# ARC Commodity Factor Risk Model
# Monthly Report March 2026

The Asset Risk Company (ARC) Commodity Model is a cross-sectional commodity factor model. The model contains 50 of the most widely traded commodity products with approximately 1,200 futures in total over all maturities. All futures in the model have exposures to sectors, sub-sectors, style and trading factors such as basis, momentum, and open interest. The model is estimated daily with 25 years of history. It provides a framework for managing risk and investment decision-making.

In this report, you will find:

- Performance of Sectors, Sub-Sectors and Style and Trading Factors
- Examples of Factor Tilted Portfolios (Low Vol, Value, Momentum, Backwardation)
- Factor Based Risk Decomposition of Popular Commodity Indexes (BCOM, GSCI)
- Inflation prediction

The ARC Commodity Model is a powerful tool to help many constituencies in the financial industry, trading, and real economy. Some of the applications of the model are very straightforward, but some uses of the model are more nuanced. We recommend this short piece that provides details on both common and novel use cases for a commodity factor model: https://www.assetriskcompany.com/whyfactor.html. You can access our latest research at https://www.assetriskcompany.com/library.html.

ARC
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## Sectors and Factors Performance Report:

**Table 1: Sectors and Subsectors Performance**

| Sectors | March 26 | 2026 | 5-year Return | 5-year Volatility |
|---|---|---|---|---|
| **Agriculture** | **2.9%** | **2.2%** | **5.3%** | **11.8%** |
| Grain And Oilseed | 1.9% | 7.5% | 2.6% | 14.3% |
| Lumber And Pulp | 2.8% | 2.9% | -14.1% | 43.6% |
| Proteins | 3.5% | 1.3% | 12.1% | 11.2% |
| Softs | 4.9% | -8.0% | 4.3% | 14.8% |
| **Energy** | **3.0%** | **10.0%** | **5.9%** | **13.3%** |
| Biofuels | 3.0% | 10.0% | 10.9% | 15.9% |
| Coal | 3.0% | 10.0% | 19.7% | 23.8% |
| Crude Oil | 0.3% | 2.6% | 1.7% | 14.1% |
| Natural Gas | 1.8% | 7.9% | 7.9% | 16.0% |
| Petrochemicals | 3.0% | 10.0% | 1.8% | 15.8% |
| Refined Products | 9.2% | 25.2% | 8.7% | 17.4% |
| **Metals** | **-6.7%** | **3.0%** | **15.7%** | **16.0%** |
| Base | -3.0% | -0.9% | 9.5% | 16.7% |
| Precious | -9.2% | 5.2% | 20.9% | 19.0% |

The recent Iran conflict has had a clear impact on commodities. Agricultural commodities and Energy are both up, while metals — and precious metals in particular — have extended their decline significantly (-9.2% this month).

Regarding the Crude Oil factor being flat this month: our factors account for the full forward curve. While the front month jumped 30%, the rest of the curve has not moved

as much — there are 130 maturities for CL. Should the conflict persist, we would expect the impact to spread to longer maturities. By contrast, the impact on refined products (RBOB gasoline and Gasoil) has been more evenly distributed across the curve.

The returns come naturally from a cross-sectional regression of the 1,200 assets in the model and therefore cover the entire term structure. For instance, Natural Gas has more than 120 maturities in the model. The model uses all of that information to derive sector and subsector returns and one can think of our sectors as risk weighted on the entire curve.

**Table 2. Styles/Trading Factors Performance**

| Factor | March 26 | 2026 | 5 Year Return | 5 Year Volatility |
|---|---|---|---|---|
| **Basis** | **0.4%** | **-0.8%** | **-6.9%** | **4.3%** |
| **Open Interest** | **1.3%** | **2.5%** | **2.2%** | **4.2%** |
| **Momentum** | **-5.4%** | **0.5%** | **3.4%** | **7.8%** |
| **ST Momentum** | **1.9%** | **4.0%** | **-6.0%** | **5.6%** |
| **Trading Activity** | **0.9%** | **2.5%** | **-0.4%** | **2.4%** |
| **Volatility** | **-3.1%** | **1.2%** | **1.1%** | **8.7%** |
| **ST Volatility** | **1.7%** | **-0.1%** | **-1.4%** | **7.6%** |

The Momentum factor, which delivered standout performance in 2025, experienced a significant pullback this month — a move of approximately 2 standard deviations.

The factor replicating portfolios, which include both long and short exposures across nearly all instruments in the model's universe, are theoretical constructs and not directly tradable.

In contrast, our practical long-only, factor-tilted implementation offers a more parsimonious and liquid representation of the strategy.

## Factor Tilted Portfolios Performance Report:

As shown above there are some clear patterns emerging for the ARC Commodity Styles and Trading Factors. However in order to take advantage of these trends, ARC has created long-only tilted versions. Our findings, based on 25 years of data, are:

- Low Volatility and Low Momentum (Value), Low Basis (Extreme Backwardation) are reliable and produce much better performance and risk than traditional indices
- High Momentum performed well over the last 5 years
- High Basis is reliable in underperforming the indices

**Table 3: Top 5 Futures Tilted Portfolios and BCOM Performance**

| Return & Risk | Low Vol | Low Mom/Value | Low Basis | Hi Mom | BCOM |
|---|---|---|---|---|---|
| March 2026 | 3.2% | 14.1% | 12.1% | -11.6% | 11.1% |
| 2026 | 7.0% | 8.9% | 22.2% | 8.8% | 23.3% |
| Annualized | 10.7% | 13.7% | 14.5% | 25.3% | 10.1% |
| Volatility | 6.8% | 17.3% | 14.9% | 17.7% | 14.9% |
| Sharpe | 1.6 | 0.8 | 1.0 | 1.4 | 0.7 |

*Annualized 5 years

High Momentum has been nothing short of spectacular, before the war in Iran, but had a major reversal this month (-11.6%), while Value had an exceptional month (+14.1%). Noticeably, extreme backwardation (Low Basis) was up 12.1% this month From a longer-term perspective, both the Low Volatility and High Momentum long-only portfolios have delivered robust risk-adjusted returns, each achieving Sharpe ratios above 1.4 over the past five years.

## Commodity Indices Risk Decomposition

We observed a significant increase in ex-ante volatility across both indices, with GSCI exhibiting higher volatility than BCOM, since it has more exposures in Energy. The model is reacting quickly to market conditions. Our factor decomposition indicates that this increase is primarily driven by greater exposure to Short-Term Volatility. In addition, both indices display elevated z-scores relative to Open Interest, underscoring their concentration in front-month contracts and the associated sensitivity to short-dated market dynamics.

We use a 6 month half-life for this risk decomposition so the model is fairly reactive to market conditions. Despite different sector allocations, both indices have similar risk and exposures to styles.

**Table 4: Factor Exposures**

| Factors Exposures | BCOM | GSCI |
|---|---|---|
| **Agriculture** | 0.31 | 0.23 |
| **Energy** | 0.39 | 0.57 |
| **Metals** | 0.30 | 0.21 |
| **Basis** | 0.19 | 0.13 |
| **Open Interest** | 2.29 | 2.17 |
| **Momentum** | 0.08 | 0.00 |
| **ST Momentum** | 0.85 | 1.49 |
| **Trading Activity** | -0.47 | 0.19 |
| **Volatility** | 0.10 | 0.08 |
| **ST Volatility** | 0.88 | 1.27 |

Exposures, z-scores for BCOM and GSCI as of 3/31/2026

A portfolio that is long/short would be evaluated on the breakout between systematic exposures and whether idiosyncratic risk. Long-only managers will want to find their exposures relative to their benchmark. As shown below in the correlation tables, sector correlations with style factors are relatively small. The model is able to separate risk due to sector allocation and styles risk. All risk is not equal. Systematic risk can display non-normal behavior when compared to specific or idiosyncratic risk. Both types of risks are driven by fluctuation, but systematic risk is driven by the "crowd" expressing some thematic bet. The systematic risk is related to market risk.

**Table 5: Risk Attribution of BCOM and GSCI**

| Index | BCOM | GSCI |
|---|---|---|
| **Total Risk** | **41.4%** | **59.0%** |
| **Agriculture** | 1.4% | 1.0% |
| **Energy** | 2.6% | 3.4% |
| **Metals** | 3.1% | 1.9% |
| **Basis** | -0.2% | -0.1% |
| **Open Interest** | 3.5% | 2.1% |
| **Momentum** | 0.3% | 0.0% |
| **ST Momentum** | 12.6% | 23.1% |
| **Trading Activity** | 0.1% | 0.0% |
| **Volatility** | -0.5% | -0.4% |
| **ST Volatility** | 18.1% | 27.8% |
| **Specific Risk** | 5.1% | 6.4% |

Ex-Ante Annual Volatility Decomposition for BCOM and GSCI as of 3/31/2026

## Inflation:

Empirical testing finds that the ARC Commodity Model is an excellent predictor of breakout moves in the headline number, both in bouts of inflation and deflation. For March, we predict an increase in CPI level, and an increase year-on-year (Inflation). Reach out to info@assetriskcompany.com for our estimate.

## Factor Correlations:

Long-term correlations between sectors and style factors are very low. The model is able to separate sector allocation risk from style risk providing key insights in the real key drivers of risk and performance of a portfolio.

**Table 6. Factor Correlations**

| Correlations | Agriculture | Energy | Metals | Basis | Open Interest | Momentum | ST Momentum | Trading Activity | Volatility | ST Volatility |
|---|---|---|---|---|---|---|---|---|---|---|
| Agriculture | 1.00 | 0.25 | 0.33 | (0.02) | (0.09) | 0.03 | 0.15 | 0.10 | 0.13 | 0.17 |
| Energy | 0.24 | 1.00 | 0.27 | (0.09) | 0.30 | 0.01 | 0.06 | (0.11) | 0.04 | 0.16 |
| Metals | 0.36 | 0.26 | 1.00 | (0.19) | (0.02) | 0.04 | 0.10 | 0.05 | 0.05 | 0.12 |
| Basis | (0.05) | (0.08) | (0.19) | 1.00 | (0.12) | 0.05 | (0.17) | 0.07 | 0.06 | (0.08) |
| Open Interest | (0.11) | 0.27 | (0.05) | (0.07) | 1.00 | (0.03) | 0.01 | (0.56) | (0.18) | (0.02) |
| Momentum | 0.06 | 0.09 | 0.05 | 0.07 | 0.06 | 1.00 | 0.29 | 0.02 | 0.40 | (0.04) |
| ST Momentum | 0.24 | 0.11 | 0.14 | (0.21) | 0.02 | 0.31 | 1.00 | 0.07 | (0.07) | 0.49 |
| Trading Activity | 0.14 | (0.08) | 0.09 | 0.02 | (0.51) | (0.03) | 0.06 | 1.00 | 0.12 | 0.04 |
| Volatility | 0.09 | 0.06 | 0.06 | 0.04 | (0.13) | 0.40 | (0.09) | 0.10 | 1.00 | (0.58) |
| ST Volatility | 0.20 | 0.14 | 0.11 | (0.05) | (0.05) | (0.02) | 0.57 | 0.06 | (0.57) | 1.00 |

1 yr correlations on the right (above the diagonal), 30 days on left (below the diagonal).

## Conclusion:

In this report, we have shown the factor performance driving the commodity markets. Using the ARC Commodity model, style-tilted portfolios have shown great performance and seem to be suitable benchmarks for active managers to track. We then conducted an analysis into the risk dynamics of two major commodity indices. The view of commodities as diversifiers is quite accurate. All of this was possible with the ARC model. The model enables the user to look at their book or portfolio and how it fits into their thesis as well as how it fits in the broader economic landscape.