



ARC Commodity Factor Risk Model Monthly Report September 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	0.2%	8.1%	-4.7%	5.8%
Open Interest	0.7%	-6.3%	-1.7%	3.2%
Momentum	0.4%	-3.7%	0.5%	4.7%
ST Momentum	-1.4%	-4.1%	-5.4%	5.0%
Trading Activity	-0.2%	1.1%	-0.1%	1.8%
Volatility	0.9%	10.0%	2.8%	5.7%
ST Volatility	-2.8%	-1.9%	-2.8%	5.4%

* Annualized 2017-2020

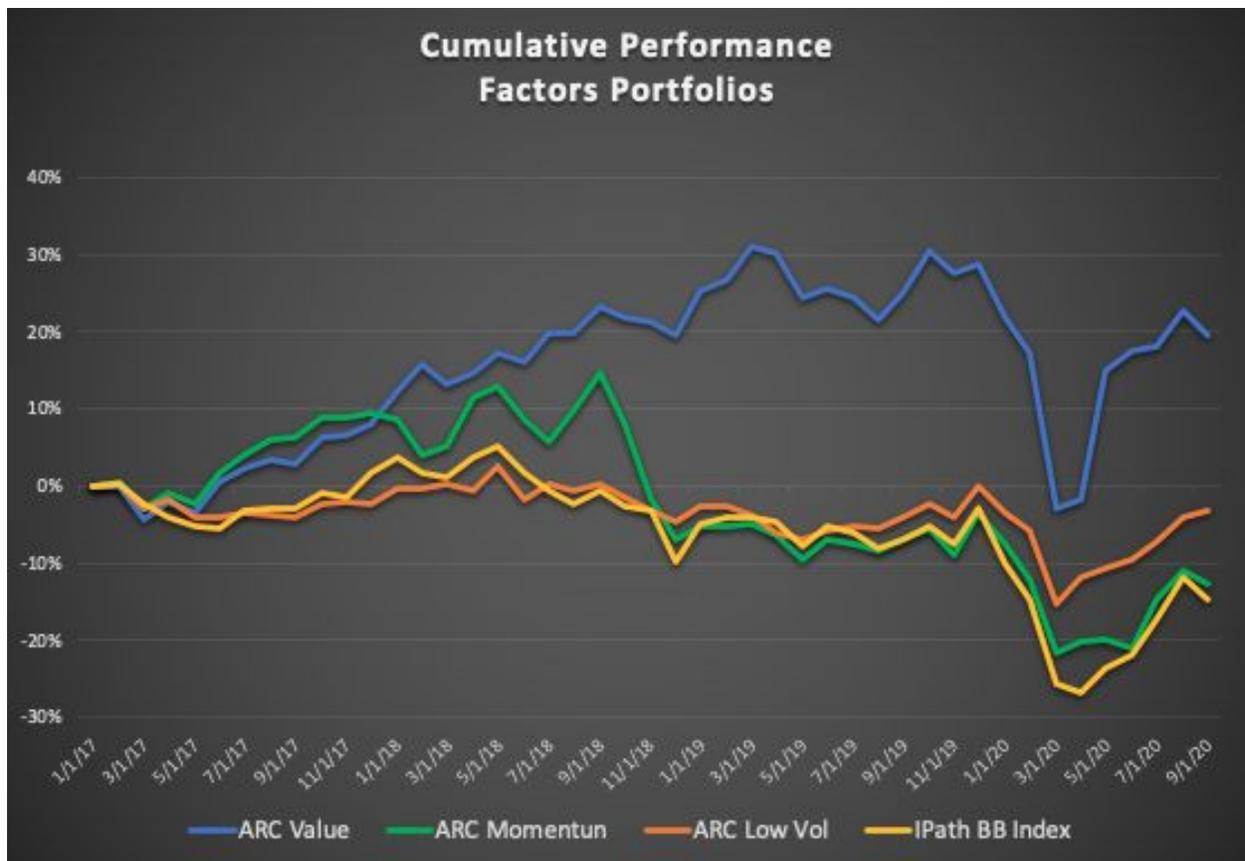
Open Interest turned positive this month after a massive drop during the crisis. We will monitor to see if it is mean reverting. Volatility factor is still growing with a YTD of 10%. We notice a significant drop this month for ST momentum and ST Volatility.



Factor Tilted Portfolios Performance Report:

The Low Vol Factor portfolio delivered this year as expected. While the index was down 3.3% this month the Low Vol returned 1.1%.

Returns	ARC Value	ARC Momentum	ARC Low Vol	IPath BB Index
YTD	-7.2%	-9.4%	-3.1%	-12.1%
September	-2.6%	-1.7%	1.1%	-3.3%
Annualized	4.9%	-3.5%	-0.8%	-4.1%





Sectors, Subsectors MTD, YTD & Historical Report

ARC sectors and subsectors returns come from the regression model and not from preset weightings of commodities (tilted portfolios). Energy is still negative for the year. Lumber & Pulp is very volatile with big upward and downward months. Both Base and Precious metals corrected this month (-6%) after a very strong performance in the last few months as a safe refuge for the post COVID-19 crisis (recession & inflation fears).

Factor	MTD Perf	YTD Perf	Historical Returns*	Volatility*
Agriculture	0.9%	8.8%	2.1%	8.5%
Grain And Oilseed	2.4%	10.7%	2.8%	10.2%
Lumber And Pulp	-19.3%	57.2%	20.8%	36.6%
Proteins	1.8%	1.1%	2.8%	9.8%
Softs	-1.8%	9.7%	-1.2%	9.9%
Energy	-3.7%	-17.9%	-8.9%	13.3%
Biofuels	3.2%	-9.5%	-3.3%	18.1%
Coal	0.7%	-5.5%	2.1%	14.0%
Crude Oil	-6.3%	-24.8%	-8.8%	16.3%
Natural Gas	-5.8%	-13.3%	-10.3%	10.3%
Petrochemicals	0.1%	-6.8%	-11.2%	17.6%
Refined Products	-5.6%	-33.8%	-10.6%	19.6%
Metals	-6.7%	14.8%	11.9%	14.8%
Base	-6.6%	6.3%	8.5%	15.8%
Precious	-6.8%	34.3%	17.6%	17.6%

* 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	0.54	0.18	0.14	(0.25)	(0.34)	(0.11)	0.27	0.31
Energy	0.56	1.00	0.45	(0.40)	0.32	(0.29)	(0.40)	(0.11)	0.15	0.31
Metals	0.53	0.36	1.00	0.11	0.10	(0.21)	(0.35)	(0.13)	0.09	0.32
Basis	(0.03)	(0.00)	0.19	1.00	0.05	0.00	0.08	(0.08)	0.12	(0.11)
Open Interest	(0.03)	0.19	(0.18)	(0.10)	1.00	(0.17)	(0.20)	(0.35)	0.01	(0.01)
Momentum	(0.05)	0.09	(0.17)	(0.46)	0.10	1.00	0.33	0.01	(0.10)	(0.11)
ST Momentum	(0.15)	(0.59)	(0.26)	(0.04)	(0.25)	(0.05)	1.00	0.01	(0.17)	(0.05)
Trading Activity	(0.02)	(0.00)	(0.01)	(0.06)	(0.53)	(0.08)	(0.14)	1.00	0.01	(0.04)
Volatility	0.45	0.74	0.18	0.05	0.05	0.23	(0.59)	0.14	1.00	(0.60)
ST Volatility	(0.09)	(0.46)	0.21	(0.08)	(0.25)	(0.32)	0.50	(0.09)	(0.84)	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. 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). Sectors contribute to 69% and 47% of the total volatility for respectively for BB COM and S&P GSCI.

Risk	BB COM	S&P GSCI	Contribution BB COM	Contribution S&P GSCI
Total Volatility	16.2%	23.0%	100%	100%
Agriculture	2.9%	2.1%	18%	9%
Energy	2.7%	6.7%	17%	29%
Metals	5.6%	2.0%	34%	9%
Basis	0.2%	0.3%	1%	1%
Open Interest	2.8%	4.2%	17%	18%
Momentum	-0.3%	0.4%	-2%	2%
ST Momentum	-0.4%	0.0%	-3%	0%
Trading Activity	0.2%	0.7%	1%	3%
Volatility	0.7%	5.7%	5%	25%
ST Volatility	1.2%	0.5%	8%	2%
Specific Volatility	4.4%	4.3%	27%	18%

See more detailed analysis at:

http://www.assetriskcompany.com/docs/RiskFactorDecompositionCommodityIndices_20200831.pdf

Contact info@assetriskcompany.com for more information, or visit us at www.assetriskcompany.com