A commodity index to rule them all?

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UBS ETFs On Track Research

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The idea of finding the ultimate broad commodity index might sound tempting. However, there are nuances to consider and the right solution may differ depending on individual investors' preferences. At UBS ETFs, we offer a wide range of commodity ETFs tracking differentiated commodity indexes which are designed to meet these different needs. Let's kick off our journey where we'll investigate the key characteristics and differentiating factors of existing indexes.

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Mind the roll

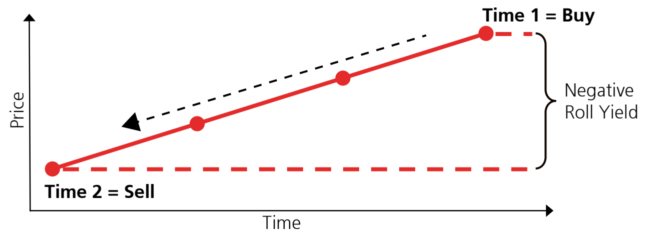
The first way in which commodity indices differ from each other is by their rolling methodology. Buying physical commodities is not an option in the case of a broad commodity basket. So, broad commodity investing involves the purchase of futures contracts, with the expectation of selling a (shorter-term) contract before it expires and buying another (longer-term) futures contract – this process is what is known as rolling over the contract.

But what's the best rolling approach for an index? First generation indices, such as the Bloomberg Commodity index (BCOM), use a simple "front-month" approach: the logic is to buy a front-month futures contract and, come the end of the month, sell it off and buy another front-month contract. While this is easy to extend an investment indefinitely, it's not a very sophisticated approach. When a futures contract trades at a higher price as it approaches expiration (known as backwardation) this generates positive roll yield return (Figure 1, RHS). The primary cause of backwardation is a shortage of the commodity in the spot market. Most of the commodities however are in a contango situation so that futures prices are falling over time to converge to the future spot price (which partly reflects storage costs). Contango actually entails negative roll yield return (buying high, selling low) which, accumulating over the longer-term, may result in substantial drag on performance (Figure 1, LHS).

Figure 1. Illustration of Contango and Backwardated markets

Contango markets

Definition: The price of a commodity future is higher than the spot price of the commodity



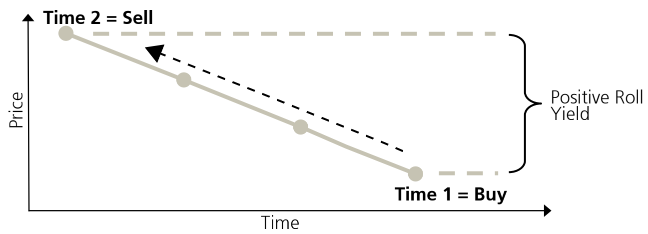
Interpretation: If longer term futures contracts are higher than shorter term futures contracts, the investor "buys high", and "sells low".

Contango occurs when market supply and demand are stable and storage costs exceed convenience yields.

This curve shapes generates a *negative* roll yield.

Backwardated markets

Definition: The price of a commodity future is lower than the spot price of the commodity



Interpretation: If longer term futures contracts are lower than shorter term futures contracts, the investor "buys low", and "sells high"

Periodic supply shocks can drive spot prices to premiums over the forward markets

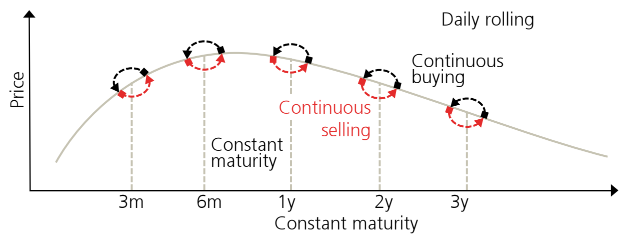
This curve shapes generates a *positive* roll yield.

Source: UBS Asset Management. For illustrative purposes only.

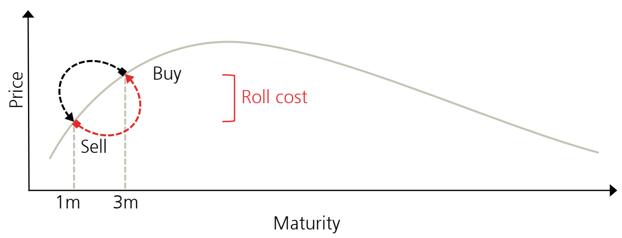
What's better is to try and understand the shape of futures prices and adjusting the roll strategy accordingly. For example, one might want to buy a further out contract, or have a mix of contract tenors to create diversification. For example, the UBS CMCI framework allocates to futures spread from 3-month to 3-year contracts (see Figure 2), which mitigates the impact of roll yield. In addition, small proportions of the underlying futures are rolled daily thereby avoiding problems associated with punctual rolls of traditional indices.

Figure 2. Rolling approaches

CMCI daily rolling methodology



Traditional monthly rolling methodology



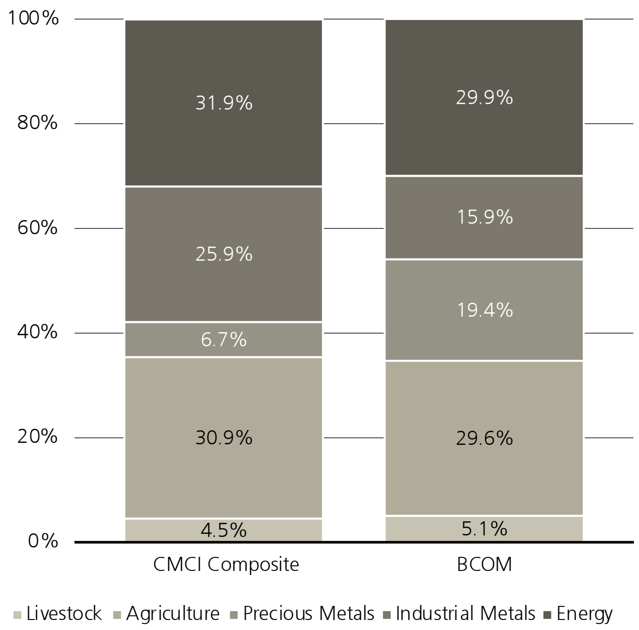
Source: UBS Asset Management. For illustrative purposes only.

Pick your sectors and their target weights

Another key aspect to consider when selecting a broad commodity index is the selection of commodity sectors. While the majority of broad commodity indexes will include the same five major commodity sectors (Energy, Industrial Metals, Precious Metals, Agriculture and Livestock), there are small nuances in terms of which component is included within each sector. As certain investors have a preference for indexes that exclude the Agriculture and Livestock sectors, all the major index approaches are also available with versions excluding these two sectors.

Once the sectors have been chosen, a very important differentiating factor becomes the weighting methodology. The BCOM index for example uses a weighting approach primarily based on liquidity and production, with capping limits applied to diversify exposure to single commodities and sectors. While production is widely used as a component of the weighting methodology, it can lead to undesired concentration risk towards a particular sector. The UBS CMCI methodology uses a more unique two-step approach, which is designed to reflect both the economic significance and the market liquidity for each commodity. Both of these weighting techniques have their merits, but should be well understood as they lead to different sector allocations (Figure 3).

Figure 3. Sector breakdown CMCI and BCOM indexes



Source: UBS Asset Management, Bloomberg. Target index weights for 2023 (valid until August 2023 for CMCI).

Performance implications

We have covered two of the most important criteria in order to select a broad commodity index – the rolling methodology and the weighting approach. In order to assess the merits of each one, we can look at available indexes and compare their risk-return characteristics. Figure 4 shows the different indexes we will consider in our analysis and their respective methodologies. The CMCI ex-Ags is included for completeness, but it is mainly the indexes included in first three columns which will be useful to understand how the rolling and weighting methods can impact the performance profile of a broad commodity index.

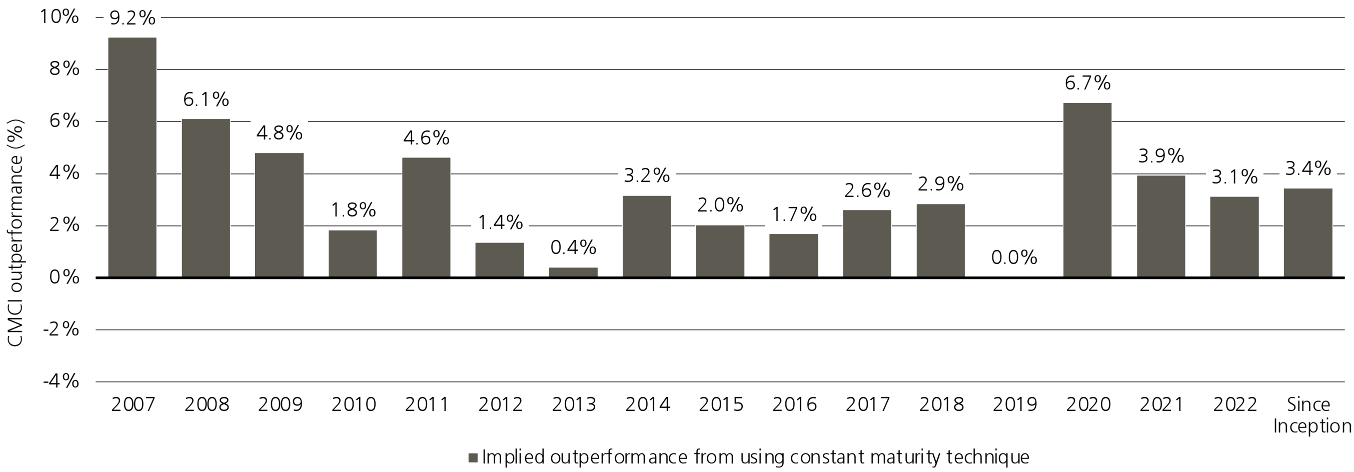
The UBS BCOM CMCI index uses the same commodity weights as the BCOM index, while using the UBS CMCI rolling methodology. We can compare the performance of both indexes in order to assess that specific rolling technique. Figure 5 shows the BCOM CMCI excess returns compared to the BCOM index for each calendar year since inception of the index. Interestingly, the BCOM CMCI version has consistently outperformed the standard BCOM, displaying an average annual outperformance of 3.4% since inception. These results also hold true on a risk-adjusted basis, as the BCOM CMCI exhibited a lower volatility in each observed year.

Figure 4. Illustration of Contango and Backwardated markets

	Bloomberg Commodity Index (BCOM)	**UBS BCOM CMCI (BCOM CMCI)**	**UBS CMCI Composite (CMCI)**	**UBS CMCI ex-Agriculture Ex-Livestock (CMCI ex-Ags)**
Weighting mechanism	Liquidity, production		Economic weights, liquidity	
Constituents	24		29	14
Rebalance frequency	Annual	Monthly		
Strategy type	First generation	Enhanced		
Roll strategy	Front month	Constant maturity		
Maturity exposure	Single fixed contract	Diversified across curve		
Roll frequency	Monthly	Daily		
Roll period	Fifth to ninth business day	Daily		
Currencies available	USD, EUR hedged, CHF hedged, GBP hedged			

Source: UBS Asset Management, Index providers. Data as of January 2023.

Figure 5. BCOM CMCI Excess returns vs. BCOM index

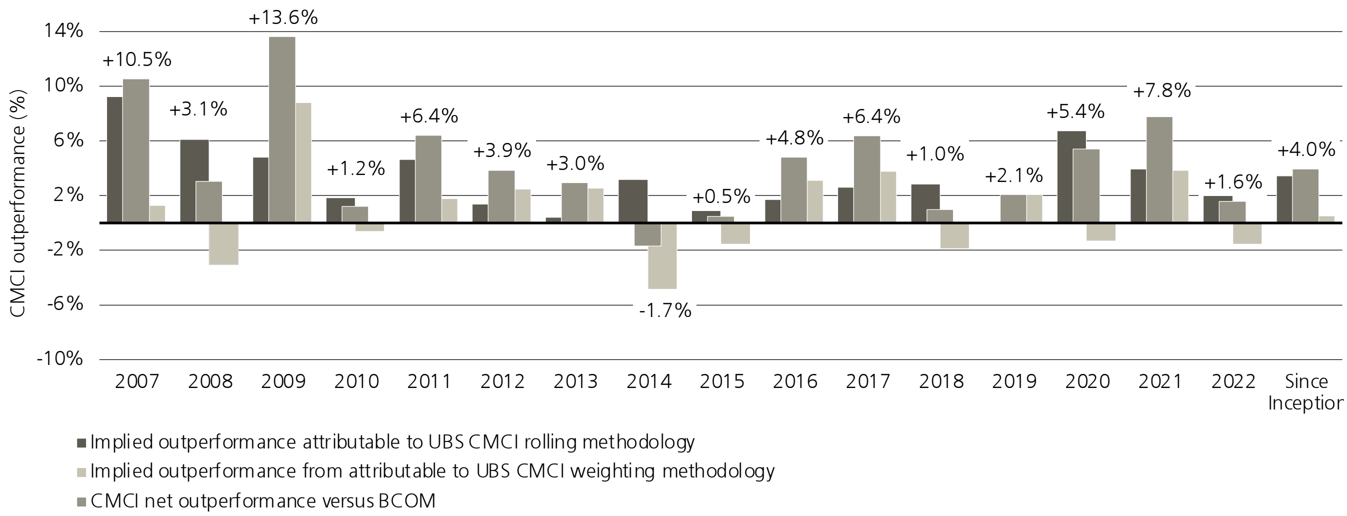


Source: UBS Asset Management, Bloomberg. Data as of 31 December 2022. Returns over 1 year are annualised, all performance in USD.
Past performance is not a guide to the future. CMCI Index is the UBS Bloomberg CMCI Composite Excess Return Index.
BCOM is the Bloomberg Commodity Excess Return Index. Inception date 31 January 2007.

In order to understand the impact of the weighting approach, we can add a third index into the mix. The UBS CMCI Composite index (CMCI), similar to the BCOM CMCI index, applies the CMCI rolling technique but also uses the different weighting approach based on the economic significance of single commodities we mentioned earlier. We can therefore also deduct what is the implied excess return attributable to the CMCI weighting methodology, expanding on the previous chart which highlighted the differences attributable to the rolling technique.

If we look at the whole period since inception, the UBS CMCI weighting methodology has positively contributed to performance versus BCOM, albeit by an average of +0.5%. Thanks to its relative overweight in Precious Metals (see Figure 3), it seems that the BCOM weighting approach performs better than the CMCI approach in times of market turmoil, such was the case in 2008, 2014 or 2022.

Figure 6. CMCI Excess returns vs. BCOM index



Source: UBS Asset Management, Bloomberg. Data as of 31 December 2022. Returns over 1 year are annualised, all performance in USD. **Past performance is not a guide to the future.** CMCI Index is the UBS Bloomberg CMCI Composite Excess Return Index. BCOM is the Bloomberg Commodity Excess Return Index. Inception date 31 January 2007.

Your trusted partner for your commodity investment

As we have discovered, not all commodity indexes are created equal. It is important to understand their nuances in order to select the right approach. At UBS ETFs, we believe that there is not a one-size-fits-all approach. Instead, we support you along the journey to find the solution that best fits YOUR needs.

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