



ARC Commodity Factor Risk Model Monthly Report October 2020

The Asset Risk Company (ARC) Commodity model is a cross-sectional commodity factor model. Factors including commodity sectors, sub-sectors, and styles are estimated daily. It provides a framework for managing risk and investment decisions. The model is presented in a nesting format allowing the decision maker to view the market from a macro lens of broad classes (metals, energy, agricultural) to finer product classifications, while preserving the attribution of risk between the style and non-style factors.

YTD, MTD & Historical Styles Performance Report:

Factor	MTD Perf	YTD Perf	Historical Returns*	Volatility*
Basis	-1.6%	6.3%	-5.0%	5.8%
Open Interest	-0.1%	-6.4%	-1.7%	3.1%
Momentum	1.6%	-2.1%	0.9%	4.7%
ST Momentum	-0.8%	-4.9%	-5.5%	4.9%
Trading Activity	-0.4%	0.7%	-0.2%	1.8%
Volatility	1.0%	11.1%	3.0%	5.7%
ST Volatility	-0.9%	-2.7%	-2.9%	5.4%

* Annualized 2017-2020

A big month for Momentum in October! Volatility factor is still growing with a YTD return of 11%. Basis experienced a significant drop this month, though still doing well on a YTD timeframe.

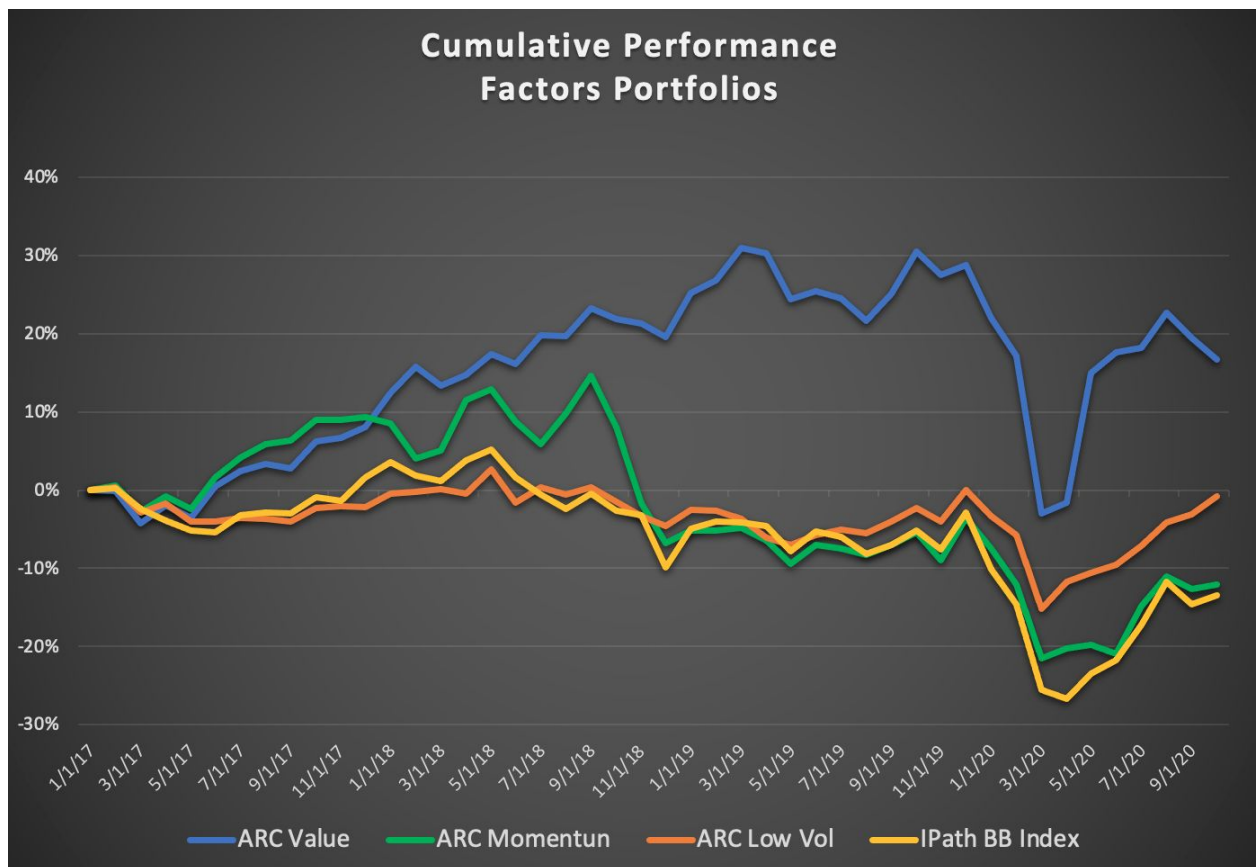


Factor Tilted Portfolios Performance Report:

The Low Vol Factor portfolio delivered this year as expected and had a strong month. Value had a tough month but is still ahead of the index YTD.

Returns	ARC Value	ARC Momentum	ARC Low Vol	IPath BB Index
YTD	-9.4%	-8.8%	-0.9%	-10.8%
October	-2.4%	0.6%	2.3%	1.4%
Annualized*	4.1%	-3.3%	-0.2%	11.8%
Volatility	15.5%	13.2%	8.6%	12.6%

*2017/2020





Sectors, Subsectors MTD, YTD & Historical Report

ARC sectors and subsectors returns are estimated from the statistical model and not from preset weightings of commodities (tilted portfolios). Energy is down 3.7% this month and 21% for the year, with Oil and Refined products leading the drop. Grains & Oilseed and Soft are up YTD. Precious metals corrected again this month (-5.4%) but are up 27% YTD.

Factor	MTD Perf	YTD Perf	Historical Returns*	Volatility*
Agriculture	0.4%	9.2%	2.2%	8.4%
Grain And Oilseed	1.7%	12.7%	3.2%	10.1%
Lumber And Pulp	-6.9%	46.3%	18.1%	36.5%
Proteins	-0.5%	0.6%	2.6%	9.7%
Softs	-1.5%	8.1%	-1.5%	9.8%
Energy	-3.7%	-20.9%	-9.6%	13.3%
Biofuels	0.6%	-9.0%	-3.1%	17.9%
Coal	-5.9%	-11.0%	0.4%	14.1%
Crude Oil	-6.4%	-29.6%	-10.2%	16.4%
Natural Gas	0.3%	-13.0%	-10.0%	10.2%
Petrochemicals	1.1%	-5.8%	-10.7%	17.4%
Refined Products	-1.9%	-35.0%	-10.9%	19.4%
Metals	-0.7%	14.0%	11.4%	14.6%
Base	2.9%	9.4%	9.1%	15.7%
Precious	-5.4%	27.1%	15.5%	17.8%

* 2017-2020

Factors Correlations:

As market volatility decreases, short term correlations have come down. Long term correlations between Styles Factors are low.



Correlations	Agriculture	Energy	Metals	Basis	Open Interest	Momentum	ST Momentum	Trading Activity	Volatility	ST Volatility
Agriculture	1.00	0.53	0.51	0.20	0.14	(0.25)	(0.36)	(0.11)	0.30	0.29
Energy	0.50	1.00	0.46	(0.36)	0.35	(0.32)	(0.41)	(0.10)	0.17	0.29
Metals	0.26	0.42	1.00	0.10	0.13	(0.20)	(0.33)	(0.12)	0.08	0.32
Basis	0.53	0.27	(0.09)	1.00	0.03	0.02	0.07	(0.09)	0.14	(0.10)
Open Interest	0.26	0.78	0.37	0.17	1.00	(0.17)	(0.20)	(0.34)	0.02	0.00
Momentum	(0.07)	(0.19)	0.10	(0.30)	(0.39)	1.00	0.32	0.02	(0.12)	(0.12)
ST Momentum	(0.55)	(0.50)	(0.04)	(0.44)	(0.26)	0.30	1.00	0.02	(0.20)	(0.05)
Trading Activity	(0.13)	(0.11)	(0.02)	(0.34)	(0.25)	0.23	0.02	1.00	0.01	(0.04)
Volatility	0.76	0.50	0.24	0.61	0.29	(0.19)	(0.66)	(0.19)	1.00	(0.60)
ST Volatility	(0.39)	(0.33)	(0.06)	(0.64)	(0.33)	0.33	0.44	0.18	(0.78)	1.00

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

Commodity Indices Risk Decomposition

We look at the risk factor decomposition of the main indices through the prism of the ARC short term model as of 10/31/2020. Bloomberg Commodity index is currently overweight in metals and S&P GSCI in energy, which the model captures. Both have significant exposure to Open Interest, reflecting a bias towards the front of the curve (short maturity contracts are more volatile). The Volatility factor is significant for the GSCI vs BB COM. Sectors contribute to 58% and 46% of the total volatility respectively for BB COM and S&P GSCI.

Index	BB COM	GSCI	BB COM Contribution	GSCI Contribution
Total Volatility	17.4%	23.7%	100%	100%
Agriculture	2.5%	2.3%	14.2%	9.5%
Energy	2.7%	6.7%	15.6%	28.2%
Metals	4.9%	2.0%	27.9%	8.4%
Basis	0.0%	0.0%	0.0%	0.0%
Open Interest	6.7%	6.2%	38.3%	26.2%
Momentum	-0.3%	0.4%	-1.9%	1.8%
ST Momentum	-0.5%	0.4%	-2.9%	1.8%
Trading Activity	-0.3%	0.1%	-1.6%	0.6%
Volatility	0.6%	5.1%	3.3%	21.3%
ST Volatility	0.6%	0.2%	3.4%	0.7%
Specific Risk	4.6%	4.0%	26.6%	16.9%