

# **Very BERY: Bloomberg Enhanced Roll Yield Index**

**Harvesting the fruits of curve and carry premia in a  
long only index**

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## Executive Summary

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During the market turmoil of 2022 when bonds and equities failed to perform and inflation stayed at elevated levels, commodities were one of the few asset classes to generate positive returns. This scenario propelled commodities as an asset class back into the spotlight for both portfolio diversification purposes and, as an effective inflation hedge. In addition, the key factors of geopolitical turbulence, adverse weather conditions and the uncertain path of inflation have contributed to higher commodities levels.

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The Bloomberg Enhanced Roll Yield (BERY) index is an enhanced roll and carry long-only commodity index that was launched in June 2021. The index is a dynamically weighted strategy that has similar characteristics to BCOM with the following features:

- Typically allocates up to the first four futures contracts where liquidity is deepest (harvesting **curve premium**)
- Provides greater exposure to commodities that trade in backwardation as opposed to contango (capturing **carry premium**) by measuring Slope Scores
- Offers a **wider eligible universe** of commodities including the current BCOM components plus Feeder Cattle and Tin

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BERY diminishes the traditional trade-off between liquidity and performance, and ultimately seeks to provide high capacity and mitigate the impact of negative carry and reduce roll congestion, using four equal-weighted contracts for each commodity, excluding gold and silver which use three contracts.

In this paper, we explore the role of BERY as a suitable alternative to BCOM for traditional asset portfolios and highlight case studies that help to explain the performance attributes of the strategy. Finally, we outline scenarios in which BERY might underperform relative to other roll enhanced peers.

We find that BERY does offer diversification characteristics against equities and fixed income, plus improved inflation-hedging metrics, like BCOM.

The primary driver of returns for BERY is commodity market returns, however the curve premium and carry premium components are significant contributors to the outperformance over BCOM. Historically, we can assign 60-70% of this outperformance to curve premium and 30-35% to carry premium with the marginal balance attributed to the inclusion of a wider universe.

*The authors of this paper would like to acknowledge the valuable contributions from Francesco Maria Favero, Kartik Ghia, Vikas Jain, Kenneth Hoefling, Allison Stone and Jim Wiederhold.*

## Introduction to BERY

The Bloomberg Enhanced Roll Yield Index (BERY) is a broad-based, long-only commodity benchmark that incorporates aspects of risk-premia strategies. In this paper, we examine the attributes of the BERY strategy's performance historically. When it comes to understanding how BERY has performed it is important that we examine the components aligned to the four pillars below.

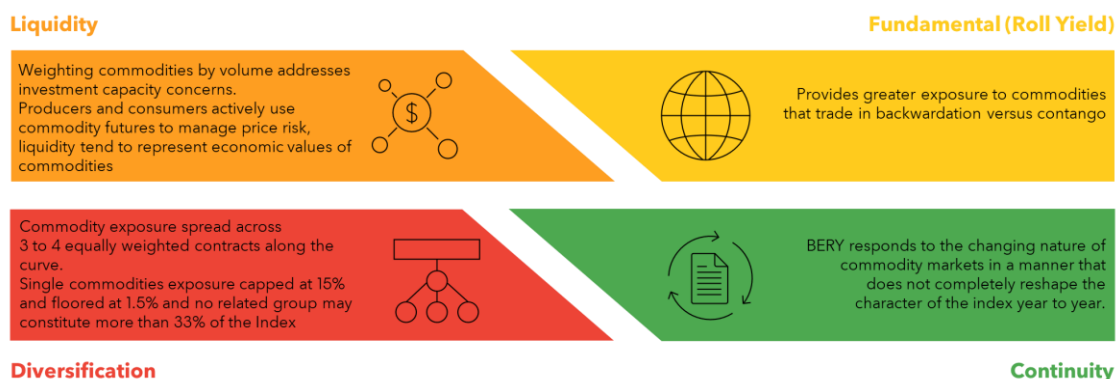
Further, we also compare how BERY has fared relative to its enhanced roll peers such as BCOMF3 and BCOMRS.

The BERY index combines four key aspects in its construction:

- 1) **Liquidity** based weights (US dollar volume traded)
- 2) **Diversification** via Curve Premium (allocation to deferred contracts) (commodity and sector caps to exploit correlation structures)
- 3) **Fundamental** (Roll Yield) via Carry premium (tilting of individual commodities weights based on slope differentials "Slope Score")
- 4) **Continuity** from annually rebalanced weights

Figure 1

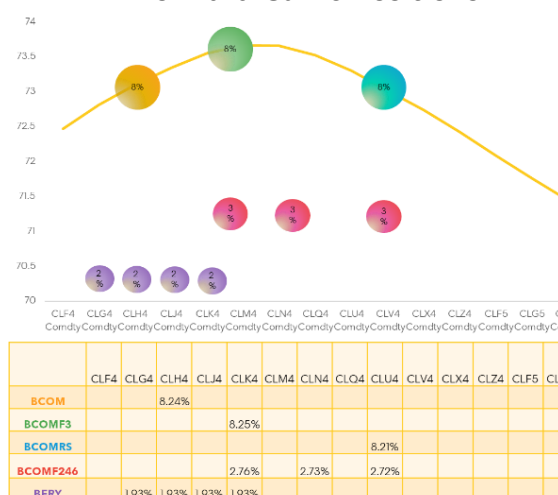
### Four Pillars of BERY



The family of Bloomberg Commodities indices are positioned in various contracts and weights along the forward curves. We show examples of WTI and Corn forward curves in the chart below, where the orange bubble represent BCOM futures position and BERY positions are highlighted in purple.

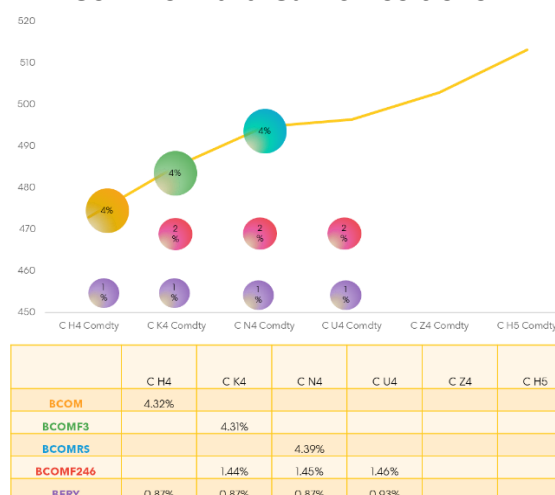
Figure 2

### WTI Forward Curve Positions



Source: Bloomberg. Data as of 18-Dec-23

### Corn Forward Curve Positions



Source: Bloomberg. Data as of 18-Dec-23

At the first step in constructing BERY, commodity liquidity percentages are determined per individual commodity. These are calculated by taking a three-year average of daily trading volumes. These weights are then subjected to diversification criteria with individual commodities weights bound between a weight of 1.5% to 15% and commodity groups capped at 33%.

In the BERY construction for carry tilting, "Slope Scores" are determined for each commodity by taking the three-year daily average nearby to 1 year gradient, standardised by dividing the maximum absolute gradient of all commodities. The score is then scaled with the degree of backwardation relative to the other commodities. The scores are scaled between 0 and 1 where the commodity with maximum absolute gradient has the score of 1 if the slope is positive and 0 if negative.

In our analysis, we bundle these weighting dynamics of liquidity and slope differential together as the "carry premium".

More details on the profile and construction of BERY are available in the index methodology and the paper "[Commodities Indices: Enhancing Roll Yield: A More Liquid & Diversified Index](#)" [1].

Reference Index Bloomberg Tickers:

{BCOM Index GO}

{BERY Index GO}

{BCOMF3 Index GO}

{BCOMRS GO}

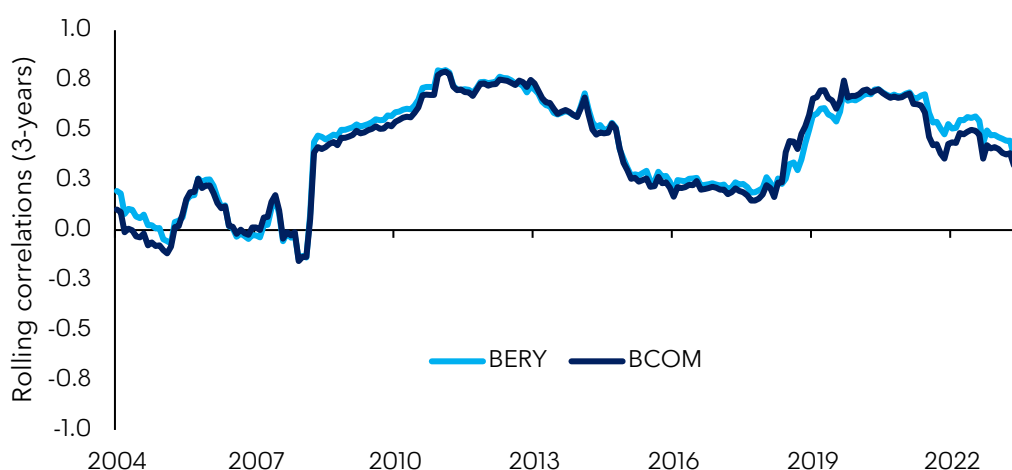
## BERY Offers Diversification and Inflation Hedging Properties, Just Like BCOM

Commodities are an effective way to gain exposure to the economic cycle, but the two most common reasons pertain to diversification exposures and inflation hedging. BCOM characteristics are well suited to both objectives due to the benchmark's low correlation to other asset classes and its high inflation beta or sensitivity to changes in inflation. In this section, we determine whether BERY meets the initial objectives set out for an investment in commodities with respect to portfolio diversification and inflation-hedging; and therefore, in doing so, we address whether BERY is a suitable alternative to BCOM.

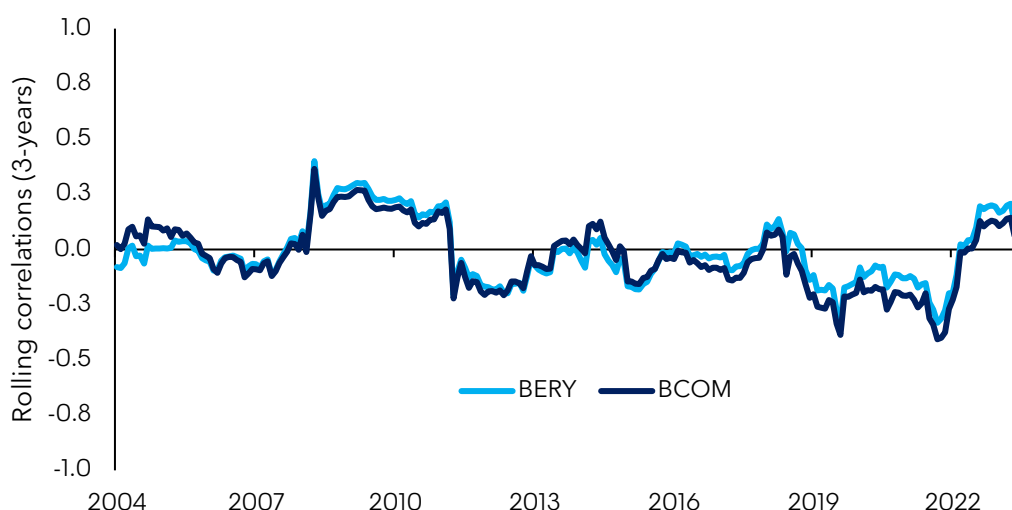
As discussed in the "[BCOM: The Commodities Benchmark](#)" paper [2], BCOM shows an historical correlation to equities and fixed income ranging from low to moderate which makes commodities a great diversifier within a traditional asset portfolio. BERY offers the same diversification profile against equities and fixed income as BCOM over the last two decades of back tested history.

Figure 3

### BCOM and BERY Rolling Correlation to Equities and Fixed Income



Source: Bloomberg. Data from 30-Jun-01 to 31-Dec-23. US Equity (B500)



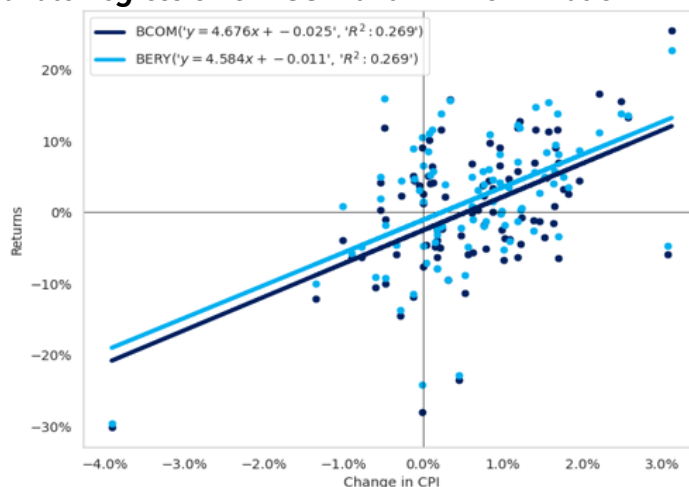
Source: Bloomberg. Data from 30-Jun-01 to 31-Dec-23. US FI (Bloomberg US Agg TR Value Unhedged USD), US Dollar (DXY Index)

In the Commodities Investment Insight paper "[Inflation and Commodities: Examining the Link](#)" [3], the authors investigate the characteristics of Commodities and Inflation. Here, we extend the same analysis from BCOM to BERY.

Reassuringly, our inflation beta-based results show that there are similar relationships between BCOM / BERY and against CPI % changes:

Figure 4

#### Full-Sample Univariate Regression of BCOM and BERY on Inflation



Source: Bloomberg. Data from 30-Jun-01 to 31-Dec-23

The full-sample univariate regression of BCOM and BERY on inflation offers statistically significant coefficients with R-squared of 0.27 for both. The 8y-rolling regressions on quarterly data demonstrates a time varying nature of the relationship, although both BCOM and BERY mirror a similar profile.

Figure 5

#### BCOM and BERY Mirror Their Relationships with Inflation Over Time

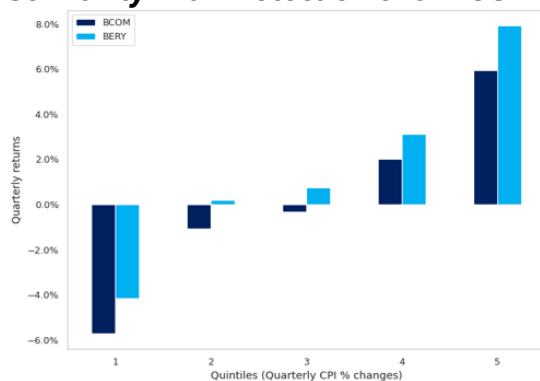


Source: Bloomberg. Data from 31-Mar-60 to 31-Dec-23

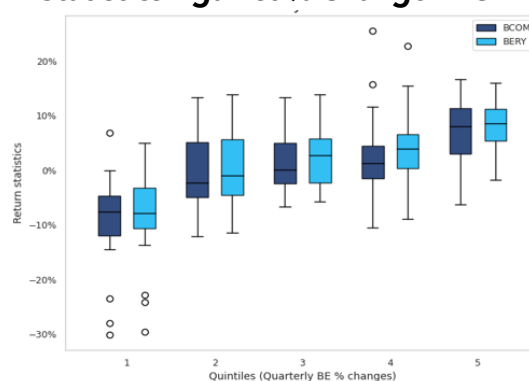
Further, we expand our study on the inflation hedging characteristics to consider the behaviour in the tails versus other episodes. We address this non-linear relationship factor by testing the quintile-based data.

Figure 6

### ***BERY Offers Greater Inflation Convexity with Protection over BCOM***



### ***BCOM and BERY Quintiles Summary Statistics Against % Change in CPI***



Source: Bloomberg. Data from 30-Jun-01 to 31-Dec-23

The above charts highlight the stable relationship and attractive hedging characteristics of both BCOM and BERY against inflation. In fact, BERY offers greater inflation convexity compared to BCOM in the top quintiles and suffers less in the bottom quintile. However, as discussed in the “Inflation and Commodities” paper, roll return is an important factor for consideration and leads onto our deep dive in the next section.

From our analysis in this section, we find that BERY is a viable alternative to BCOM and provides portfolio diversification and inflation-hedging characteristics

## Understanding BERY's Performance

BERY is a broad-based, long-only commodity benchmark that incorporates aspects of risk premia strategies. The primary driver of returns for the strategy comes from market beta; over the 23-year history BERY against BCOM spot delivers a strong relationship with R-squared of 0.90. However, there are other factors to consider when understanding BERY's performance.

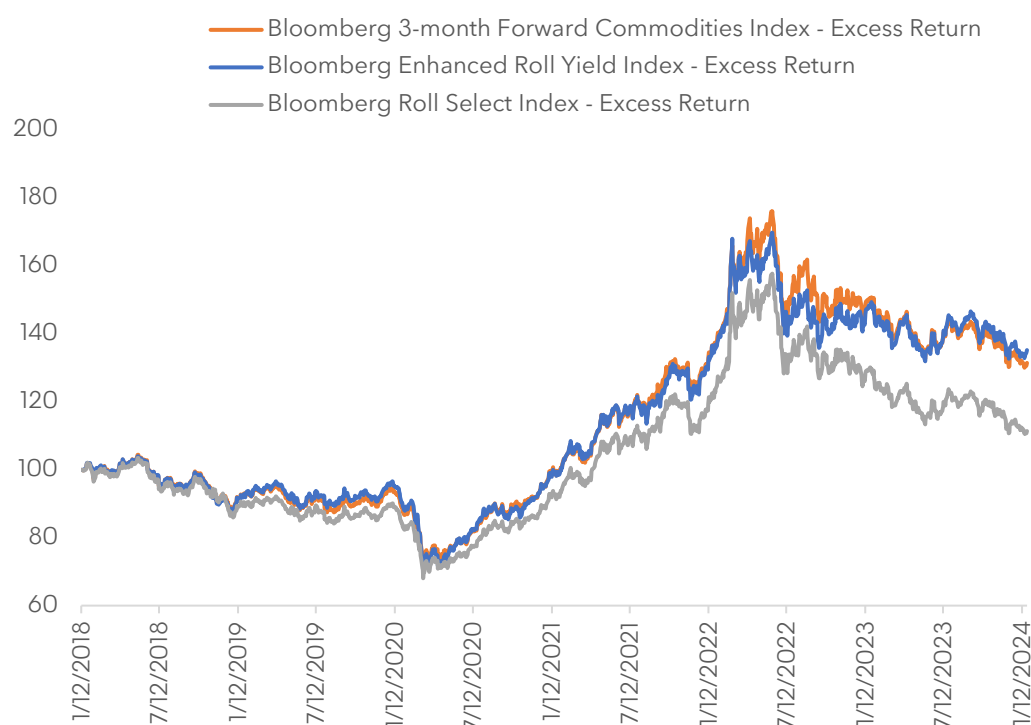
In this section, we compare the BERY performance relative to enhanced roll strategy peers of BCOMF3 and BCOMRS. In our analysis we cover a 6-year window to include both in-sample and out-of-sample data. The BERY launch date is 4<sup>th</sup> June 2021, so we capture roughly half the observation in the live data and half in the backtest. We break down their performances into the two factors that are fundamental to the BERY design:

- Curve Premium: Defined as roll return generated from futures contract positioning
- Carry Premium: Weight-tilting to individual commodities based on slope differentials and daily liquidity

In the conclusion, we do also consider the implications of the wider eligible universe of commodities for BERY.

Figure 7

### **Bloomberg Roll Enhanced Commodities Indices 6-year Performance**



Source: Bloomberg. Data from 12-Jan-18 to 22-Jan-24.

Bloomberg 3-month Forward Commodities Index - Excess Return {BCOMF3 Index GO}

Bloomberg Enhanced Roll Yield Index - Excess Return {BERY Index GO}

Bloomberg Roll Select Index - Excess Return {BCOMRS GO}



## Performance Analysis

### Curve Premium

To isolate the curve premium embedded in BERY and the enhanced roll strategies, we employ a specific approach in this analysis. We apply this methodology to all the commodities in the joint universes of BERY and BCOM.

We identify the two legs of the curve premium component for each commodity:

- 1) a long leg, 100% exposed to the index (i.e., BERY / BCOMF3 / BCOMRS)
- 2) a short leg, 100% exposed to the relevant BCOM Single Commodity index

Below is an example of the three indices for WTI Crude Oil ("CL"):

$$\begin{aligned}
 BERYCL_{ry}(t) &= 1 + \left( \frac{BERYCL(t)}{BERYCL(t-1)} - 1 \right) - \left( \frac{BCOMCL(t)}{BCOMCL(t-1)} - 1 \right) \\
 BCOMRCL_{ry}(t) &= 1 + \left( \frac{BCOMRCL(t)}{BCOMRCL(t-1)} - 1 \right) - \left( \frac{BCOMCL(t)}{BCOMCL(t-1)} - 1 \right) \\
 BCOMCL3_{ry}(t) &= 1 + \left( \frac{BCOMCL3(t)}{BCOMCL3(t-1)} - 1 \right) - \left( \frac{BCOMCL(t)}{BCOMCL(t-1)} - 1 \right)
 \end{aligned}$$

Where, the BERY Single Commodity index (e.g., BERYCL) has been constructed as an equally weighted basket, monthly rebalanced, containing 4 single commodity rolling futures, each one following the BERY rolling schedule of the relevant curve position (called F1-F4 in the original BERY methodology).

These curve premia indices reflect the capability to harvest returns originated by the time-effect (roll-up and roll-down the futures curve) and by changes in the term structure of the curve (variation in the underlying supply/demand equilibrium).

At this point, we recap that the three indices considered in this analysis use three different methods in trying to harvest roll yield. A summary of each approach is presented in the below table:

Figure 8

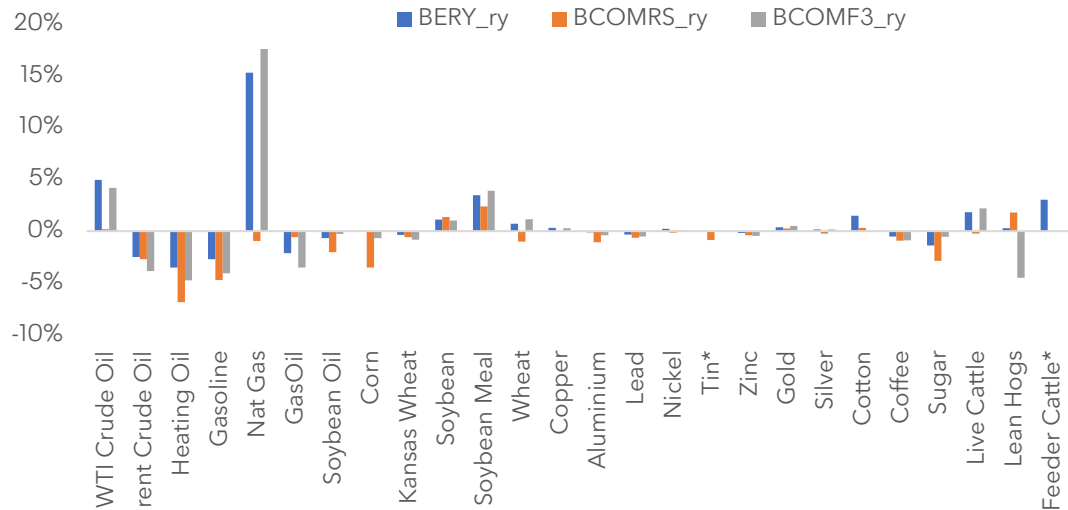
#### **Bloomberg Roll Enhanced Commodities Indices Summary**

Index	Signal	Signal effect	Curve position	Weight Scheme
<b>BERY</b>	3 Years average F1-F12 Spread + Liquidity signal	Used for weights calculation	Fixed equally weighted 4 contracts position	Driven by Signal (Backwardation)
<b>BCOMRS</b>	1-day annualised F1-Fn contract spread, where n<9	Used to select curve position	1 single contract selected by the Signal.	BCOM
<b>BCOMF3</b>	N/A	N/A	3 months forward	BCOM

Across the universe of 26 commodities, we assess each of the key statistics of returns, volatility, risk-adjusted returns, and maximum drawdowns to determine if there are any notable patterns in our curve premia analysis.

First, we observe that on average over the past 6 years the curve premia have been positive across BERY\_ry and BCOMF3\_ry but negative for BCOMRS\_ry. Natural Gas has been the largest positive contributor for BERY\_ry and BCOMF3\_ry. Across the sectors the curve premia varies and even within the same sectors there is no generalization that can be made.

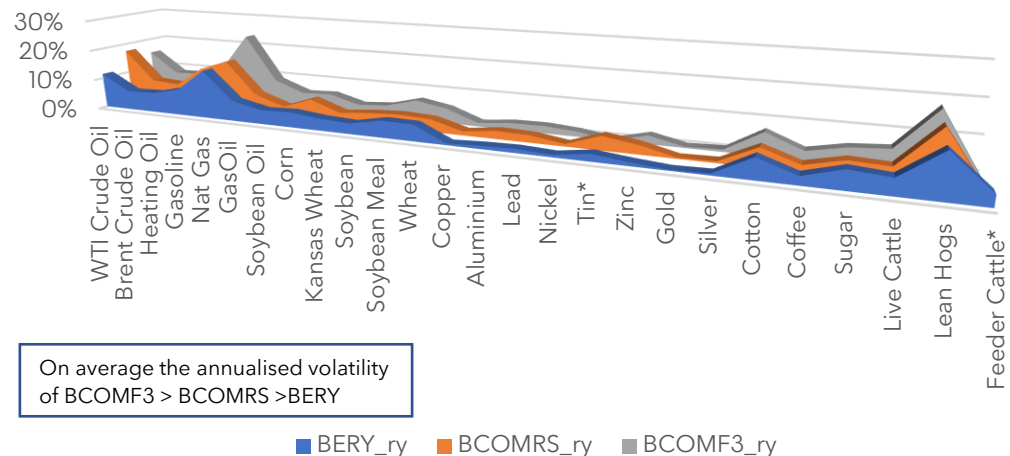
Figure 9

**Curve Premium Annualised Return Per Commodity**

Source: Bloomberg. Data from 12-Jan-18 to 30-Sep-23. \*Tin and Feeder Cattle are included in BERY but not BCOMRS and BCOMF3.

However, there is a clear trend in the profile of volatility. BERY\_ry has a lower annualised volatility than BCOMRS\_ry, and in turn, BCOMRS\_ry has a lower annualised volatility than BCOMF3\_ry. This can be explained by BERY allocating to multiple futures contracts, diversifying the exposure away from single forward contracts as per BCOMRS and BCOMF3.

Figure 10

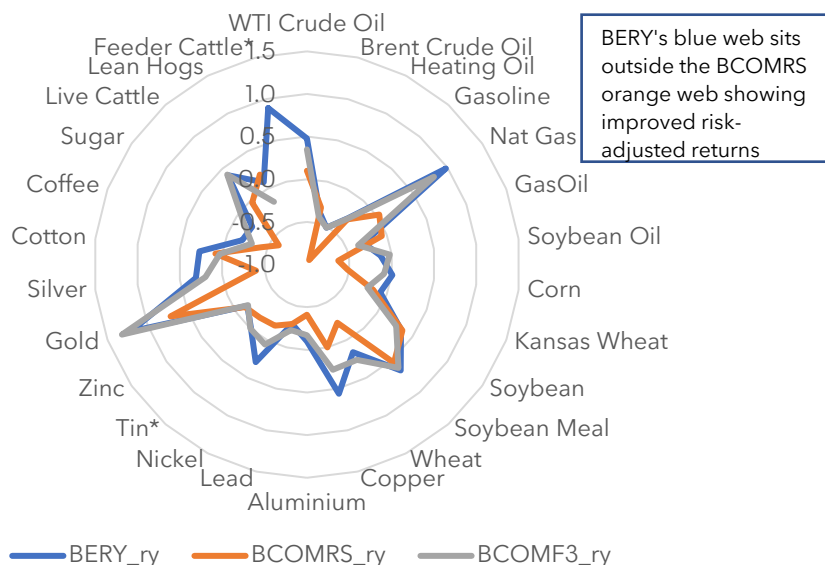
**Curve Premium Annualised Volatility Per Commodity**

Source: Bloomberg. Data from 12-Jan-18 to 30-Sep-23. \*Tin and Feeder Cattle are included in BERY but not BCOMRS and BCOMF3.

The higher curve premium and lower volatility profile of BERY\_ry translates into improved risk-adjusted return per commodity. In the spider diagram below, we see this with the BERY\_ry web spanning a wider circumference than BCOMRS\_ry.

Figure 11

### Curve Premium Risk-Adjusted Return Per Commodity

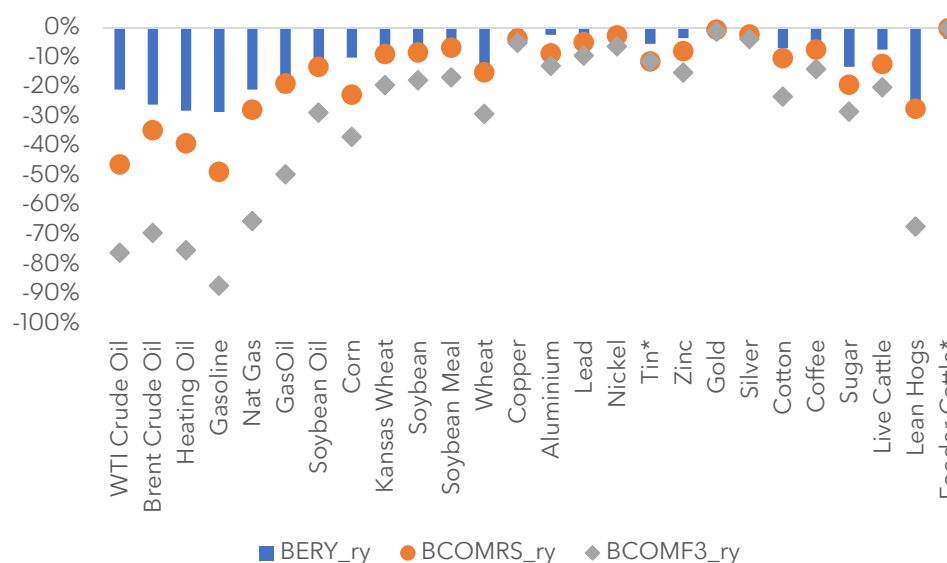


Source: Bloomberg. Data from 12-Jan-18 to 30-Sep-23. \*Tin and Feeder Cattle are included in BERY but not BCOMRS and BCOMF3.

Finally, for the single commodities curve premium we measure the maximum drawdowns per commodity. BERY\_ry has a much-reduced drawdown compared to BCOMRS\_ry and BCOMF3\_ry.

Figure 12

### Curve Premium Max Drawdown Per Commodity



Source: Bloomberg. Data from 12-Jan-18 to 30-Sep-23. \*Tin and Feeder Cattle are included in BERY but not BCOMRS and BCOMF3.

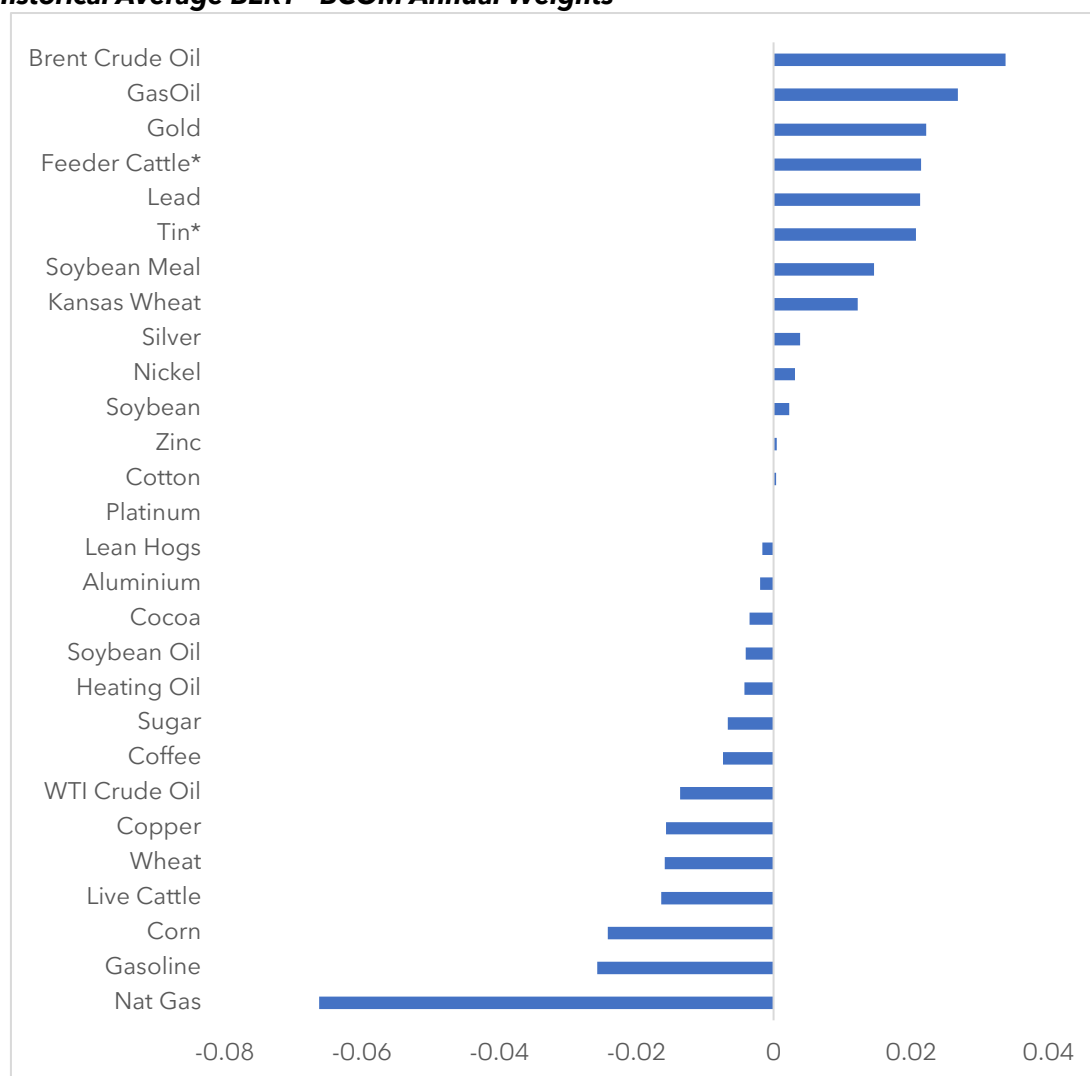
### Carry Premium

For the carry premium assessment, we are determining the impact from the differing weighting schemes between BCOM and BERY. As highlighted in the section "Introduction to BERY", the components of liquidity and slope differential are combined in determining the BERY weights annually.

In the bar chart, we compare the average historical annual weights of BCOM less BERY for each commodity. The BERY weights are determined annually by the calculation of the Slope Score and liquidity measured by three-year average of daily trading volumes. The Slope Scores are determined for each commodity by taking the three-year daily average nearby to 1 year gradient, standardised by dividing the maximum absolute gradient of all commodities. The score is then scaled with the degree of backwardation relative to the other commodities. The commodity with maximum absolute gradient has the score of 1 if the slope is positive and 0 if negative.

Figure 13

#### **Historical Average BERY - BCOM Annual Weights**



Source: Bloomberg. Data from 12-Jan-18 to 30-Dec-23. \*Tin and Feeder Cattle are included in BERY but not BCOM.

Historically, Natural Gas which has been in contango has been under-allocated in BERY and vice versa for Brent Crude Oil. Further, Natural Gas is one of the most volatile commodities in this universe. In the Curve Premium Annualised Return Per Commodity bar chart in the above sub-section, we found that the BERY<sub>ry</sub> Natural Gas was an outlier in terms of positive curve premia returns. However, this impact at the top level of the BERY index is offset from an under-weight allocation to Natural Gas from the carry

premia tilting. Therefore, with respect to Natural Gas, when both the curve and carry exposures are combined, the overall impact is muted.

### Curve + Carry Premium

For the next step we build up the contributions of curve and carry premia for each of the six sectors. We examine these performances to identify if there are any sector biases. For this exercise we follow the below steps for each of the sectors:

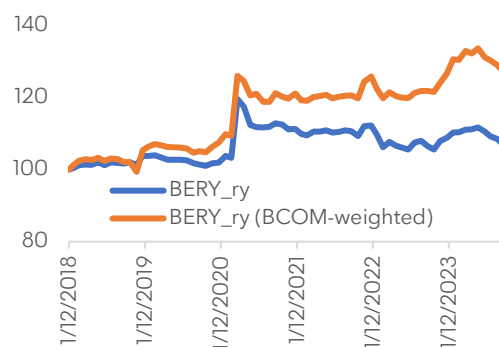
- 1) We calculate BERY\_ry using the yearly target percentage weights for BERY (CTW in the methodology terms) assuming perfect daily exposure.
- 2) For BERY\_ry (BCOM weighted) the BERY\_ry individual commodity indices are combined using the BCOM weights using the yearly target percentage weights for BCOM (CIP in the methodology terms).

The results are shown in the performance charts below:

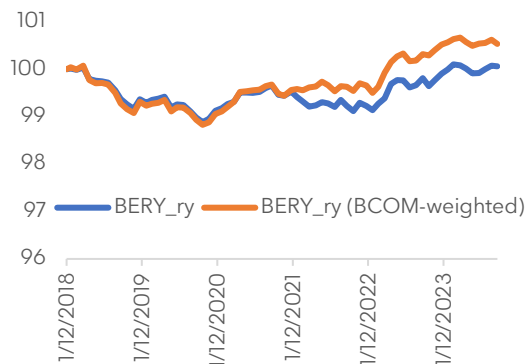
Figure 14

### Daily Curve Premia Per BCOM Sectors

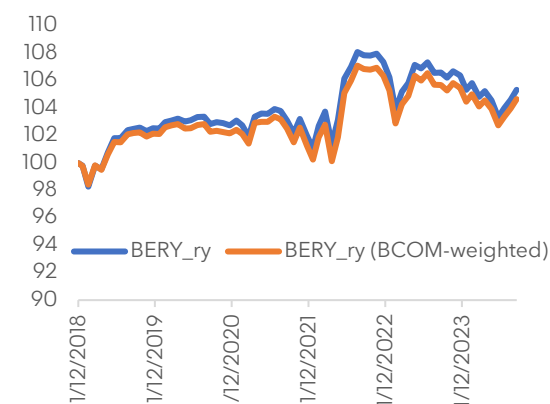
#### Energy



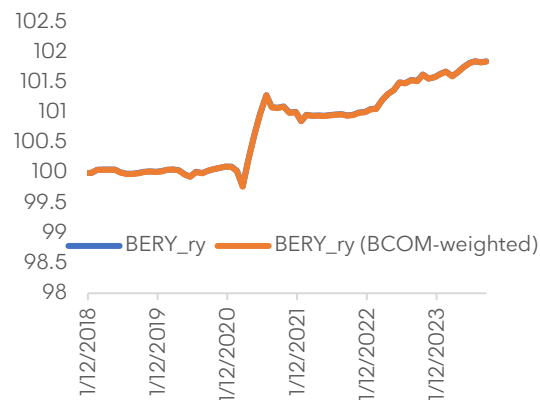
#### Industrial Metals

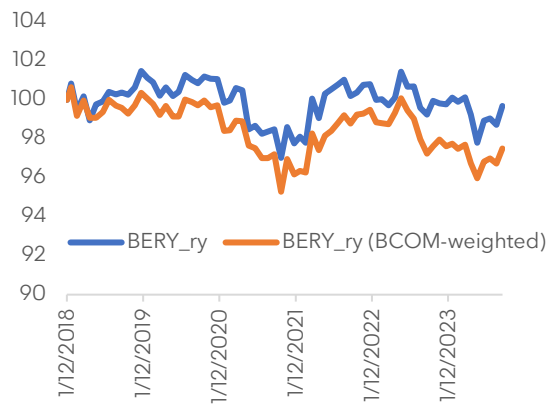
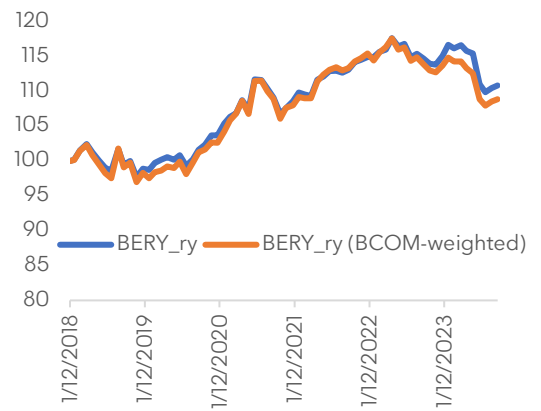


#### Grains



#### Precious Metals



*Softs**Livestock*

Source: Bloomberg. Data from 12-Jan-18 to 30-Sep-23. BERY live date = 04-Jun-21

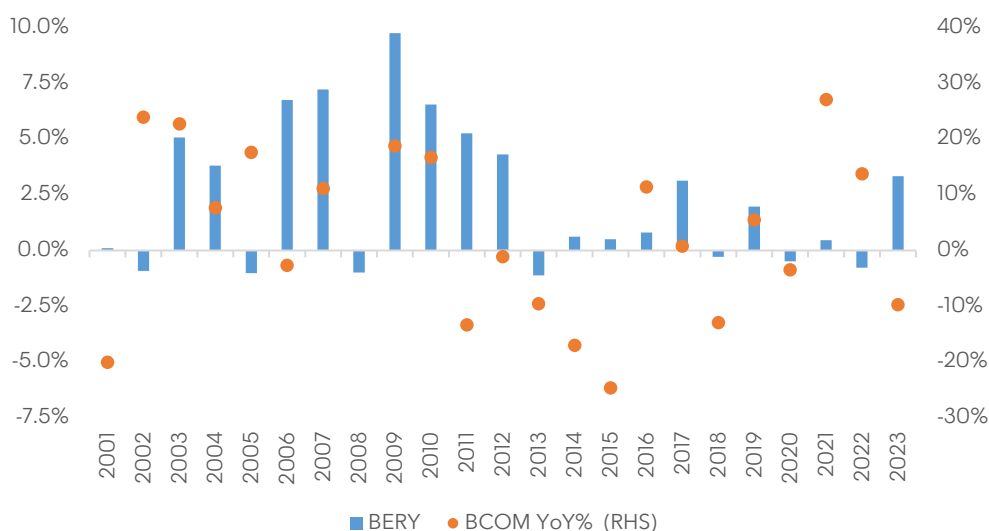
From the above charts, we can see that the BERY\_ry has been positive for all the sectors indicating that there is positive curve and carry premia being captured by all sectors. Further, we see that the BERY\_ry line sits above the BERY\_ry (BCOM-weighted) for the Grains, Softs and Livestock indicating that there is an additional positive contribution coming from the carry premia tilting.

## When does BERY underperform relative to 1) BCOM and 2) other roll enhanced strategies such as BCOMRS?

### BERY performance relative to BCOM

BERY index captures spot, curve and carry returns. From the chart below, we plot the BERY less BCOM annual year-on-year performances, overall, we note that BERY on balance has outperformed against BCOM in most of these periods. In fact, the average outperformance of BERY over BCOM has been 3.7% versus an average underperformance of -0.8%, i.e., when BERY does undershoot BCOM is with a much lower absolute level than when it outperforms. Further, the windows of underperformance have tended to occur a year following on from strong outperformance.

Figure 15  
**BERY Performance Over BCOM (yoy%)**



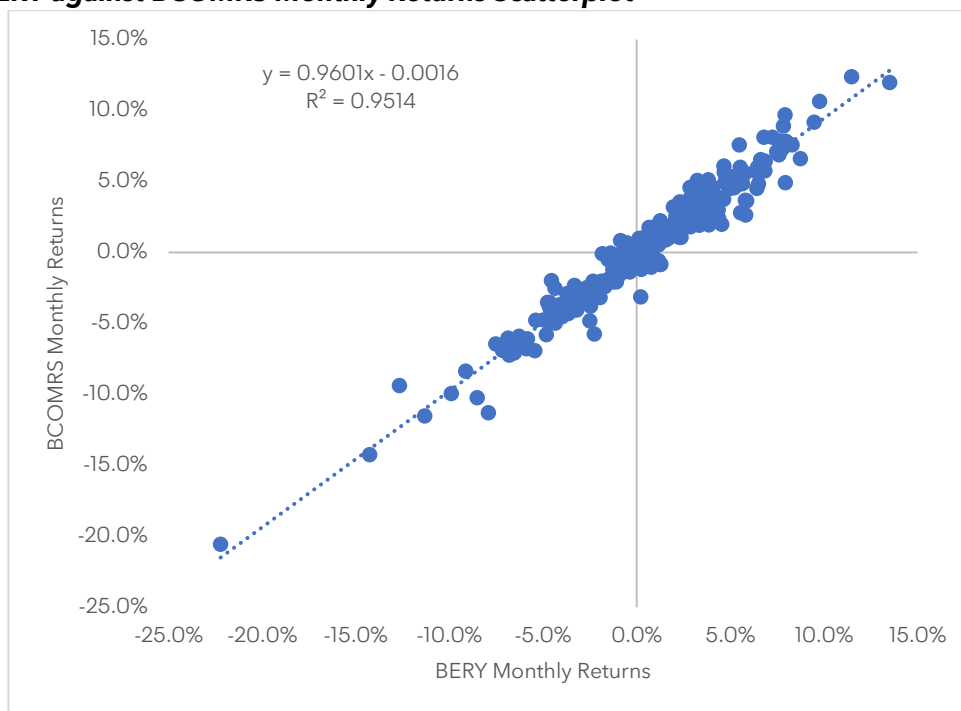
Source: Bloomberg. Data from 31-Jan-01 to 30-Nov-23.

Historically, BERY has underperformed against the BCOM when deferred contracts have not rallied as strongly as the nearby contract. This often happens in rebound scenarios post market stress events, such as, the years following the burst of the DotCom bubble in early 2000s, GFC in 2008/09, China's economy slowdown in 2013 and the Covid Crisis in 2020. In these sharp market bounce situations, where performance is driven by spot returns, it has been BCOM that has been the best performing long-only commodities strategy.

### BERY performance relative to BCOMRS

From our analysis above we have found that BERY has outperformed BCOMRS by greater than 3% p.a. over in-sample and out-of-sample windows. On average for calendar month returns BERY performance has exceeded BCOMRS over 60% of the time. The full-sample univariate regression of BERY on BCOMRS offers a statistically significant coefficient with R-squared of 0.95. In the scatterplot chart, we highlight the observation points where the BCOMRS monthly returns have performed better than BERY.

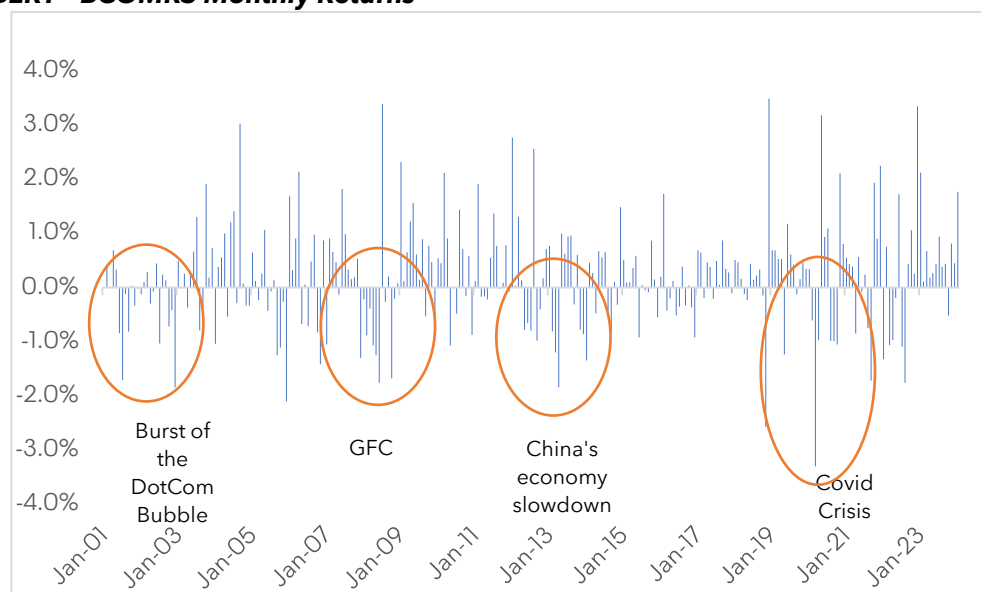
Figure 16  
**BERY against BCOMRS Monthly Returns Scatterplot**



Source: Bloomberg. Data from 31-Jan-01 to 25-Jan-24.

Historically BERY has performed better than BCOMRS in over 60% of these monthly returns. However, there are clusters of episodes when BERY has underperformed BCOMRS which we highlighted in the chart below.

Figure 17  
**BERY - BCOMRS Monthly Returns**



Source: Bloomberg. Data from 31-Jan-01 to 25-Jan-24.

Traditionally, we find that BERY harvests additional commodities curve and carry premia and tends to underperform BCOMRS when there are sharp market corrections such as the burst of the Dot Com bubble in early 2000s, GFC in 2008/09, China's economy slowdown in 2013 and the Covid Crisis in 2020.



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An explanation of why BERY would suffer relative to BCOMRS in scenarios of sharp declines in spot prices would be due to the dual impact of 1) futures curve positioning and 2) backwardation weight tilting. BERY allocates to the front 4 futures contracts while BCOMRS positions in a single contract up to 9 months deferred. In the event of sudden declines, the front contracts react much more aggressive than deferred positions. In addition, these shock events trigger forward curve rotations away from backwardation into contango which can adversely impact performance. This pro-cyclical characteristic is a consistent feature of the carry premia.

This phenomenon is explored in more detail with the single commodity case study in the appendix.

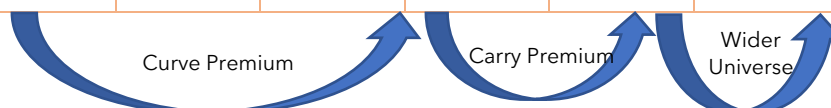
## Conclusions

To finalise our results, we consolidated our individual and sector evaluation into the below table for the BCOM / BERY composite indices:

Figure 18

### **Bloomberg Roll Enhanced Commodities Indices 6-year Performance**

Statistics over 6 y	BCOM	BCOMF3	BCOMRS	BERY_ BCOM_ Weight	BERY_ BCOM_ Universe	BERY
Description	Bloomberg Commodity Index	Bloomberg 3-month Forward Commodity Index	Bloomberg Roll Select Commodity Index	BERY with BCOM weights	BERY with BCOM universe and BERY weights +	Bloomberg Enhanced Roll Yield Index
<b>Ann Ret</b>	2.41%	5.52%	2.69%	5.09%	5.88%	5.83%
<b>Ann Vol</b>	15.60%	14.38%	14.63%	14.77%	15.14%	14.77%
<b>Sharpe Ratio</b>	0.15	0.38	0.18	0.34	0.39	0.39
<b>Max DD</b>	-35.05%	-31.77%	-34.23%	-32.20%	-33.27%	-32.97%
<b>Calmar Ratio</b>	6.89%	17.38%	7.87%	15.81%	17.69%	17.70%



Source: Bloomberg. Data from 02-Jan-18 to 30-Nov-23. +excludes FC & LT.

In our findings on BERY's performance we summarise that:

- BERY is a suitable alternative to BCOM offering diversification characteristics against equities and fixed income, plus improved inflation-hedging metrics.
- As a long-only investment in commodities BERY's primary driver of returns is driven by BCOM spot returns, however the curve and carry components are significant contributors to the outperformance over the standard benchmark.
- BCOMF3 offers positive outperformance to BCOMF0, due to its improved roll returns, but is also subject to higher volatility and draw-down in regimes where volatility impacts differently the different sections of the futures curve. This is discussed in the paper "[Commodity Investment Insights – Rolling Along the Curve](#)" [4].
- Further, optimised contract selection indices, like BCOMRS, offer little protection against the volatility in the curve dynamics of commodity futures, but better returns in regimes where curves are more stable.
- From the BERY Performance Analysis, we observe BERY indices offer the most stable and diversified roll return profile, with better risk adjusted roll return and lower roll return volatility. Furthermore, BERY offers defensive attributes over BCOM.

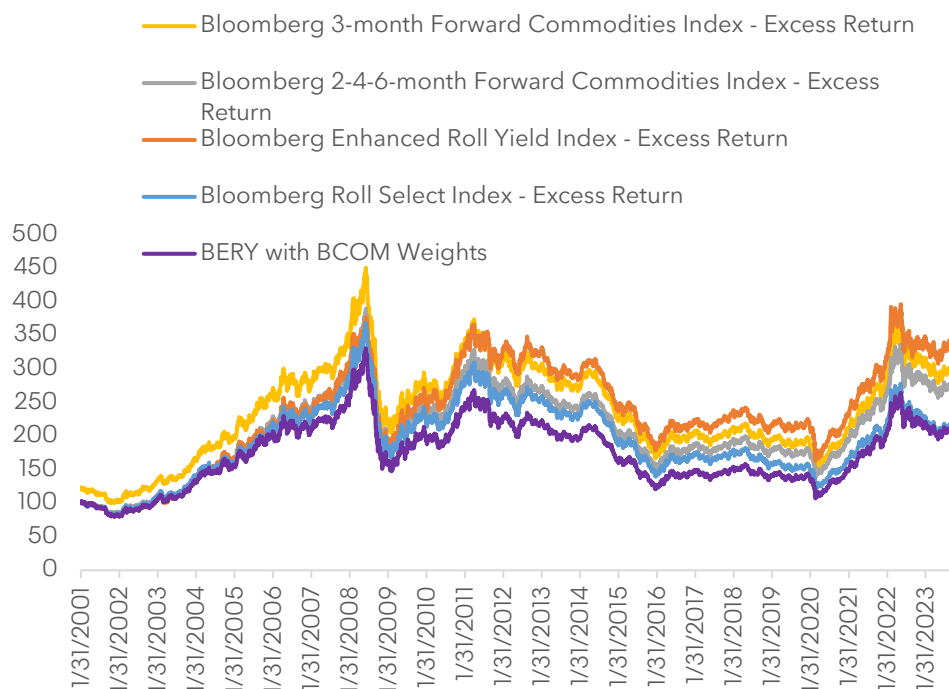
**Over the recent 6-year period, we observe that BERY has outperformed BCOM by 3.4% p.a. of which 60-70% can be attributable to the futures selection (curve premium) and 30-40% comes from the carry weighting scheme (carry premium), with the wider universe contributing a marginal difference. These return profiles are consistent over the in-sample and out-of-sample periods.**

## Appendix

### Long-term Data

Figure 19

#### **Bloomberg Roll Enhanced Commodities Indices - Long Dated**



	BCOM	BCOMF3	BCOMRS	BERY_ BCOM_ Weight	BERY_ BCOM_ Universe	BERY
Description	Bloomberg Commodity Index	Bloomberg 3-month Forward Commodity Index	Bloomberg Roll Select Commodity Index	BERY with BCOM weights	BERY with BCOM universe and BERY weights +	Bloomberg Enhanced Roll Yield Index
Ann Ret	-0.39%	3.89%	3.22%	3.14%	5.21%	5.31%
Ann Vol	16.34%	15.08%	15.12%	15.42%	15.77%	15.38%
Sharpe Ratio	n/a	0.26	0.21	0.20	0.33	0.35
Max DD	-75.00%	-66.79%	-67.43%	-67.64%	-58.27%	-56.83%
Calmar Ratio	-0.52%	5.80%	4.76%	4.64%	8.91%	9.31%

Source: Bloomberg. Data from 31-Jan-01 to 30-Nov-23. \*excludes FC & LT.

## Performance Scenarios

Figure 20

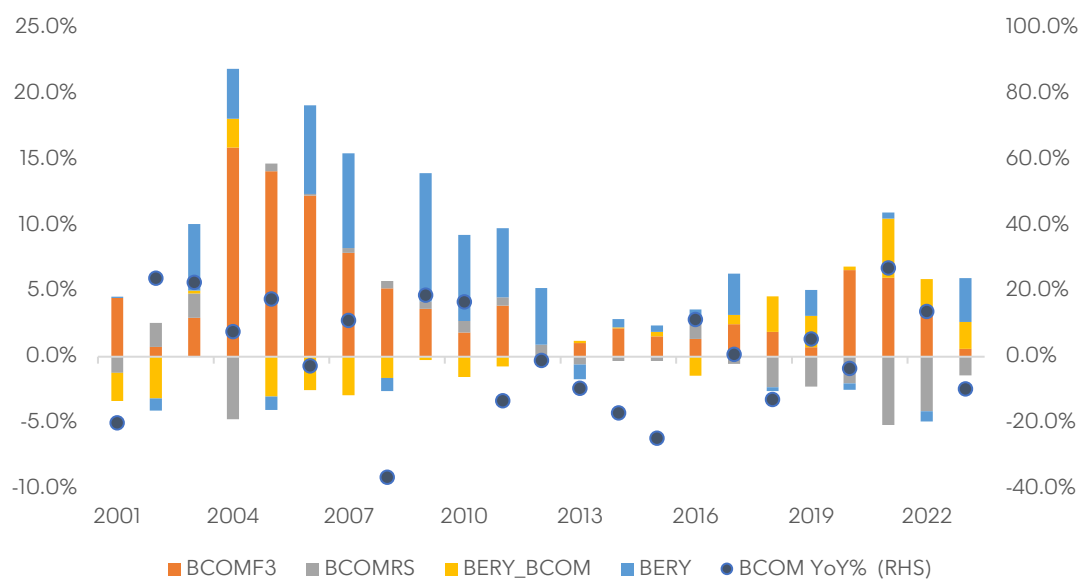
**Bloomberg Roll Enhanced Commodities Indices - Long Dated**

		BCOM	BCOMF3	BCOMRS	BERY
Post recession	Jan 2002 - Jun 2002	11.8%	13.8%	12.8%	13.1%
China/global industrial growth	Aug 2007 - Mar 2009	161.7%	333.8%	335.0%	355.5%
Global Financial Crisis	Jul 2008 - Mar 2009	-52.9%	-49.9%	-49.6%	-47.3%
Start of hiking cycle	Apr 2014 - Dec 2015	-41.6%	-38.1%	-39.0%	-37.4%
COVID pandemic	Jan 2020 - Mar 2020	-23.5%	-20.0%	-19.7%	-22.8%
Russian invasion, high inflation	Jan 2022 - Nov 2023	2.7%	6.4%	1.1%	8.8%

Source: Bloomberg. Data from 31-Jan-01 to 30-Nov-23.

## Performance Scenarios

Figure 21

**Bloomberg Roll Enhanced Commodities Indices Outperformance Over BCOM (yoy%)**

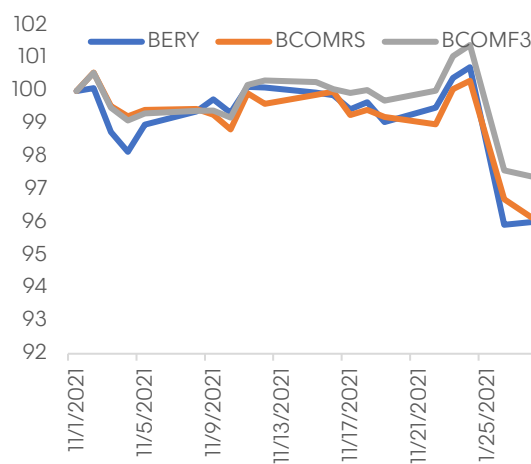
Source: Bloomberg. Data from 31-Jan-01 to 30-Nov-23.

### Scenario Analysis: WTI Crude Oil in November 2021

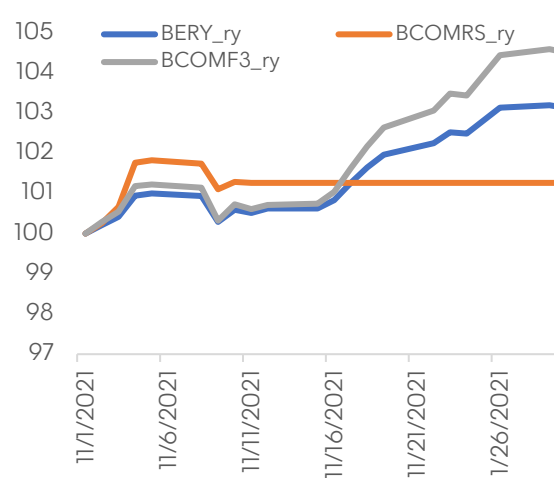
As fresh fears about a new covid strain ignited concerns over a global demand slowdown in November 2021, WTI spot prices tumbled ~20% over the month. In this period both BERY (-6.39%) and BCOMRS (-6.97%) underperformed BCOMF3 (-5.34%). We can pinpoint that the divergence in performances can be explained by the relative curve premia in WTI, where deferred futures positions in BCOMF3 and BCOMRS were able to buffer against front month contract losses.

Figure 22

#### Performance Over November 2021



#### WTI Curve Premium

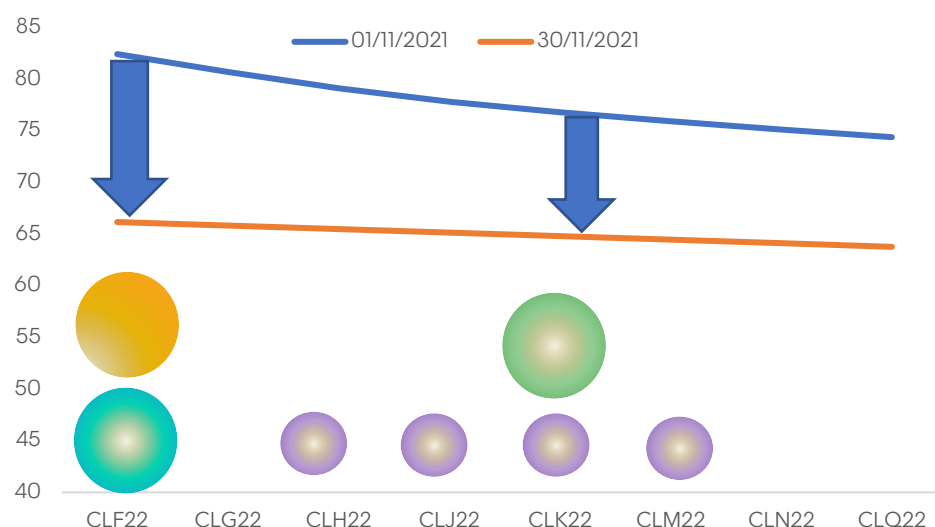


Source: Bloomberg. Data as of 18-Dec-23

In this scenario the WTI forward curve started Nov-21 in backwardation but the curve flattened as prices dropped. We can see from the WTI forward curve chart below that the front end declined by more than deferred contracts; Jan-22 fell by -19.7% while May-22 was down -15.6%.

Figure 23

#### WTI Forward Curve Positions



	CLF22	CLG22	CLH22	CLJ22	CLK22	CLM22	CLN22	CLQ22
BCOMCL	100%							
BCOMCL3					100%			
BCOMRCL	100%							
BERYCL			25%	25%	25%	25%		

Source: Bloomberg. Data from 01-Nov-21 to 30-Nov-21

Here we summarise the curve positions for the indices:

- BCOMCL held the Jan-22 contract
- BCOMRS selected the front contract as the more backwardated and positioned in Jan-22
- BCOMF3 rolled into the May-22 contract
- BERY maintained its standard composite position splitting equally the exposure on the contracts from Mar-22 to Jun-22.

In this market downturn episode BCOMF3 was able to shield away from losses from its positioning in further deferred contract, whereas the futures positions in BCOMRS and BERY were more exposed to decline in the front part of the futures curve. This curve rotation example gives an explanation on why BERY might underperform other roll enhanced strategies in market stress events.

References

[1] "Commodity Indices - Enhancing Roll Yield: A More Liquid & Diversified Index", K. Ghia, Bloomberg Index Publication, May 2021

[2] "Commodity Investment Insights - BCOM: The Commodities Benchmark", J.Wiederhold, J.Gibb, Bloomberg Index Publication, January 2024

[3] "Commodity Investment Insights - Inflation and Commodities: Examining the Link", K. Ghia, Bloomberg Index Publication, May 2021

[4] "Commodity Investment Insights - Rolling Along the Curve", K. Ghia, Bloomberg Index Publication, July 2023

Revisions	Date	Edition	Change Summary
	23 <sup>rd</sup> Feb 2024	1 <sup>st</sup> Edition	
	5 <sup>th</sup> Jun 2024	2 <sup>nd</sup> Edition	Figure 13 (Brent added), 18, 19 (Changed calculation of Sharpe Ratio changed from arithmetic to geometric returns)

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