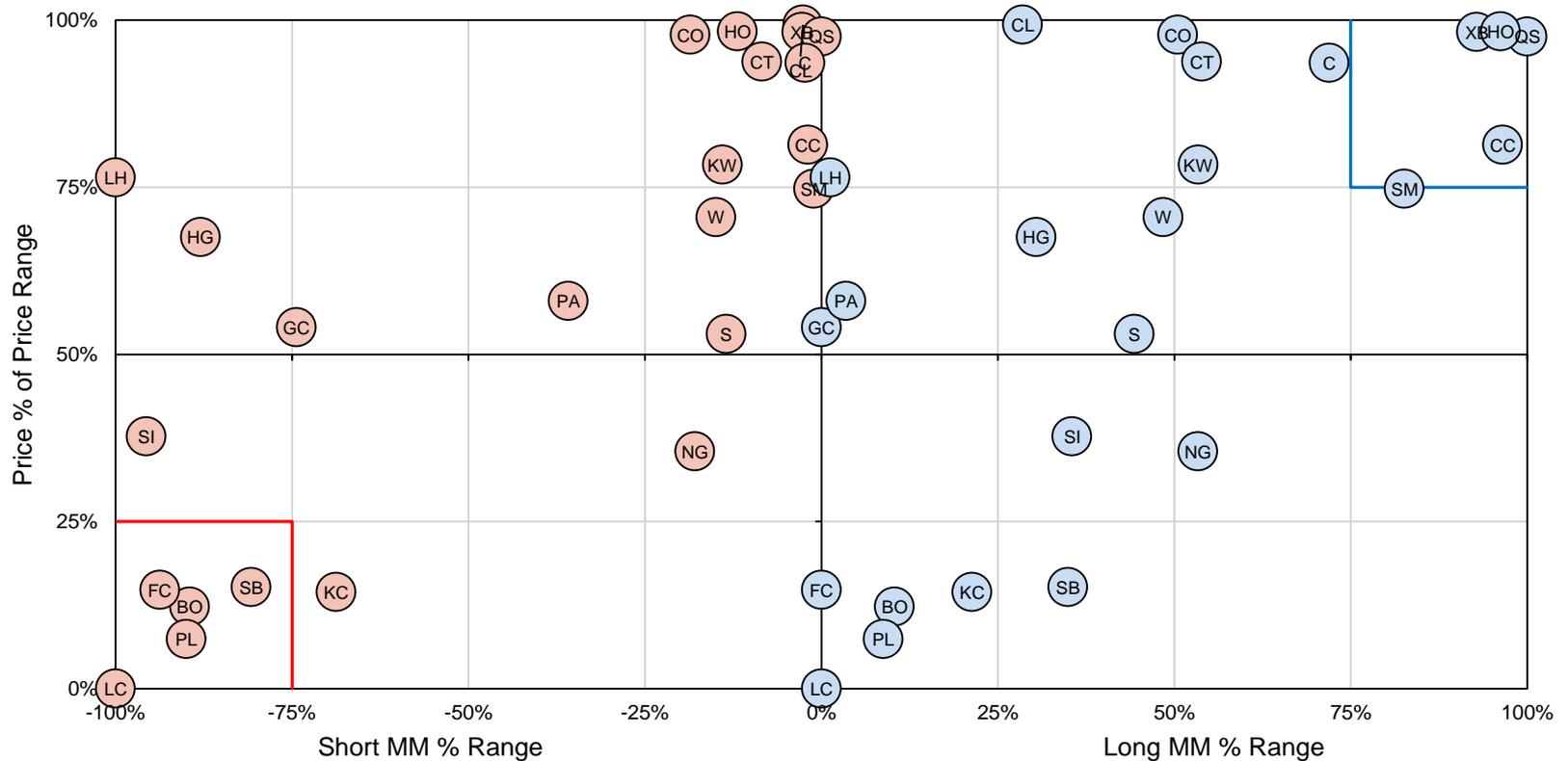


## MM performance (returns) based on net traders positions



Source: SG Cross Asset Research/Commodities

# POSITIONING ANALYTICS – OVERBOUGHT/OVERSOLD (OBOS) INDICATOR

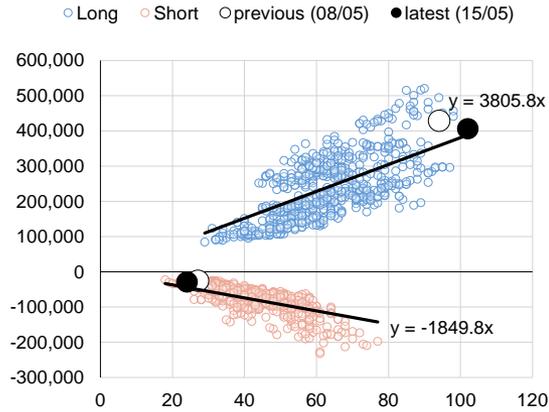


Defines and identifies “oversold” (“overbought”) commodities on a weekly basis as those that are lying at the intersection of extremes in both short (long) positioning and price weakness (strength). The “oversold” (“overbought”) box is shown in red (blue) in the figure. Commodities within the “oversold” (“overbought”) box are trading in the bottom (top) 25% of their recent one-year price range and have a short (long) position (calculated as the short [long] money manager [MM] open interest [OI] as a percentage of total OI [source: CFTC COT report]) in excess of 75% of the recent one-year maximum. These commodities are vulnerable to short covering (profit taking). Please refer to the following publication for details about the indicator and historical performance: Commodities Compass - Identifying “oversold” commodities – the intersection of two extremes.

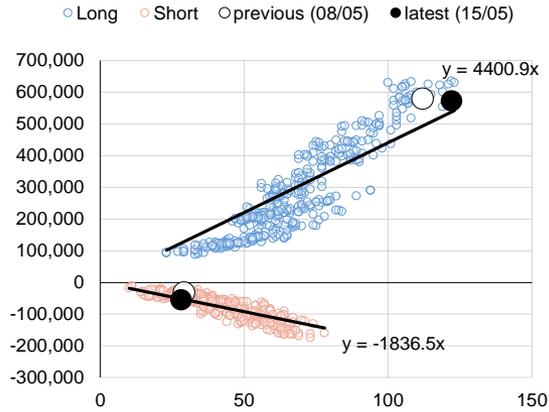
Source: SG Cross Asset Research/Commodities

# POSITIONING ANALYTICS – DRY POWDER ANALYSIS

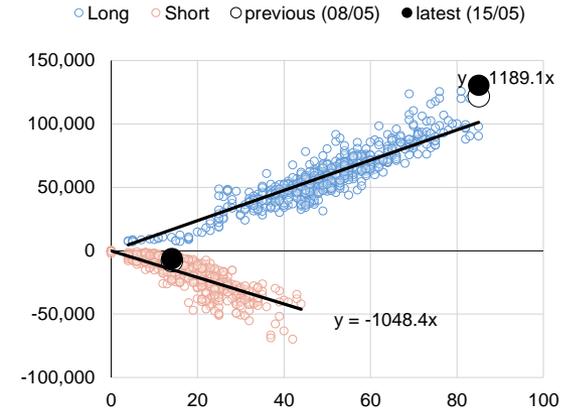
## WTI



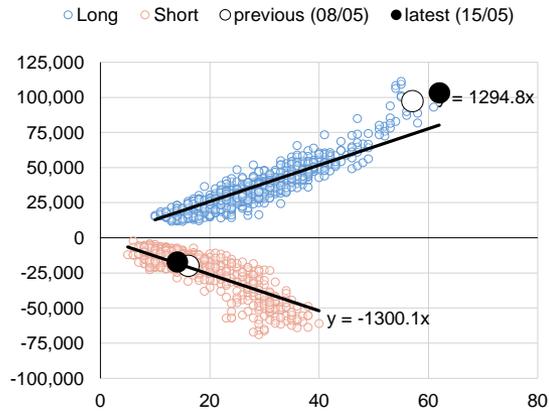
## Brent



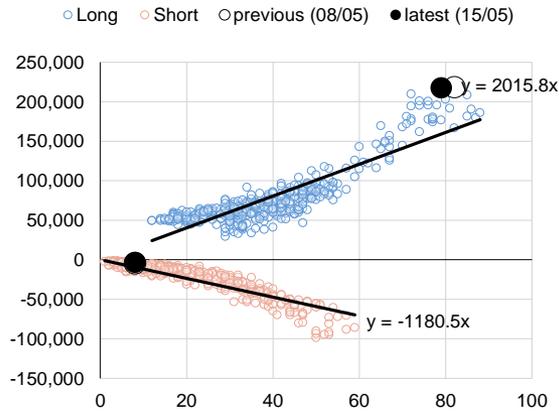
## Gasoline



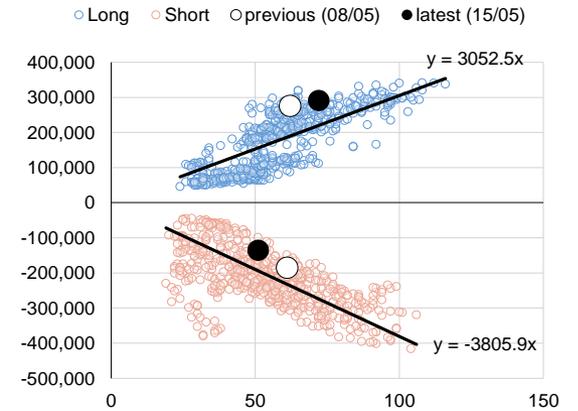
## Heating Oil



## Gasoil



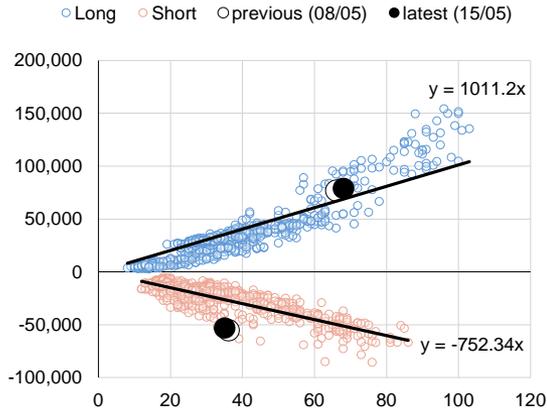
## Natural Gas



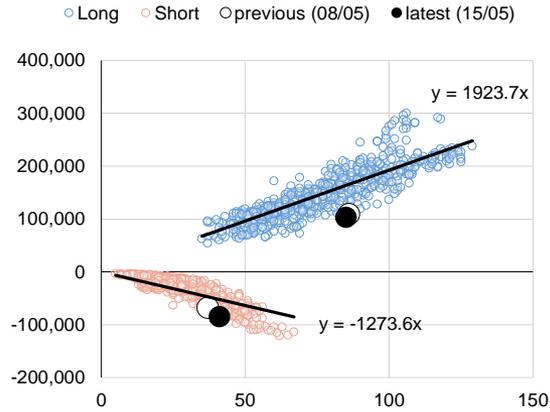
Source: SG Cross Asset Research/Commodities

# POSITIONING ANALYTICS – DRY POWDER ANALYSIS

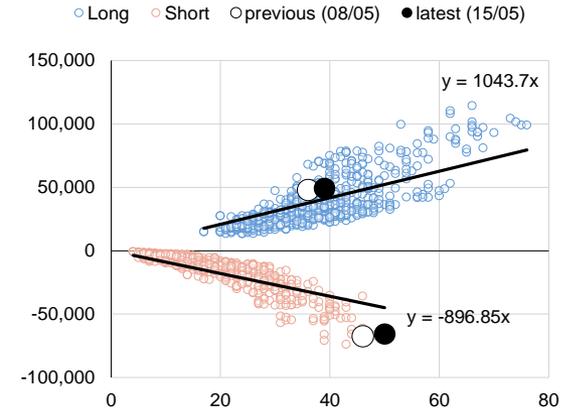
## Copper



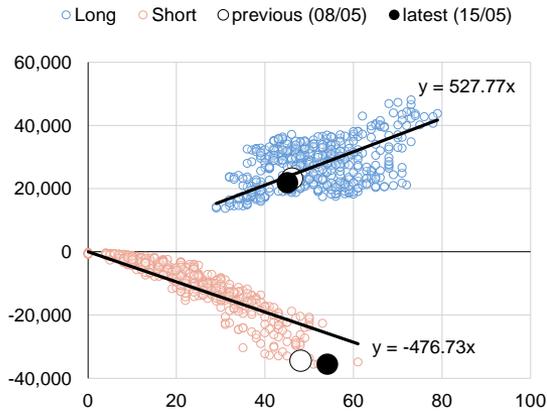
## Gold



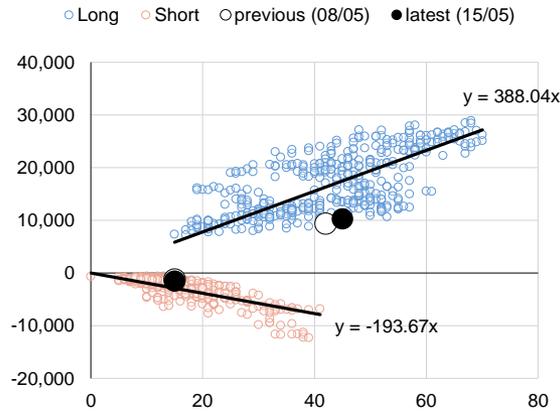
## Silver



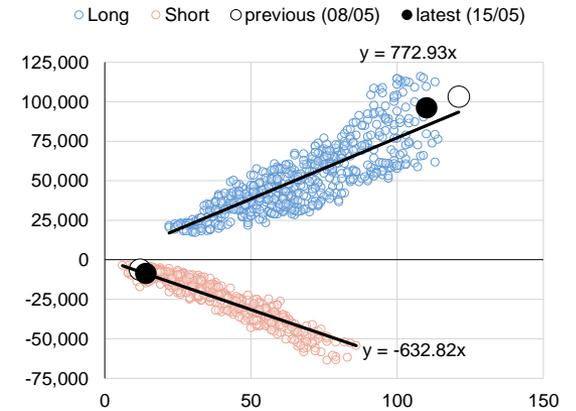
## Platinum



## Palladium



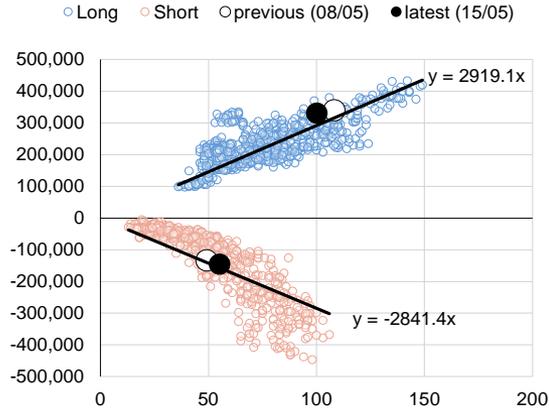
## Cotton



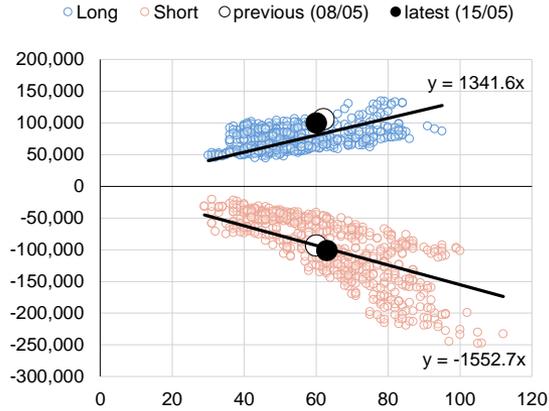
Source: SG Cross Asset Research/Commodities

# POSITIONING ANALYTICS – DRY POWDER ANALYSIS

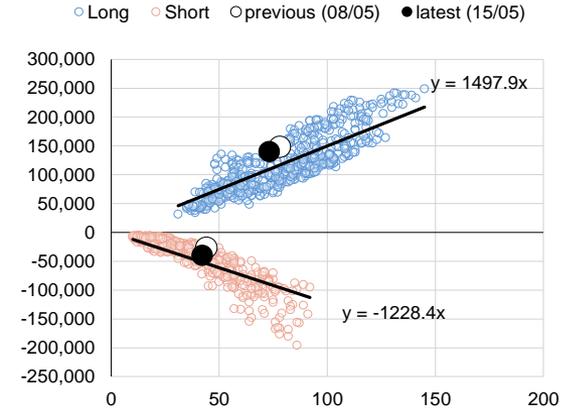
## Corn



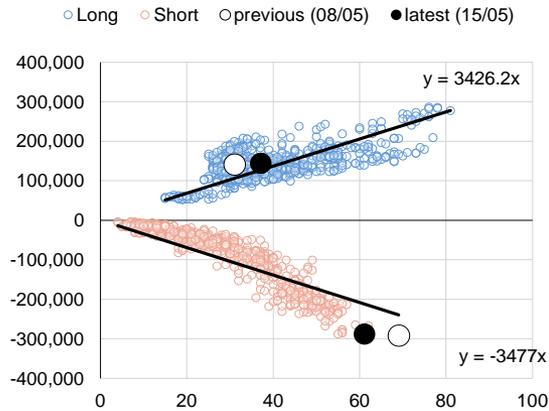
## Wheat



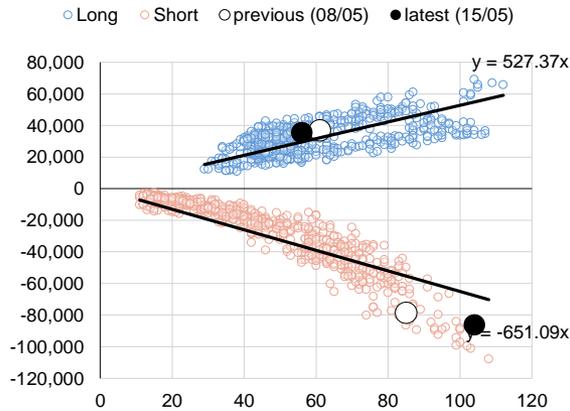
## Soybeans



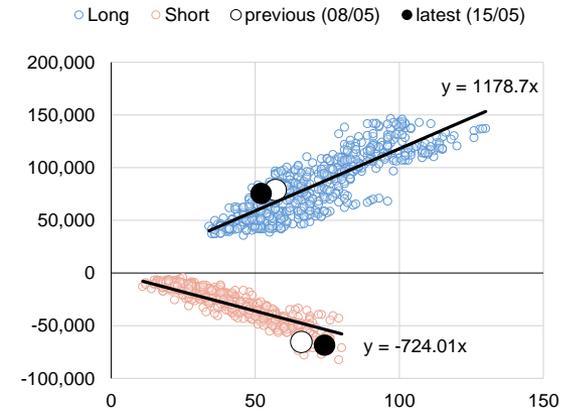
## Sugar



## Coffee

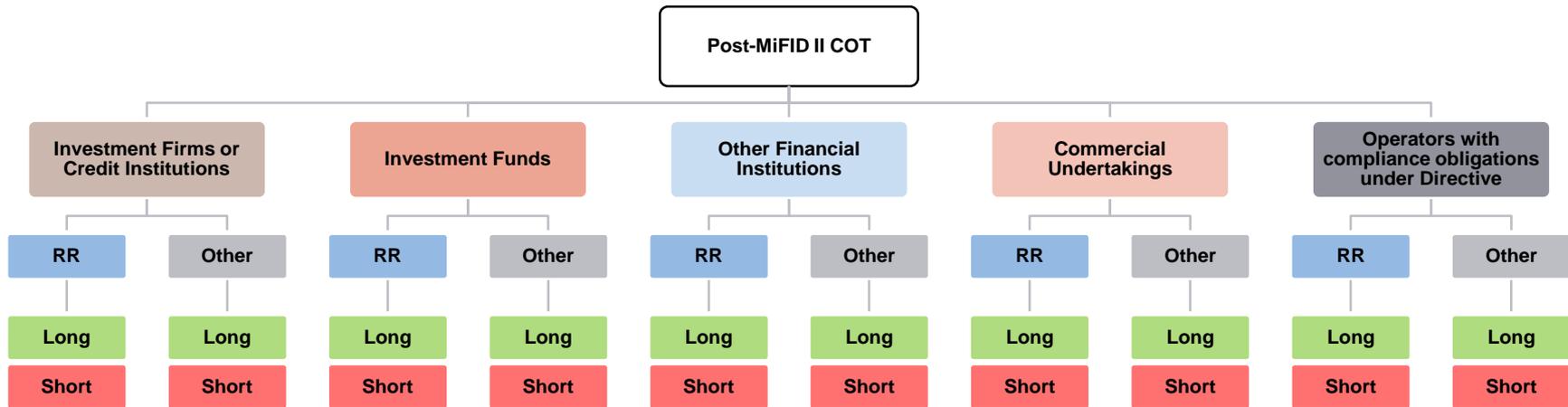


## Live Cattle



Source: SG Cross Asset Research/Commodities

# POSITIONING ANALYTICS – MIFID II COMMITMENTS OF TRADERS REPORT



## Trader classifications

- Investment firms or credit institutions (IF/CI).
- Investment funds (IF)
  - either an undertaking for collective investments in transferable securities (UCITS), or an alternative investment fund manager.
- Other financial institutions (OFI).
  - including insurance undertakings and reinsurance undertakings, and institutions for occupational retirement provision.
- Commercial undertakings (CU).
- Operators with compliance obligations under Directive 2003/87/EC (DCO).

## Speculative indicators

- Non-commercial activity: Aggregating the total position across all categories except the Commercial Undertakings.
- **Non-hedging activity: Aggregating positions that are not risk-reducing across all categories.**

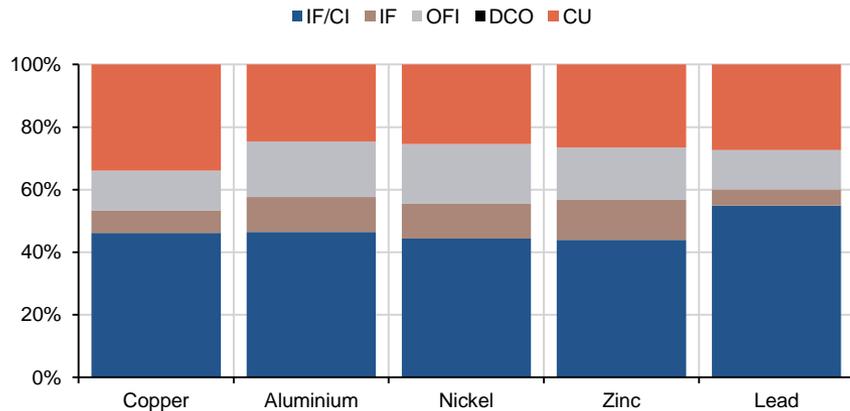
### Risk reducing positions: Positions objectively measurable as reducing risks directly related to the commercial activity.

- Reduces the risks arising from the potential change in the value of assets, services, inputs, products, commodities or liabilities
- Qualifies as a hedging contract

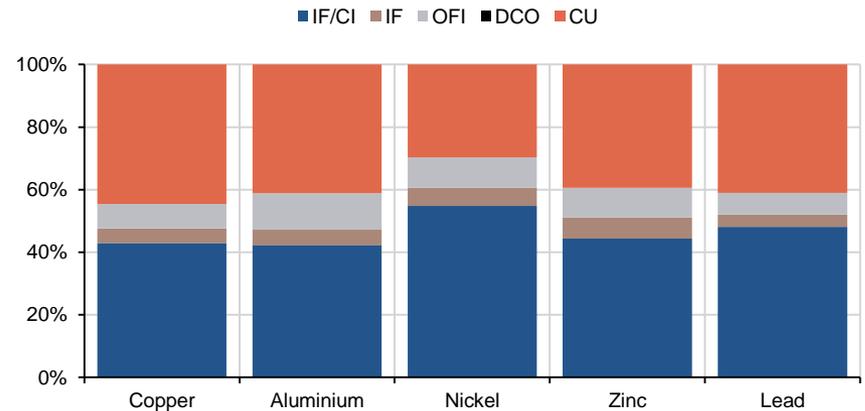
Source: SG Cross Asset Research/Commodities

# POSITIONING ANALYTICS – NEW INSIGHTS INTO LME SPECULATIVE ACTIVITY?

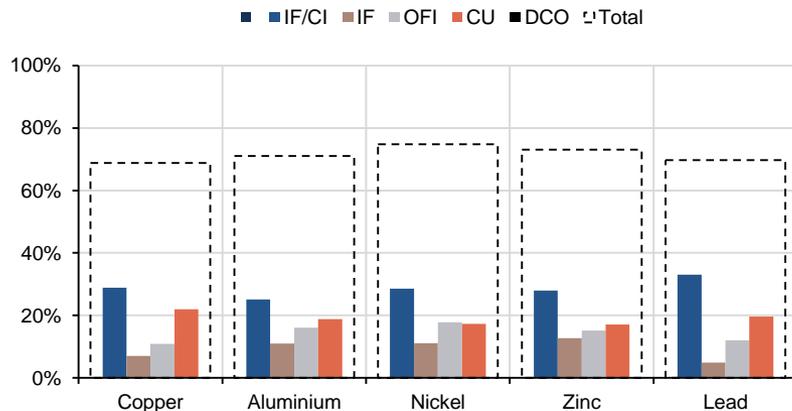
## Breakdown of long positions (% of long OI)



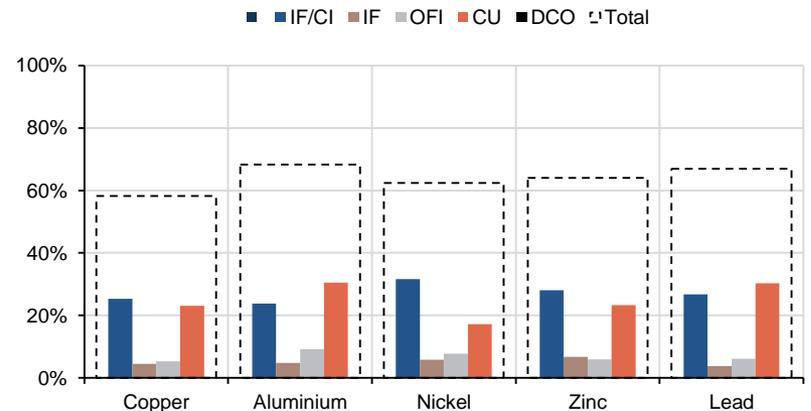
## Breakdown of short positions (% of short OI)



## Non risk-reducing (speculating) long positions (% of long OI)



## Non risk-reducing (speculating) short positions (% of short OI)

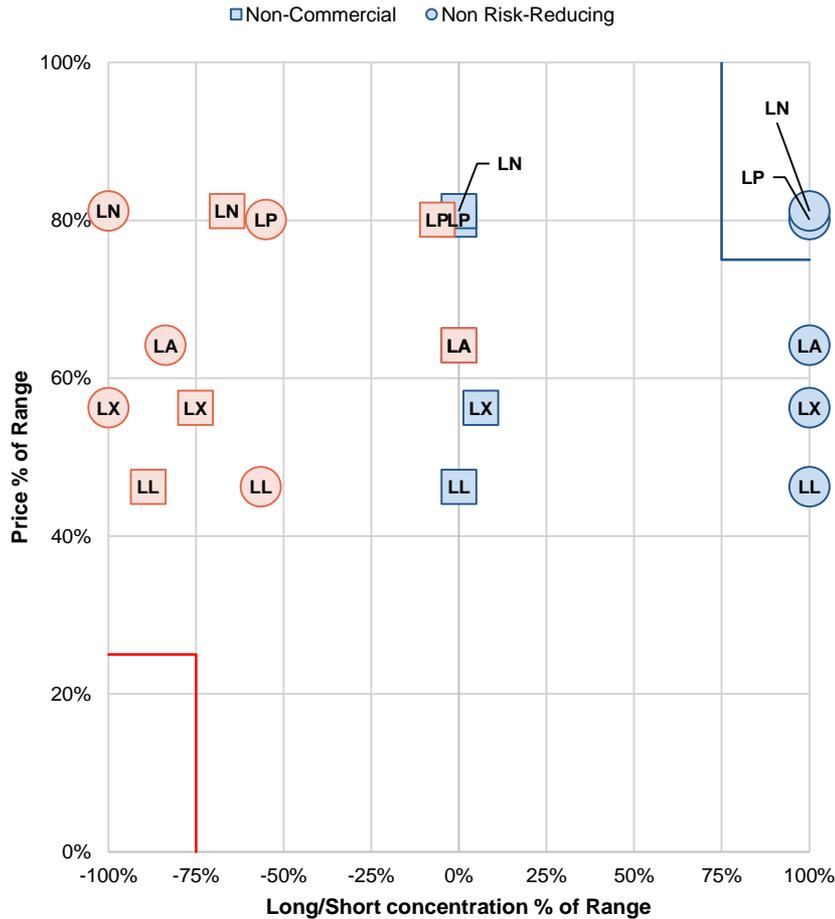


Source: SG Cross Asset Research/Commodities

# POSITIONING ANALYTICS – THE MIFID OBOS

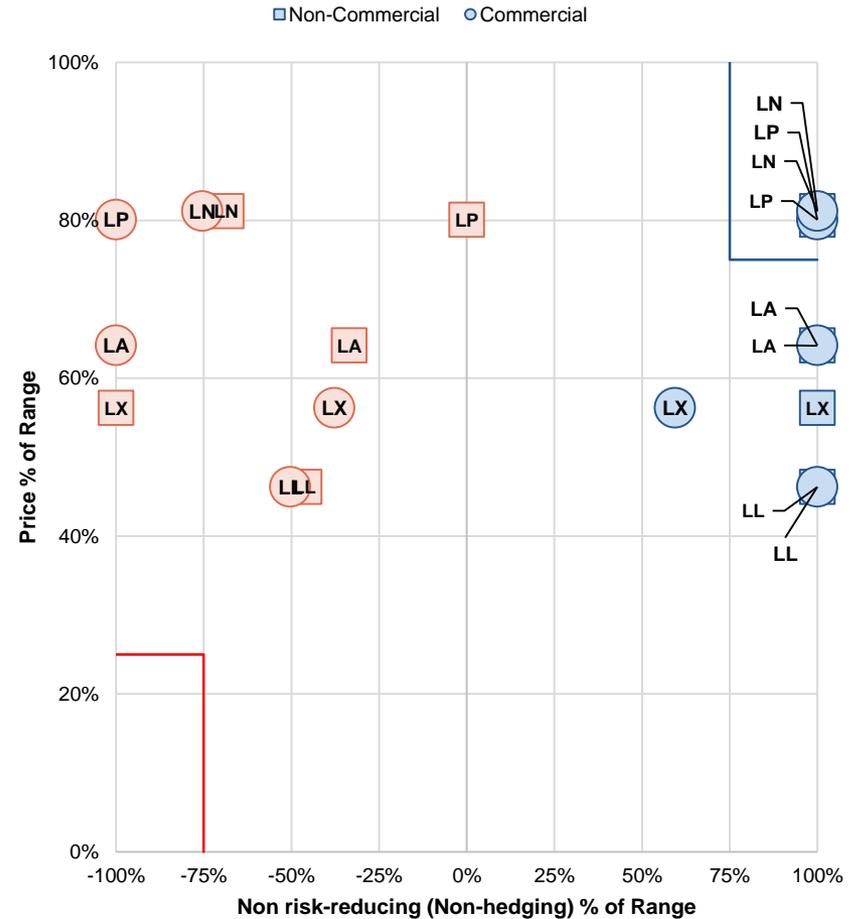
## Speculative indicators

### Non-commercial vs. non risk-reducing



## Refining it further - Momentum & Retracement Signals

### Non risk-reducing: Commercial vs. non-commercial



Source: SG Cross Asset Research/Commodities

# COMMODITY OUTLOOK – SG PRICE FORECASTS

	2Q18	3Q18	4Q18	1Q19	2018	2019	2020	2021	2022
<b>CRUDE OIL</b>									
NYMEX WTI	63.0	64.0	60.0	60.0	62.1	61.0	61.0	61.0	61.0
LLS	66.5	67.5	63.5	63.5	65.6	64.5	64.5	64.5	64.5
ICE Brent	67.0	68.0	64.0	64.0	66.2	65.0	65.0	65.0	65.0
Dubai	65.5	66.5	62.5	62.5	64.4	63.0	62.5	62.5	62.5
<b>REFINED PRODUCTS</b>									
NYMEX Ultra Low Sulfur Diesel	199	201	194	194	198	199	206	206	206
NYMEX RBOB (Gasoline)	201	196	177	177	190	187	187	187	187
ICE Gasoil	596	603	577	577	591	603	633	633	633
<b>NATURAL GAS</b>									
NYMEX Natural Gas	2.84	2.83	3.00	2.98	3.02	2.91	2.79	3.15	3.20
<b>AGRICULTURE</b>									
CBOT Corn	390	375	400	410	383	400	405	410	415
CBOT Wheat	465	460	465	460	462	466	471	476	481
KCBT Wheat	453	463	443	469	458	472	476	481	486
CBOT Soybean	1 030	1 075	1 075	1 050	1 048	1 050	1 100	1 125	1 150
CBOT Soybean Meal	365	350	355	365	356	363	367	375	385
CBOT Soybean Oil	31.5	31.0	31.5	32.0	31.6	31.6	32.5	33.0	33.5
ICE Sugar #11	12.5	12.5	13.0	13.0	12.9	13.4	13.5	14.0	14.3
ICE Robusta Coffee	1 830	1 698	1 764	1 764	1 763	1 780	1 874	1 874	1 874
ICE Arabica Coffee	125	127	130	132	126	136	140	140	140
ICE Cotton #2	75	74	77	75	77	74	75	73	73
<b>LIVESTOCK</b>									
CME Feeder Cattle	135	137	138	140	139	140	145	145	145
CME Live Cattle	110	115	115	117	116	119	120	125	130
CME Lean Hogs	70.0	70.0	65.0	67.0	68.4	68.8	70.0	71.0	72.0
<b>PRECIOUS METALS</b>									
COMEX Gold	1 325	1 300	1 275	1 275	1 315	1 275	1 275	1 250	1 250
COMEX Silver	17.0	16.8	16.8	17.0	17.0	17.0	17.0	17.0	17.0
NYMEX Palladium	1 075	1 075	1 100	1 100	1 075	1 125	1 150	1 200	1 250
NYMEX Platinum	1 025	1 025	1 050	1 075	1 025	1 050	1 050	1 100	1 100
<b>BASE METALS</b>									
LME Aluminium	2 180	2 150	2 150	2 175	2 165	2 200	2 250	2 300	2 350
LME Copper	7 100	7 000	7 250	7 200	7 100	7 250	7 500	7 750	8 000
LME Zinc	3 500	3 200	3 000	3 100	3 300	3 200	3 000	2 900	2 800
LME Lead	2 700	2 700	2 800	2 900	2 700	2 800	2 600	2 500	2 400
LME Nickel	13 500	13 350	14 000	14 000	13 500	14 000	15 000	16 000	16 000
LME Tin	22 000	21 000	21 500	21 500	21 500	22 000	21 000	21 000	21 000
<b>IRON ORE &amp; STEEL ***</b>									
Iron Ore	67.5	65.0	60.0	60.0	66.3	60.0	60.0	60.0	60.0

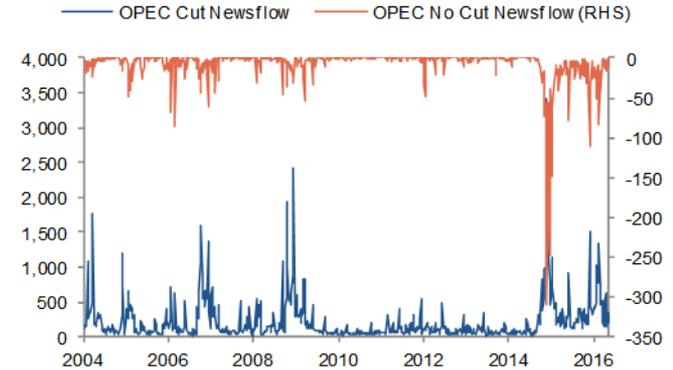
Source: SG Cross Asset Research/Commodities

# COMMODTY COMPASS: NEWSFLOW ANALYSIS – DXY, OPEC AND HURRICANES

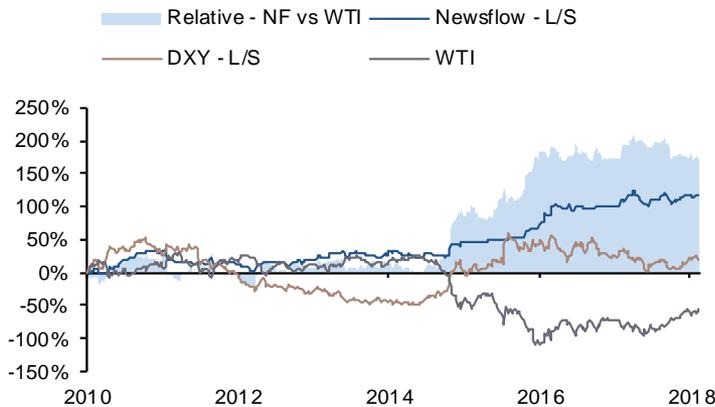
## Trading commodities using dollar-related newsflow

- Long/short trading of dollar strength- and weakness-related newsflow.
- Signals are generated based on changes in dollar strength newsflow AND changes in dollar weakness newsflow over the “evaluation week”.
- A decrease (increase) in dollar strength newsflow AND an increase (decrease) in the dollar weakness newsflow generates a long (short) trading signal.

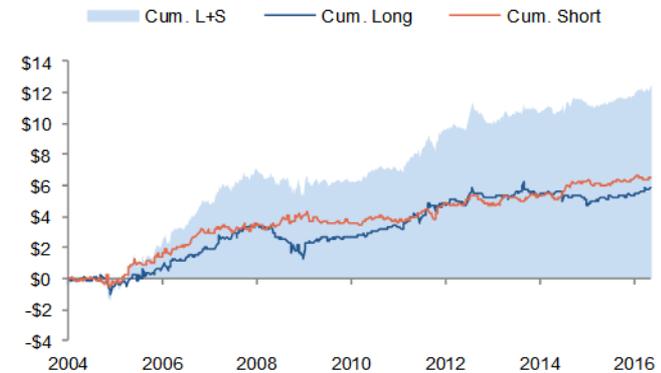
## Cut related newsflow (bullish) - occurrences per week



## Trading WTI – Newsflow significantly outperforms



## Trading Brent - CO2/CO3 spread

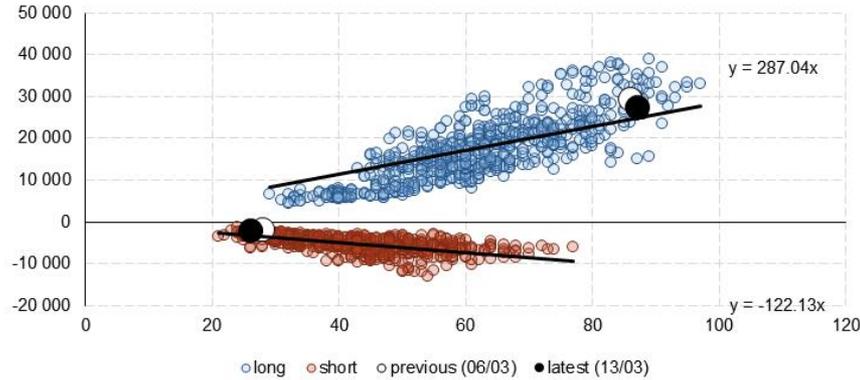


Source: SG Cross Asset Research/Commodities

# CCPA: ADVANCED POSITIONING ANALYSIS – EXAMPLES

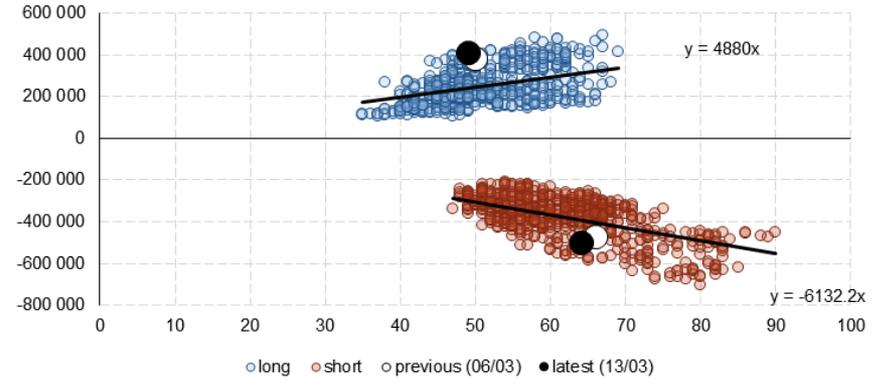
## WTI Dry powder analysis (notional \$mn) (19<sup>th</sup> March 2018)

MM dollar exposure (y-axis) vs number of MMs (x-axis)



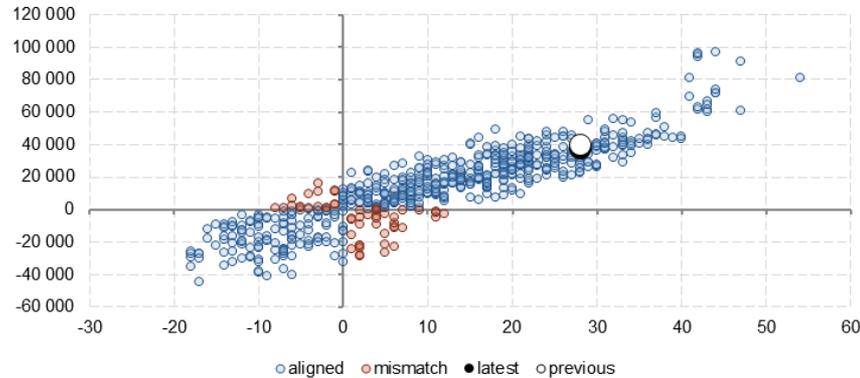
## WTI Dry powder analysis (open interest) (19<sup>th</sup> March 2018)

PMPU position (y-axis) vs number of PMPUs (x-axis)

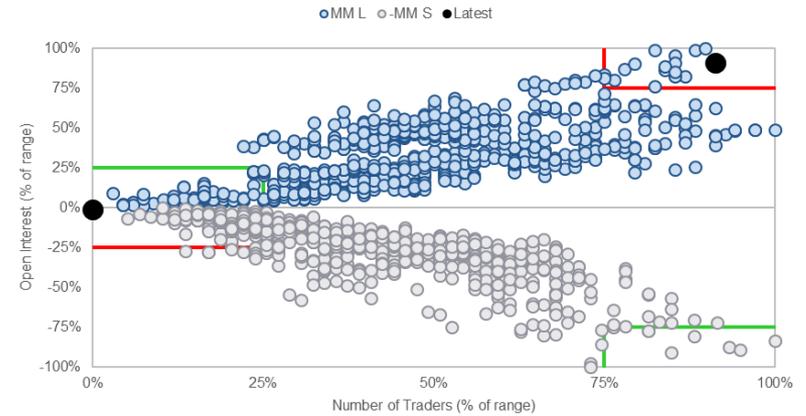


## HO Mismatch indicator

Net number of money-managers (x-axis) vs. net MM position (y-axis)



## OBOS / DP Hybrids (26<sup>th</sup> March 2018)



Source: SG Cross Asset Research/Commodities

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