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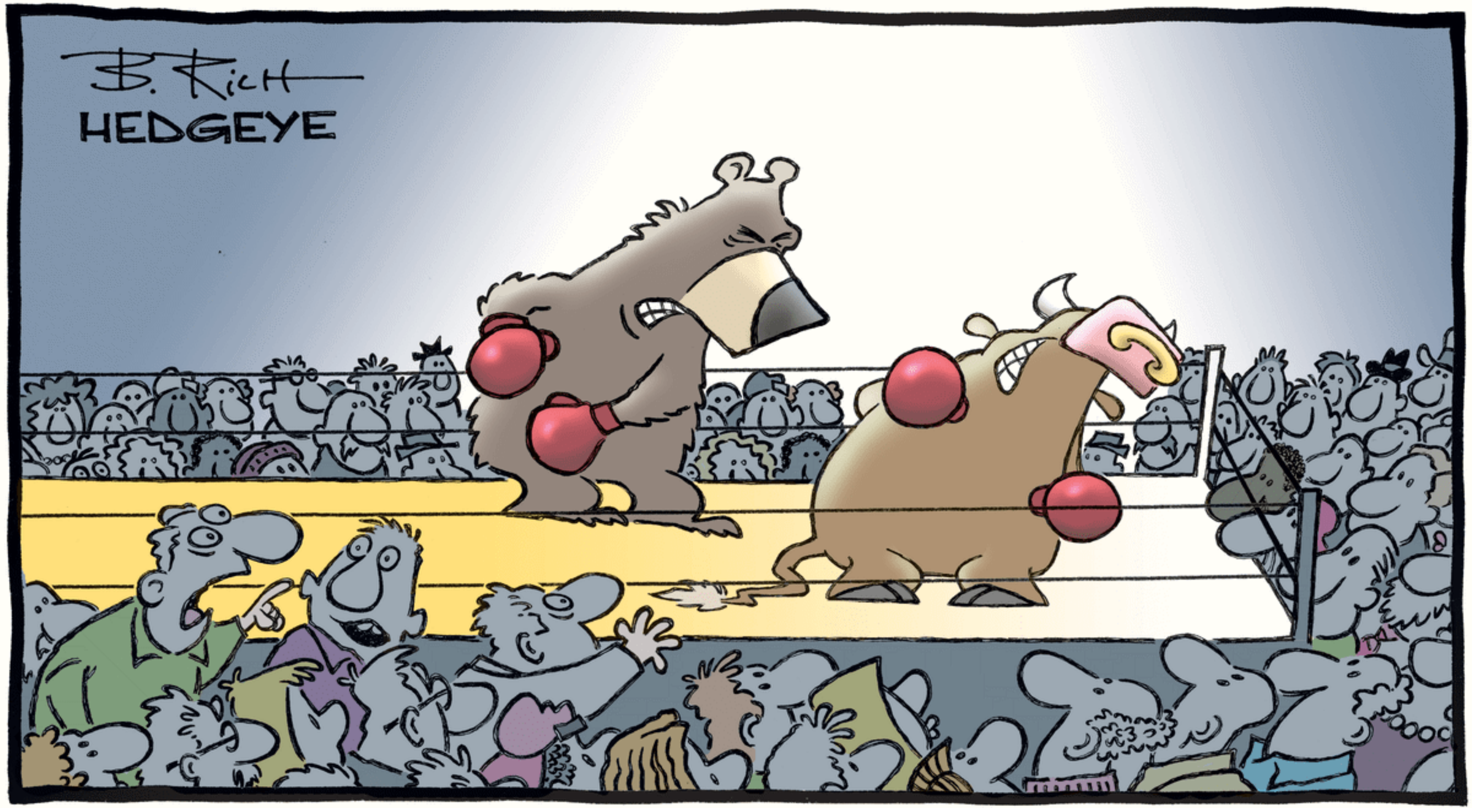
HEDGEYE'S CURRENT MARKET OUTLOOK

Phase 3 ≠ Phase 2

Updated: August 11, 2020



MACRO THEMES

Recession Stagflation

Earnings: Deep #Pod4

USD, Commodities, EM

Legal

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Q3 2020 Macro Themes

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[1] Recession Stagflation

We remain of the view that the US economy is transitioning from depression to recession, not "recovery". In the presentation we'll detail why Quad 3 is the most likely outcome for most of 3Q20E and why a flattening slope of improvement off the APR lows in economic activity represents a developing source of market risk for perceived recovery trades.

[2] Earnings: Deep #Pod4

We took offense to the consensus view that corporate profits had bottomed at the beginning of the year and continue to take offense to such speculation heading into 2H20E. In the presentation, we'll detail why we believe an epically negative earnings revision cycle is likely to commence in Q3.

[3] USD, Commodities, EM

The shallower the Quad 3, the more it looks like Quad 2 in asset performance terms – i.e. *The Machine* seeks out pricing power and organic growth potential. Cyclicals like Energy outperform in Narrow instances of Quad 3. The more pronounced the Quad 3, the more it looks like Quad 4 in asset performance terms – i.e. *The Machine* seeks out safe dividend yields. Cyclicals like Energy get smoked in Deep Quad 3. If that sounds confusing, it's because it is. In the presentation we'll do our best to help you position for what market history has proven to be the most difficult economic regime to risk manage: stagflation.

What Are The Quads?

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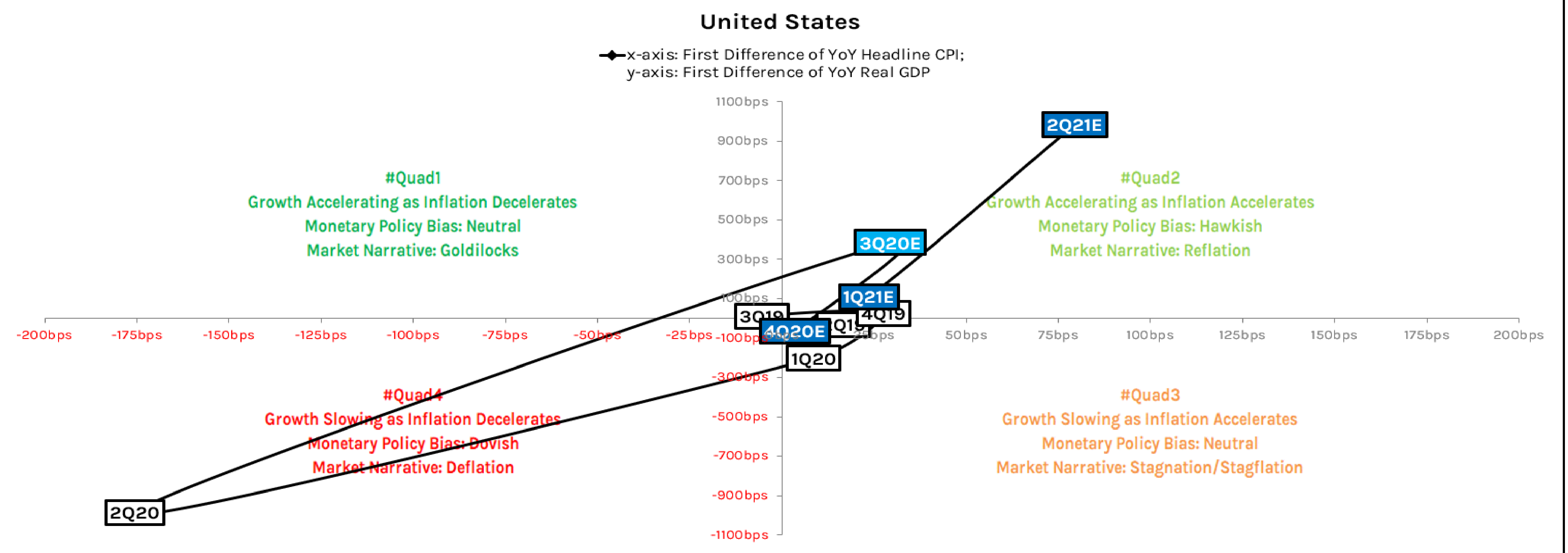
Our GIP Model is a quantitatively oriented, regime-based framework that helps investors proactively prepare for volatility phase transitions within and across asset classes – i.e. GROWTH, INFLATION, and POLICY.

United States	3Q17	4Q17	1Q18	2Q18	3Q18	4Q18	1Q19	2Q19	3Q19	4Q19	1Q20	2Q20	← Actuals | Estimates →	3Q20E	4Q20E	1Q21E	2Q21E
Real GDP QoQ SAAR	2.90%	3.90%	3.80%	2.70%	2.10%	1.30%	2.90%	1.50%	2.60%	2.40%	-5.00%	-32.90%	Real GDP QoQ SAAR	19.70%	-0.42%	-0.35%	-0.32%
Real GDP YoY	2.37%	2.70%	3.08%	3.33%	3.12%	2.48%	2.27%	1.96%	2.08%	2.34%	0.32%	-9.54%	Real GDP YoY	-5.69%	-6.34%	-5.22%	4.64%
2yr Comparative Base Effects	2.08%	2.12%	1.92%	1.80%	1.98%	2.39%	2.57%	2.75%	2.74%	2.59%	2.67%	2.64%	2yr Comparative Base Effects	2.60%	2.41%	1.29%	-3.79%
Headline CPI YoY	1.97%	2.12%	2.21%	2.71%	2.64%	2.20%	1.64%	1.81%	1.76%	2.03%	2.12%	0.36%	Headline CPI YoY	0.66%	0.69%	0.93%	1.72%
2yr Comparative Base Effects	0.61%	1.13%	1.81%	1.48%	1.54%	1.96%	2.38%	2.31%	2.30%	2.16%	1.93%	2.26%	2yr Comparative Base Effects	2.20%	2.12%	1.88%	1.09%



Data Source: Bloomberg. Light Blue box= Hedgeye Predictive Tracking Algorithm nowcast. Dark Blue boxes = Hedgeye COVID19 Scenario Analysis estimates.

US Real GDP YoY Projections

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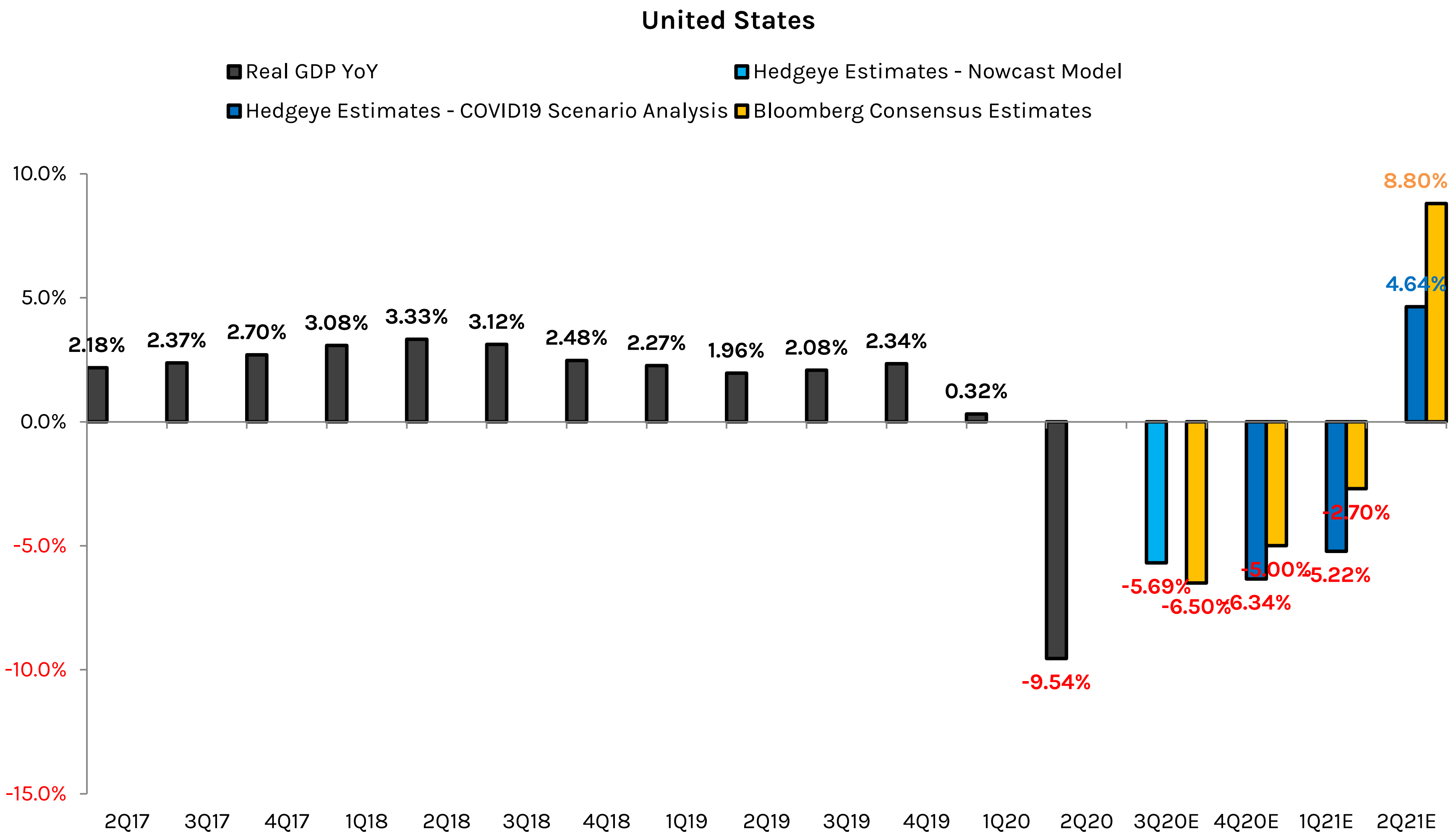

We use two distinct models to forecast the YoY growth rate of Real GDP and the combination of the two allows us to develop both a highly accurate real-time assessment of near-term economic momentum, as well as a high-probability scenario for where growth is likely to trend over the NTM.

Intra-quarter, we employ a stochastic nowcasting framework that anchors on nonlinear interpolation to relay rate of change signals from the individual features of the dynamic factor model to the base rate. In out-quarters where high-frequency data has yet to be reported, we employ a Bayesian Inference process that adjusts each of the preceding forecasted base rates inversely and proportionally to changes in the base effects.

All told, our US GDP nowcast model has an average absolute forecast error of 26bps and an 88% success rate in terms of accurately projecting the rate of change of GROWTH.

US Real GDP QoQ SAAR Projections

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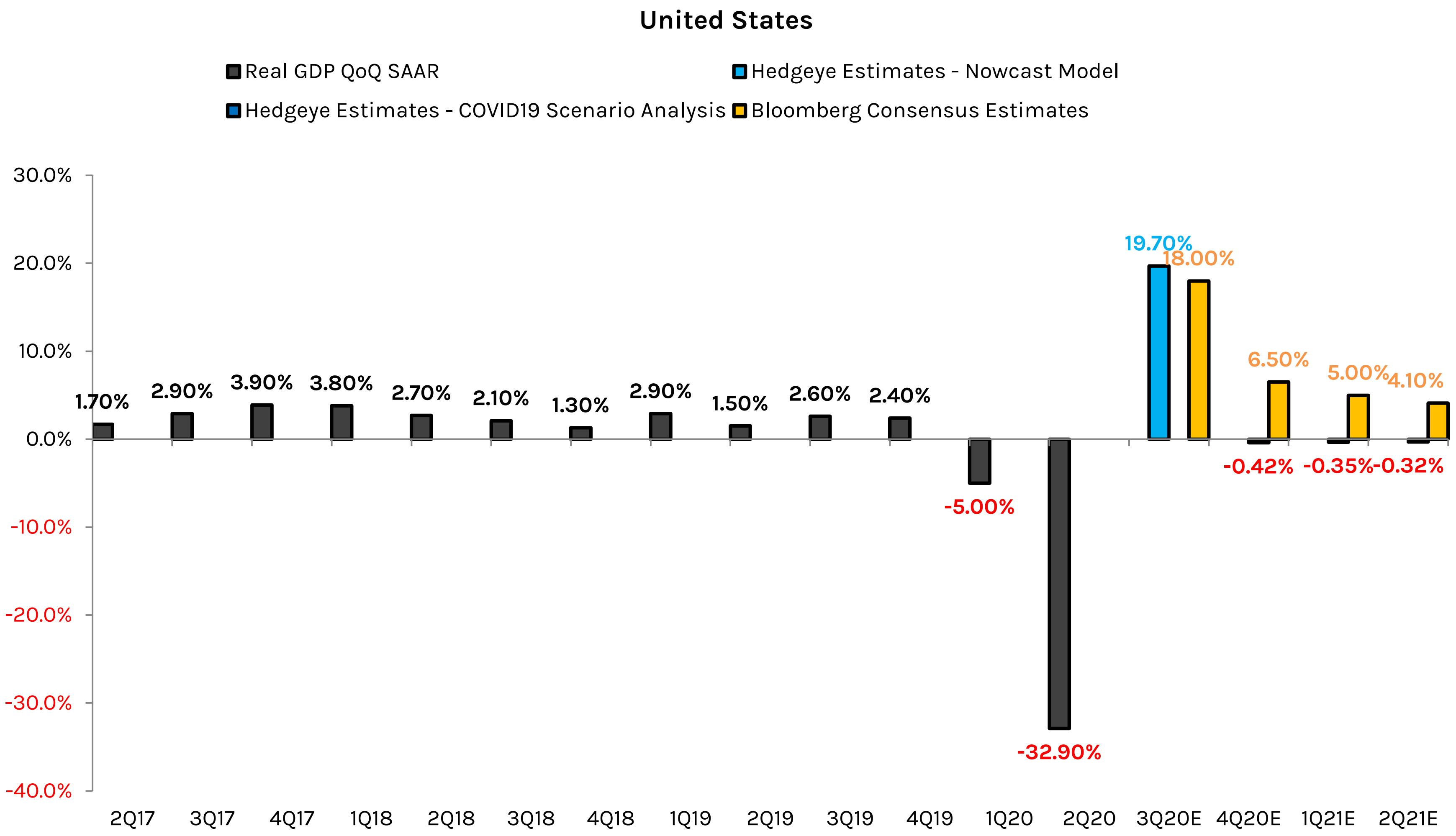

One differentiating factor of our forecasting process is that we aim to solve for where the economy is trending on a ***Full Investing Cycle*** basis, rather than trying to identify super short-term economic momentum.

Our rigorous study of financial market history suggests the latter to be little more than noise in the context of making accurate intermediate-to-long-term investment decisions.

As such, we are comfortable departing from the [perceived] "best" practices of economist consensus by interpolating our QoQ SAAR forecasts from our forecasted YoY growth rates. Macroeconomic Theory ≠ Macro Risk Management.

US Real GDP Nowcast Model

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Each of the following 30 features backtests as statistically significant with respect to predicting the rate of change of Real GDP growth and each feature's contribution to the overall signal is dynamically re-trained each quarter according to the relative strength of its first difference regression with the dependent variable.

HEDGEYE US NOWCAST MODEL SUMMARY	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	2Q20	3Q20	Δ
Real PCE YoY (1)	2.97	2.80	1.30	2.19	2.22	2.50	2.43	2.34	2.55	2.44	2.33	2.58	2.30	2.06	3.02	2.69	2.61	-4.69	-16.69	-9.96	-5.54	-	-	-	-10.73	-	-
Real Disposable Personal Income YoY (14)	3.40	3.42	4.29	3.47	3.37	2.89	2.39	2.05	1.85	1.58	1.79	2.02	1.81	2.10	0.83	1.56	2.03	0.57	16.22	10.21	8.12	-	-	-	11.52	-	-
Personal Savings Rate % of DPI (7)	7.6	7.4	9.1	8.5	8.6	8.0	7.5	7.3	7.1	7.0	7.3	7.3	7.2	7.5	7.2	7.6	8.3	12.8	33.5	24.2	19.0	-	-	-	25.6	-	-
Headline Retail Sales YoY (12)	4.40	3.63	0.92	2.52	1.99	3.61	3.86	2.90	3.49	3.64	4.31	3.95	3.31	3.25	5.61	4.87	4.48	-5.59	-19.86	-5.65	1.10	-	-	-	-8.14	-	-
Retail Sales Control Group YoY (13)	4.71	4.54	0.46	3.68	2.81	3.88	3.86	3.45	4.98	4.87	5.05	4.41	4.10	2.51	6.20	3.70	4.01	6.32	-7.46	1.26	6.29	-	-	-	0.03	-	-
Auto Sales YoY (16)	-2.67	0.00	-1.46	-2.75	-2.36	0.57	-3.93	2.91	-0.46	0.84	2.23	-1.21	-5.43	-1.78	-4.57	1.45	1.63	-35.03	-47.68	-29.42	-24.57	-13.67	-	-	-33.89	-13.67	20.22
MBA Mortgage Purchase Index YoY (30)	-1.60	-0.28	-1.07	5.99	0.20	3.40	5.56	5.11	8.16	6.21	5.97	10.50	9.34	11.00	9.05	9.09	10.61	-2.10	-29.85	-1.13	15.98	17.46	-	-	-5.00	17.46	22.46
Total Employees On Nonfarm Payrolls YoY (4)	1.60	1.53	1.57	1.67	1.39	1.37	1.42	1.28	1.26	1.29	1.27	1.35	1.34	1.42	1.42	1.38	1.55	0.54	-13.42	-11.65	-8.58	-7.53	-	-	-11.22	-7.53	3.68
Aggregate Hours Worked YoY (2)	1.89	1.24	1.57	1.96	1.10	1.37	1.12	0.99	0.67	0.71	0.97	1.06	1.05	1.13	0.84	0.80	1.55	-0.63	-13.92	-10.88	-8.05	-6.99	-	-	-10.95	-6.99	3.96
Aggregate Labor Income YoY (3)	5.28	4.63	5.00	5.28	4.65	4.84	4.50	4.32	4.10	4.20	4.46	4.20	4.30	4.45	3.87	3.90	4.59	2.70	-7.05	-5.03	-3.58	-2.55	-	-	-5.22	-2.55	2.67
Monthly Initial Jobless Claims YoY (5)	-9.17	-6.68	-8.88	-6.08	2.27	-3.63	-2.93	-1.20	-0.07	-1.16	0.93	-0.12	-0.23	-4.19	4.39	-4.47	-4.89	1124.40	2238.86	1028.00	577.51	523.25	-	-	1281.46	523.25	-758.21
Bloomberg Consumer Comfort Index (10)	60.2	60.9	59.5	57.9	59.7	60.7	60.3	60.2	62.3	64.2	62.0	62.6	62.7	59.2	62.2	66.1	65.3	60.9	43.8	36.0	40.9	44.1	44.9	-	40.2	44.5	4.2
Industrial Production YoY (9)	4.06	4.06	3.77	3.63	2.74	2.26	0.71	1.73	1.02	0.40	0.30	-0.18	-0.81	-0.42	-0.81	-0.85	-0.22	-4.76	-16.32	-15.36	-10.82	-	-	-	-14.16	-	-
Capacity Utilization (6)	79.3	79.6	79.5	79.0	78.5	78.4	77.8	77.8	77.7	77.4	77.8	77.4	77.0	77.6	77.2	76.9	76.9	73.5	64.2	65.1	68.6	-	-	-	66.0	-	-
Durable Goods New Orders YoY (22)	6.01	3.77	3.59	8.07	0.04	2.26	-1.66	-3.96	-4.41	0.38	-3.27	-5.73	-1.61	-3.95	-3.27	-3.62	1.62	-18.64	-30.29	-18.64	-12.52	-	-	-	-20.48	-	-
Core Capital Goods New Orders YoY (29)	4.15	1.62	2.44	5.56	4.74	6.40	2.25	0.84	0.49	-3.29	0.10	-0.12	-0.74	3.43	1.67	0.56	0.97	-2.63	-7.25	-4.34	-3.16	-	-	-	-4.92	-	-
Factory Orders YoY (20)	6.44	3.04	2.26	4.41	1.22	2.45	0.84	-1.29	-2.25	0.48	-1.75	-3.28	-1.31	-1.16	0.29	-0.55	0.53	-12.43	-22.74	-16.08	-10.61	-	-	-	-16.48	-	-
Manufacturing & Trade Inventories YoY (23)	5.03	4.43	4.91	5.20	5.09	5.05	5.29	5.29	5.00	4.70	3.93	3.41	2.86	2.66	1.87	0.77	-0.16	-0.48	-2.25	-4.78	-	-	-	-	-3.52	-	-
Nonresidential Construction Spending YoY (27)	3.81	2.01	3.12	1.81	1.71	4.04	4.93	4.38	5.12	5.85	5.24	8.88	8.34	11.18	9.05	7.75	5.78	4.30	-0.10	-0.01	0.40	-	-	-	0.10	-	-
Residential Construction Spending YoY (28)	-0.70	-4.76	-8.21	-8.23	-10.62	-8.94	-7.78	-7.49	-4.63	-2.27	0.99	1.66	4.00	6.33	9.80	11.72	13.40	12.15	6.10	2.21	-0.39	-	-	-	2.64	-	-
ISM Manufacturing PMI (25)	58.5	58.8	55.0	55.5	54.1	54.6	53.4	52.3	51.6	51.3	48.8	48.2	48.5	48.1	47.8	50.9	50.1	49.1	41.5	43.1	52.6	54.2	-	-	45.7	54.2	8.5
ISM Non-Manufacturing PMI (17)	60.3	60.2	58.0	56.0	58.5	56.3	55.7	56.3	55.4	54.8	56.0	53.5	54.4	53.9	54.9	55.5	57.3	52.5	41.8	45.4	57.1	58.1	-	-	48.1	58.1	10.0
NFIB Small Business Optimism Index (21)	107.4	104.8	104.4	101.2	101.7	101.8	103.5	105.0	103.3	104.7	103.1	101.8	102.4	104.7	102.7	104.3	104.5	96.4	90.9	94.4	100.6	-	-	-	95.3	-	-
Exports YoY (11)	5.94	2.55	-0.30	1.50	0.41	-0.06	-1.32	-1.01	-1.55	-0.07	-0.15	-1.87	-1.83	-0.42	1.22	0.10	0.45	-10.78	-27.79	-32.02	-24.37	-	-	-	-28.06	-	-
Imports YoY (15)	8.88	3.71	3.38	1.92	-0.21	2.30	0.67	3.09	1.58	0.12	0.03	-2.87	-4.98	-3.63	-3.08	-2.61	-4.53	-11.27	-22.28	-24.47	-19.94	-	-	-	-22.23	-	-
Rail Traffic YoY (18)	1.96	3.83	1.76	3.89	-3.32	-4.72	-2.42	-5.54	-4.59	-5.53	-5.03	-6.39	-7.90	-7.70	-9.40	-6.22	-6.74	-10.09	-20.91	-20.61	-14.29	-8.19	-	-	-18.60	-8.19	10.41
Headline CPI YoY (24)	2.52	2.18	1.91	1.55	1.52	1.86	2.00	1.79	1.65	1.81	1.75	1.71	1.76	2.05	2.29	2.49	2.33	1.54	0.33	0.12	0.65	-	-	-	0.36	-	-
PCE Deflator YoY (26)	2.08	1.97	1.88	1.47	1.37	1.50	1.62	1.49	1.46	1.53	1.52	1.39	1.43	1.44	1.64	1.88	1.84	1.34	0.48	0.50	0.75	-	-	-	0.57	-	-
Core PCE Deflator YoY (19)	1.91	2.04	2.08	1.85	1.69	1.58	1.69	1.60	1.71	1.74	1.87	1.72	1.74	1.58	1.62	1.75	1.87	1.65	0.93	0.96	0.95	-	-	-	0.95	-	-
M2 Money Supply YoY (8)	3.75	3.51	3.94	4.34	4.15	3.81	4.07	4.27	4.54	5.00	5.06	5.51	6.26	6.89	6.49	6.71	7.26	10.70	17.20	21.87	22.90	23.41	-	-	20.66	23.41	2.75

Data Source: Bloomberg. Intellectual Property of Hedgeye Risk Management. Nowcast feature rank shown in parenthesis.

US Headline CPI YoY Projections

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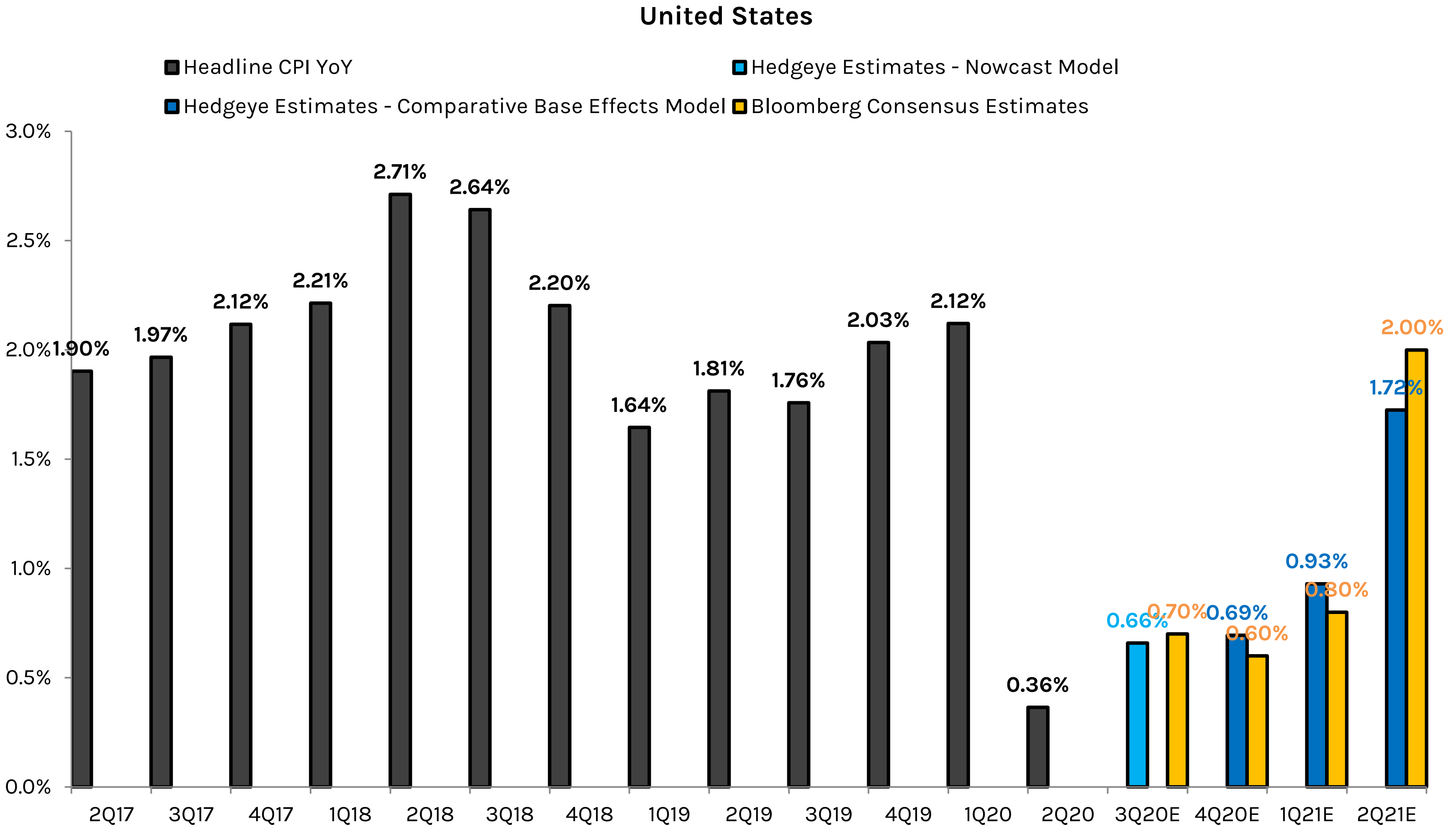

We use two distinct models to forecast the YoY growth rate of Headline CPI and the combination of the two allows us to develop both a highly accurate real-time assessment of near-term inflation momentum, as well as a high-probability scenario for where inflation is likely to trend over the NTM.

Intra-quarter, we employ a stochastic nowcasting framework that anchors on nonlinear interpolation to relay rate of change signals from the individual features of the dynamic factor model to the base rate. In out-quarters where high-frequency data has yet to be reported, we employ a Bayesian Inference process that adjusts each of the preceding forecasted base rates inversely and proportionally to changes in the base effects.

All told, our US CPI nowcast model has an average absolute forecast error of 17bps and an 85% success rate in terms of accurately projecting the rate of change of INFLATION.

US Headline CPI Nowcast Model

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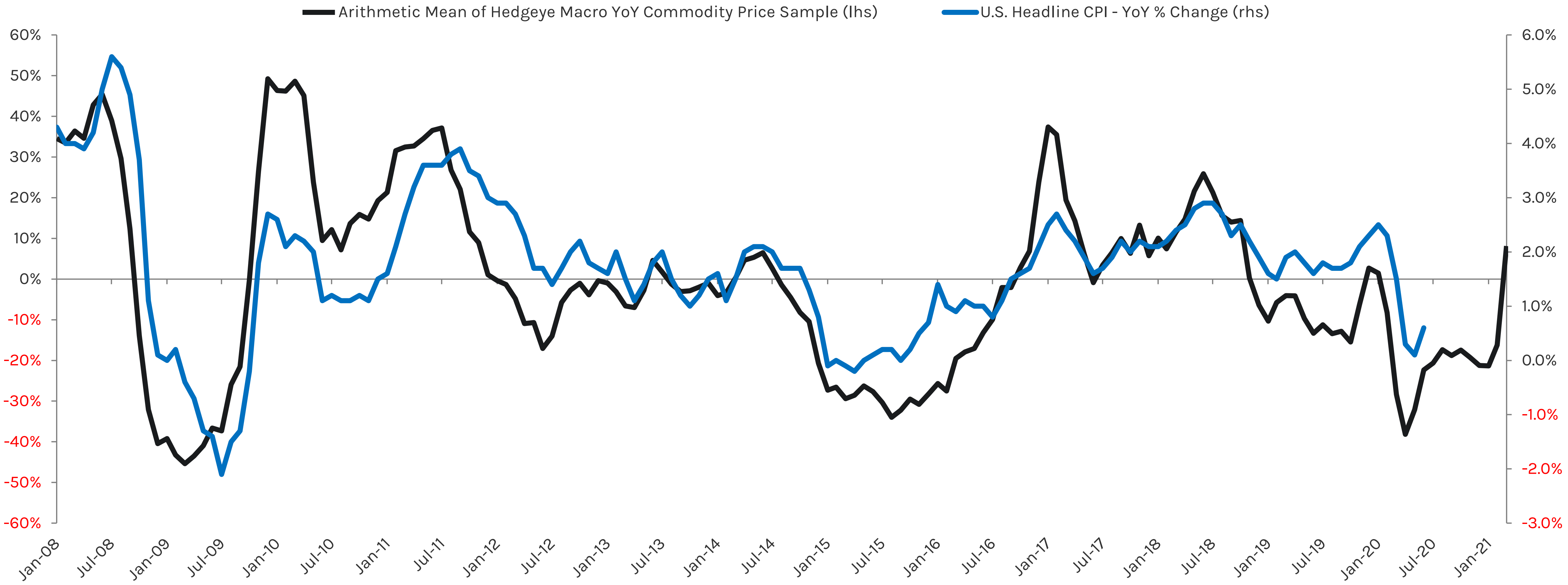
Structural shifts in the economy have increasingly mitigated the risk of a wage/price spiral, leading to an increased sensitivity of headline CPI to annual fluctuations in tradeable goods prices – a dynamic our model has astutely capitalized on.



The Hedgeye Macro commodity price sample includes the CRB Index, CRB Raw Industrials Index, Brent Crude Oil and the UN Food and Agriculture Price Index.
YoY deltas are calculated from monthly averages. Forward estimates assume no change to current monthly averages.

OUR MACRO PROCESS

Data Source: Bloomberg

The Investment Landscape Has Evolved Tremendously

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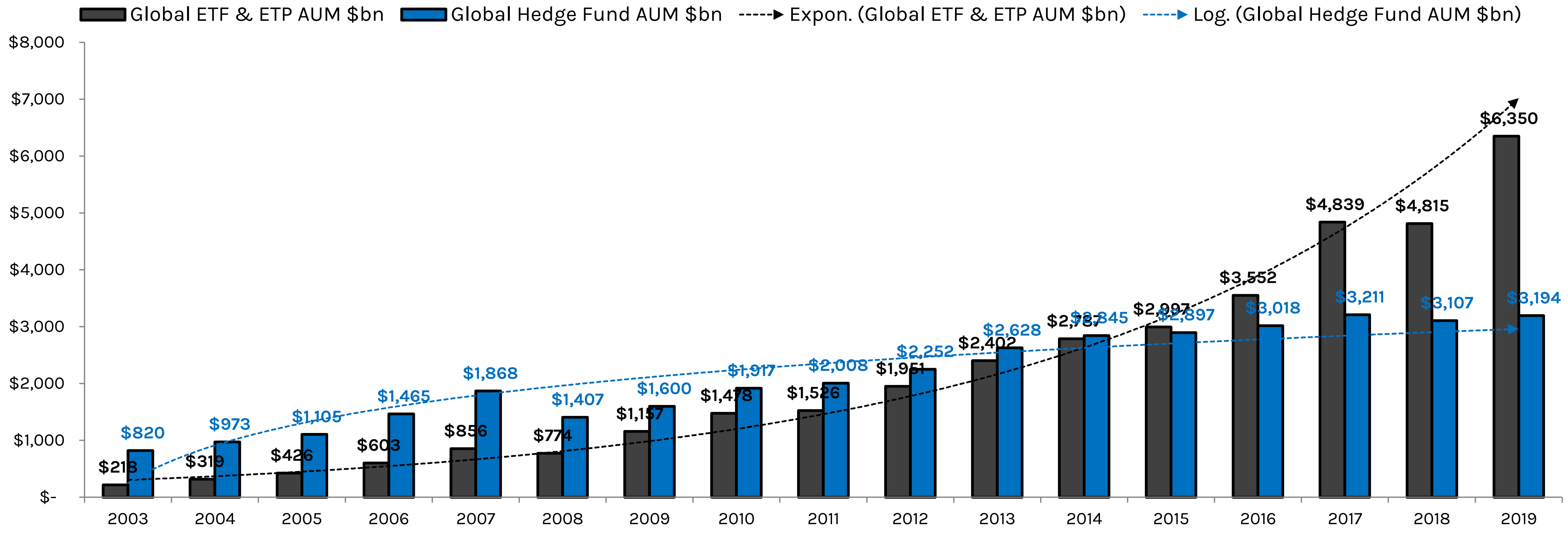
Stock-picking has given way to factor-picking and it's our job as investors to embrace this sea change, rather than fight it.



Skate To Where The Puck Is Going Within Asset Management

Assets invested in ETFs and ETPs listed surpassed $6 trillion globally as of YE 2019, topping global hedge fund assets by over $3 trillion. Moreover, BlackRock anticipates ETF/ETP AUM to double to $12 trillion over the next 5 years. Regardless of whether or not you agree with this projection, you have to agree that **the proliferation of factor-based index investing and the concentration of hedge fund AUM at market-neutral platforms has made financial markets more sensitive to Macro risks than ever before.** For example, JPM estimates systematic trading accounts for over 90% of US equity trading volume. Are your investment processes equipped to compete for alpha in this new regime?

... So We Evolved Alongside It

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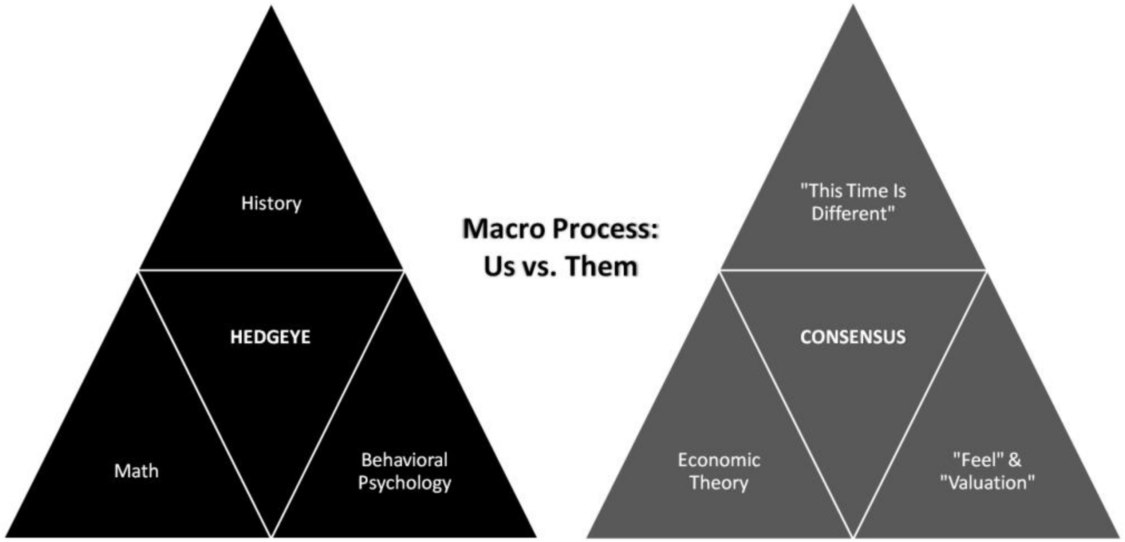

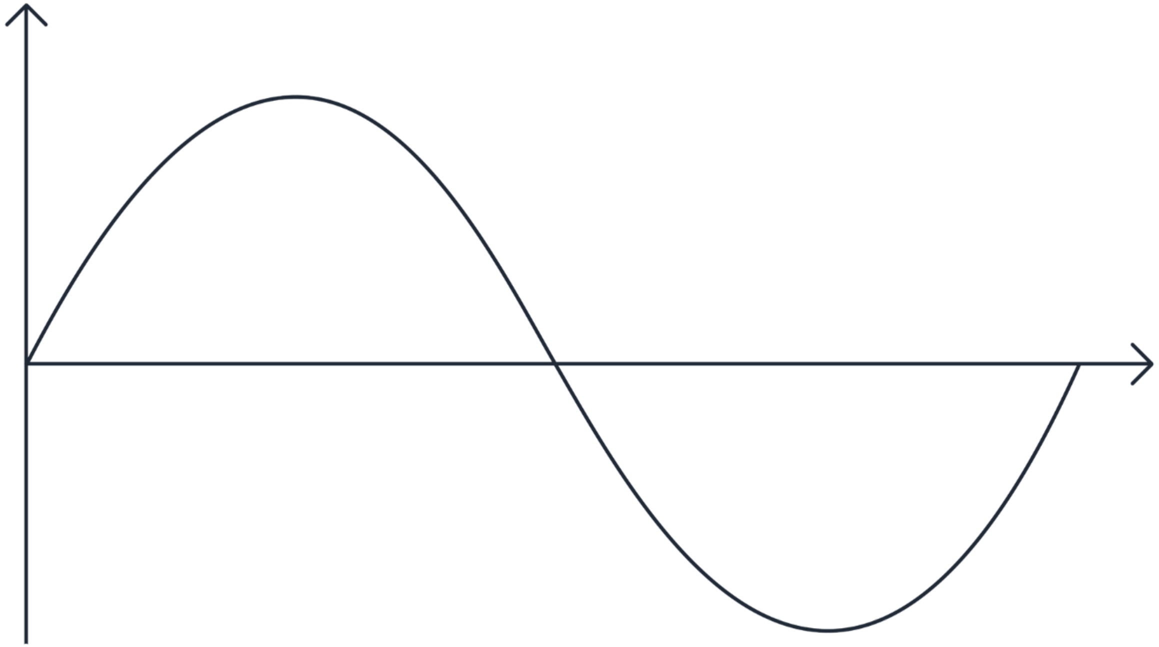

WE ARE DIFFERENTIATED FROM THE HERD

Macroeconomic Research and Global Macro Risk Management are two very different fields. We specialize in the latter, incorporating key lessons from behavioral finance such as Prospect Theory and Bayesian Inference into our analysis. **We don't "feel" anything with regards to the markets or the economy; if we can't contextualize it with math, we don't have a view on it.**

...BECAUSE WE FOCUS ON THE FACTS

Rate of change accelerations and decelerations are facts, not opinions, and our process is focused on contextualizing these facts, rather opining on the validity of absolute levels of growth, inflation, and/or policy. **This focus helps us consistently spot inflections in the performance of key factor exposures, across asset classes, 3-6 months ahead of investor consensus.**

What Tends To Outperform/Underperform In Each Quad?

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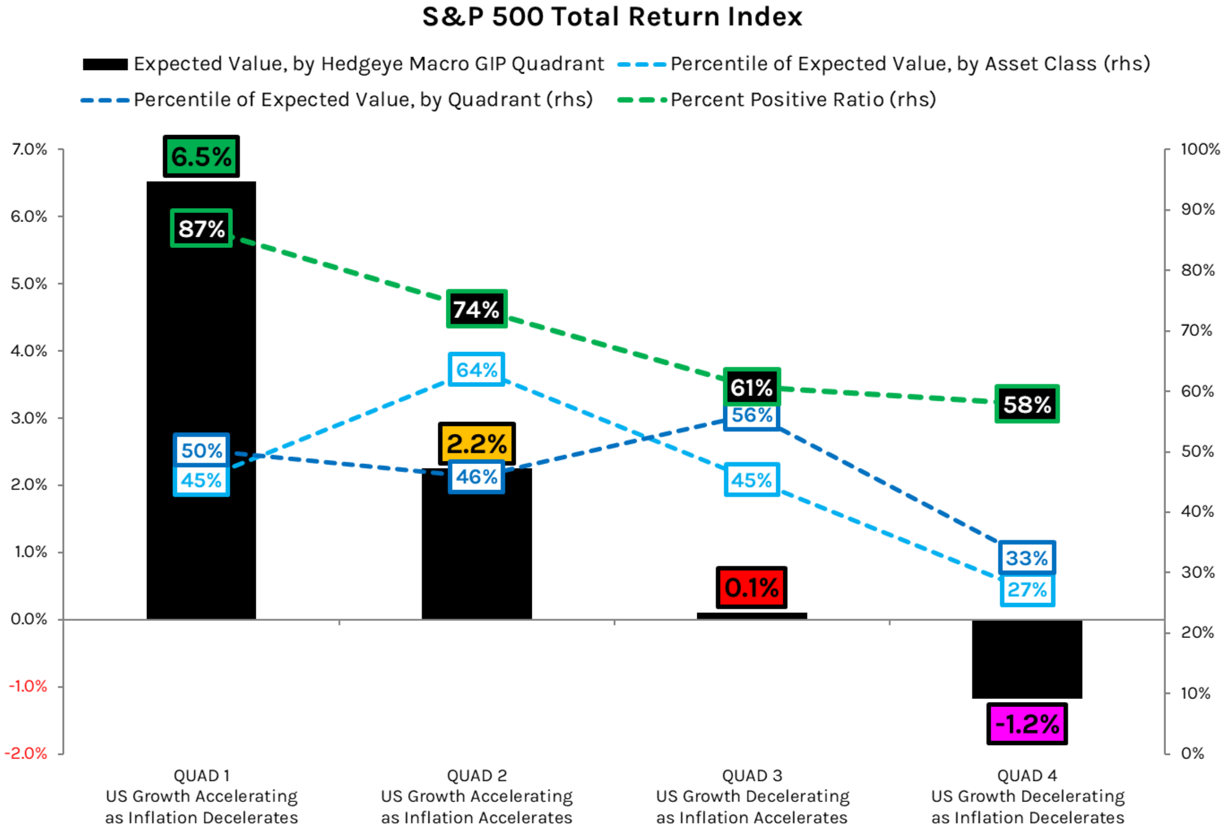
	QUAD 1			QUAD 2			QUAD 3			QUAD 4		
	Straight	Narrow	Deep	Straight	Narrow	Deep	Straight	Narrow	Deep	Straight	Narrow	Deep
S&P 500 INDEX - Expected Value (SPY)	6.0%	2.6%	5.0%	2.0%	0.7%	-0.1%	0.3%	4.3%	-4.8%	0.5%	8.6%	-0.8%
Consumer Cyclical (XLY)	Outperform	Underperform	Outperform	Outperform	Underperform	Outperform	Outperform	Underperform	Outperform	Outperform	Outperform	Outperform
Consumer Non-Cyclical (XLP)	Underperform	Underperform	Underperform	Underperform	Underperform	Outperform	Outperform	Outperform	Outperform	Outperform	Outperform	Outperform
Energy (XLE)	Underperform	Underperform	Underperform	Underperform	Outperform	Outperform	Underperform	Underperform	Outperform	Underperform	Outperform	Outperform
Financials (XLF)	Underperform	Underperform	Outperform	Underperform	Underperform	Underperform	Underperform	Underperform	Outperform	Outperform	Underperform	Underperform
Health Care (XLV)	Underperform	Outperform	Underperform	Underperform	Underperform	Outperform	Outperform	Underperform	Outperform	Outperform	Underperform	Outperform
Industrials (XLI)	Outperform	Underperform	Outperform	Outperform	Underperform	Outperform	Underperform	Underperform	Outperform	Underperform	Outperform	Outperform
Information Technology (XLK)	Outperform	Outperform	Outperform	Outperform	Outperform	Underperform	Outperform	Outperform	Underperform	Underperform	Underperform	Underperform
Materials (XLB)	Outperform	Underperform	Outperform	Underperform	Outperform	Underperform	Underperform	Outperform	Underperform	Outperform	Underperform	Outperform
REITS (XLRE)	Underperform	Underperform	Outperform	Underperform	Underperform	Outperform	Underperform	Underperform	Outperform	Outperform	Outperform	Underperform
Communication Services (XLC)	Outperform	Outperform	Underperform	Underperform	Underperform	Underperform	Underperform	Outperform	Underperform	Outperform	Outperform	Outperform
Utilities (XLU)	Underperform	Outperform	Underperform	Underperform	Underperform	Underperform	Outperform	Outperform	Outperform	Outperform	Outperform	Underperform
Growth (IWF)	Outperform	Outperform	Underperform	Outperform	Outperform	Outperform	Outperform	Outperform	Underperform	Underperform	Outperform	Underperform
Value (IWD)	Underperform	Underperform	Outperform	Underperform	Underperform	Underperform	Underperform	Underperform	Outperform	Outperform	Outperform	Outperform
Cyclicals (IWN)	Outperform	Underperform	Outperform	Outperform	Outperform	Underperform	Outperform	Outperform	Underperform	Underperform	Outperform	Underperform
Defensives (DEF)	Underperform	Outperform	Underperform	Underperform	Underperform	Outperform	Outperform	Underperform	Outperform	Outperform	Outperform	Outperform
High Beta (SPHB)	Outperform	Underperform	Outperform	Outperform	Outperform	Underperform	Underperform	Outperform	Underperform	Underperform	Outperform	Underperform
Low Beta (SPLV)	Underperform	Outperform	Underperform	Underperform	Underperform	Outperform	Outperform	Underperform	Outperform	Outperform	Outperform	Outperform
Momentum (MTUM)	Outperform	Outperform	Outperform	Outperform	Outperform	Outperform	Outperform	Outperform	Underperform	Underperform	Outperform	Underperform
Quality (QUAL)	Outperform	Outperform	Outperform	Outperform	Underperform	Outperform	Outperform	Outperform	Outperform	Outperform	Outperform	Outperform
Dividend Yield (SDY)	Outperform	Underperform	Outperform	Underperform	Underperform	Outperform	Underperform	Underperform	Outperform	Outperform	Outperform	Outperform
Size (DIA)	Underperform	Outperform	Outperform	Outperform	Outperform	Underperform	Outperform	Outperform	Outperform	Outperform	Underperform	Outperform
Secular Growth (QQQ)	Outperform	Outperform	Outperform	Outperform	Outperform	Underperform	Outperform	Outperform	Underperform	Underperform	Underperform	Underperform
Mid-Caps (MDY)	Outperform	Underperform	Outperform	Outperform	Outperform	Outperform	Outperform	Outperform	Outperform	Outperform	Outperform	Outperform
Small-Caps (IWM)	Underperform	Underperform	Outperform	Outperform	Outperform	Underperform	Underperform	Underperform	Underperform	Outperform	Outperform	Outperform
BARCLAYS AGG - Expected Value (AGG)	1.2%	1.8%	1.6%	0.7%	1.1%	1.7%	1.0%	0.0%	1.5%	2.3%	1.8%	3.1%
Leveraged Loans (BKLN)	Outperform	Underperform	Outperform	Outperform	Outperform	Outperform	Underperform	Outperform	Underperform	Underperform	Outperform	Underperform
BDCs (BIZD)	Outperform	Outperform	Outperform	Outperform	Outperform	Outperform	Underperform	Underperform	Underperform	Outperform	Outperform	Underperform
Preferreds (PFF)	Underperform	Underperform	Underperform	Outperform	Outperform	Underperform	Underperform	Outperform	Underperform	Underperform	Outperform	Underperform
IG Credit (LQD)	Outperform	Outperform	Outperform	Outperform	Outperform	Outperform	Underperform	Outperform	Underperform	Outperform	Outperform	Outperform
HY Credit (HYG)	Outperform	Underperform	Outperform	Outperform	Underperform	Outperform	Underperform	Outperform	Underperform	Outperform	Outperform	Underperform
Convertibles (CWB)	Outperform	Outperform	Outperform	Outperform	Outperform	Outperform	Underperform	Outperform	Underperform	Outperform	Outperform	Underperform
EM Hard Currency (EMB)	Outperform	Underperform	Outperform	Outperform	Outperform	Outperform	Outperform	Outperform	Underperform	Outperform	Outperform	Underperform
EM Local Currency (EMLC)	Outperform	Underperform	Outperform	Outperform	Outperform	Outperform	Underperform	Outperform	Underperform	Underperform	Underperform	Underperform
1-3yr Treasuries (SHY)	Underperform	Underperform	Underperform	Underperform	Underperform	Underperform	Underperform	Outperform	Underperform	Underperform	Underperform	Underperform
5-10yr Treasuries (IEF)	Underperform	Outperform	Underperform	Underperform	Underperform	Outperform	Outperform	Underperform	Outperform	Outperform	Outperform	Outperform
10-20yr Treasuries (TLT)	Outperform	Outperform	Outperform	Underperform	Underperform	Outperform	Outperform	Underperform	Outperform	Outperform	Outperform	Outperform
25+ Year Treasuries (EDV)	Outperform	Outperform	Outperform	Underperform	Underperform	Underperform	Outperform	Underperform	Outperform	Outperform	Outperform	Outperform
0-5yr TIPS (STIP)	Underperform	Underperform	Underperform	Outperform	Underperform	Underperform	Outperform	Outperform	Underperform	Underperform	Underperform	Underperform
5-10yr TIPS (TIP)	Underperform	Underperform	Outperform	Outperform	Outperform	Outperform	Outperform	Outperform	Underperform	Underperform	Outperform	Underperform
MBS (MBB)	Underperform	Underperform	Underperform	Outperform	Outperform	Underperform	Outperform	Outperform	Outperform	Underperform	Underperform	Underperform
Munis (MUB)	Outperform	Underperform	Outperform	Underperform	Underperform	Underperform	Underperform	Outperform	Underperform	Underperform	Underperform	Underperform
Taxable Munis (BAB)	Outperform	Outperform	Outperform	Underperform	Outperform	Underperform	Outperform	Outperform	Outperform	Outperform	Outperform	Underperform
CRB INDEX - Expected Value (DBC)	0.1%	-1.2%	2.4%	3.7%	3.0%	4.8%	-0.1%	3.7%	-9.2%	-2.4%	6.9%	-5.8%
CRB Raw Industrials Index (DBB)	Outperform	Outperform	Outperform	Underperform	Outperform	Underperform	Underperform	Underperform	Outperform	Outperform	Underperform	Underperform
CRB Foodstuffs Index (DBA)	Underperform	Outperform	Underperform	Underperform	Underperform	Outperform	Outperform	Underperform	Outperform	Outperform	Underperform	Outperform
WTI Crude Oil (USO)	Outperform	Outperform	Outperform	Outperform	Outperform	Outperform	Outperform	Outperform	Underperform	Outperform	Outperform	Outperform
US DOLLAR INDEX (DXY) - Expected Value (UUP)	-0.5%	-1.7%	0.7%	-0.5%	-2.9%	0.9%	-0.1%	-0.5%	2.6%	1.4%	2.0%	-0.2%
Gold (GLD)	Outperform	Outperform	Outperform	Outperform	Outperform	Outperform	Outperform	Outperform	Underperform	Outperform	Underperform	Outperform
EM FX (CEW)	Outperform	Outperform	Underperform	Underperform	Outperform	Underperform	Underperform	Outperform	Underperform	Underperform	Underperform	Underperform

Source: Hedgeye GIP Model Market History Backtests. Quarterly observations beginning in 1Q98. Bloomberg data. Total Return indices. ETF exposures in ().

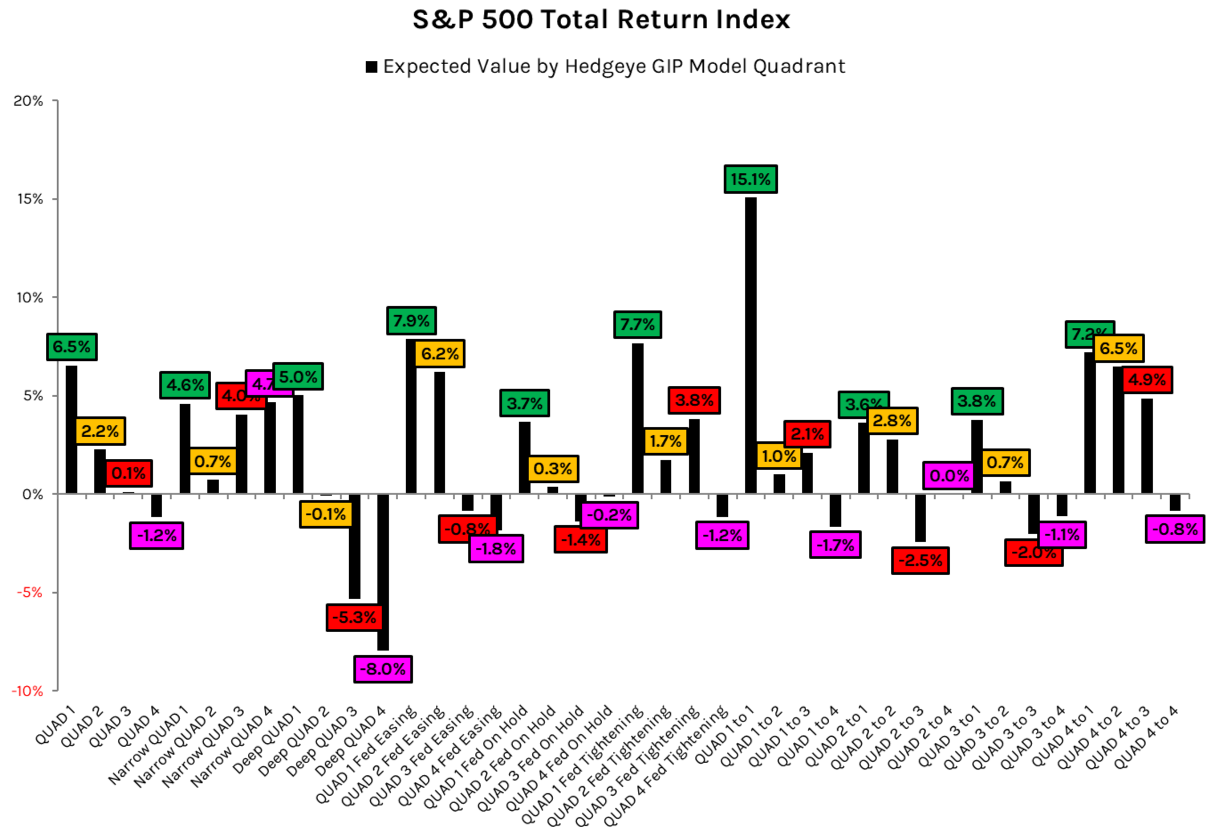
Why Use The Quads?

HEDGEYE

Contrary to conflicted and compromised financial literature that wants you to remain fully invested and fully diversified throughout, our DELIBERATE STUDY of financial market history shows meaningful deltas in absolute and relative asset performance tend to CLUSTER around PARTICULAR moments in time – usually in conjunction with regime changes in economic conditions.



Data Source: Bloomberg. Asset classes include equities, fixed income, currencies and commodities. Quarterly observations starting in 1Q98.

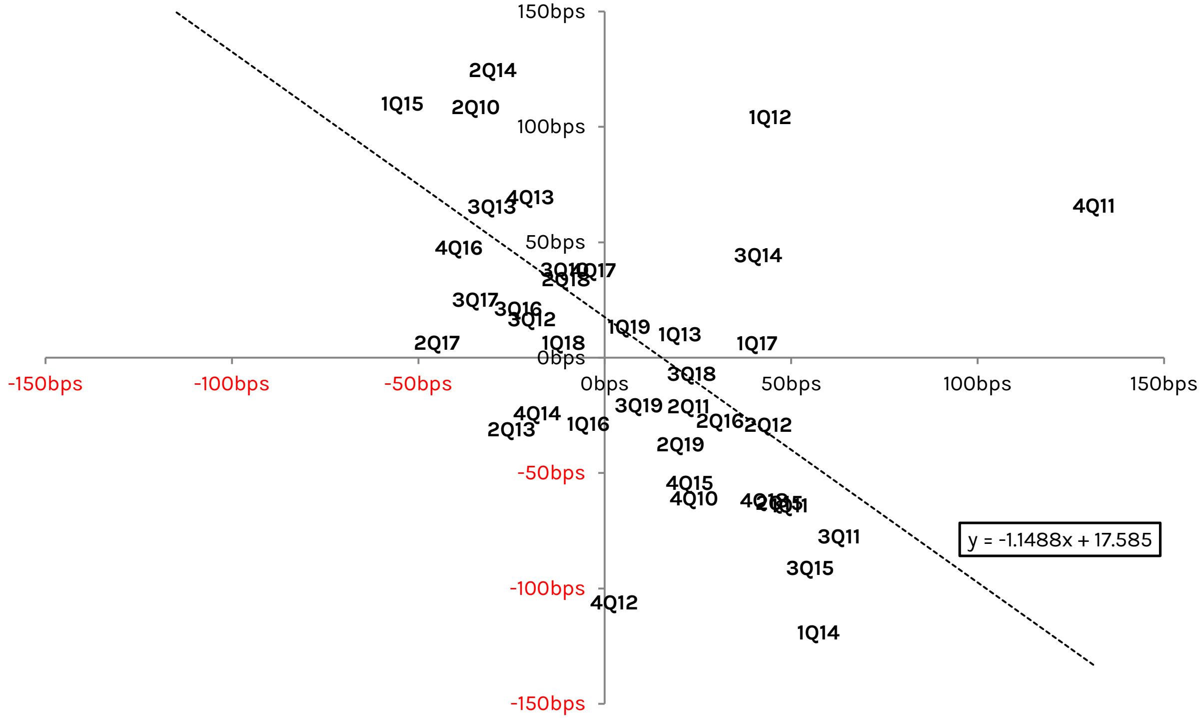


Data Source: Bloomberg. Asset classes include equities, fixed income, currencies and commodities. Quarterly observations starting in 1Q98.

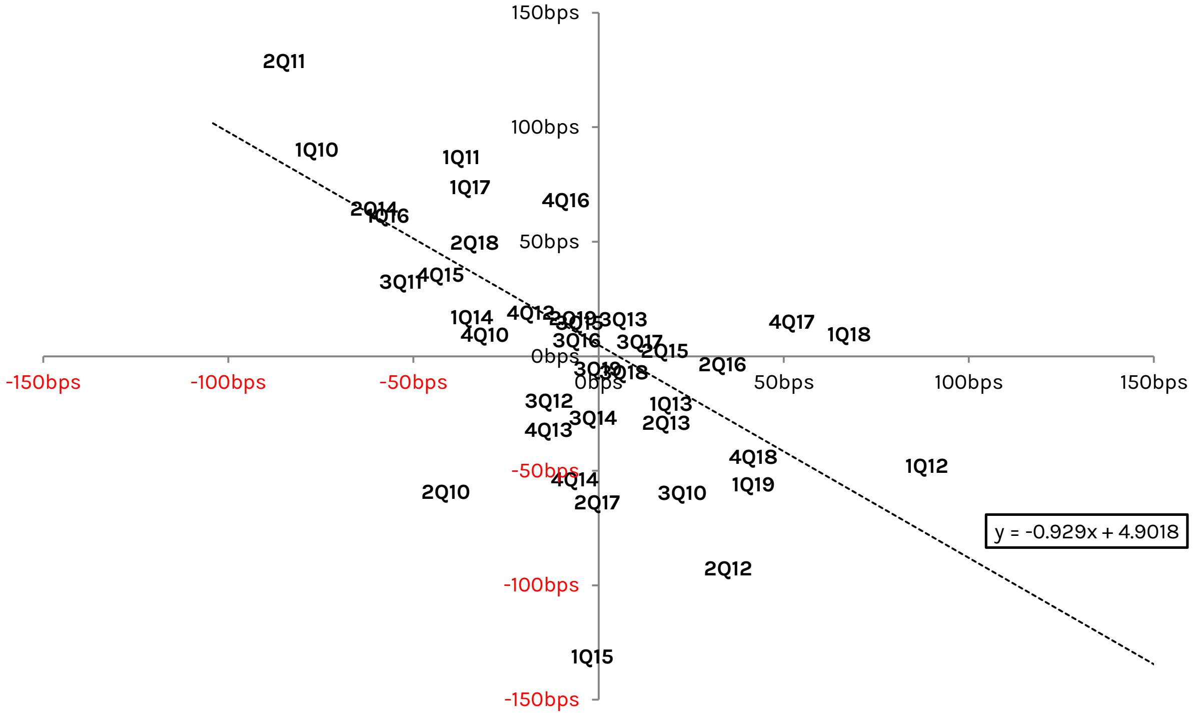
A Quick Lesson In Base Effects

HEDGEYE

x-axis: First Difference of the 2yr Average YoY Real GDP Growth Rate in the Comparative Base Period;
y-axis: First Difference of the YoY Real GDP Growth Rate in the Forecast Period (Trailing 10Y)
Raw Backtest: 78%; Momentum Backtest: 83%



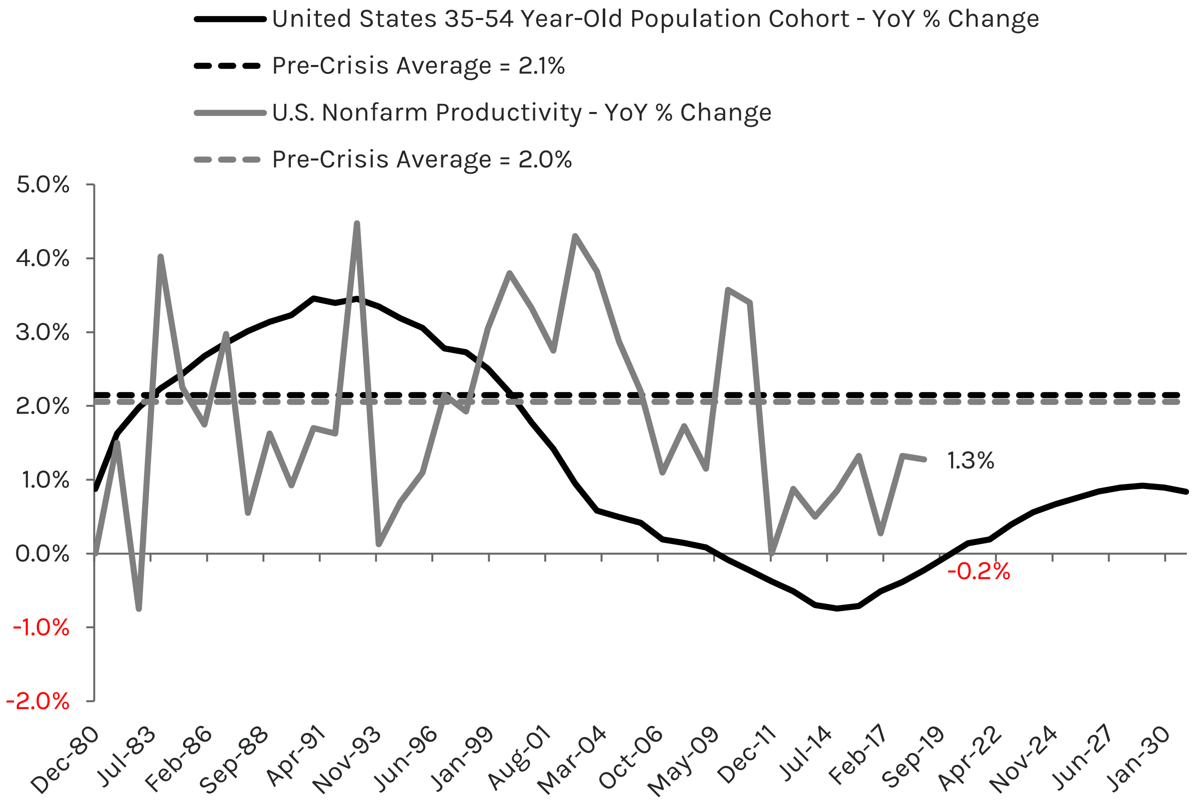
x-axis: First Difference of the 2yr Average YoY Headline CPI Rate in the Comparative Base Period;
y-axis: First Difference of the YoY Headline CPI Rate in the Forecast Period (Trailing 10Y)
Raw Backtest: 68%; Momentum Backtest: 77%

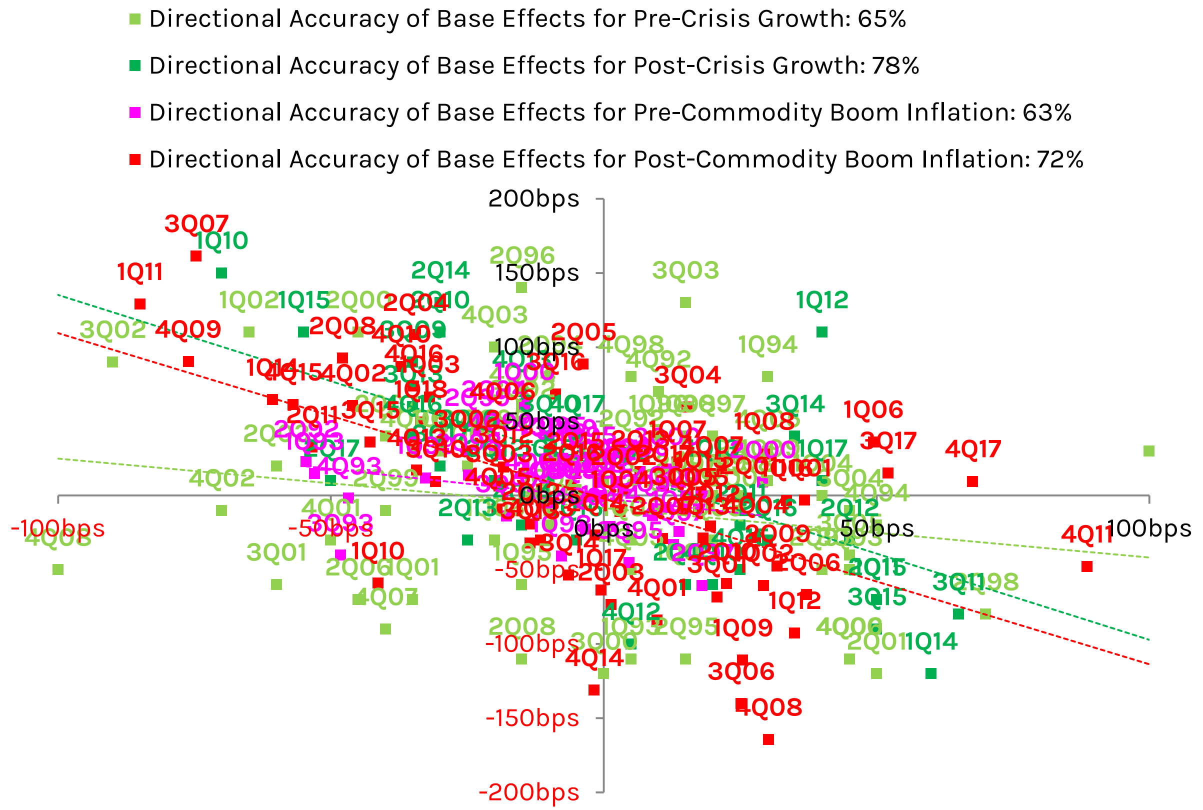


Using the US economy as an example, the marginal rate of change in **the 2yr comparative base explains INFLECTIONS in GROWTH and INFLATION 78% and 68% of the time, respectively**. Moreover, **2yr comps perpetuate MOMENTUM in GROWTH and INFLATION 83% and 77% of the time, respectively**. These figures are near the modal outcomes of the GROWTH and INFLATION backtests across the near-50 economies we maintain detailed GIP Models for – which means base effects matter a lot to projecting the probable path forward for any economy.

Base Effects Matter More Now Than Ever

HEDGEYE



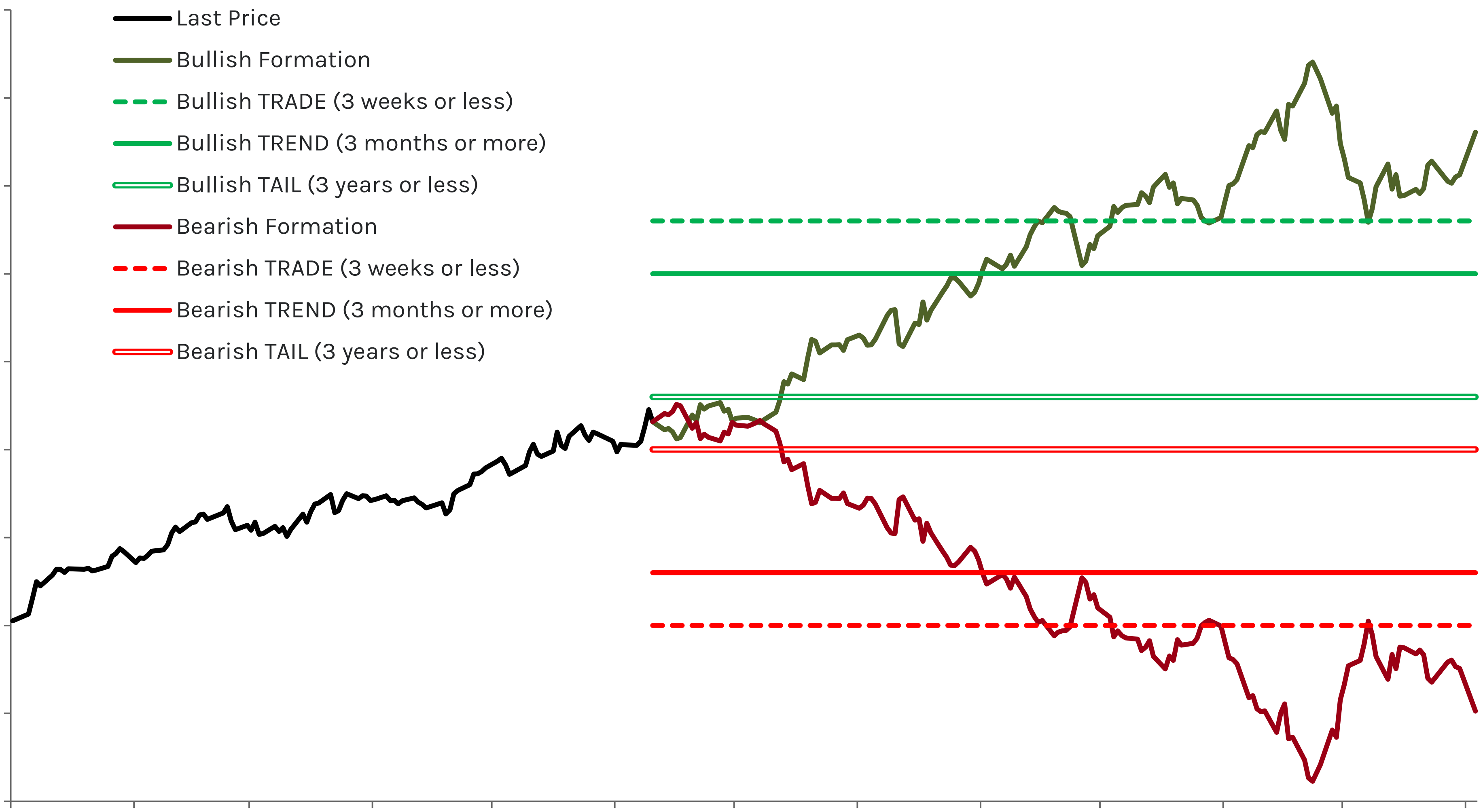


As **the economy has grown increasingly reliant upon financial leverage** to replace a lost ~300 basis points of organic growth potential…

… both growth and inflation have become decidedly more cyclical throughout the post-crisis era. **Leverage amplifies both economic and financial market volatility**.

The Quads Provide A Reliable Starting Point For Asset Allocation And Keith's Quantitative Signaling Overlay Confirms Market Direction And Helps Risk Manage Core Exposures

HEDGEYE



Core to the process of selecting our core exposures is determining whether the ticker screens well from the perspective of Keith's proprietary risk management process, which employs PRICE, VOLUME and VOLATILITY as discrete factors in the calculus of levels that backtest well as critical momentum thresholds.

Assets where last price is greater than all three (in ascending order) are said to be in a "Bullish Formation" and all dips should be bought, insomuch that assets in the converse "Bearish Formation" should be repeatedly shorted on strength.

A | B Testing Process: Quantify Investor Consensus

HEDGEYE

Monitoring Sector and Style factor Performance allows us to quantitatively track the evolution of our Macro Themes. Additionally, MEASURING and MAPPING key data sets within the CFTC COT report removes the qualitative guesswork from the process of tracking and ultimately FADING crowded positioning.

STYLE FACTOR PERFORMANCE*

	FACTOR	1D % Chg	1W % Chg	1M % Chg	3M % Chg	6M % Chg	YTD % Chg
Debt	High Debt/EV	1.6%	3.4%	10.5%	13.2%	-22.0%	-21.9%
	Low Debt/EV	-0.2%	1.3%	5.9%	15.4%	9.7%	13.5%
SI	High Short Interest	1.1%	3.5%	10.4%	14.0%	-17.7%	-18.3%
	Low Short Interest	1.0%	2.1%	7.3%	11.1%	-3.6%	-0.3%
BETA	High Beta	1.7%	4.8%	12.8%	17.3%	-26.6%	-27.7%
	Low Beta	0.5%	1.0%	5.6%	11.1%	10.5%	13.2%
YIELD	High Yield	1.8%	3.0%	9.3%	8.5%	-26.9%	-27.9%
	Low Yield	0.0%	2.2%	8.1%	17.0%	6.1%	9.4%
MKT CAP	MCAP Bottom 25%	1.8%	4.1%	11.9%	12.3%	-24.6%	-26.0%
	MCAP Top 25%	0.5%	2.2%	6.5%	12.4%	2.5%	6.0%
Sales	Top 25% Sales Growth	0.1%	2.5%	7.6%	14.7%	-5.6%	-4.7%
	Bottom 25% Sales Growth	1.7%	2.9%	8.4%	8.2%	-17.7%	-18.4%
EPS	Top 25% EPS Growth	1.2%	4.0%	11.6%	15.5%	-10.1%	-11.1%
	Bottom 25% EPS Growth	1.4%	3.0%	6.7%	8.2%	-18.4%	-18.2%

**Mean Performance of Top Quartile vs. Bottom Quartile, S&P500 Companies*

CFTC NON-COMMERCIAL NET LONG POSITIONING

	METRIC	Latest	W/W Chg	3M Ave	6M Ave	1Y Ave	3Y Max	3Y Min	Z-Score 1Y	Z-Score 3Y
EQUITIES	SPX (Index + E-mini)	(49,438)	(7,583)	(143,994)	(126,614)	(52,858)	271,423	(319,133)	0.03X	-0.89X
	VIX	(87,482)	1,429	(68,546)	(58,047)	(105,571)	92,913	(218,362)	0.30X	-0.10X
	Russell 2000 (mini)	7,924	(7,848)	10,701	2,800	2,568	72,749	(88,708)	0.16X	0.24X
	Dow Jones (mini)	(6,369)	(94)	(16,310)	(7,291)	13,849	95,976	(28,732)	-0.84X	-1.29X
	Nasdaq (mini)	20,707	(6,054)	24,417	21,449	23,383	48,279	(24,815)	-0.23X	0.25X
RATES	10Y UST	165,292	57,480	29,592	(11,053)	(115,611)	288,117	(758,490)	2.07X	1.67X
	2Y UST	(264,769)	(27,035)	(261,596)	(204,547)	(224,532)	67,767	(421,551)	-0.47X	-0.65X
	5Y UST	(53,108)	(101,751)	(119,282)	(139,260)	(173,848)	65,383	(866,140)	1.17X	1.11X
	UST Bonds	(140,864)	(18,610)	(109,209)	(88,129)	(73,557)	122,839	(142,810)	-2.19X	-1.93X
	30D Fed Funds	203,007	(115,231)	376,355	356,178	292,197	488,558	(284,749)	-0.69X	0.70X
	Eurodollar	86,417	(164,912)	(19,964)	72,843	650,481	2,134,274	(3,110,209)	-0.70X	0.62X
CURRENCIES	$USD	(6,464)	252	47	8,538	17,276	43,033	(10,666)	-1.76X	-1.50X
	JPY	30,381	1,317	23,750	15,505	(314)	33,088	(140,151)	1.02X	1.52X
	EUR	185,135	22,915	113,707	67,309	(583)	185,135	(123,765)	2.19X	2.06X
	GBP	(16,150)	8,506	(18,025)	(3,383)	(18,999)	49,216	(107,406)	0.08X	0.14X
	AUD	(1,618)	4,129	(13,120)	(26,588)	(35,053)	77,969	(74,181)	1.91X	0.66X
	CAD	(23,139)	(10,321)	(23,875)	(19,951)	800	78,001	(67,121)	-0.98X	-0.56X
	MXN	2,994	(7,867)	10,220	30,149	81,990	170,379	(21,903)	-1.24X	-1.38X
	NZD	(1,452)	(602)	(4,656)	(10,320)	(16,903)	27,603	(42,544)	1.09X	0.60X
	CHF	12,502	3,397	6,302	5,234	(1,853)	12,502	(47,216)	1.55X	1.88X
COMMODITIES	CRUDE OIL	548,390	5,256	555,442	511,346	485,528	784,290	332,714	0.95X	0.16X
	GOLD	173,473	(1,037)	164,647	188,449	216,554	292,066	(103,009)	-0.95X	0.41X
	COPPER	39,486	(3,559)	17,132	(6,386)	(17,534)	67,602	(60,135)	2.14X	1.11X
	Natural Gas	(6,558)	12,002	(43,057)	(86,028)	(138,247)	30,134	(262,534)	1.71X	1.25X
	RBOB Gasoline	58,543	7,582	52,465	72,747	78,380	129,000	42,174	-0.81X	-1.48X
	ULSD Heating Oil	15,047	4,796	5,729	(3,884)	(3,764)	67,696	(27,674)	1.84X	0.05X
	Silver	34,841	3,319	36,854	37,259	47,940	80,646	(30,158)	-0.82X	0.21X
	Platinum	19,426	(3,085)	18,998	22,478	34,323	69,306	(11,540)	-0.84X	-0.17X
	Aluminum	163,475	(2,043)	159,440	161,536	158,399	168,292	122,356	0.48X	1.20X
	Nickel	42,230	(365)	42,647	44,026	37,396	47,708	13,508	0.55X	1.12X
	Corn	(100,550)	(36,002)	(163,660)	(124,259)	(85,674)	372,754	(270,560)	-0.19X	-0.66X
	Soybeans	60,790	(23,217)	67,083	39,748	19,259	210,365	(148,817)	0.82X	0.68X
	Wheat	16,149	(1,269)	(10,186)	8,056	13,101	63,219	(119,350)	0.14X	0.66X
	Live Cattle	57,359	3,679	42,291	37,683	54,801	183,134	19,421	0.09X	-0.62X
	Lean Hogs	22,914	(1,371)	22,756	29,233	34,971	97,769	(11,151)	-0.91X	-0.54X
	Sugar	172,377	33,289	99,285	82,575	12,200	228,364	(205,161)	1.24X	2.23X
	Cotton	42,343	6,212	23,228	11,381	7,305	129,851	(37,827)	1.56X	0.05X
	Coffee	26,258	20,118	(2,396)	6,392	1,118	46,860	(106,651)	0.90X	1.71X
	Cocoa	16,333	22,429	(1,694)	11,584	24,440	81,269	(37,480)	-0.25X	-0.01X
	Orange Juice	1,172	(695)	1,889	(210)	(3,352)	5,540	(9,416)	1.20X	0.95X

A | B Testing Process: Measure & Map The Volatility of Volatility

HEDGEYE

Deliberately studying the VOLATILITY OF VOLATILITY leads to high-probability decision-making opportunities. TIMING matters.

TIME WINDOW SETTING: VOLATILITY_30D PUT_IMP_VOL_30D	TICKER	TOTAL RETURN PERFORMANCE YTD %	IVOL PREMIUM/DISCOUNT IVOL PREM % IVOL / RVOL CURRENT	Yesterday	1W Ago	1M Ago	TTM Z-Score	3Yr Z-Score	REALIZED VOLATILITY TRENDS RVOL CURRENT	MM %	PERCENTILE 10YR	IMPLIED VOLATILITY TRENDS IVOL CURRENT	MM %	PERCENTILE 10YR
US EQUITIES														
Power Shares QQQ Trust ETF	QQQ US EQUITY	28.18%	21%	21%	8%	22%	0.4	0.5	21.0	-13%	80%	25.5	-13%	90%
Technology Sector SPDR ETF	XLK US EQUITY	25.07%	19%	19%	2%	13%	0.3	0.3	22.4	-17%	81%	26.5	-12%	90%
Consumer Discretionary Sector SPDR ETF	XLY US EQUITY	12.73%	25%	25%	9%	4%	0.4	0.4	15.8	-41%	65%	19.7	-29%	79%
Communication Services SPDR ETF	XLC US EQUITY	12.29%	26%	26%	-2%	8%	0.4		17.7	-33%	43%	22.3	-22%	62%
Health Care Sector SPDR ETF	XLV US EQUITY	5.45%	31%	31%	18%	-9%	0.8	0.9	13.3	-46%	50%	17.3	-23%	80%
SPDR S&P 500 ETF Trust	SPY US EQUITY	5.05%	37%	37%	11%	-9%	1.0	1.0	12.5	-53%	54%	17.1	-29%	78%
Consumer Staples Sector SPDR ETF	XLP US EQUITY	2.23%	46%	46%	-11%	-2%	0.0	0.3	10.9	-42%	52%	16.0	-13%	87%
Materials Sector SPDR ETF	XLB US EQUITY	1.73%	27%	27%	35%	-12%	0.4	0.6	19.5	-41%	66%	24.8	-15%	85%
Utilities Sector SPDR ETF	XLU US EQUITY	-3.05%	-17%	-17%	1%	0%	-0.5	-0.6	18.5	-23%	84%	15.4	-36%	74%
I-Shares Russell 2000 ETF	IWM US EQUITY	-5.06%	17%	17%	14%	-7%	0.3	0.3	23.2	-40%	83%	27.0	-25%	88%
Industrials Sector SPDR ETF	XLI US EQUITY	-6.62%	12%	12%	6%	-11%	0.1	0.1	20.5	-45%	79%	22.9	-31%	86%
Vanguard Real Estate REIT ETF	VNQ US EQUITY	-9.67%	18%	18%	20%	-12%	1.0	0.9	18.9	-48%	75%	22.3	-30%	86%
Financials Sector SPDR ETF	XLF US EQUITY	-18.05%	25%	25%	-5%	-11%	0.7	0.6	21.3	-51%	75%	26.7	-31%	88%
Energy Sector SPDR ETF	XLE US EQUITY	-35.78%	-2%	-2%	-6%	-18%	0.2	-0.1	37.2	-35%	91%	36.4	-22%	92%
INTERNATIONAL EQUITIES														
I-Shares MSCI Emerging Markets ETF	EEM US EQUITY	-1.66%	-4%	-4%	-3%	-9%	-0.3	-0.3	22.2	-26%	73%	21.3	-22%	60%
I-Shares China Large-Cap ETF	FXI US EQUITY	-2.90%	-34%	-34%	-36%	-21%	-1.2	-1.7	36.5	-3%	92%	24.1	-19%	66%
I-Shares MSCI Japan ETF	EWJ US EQUITY	-4.71%	8%	8%	27%	-2%	0.2	0.1	16.2	-25%	59%	17.5	-17%	56%
Euro Stoxx 50 Index	SX5E INDEX	-11.12%	7%	7%	9%	-12%	0.5	0.1	19.7	-34%	67%	21.0	-21%	71%
CURRENCIES														
Currency Shares Euro Trust ETF	FXE US EQUITY	4.52%	21%	21%	28%	0%	0.8	1.1	6.4	-6%	25%	7.8	14%	43%
Currency Shares Japanese Yen ETF	FXY US EQUITY	2.18%	8%	8%	21%	-12%	0.4	0.0	6.3	-7%	25%	6.8	15%	19%
Currency Shares British Pound ETF	FXB US EQUITY	-1.57%	40%	40%	21%	-18%	1.0	1.3	6.4	-34%	19%	9.0	12%	59%
PowerShares US Dollar Index ETF	UUP US EQUITY	-2.85%	45%	45%	59%	134%	0.6	0.5	5.6	-11%	25%	8.0	-45%	57%
COMMODITIES														
SPDR Gold Shares ETF	GLD US EQUITY	33.53%	82%	82%	107%	15%	2.3	3.5	13.2	1%	50%	24.0	61%	95%
PowerShares DB Agriculture Fund ETF	DBA US EQUITY	-15.52%	59%	59%	51%	128%	0.6	1.0	13.3	14%	66%	21.1	-21%	89%
United States Natural Gas Fund ETF	UNG US EQUITY	-24.02%	-19%	-19%	-8%	14%	-1.7	-1.2	73.4	37%	98%	59.3	-3%	93%
United States Oil Fund ETF	USO US EQUITY	-70.87%	47%	47%	28%	0%	1.5	2.0	22.3	-47%	29%	32.8	-22%	64%
FIXED INCOME														
I-Shares 20+ Year Treasury Bond ETF	TLT US EQUITY	26.58%	43%	43%	44%	0%	2.0	2.3	10.2	-33%	24%	14.6	-5%	69%
I-Shares 7-10 Year Treasury Bond ETF	IEF US EQUITY	12.01%	74%	74%	90%	12%	0.6	0.7	2.9	-39%	0%	5.0	-6%	20%
I-Shares IBOXX IG Corporate Bond ETF	LQD US EQUITY	10.32%	71%	71%	75%	6%	1.7	2.1	4.3	-41%	31%	7.4	-5%	87%
I-Shares J.P. Morgan USD EM Bond ETF	EMB US EQUITY	2.12%	56%	56%	75%	45%	1.5	1.5	5.2	-50%	38%	8.0	-46%	64%
I-Shares IBOXX HY Corporate Bond ETF	HYG US EQUITY	-0.15%	24%	24%	-5%	4%	0.5	0.4	6.8	-46%	67%	8.5	-35%	74%

Data Source: CBOE, CME, Bloomberg

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