

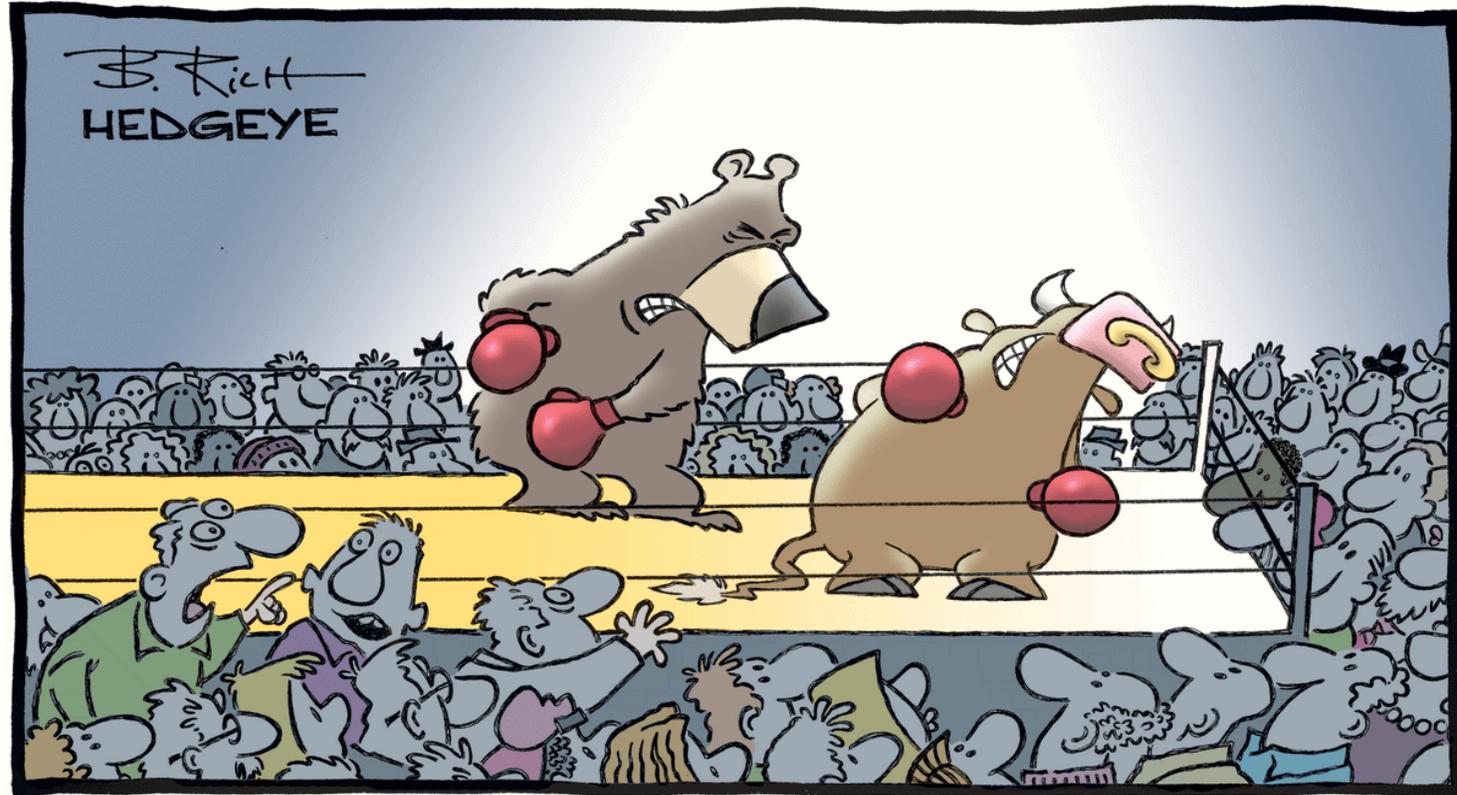
HEDGEYE



HEDGEYE'S CURRENT MARKET OUTLOOK

New Quarter; Same Reflation

Updated: June 7th, 2021



MACRO THEMES

USA Still #Quad2

Macro Signals and Divergences

Rates & Housing... Peak Cycle?

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1 USA Still #Quad2

The U.S. is poised to enter its fourth consecutive #Quad2 quarter in Q2 with some of the easiest economic comparisons we've seen in our lifetimes. These base effect dynamics are aided by ongoing Fed-Fiscal support and promise a continuation of the historic reflationary environment that has already been on discrete display across cyclical, rate and inflation sensitive assets. We'll detail how much juice remains in Quad 2 exposures and how we'll risk manage the prospective inflection towards Quad 4. In addition, we'll look at vaccine roll-out in the U.S., which is easing the concern of increased Covid-19 restrictions on mobility.

2 Macro Signals and Divergences

There has been a lot of price noise (Brownian Motion) in the markets in recent weeks, especially with rates breaking out and various #Quad2 exposures taking a breather. We will review what our Trade / Trend / Tail model is saying in aggregate from quantitative perspective as it relates to where we are in the cycle. Spoiler alert: not a lot of changes despite recent "noise".

3 Rates & Housing ... Peak Cycle?

As they typically do, rates have been rising as the #Quad2 economic rate of change data accelerates. The question of course is: what will this ultimately mean for the cycle? In particular housing, which has been en fuego. Our colleague Josh Steiner will be on the call to discuss his 50 basis points rule of thumb on rates as it relates to housing, as well as his longer term views.

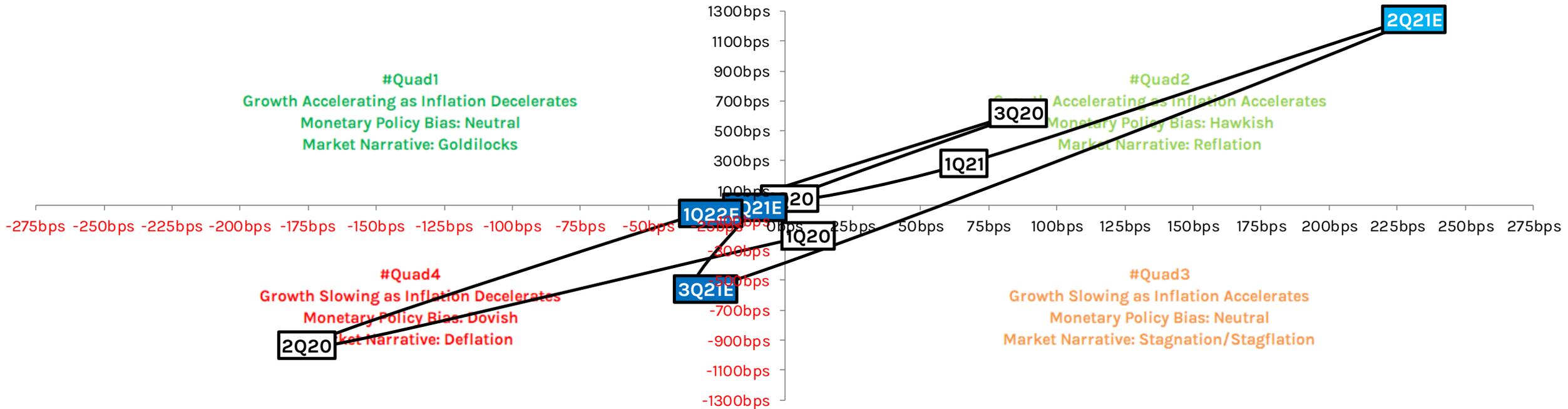
What Are The Quads?

Our GIP Model is a quantitatively oriented, regime-based framework that helps investors proactively prepare for volatility phase transitions within and across asset classes by triangulating the three factors that matter most to Macro Risk Management – i.e. GROWTH, INFLATION, and POLICY.

United States	2Q18	3Q18	4Q18	1Q19	2Q19	3Q19	4Q19	1Q20	2Q20	3Q20	4Q20	1Q21	← Actuals Estimates →	2Q21E	3Q21E	4Q21E	1Q22E
Real GDP QoQ SAAR	2.70%	2.10%	1.30%	2.90%	1.50%	2.60%	2.40%	-5.00%	-31.40%	33.40%	4.30%	6.40%	Real GDP QoQ SAAR	9.16%	8.58%	3.87%	4.18%
Real GDP YoY	3.33%	3.12%	2.48%	2.27%	1.96%	2.08%	2.34%	0.32%	-9.03%	-2.85%	-2.39%	0.41%	Real GDP YoY	12.85%	7.25%	7.15%	6.60%
2yr Comparative Base Effects	1.80%	1.98%	2.39%	2.57%	2.75%	2.74%	2.59%	2.67%	2.64%	2.60%	2.41%	1.29%	2yr Comparative Base Effects	-3.53%	-0.39%	-0.02%	0.36%
Headline CPI YoY	2.71%	2.64%	2.20%	1.64%	1.81%	1.76%	2.03%	2.12%	0.36%	1.22%	1.24%	1.90%	Headline CPI YoY	4.21%	3.92%	3.81%	3.54%
2yr Comparative Base Effects	1.48%	1.54%	1.96%	2.38%	2.31%	2.30%	2.16%	1.93%	2.26%	2.20%	2.12%	1.88%	2yr Comparative Base Effects	1.09%	1.49%	1.64%	2.01%

United States

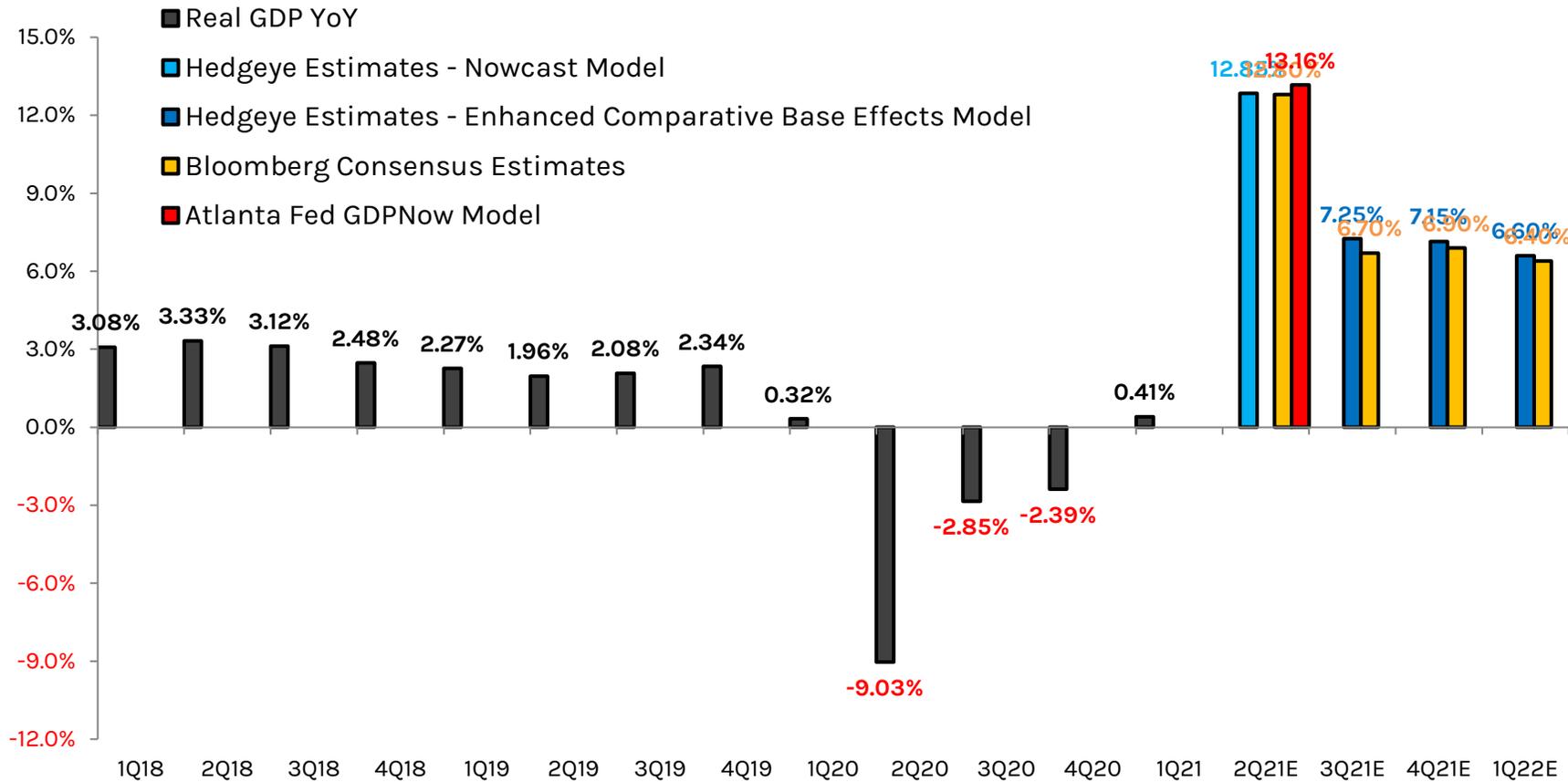
◆ x-axis: First Difference of YoY Headline CPI;
y-axis: First Difference of YoY Real GDP



Data Source: Bloomberg. Light Blue box = Hedgeye Nowcast Model estimate. Dark Blue boxes = Hedgeye Comparative Base Effects Model estimates.

US Real GDP YoY Projections

United States

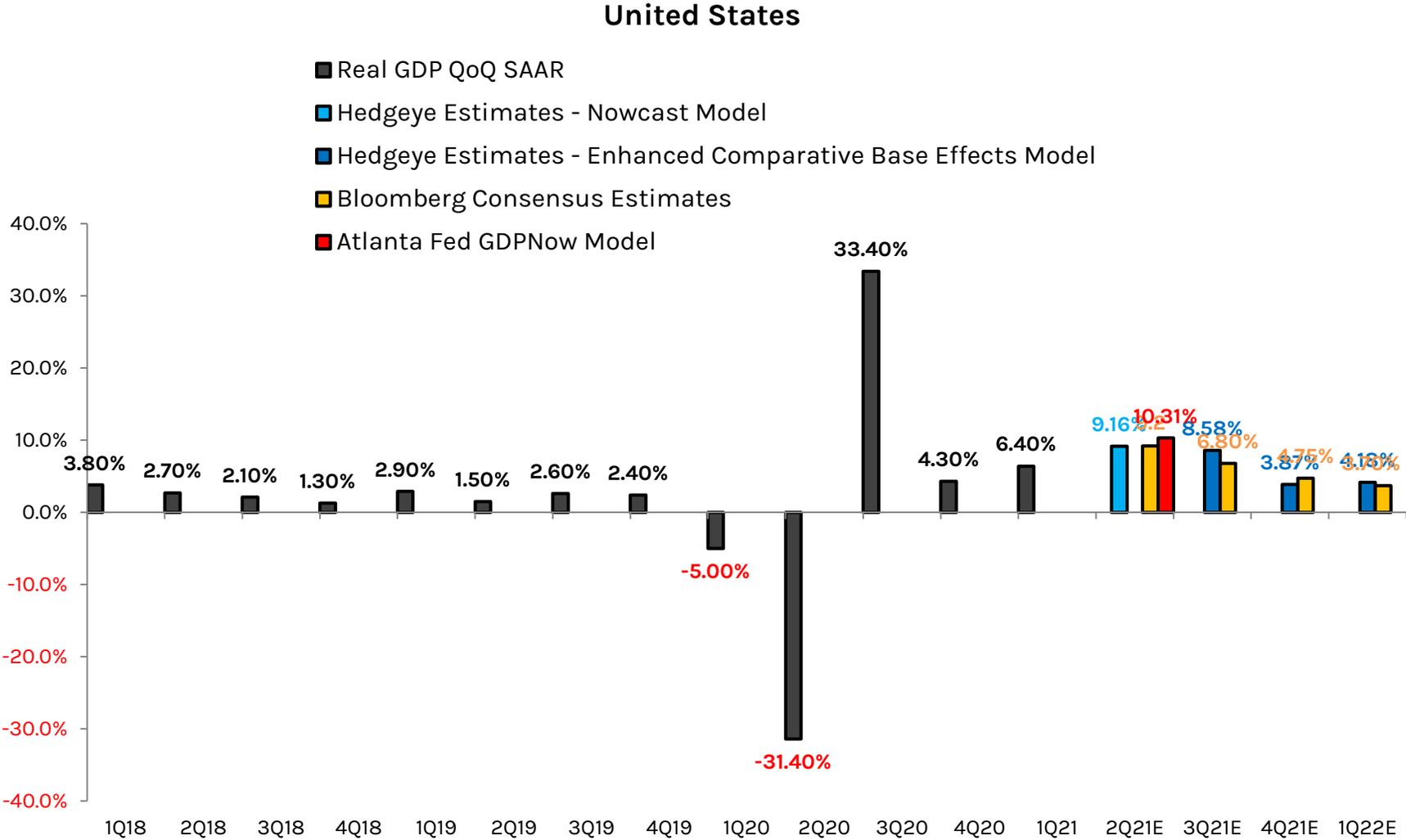


We use two distinct models to forecast the YoY growth rate of Real GDP and the combination of the two allows us to develop both a highly accurate real-time assessment of near-term economic momentum, as well as a high-probability scenario for where growth is likely to trend over the NTM.

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 55bps and an 85% success rate in terms of accurately projecting the rate of change of GROWTH.

US Real GDP QoQ SAAR Projections



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.

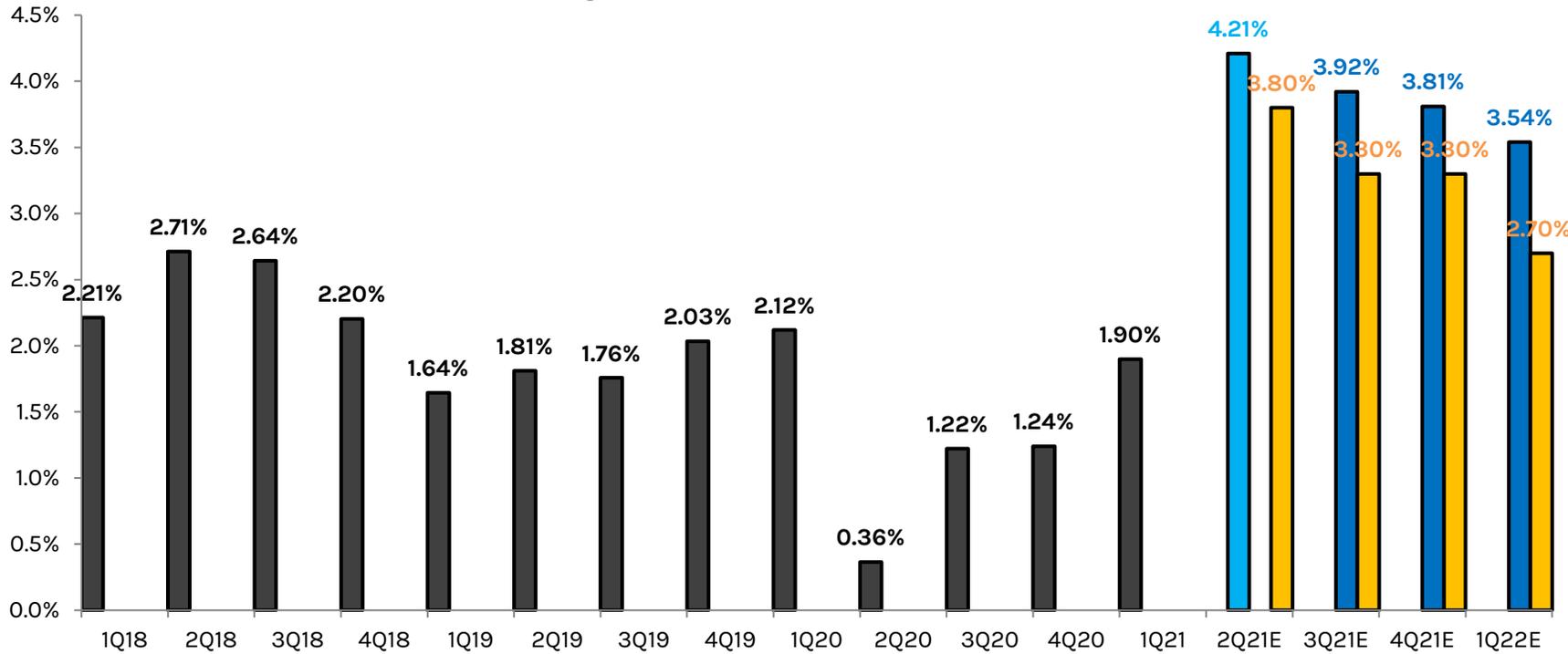
Our rigorous study of financial market history suggests the latter to be little more than noise in the context of making accurate intermediate-to-long-term investment decisions.

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 Headline CPI YoY Projections

United States

- Headline CPI YoY
- Hedgeye Estimates - Nowcast Model
- Hedgeye Estimates - Comparative Base Effects Model
- Bloomberg Consensus Estimates



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 36bps and an 85% success rate in terms of accurately projecting the rate of change of INFLATION.

US Real GDP Nowcast Model

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

	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	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	1Q21	2Q21	Δ
Real PCE YoY (1)	2.44	2.33	2.58	2.30	2.06	3.02	2.69	2.61	-4.69	-16.53	-9.64	-4.58	-3.61	-2.94	-1.95	-1.86	-2.58	-3.52	-0.98	-2.13	8.92	24.02	-	-	1.94	24.02	22.09
Real Disposable Personal Income YoY (14)	1.58	1.79	2.02	1.81	2.10	0.83	1.55	2.01	0.63	16.67	11.10	8.92	9.19	4.85	5.23	4.76	3.11	3.69	14.44	4.58	30.17	-4.43	-	-	16.40	-4.43	-20.83
Personal Savings Rate % of DPI (6)	7.0	7.3	7.3	7.2	7.5	7.2	7.6	8.3	12.9	33.7	24.7	19.0	18.4	14.6	14.1	13.5	13.1	14.2	20.6	14.7	27.7	14.9	-	-	21.0	14.9	-6.1
Headline Retail Sales YoY (9)	3.28	3.97	3.65	2.98	3.12	5.49	4.81	4.61	-5.86	-19.98	-5.75	2.12	2.86	3.22	5.96	5.55	3.78	2.31	9.40	6.50	29.01	51.22	-	-	14.97	51.22	36.25
Retail Sales Control Group YoY (13)	4.39	4.69	4.05	3.76	2.43	6.04	3.86	4.36	6.33	-7.14	1.84	7.36	8.61	8.47	10.57	10.19	9.33	6.00	14.07	10.23	15.19	29.10	-	-	13.16	29.10	15.94
Auto Sales YoY (10)	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	-10.49	-4.94	-2.05	-9.01	-2.57	-1.25	-6.89	56.11	115.73	39.15	-	15.99	77.44	61.45
MBA Mortgage Purchase Index YoY (24)	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	26.46	22.26	22.95	20.54	24.68	14.18	8.28	17.32	48.33	3.24	-	13.26	25.78	12.52
Total Employees On Nonfarm Payrolls YoY (7)	1.26	1.24	1.32	1.30	1.40	1.34	1.39	1.62	0.38	-13.50	-11.66	-8.55	-7.52	-6.59	-6.25	-5.93	-5.90	-6.20	-6.24	-6.07	-4.50	10.89	8.95	-	-5.60	9.92	15.52
Aggregate Hours Worked YoY (2)	0.68	0.95	1.32	1.01	1.10	0.75	0.80	1.62	-0.78	-14.01	-10.89	-8.01	-6.71	-5.78	-5.16	-4.83	-4.53	-5.10	-4.33	-5.52	-2.26	13.16	9.58	-	-4.03	11.37	15.40
Aggregate Labor Income YoY (4)	4.09	4.43	4.43	4.26	4.42	3.72	3.87	4.66	2.72	-6.99	-4.94	-3.44	-2.29	-1.39	-0.62	-0.52	-0.21	0.08	0.69	-0.58	1.93	13.57	11.75	-	0.68	12.66	11.98
Monthly Initial Jobless Claims YoY (3)	-3.12	0.75	0.12	-0.82	-5.95	4.62	-7.27	-7.33	1070.82	2217.69	1010.90	571.73	507.64	368.48	368.23	289.58	225.08	199.08	227.45	276.33	-69.47	-86.89	-79.26	-	144.77	-83.08	-227.85
Bloomberg Consumer Comfort Index (12)	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	44.3	48.7	47.3	48.8	47.3	44.3	46.7	49.3	53.8	54.7	-	46.8	54.2	7.5
Industrial Production YoY (8)	-1.44	-1.42	-1.75	-2.43	-1.85	-2.17	-2.14	-1.37	-5.27	-17.65	-16.21	-10.96	-7.02	-6.62	-6.56	-4.75	-4.73	-3.23	-1.75	-4.87	1.05	17.59	-	-	-1.86	17.59	19.44
Capacity Utilization (5)	77.1	77.5	77.2	76.5	76.8	76.5	76.1	76.3	73.4	63.4	64.7	68.7	71.5	72.3	72.1	72.9	73.3	74.2	74.9	72.7	74.2	74.6	-	-	73.9	74.6	0.7
Durable Goods New Orders YoY (22)	6.83	-1.03	0.15	4.67	2.07	-0.84	-9.29	-5.07	-28.49	-35.95	-25.38	-18.59	-12.41	-9.18	-7.60	-8.71	-0.14	-1.21	6.24	6.65	36.31	52.20	-	-	16.40	52.20	35.80
Core Capital Goods New Orders YoY (28)	-4.26	-1.80	-1.83	-2.18	1.40	0.23	-0.12	-0.52	-3.54	-8.92	-6.09	-2.78	0.56	3.35	5.31	6.07	8.24	10.11	10.07	11.20	14.38	25.16	-	-	11.88	25.16	13.28
Factory Orders YoY (18)	0.62	-3.49	-3.08	-0.92	-0.58	-0.66	-5.36	-4.28	-18.61	-26.48	-20.48	-13.85	-9.95	-7.74	-6.69	-6.83	-2.11	-2.03	3.17	3.96	21.19	34.07	-	-	9.44	34.07	24.63
Manufacturing & Trade Inventories YoY (26)	4.48	3.87	3.27	2.68	2.55	1.61	0.58	-0.38	-0.75	-2.53	-4.93	-6.04	-6.17	-5.65	-4.84	-3.95	-3.20	-2.60	-1.68	-0.55	-0.02	-	-	-	-0.75	-	-
Nonresidential Construction Spending YoY (30)	5.85	5.24	8.88	8.34	11.18	9.05	7.75	5.78	4.30	-0.10	0.83	1.41	-0.17	-2.11	-4.40	-2.83	-3.80	-4.00	-5.24	-5.53	-6.02	-3.89	-	-	-5.60	-3.89	1.71
Residential Construction Spending YoY (29)	-2.27	0.99	1.66	4.00	6.33	9.80	11.72	13.40	12.15	6.10	1.81	3.34	6.24	11.67	11.94	16.93	18.40	23.00	20.96	18.65	22.63	29.50	-	-	20.75	29.50	8.75
ISM Manufacturing PMI (23)	51.0	48.4	48.3	48.3	48.2	47.7	51.1	50.3	49.7	41.7	43.1	52.2	53.7	55.6	55.7	58.8	57.7	60.5	58.7	60.8	64.7	60.7	61.2	-	61.4	61.0	-0.4
ISM Non-Manufacturing PMI (15)	54.2	55.8	52.9	54.6	53.9	55.6	55.9	56.7	53.6	41.6	45.4	56.5	56.6	57.2	57.2	56.2	56.8	57.7	58.7	55.3	63.7	62.7	64.0	-	59.2	63.4	4.1
NFIB Small Business Optimism Index (19)	104.7	103.1	101.8	102.4	104.7	102.7	104.3	104.5	96.4	90.9	94.4	100.6	98.8	100.2	104.0	104.0	101.4	95.9	95.0	95.8	98.2	99.8	-	-	96.3	99.8	3.5
Exports YoY (11)	-0.07	-0.15	-1.87	-1.83	-0.42	1.22	-1.22	-1.30	-13.16	-28.92	-32.50	-24.76	-19.28	-17.62	-15.09	-13.68	-12.69	-10.10	-7.43	-9.84	8.06	-	-	-	-3.07	-	-
Imports YoY (16)	0.12	0.03	-2.87	-4.98	-3.63	-3.08	-2.78	-4.66	-11.34	-22.09	-24.28	-19.84	-11.29	-8.35	-6.30	-3.09	0.50	-0.03	3.18	4.89	18.13	-	-	-	8.73	-	-
Rail Traffic YoY (17)	-5.53	-5.04	-6.38	-7.91	-7.71	-9.38	-6.22	-6.74	-10.10	-20.89	-20.62	-14.29	-8.19	-5.95	-1.44	1.71	2.45	4.92	4.76	-4.40	12.87	27.34	27.81	-	4.41	27.57	23.16
Headline CPI YoY (25)	1.81	1.75	1.71	1.76	2.05	2.29	2.49	2.33	1.54	0.33	0.12	0.65	0.99	1.31	1.37	1.18	1.17	1.36	1.40	1.68	2.62	4.16	-	-	1.90	4.16	2.26
PCE Deflator YoY (27)	1.53	1.52	1.39	1.43	1.44	1.64	1.88	1.84	1.34	0.48	0.54	0.92	1.01	1.24	1.35	1.20	1.12	1.23	1.38	1.57	2.41	3.58	-	-	1.79	3.58	1.79
Core PCE Deflator YoY (21)	1.74	1.87	1.72	1.74	1.58	1.62	1.75	1.87	1.65	0.93	1.01	1.14	1.26	1.43	1.53	1.40	1.34	1.41	1.44	1.43	1.94	3.06	-	-	1.60	3.06	1.46
M2 Money Supply YoY (20)	4.96	5.19	5.60	6.44	6.99	6.62	6.67	6.79	10.16	16.95	21.95	22.91	23.27	23.05	23.78	23.71	24.29	24.80	25.87	27.10	24.34	17.99	-	-	25.77	17.99	-7.78

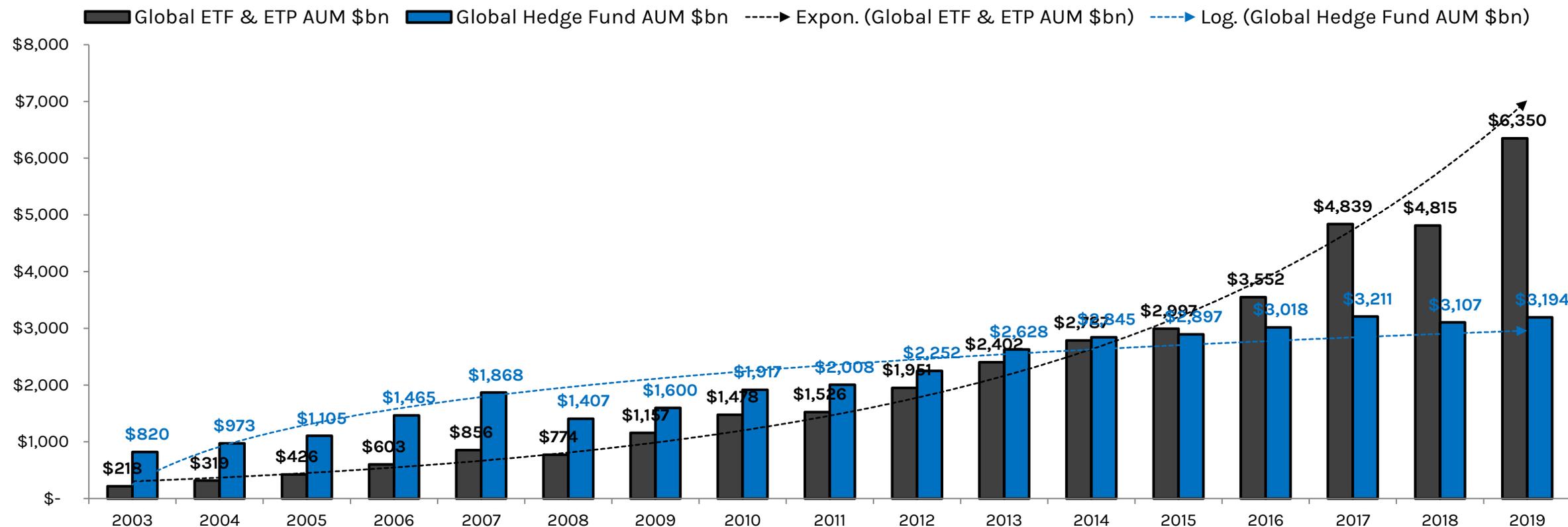
Data Source: Bloomberg. Intellectual Property of Hedgeye Risk Management. Nowcast feature rank shown in parenthesis.

OUR MACRO PROCESS



The Investment Landscape Has Evolved Tremendously

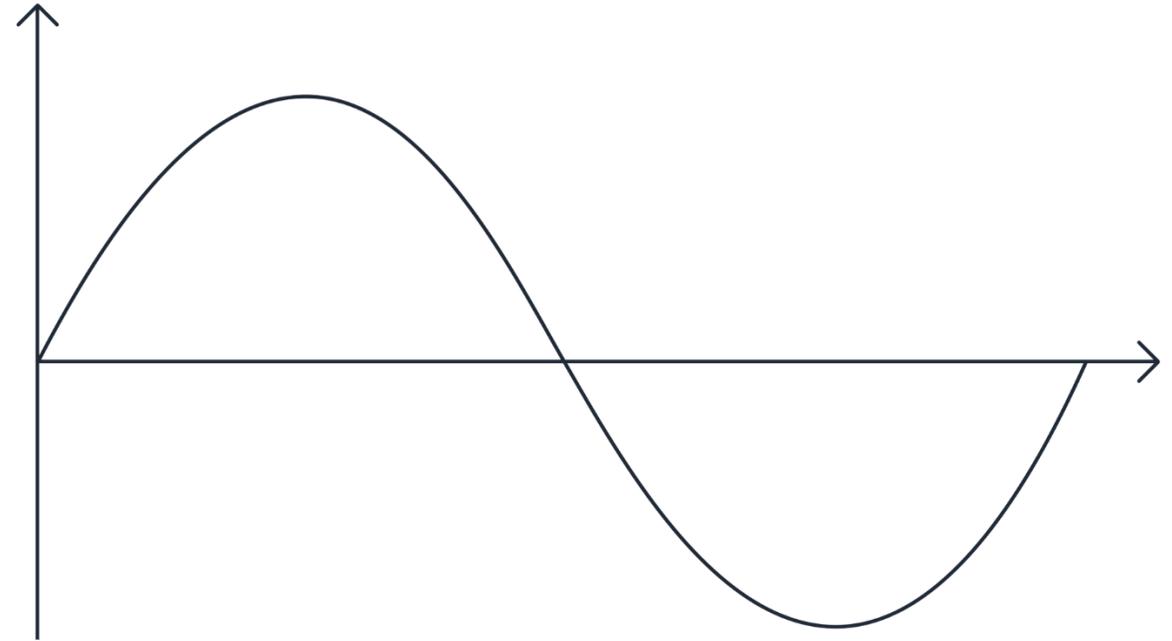
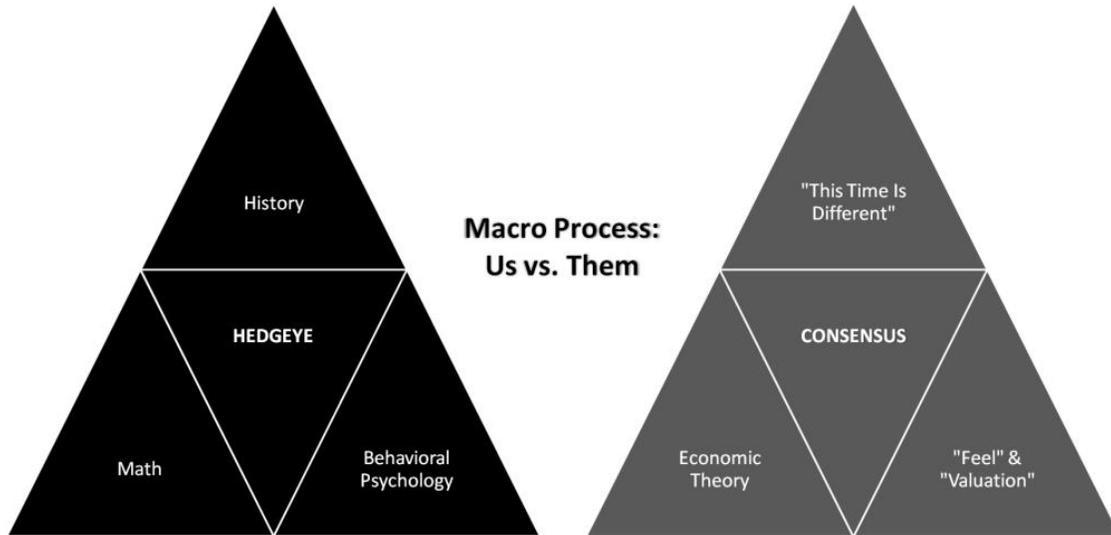
Stock-picking has given way to factor-picking and it's our job as investors to embrace this sea change, rather than fight it.



Skate To Where The Puck Is Going Within Asset Management

AUM in listed ETFs and ETPs 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 you agree with this projection, you must 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 research and risk management processes equipped to compete for alpha in this new regime?

... So We Evolved Alongside It



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.**

Quarterly Expected Values By GIP Model Quad Regime

Hedgeye Macro US GIP Model Backtest	EV by Quadrant				Shallow GDP Δ				Deep GDP Δ				Fed Easing				Fed On Hold				Fed Tightening				Quad 1 Prior				Quad 2 Prior				Quad 3 Prior				Quad 4 Prior				China Quad				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	11	12	13	14	21	22	23	24	31	32	33	34	41	42	43	44	1	2	3	4	
S&P 500 INDEX (SPY)	6.8%	2.9%	1.0%	-1.4%	4.6%	2.3%	3.1%	5.0%	9.2%	1.2%	-3.7%	-6.6%	9.1%	7.2%	1.2%	-3.8%	3.7%	-0.4%	-0.8%	-0.2%	6.7%	2.9%	3.8%	0.9%	15.1%	2.3%	1.8%	-1.7%	3.7%	3.5%	4.0%	-19.6%	3.6%	0.7%	-2.0%	-1.1%	7.9%	6.5%	4.7%	1.2%	3.0%	4.1%	-1.0%	1.9%	
Communication Services (XLC)	7.0%	-1.4%	0.7%	0.1%	9.7%	-1.7%	4.5%	6.8%	6.3%	-4.8%	-6.2%	-3.7%	10.0%	4.2%	2.6%	-2.6%	2.0%	-3.2%	-2.2%	-3.5%	7.9%	-1.8%	3.2%	1.0%	17.1%	-2.3%	0.5%	1.1%	5.0%	-0.9%	5.4%	-17.0%	4.0%	-2.4%	-1.6%	1.9%	6.8%	1.7%	2.7%	-0.3%	2.1%	2.9%	-0.6%	1.3%	
Consumer Cyclical (XLY)	8.4%	3.2%	1.1%	-0.3%	4.8%	2.1%	2.1%	6.0%	13.2%	2.1%	-2.0%	-5.4%	10.8%	7.2%	2.2%	-1.5%	5.9%	-0.9%	1.3%	-0.3%	7.3%	4.6%	2.5%	1.2%	20.2%	3.9%	2.6%	-2.0%	2.7%	5.4%	0.4%	-19.3%	2.4%	-2.5%	-1.1%	-1.3%	11.7%	3.7%	4.4%	4.8%	4.2%	4.4%	-0.3%	3.0%	
Consumer Non-Cyclical (XLP)	4.9%	1.3%	0.8%	1.8%	1.4%	-1.8%	1.6%	8.2%	7.3%	4.3%	0.4%	-1.0%	6.2%	4.4%	1.1%	-0.3%	3.4%	-1.1%	0.9%	8.0%	4.7%	1.3%	0.2%	0.0%	12.8%	2.2%	0.7%	2.2%	3.5%	0.3%	-1.9%	-12.7%	1.2%	2.1%	0.7%	4.3%	5.3%	0.4%	3.8%	0.8%	1.7%	2.8%	1.5%	2.1%	
Energy (XLE)	6.3%	3.0%	1.8%	-3.8%	3.9%	3.3%	6.4%	1.5%	7.0%	-2.5%	-6.9%	-9.6%	7.1%	9.5%	5.9%	-9.8%	2.8%	1.7%	-4.2%	2.0%	9.0%	-1.6%	6.7%	-0.4%	5.9%	-0.9%	3.7%	-6.7%	2.1%	3.7%	2.8%	-50.5%	6.4%	7.2%	-2.0%	-0.3%	9.2%	3.9%	6.9%	0.8%	6.3%	4.5%	-3.9%	-0.3%	
Financials (XLF)	6.2%	3.0%	0.1%	-1.4%	3.3%	0.5%	-0.9%	4.5%	10.2%	-0.2%	-1.1%	-8.4%	8.3%	7.8%	-2.4%	-6.2%	3.4%	2.7%	0.3%	2.1%	5.8%	-1.5%	3.1%	2.2%	16.2%	1.0%	1.7%	-0.7%	1.9%	6.5%	8.0%	-31.9%	1.1%	-3.4%	-5.7%	-0.3%	8.4%	7.5%	3.6%	1.2%	0.9%	5.0%	-3.2%	1.9%	
Health Care (XLV)	6.3%	2.4%	0.8%	0.6%	5.7%	-0.4%	2.0%	4.8%	6.6%	4.9%	-1.9%	-1.6%	7.8%	7.7%	1.7%	-1.7%	4.0%	-2.7%	0.6%	5.8%	6.5%	3.8%	0.1%	-0.2%	10.9%	0.7%	2.1%	0.8%	4.6%	0.7%	3.3%	-12.7%	5.2%	5.7%	-1.8%	3.1%	6.5%	7.7%	2.7%	-0.6%	1.7%	3.5%	-0.6%	3.8%	
Industrials (XLI)	7.2%	3.4%	1.1%	-1.8%	4.7%	0.1%	2.9%	5.2%	9.2%	2.9%	-3.3%	-6.8%	9.6%	8.7%	1.2%	-3.8%	3.5%	0.5%	-1.3%	-0.8%	7.4%	1.8%	5.1%	-0.1%	14.6%	3.5%	1.2%	-3.7%	5.2%	3.6%	4.5%	-27.0%	4.2%	1.9%	-2.0%	-0.8%	8.1%	7.7%	4.8%	6.1%	2.0%	2.2%	5.6%	-1.1%	0.9%
Information Technology (XLK)	9.0%	5.4%	2.5%	-2.6%	6.8%	8.3%	6.6%	4.0%	12.5%	1.1%	-5.4%	-10.0%	13.6%	8.7%	2.1%	-4.1%	3.7%	0.2%	0.6%	-7.4%	7.7%	9.0%	6.3%	2.8%	23.2%	3.8%	1.9%	-3.9%	5.6%	5.6%	8.6%	-11.9%	4.5%	3.2%	-1.0%	-6.8%	9.1%	13.6%	7.1%	4.5%	4.2%	4.9%	0.4%	3.6%	
Materials (XLB)	7.3%	2.8%	0.6%	-0.5%	3.7%	2.9%	5.2%	1.2%	10.3%	-0.3%	-7.0%	-3.5%	7.9%	7.8%	4.7%	-5.4%	6.5%	1.2%	-4.4%	3.9%	7.3%	-0.2%	3.9%	2.5%	10.8%	6.9%	3.4%	-5.9%	4.0%	1.9%	-0.3%	-26.1%	3.8%	-2.6%	-2.9%	1.8%	10.3%	5.0%	4.8%	4.3%	6.7%	4.4%	-1.3%	0.0%	
REITS (XLRE)	4.0%	0.2%	0.2%	0.9%	3.0%	-1.1%	-1.1%	9.1%	6.7%	4.3%	0.4%	-6.3%	4.6%	4.4%	0.3%	-3.8%	2.9%	-2.1%	-1.0%	6.0%	4.4%	-0.8%	2.1%	3.4%	5.9%	2.5%	-2.2%	6.3%	-0.6%	-0.1%	1.9%	-24.6%	1.5%	-1.5%	0.7%	-0.4%	7.9%	-1.6%	2.3%	2.2%	3.4%	2.3%	-2.0%	1.0%	
Utilities (XLU)	3.5%	-1.1%	4.0%	1.3%	5.5%	-3.7%	5.3%	9.7%	1.7%	0.1%	3.3%	-2.2%	4.4%	3.2%	3.1%	-2.5%	2.8%	-5.3%	3.1%	5.7%	2.8%	0.4%	6.6%	3.2%	4.4%	-0.2%	1.8%	7.1%	1.2%	-3.0%	12.9%	-13.5%	8.4%	2.0%	1.9%	3.7%	1.9%	-2.6%	5.4%	-3.4%	3.2%	3.0%	2.0%	0.5%	
Growth (IWF)	7.4%	4.2%	1.2%	-2.2%	4.9%	4.2%	3.5%	4.8%	10.4%	2.4%	-4.5%	-8.5%	10.3%	8.0%	1.8%	-4.2%	3.7%	-0.4%	-0.7%	-4.0%	7.0%	6.5%	3.8%	1.8%	18.1%	3.4%	2.1%	-2.4%	4.0%	5.3%	4.5%	14.1%	3.3%	1.4%	-2.0%	-3.9%	8.4%	7.6%	4.9%	1.7%	3.0%	4.6%	-0.5%	2.1%	
Value (IWD)	6.4%	1.8%	1.0%	-0.7%	4.7%	0.3%	2.7%	5.2%	8.5%	0.0%	-2.8%	-5.4%	8.1%	7.3%	1.2%	-3.9%	3.9%	-0.2%	-1.2%	3.0%	6.6%	-0.9%	4.5%	0.7%	12.6%	1.7%	1.5%	-2.8%	3.1%	5.5%	5.2%	-26.7%	4.0%	-1.1%	-2.3%	1.1%	7.9%	5.4%	4.7%	1.0%	3.4%	4.0%	-1.7%	1.5%	
Cyclical (RSP)	8.0%	3.9%	1.2%	-2.8%	5.3%	3.8%	4.1%	4.1%	11.9%	0.7%	-5.3%	-10.6%	11.0%	9.6%	2.3%	-6.0%	3.9%	-0.1%	-1.9%	-3.3%	7.7%	3.4%	5.2%	1.8%	18.8%	2.5%	2.9%	-3.0%	3.3%	5.8%	6.6%	-23.4%	3.9%	-1.1%	-3.5%	-4.1%	9.8%	9.7%	5.2%	1.9%	3.9%	5.2%	-2.3%	1.7%	
Defensives (DEF)	6.0%	2.3%	1.0%	-0.1%	4.4%	1.1%	2.2%	5.9%	7.4%	1.9%	-2.3%	-3.7%	7.7%	5.6%	0.7%	-2.0%	3.6%	-0.6%	0.0%	2.1%	6.0%	2.9%	3.1%	0.9%	12.6%	2.6%	0.8%	-3.0%	3.7%	2.1%	3.0%	-17.0%	3.6%	1.8%	-0.9%	1.1%	6.7%	3.4%	4.5%	1.3%	2.5%	3.6%	0.0%	2.0%	
High Beta (SPHB)	9.6%	5.0%	1.2%	-4.0%	8.2%	3.6%	4.9%	2.8%	14.1%	0.2%	-6.9%	-15.6%	15.8%	13.7%	2.7%	-7.6%	2.8%	-1.1%	-3.3%	-6.9%	7.1%	4.3%	6.9%	2.6%	19.8%	-0.6%	2.8%	-5.2%	3.2%	9.3%	12.1%	-36.2%	6.3%	0.9%	-6.7%	-7.8%	12.3%	12.8%	8.3%	5.7%	3.1%	6.8%	-3.5%	2.1%	
Low Beta (SPLV)	4.5%	1.1%	1.6%	2.2%	3.8%	-1.6%	2.3%	8.4%	5.5%	3.0%	0.3%	-1.1%	4.8%	4.2%	0.7%	0.0%	4.4%	-0.8%	1.1%	6.8%	4.2%	0.6%	3.6%	1.9%	8.0%	3.4%	-0.4%	2.8%	2.7%	0.0%	3.7%	-19.0%	3.6%	0.9%	1.5%	4.0%	5.1%	-0.5%	4.2%	2.8%	3.6%	3.0%	0.9%	1.8%	
Momentum (MTUM)	8.1%	4.1%	1.7%	-3.0%	5.2%	5.4%	4.3%	5.8%	10.5%	2.4%	-4.1%	-10.0%	9.7%	6.0%	1.5%	-5.1%	5.3%	0.1%	-0.4%	-3.2%	8.7%	7.6%	5.5%	-0.3%	19.5%	4.2%	3.0%	-1.5%	4.6%	6.0%	3.4%	-13.8%	5.0%	0.4%	-1.7%	-4.2%	8.4%	3.7%	6.3%	-1.3%	3.9%	4.1%	-0.8%	2.6%	
Quality (QUAL)	7.3%	3.3%	1.4%	0.0%	6.0%	1.3%	3.7%	6.0%	9.2%	3.4%	-2.8%	-4.1%	9.3%	7.0%	2.0%	-2.0%	4.3%	0.2%	-0.5%	2.2%	7.3%	3.7%	3.6%	1.1%	14.9%	2.6%	1.7%	-1.9%	4.8%	2.9%	4.1%	-17.6%	5.3%	3.7%	-1.3%	0.7%	7.5%	5.7%	5.2%	3.2%	3.2%	4.6%	0.4%	2.3%	
Dividend Yield (SDY)	6.8%	1.8%	0.8%	1.7%	4.5%	-0.3%	1.7%	6.9%	9.2%	1.6%	-1.1%	-2.0%	8.2%	6.7%	0.5%	-0.4%	4.7%	-0.2%	0.1%	5.9%	6.8%	-0.5%	2.4%	1.3%	13.3%	3.2%	0.1%	0.6%	3.4%	1.8%	1.5%	-23.3%	4.0%	-1.0%	0.0%	3.7%	8.4%	3.4%	4.0%	3.7%	3.5%	3.7%	0.3%	2.5%	
Size (OEF)	6.9%	3.1%	1.1%	-1.7%	4.8%	3.1%	3.1%	4.4%	8.8%	1.2%	-3.8%	-5.8%	8.4%	6.8%	0.7%	-3.8%	3.3%	-0.3%	-0.2%	-2.0%	6.9%	3.8%	3.8%	0.0%	15.5%	2.0%	2.0%	-2.3%	4.1%	3.8%	3.8%	-17.2%	3.4%	1.3%	-1.7%	-1.3%	7.8%	7.0%	3.8%	0.6%	2.7%	3.9%	-0.6%	2.0%	
Secular Growth (QQQ)	7.8%	6.0%	2.6%	-2.7%	8.0%	9.8%	6.2%	3.8%	12.6%	1.0%	-6.0%	-9.0%	12.6%	9.7%	2.2%	-4.4%	1.2%	-0.8%	-0.4%	-7.4%	7.9%	11.3%	7.5%	2.7%	18.2%	3.2%	3.0%	-3.6%	6.0%	8.7%	11.0%	-10.3%	5.1%	1.8%	-1.0%	-6.3%	7.8%	11.8%	8.0%	3.0%	4.1%	5.1%	0.8%	1.9%	
Mid-Caps (MDY)	7.5%	4.0%	1.7%	-0.9%	4.1%	2.6%	3.1%	5.7%	13.2%	1.5%	-2.8%	-8.2%	9.3%	9.7%	3.2%	-3.5%	5.1%	1.0%	-2.1%	-0.2%	7.2%	2.3%	6.4%	1.8%	18.3%	3.1%	1.2%	-1.3%	1.8%	6.4%	8.7%	-29.7%	5.5%	-0.4%	-1.6%	-1.5%	8.8%	5.6%	5.3%	4.1%	5.0%	5.9%	-1.5%	1.2%	
Small-Caps (IWM)	6.8%	4.9%	0.5%	-1.2%	5.3%	5.2%	2.5%	6.2%	10.6%	0.5%	-4.8%	-8.6%	8.1%	11.0%	2.0%	-3.2%	4.9%	1.3%	-3.5%	0.0%	6.9%	3.5%	5.6%	0.4%	13.3%	4.2%	0.2%	-0.7%	1.1%	7.1%	4.2%	-30.6%	3.2%	-0.9%	-2.2%	-2.6%	10.5%	9.5%	5.3%	4.1%	5.6%	4.7%	-2.1%	1.3%	
BARCLAYS AGG (AGG)	1.2%	0.7%	0.9%	2.3%	1.5%	0.8%	0.3%	1.9%	1.4%	1.5%	1.7%	3.3%	1.5%	0.9%	1.0%	2.2%	1.4%	0.8%	1.2%	3.0%	0.5%	0.2%	0.3%	1.9%	1.0%	1.0%	0.6%	2.2%	1.1%	0.3%	1.9%	3.1%	1.8%	1.0%	1.0%	2.6%	1.1%	0.3%	0.2%	1.9%	1.2%	1.0%	1.8%	1.3%	
Leveraged Loans (BKLN)	2.3%	1.8%	0.6%	0.6%	1.9%	1.2%	1.4%	1.5%	3.5%	2.3%	-1.1%	-5.2%	2.8%	2.8%	1.0%	-3.2%	1.3%	1.2%	-0.3%	1.5%	2.6%	1.6%	1.5%	4.8%	2.7%	2.0%	1.3%	0.6%	-2.2%	0.5%	1.8%	-13.0%	0.7%	1.2%	-0.6%	-1.5%	3.7%	2.4%	1.6%	5.5%	2.4%	1.7%	-0.3%	1.1%	
BDCs (BIZD)	6.3%	5.7%	-1.3%	-0.3%	5.3%	4.0%	-4.9%	5.6%	11.5%	10.6%	-3.7%	-25.9%	8.1%	10.7%	-3.0%	-15.4%	1.3%	1.7%	-1.0%	5.4%	7.4%	2.4%	2.3%	9.5%	13.9%	3.8%	-0.5%	-0.2%	-2.0%	8.5%	7.1%	-44.8%	2.1%	0.6%	-4.2%	-2.0%	11.7%	6.1%	4.2%	18.1%	6.9%	5.4%	-7.1%	2.9%	
Preferreds (PFD)	1.9%	2.6%	-0.3%	-0.5%	2.1%	2.8%	0.7%	1.5%	3.0%	3.6%	-1.8%	-7.3%	3.1%	2.4%	0.7%	-6.1%	0.4%	2.0%	-1.2%	2.4%	1.7%	4.0%	-0.3%	1.7%	3.3%	3.3%	-0.1%	-0.6%	0.8%	2.5%	4.6%	-22.8%	2.0%	-0.8%	-1.4%	0.0%	2.5%	4.3%	-0.1%	5.7%	5.4%	0.8%	-1.6%	0.1%	
IG Credit (LQD)	2.0%	0.9%	0.7%	2.5%	2.2%	0.9%	0.2%	2.5%	2.8%	1.9%	1.0%	2.3%	2.6%	1.8%	1.1%	1.7%	1.6%	0.9%	0.7%	3.4%	1.5%	0.0%	0.1%	2.9%	2.4%	1.2%	0.5%	2.2%	1.3%	0.6%	2.2%	-3.1%	2.3%	0.9%	0.4%	2.9%	2.2%	1.1%	0.3%	3.1%	1.8%	1.3%	1.5%	1.5%	
HY Credit (HYG)	3.4%	1.7%	0.8%	1.3%	3.1%	0.7%	1.6%	2.4%	5.1%	2.7%	-1.4%	-4.9%	3.9%	4.1%	2.1%	-2.4%	2.8%	0.4%	-0.2%	1.7%	3.4%	1.0%	0.8%	5.7%	4.7%	1.9%	1.6%	0.3%</																	

Highest/Lowest Expected Values By Quad Regime

Quad 1: Goldilocks

Best Asset Classes:

Equities, Credit, Commodities, FX

Worst Asset Classes:

Fixed Income, USD

Best Equity Sectors:

Tech, Consumer Discretionary, Materials, Industrials, Telecom

Worst Equity Sectors:

Utilities, REITS, Consumer Staples, Financials, Energy

Best Equity Style Factors:

High Beta, Momentum, Leverage, Secular Growth, Mid Caps

Worst Equity Style Factors:

Low Beta, Defensives, Value, Dividend Yield, Small Caps

Best Fixed Income Sectors:

BDCs, Convertibles, HY Credit, EM \$ Debt, Leveraged Loans

Worst Fixed Income Sectors:

TIPS, Short Duration Treasuries, MBS, Treasury Belly, Long Bond

Quad 2: Reflation

Best Asset Classes:

Commodities, Equities, Credit, FX

Worst Asset Classes:

Fixed Income, USD

Best Equity Sectors:

Tech, Consumer Discretionary, Industrials, Energy, Financials

Worst Equity Sectors:

Telecom, Utilities, REITS, Consumer Staples, Health Care

Best Equity Style Factors:

Secular Growth, High Beta, Small Caps, Cyclical Growth, Momentum

Worst Equity Style Factors:

Low Beta, Dividend Yield, Value, Defensives, Size

Best Fixed Income Sectors:

Convertibles, BDCs, Preferreds, Leveraged Loans, HY Credit

Worst Fixed Income Sectors:

Long Bond, Treasury Belly, Munis, MBS, IG Credit

Quad 3: Stagflation

Best Asset Classes:

Gold, Commodities, Fixed Income

Worst Asset Classes:

Credit

Best Equity Sectors:

Utilities, Tech, Energy, Industrials, Consumer Discretionary

Worst Equity Sectors:

Financials, REITS, Materials, Telecom, Consumer Staples

Best Equity Style Factors:

Secular Growth, Momentum, Mid Caps, Low Beta, Quality

Worst Equity Style Factors:

Small Caps, Dividend Yield, Value, Defensives, Size

Best Fixed Income Sectors:

Munis, EM \$ Debt, Long Bond, TIPS, Treasury Belly

Worst Fixed Income Sectors:

BDCs, Preferreds, Convertibles, Leveraged Loans, HY Credit

Quad 4: Deflation

Best Asset Classes:

Fixed Income, Gold, USD

Worst Asset Classes:

Commodities, Equities, Credit, FX

Best Equity Sectors:

Consumer Staples, Utilities, REITS, Health Care, Telecom

Worst Equity Sectors:

Energy, Tech, Industrials, Financials, Materials

Best Equity Style Factors:

Low Beta, Dividend Yield, Quality, Defensives, Value

Worst Equity Style Factors:

High Beta, Momentum, Leverage, Secular Growth, Cyclical Growth

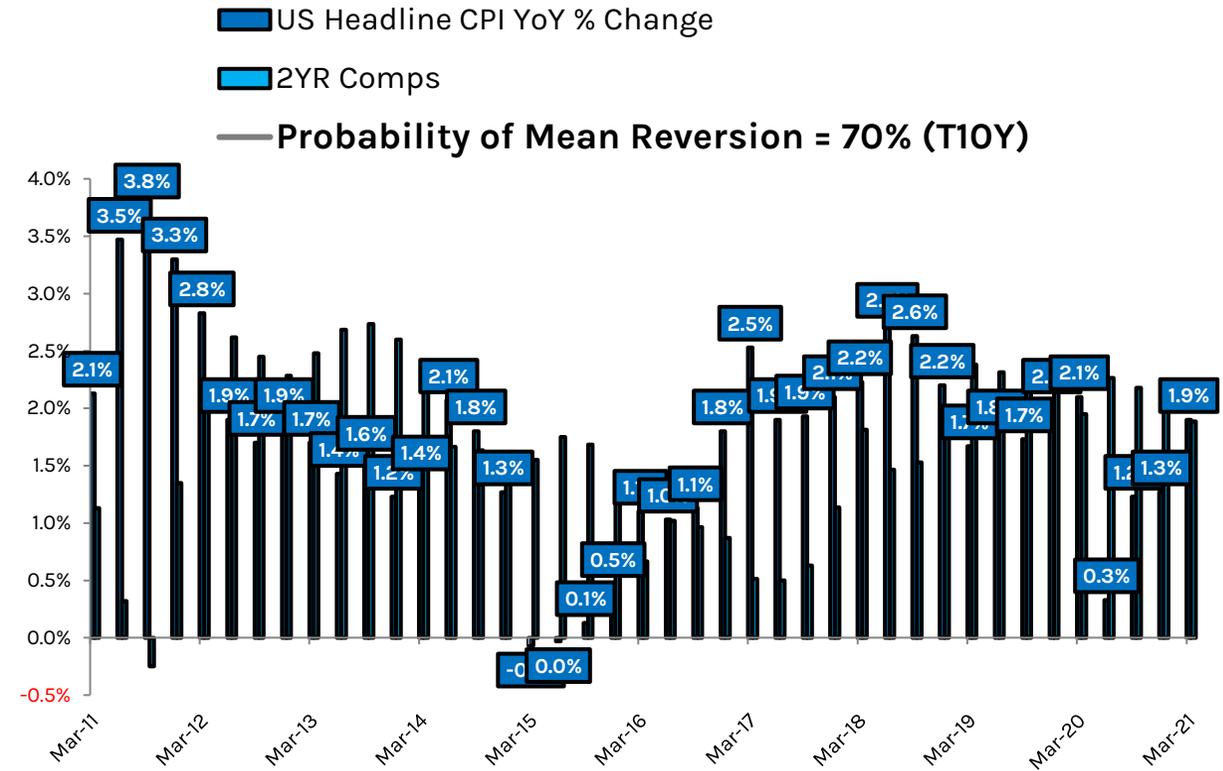
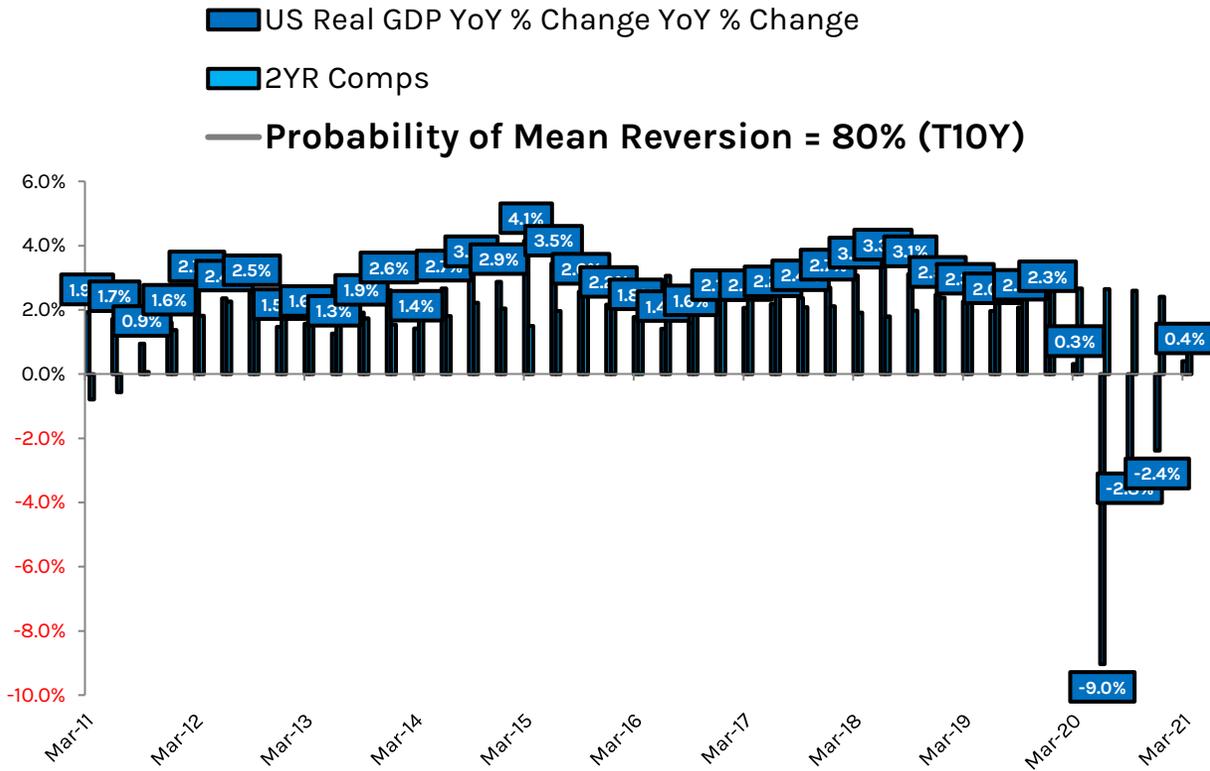
Best Fixed Income Sectors:

Long Bond, Treasury Belly, IG Credit, Munis, MBS

Worst Fixed Income Sectors:

Preferreds, EM Local Currency, BDCs, Leveraged Loans, TIPS

Base Effects Matter Because GDP and CPI Are More Or Less Stationary Processes When Analyzed On A YoY Rate Of Change Basis



Using the US economy as an example, the sign of the first difference of 2yr base effects explains INFLECTIONS in GROWTH and INFLATION 80% and 70% of the time, respectively. Moreover, easing or steepening base effects perpetuate MOMENTUM in GROWTH and INFLATION 80% and 76% 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.

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



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, inasmuch that assets in the converse "Bearish Formation" should be repeatedly shorted on strength.

A | B Testing Process: Quantify Investor Consensus

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	0.0%	1.5%	3.0%	10.1%	27.2%	29.5%
	Low Debt/EV	1.2%	0.6%	1.7%	9.8%	12.4%	8.1%
SI	High Short Interest	0.4%	1.0%	2.3%	9.5%	22.0%	21.6%
	Low Short Interest	0.6%	0.6%	0.4%	11.1%	15.9%	14.7%
BETA	High Beta	0.1%	0.5%	2.8%	11.4%	30.4%	30.8%
	Low Beta	0.8%	0.9%	1.1%	10.8%	10.8%	9.0%
YIELD	High Yield	0.1%	1.7%	1.2%	10.9%	19.3%	21.3%
	Low Yield	0.8%	-0.2%	1.6%	7.7%	17.4%	14.2%
MKT CAP	MCAP Bottom 25%	0.2%	0.7%	0.7%	10.8%	23.7%	23.4%
	MCAP Top 25%	0.7%	0.8%	1.4%	11.4%	16.8%	15.8%
Sales	Top 25% Sales Growth	1.0%	1.1%	3.5%	8.0%	19.2%	16.8%
	Bottom 25% Sales Growth	0.2%	1.2%	1.1%	12.3%	23.7%	24.2%
EPS	Top 25% EPS Growth	0.7%	1.1%	2.1%	7.4%	20.2%	18.3%
	Bottom 25% EPS Growth	0.2%	0.8%	2.2%	12.1%	25.5%	26.4%

*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		Z-Score		
						Max	Min	1Y	3Y	
EQUITIES	SPX (Index + E-mini)	(19,225)	(10,731)	(20,493)	(18,809)	(6,543)	245,514	(318,850)	-0.18X	-0.30X
	VIX	(61,782)	(850)	(88,911)	(108,726)	(101,054)	44,245	(218,362)	1.70X	0.59X
	Russell 2000 (mini)	(34,752)	(1,096)	(19,244)	(9,135)	6,881	68,420	(88,708)	-1.93X	-0.83X
	Dow Jones (mini)	(9,866)	3,293	(11,057)	(11,636)	(9,829)	54,635	(28,732)	-0.01X	-1.02X
	Nasdaq (mini)	(13,457)	(1,587)	(9,582)	3,653	(1,028)	47,085	(133,005)	-0.37X	-0.98X
	Nikkei Index	(4,091)	(45)	(4,133)	(2,730)	(2,677)	4,738	(16,298)	-0.40X	0.52X
RATES	10Y UST	135,651	(30,048)	64,652	58,161	71,665	165,699	(758,490)	0.98X	1.32X
	2Y UST	(83,061)	58,817	(254,318)	(235,139)	(246,799)	30,550	(421,551)	2.29X	1.42X
	5Y UST	(86,787)	(4,634)	(24,287)	(49,459)	(140,274)	148,962	(866,140)	0.35X	0.63X
	UST Bonds	(92,294)	25,651	(123,051)	(154,909)	(168,989)	3,026	(241,003)	1.73X	-0.02X
	30D Fed Funds	(297,178)	(49,219)	(188,093)	(117,601)	41,933	488,558	(297,178)	-1.65X	-1.84X
	Eurodollar	(256,846)	(53,741)	497,208	519,500	485,181	2,134,274	(2,835,314)	-2.38X	-0.20X
CURRENCIES	\$USD	2,972	183	3,868	(4,441)	(4,972)	43,033	(15,000)	1.19X	-0.78X
	JPY	(48,519)	1,448	(52,353)	(9,995)	9,578	52,239	(117,731)	-1.59X	-0.58X
	EUR	111,826	4,660	83,614	110,040	137,399	212,535	(123,765)	-0.64X	0.96X
	GBP	27,764	(6,088)	26,461	23,467	7,746	40,671	(107,406)	1.07X	1.38X
	AUD	(3,737)	(421)	1,766	1,057	(49)	15,665	(74,181)	-0.47X	1.14X
	CAD	50,344	5,122	21,536	16,698	(2,122)	53,332	(67,121)	2.46X	2.25X
	MXN	(3,643)	4,999	(10,774)	(6,006)	4,948	170,379	(29,510)	-0.60X	-1.02X
	NZD	5,929	(2,656)	6,055	9,908	7,604	17,126	(42,544)	-0.30X	0.95X
	CHF	475	1,507	239	5,541	9,344	17,848	(47,216)	-1.45X	0.46X
COMMODITIES	CRUDE OIL	537,868	12,450	546,099	549,833	535,959	702,356	332,714	0.07X	0.53X
	GOLD	129,846	2,943	80,100	89,330	116,614	292,066	(103,009)	0.34X	0.10X
	COPPER	19,484	(5,060)	41,592	54,707	55,696	80,564	(60,135)	-1.91X	0.29X
	Natural Gas	(86,420)	(10,791)	(56,489)	(21,336)	3,576	71,340	(262,534)	-2.01X	-0.21X
	RBOB Gasoline	56,101	2,506	51,515	59,652	58,943	129,000	40,626	-0.24X	-1.02X
	ULSD Heating Oil	22,626	(2,144)	11,375	11,748	11,231	50,485	(27,674)	1.84X	0.98X
	Silver	48,944	(2,831)	41,826	45,769	44,373	80,646	(30,158)	0.57X	0.59X
	Platinum	25,589	1,128	28,322	29,200	22,805	69,306	(11,540)	0.36X	0.19X
	Corn	408,096	20,125	474,232	493,135	338,367	557,581	(270,560)	0.27X	1.36X
	Soybeans	162,365	3,780	183,747	197,835	196,445	270,935	(148,817)	-0.53X	1.01X
	Wheat	17,618	331	22,556	29,622	27,672	63,219	(69,231)	-0.46X	0.22X
	Live Cattle	73,134	(9,298)	90,970	91,892	77,004	183,134	20,158	-0.17X	-0.20X
	Lean Hogs	95,119	2,785	89,910	77,057	59,500	97,769	(7,575)	1.46X	1.81X
	Sugar	283,408	18,555	246,274	247,021	241,142	316,046	(205,161)	0.69X	1.51X
	Cotton	58,937	1,241	73,809	80,615	72,488	123,757	(37,827)	-0.63X	0.58X
	Coffee	64,466	5,893	45,884	45,702	37,680	64,466	(106,651)	1.20X	1.57X
	Cocoa	20,545	3,554	27,693	33,540	29,464	81,269	(31,483)	-0.51X	-0.03X
	Orange Juice	(403)	523	(987)	(3)	251	5,531	(9,416)	-0.44X	0.62X

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

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

TIME WINDOW SETTING:		TOTAL RETURN PERFORMANCE	IVOL PREMIUM/DISCOUNT						REALIZED VOLATILITY TRENDS			IMPLIED VOLATILITY TRENDS			
VOLATILITY_30D			YTD %	IVOL PREM %		1W Ago	1M Ago	TTM Z-Score	3Yr Z-Score	RVOL		PERCENTILE	IVOL		
PUT_IMP_VOL_30D				IVOL / RVOL	Yesterday					Yesterday	CURRENT	MM %	10YR	CURRENT	MM %
TICKER		CURRENT													
US EQUITIES															
Energy Sector SPDR ETF	XLE US EQUITY	48.67%	3%	-8%	32%	15%	0.0	0.1	29.3	9%	77%	30.2	-2%	80%	
Financials Sector SPDR ETF	XLF US EQUITY	31.08%	27%	27%	-9%	36%	0.5	0.6	14.4	-5%	34%	18.3	-10%	60%	
Materials Sector SPDR ETF	XLB US EQUITY	21.95%	35%	23%	26%	32%	0.4	0.6	15.9	-4%	47%	21.5	-2%	73%	
Vanguard Real Estate REIT ETF	VNQ US EQUITY	21.43%	-7%	-5%	-10%	38%	-0.9	-0.4	15.2	31%	58%	14.2	-12%	48%	
Industrials Sector SPDR ETF	XLI US EQUITY	19.33%	50%	37%	20%	94%	0.8	1.1	14.7	26%	51%	22.1	-2%	80%	
Communication Services SPDR ETF	XLC US EQUITY	17.56%	-16%	-3%	-11%	16%	-1.3	-1.0	18.4	4%	46%	15.5	-25%	11%	
I-Shares Russell 2000 ETF	IWM US EQUITY	16.20%	-5%	5%	-10%	10%	-0.8	-0.5	20.0	-10%	69%	19.1	-22%	61%	
SPDR S&P 500 ETF Trust	SPY US EQUITY	13.40%	-5%	6%	-11%	45%	-0.8	-0.5	12.5	17%	52%	11.8	-24%	37%	
Health Care Sector SPDR ETF	XLV US EQUITY	7.99%	24%	38%	44%	27%	-0.2	0.3	9.9	-10%	20%	12.2	-12%	27%	
Technology Sector SPDR ETF	XLK US EQUITY	7.91%	-14%	26%	-6%	15%	-1.0	-0.7	20.0	4%	73%	17.3	-22%	61%	
Power Shares QQQ Trust ETF	QQQ US EQUITY	7.10%	-8%	7%	-6%	36%	-0.9	-0.6	18.5	10%	67%	17.1	-25%	59%	
Consumer Staples Sector SPDR ETF	XLP US EQUITY	6.60%	62%	39%	61%	108%	0.4	0.4	10.7	-6%	45%	17.4	-27%	86%	
Consumer Discretionary Sector SPDR ETF	XLY US EQUITY	6.54%	-3%	3%	-23%	21%	-0.8	-0.6	16.4	11%	64%	15.9	-11%	59%	
Utilities Sector SPDR ETF	XLU US EQUITY	5.07%	-20%	-11%	56%	111%	-1.2	-0.7	14.6	33%	59%	11.8	-49%	25%	
INTERNATIONAL EQUITIES															
Euro Stoxx 50 Index	BSXSE INDEX	17.22%	-10%	-5%	-17%	43%	-0.8	-0.5	14.9	25%	40%	13.5	-21%	23%	
I-Shares MSCI Emerging Markets ETF	EEM US EQUITY	8.36%	-6%	-6%	-14%	18%	-0.6	-0.5	17.7	10%	44%	16.7	-12%	28%	
I-Shares MSCI Japan ETF	EWJ US EQUITY	2.95%	-26%	-22%	-27%	7%	-1.4	-1.3	17.4	15%	67%	12.8	-21%	24%	
I-Shares China Large-Cap ETF	FXI US EQUITY	0.80%	-5%	-3%	0%	3%	-0.1	-0.2	20.3	-1%	42%	19.2	-8%	24%	
CURRENCIES															
Currency Shares British Pound ETF	FXB US EQUITY	3.42%	-6%	2%	-2%	5%	-0.8	-0.6	6.8	-6%	25%	6.4	-16%	11%	
PowerShares US Dollar Index ETF	UUP US EQUITY	0.00%	-5%	4%	5%	12%	-1.6	-0.6	6.3	19%	48%	6.0	1%	13%	
Currency Shares Euro Trust ETF	FXE US EQUITY	-0.79%	-14%	-12%	-11%	3%	-1.6	-1.1	6.6	19%	33%	5.7	-1%	11%	
Currency Shares Japanese Yen ETF	FXJ US EQUITY	-5.97%	2%	15%	23%	56%	-0.6	-0.4	5.7	16%	22%	5.8	-24%	9%	
COMMODITIES															
United States Oil Fund ETF	USO US EQUITY	43.17%	11%	15%	10%	-7%	-0.2	0.2	26.2	-24%	46%	29.0	-10%	45%	
United States Natural Gas Fund ETF	UNG US EQUITY	18.37%	26%	20%	42%	24%	0.3	0.4	26.7	5%	19%	33.7	6%	32%	
PowerShares DB Agriculture Fund ETF	DBA US EQUITY	17.78%	-1%	4%	8%	59%	-2.2	-1.2	20.0	55%	98%	19.9	-3%	88%	
SPDR Gold Shares ETF	GLD US EQUITY	-0.67%	12%	16%	35%	-3%	0.1	0.3	11.9	-11%	38%	13.3	3%	37%	
FIXED INCOME															
I-Shares IBOXX HY Corporate Bond ETF	HYG US EQUITY	1.70%	-2%	15%	25%	26%	-1.1	-0.6	3.4	5%	15%	3.3	-18%	3%	
I-Shares J.P. Morgan USD EM Bond ETF	EMB US EQUITY	-1.82%	-3%	11%	-2%	3%	-0.8	-0.6	6.4	4%	63%	6.3	-1%	35%	
I-Shares IBOXX IG Corporate Bond ETF	LDD US EQUITY	-3.43%	-3%	18%	13%	23%	-0.9	-0.5	5.4	4%	64%	5.2	-18%	40%	
I-Shares 7-10 Year Treasury Bond ETF	IEF US EQUITY	-4.01%	32%	67%	58%	47%	-0.5	-0.1	3.8	-11%	14%	5.0	-20%	23%	
I-Shares 20+ Year Treasury Bond ETF	TLT US EQUITY	-10.71%	19%	43%	41%	26%	0.1	0.7	9.3	-14%	12%	11.1	-19%	30%	
MEGA-CAP TECH															
Alphabet	GOOGL US EQUITY	36.57%	-13%	-6%	-14%	1%	-0.9	-0.5	23.9	5%	60%	20.7	-10%	35%	
Facebook	FB US EQUITY	20.94%	-25%	-20%	-25%	-17%	-1.2	-0.9	32.0	-1%	54%	24.1	-11%	21%	
Microsoft	MSFT US EQUITY	13.27%	-13%	-7%	-10%	3%	-1.0	-0.6	21.7	0%	51%	18.9	-16%	29%	
Amazon	AMZN US EQUITY	-1.56%	-1%	5%	-5%	21%	-0.7	-0.5	21.5	-2%	31%	21.2	-20%	11%	
Apple	AAPL US EQUITY	-4.82%	-3%	3%	-6%	10%	-0.5	-0.3	22.7	-5%	41%	22.0	-17%	27%	

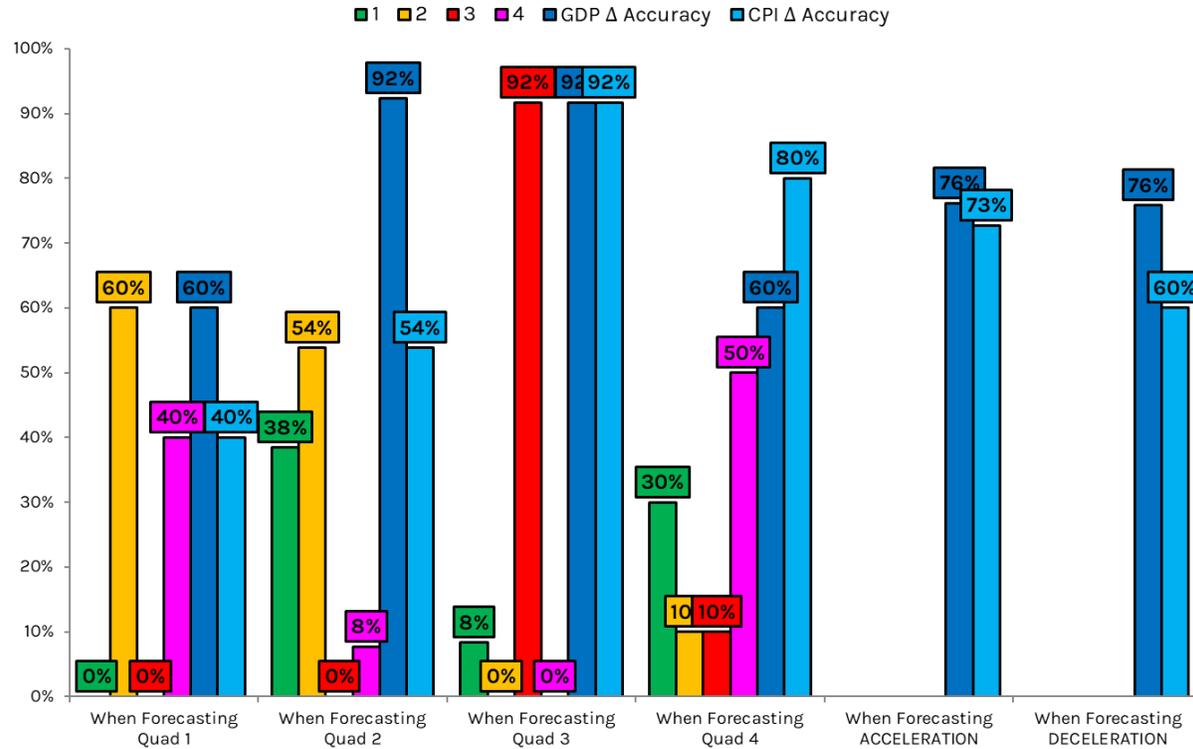
Data Source: CBOE, CME, Bloomberg

Measuring And Mapping The Quads With Precision Ex Ante Matters To Driving Ex Post Returns

US Comparative Base Effects Model Backtest

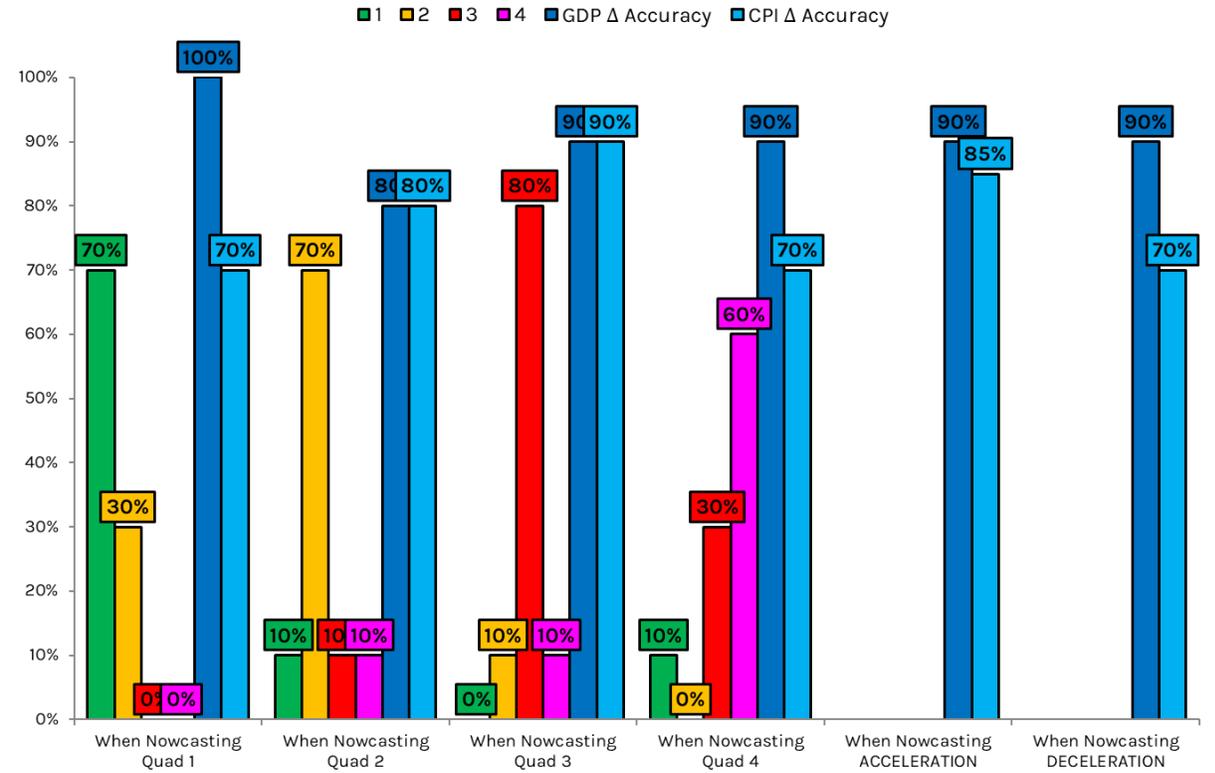
US Nowcast Model Backtest

Hedgeye Comparative Base Effects Model Quad Projection Accuracy: United States



Data Source: Bloomberg

Hedgeye Nowcast Model Quad Projection Accuracy: United States



Data Source: Bloomberg

FOR MORE INFORMATION CONTACT US AT:

INFO@HEDGEYE.COM