

# UBS Bloomberg SPGSCI Consant Maturity

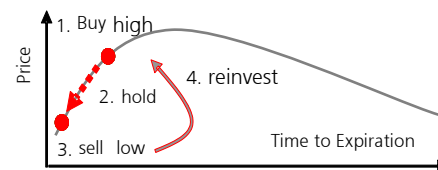
## CMCI with S&P GSCI omponents and weights – Factsheet, December 2018

### Index Characteristics

- Overview:** The UBS Bloomberg CMCI Index (CMCI) is designed to provide enhanced beta exposure to commodities' investment by applying the daily rolling mechanism and tenor-diversification principle to its underlying components. The UBS Bloomberg SPGSCI Constant Maturity Commodity Index (CM-SP) applies the CMCI methodology using commodity components/weights of S&P GSCI.
- Methodology:** The CMCI was developed and launched by UBS in 2007 as a state-of-the-art broad commodity index. It features a weighting engine that allocates across a variety of commodities. For each underlying, exposure is distributed across the liquid tenors. Its methodology can be applied to any number of individual commodities and commodity sectors.
  - Daily rolling: Small proportions of the underlying futures are rolled daily to avoid the potential problems associated with the punctual roll of traditional indices.
  - Tenor diversification: The index takes positions across the liquid part of the commodity futures curve to avoid concentration at the front of the curve.
- Rebalancing:** UBS Bloomberg SPGSCI Constant Maturity rebalances monthly to the effective weights of the S&P GSCI except in January when it implements the target weights of the S&P GSCI.
- Enhanced benchmark:** These innovative features aim to reduce the effects of negative roll yield and maximize the tracking of spot commodity prices based on the allocation in the S&P GSCI. The methodology does not guarantee complete mitigation of negative roll yield. This index can also be used in a long/short form against the S&P GSCI to benefit from the different investment methodologies.

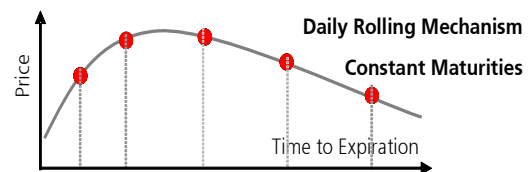
### Bloomberg Commodity Index

- Limit exposure to short-dated futures contracts
- An upward sloping forward curve ("contango") such as below puts investors in the costly position of "buying high, selling low" each time a future is rolled. This effect is known as negative roll yield.



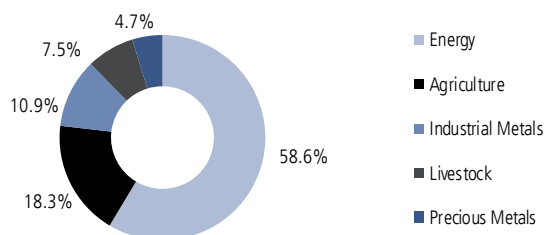
### UBS Bloomberg CMCI

- Expands commodity investment beyond short-dated futures contracts
- Gives access to various constant maturities. In doing so, it can reduce the financial impact of rolling futures and may diminish volatility found in traditional indices



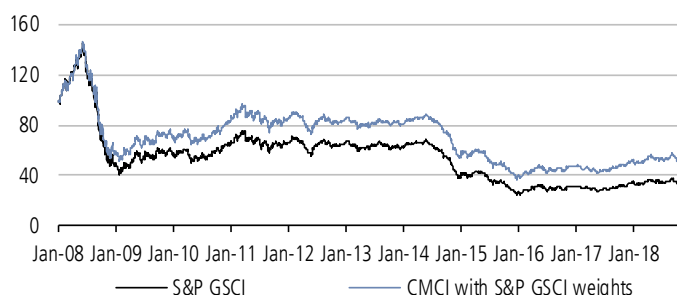
Source: UBS AG, For illustrative purposes only.

### S&P GSCI Index composition



S&P GSCI – 2018 target weights. Source: UBS AG, Bloomberg

### Historical performance trend



Based on daily closing prices from 31.01.2008 to 30.11.2018. Excess Return indices. Source: Bloomberg, UBS AG

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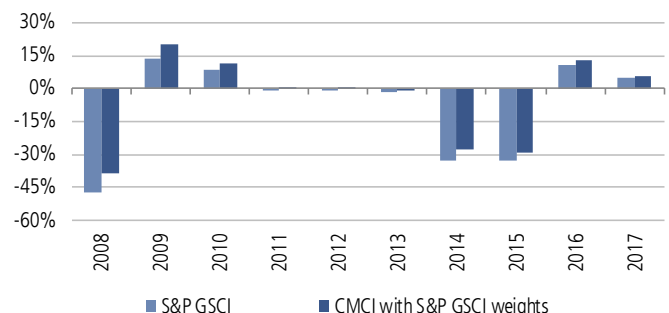
### Historical Performance statistics

|                      | UBS Bloomberg CMSPGSCI Index | S&P GSCI Index |
|----------------------|------------------------------|----------------|
| Bloomberg code       | CMSPCIER Index               | SPGSCI Index   |
| Performance p.a. (%) | (6.73)                       | (10.39)        |
| Volatility p.a.      | 20.52%                       | 23.03%         |
| Sharpe Ratio         | (-ve)                        | (-ve)          |

Based on daily closing prices from 31.01.2008 to 30.11.2018. Based on Excess Return Indices. Past performance does not indicate future results.

Source: Bloomberg, UBS AG

### Performance comparison



Excess Return indices. Daily closing prices 31.01.2008 to 29.12.2017. Past performance does not indicate future results. Source: UBS AG, Bloomberg

## UBS Bloomberg CMCI Outperformance over S&P GSCI - Attribution analysis

| Sector            | Weight | Commodity        | Weight | Outperformance - November 2018<br>(unweighted) | Average unweighted outperformance<br>per month |
|-------------------|--------|------------------|--------|--|--|
| Energy            | 58.6%  | WTI Crude Oil    | 24.7%  | 1.41%  | 0.72%  |
|                   |        | Brent Crude Oil  | 16.9%  | 2.06%  | 0.21%  |
|                   |        | RBOB Gasoline    | 4.6%   | -0.07%   | 0.10%  |
|                   |        | Heating Oil      | 3.9%   | 0.09%  | 0.03%  |
|                   |        | Gasoil           | 4.6%   | 0.69%  | 0.00%  |
|                   |        | Natural Gas      | 3.9%   | -22.46%  | 0.93%  |
| Industrial Metals | 10.9%  | Aluminum         | 3.6%   | 0.09%  | 0.23%  |
|                   |        | Copper           | 4.4%   | -0.43%   | 0.09%  |
|                   |        | Lead             | 0.9%   | 0.01%  | 0.13%  |
|                   |        | Nickel           | 0.7%   | 0.08%  | 0.11%  |
|                   |        | Zinc             | 1.3%   | -0.84%   | 0.10%  |
| Precious Metals   | 4.7%   | Gold             | 4.2%   | 0.01%  | -0.01%   |
|                   |        | Silver           | 0.5%   | 0.06%  | 0.01%  |
| Agriculture       | 18.2%  | Chicago Wheat    | 3.0%   | -1.57%   | 0.20%  |
|                   |        | Kansas Wheat*    | 1.1%   | -0.64%   | -0.28%   |
|                   |        | Corn             | 5.0%   | -0.37%   | 0.25%  |
|                   |        | Soybeans         | 3.7%   | -0.34%   | 0.07%  |
|                   |        | Cotton           | 1.6%   | 0.15%  | 0.24%  |
|                   |        | Sugar            | 2.5%   | 0.17%  | 0.33%  |
|                   |        | Coffee           | 1.0%   | 0.46%  | 0.09%  |
|                   |        | Cocoa**          | 0.4%   | 0.53%  | -0.20%   |
| Livestock         | 7.5%   | Live Cattle      | 4.1%   | -1.73%   | 0.23%  |
|                   |        | Feeder Cattle*** | 1.3%   | -0.02%   | 0.13%  |
|                   |        | Lean Hogs        | 2.2%   | -3.87%   | 0.34%  |

Based on monthly closing prices from 31.01.2007 to 30.11.2018. Excess Return indices.

Weights used are S&P GSCI target weights (reference percentage dollar) for 2018. \*CMCI Kansas Wheat data only available since 29 May 2009. \*\*CMCI Cocoa data only available since 12 September 2008. \*\*\* CMCI Feeder Cattle data only available since 30 September 2008. CMCI is back-tested up to Jan 2007 and live thereafter.

Source: UBS AG, Bloomberg. \*Note: Average outperformance per month is the difference between monthly compounded returns of CMCI and S&P GSCI sub indices.

## Monthly performance - UBS Bloomberg BCOM Constant Maturity Index

|             | Jan   | Feb   | Mar   | Apr   | May    | Jun   | Jul    | Aug   | Sep    | Oct    | Nov    | Dec    | Total  |
|-------------|-------|-------|-------|-------|--------|-------|--------|-------|--------|--------|--------|--------|--------|
| <b>2008</b> |       | 10.8% | -1.6% | 7.9%  | 10.7%  | 9.9%  | -11.6% | -6.5% | -12.2% | -25.8% | -12.3% | -9.1%  | -38.6% |
| <b>2009</b> | -5.8% | -4.7% | 5.6%  | -0.4% | 16.4%  | 0.9%  | 1.4%   | 0.5%  | -2.9%  | 6.2%   | 2.9%   | 0.1%   | 20.1%  |
| <b>2010</b> | -7.5% | 4.9%  | 1.9%  | 4.8%  | -11.6% | -0.5% | 5.4%   | -3.5% | 7.0%   | 2.2%   | 0.6%   | 9.3%   | 11.5%  |
| <b>2011</b> | 4.6%  | 4.2%  | 3.7%  | 3.5%  | -5.1%  | -4.4% | 2.4%   | -2.4% | -12.4% | 8.6%   | 1.2%   | -1.5%  | 0.5%   |
| <b>2012</b> | 2.8%  | 5.5%  | -1.8% | -0.8% | -11.8% | 0.9%  | 5.3%   | 5.8%  | -1.4%  | -3.5%  | 1.9%   | -0.8%  | 0.6%   |
| <b>2013</b> | 3.5%  | -4.0% | 0.9%  | -4.0% | -1.0%  | -0.7% | 4.1%   | 2.7%  | -2.2%  | -0.2%  | -0.1%  | 1.2%   | -0.2%  |
| <b>2014</b> | -2.5% | 4.5%  | 0.6%  | 0.9%  | 0.2%   | 2.6%  | -3.9%  | -1.3% | -5.8%  | -5.0%  | -10.0% | -11.1% | -27.9% |
| <b>2015</b> | -6.4% | 5.9%  | -6.3% | 8.6%  | -2.3%  | 0.2%  | -12.7% | -3.2% | -2.7%  | 1.0%   | -7.6%  | -6.9%  | -29.5% |
| <b>2016</b> | -4.2% | -1.2% | 4.3%  | 8.2%  | 2.2%   | 1.1%  | -7.9%  | 1.1%  | 3.8%   | -0.9%  | 2.5%   | 4.2%   | 13.0%  |
| <b>2017</b> | -0.8% | 0.2%  | -3.6% | -1.6% | -1.5%  | -1.1% | 3.6%   | -0.6% | 2.7%   | 3.3%   | 1.3%   | 3.7%   | 5.4%   |
| <b>2018</b> | 3.0%  | -2.9% | 2.2%  | 4.4%  | 2.4%   | -0.4% | -2.2%  | 1.0%  | 3.7%   | -4.9%  | -11.6% |        | -6.3%  |

Based on daily closing prices from 31.01.2008 to 30.11.2018. Excess Return indices.

Source: Bloomberg, UBS AG

### Key advantages

- CMCI indices are based on an intelligent rolling process that could reduce the negative roll effects of rolling commodity futures.
- Given CMCI indices invest across the liquid part of the futures curve, it could reduce the volatility of investment as compared to front month rolling indices.

### Principal risks

- CMCI indices may not fully reflect any sharp rallies or drawdowns in commodities as they tend to affect the near dated futures contracts more than the farther dated.
- While CMCI aims to reduce negative roll yield, in certain market scenarios it may underperform the traditional front month rolling indices.

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