

HEDGEYE



# HEDGEYE'S CURRENT MARKET OUTLOOK

Just Right.

(for now)

Updated: February 4<sup>th</sup>, 2022



## MACRO THEMES

USA: #Quad2 in Q4?

Global Inflation's Acceleration

Long Emerging Markets?

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## [1] #Quad1 or Narrow #Quad4 in Q1?

The multi-quarter reflationary bonanza is now rearview. It gets harder from here and more active macro risk management will take sharper focus. We'll map out our latest projections for the trajectory of growth and inflation, detail the allocation pivots that matter, discuss how to be effectively positioned for either Quad 1 or shallow Quad 4 scenario's and consider the scope for another large-scale policy mistake (ala 4Q18) into 2H22.

## [2] #Peak Inflation

Peaks are generally processes, not points, and while imbalances with residual price impacts will persist, we think the broader domestic inflationary impulse is set to crest and roll over the coming months. Looking abroad, we're seeing early indications of peaking in leading inflationary indicators across both DM and EM economies. While absolute levels of inflation will remain high for some time, we see the beginning of disinflationary pressures emerging over the course of 1H22 globally

## [3] Long EM #Reiterated

Our Q1 EM focus will be on those countries where the signal is positive, and the Quad setup is either already favorable or poised to become so on a protracted basis over the next 1-2 Quarters. China is beginning to appear interesting from a Signal standpoint with a protracted favorable Quad setup just one quarter away.

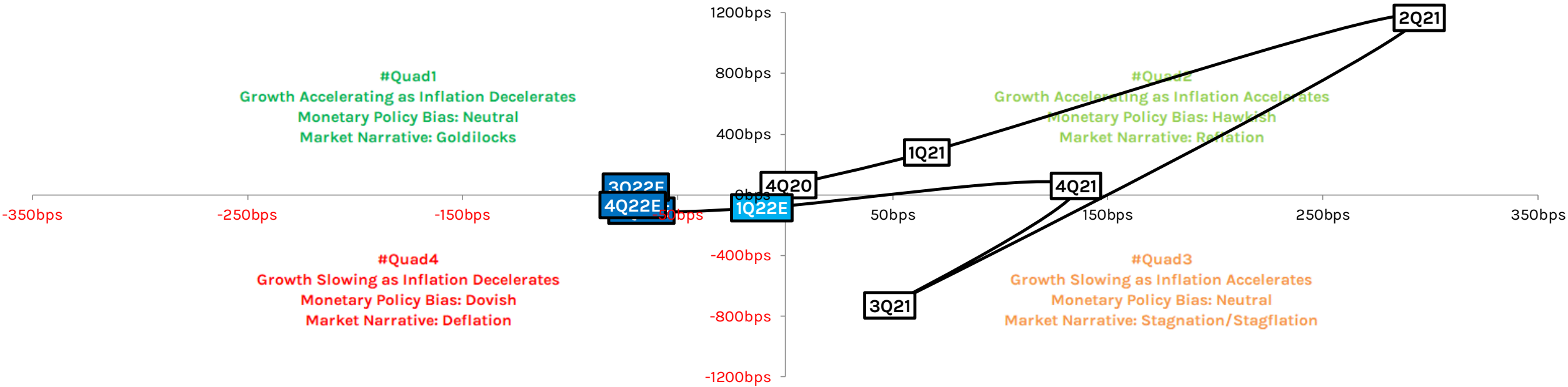
# What Are The Quads?

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	1Q19	2Q19	3Q19	4Q19	1Q20	2Q20	3Q20	4Q20	1Q21	2Q21	3Q21	4Q21	← Actuals   Estimates →	1Q22E	2Q22E	3Q22E	4Q22E
Real GDP QoQ SAAR	2.40%	3.20%	2.80%	1.90%	-5.10%	-31.20%	33.80%	4.50%	6.30%	6.70%	2.30%	6.90%	Real GDP QoQ SAAR	2.85%	2.51%	4.25%	4.10%
Real GDP YoY	2.15%	2.11%	2.32%	2.57%	0.63%	-9.08%	-2.89%	-2.26%	0.55%	12.23%	4.95%	5.53%	Real GDP YoY	4.68%	3.63%	4.14%	3.47%
2yr Comparative Base Effects	2.45%	2.72%	2.66%	2.52%	2.58%	2.70%	2.69%	2.45%	1.39%	-3.49%	-0.28%	0.15%	2yr Comparative Base Effects	0.59%	1.57%	1.03%	1.63%
Headline CPI YoY	1.64%	1.81%	1.76%	2.03%	2.12%	0.36%	1.22%	1.24%	1.90%	4.85%	5.34%	6.69%	Headline CPI YoY	6.58%	5.91%	5.22%	4.51%
2yr Comparative Base Effects	2.38%	2.31%	2.30%	2.16%	1.93%	2.26%	2.20%	2.12%	1.88%	1.09%	1.49%	1.64%	2yr Comparative Base Effects	2.01%	2.61%	3.28%	3.96%

## United States

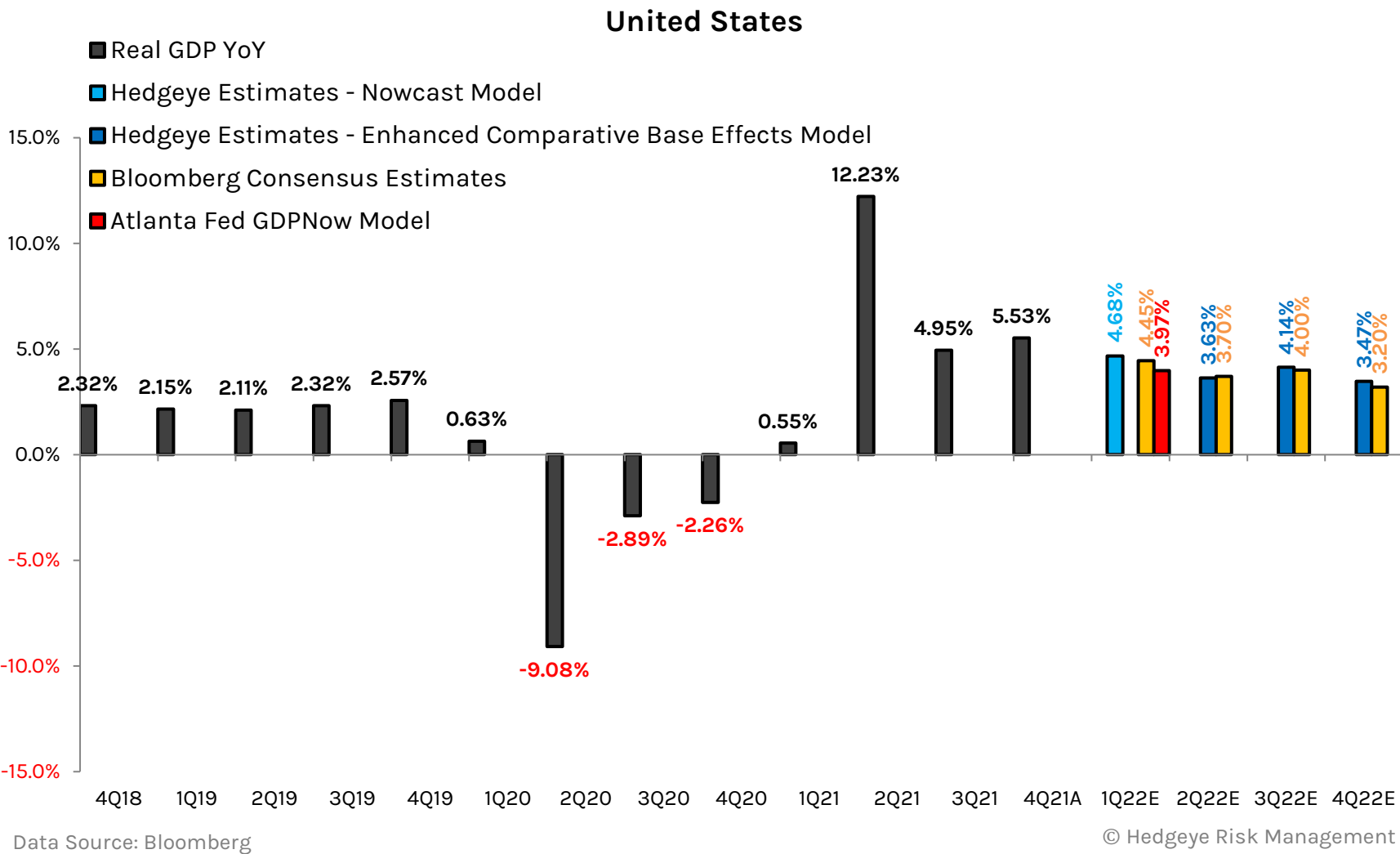
◆ x-axis: First Difference of YoY Headline CPI;  
y-axis: First Difference of YoY Real GDP



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

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# US Real GDP YoY Projections

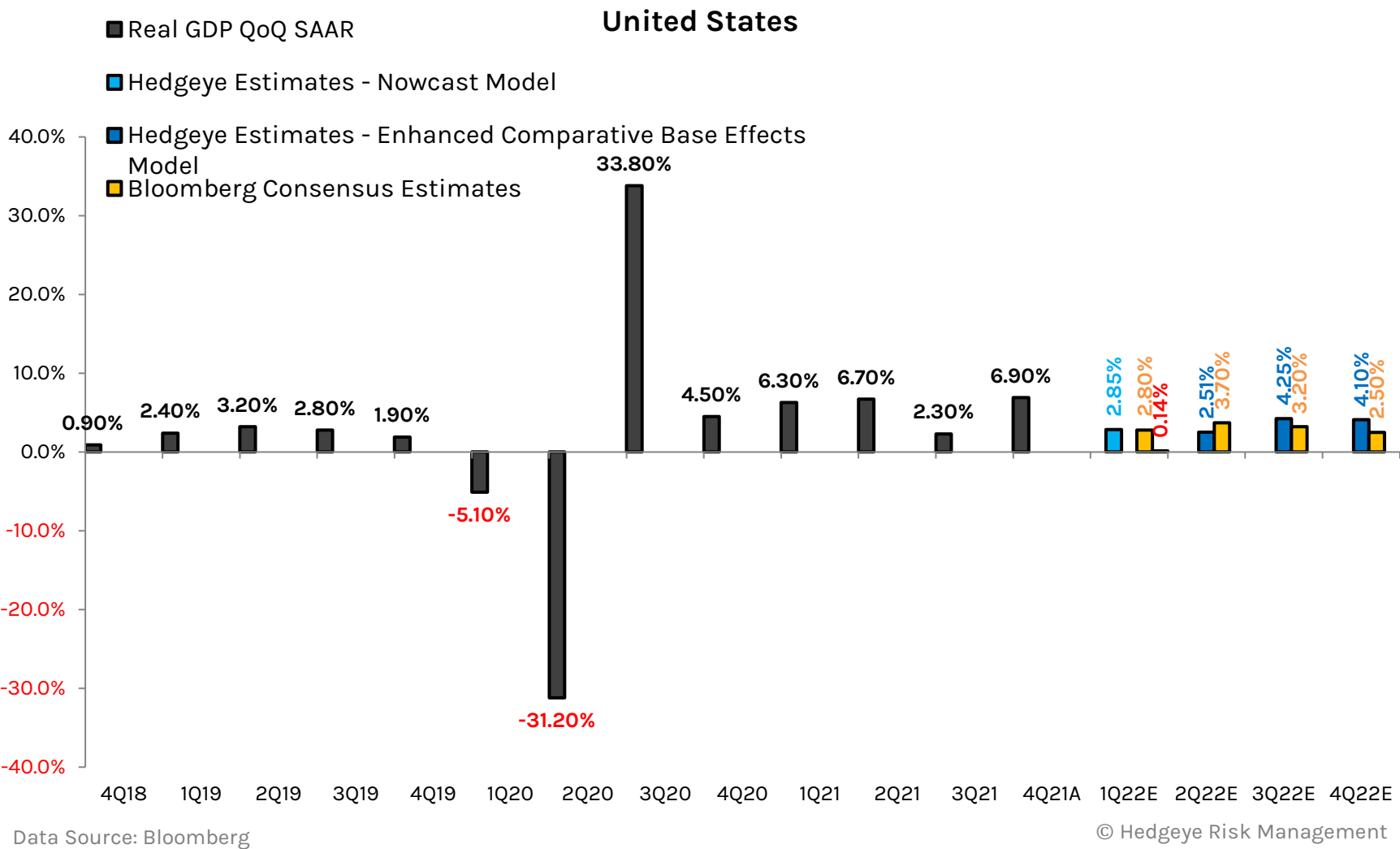


We use two distinct models to forecast the YoY growth rate of Real GDP and the combination of the two allows us to develop both a highly accurate real-time assessment of near-term economic momentum, as well as a high-probability scenario for where growth is likely to trend over the NTM.

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

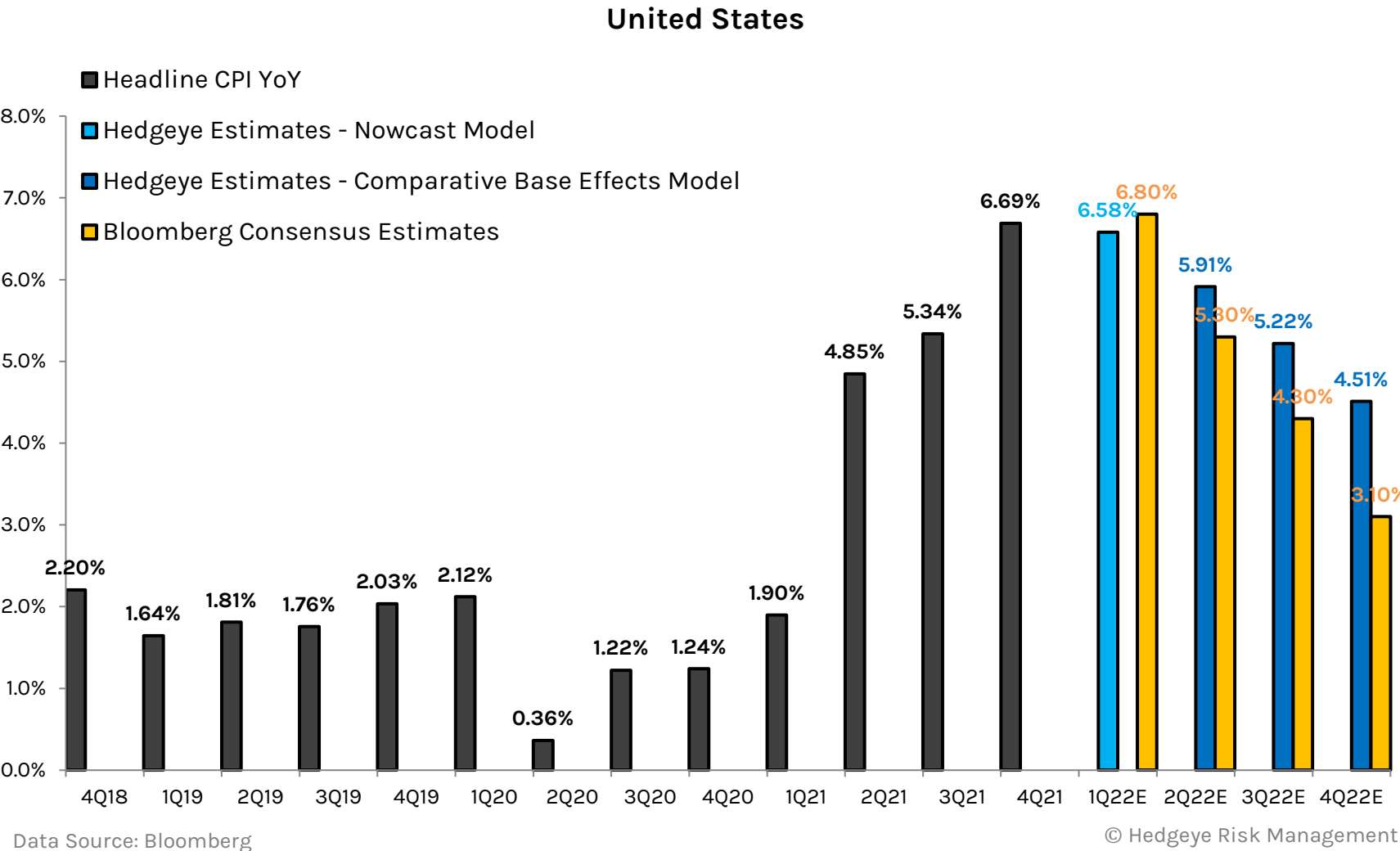


One differentiating factor of our forecasting process is that we aim to solve for where the economy is trending on a **Full Investing Cycle** basis, rather than trying to identify super short-term economic momentum.

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



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	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	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	4Q21	1Q22	Δ	
Real PCE YoY (1)	-16.43	-9.58	-4.56	-3.46	-3.08	-1.91	-1.57	-2.44	-3.26	-0.80	-2.16	9.65	25.42	15.07	9.35	7.46	7.50	6.38	6.88	7.23	7.12	-	-	-	7.08	-	-	
Real Disposable Personal Income YoY (14)	16.98	11.31	9.33	9.85	5.25	5.64	5.04	3.23	3.70	13.43	3.18	28.80	-5.96	-4.06	-2.83	-2.62	1.02	-1.18	-0.87	0.23	-0.17	-	-	-	-0.27	-	-	
Personal Savings Rate % of DPI (6)	33.8	24.8	19.3	18.7	15.0	14.3	13.6	13.0	14.0	19.9	13.5	26.6	12.6	10.4	9.5	10.5	9.8	8.1	7.1	7.2	7.9	-	-	-	7.4	-	-	
Headline Retail Sales YoY (9)	-20.01	-5.76	1.99	2.71	3.09	5.90	5.34	3.38	2.31	9.40	6.50	29.71	53.42	28.05	18.86	15.32	15.69	14.16	16.24	18.24	16.95	-	-	-	17.14	-	-	
Retail Sales Control Group YoY (13)	-7.14	1.81	7.19	8.54	8.47	10.51	10.13	9.26	6.03	14.07	10.23	16.27	31.71	18.34	13.47	9.54	12.31	10.90	12.80	13.25	12.87	-	-	-	12.97	-	-	
Auto Sales YoY (10)	-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	-25.46	-19.86	-17.30	-23.54	-9.56	-	-	-20.23	-9.56	10.67	
MBA Mortgage Purchase Index YoY (24)	-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	-14.14	-11.03	-6.98	-9.26	-10.06	-	-	-	-9.09	-10.06	-0.97
Total Employees On Nonfarm Payrolls YoY (7)	-13.36	-11.65	-8.74	-7.87	-6.86	-6.36	-5.99	-5.92	-6.12	-5.99	-5.76	-4.35	10.87	9.00	5.84	5.28	4.40	4.02	4.02	4.24	4.68	4.62	-	-	-	4.31	4.62	0.31
Aggregate Hours Worked YoY (2)	-13.86	-10.88	-8.21	-7.33	-6.05	-5.27	-4.62	-4.55	-5.03	-4.07	-5.21	-2.11	13.13	9.63	6.45	5.89	4.40	4.02	3.73	4.24	4.68	3.13	-	-	-	4.21	3.13	-1.08
Aggregate Labor Income YoY (4)	-6.95	-4.93	-3.54	-2.77	-1.54	-0.69	-0.23	-0.17	0.16	0.99	-0.30	2.21	13.85	12.03	10.66	10.42	8.93	8.99	9.28	9.79	9.86	8.99	-	-	-	9.64	8.99	-0.65
Monthly Initial Jobless Claims YoY (3)	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	-63.50	-63.70	-65.87	-67.41	-68.97	-65.08	-	-	-	-67.42	-65.08	2.33
Bloomberg Consumer Comfort Index (12)	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	56.7	50.3	51.0	48.7	42.1	-	-	-	50.0	42.1	-7.9
Industrial Production YoY (8)	-17.65	-16.21	-10.96	-7.02	-6.62	-6.56	-4.75	-4.73	-3.28	-1.67	-4.86	1.76	17.86	16.40	10.21	6.62	5.33	4.62	4.76	4.98	3.67	-	-	-	4.47	-	-	
Capacity Utilization (5)	63.4	64.7	68.7	71.5	72.3	72.1	72.9	73.3	74.1	75.0	72.7	74.8	74.8	75.3	75.7	76.2	76.0	75.2	76.1	76.6	76.5	-	-	-	76.4	-	-	
Durable Goods New Orders YoY (22)	-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	18.33	17.60	15.30	14.37	15.48	12.96	-	-	-	14.27	-	-	
Core Capital Goods New Orders YoY (28)	-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	15.93	13.73	13.90	13.20	11.92	10.56	-	-	-	11.89	-	-	
Factory Orders YoY (18)	-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	16.25	15.80	15.14	15.52	15.79	13.32	-	-	-	14.88	-	-	
Manufacturing & Trade Inventories YoY (26)	-2.02	-4.64	-5.78	-6.00	-5.54	-4.73	-3.95	-3.26	-2.55	-1.62	-0.44	0.06	1.54	4.60	6.67	7.27	7.51	7.53	7.98	8.73	-	-	-	-	8.35	-	-	
Nonresidential Construction Spending YoY (30)	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	-5.50	-3.09	-0.71	1.31	2.92	4.16	3.86	-	-	-	3.65	-	-	
Residential Construction Spending YoY (29)	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	31.71	26.99	22.99	21.67	19.52	16.77	14.73	-	-	-	17.00	-	-	
ISM Manufacturing PMI (23)	41.6	43.5	52.4	53.9	55.4	55.4	58.8	57.3	60.5	59.4	60.9	63.7	60.6	61.6	60.9	59.9	59.7	60.5	60.8	60.6	58.8	57.6	-	-	-	60.1	57.6	-2.5
ISM Non-Manufacturing PMI (15)	41.5	45.2	56.8	57.0	57.4	57.7	56.1	56.5	57.8	58.5	55.9	62.2	62.7	63.2	60.7	64.1	62.2	62.6	66.7	68.4	62.3	59.9	-	-	-	65.8	59.9	-5.9
NFIB Small Business Optimism Index (19)	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	100.1	99.1	98.2	98.4	98.9	-	-	-	98.5	-	-	
Exports YoY (11)	-28.63	-31.72	-24.59	-19.18	-17.19	-14.71	-13.05	-11.71	-9.06	-5.21	-7.02	9.32	38.31	43.42	32.57	24.29	22.33	16.14	22.51	21.08	-	-	-	-	21.79	-	-	
Imports YoY (16)	-22.02	-24.39	-19.73	-11.39	-8.76	-6.36	-2.56	0.86	0.54	3.81	4.93	18.13	34.82	38.06	35.32	22.06	20.33	19.75	18.10	20.55	-	-	-	-	19.33	-	-	
Rail Traffic YoY (17)	-20.89	-20.62	-14.29	-8.21	-5.96	-1.42	1.70	2.43	4.94	4.75	-4.40	12.87	27.34	27.81	13.89	6.26	-0.04	-2.20	-2.34	-4.45	-6.24	-5.77	-	-	-	-4.34	-5.77	-1.43
Headline CPI YoY (25)	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	5.25	5.39	6.22	6.81	7.04	-	-	-	6.69	-	-	
PCE Deflator YoY (27)	0.41	0.51	0.91	1.04	1.30	1.38	1.17	1.11	1.29	1.41	1.63	2.45	3.58	3.97	4.03	4.16	4.24	4.44	5.08	5.72	5.79	-	-	-	5.53	-	-	
Core PCE Deflator YoY (21)	0.91	1.00	1.13	1.30	1.50	1.57	1.42	1.38	1.48	1.51	1.49	1.97	3.08	3.46	3.59	3.60	3.60	3.70	4.16	4.66	4.85	-	-	-	4.56	-	-	
M2 Money Supply YoY (20)	16.96	21.96	22.92	23.28	23.05	23.79	23.72	24.31	24.82	25.88	27.12	24.37	18.19	14.05	12.40	12.35	13.36	12.88	13.01	13.07	13.11	-	-	-	13.06	-	-	

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



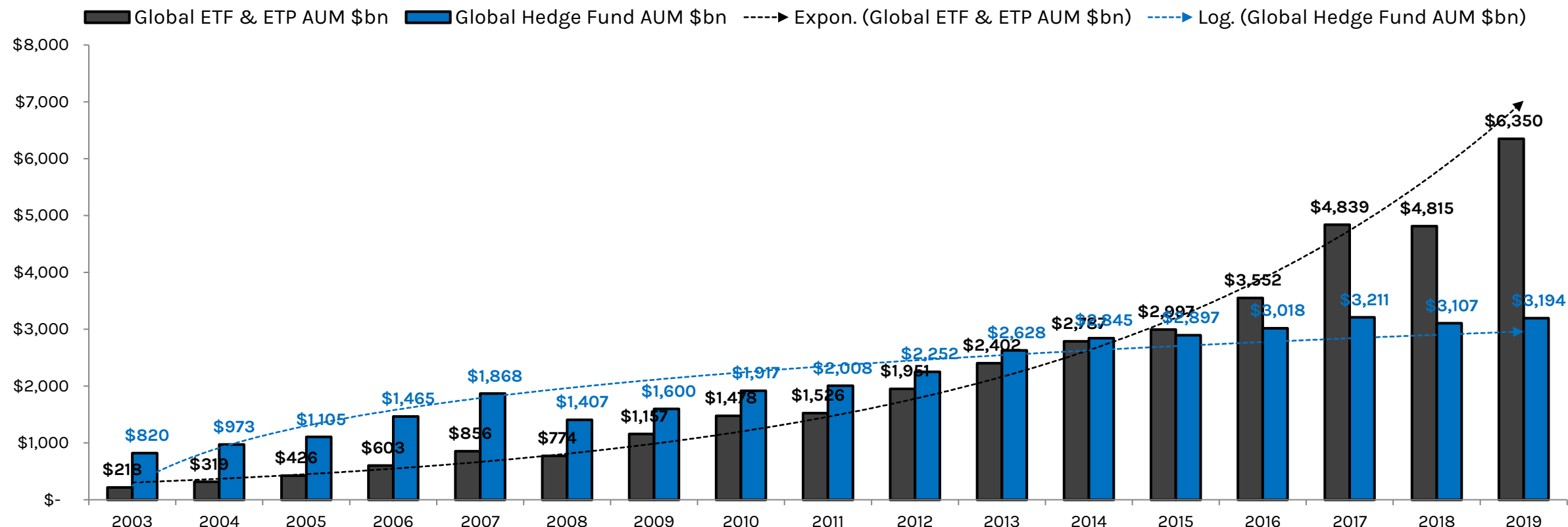
# OUR MACRO PROCESS



# The Investment Landscape Has Evolved Tremendously

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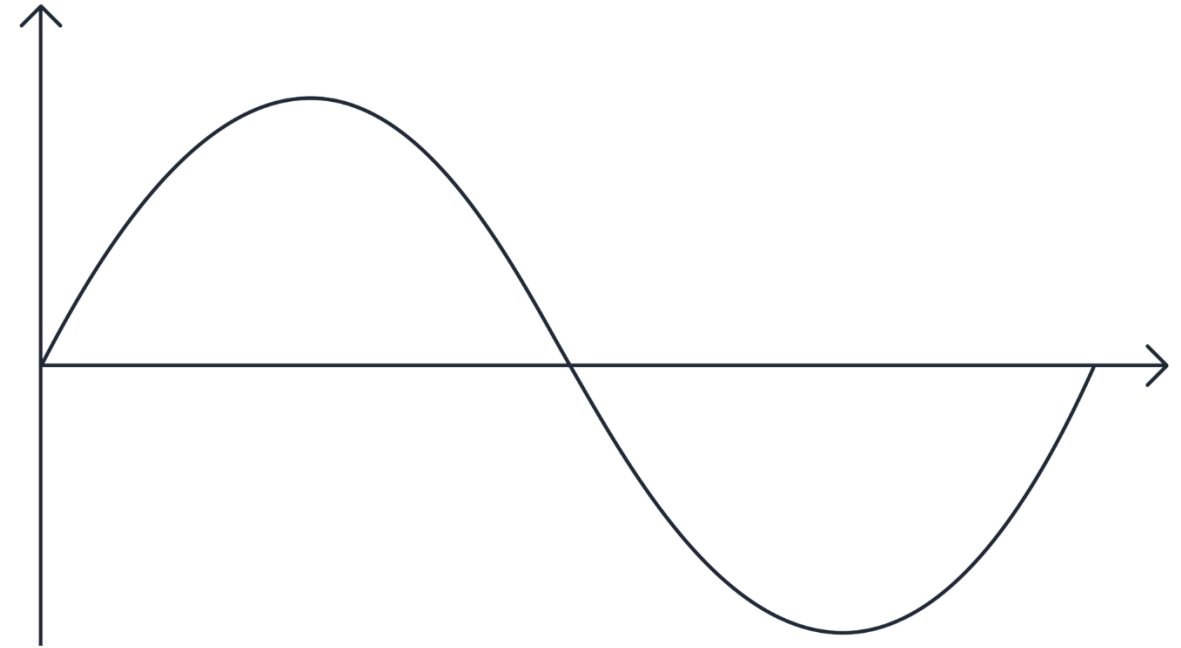
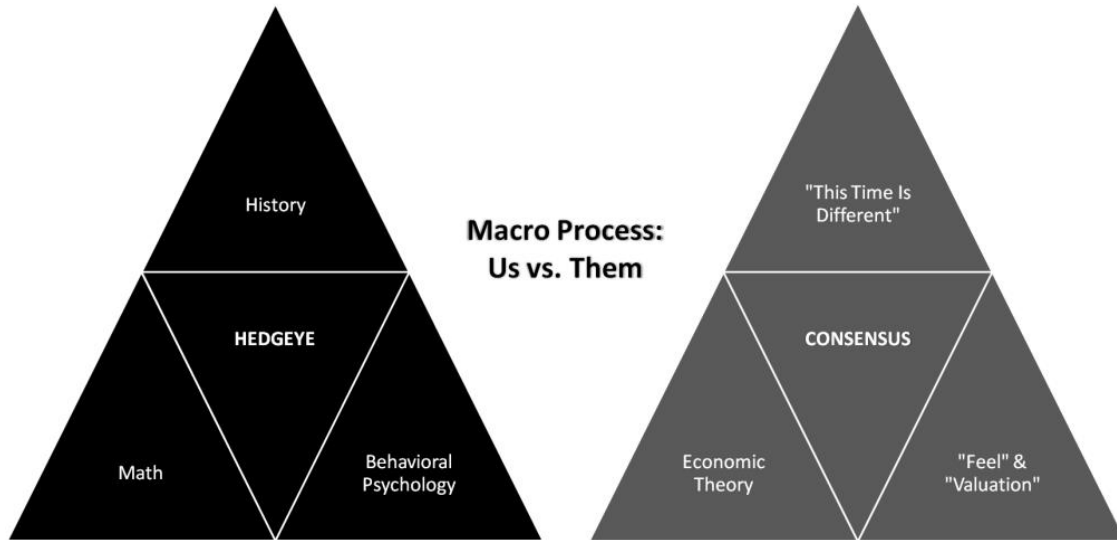
Stock-picking has given way to factor-picking and it's our job as investors to embrace this sea change, rather than fight it.



## Skate To Where The Puck Is Going Within Asset Management

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

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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			
Exposure	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	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%	-1.0%	1.9%
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%	-0.3%	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%	4.4%	-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%	0.2%	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%	-16.7%	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%	-26.1%	3.8%	-2.6%	-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%	4.6%	-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 (SPHB)	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%	-6.7%	-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%	1.5%	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%	18.2%	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%														

# 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

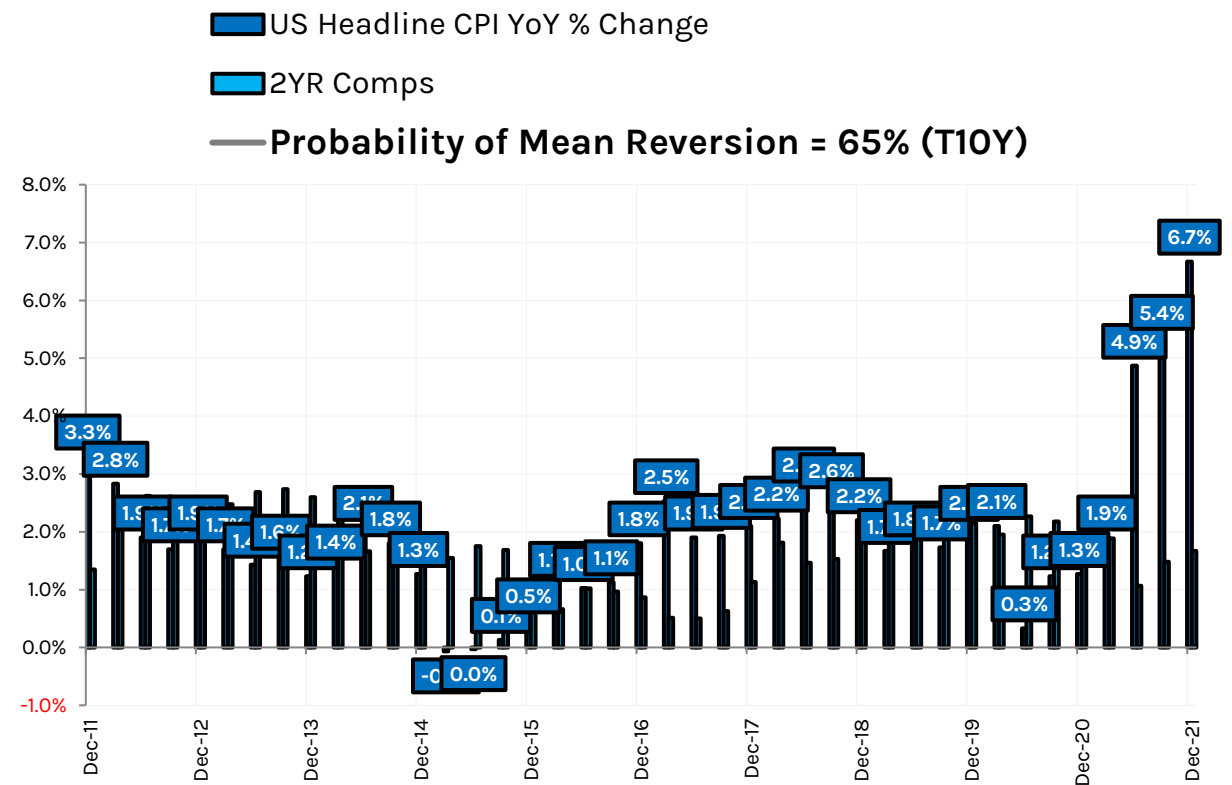
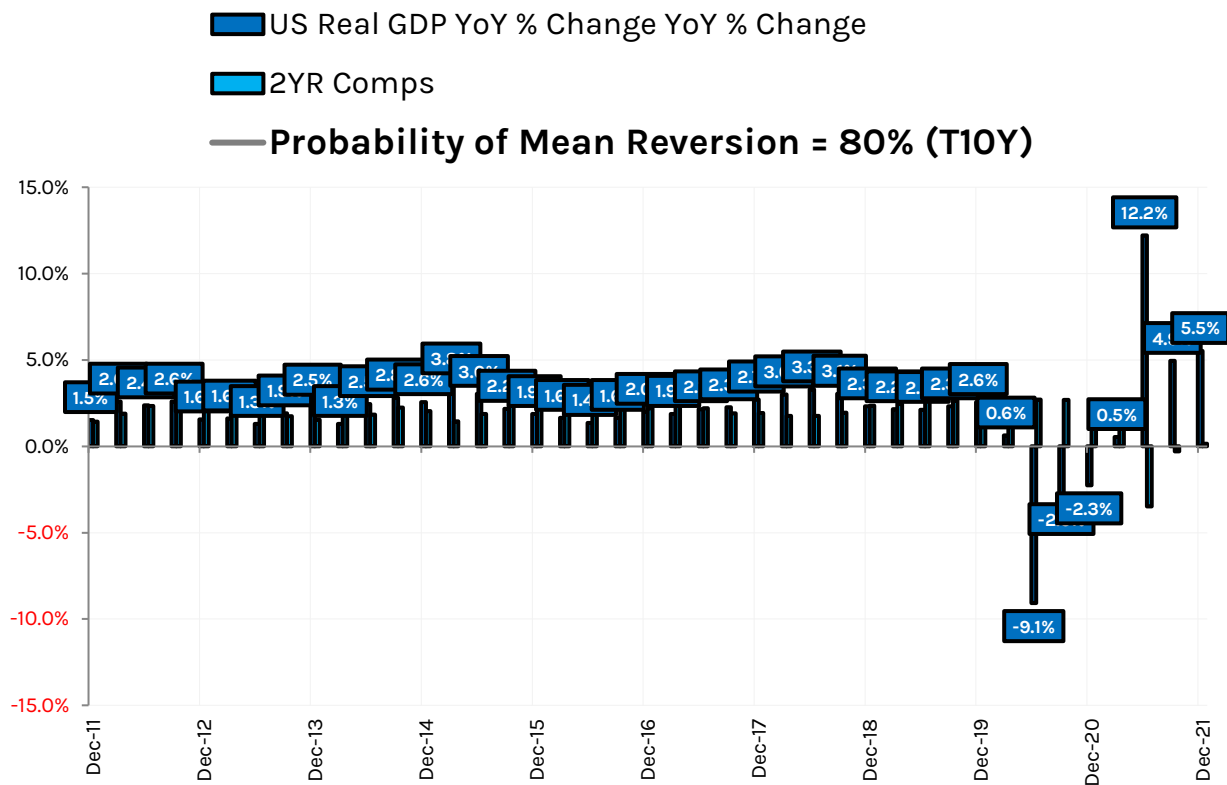
### Best Fixed Income Sectors:

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

### Worst Fixed Income Sectors:

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

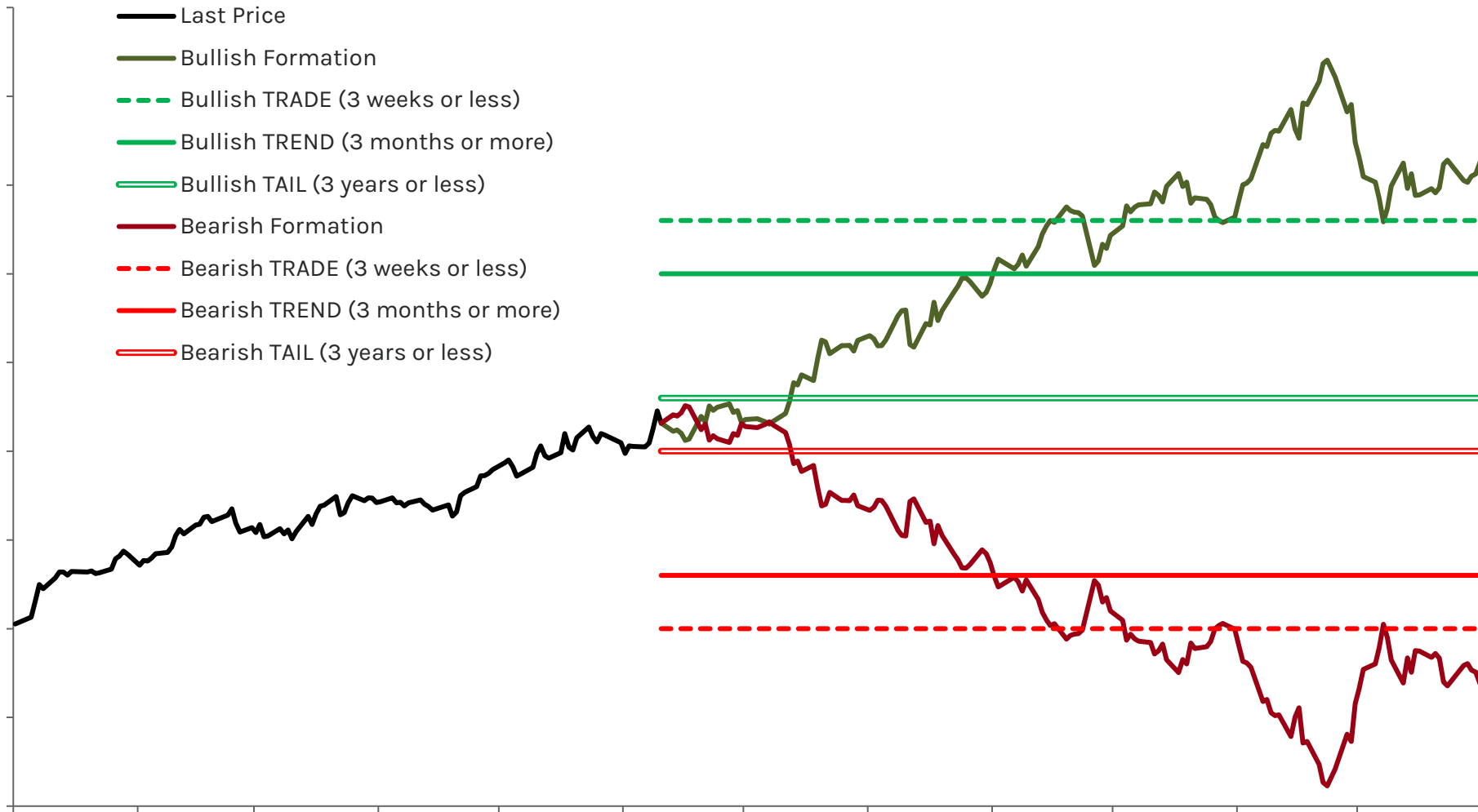
# Base Effects Matter Because GDP and CPI Are More Or Less Stationary Processes When Analyzed On A YoY Rate Of Change Basis



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	-0.6%	3.4%	0.3%	0.0%	5.0%	1.9%
	Low Debt/EV	-2.5%	4.8%	-11.2%	-9.3%	-4.9%	-11.8%
SI	High Short Interest	-1.2%	3.9%	-4.9%	-4.8%	0.3%	-3.9%
	Low Short Interest	-1.5%	3.6%	-5.2%	-2.9%	1.9%	-5.6%
BETA	High Beta	-1.6%	3.7%	-5.0%	-4.9%	2.5%	-3.9%
	Low Beta	-0.8%	3.2%	-3.9%	-0.4%	0.0%	-4.2%
YIELD	High Yield	-0.9%	2.1%	0.0%	2.1%	4.0%	0.7%
	Low Yield	-2.0%	5.4%	-10.1%	-11.4%	-6.8%	-9.9%
MKT CAP	MCAP Bottom 25%	-1.5%	3.0%	-5.2%	-5.3%	-3.2%	-4.9%
	MCAP Top 25%	-1.7%	3.4%	-5.0%	-2.2%	1.6%	-4.5%
Sales	Top 25% Sales Growth	-2.5%	4.4%	-7.2%	-7.8%	1.9%	-6.4%
	Bottom 25% Sales Growth	-0.5%	2.9%	-0.3%	2.1%	3.1%	-0.1%
EPS	Top 25% EPS Growth	-1.7%	4.3%	-4.9%	-5.2%	3.6%	-3.9%
	Bottom 25% EPS Growth	-1.2%	3.0%	-3.4%	-2.9%	0.3%	-3.1%

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

## CFTC NON-COMMERCIAL NET LONG POSITIONING

CFTC NON-COMMERCIAL NET LONG POSITIONING						3Y		Z-Score		
	METRIC	Latest	W/W Chg	3M Ave	6M Ave	1Y Ave	Max	Min	1Y	3Y
EQUITIES	SPX (Index + E-mini)	211,855	71,199	137,602	85,606	39,644	211,855	(333,489)	2.39X	2.25X
	VIX	(41,742)	5,152	(58,628)	(68,206)	(80,409)	(18,377)	(218,362)	1.31X	1.29X
	Russell 2000 (mini)	(3,095)	12,173	(20,288)	(40,183)	(32,098)	58,474	(88,708)	1.31X	0.26X
	Dow Jones (mini)	(10,249)	75	(3,591)	(3,736)	(6,201)	51,359	(28,732)	-0.57X	-0.78X
	Nasdaq (mini)	27,139	(2,417)	22,590	10,757	3,326	47,085	(133,005)	1.57X	0.75X
	Nikkei Index	(2,329)	1,040	(2,808)	(3,656)	(3,802)	4,738	(16,298)	0.53X	0.70X
RATES	10Y UST	(224,275)	19,305	(226,848)	(53,730)	16,286	238,882	(434,970)	-1.46X	-0.89X
	2Y UST	29,996	(7,202)	21,672	(6,607)	(105,099)	86,786	(402,529)	1.05X	1.82X
	5Y UST	(150,985)	122,505	(309,559)	(219,515)	(128,740)	148,962	(448,910)	-0.14X	0.07X
	UST Bonds	(66,679)	(21,050)	(30,942)	(60,549)	(93,552)	2,332	(241,003)	0.52X	0.42X
	30D Fed Funds	49,437	61,711	(67,475)	(72,870)	(124,842)	488,558	(320,917)	2.19X	-0.01X
	Eurodollar	(1,059,419)	(281,905)	(757,748)	(513,022)	(136,550)	2,134,274	(1,098,014)	-1.60X	-1.87X
CURRENCIES	USD	36,830	428	35,770	30,696	15,666	43,033	(15,000)	1.24X	1.32X
	JPY	(68,682)	14,381	(81,695)	(77,874)	(57,103)	52,239	(117,217)	-0.32X	-1.04X
	EUR	28,035	6,452	(4,762)	4,009	47,988	212,535	(123,765)	-0.39X	-0.01X
	GBP	(5,553)	(8,192)	(29,060)	(16,246)	3,119	40,671	(107,406)	-0.33X	0.21X
	AUD	(89,974)	2,353	(82,375)	(76,456)	(41,705)	15,665	(94,816)	-1.27X	-1.88X
	CAD	11,161	3,741	(3,150)	(4,374)	8,968	53,332	(49,083)	0.11X	0.57X
	MXN	(739)	(5,737)	(27,240)	(26,654)	(19,026)	170,379	(64,080)	1.05X	-0.66X
	NZD	(10,773)	(2,442)	1,427	2,862	4,934	17,126	(42,544)	-2.25X	-0.45X
	CHF	(10,150)	1,944	(12,682)	(9,210)	(2,017)	17,848	(40,715)	-0.80X	-0.45X
COMMODITIES	CRUDE OIL	444,520	(8,554)	435,691	449,865	502,315	594,465	341,465	-0.95X	-0.73X
	GOLD	117,708	33,169	105,412	91,615	88,893	292,066	(22,328)	1.11X	-0.33X
	COPPER	26,082	4,165	16,431	20,600	30,521	80,564	(60,135)	-0.23X	0.37X
	Natural Gas	(126,162)	(6,724)	(136,594)	(139,045)	(96,918)	71,340	(262,534)	-0.52X	-0.44X
	RBOB Gasoline	60,247	(1,128)	54,959	48,579	50,164	129,000	29,497	1.13X	-0.37X
	ULSD Heating Oil	20,346	2,984	13,902	23,960	19,458	40,330	(27,674)	0.08X	0.98X
	Silver	32,273	2,704	31,964	27,409	35,115	80,646	(26,016)	-0.25X	-0.37X
	Platinum	16,016	7,375	10,468	9,169	17,284	69,306	(1,557)	-0.12X	-0.47X
	Corn	424,084	50,562	409,673	358,974	397,921	557,581	(270,560)	0.33X	1.06X
	Soybeans	149,709	21,540	91,411	77,252	121,140	270,935	(148,817)	0.48X	0.74X
	Wheat	797	11,137	5,077	8,167	15,810	60,302	(69,231)	-0.92X	-0.40X
	Live Cattle	64,900	(15,944)	82,670	80,039	86,726	183,134	20,158	-1.23X	-0.38X
	Lean Hogs	71,517	15,557	59,103	72,554	79,644	101,947	4,913	-0.54X	0.56X
	Sugar	121,291	14,392	180,447	220,217	233,287	316,046	(205,161)	-2.37X	0.05X
	Cotton	98,625	(2,348)	102,542	105,496	91,163	127,919	(37,827)	0.42X	1.18X
	Coffee	64,944	(826)	61,489	58,446	53,265	66,063	(70,193)	1.15X	1.18X
	Cocoa	22,065	(553)	63	10,611	17,287	81,269	(31,483)	0.28X	0.00X
	Orange Juice	4,749	647	979	2,171	1,226	4,749	(9,416)	1.65X	1.61X

# 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.

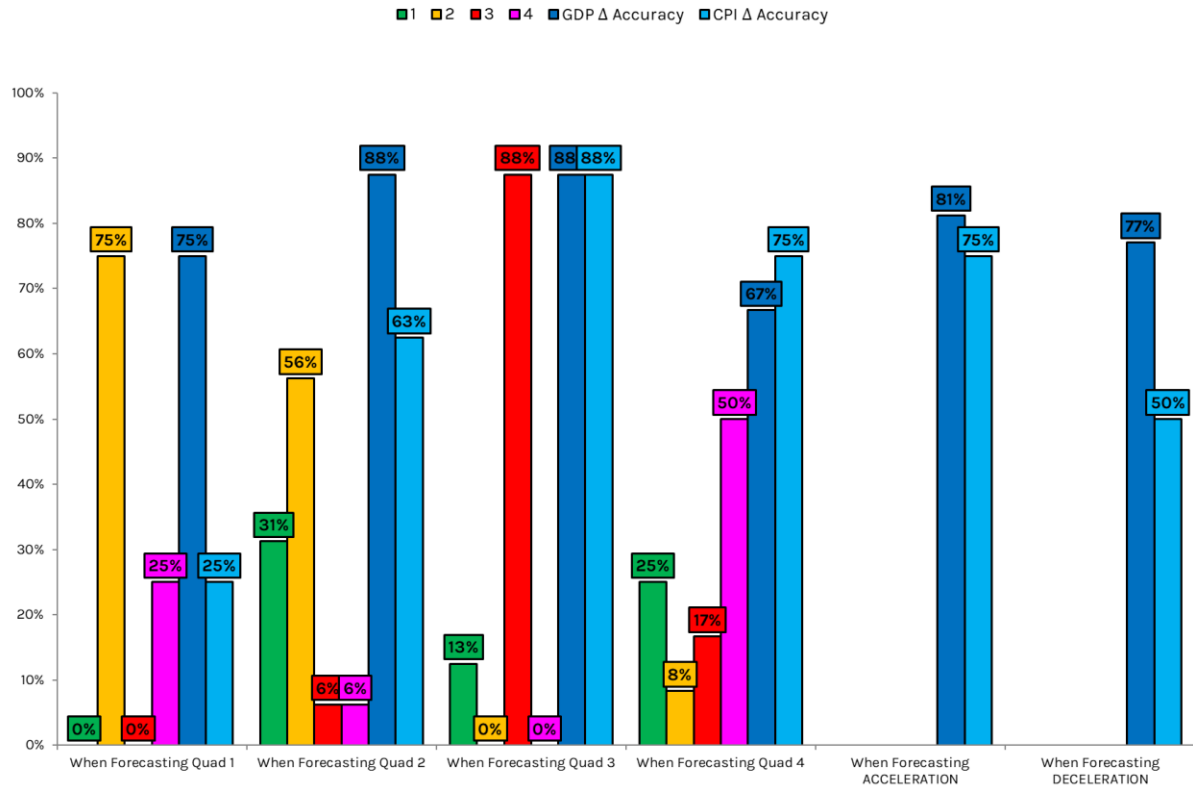
TIME WINDOW SETTING: VOLATILITY_30D PUT_IMP_VOL_30D		TOTAL RETURN PERFORMANCE	IVOL PREMIUM/DISCOUNT						REALIZED VOLATILITY TRENDS			IMPLIED VOLATILITY TRENDS		
TICKER		YTD %	IVOL / RVOL	Yesterday	1W Ago	1M Ago	TTM Z-Score	3Yr Z-Score	RVOL CURRENT	MM %	PERCENTILE 10YR	IVOL CURRENT	MM %	PERCENTILE 10YR
US EQUITIES														
CURRENT														
Energy Sector SPDR ETF	XLE US EQUITY	22.23%	66%	26%	37%	-15%	3.7	2.8	25.5	-15%	68%	42.2	66%	95%
Financials Sector SPDR ETF	XLF US EQUITY	0.97%	32%	12%	36%	-24%	0.4	0.6	18.4	-23%	66%	24.2	33%	86%
Consumer Staples Sector SPDR ETF	XLP US EQUITY	-0.36%	76%	189%	177%	-12%	0.3	0.4	10.4	-33%	43%	18.2	33%	89%
Utilities Sector SPDR ETF	XLU US EQUITY	-3.56%	151%	49%	129%	-6%	3.1	3.2	14.3	-13%	58%	35.9	133%	99%
Industrials Sector SPDR ETF	XLI US EQUITY	-4.36%	45%	57%	58%	-24%	0.5	0.8	15.4	-26%	60%	22.2	42%	84%
Health Care Sector SPDR ETF	XLV US EQUITY	-5.76%	15%	-3%	76%	42%	-0.8	-0.1	14.1	9%	59%	16.3	-11%	72%
SPDR S&P 500 ETF Trust	SPY US EQUITY	-5.97%	18%	6%	65%	-32%	0.1	0.1	18.4	0%	84%	21.7	73%	92%
Materials Sector SPDR ETF	XLB US EQUITY	-6.72%	64%	33%	53%	28%	0.8	1.1	17.6	-5%	64%	28.9	22%	93%
Technology Sector SPDR ETF	XLK US EQUITY	-8.58%	13%	-20%	51%	-27%	-0.1	0.0	27.2	3%	89%	30.6	60%	94%
Communication Services SPDR ETF	XLC US EQUITY	-8.61%	-13%	-6%	51%	-21%	-1.2	-0.9	30.3	58%	91%	26.4	74%	78%
Real Estate Sector SPDR ETF	XLRE US EQUITY	-8.63%	3%	-9%	58%	-22%	-0.5	-0.1	20.3	-2%	82%	20.9	28%	78%
Power Shares QQQ Trust ETF	QQQ US EQUITY	-11.13%	8%	-5%	47%	-25%	-0.4	-0.3	28.0	19%	91%	30.1	70%	95%
I-Shares Russell 2000 ETF	IWM US EQUITY	-11.20%	13%	5%	38%	-26%	0.2	0.1	25.1	-6%	90%	28.4	44%	91%
Consumer Discretionary Sector SPDR ETF	XLY US EQUITY	-12.30%	7%	-10%	40%	-33%	-0.2	-0.3	27.7	9%	96%	29.8	75%	97%
INTERNATIONAL EQUITIES														
I-Shares China Large-Cap ETF	FXI US EQUITY	2.87%	-5%	-8%	5%	-2%	0.1	-0.2	30.5	22%	88%	29.1	18%	92%
I-Shares MSCI Emerging Markets ETF	EEM US EQUITY	-0.63%	132%	142%	44%	-9%	3.7	4.2	19.2	4%	62%	44.5	166%	99%
Euro Stoxx 50 Index	SXSE INDEX	-3.75%	-2%	-6%	12%	-39%	-0.4	-0.2	20.6	-15%	75%	20.1	37%	73%
I-Shares MSCI Japan ETF	EWJ US EQUITY	-4.84%	15%	10%	74%	-18%	0.6	0.3	15.6	-7%	58%	17.9	30%	69%
CURRENCIES														
Currency Shares British Pound ETF	FXB US EQUITY	0.47%	25%	16%	12%	13%	2.1	0.7	5.5	1%	10%	6.9	11%	22%
Currency Shares Euro Trust ETF	FXE US EQUITY	0.38%	-16%	-17%	-17%	-14%	-1.1	-1.2	7.8	16%	64%	6.6	13%	30%
Currency Shares Japanese Yen ETF	FXJ US EQUITY	0.11%	50%	20%	26%	-27%	0.8	1.0	5.4	-33%	19%	8.1	38%	48%
PowerShares US Dollar Index ETF	UUP US EQUITY	-0.23%	18%	14%	16%	19%	-0.1	-0.2	6.4	14%	58%	7.6	13%	57%
COMMODITIES														
United States Natural Gas Fund ETF	UNG US EQUITY	38.03%	-22%	1%	-17%	-16%	-0.8	-0.9	91.2	30%	99%	71.1	20%	95%
United States Oil Fund ETF	USO US EQUITY	16.83%	82%	84%	63%	-35%	2.2	2.5	20.0	-60%	21%	36.4	12%	73%
iPath Coffee Subindex ETN	JO US EQUITY	7.98%	41%	41%	24%	14%	1.3	1.3	27.5	-17%	34%	38.9	3%	74%
iPath Cocoa Subindex ETN	NIB US EQUITY	4.61%	-7%	-5%	-17%	-16%	0.2	-0.4	30.8	-4%	69%	28.7	6%	65%
Teucrium Corn ETF	CORN US EQUITY	3.81%	42%	46%	48%	58%	0.8	0.4	17.6	11%	45%	25.0	0%	66%
SPDR Gold Shares ETF	GLD US EQUITY	-1.38%	10%	5%	10%	12%	0.3	0.2	12.1	1%	41%	13.4	-1%	39%
FIXED INCOME														
I-Shares 7-10 Year Treasury Bond ETF	IEF US EQUITY	-2.46%	13%	12%	8%	-1%	-0.3	-0.4	6.1	-16%	78%	6.9	-4%	81%
I-Shares IBOXx HY Corporate Bond ETF	HYG US EQUITY	-3.00%	56%	39%	105%	-31%	0.9	1.0	4.8	-16%	44%	7.5	91%	66%
I-Shares J.P. Morgan USD EM Bond ETF	EMB US EQUITY	-3.52%	13%	14%	16%	-8%	-0.1	-0.1	8.0	4%	84%	9.1	28%	76%
I-Shares IBOXx IG Corporate Bond ETF	LQD US EQUITY	-4.20%	20%	13%	23%	-3%	0.7	0.3	7.0	-8%	86%	8.4	15%	93%
I-Shares 20+ Year Treasury Bond ETF	TLT US EQUITY	-4.66%	2%	1%	0%	-14%	-0.2	0.0	15.1	-20%	77%	15.4	-5%	84%
MEGA-CAP TECH														
Alphabet	GOOGL US EQUITY	-1.22%	-11%	-23%	62%	17%	-0.7	-0.5	35.9	59%	91%	31.9	21%	88%
Apple	AAPL US EQUITY	-2.51%	-4%	-19%	69%	-6%	-0.8	-0.4	30.3	0%	74%	29.1	2%	68%
Microsoft	MSFT US EQUITY	-10.43%	6%	-13%	20%	-6%	-0.3	-0.1	30.3	14%	81%	32.2	29%	92%
Amazon	AMZN US EQUITY	-16.72%	38%	19%	46%	21%	1.1	0.7	39.8	64%	83%	54.8	87%	100%
Facebook	FB US EQUITY	-29.31%	-48%	32%	43%	5%	-2.7	-1.9	97.8	199%	100%	50.7	47%	92%
Data Source: CBOE, CME, Bloomberg														

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

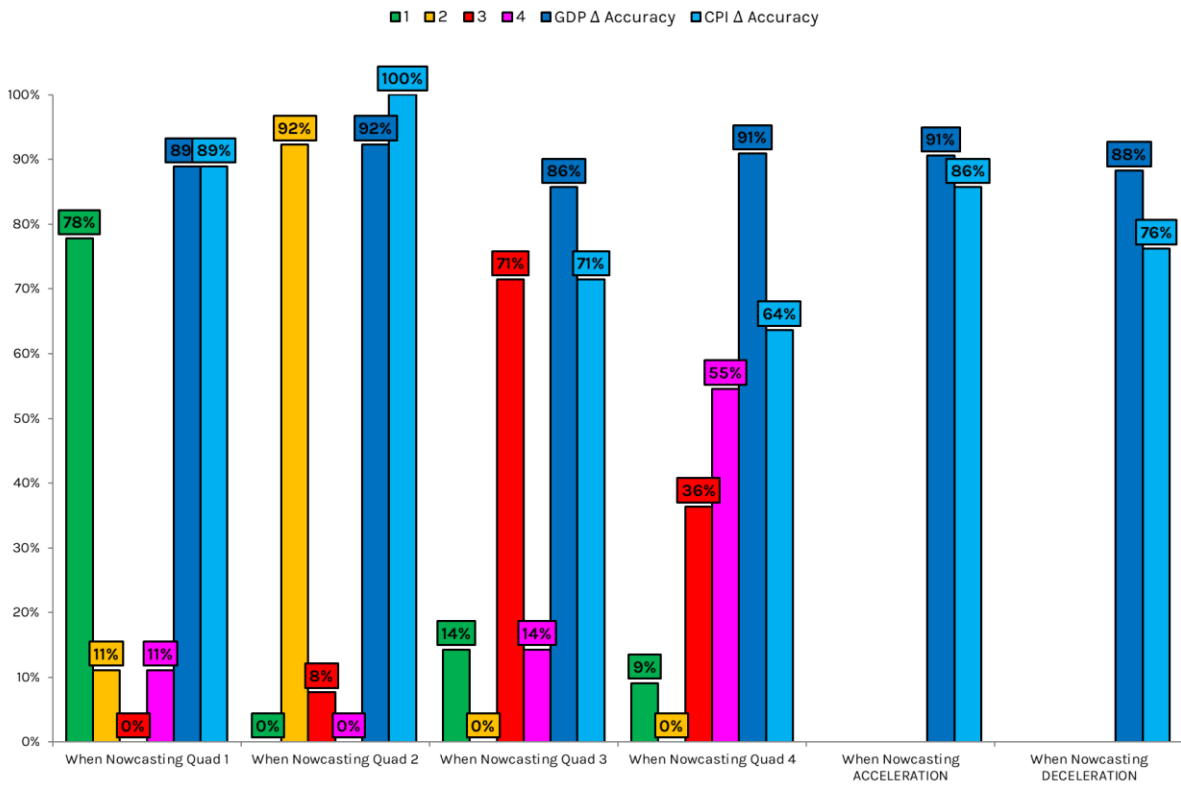
Hedgeye Comparative Base Effects Model Quad Projection Accuracy: United States



Data Source: Bloomberg

## US Nowcast Model Backtest

Hedgeye Nowcast Model Quad Projection Accuracy: United States



Data Source: Bloomberg

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