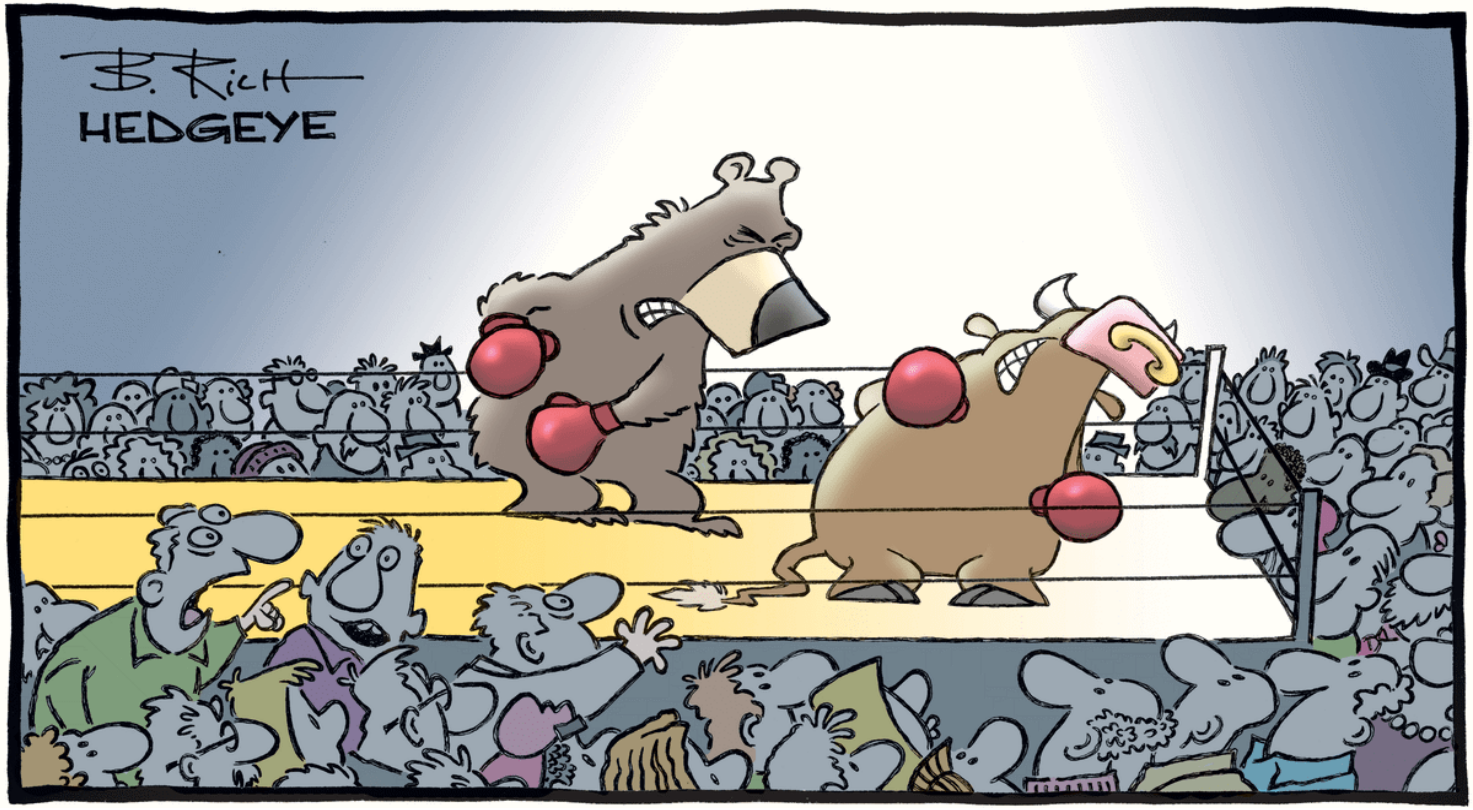
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HEDGEYE'S CURRENT MARKET OUTLOOK

New Quarter; Same Reflation

Updated: April 8th, 2021



MACRO THEMES

USA Still #Quad2

Macro Signals and Divergences

Rates & Housing… Peak Cycle?

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Q2 2021 Macro Themes

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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 mange 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.

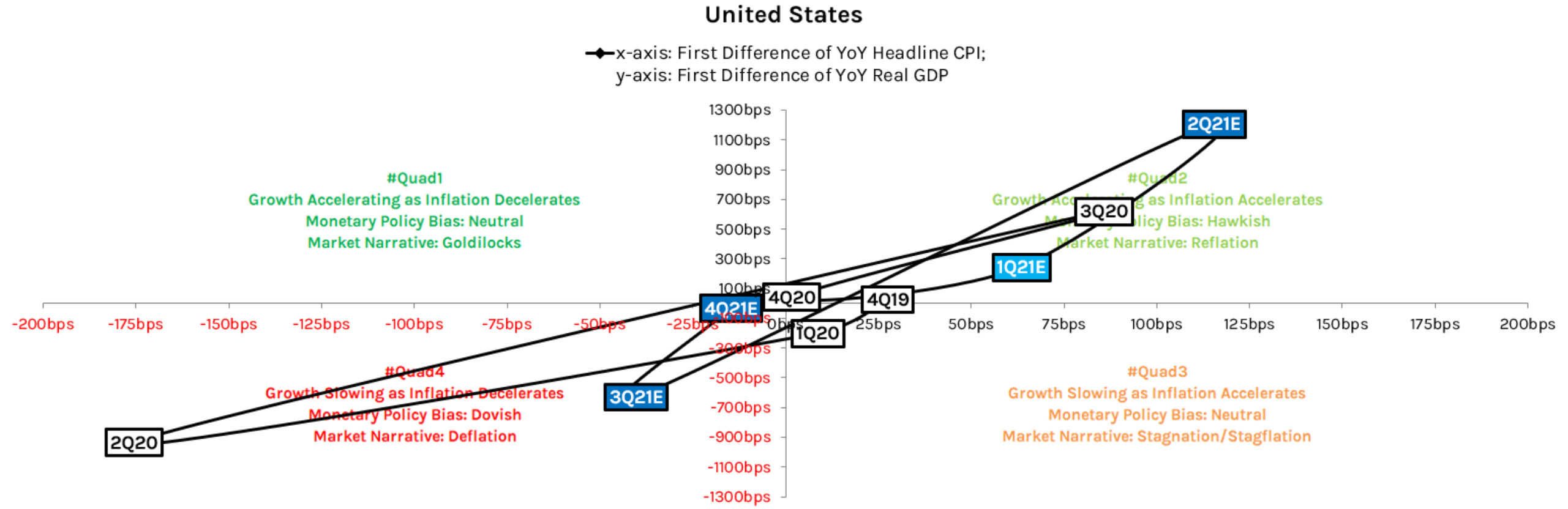
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What Are The Quads?

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

United States	1Q18	2Q18	3Q18	4Q18	1Q19	2Q19	3Q19	4Q19	1Q20	2Q20	3Q20	4Q20	← Actuals | Estimates →	1Q21E	2Q21E	3Q21E	4Q21E
Real GDP QoQ SAAR	3.80%	2.70%	2.10%	1.30%	2.90%	1.50%	2.60%	2.40%	-5.00%	-31.40%	33.40%	4.30%	Real GDP QoQ SAAR	3.27%	7.36%	6.14%	2.99%
Real GDP YoY	3.08%	3.33%	3.12%	2.48%	2.27%	1.96%	2.08%	2.34%	0.32%	-9.03%	-2.85%	-2.39%	Real GDP YoY	-0.33%	11.61%	5.21%	5.01%
2yr Comparative Base Effects	1.92%	1.80%	1.98%	2.39%	2.57%	2.75%	2.74%	2.59%	2.67%	2.64%	2.60%	2.41%	2yr Comparative Base Effects	1.29%	-3.53%	-0.39%	-0.05%
Headline CPI YoY	2.21%	2.71%	2.64%	2.20%	1.64%	1.81%	1.76%	2.03%	2.12%	0.36%	1.22%	1.24%	Headline CPI YoY	1.88%	3.08%	2.72%	2.58%
2yr Comparative Base Effects	1.81%	1.48%	1.54%	1.96%	2.38%	2.31%	2.30%	2.16%	1.93%	2.26%	2.20%	2.12%	2yr Comparative Base Effects	1.88%	1.09%	1.49%	1.64%

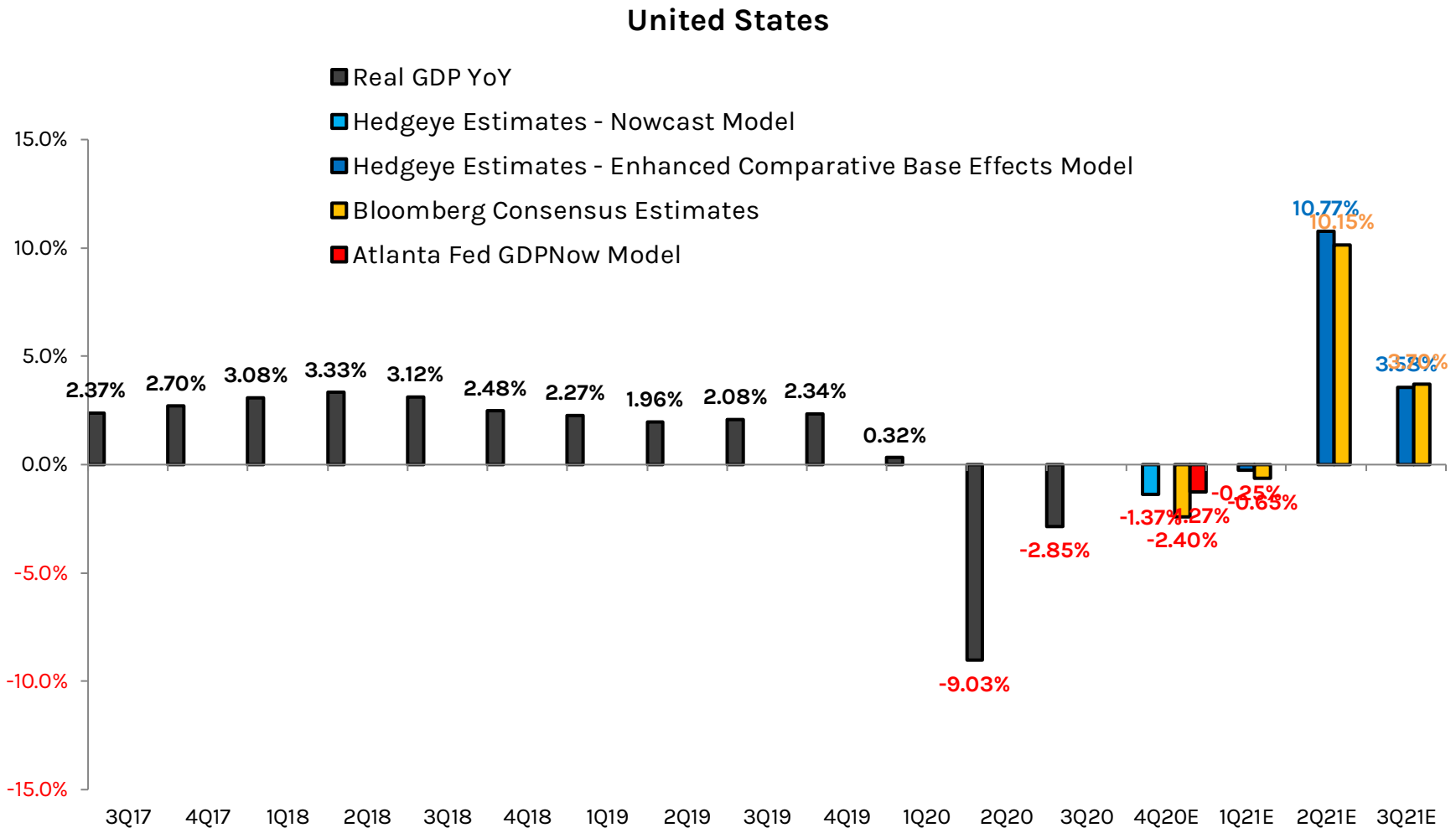


Data Source: Bloomberg. Light Blue box = Hedgeye Nowcast Model estimate. Dark Blue boxes = Hedgeye Comparative Base Effects Model estimates.

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US Real GDP YoY Projections

HEDGEYE



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.

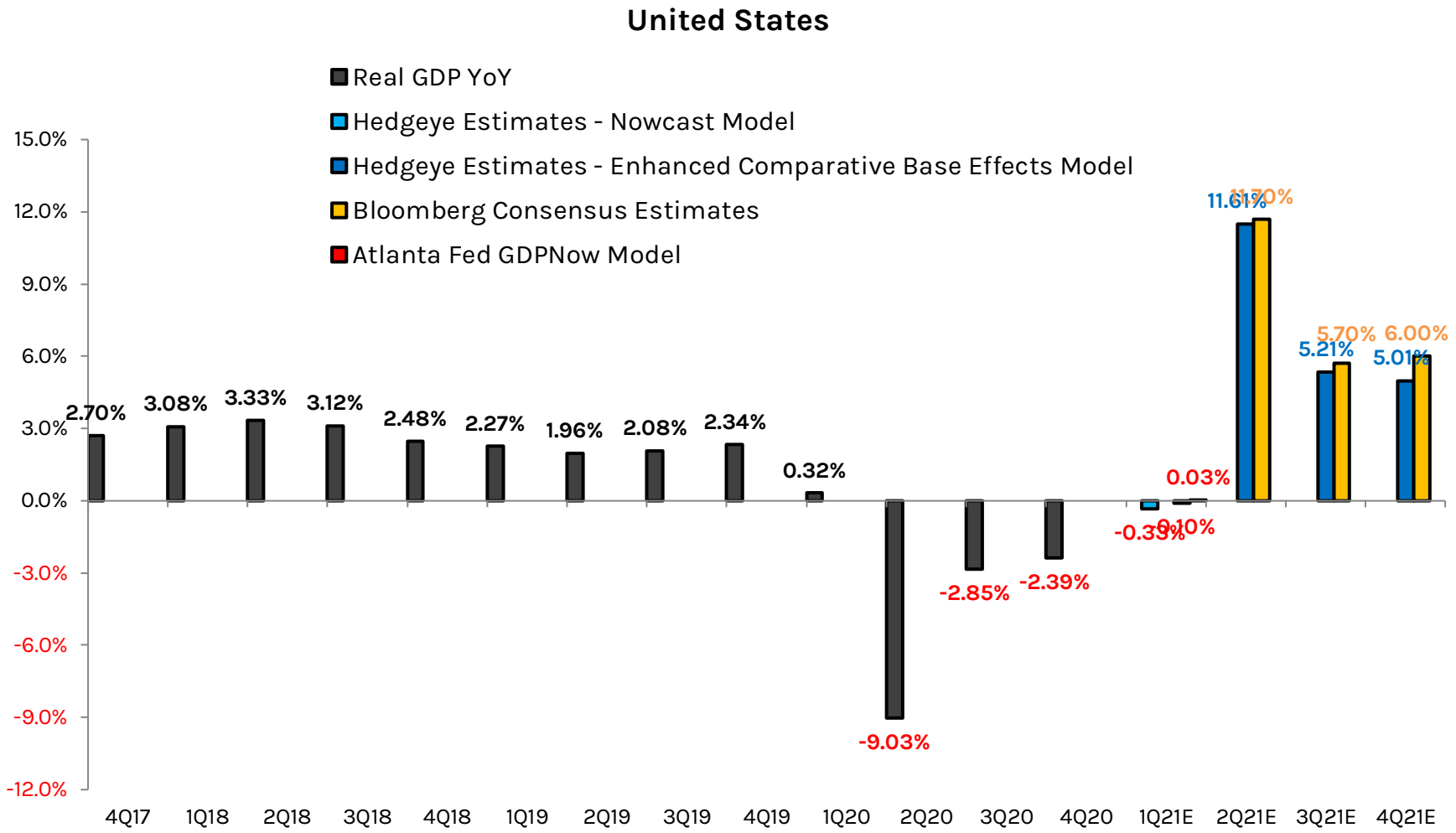
All told, our US GDP nowcast model has an average absolute forecast error of 25bps and an 90% success rate in terms of accurately projecting the rate of change of GROWTH.

Data Source: Bloomberg

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US Real GDP YoY Projections

HEDGEYE



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.

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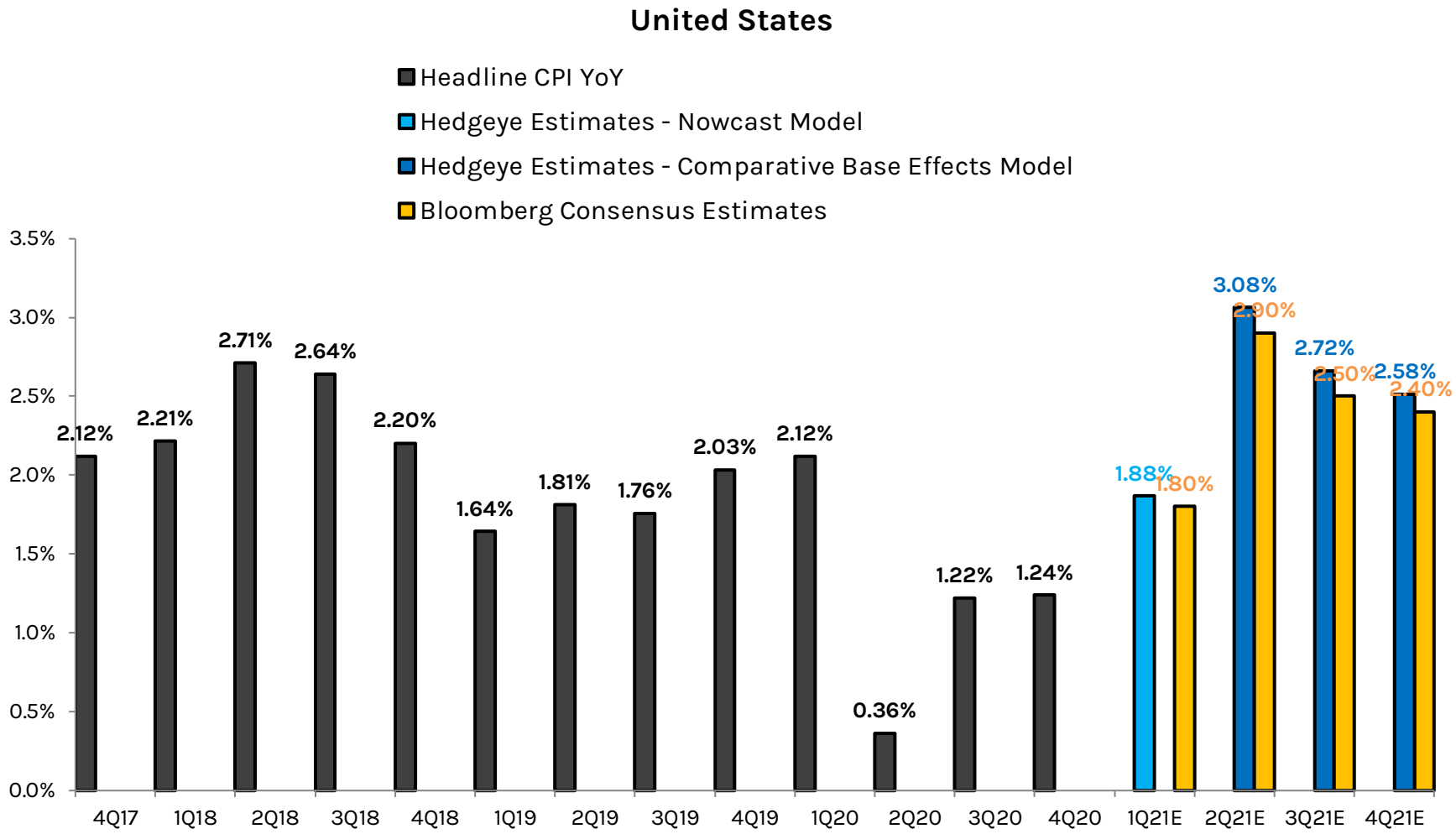
All told, our US GDP nowcast model has an average absolute forecast error of 55bps and an 85% success rate in terms of accurately projecting the rate of change of GROWTH.

Data Source: Bloomberg

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US Headline CPI YoY Projections

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

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

All told, our US CPI nowcast model has an average absolute forecast error of 36bps and an 85% success rate in terms of accurately projecting the rate of change of INFLATION.

Data Source: Bloomberg

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US Real GDP Nowcast Model

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

HEDGEYE US NOWCAST MODEL SUMMARY	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21
Real PCE YoY (1)	2.43	2.34	2.55	2.44	2.33	2.58	2.30	2.06	3.02	2.69	2.61	-4.69	-16.53	-9.64	-4.58	-3.61	-2.94	-1.95	-1.94	-2.61	-3.52	-1.00	-2.11	-
Real Disposable Personal Income YoY (14)	2.39	2.05	1.85	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	4.27	2.35	2.79	13.33	3.42	-
Personal Savings Rate % of DPI (6)	7.5	7.3	7.1	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	13.2	12.5	13.5	19.8	13.6	-
Headline Retail Sales YoY (9)	3.86	2.90	3.44	3.57	4.30	3.71	3.09	3.32	5.79	4.71	4.73	-5.59	-19.86	-5.55	2.23	2.70	3.61	6.09	5.44	3.79	2.28	9.51	6.27	-
Retail Sales Control Group YoY (13)	3.86	3.45	4.97	4.83	4.97	4.32	4.05	2.50	6.35	3.72	4.04	6.32	-7.46	1.50	7.01	7.76	8.66	10.29	9.55	8.90	5.54	14.12	10.20	-
Auto Sales YoY (10)	-3.93	2.91	-0.46	0.84	2.23	-1.21	-5.43	-1.78	-4.57	1.45	1.63	-35.03	-47.68	-29.42	-24.57	-13.67	-10.49	-4.94	-2.05	-9.01	-2.57	-1.25	-6.89	56.10
MBA Mortgage Purchase Index YoY (24)	5.56	5.11	8.16	6.21	5.97	10.50	9.34	11.00	9.05	9.09	10.61	-2.10	-29.85	-1.13	15.98	17.46	26.46	22.26	22.95	20.54	24.68	14.18	8.28	17.32
Total Employees On Nonfarm Payrolls YoY (7)	1.41	1.26	1.24	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	-6.11	-4.46
Aggregate Hours Worked YoY (2)	1.11	0.97	0.94	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	-5.22	-4.48	-5.63	-2.10
Aggregate Labor Income YoY (4)	4.46	4.30	4.38	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	0.25	0.76	-0.37	2.15
Monthly Initial Jobless Claims YoY (3)	-4.20	-2.23	2.48	-3.12	0.75	0.12	-0.82	-5.95	4.62	-7.12	-7.20	1075.85	2245.45	1024.38	574.43	509.26	373.87	382.26	293.17	231.63	203.60	230.45	276.14	74.04
Bloomberg Consumer Comfort Index (12)	60.3	60.2	62.3	64.2	62.0	62.6	62.7	59.2	62.2	66.1	65.3	60.9	43.8	36.0	40.9	44.1	44.3	48.7	47.3	48.8	47.3	44.3	46.7	49.3
Industrial Production YoY (8)	0.71	1.73	1.02	0.40	0.30	-0.18	-0.81	-0.42	-0.81	-0.85	-0.24	-4.70	-16.26	-15.72	-10.50	-6.58	-6.34	-6.09	-4.75	-4.79	-3.48	-1.95	-4.25	-
Capacity Utilization (5)	77.8	77.8	77.7	77.4	77.8	77.4	77.0	77.6	77.2	76.9	76.9	73.6	64.2	64.8	68.9	71.8	72.5	72.5	73.2	73.9	74.6	75.5	73.8	-
Durable Goods New Orders YoY (22)	-1.66	-3.96	-4.41	0.38	-3.27	-5.73	-1.61	-3.95	-3.27	-3.62	1.62	-18.64	-30.29	-18.64	-12.42	-4.50	-4.54	-1.62	0.22	4.26	2.67	6.43	3.17	-
Core Capital Goods New Orders YoY (28)	2.25	0.84	0.49	-3.29	0.10	-0.12	-0.74	3.43	1.67	0.56	0.97	-2.63	-7.25	-4.34	-2.34	0.55	3.52	5.68	7.17	7.45	9.61	9.31	9.07	-
Factory Orders YoY (18)	0.84	-1.29	-2.25	0.48	-1.75	-3.28	-1.31	-1.16	0.29	-0.55	0.53	-12.43	-22.74	-16.08	-10.40	-6.01	-5.47	-3.74	-2.53	-0.18	-0.28	2.85	1.86	-
Manufacturing & Trade Inventories YoY (26)	5.29	5.29	5.10	4.77	4.01	3.39	2.83	2.62	1.71	0.61	-0.16	-0.48	-2.25	-4.80	-5.75	-5.88	-5.45	-4.55	-3.88	-3.21	-2.39	-1.84	-	-
Nonresidential Construction Spending YoY (30)	4.93	4.38	5.12	5.85	5.24	8.88	8.34	11.18	9.05	7.75	5.78	4.30	-0.10	0.83	1.41	-0.17	-2.11	-4.40	-2.83	-3.80	-4.00	-4.85	-6.07	-
Residential Construction Spending YoY (29)	-7.78	-7.49	-4.63	-2.27	0.99	1.66	4.00	6.33	9.80	11.72	13.40	12.15	6.10	1.81	3.34	6.24	11.67	11.94	16.93	18.40	23.00	22.12	21.12	-
ISM Manufacturing PMI (23)	53.6	52.2	51.3	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
ISM Non-Manufacturing PMI (15)	55.6	56.2	55.0	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
NFIB Small Business Optimism Index (19)	103.5	105.0	103.3	104.7	103.1	101.8	102.4	104.7	102.7	104.3	104.5	96.4	90.9	94.4	100.6	98.8	100.2	104.0	104.0	101.4	95.9	95.0	95.8	-
Exports YoY (11)	-1.32	-1.01	-1.55	-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	-7.57	-	-
Imports YoY (16)	0.67	3.09	1.58	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	3.22	-	-
Rail Traffic YoY (17)	-2.42	-5.54	-4.59	-5.53	-5.04	-6.38	-7.91	-7.71	-9.38	-6.22	-6.74	-10.09	-20.91	-20.61	-14.29	-8.19	-5.95	-1.44	1.71	2.45	4.92	4.76	-4.40	12.90
Headline CPI YoY (25)	2.00	1.79	1.65	1.81	1.75	1.71	1.76	2.05	2.29	2.49	2.33	1.54	0.33	0.12	0.65	0.99	1.31	1.37	1.18	1.17	1.36	1.40	1.68	-
PCE Deflator YoY (27)	1.62	1.49	1.46	1.53	1.52	1.39	1.43	1.44	1.64	1.88	1.84	1.34	0.48	0.54	0.92	1.01	1.24	1.35	1.20	1.12	1.23	1.41	1.55	-
Core PCE Deflator YoY (21)	1.69	1.60	1.71	1.74	1.87	1.72	1.74	1.58	1.62	1.75	1.87	1.65	0.93	1.01	1.14	1.26	1.43	1.53	1.40	1.34	1.41	1.48	1.41	-
M2 Money Supply YoY (20)	4.06	4.21	4.59	4.94	5.15	5.54	6.33	7.04	6.66	6.67	6.73	9.62	16.43	21.67	22.77	23.33	23.00	23.93	23.59	24.30	24.70	25.58	25.67	-

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

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OUR MACRO PROCESS



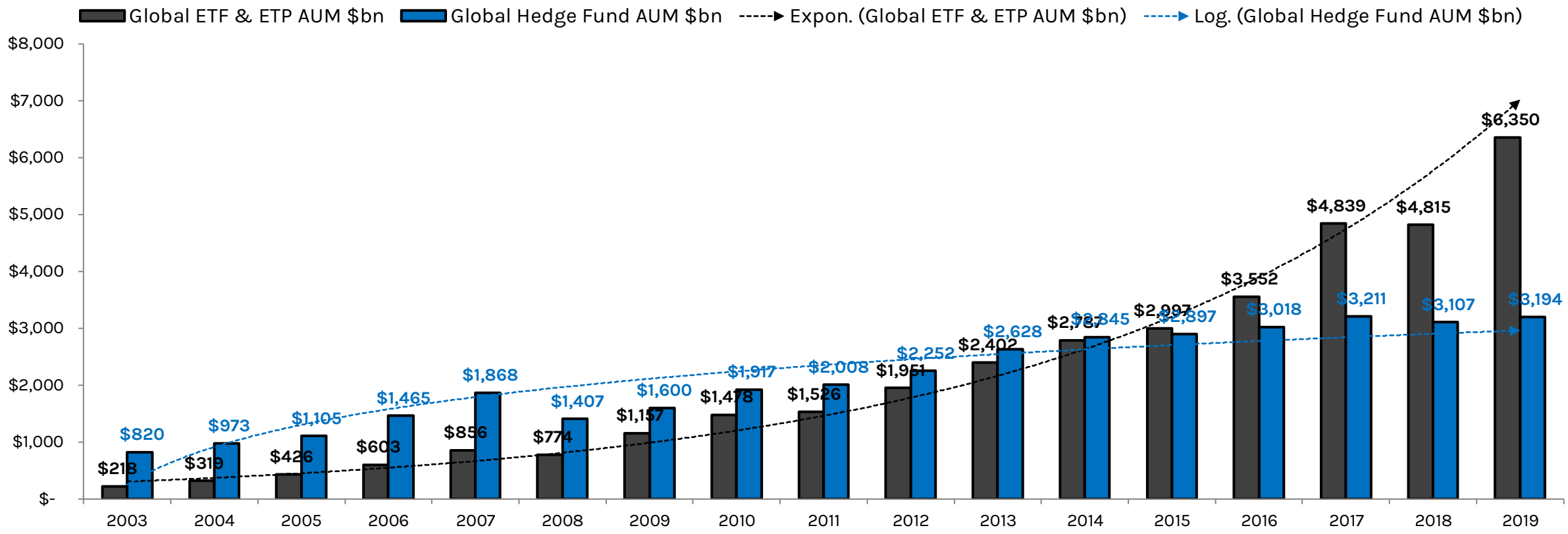
Data Source: Bloomberg

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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.



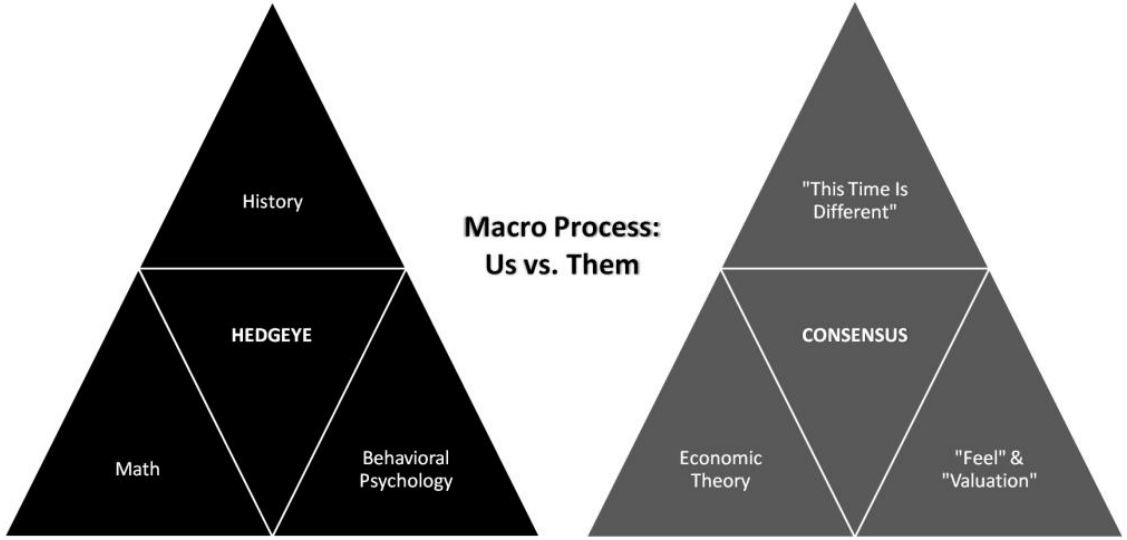
Skate To Where The Puck Is Going Within Asset Management

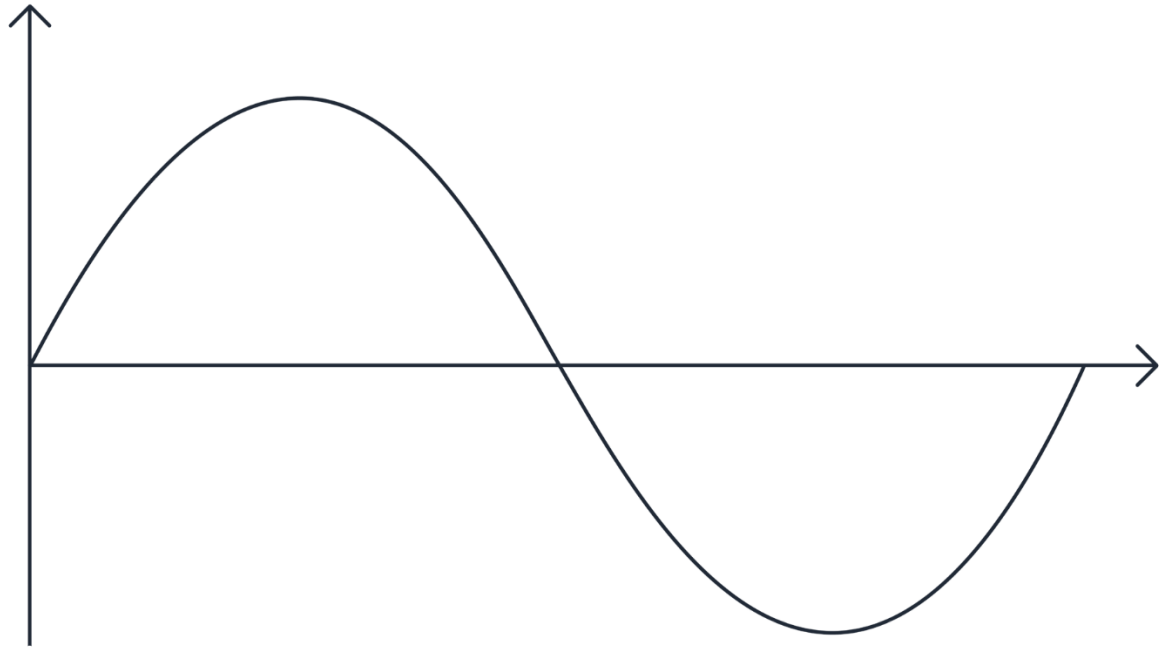
AUM in listed ETFs and ETPs surpassed $6 trillion globally as of YE 2019, topping global hedge fund assets by over $3 trillion. Moreover, BlackRock anticipates ETF/ETP AUM to double to $12 trillion over the next 5 years. Regardless of whether you agree with this projection, you must agree that **the 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?**

Data Source: Bloomberg

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… 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.**

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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	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%	4.8%	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%	8.7%	-1.7%	4.5%	6.8%	6.3%	-4.8%	-6.2%	-3.7%	10.0%	4.2%	2.6%	-2.6%	2.0%	-5.2%	-2.2%	3.5%	7.9%	-1.8%	3.2%	1.0%	17.1%	-2.3%	0.5%	1.1%	5.0%	-0.9%	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%	-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%	5.4%	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%	9.0%	-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%	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%	-0.8%	3.1%	2.5%	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%
Cyclicals (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%	-0.3%	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%	8.9%	1.2%	-3.8%	-5.8%	9.4%	6.8%	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%	3.8%	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%	9.6%	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%	0.3%	-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%	12.2%	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%	3.5%	-0.4%	-1.6%	-1.5%	9.8%	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%	-0.2%	0.5%	1.8%	1.2%	-13.0%	1.7%	1.2%	-0.6%	-1.5%	3.7%	2.4%	1.6%	5.5%	2.4%	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 (PFF)	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%	1.7%	1.5%	1.9%	-12.7%	2.5%	0.6%	-0.6%	-0.5%	4.7%	4.1%	1.8%	6.0%	2.5%	2.7%	-0.7%	1.7%
Convertibles (CWB)	5.6%	6.3%	0.0%	0.4%	5.4%	5.6%	1.8%	3.4%	9.0%	6.7%	-4.4%	-7.7%	7.9%	8.9%	1.7%	-5.0%	2.9%	3.6%	-3.3%	1.8%	4.9%	6.6%	2.6%	3.4%	10.0%	7.0%	2.2%	-1.5%	1.7%	6.0%	5.8%	-13.4%	3.7%	4.5%	-3.9%	-0.9%	8.9%	7.3%	3.4%	11.0%	8.6%	3.8%	-0.6%	1.3%
EM USD Debt (EMB)	3.2%	1.4%	1.9%	1.8%	0.8%	1.6%	3.1%	1.4%	6.0%	2.2%	-0.4%	0.2%	2.5%	3.2%	2.8%	-2.1%	3.5%	-0.2%	1.0%	3.4%	3.8%	1.7%	2.6%	5.6%	8.4%	0.9%	0.8%	1.7%	1.7%	1.6%	7.0%	-9.5%	-0.8%	1.1%	1.0%	1.7%	4.6%	2.6%	2.0%	3.5%	1.4%	3.2%	1.2%	1.6%
EM Local Currency Debt (EMLC)	1.6%	1.8%	0.7%	-0.5%	2.2%	0.4%	5.6%	-0.6%	2.2%	3.8%	-3.5%	-6.6%	0.5%	4.4%	2.7%	-3.5%	-1.4%	0.1%	-1.0%	0.5%	5.6%	-1.2%	3.4%	2.6%	8.7%	2.5%	1.3%	-0.9%	-2.1%	0.2%	6.8%	-7.6%	1.6%	5.4%	-0.8%	-0.9%	1.8%	3.6%	3.4%	2.7%	2.6%	2.8%	-1.3%	-0.3%
1-3yr Treasurys (SHY)	0.6%	0.5%	0.7%	1.2%	0.8%	0.7%	0.4%	0.5%	0.4%	0.8%	1.2%	2.1%	0.8%	0.3%	0.7%	1.6%	0.6%	0.7%	0.8%	1.3%	0.2%	0.6%	0.4%	0.7%	0.4%	0.6%	0.7%	0.8%	0.7%	0.4%	1.1%	2.8%	0.8%	1.0%	0.6%	1.3%	0.5%	0.2%	0.1%	1.3%	0.6%	0.7%	1.0%	0.7%
5-10yr Treasurys (IEF)	1.1%	0.4%	1.1%	2.9%	1.6%	0.6%	-0.2%	2.4%	0.8%	1.7%	3.1%	5.5%	1.4%	0.1%	1.1%	3.5%	1.5%	0.9%	1.7%	4.0%	0.1%	0.0%	-0.1%	1.3%	0.8%	0.7%	0.3%	3.5%	1.4%	0.2%	1.8%	8.7%	2.4%	0.9%	2.0%	3.8%	0.3%	-0.6%	-0.4%	0.6%	0.9%	0.8%	2.9%	1.3%
10-20yr Treasurys (TLT)	1.3%	-0.1%	1.4%	4.1%	1.5%	0.2%	-0.4%	4.2%	1.0%	1.6%	4.2%	7.9%	1.7%	-0.9%	0.9%	4.9%	2.0%	0.8%	2.5%	5.9%	-0.3%	-0.5%	0.3%	1.9%	0.4%	0.0%	0.1%	5.7%	1.7%	-0.2%	2.7%	15.3%	3.2%	0.7%	2.8%	5.3%	0.2%	-1.8%	-0.3%	0.0%	1.0%	0.6%	4.3%	1.8%
25+ Year Treasurys (EDV)	1.4%	-0.8%	1.8%	5.6%	1.4%	-0.1%	-1.0%	6.3%	1.1%	1.2%	6.5%	12.6%	2.0%	-2.2%	0.8%	8.2%	3.1%	0.5%	3.5%	8.1%	-1.5%	-1.0%	0.3%	0.6%	-1.0%	-1.3%	-0.9%	8.2%	2.7%	-0.6%	3.3%	22.7%	4.5%	0.6%	4.3%	8.6%	-0.3%	-2.3%	-0.4%	-2.1%	1.1%	-0.1%	6.0%	2.6%
0-5yr TIPS (STIP)	0.5%	0.8%	1.1%	0.6%	0.4%	0.6%	1.1%	0.6%	1.0%	1.4%	0.6%	-0.6%	0.8%	1.2%	1.6%	-1.3%	0.1%	0.4%	0.6%	1.3%	0.4%	0.8%	0.8%	1.6%	1.1%	1.1%	1.4%	0.5%	0.3%	0.5%	0.7%	-0.7%	0.4%	1.1%	1.1%	-0.1%	0.5%	0.7%	0.6%	2.7%	1.0%	1.1%	0.9%	0.1%
5-10yr TIPS (TIP)	0.8%	1.5%	1.5%	1.7%	0.2%	1.6%	1.3%	2.1%	2.0%	3.0%	1.6%	1.0%	0.6%	1.8%	2.3%	-0.5%	1.2%	1.5%	1.1%	3.3%	0.6%	1.0%	0.7%	2.3%	2.2%	2.1%	1.5%	2.2%	0.5%	1.1%	0.9%	1.4%	1.1%	1.7%	2.0%	0.7%	0.5%	0.8%	0.6%	3.3%	2.0%	1.5%	2.0%	0.3%
MBS (MBB)	0.9%	0.8%	1.0%	2.0%	1.0%	1.0%	0.7%	1.4%	1.1%	1.4%	1.8%	3.0%	0.8%	1.1%	1.2%	2.0%	1.4%	0.7%	1.3%	2.3%	0.3%	0.5%	0.4%	1.8%	0.7%	1.1%	0.9%	1.8%	1.0%	0.3%	1.6%	2.8%	1.0%	1.3%	1.2%	2.2%	0.8%	0.7%	0.5%	1.9%	1.0%	1.0%	1.4%	1.3%
Munis (MUB)	1.6%	0.6%	0.7%	1.9%	1.6%	0.7%	0.5%	1.6%	2.0%	1.5%	1.2%	2.1%	1.9%	0.9%	0.6%	0.9%	1.4%	0.7%	1.1%	2.8%	1.3%	0.2%	0.3%	2.6%	1.9%	0.8%	0.4%	1.9%	1.1%	0.5%	1.7%	-0.6%	1.9%	0.8%	0.8%	2.2%	1.5%	0.2%	0.2%	2.0%	1.5%	0.8%	1.3%	1.3%
Taxable Munis (BAB)	2.2%	0.1%	1.9%	2.4%	1.5%	0.4%	1.4%	3.0%	3.7%	1.6%	3.6%	0.6%	1.7%	0.6%	1.8%	0.8%	2.6%	-0.5%	2.2%	4.7%	2.5%	0.2%	1.6%	2.7%	3.9%	-0.3%	0.3%	3.0%	1.7%	0.0%	1.7%	1.2%	1.8%	1.5%	3.0%	2.0%	2.0%	-0.2%	4.5%	2.9%	1.9%	0.9%	2.4%	1.9%
CRB Index (DBC)	1.3%	4.8%	1.7%	-4.2%	0.6%	4.1%	4.8%	-1.2%	1.5%	5.6%	-4.3%	-11.4%	-0.6%	5.1%	7.3%	-12.4%	0.2%	3.4%	-3.8%	2.0%	5.8%	6.4%	3.8%	1.8%	-0.4%	5.3%	5.0%	-6.0%	-0.3%	4.3%	4.3%	-34.2%	2.1%	6.5%	-2.0%	-2.5%	2.5%	2.0%	1.6%	-0.8%	4.1%	3.6%	-0.2%	-3.6%
CRB Raw Index	1.0%	3.7%	-0.3%	-0.9%	0.9%	2.6%	-0.2%	-1.1%	1.4%	4.4%	-1.9%	-4.4%	-1.1%	5.0%	2.3%	-5.9%	1.4%	3.4%	-1.6%	-0.3%	4.2%	2.7%	-1.4%	5.0%	3.3%	6.5%	1.6%	-1.9%	0.0%	2.8%	1.1%	-7.0%	-1.1%	1.9%	-1.5%	-1.6%	2.1%	2.5%	-2.8%	1.4%	1.3%	3.2%	-1.1%	-1.5%
CRB Foodstuffs Index (DBA)	-0.3%	2.6%	1.8%	-1.1%	1.4%	-1.6%	1.0%	-0.7%	-3.4%	6.6%	1.1%	-3.5%	3.9%	4.6%	6.6%	-4.9%	1.4%	1.3%	-1.4%	4.4%	3.8%	2.3%	1.2%	-0.2%	4.5%	5.0%	4.5%	-0.5%	-2.6%	1.8%	1.4%	-8.9%	0.2%	2.7%	1.0%	-3.9%	-0.6%	-2.1%	-1.6%	2.8%	2.2%	1.0%	2.4%	-1.3%
Bloomberg Energy Index (BNO)	6.6%	10.8%	5.1%	-8.8%	3.7%	7.0%	14.4%	-6.1%	12.0%	17.2%	-7.2%	-24.1%	6.2%	6.2%	11.4%	-24.7%	2.4%	7.3%	-2.7%	-1.8%	12.1%	20.0%	10.4%	6.8%	-1.7%	8.6%	12.8%	-16.8%	-1.9%	7.9%	-1.9%	-66.0%	7.0%	23.4%	0.9%	-6.1%	14.7%	3.1%	6.3%	2.1%	15.0%	6.3%	-3.6%	-2.4%
Bloomberg Precious Metals Index (DBP)	2.4%	4.9%	1.0%	1.4%	3.7%	4.5%	2.0%	1.8%	3.7%	8.5%	-2.8%	1.2%	-1.2%	8.4%	5.6%	-3.6%	3.4%	1.3%	-3.2%	3.5%	7.4%	6.2%	2.3%	6.5%	8.2%	6.8%	3.4%	1.3%	0.4%	1.9%	6.7%	0.3%	-0.8%	7.7%	-2.6%	4.0%	3.7%	5.8%	-0.2%	-1.2%	1.0%	5.2%	3.1%	-1.1%
Silver (SLV)	5.0%	2.8%	-0.3%	3.2%	7.2%	1.8%	-0.1%	2.2%	9.0%	6.5%	-6.8%	-1.6%	-1.1%	6.7%	8.4%	-3.2%	5.9%	-1.2%	-4.9%	7.5%	14.0%	4.3%	-3.7%	8.4%	8.7%	9.3%	1.9%	3.2%	-0.9%	-1.7%	2.5%	-21.7%	-2.4%	1.6%	-1.4%	6.9%	11.8%	3.7%	-5.2%	2.5%	7.0%	3.0%	1.8%	-0.4%
Bitcoin (GBTC)	62.2%	59.8%	106.4%	-19.0%	72.7%	13.2%	12.9%	-10.8%	41.1%	17.1%	-	-9.5%	41.1%	78.8%	-	-21.0%	132.9%	154.9%	12.9%	-	12.6%	-16.3%	199.9%	-16.9%	-	41.9%	-	-44.7%	12.6%	87.0%	12.9%	-9.5%	132.9%	-	-	-32.5%	41.1%	-13.1%	199.9%	10.8%	45.6%	84.5%	32.3%	33.0%
WTI Crude Oil (USO)	6.7%	9.9%	3.3%	-6.1%	2.2%	10.4%	10.4%	-3.1%	10.2%	7.9%	-7.4%	-19.4%	10.1%	10.2%	9.7%	-21.5%	0.0%	7.5%	-2.7%	-1.9%	9.0%	12.7%	5.2%	10.7%	-5.1%	5.3%	12.0%	-17.0%	-0.2%	11.7%	-0.8%	-66.5%	10.9%	14.7%	-1.7%	-4.1%	13.0%	6.4%	1.4%	8.1%	13.9%	5.0%	-1.0%	-2.2%
Natural Gas (UNG)	2.2%	5.2%	5.8%	-2.9%	-0.4%	-0.3%	13.0%	1.7%	7.7%	14.2%	0.5%	0.5%	0.1%	-3.2%	12.1%	-17.6%	12.2%	3.5%	-4.7%	31.7%	-6.0%	15.9%	15.8%	-8.7%	-21.7%	7.7%	4.8%	-2.4%	10.5%	1.0%	10.9%	-25.1%	1.3%	14.1%	-0.4%	14.7%	5.1%	-3.3%	20.1%	-20.1%	6.6%	6.6%	1.8%	-3.7%
Iron Ore	-3.2%	6.3%	4.0%	-1.5%	-11.2%	-2.6%	4.8%	-4.9%	9.5%	5.8%	-6.0%	-1.9%	1.4%	-3.4%	-14.4%	-10.6%	-17.5%	15.6%	-1.8%	1.0%	16.1%	3.7%	51.7%	11.1%	-	17.3%	-11.0%	-3.5%	1.7%	10.3%	4.8%	-1.9%	-38.4%	-10.3%	-2.1%	-7.6%	9.5%	-6.2%	51.7%	15.3%	0.4%	24.2%	-0.6%	-7.7%
Copper (CPER)	5.1%	6.0%	0.5%	-0.1%	1.9%	4.3%	5.0%	2.6%	8.3%	5.6%	-4.1%	-12.0%	4.4%	10.6%	2.3%	-12.5%	1.4%	5.2%	-4.9%	2.7%	10.4%	2.6%	7.3%	13.7%	8.9%	9.8%	2.5%	2.5%	1.2%	3.5%	4.4%	-20.3%	3.9%	6.3%	-2.1%	-4.6%	7.0%	4.6%	-1.0%	5.9%	5.3%	6.7%	-2.6%	-0.5%
US Dollar Index (UUP)	-0.7%	-0.8%	-0.2%	1.7%	-2.8%	-1.8%	-1.0%	3.0%	0.1%	0.3%	1.6%	0.5%	-1.3%	-0.9%	-1.9%	2.7%	0.7%	-1.3%	1.5%	0.7%	-1.5%	-0.1%	-0.8%	1.0%	-4.0%	-3.5%	-0.4%	3.2%	0.5%	1.6%	0.7%	2.8%	-1.6%	-1.1%	0.3%	1.2%	0.0%	-1.9%	-1.7%	1.0%	-0.9%	-0.8%	-0.6%	1.8%
Gold (GLD)	2.2%	2.4%	2.3%	1.9%	3.5%	2.0%	3.2%	-0.5%	4.8%	5.4%	0.7%	2.1%	-1.9%	4.2%	5.1%	0.7%	5.4%	0.9%	0.7%	0.4%	4.8%	2.7%	1.5%	4.5%	3.0%	6.8%	3.0%	1.2%	1.7%	-1.7%	2.0%	3.9%	-1.2%	4.7%	1.4%	2.6%	4.6%	1.3%	3.5%	1.3%

Highest/Lowest Expected Values By Quad Regime

HEDGEYE

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 Treasurys, 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:

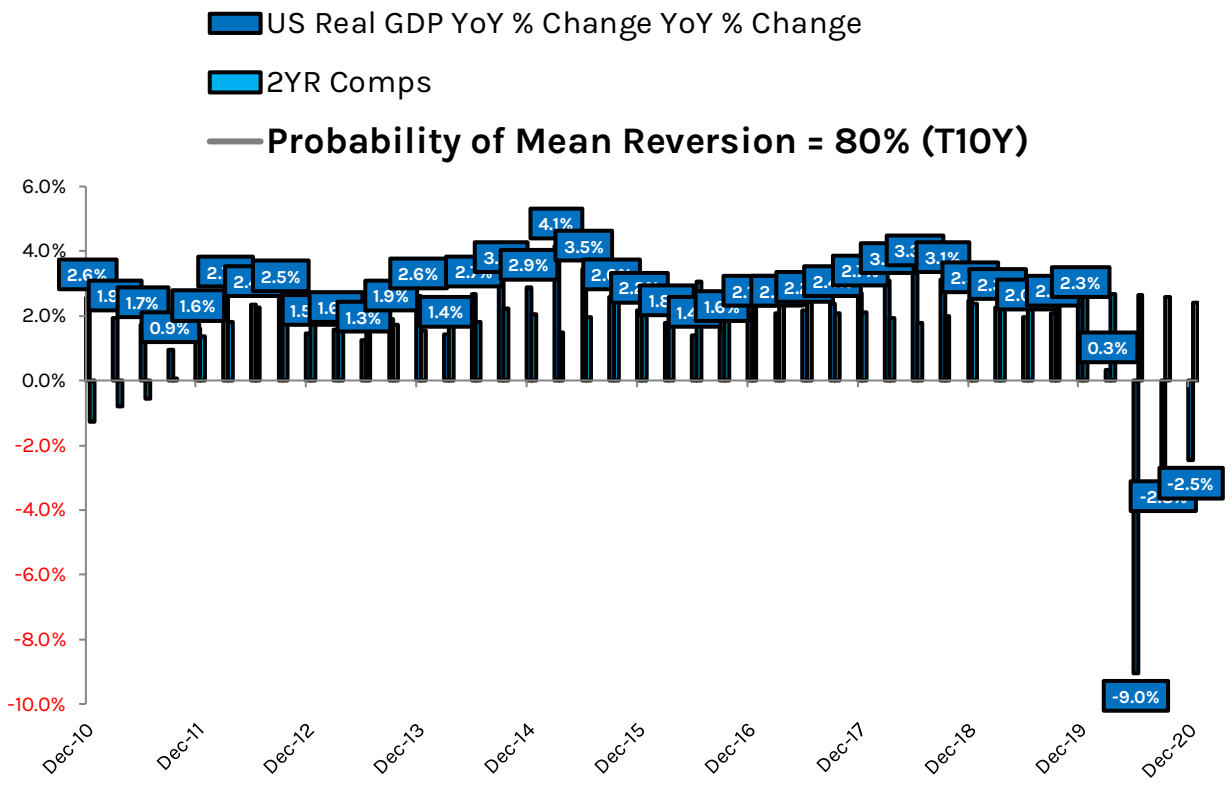
Preferreds, EM Local Currency, BDCs, Leveraged Loans, TIPS

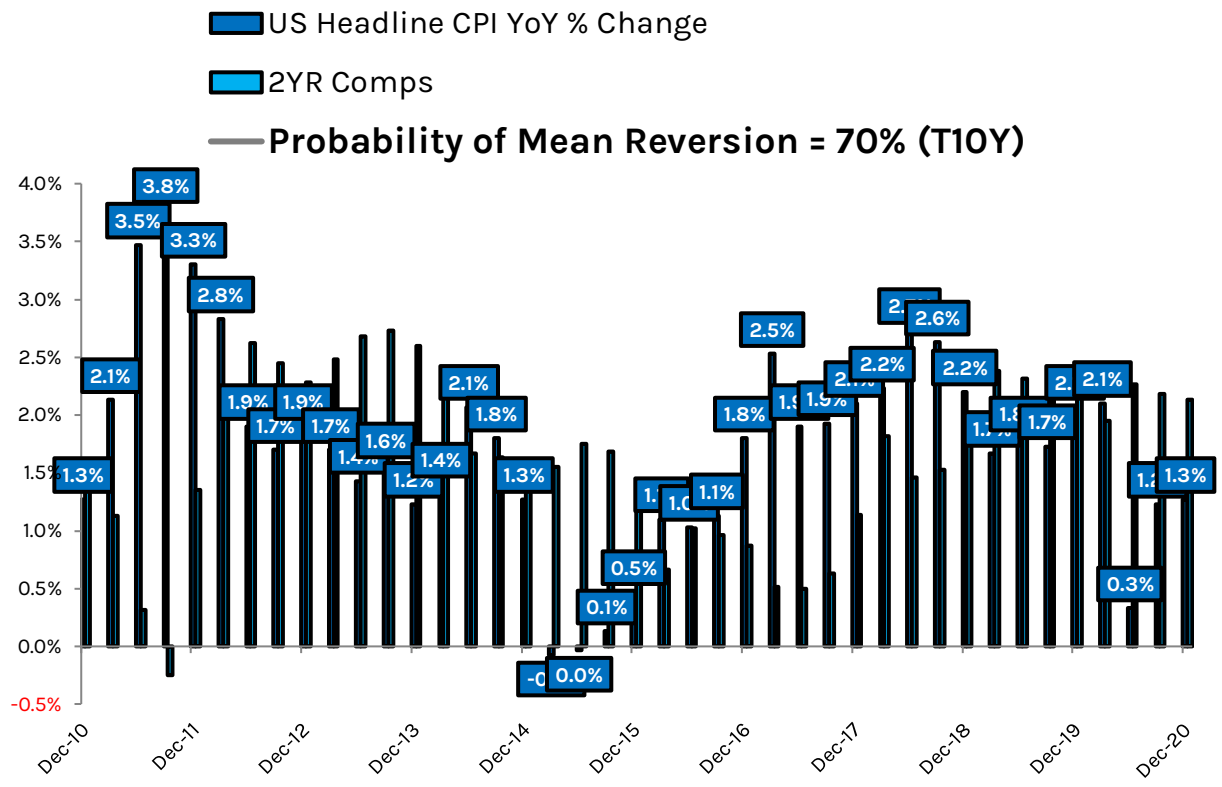
Source: Hedgeye GIP Model Market History Backtests. Quarterly expected values since 1Q98. Bloomberg data. Total Return indices. ETF exposures in ().

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

HEDGEYE





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.

Data Source: Bloomberg

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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

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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.

Data Source: Bloomberg

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A | B Testing Process: Quantify Investor Consensus

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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%	1.0%	2.4%	**16.5%**	**49.9%**	**20.5%**
	Low Debt/EV	**1.3%**	**3.1%**	**7.1%**	6.1%	21.3%	5.3%
SI	High Short Interest	0.5%	1.4%	3.5%	**14.8%**	**42.6%**	**17.9%**
	Low Short Interest	**1.2%**	**1.7%**	**6.5%**	8.4%	23.4%	9.5%
BETA	High Beta	0.7%	**1.7%**	4.1%	**18.2%**	**58.5%**	**22.1%**
	Low Beta	**1.2%**	1.6%	**7.1%**	5.9%	12.3%	5.7%
YIELD	High Yield	0.2%	0.1%	3.9%	**13.6%**	33.8%	**16.1%**
	Low Yield	**1.3%**	**2.9%**	**5.2%**	8.5%	**34.5%**	9.4%
MKT CAP	MCAP Bottom 25%	0.7%	1.2%	4.5%	**13.7%**	**41.7%**	**17.3%**
	MCAP Top 25%	**1.2%**	**1.9%**	**6.4%**	9.2%	26.4%	9.8%
Sales	Top 25% Sales Growth	**1.0%**	**2.7%**	4.5%	10.9%	**36.5%**	11.3%
	Bottom 25% Sales Growth	0.4%	0.5%	**4.5%**	**11.3%**	33.0%	**15.5%**
EPS	Top 25% EPS Growth	0.7%	**1.8%**	3.1%	12.0%	**42.6%**	13.7%
	Bottom 25% EPS Growth	**0.7%**	1.0%	**4.6%**	**13.4%**	34.2%	**16.2%**

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

CFTC NON-COMMERCIAL NET LONG POSITIONING

	METRIC	Latest	W/W Chg	3M Ave	6M Ave	1Y Ave	3Y Max	3Y Min	Z-Score 1Y	Z-Score 3Y
EQUITIES	SPX (Index + E-mini)	(44,528)	(22,187)	(15,295)	(404)	(43,462)	245,514	(318,850)	-0.01X	-0.60X
	VIX	(94,390)	7,900	(129,351)	(113,239)	(94,733)	92,913	(218,362)	0.01X	-0.05X
	Russell 2000 (mini)	(9,977)	(19,122)	(2,013)	14,735	13,160	72,749	(88,708)	-1.21X	-0.25X
	Dow Jones (mini)	(14,604)	(739)	(13,153)	(11,187)	(11,759)	54,635	(28,732)	-0.38X	-1.34X
	Nasdaq (mini)	(17,381)	(5,588)	7,757	6,699	3,971	47,085	(133,005)	-0.63X	-1.18X
	Nikkei Index	(4,204)	(284)	(2,441)	(224)	(3,396)	11,986	(16,298)	-0.19X	0.19X
RATES	10Y UST	(47,824)	(10,331)	28,422	46,553	45,208	165,292	(758,490)	-1.25X	0.61X
	2Y UST	(342,663)	25,693	(251,627)	(255,462)	(251,597)	67,767	(421,551)	-1.39X	-1.19X
	5Y UST	117,022	55,316	18,633	(152,032)	(162,576)	148,962	(866,140)	1.88X	1.58X
	UST Bonds	(116,435)	17,222	(176,734)	(191,083)	(165,573)	36,491	(241,003)	1.01X	-0.47X
	30D Fed Funds	(82,631)	(5,184)	(82,581)	10,394	163,006	488,558	(222,037)	-1.34X	-0.94X
	Eurodollar	1,031,106	(8,581)	660,836	628,824	381,893	2,134,274	(3,110,209)	1.34X	0.87X
CURRENCIES	$USD	5,694	334	(8,013)	(7,652)	(4,288)	43,033	(15,000)	1.00X	-0.64X
	JPY	(66,264)	(9,312)	7,365	24,785	24,057	52,239	(117,731)	-3.94X	-1.01X
	EUR	59,373	(25,011)	119,610	132,855	138,365	212,535	(123,765)	-1.94X	0.41X
	GBP	23,393	2,110	24,454	10,806	(588)	49,216	(107,406)	1.43X	1.31X
	AUD	11,168	6,332	2,955	(1,389)	(4,590)	15,665	(74,181)	1.03X	1.85X
	CAD	5,717	1,354	9,814	(331)	(12,562)	53,332	(67,121)	1.12X	0.76X
	MXN	(15,165)	5,802	(5,200)	3,820	7,812	170,379	(29,510)	-1.74X	-1.26X
	NZD	4,046	(678)	11,879	11,171	4,572	27,603	(42,544)	-0.05X	0.84X
	CHF	3,409	1,292	9,053	11,394	10,519	17,848	(47,216)	-1.58X	0.72X
COMMODITIES	CRUDE OIL	574,906	9,021	560,308	545,533	538,786	769,743	332,714	1.24X	0.77X
	GOLD	50,463	(5,547)	78,213	101,986	129,480	292,066	(103,009)	-2.03X	-0.64X
	COPPER	44,614	(2,077)	62,635	66,849	48,036	80,564	(60,135)	-0.11X	0.96X
	Natural Gas	(38,538)	(375)	5,283	17,094	5,154	71,340	(262,534)	-0.96X	0.35X
	RBOB Gasoline	47,656	580	58,997	62,017	59,937	129,000	40,626	-0.84X	-1.60X
	ULSD Heating Oil	6,827	(1,017)	10,361	12,381	9,324	50,485	(27,674)	-0.35X	0.03X
	Silver	28,614	(2,097)	43,473	47,465	41,986	80,646	(30,158)	-1.40X	-0.14X
	Platinum	30,674	483	31,192	25,591	21,082	69,306	(11,540)	1.29X	0.57X
	Corn	512,769	8,724	506,060	473,288	210,904	557,581	(270,560)	1.04X	1.99X
	Soybeans	159,422	(29,831)	197,337	221,518	170,965	270,935	(148,817)	-0.13X	1.06X
	Wheat	5,762	(21,219)	33,425	32,442	20,152	63,219	(69,231)	-0.60X	-0.16X
	Live Cattle	103,358	6,403	100,880	80,193	67,707	183,134	19,421	1.42X	0.68X
	Lean Hogs	94,766	3,579	75,194	61,619	47,429	97,769	(11,151)	2.30X	2.02X
	Sugar	194,465	(11,760)	231,787	255,583	202,968	316,046	(205,161)	-0.09X	1.06X
	Cotton	76,381	(6,732)	86,670	84,016	60,823	127,052	(37,827)	0.46X	0.87X
	Coffee	28,314	(11,932)	45,228	38,376	28,870	60,402	(106,651)	-0.03X	0.95X
	Cocoa	28,368	(17,063)	40,316	35,865	25,425	81,269	(31,483)	0.14X	0.20X
	Orange Juice	(656)	(441)	308	720	785	5,540	(9,416)	-1.07X	0.46X

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

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

TIME WINDOW SETTING: VOLATILITY_30D / PUT_IMP_VOL_30D	TICKER	TOTAL RETURN PERFORMANCE YTD %	IVOL PREMIUM/DISCOUNT IVOL PREM % IVOL / RVOL CURRENT	Yesterday	1W Ago	1M Ago	TTM Z-Score	3Yr Z-Score	REALIZED VOLATILITY TRENDS RVOL CURRENT	MM %	PERCENTILE 10YR	IMPLIED VOLATILITY TRENDS IVOL CURRENT	MM %	PERCENTILE 10YR
US EQUITIES														
Energy Sector SPDR ETF	XLE US EQUITY	30.97%	-10%	2%	5%	4%	-0.2	-0.4	34.3	-1%	84%	30.8	-14%	81%
Financials Sector SPDR ETF	XLF US EQUITY	18.37%	-3%	-8%	2%	2%	-0.2	-0.4	21.6	-9%	75%	21.1	-13%	73%
I-Shares Russell 2000 ETF	IWM US EQUITY	14.96%	-22%	-23%	-5%	13%	-1.1	-1.1	33.2	18%	92%	26.0	-18%	83%
Industrials Sector SPDR ETF	XLI US EQUITY	13.28%	11%	-12%	0%	20%	0.0	0.0	19.5	-5%	74%	21.6	-12%	79%
Communication Services SPDR ETF	XLC US EQUITY	13.05%	-11%	-9%	10%	0%	-0.8		21.2	1%	56%	18.8	-11%	36%
Materials Sector SPDR ETF	XLB US EQUITY	11.63%	32%	42%	-1%	22%	0.6	0.6	20.7	-8%	72%	27.4	0%	88%
Vanguard Real Estate REIT ETF	VNQ US EQUITY	11.19%	-16%	-16%	2%	32%	-0.7	-0.7	17.1	11%	66%	14.4	-29%	49%
SPDR S&P 500 ETF Trust	SPY US EQUITY	9.04%	-22%	-23%	-8%	-2%	-0.9	-0.9	17.8	-7%	78%	13.9	-26%	57%
Consumer Discretionary Sector SPDR ETF	XLY US EQUITY	7.94%	-22%	-15%	-6%	-1%	-1.0	-1.1	26.0	4%	90%	20.3	-18%	78%
Technology Sector SPDR ETF	XLK US EQUITY	6.57%	-29%	-17%	-9%	17%	-1.2	-1.1	30.1	16%	91%	21.3	-29%	76%
Power Shares QQQ Trust ETF	QQQ US EQUITY	5.65%	-29%	-32%	-16%	12%	-1.2	-1.2	29.9	17%	92%	21.1	-26%	77%
Utilities Sector SPDR ETF	XLU US EQUITY	3.93%	11%	50%	40%	35%	0.3	0.1	17.2	-10%	75%	19.1	-26%	87%
Health Care Sector SPDR ETF	XLV US EQUITY	3.67%	12%	54%	18%	14%	-0.1	0.0	13.5	-17%	51%	15.1	-19%	59%
Consumer Staples Sector SPDR ETF	XLP US EQUITY	2.62%	45%	170%	6%	35%	0.5	0.2	13.9	-6%	75%	20.2	1%	93%
INTERNATIONAL EQUITIES														
Euro Stoxx 50 Index	SX5E INDEX	11.58%	-3%	-3%	6%	28%	-0.1	-0.2	12.9	-16%	25%	12.5	-36%	16%
I-Shares MSCI Emerging Markets ETF	EEM US EQUITY	4.64%	-33%	-37%	-22%	3%	-1.3	-1.5	25.6	7%	83%	17.2	-30%	31%
I-Shares MSCI Japan ETF	EWJ US EQUITY	3.58%	23%	-5%	4%	8%	0.5	0.8	16.2	-3%	61%	20.0	10%	79%
I-Shares China Large-Cap ETF	FXI US EQUITY	2.28%	-28%	-36%	-22%	-11%	-0.9	-1.4	30.5	4%	85%	21.8	-17%	49%
CURRENCIES														
PowerShares US Dollar Index ETF	UUP US EQUITY	2.85%	-1%	-4%	7%	36%	-1.0	-0.5	6.1	8%	39%	6.0	-21%	13%
Currency Shares British Pound ETF	FXB US EQUITY	1.60%	10%	5%	12%	37%	0.2	0.0	6.7	6%	23%	7.4	-15%	29%
Currency Shares Euro Trust ETF	FXE US EQUITY	-3.51%	-5%	-14%	-7%	6%	-0.5	-0.6	6.6	7%	33%	6.3	-5%	18%
Currency Shares Japanese Yen ETF	FXY US EQUITY	-6.44%	248%	67%	179%	94%	4.6	7.2	4.8	-14%	10%	16.8	54%	99%
COMMODITIES														
United States Oil Fund ETF	USO US EQUITY	22.02%	-20%	-26%	-11%	15%	-1.0	-1.1	49.4	73%	91%	39.3	20%	77%
PowerShares DB Base Metals Fund ETF	DBB US EQUITY	9.79%	268%	233%	331%	310%	-0.3	-0.3	27.3	16%	96%	100.6	4%	87%
PowerShares DB Agriculture Fund ETF	DBA US EQUITY	4.83%	38%	24%	54%	81%	-1.1	-0.1	12.7	13%	68%	17.6	-14%	82%
United States Natural Gas Fund ETF	UNG US EQUITY	0.54%	-14%	9%	18%	-44%	-0.5	-0.8	29.2	-46%	28%	25.2	-16%	8%
SPDR Gold Shares ETF	GLD US EQUITY	-9.22%	-10%	-17%	-7%	13%	-0.5	-0.7	16.0	3%	67%	14.3	-18%	45%
FIXED INCOME														
I-Shares IBOXX HY Corporate Bond ETF	HYG US EQUITY	0.84%	-29%	-31%	-7%	25%	-1.3	-1.3	6.3	26%	61%	4.5	-28%	16%
I-Shares J.P. Morgan USD EM Bond ETF	EMB US EQUITY	-4.84%	-4%	-16%	-14%	23%	-0.8	-0.7	12.2	46%	92%	11.7	13%	89%
I-Shares IBOXX IG Corporate Bond ETF	LQD US EQUITY	-5.35%	-19%	-38%	-22%	19%	-0.8	-1.0	9.6	15%	95%	7.8	-22%	88%
I-Shares 7-10 Year Treasury Bond ETF	IEF US EQUITY	-5.58%	-11%	-7%	0%	77%	-0.9	-0.6	7.0	12%	84%	6.2	-44%	60%
I-Shares 20+ Year Treasury Bond ETF	TLT US EQUITY	-12.88%	-16%	-17%	-9%	3%	-0.8	-0.7	17.8	13%	89%	14.9	-8%	75%
MEGA-CAP TECH														
Alphabet	GOOGL US EQUITY	26.61%	-4%	-2%	9%	-17%	-0.2	-0.2	32.1	-8%	81%	30.8	6%	83%
Facebook	FB US EQUITY	13.09%	2%	-1%	4%	14%	0.0	0.0	37.0	26%	68%	37.9	13%	68%
Microsoft	MSFT US EQUITY	12.24%	-7%	-13%	4%	13%	-0.3	-0.4	27.6	10%	75%	25.7	-10%	76%
Amazon	AMZN US EQUITY	-0.93%	5%	0%	8%	17%	-0.3	-0.2	27.9	7%	52%	29.3	-4%	53%
Apple	AAPL US EQUITY	-4.97%	-13%	-17%	-7%	9%	-0.6	-0.5	35.6	11%	84%	30.9	-11%	75%

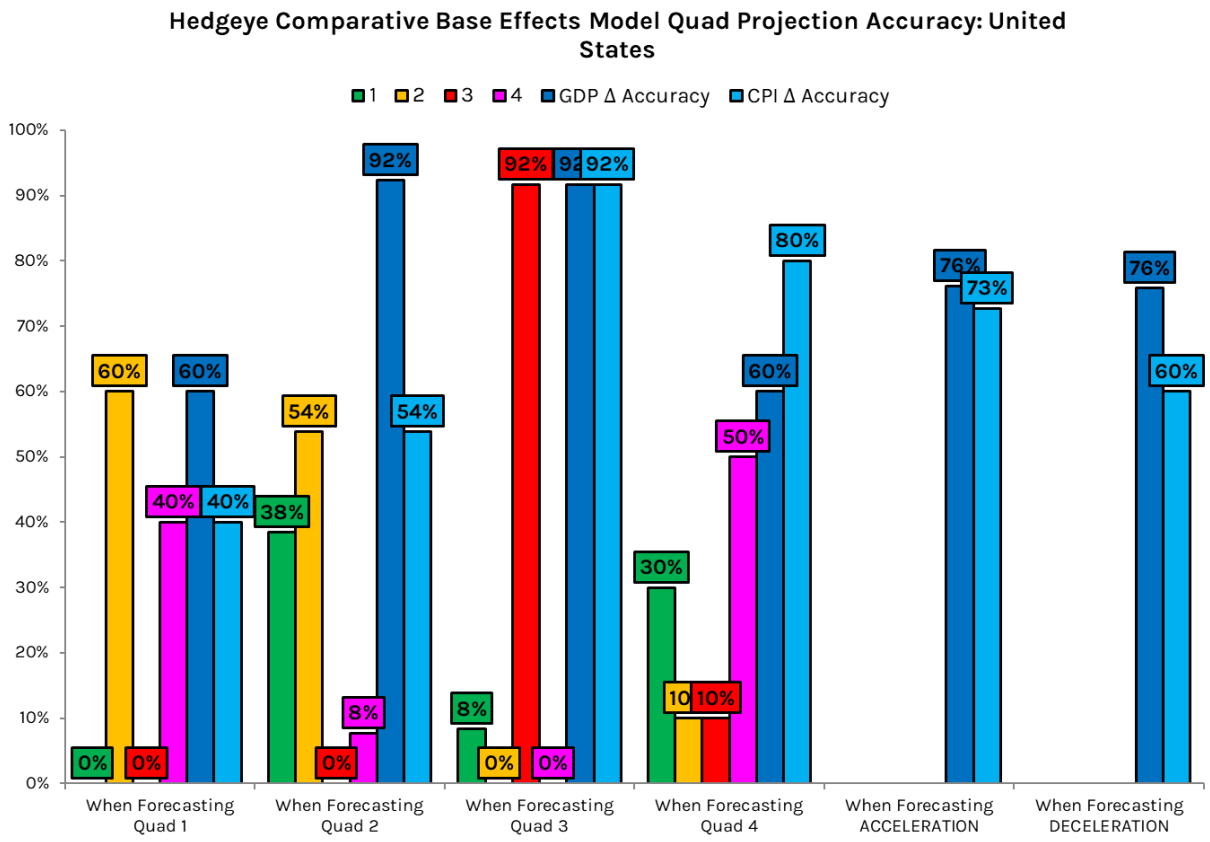
Data Source: CBOE, CME, Bloomberg

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

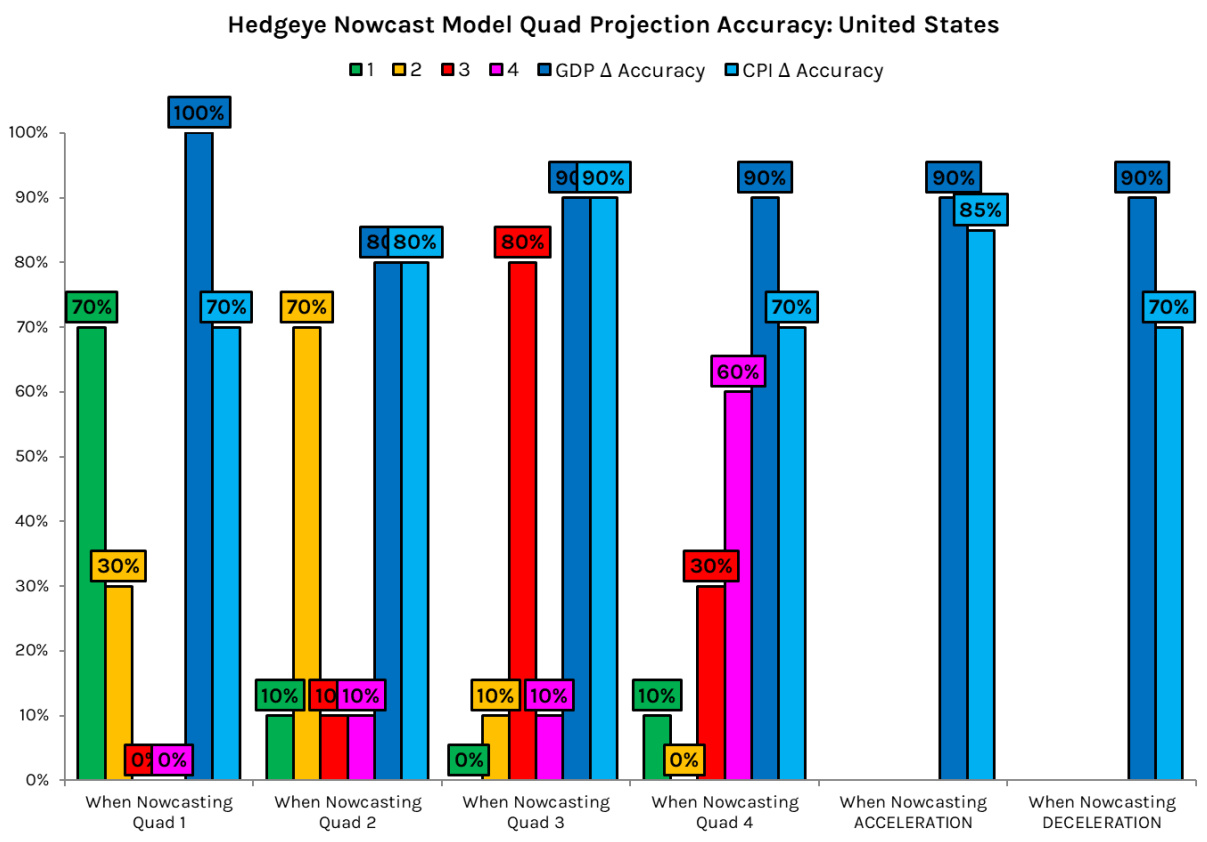
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US Comparative Base Effects Model Backtest



Data Source: Bloomberg

US Nowcast Model Backtest



Data Source: Bloomberg

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