

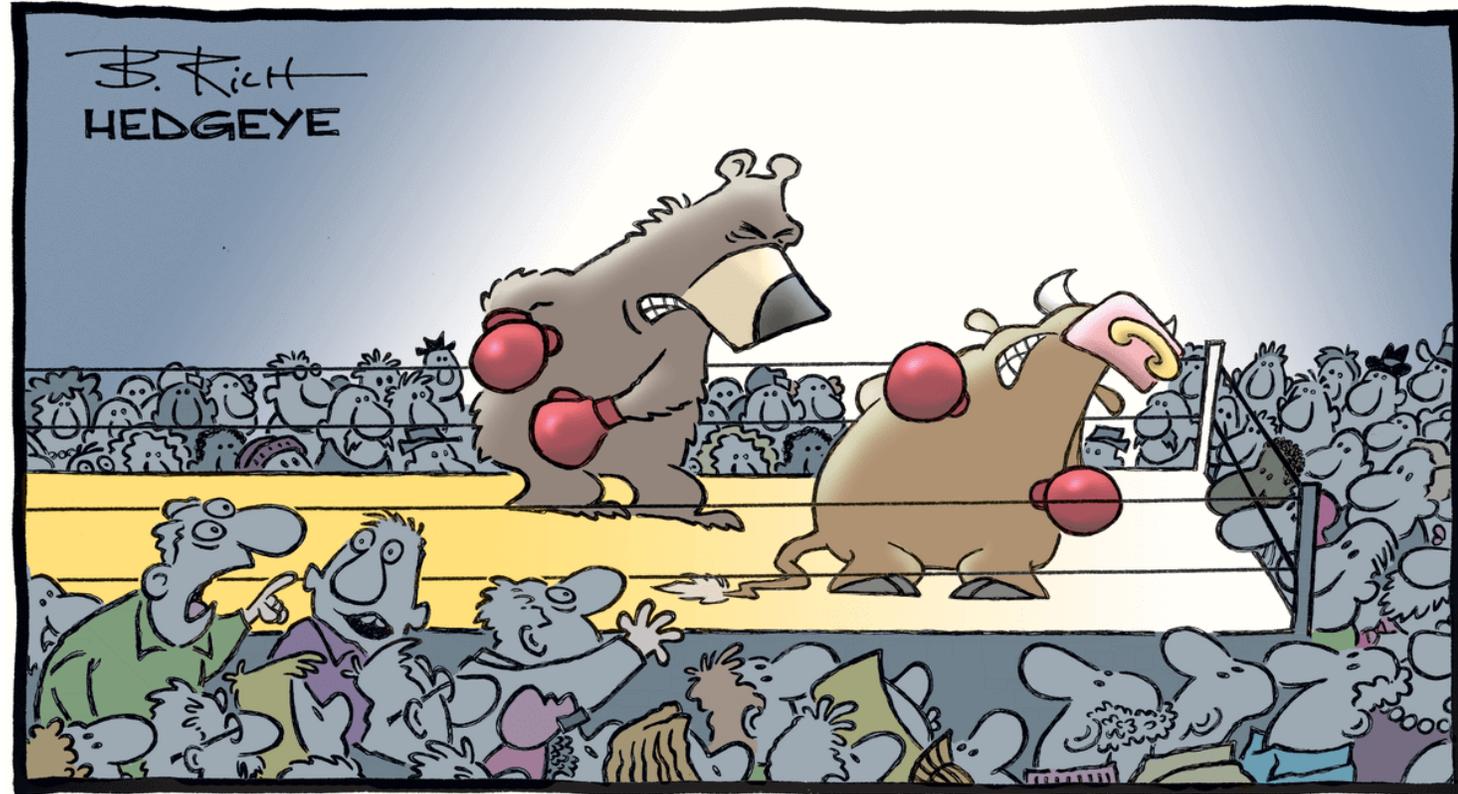
HEDGEYE



HEDGEYE'S CURRENT MARKET OUTLOOK

Prepping For The Pivot

Updated: September 7th, 2021



MACRO THEMES

#Quad2 Phase Transition

#LaborInflation = Sticky Stagflation

Long Europe, Short China #Reiterated

DISCLAIMER

Hedgeye Risk Management, LLC (“Hedgeye”) is a registered investment advisor, registered with the State of Connecticut. Hedgeye is not a broker dealer and does not provide investment advice to individuals. This research does not constitute an offer to sell, or a solicitation of an offer to buy any security or investment vehicle. This research is presented without regard for individual investment preferences or risk parameters; it is general information and does not constitute specific investment advice, nor does it constitute or contain any legal or tax opinions. This presentation is based on information from sources believed to be reliable. Hedgeye is not responsible for errors, inaccuracies or omissions of information. The opinions and conclusions contained in this report are those of the individual expressing those opinions or conclusion and are intended solely for the use of Hedgeye’s clients and subscribers, and the authorized recipients of the content. In reaching its own opinions and conclusions, Hedgeye and its employees have relied upon research conducted by Hedgeye’s employees, which is based upon sources considered credible and reliable within the industry. Neither Hedgeye, nor its employees nor any individual expressing opinions, conclusions or data are responsible for the validity or authenticity of the information upon which it has relied.

TERMS OF USE

This report is protected by United States and foreign copyright laws and is intended solely for the use of its authorized recipient. Access must be provided directly by Hedgeye. There is a fee associated with access to this report and the information and materials presented during the event. **Redistribution or republication of this report and its contents are strictly prohibited.** By joining this call or possessing these materials, you agree to these Terms. For more detail please refer to the appropriate sections of the Hedgeye Services Agreement and the Terms of Service at https://www.hedgeye.com/terms_of_service.

Q3 2021 Macro Themes

1 #Quad2 Phase Transition

The slowest moving reflationary train in history did not disappoint and it looks set for a final crescendo over the coming month(s). We'll detail the outlook for labor, earnings and the Services economy as domestic macro girds for a ramp to a historic Quad 2 cycle peak. With growth deceleration a mathematical certainty on the backside of the easiest comps in modernity, we'll explore the probable trajectory of the inflection and detail how we'll be risk managing and allocating amidst the chop associated with renormalization and the evolving macro-policy conjuncture.

2 #LaborInflation = Sticky Stagflation

Idiosyncratic pandemic dynamics coupled with unprecedented Fed-Fiscal policy accommodation have driven historic fundamental demand-supply imbalances. We'll redux how this imbalance has manifested across the Goods economy, how similar imbalances will continue to propagate across the Services sector and what it means vis-à-vis implications for labor inflation and the earnings cycle as a transition to Quad 3 becomes increasingly probable. "Transitory" is, of course, conveniently amorphous and non-specific policy-speak ... we'll discuss why inflation is likely to remain sticky-high over the coming quarter(s).

3 Long Europe, Short China #Reiterated

While most of the G20 was in Quad 2 in Q2, China stood alone in Quad 3 as it was the first to enter and emerge from Covid's comp shadow. Looking ahead, China will remain in a decelerating growth environment for the rest of 2021. Q3 will see the entire G20, save India/Indonesia/Turkey, fall into Quad 4. However, Europe, in contrast to the rest of the G20, is poised to be the only region with accelerating Q4 and Q1 growth, setting the stage for ongoing positive performance.

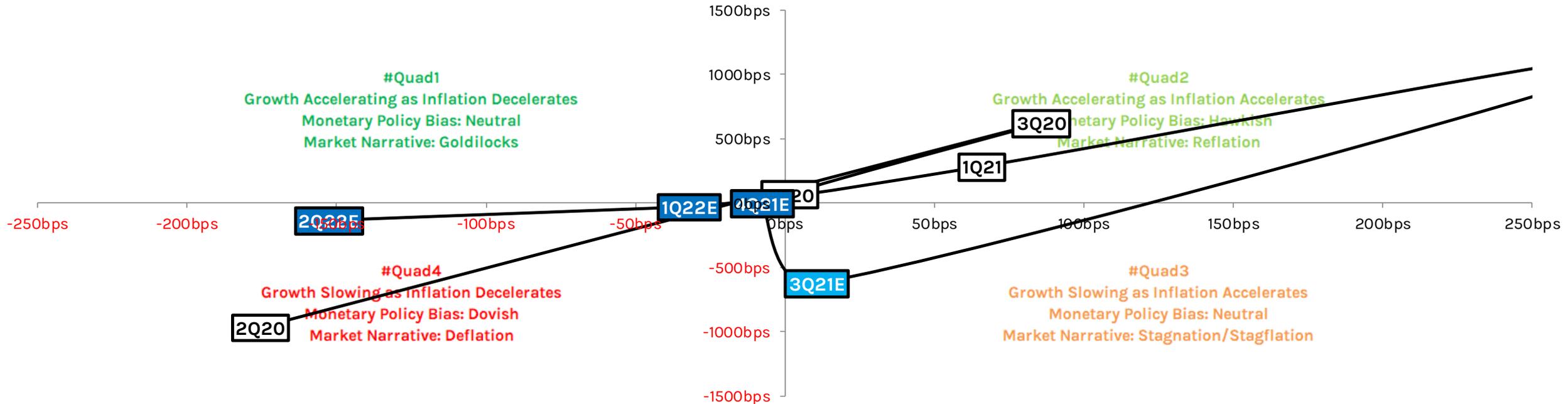
What Are The Quads?

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	3Q18	4Q18	1Q19	2Q19	3Q19	4Q19	1Q20	2Q20	3Q20	4Q20	1Q21	2Q21	← Actuals Estimates →	3Q21E	4Q21E	1Q22E	2Q22E
Real GDP QoQ SAAR	1.90%	0.90%	2.40%	3.20%	2.80%	1.90%	-5.10%	-31.20%	33.80%	4.50%	6.30%	6.60%	Real GDP QoQ SAAR	6.10%	4.13%	4.85%	1.04%
Real GDP YoY	3.05%	2.32%	2.15%	2.11%	2.32%	2.57%	0.63%	-9.08%	-2.89%	-2.26%	0.55%	12.18%	Real GDP YoY	5.90%	5.81%	5.48%	4.09%
2yr Comparative Base Effects	1.96%	2.36%	2.45%	2.72%	2.66%	2.52%	2.58%	2.70%	2.69%	2.45%	1.39%	-3.49%	2yr Comparative Base Effects	-0.28%	0.15%	0.59%	1.55%
Headline CPI YoY	2.64%	2.20%	1.64%	1.81%	1.76%	2.03%	2.12%	0.36%	1.22%	1.24%	1.90%	4.85%	Headline CPI YoY	4.95%	4.88%	4.56%	3.03%
2yr Comparative Base Effects	1.54%	1.96%	2.38%	2.31%	2.30%	2.16%	1.93%	2.26%	2.20%	2.12%	1.88%	1.09%	2yr Comparative Base Effects	1.49%	1.64%	2.01%	2.61%

United States

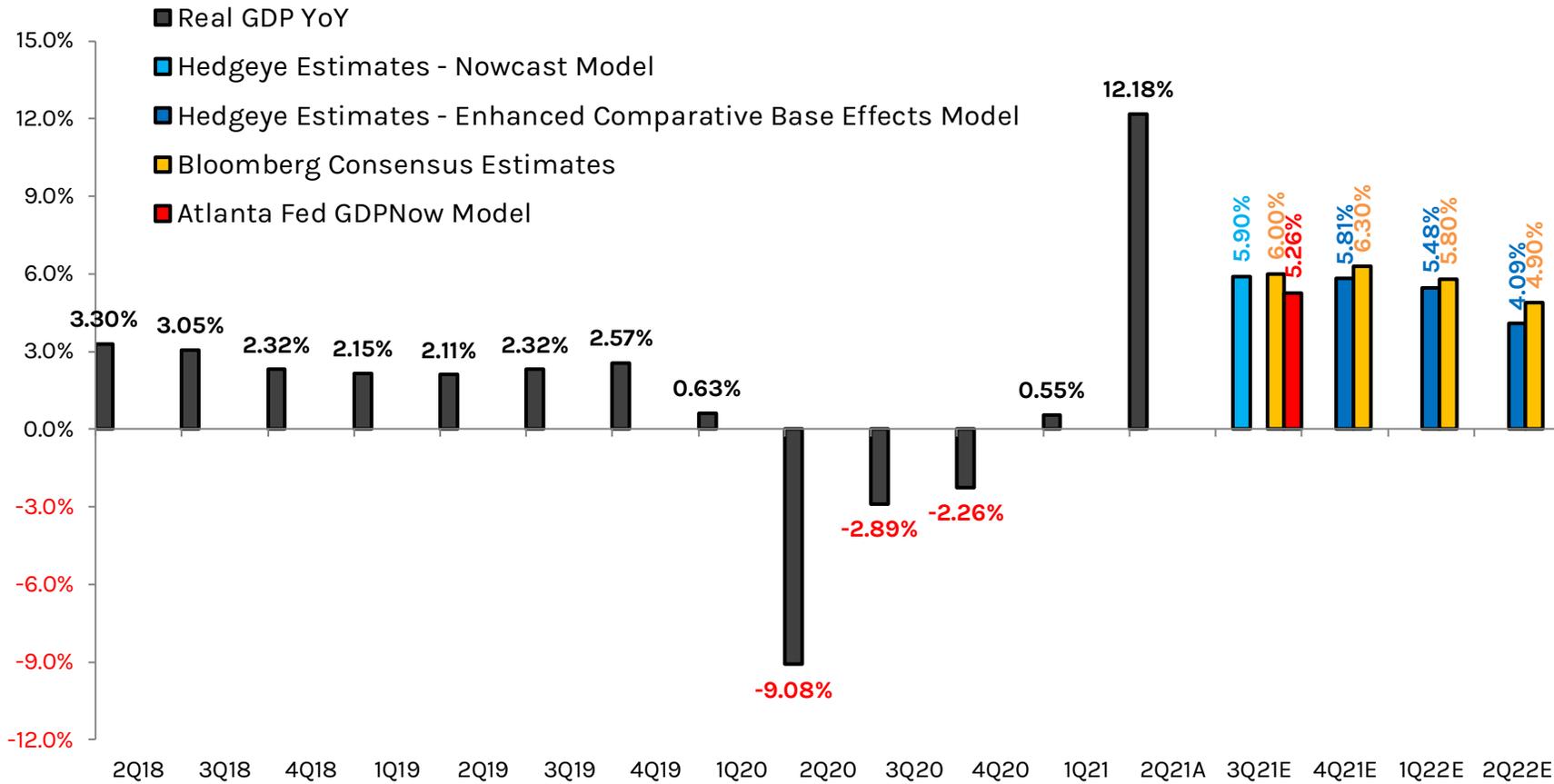
◆ x-axis: First Difference of YoY Headline CPI;
y-axis: First Difference of YoY Real GDP



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

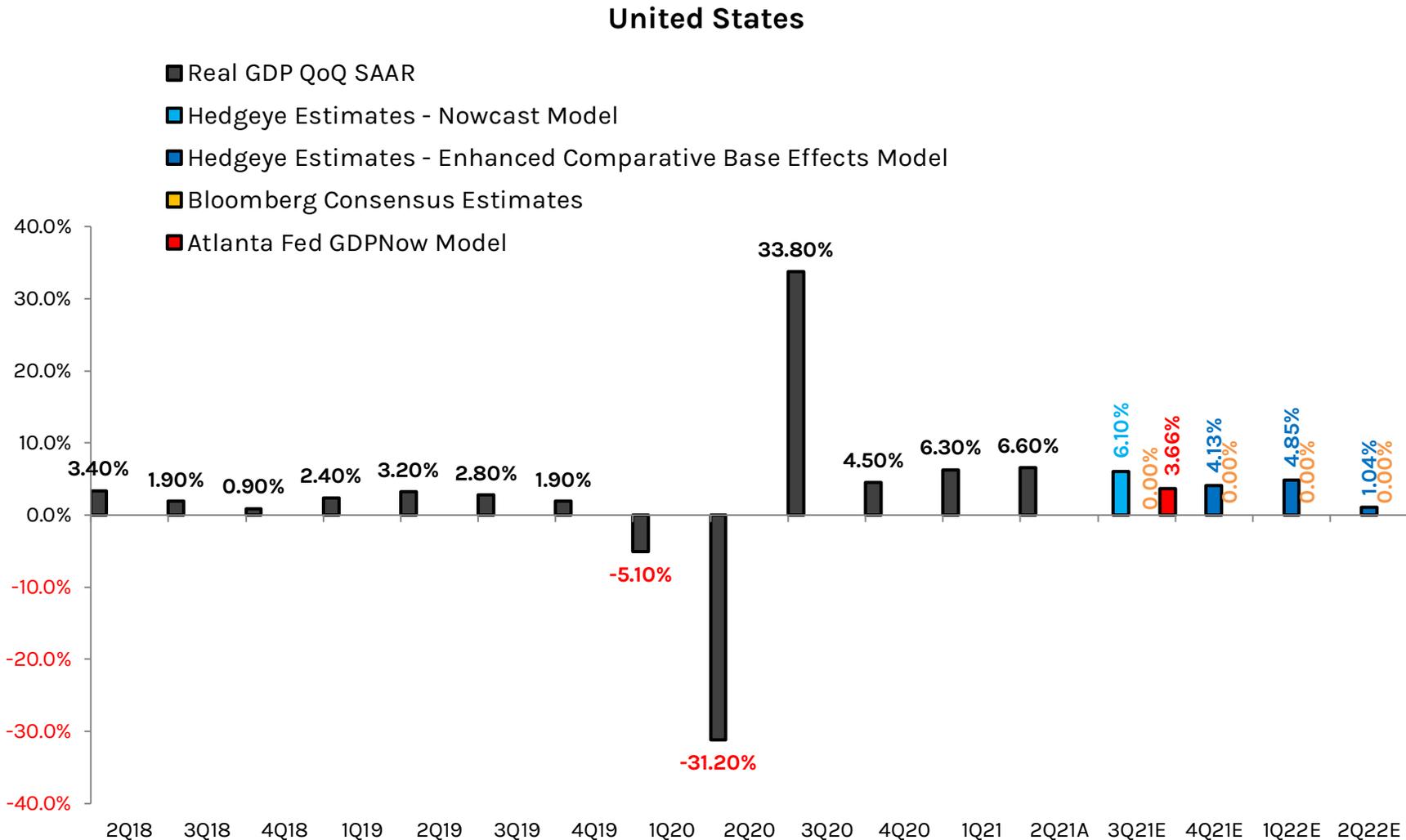


We use two distinct models to forecast the YoY growth rate of Real GDP and the combination of the two allows us to develop both a highly accurate real-time assessment of near-term economic momentum, as well as a high-probability scenario for where growth is likely to trend over the NTM.

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



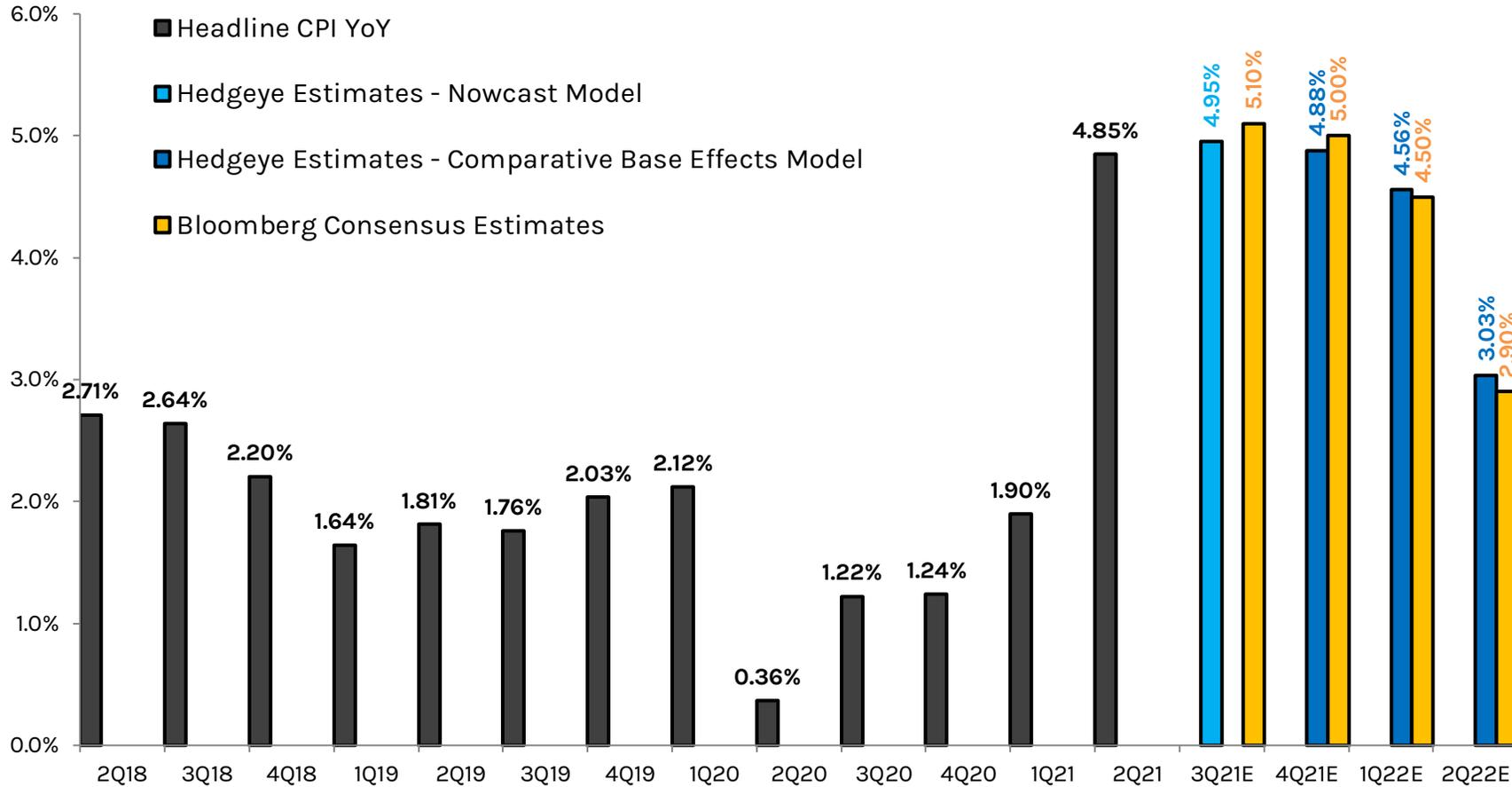
One differentiating factor of our forecasting process is that we aim to solve for where the economy is trending on a **Full Investing Cycle** basis, rather than trying to identify super short-term economic momentum.

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



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	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	Jul-21	Aug-21	Sep-21	2Q21	3Q21	Δ	
Real PCE YoY (1)	2.03	1.94	2.83	2.77	2.82	-4.65	-16.43	-9.58	-4.56	-3.46	-3.08	-1.91	-1.57	-2.44	-3.26	-0.80	-2.16	9.65	25.38	15.05	9.27	7.56	-	-	16.57	7.56	-9.01	
Real Disposable Personal Income YoY (14)	2.02	2.31	0.85	1.78	2.22	0.76	16.98	11.31	9.33	9.85	5.25	5.64	5.04	3.23	3.70	13.43	3.18	28.80	-6.41	-4.76	-3.64	-3.54	-	-	-4.94	-3.54	1.40	
Personal Savings Rate % of DPI (6)	7.4	7.5	7.3	7.8	8.3	13.1	33.8	24.8	19.3	18.7	15.0	14.3	13.6	13.0	14.0	19.9	13.5	26.6	12.3	9.8	8.8	9.6	-	-	10.3	9.6	-0.7	
Headline Retail Sales YoY (9)	2.98	3.12	5.49	4.81	4.61	-5.86	-20.01	-5.76	1.99	2.71	3.22	5.96	5.55	3.78	2.31	9.40	6.50	29.71	53.42	28.05	18.73	15.78	-	-	33.40	15.78	-17.62	
Retail Sales Control Group YoY (13)	3.76	2.43	6.04	3.86	4.36	6.33	-7.14	1.81	7.19	8.51	8.47	10.57	10.19	9.33	6.00	14.07	10.23	16.27	31.71	18.34	13.28	10.23	-	-	21.11	10.23	-10.88	
Auto Sales YoY (10)	-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	17.70	1.58	-14.02	-	-	57.53	-6.22	-63.75
MBA Mortgage Purchase Index YoY (24)	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	-16.25	-17.27	-17.56	-	-	11.77	-17.41	-29.19
Total Employees On Nonfarm Payrolls YoY (7)	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	10.88	8.98	5.85	5.29	4.28	-	-	8.57	4.79	-3.78
Aggregate Hours Worked YoY (2)	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	13.15	9.30	6.15	5.60	4.28	-	-	9.53	4.94	-4.60
Aggregate Labor Income YoY (4)	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	13.53	11.39	10.10	9.88	8.74	-	-	11.67	9.31	-2.36
Monthly Initial Jobless Claims YoY (3)	-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	-79.22	-73.95	-71.29	-63.64	-	-	-80.02	-67.47	12.56
Bloomberg Consumer Comfort Index (12)	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	55.9	52.6	56.0	-	-	54.8	54.3	-0.5
Industrial Production YoY (8)	-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	-3.28	-1.67	-4.86	1.72	17.77	16.48	9.90	6.56	-	-	14.71	6.56	-8.15	
Capacity Utilization (5)	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	74.1	75.0	72.7	74.7	74.7	75.3	75.4	76.1	-	-	75.2	76.1	0.9	
Durable Goods New Orders YoY (22)	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	53.02	42.78	29.33	17.67	-	-	41.71	17.67	-24.04	
Core Capital Goods New Orders YoY (28)	-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	25.79	23.57	19.02	15.72	-	-	22.79	15.72	-7.08	
Factory Orders YoY (18)	-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	34.69	31.16	22.35	15.93	-	-	29.40	15.93	-13.48	
Manufacturing & Trade Inventories YoY (26)	3.31	3.25	2.43	1.31	0.26	-0.15	-2.02	-4.64	-5.78	-5.88	-5.43	-4.65	-3.85	-3.16	-2.55	-1.62	-0.44	0.06	1.54	4.60	6.58	-	-	-	4.24	-	-	
Nonresidential Construction Spending YoY (30)	12.58	15.91	13.86	13.71	10.95	8.99	1.97	1.79	-0.19	-3.42	-4.97	-6.86	-7.22	-8.82	-9.05	-8.65	-9.94	-9.77	-6.40	-6.19	-5.96	-4.23	-	-	-6.18	-4.23	1.95	
Residential Construction Spending YoY (29)	5.54	7.26	12.97	14.30	17.59	18.70	13.59	10.04	9.37	10.67	13.87	15.94	18.30	19.60	21.09	23.32	19.29	20.36	25.61	30.13	29.73	26.52	-	-	28.49	26.52	-1.96	
ISM Manufacturing PMI (23)	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	60.6	59.5	59.9	-	-	60.8	59.7	-1.1
ISM Non-Manufacturing PMI (15)	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	60.1	64.1	-	-	62.3	64.1	1.8	
NFIB Small Business Optimism Index (19)	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	99.6	102.5	99.7	-	-	100.6	99.7	-0.9	
Exports YoY (11)	-1.73	-0.31	1.01	-1.91	-2.53	-12.31	-28.63	-31.72	-24.59	-19.18	-17.19	-14.71	-13.05	-11.71	-9.06	-5.21	-7.02	9.32	37.83	42.87	32.29	24.53	-	-	37.66	24.53	-13.13	
Imports YoY (16)	-5.01	-4.06	-3.10	-2.85	-4.53	-10.98	-22.02	-24.39	-19.73	-11.39	-8.76	-6.36	-2.56	0.86	0.54	3.81	4.93	18.13	34.71	37.93	35.24	22.11	-	-	35.96	22.11	-13.85	
Rail Traffic YoY (17)	-7.91	-7.71	-9.38	-6.22	-6.74	-10.10	-20.89	-20.62	-14.29	-8.21	-5.96	-1.44	1.71	2.45	4.92	4.76	-4.40	12.87	27.34	27.81	13.89	6.26	-0.04	-	23.01	3.11	-19.90	
Headline CPI YoY (25)	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	4.99	5.39	5.37	-	-	4.85	5.37	0.52	
PCE Deflator YoY (27)	1.41	1.42	1.65	1.90	1.87	1.34	0.41	0.51	0.91	1.04	1.30	1.38	1.17	1.11	1.29	1.41	1.63	2.45	3.59	3.98	4.03	4.17	-	-	3.86	4.17	0.31	
Core PCE Deflator YoY (21)	1.72	1.57	1.64	1.78	1.91	1.70	0.91	1.00	1.13	1.30	1.50	1.57	1.42	1.38	1.48	1.51	1.49	1.97	3.09	3.47	3.58	3.62	-	-	3.38	3.62	0.24	
M2 Money Supply YoY (20)	6.44	6.99	6.62	6.67	6.79	10.17	16.96	21.96	22.92	23.28	23.05	23.79	23.72	24.31	24.82	25.87	27.12	24.37	18.10	13.88	12.17	12.11	-	-	14.72	12.11	-2.61	

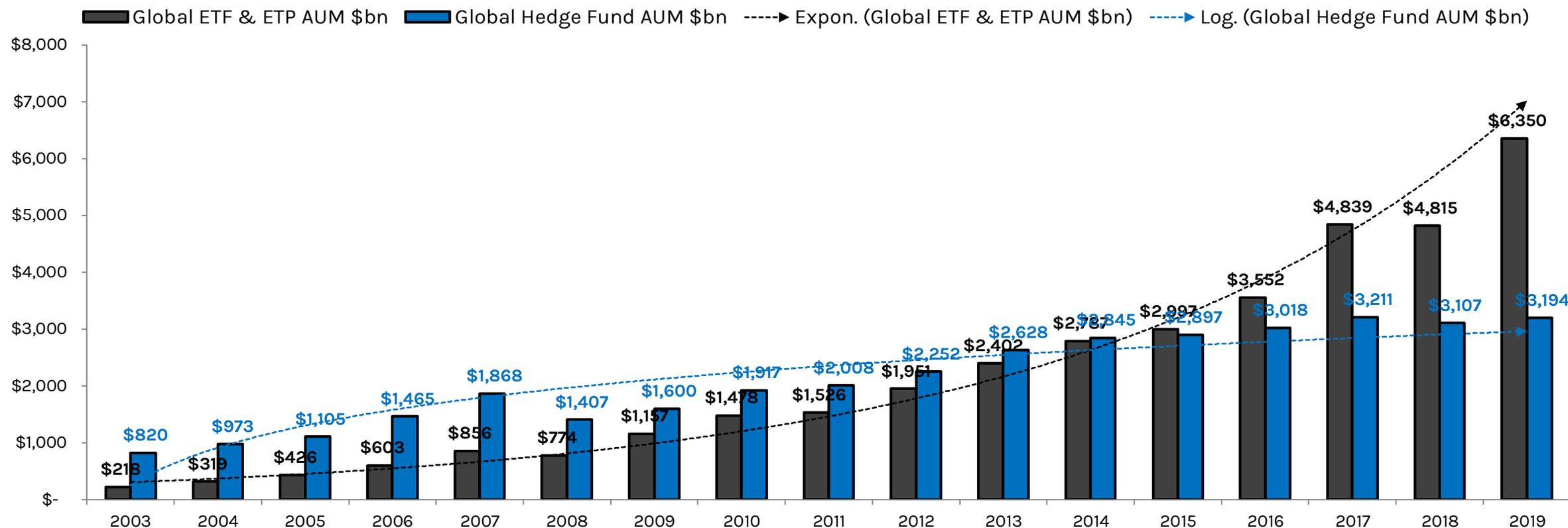
Data Source: Bloomberg, Intellectual Property of Hedgeye Risk Management. Nowcast feature rank shown in parenthesis.

OUR MACRO PROCESS



The Investment Landscape Has Evolved Tremendously

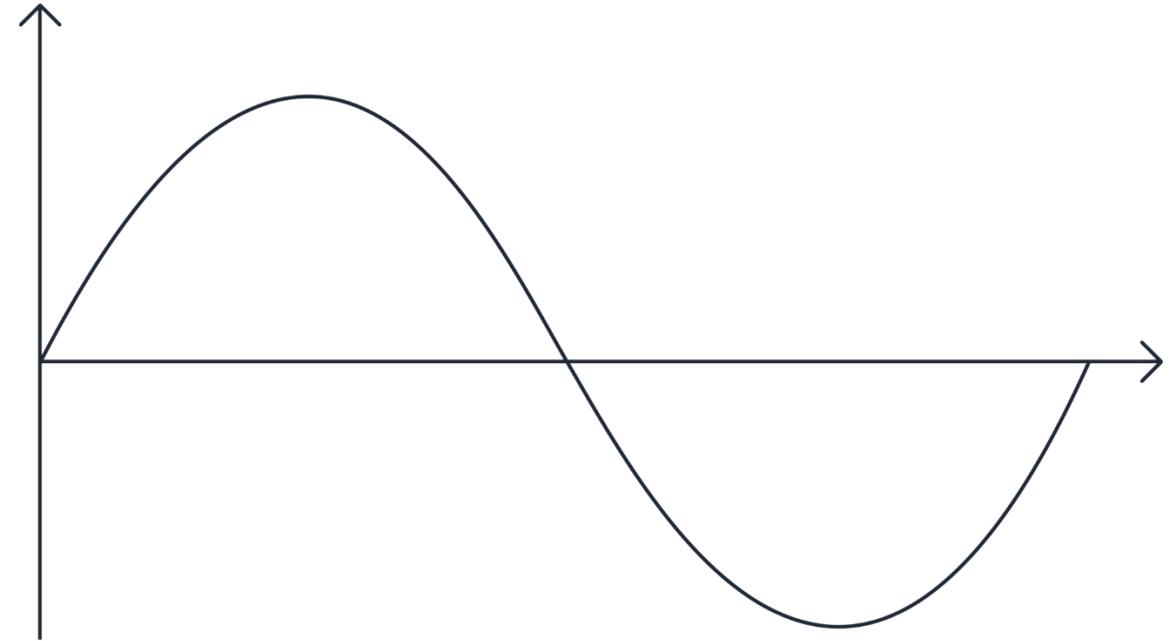
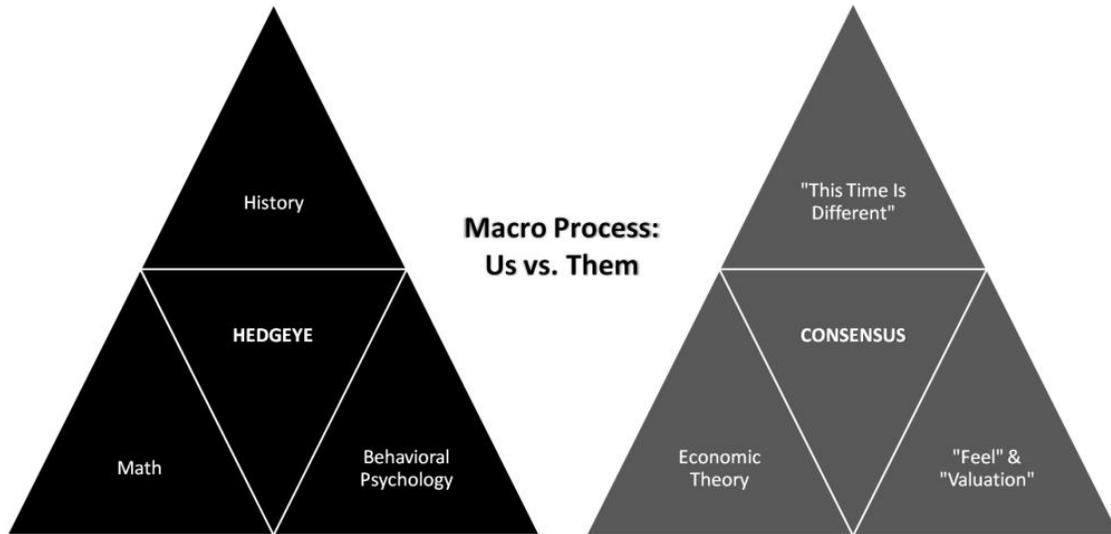
Stock-picking has given way to factor-picking and it's our job as investors to embrace this sea change, rather than fight it.



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 Exposure	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%	3.0%	1.0%	-1.4%	4.8%	2.3%	3.1%	5.0%	9.0%	1.8%	-3.7%	-6.6%	9.1%	7.0%	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%	3.8%	4.0%	-19.6%	3.6%	0.7%	-2.0%	-1.1%	7.9%	6.5%	4.7%	1.2%	3.2%	4.1%	2.9%	-1.0%	1.9%	1.3%
Communication Services (XLC)	7.0%	-0.9%	0.7%	0.1%	8.7%	-1.7%	4.5%	6.8%	6.4%	-3.2%	-6.2%	-3.7%	10.0%	4.8%	2.6%	-2.6%	2.0%	-5.2%	-2.2%	3.5%	7.9%	-1.8%	3.2%	1.0%	17.1%	-2.3%	0.5%	1.1%	5.0%	0.1%	5.4%	-17.0%	4.0%	-2.4%	-1.6%	1.9%	6.8%	1.7%	2.7%	-0.6%	2.5%	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%	13.5%	2.2%	-2.0%	-5.4%	10.8%	6.6%	-0.2%	-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%	5.2%	0.4%	-19.3%	2.4%	-2.5%	-1.1%	-1.3%	11.7%	3.7%	4.4%	4.8%	4.2%	2.4%	-0.3%	3.0%		
Consumer Non-Cyclical (XLP)	4.9%	1.2%	0.8%	1.8%	1.4%	-1.8%	1.6%	8.2%	7.1%	3.9%	0.4%	-1.0%	6.2%	3.9%	1.1%	-0.3%	3.4%	-1.1%	0.9%	8.0%	4.7%	1.3%	2.0%	0.0%	12.8%	2.2%	0.7%	2.2%	3.5%	0.4%	-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%	4.4%	1.8%	-3.8%	3.9%	3.3%	6.4%	1.5%	6.8%	1.7%	-6.9%	-9.6%	7.1%	12.5%	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%	6.7%	2.8%	50.5%	6.4%	7.2%	-2.0%	-0.3%	9.2%	3.9%	6.9%	0.8%	7.7%	4.5%	-3.9%	-0.3%		
Financials (XLF)	6.2%	3.6%	0.1%	-1.4%	3.3%	0.5%	-0.9%	4.5%	10.2%	1.9%	-1.1%	-8.4%	8.3%	9.0%	-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%	7.5%	9.0%	-31.9%	1.1%	-3.4%	-5.7%	-0.3%	8.4%	7.5%	3.6%	1.2%	1.7%	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%	6.2%	4.7%	-1.9%	-1.6%	7.8%	7.1%	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%	1.0%	3.3%	-12.7%	5.2%	5.7%	-1.8%	3.1%	6.5%	7.7%	2.7%	-0.6%	1.8%	3.5%	-0.6%	3.8%		
Industrials (XLI)	7.2%	3.8%	1.1%	-1.8%	4.7%	0.1%	2.9%	5.2%	8.6%	4.0%	-3.3%	-6.8%	9.6%	9.1%	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%	4.5%	4.5%	-27.0%	4.2%	1.9%	-2.0%	-0.8%	7.7%	4.8%	6.1%	2.0%	2.8%	5.6%	-1.1%	0.9%		
Information Technology (XLK)	9.0%	5.2%	2.5%	-2.6%	6.8%	8.3%	6.6%	4.0%	12.4%	1.2%	-5.4%	-10.0%	13.6%	7.7%	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%	5.2%	8.6%	-11.9%	4.5%	3.2%	-1.0%	-6.8%	9.1%	13.6%	7.1%	4.5%	4.1%	4.9%	0.4%	3.6%		
Materials (XLB)	7.3%	3.1%	0.6%	-0.5%	3.7%	2.9%	5.2%	1.2%	10.2%	0.8%	-7.0%	-3.5%	7.9%	8.0%	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%	2.7%	-0.3%	-2.6%	1.8%	-3.2%	-2.9%	1.8%	10.3%	5.0%	4.8%	4.3%	6.8%	4.4%	-1.3%	0.0%		
REITs (XLRE)	4.0%	0.6%	0.2%	0.9%	3.0%	-1.1%	-1.1%	9.1%	7.8%	4.7%	0.4%	-6.3%	4.6%	4.8%	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%	0.7%	1.9%	-24.6%	1.5%	-1.5%	0.7%	-0.4%	7.9%	-1.6%	2.3%	2.2%	3.6%	2.3%	-2.0%	1.0%		
Utilities (XLU)	3.5%	-0.9%	4.0%	1.3%	5.5%	-3.7%	5.3%	9.7%	1.5%	0.4%	3.3%	-2.2%	4.4%	3.1%	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%	-2.3%	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%	4.0%	1.2%	-2.2%	4.9%	4.2%	3.5%	4.8%	10.4%	2.3%	-4.5%	-8.5%	10.3%	7.0%	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%	4.8%	4.5%	-14.1%	3.3%	1.4%	-2.0%	-3.9%	8.4%	7.6%	4.9%	1.7%	2.9%	3.6%	-0.5%	2.1%		
Value (IWD)	6.4%	2.3%	1.0%	-0.7%	4.7%	0.3%	2.7%	5.2%	8.3%	1.4%	-2.8%	-5.4%	8.1%	7.9%	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%	-0.8%	3.1%	3.5%	5.2%	-26.7%	4.0%	-1.1%	-2.3%	1.1%	7.9%	5.4%	4.7%	1.0%	3.8%	4.0%	-1.7%	1.5%		
Cyclical (RSP)	8.0%	4.0%	1.2%	-2.8%	5.3%	3.8%	4.1%	4.1%	12.1%	1.6%	-5.3%	-10.6%	10.0%	9.3%	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%	6.0%	6.6%	-23.4%	3.9%	-1.1%	-3.5%	-4.1%	9.8%	9.7%	5.2%	1.9%	4.1%	5.2%	-2.3%	1.7%		
Defensives (DEF)	6.0%	2.4%	1.0%	-0.1%	4.4%	1.1%	2.2%	5.9%	7.1%	2.2%	-2.3%	-3.7%	7.7%	5.3%	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%	-0.3%	3.7%	2.3%	3.0%	-17.0%	3.6%	1.8%	-0.9%	1.1%	6.7%	3.4%	4.5%	1.3%	2.6%	3.6%	0.0%	2.0%		
High Beta (SPH)	9.6%	5.8%	1.2%	-4.0%	8.2%	3.6%	4.9%	2.8%	14.1%	3.0%	-6.9%	-15.6%	15.8%	15.0%	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%	10.8%	12.1%	-36.2%	6.3%	0.9%	1.6%	-7.8%	12.3%	12.8%	8.3%	5.7%	4.2%	6.8%	-3.5%	2.1%		
Low Beta (SPLV)	4.5%	1.3%	1.6%	2.2%	3.8%	-1.6%	2.3%	8.4%	5.3%	3.1%	0.3%	-1.1%	4.8%	4.1%	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%	0.4%	3.7%	-19.0%	3.6%	0.9%	6.7%	4.0%	5.1%	-0.5%	4.2%	2.8%	3.6%	3.0%	0.9%	1.8%		
Momentum (MTUM)	8.1%	3.9%	1.7%	-3.0%	5.2%	5.4%	4.3%	5.8%	10.5%	2.1%	-4.1%	-10.0%	9.7%	5.1%	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%	5.4%	3.4%	-13.8%	5.0%	0.4%	-1.7%	-4.2%	8.4%	3.7%	6.3%	-1.3%	3.7%	4.1%	-0.8%	2.6%		
Quality (QUAL)	7.3%	3.4%	1.4%	0.0%	6.0%	1.3%	3.7%	6.0%	9.1%	3.7%	-2.8%	-4.1%	9.3%	6.8%	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%	3.2%	4.1%	-17.6%	5.3%	3.7%	-1.3%	0.7%	7.5%	5.7%	5.2%	3.2%	3.3%	4.6%	0.4%	2.3%		
Dividend Yield (SDY)	6.8%	2.1%	0.8%	1.7%	4.5%	-0.3%	1.7%	6.9%	9.2%	2.4%	-1.1%	-2.0%	8.2%	7.0%	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%	2.5%	1.5%	-23.3%	4.0%	-1.0%	0.0%	3.7%	8.4%	3.4%	4.0%	3.7%	3.8%	3.7%	0.3%	2.5%		
Size (OEF)	6.9%	3.2%	1.1%	-1.7%	4.8%	3.1%	3.1%	4.4%	8.6%	1.7%	-3.8%	-5.8%	9.4%	6.6%	0.7%	-3.8%	3.3%	0.3%	-0.2%	-0.2%	6.9%	3.8%	3.8%	0.0%	15.5%	2.0%	2.0%	-2.3%	4.1%	3.9%	3.8%	-17.2%	3.4%	1.3%	-1.7%	-1.3%	7.8%	7.0%	3.8%	0.6%	2.8%	3.9%	-0.6%	2.0%		
Secular Growth (QQQ)	7.8%	5.8%	2.6%	-2.7%	8.0%	9.8%	6.2%	3.8%	9.2%	1.1%	-6.0%	-9.0%	12.6%	8.6%	2.2%	-4.4%	1.2%	-0.8%	-0.4%	-7.4%	7.9%	11.3%	7.5%	2.7%	18.8%	3.2%	0.3%	-3.6%	6.0%	7.9%	11.0%	-10.3%	5.1%	1.8%	-1.0%	-6.3%	9.8%	11.8%	8.0%	3.0%	3.9%	5.1%	0.8%	1.9%		
Mid-Caps (MDY)	7.5%	4.4%	1.7%	-0.9%	4.1%	2.6%	3.1%	5.7%	12.7%	3.0%	-2.8%	-8.2%	9.3%	10.2%	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%	7.2%	8.7%	-29.7%	3.5%	-0.4%	-1.6%	-1.5%	9.8%	5.6%	5.3%	4.1%	5.5%	5.9%	-1.5%	1.2%		
Small-Caps (IWM)	6.8%	5.3%	0.5%	-1.2%	5.3%	5.2%	2.5%	6.2%	10.8%	2.0%	-4.8%	-8.6%	8.1%	11.3%	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%	7.8%	4.2%	-30.6%	3.2%	-0.9%	-2.2%	-2.6%	10.5%	9.5%	5.3%	4.1%	6.0%	4.7%	-2.1%	1.3%		
BARCLAYS AGG (AGG)	1.2%	0.5%	0.9%	2.3%	1.5%	0.8%	0.3%	1.9%	1.6%	0.9%	1.7%	3.3%	1.5%	0.3%	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%	-0.1%	1.9%	3.1%	1.8%	1.0%	1.0%	2.6%	1.1%	0.3%	0.2%	1.9%	0.9%	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%	3.7%	2.3%	-1.1%	-5.2%	2.8%	2.6%	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%	-0.2%	0.5%	1.8%	1.2%	-13.0%	1.7%	1.2%	-0.6%	-1.5%	3.7%	2.4%	1.6%	5.5%	2.3%	1.7%	-0.3%	1.1%		
BDCs (BIZD)	6.3%	6.5%	-1.3%	-0.3%	5.3%	4.0%	4.9%	5.6%	12.8%	12.0%	-3.7%	-25.3%	8.1%	11.7%	-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%	9.8%	7.1%	-44.8%	2.1%	0.6%	-4.2%	-2.0%	11.7%	6.1%	4.2%	18.1%	7.9%	5.4%	-7.1%	2.9%		
Preferreds (PFF)	1.9%	3.0%	-0.3%	-0.5%	2.1%	2.8%	0.7%	1.5%	3.5%	4.5%	-1.8%	-7.3%	3.1%	3.3%	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%	3.4%	4.6%	-22.8%	2.0%	-0.8%	-1.4%	0.0%	2.5%	4.3%	-1.0%	5.7%	5.7%	0.8%	-1.6%	0.1%		
IG Credit (LQD)	2.0%	0.6%	0.7%	2.5%	2.2%	0.9%	0.2%	2.5%	3.0%	1.1%	1.0%	2.3%	2.6%	0.9%	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%	0.0%	2.2%	-3.1%	2.3%	0.9%	0.4%	2.9%	2.2%	1.1%	0.3%	3.1%	1.5%	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%	5.2%	2.5%	-1.4%	-4.9%	3.9%	3.6%	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.																			

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

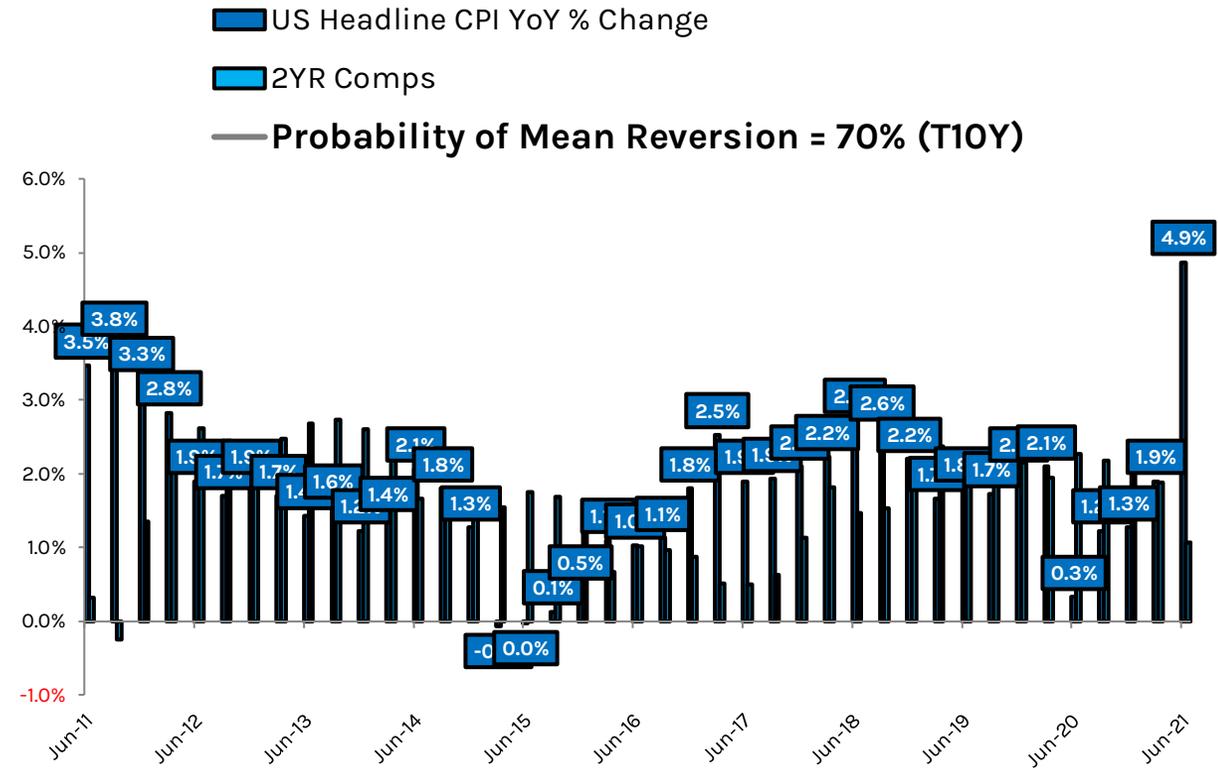
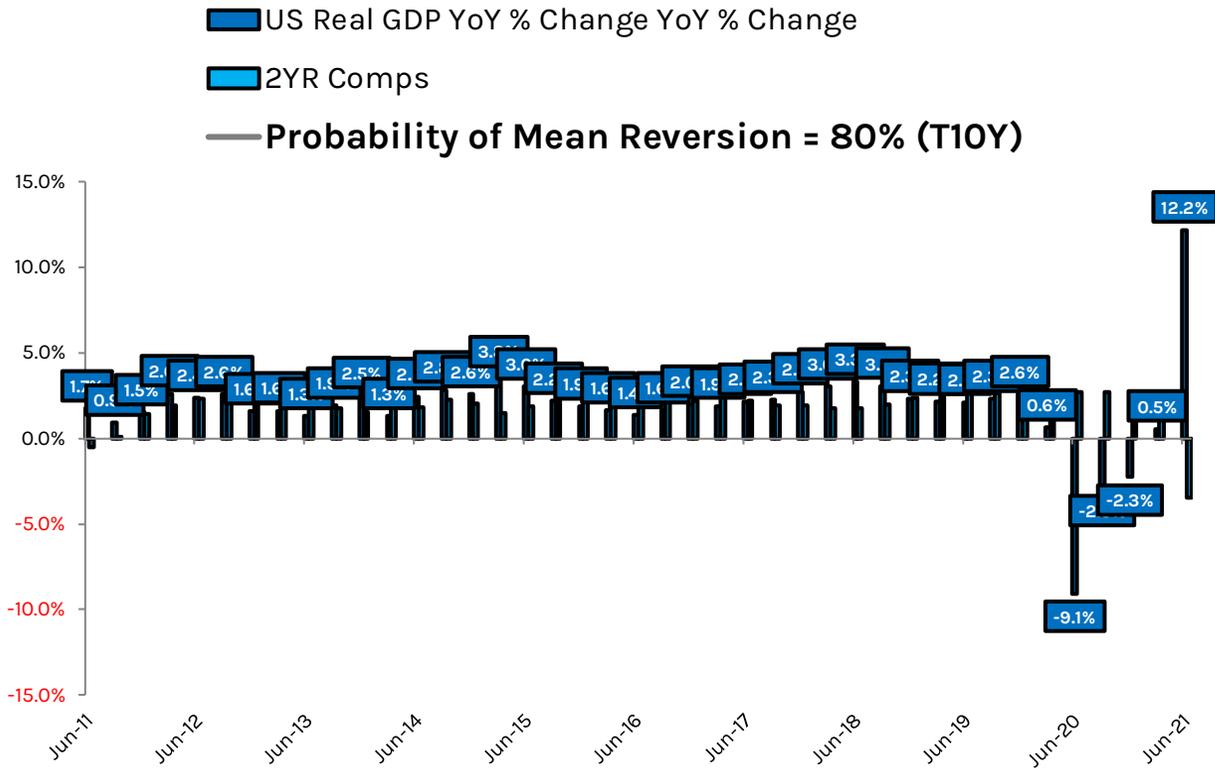
Best Fixed Income Sectors:

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

Worst Fixed Income Sectors:

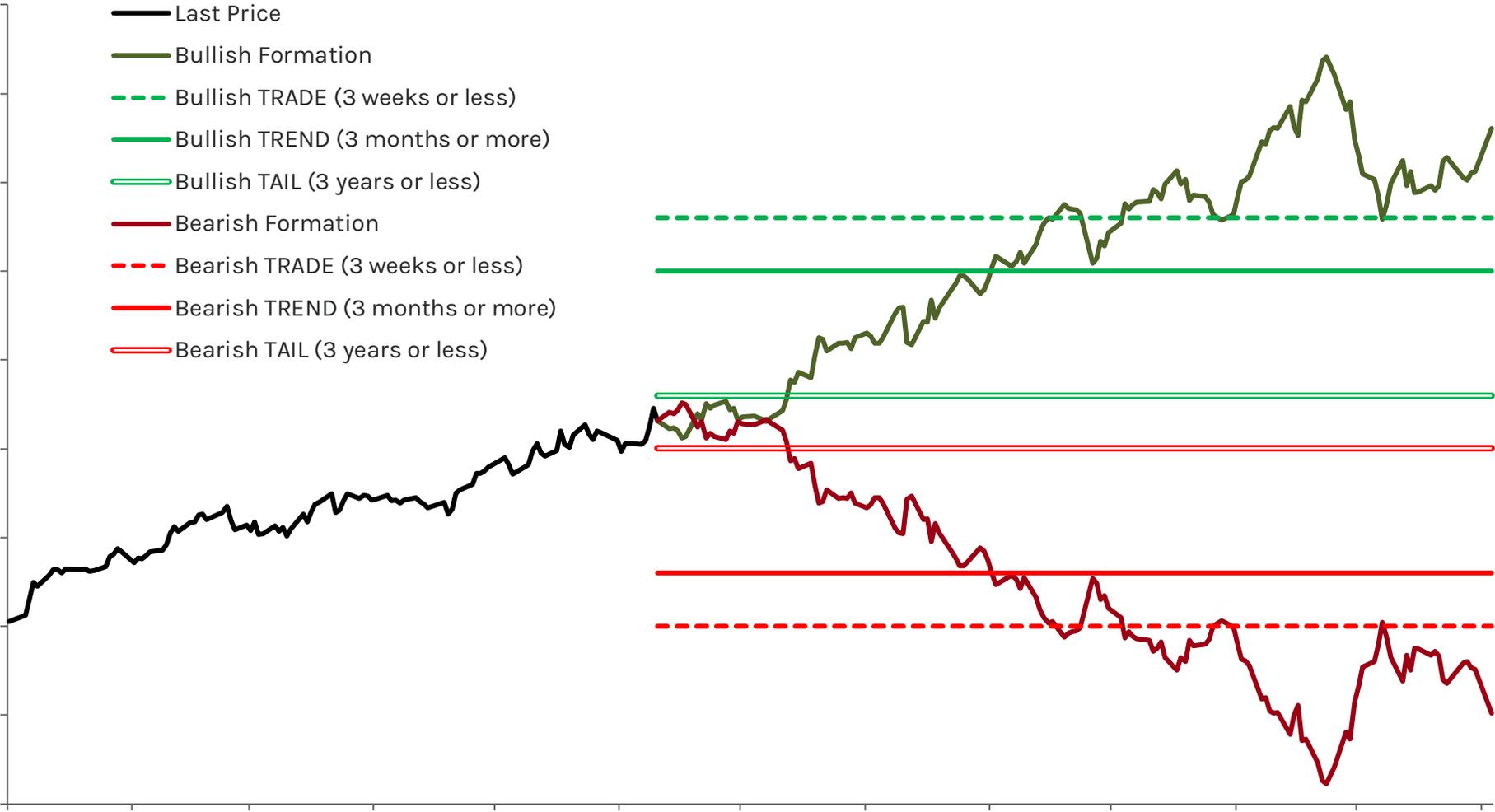
Preferreds, EM Local Currency, BDCs, Leveraged Loans, TIPS

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, insomuch 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	-0.9%	-0.6%	0.3%	-4.9%	5.8%	22.2%
	Low Debt/EV	0.1%	0.9%	2.5%	14.2%	26.3%	25.1%
SI	High Short Interest	-0.5%	0.2%	1.3%	2.0%	12.2%	23.1%
	Low Short Interest	-0.3%	0.3%	1.9%	6.6%	18.8%	20.7%
BETA	High Beta	-0.8%	-1.6%	-0.3%	-2.4%	7.9%	25.9%
	Low Beta	0.0%	1.5%	2.3%	7.0%	19.1%	17.6%
YIELD	High Yield	-0.5%	0.0%	0.8%	-2.7%	8.0%	18.3%
	Low Yield	-0.3%	0.5%	1.9%	9.1%	18.5%	25.1%
MKT CAP	MCAP Bottom 25%	-0.7%	-0.3%	0.5%	-4.5%	6.2%	18.0%
	MCAP Top 25%	-0.1%	0.3%	1.4%	6.4%	19.2%	23.3%
Sales	Top 25% Sales Growth	-0.4%	-0.2%	1.3%	5.0%	14.5%	21.3%
	Bottom 25% Sales Growth	-0.4%	-0.1%	1.1%	0.5%	13.9%	25.1%
EPS	Top 25% EPS Growth	-0.4%	0.2%	1.2%	3.2%	11.7%	19.2%
	Bottom 25% EPS Growth	-0.5%	-0.4%	1.8%	0.7%	13.6%	28.1%

*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)	(27,806)	(46,849)	31,593	6,435	9,144	245,514	(318,850)	-0.88X	-0.31X
	VIX	(85,835)	(12,686)	(66,710)	(75,814)	(94,284)	44,245	(218,362)	0.32X	0.09X
	Russell 2000 (mini)	(66,303)	5,781	(52,114)	(38,526)	(9,813)	58,474	(88,708)	-1.68X	-1.59X
	Dow Jones (mini)	(2,577)	(1,154)	(1,741)	(5,694)	(7,569)	54,635	(28,732)	0.66X	-0.55X
	Nasdaq (mini)	(807)	(2,595)	(4,773)	(6,986)	(2,234)	47,085	(133,005)	0.05X	-0.34X
Nikkei Index	(4,003)	86	(4,975)	(4,591)	(2,438)	4,738	(16,298)	-0.51X	0.54X	
RATES	10Y UST	4,874	(187,867)	147,569	113,991	88,446	238,882	(758,490)	-1.09X	0.46X
	2Y UST	(18,852)	(11,303)	(74,282)	(154,391)	(200,036)	34,641	(421,551)	1.65X	2.03X
	5Y UST	(19,135)	(121,674)	(68,391)	(53,653)	(130,936)	148,962	(866,140)	0.70X	0.80X
	UST Bonds	(101,636)	(7,769)	(86,035)	(101,963)	(152,900)	2,332	(241,003)	0.95X	-0.12X
	30D Fed Funds	(100,285)	(29,846)	(165,425)	(178,642)	(63,170)	488,558	(320,917)	-0.23X	-0.74X
	Eurodollar	(308,591)	(135,535)	(302,796)	45,926	331,195	2,134,274	(2,671,440)	-1.40X	-0.49X
CURRENCIES	\$USD	20,685	329	11,121	7,715	(241)	43,033	(15,000)	2.02X	0.35X
	JPY	(64,708)	2,202	(60,047)	(56,882)	(12,133)	52,239	(117,731)	-1.13X	-0.94X
	EUR	11,939	(13,107)	60,656	71,113	108,469	212,535	(123,765)	-2.04X	-0.13X
	GBP	(15,081)	2,342	5,949	15,247	10,609	40,671	(107,406)	-1.53X	0.01X
	AUD	(59,920)	(2,034)	(36,410)	(19,130)	(9,869)	15,665	(74,181)	-2.64X	-1.19X
	CAD	(577)	(7,988)	21,420	21,957	8,902	53,332	(67,121)	-0.44X	0.18X
	MXN	(21,303)	2,758	(22,567)	(16,381)	(3,903)	170,379	(29,510)	-0.96X	-1.18X
	NZD	(2,129)	(1,677)	1,528	3,604	7,269	17,126	(42,544)	-1.88X	0.30X
	CHF	3,189	(243)	6,745	3,608	8,103	17,848	(40,715)	-0.85X	0.48X
COMMODITIES	CRUDE OIL	425,777	(17,827)	525,322	533,653	535,654	594,465	332,714	-2.98X	-0.90X
	GOLD	98,865	4,273	94,584	89,002	99,803	292,066	(103,009)	-0.03X	-0.36X
	COPPER	22,032	13,909	19,802	29,544	48,772	80,564	(60,135)	-1.22X	0.33X
	Natural Gas	(144,585)	21,391	(126,648)	(95,209)	(31,751)	71,340	(262,534)	-1.59X	-0.84X
	RBOB Gasoline	41,196	3,982	45,225	48,267	55,337	129,000	29,497	-1.08X	-1.45X
	ULSD Heating Oil	38,310	4,083	27,609	20,313	16,011	48,330	(27,674)	2.35X	2.12X
	Silver	21,541	2,263	34,584	38,234	43,407	80,646	(28,323)	-2.20X	-0.67X
	Platinum	8,039	(853)	12,749	19,780	21,158	69,306	(7,161)	-1.45X	-1.06X
	Corn	317,678	(21,236)	333,200	397,734	418,865	557,581	(270,560)	-0.96X	0.82X
	Soybeans	66,948	(13,576)	98,589	137,693	185,453	270,935	(148,817)	-1.99X	0.04X
	Wheat	23,239	(3,549)	21,579	21,751	28,930	60,302	(69,231)	-0.42X	0.45X
	Live Cattle	108,278	(11,272)	93,047	91,561	84,242	183,134	20,158	1.26X	0.72X
	Lean Hogs	94,092	2,234	92,063	91,020	74,249	101,947	4,913	1.00X	1.55X
	Sugar	290,762	(7,583)	270,329	260,299	262,143	316,046	(205,161)	0.88X	1.31X
	Cotton	108,567	2,222	83,409	78,495	80,581	108,567	(37,827)	2.26X	1.84X
	Coffee	53,063	3,129	51,022	48,564	43,672	64,466	(106,651)	0.80X	1.12X
	Cocoa	21,483	(5,357)	11,080	17,749	26,792	81,269	(31,483)	-0.35X	0.01X
	Orange Juice	4,745	131	3,100	1,195	808	4,745	(9,416)	2.00X	1.89X

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	IVOL PREMIUM/DISCOUNT						REALIZED VOLATILITY TRENDS			IMPLIED VOLATILITY TRENDS		
VOLATILITY_30D		PERFORMANCE	IVOL PREM %						RVOL		PERCENTILE	IVOL		PERCENTILE
PUT_IMP_VOL_30D		YTD %	IVOL / RVOL	Yesterday	1W Ago	1M Ago	TTM Z-Score	3Yr Z-Score	CURRENT	MM %	10YR	CURRENT	MM %	10YR
TICKER		CURRENT												
US EQUITIES														
Real Estate Sector SPDR ETF	XLRE US EQUITY	35.46%	22%	25%	26%	27%	0.5	1.0	10.5	-13%	15%	12.8	-17%	32%
Energy Sector SPDR ETF	XLE US EQUITY	30.93%	1%	-22%	-5%	3%	-0.2	0.0	26.9	-10%	71%	27.1	-12%	75%
Financials Sector SPDR ETF	XLF US EQUITY	30.22%	23%	25%	7%	-6%	0.3	0.5	14.4	-30%	34%	17.6	-9%	56%
Communication Services SPDR ETF	XLC US EQUITY	27.11%	28%	28%	-4%	19%	0.2	0.4	10.9	-23%	7%	13.9	-16%	4%
Technology Sector SPDR ETF	XLK US EQUITY	23.04%	38%	74%	43%	49%	0.6	0.8	11.0	-8%	19%	15.1	-15%	46%
SPDR S&P 500 ETF Trust	SPY US EQUITY	21.98%	34%	39%	15%	33%	0.6	0.7	7.8	-23%	15%	10.5	-23%	23%
Power Shares QQQ Trust ETF	QQQ US EQUITY	21.91%	44%	51%	26%	64%	0.7	1.0	10.0	-1%	12%	14.5	-13%	37%
Health Care Sector SPDR ETF	XLV US EQUITY	21.52%	20%	54%	16%	49%	-0.4	0.2	10.4	14%	26%	12.4	-8%	31%
Materials Sector SPDR ETF	XLB US EQUITY	18.93%	38%	110%	101%	76%	0.3	0.6	13.5	-12%	30%	18.5	-31%	62%
Industrials Sector SPDR ETF	XLI US EQUITY	18.84%	13%	32%	5%	-5%	-0.6	0.0	11.9	-24%	26%	13.5	-9%	30%
I-Shares Russell 2000 ETF	IWM US EQUITY	16.66%	6%	11%	-6%	12%	-0.5	-0.1	17.6	-12%	56%	18.6	-17%	59%
Consumer Discretionary Sector SPDR ETF	XLY US EQUITY	14.49%	-7%	-1%	2%	26%	-0.9	-0.6	14.3	3%	56%	13.3	-24%	33%
Utilities Sector SPDR ETF	XLU US EQUITY	12.51%	19%	10%	145%	108%	-0.1	0.2	11.6	-17%	31%	13.8	-53%	51%
Consumer Staples Sector SPDR ETF	XLP US EQUITY	9.25%	20%	152%	35%	54%	-0.7	-0.2	9.2	15%	27%	11.0	-11%	38%
INTERNATIONAL EQUITIES														
Euro Stoxx 50 Index	SX5E INDEX	21.84%	47%	44%	20%	-11%	1.6	1.8	9.1	-46%	5%	13.3	-11%	23%
I-Shares MSCI Japan ETF	EWJ US EQUITY	7.07%	9%	21%	16%	1%	-0.1	0.2	14.3	-3%	44%	15.6	4%	43%
I-Shares MSCI Emerging Markets ETF	EEM US EQUITY	3.25%	-11%	-16%	26%	-1%	-0.9	-0.7	18.3	0%	51%	16.2	-11%	26%
I-Shares China Large-Cap ETF	FXI US EQUITY	-10.39%	-23%	-30%	-25%	-22%	-1.1	-1.0	31.7	-7%	87%	24.4	-8%	69%
CURRENCIES														
PowerShares US Dollar Index ETF	UUP US EQUITY	2.02%	23%	22%	18%	40%	-0.1	-0.1	4.7	8%	12%	5.8	-5%	10%
Currency Shares British Pound ETF	FXB US EQUITY	1.12%	-8%	-7%	-11%	6%	-0.8	-0.6	6.3	0%	19%	5.8	-13%	6%
Currency Shares Euro Trust ETF	FXE US EQUITY	-3.39%	14%	18%	19%	27%	0.7	0.6	4.5	4%	8%	5.1	-7%	6%
Currency Shares Japanese Yen ETF	FXJ US EQUITY	-6.23%	22%	23%	11%	17%	-0.2	0.2	4.6	-21%	8%	5.6	-18%	8%
COMMODITIES														
United States Natural Gas Fund ETF	UNG US EQUITY	78.48%	34%	33%	105%	34%	0.2	0.5	40.9	33%	65%	54.7	33%	85%
United States Oil Fund ETF	USO US EQUITY	47.41%	-11%	-11%	-11%	-1%	-1.0	-0.8	32.1	-2%	64%	28.5	-13%	43%
PowerShares DB Base Metals Fund ETF	DBB US EQUITY	20.34%	427%	269%	268%	320%	0.3	-0.1	14.9	-7%	34%	78.7	17%	82%
PowerShares DB Agriculture Fund ETF	DBA US EQUITY	18.15%	22%	8%	3%	-15%	-0.7	-0.5	13.4	-35%	75%	16.3	-7%	78%
SPDR Gold Shares ETF	GLD US EQUITY	-4.09%	-8%	-7%	-4%	69%	-0.5	-0.5	14.2	76%	55%	13.1	-4%	36%
FIXED INCOME														
I-Shares IBOXX HY Corporate Bond ETF	HYG US EQUITY	3.56%	-10%	-12%	-6%	9%	-1.3	-0.8	3.3	-15%	14%	3.0	-30%	2%
I-Shares J.P. Morgan USD EM Bond ETF	EMB US EQUITY	0.14%	24%	30%	28%	66%	0.0	0.3	4.1	13%	12%	5.0	-15%	8%
I-Shares IBOXX IG Corporate Bond ETF	LDI US EQUITY	-0.77%	8%	6%	11%	30%	-0.4	-0.2	5.0	5%	51%	5.4	-13%	44%
I-Shares 7-10 Year Treasury Bond ETF	IEF US EQUITY	-1.95%	19%	35%	24%	26%	-0.4	-0.3	4.3	-18%	24%	5.1	-22%	27%
I-Shares 20+ Year Treasury Bond ETF	TLT US EQUITY	-5.07%	14%	22%	11%	10%	0.0	0.4	10.7	-22%	32%	12.2	-20%	44%
MEGA-CAP TECH														
Alphabet	GOOGL US EQUITY	64.03%	7%	10%	-7%	3%	-0.1	0.1	16.3	-15%	23%	17.4	-12%	14%
Facebook	FB US EQUITY	37.74%	-7%	-4%	-21%	-14%	-0.5	-0.4	22.4	-22%	25%	20.9	-15%	11%
Microsoft	MSFT US EQUITY	36.28%	19%	23%	13%	27%	0.3	0.4	13.8	2%	10%	16.4	-4%	14%
Apple	AAPL US EQUITY	16.83%	25%	31%	17%	7%	0.7	0.7	17.6	-12%	16%	21.9	2%	27%
Amazon	AMZN US EQUITY	6.79%	-33%	-31%	-35%	-29%	-1.6	-1.4	28.6	-11%	56%	19.3	-15%	7%

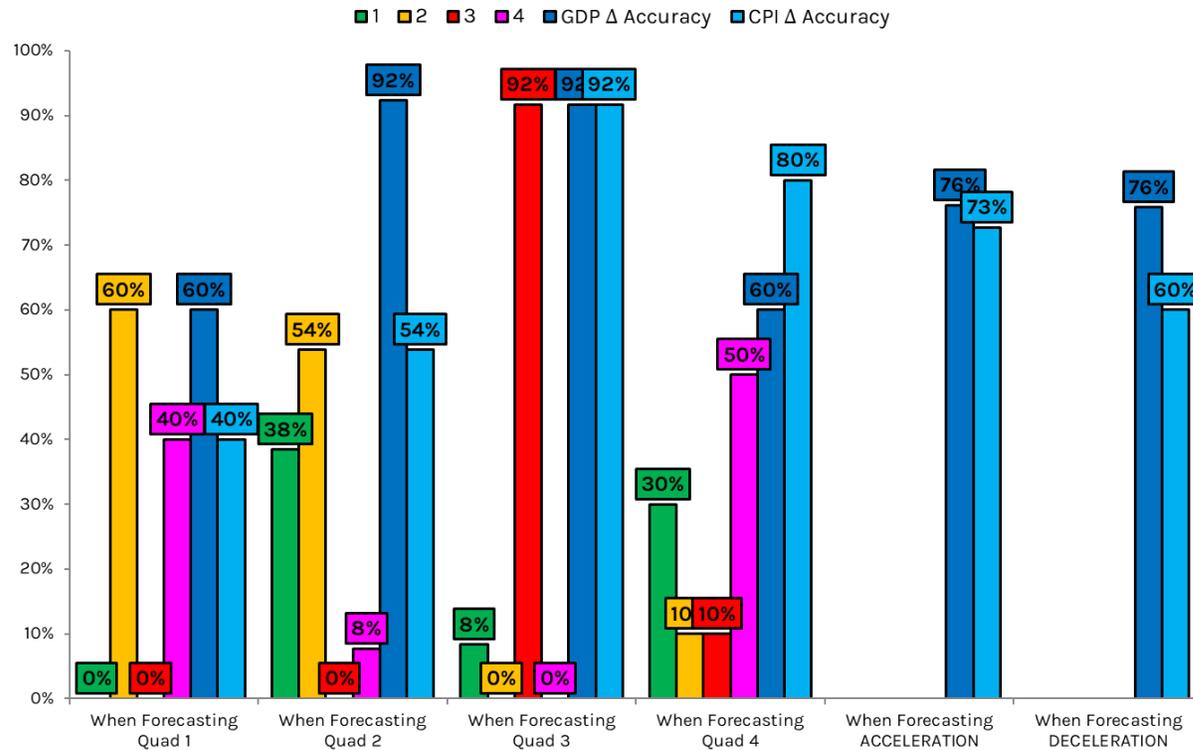
Data Source: CBOE, CME, Bloomberg

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

US Comparative Base Effects Model Backtest

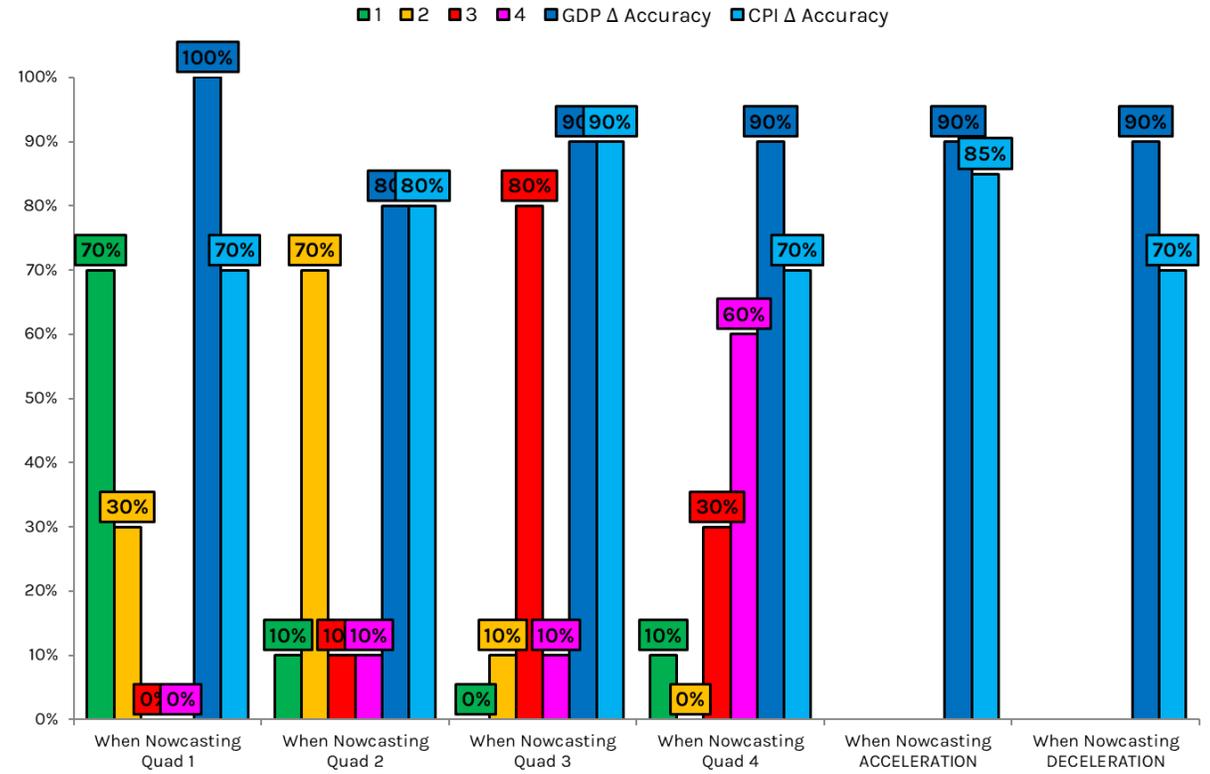
US Nowcast Model Backtest

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