ARC Commodity Factor Risk Model
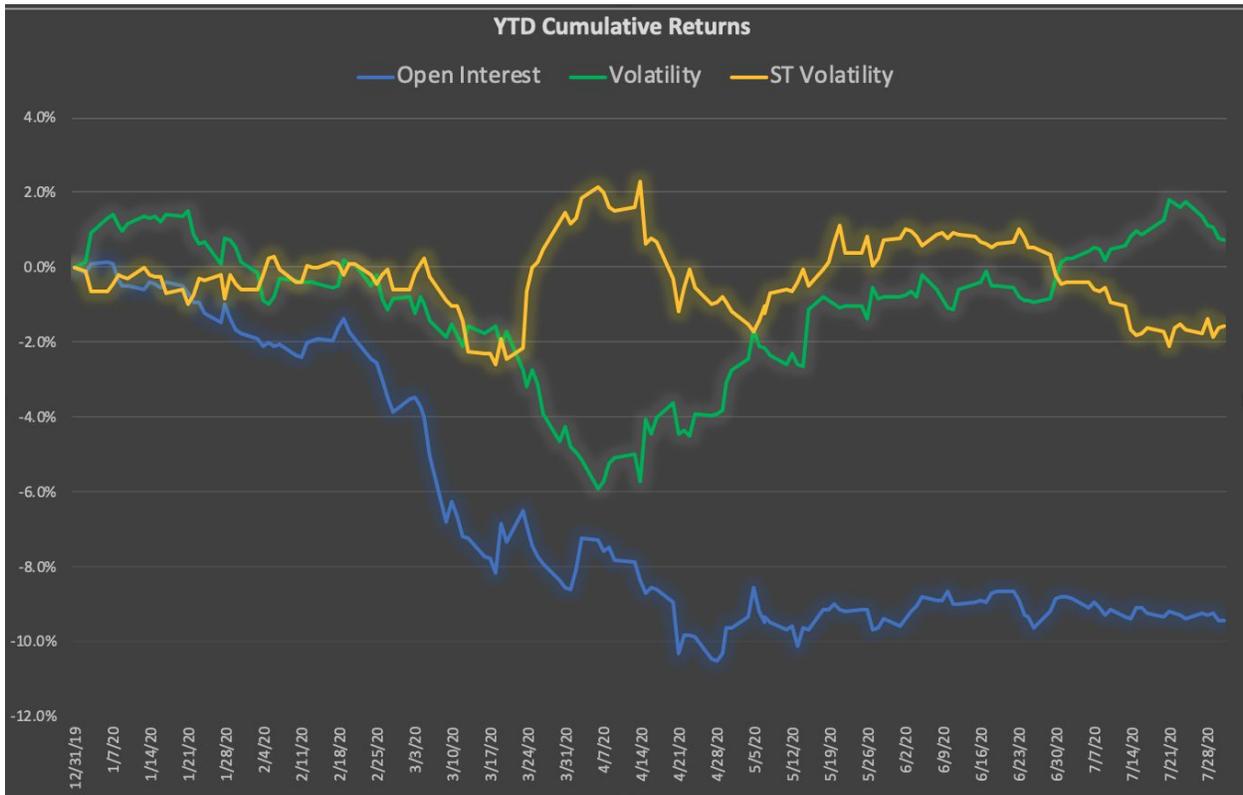# Monthly Report July 2020

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	-0.3%	-3.6%	-3.1%	2.4%
Momentum	0.2%	-2.1%	1.6%	3.8%
ST Momentum	-0.2%	-3.0%	-2.9%	3.2%
Open Interest	-0.7%	-9.4%	-3.5%	3.8%
Trading Activity	0.1%	0.7%	0.1%	1.4%
Volatility	1.0%	0.7%	0.5%	4.8%
ST Volatility	-1.4%	-1.6%	-2.0%	3.3%

* Annualized 2017-2020

Momentum was positive this month and factor tilted momentum portfolios had a big month. As expected the volatility factor has mean-reversed since the crisis. Open Interest is still very negative for the year.

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YTD Cumulative Returns

Factor Tilted Portfolios Performance Report:

A big month for the main index with similar return for Momentum tilted portfolios, suggesting a hidden factor bet. This illustrates why factor models are so important.

| Returns	ARC Low Vol	ARC Value	ARC Momentum	BB Ipath ETN
Annualized Return	-1.5%	2.4%	-4.7%	-6.7%
YTD (July)	-9.1%	-18.1%	-9.1%	-17.3%
Jul-20	3.2%	1.3%	7.3%	7.4%

Sectors, Subsectors MTD, YTD & Historical Report

Metals have turned positive for the year with a huge July performance for precious metals. Massive jump in July for Lumber & Pulp. The move in lumber is consistent with the news flow around the exodus from central business districts post COVID-19. The metals performance is mostly likely the reaction of markets to massive deficits and the likelihood of "hot money" touching off either inflation or a Dollar crisis. Note that sectors and sub-sectors returns are jointly estimated using ARC's proprietary nesting model approach. They cover the full term structure.

Factor	MTD Perf	YTD Perf	Historical Returns*	Volatility*
Agriculture	**3.7%**	**-4.6%**	**-3.8%**	**8.2%**
Grain And Oilseed	3.6%	-5.5%	-4.0%	9.5%
Lumber And Pulp	25.7%	33.3%	21.4%	31.7%
Proteins	3.1%	-7.8%	-2.4%	9.9%
Softs	1.7%	0.5%	-6.0%	9.5%
Energy	**4.0%**	**-12.2%**	**-6.8%**	**13.4%**
Biofuels	-5.6%	-21.5%	-9.1%	19.2%
Coal	2.7%	-4.0%	1.9%	15.6%
Crude Oil	4.7%	-15.9%	-4.1%	15.3%
Natural Gas	8.1%	2.2%	-6.2%	8.6%
Petrochemicals	3.7%	-7.0%	-10.8%	20.6%
Refined Products	2.8%	-28.1%	-10.4%	21.8%
Metals	**9.4%**	**7.0%**	**8.9%**	**15.1%**
Base	5.5%	-4.3%	5.4%	16.4%
Precious	15.5%	34.6%	14.8%	17.9%

* 2017-2020

YTD Cumulative Returns
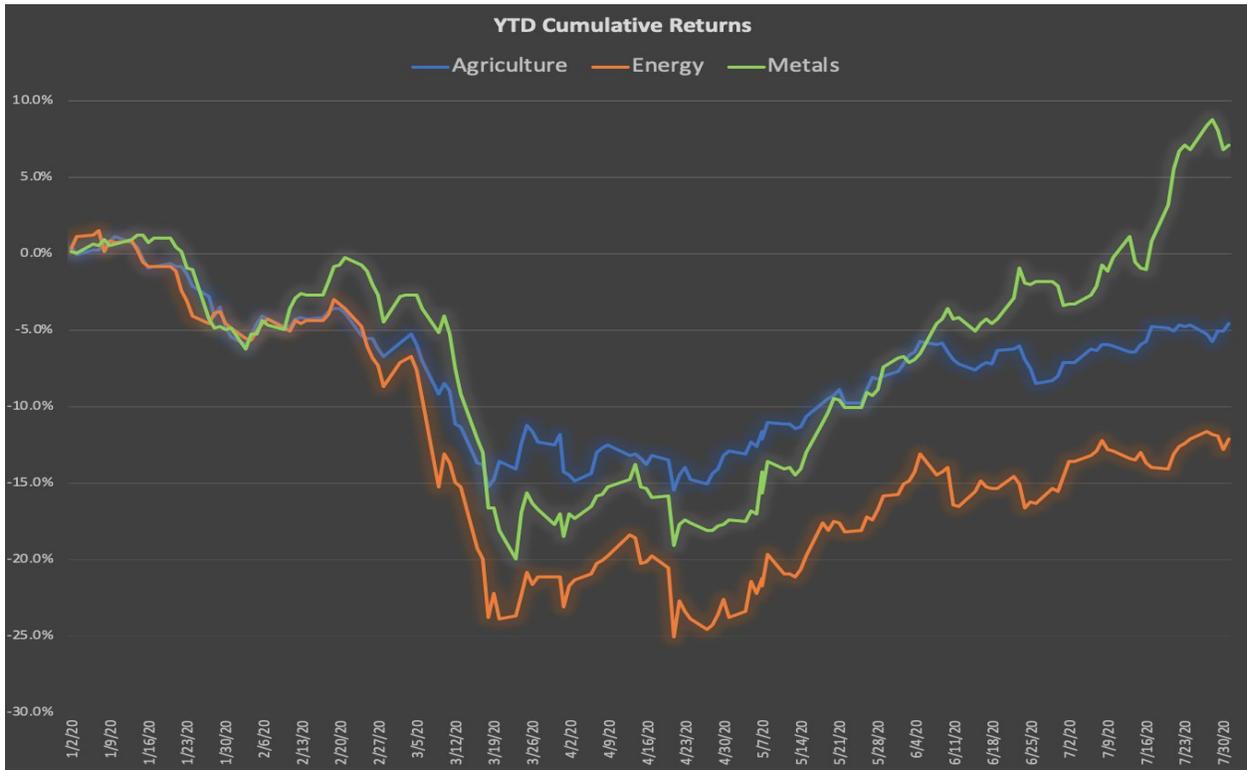
Factors Correlations:

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

Correlations	Agriculture	Energy	Metals	Basis	Momentum	ST Momentum	Open Interest	Trading Activity	Volatility	ST Volatility
Agriculture	1.00	0.61	0.52	(0.45)	0.35	(0.06)	(0.35)	(0.07)	0.26	0.31
Energy	0.32	1.00	0.59	(0.60)	0.69	(0.11)	(0.37)	0.03	0.27	0.29
Metals	(0.00)	0.20	1.00	(0.49)	0.31	(0.08)	(0.37)	(0.12)	0.14	0.33
Basis	(0.23)	(0.39)	(0.05)	1.00	(0.44)	0.09	0.35	0.06	(0.17)	(0.23)
Momentum	0.17	0.53	(0.02)	(0.38)	1.00	(0.16)	(0.28)	0.22	0.23	0.10
ST Momentum	(0.21)	0.28	(0.57)	0.06	0.08	1.00	0.15	(0.02)	(0.03)	0.18
Open Interest	0.08	0.38	0.05	(0.24)	0.02	0.05	1.00	0.46	(0.09)	(0.10)
Trading Activity	0.48	0.71	0.10	(0.43)	0.52	0.14	0.64	1.00	0.27	(0.12)
Volatility	0.28	0.35	0.00	(0.26)	0.44	0.28	(0.36)	0.34	1.00	(0.45)
ST Volatility	0.03	(0.06)	0.33	0.18	(0.42)	(0.30)	0.21	(0.11)	(0.65)	1.00

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

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