



# Q3 2020 Macro Themes

Phase 3 ≠ Phase 2

---

Updated August 26, 2020  
Originally Published June 23<sup>rd</sup>



## MACRO

Keith McCullough   Daryl Jones

Darius Dale

Christian Drake

## 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](https://www.hedgeye.com/terms_of_service).

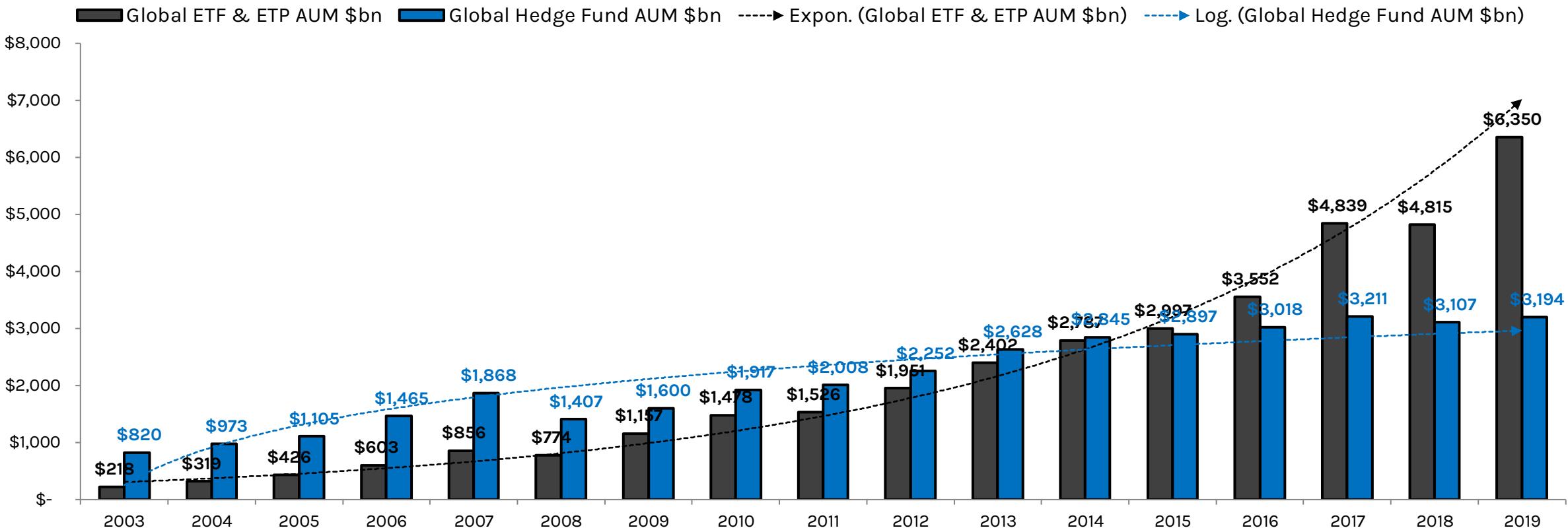
Please submit questions\* to  
**qa@hedgeye.com**

\*Answered at the end of the call

# The Investment Landscape Has Evolved Tremendously

HEDGEYE

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

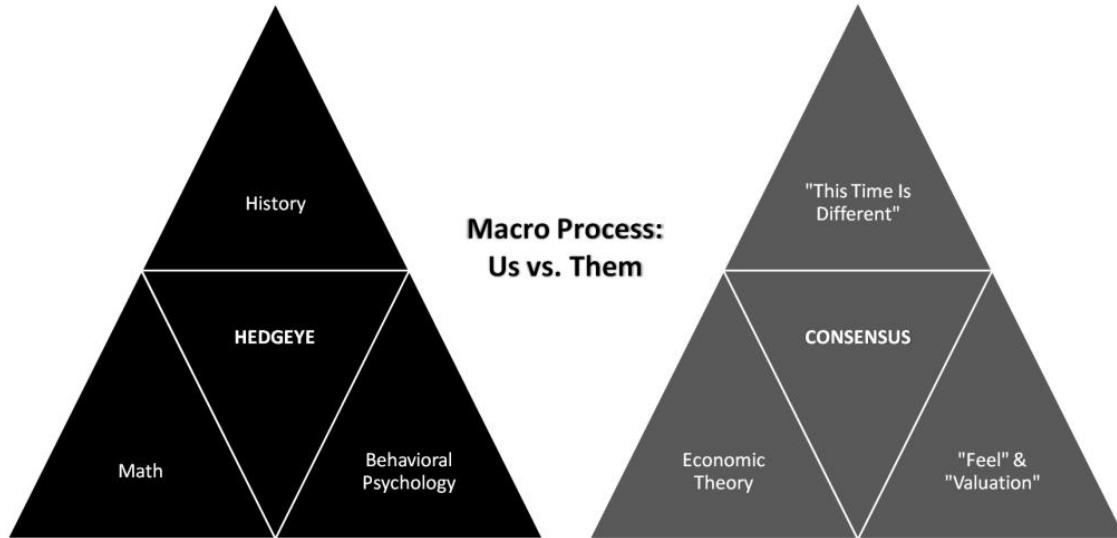


## Skate To Where The Puck Is Going Within Asset Management

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?

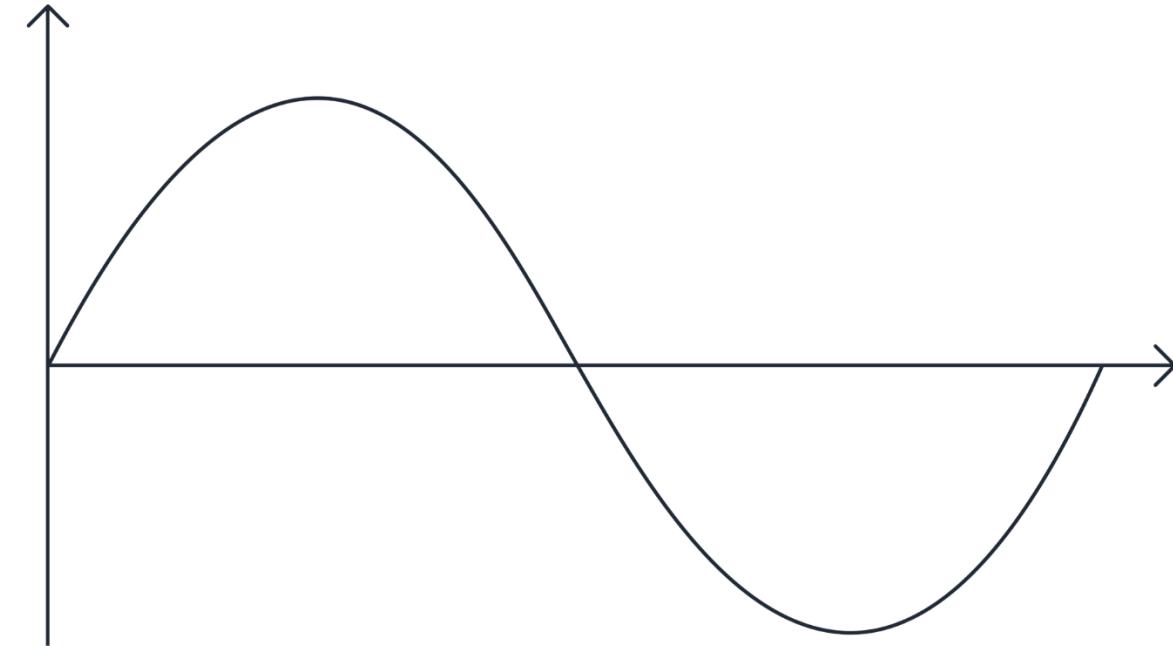
# ... So We Evolved Alongside It

HEDGEYE



## WE ARE DIFFERENTIATED FROM THE HERD

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



## ...BECAUSE WE FOCUS ON THE FACTS

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

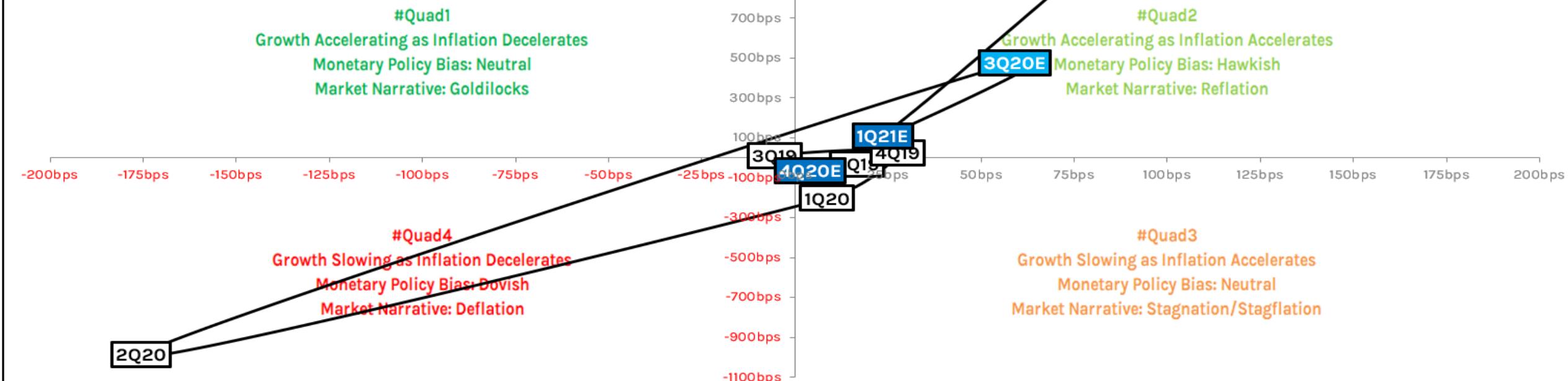
# What Are The Quads?

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

United States	3Q17	4Q17	1Q18	2Q18	3Q18	4Q18	1Q19	2Q19	3Q19	4Q19	1Q20	2Q20	← Actuals →	Estimates	3Q20E	4Q20E	1Q21E	2Q21E
Real GDP QoQ SAAR	2.90%	3.90%	3.80%	2.70%	2.10%	1.30%	2.90%	1.50%	2.60%	2.40%	-5.00%	-32.90%	Real GDP QoQ SAAR	23.82%	-0.39%	-0.40%	-0.68%	
Real GDP YoY	2.37%	2.70%	3.08%	3.33%	3.12%	2.48%	2.27%	1.96%	2.08%	2.34%	0.32%	-9.54%	Real GDP YoY	-4.76%	-5.41%	-4.29%	5.57%	
2yr Comparative Base Effects	2.08%	2.12%	1.92%	1.80%	1.98%	2.39%	2.57%	2.75%	2.74%	2.59%	2.67%	2.64%	2yr Comparative Base Effects	2.60%	2.41%	1.29%	-3.79%	
Headline CPI YoY	1.97%	2.12%	2.21%	2.71%	2.64%	2.20%	1.64%	1.81%	1.76%	2.03%	2.12%	0.36%	Headline CPI YoY	0.96%	1.00%	1.23%	2.03%	
2yr Comparative Base Effects	0.61%	1.13%	1.81%	1.48%	1.54%	1.96%	2.38%	2.31%	2.30%	2.16%	1.93%	2.26%	2yr Comparative Base Effects	2.20%	2.12%	1.88%	1.09%	

## United States

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



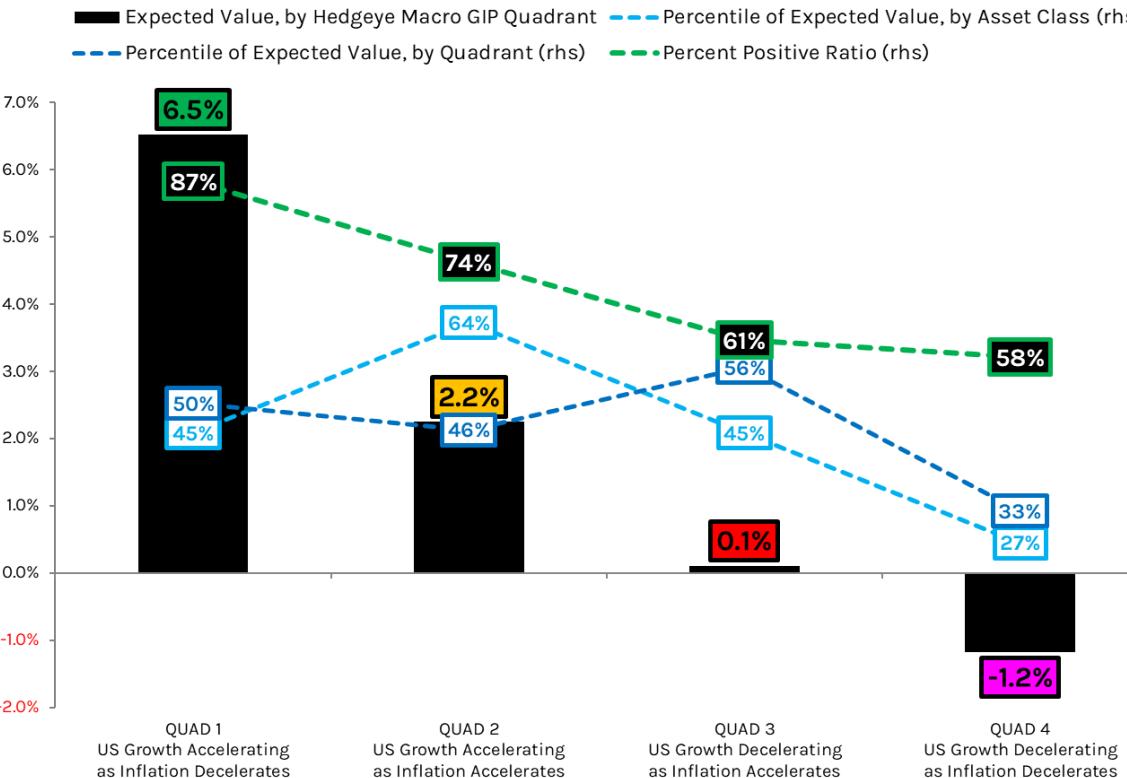
Data Source: Bloomberg. Light Blue box = Hedgeye Predictive Tracking Algorithm nowcast. Dark Blue boxes = Hedgeye COVID19 Scenario Analysis estimates.

© Hedgeye Risk Management

# Why Use The Quads?

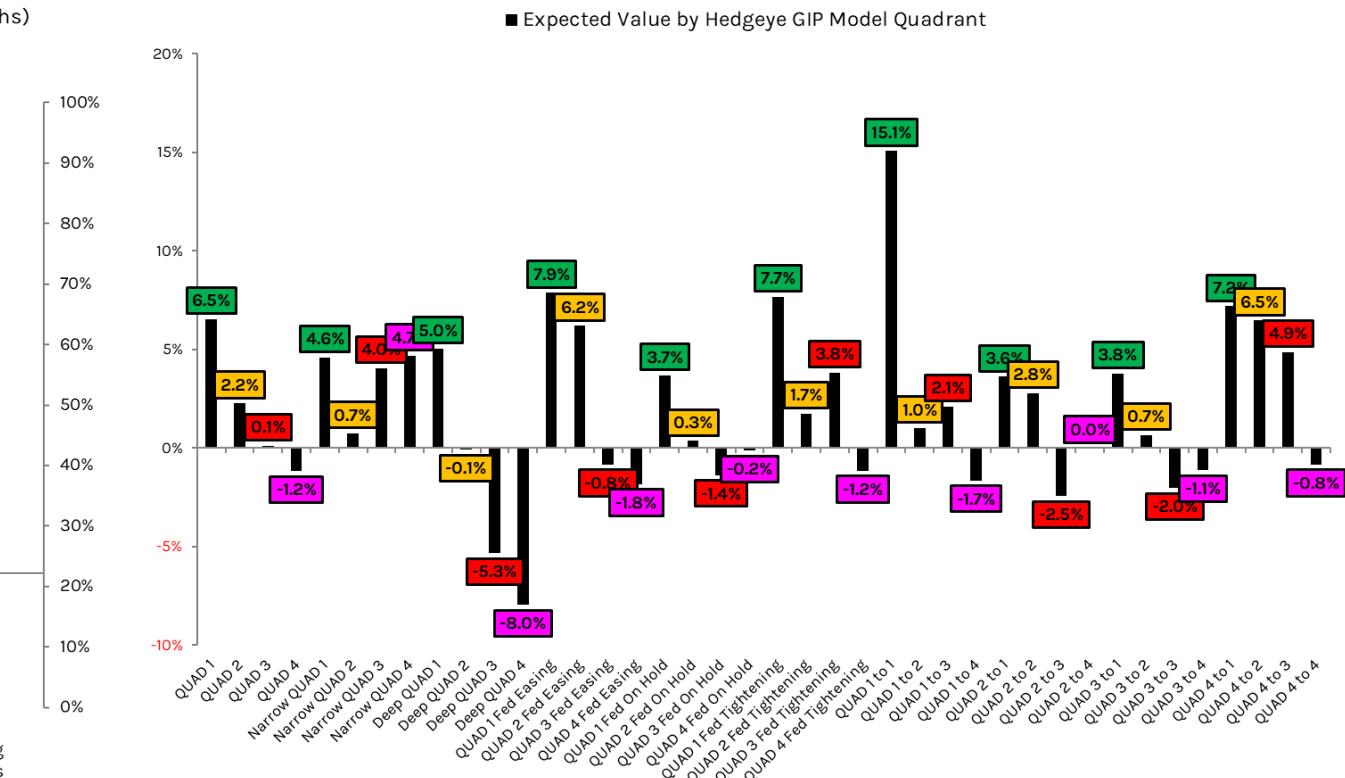
Contrary to conflicted and compromised financial literature that wants you to remain fully invested and fully diversified throughout, our DELIBERATE STUDY of financial market history shows meaningful deltas in absolute and relative asset performance tend to CLUSTER around PARTICULAR moments in time –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

**S&P 500 Total Return Index**



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

**S&P 500 Total Return Index**



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

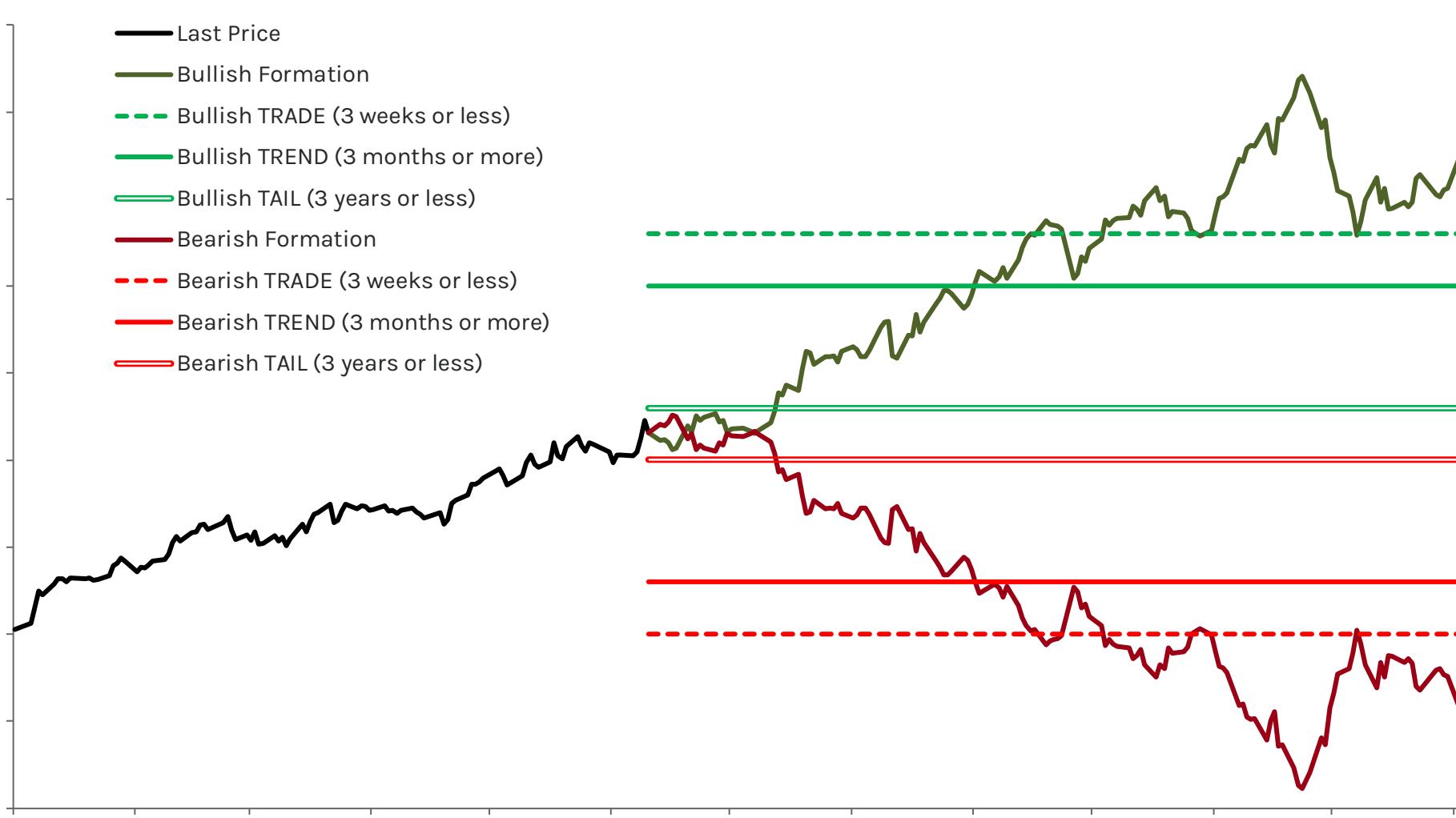
# What Tends To Outperform/Underperform In Each Quad?

HEDGEYE

	QUAD 1			QUAD 2			QUAD 3			QUAD 4		
	Straight	Narrow	Deep									
S & P 500 INDEX - Expected Value (SPY)	6.0%	2.6%	5.0%	2.0%	0.7%	-0.1%	0.3%	4.3%	-4.8%	0.5%	8.6%	-0.8%
Consumer Cyclical (XLY)	Outperform	Underperform	Outperform	Outperform	Underperform	Outperform	Outperform	Underperform	Outperform	Outperform	Outperform	Outperform
Consumer Non-Cyclical (XLP)	Underperform	Underperform	Underperform	Underperform	Underperform	Outperform	Outperform	Underperform	Outperform	Outperform	Outperform	Outperform
Energy (XLE)	Underperform	Underperform	Underperform	Outperform	Outperform	Outperform	Underperform	Outperform	Underperform	Underperform	Outperform	Outperform
Financials (XLF)	Underperform	Underperform	Outperform	Underperform	Underperform	Underperform	Underperform	Underperform	Outperform	Outperform	Underperform	Underperform
Health Care (XLV)	Underperform	Outperform	Underperform	Underperform	Underperform	Outperform	Outperform	Underperform	Outperform	Outperform	Underperform	Outperform
Industrials (XLI)	Outperform	Underperform	Outperform	Outperform	Underperform	Outperform	Underperform	Underperform	Outperform	Underperform	Outperform	Outperform
Information Technology (XLK)	Outperform	Outperform	Outperform	Outperform	Outperform	Underperform	Outperform	Outperform	Underperform	Underperform	Underperform	Underperform
Materials (XLB)	Outperform	Underperform	Outperform	Underperform	Outperform	Underperform	Underperform	Outperform	Underperform	Outperform	Underperform	Outperform
REITS (XLRE)	Underperform	Underperform	Outperform	Underperform	Underperform	Outperform	Underperform	Underperform	Outperform	Outperform	Outperform	Underperform
Communication Services (XLC)	Outperform	Outperform	Underperform	Underperform	Underperform	Underperform	Underperform	Outperform	Underperform	Outperform	Outperform	Outperform
Utilities (XLU)	Underperform	Outperform	Underperform	Underperform	Underperform	Underperform	Outperform	Outperform	Outperform	Outperform	Outperform	Underperform
Growth (IWF)	Outperform	Outperform	Underperform	Outperform	Outperform	Outperform	Outperform	Outperform	Underperform	Underperform	Outperform	Underperform
Value (IWD)	Underperform	Underperform	Outperform	Underperform	Underperform	Underperform	Underperform	Underperform	Outperform	Outperform	Outperform	Outperform
Cyclicals (IWN)	Outperform	Underperform	Outperform	Outperform	Underperform	Underperform	Outperform	Outperform	Underperform	Underperform	Outperform	Underperform
Defensives (DEF)	Underperform	Outperform	Underperform	Underperform	Underperform	Outperform	Outperform	Underperform	Outperform	Outperform	Outperform	Outperform
High Beta (SPHB)	Outperform	Underperform	Outperform	Outperform	Outperform	Underperform	Underperform	Outperform	Underperform	Outperform	Outperform	Underperform
Low Beta (SPLV)	Underperform	Outperform	Underperform	Underperform	Underperform	Outperform	Outperform	Underperform	Outperform	Outperform	Outperform	Outperform
Momentum (MTUM)	Outperform	Underperform	Outperform	Underperform								
Quality (QUAL)	Outperform	Outperform	Outperform	Outperform	Underperform	Outperform						
Dividend Yield (SDY)	Outperform	Underperform	Outperform	Underperform	Underperform	Outperform	Underperform	Underperform	Underperform	Outperform	Outperform	Outperform
Size (DIA)	Underperform	Outperform	Outperform	Outperform	Outperform	Underperform	Outperform	Outperform	Outperform	Outperform	Underperform	Outperform
Secular Growth (QQQ)	Outperform	Outperform	Outperform	Outperform	Outperform	Underperform	Outperform	Outperform	Underperform	Underperform	Underperform	Underperform
Mid-Caps (MDY)	Outperform	Underperform	Outperform									
Small-Caps (IWM)	Underperform	Underperform	Outperform	Outperform	Outperform	Underperform	Underperform	Underperform	Underperform	Outperform	Outperform	Outperform
BARCLAYS AGG - Expected Value (AGG)	1.2%	1.8%	1.6%	0.7%	1.1%	1.7%	1.0%	0.0%	1.5%	2.3%	1.8%	3.1%
Leveraged Loans (BKLN)	Outperform	Underperform	Outperform	Outperform	Outperform	Outperform	Underperform	Outperform	Underperform	Underperform	Outperform	Underperform
BDCs (BIZD)	Outperform	Outperform	Outperform	Outperform	Outperform	Outperform	Underperform	Underperform	Underperform	Outperform	Outperform	Underperform
Preferreds (PFF)	Underperform	Underperform	Underperform	Outperform	Outperform	Underperform	Underperform	Outperform	Underperform	Underperform	Outperform	Underperform
IG Credit (LQD)	Outperform	Outperform	Outperform	Outperform	Outperform	Outperform	Underperform	Outperform	Underperform	Outperform	Outperform	Outperform
HY Credit (HYG)	Outperform	Underperform	Outperform	Outperform	Underperform	Outperform	Underperform	Outperform	Underperform	Outperform	Outperform	Underperform
Convertibles (CWB)	Outperform	Outperform	Outperform	Outperform	Outperform	Outperform	Underperform	Outperform	Underperform	Outperform	Outperform	Underperform
EM Hard Currency (EMB)	Outperform	Underperform	Outperform	Underperform	Outperform	Underperform						
EM Local Currency (EMLC)	Outperform	Underperform	Outperform	Outperform	Outperform	Outperform	Underperform	Outperform	Outperform	Underperform	Underperform	Underperform
1-3yr Treasuries (SHY)	Underperform	Outperform	Underperform	Underperform	Underperform	Underperform						
5-10yr Treasuries (IEF)	Underperform	Outperform	Underperform	Underperform	Underperform	Outperform	Outperform	Underperform	Outperform	Outperform	Outperform	Outperform
10-20yr Treasuries (TLT)	Outperform	Outperform	Outperform	Underperform	Underperform	Outperform	Outperform	Underperform	Outperform	Outperform	Outperform	Outperform
25+ Year Treasuries (EDV)	Outperform	Outperform	Outperform	Underperform	Underperform	Underperform	Outperform	Underperform	Outperform	Outperform	Outperform	Outperform
0-5yr TIPS (STIP)	Underperform	Underperform	Underperform	Outperform	Underperform	Underperform	Underperform	Outperform	Underperform	Underperform	Underperform	Underperform
5-10yr TIPS (TIP)	Underperform	Underperform	Outperform	Outperform	Outperform	Outperform	Outperform	Outperform	Underperform	Underperform	Outperform	Underperform
MBS (MBB)	Underperform	Underperform	Underperform	Outperform	Outperform	Underperform	Outperform	Outperform	Outperform	Underperform	Underperform	Underperform
Munis (MUB)	Outperform	Underperform	Outperform	Underperform	Underperform	Underperform	Underperform	Outperform	Underperform	Underperform	Underperform	Underperform
Taxable Munis (BAB)	Outperform	Outperform	Outperform	Underperform	Underperform	Outperform	Underperform	Outperform	Outperform	Outperform	Outperform	Underperform
CRB INDEX - Expected Value (DBC)	0.1%	-1.2%	2.4%	3.7%	3.0%	4.8%	-0.1%	3.7%	-9.2%	-2.4%	6.9%	-5.8%
CRB Raw Industrials Index (DBB)	Outperform	Outperform	Outperform	Underperform	Outperform	Underperform	Underperform	Underperform	Outperform	Outperform	Underperform	Underperform
CRB Foodstuffs Index (DBA)	Underperform	Outperform	Underperform	Underperform	Underperform	Outperform	Outperform	Underperform	Outperform	Outperform	Underperform	Outperform
WTI Crude Oil (USO)	Outperform	Underperform	Outperform	Outperform	Outperform							
US DOLLAR INDEX (DXY) - Expected Value (UUP)	-0.5%	-17%	0.7%	-0.5%	-2.9%	0.9%	-0.1%	-0.5%	2.6%	1.4%	2.0%	-0.2%
Gold (GLD)	Outperform	Underperform	Outperform	Underperform	Outperform							
EM FX (CEW)	Outperform	Outperform	Underperform	Underperform	Outperform	Underperform	Underperform	Outperform	Underperform	Underperform	Underperform	Underperform

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

HEDGEYE



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

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

# A | B Testing Process: Quantify Investor Consensus

HEDGEYE

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

## STYLE FACTOR PERFORMANCE\*

	1D	1W	1M	3M	6M	YTD
FACTOR	% Chg	% Chg	% Chg	% Chg	% Chg	% Chg
Debt	High Debt/EV	-0.5%	0.6%	4.3%	15.9%	-14.4%
	Low Debt/EV	0.4%	0.4%	4.4%	14.8%	18.7%
SI	High Short Interest	-0.2%	0.9%	5.4%	17.6%	-8.1%
	Low Short Interest	0.2%	0.6%	3.6%	13.1%	5.3%
Beta	High Beta	-0.2%	1.2%	6.7%	20.9%	-15.7%
	Low Beta	0.1%	-0.2%	3.0%	11.4%	14.9%
Yield	High Yield	-0.4%	0.5%	2.2%	10.4%	-20.3%
	Low Yield	0.3%	0.8%	5.4%	16.3%	15.5%
MKT CAP	MCAP Bottom 25%	-0.4%	0.5%	4.0%	15.3%	-16.1%
	MCAP Top 25%	0.3%	1.0%	5.1%	14.3%	9.9%
Sales	Top 25% Sales Growth	0.3%	1.4%	6.0%	16.3%	5.0%
	Bottom 25% Sales Growth	-0.3%	0.4%	2.7%	11.4%	-10.3%
EPS	Top 25% EPS Growth	0.1%	0.8%	5.7%	16.8%	0.4%
	Bottom 25% EPS Growth	-0.3%	0.8%	3.4%	11.6%	-13.0%

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

## CFTC NON-COMMERCIAL NET LONG POSITIONING

EQUITIES	METRIC	Latest	W/W Chg	3M Ave	6M Ave	1Y Ave	3Y			Z-Score	
							Max	Min	1Y	3Y	Max
SPX (Index + E-mini)	(68,928)	(1,258)	(98,256)	(140,238)	(57,869)	271,423	(319,133)	-0.10X	-1.03X		
VIX	(96,984)	(3,131)	(80,280)	(57,362)	(107,026)	92,913	(218,362)	0.17X	-0.24X		
Russell 2000 (mini)	13,833	(1,356)	9,622	(525)	5,541	72,749	(88,708)	0.26X	0.39X		
Dow Jones (mini)	(3,141)	(10)	(14,007)	(10,689)	12,322	95,976	(28,732)	-0.65X	-1.16X		
Nasdaq (mini)	23,825	9,168	28,798	20,107	23,167	48,279	(24,815)	0.06X	0.45X		
Nikkei Index	(5,973)	(1,226)	(4,577)	(6,155)	(8,114)	14,214	(16,298)	0.56X	-0.28X		
10Y UST	120,754	47,370	68,604	13,165	(98,829)	288,117	(758,490)	1.66X	1.50X		
2Y UST	(248,584)	13,017	(268,850)	(219,427)	(222,675)	67,767	(421,551)	-0.31X	-0.48X		
5Y UST	(54,597)	41,522	(91,755)	(133,218)	(173,828)	65,383	(866,140)	1.15X	1.10X		
UST Bonds	(145,838)	6,650	(119,684)	(101,338)	(77,660)	122,839	(152,488)	-2.04X	-1.95X		
30D Fed Funds	240,308	5,057	335,540	352,421	303,207	488,558	(243,928)	-0.57X	0.87X		
Eurodollar	309,387	6,259	102,009	(105,869)	612,747	2,134,274	(3,110,209)	-0.38X	0.75X		
SUSD	(7,503)	671	(5,044)	5,251	15,804	43,033	(10,666)	-1.65X	-1.55X		
JPY	20,195	(3,204)	21,917	23,599	(679)	33,088	(140,151)	0.69X	1.28X		
EUR	199,921	(22)	139,308	99,676	9,066	199,943	(123,765)	2.06X	2.16X		
GBP	2,935	8,112	(14,374)	(7,484)	(15,434)	49,216	(107,406)	0.53X	0.65X		
AUD	(4,196)	351	(5,111)	(22,227)	(32,823)	77,969	(74,181)	1.62X	0.63X		
CAD	(32,762)	(4,086)	(21,940)	(24,629)	(886)	78,001	(67,121)	-1.27X	-0.81X		
MXN	4,498	(2,318)	11,616	13,744	78,187	170,379	(21,903)	-1.13X	-1.31X		
NZD	3,756	3,938	(758)	(8,745)	(15,963)	27,603	(42,544)	1.35X	0.97X		
CHF	15,519	(2,329)	7,508	6,855	(934)	17,848	(47,216)	1.69X	2.02X		
CRUDE OIL	531,244	(4,039)	551,437	525,459	489,719	784,290	332,714	0.63X	0.01X		
GOLD	155,274	5,145	165,673	174,116	211,308	292,066	(103,009)	-1.24X	0.25X		
COPPER	44,127	9,692	28,043	1,721	(13,860)	67,602	(60,135)	2.07X	1.26X		
Natural Gas	9,556	(4,997)	(29,911)	(59,757)	(130,223)	30,134	(262,534)	1.72X	1.45X		
RBOB Gasoline	68,878	5,275	52,831	67,810	78,556	129,000	42,174	-0.40X	-0.89X		
ULSD Heating Oil	14,978	1,869	8,219	198	(3,215)	67,696	(27,674)	1.68X	0.05X		
Silver	32,822	4,150	36,305	32,989	46,804	80,646	(30,158)	-0.86X	0.14X		
Platinum	21,841	(438)	18,969	19,196	34,327	69,306	(11,540)	-0.71X	-0.02X		
Aluminum	163,475	(2,043)	159,713	161,254	158,399	168,292	122,356	0.48X	1.14X		
Nickel	42,230	(365)	42,664	44,031	37,396	47,708	13,508	0.55X	1.05X		
Corn	(35,220)	62,987	(127,200)	(130,562)	(88,970)	372,754	(270,560)	0.79X	-0.23X		
Soybeans	129,209	85,856	80,248	53,254	24,284	210,365	(148,817)	2.02X	1.56X		
Wheat	5,381	5,782	(6,433)	3,577	12,687	63,219	(119,350)	-0.33X	0.38X		
Live Cattle	77,773	13,104	47,968	39,678	56,367	183,134	19,421	0.72X	-0.13X		
Lean Hogs	30,059	366	23,414	28,708	33,722	97,769	(11,151)	-0.31X	-0.26X		
Sugar	219,393	24,138	134,095	77,785	25,518	228,364	(205,161)	1.48X	2.61X		
Cotton	51,829	27	33,099	12,933	10,588	129,851	(37,827)	1.82X	0.25X		
Coffee	36,378	4,325	888	9,487	3,863	46,860	(106,651)	1.17X	1.95X		
Cocoa	31,265	1,531	3,492	4,871	26,148	81,269	(37,480)	0.16X	0.48X		
Orange Juice	705	173	1,593	610	(3,036)	5,540	(9,416)	0.99X	0.82X		

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

HEDGEYE

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

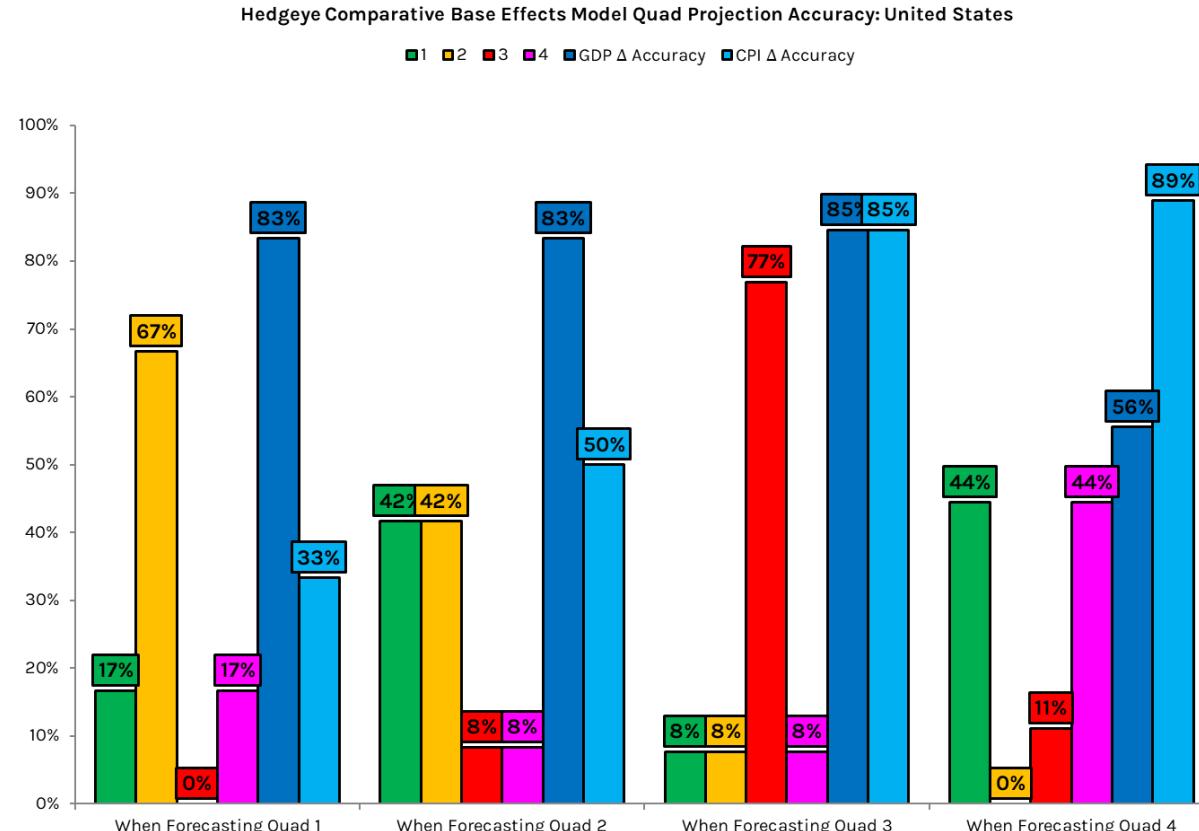
TIME WINDOW SETTING: VOLATILITY_30D PUT_IMP_VOL_30D	TICKER	TOTAL RETURN PERFORMANCE YTD %	IVOL PREMIUM/DISCOUNT						REALIZED VOLATILITY TRENDS				IMPLIED VOLATILITY TRENDS			
			IVOL PREM %		IVOL / RVOL	Yesterday	1W Ago	1M Ago	TTM Z-Score	3Yr Z-Score	RVOL CURRENT	MM %	PERCENTILE 10YR	IVOL CURRENT	MM %	PERCENTILE 10YR
			CURRENT	PREM %												
<b>US EQUITIES</b>																
PowerShares QQQ Trust ETF	QQQ US EQUITY	34.97%	19%	24%	12%	32%	0.3	0.4	20.5	-8%	79%	24.4	-17%	88%		
Technology Sector SPDR ETF	XLK US EQUITY	31.47%	14%	20%	11%	24%	0.1	0.2	21.6	-4%	80%	24.6	-12%	87%		
Consumer Discretionary Sector SPDR ETF	XLY US EQUITY	19.56%	71%	81%	60%	24%	1.5	1.7	12.1	-40%	38%	20.6	-16%	83%		
Communication Services SPDR ETF	XLC US EQUITY	16.30%	49%	55%	32%	21%	1.0	1.7	14.6	-37%	30%	21.7	-22%	61%		
SPDR S&P 500 ETF Trust	SPY US EQUITY	8.05%	64%	60%	49%	15%	1.6	1.7	9.9	-45%	31%	16.2	-22%	74%		
Health Care Sector SPDR ETF	XLV US EQUITY	6.08%	55%	51%	42%	19%	1.4	1.7	10.9	-37%	32%	16.9	-19%	77%		
Consumer Staples Sector SPDR ETF	XLP US EQUITY	4.16%	55%	56%	34%	-8%	0.0	0.4	8.9	-43%	27%	13.8	-3%	76%		
Materials Sector SPDR ETF	XLB US EQUITY	3.41%	52%	43%	26%	28%	0.9	1.3	15.2	-25%	42%	23.1	-11%	80%		
Industrials Sector SPDR ETF	XLI US EQUITY	-3.39%	47%	44%	27%	9%	0.9	1.2	15.1	-38%	56%	22.2	-16%	84%		
I-Shares Russell 2000 ETF	IWM US EQUITY	-4.92%	60%	34%	22%	14%	1.6	1.8	15.4	-44%	44%	24.5	-21%	84%		
Utilities Sector SPDR ETF	XLU US EQUITY	-6.39%	-1%	5%	-4%	2%	-0.2	-0.2	17.6	-12%	82%	17.5	-14%	86%		
Vanguard Real Estate REIT ETF	VNQ US EQUITY	-10.52%	20%	18%	19%	26%	1.0	1.0	17.4	-19%	68%	20.8	-22%	83%		
Financials Sector SPDR ETF	XLF US EQUITY	-17.65%	58%	35%	30%	1%	1.6	1.7	16.9	-40%	59%	26.7	-6%	88%		
Energy Sector SPDR ETF	XLE US EQUITY	-36.95%	5%	8%	-8%	-5%	0.5	0.2	31.3	-26%	86%	32.8	-18%	89%		
<b>INTERNATIONAL EQUITIES</b>																
I-Shares China Large-Cap ETF	FXI US EQUITY	3.54%	14%	17%	8%	-31%	0.9	0.9	18.2	-49%	29%	20.7	-15%	38%		
I-Shares MSCI Emerging Markets ETF	EEM US EQUITY	1.37%	26%	24%	26%	7%	0.7	1.0	16.2	-23%	31%	20.4	-10%	55%		
I-Shares MSCI Japan ETF	EWJ US EQUITY	-1.02%	4%	3%	-2%	17%	0.1	0.0	15.9	5%	55%	16.5	-7%	47%		
Euro Stoxx 50 Index	SXSE INDEX	-9.02%	9%	4%	9%	2%	0.5	0.1	18.2	-18%	60%	19.8	-12%	64%		
<b>CURRENCIES</b>																
Currency Shares Euro Trust ETF	FXE US EQUITY	4.86%	9%	13%	29%	23%	0.1	0.3	7.0	20%	36%	7.6	6%	40%		
Currency Shares Japanese Yen ETF	FXY US EQUITY	1.70%	0%	-2%	5%	25%	0.0	-0.3	6.9	33%	32%	6.9	7%	21%		
Currency Shares British Pound ETF	FXB US EQUITY	-0.94%	9%	12%	41%	1%	0.1	0.0	8.1	0%	49%	8.8	8%	56%		
PowerShares US Dollar Index ETF	UUP US EQUITY	-3.23%	24%	33%	49%	61%	0.0	0.0	6.4	26%	44%	7.9	-3%	54%		
<b>COMMODITIES</b>																
SPDR Gold Shares ETF	GLD US EQUITY	26.82%	-25%	-20%	-3%	108%	-1.2	-1.4	26.4	195%	95%	20.0	7%	86%		
PowerShares DB Agriculture Fund ETF	DBA US EQUITY	-12.44%	113%	106%	82%	64%	1.8	2.7	11.9	-11%	53%	25.3	16%	97%		
United States Natural Gas Fund ETF	UNG US EQUITY	-17.73%	-21%	-23%	-28%	2%	-1.5	-1.3	66.9	14%	95%	53.2	-11%	87%		
United States Oil Fund ETF	USD US EQUITY	-69.83%	55%	63%	30%	23%	1.7	2.3	18.2	-41%	15%	28.2	-25%	44%		
<b>FIXED INCOME</b>																
I-Shares 20+ Year Treasury Bond ETF	TLT US EQUITY	22.69%	47%	39%	29%	37%	2.1	2.4	10.6	-5%	29%	15.6	2%	80%		
I-Shares 7-10 Year Treasury Bond ETF	IEF US EQUITY	11.21%	138%	73%	76%	164%	1.5	1.7	3.0	17%	1%	7.1	5%	75%		
I-Shares IBOXX IG Corporate Bond ETF	LQD US EQUITY	7.82%	45%	57%	81%	35%	1.0	1.1	5.6	0%	67%	8.1	7%	92%		
I-Shares J.P. Morgan USD EM Bond ETF	EMB US EQUITY	1.37%	57%	70%	57%	82%	1.4	1.5	4.8	-7%	28%	7.5	-20%	58%		
I-Shares IBOXX HY Corporate Bond ETF	HYG US EQUITY	-0.09%	48%	52%	49%	19%	1.2	1.1	5.3	-39%	45%	7.8	-24%	67%		
<b>MEGA-CAP TECH</b>																
Amazon	AMZN US EQUITY	81.10%	7%	1%	-6%	17%	-0.2	-0.1	36.4	-12%	74%	39.0	-20%	82%		
Apple	AAPL US EQUITY	71.21%	4%	12%	-18%	23%	0.0	0.0	43.5	57%	95%	45.3	32%	98%		
Microsoft	MSFT US EQUITY	38.35%	-7%	-8%	-14%	5%	-0.4	-0.3	32.5	7%	84%	30.3	-5%	92%		
Facebook	FB US EQUITY	36.82%	2%	2%	-8%	10%	-0.1	0.0	37.4	-4%	69%	38.2	-11%	71%		
Alphabet	GOOGL US EQUITY	19.89%	24%	26%	7%	23%	0.6	0.6	23.7	-18%	63%	29.4	-18%	81%		

Data Source: CBOE, CME, Bloomberg

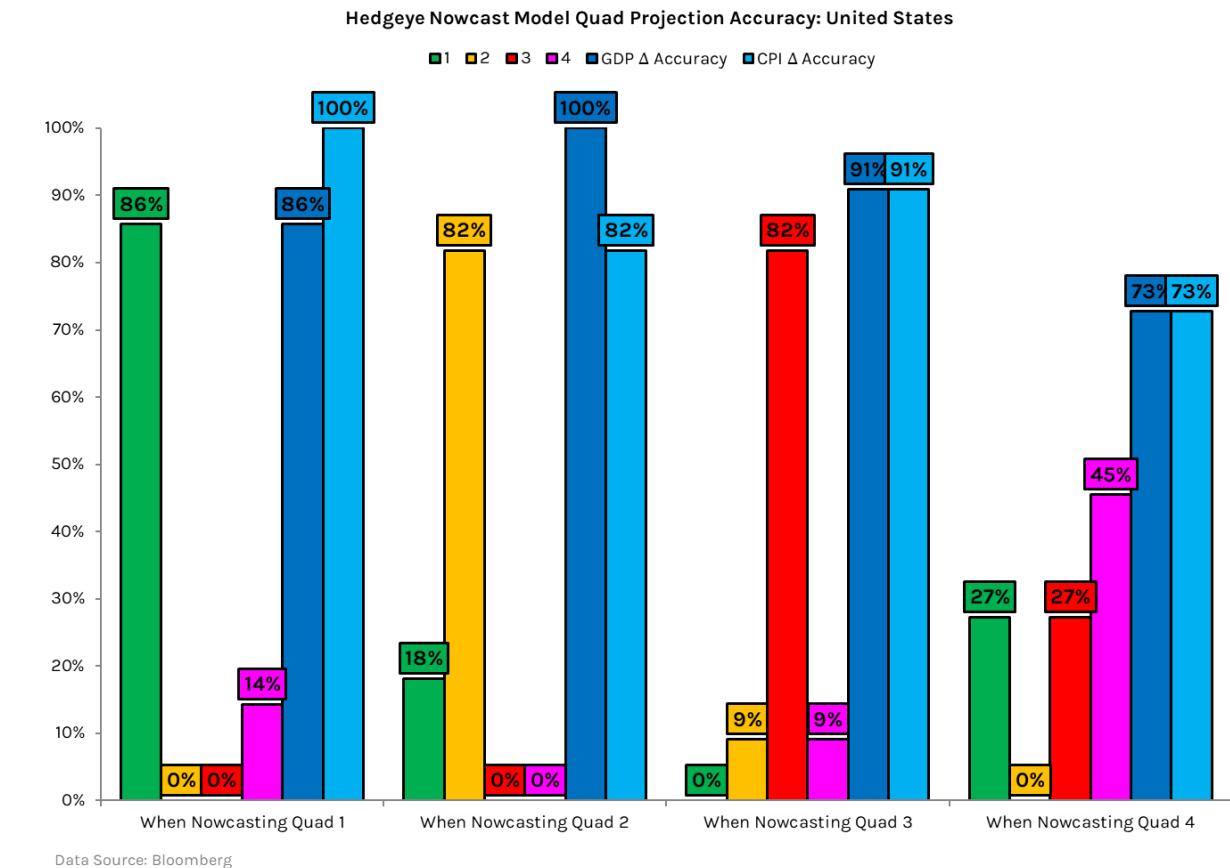
# Measuring And Mapping The Quads With Precision Ex Ante Matters To Driving Ex Post Returns

HEDGEYE

## US Comparative Base Effects Model Backtest

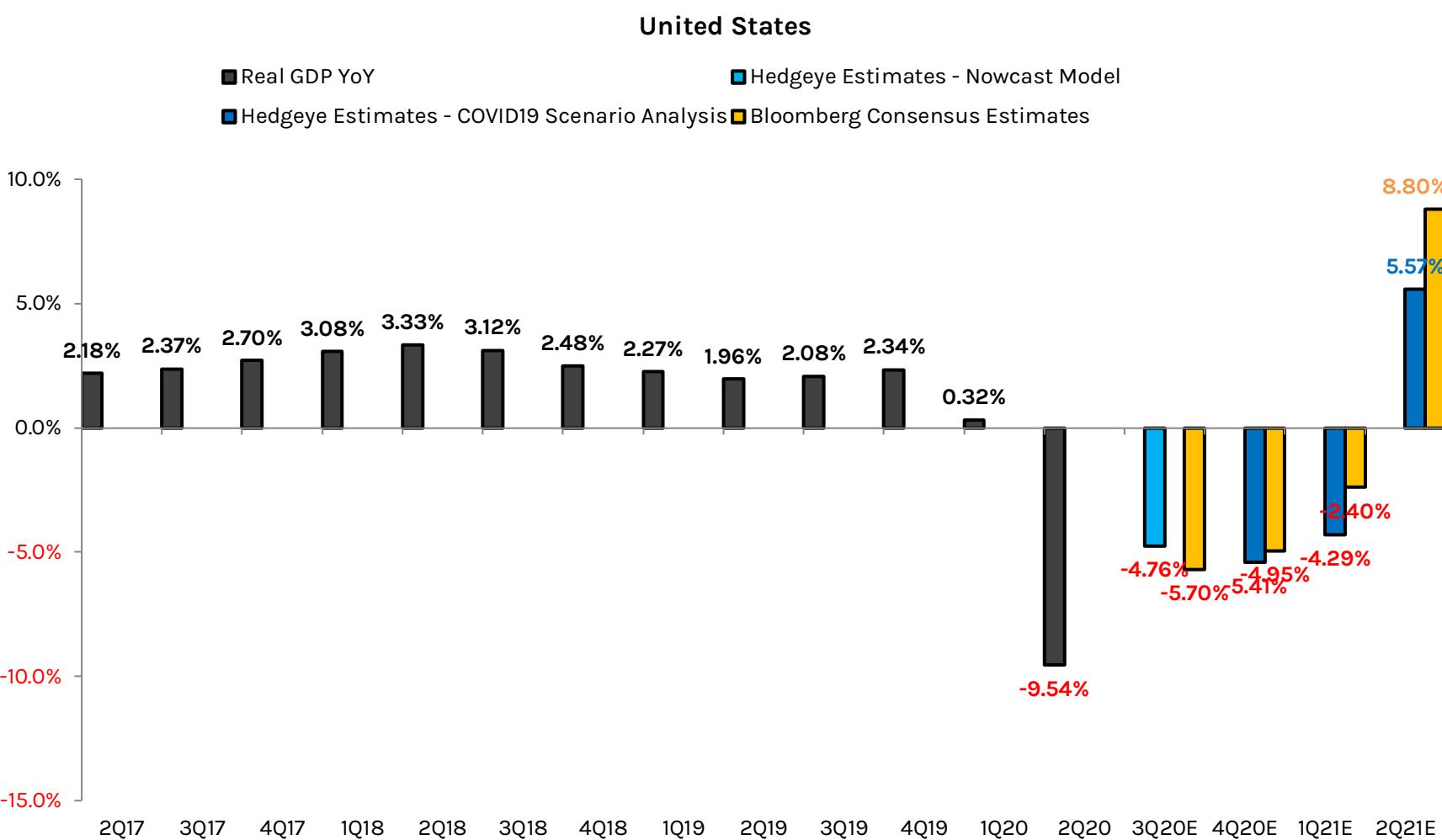


## US Nowcast Model Backtest



# US Real GDP YoY Projections

HEDGEYE



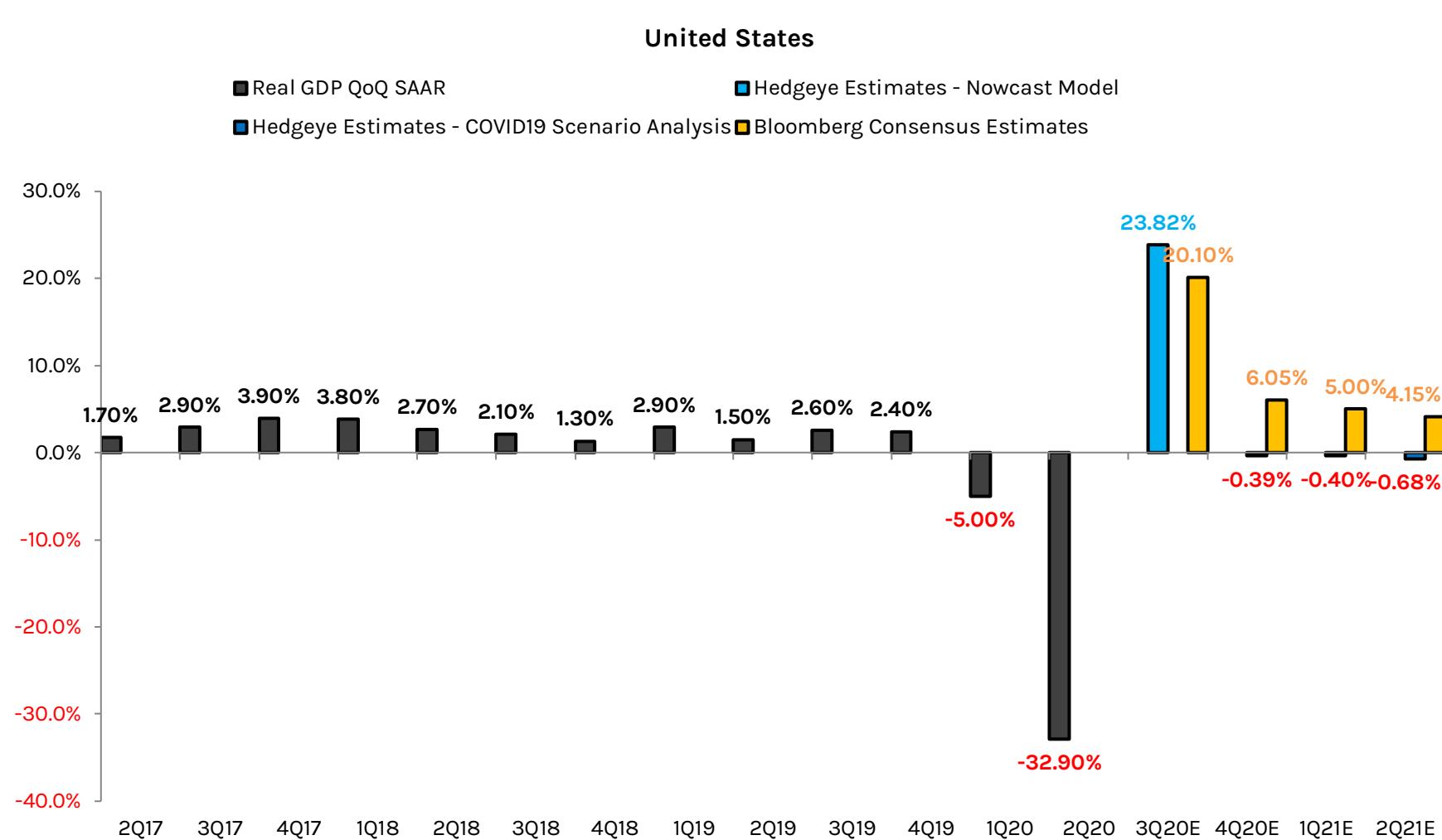
We use two distinct models to forecast the YoY growth rate of Real GDP and the combination of the two allows us to develop both a highly accurate real-time assessment of near-term economic momentum, as well as a high-probability scenario for where growth is likely to trend over the NTM.

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 26bps and an 88% success rate in terms of accurately projecting the rate of change of GROWTH.

# US Real GDP QoQ SAAR Projections

HEDGEYE



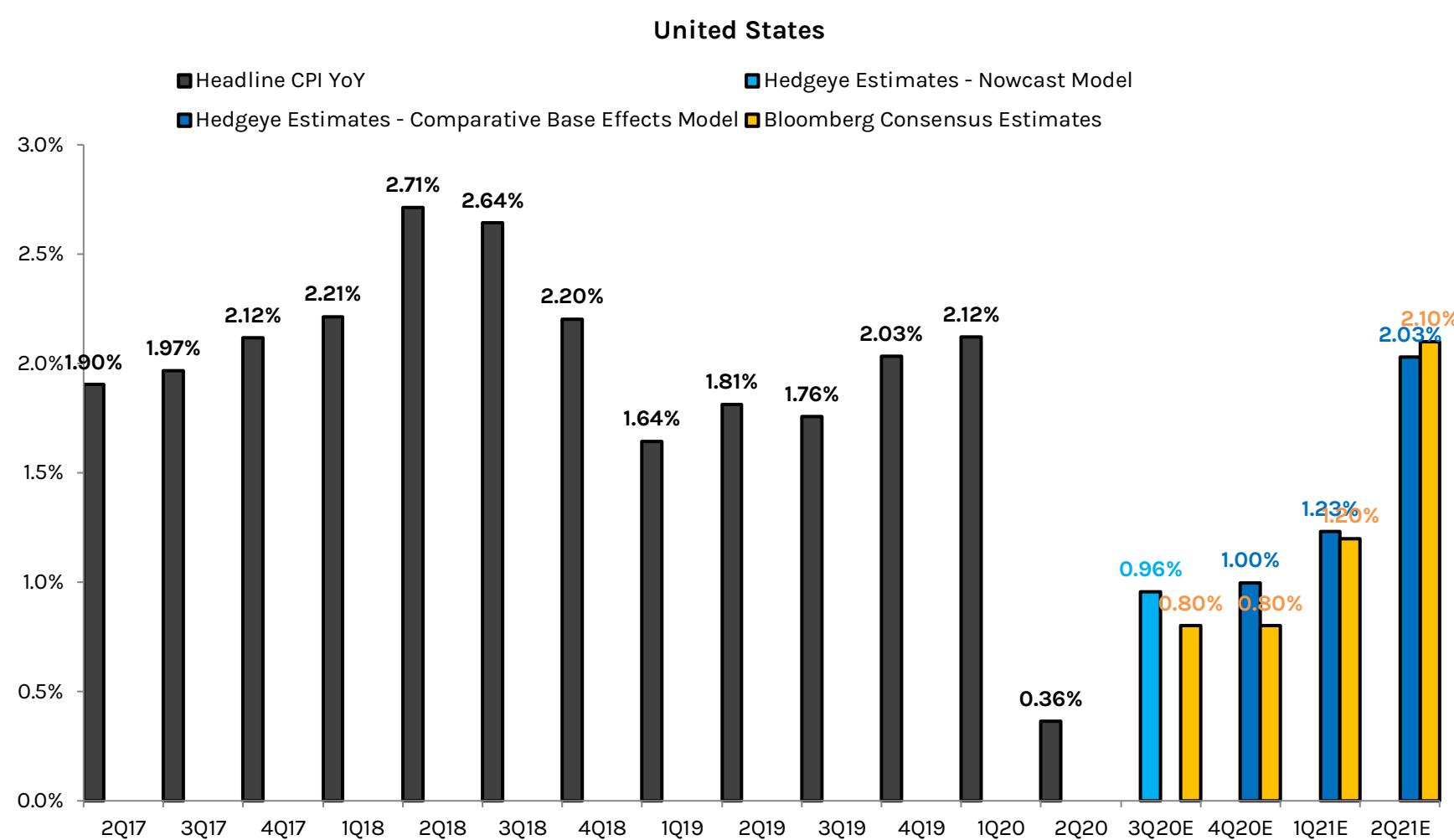
One differentiating factor of our forecasting process is that we aim to solve for where the economy is trending on a **Full Investing Cycle** basis, rather than trying to identify super short-term economic momentum.

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

HEDGEYE



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

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

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

# US Real GDP Nowcast Model

HEDGEYE

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

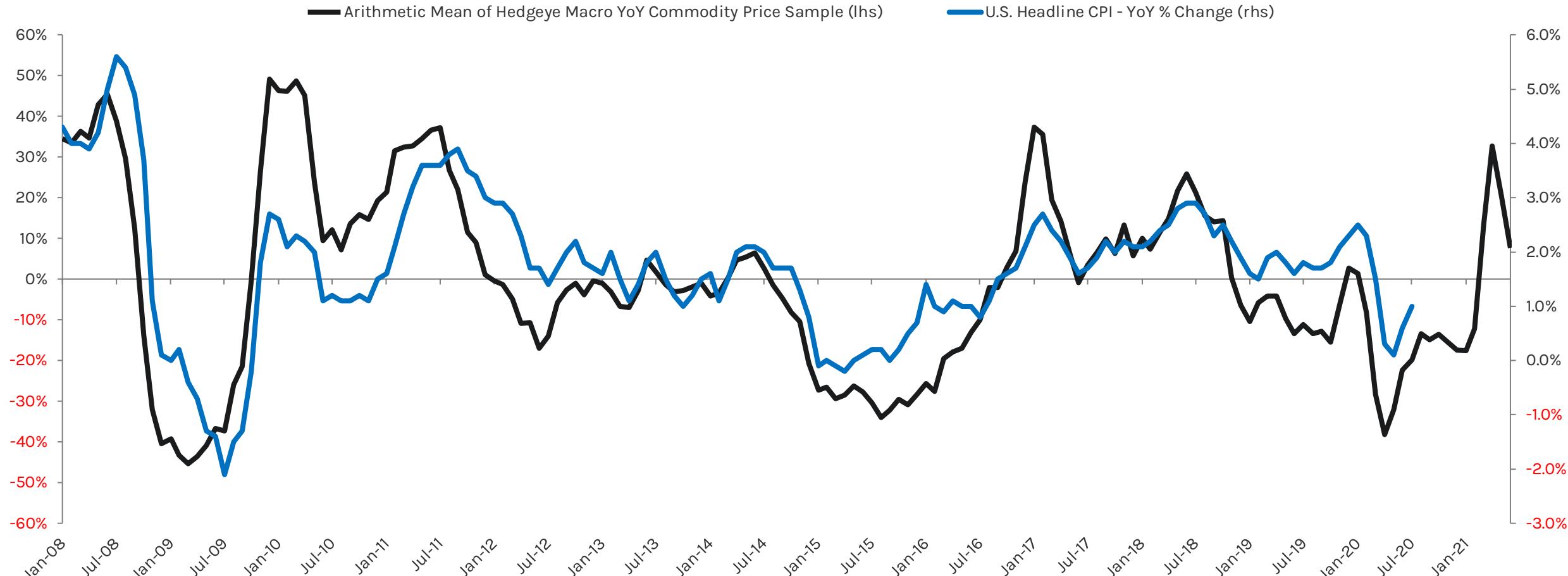
HEDGEYE US NOWCAST MODEL SUMMARY	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	2Q20	3Q20	Δ	
Real PCE YoY (1)	2.97	2.80	1.30	2.19	2.22	2.50	2.43	2.34	2.55	2.44	2.33	2.58	2.30	2.06	3.02	2.69	2.61	-4.69	-16.69	-9.96	-5.54	-	-	-	-	-10.73	-	-
Real Disposable Personal Income YoY (14)	3.40	3.42	4.29	3.47	3.37	2.89	2.39	2.05	1.85	1.58	1.79	2.02	1.81	2.10	0.83	1.56	2.03	0.57	16.22	10.21	8.12	-	-	-	-	11.52	-	-
Personal Savings Rate % of DPI (7)	7.6	7.4	9.1	8.5	8.6	8.0	7.5	7.3	7.1	7.0	7.3	7.3	7.2	7.5	7.2	7.6	8.3	12.8	33.5	24.2	19.0	-	-	-	-	25.6	-	-
Headline Retail Sales YoY (12)	4.40	3.63	0.92	2.52	1.99	3.61	3.86	2.90	3.44	3.55	4.31	3.95	3.31	3.25	5.61	4.87	4.48	-5.59	-19.86	-5.55	2.12	2.74	-	-	-	-7.76	2.74	10.50
Retail Sales Control Group YoY (13)	4.71	4.54	0.46	3.68	2.81	3.88	3.86	3.45	4.97	4.83	5.05	4.41	4.10	2.51	6.20	3.70	4.01	6.32	-7.46	1.50	6.93	7.96	-	-	-	0.32	7.96	7.63
Auto Sales YoY (16)	-2.67	0.00	-146	-2.75	-2.36	0.57	-3.93	2.91	-0.46	0.84	2.23	-121	-5.43	-1.78	-4.57	145	1.63	-35.03	-47.68	-29.42	-24.57	-13.67	-	-	-	-33.89	-13.67	20.22
MBA Mortgage Purchase Index YoY (30)	-160	-0.28	-107	5.99	0.20	3.40	5.56	5.11	8.16	6.21	5.97	10.50	9.34	11.00	9.05	9.09	10.61	-2.10	-29.85	-1.13	15.98	17.46	26.02	-	-	-5.00	2174	26.74
Total Employees On Nonfarm Payrolls YoY (4)	1.60	1.53	1.57	1.67	1.39	1.37	1.42	1.28	1.26	1.29	1.27	1.35	1.34	1.42	1.42	1.38	1.55	0.54	-13.42	-11.65	-8.58	-7.53	-	-	-	-11.22	-7.53	3.68
Aggregate Hours Worked YoY (2)	1.89	1.24	1.57	1.96	1.10	1.37	1.12	0.99	0.67	0.71	0.97	1.06	1.05	1.13	0.84	0.80	1.55	-0.63	-13.92	-10.88	-8.05	-6.99	-	-	-	-10.95	-6.99	3.96
Aggregate Labor Income YoY (3)	5.28	4.63	5.00	5.28	4.65	4.84	4.50	4.32	4.10	4.20	4.46	4.20	4.30	4.45	3.87	3.90	4.59	2.70	-7.05	-5.03	-3.58	-2.55	-	-	-	-5.22	-2.55	2.67
Monthly Initial Jobless Claims YoY (5)	-9.17	-6.68	-8.88	-6.08	2.27	-3.63	-2.93	-1.20	-0.07	-1.16	0.93	-0.12	-0.23	-4.19	4.39	-4.47	-4.89	1124.40	2238.86	1028.00	577.51	523.72	380.34	-	-	1281.46	452.03	-829.43
Bloomberg Consumer Comfort Index (10)	60.2	60.9	59.5	57.9	59.7	60.7	60.3	60.2	62.3	64.2	62.0	62.6	62.7	59.2	62.2	66.1	65.3	60.9	43.8	36.0	40.9	44.1	44.0	-	-	40.2	44.0	3.8
Industrial Production YoY (9)	4.06	4.06	3.77	3.63	2.74	2.26	0.71	1.73	1.02	0.40	0.30	-0.18	-0.81	-0.42	-0.81	-0.85	-0.24	-4.63	-16.32	-15.76	-11.03	-8.18	-	-	-	-14.37	-8.18	6.19
Capacity Utilization (6)	79.3	79.6	79.5	79.0	78.5	78.4	77.8	77.8	77.7	77.4	77.8	77.4	77.0	77.6	77.2	76.9	76.9	73.6	64.2	64.8	68.5	70.6	-	-	-	65.8	70.6	4.7
Durable Goods New Orders YoY (23)	6.01	3.77	3.59	8.07	0.04	2.26	-1.66	-3.96	-4.41	0.38	-3.27	-5.73	-1.61	-3.95	-3.27	-3.62	1.62	-18.64	-30.29	-18.64	-12.52	-	-	-	-	-20.48	-	-
Core Capital Goods New Orders YoY (29)	4.15	1.62	2.44	5.56	4.74	6.40	2.25	0.84	0.49	-3.29	0.10	-0.12	-0.74	3.43	1.67	0.56	0.97	-2.63	-7.25	-4.34	-3.16	-	-	-	-	-4.92	-	-
Factory Orders YoY (20)	6.44	3.04	2.26	4.41	1.22	2.45	0.84	-1.29	-2.25	0.48	-1.75	-3.28	-1.31	-1.16	0.29	-0.55	0.53	-12.43	-22.74	-16.08	-10.61	-	-	-	-	-16.48	-	-
Manufacturing & Trade Inventories YoY (22)	5.03	4.43	4.91	5.20	5.09	5.05	5.29	5.29	5.10	4.70	3.93	3.41	2.86	2.66	1.87	0.77	-0.16	-0.48	-2.25	-4.80	-5.76	-	-	-	-	-4.27	-	-
Nonresidential Construction Spending YoY (27)	3.81	2.01	3.12	1.81	1.71	4.04	4.93	4.38	5.12	5.85	5.24	8.88	8.34	11.18	9.05	7.75	5.78	4.30	-0.10	-0.01	0.40	-	-	-	-	0.10	-	-
Residential Construction Spending YoY (28)	-0.70	-4.76	-8.21	-8.23	-10.62	-8.94	-7.78	-7.49	-4.63	-2.27	0.99	1.66	4.00	6.33	9.80	11.72	13.40	12.15	6.10	2.21	-0.39	-	-	-	-	2.64	-	-
ISM Manufacturing PMI (25)	58.5	58.8	55.0	55.5	54.1	54.6	53.4	52.3	51.6	51.3	48.8	48.2	48.5	48.1	47.8	50.9	50.1	49.1	41.5	43.1	52.6	54.2	-	-	-	45.7	54.2	8.5
ISM Non-Manufacturing PMI (17)	60.3	60.2	58.0	56.0	58.5	56.3	55.7	56.3	55.4	54.8	56.0	53.5	54.4	53.9	54.9	55.5	57.3	52.5	41.8	45.4	57.1	58.1	-	-	-	48.1	58.1	10.0
NFIB Small Business Optimism Index (21)	107.4	104.8	104.4	101.2	101.7	101.8	103.5	105.0	103.3	104.7	103.1	101.8	102.4	104.7	102.7	104.3	104.5	96.4	90.9	94.4	100.6	98.8	-	-	-	95.3	98.8	3.5
Exports YoY (11)	5.94	2.55	-0.30	1.50	0.41	-0.06	-1.32	-1.01	-1.55	-0.07	-0.15	-1.87	-1.83	-0.42	1.22	0.10	0.45	-10.78	-27.79	-32.02	-24.37	-	-	-	-	-28.06	-	-
Imports YoY (15)	8.88	3.71	3.38	1.92	-0.21	2.30	0.67	3.09	1.58	0.12	0.03	-2.87	-4.98	-3.63	-3.08	-2.61	-4.53	-11.27	-22.28	-24.47	-19.94	-	-	-	-	-22.23	-	-
Rail Traffic YoY (18)	1.96	3.83	1.76	3.89	-3.32	-4.72	-2.42	-5.54	-4.59	-5.53	-5.04	-6.39	-7.90	-7.70	-9.40	-6.22	-6.74	-10.09	-20.91	-20.61	-14.29	-8.19	-7.13	-	-	-18.60	-7.66	10.94
Headline CPI YoY (24)	2.52	2.18	1.91	1.55	1.52	1.86	2.00	1.79	1.65	1.81	1.75	1.71	1.76	2.05	2.29	2.49	2.33	1.54	0.33	0.12	0.65	0.99	-	-	-	0.36	0.99	0.62
PCE Deflator YoY (26)	2.08	1.97	1.88	1.47	1.37	1.50	1.62	1.49	1.46	1.53	1.52	1.39	1.43	1.44	1.64	1.88	1.84	1.34	0.48	0.50	0.75	-	-	-	-	0.57	-	-
Core PCE Deflator YoY (19)	1.91	2.04	2.08	1.85	1.69	1.58	1.69	1.60	1.71	1.74	1.87	1.72	1.74	1.58	1.62	1.75	1.87	1.65	0.93	0.96	0.95	-	-	-	-	0.95	-	-
M2 Money Supply YoY (8)	3.75	3.51	3.94	4.34	4.15	3.81	4.07	4.27	4.54	5.00	5.06	5.51	6.26	6.89	6.49	6.71	7.26	10.70	17.20	2187	22.80	23.41	22.83	-	-	20.66	23.12	2.46

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

# US Headline CPI Nowcast Model

HEDGEYE

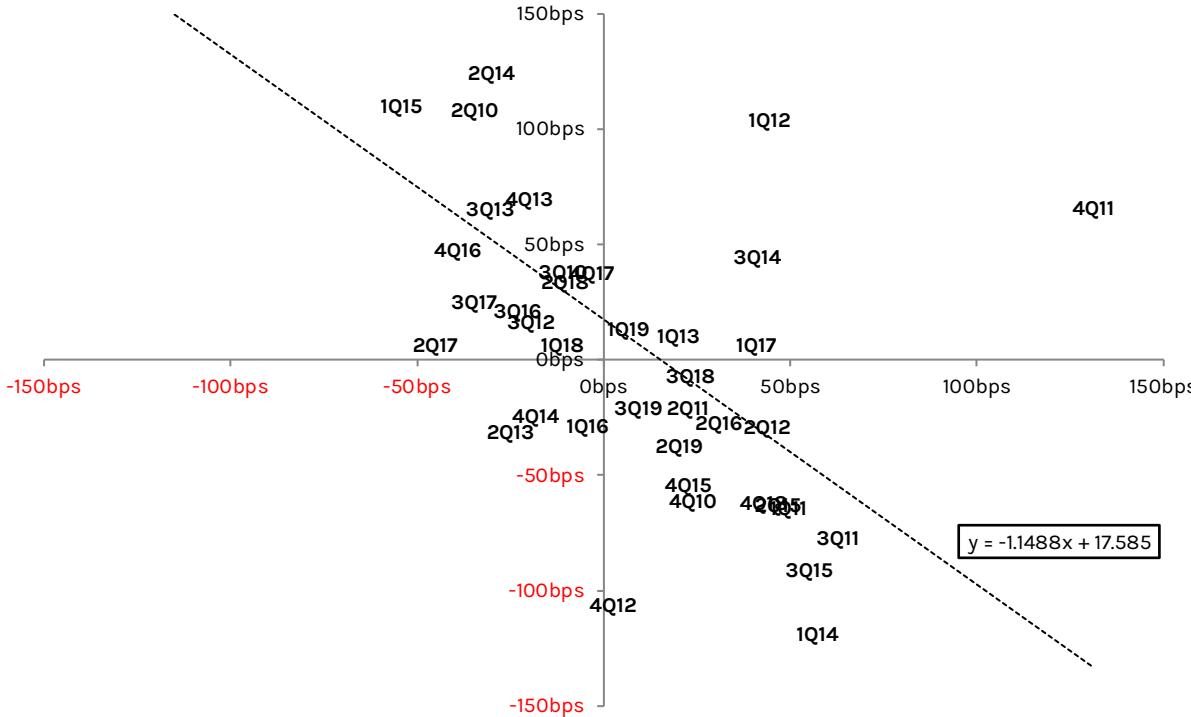
Structural shifts in the economy have increasingly mitigated the risk of a wage/price spiral, leading to an increased sensitivity of headline CPI to annual fluctuations in tradeable goods prices – a dynamic our model has astutely capitalized on.



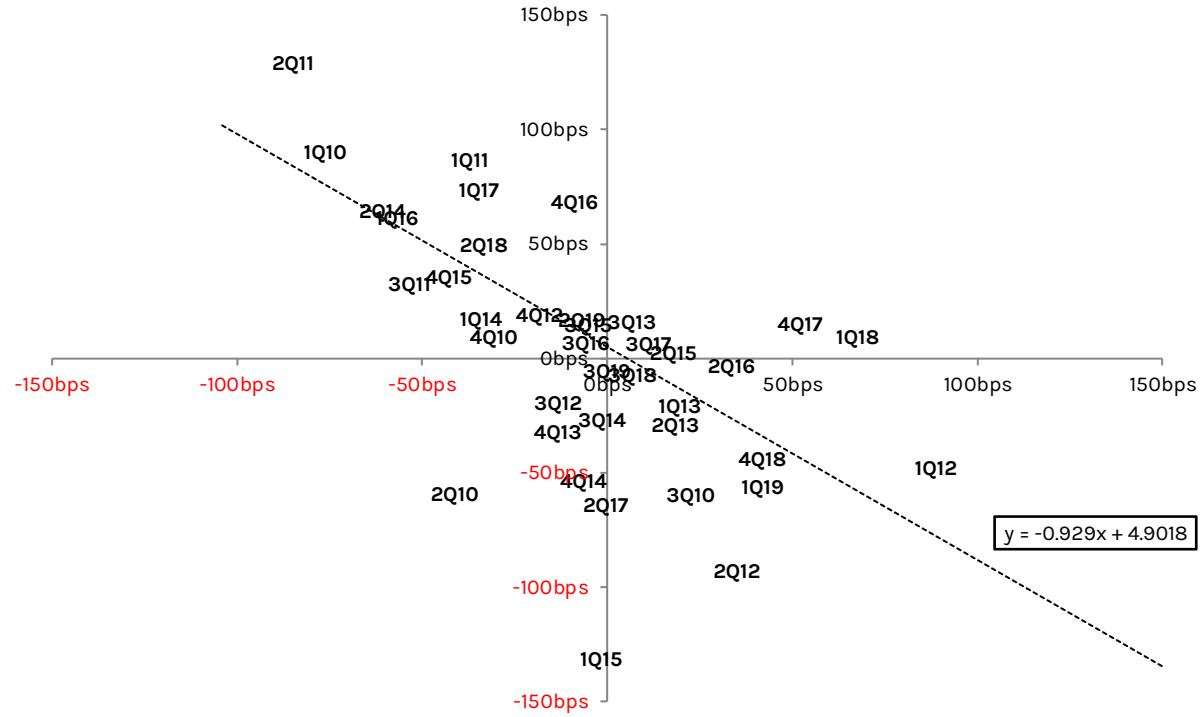
The Hedgeye Macro commodity price sample includes the CRB Index, CRB Raw Industrials Index, Brent Crude Oil and the UN Food and Agriculture Price Index.  
YoY deltas are calculated from monthly averages. Forward estimates assume no change to current monthly averages.

# A Quick Lesson In Base Effects

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



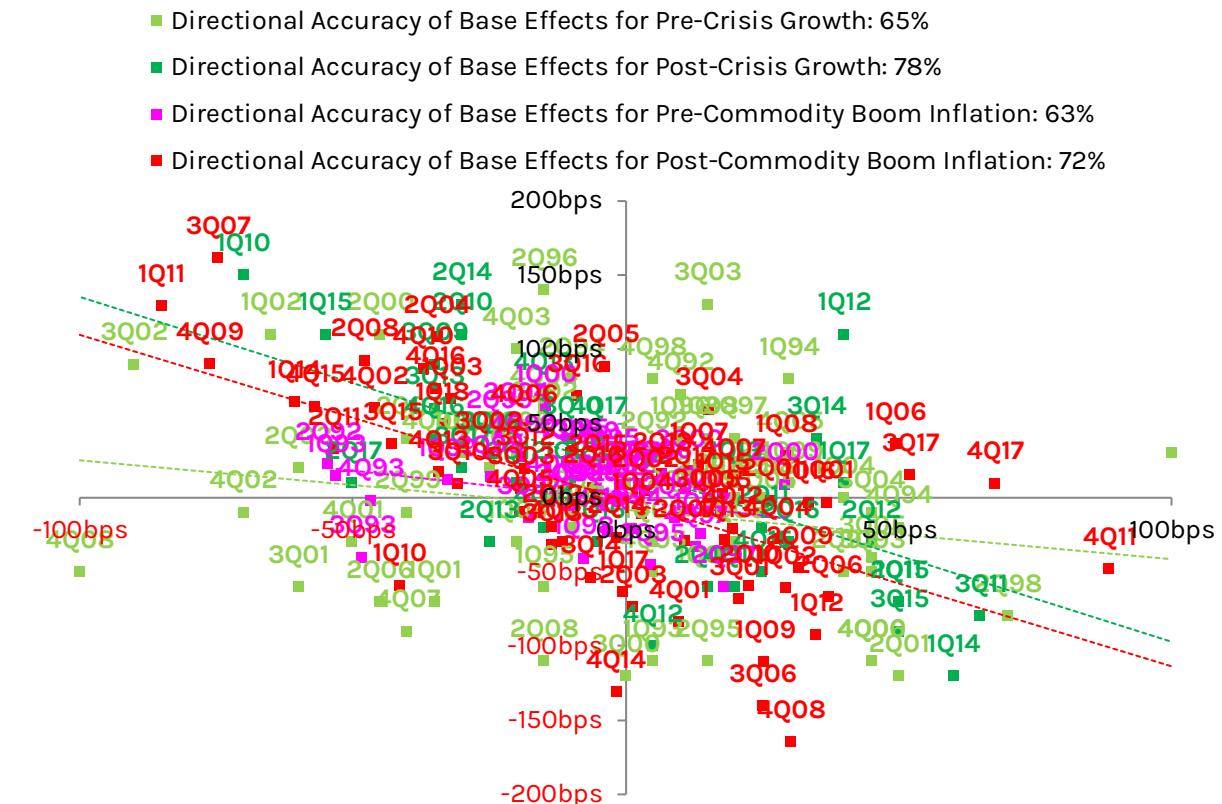
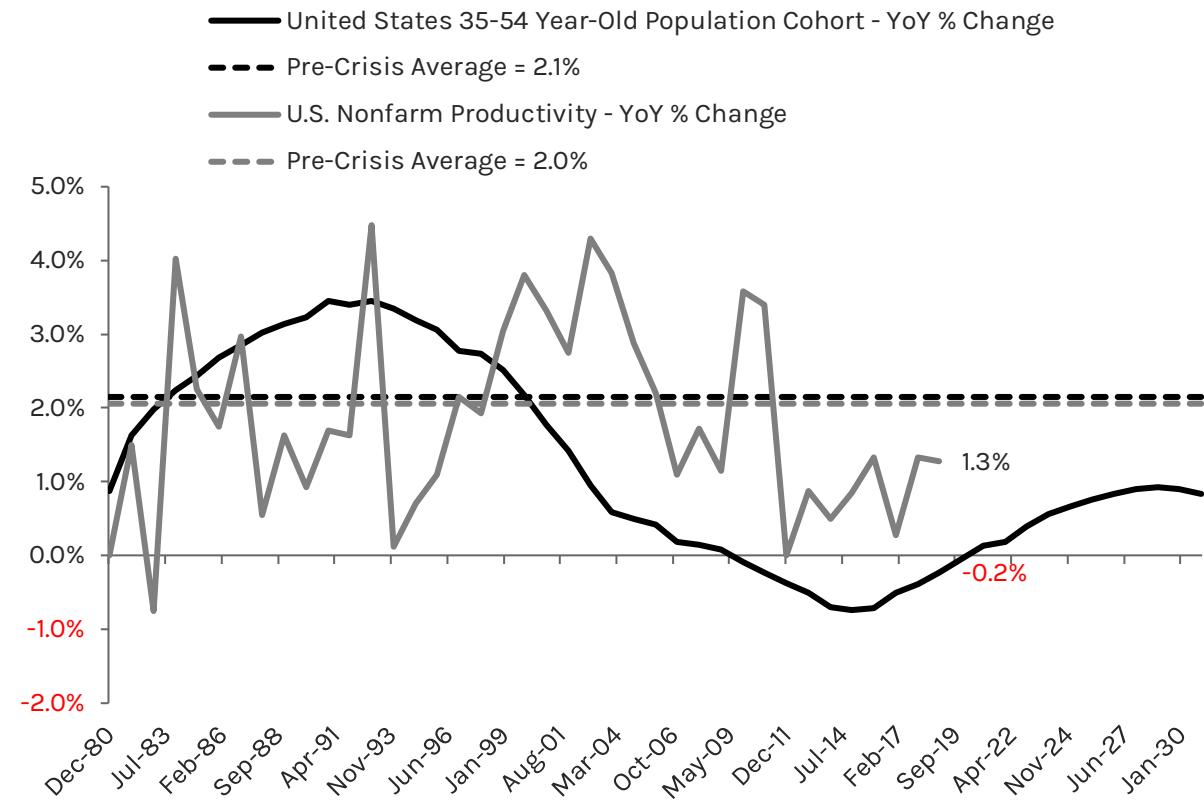
x-axis: First Difference of the 2yr Average YoY Headline CPI Rate in the Comparative Base Period;  
y-axis: First Difference of the YoY Headline CPI Rate in the Forecast Period (Trailing 10Y)  
Raw Backtest: 68%; Momentum Backtest: 77%



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

# Base Effects Matter More Now Than Ever

HEDGEYE



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

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

# The Quads Are Global

HEDGEYE

## G20 GIP Model Summary

8/26/2020	Hedgeye Macro GIP Model Signals												GROWTH				Strength Of Signal				INFLATION				Strength Of Signal								
	Actuals								Estimates				Real GDP YoY				NTM Δ	Conditional Probability Of Est. Δ				Headline CPI YoY				NTM Δ	Conditional Probability Of Est. Δ						
	2Q18	3Q18	4Q18	1Q19	2Q19	3Q19	4Q19	1Q20	2Q20	3Q20E	4Q20E	1Q21E	2Q21E	2Q20	3Q20E	4Q20E	1Q21E	2Q21E	2Q21E Less 3Q20E	3Q20E	4Q20E	1Q21E	2Q21E	2Q20	3Q20E	4Q20E	1Q21E	2Q21E	2Q21E Less 3Q20E	3Q20E	4Q20E	1Q21E	2Q21E
	3	2	3	2	2	4	1	4	4	2	4	1	2	-11.24	-9.57	-11.00	-9.00	-3.16	641bps	96	89	98	98	43.93	46.09	41.82	40.41	41.45	-463bps	72	93	64	61
Argentina	3	2	3	2	2	4	1	4	4	2	4	1	2	-11.24	-9.57	-11.00	-9.00	-3.16	641bps	96	89	98	98	0.65	1.09	1.23	1.18	1.70	61bps	98	79	60	98
Australia	1	3	4	4	4	1	1	3	4	2	2	1	2	-0.21	2.73	3.25	3.86	5.45	273bps	98	98	98	98	2.14	3.59	3.42	3.21	3.94	35bps	98	60	63	95
Brazil	3	2	4	4	2	1	2	3	4	2	4	1	2	-2.71	0.62	0.61	1.89	4.35	373bps	98	51	98	98	0.02	0.23	0.32	0.68	1.30	108bps	86	67	98	98
Canada	3	2	4	4	2	4	3	4	4	2	3	2	2	-4.00	-0.73	-1.10	0.24	3.33	406bps	98	89	98	98	2.74	3.01	2.68	2.50	3.20	19bps	74	80	66	98
China	1	3	4	4	2	3	2	3	1	2	1	1	3	1.86	3.61	7.48	16.12	10.19	658bps	98	98	98	98	0.23	0.53	0.56	0.75	1.20	67bps	98	58	91	98
Eurozone	3	3	4	1	4	1	3	3	4	2	3	2	2	-15.00	-12.79	-12.92	-10.97	0.93	1372bps	98	61	98	98	0.33	0.85	0.94	1.25	1.82	97bps	98	66	98	98
France	3	3	4	1	1	4	3	3	4	2	3	2	2	-18.96	-17.29	-17.74	-14.70	-1.47	1582bps	98	80	98	98	2.27	2.35	2.40	2.57	2.76	41bps	54	52	59	59
Germany	2	3	-	1	3	1	3	3	4	1	4	2	2	-11.30	-8.33	-9.50	-8.60	0.90	924bps	98	98	98	98	0.70	0.56	0.50	0.62	1.02	46bps	78	61	73	98
India	3	4	4	1	3	3	3	3	4	2	1	1	1	-10.40	-8.34	-7.07	-6.62	6.89	1522bps	98	98	73	98	6.57	7.18	6.87	6.52	6.27	-91bps	76	63	65	61
Indonesia	1	4	2	4	3	3	4	3	4	2	2	2	2	-5.32	-3.85	-3.81	-2.76	5.53	938bps	98	54	98	98	2.43	3.18	3.27	3.32	4.17	99bps	98	58	54	98
Italy	3	3	4	1	1	1	4	4	4	2	2	2	2	-17.26	-15.09	-14.25	-11.57	0.20	1529bps	98	98	98	98	-0.20	0.50	0.54	0.81	1.07	58bps	98	56	84	84
Japan	1	3	4	1	2	1	3	4	4	2	3	3	1	-9.90	-6.07	-7.09	-7.14	0.96	703bps	98	98	53	98	0.10	0.36	0.38	0.65	0.62	26bps	73	52	73	53
Mexico	1	3	4	4	3	1	4	3	4	2	3	2	2	-18.92	-17.82	-17.95	-17.57	-0.02	1780bps	98	60	81	98	2.77	3.67	3.79	3.92	4.18	51bps	98	61	62	73
Russia	2	3	2	3	1	1	1	4	3	2	2	1	1	-8.50	-5.50	-4.74	-3.30	6.84	1234bps	98	91	98	98	3.10	5.53	5.59	5.46	5.19	-34bps	98	51	53	55
South Africa	3	2	4	4	2	4	4	2	4	2	3	2	2	-5.99	-4.62	-4.95	-4.60	1.29	591bps	98	90	93	98	2.43	3.18	3.27	3.32	4.17	99bps	98	58	54	98
South Korea	2	3	2	4	2	4	2	3	4	2	4	2	2	-2.90	-1.73	-1.98	-0.88	3.42	515bps	98	77	98	98	-0.07	0.33	0.21	0.37	1.01	68bps	98	69	76	98
Spain	3	3	4	1	4	4	3	3	4	2	2	2	2	-22.10	-20.93	-20.76	-17.86	0.14	2107bps	98	59	98	98	-0.63	-0.31	-0.22	-0.02	0.70	101bps	98	64	81	98
Turkey	3	3	3	1	1	1	1	3	4	2	1	2	2	-8.50	-6.33	-5.65	-5.21	7.83	1416bps	98	69	63	98	11.65	13.23	13.21	13.62	15.08	185bps	98	51	65	98
United Kingdom	1	2	4	1	3	4	4	3	4	2	2	2	2	-21.70	-19.70	-19.60	-18.50	1.50	2120bps	98	55	98	98	0.63	1.09	1.29	1.37	1.81	72bps	98	82	63	98
United States	2	4	4	4	3	1	2	3	4	2	3	2	2	-9.54	-4.76	-5.41	-4.29	5.57	1033bps	98	98	98	98	0.36	0.96	1.00	1.23	2.03	107bps	98	60	98	98
MODE/MEDIAN	3	3	4	4	2	1	3	3	4	2	3	2	2	-9.72	-6.20	-6.36	-5.91	2.41	861bps	98	89	98	98	0.67	1.09	1.26	1.31	1.92	84bps	98	61	66	98

Data Source: Bloomberg, BIS, World Bank, and IMF. Intellectual Property of Hedgeye Risk Management.

GREEN header = Hedgeye Nowcast estimates. BLUE header = Hedgeye β-Adjusted Comparative Base Effect Model estimates. GREEN/RED shading in GDP and CPI projections denotes sequential acceleration/deceleration.

Conditional probability inversely proportional to the prior base rate's percentile score within a 95% confidence interval band around the projected GROWTH or INFLATION rate in a given quarter.

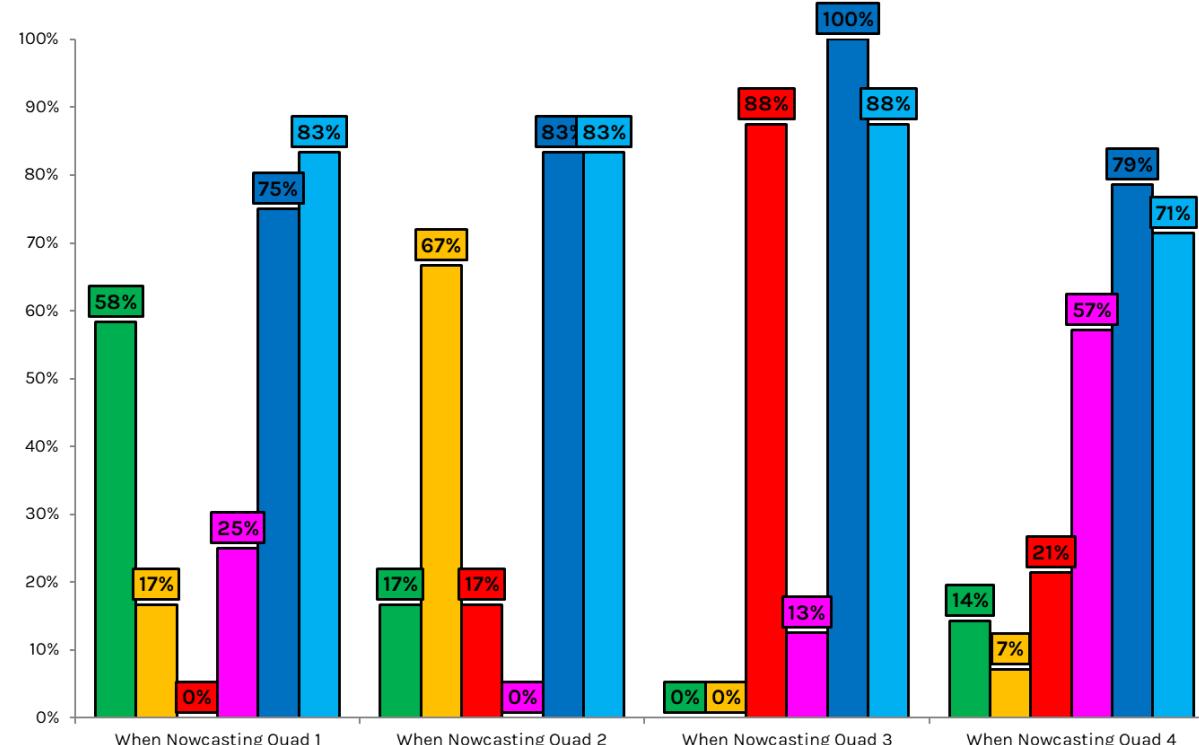
# ... As Are The Backtests

HEDGEYE

## Germany Nowcast Model Backtest

Hedgeye Nowcast Model Quad Projection Accuracy: Germany

■ 1 ■ 2 ■ 3 ■ 4 ■ GDP Δ Accuracy ■ CPI Δ Accuracy

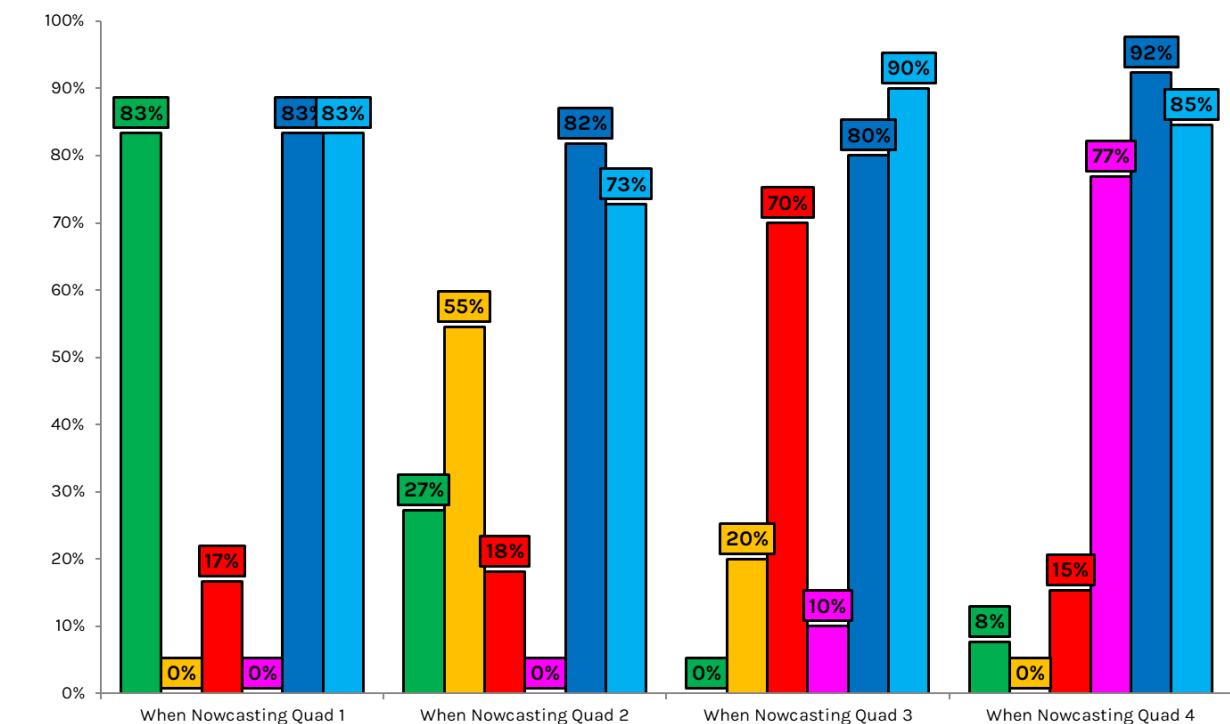


Data Source: Bloomberg

## Canada Nowcast Model Backtest

Hedgeye Nowcast Model Quad Projection Accuracy: Canada

■ 1 ■ 2 ■ 3 ■ 4 ■ GDP Δ Accuracy ■ CPI Δ Accuracy



Data Source: Bloomberg

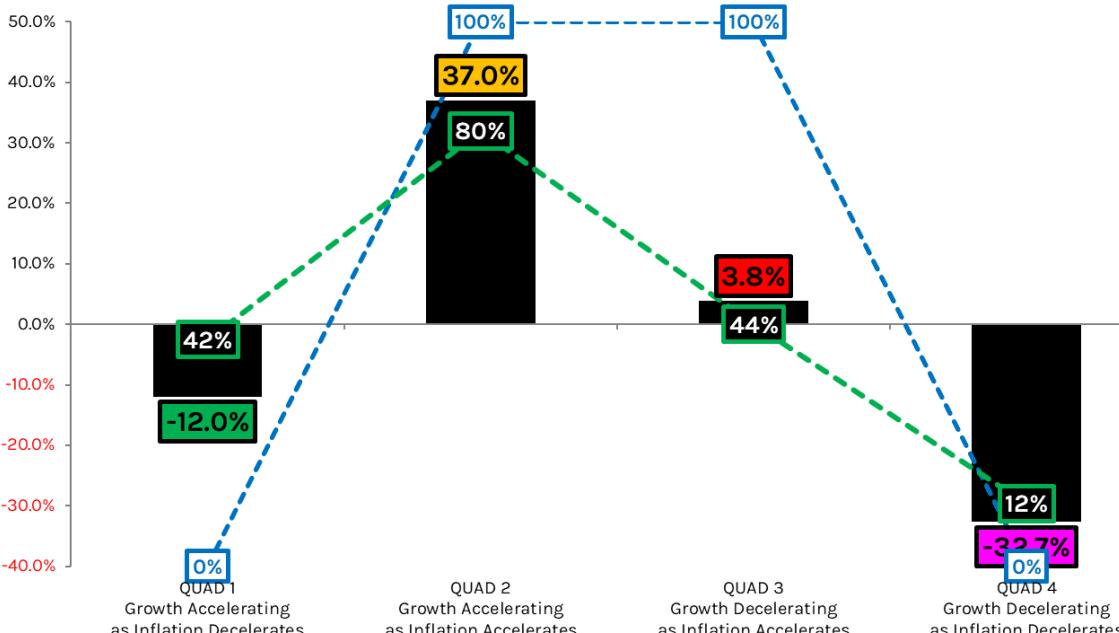
# ... As Are The Market Implications

HEDGEYE

## Germany GIP Model Factor Exposure Backtest: 10yr Bund Yield

### GERMANY GOVT BND 10 YR DBR

- Expected Value, by Selected Country's GIP Quadrant
- Percentile of Expected Value, by Quadrant, within Respective Asset Class (rhs)
- - - Percentile of Expected Value, by Quadrant, across Asset Classes (rhs)
- - - Percent Positive Ratio (rhs)

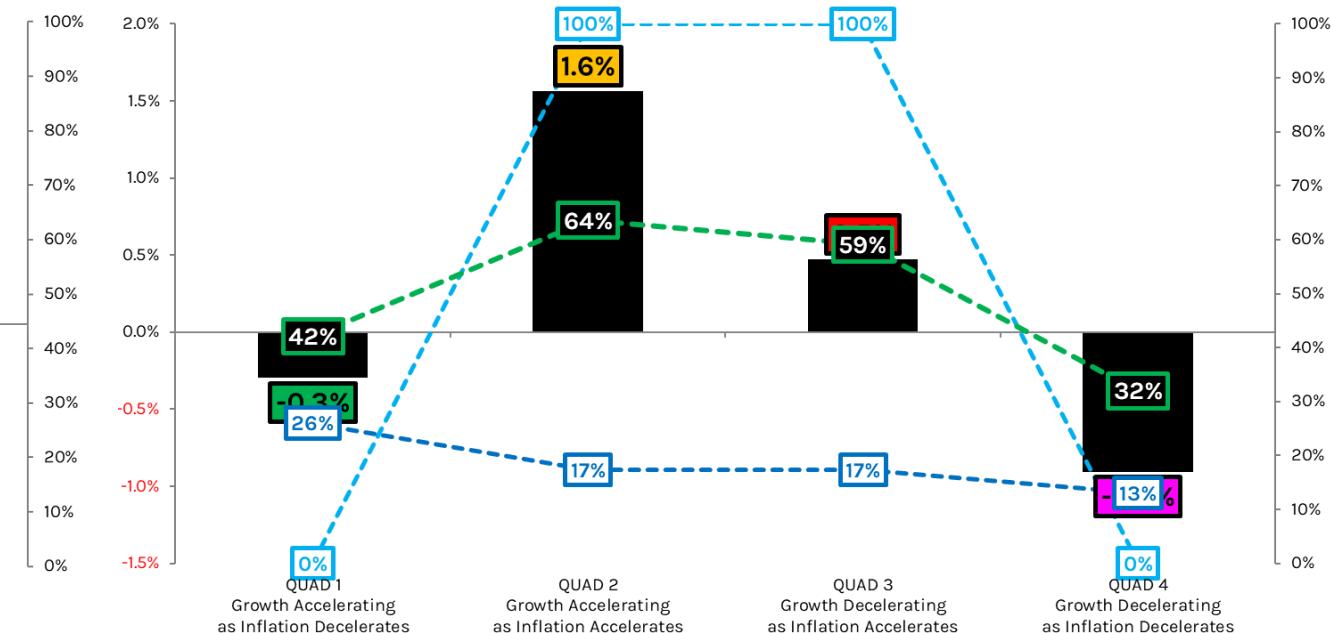


Data Source: Bloomberg. Asset classes include equities, fixed income, currencies and commodities. Quarterly observations starting in 1Q98.

## Canada GIP Model Factor Exposure Backtest: CAD/USD Exchange Rate

### CADUSD Spot Exchange Rate - Price of 1 CAD in USD

- Expected Value, by Selected Country's GIP Quadrant
- Percentile of Expected Value, by Quadrant, within Respective Asset Class (rhs)
- - - Percentile of Expected Value, by Quadrant, across Asset Classes (rhs)
- - - Percent Positive Ratio (rhs)



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

# The Quads Are Global

HEDGEYE

## Emerging Market GIP Model Summary

8/26/2020	Hedgeye Macro GIP Model Signals												GROWTH					Strength Of Signal				INFLATION					Strength Of Signal							
	Actuals						Estimates						Real GDP YoY				NTM Δ	Conditional Probability Of Est. Δ				Headline CPI YoY				NTM Δ	Conditional Probability Of Est. Δ							
	2Q18	3Q18	4Q18	1Q19	2Q19	3Q19	4Q19	1Q20	2Q20	3Q20E	4Q20E	1Q21E	2Q21E	2Q20	3Q20E	4Q20E	1Q21E	2Q21E	2Q21E Less 3Q20E	3Q20E	4Q20E	1Q21E	2Q21E	2Q20	3Q20E	4Q20E	1Q21E	2Q21E	2Q21E Less 3Q20E	3Q20E	4Q20E	1Q21E	2Q21E	
Argentina	3	2	3	2	2	4	1	4	4	2	4	1	2	-11.24	-9.57	-11.00	-9.00	-3.16	641bps	96	89	98	98	43.93	46.09	41.82	40.41	41.45	-463bps	72	93	64	61	
Brazil	3	2	4	4	2	1	2	3	4	2	4	1	2	-2.71	0.62	0.61	189	4.35	373bps	98	51	98	98	2.14	3.59	3.42	3.21	3.94	35bps	98	60	63	95	
Chile	2	3	1	4	2	1	3	2	4	2	4	4	2	-14.10	-12.53	-16.95	-17.21	-2.91	963bps	98	98	63	98	2.93	3.06	2.88	2.69	2.90	-16bps	59	63	64	65	
China	1	3	4	4	2	3	2	3	1	2	1	1	3	1.86	3.61	7.48	16.12	10.19	658bps	98	98	98	98	2.74	3.01	2.68	2.50	3.20	19bps	74	80	66	98	
Colombia	4	1	3	4	2	3	2	4	4	2	1	2	2	-7.30	-6.37	-5.43	-3.98	4.32	1069bps	98	98	98	98	2.85	3.20	3.09	3.21	3.55	35bps	74	58	58	73	
Czech Republic	3	3	1	3	3	2	3	3	4	2	2	1	2	-9.28	-7.61	-5.98	-4.03	3.54	1116bps	98	98	98	98	3.13	3.60	3.63	3.01	3.19	-41bps	98	53	98	70	
Emerging Markets	4	3	3	4	2	4	2	3	1	2	4	1	3	-0.74	4.73	4.62	8.64	6.12	139bps	98	60	98	98	3.01	3.39	3.13	2.96	3.49	10bps	98	97	80	98	
Greece	3	2	3	4	1	4	3	3	4	1	1	2	2	-8.11	-3.44	-0.48	0.77	7.68	1112bps	98	98	98	98	-1.17	-1.41	-1.52	-1.39	-0.46	95bps	70	60	61	98	
Hong Kong	4	3	3	4	3	3	4	4	1	1	3	2	4	-9.00	-5.67	-7.24	-3.99	-4.09	158bps	98	98	98	98	56	1.37	-0.23	-0.19	0.53	0.43	66bps	98	53	92	56
Hungary	2	2	-	4	3	1	3	3	4	2	1	1	2	-13.60	-13.20	-12.59	-11.44	4.36	1756bps	72	83	98	98	2.50	3.60	3.53	3.10	3.73	14bps	98	55	83	98	
India	3	4	4	1	3	3	3	3	4	2	1	1	1	-10.40	-8.34	-7.07	-6.62	6.89	1522bps	98	98	73	98	6.57	7.18	6.87	6.52	6.27	-91bps	76	63	65	61	
Indonesia	1	4	2	4	3	3	4	3	4	2	2	2	2	-5.32	-3.85	-3.81	-2.76	5.53	938bps	98	54	98	98	2.27	2.35	2.40	2.57	2.76	41bps	54	52	59	59	
Malaysia	4	4	1	4	2	3	4	4	4	2	3	2	2	-17.10	-15.67	-16.53	-14.93	2.87	1854bps	98	97	98	98	-2.56	-143	-130	-0.96	0.30	173bps	98	60	77	98	
Mexico	1	3	4	4	3	1	4	3	4	2	3	2	2	-18.92	-17.82	-17.95	-17.57	-0.02	1780bps	98	60	81	98	2.77	3.67	3.79	3.92	4.18	51bps	98	61	62	73	
Peru	2	3	2	3	3	1	4	4	4	2	4	1	1	-30.43	-28.10	-28.46	-24.87	2.47	3056bps	98	63	98	98	1.70	2.22	2.05	2.02	1.90	-32bps	98	68	52	63	
Philippines	3	3	1	4	4	1	1	3	4	2	3	2	2	-16.50	-15.47	-15.90	-11.85	3.95	1941bps	90	67	98	98	2.27	2.99	3.12	3.60	4.24	125bps	98	61	88	98	
Poland	2	3	4	4	3	3	3	3	4	2	2	1	2	-8.20	-2.84	-1.23	-0.48	9.72	1255bps	98	98	98	98	3.20	3.59	3.71	2.96	3.03	-55bps	84	61	98	56	
Russia	2	3	2	3	1	1	1	4	3	2	2	1	1	-8.50	-5.50	-4.74	-3.30	6.84	1234bps	98	91	98	98	3.10	5.53	5.59	5.46	5.19	-34bps	98	51	53	55	
South Africa	3	2	4	4	2	4	4	2	4	2	3	2	2	-5.99	-4.62	-4.95	-4.60	1.29	591bps	98	90	93	98	2.43	3.18	3.27	3.32	4.17	99bps	98	58	54	98	
South Korea	2	3	2	4	2	4	2	3	4	2	4	2	2	-2.90	-1.73	-1.98	-0.88	3.42	515bps	98	77	98	98	-0.07	0.33	0.21	0.37	1.01	68bps	98	69	76	98	
Taiwan	2	4	4	4	2	1	2	4	4	2	2	2	2	-0.58	0.00	0.22	0.83	3.61	362bps	98	70	98	98	-0.98	-0.52	-0.28	-0.13	0.39	91bps	97	75	65	98	
Thailand	3	3	1	4	3	1	4	3	4	2	2	2	2	-12.20	-4.26	-2.93	-0.73	9.47	1373bps	98	98	98	98	-2.67	-1.52	-1.30	-1.26	0.11	163bps	98	72	54	98	
Turkey	3	3	3	1	1	1	3	4	2	1	2	2	2	-8.50	-6.33	-5.65	-5.21	7.83	1416bps	98	69	63	98	11.65	13.23	13.21	13.62	15.08	185bps	98	51	65	98	
MODE/MEDIAN	3	3	4	4	2	1	4	3	4	2	4	2	2	-8.50	-5.67	-5.43	-3.99	4.32	999bps	98	90	98	98	2.47	3.19	3.12	2.99	3.34	15bps	98	61	65	84	

Data Source: Bloomberg, BIS, World Bank, and IMF. Intellectual Property of Hedgeye Risk Management.

GREEN header = Hedgeye Nowcast estimates. BLUE header = Hedgeye β-Adjusted Comparative Base Effect Model estimates. GREEN/RED shading in GDP and CPI projections denotes sequential acceleration/deceleration.

Conditional probability inversely proportional to the prior base rate's percentile score within a 95% confidence interval band around the projected GROWTH or INFLATION rate in a given quarter.

# The Quads Are Global

HEDGEYE

## Global Macro Risk Monitor

8/26/2020	GIP Model Signals												High-Frequency Economic Data Signals												8/26/2020	Structural Economic Risk Factors								Financial Market Valuation Signals								
	Actuals						Hedgeye Forecasts						Consumption			Manufacturing			Exports		Manufacturing PMI		Consumer Conf.		Business Conf.		Headline CPI		Core CPI			Economic Cycle Risk				Global Capital Cycle Risk				Stock Market	Bond Market	Currency
	Hedgeye Global Macro Risk Monitor	3Q18	4Q18	1Q19	2Q19	3Q19	4Q19	1Q20	2Q20	3Q20E	4Q20E	1Q21E	2Q21E	6-12M Trend	Percentile of Latest Reading (T3Y)	6-12M Trend	Percentile of Latest Reading (T3Y)	6-12M Trend	Percentile of Latest Reading (T3Y)	6-12M Trend	Percentile of Latest Reading (T3Y)	6-12M Trend	Percentile of Latest Reading (T3Y)	Hedgeye Global Macro Risk Monitor	Private Nonfinancial Sector Leverage (Z-Score; T5Y)	Private Nonfinancial Sector Debt Service Ratio (Z-Score; T5Y)	Output Gap as a % of Potential GDP	35-54 Year-Old Population Cohort (SY-Forward CAGR)	Sovereign Budget Balance as a % of Nominal GDP	Current Account Balance as a % of Nominal GDP	Twin Surplus (+)/Deficit (-) Balance as a % of Nominal GDP	MSCI Index Price-to-NTM-Earnings Ratio Spread vs. MSCI ACWI (Z-Score; T3Y)	JOY Yield Spread vs. Barclays Global Agg YTW (Z-Score; T3Y)	Broad Real Effective Exchange Rate (Z-Score; T3Y)								
Argentina	2	3	2	2	4	1	4	4	2	4	1	2	↓	6%	↓	41%	3%	-	-	↓	37%	↓	9%	↓	32%	-	Argentina	0.0x	-	-	1.5%	-0.4%	-0.1%	-0.5%	-	0.0x	-0.6x					
Australia	3	4	4	4	1	1	3	4	2	2	1	2	↑	97%	↓	90%	3%	60%	3%	0%	9%	↓	0%	9%	↓	0%	Australia	-1.7x	-2.8x	-0.8%	1.3%	-0.1%	1.1%	-	-1.9x	-0.5x	-0.9x					
Austria	3	1	1	3	4	4	3	4	2	2	1	2	↓	82%	↓	6%	-	-	51%	6%	9%	9%	46%	100%	Austria	-2.0x	-	-	0.8%	-1.1%	0.4%	2.7%	3.1%	-0.9x	1.0x	0.6x						
Belgium	-	3	4	1	1	4	4	3	4	2	2	2	↓	100%	↓	3%	3%	6%	-	-	9%	9%	46%	100%	Belgium	-0.5x	-1.2x	0.1%	-0.4%	-0.4%	-0.7%	-0.7%	-3.3%	-2.1x	0.9x	0.6x						
Brazil	2	4	4	2	1	2	3	4	2	4	1	2	↓	21%	↓	6%	31%	100%	49%	11%	46%	6%	6%	0%	Brazil	0.7x	-0.9x	-	1.2%	-1.14%	-2.8%	-14.2%	4.4x	-0.7x	-2.2x							
Canada	2	4	4	2	4	3	4	4	2	3	2	2	↓	74%	↓	6%	6%	49%	63%	80%	6%	6%	0%	Canada	1.2x	0.5x	-0.6%	0.4%	-0.6%	-1.8%	-2.4%	-1.3x	-1.4x	-0.7x								
Chile	3	1	4	2	1	3	2	4	2	4	4	2	↓	0%	15%	57%	-	-	3%	14%	43%	20%	2.5x	-	-	0.8%	-5.0%	-2.1%	-7.1%	-1.5x	0.0x	-1.3x	-0.5x									
China	3	4	4	2	3	2	3	1	2	1	1	3	↓	16%	9%	82%	9%	63%	0%	74%	63%	63%	0%	China	0.5x	-0.2x	-	0.1%	-4.9%	1.2%	-	-2.3x	1.3x	-0.1x								
Colombia	1	3	4	2	3	2	4	4	2	1	2	2	↓	6%	6%	9%	97%	9%	9%	9%	9%	0%	0%	3%	Colombia	-0.9x	-	-	1.0%	-1.9%	-4.2%	-6.1%	-2.0x	-	-1.6x							
Czech Republic	3	1	3	3	2	3	3	4	2	2	1	2	↓	9%	9%	9%	25%	43%	9%	9%	91%	91%	97%	Czech Republic	-1.0x	17x	-	0.2%	-0.8%	0.2%	-	-2.4x	0.5x	0.2x								
Denmark	1	4	3	4	1	3	4	4	2	1	1	2	↑	97%	9%	9%	63%	11%	9%	11%	63%	63%	63%	Denmark	-1.6x	-1.7x	0.7%	-1.0%	2.7%	8.2%	10.9%	1.2x	1.2x	0.1x								
Emerging Markets	3	3	4	2	4	2	3	1	2	4	1	3	↓	9%	0%	50%	86%	11%	14%	55%	0%	0%	0%	Emerging Markets	1.0x	-	-	0.6%	-4.0%	0.3%	-	-2.2x	-0.3x	-1.9x								
Eurozone	3	4	1	4	1	3	3	4	2	3	2	2	↓	24%	9%	54%	9%	9%	100%	9%	9%	77%	77%	77%	Eurozone	0.4x	0.3x	0.1%	-1.2%	-1.1%	2.3%	-	2.5x	1.1x	0.8x							
Finland	3	3	4	2	1	4	3	4	2	2	2	2	↑	97%	0%	0%	37%	9%	17%	17%	71%	71%	71%	Finland	-1.2x	-1.1x	-0.5%	-0.3%	-1.1%	-1.2%	-2.2%	-2.7x	1.3x	-0.1x								
France	3	4	1	1	4	3	3	4	2	3	2	2	↓	79%	9%	6%	6%	11%	9%	9%	11%	100%	100%	100%	France	1.3x	1.0x	0.2%	-0.3%	-3.5%	-5.3%	4.1x	0.9x	0.3x								
Germany	3	-	1	3	1	3	3	4	1	4	2	2	↓	62%	6%	6%	63%	6%	6%	100%	0%	0%	0%	Germany	1.8x	1.8x	0.4%	-1.5%	1.3%	7.1%	8.4%	1.1x	1.1x	1.2x								
Greece	2	3	4	1	4	3	3	4	1	1	2	2	↓	3%	9%	12%	9%	12%	9%	40%	6%	0%	3%	Greece	-1.7x	-	-	-4.3%	-1.2%	10%	-1.3%	-	-2.5x	-1.2x	-0.8x							
Hong Kong	3	3	4	3	3	4	4	1	1	3	2	4	↓	12%	0%	31%	29%	100%	29%	0%	-	-	-	-	Hong Kong	1.3x	1.7x	-	-0.6%	-2.1%	4.9%	-	-2.3x	0.0x	1.3x							
Hungary	2	-	4	3	1	3	3	4	2	1	1	2	↓	6%	6%	12%	14%	9%	9%	80%	100%	100%	100%	Hungary	-1.1x	-1.0x	-	-0.1%	-2.7%	-0.8%	-3.4%	-2.4x	0.9x	-1.4x								
India	4	4	1	3	3	3	3	4	2	1	1	1	-	-	9%	26%	6%	6%	6%	91%	-	-	-	India	-0.6x	-0.9x	-	2.1%	-4.6%	-0.8%	-5.4%	-0.2x	-1.0x	-0.4x								
Indonesia	4	2	4	3	3	4	3	4	2	2	2	2	↓	9%	0%	6%	11%	9%	9%	9%	0%	0%	0%	Indonesia	-0.2x	0.1x	-	0.8%	-2.2%	-2.1%	-4.3%	-1.7x	0.4x	1.4x								
Ireland	3	4	1	3	1	2	4	4	2	4	3	2	↓	100%	62%	41%	89%	9%	9%	3%	3%	3%	3%	Ireland	-1.2x	-	-	1.3%	0.2%	0.0%	-18.2%	2.0x	0.7x	-0.5x								
Italy	3	4	1	1	1	4	4	4	2	2	2	2	↓	18%	9%	69%	69%	3%	6%	40%	100%	100%	100%	Italy	-1.3x	-1.3x	-1.0%	-1.9%	-2.5%	3.1%	-	-2.1x	-0.7x	-0.3x								
Japan	3	4	1	2	1	3	4	4	2	3	3	1	↓	21%	3%	9%	14%	9%	9%	23%	6%	6%	6%	Japan	2.1x	2.2x	-0.2%	-0.9%	-2.6%	3.1%	-	-0.8x	2.3x	1.3x								
Malaysia	4	1	4	2	3	4	4	4	2	3	2	2	-	-	9%	74%	80%	25%	0%	9%	9%	9%	-	-	Malaysia	1.1x	1.2x	-	0.0%	-4.8%	2.5%	-	-2.0x	-2.4x	-1.9x							
Mexico	3	4	4	3	1	4	3	4	2	3	2	2	↓	6%	6%	6%	70%	9%	9%	29%	71%	71%	71%	Mexico	0.3x	1.2x	-	1.6%	-1.4%	0.3%	-	-1.2x	-1.8x	-1.7x								
Netherlands	3	3	3	2	2	4	4	4	2	1	2	1	↓	100%	3%	6%	6%	9%	9%	9%	37%	94%	94%	94%	Netherlands	-2.0x	-17x	0.7%	-1.3%	1.5%	9.9%	11.4%	0.0x	1.0x	2.5x							
New Zealand	3	4	1	3	1	3	3	4	2	1	1	2	↓	11%	0%	11%	97%	6%	21%	9%	9%	0%	0%	New Zealand	-0.5x	-	0.2%	-0.3%	-3.6%	-3.1%	-6.7%	1.4x	-1.1x	-0.6x								
Norway	3	2	1	4	1	1	4	3	2	1	2	2	↑	100%	79%	26%	6%	0%	-	-	26%	100%	100%	100%	Norway	-0.4x	2.3x	0.4%	0.2%	5.1%	4.1%	9.2%	-	-2.0x	-1.6x							
Peru	3	2	3	3	1	4	4	4	2	4	1	1	-	-	3%	6%	6%	-	-	49%	-	-	-	Peru	-	-	-	1.9%	-4.7%	-15%	-1.6%	-2.3x	0.0x	0.7x								
Philippines	3	1	4	4	1	1	3	4	2	3	2	2	-	-	6%	9%	9%	9%	0%	34%	100%	100%	100%	Philippines	-	-	-	1.7%	-6.3%	0.3%	-	-1.9x	0.0x	2.0x								
Poland	3	4	4	3	3	3	3	4	2	2	1	2	↓	11%	17%	41%	49%	69%	9%	83%	100%	100%	100%	Poland	-2.2x	-18x	-	1.2%	-2.0%	3.5%	-	-3.0x	-1.2x	0.1x								
Portugal	3	4	1	4	4	2	3	4	2	2	1	2	↓	6%	6%	9%	-	-	6%	9%	9%	6%	Portugal	-1.4x	-14x	0.4%	-1.2%	-0.1%	-0.3%	-0.4%	-	-10x	-0.3x	0.4x								
Russia	3	2	3	1	1	1	4	3	2	2	1	1	↓	9%	6%	6%	29%	0%	17%	57%	57%	54%	54%	Russia	-0.4x	-1.0x	-	1.5%	0.9%	3.2%	4.1%	-2.3x	-0.8x	-0.4x								
Singapore	3	4	3	3	1	2	4	4	2	4	2	2	↓	6%	3%	66%	37%	27%	9%	-	-	-	-	Singapore	3.3x	-	-	-0.5%	-3.8%	18.1%	-	-2.2x	-1.5x	-1.8x								
Saudi Arabia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Saudi Arabia	-0.2x	-	-	1.6%	-	4.6%	4.6%	0.1x	0.0x	0.4x									
South Africa	2	4																																								

## [ 1 ] Deep Quad 4

Our process for determining the depth and duration of the pending recession leaves no room for guesswork, unlike the deterministic forecasts of economists who never saw Quad 4 in Q2 coming to begin with. It starts and ends with the measuring and mapping of the data. In the presentation, we'll provide a detailed guide to help investors stochastically navigate the crisis in a repeatable and robust manner.

## [ 2 ] Earnings Recessions

Sell-side consensus still anticipates decent S&P 500 EPS growth this year, accelerating from down YoY in 1H20E to up +6% by 4Q20E. We'll continue to take the other side of the consensus 2020 earnings recovery narrative and detail why in the presentation.

## [ 3 ] Cross Asset Class Volatility

Our process for determining the depth and duration of this bear market doesn't anchor on valuation opinions, nor does it require hope, prayer - or tears for that matter. It starts and ends with the measuring and mapping of volatility. In the presentation, we'll contextualize the acute clustering in volatility, detail the forward-looking implications for asset markets, as well as offer key risk management levels for what would signal to us that Mr. Market is finally done pricing in Deep Quad 4.

## [1] Recession Stagflation

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

## [2] Earnings: Deep #Pod4

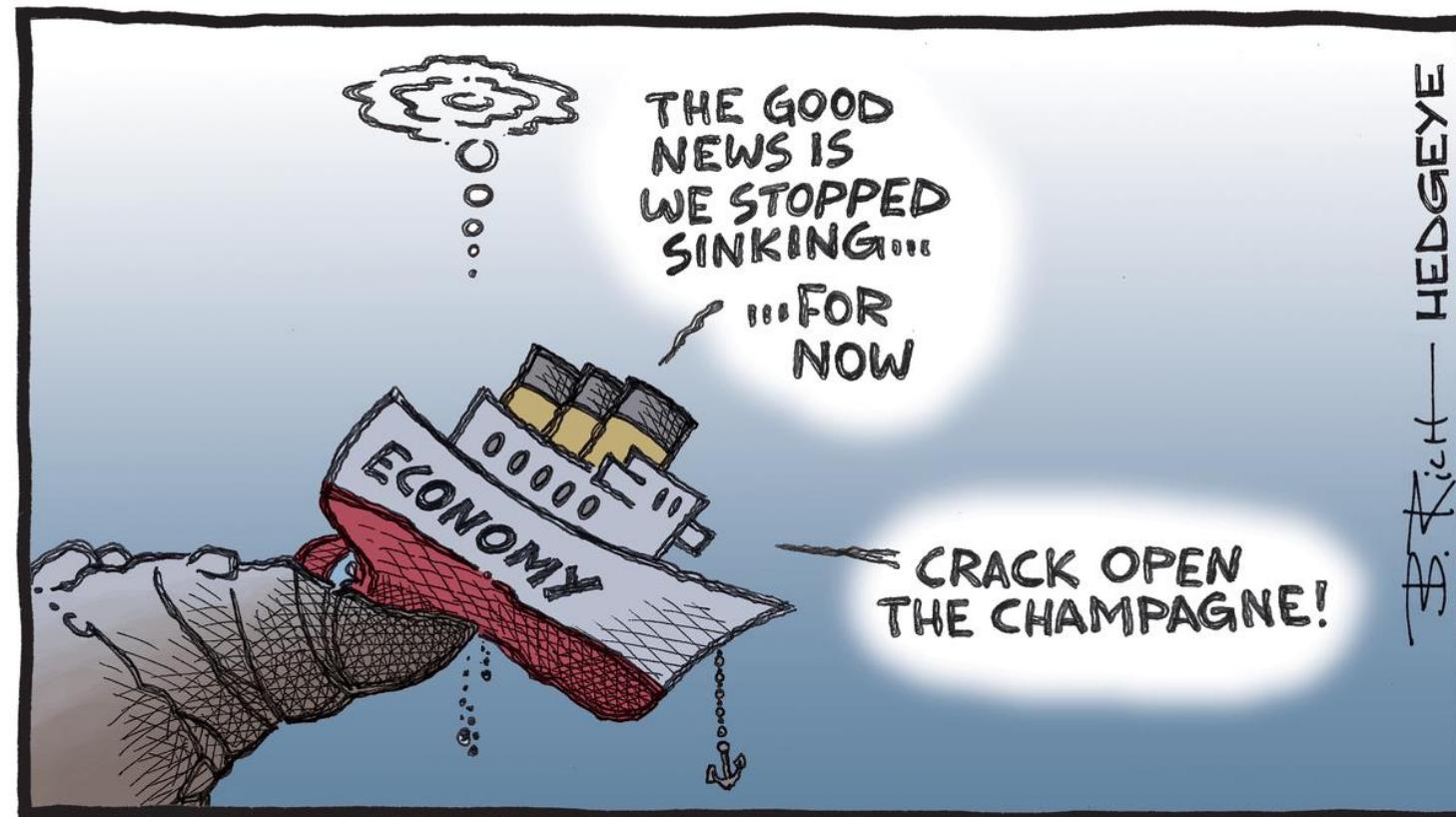
We took offense to the consensus view that corporate profits had bottomed at the beginning of the year and continue to take offense to such speculation heading into 2H20E. In the presentation, we'll detail why we believe an epically negative earnings revision cycle is likely to commence in Q3.

## [3] USD, Commodities, EM

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

# Q3 2020 Macro Themes

HEDGEYE

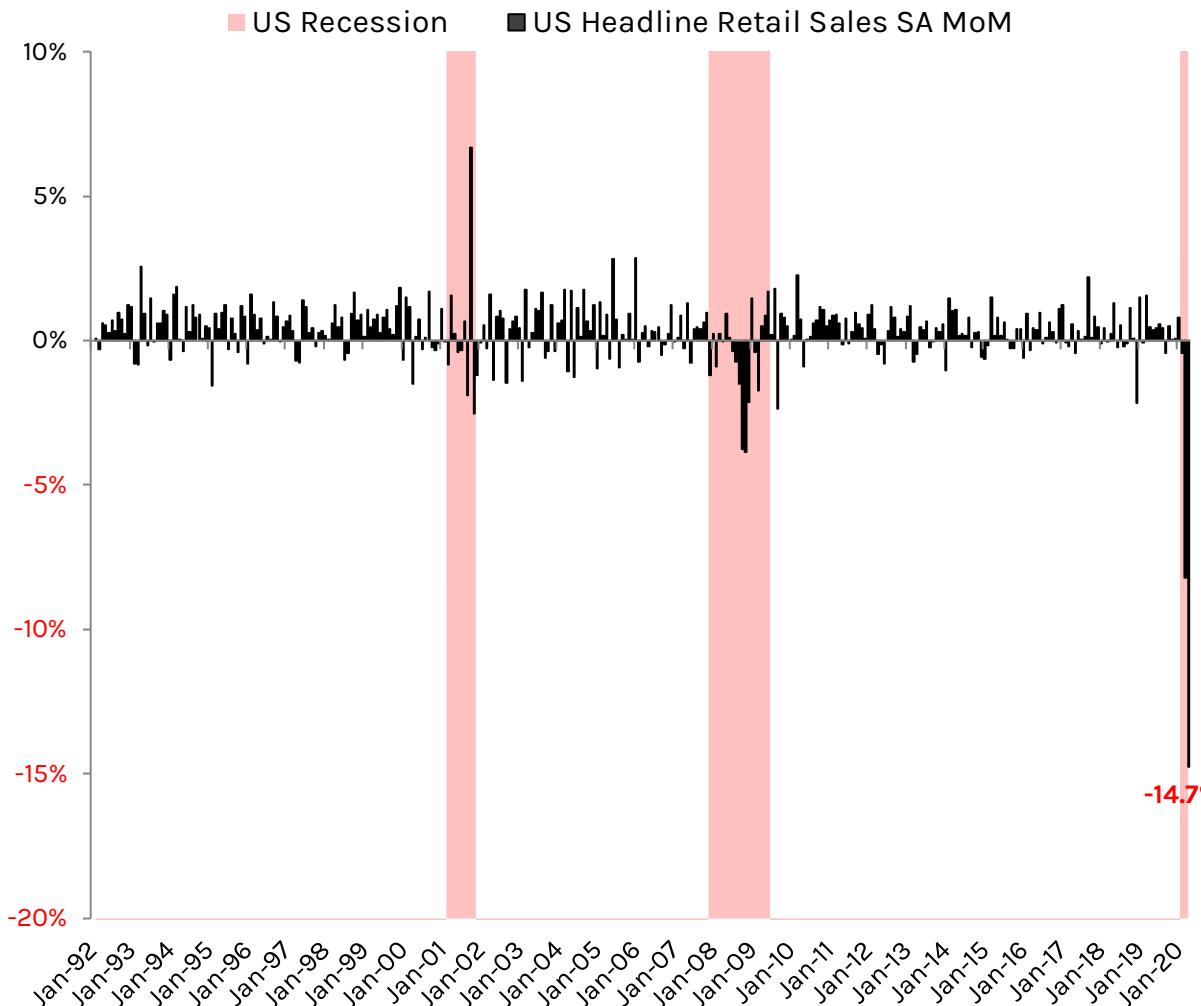


## Recession Stagflation

# Phase 1: Shutdowns = Economic Collapse (MAR-APR)

HEDGEYE

Rate of Change: Consumer Spending



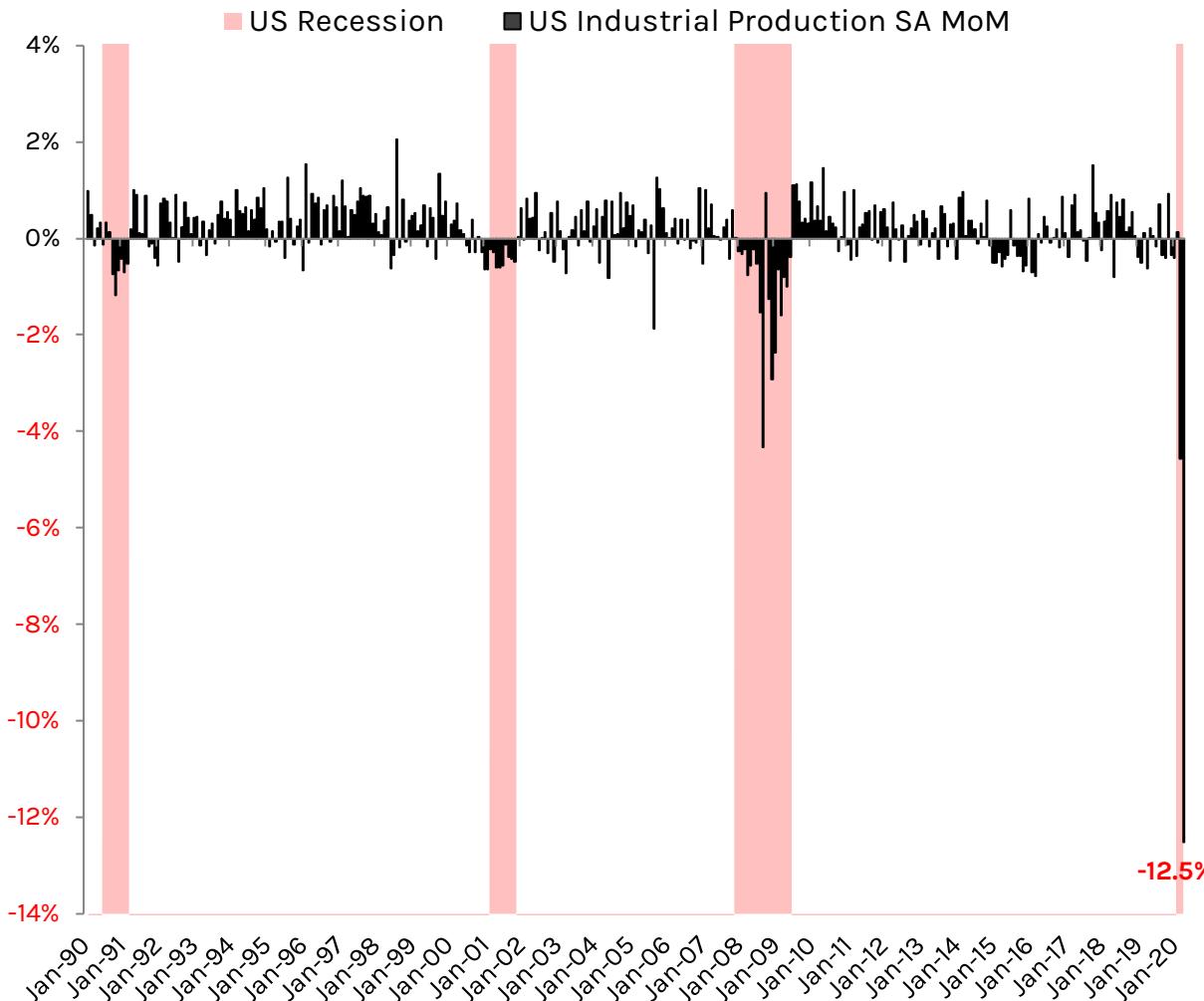
Absolute Level: Consumer Spending



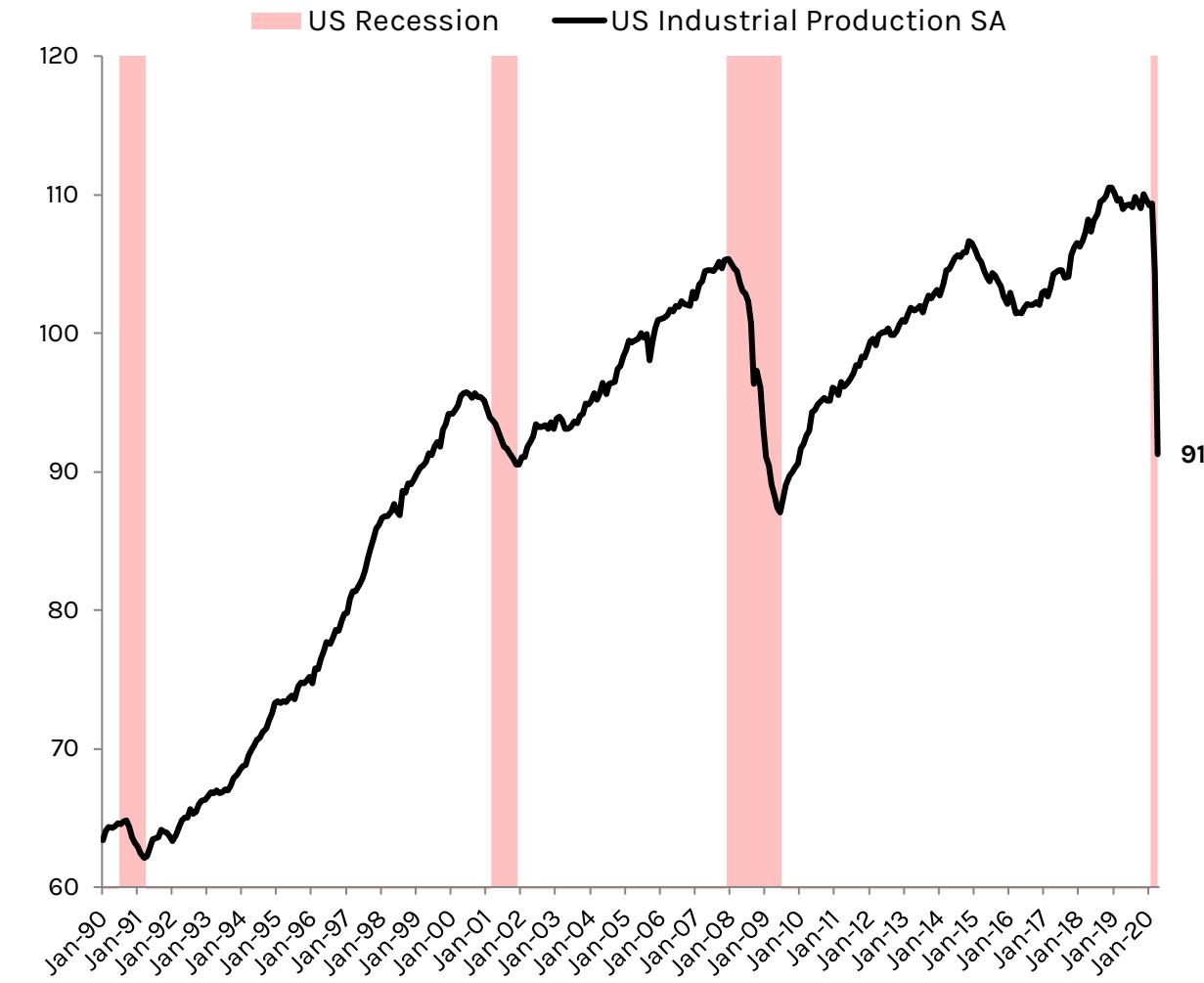
# Phase 1: Shutdowns = Economic Collapse (MAR-APR)

HEDGEYE

Rate of Change: Manufacturing



Absolute Level: Manufacturing

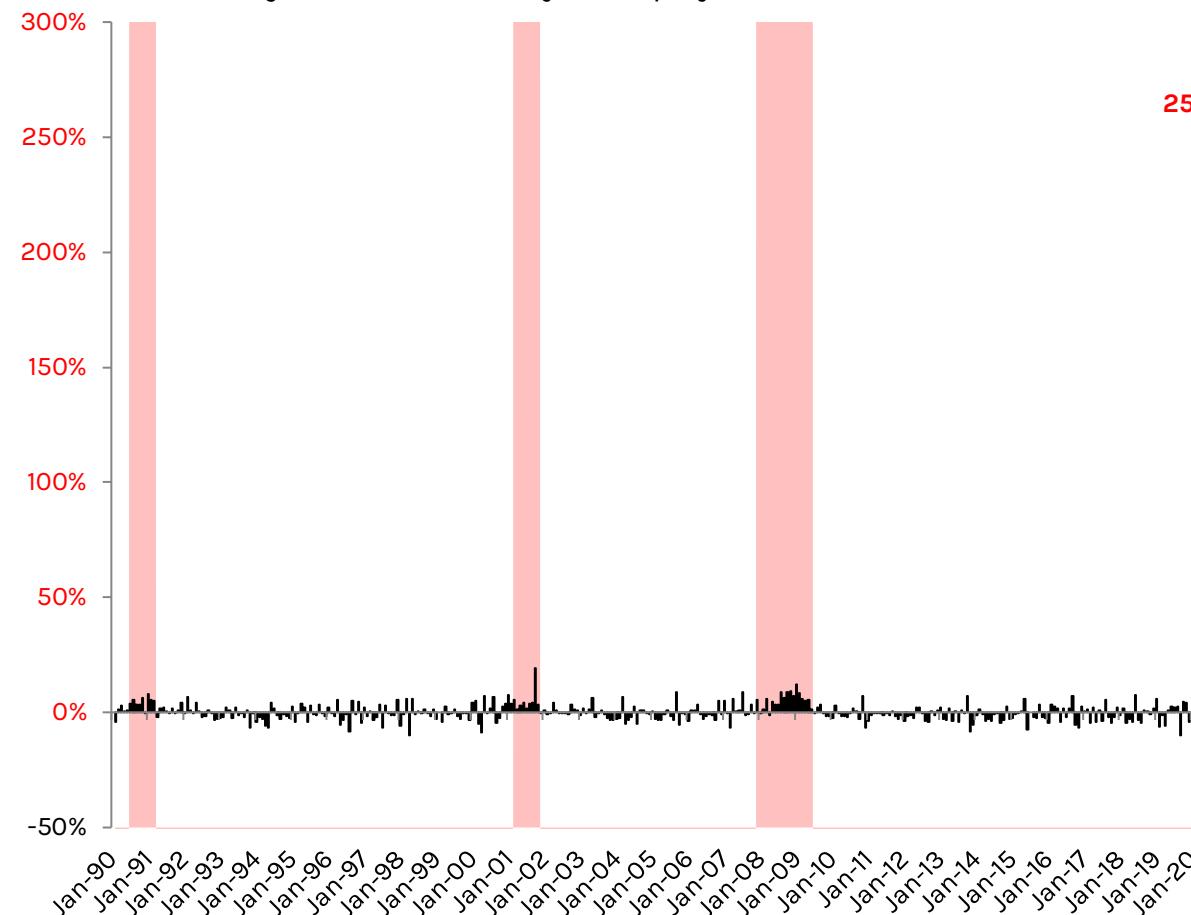


# Phase 1: Shutdowns = Economic Collapse (MAR-APR)

HEDGEYE

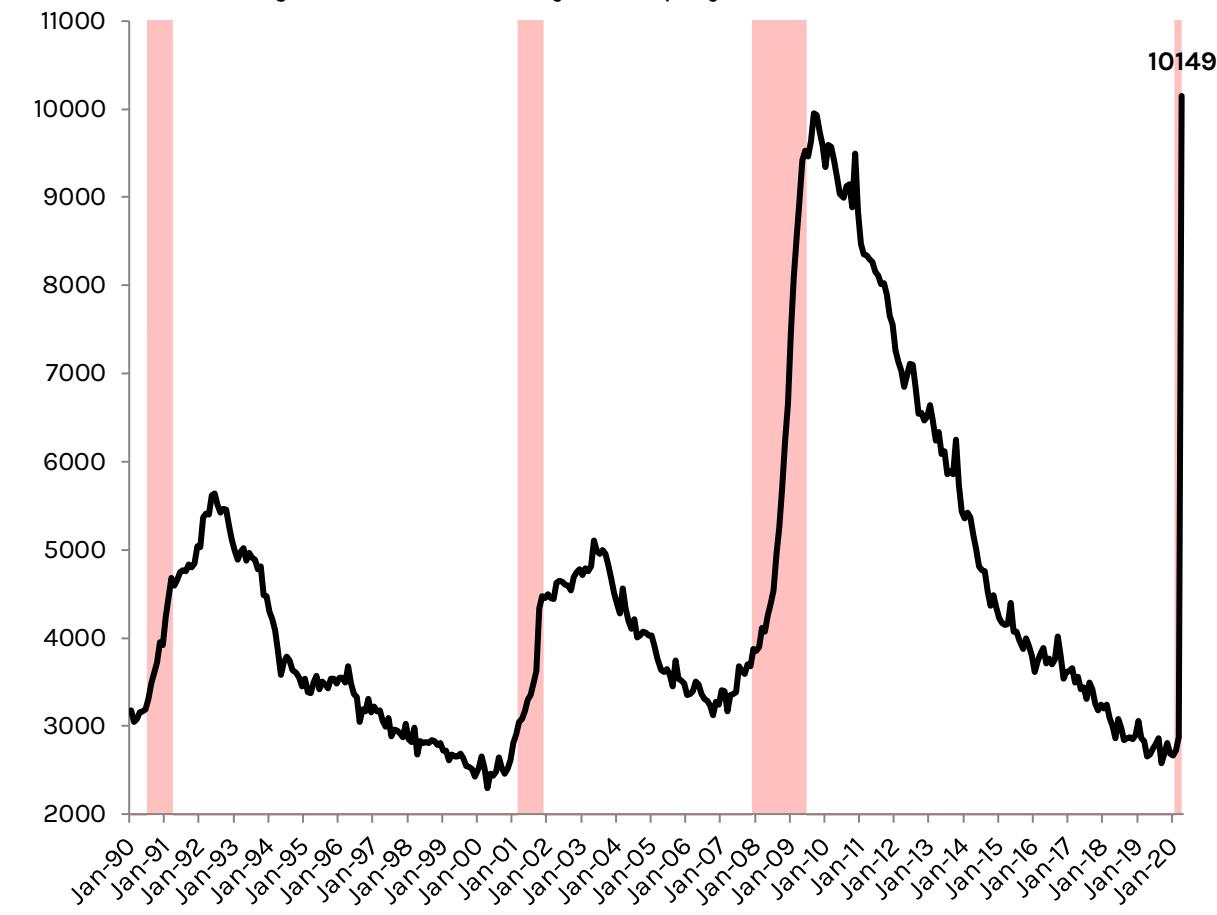
Rate of Change: Job Loss

■ US Recession  
■ US Adj. Total Permanently Unemployed Due to Job Loss SA MoM



Absolute Level: Job Loss

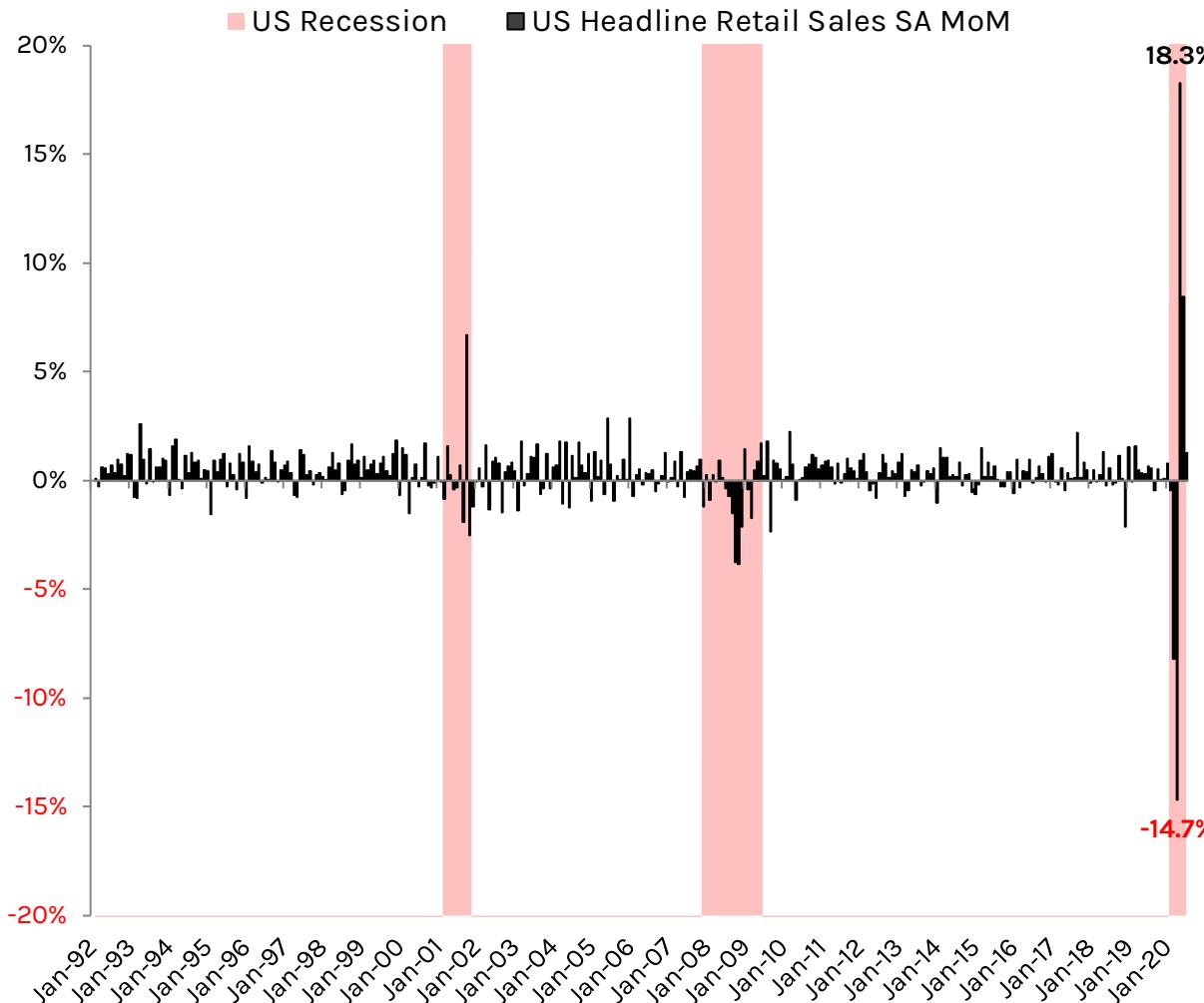
■ US Recession  
— US Adj. Total Permanently Unemployed Due to Job Loss SA (000's)



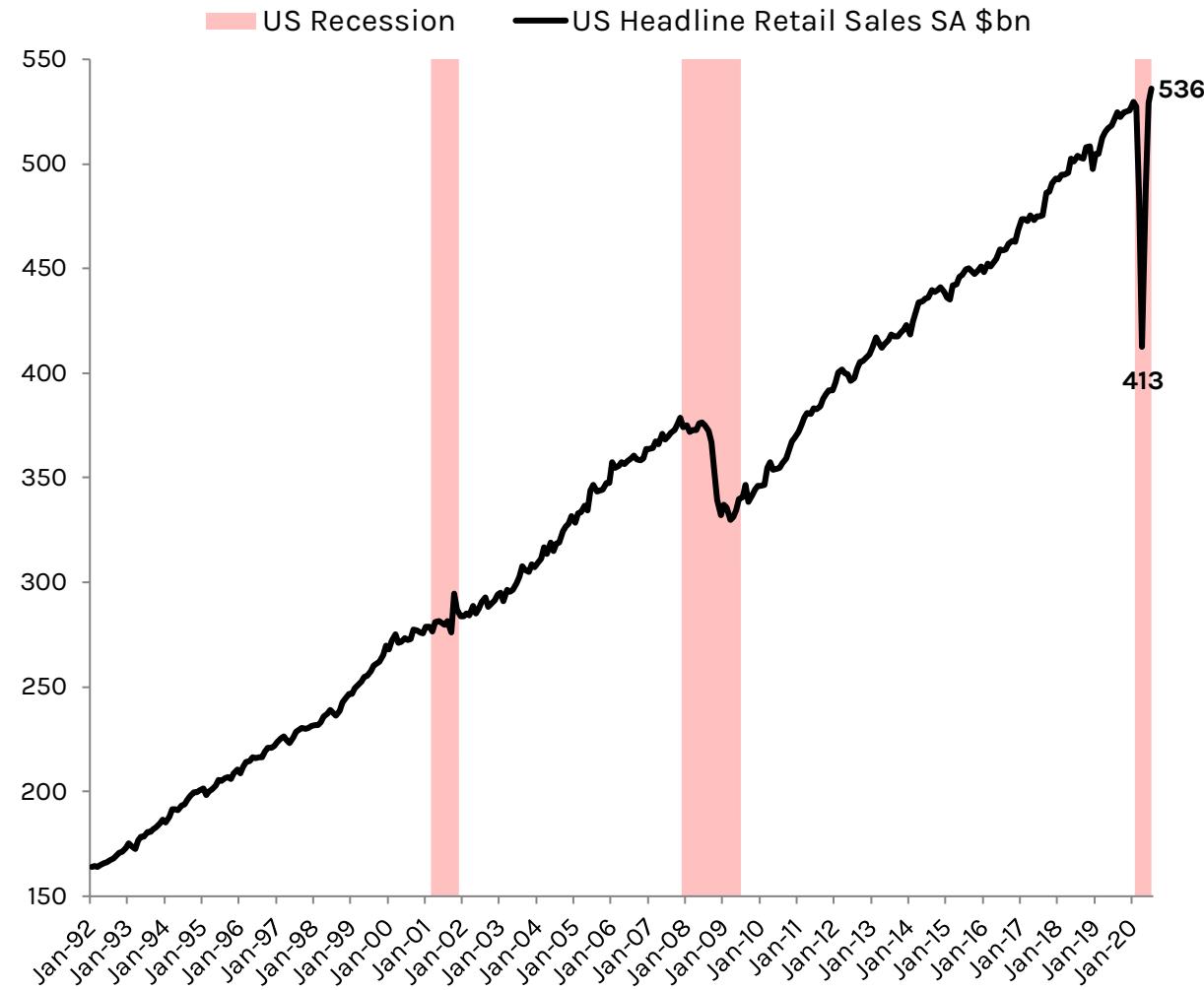
# Phase 2: Reopening = Acceleration Off The Lows

HEDGEYE

Rate of Change: Consumer Spending



Absolute Level: Consumer Spending



# Population-Weighted Reopening Timeline

HEDGEYE

MODELING ASSUMPTIONS (courtesy of Hedgeye Healthcare Policy Sector Head Emily Evans):	
• Anchors on the “phased approach” plan outlined by each Governor	
• In the absence of a plan, relies on Hedgeye Healthcare’s Preparedness Score to estimate when restrictions are relaxed	
• Heavily weighted to Phases II and III because Phase I in most plans involves limited things like curbside retail business, etc.	
• The plan is also probably a bit optimistic because most schools are unlikely to return to their normal patterns until fall; moreover, these projections do not account for potential setbacks that may arise along the way	

Checkpoint:	1-May	15-May	1-Jun	15-Jun	30-Jun	Checkpoint:	1-May	15-May	1-Jun	15-Jun	30-Jun
Alabama	25%	63%	100%			Montana	25%	63%	100%		
Alaska	100%					Nebraska	25%	63%	100%		
Arizona	25%	63%	100%			Nevada	0%	25%	63%	100%	
Arkansas	25%	63%	100%			New Hampshire	0%	25%	63%	100%	
California	25%	63%	100%			New Jersey	0%	0%	25%	63%	100%
Colorado	25%	63%	100%			New Mexico	0%	25%	63%	100%	
Connecticut	0%	25%	63%	100%		New York	0%	25%	50%	75%	100%
Delaware	0%	0%	25%	63%	100%	North Carolina	0%	25%	63%	100%	
District Of Columbia	0%	25%	63%	100%		North Dakota	25%	63%	100%		
Florida	25%	63%	100%			Ohio	0%	25%	63%	100%	
Georgia	25%	63%	100%			Oklahoma	25%	63%	100%		
Hawaii	0%	0%	25%	63%	100%	Oregon	0%	25%	63%	100%	
Idaho	25%	63%	100%			Pennsylvania	0%	25%	63%	100%	
Illinois	0%	0%	25%	63%	100%	Rhode Island	0%	25%	63%	100%	
Indiana	0%	25%	63%	100%		South Carolina	25%	63%	100%		
Iowa	25%	50%	75%	100%		South Dakota	25%	63%	100%		
Kansas	0%	25%	63%	100%		Tennessee	25%	50%	75%	100%	
Kentucky	0%	25%	50%	75%	100%	Texas	25%	63%	100%		
Louisiana	0%	25%	63%	100%		Utah	25%	63%	100%		
Maine	0%	25%	50%	75%	100%	Vermont	25%	63%	100%		
Maryland	0%	25%	63%	100%		Virginia	0%	25%	63%	100%	
Massachusetts	0%	0%	25%	63%	100%	Washington	0%	25%	63%	100%	
Michigan	0%	25%	63%	100%		West Virginia	25%	63%	100%		
Minnesota	0%	25%	63%	100%		Wisconsin	0%	25%	63%	100%	
Mississippi	0%	25%	63%	100%		Wyoming	25%	63%	100%		
Missouri	0%	25%	63%	100%		TOTAL	12%	40%	75%	95%	100%

# GDP-Weighted Reopening Timeline

HEDGEYE

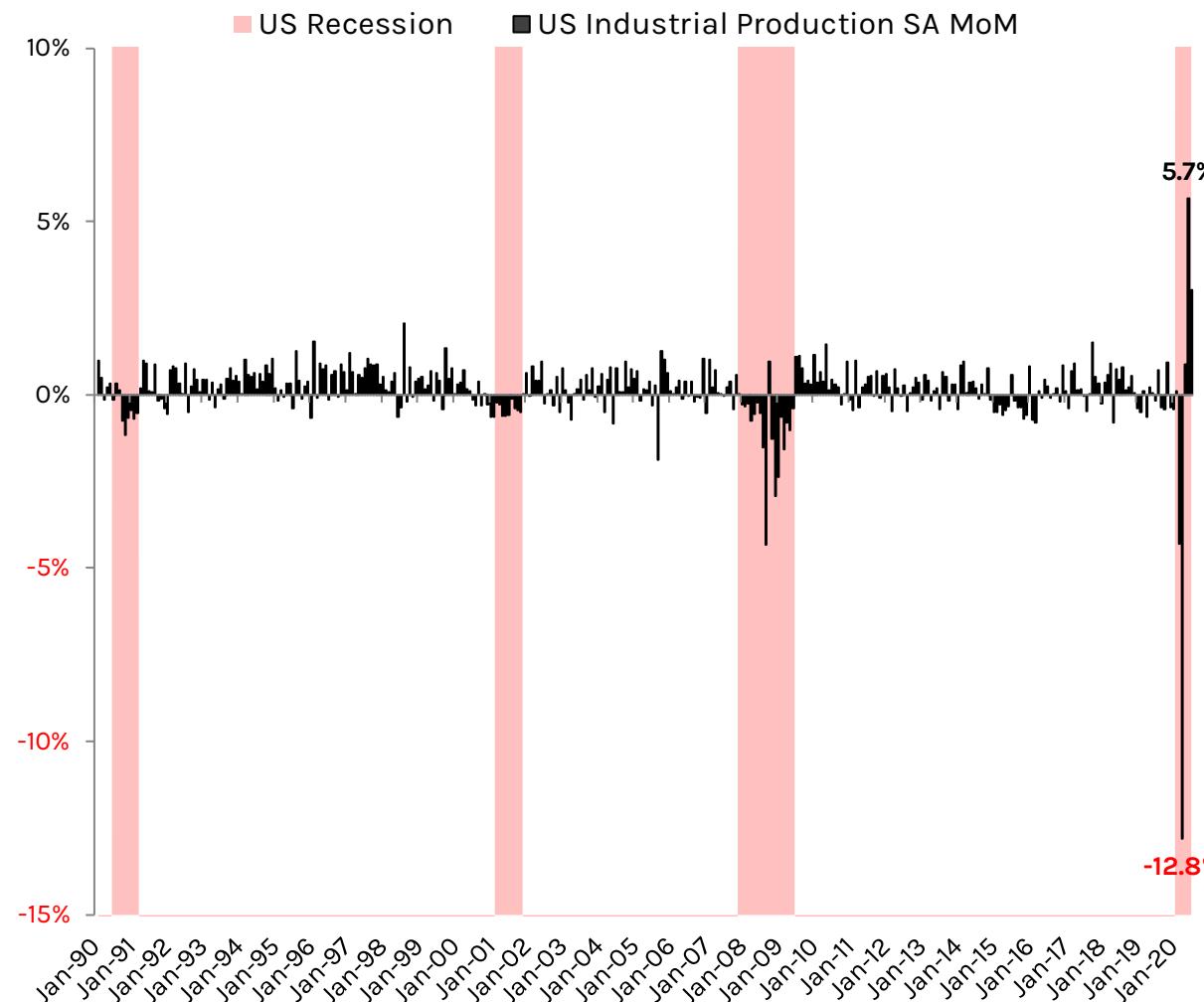
MODELING ASSUMPTIONS (courtesy of Hedgeye Healthcare Policy Sector Head Emily Evans):	
• Anchors on the “phased approach” plan outlined by each Governor	
• In the absence of a plan, relies on Hedgeye Healthcare’s Preparedness Score to estimate when restrictions are relaxed	
• Heavily weighted to Phases II and III because Phase I in most plans involves limited things like curbside retail business, etc.	
• The plan is also probably a bit optimistic because most schools are unlikely to return to their normal patterns until fall; moreover, these projections do not account for potential setbacks that may arise along the way	

Checkpoint:	1-May	15-May	1-Jun	15-Jun	30-Jun	Checkpoint:	1-May	15-May	1-Jun	15-Jun	30-Jun
Alabama	0.3%	0.4%	0.4%			Montana	0.1%	0.1%	0.1%		
Alaska	0.3%					Nebraska	0.1%	0.2%	0.2%		
Arizona	0.4%	0.6%	0.6%			Nevada	0.0%	0.2%	0.3%	0.3%	
Arkansas	0.2%	0.2%	0.2%			New Hampshire	0.0%	0.1%	0.2%	0.2%	
California	3.6%	5.4%	5.4%			New Jersey	0.0%	0.0%	0.7%	1.1%	1.1%
Colorado	0.5%	0.7%	0.7%			New Mexico	0.0%	0.1%	0.2%	0.2%	
Connecticut	0.0%	0.3%	0.5%	0.5%		New York	0.0%	2.0%	2.0%	2.0%	2.0%
Delaware	0.0%	0.0%	0.1%	0.1%	0.1%	North Carolina	0.0%	0.7%	1.0%	1.0%	
District Of Columbia	0.0%	0.6%	0.8%	0.8%		North Dakota	0.1%	0.1%	0.1%		
Florida	1.3%	1.9%	1.9%			Ohio	0.0%	0.8%	1.2%	1.2%	
Georgia	0.7%	1.1%	1.1%			Oklahoma	0.2%	0.4%	0.4%		
Hawaii	0.0%	0.0%	0.1%	0.2%	0.2%	Oregon	0.0%	0.3%	0.4%	0.4%	
Idaho	0.1%	0.1%	0.1%			Pennsylvania	0.0%	0.9%	1.4%	1.4%	
Illinois	0.0%	0.0%	1.0%	1.6%	1.6%	Rhode Island	0.0%	0.1%	0.1%	0.1%	
Indiana	0.0%	0.4%	0.7%	0.7%		South Carolina	0.3%	0.4%	0.4%		
Iowa	0.2%	0.2%	0.2%	0.2%		South Dakota	0.1%	0.1%	0.1%		
Kansas	0.0%	0.2%	0.3%	0.3%		Tennessee	0.4%	0.4%	0.4%	0.4%	
Kentucky	0.0%	0.2%	0.2%	0.2%	0.2%	Texas	2.2%	3.3%	3.3%		
Louisiana	0.0%	0.3%	0.5%	0.5%		Utah	0.2%	0.3%	0.3%		
Maine	0.0%	0.1%	0.1%	0.1%	0.1%	Vermont	0.0%	0.1%	0.1%		
Maryland	0.0%	0.5%	0.7%	0.7%		Virginia	0.0%	0.6%	1.0%	1.0%	
Massachusetts	0.0%	0.0%	0.7%	1.0%	1.0%	Washington	0.0%	0.7%	1.0%	1.0%	
Michigan	0.0%	0.6%	0.9%	0.9%		West Virginia	0.1%	0.1%	0.1%		
Minnesota	0.0%	0.4%	0.7%	0.7%		Wisconsin	0.0%	0.4%	0.6%	0.6%	
Mississippi	0.0%	0.1%	0.2%	0.2%		Wyoming	0.0%	0.1%	0.1%		
Missouri	0.0%	0.4%	0.6%	0.6%		TOTAL	11.3%	27.5%	34.6%	20.3%	6.3%

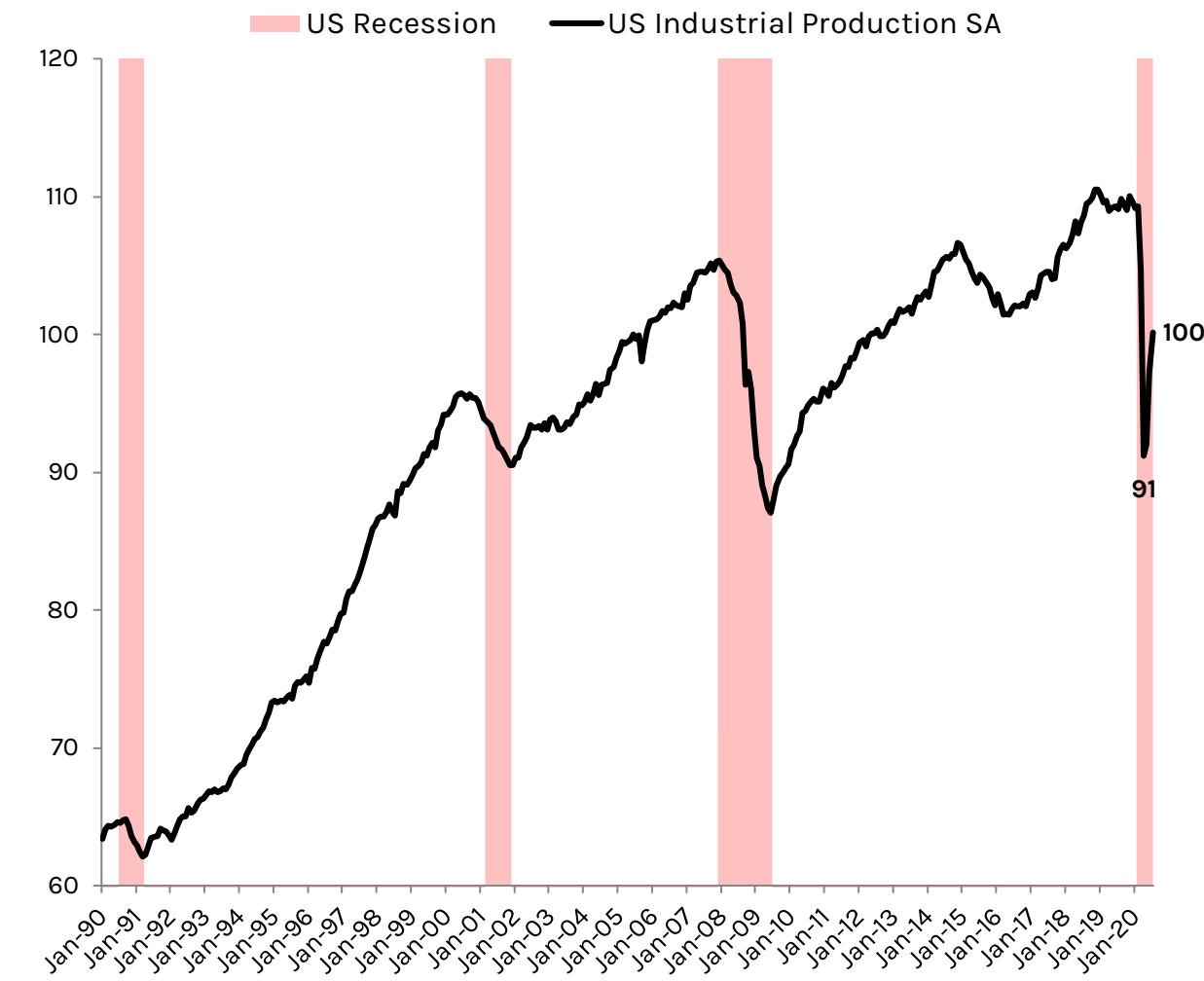
# Phase 2: Bouncing To Down -8% Year-Over-Year

HEDGEYE

Rate of Change: Manufacturing



Absolute Level: Manufacturing

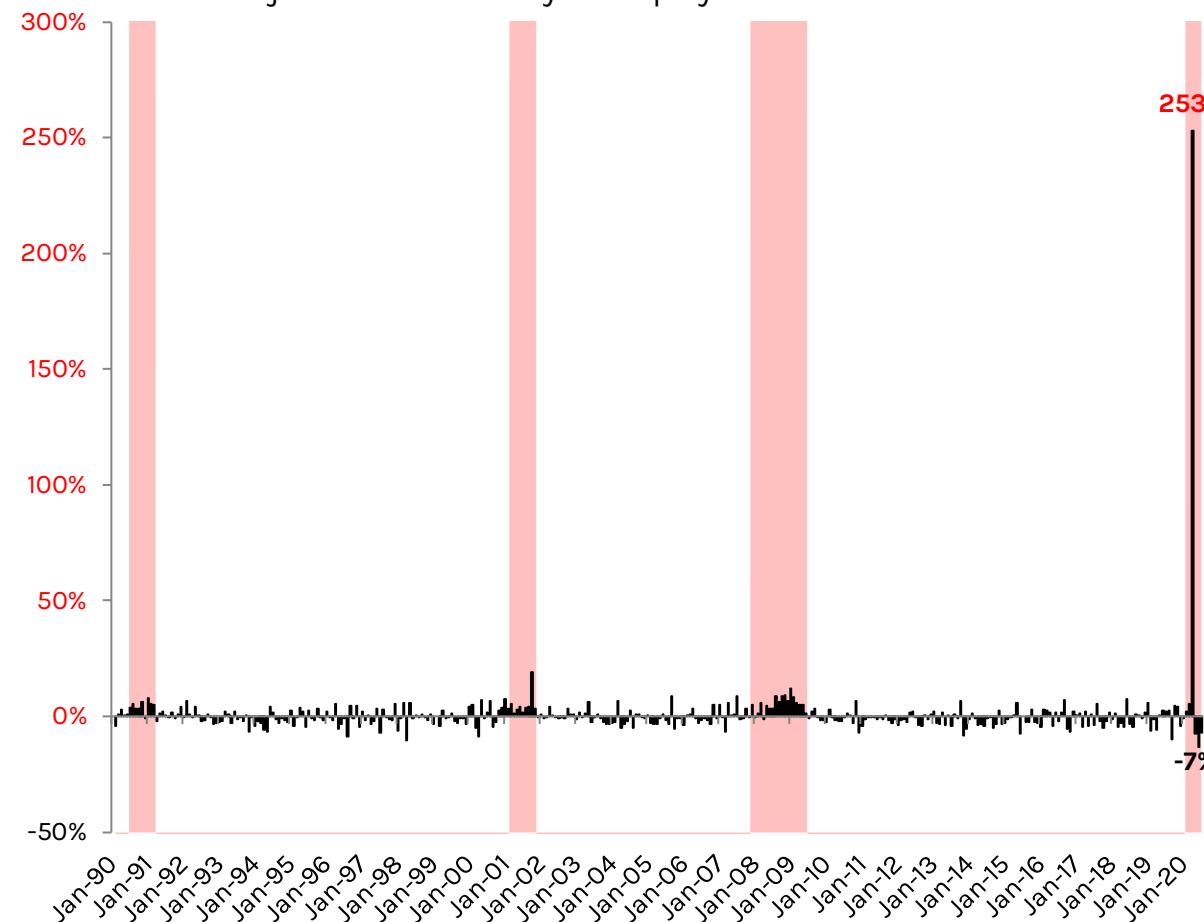


# Job Growth Will Lag The Recovery In Economic Activity Throughout Phase 2

HEDGEYE

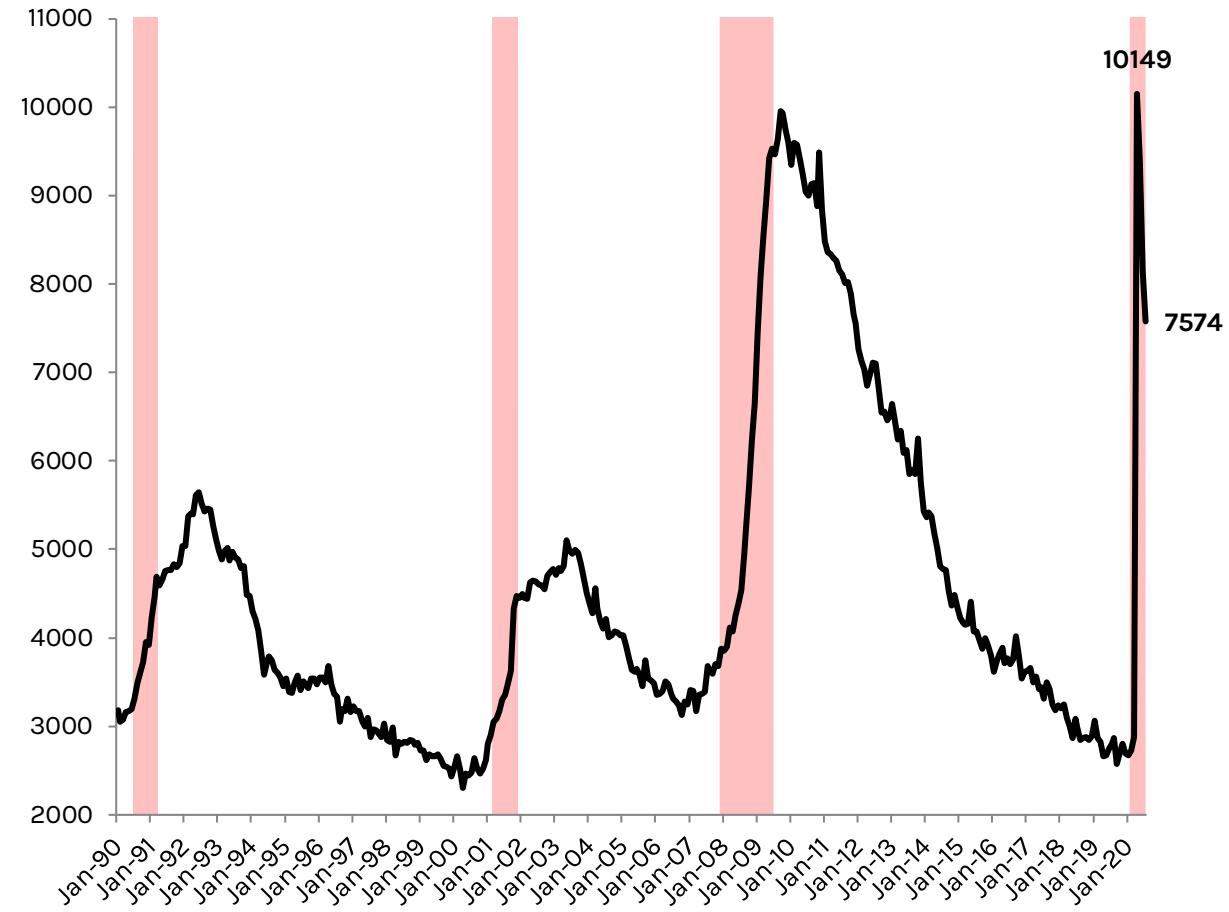
Rate of Change: Job Loss

■ US Recession  
■ US Adj. Total Permanently Unemployed Due to Job Loss SA MoM



Absolute Level: Job Loss

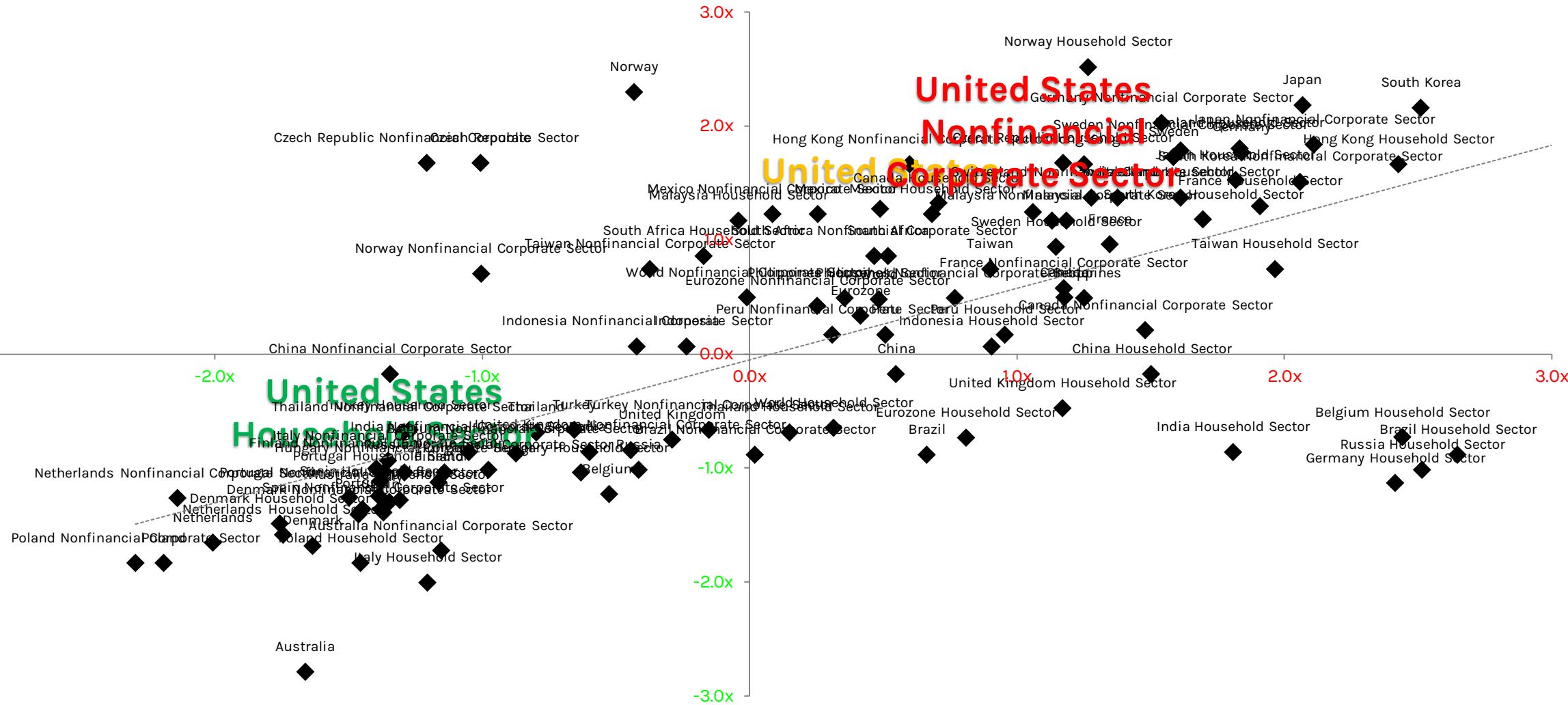
■ US Recession  
— US Adj. Total Permanently Unemployed Due to Job Loss SA (000's)



# Why? Because Corporate Leverage Remains A Big Problem

HEDGEYE

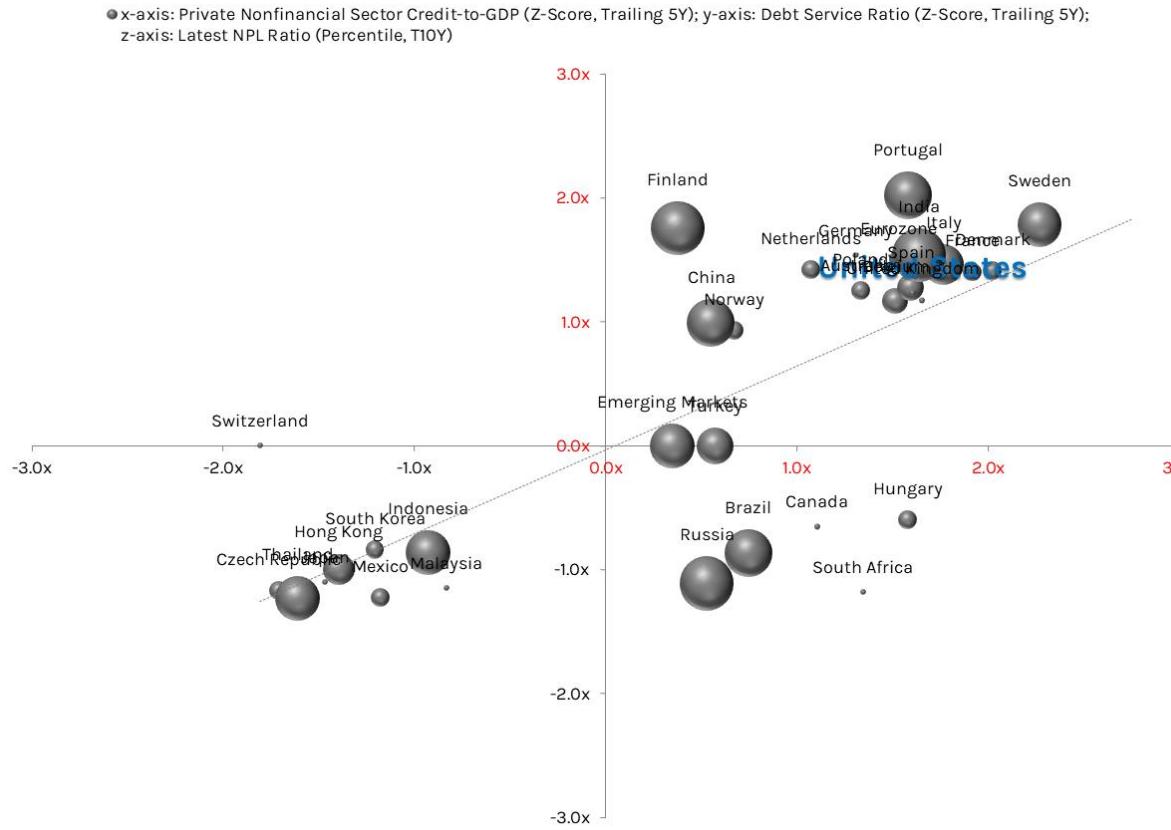
- ◆ x-axis: Private Nonfinancial Sector Credit-to-GDP (Z-Score, Trailing 5Y)
- y-axis: Debt Service Ratio (Z-Score, Trailing 5Y)



# Economic History Stipulates Business Cycle Downturns Occur At The Intersection Of Capital Misallocation (x-axis) & Financial Tightening (y-axis)

HEDGEYE

Q4 2000 US Business Cycle Peak



Q4 2007 US Business Cycle Peak



Data Source: Bloomberg, IMF, BIS, and World Bank

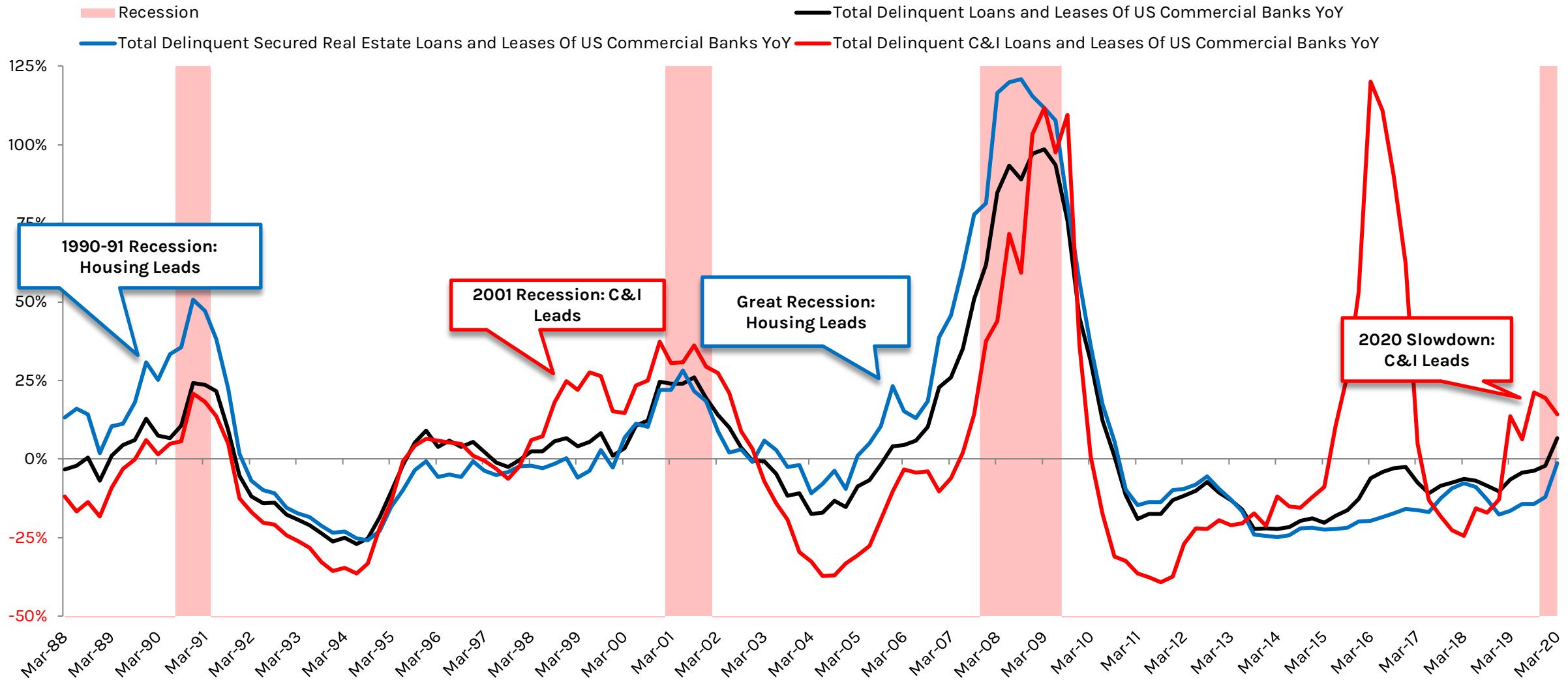
© Hedgeye Risk Management

Data Source: Bloomberg, IMF, BIS, and World Bank

© Hedgeye Risk Management

# The Credit Cycle Was Coming Unglued Prior To COVID19 Disruptions

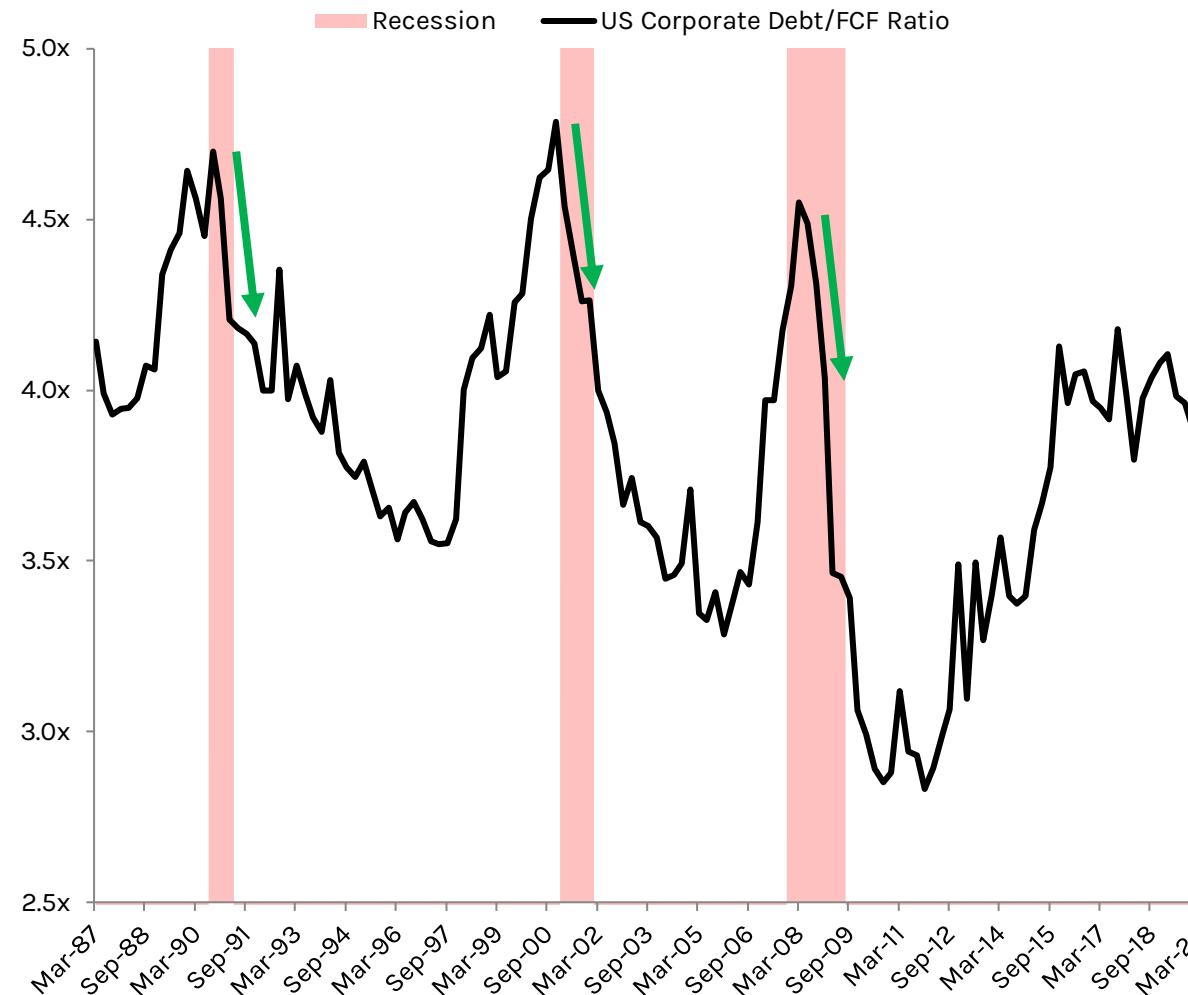
HEDGEYE



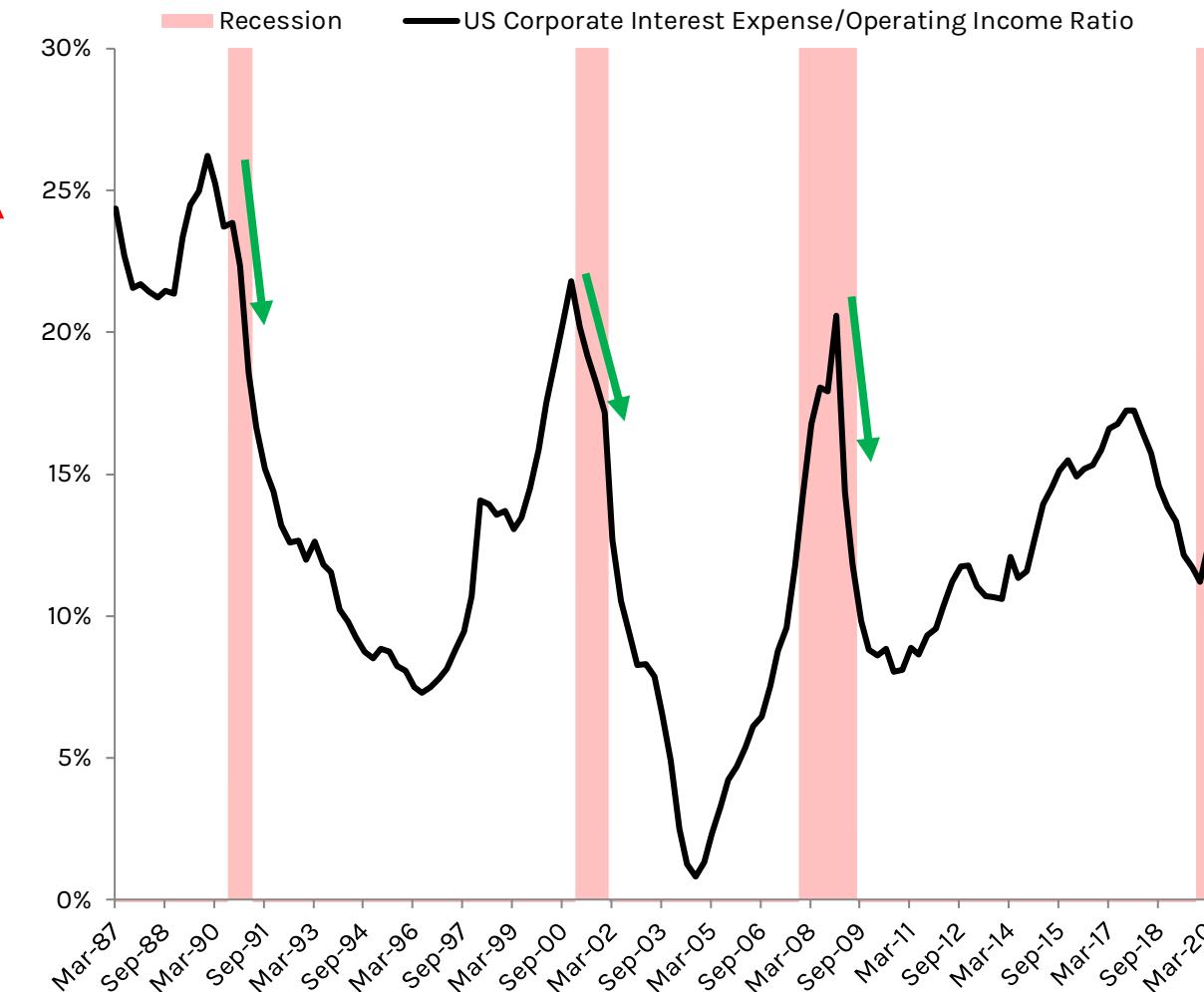
# The Fed's Facilities = Leverage Upon Leverage

HEDGEYE

Robbing Peter To Pay Paul: Corporate Leverage



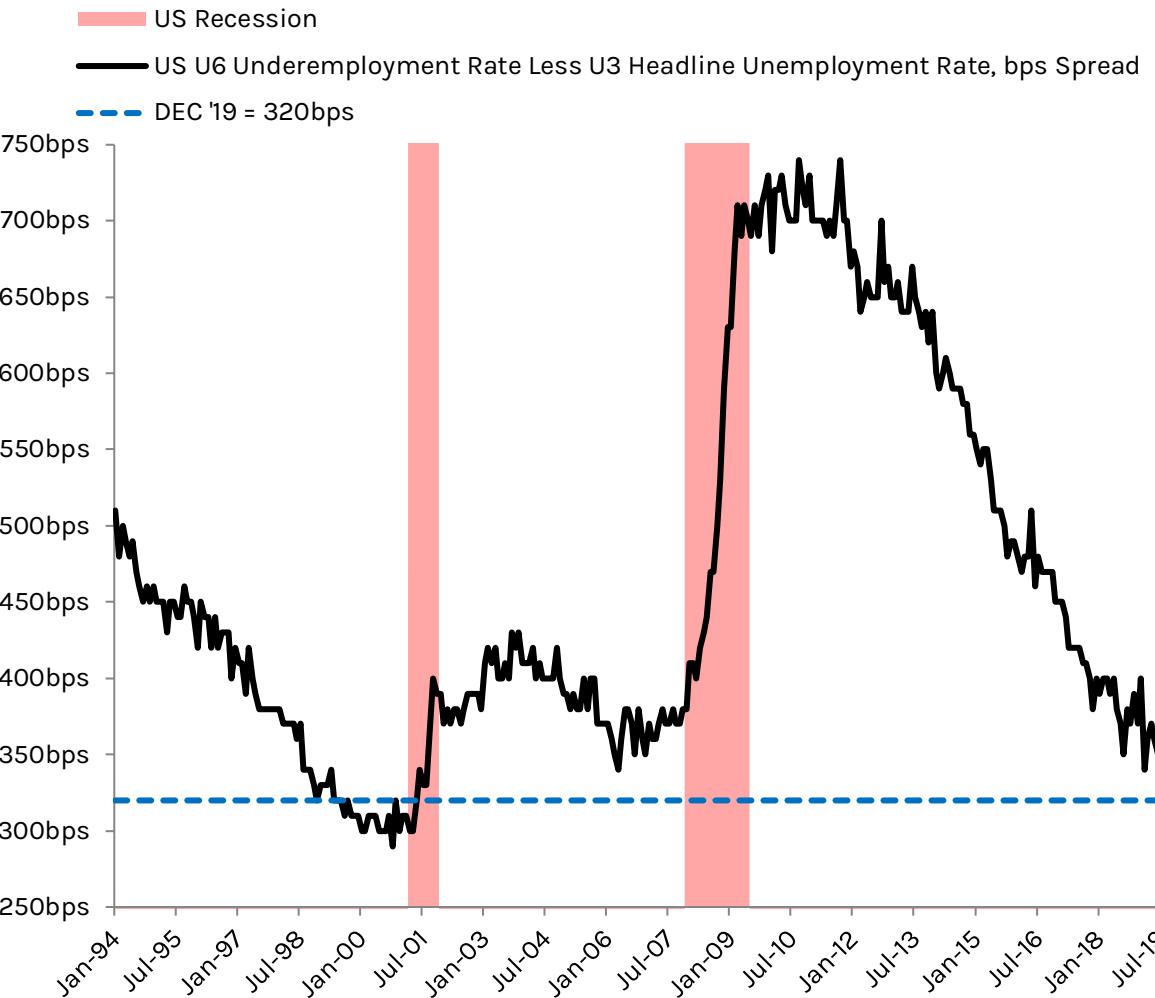
Robbing Peter To Pay Paul: Debt Service



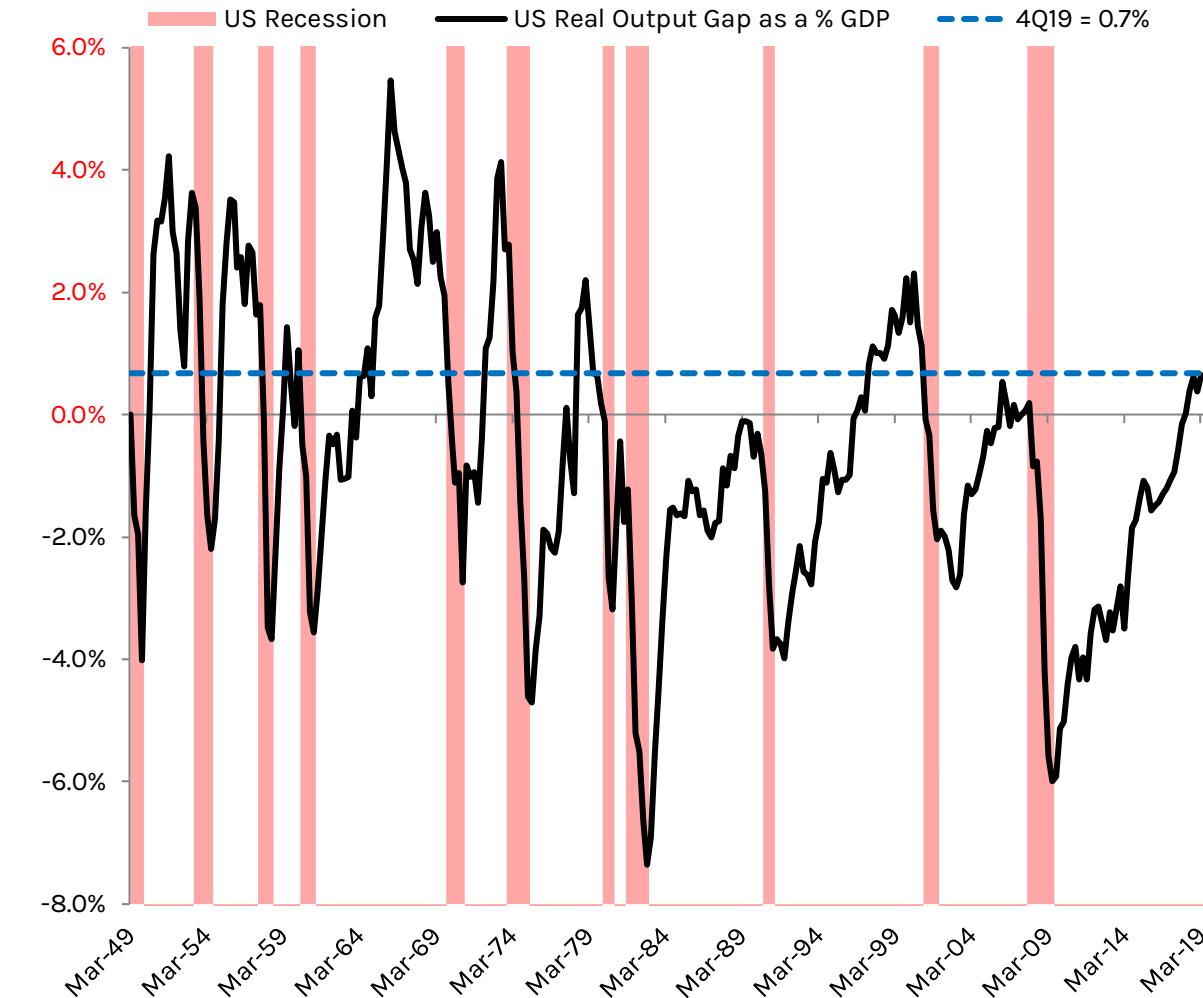
# Phase 3 = “White Swan” Recession (AUG-Q3 Earnings Season)

HEDGEYE

## Cycle-Peak Employment At YE19 Implied Elevated Recession Risk In 2020 Pre-COVID



## Cycle-Peak Output At YE19 Implied Elevated Recession Risk In 2020 Pre-COVID



# Business Cycle Downturns Require TIME and SPACE To Play Out

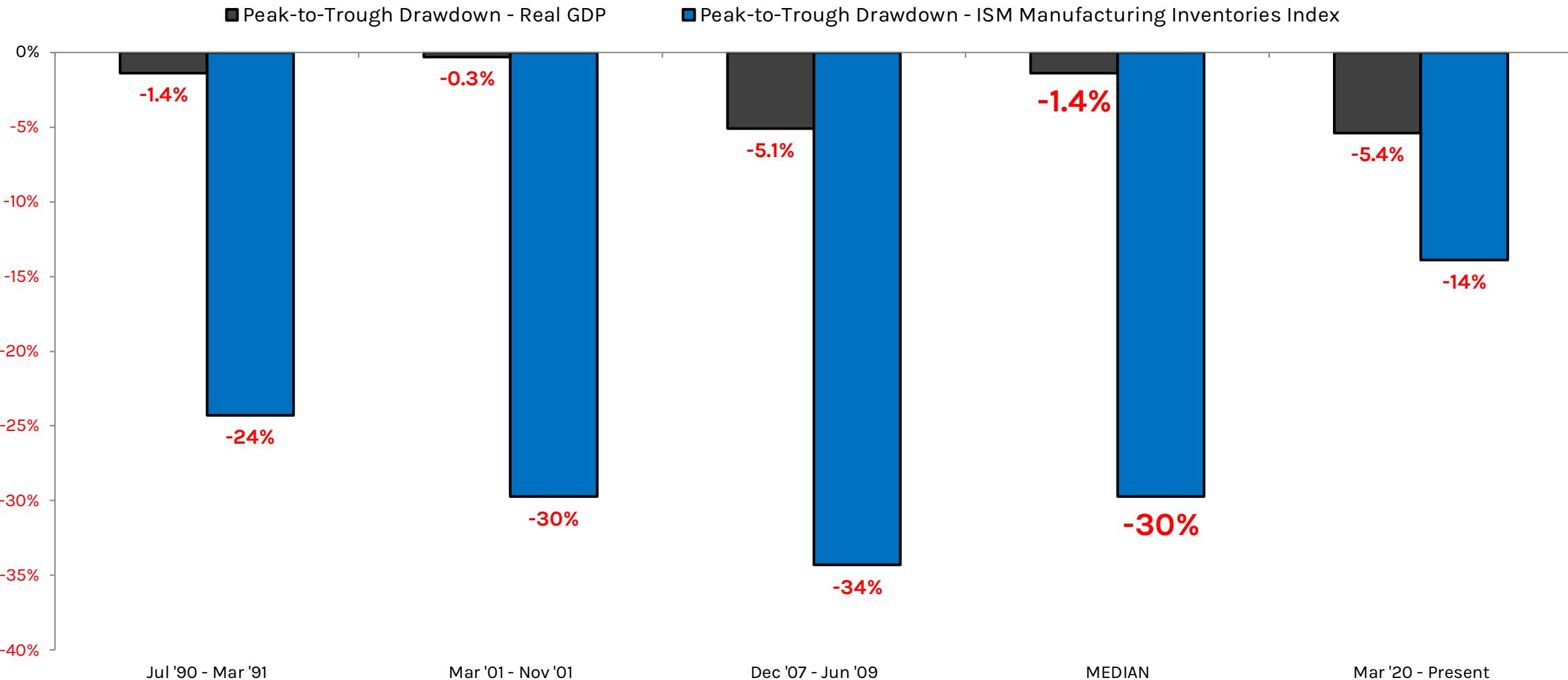
HEDGEYE

US Recessions: Great Depression - Present	Peak-to-Trough Decline in Real GDP	% Due To Inventories	Duration (Months)	Trigger
August 1929 - March 1933	-26.7%		44	Financial Crisis
May 1937 - June 1938	-18.2%		14	Fed Tightening
February 1945 - October 1945	-12.7%		9	Fiscal Retrenchment
November 1948 - October 1949	-1.7%	118%	12	Fed Tightening
July 1953 - May 1954	-2.6%	31%	11	Fed Tightening
August 1957 - April 1958	-3.7%	22%	9	Fed Tightening
April 1960 - February 1961	-1.6%	150%	11	Fed Tightening
December 1969 - November 1970	-0.6%	120%	12	Fiscal Retrenchment
November 1973 - March 1975	-3.2%	47%	17	Oil Price Shock
January 1980 - July 1980	-2.2%	47%	7	Oil Price Shock
July 1981 - November 1982	-2.7%	50%	17	Fed Tightening
July 1990 - March 1991	-1.4%	40%	9	Oil Price Shock
March 2001 - November 2001	-0.3%	60%	9	Financial Crisis
December 2007 - June 2009	-5.1%	34%	19	Financial Crisis
MIN	-0.3%	22%	7	
MEDIAN/MODE	-2.7%	47%	11	Fed Tightening
MAX	-26.7%	150%	44	

# The Inventory Cycle Is Still Young

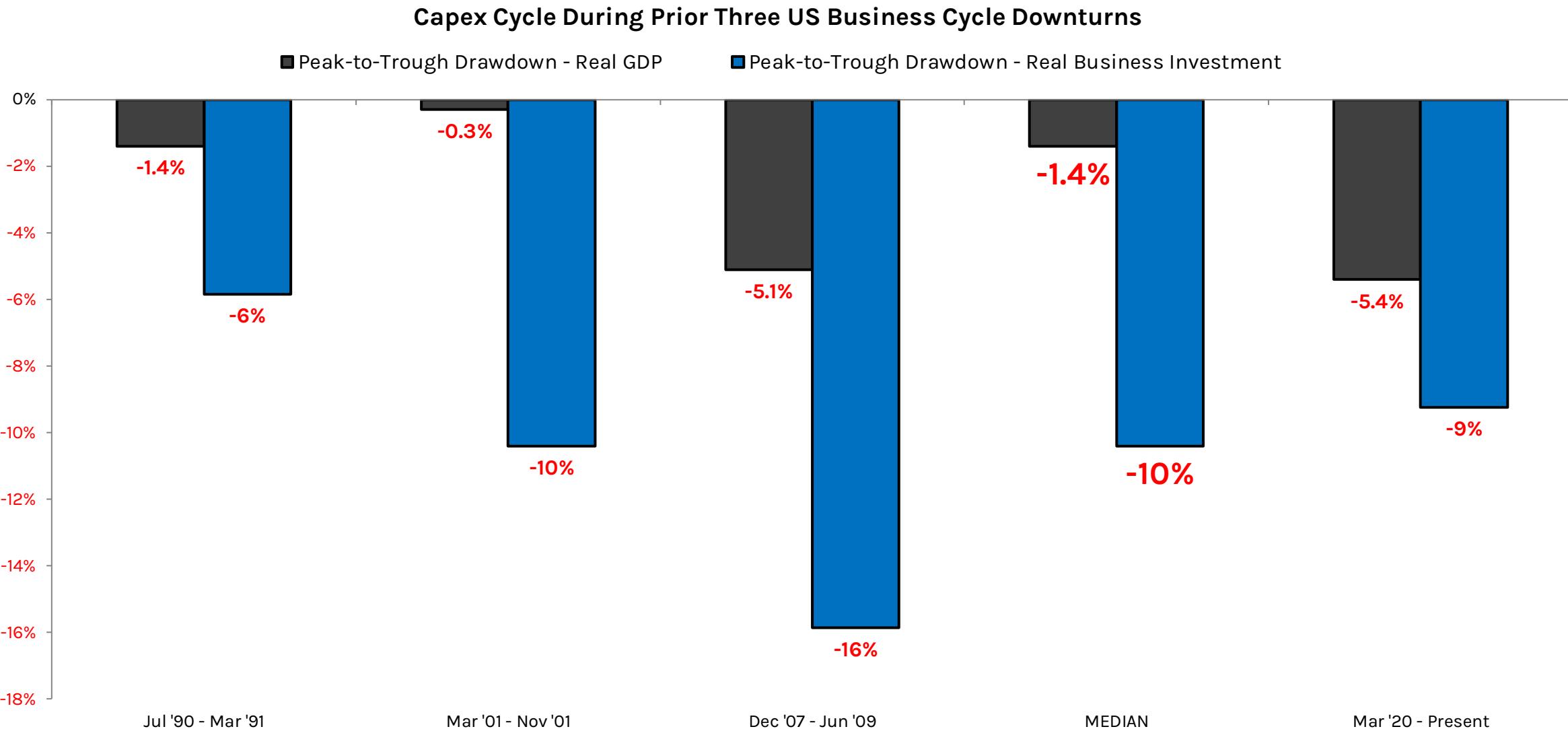
HEDGEYE

Inventory Cycle During Prior Three US Business Cycle Downturns



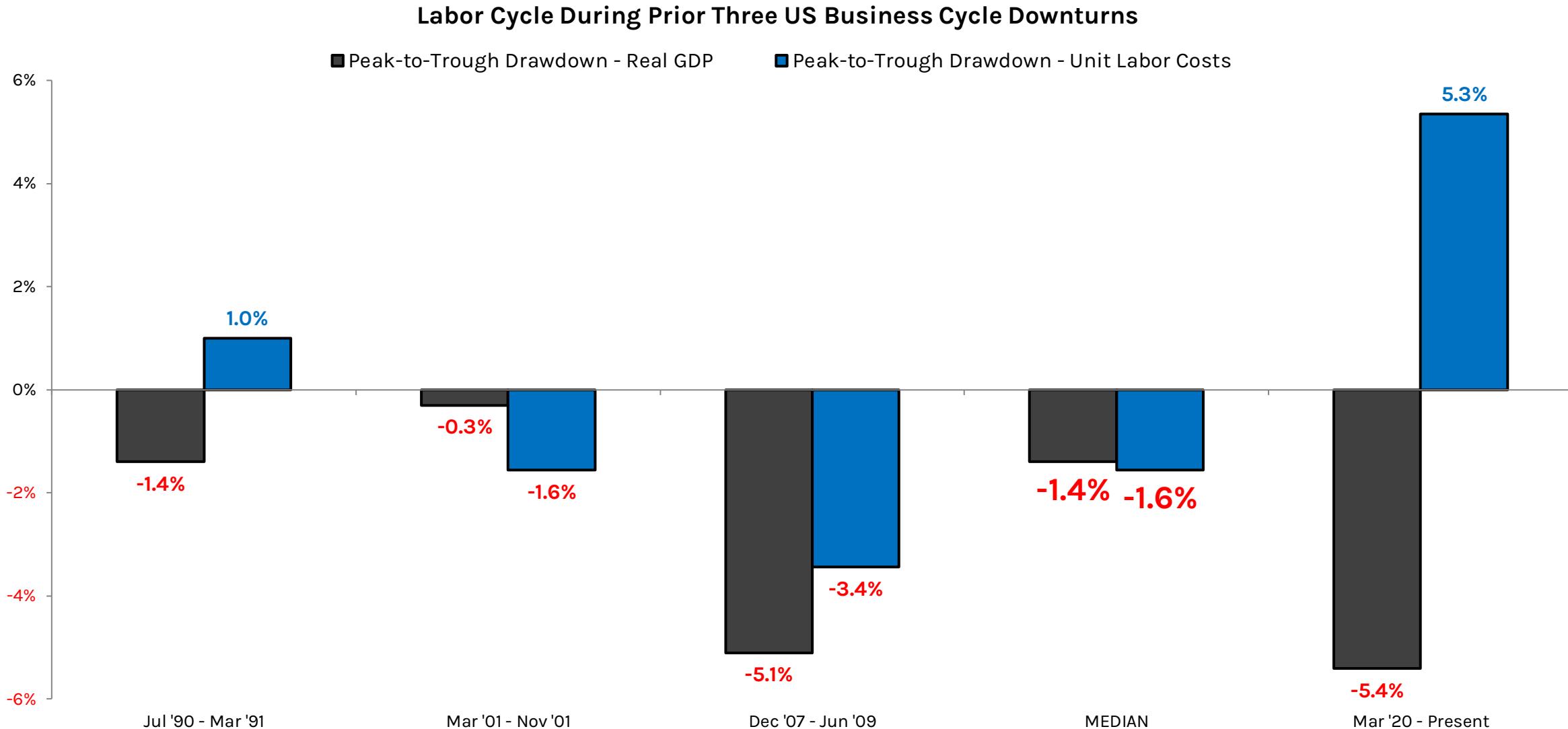
# The Capex Cycle Is Still Young

HEDGEYE



# Believe It Or Not, But We're Still In The Middle Innings Of The Labor Cycle

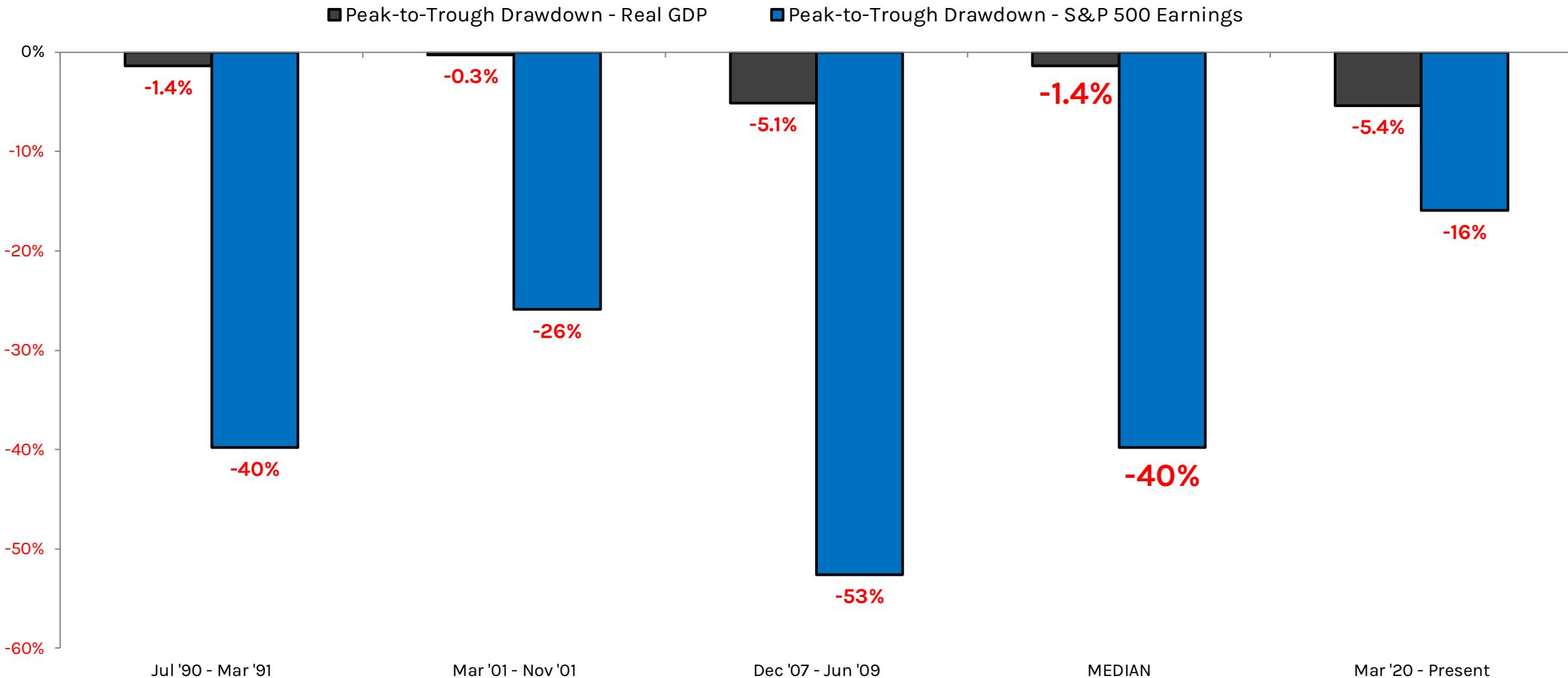
HEDGEYE



# Why? Because The Corporate Profits Cycle Is Still Young

HEDGEYE

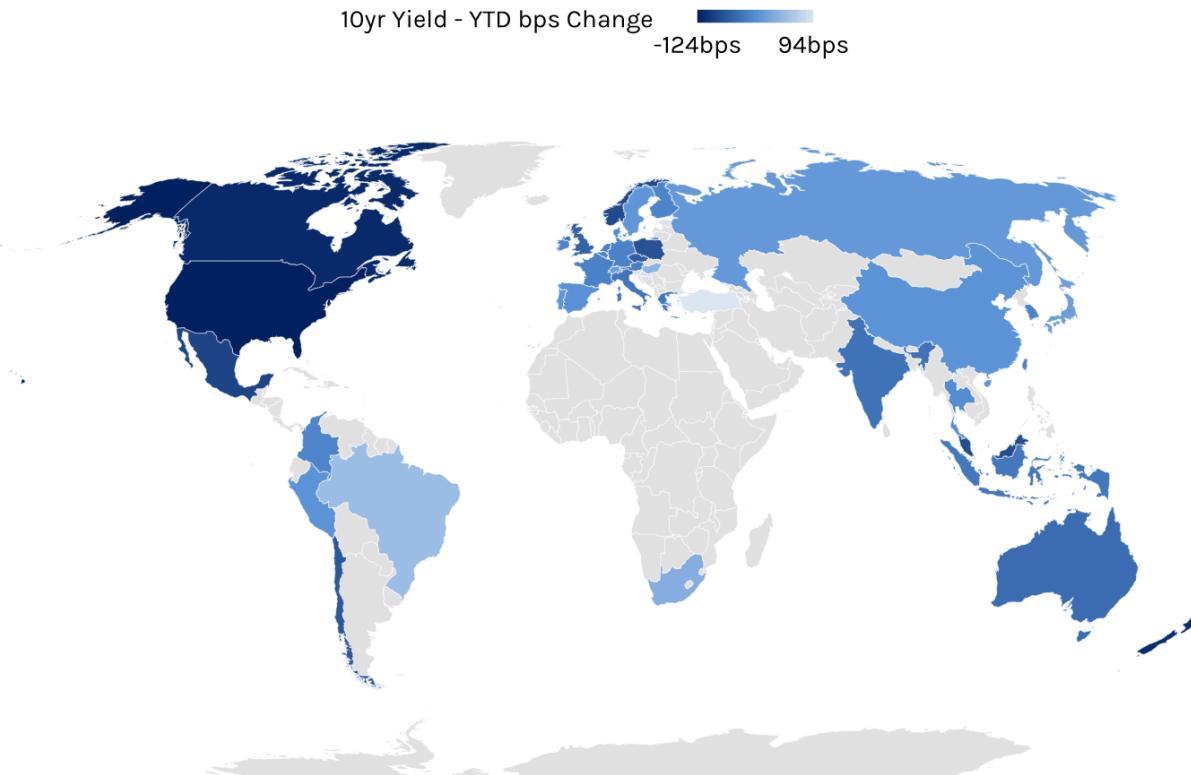
Corporate Profits Cycle During Prior Three US Business Cycle Downturns



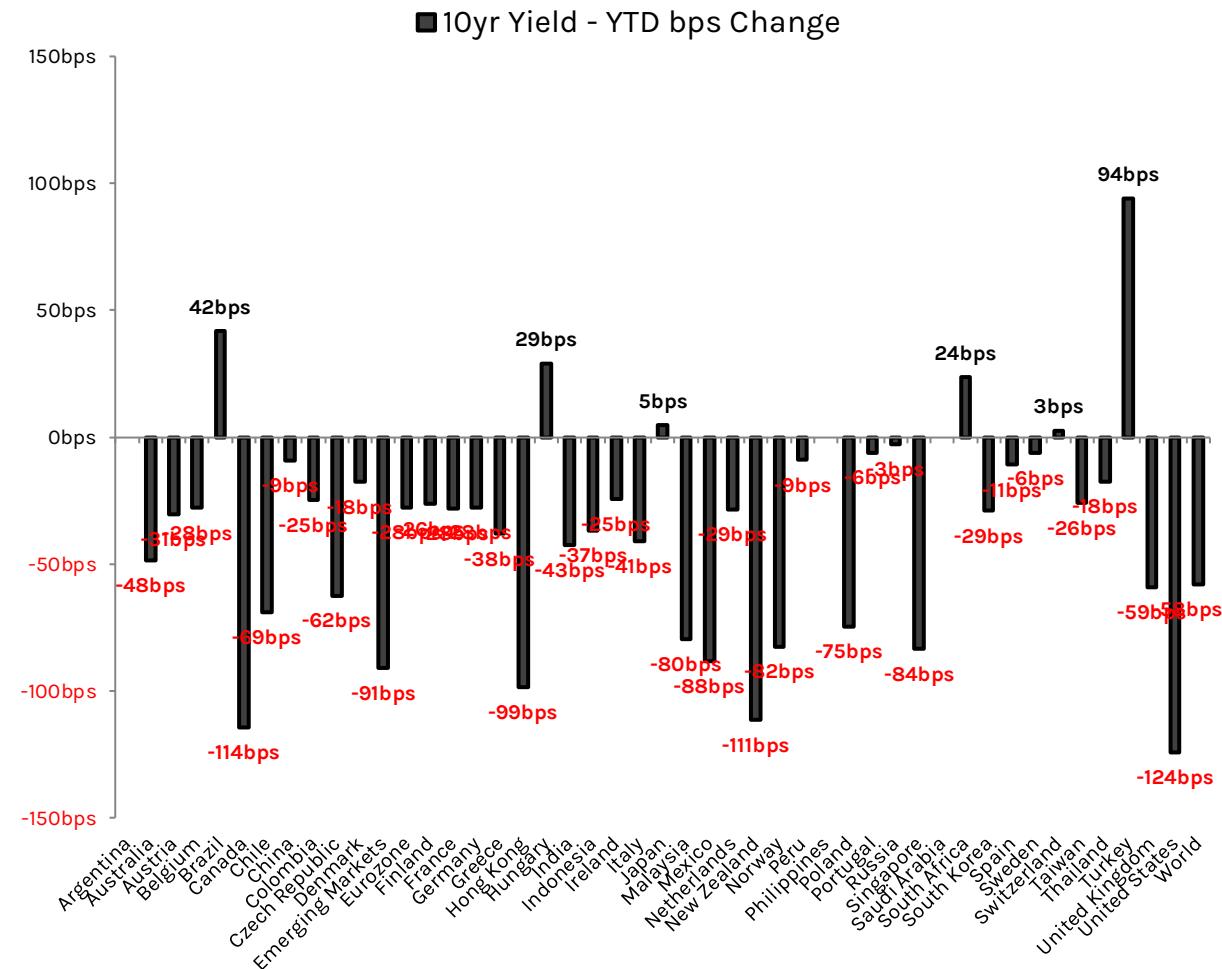
# ENTER: Monetary Anti-Gravity Machine aka “CTRL+P”

HEDGEYE

The US Is Among Global Leaders In Monetary Stimulus



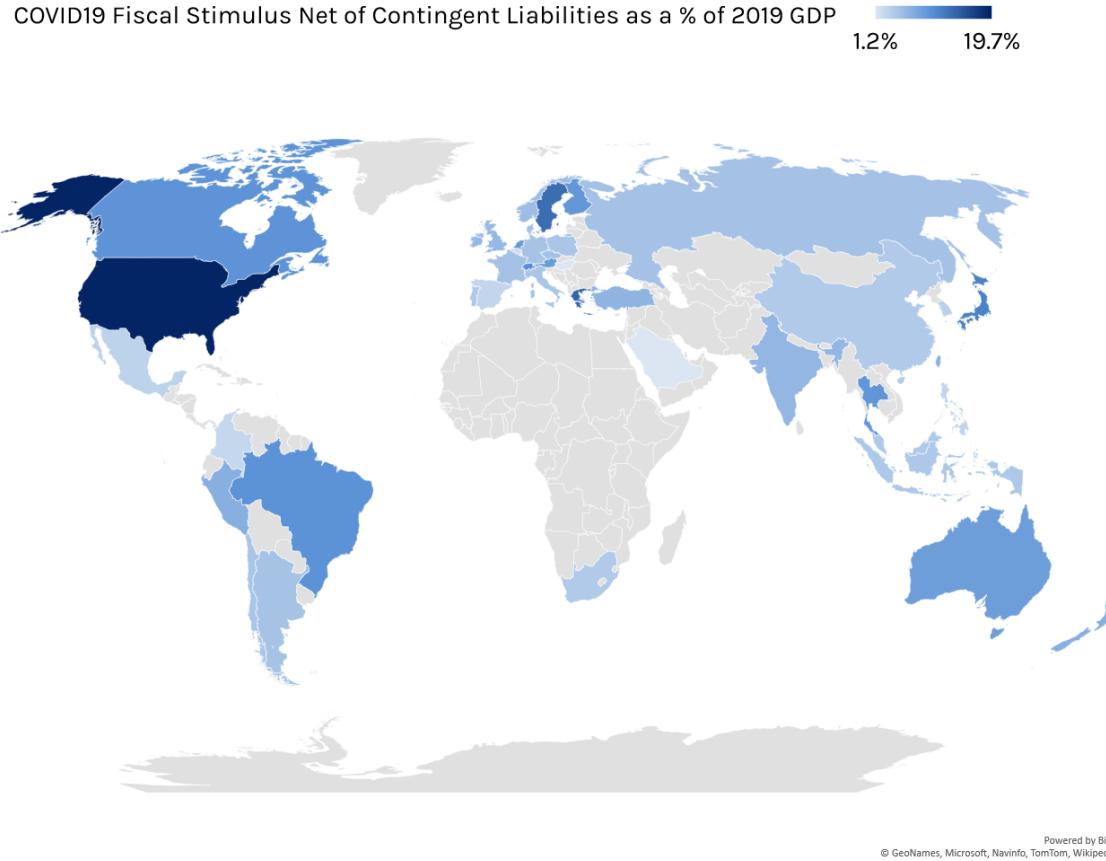
Aggressive Monetary Policy Support Is Not Just A US Phenomenon, But US Dollar Debasement Is Outpacing Nearly Every Other Country In The World



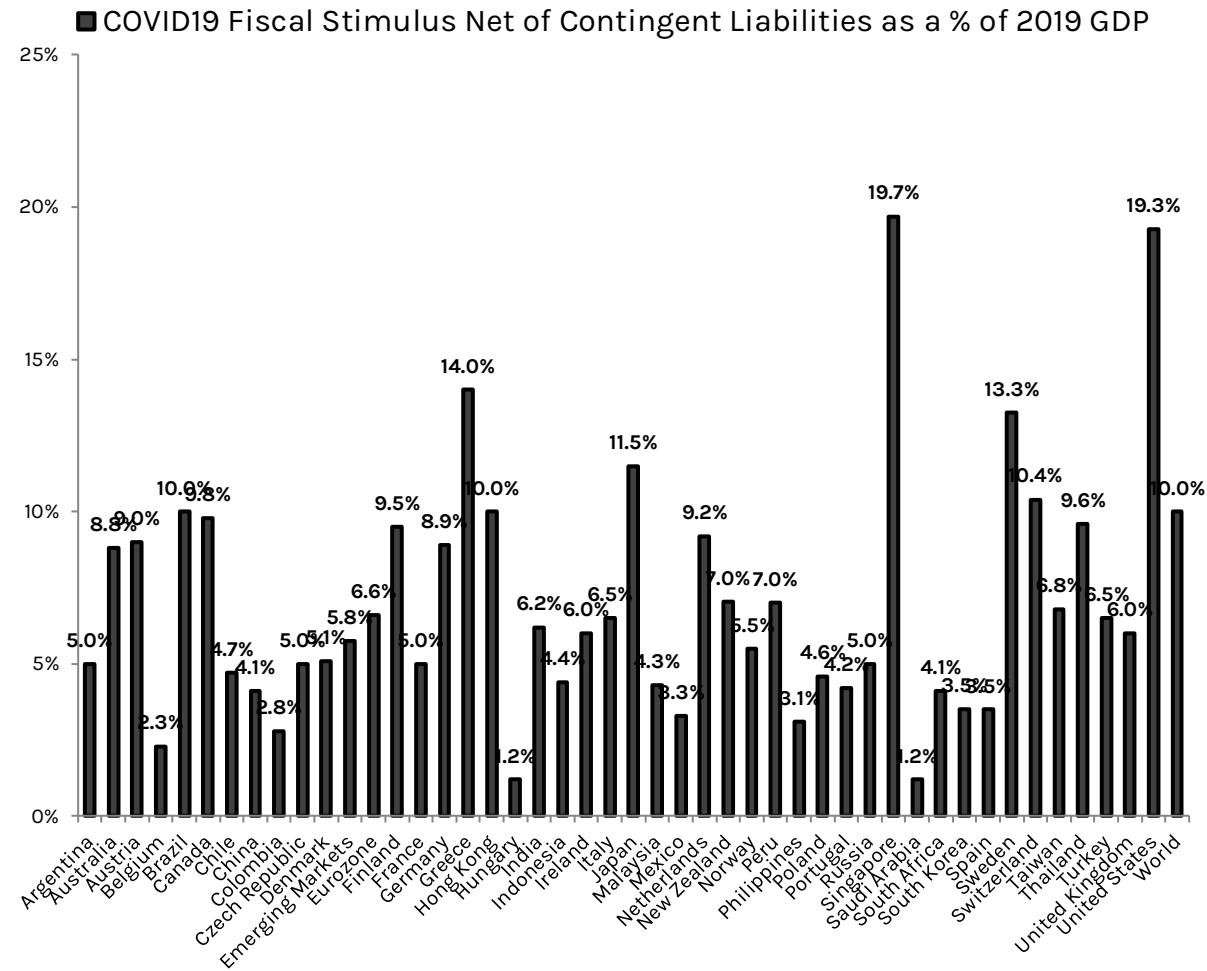
# ENTER: Fiscal Anti-Gravity Machine aka “Debt Binge”

HEDGEYE

The US Is Among Global Leaders In Fiscal Stimulus



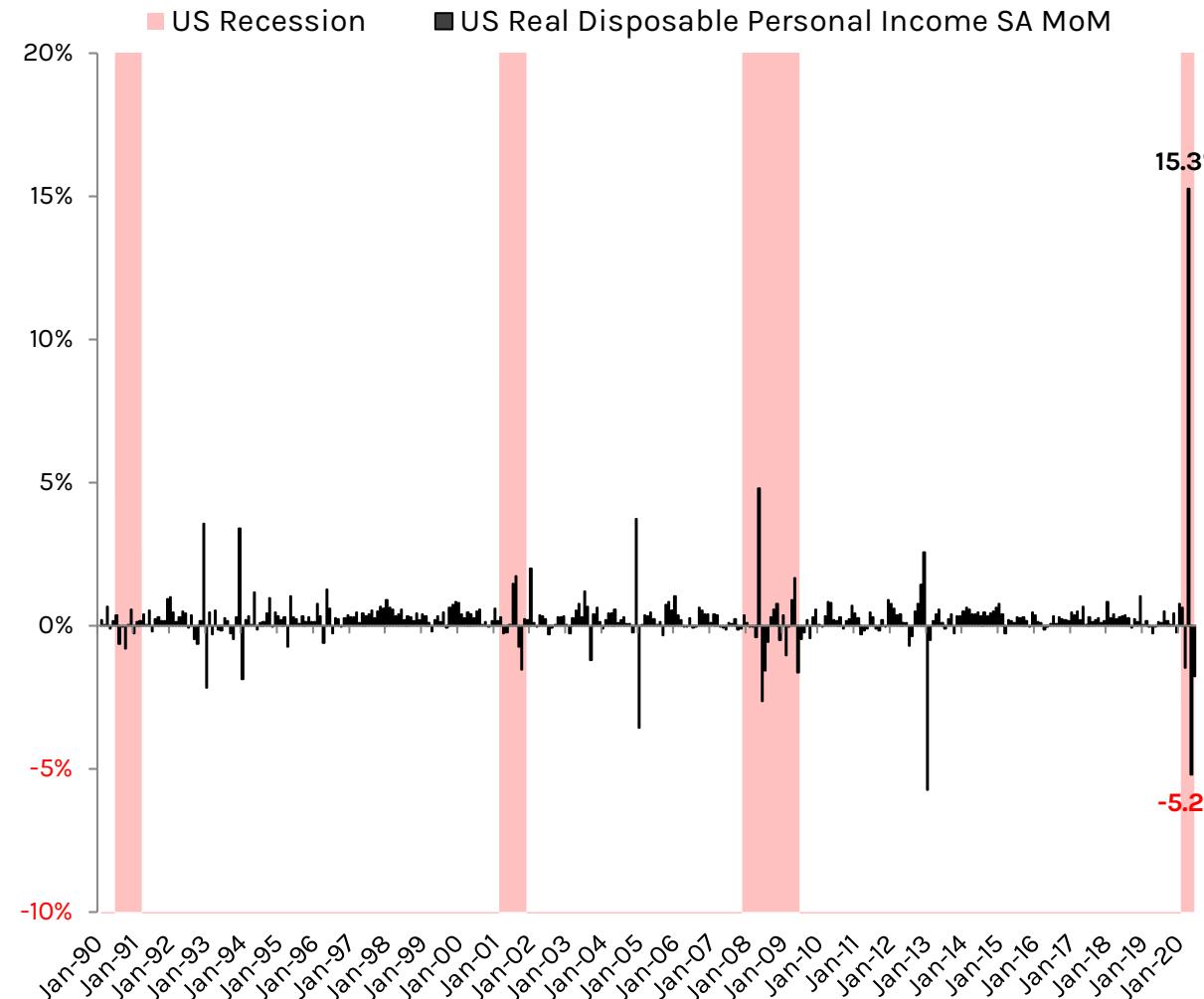
Aggressive Fiscal Support Is Not Just A US Phenomenon, But US Dollar Debasement Is Outpacing Nearly Every Other Country In The World



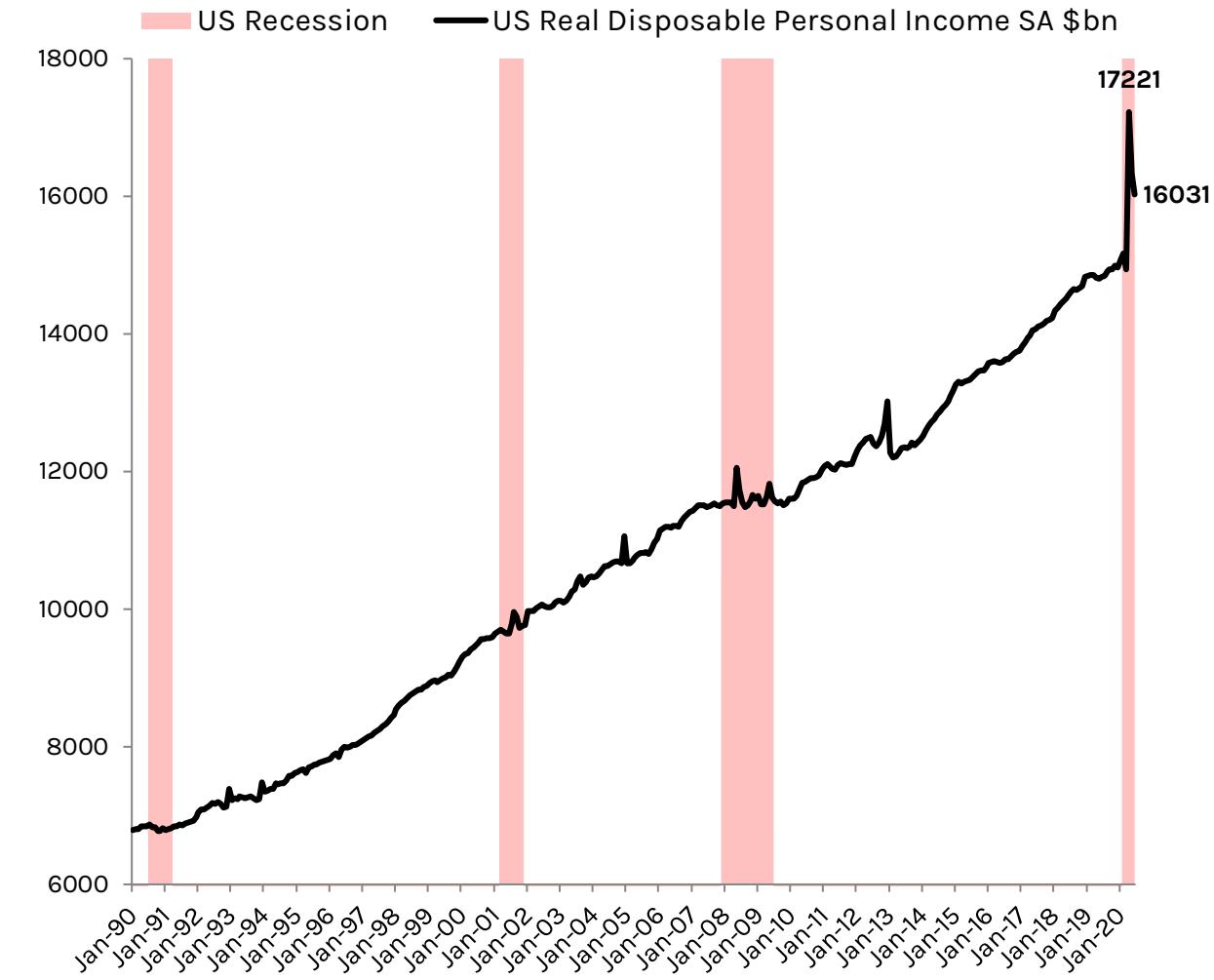
# Fiscal Stimulus Has Perpetuated An Unprecedented Surge In Personal Income

HEDGEYE

Rate of Change: Household Income



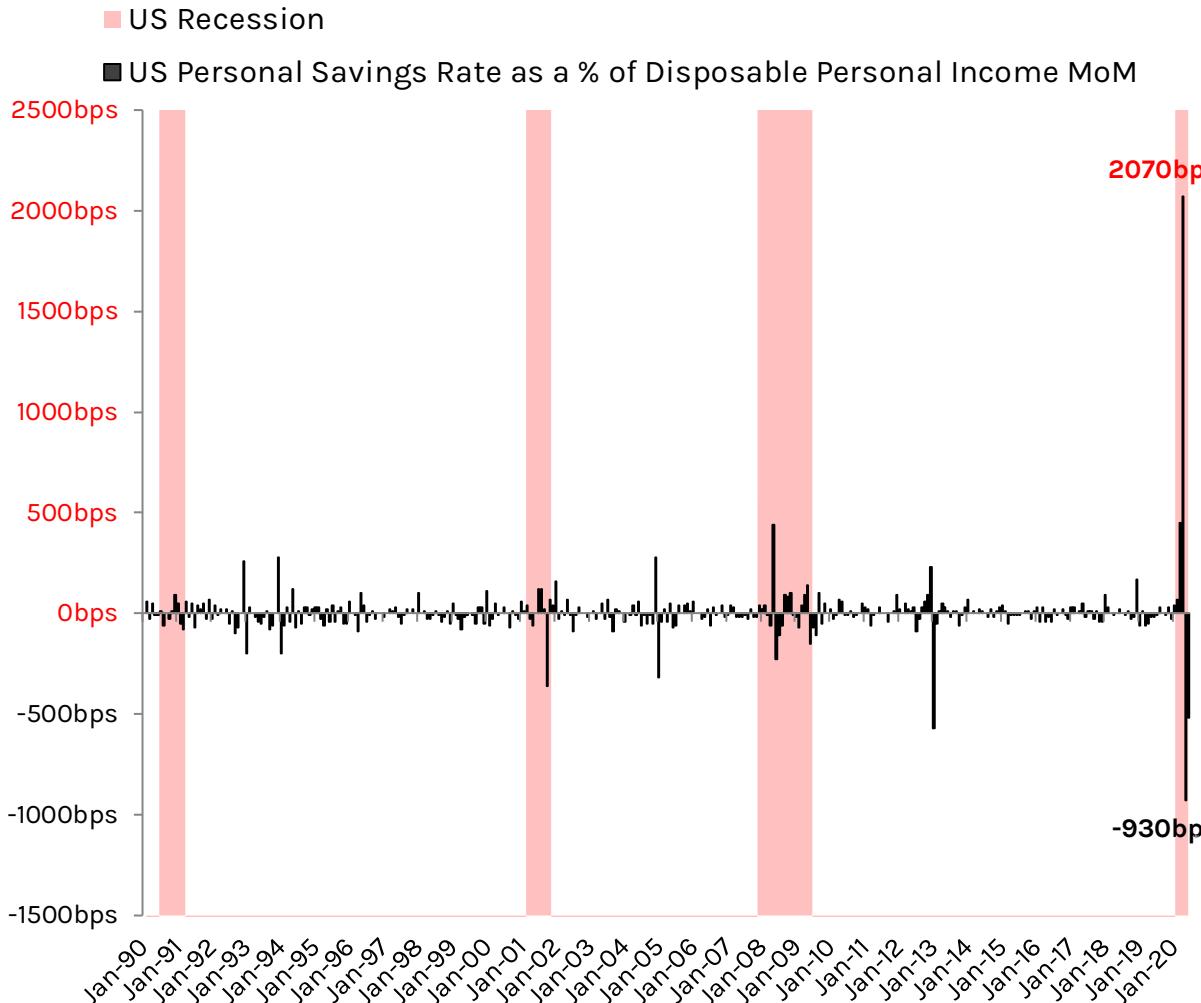
Absolute Level: Household Income



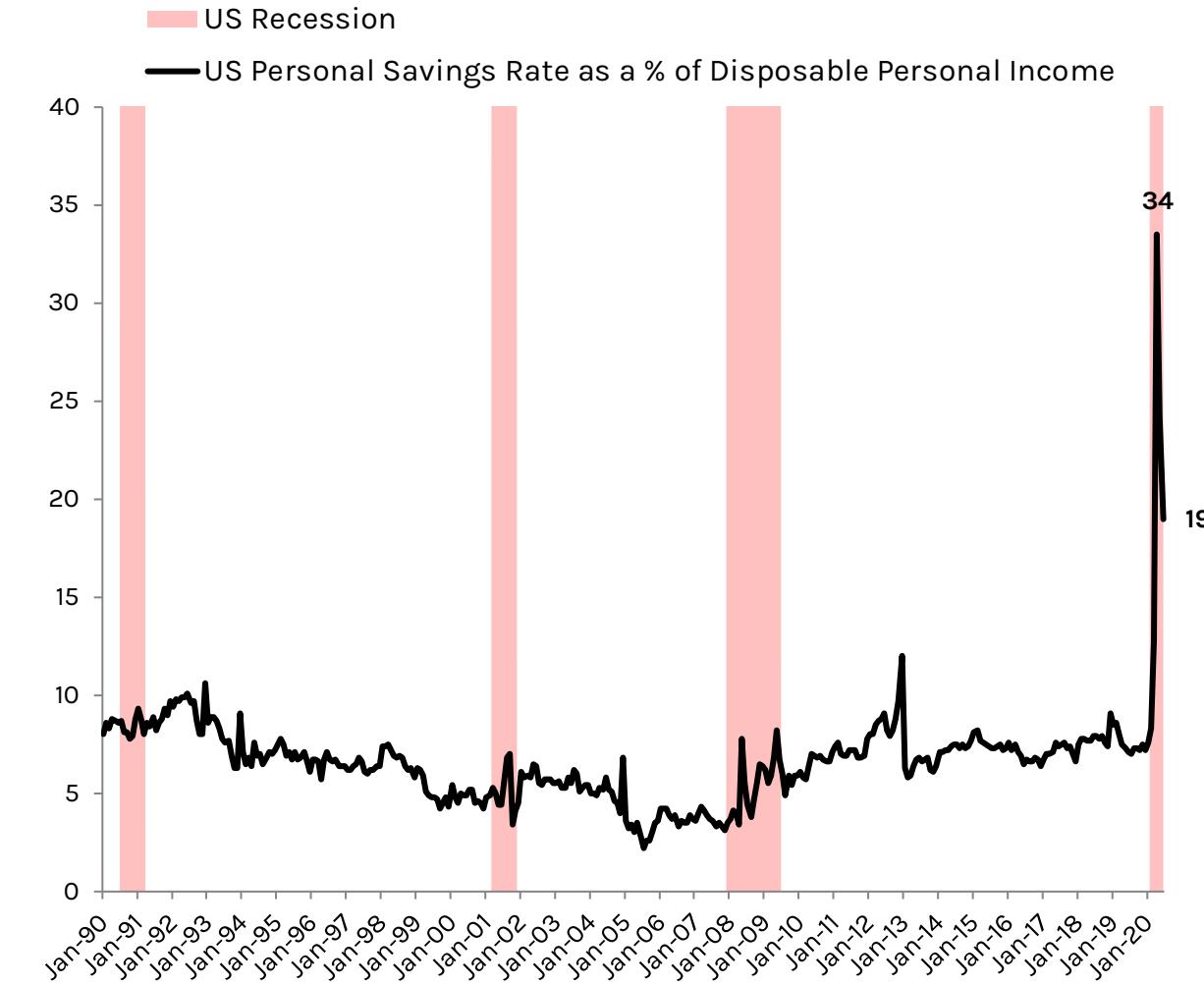
# Pent Up Demand Or Saving For A Rainy Day?

HEDGEYE

Rate of Change: Household Savings Rate



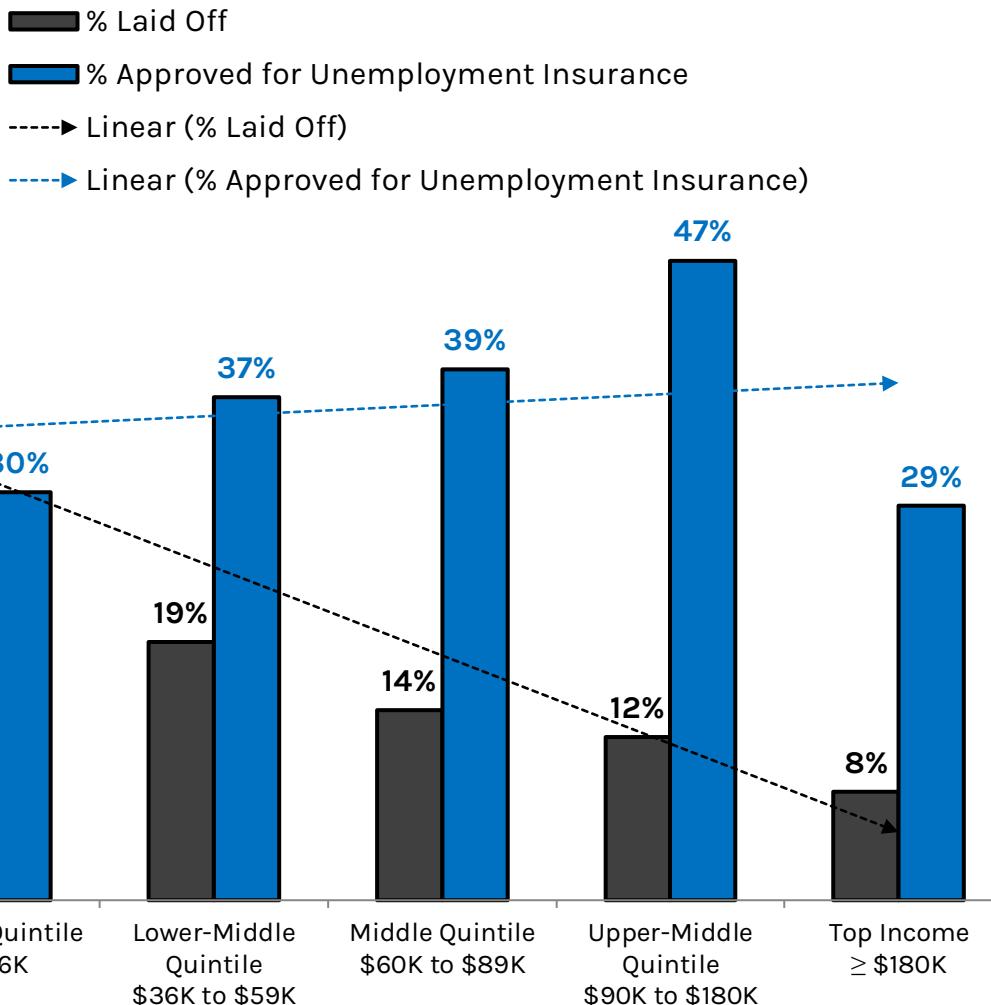
Absolute Level: Household Savings Rate



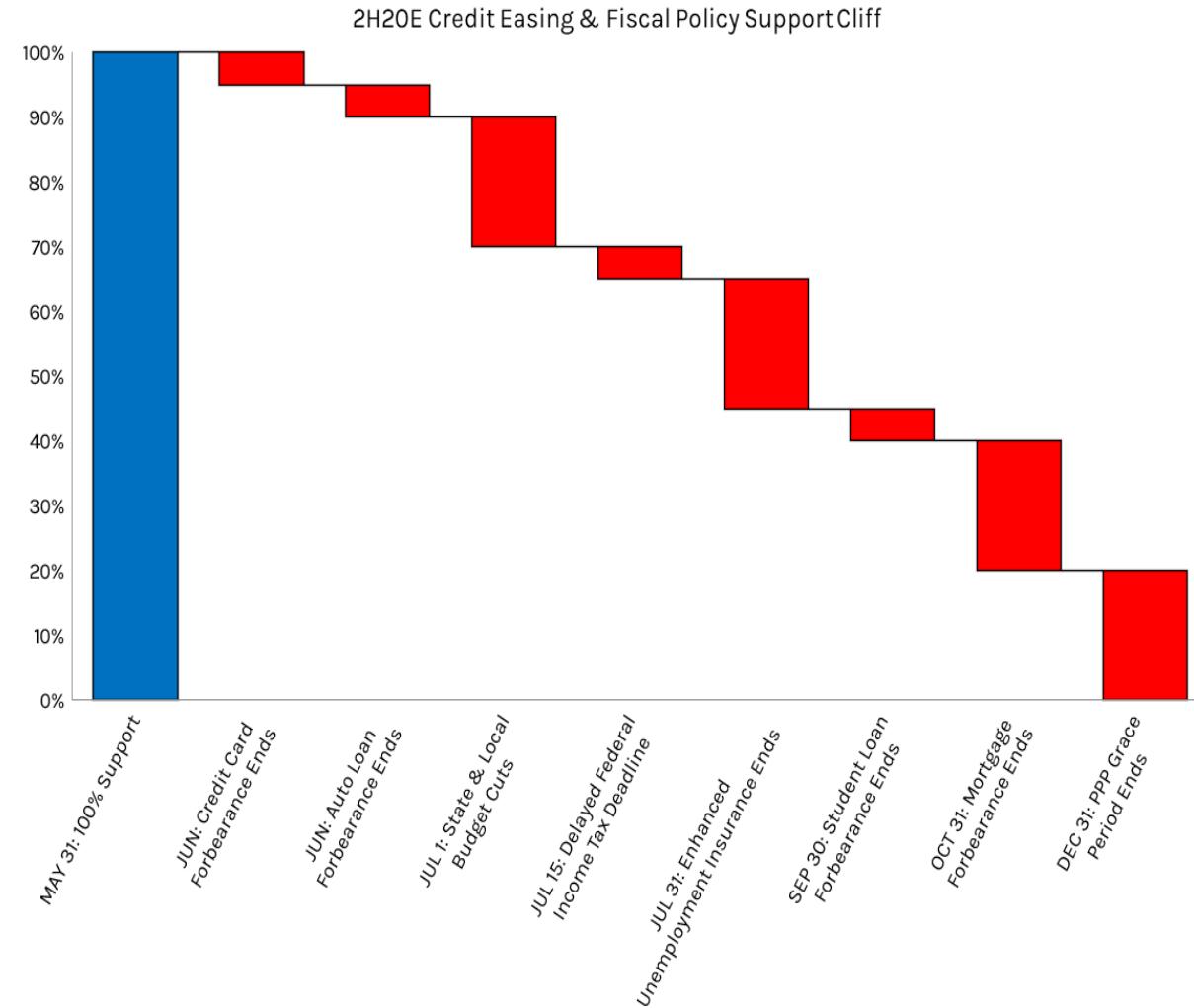
# One-Off Stimulus Measures ≠ Sustainable Cash Flows

HEDGEYE

## Job Losses And Jobless Claims Application Rejections Have Disproportionately Impacted The Most Vulnerable



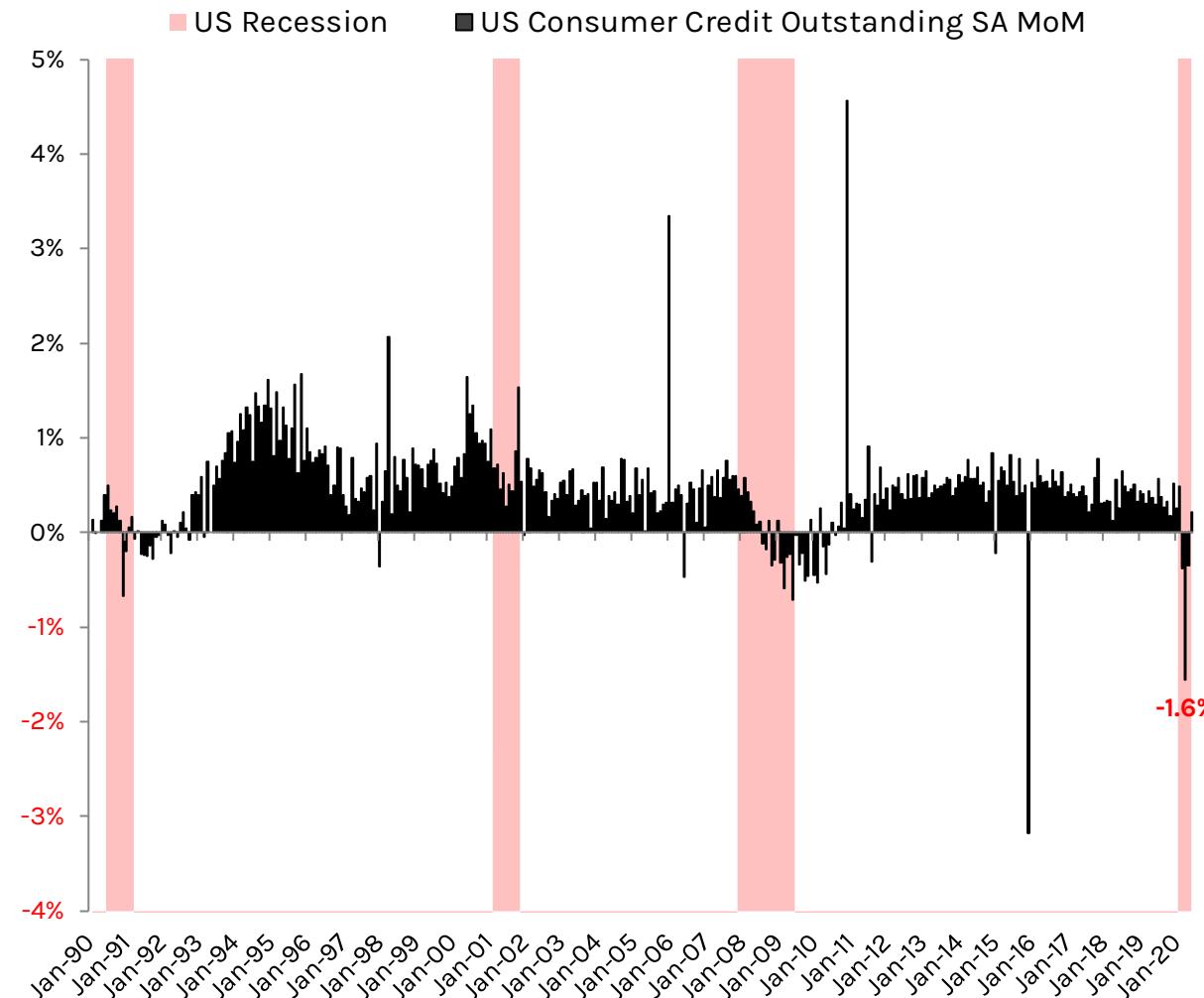
## The Policy Support Cliff Looms Large Heading Into 2H20E



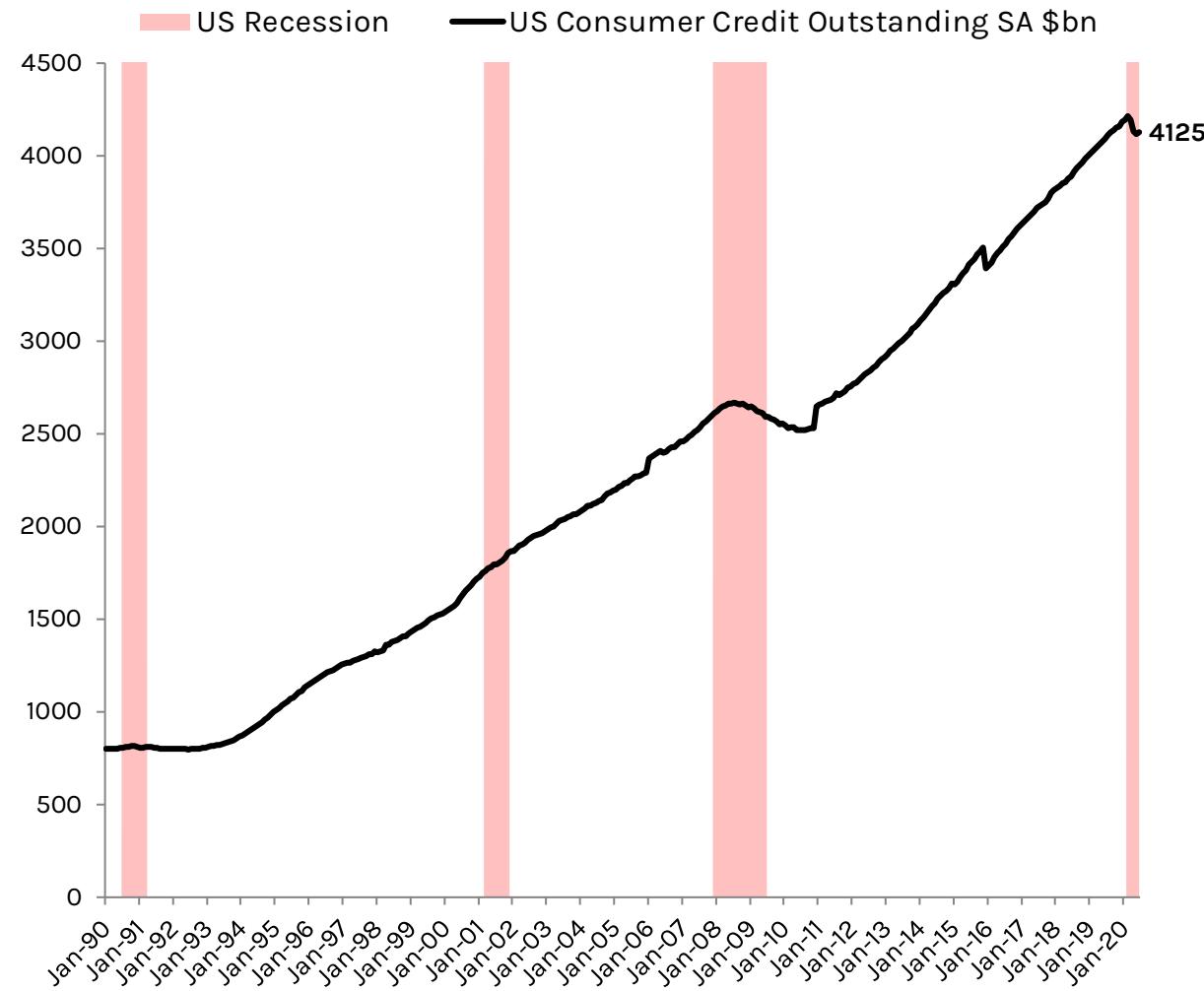
# Phase 3 = Balance Sheet Repair

HEDGEYE

Rate of Change: Consumer Credit



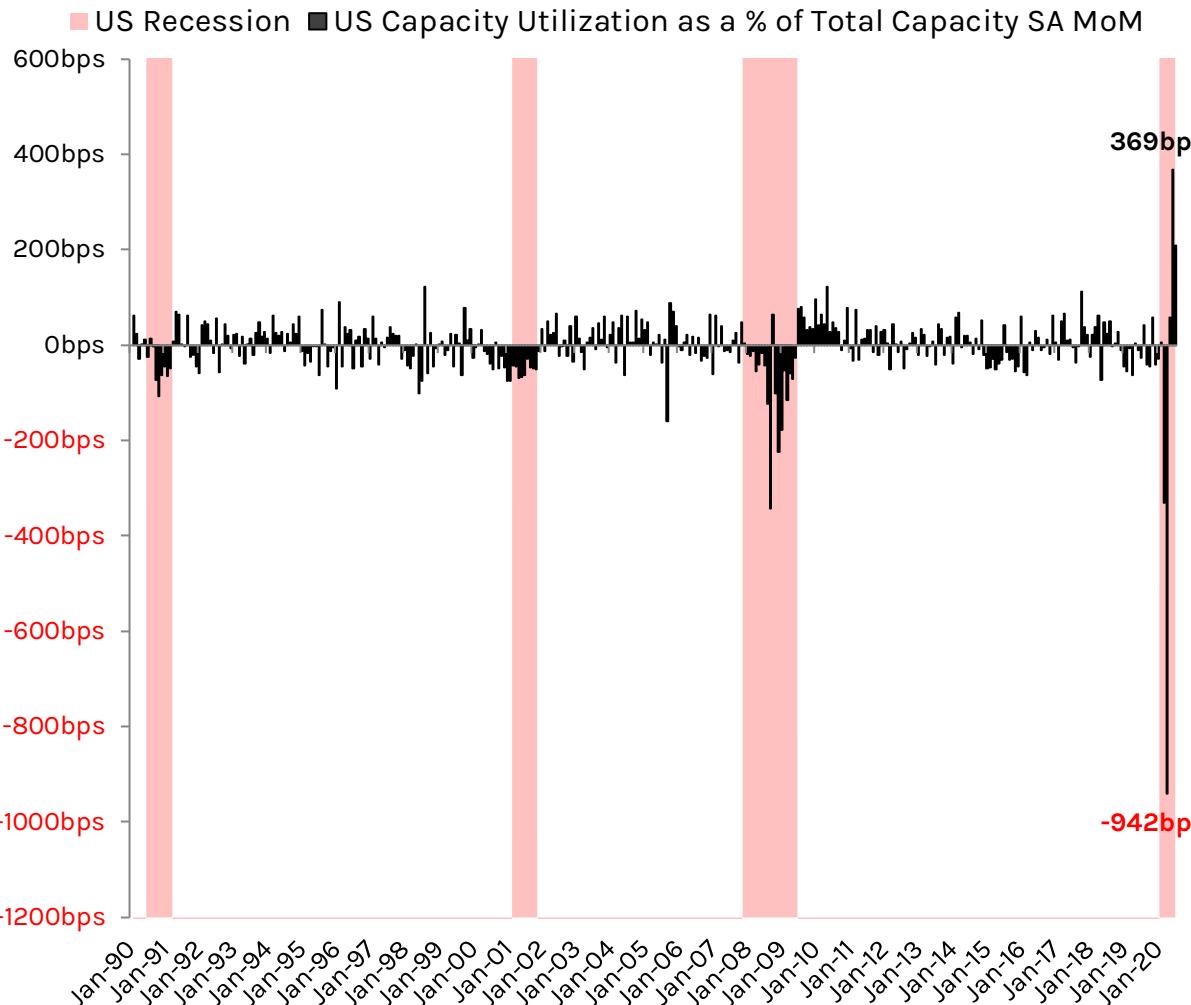
Absolute Level: Consumer Credit



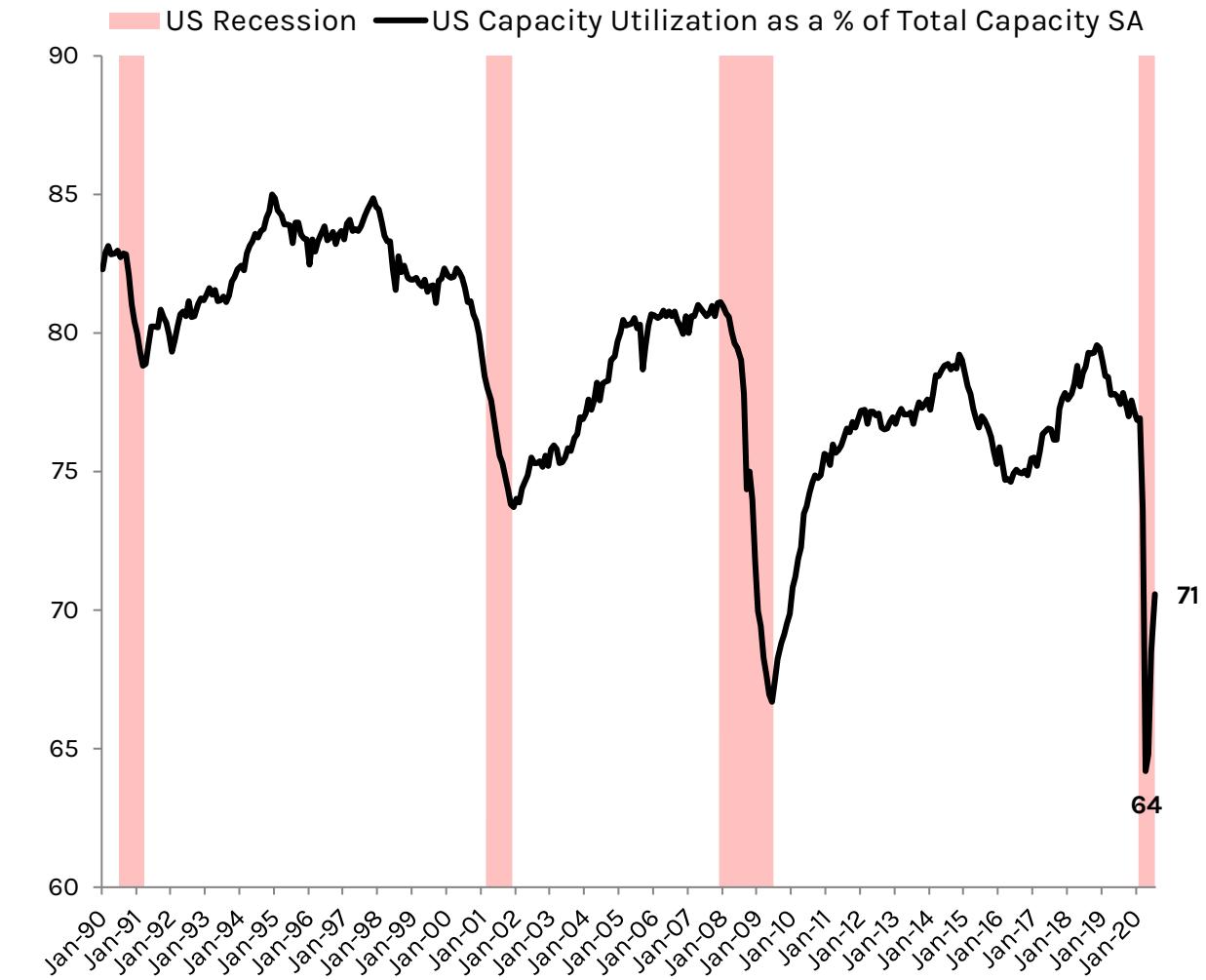
# Phase 3 = Depressed Capacity Utilization

HEDGEYE

Rate of Change: Capacity Utilization

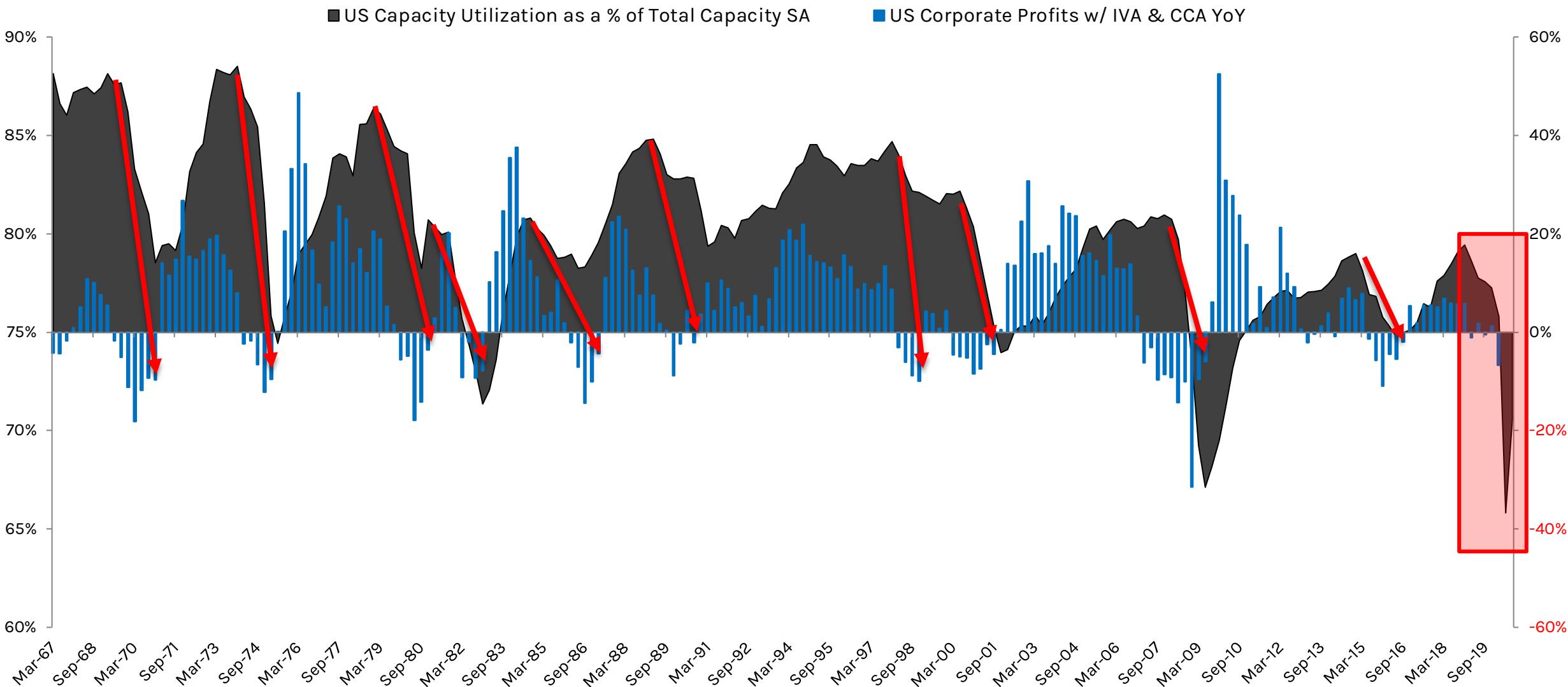


Absolute Level: Capacity Utilization



# It Could Take 12-18 Months For Corporate Cash Flows To Turn Positive After A Shock To Capacity Utilization Of This Magnitude

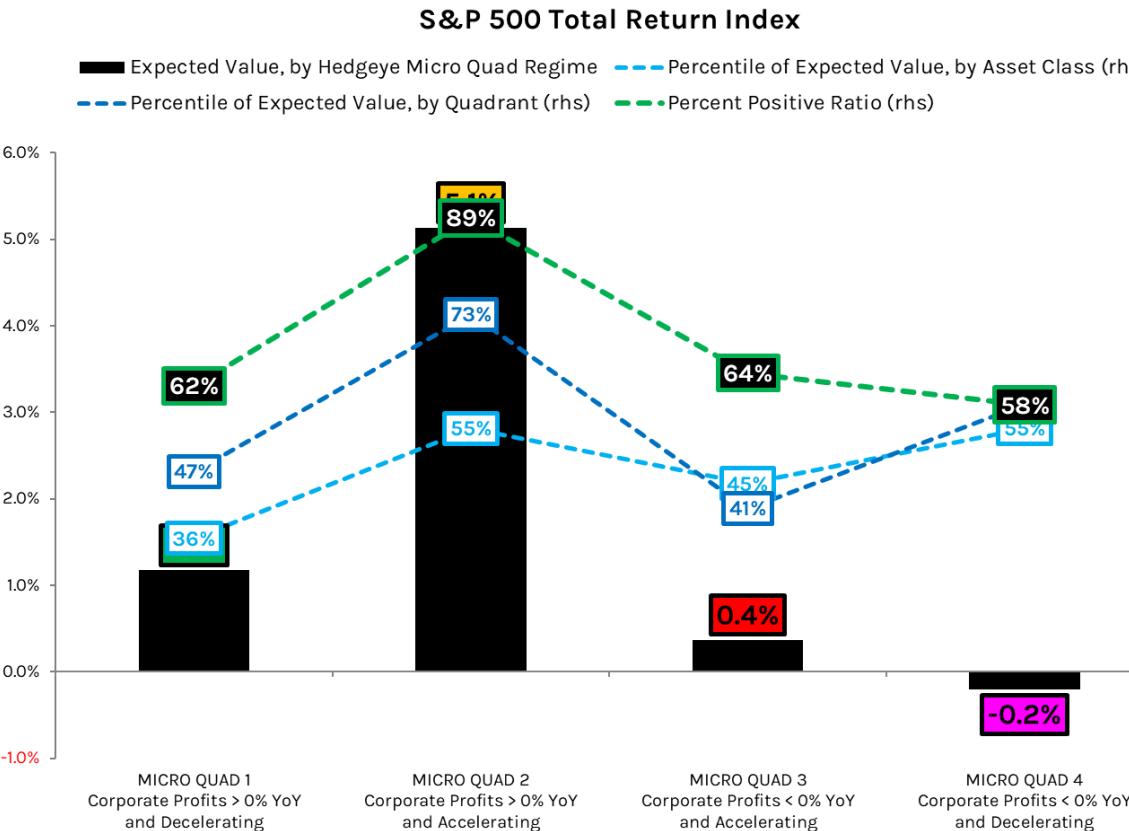
HEDGEYE



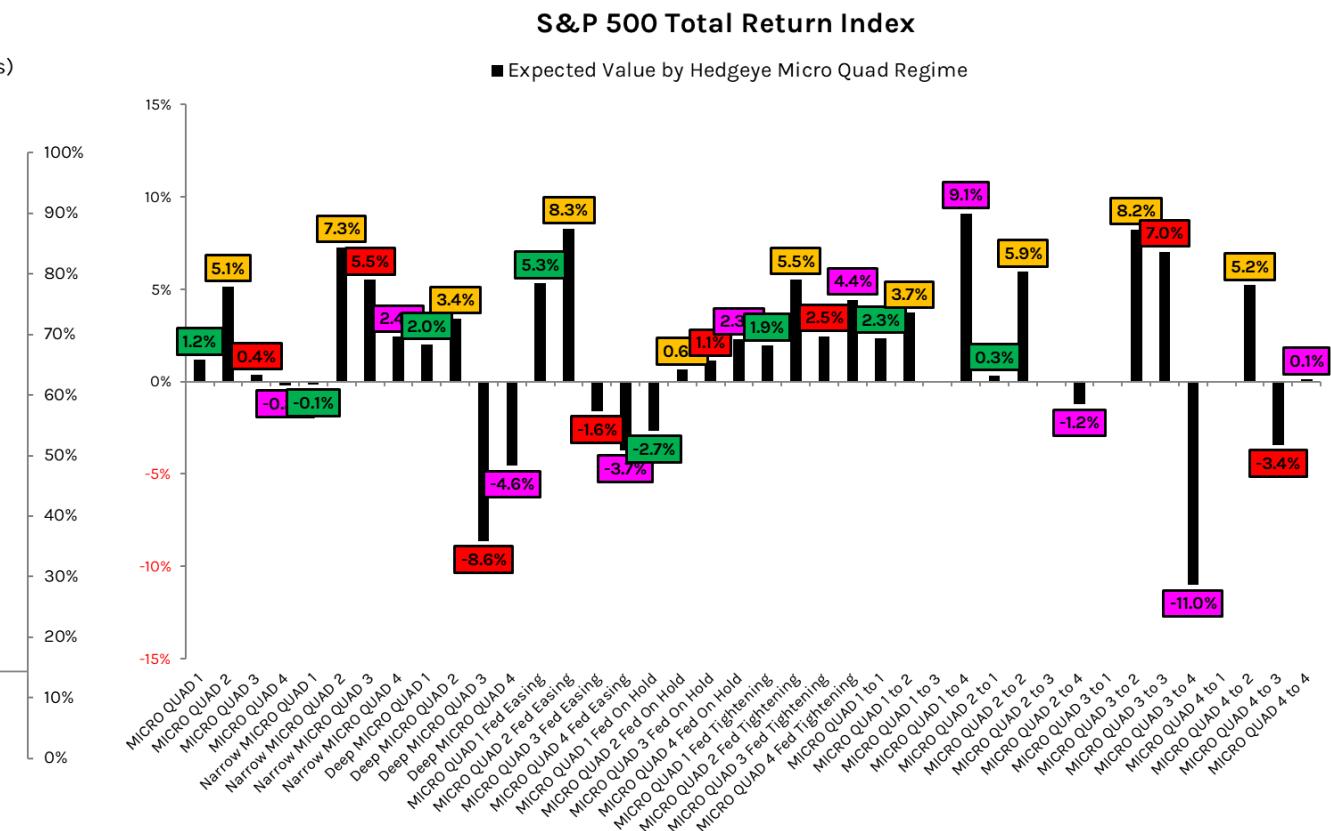
# Before The Quads Came The Pods: Introducing Our “Micro Quad” Framework

HEDGEYE

## “Micro Quads” Cumulative Backtest



## “Micro Quads” Conditional Factoring Backtest



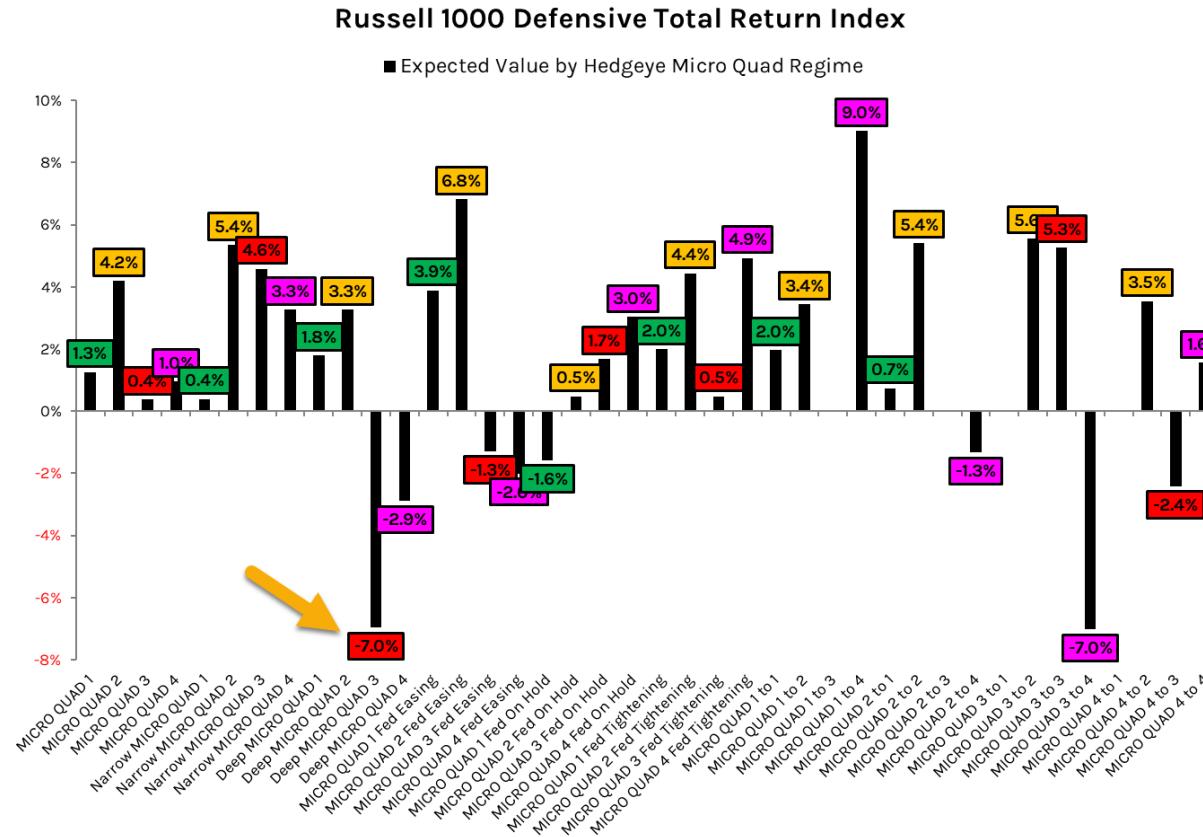
Data Source: Bloomberg. Asset classes include equities, fixed income, currencies and commodities. Quarterly observations starting in 1Q98.

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

# It's Still Too Early To Rotate Into Cyclical Sectors

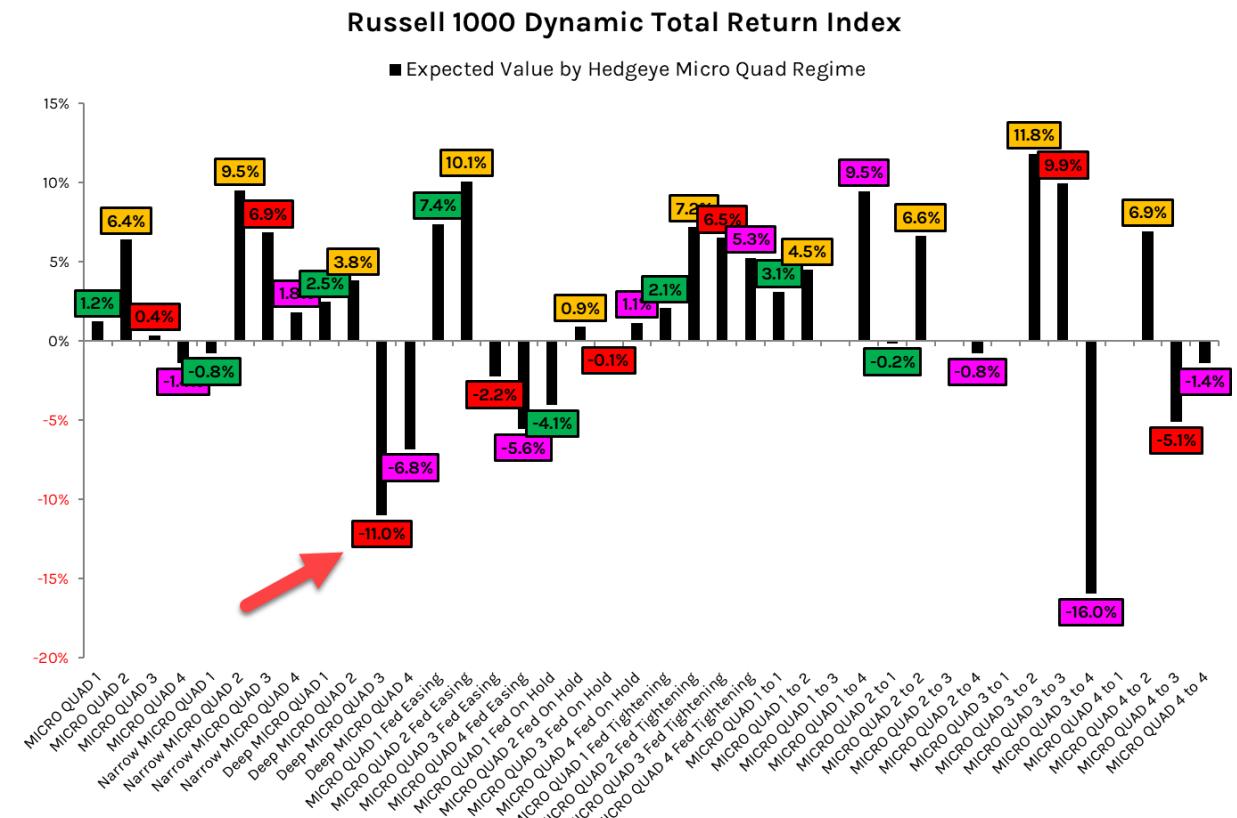
HEDGEYE

## Overweight Defensive Sectors & Style Factors



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

## Underweight Cyclical Sectors & Style Factors



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

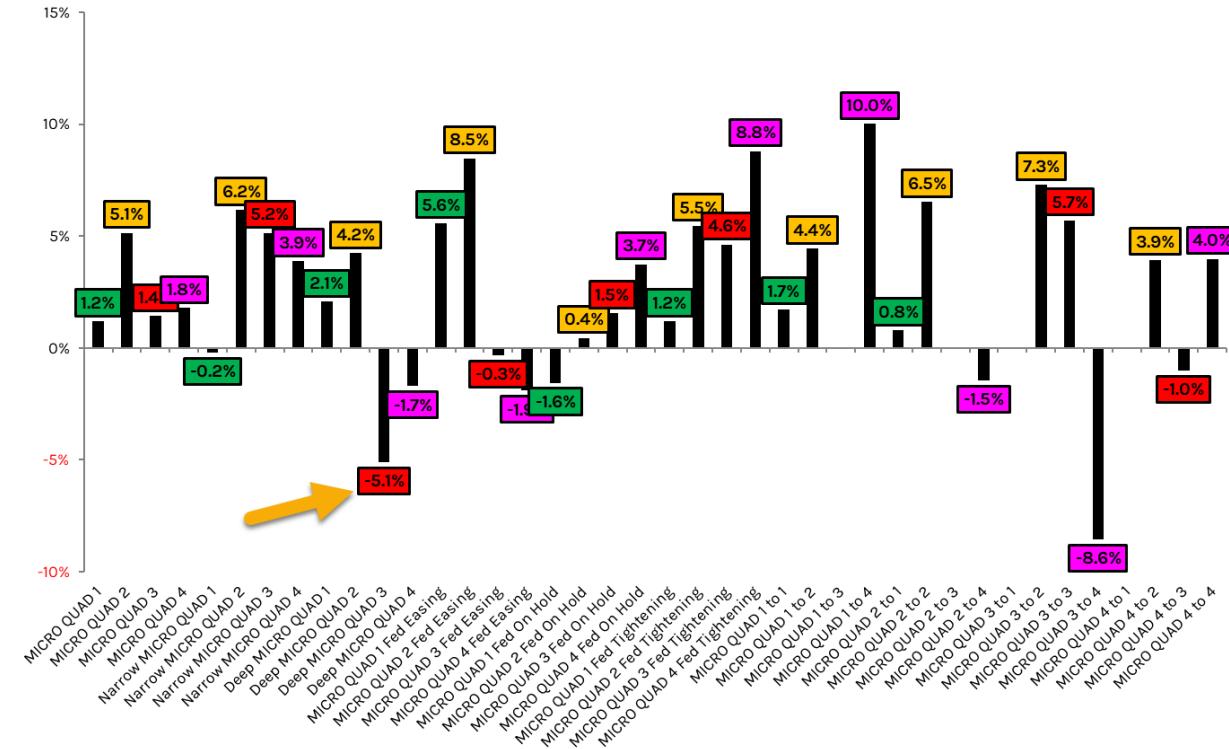
# Do Not Chase “Robinhood Recovery Trades” Heading Into Q3 Earnings Season

HEDGEYE

## Overweight Quality

S&P 500 Quality Total Return Index

■ Expected Value by Hedgeye Micro Quad Regime

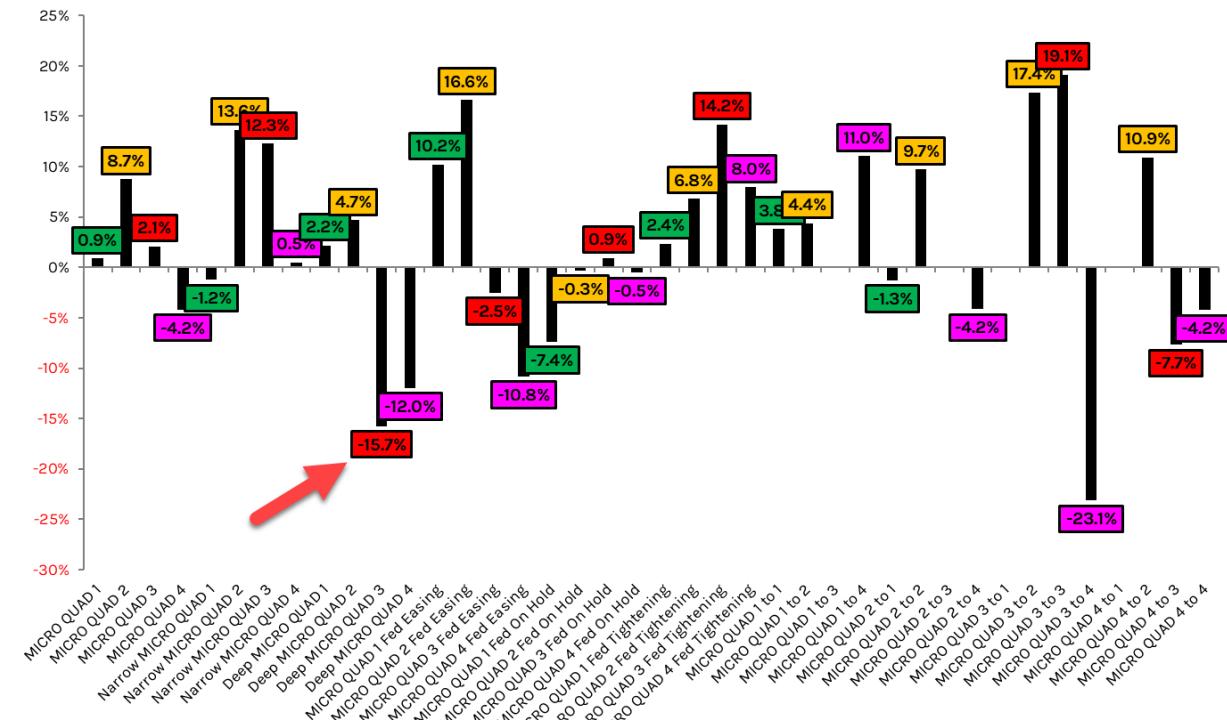


Data Source: Bloomberg. Asset classes include equities, fixed income, currencies and commodities. Quarterly observations starting in 1Q98.

## Underweight Economic & Financial Leverage

S&P 500 High Beta Total Return Index

■ Expected Value by Hedgeye Micro Quad Regime



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

# Q3 2020 Macro Themes

HEDGEYE

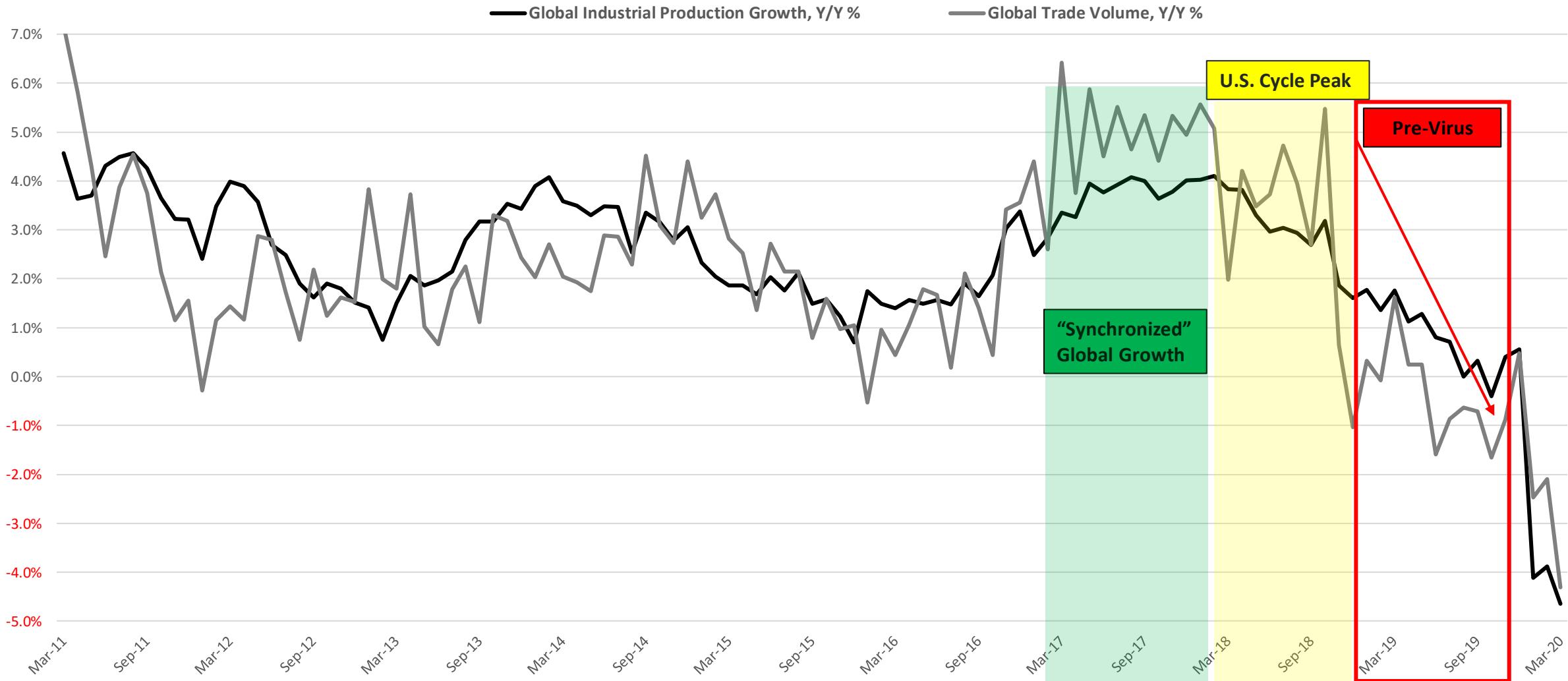


Earnings: Deep #Pod4

# TO BE CLEAR: The Global Cycle Was In Deceleration Pre-Virus

HEDGEYE

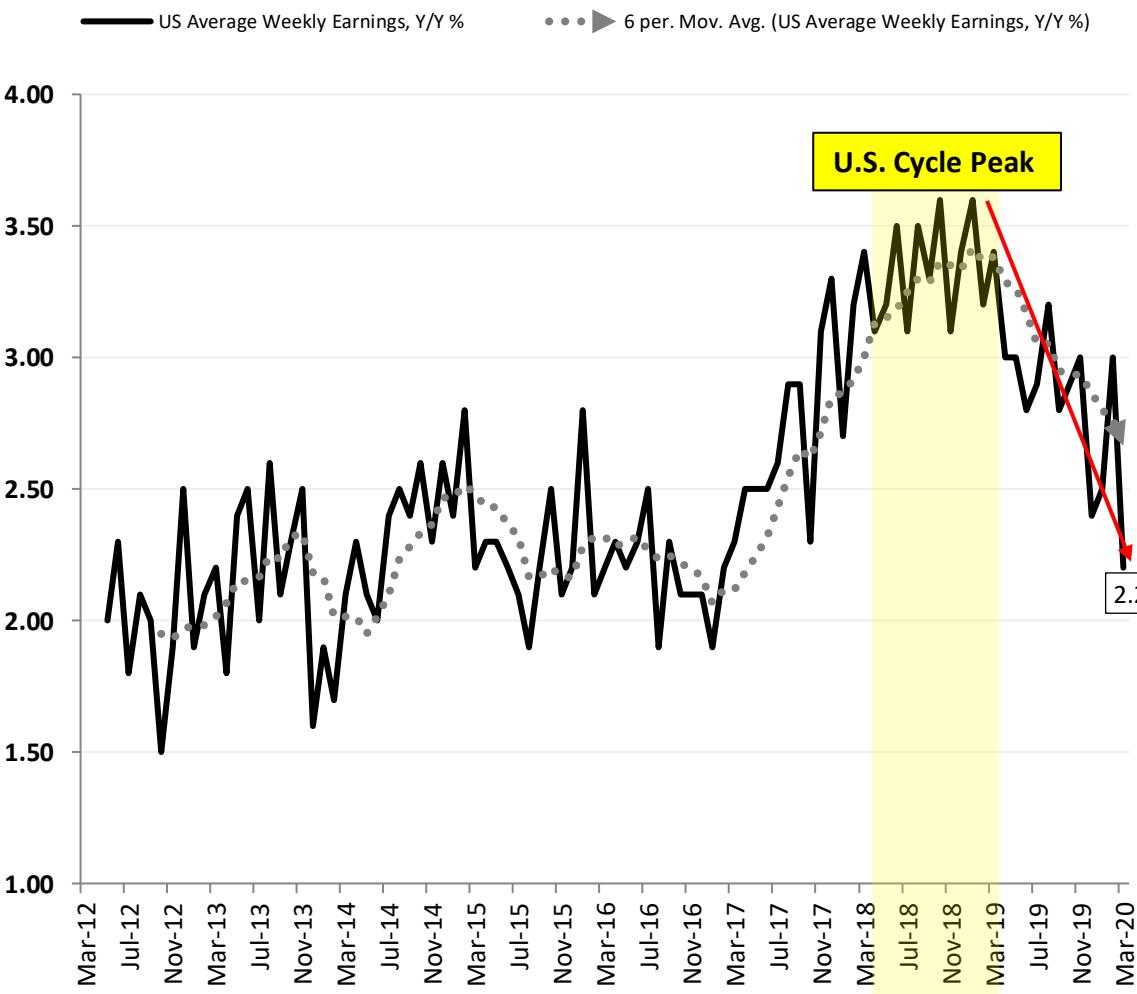
Fragility defined the pre-virus domestic and global macro cycle. The virus emerged as the exigent shock but fragility left the cycle susceptible to any number of catalysts.



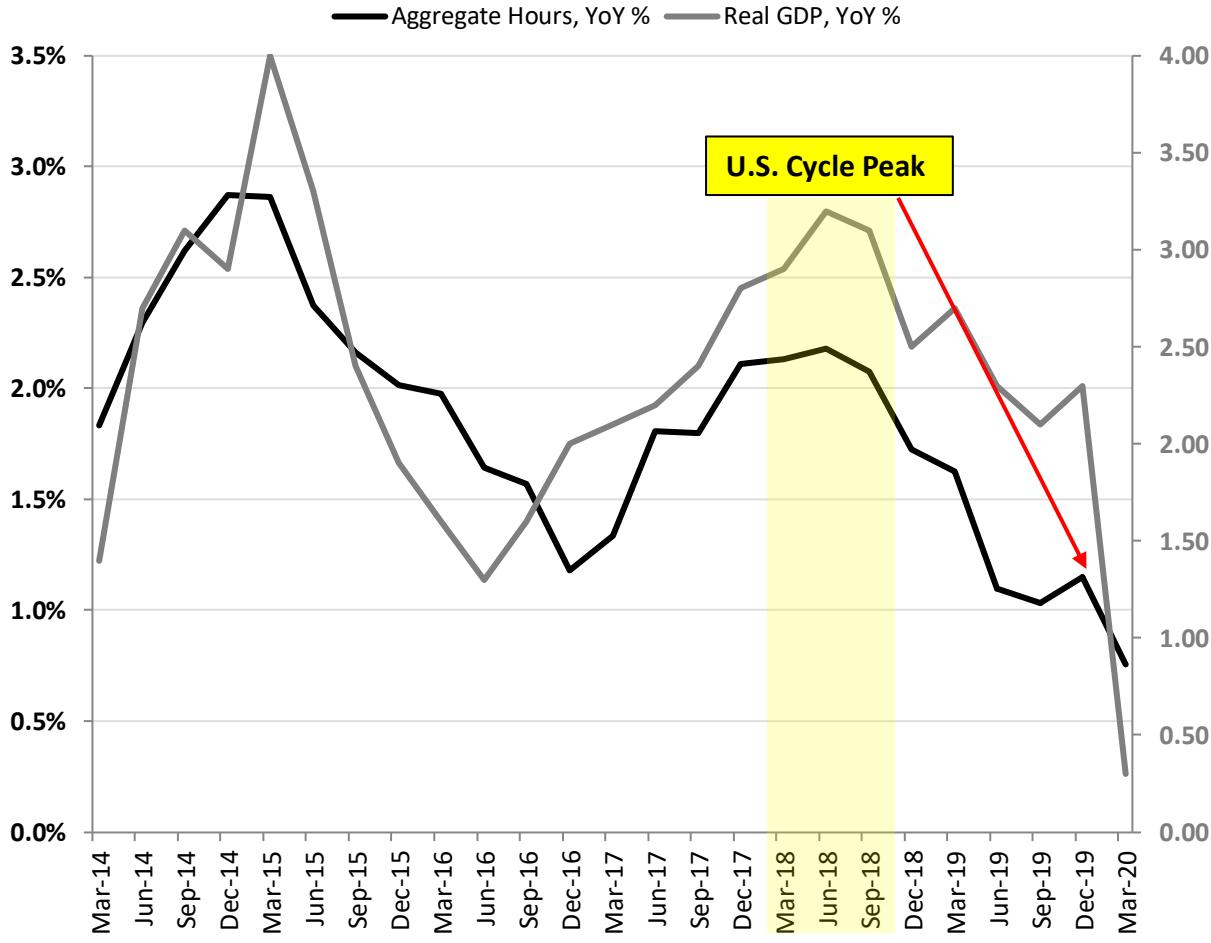
# Domestically, A Discrete (Pre-COVID) Deceleration in Consumption Capacity

HEDGEYE

Aggregate Hours growth and Consumption Capacity were both slowing conspicuously into 1H20.

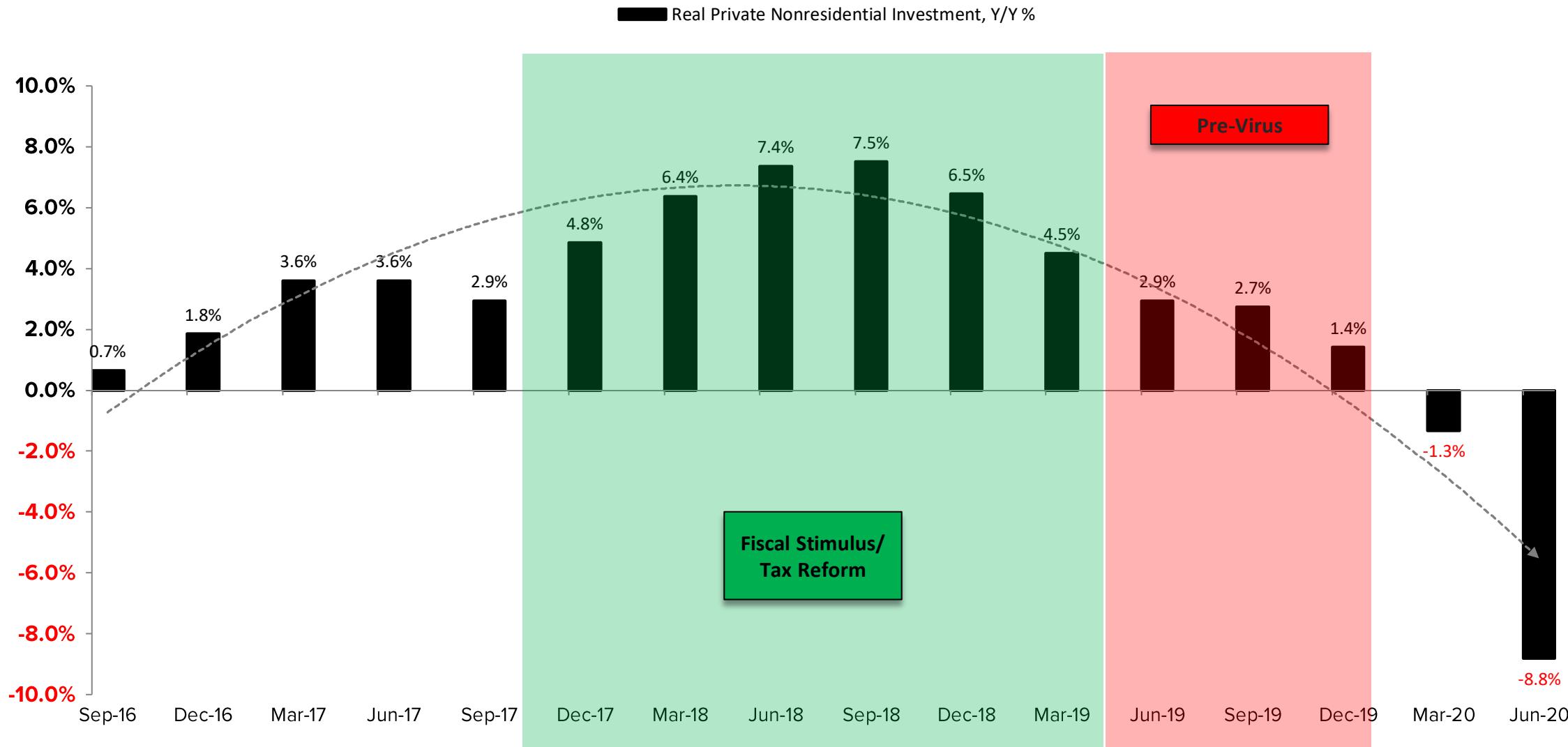


## Aggregate Hours Growth vs Real GDP Growth



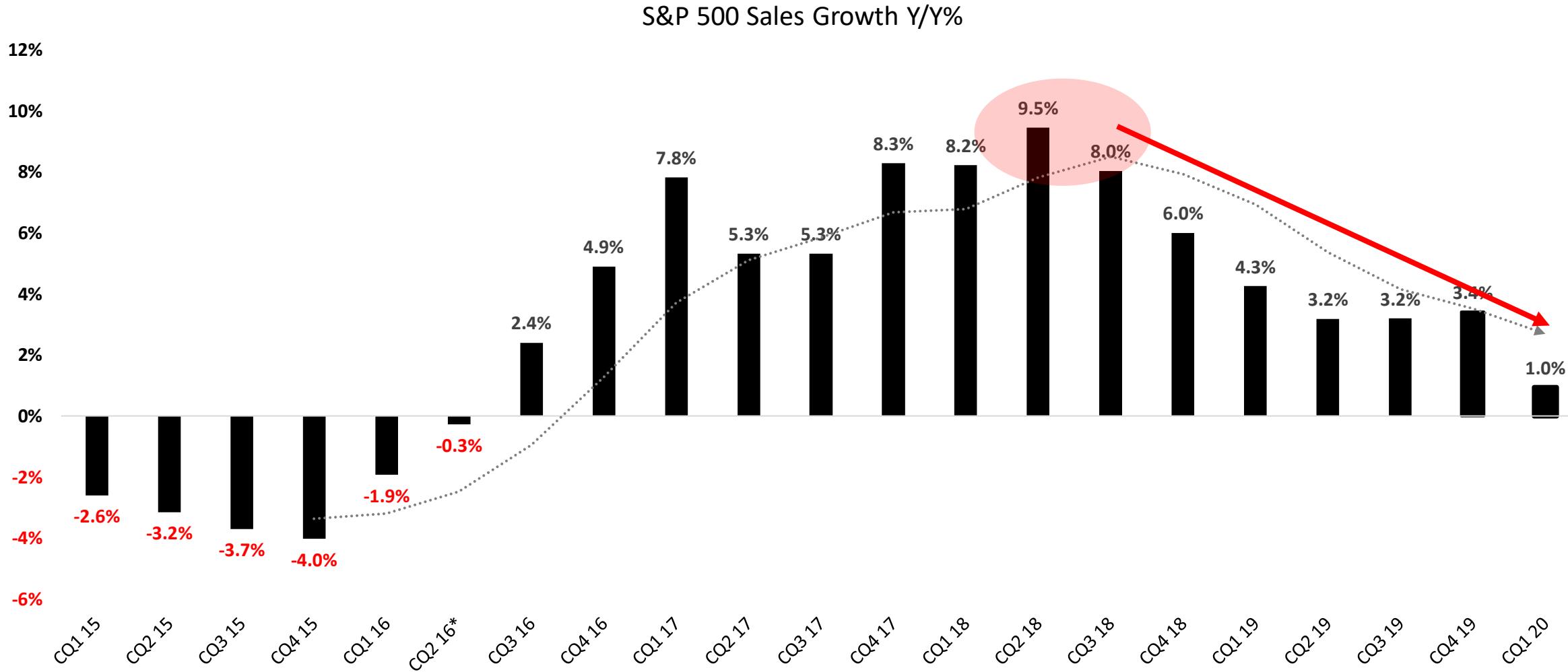
# Investment Growth Was Already Negative

HEDGEYE



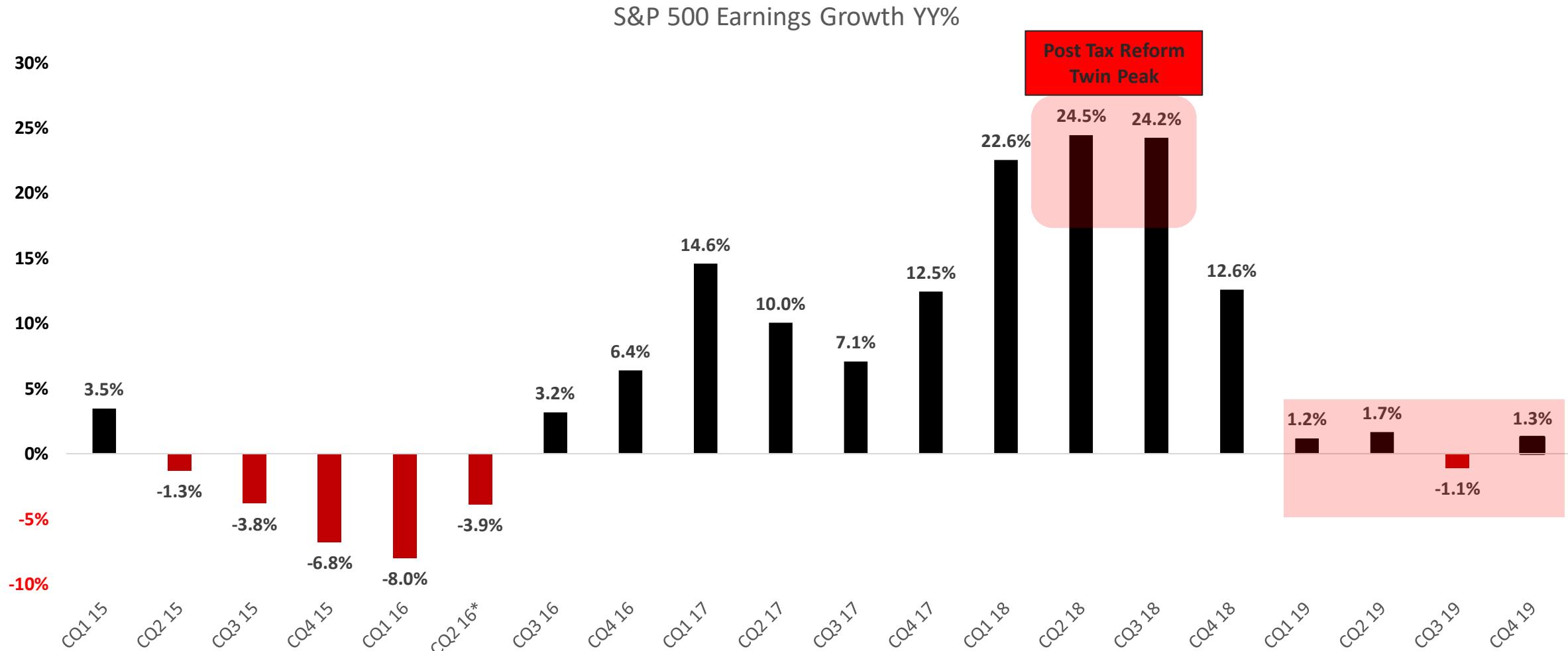
# POD 1: Revenue Growth = 2<sup>nd</sup> Derivative Negative

HEDGEYE



# POD 2: Earnings Stagnation Was Already An Entrenched Reality

HEDGEYE

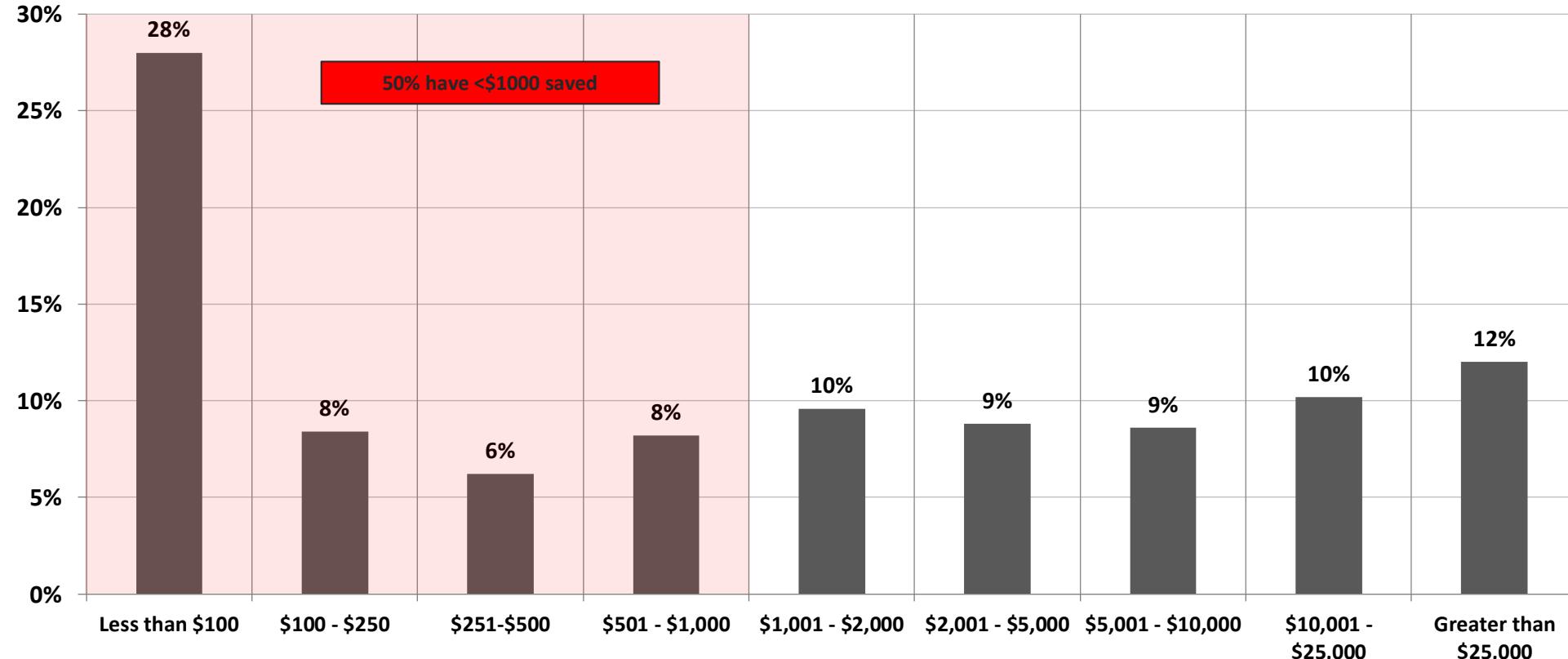


# Households Were Not Prepared for an Income Shock

HEDGEYE

Percentage of respondents by savings on hand

## Cash Savings (non-retirement) On Hand In Case of Emergency or Job Loss



Source: Hedgeye Survey (500 Respondents, April 2020)

© Hedgeye Risk Management

Many consumers went into the downturn in a very precarious financial situation.

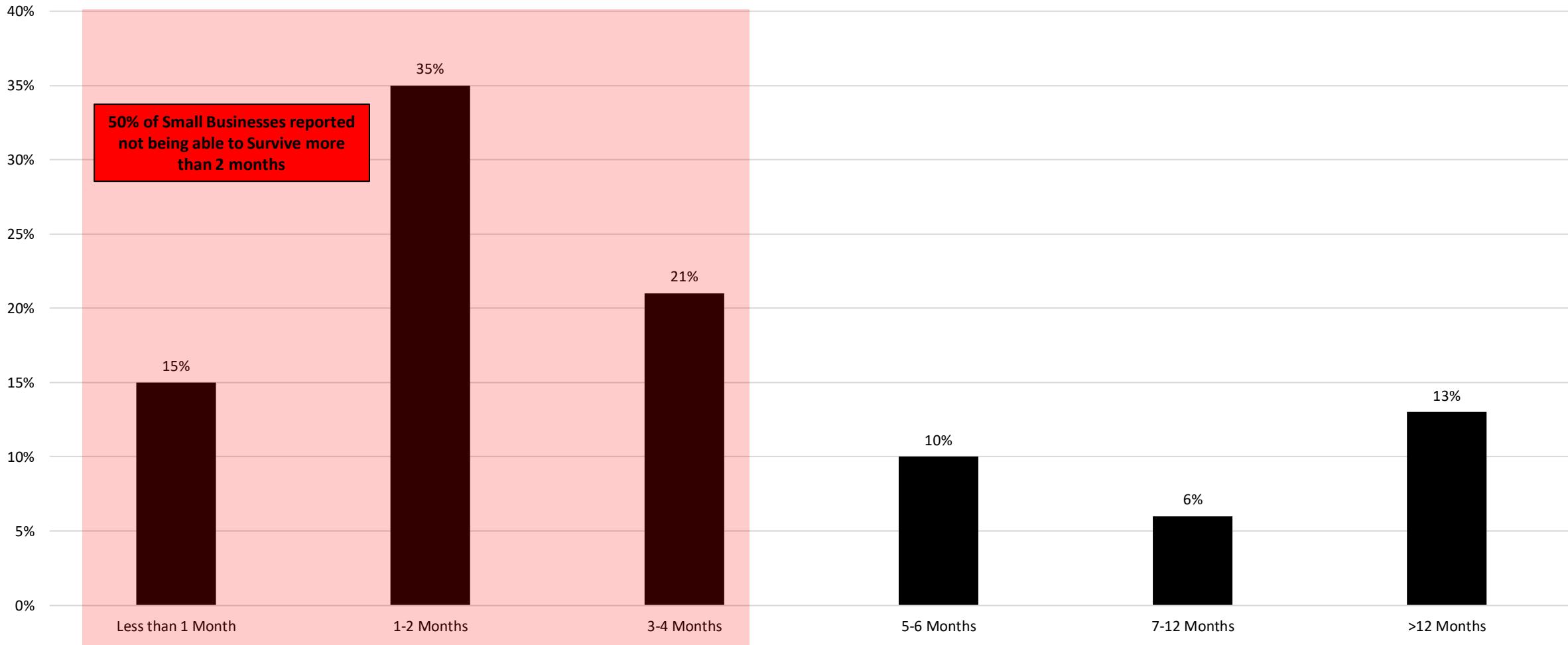
- 28% had <\$100 saved
- 42% had <\$500 saved
- 50% had <\$1,000 saved

# Neither Were Businesses

HEDGEYE

75% of Small Businesses indicated they could not survive a 4-month shutdown.

NFIB: How Long Can You Survive A Shutdown?

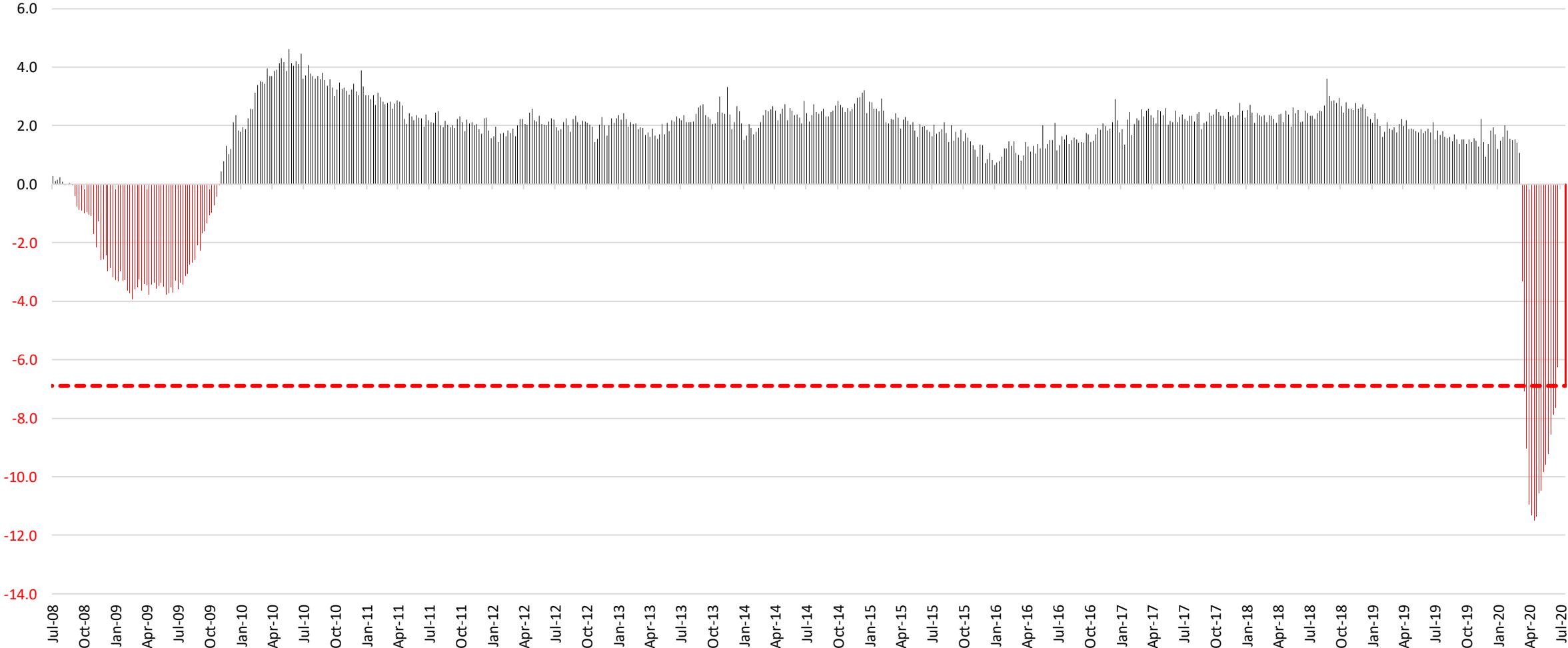


# Then The Bottom Fell Out

HEDGEYE

The WEI is a high-frequency composite that captures the level of national activity on weekly basis. It has now been negative for 19 consecutive weeks ... and at a multiple of the worst level observed during the GFC.

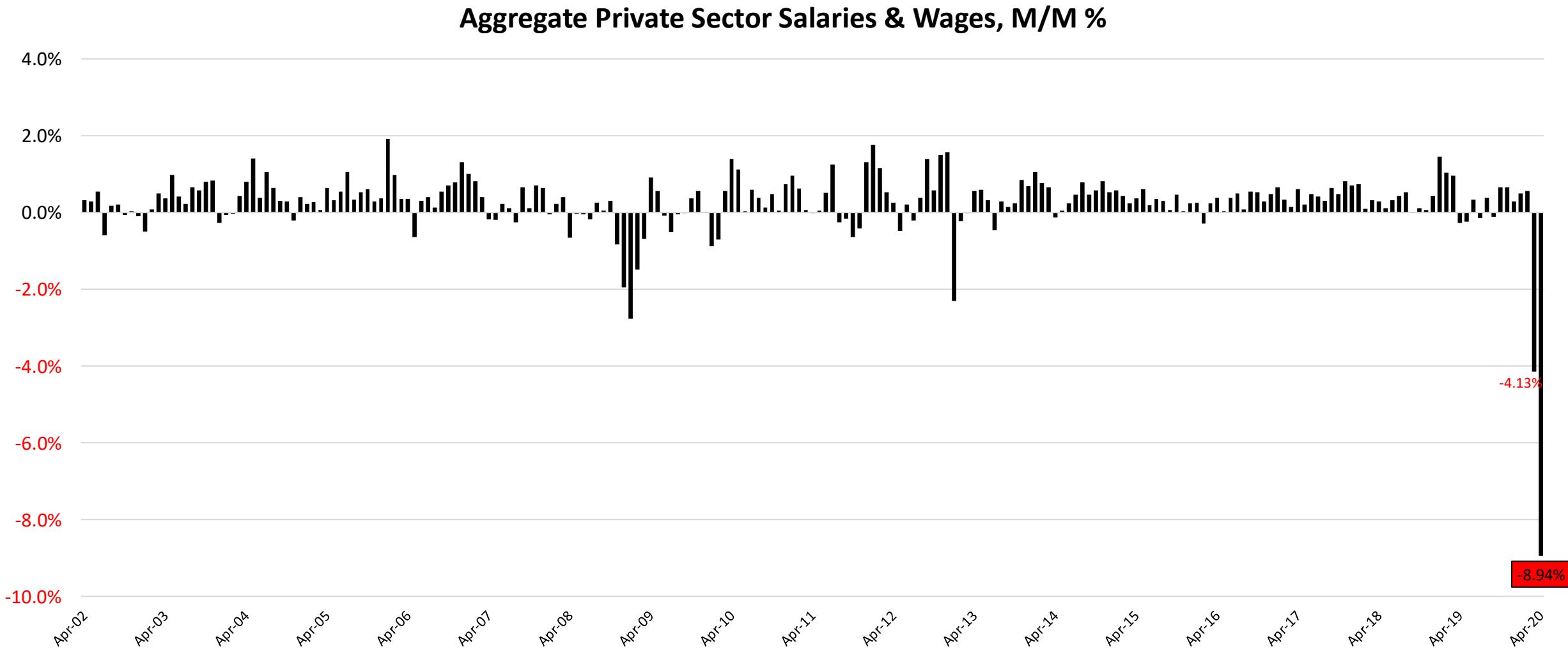
NY FED: Weekly Economic Activity



# Labor Income Plunged

HEDGEYE

Job Loss and Reduced Hours drove an unprecedented cratering in wage income.

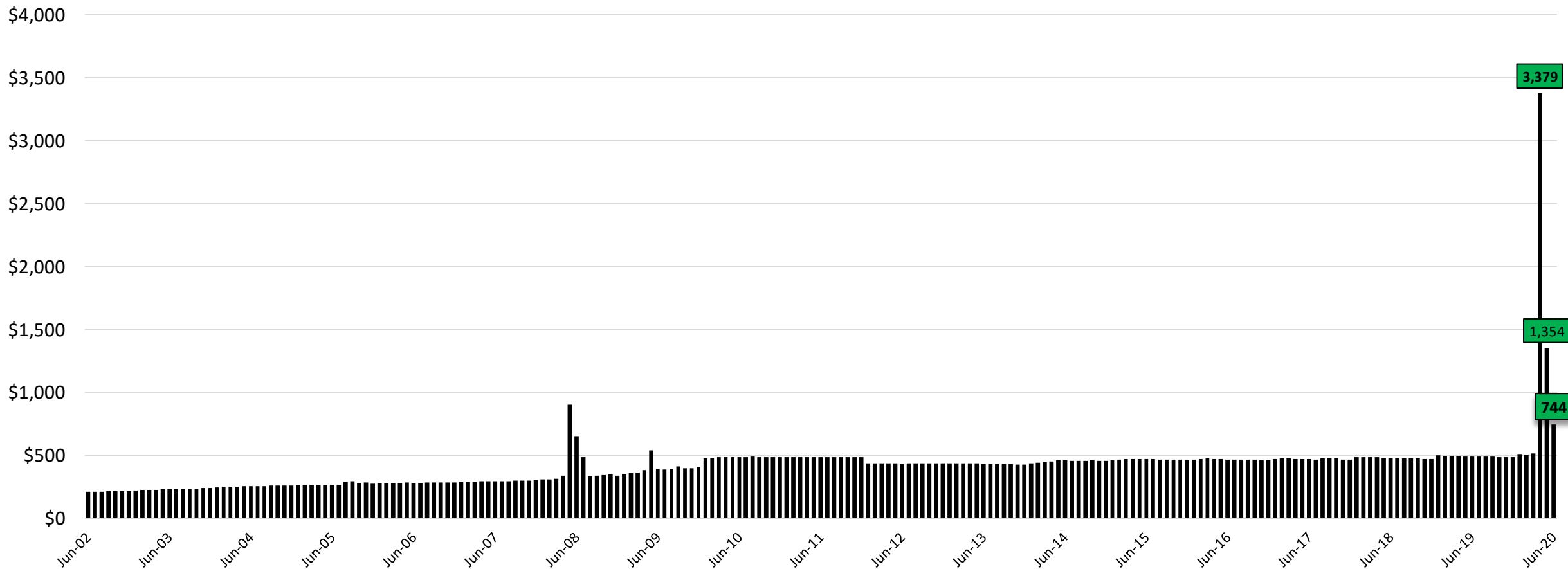


# This Is Now Rearview ....

HEDGEYE

Households received \$3.4T in stimulus support in April and \$1.4T in May which buttressed against a complete cratering in the domestic consumption economy. For comparison, \$4.4T is roughly 4/5 of total annual Retail Sales.

Personal Income via Social Benefits  
\$B's

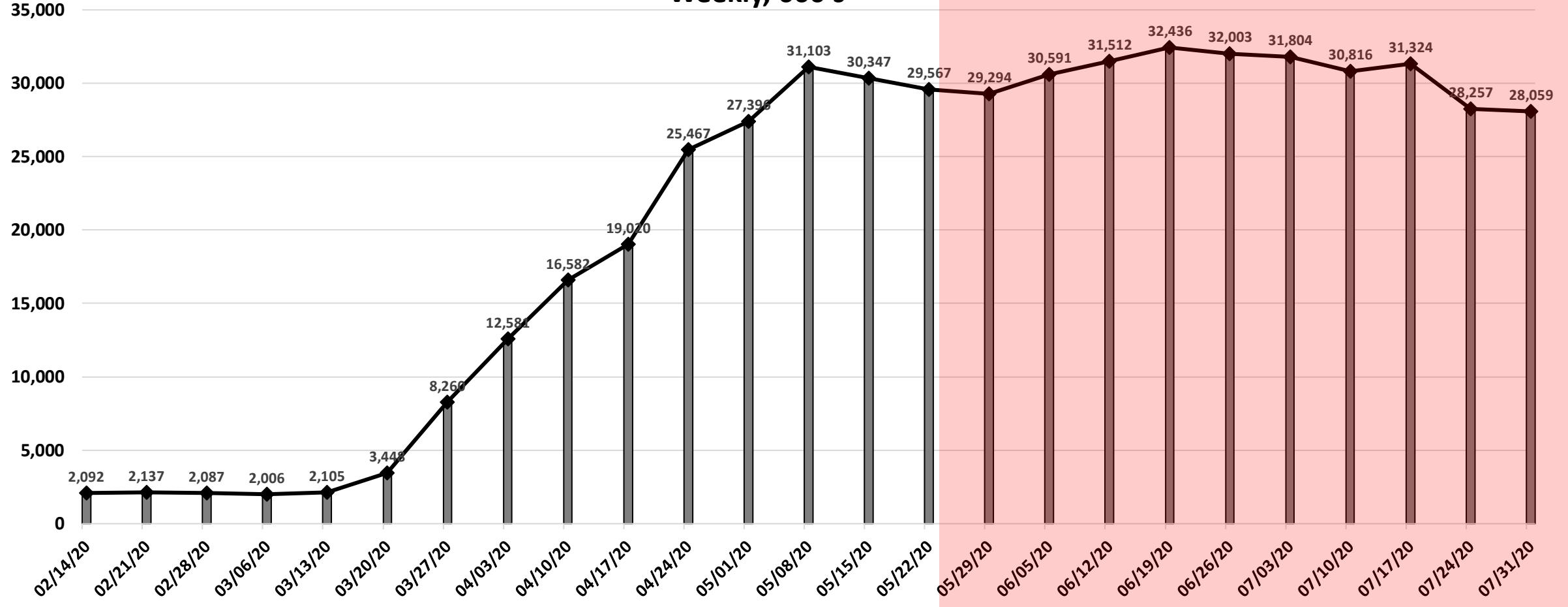


# The Labor Recovery Curve is Inflecting .... In the Wrong Direction

HEDGEYE

If you are losing your job amidst large-scale reopening efforts and a full 5+ months into a “Temporary” Decline, how likely is it that your job loss is “Temporary”?

Total U.I. Benefit Recipients  
Weekly, 000's

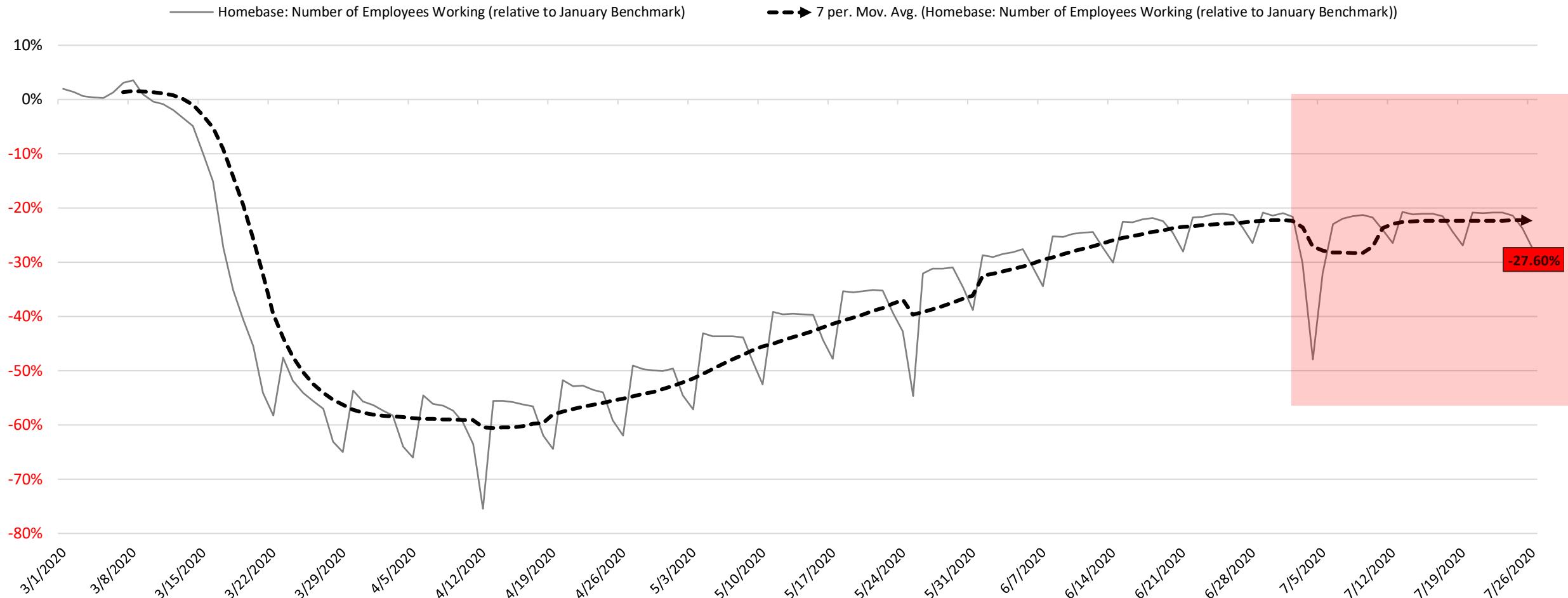


# The Recovery Curve is Flattening

HEDGEYE

After a gradual, progressive recovery, improvement in the number of employees working at small business stalled out at -25% and has begun to roll over

Small Business: Number of Employees Working

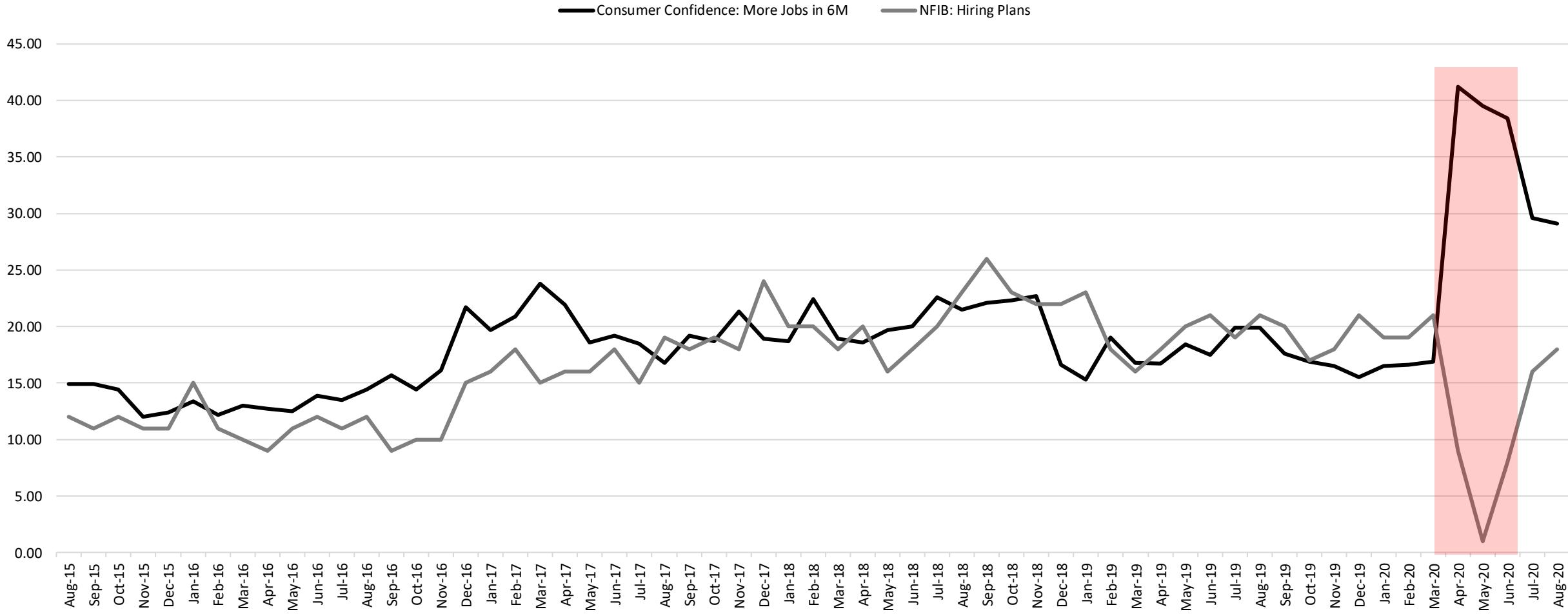


# Irrational Optimism?

HEDGEYE

While recovery optimism is understandable the data suggest the black line re-converging with the gray line is higher probability. Indeed, as the “temporary” shock pushes into its 6<sup>th</sup> month and support funds fade, expectations are beginning to reset lower.

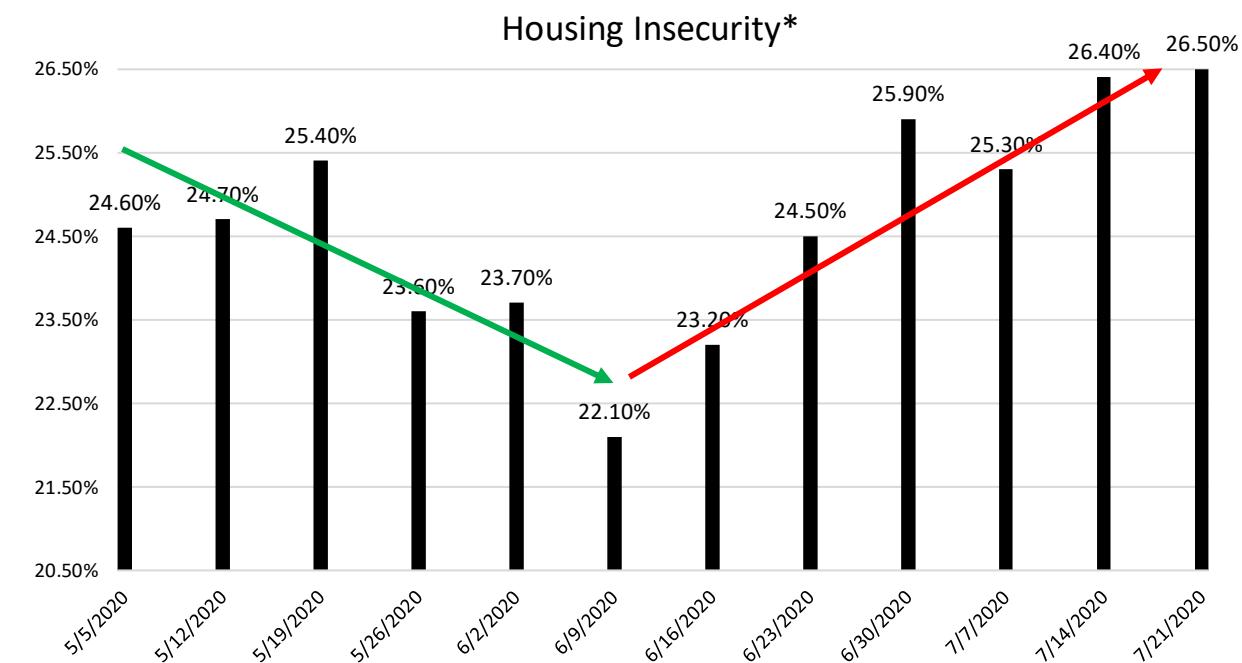
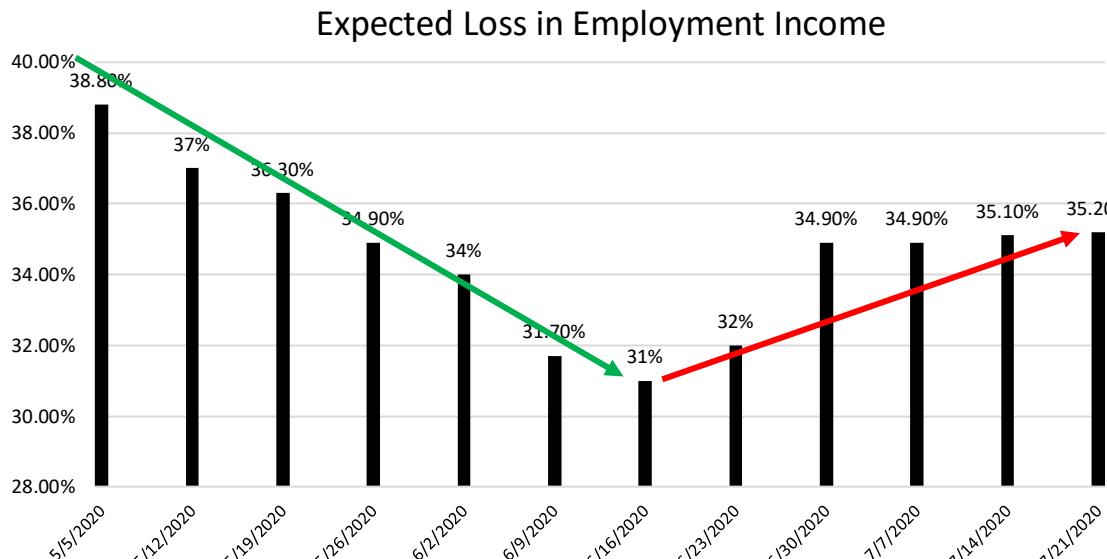
NFIB HIRING PLANS vs 6M CONSUMER EXPECTATIONS FOR MORE JOBS



# The Recovery Curve is Flattening

HEDGEYE

Duration matters at least as much as magnitude. As the COVID shock moves through month 5, expectations around income and housing security are going the wrong way.



\*Percentage of adults who missed last month's rent or mortgage payment, or who have slight or no confidence that their household can pay next month's rent or mortgage on time.

# The Recovery Curve is Flattening

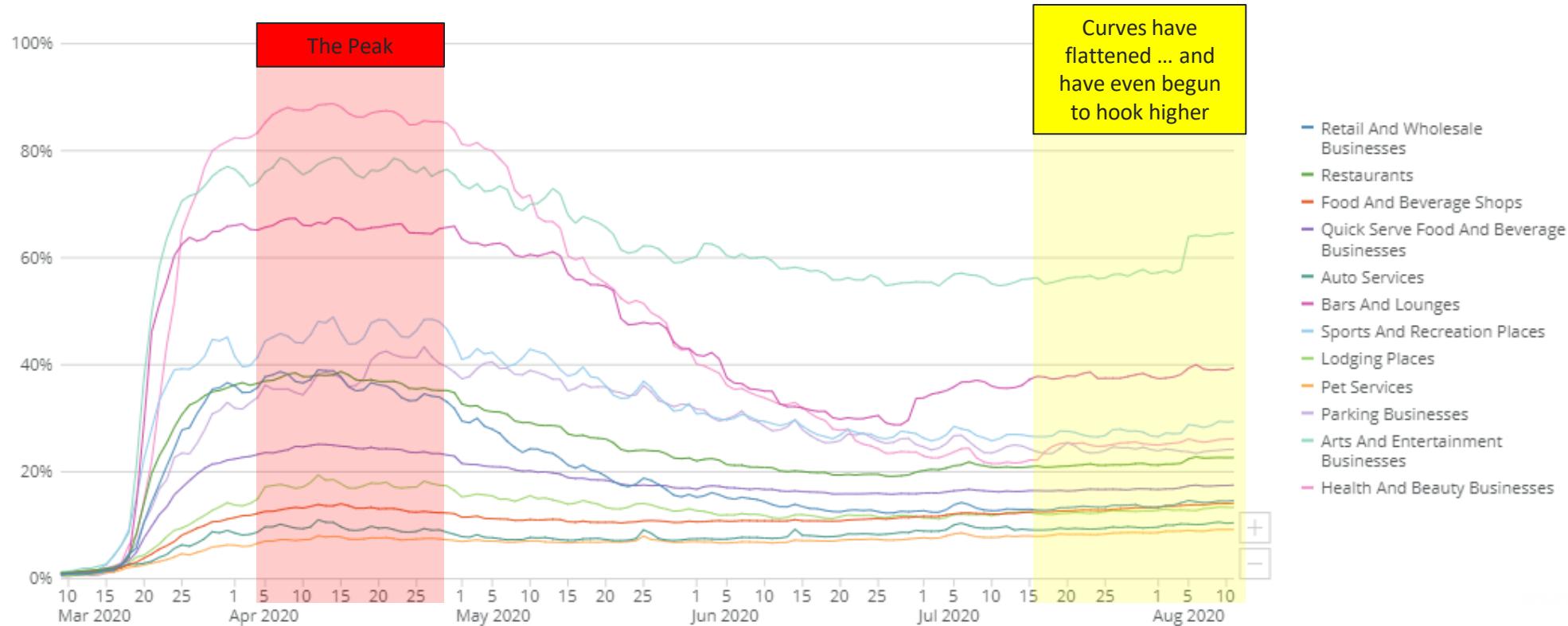
HEDGEYE

Business Closures (businesses reporting no transactions) rates have improved off peak. But the cross-sector curves are flattening ... and at meaningfully elevated levels.

## Business Closure Rate by Category



All Time

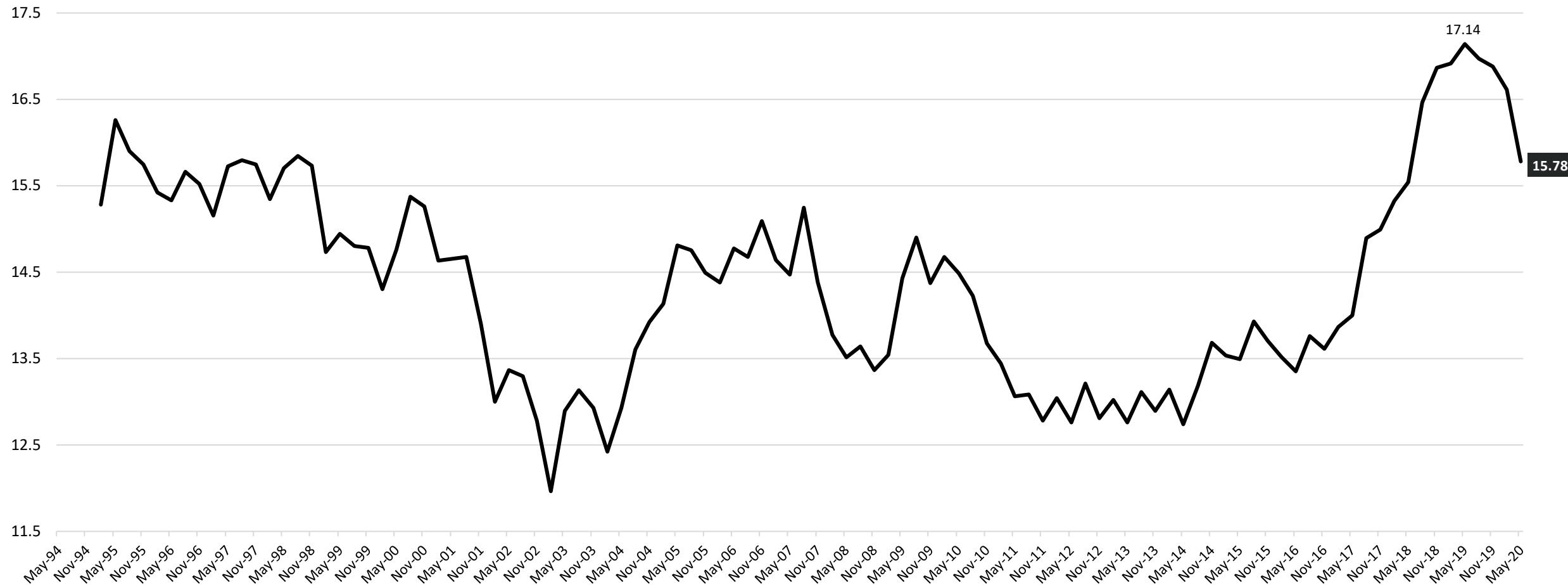


# Bailing Out Who? Cost To Borrow #NeverHigher

HEDGEYE

## Credit Card Interest Rate

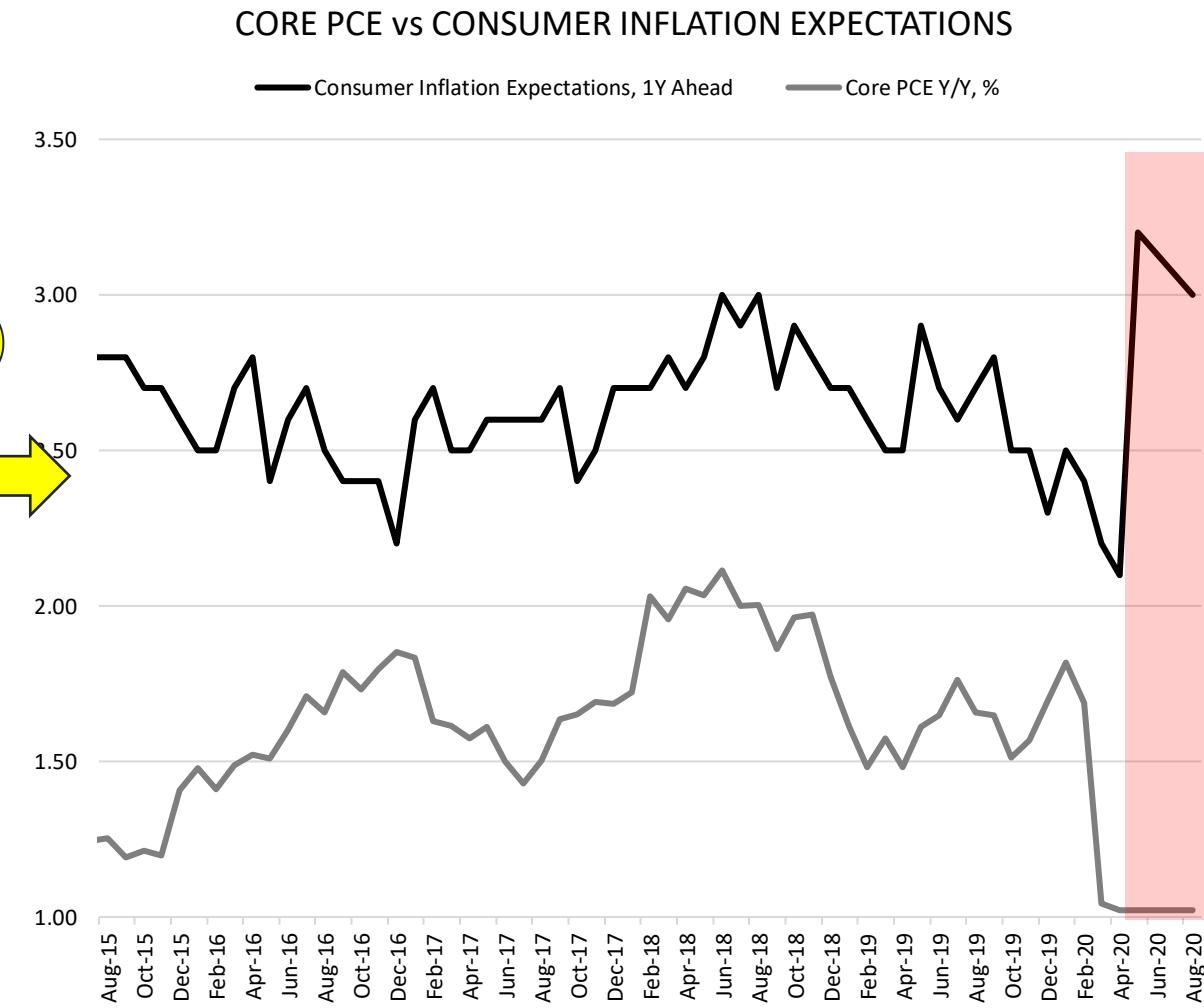
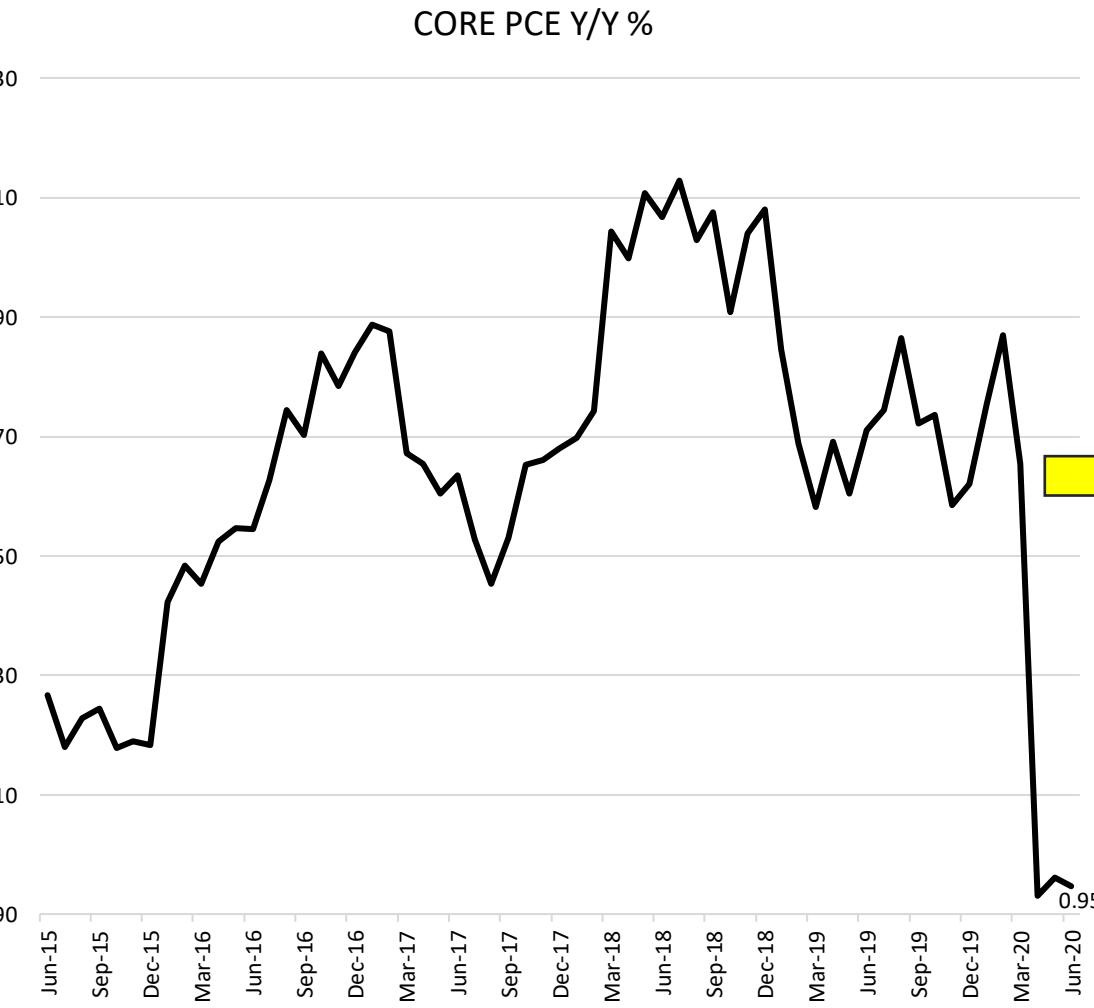
— Credit Card Interest Rate (Federal Reserve Consumer Credit Commercial Bank Credit Card Assessed Interest)



# For Consumers: It's The Particular That Matters

HEDGEYE

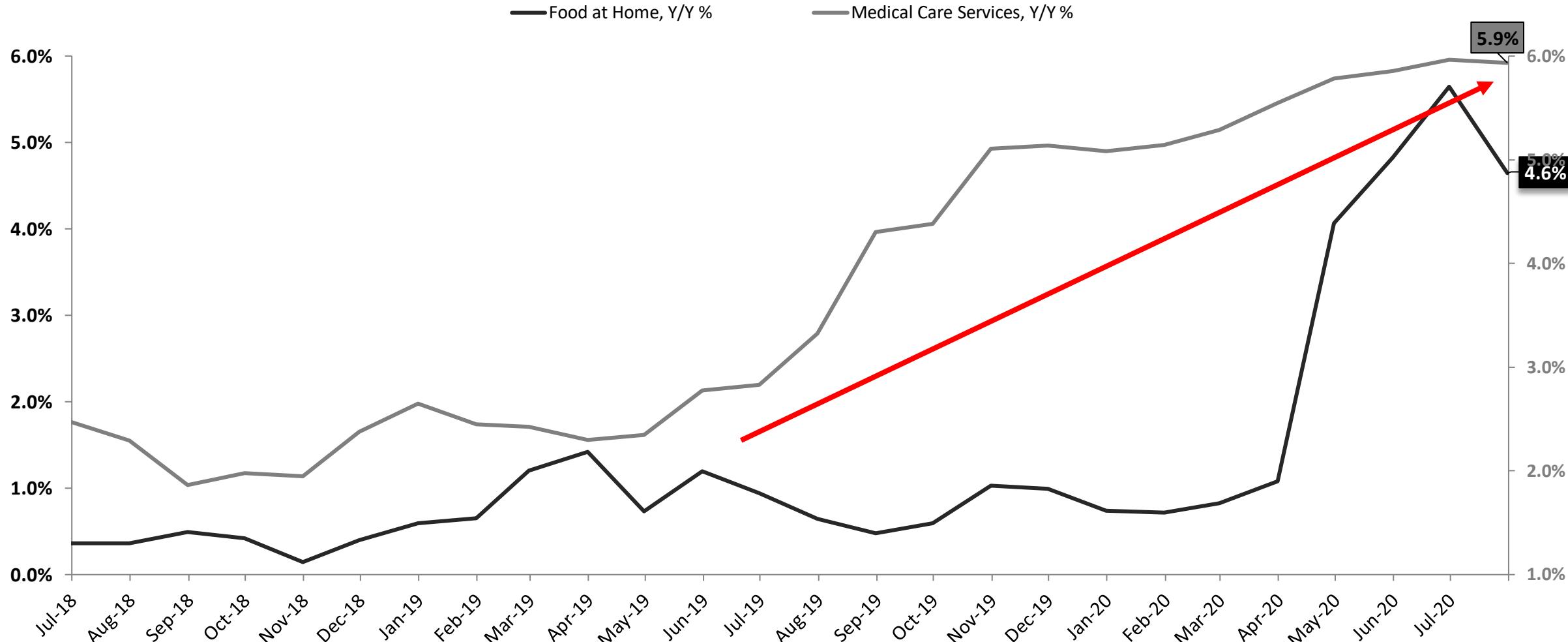
While reported inflation is decelerated to multi-year lows, Consumer Inflation expectations have spiked.



# QUAD 3 Stagflation Is Already Here

HEDGEYE

While reported price growth in the aggregate is conspicuously disinflationary, prices for the stuff people actually have to buy have gone vertical.

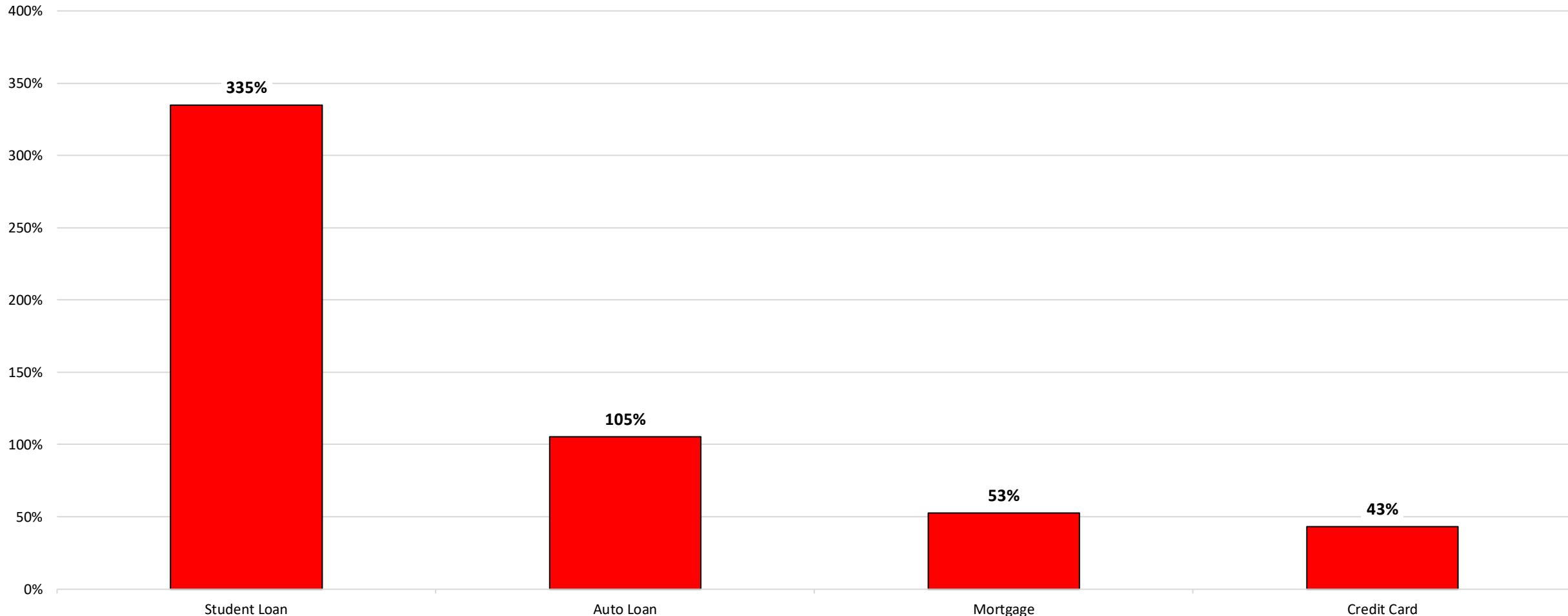


# Unsurprisingly Missed Payments Are Piling Up

HEDGEYE

Transunion data show over 106 million loan payments have been missed since March.

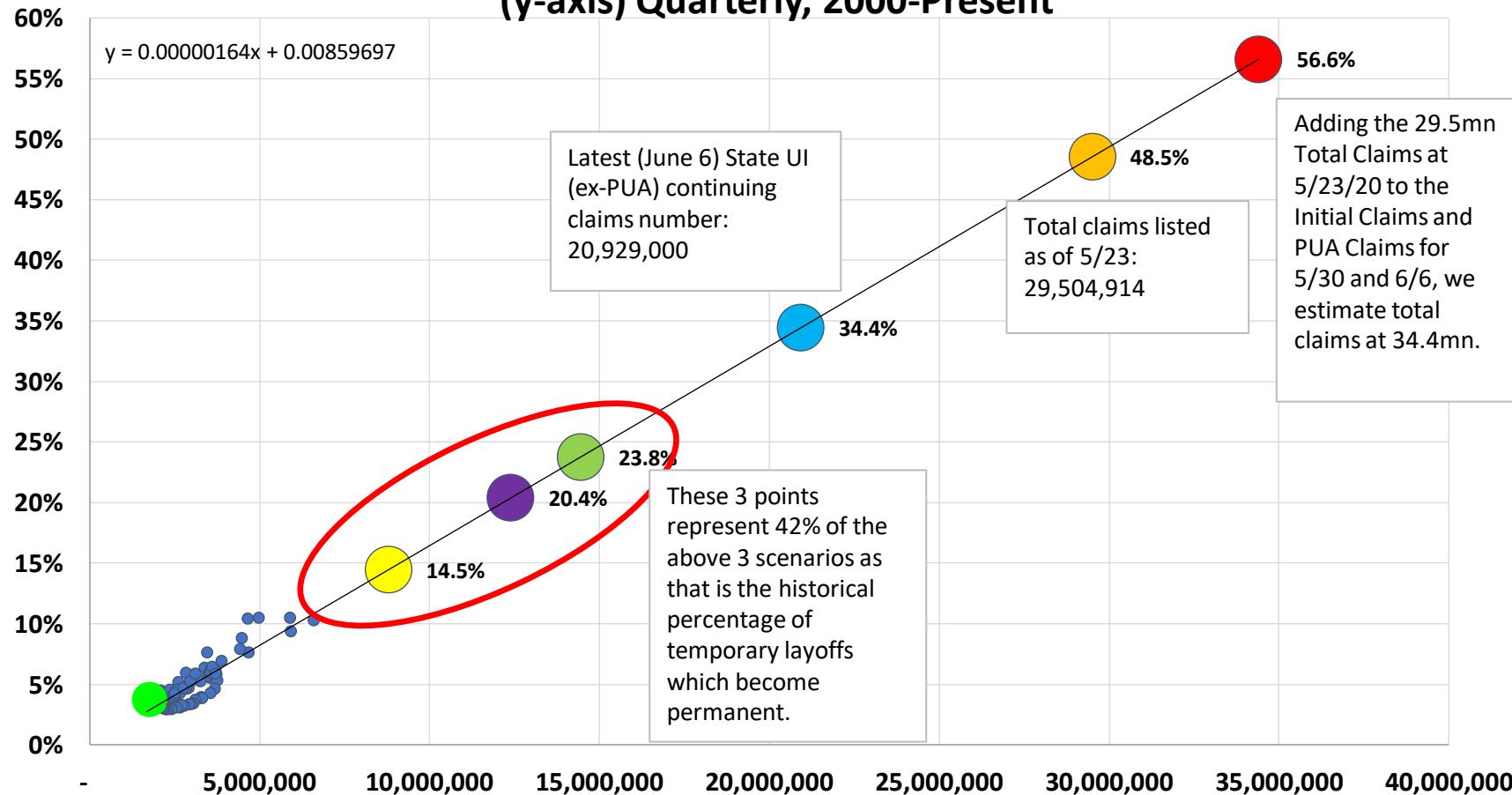
Deferred & Unpaid Debt Payments: M/M Chg (May)



# The Defaults and Charge-offs Are Coming

HEDGEYE

Continuing Jobless Claims (x-axis) Vs. Credit Card Charge-Off Rate (y-axis) Quarterly, 2000-Present



Source: Federal Reserve, HRM Estimates

© Hedgeye Risk Management

Pre-Covid 19 Continued Claims stood at 1.8mn while charge-offs were 3.7%. This is depicted in the bright green circle at the bottom left of the chart.

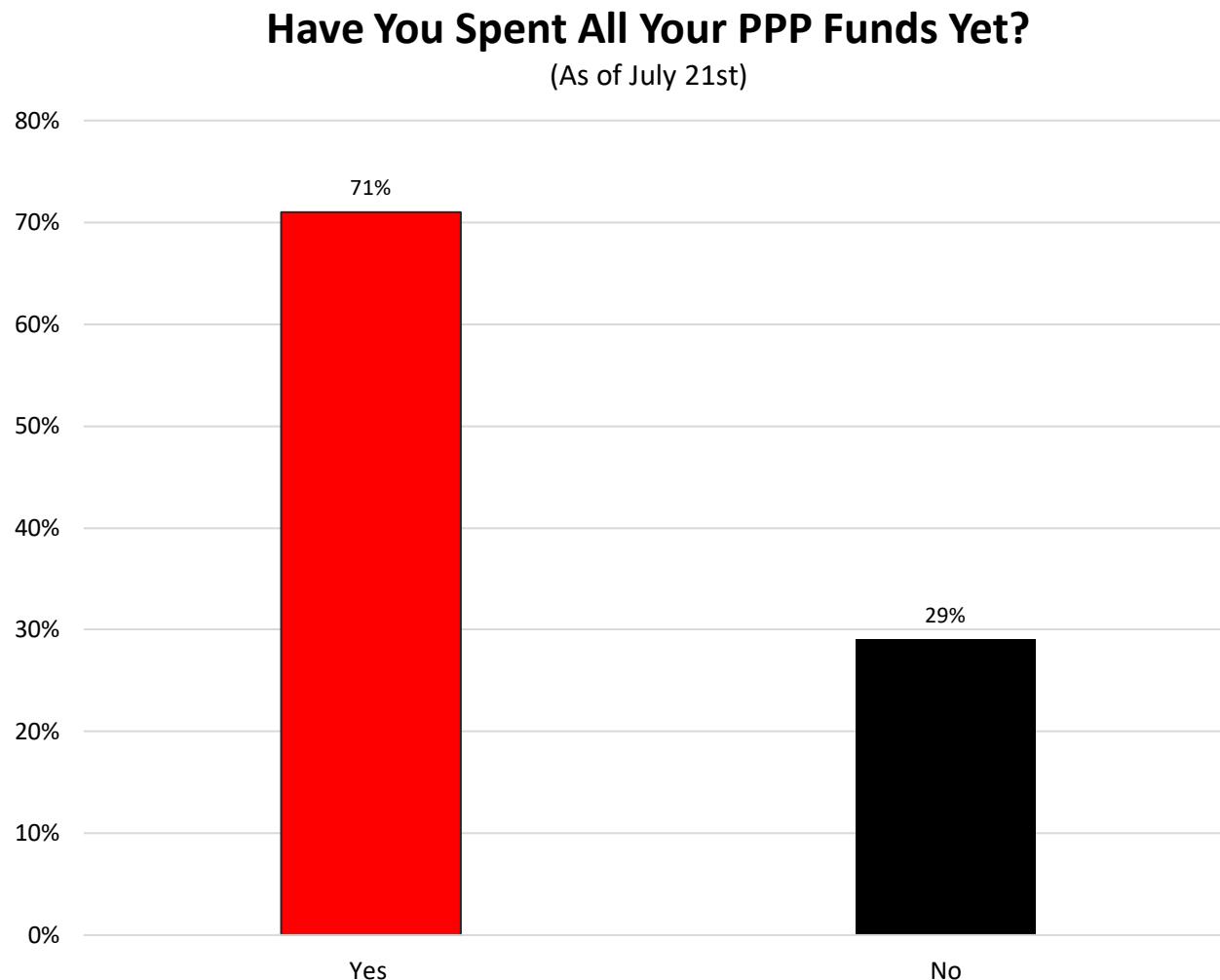
The three colored circles in the top right of this chart reflect different scenarios using claims totals from the previous slide. They assume continuing claims levels of 20.9mn, 29.5mn and 34.4mn.

The three colored circles within the red band reflect the above scenarios, but reduced to 42%, based on the probability that 42% of these pandemic layoffs will likely become permanent based on an historic analysis of the share of temp layoffs that become permanent.

At the peak of the GFC, charge-off rates hit 10.5%. The six scenarios listed here would suggest charge-off rates of 14.5%, 20.4%, 23.8%, 34.4%, 48.5% and 56.6%.

# THE CLOCK TICK IS GETTING LOUDER

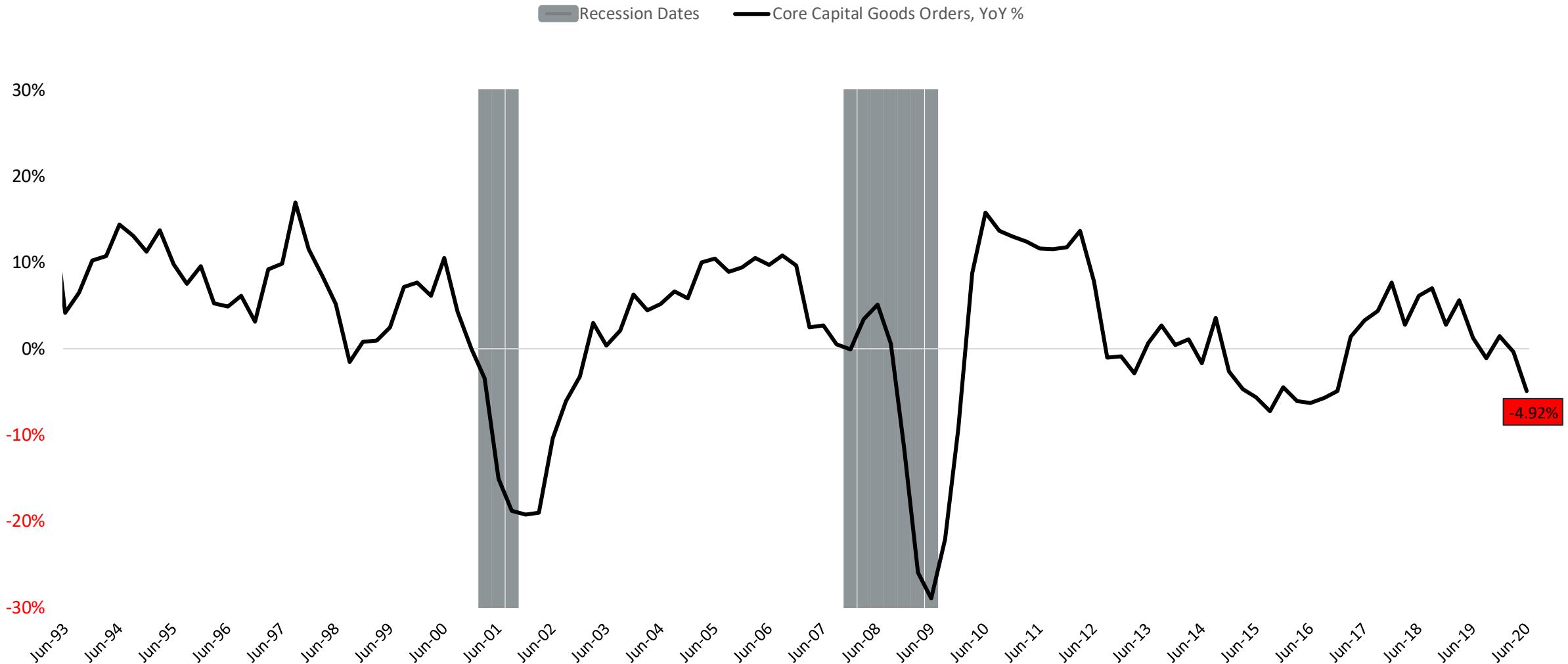
HEDGEYE



# Business Investment will not be a source of demand

HEDGEYE

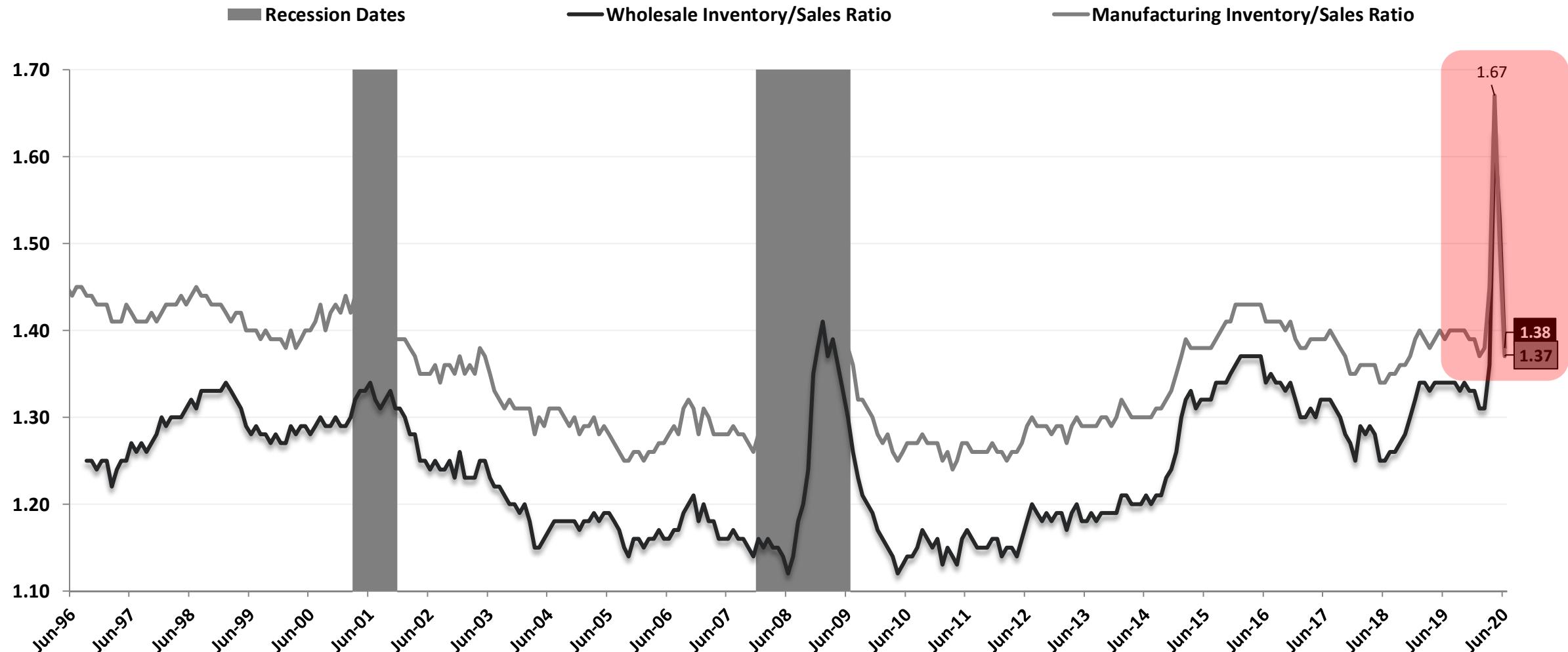
Would you accelerate investment spending into declining demand, depression level job loss, already negative earnings growth, higher costs and rampant uncertainty?  
What, simply, is the catalyst for a durable inflection?



# Neither will the Inventory cycle.

HEDGEYE

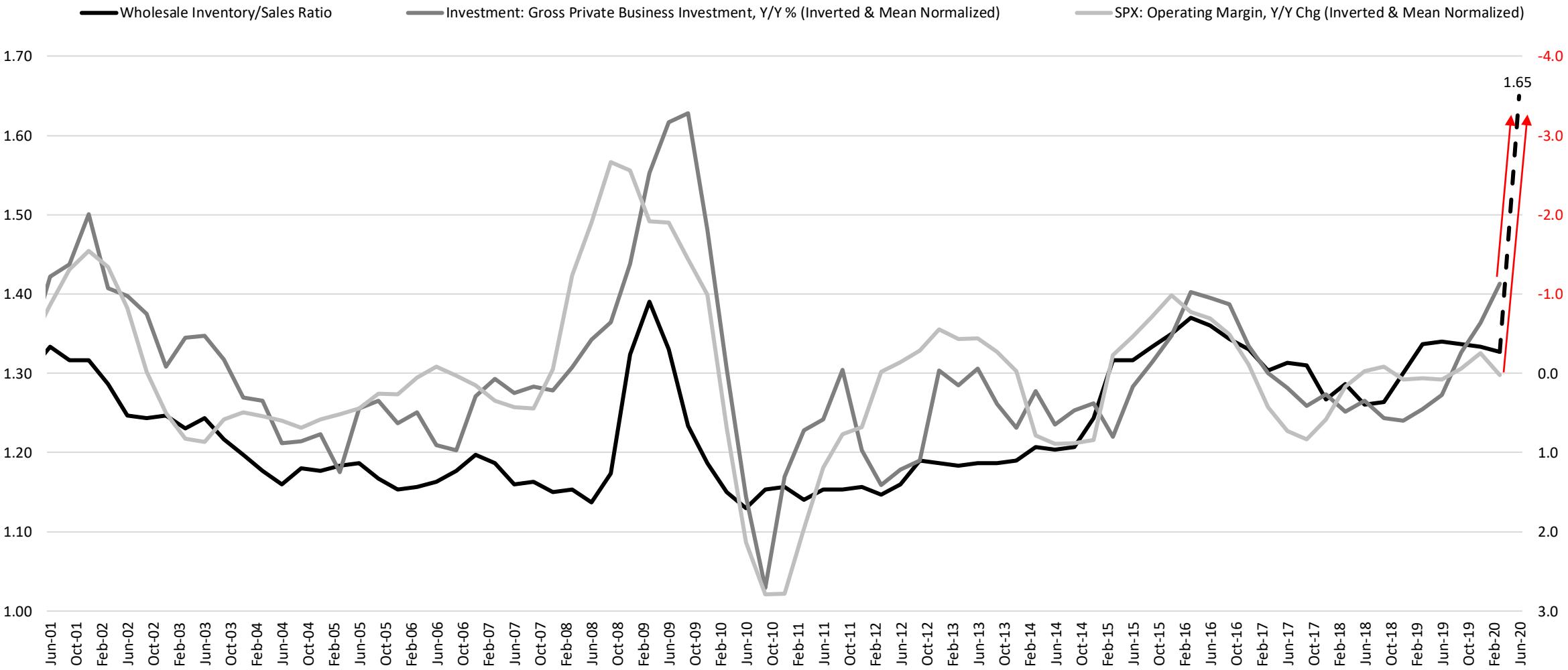
Inventory-to-Sales = ATH  $\neq$  Margin or Demand/Investment Upside



# Inventory-to-Sales ↑, Future Investment & Margins ↓

HEDGEYE

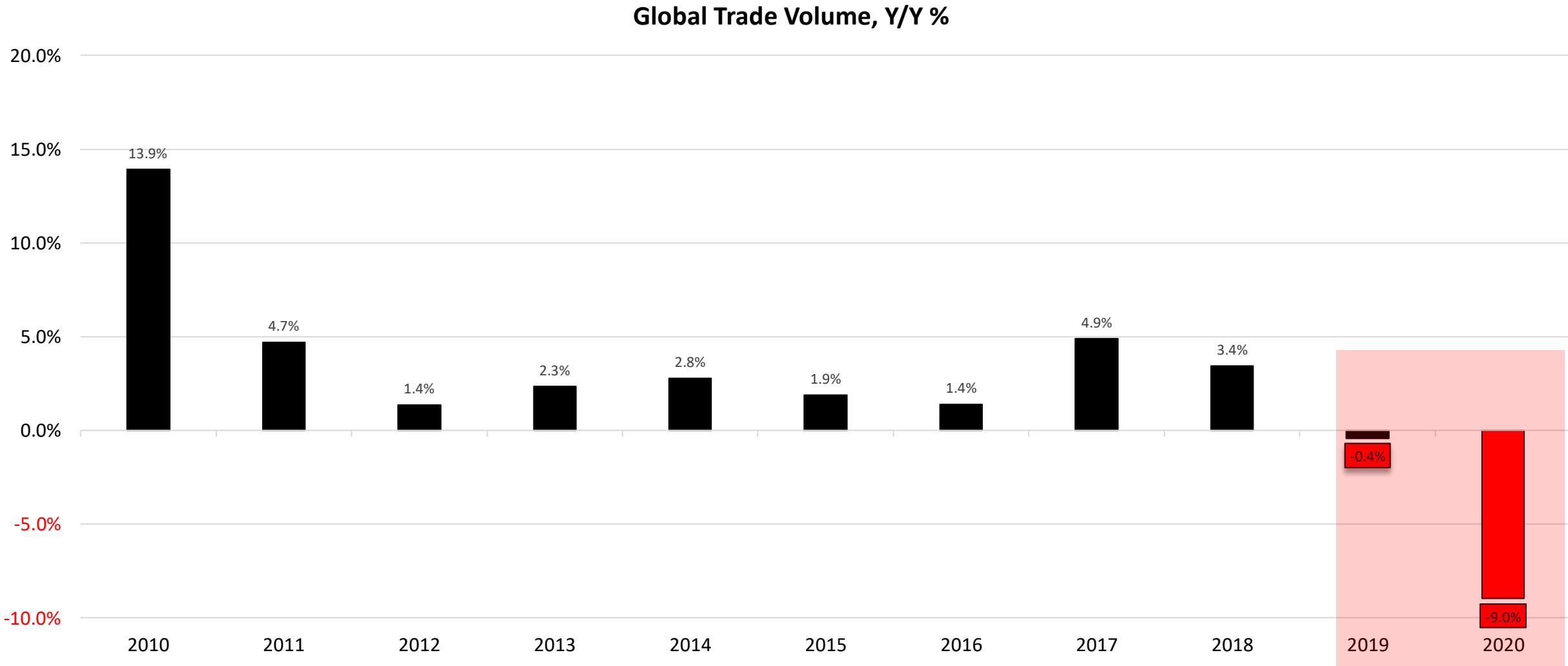
Empirically, increases in the IS ratio lead to decreased investment and margin compression. Look for the gray lines to recouple with the black line over the coming quarter(s)



# Domestic Consumption ↓, Capex ↓, Inventory ↓ .... External Demand ↓

HEDGEYE

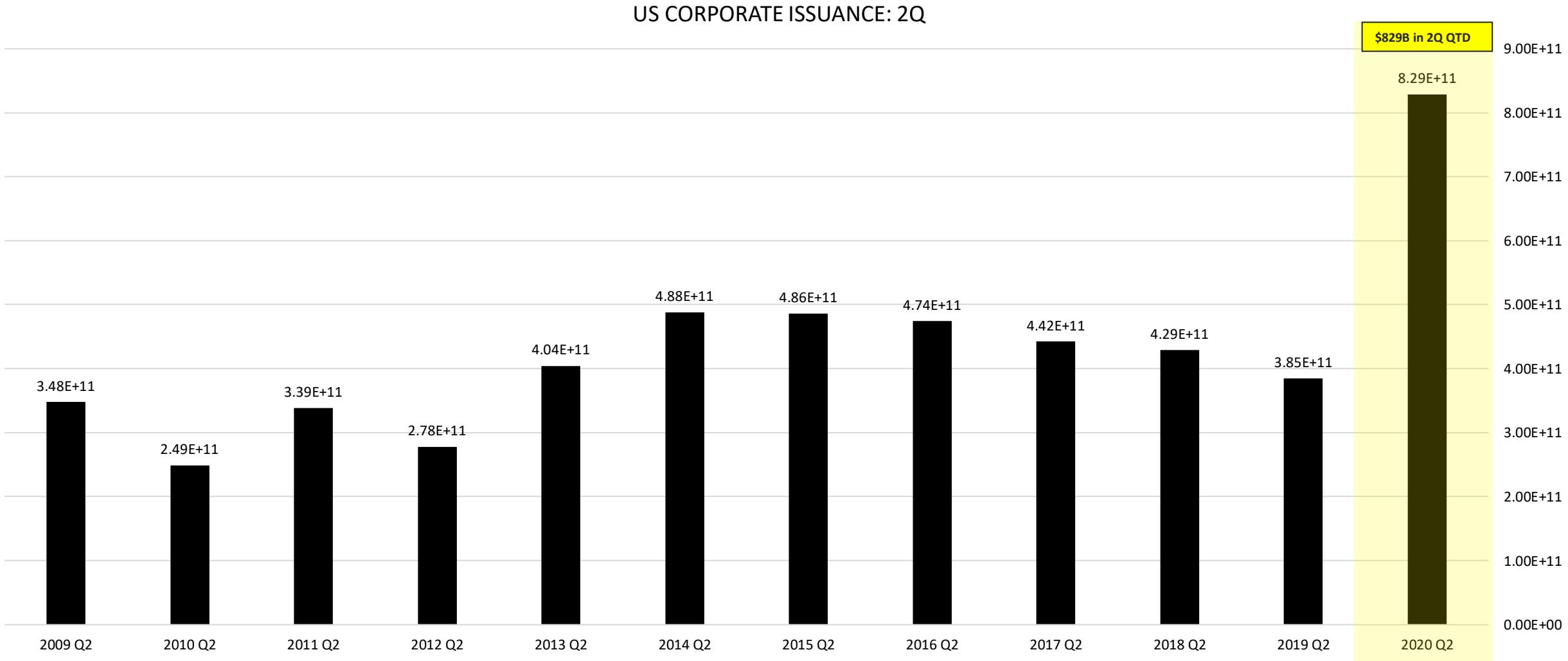
Global Recession + Current/Residual strong \$USD + Deglobalization means external demand will not be a durable support to growth. The waxing and waning Sino-U.S. relations (i.e. Trade Deal) will remain a wild-card.



# Then Came Their God (The Fed) With Moarr Leverage

HEDGEYE

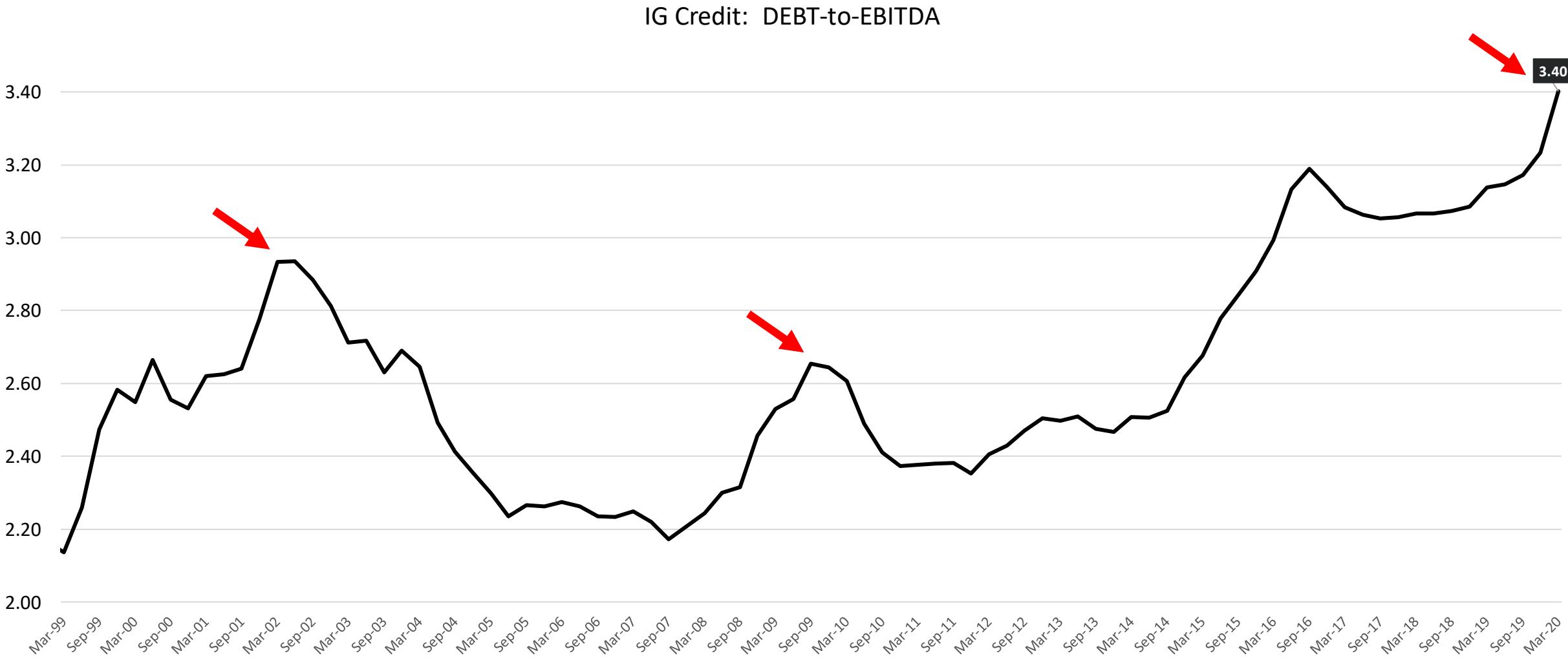
U.S. Corporates issued over \$800B in new debt in 2Q20 alone. IG issuance totaled 1.23T in 1H20, roughly equivalent to the largest full year issuance over the past decade.



# Net and Total Debt-to-EBITDA = ATH

HEDGEYE

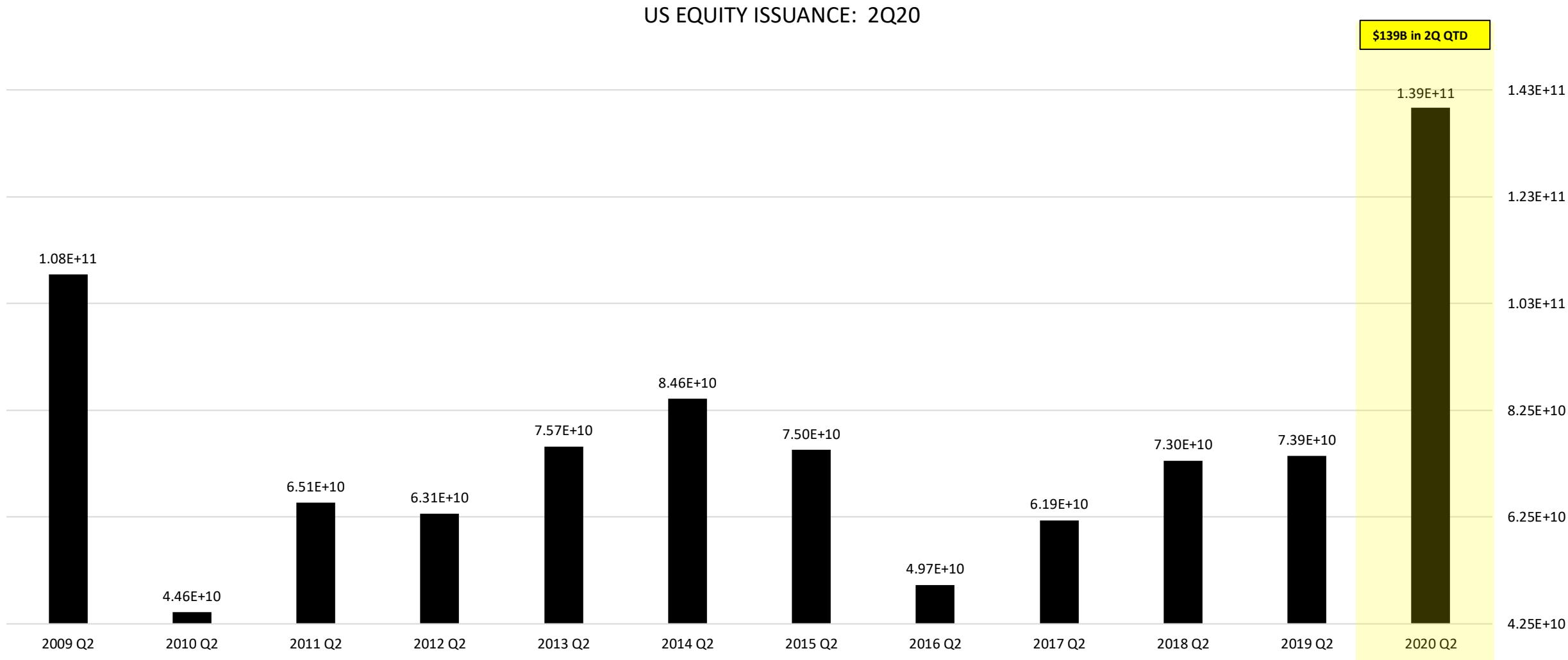
Debt-to-EBITDA was at an all-time high for IG credit in 1Q20 while interest coverage was at its lowest level since the GFC.



# Mrrrrna. Equity Issuance, Old Wall Style! ↑↑

HEDGEYE

The liquidity rush wasn't just in credit. Equity issuance ballooned to \$139B in 2Q20



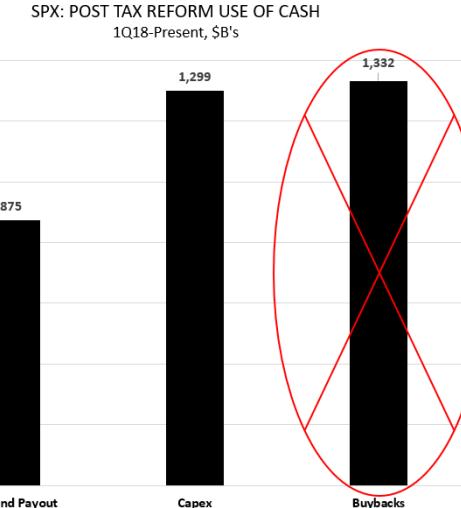
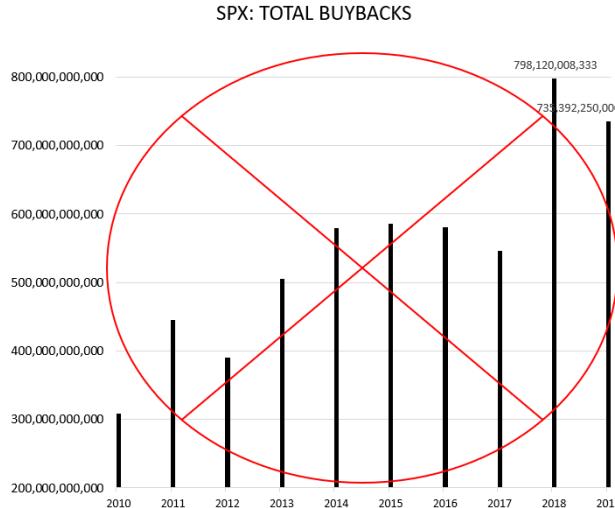
# Remember this Risk Callout (last qtr)?

HEDGEYE

WHAT IF .....

HEDGEYE

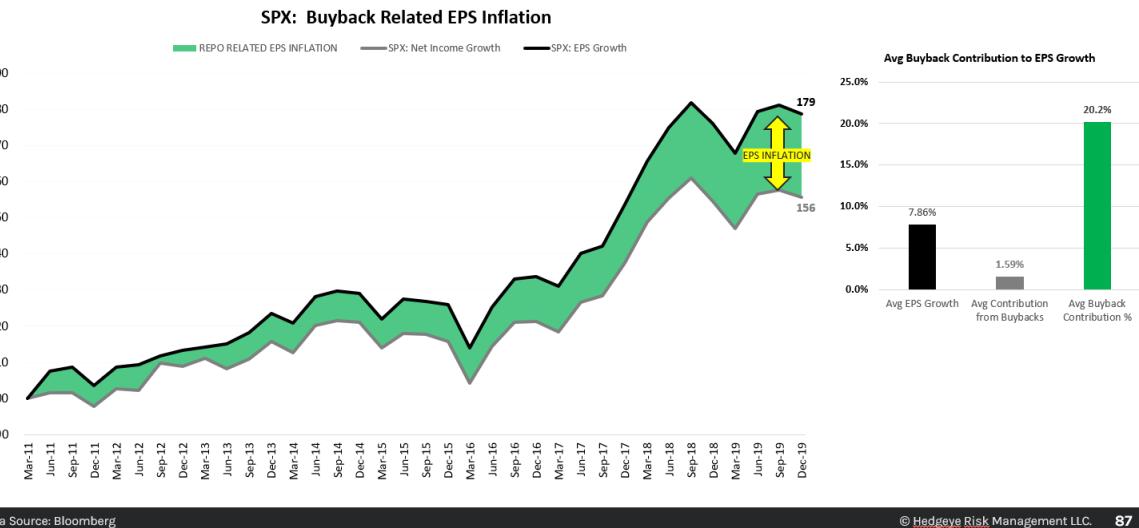
Buybacks activity across the S&P500 has been running ~\$800B in recent years and has been the largest use of corporate cash post tax reform.



Buybacks have been THE tailwind to EPS inflation.

HEDGEYE

~20% of EPS growth, on average, has been attributable to Buyback activity over the course of the expansion.

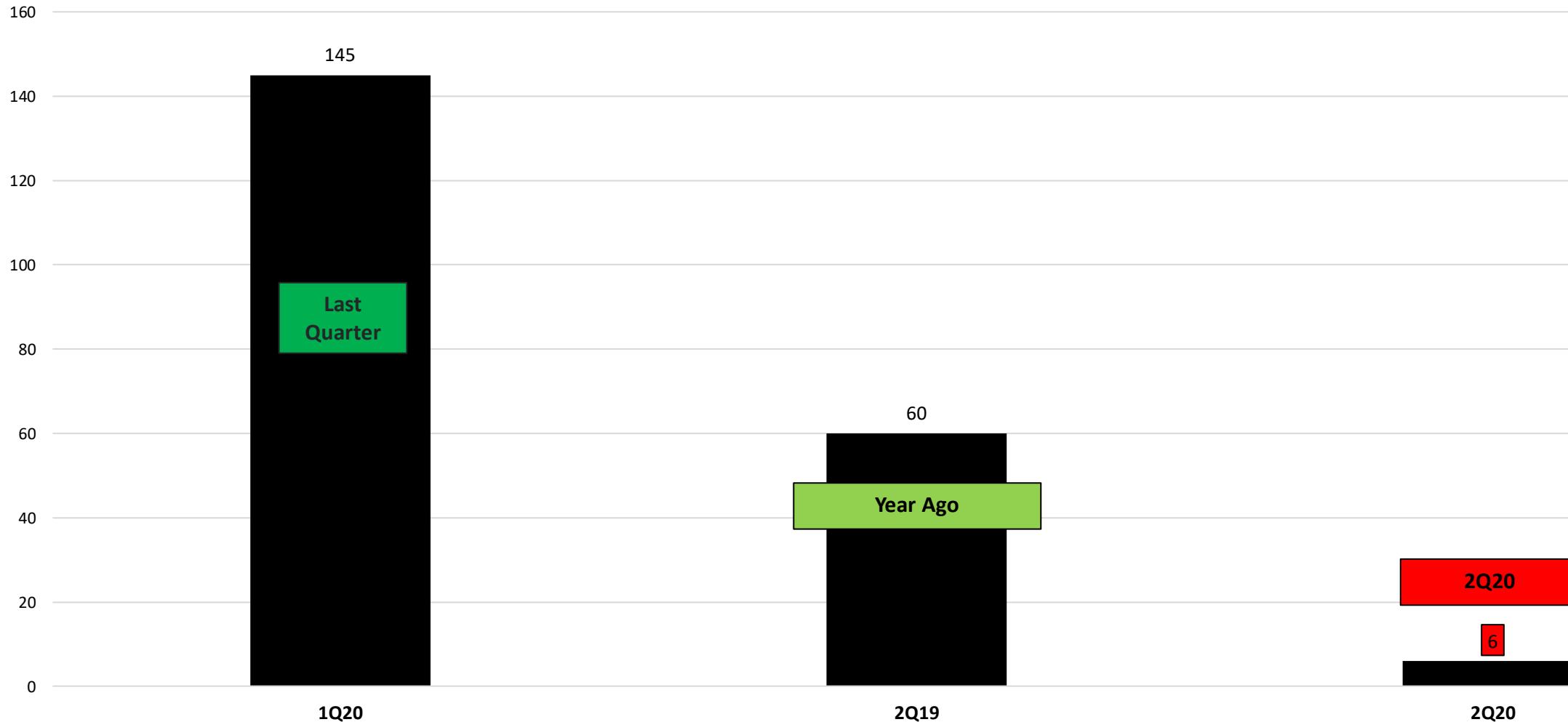


# Guess What Hasn't Surged? .....

HEDGEYE

Buybacks have been the only net positive source of equity demand for the whole of the expansion and the largest support to EPS growth. It looks like a hard stop for the real-life PPT in 2Q.

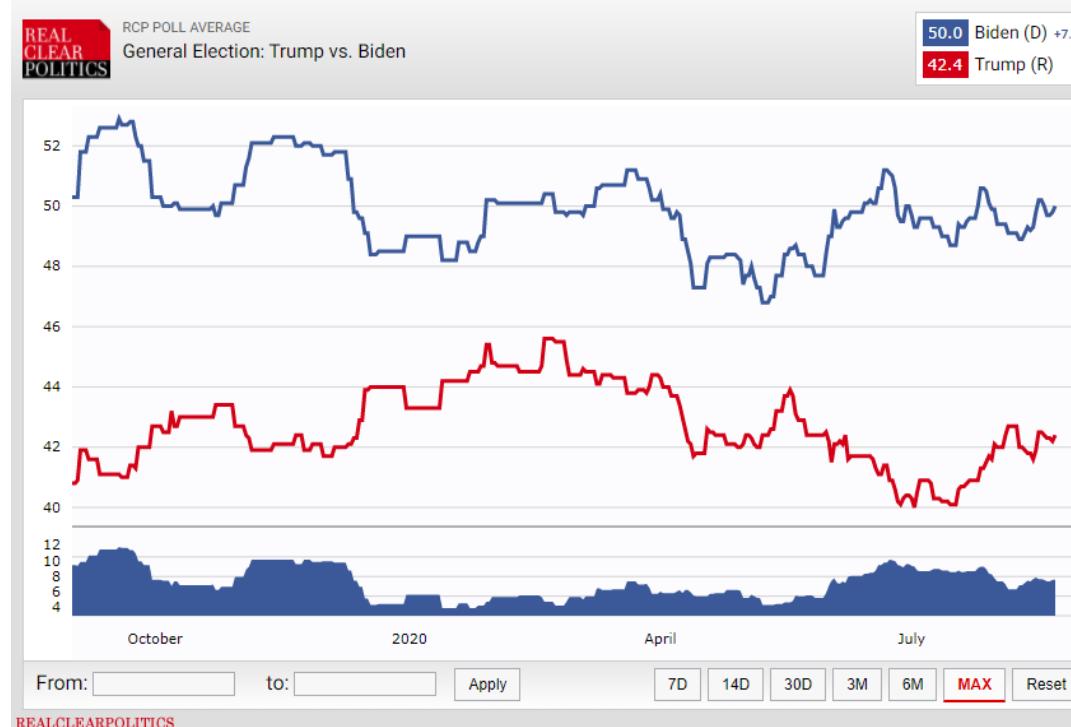
SPX: 2Q20 Announced Buybacks



# Remember the +10% Increase in EPS Growth Complements of Tax Reform?

HEDGEYE

Election Uncertainty and the prospects of a roll-back of Tax Reform have risen as Biden's lead in National Polls has expanded. Tax reform boosted SPX earnings growth by ~10% in 2018. With depressed earnings capacity defining the NTM, the converse impact associated with a full/partial roll-back would be devastating ... although a Dem victory would likely herald a push-pull between Tax Reform and MMT/Redistribution initiatives.

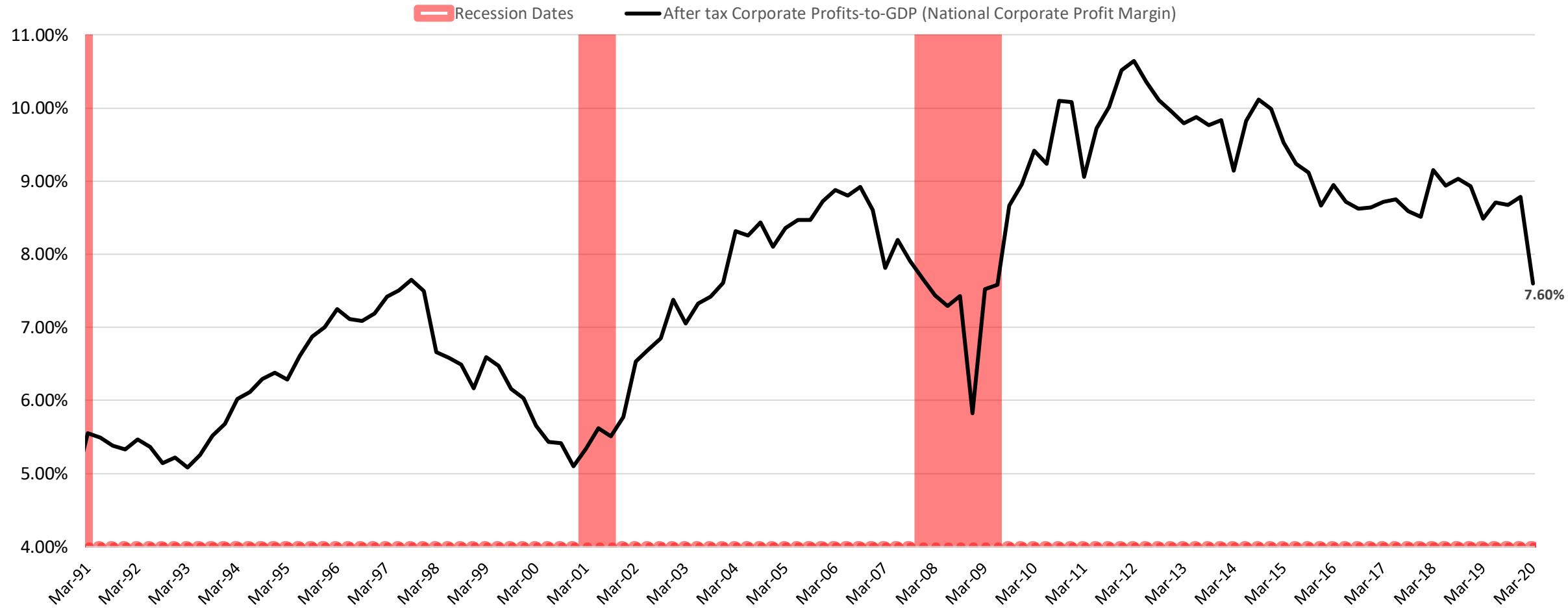


Growth ↓ + Equity Issuance ↑ + Debt ↑ + Buybacks ↓ ≠ Margins/EPS ↑

HEDGEYE

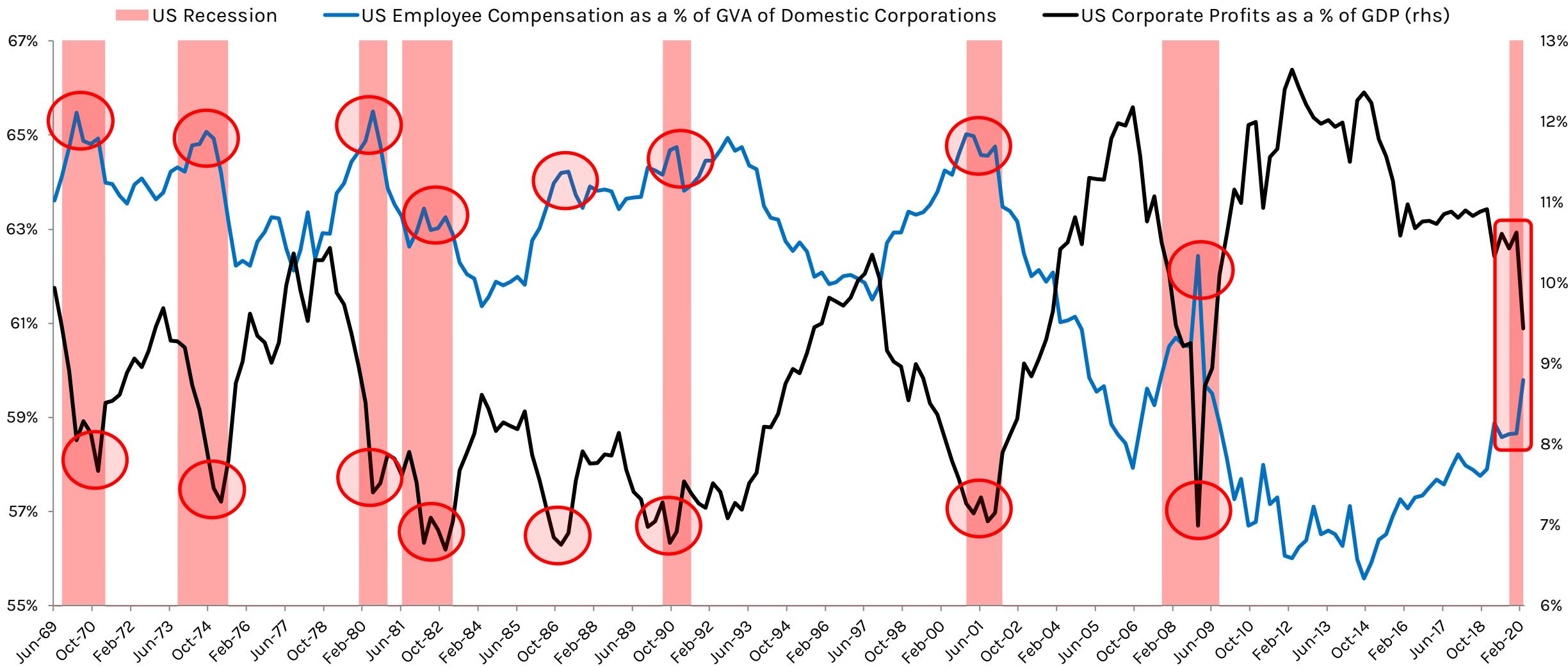
Margins were already under pressure and ceding share to labor. Current dynamics will only accelerate the margin contraction.

### National Corporate Profit Margin



# A Cyclical Corporate Margin Squeeze Was In Effect Prior To COVID-19 Crisis – Which Only Serves To Accelerate Downside In EBIT Margins

HEDGEYE



**POD 1**

## Structural Damage + Inability for Consumption, Investment & External Demand to Support a Durable Topline Recovery

HEDGEYE

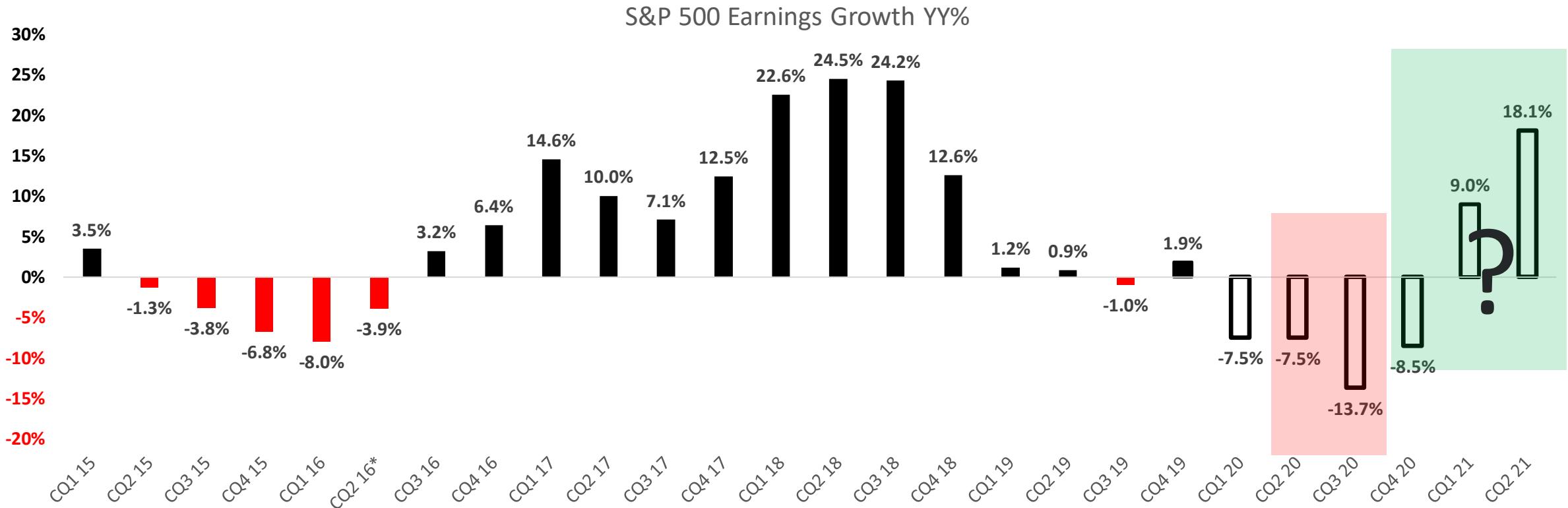
+

**POD 2**

Suppressed Demand + ATH Leverage, Excess Capacity, Inventory Overhang, Equity Issuance ↑, Repo ↓, rising health & supply chain related costs, deglobalization and prospective tax reform rollback driving protracted margin pressure.

=

**DEEP POD 4**



# Q3 2020 Macro Themes

HEDGEYE



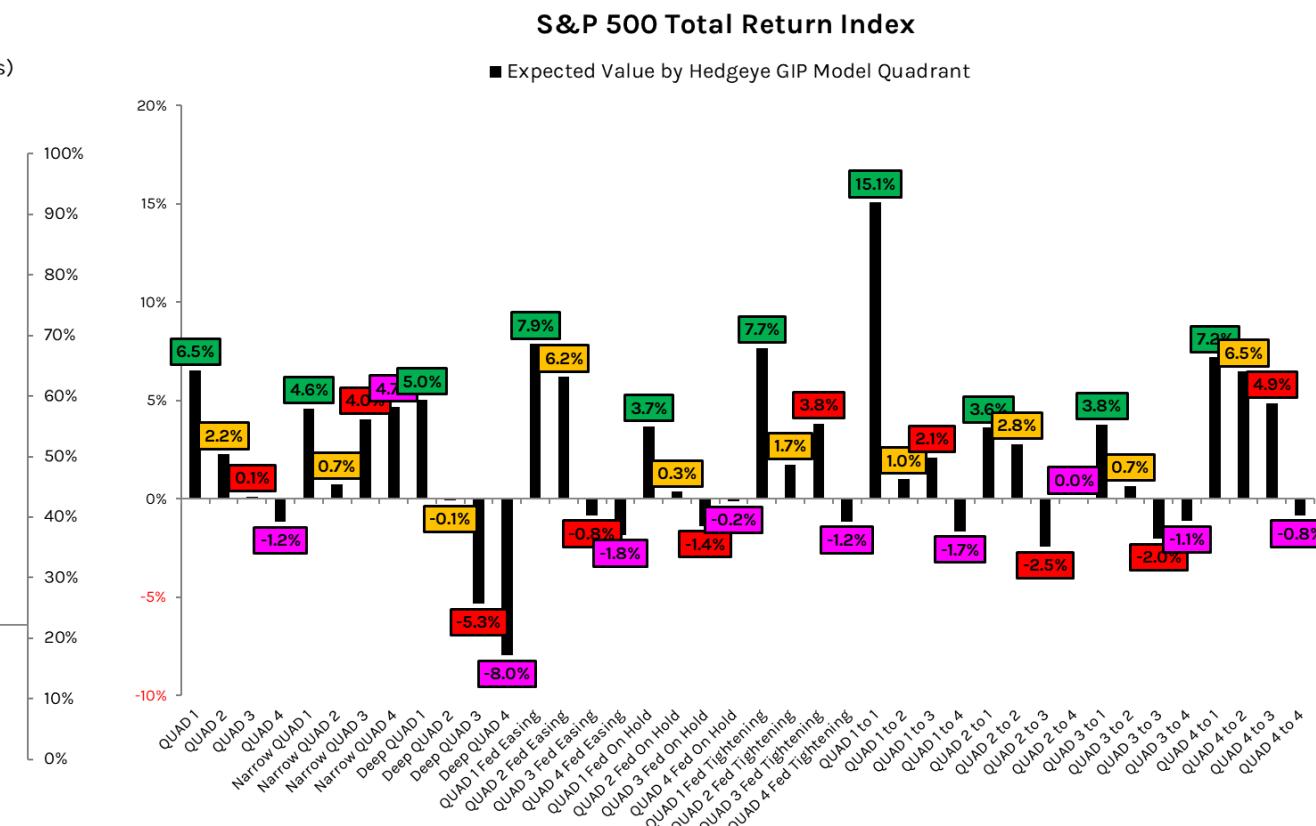
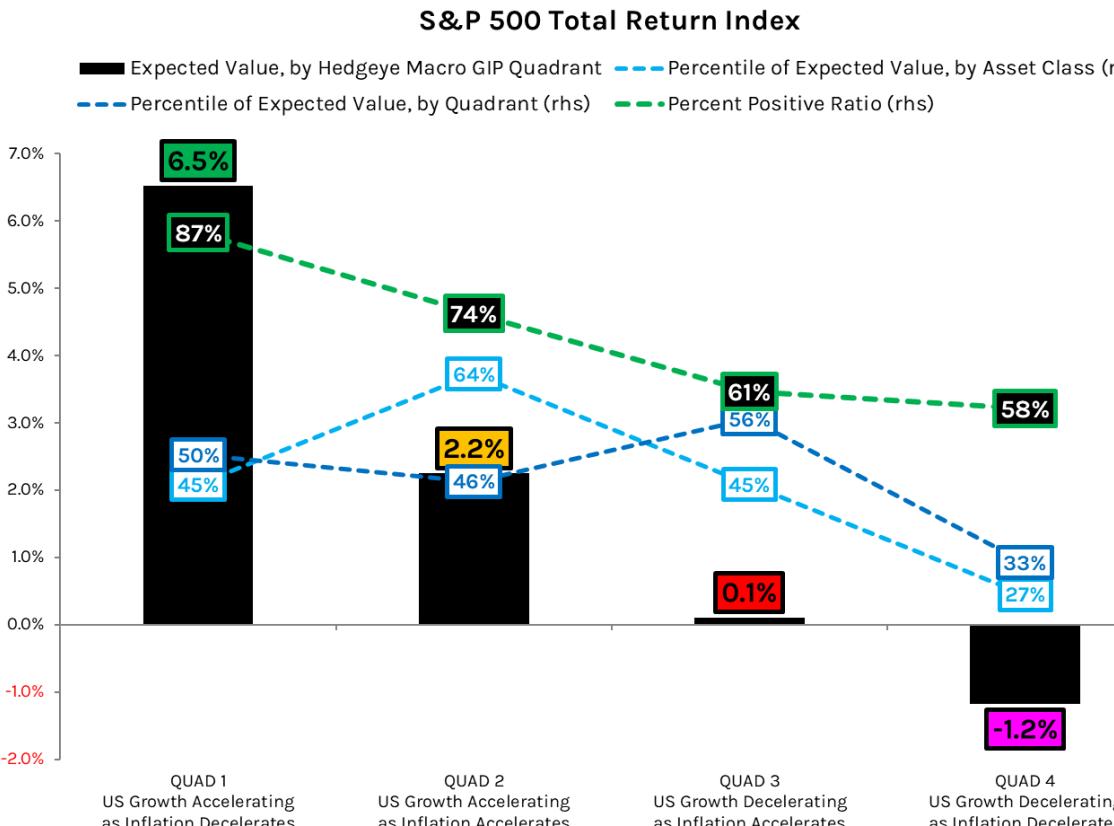
USD, Commodities, EM

# Stagflation Is The Hardest Macro Regime To Risk Manage

HEDGEYE

Quad 3 = “No Soup For You” From The Perspective  
Of Equity & Credit Beta

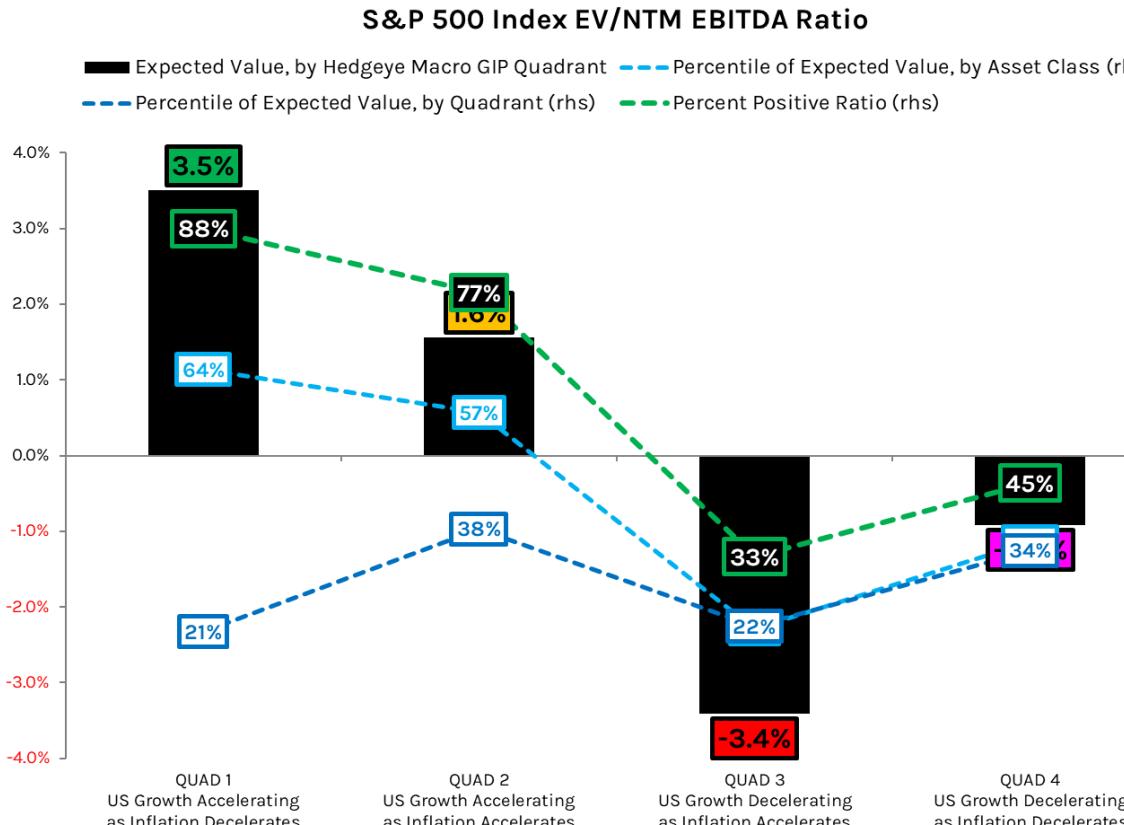
Elevated Intra-Regime Dispersion Puts The Onus  
On Stock & Credit Picking To Generate Alpha



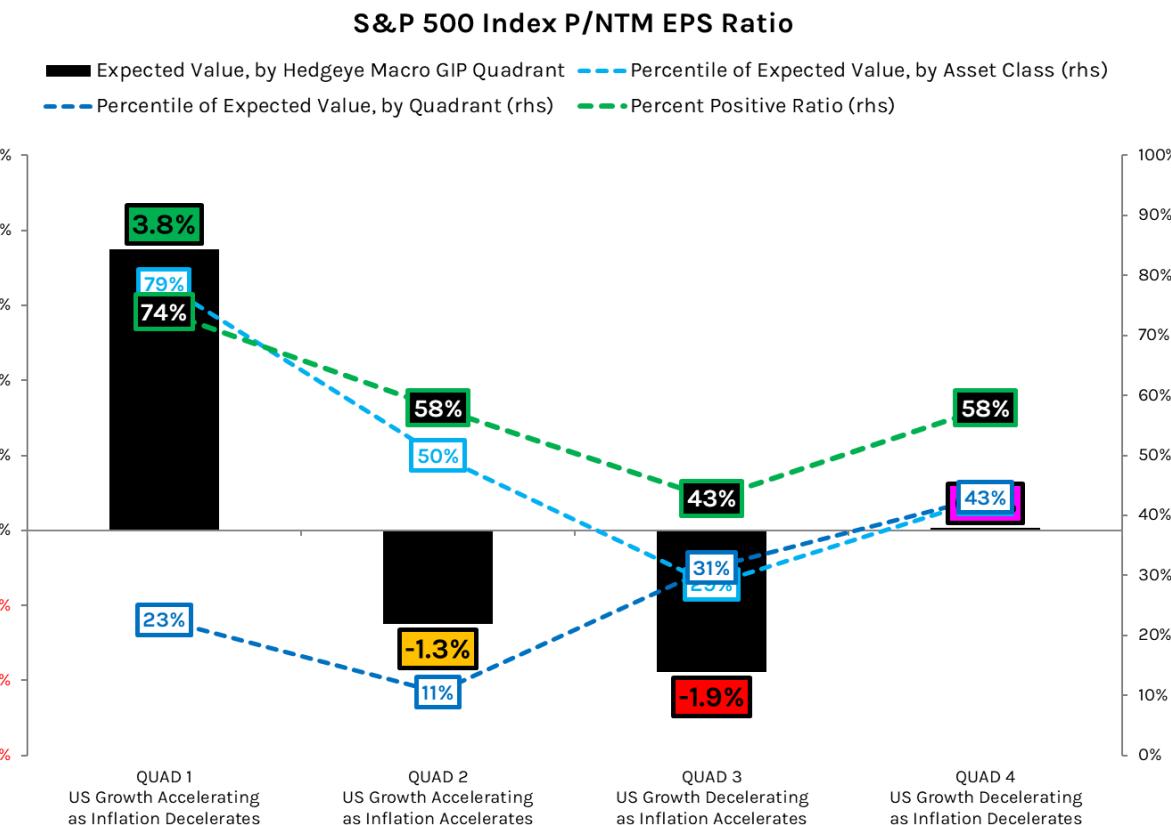
# Quad 3 Is Bad For Market Multiples

HEDGEYE

## Enterprise Value-to-NTM EBITDA Multiples Contract At Their Fastest Rate In Quad 3



## Price-to-NTM-Earnings Multiples Contract At Their Fastest Rate In Quad 3

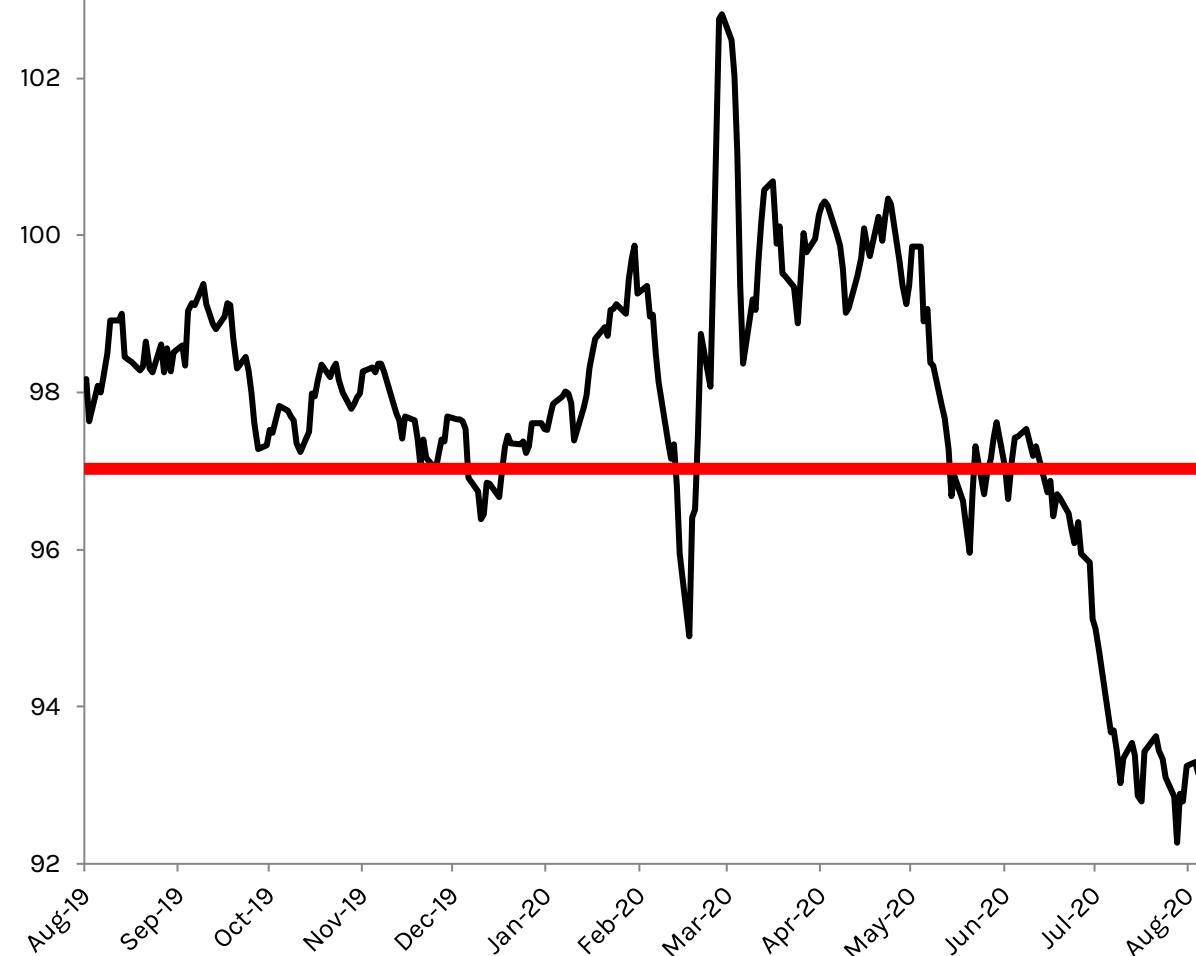


# Per Usual, The US Dollar Is THE Market Indicator To Watch

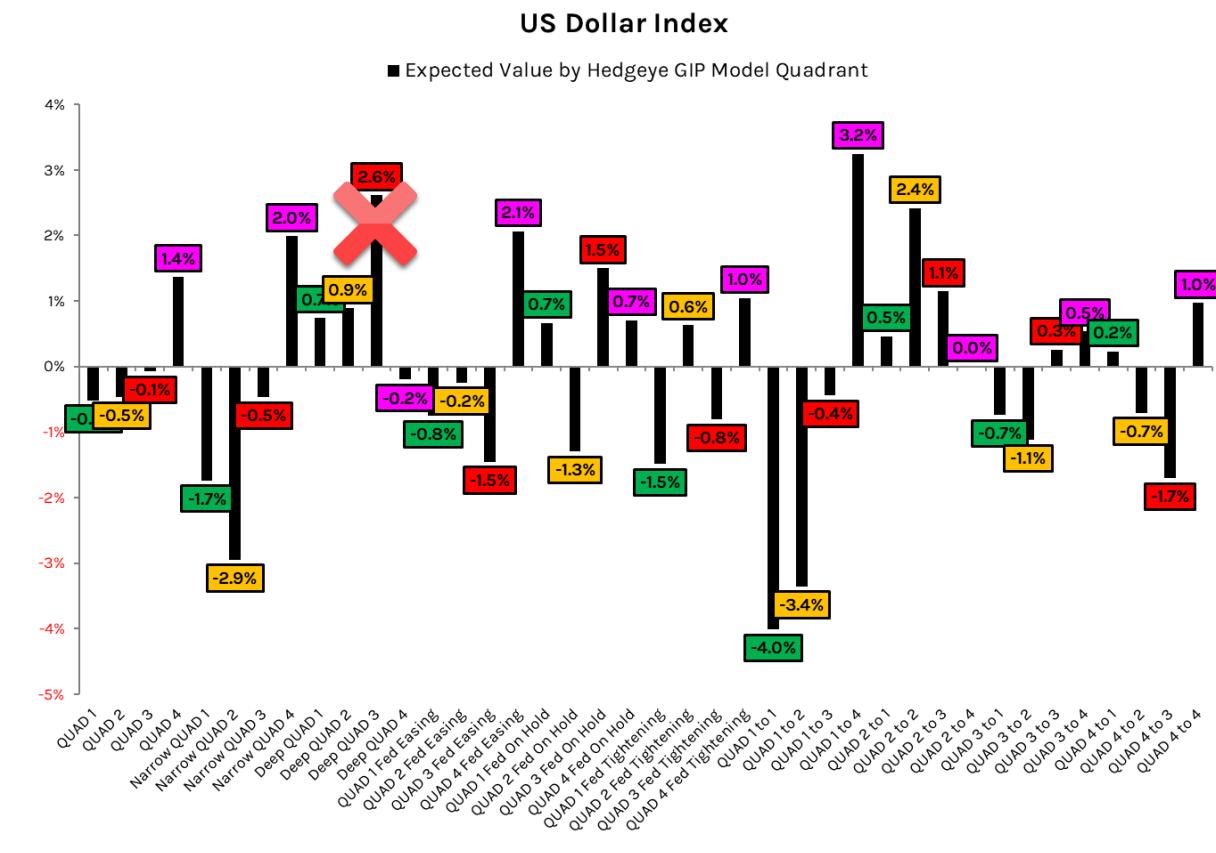
HEDGEYE

The US Dollar Index Has More Than Confirmed Its Late-MAY/Early-JUN Bullish-To-Bearish TREND Phase Transition

—US Dollar Index (DXY)    —@Hedgeye TREND Resistance = 97.03



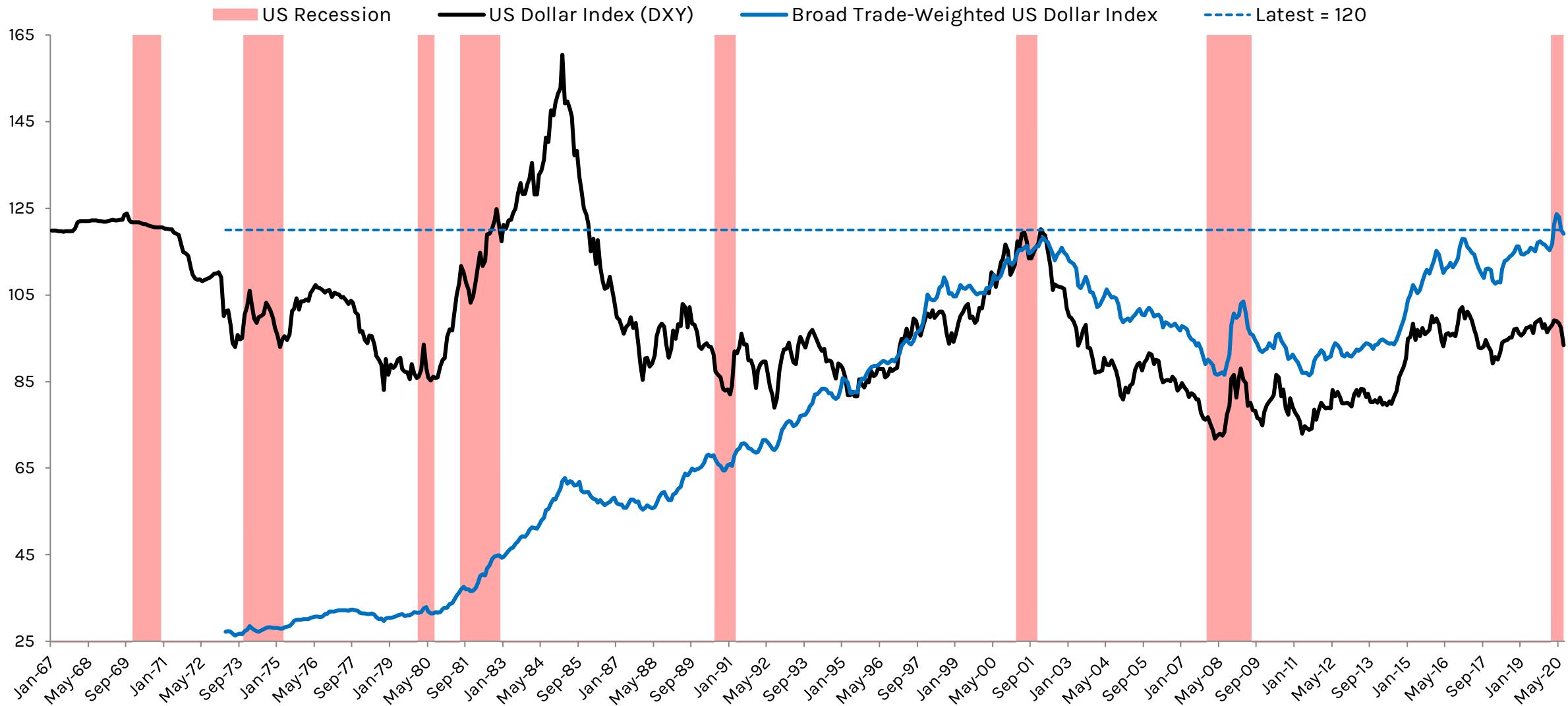
That Bearish TREND Breakdown Took Deep Quad 3 Market Risk Off The Table For The Equity And Credit Markets



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

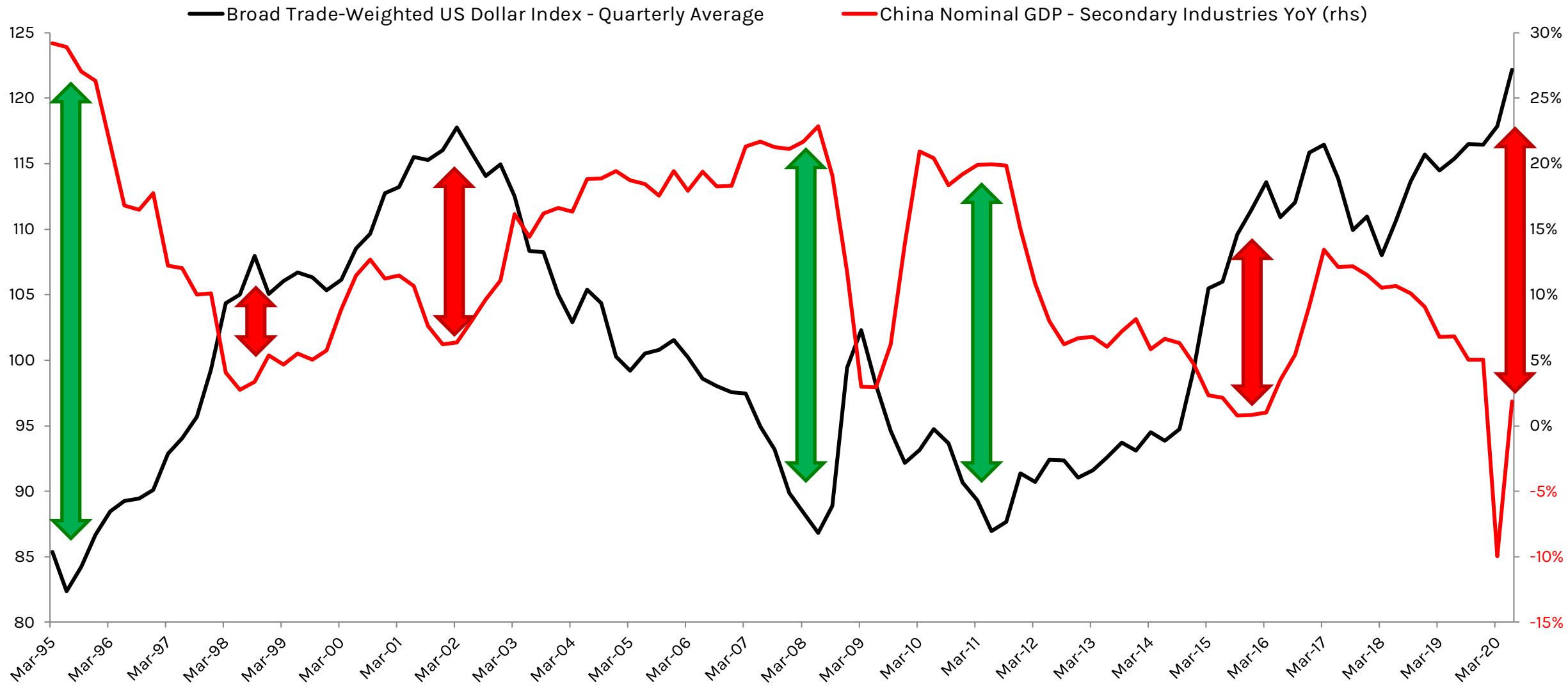
# The Dollar Has A Tremendous Degree Of Scope For Depreciation – Particularly In Broad Trade-Weighted Terms

HEDGEYE



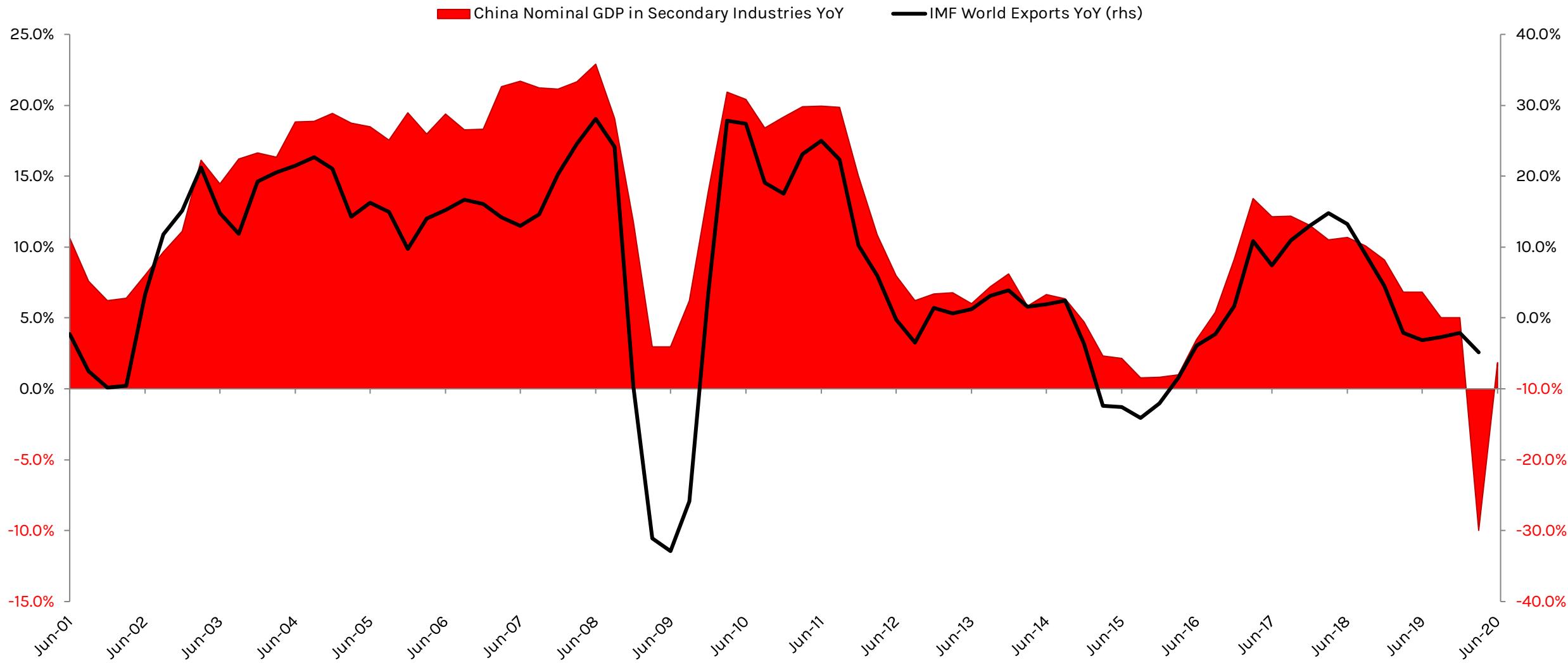
# The Chinese Economy Is Especially Sensitive To Global Dollar Liquidity Dynamics And Would Welcome Further USD Debasement

HEDGEYE



# Can The Chinese Economy Recover From Its First Recession In Decades?

HEDGEYE



# ... Our Model Says, “Yes”, But...

HEDGEYE

China

GROWTH	1Q17	2Q17	3Q17	4Q17	1Q18	2Q18	3Q18	4Q18	1Q19	2Q19	3Q19	4Q19	1Q20	2Q20	3Q20E	4Q20E	1Q21E	2Q21E
2yr Comps	1.66%	2.81%	3.10%	4.97%	7.21%	7.80%	8.79%	10.33%	11.97%	11.40%	11.13%	10.31%	8.65%	8.74%	7.56%	7.05%	-1.59%	4.34%
Real GDP YoY	13.43%	12.13%	12.17%	11.54%	10.51%	10.66%	10.10%	9.08%	6.80%	6.82%	5.02%	5.03%	-9.99%	1.86%	3.61%	7.48%	16.12%	10.19%
GIP Model Quad	1	4	2	3	3	1	3	4	4	2	3	2	3	1	2	1	1	3

INFLATION	1Q17	2Q17	3Q17	4Q17	1Q18	2Q18	3Q18	4Q18	1Q19	2Q19	3Q19	4Q19	1Q20	2Q20	3Q20E	4Q20E	1Q21E	2Q21E
2yr Comps	1.66%	1.72%	1.71%	1.80%	1.77%	1.74%	1.64%	1.98%	1.78%	1.60%	1.94%	2.01%	1.99%	2.23%	2.58%	3.21%	3.39%	2.70%
Headline CPI YoY	1.42%	1.39%	1.60%	1.82%	2.14%	1.80%	2.28%	2.19%	1.83%	2.65%	2.88%	4.23%	4.94%	2.74%	3.01%	2.68%	2.50%	3.20%
GIP Model Quad	1	4	2	3	3	1	3	1	4	4	2	3	2	3	1	2	1	3

Unconditional Probability Of Forecasted Delta

Conditional Probability Of Forecasted Delta

Unconditional Probability Of Forecasted Delta

Conditional Probability Of Forecasted Delta

83% 65% 65% 65%

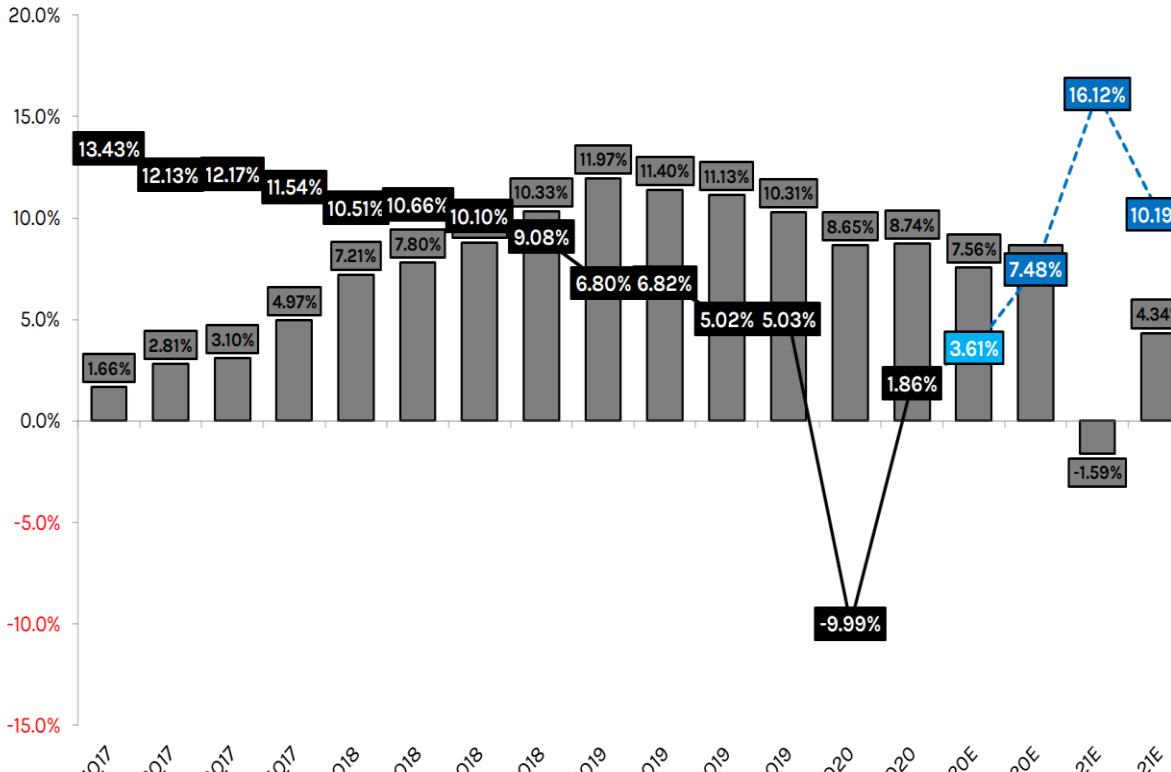
98% 98% 98% 98%

68% 68% 68% 68%

74% 80% 66% 98%

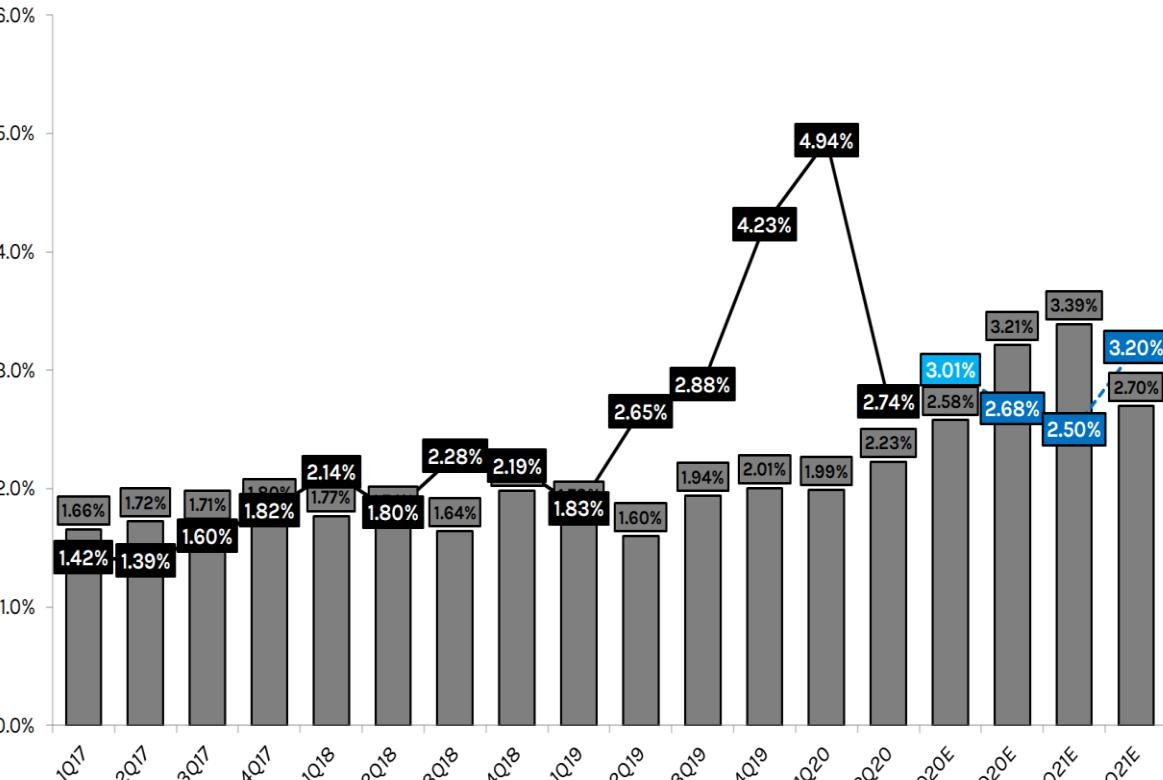
China

■ 2yr Comps ■ Real GDP YoY



China

■ 2yr Comps ■ Headline CPI YoY

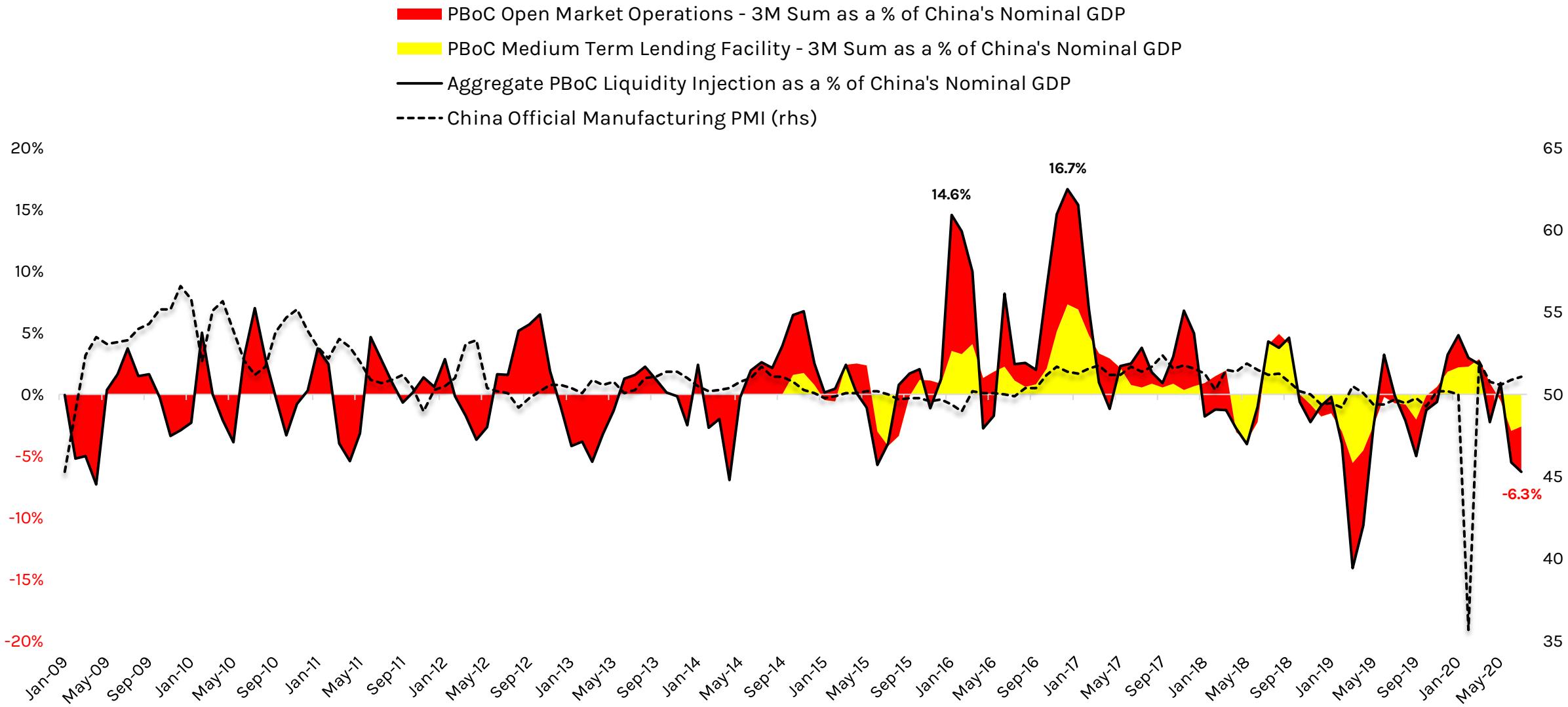


Data Source: Bloomberg. Light Blue box = Hedgeye Nowcast estimates. Dark Blue boxes = Hedgeye COVID-19 Scenario Analysis estimates.

Data Source: Bloomberg. Light Blue box = Hedgeye Nowcast estimates. Dark Blue boxes = Hedgeye β-Adjusted Comparative Base Effect Model estimates.

# ... The PBoC's Muted Policy Response Thus Far Is Unlikely Catalyze Another “Globally Synchronized Recovery”

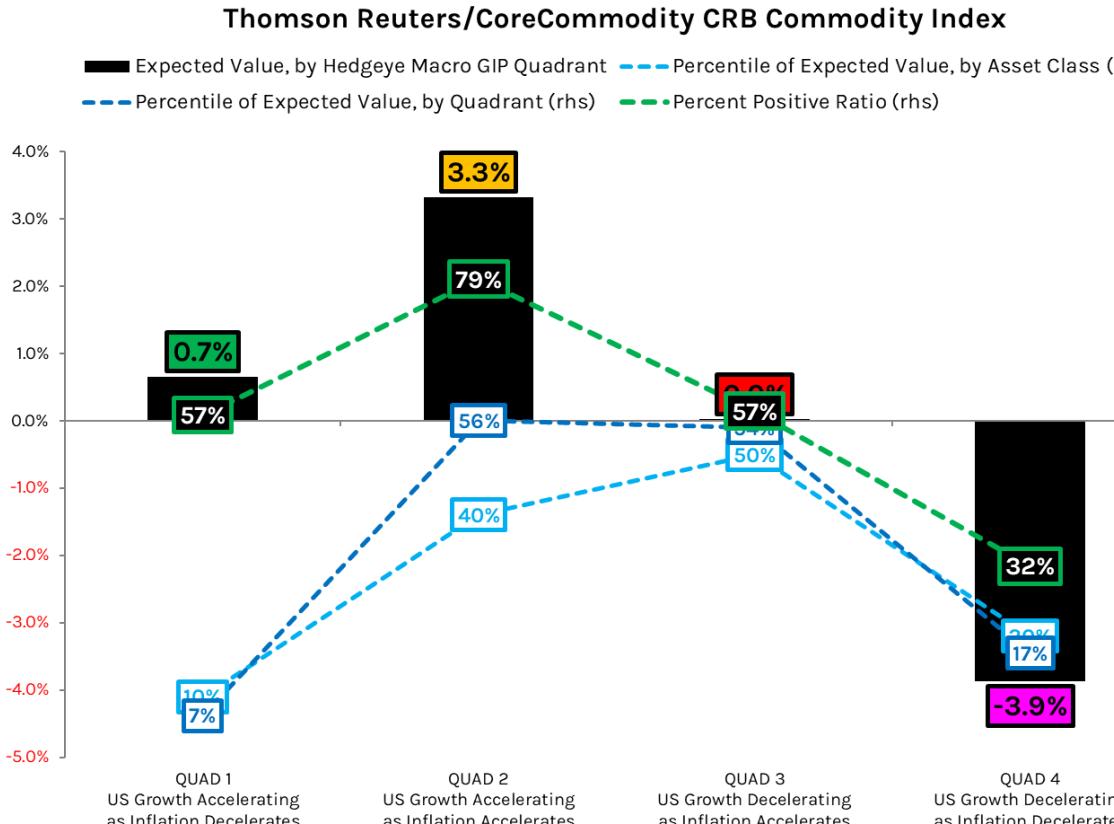
HEDGEYE



# Long: Commodities

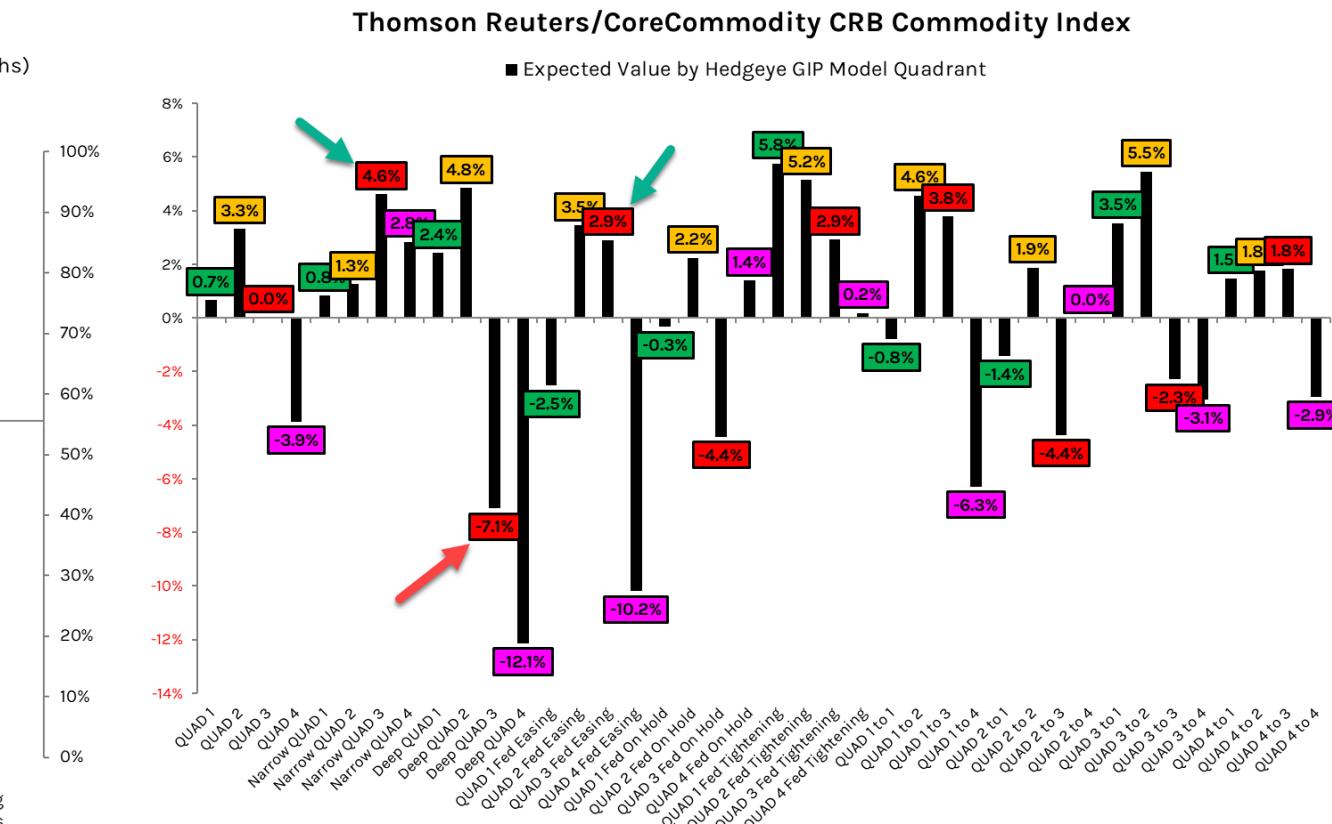
HEDGEYE

## “Macro Quads” Cumulative Backtest

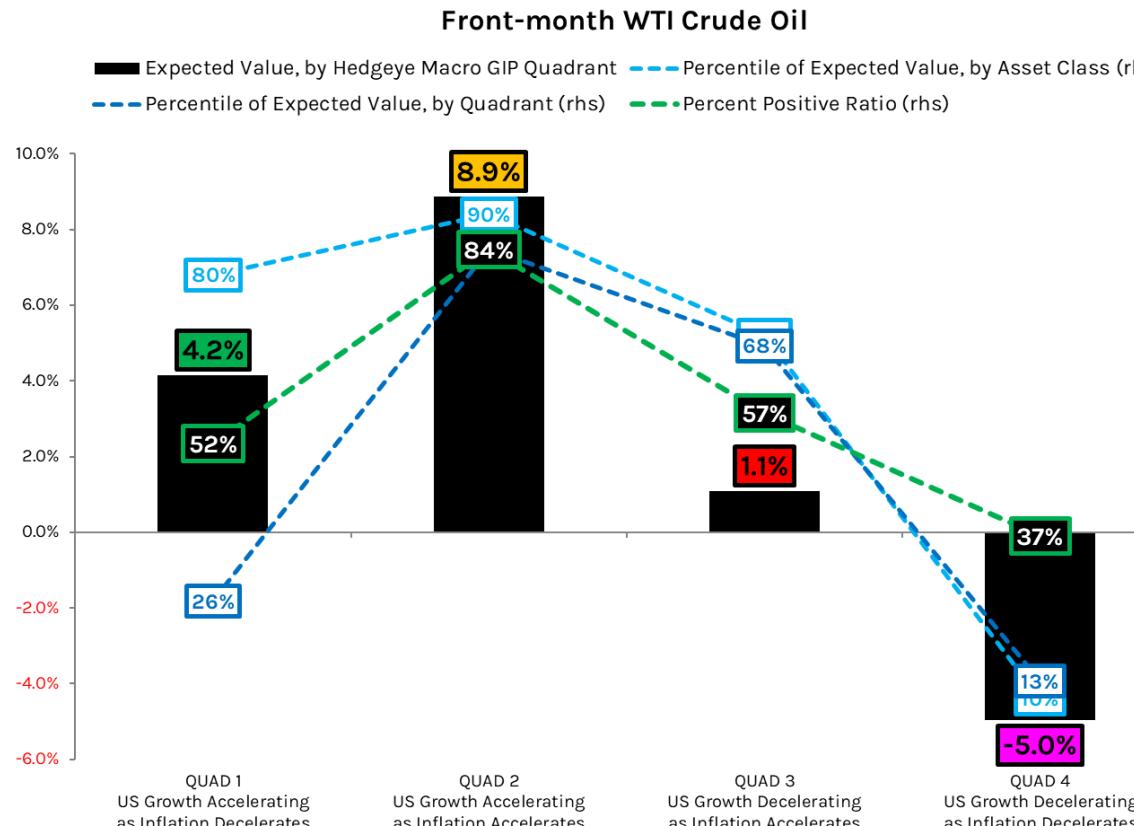


Data Source: Bloomberg. Asset classes include equities, fixed income, currencies and commodities. Quarterly observations starting in 1Q98.

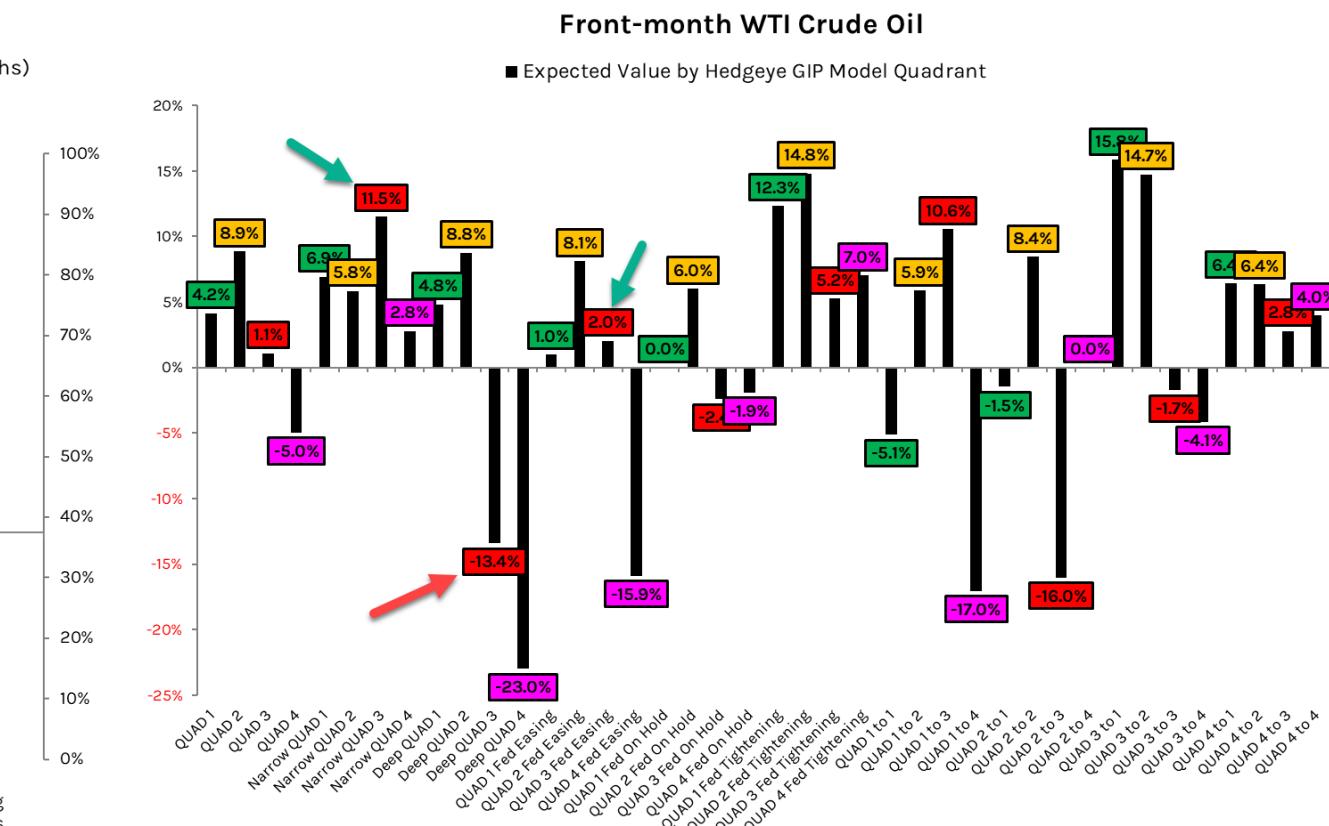
## “Macro Quads” Conditional Factoring Backtest



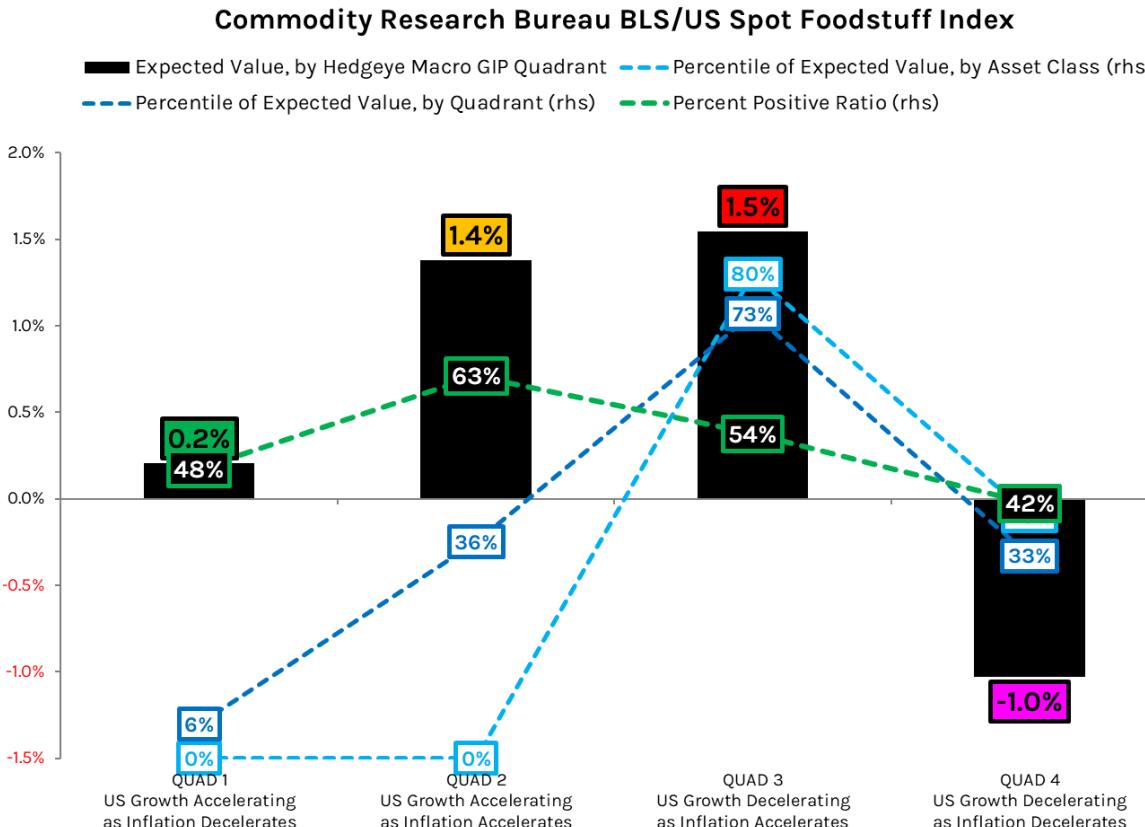
## “Macro Quads” Cumulative Backtest



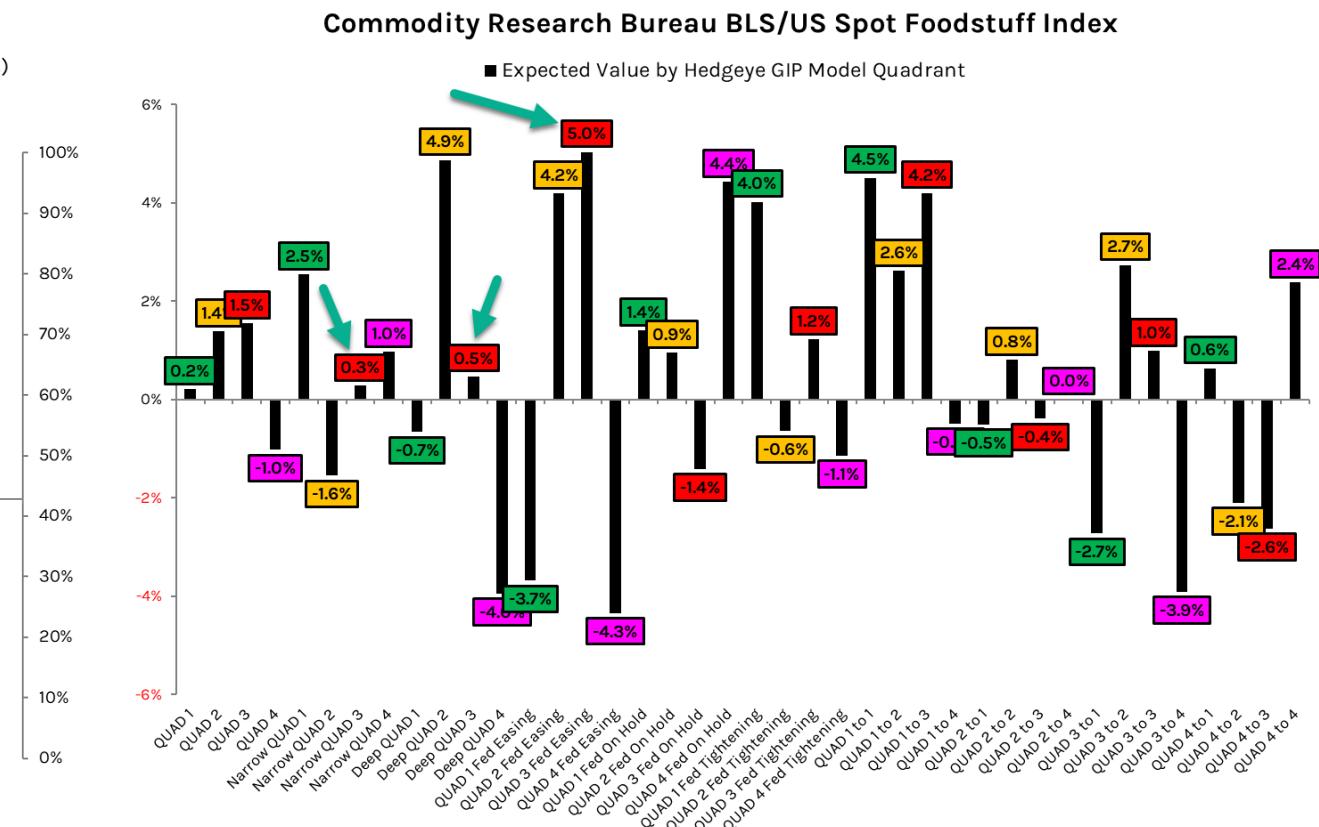
## “Macro Quads” Conditional Factoring Backtest



## “Macro Quads” Cumulative Backtest



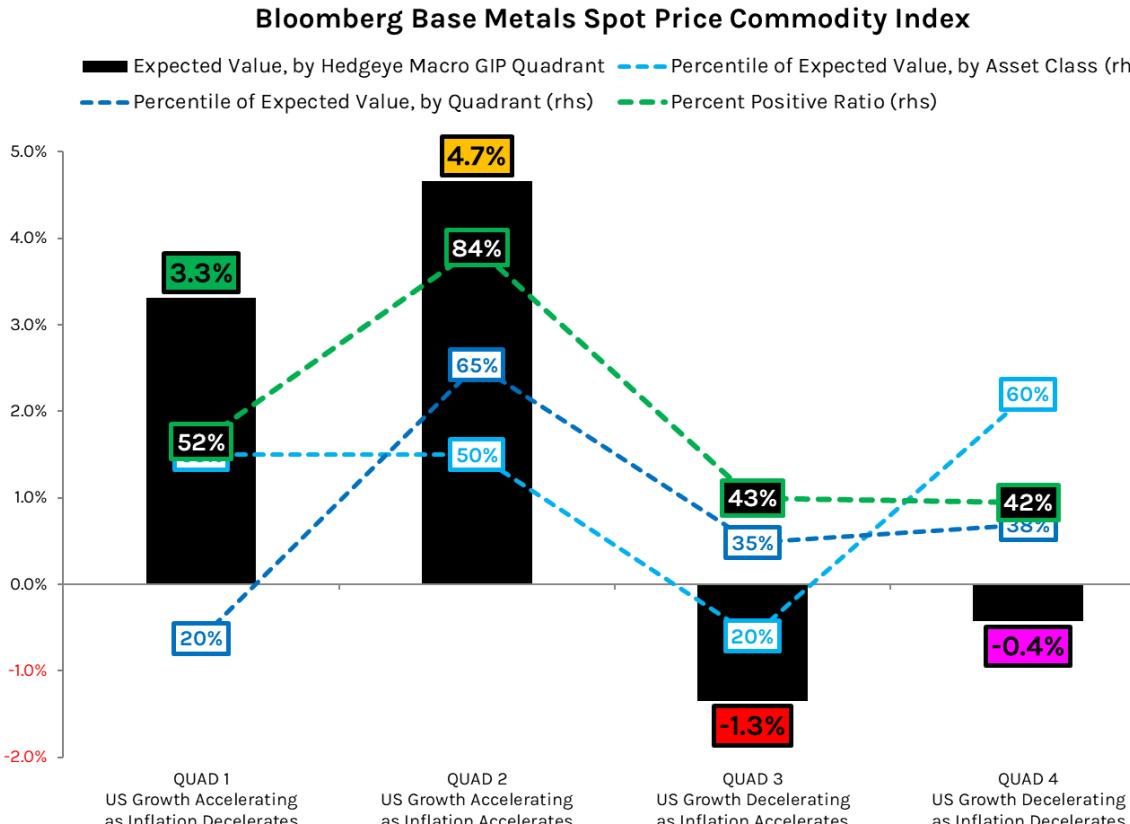
## “Macro Quads” Conditional Factoring Backtest



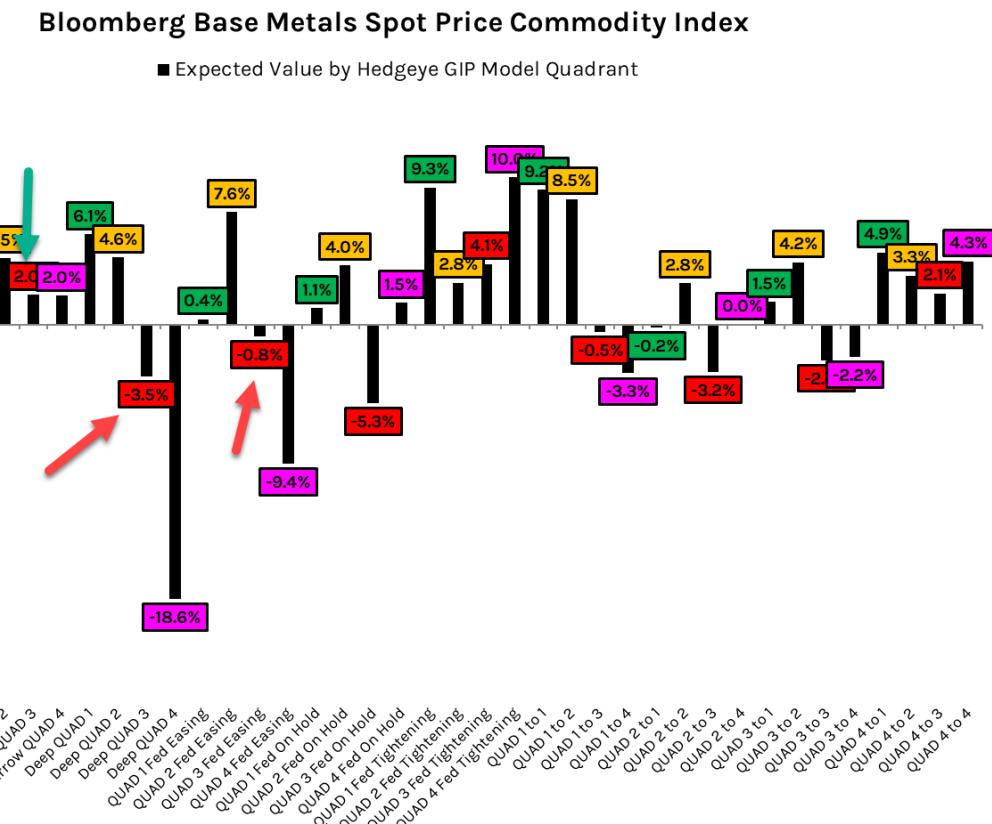
# #InflationAccelerating ≠ #GrowthAccelerating For Base Metals

HEDGEYE

## “Macro Quads” Cumulative Backtest



## “Macro Quads” Conditional Factoring Backtest



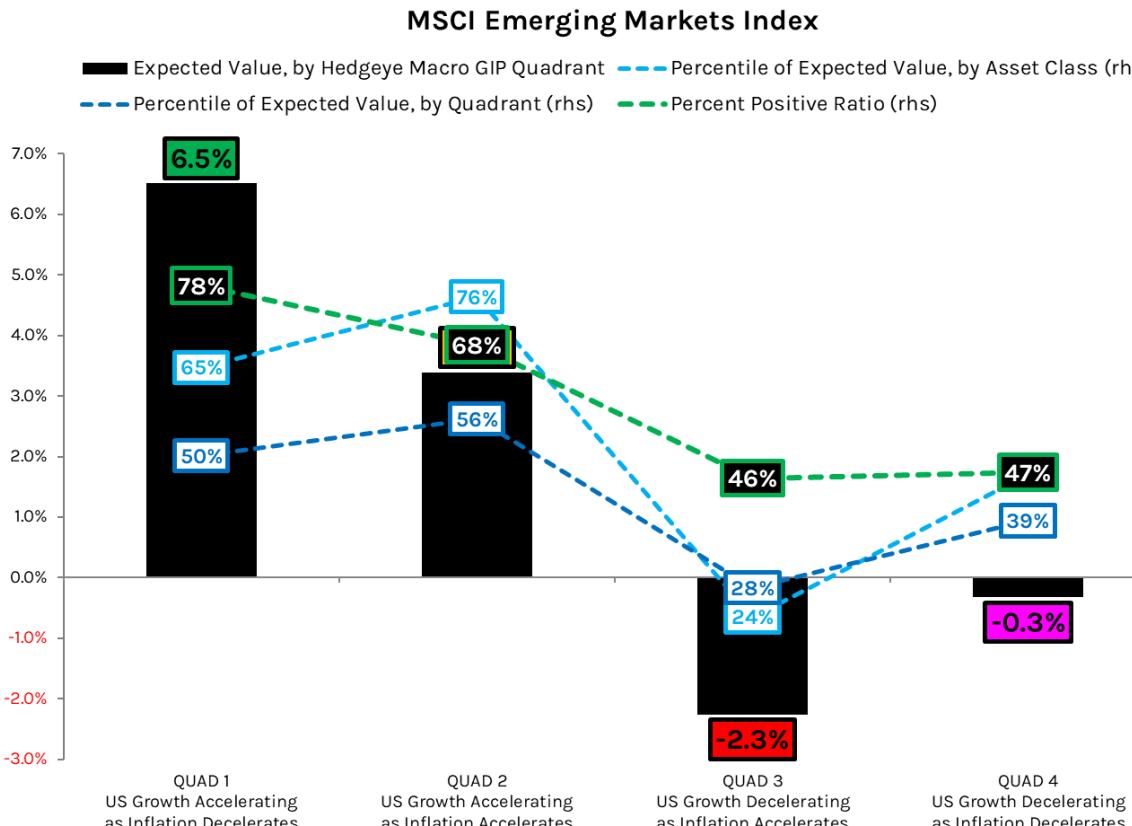
Data Source: Bloomberg. Asset classes include equities, fixed income, currencies and commodities. Quarterly observations starting in 1Q98.

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

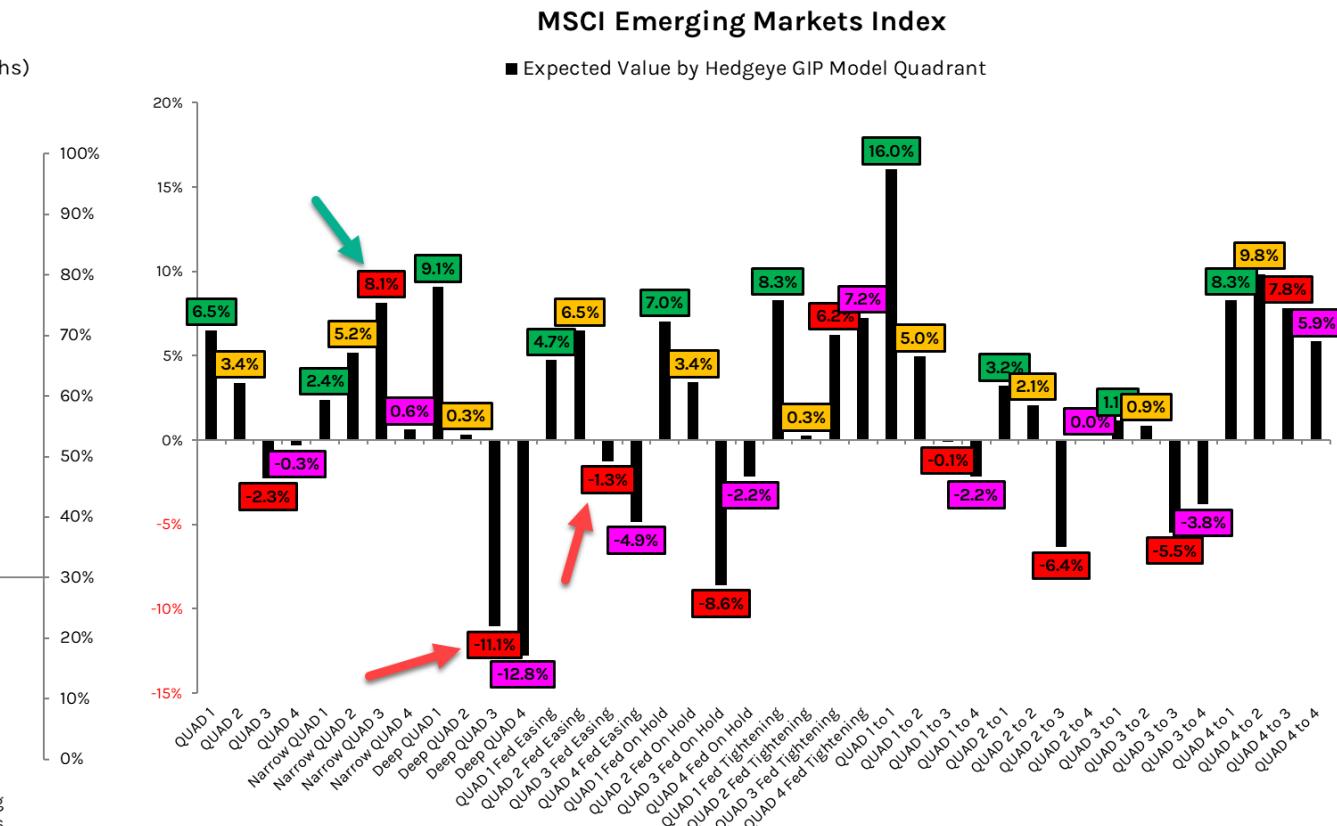
# EM Equities Need A “Narrow” Quad 3 To Outperform

HEDGEYE

## “Macro Quads” Cumulative Backtest



## “Macro Quads” Conditional Factoring Backtest



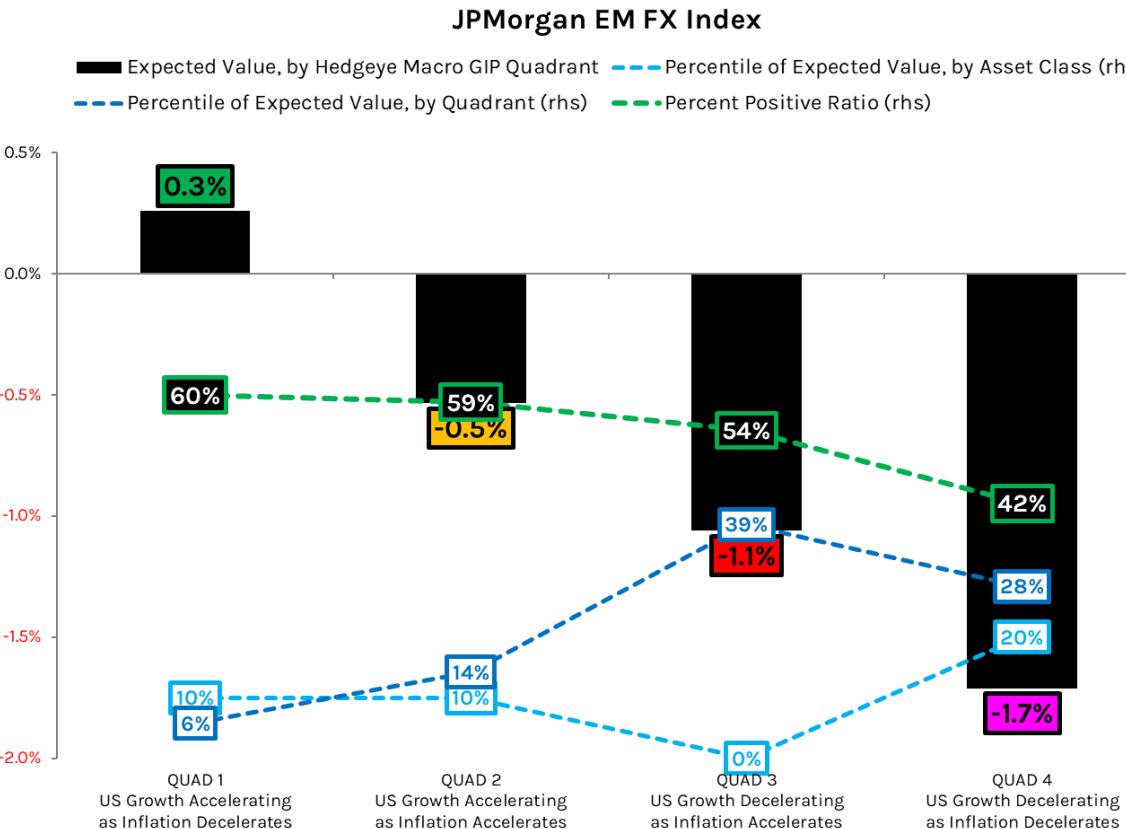
Data Source: Bloomberg. Asset classes include equities, fixed income, currencies and commodities. Quarterly observations starting in 1Q98.

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

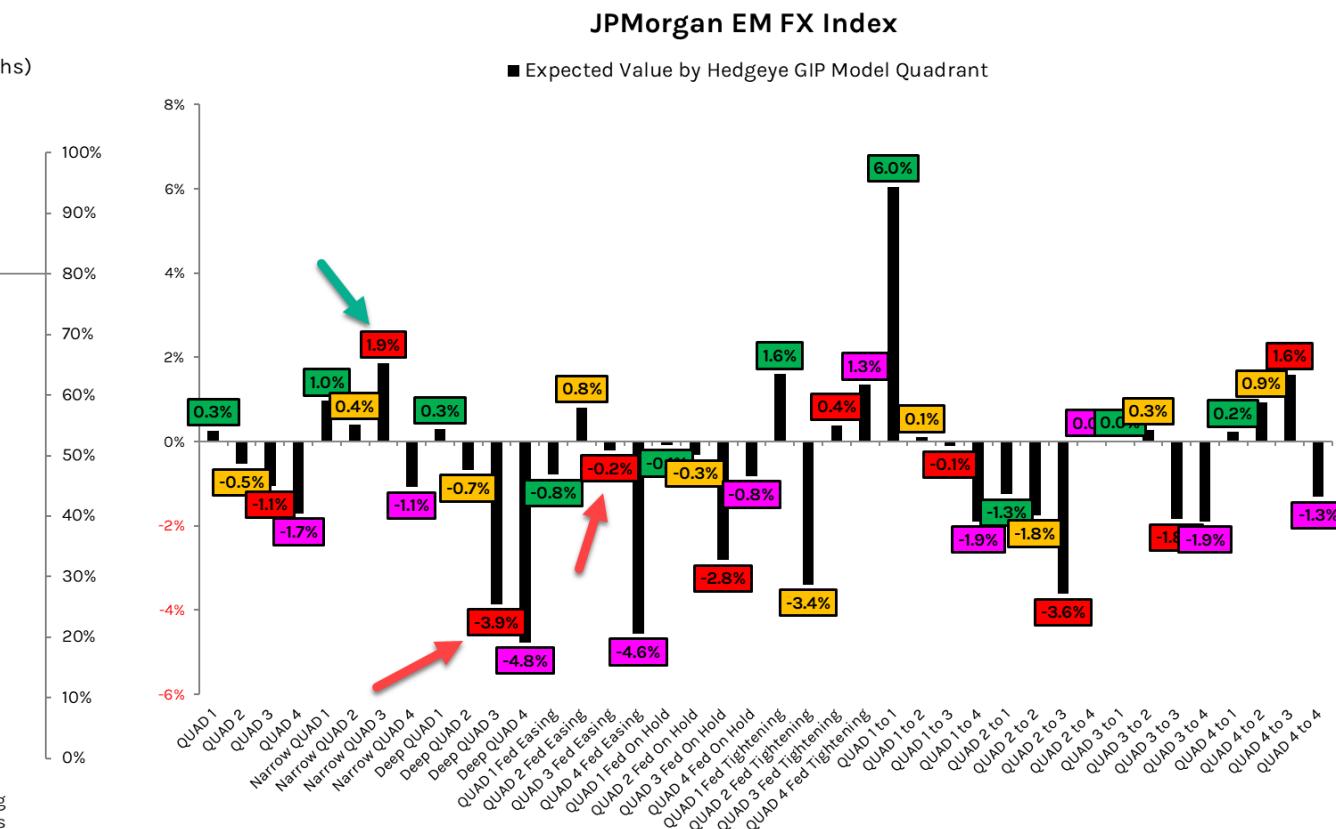
# EM Currencies Need A “Narrow” Quad 3 To Outperform

HEDGEYE

## “Macro Quads” Cumulative Backtest



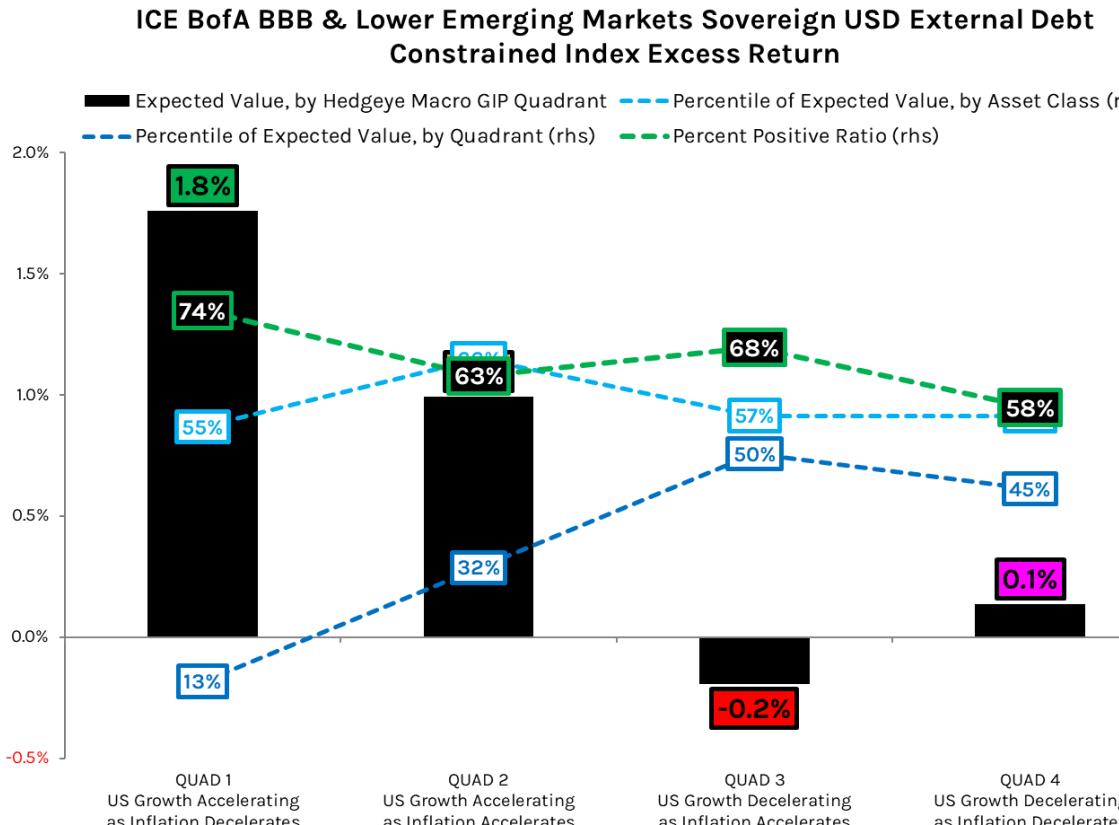
## “Macro Quads” Conditional Factoring Backtest



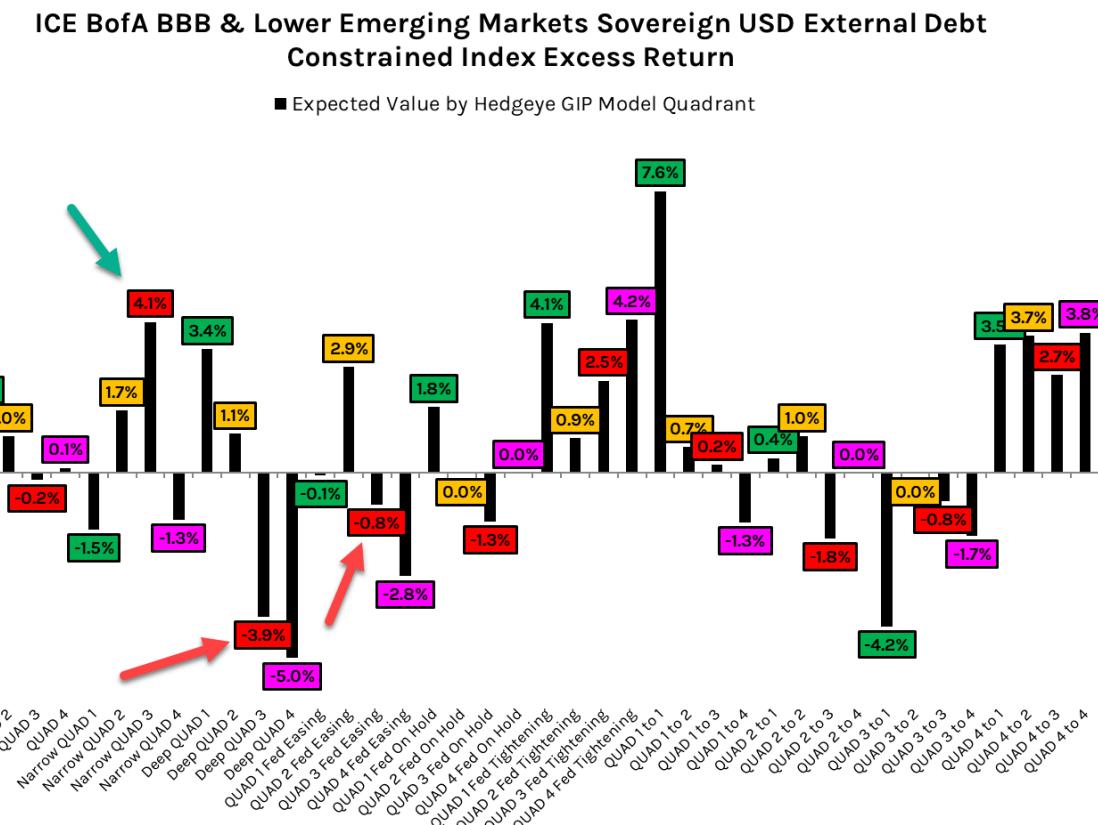
# EM Sovereign Debt Needs A “Narrow” Quad 3 To Outperform

HEDGEYE

## “Macro Quads” Cumulative Backtest



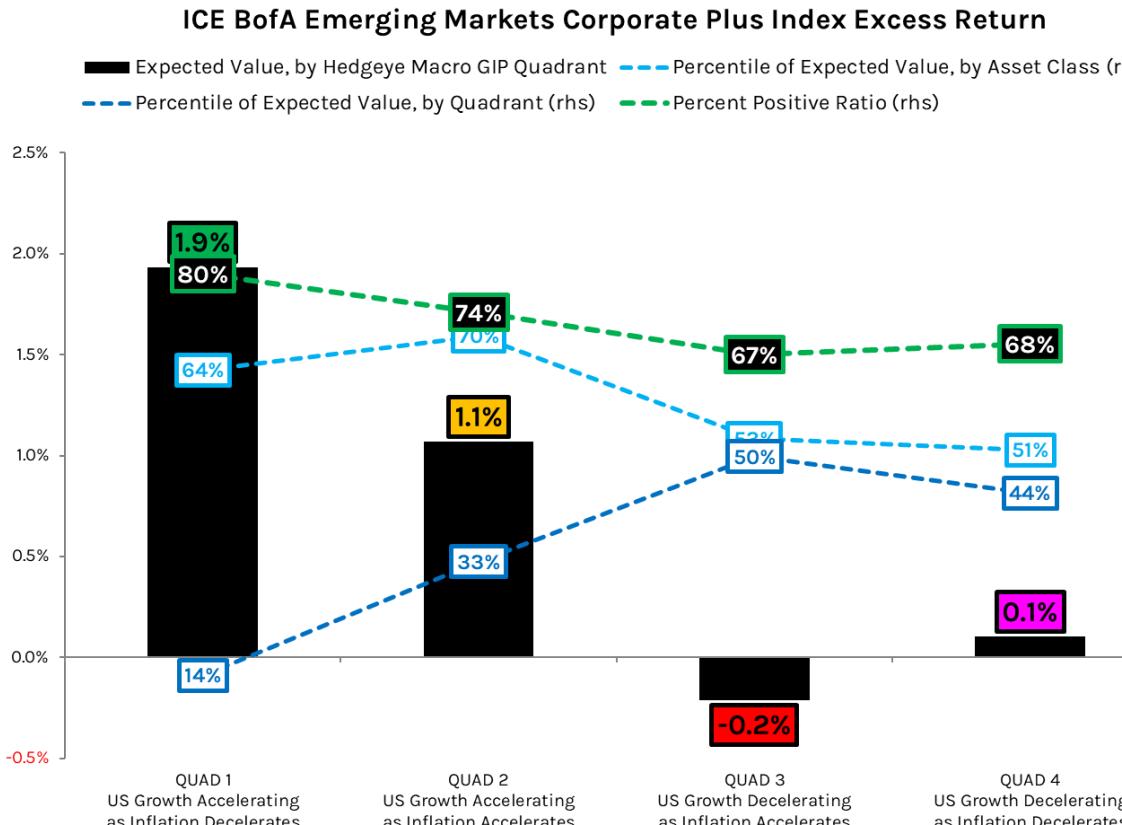
## “Macro Quads” Conditional Factoring Backtest



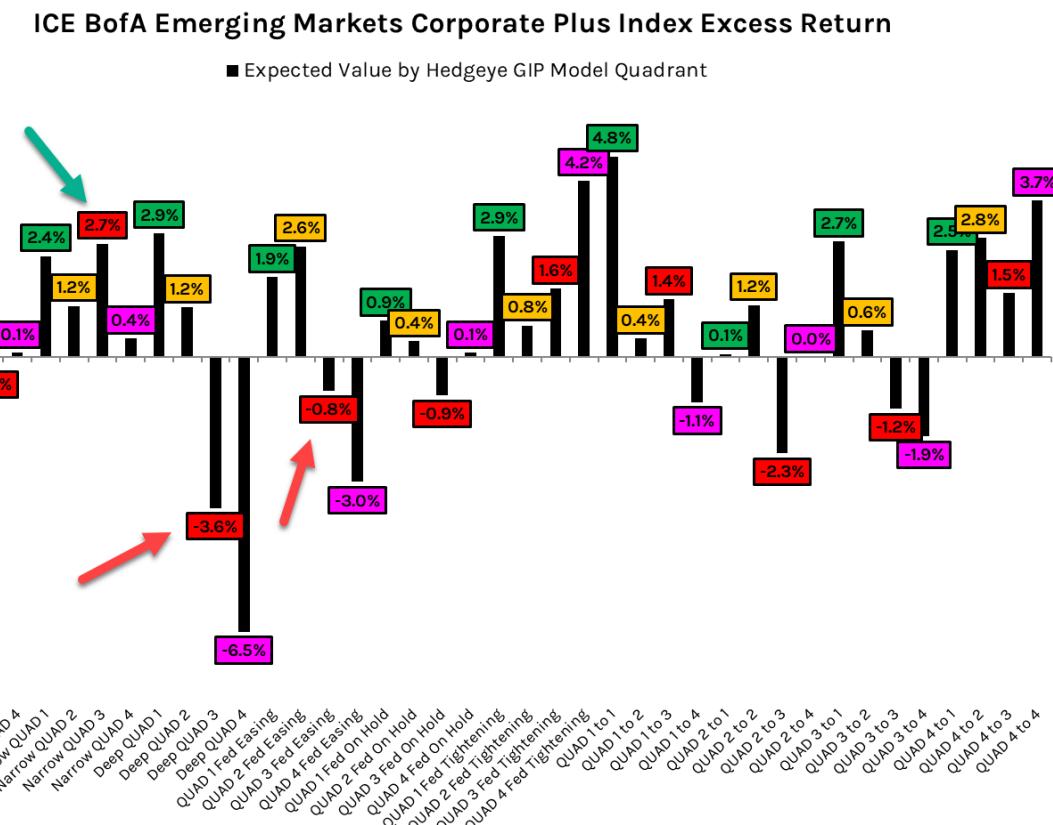
# EM Corporate Credit Needs A “Narrow” Quad 3 To Outperform

HEDGEYE

## “Macro Quads” Cumulative Backtest



## “Macro Quads” Conditional Factoring Backtest



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

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

# Conclusion: Be Selective In EM

HEDGEYE

## LONGS:

**China (KWEB, KBA)**

**Indonesia (EIDO)**

**Russia (RSX)**

**Taiwan (EWT)**

## SHORTS:

**Chile (ECH)**

**Mexico (EWW)**

**South Africa (EZA)**

**Turkey (TUR)**

8/25/2020	Hedgeye Macro GIP Model Signals												GROWTH					Strength Of Signal				INFLATION					Strength Of Signal						
	Actuals						Estimates						Real GDP YoY				NTM Δ	Conditional Probability Of Est. Δ				Headline CPI YoY				NTM Δ	Conditional Probability Of Est. Δ						
	2Q18	3Q18	4Q18	1Q19	2Q19	3Q19	4Q19	1Q20	2Q20	3Q20E	4Q20E	1Q21E	2Q21E	2Q20	3Q20E	4Q20E	1Q21E	2Q21E	2Q21E Less 3Q20E	3Q20E	4Q20E	1Q21E	2Q21E	2Q20	3Q20E	4Q20E	1Q21E	2Q21E	2Q21E Less 3Q20E	3Q20E	4Q20E	1Q21E	2Q21E
Argentina	3	2	3	2	2	4	1	4	4	2	4	1	2	-11.24	-9.57	-11.00	-9.00	-3.16	641bps	96	89	99	98	43.93	46.06	41.80	40.39	41.44	-463bps	72	93	64	61
Brazil	3	2	4	4	2	1	2	3	4	2	4	1	2	-2.71	0.62	0.61	1.89	4.35	373bps	98	51	98	98	2.14	3.58	3.41	3.20	3.93	35bps	98	60	63	95
Chile	2	3	1	4	2	1	3	2	4	2	4	4	2	-14.10	-12.53	-16.95	-17.21	-2.91	963bps	98	98	63	98	2.93	3.06	2.88	2.68	2.90	-16bps	59	63	64	65
China	1	3	4	4	2	3	2	3	1	2	1	1	3	1.86	3.61	748	16.12	10.19	658bps	98	98	98	98	2.74	3.01	2.68	2.50	3.20	19bps	74	80	66	98
Colombia	4	1	3	4	2	3	2	4	4	2	1	2	2	-7.30	-6.37	-5.43	-3.98	4.32	1069bps	98	98	98	98	2.85	3.20	3.09	3.20	3.54	35bps	74	58	58	73
Czech Republic	3	3	1	3	3	2	3	3	4	2	2	1	2	-9.28	-7.61	-5.98	-4.03	3.54	1116bps	98	98	98	98	3.13	3.60	3.62	3.01	3.19	-41bps	98	53	98	70
Emerging Markets	4	3	3	4	2	4	2	3	1	2	4	1	3	-0.74	4.73	4.62	8.64	6.12	139bps	98	60	98	98	3.01	3.39	3.13	2.96	3.49	10bps	98	97	80	98
Greece	3	2	3	4	1	4	3	3	4	1	1	2	2	-8.11	-3.44	-0.48	0.77	7.68	1112bps	98	98	98	98	-1.17	-1.41	-1.52	-1.39	-0.46	95bps	70	60	61	98
Hong Kong	4	3	3	4	3	3	4	4	1	1	3	2	4	-9.00	-5.67	-7.24	-3.99	-4.09	158bps	98	98	98	56	1.37	-0.24	-0.19	0.53	0.43	66bps	98	53	92	56
Hungary	2	2	-	4	3	1	3	3	4	2	1	1	2	-13.60	-12.59	-11.44	4.36	1756bps	72	83	98	98	2.50	3.59	3.53	3.10	3.73	14bps	98	55	83	98	
India	3	4	4	1	3	3	3	3	4	2	1	1	1	-10.40	-8.34	-7.07	-6.62	6.89	1522bps	98	98	73	98	6.57	7.17	6.87	6.52	6.27	-91bps	76	63	65	61
Indonesia	1	4	2	4	3	3	4	3	4	2	2	2	2	-5.32	-3.85	-3.81	-2.76	5.53	938bps	98	54	98	98	2.27	2.35	2.39	2.57	2.75	41bps	54	52	59	59
Malaysia	4	4	1	4	2	3	4	4	4	2	3	2	2	-17.10	-15.67	-16.53	-14.93	2.87	1854bps	98	97	98	98	-2.56	-1.43	-1.31	-0.96	0.30	173bps	98	60	77	98
Mexico	1	3	4	4	3	1	4	3	4	2	3	2	2	-18.92	-17.82	-17.95	-17.57	-0.02	1780bps	98	60	81	98	2.77	3.67	3.79	3.92	4.18	51bps	98	61	62	73
Peru	2	3	2	3	3	1	4	4	4	2	4	1	1	-30.43	-28.10	-28.46	-24.87	2.47	3056bps	98	63	98	98	1.70	2.22	2.05	2.02	1.90	-32bps	98	68	52	63
Philippines	3	3	1	4	4	1	1	3	4	2	3	2	2	-16.50	-15.47	-15.90	-11.85	3.95	1941bps	90	67	98	98	2.27	2.99	3.12	3.60	4.24	125bps	98	61	88	98
Poland	2	3	4	4	3	3	3	3	4	2	2	1	2	-8.20	-2.84	-1.23	-0.48	9.72	1255bps	98	98	98	98	3.20	3.58	3.71	2.96	3.03	-55bps	84	61	98	56
Russia	2	3	2	3	1	1	1	4	3	2	2	1	1	-8.50	-5.50	-4.74	-3.30	6.84	1234bps	98	91	98	98	3.10	5.51	5.57	5.44	5.17	-34bps	98	51	53	55
South Africa	3	2	4	4	2	4	4	2	4	2	3	2	2	-5.99	-4.62	-4.95	-4.60	1.29	591bps	98	90	93	98	2.43	2.76	2.85	2.90	3.75	99bps	78	58	54	98
South Korea	2	3	2	4	2	4	2	3	4	2	4	2	2	-2.90	-1.73	-1.98	-0.88	3.42	515bps	98	77	98	98	-0.07	0.33	0.21	0.37	1.01	68bps	98	69	76	98
Taiwan	2	4	4	4	2	1	2	4	4	2	2	2	2	-0.58	0.00	0.22	0.83	3.61	362bps	98	70	98	98	-0.98	-0.52	-0.28	-0.13	0.39	91bps	97	75	65	98
Thailand	3	3	1	4	3	1	4	3	4	2	2	2	2	-12.20	-9.00	-7.67	-5.47	4.73	1373bps	98	98	98	98	-2.67	-1.52	-1.30	-1.27	0.11	163bps	98	72	54	98
Turkey	3	3	3	1	1	1	3	4	2	1	2	2	2	-8.50	-6.33	-5.65	-5.21	7.83	1416bps	98	69	63	98	11.65	13.21	13.20	13.60	15.06	185bps	98	50	65	98
MODE/MEDIAN	3	3	4	4	2	1	4	3	4	2	4	2	2	-8.50	-6.33	-5.65	-4.03	4.32	1066bps	98	90	98	98	2.47	3.13	3.10	2.96	3.34	21bps	98	61	65	84

Data Source: Bloomberg, BIS, World Bank, and IMF. Intellectual Property of Hedgeye Risk Management.

GREEN header = Hedgeye Nowcast estimates. BLUE header = Hedgeye β-Adjusted Comparative Base Effect Model estimates. GREEN/RED shading in GDP and CPI projections denotes sequential acceleration/deceleration.

Conditional probability inversely proportional to the prior base rate's percentile score within a 95% confidence interval band around the projected GROWTH or INFLATION rate in a given quarter.

# Thematic Investment Conclusions

HEDGEYE

## [ 1 ] Immediate-term TRADE (introduced at the start of the quarter)

**LONGS:** REITS (XLRE), Utilities (XLU), Metals & Mining (XME), Emerging Markets (EEM), Chinese Internet (KWEB), IG Credit (LQD), Japanese Yen (FXY), Livestock (COW), Corn (CORN), Rare Earths (REMX)

**SHORTS:** Russell 2000 Value (IWN), Airlines (JETS), Spain (EWP), US Dollar (UUP)

## [ 2 ] Intermediate-term TREND (introduced in prior quarters)

**LONGS:** Tech (XLK), Gold Miners (GDX), TIPS (TIP)

**SHORTS:** Financials (XLF), High Yield Credit (JNK)

## [ 3 ] Long-term TAIL (introduced < 3yrs ago)

**LONGS:** Long Duration Treasuries (TLT), Short Duration Treasuries (SHY), Gold (GLD)

**SHORTS:** Russell 2000 (IWM)

# Q3 2020 Macro Themes

HEDGEYE



## Appendix

# Our Structural Economic Risk Model Helps Investors Quantify Secular Headwinds Or Tailwinds

HEDGEYE

Pillar I: Demographic Risk		Pillar II: Foreign Exchange Risk		Pillar III: Credit Cycle Risk		Pillar IV: Protectionism Risk		Pillar V: Competitiveness Risk		
		Current Account Balance as a % of Nominal GDP	Sovereign Budget Balance as a % of Nominal GDP	Private Nonfinancial Sector Credit-to-GDP (Z-Score, Trailing 5Y)	Debt Service Ratio (Z-Score, Trailing 5Y)	GINI Coefficient	Misery Index (Unemployment Rate + Headline Inflation Rate)	World Bank Ease of Doing Business Index - Global Ranking (Rank in Ascending Order)	All-In Effective Corporate Tax Rate	
	SY Forward Old-Age Dependency Ratio (65+ Year-Olds as a Ratio of the Working-Age Population)	35-54 Year-Old Population Cohort - 5Y Forward CAGR								
Canada	20%	0.4%	-1.8%	-0.6%	1.2x	0.5x	33.7	5.9%	18	21%
United States	18%	0.4%	-2.1%	-9.4%	0.5x	1.3x	41.1	13.4%	6	21%
Austria	21%	-1.1%	2.6%	0.7%	-2.0x		30.5	5.1%	14	52%
Belgium	21%	-0.4%	-1.2%	-1.9%	-0.5x	-1.2x	27.6	5.0%	52	59%
Denmark	21%	-1.0%	8.3%	3.7%	-1.6x	-1.7x	29.1	4.6%	3	25%
Eurozone	23%	-1.2%	2.8%	-0.7%	0.4x	0.3x	31.6	7.3%	28	44%
Finland	24%	-0.3%	-1.4%	-1.1%	-1.2x	-1.1x	27.1	7.0%	13	38%
France	22%	-0.3%	-0.9%	-3.0%	1.3x	1.0x	33.1	8.1%	31	63%
Germany	24%	-1.5%	7.5%	1.5%	1.8x	1.8x	30.1	5.5%	20	49%
Ireland	16%	0.2%	-9.5%	0.4%	-1.2x		32.5	4.2%	17	26%
Israel	13%	1.5%	3.6%	-4.0%	0.5x		42.8	3.6%	54	28%
Italy	25%	-1.9%	3.3%	-1.6%	-1.3x	-1.3x	35.2	8.5%	46	62%
Netherlands	22%	-1.3%	9.9%	1.7%	-2.0x	-1.7x	28.0	4.6%	32	40%
Norway	18%	0.2%	4.1%	6.4%	-0.4x	2.3x	25.9	4.7%	8	40%
Portugal	24%	-1.2%	-0.3%	0.2%	-1.4x	-1.4x	36.0	6.1%	29	40%
Spain	22%	-1.5%	2.1%	-2.8%	-1.4x	-1.4x	35.9	13.0%	28	49%
Sweden	21%	-0.1%	4.6%	0.5%	1.6x	1.7x	27.3	7.7%	10	49%
Switzerland	21%	-0.5%	12.2%	1.4%	1.4x	1.4x	31.6	1.3%	33	29%
United Kingdom	19%	-0.2%	-3.8%	-2.6%	-0.3x	-0.8x	32.6	4.4%	7	31%
Australia	18%	1.3%	1.1%	-0.1%	-1.7x	-2.8x	34.9	5.3%	14	48%
Hong Kong	21%	-0.6%	6.1%	1.3%	1.3x	1.7x		5.7%	5	23%
Japan	29%	-0.9%	3.6%	-2.6%	2.1x	2.2x	32.1	2.5%	34	49%
New Zealand	18%	-0.3%	-3.0%	0.4%	-0.5x			6.7%	1	34%
Singapore	18%	-0.5%	16.6%	-0.2%	3.3x			1.7%	2	19%
Emerging Markets	12%	0.6%	0.3%	-3.3%	1.0x		40.4	7.7%	72	57%
Argentina	12%	1.5%	-0.5%	0.3%	-0.0x		42.7	52.3%	117	106%
Brazil	11%	1.2%	-2.8%	-7.5%	0.7x	-0.9x	51.5	14.5%	125	68%
Chile	15%	0.8%	-4.0%	-2.8%	2.5x		50.5	10.6%	55	31%
Colombia	10%	1.0%	-4.2%	-1.9%	-0.9x		53.5	26.3%	59	70%
Mexico	9%	1.6%	0.4%	-1.4%	0.3x	1.2x	48.2	6.3%	49	52%
Peru	9%	1.9%	-1.5%	-2.7%			44.1	8.9%	58	36%
Czech Republic	21%	0.2%	0.2%	0.3%	-1.0x	1.7x	26.1	4.9%	30	50%
Greece	24%	-1.2%	-1.3%	1.5%	-1.7x		36.7	14.8%	67	51%
Hungary	21%	-0.1%	-0.9%	-2.0%	-1.1x	-1.0x	30.6	5.8%	48	47%
Poland	21%	1.2%	1.5%	-0.8%	-2.2x	-1.8x	32.1	5.9%	27	40%
Russia	17%	1.5%	3.2%	0.9%	-0.4x	-1.0x	40.9	7.7%	35	47%
South Africa	6%	2.7%	-3.0%	-6.3%	0.5x	0.9x	63.4	33.2%	82	29%
Turkey	10%	1.3%	0.2%	-2.6%	-0.7x	-0.7x	40.2	24.9%	60	41%
Saudi Arabia	5%	1.6%	6.3%		-0.2x				92	16%
China	14%	0.1%	0.6%	-4.9%	0.5x	-0.2x	42.2	6.1%	78	68%
India	7%	2.1%	-0.9%	-4.6%	-0.6x	-0.9x	35.2		100	61%
Indonesia	7%	0.8%	-2.5%	-2.2%	-0.2x	0.1x	39.5	7.2%	72	31%
South Korea	19%	-1.1%	3.8%	1.3%	2.5x	2.2x	30.2	3.4%	4	33%
Malaysia			2.8%	-4.8%	1.1x	1.2x	46.3	0.2%	24	40%
Philippines	6%	1.7%	0.3%	-3.3%			43.0	7.4%	113	43%
Taiwan			10.7%	0.5%			33.8	2.5%	15	
Thailand	15%	-0.8%	6.4%	-2.8%	-0.8x	-0.7x	40.3	-2.4%	26	33%
<b>MEDIAN</b>	<b>18%</b>	<b>0.1%</b>	<b>0.4%</b>	<b>-1.3%</b>	<b>-0.3x</b>	<b>-0.2x</b>	<b>35.2</b>	<b>6.1%</b>	<b>31</b>	<b>41%</b>
<b>STANDARD DEVIATION</b>	<b>6%</b>	<b>1.2%</b>	<b>4.8%</b>	<b>2.8%</b>	<b>1.4x</b>	<b>1.4x</b>	<b>8.2</b>	<b>9.3%</b>	<b>33</b>	<b>17%</b>

# Our Structural Economic Risk Model Helps Investors Spot Key Vulnerabilities Within Each Investable Economy

HEDGEYE

	5Y Forward Old-Age Dependency Ratio (65+ Year-Olds as a Ratio of the Working-Age Population)	35-54 Year-Old Population Cohort - 5Y Forward CAGR	Current Account Balance as a % of Nominal GDP	Sovereign Budget Balance as a % of Nominal GDP	Private Nonfinancial Sector Credit-to-GDP (Z-Score, Trailing 5Y)	Debt Service Ratio (Z-Score, Trailing 5Y)	GINI Coefficient	Misery Index (Unemployment Rate + Headline Inflation Rate)	World Bank Ease of Doing Business Index - Global Ranking (Rank in Ascending Order)	All-In Effective Corporate Tax Rate
Canada	28	18	38	21	38	34	23	24	15	4
United States	25	19	39	47	32	39	36	41	6	4
Austria	35	39	19	10	3	19	14	18	11	37
Belgium	30	32	34	28	19	8	9	17	32	40
Denmark	32	38	5	2	6	3	11	13	3	7
Eurozone	41	41	17	22	31	33	16	32	21	27
Finland	43	30	36	24	11	9	7	29	10	19
France	39	31	32	38	40	36	22	36	24	43
Germany	44	45	6	5	43	44	12	20	16	31
Ireland	19	22	47	14	10	19	20	11	14	8
Israel	15	8	14	41	33	19	39	10	33	9
Italy	46	47	15	26	9	7	27	37	29	42
Netherlands	38	44	4	3	2	4	10	13	25	23
Norway	24	20	11	1	20	47	5	15	8	20
Portugal	45	43	29	17	7	6	29	26	22	21
Spain	40	46	20	37	8	5	28	40	20	33
Sweden	34	27	10	11	42	43	8	35	9	34
Switzerland	29	34	2	6	41	40	17	5	26	10
United Kingdom	27	28	44	31	22	14	21	12	7	14
Australia	21	10	22	19	4	1	25	19	11	30
Hong Kong	36	35	9	7	39	41	1	21	5	6
Japan	47	37	13	32	44	46	19	8	27	31
New Zealand	22	29	43	13	18	19	1	28	1	17
Singapore	23	33	1	20	47	19	1	6	2	3
Emerging Markets	14	18	25	36	30	19	33	24	37	36
Argentina	14	9	30	15	25	19	38	47	46	47
Brazil	12	12	41	46	36	12	45	42	47	45
Chile	17	15	45	35	46	19	44	39	34	12
Colombia	11	14	46	27	14	19	46	45	36	46
Mexico	8	5	25	25	29	38	43	27	31	38
Peru	9	3	37	34	26	19	41	38	35	18
Czech Republic	37	21	27	16	13	42	6	16	23	35
Greece	42	42	35	4	5	19	30	43	38	36
Hungary	31	26	31	29	12	10	15	22	30	28
Poland	33	13	21	23	1	2	18	23	19	23
Russia	20	7	16	9	21	11	35	34	28	29
South Africa	5	1	42	45	34	35	47	46	42	10
Turkey	10	11	28	33	16	16	32	44	37	25
Saudi Arabia	3	6	8	18	24	19	1	2	43	2
China	16	23	24	44	35	17	37	25	41	44
India	7	2	33	42	17	13	26	2	44	41
Indonesia	6	16	40	30	23	32	31	30	40	13
South Korea	26	40	12	8	45	45	13	9	4	16
Malaysia	1	24	17	43	37	37	42	4	17	22
Philippines	4	4	26	39	26	19	40	33	45	26
Taiwan	1	24	3	11	26	19	24	7	13	1
Thailand	18	36	7	36	15	15	33	1	18	15

# Pillar I: Demographic Risk

HEDGEYE

◆ x-axis: 5Y Forward Old-Age Dependency Ratio (65+ Year-Olds as a Ratio of the Working-Age Population); y-axis: 35-54 Year-Old Population Cohort - 5Y Forward CAGR



# Pillar II: FX Risk

HEDGEYE

◆ x-axis: Current Account Balance as a % of Nominal GDP; y-axis: Sovereign Budget Balance as a % of Nominal GDP



# Pillar III: Credit Cycle Risk

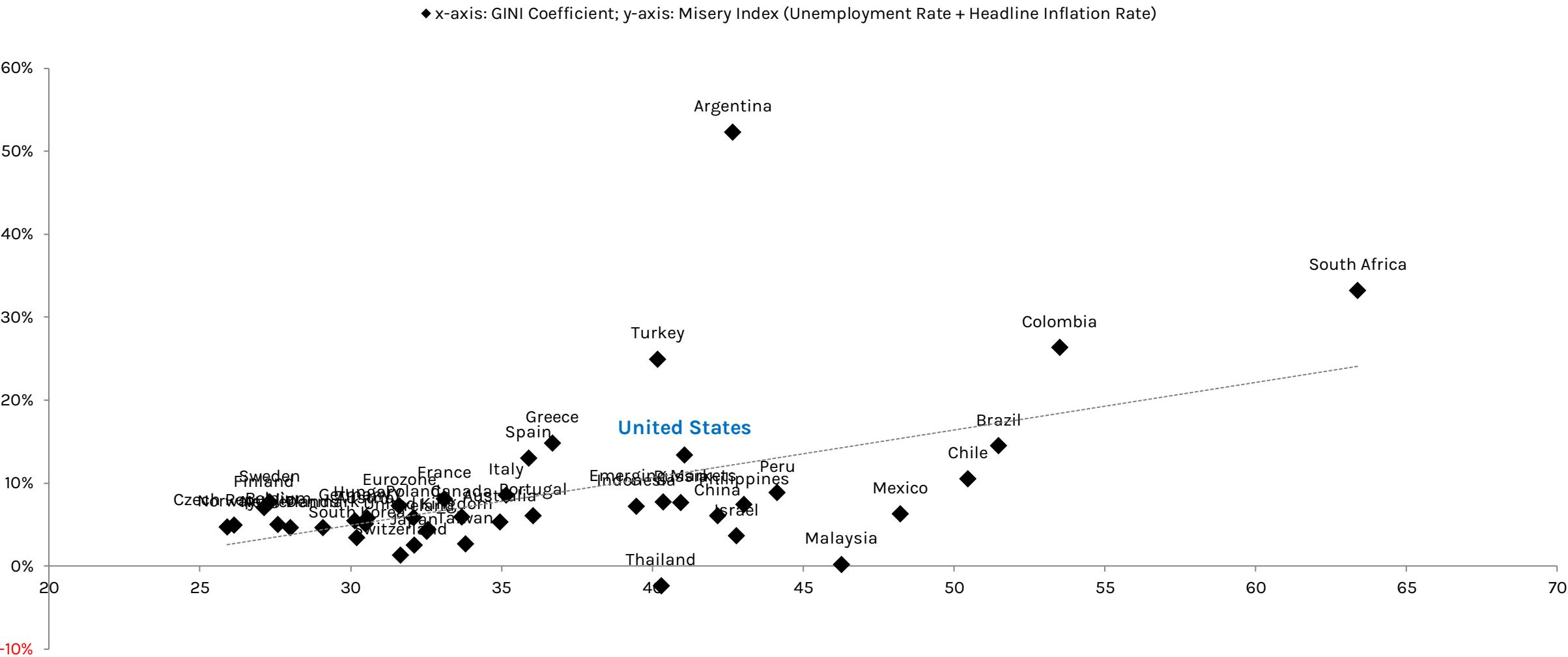
HEDGEYE

- x-axis: Private Nonfinancial Sector Credit-to-GDP (Z-Score, Trailing 5Y); y-axis: Debt Service Ratio (Z-Score, Trailing 5Y);  
z-axis: Latest NPL Ratio (Percentile, T10Y)



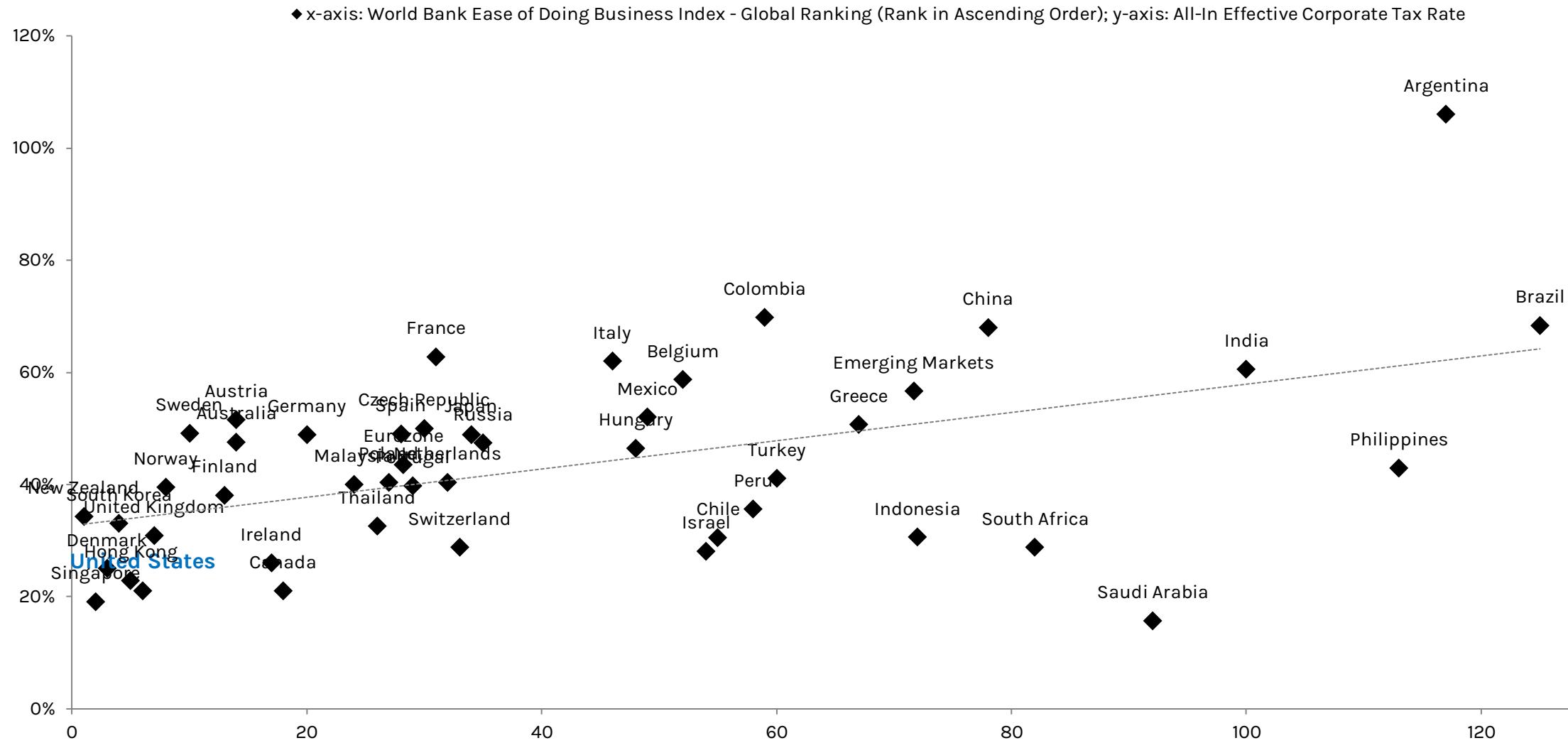
# Pillar IV: Protectionism Risk

HEDGEYE



# Pillar V: Competitiveness Risk

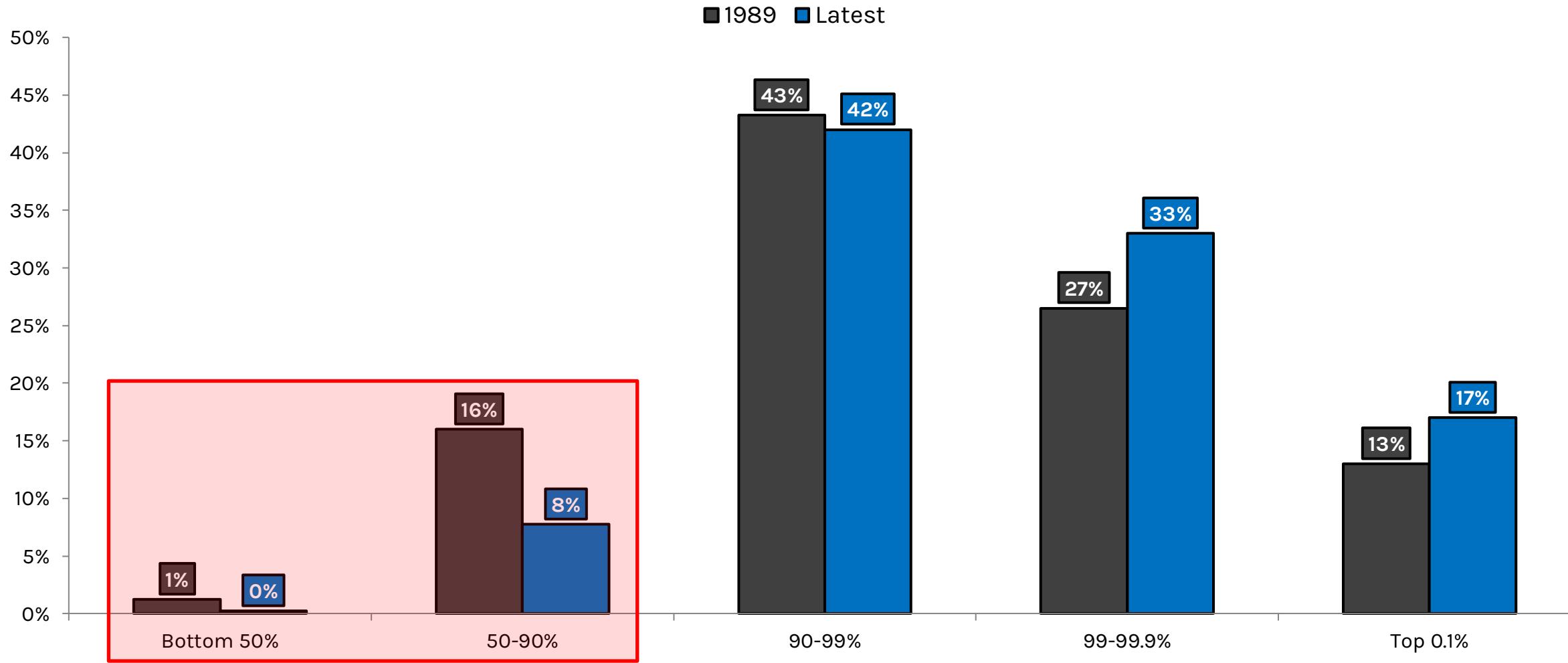
HEDGEYE



# Reflating For Whom? The Top-10% Own 92% Of All “Stahks!” In America; The Lower Median Owns 0%!

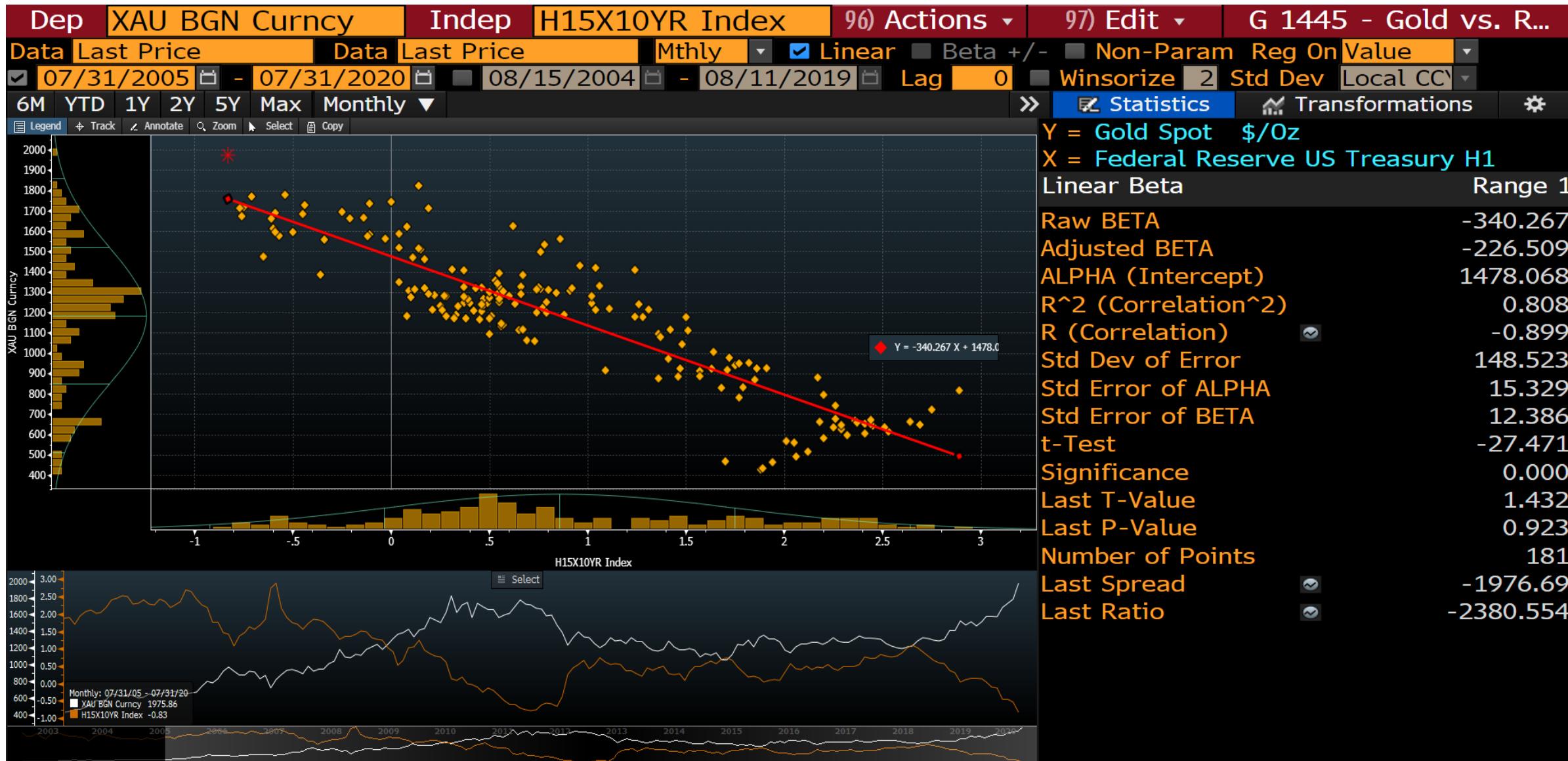
HEDGEYE

Share Of US Household Equity Ownership By Net Worth Percentile



# Get Real Rates Right; Get Gold Right

HEDGEYE



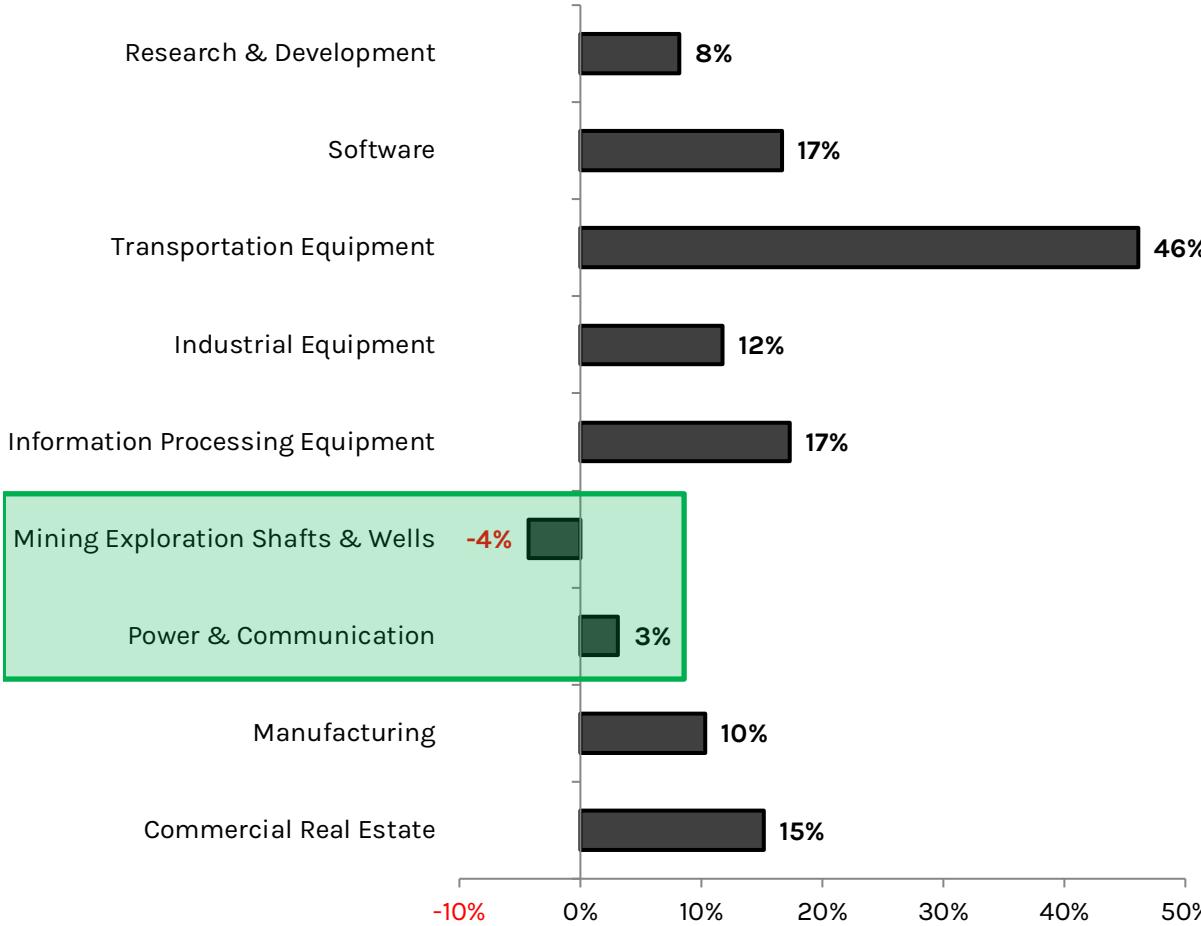
# Where To Invest For The Next Economic Expansion

HEDGEYE

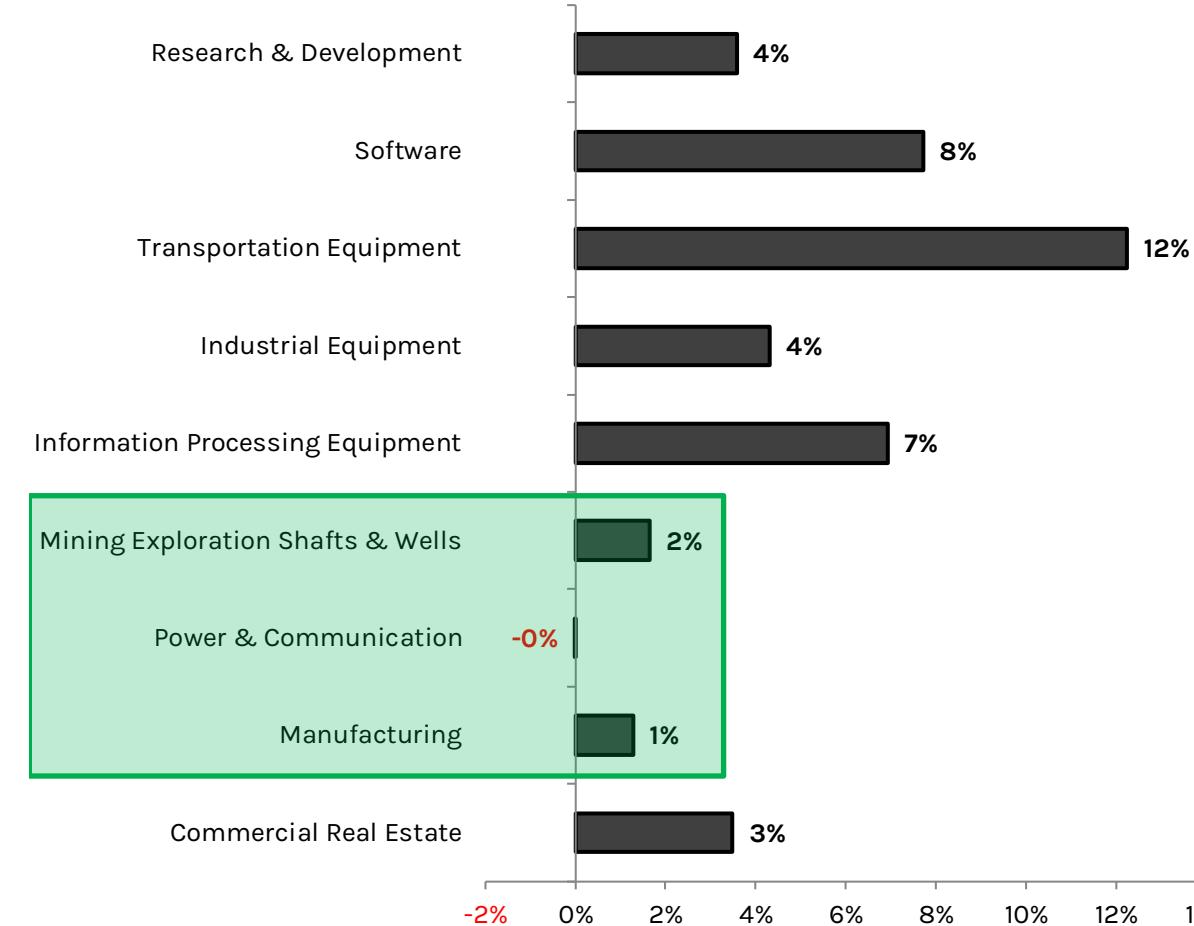
The intensity and persistency of capital investment in a particular sector tends to perpetuate relative oversupply and deflation...

... as such, investors should consider underwriting the equity and credit risk of sectors that have been left behind in the prior cycle.

■ Trailing 3yr CAGR of Real Capex by Sector

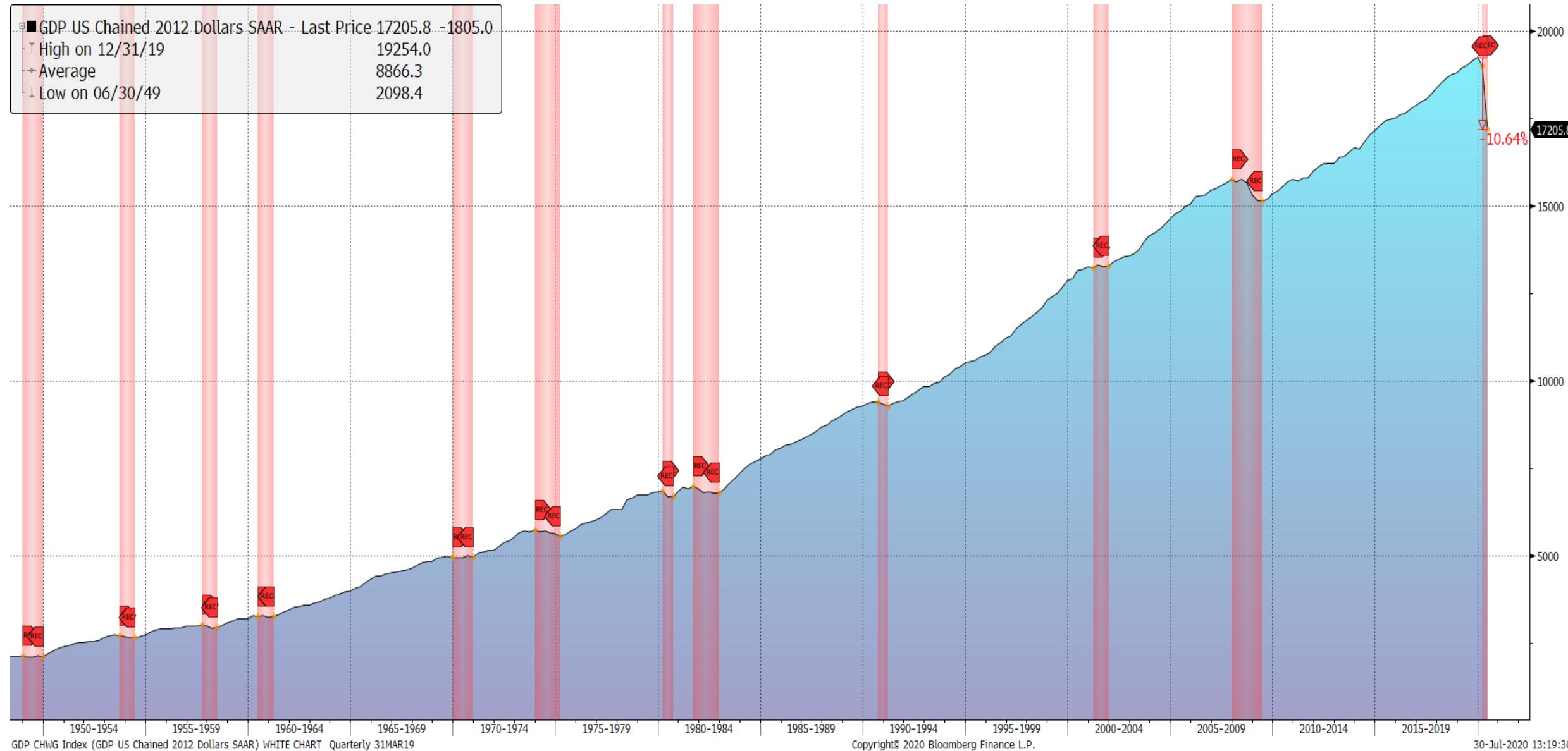


■ Trailing 10yr CAGR of Real Capex by Sector



# Worst GDP Drawdown In History By A Factor Of > 2x

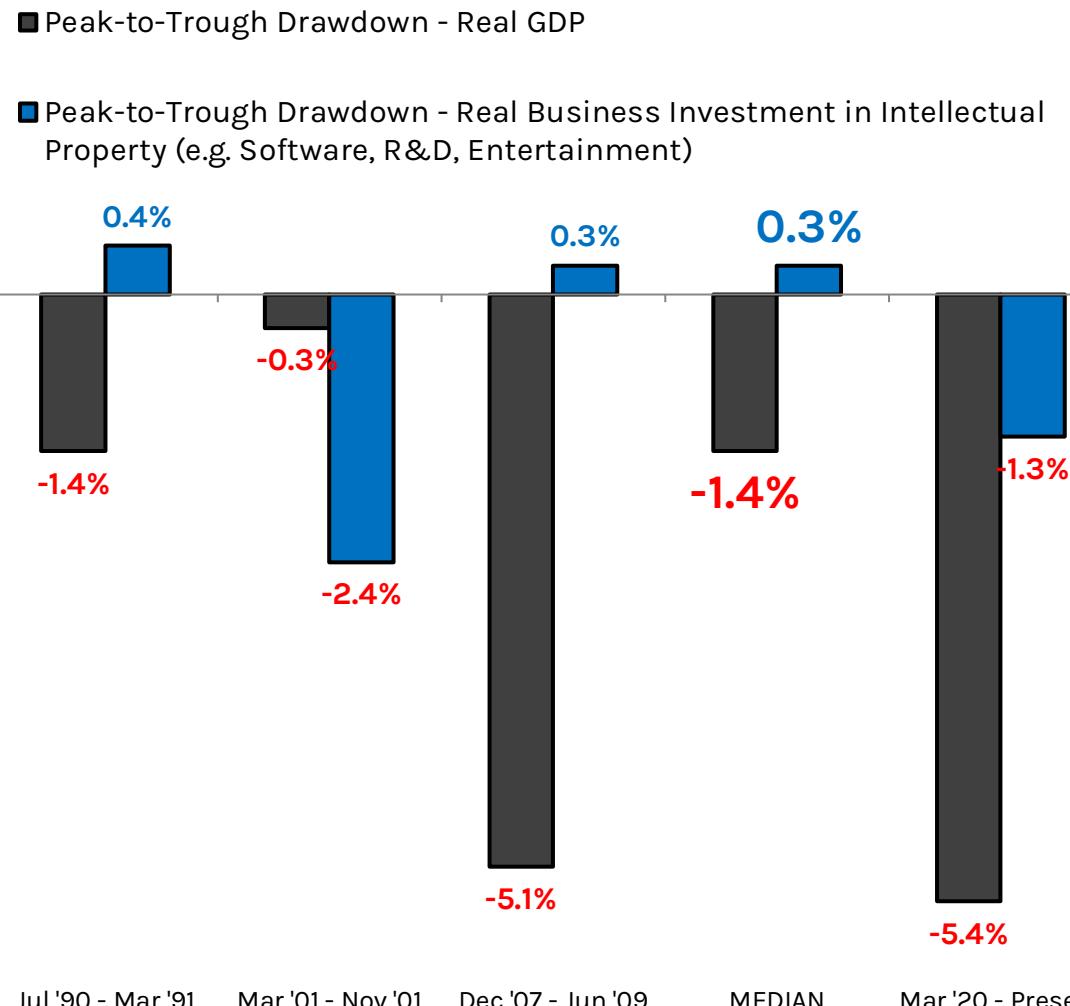
HEDGEYE



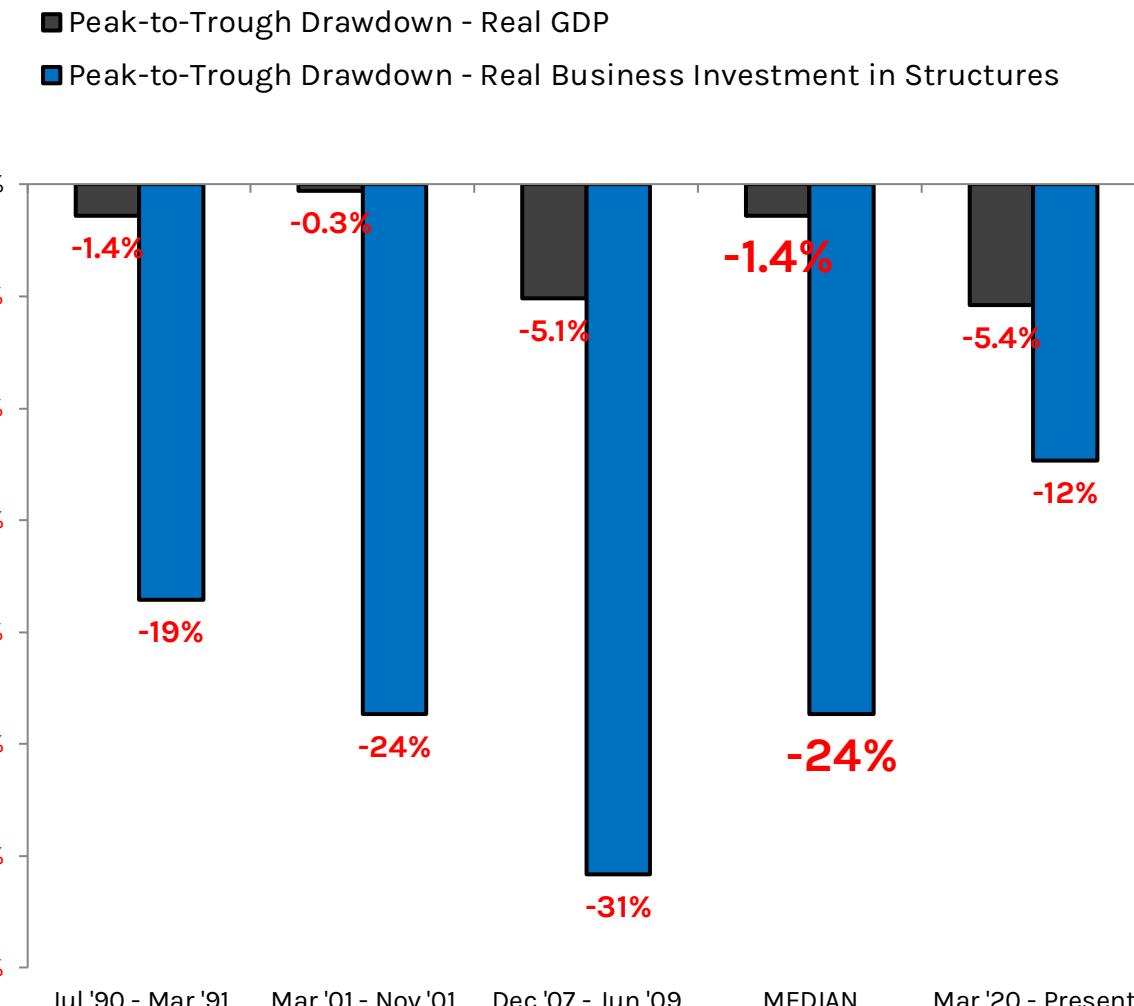
# Select Capex Cycles During Prior Three US Business Cycle Downturns

HEDGEYE

## Tech Economy Capex

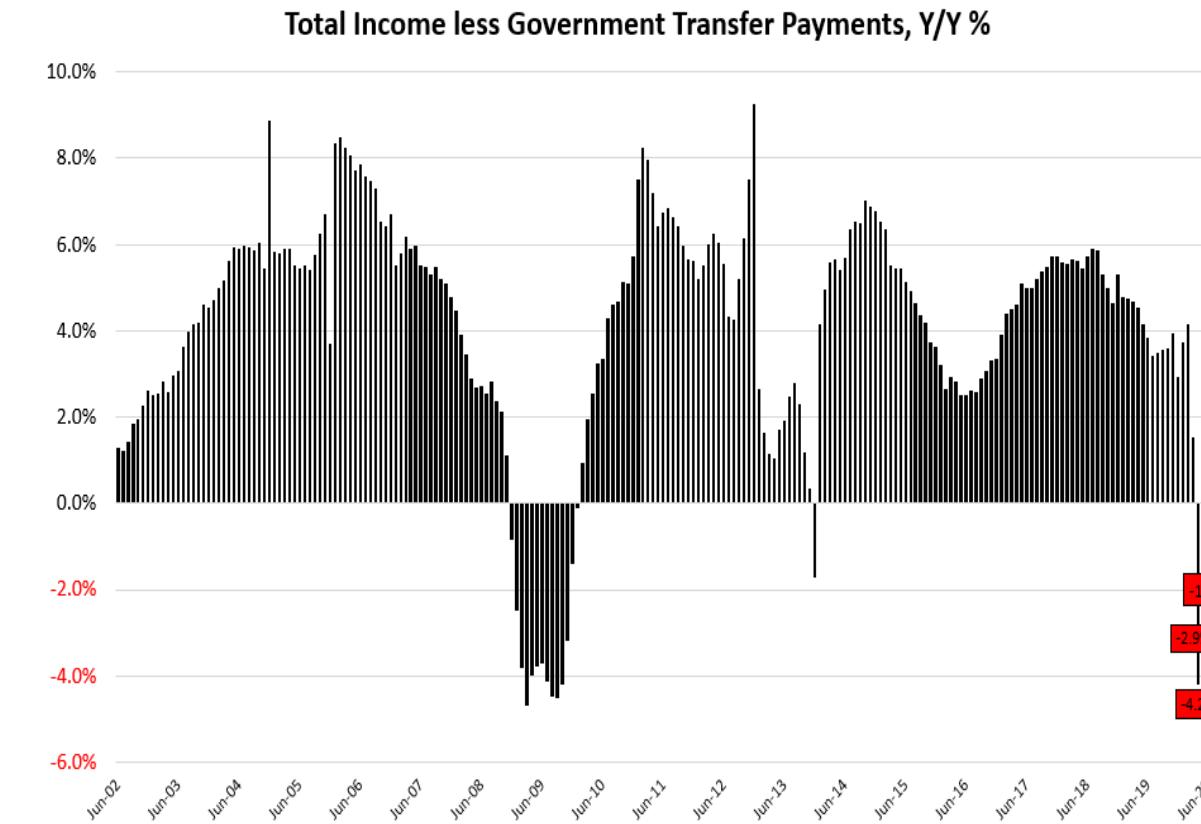
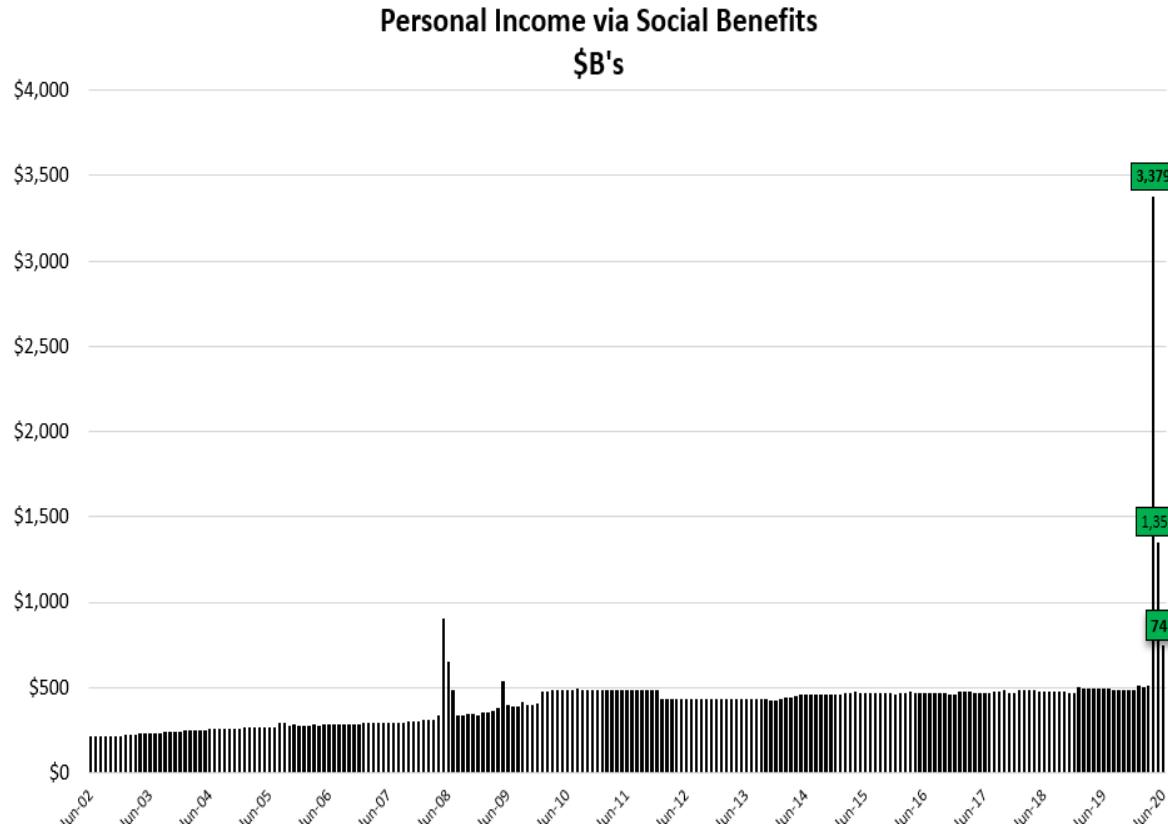


## Real Economy Capex



# Fiscal Stimulus Is Waning Despite Household Incomes Remaining Down On A YoY Basis

HEDGEYE



# Welcome To Phase 3: The Rate Of Change Of Domestic Economic Activity Is Poised To Flatten Here In AUG, Followed By Negative A Negative RoC Inflection In Subsequent Months

HEDGEYE

HEDGEYE HYPER HIGH-FREQUENCY																					
US ECONOMIC DATA TRACKER																					
	5/26	6/2	6/9	6/16	6/23	6/30	7/7	7/14	7/21	7/28	8/4	8/11	8/18	8/25	Δ	Jul-20	Aug-20	Δ	Jun-20	Sep-20	Δ
Initial Jobless Claims SA	2,123	1,897	1,566	1,540	1,482	1,408	1,310	1,308	1,422	1,435	1,191	971	1,106	-	135	1,333	1,039	-295	2,960	1,249	-1,711
Continuing Jobless Claims SA	21,268	20,606	20,289	19,231	18,760	17,760	17,304	16,151	16,951	16,090	15,480	14,844	-	-	-636	16,395	14,844	-1,551	19,564	16,137	-3,428
Total Persons Claiming Unemployment Insurance Benefits NSA	29,567	29,294	30,591	31,512	32,436	32,003	31,804	30,816	31,324	28,257	28,059	-	-	-	-198	30,052	-	-	26,761	30,052	3,291
Bloomberg Weekly Consumer Comfort Index	35.5	37.0	38.7	40.2	41.4	43.3	42.9	44.3	44.7	44.3	44.9	43.7	43.5	-	-0.20	44.1	44.0	-0.02	39.9	44.0	4.14
Bloomberg Weekly Consumer Comfort Index - Income > \$100K	52.4	53.5	58.5	61.1	61.9	60.2	61.3	63.2	61.0	63.2	58.9	55.0	58.2	-	3.20	62.2	57.4	-4.81	55.0	60.1	5.15
San Francisco Fed National Economic Sentiment Index	-0.44	-0.42	-0.46	-0.45	-0.43	-0.42	-0.39	-0.32	-0.31	-0.27	-0.25	-0.29	-0.34	-0.31	0.03	-0.31	-0.31	0.00	-0.45	-0.31	0.14
Baker, Bloom & Davis US Economic Policy Uncertainty Index	415	382	274	304	367	306	339	298	427	360	345	341	346	272	-74	360	318	-42	452	341	-111
Dallas Fed National Mobility & Engagement Index YoY	-64.3	-56.4	-51.2	-48.7	-44.3	-44.1	-46.8	-45.3	-44.4	-46.3	-49.0	-48.6	-49.2	-	-60bps	-45.1	-44.3	78bps	-68.4	-44.9	2356bps
TSA Checkpoint Total Traveler Throughput YoY	-88.6	-87.4	-85.2	-82.0	-79.8	-77.7	-73.4	-73.8	-75.0	-74.9	-73.8	-72.7	-71.4	-70.5	89bps	-73.9	-71.2	274bps	-88.7	-72.7	1599bps
Department of Transportation Weekly Highway Traffic Volume YoY	-26.0	-25.0	-21.0	-19.0	-15.0	-15.0	-15.0	-15.0	-15.0	-14.0	-14.0	-14.0	-	-	-	-14.5	-14.0	50bps	-30.9	-14.4	1652bps
New York/New Jersey Public Transit Demand Drawdown	-68.8	-66.8	-64.2	-61.2	-59.0	-55.4	-53.0	-51.6	-50.4	-49.8	-48.5	-47.0	-48.1	-49.0	-88bps	-50.9	-48.0	290bps	-68.2	-49.6	1854bps
Los Angeles Public Transit Demand Drawdown	-65.3	-63.9	-61.0	-58.2	-55.1	-53.3	-54.2	-55.5	-55.8	-56.9	-56.7	-55.2	-54.2	-55.0	-83bps	-55.8	-55.1	69bps	-64.0	-55.5	852bps
Chicago Public Transit Demand Drawdown	-65.5	-64.0	-57.9	-54.9	-51.9	-50.8	-50.2	-49.6	-51.5	-51.6	-50.8	-47.9	-45.2	-46.4	-114bps	-50.7	-47.1	358bps	-63.9	-49.2	1467bps
Houston Public Transit Demand Drawdown	-58.3	-55.9	-52.0	-52.2	-51.7	-53.5	-56.0	-55.5	-56.7	-58.5	-59.5	-57.9	-58.9	-59.1	-20bps	-57.1	-58.6	-148bps	-58.1	-57.8	36bps
Philadelphia Public Transit Demand Drawdown	-54.6	-57.0	-56.8	-53.4	-52.1	-50.0	-47.3	-47.4	-46.8	-47.0	-47.3	-47.3	-46.0	-46.1	-11bps	-47.1	-46.6	45bps	-55.7	-46.9	877bps
San Francisco/San Jose Public Transit Demand Drawdown	-77.7	-75.7	-74.0	-73.0	-71.1	-69.7	-69.0	-69.3	-70.0	-70.7	-70.7	-69.6	-68.3	-68.7	-37bps	-69.8	-69.2	65bps	-76.4	-69.5	685bps
Boston Public Transit Demand Drawdown	-70.4	-68.2	-65.3	-62.8	-59.0	-55.5	-55.1	-51.9	-50.5	-50.8	-51.0	-49.7	-50.6	-53.0	-238bps	-51.9	-51.0	89bps	-69.6	-51.5	1811bps
Miami Public Transit Demand Drawdown	-65.9	-63.1	-60.1	-56.1	-54.3	-52.3	-53.1	-54.6	-55.7	-57.0	-56.7	-56.6	-54.3	-53.1	117bps	-55.3	-55.1	20bps	-65.5	-55.2	1032bps
DC/Baltimore Public Transit Demand Drawdown	-69.5	-68.8	-64.2	-61.2	-61.0	-58.7	-56.3	-55.4	-56.4	-58.1	-57.9	-58.5	-58.8	-57.5	129bps	-56.7	-58.3	-166bps	-66.8	-57.4	943bps
Seattle/Tacoma Public Transit Demand Drawdown	-77.6	-76.6	-74.5	-74.3	-71.6	-69.9	-71.2	-71.4	-70.7	-71.0	-69.8	-69.6	-71.2	-	-61bps	-71.0	-70.6	41bps	-76.4	-70.8	559bps
Open Table US Total Seated Diners YoY	-88.6	-83.5	-77.3	-69.9	-60.9	-61.7	-61.8	-63.0	-62.2	-61.2	-58.9	-55.9	-53.2	-50.9	226bps	-61.3	-53.8	755bps	-86.7	-58.0	2873bps
Johnson Redbook Index Weekly Same Store Sales YoY	-5.5	-7.2	-9.7	-8.3	-6.1	-5.7	-6.9	-5.5	-7.5	-8.7	-7.1	-3.4	-2.8	0.6	340bps	-7.2	-3.2	398bps	-6.2	-5.2	103bps
MBA Weekly Mortgage Purchase Applications YoY	8.4	16.9	12.0	20.1	17.4	14.6	18.0	15.2	19.2	21.0	21.3	21.4	26.7	-	532bps	17.5	26.0	856bps	-3.7	19.3	2297bps
AAR Weekly Railroad Freight Traffic YoY	-19.2	-17.3	-15.6	-14.9	-12.9	-13.8	-2.4	-14.9	-8.5	-9.9	-9.9	-6.7	-6.9	-	-15bps	-8.2	-7.1	106bps	-18.2	-8.7	945bps
Fed US Weekly Commercial Bank Assets - Total Assets YoY	18.4	18.0	17.0	16.8	16.7	16.2	16.0	15.9	15.7	15.0	15.0	14.3	14.4	-	16bps	15.5	14.4	-111bps	17.3	15.1	-219bps
Fed US Weekly Commercial Bank Assets - Total Loans & Leases YoY	10.6	10.4	9.8	9.5	8.8	8.1	7.8	7.8	7.6	7.1	6.9	6.8	-	-	-9bps	7.6	6.7	-89bps	10.5	7.3	-318bps
Fed US Weekly Commercial Bank Assets - Credit Card YoY	-6.3	-6.9	-7.2	-7.5	-7.6	-7.5	-7.5	-7.6	-7.9	-8.4	-8.6	-8.9	-	-	-32bps	-7.8	-8.8	-99bps	-4.6	-8.1	-352bps
Fed US Weekly Commercial Bank Assets - Auto YoY	4.2	4.2	4.4	4.4	4.3	4.3	4.4	4.2	4.1	4.1	3.8	3.8	-	-	-4bps	4.2	3.7	-51bps	5.2	4.0	-122bps
Fed US Weekly Commercial Bank Assets - Other Consumer YoY	6.1	5.8	5.7	5.4	5.1	4.9	5.1	5.2	5.5	5.5	5.2	5.1	-	-	-5bps	5.3	5.0	-35bps	6.8	5.1	-164bps
Fed US Weekly Commercial Bank Assets - CRE YoY	6.9	6.8	6.9	6.9	6.8	6.7	6.8	6.8	6.8	6.6	6.7	6.7	-	-	1bps	6.8	6.6	-20bps	7.2	6.5	-71bps
Fed US Weekly Commercial Bank Assets - C&I YoY	29.1	28.5	26.6	26.2	24.2	22.4	20.8	20.6	20.6	20.1	19.5	19.0	18.0	-	-106bps	20.3	18.3	-200bps	26.1	19.7	-636bps

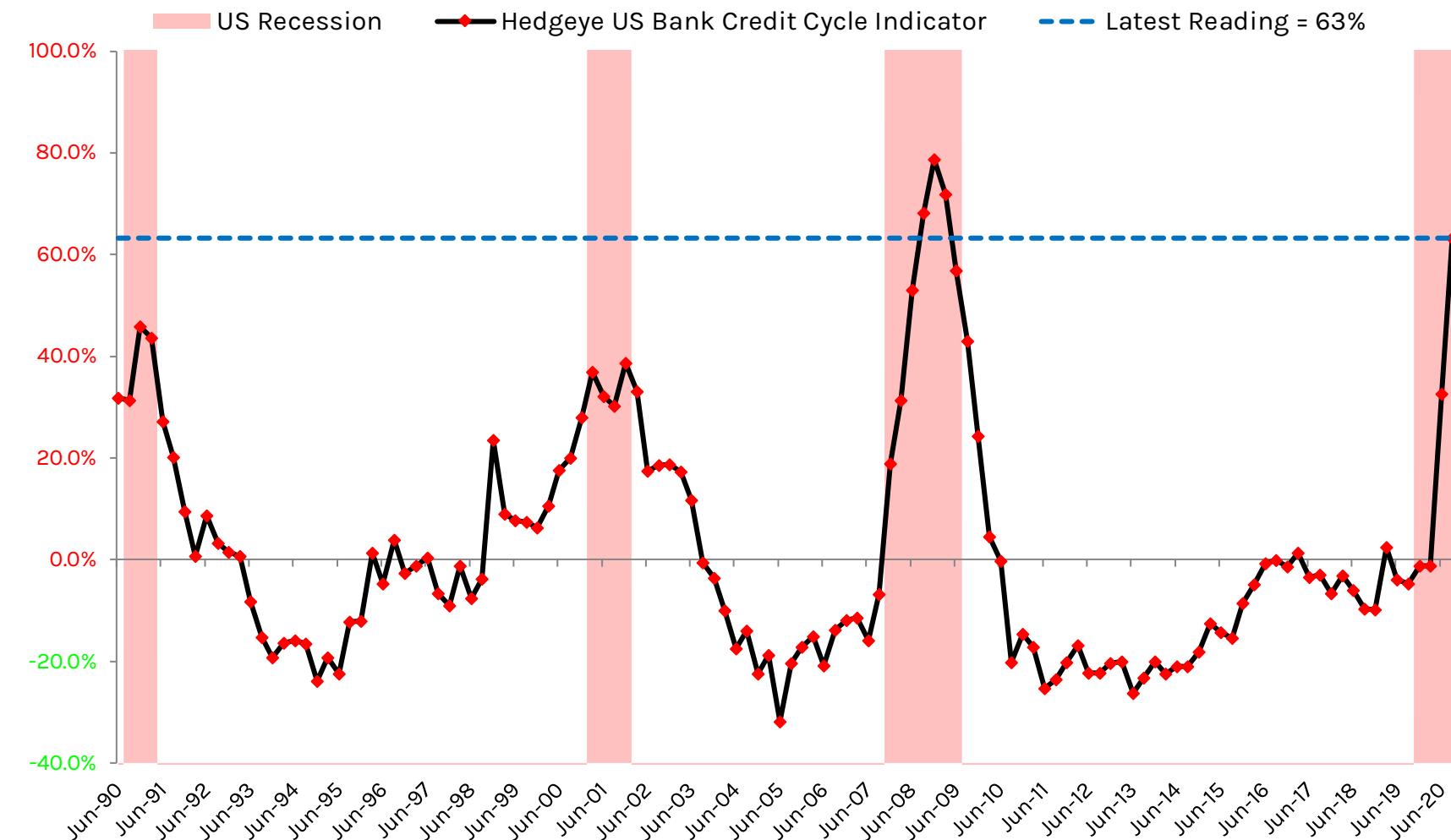
Data Source: Bloomberg, Intellectual Property of Hedgeye Risk Management. Weekly/monthly/quarterly averages. Color-coding based on displayed values for each indicator.

# Senior Loan Officers Of US Banks Just Oversaw The Fastest Tightening Of Credit In At Least Thirty Years... Twice!

HEDGEYE

Our proprietary **Hedgeye US Bank Credit Cycle Indicator** adds an additional layer of top-down context to the critical components of the Fed's Senior Loan Officer Survey. The index is an arithmetic average of the following survey responses:

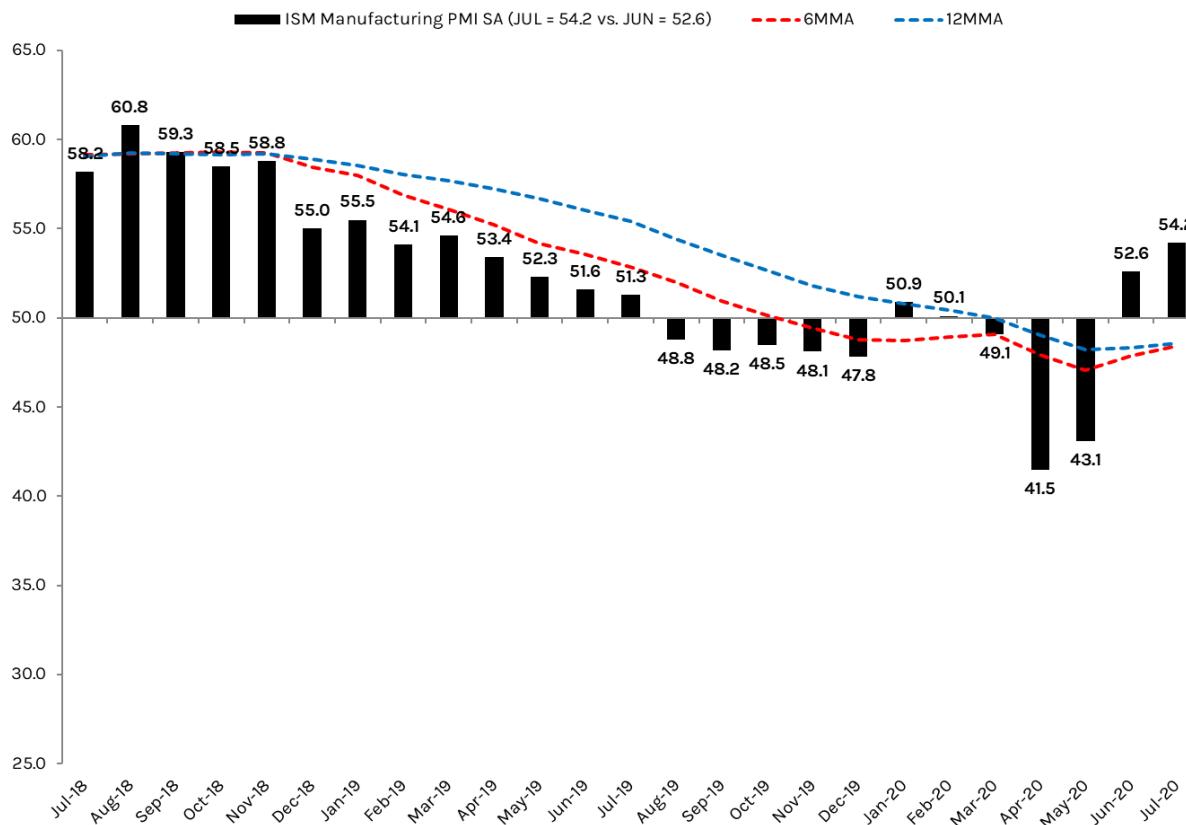
- Net % Tightening Lending Standards for Large/Medium C&I Firms
- Net % Tightening Lending Standards for Small C&I Firms
- Net % Increasing Credit Spreads Over Banks' Cost of Capital for Large/Medium C&I Firms
- Net % Increasing Credit Spreads Over Banks' Cost of Capital for Small C&I Firms
- Net % Tightening Lending Standards for Consumer Credit Card Loans
- Net % Tightening Lending Standards for Consumer New and Used Auto Loans
- Net % Tightening Lending Standards for Consumer Loans ex-Credit Cards and Autos



# As Predicted, Job Growth Is Lagging The [Unsustainable] Bounce In Economic Activity Throughout Phase 2

HEDGEYE

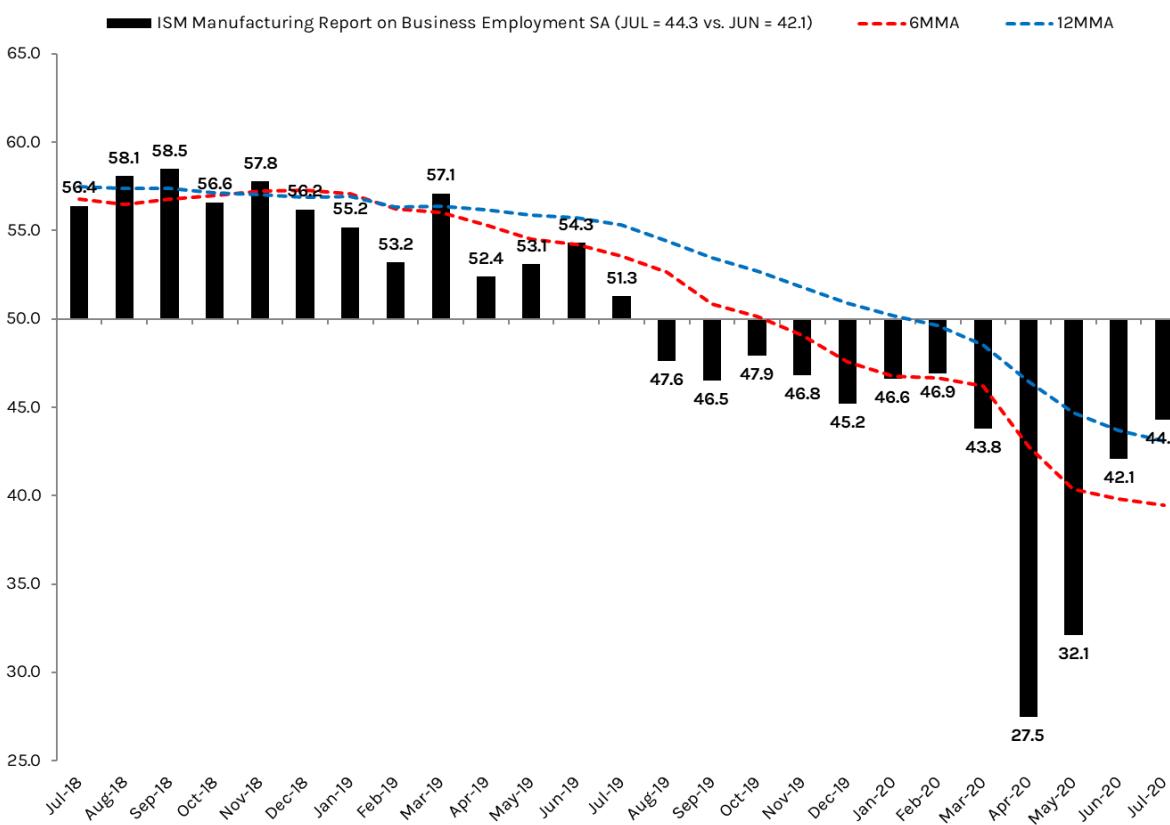
## ISM Manufacturing PMI – Headline Index



Data Source: Bloomberg

© Hedgeye Risk Management

## ISM Manufacturing PMI – Employment Index



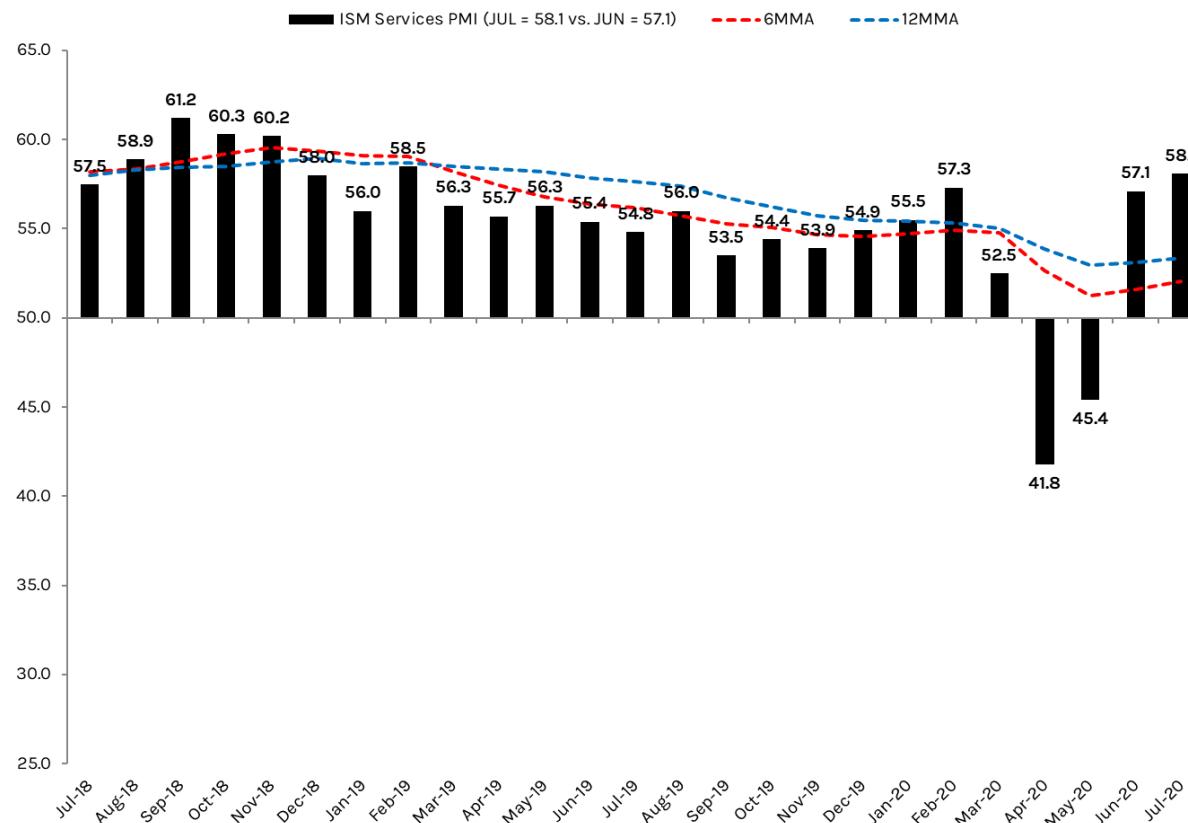
Data Source: Bloomberg

© Hedgeye Risk Management

# As Predicted, Job Growth Is Lagging The [Unsustainable] Bounce In Economic Activity Throughout Phase 2

HEDGEYE

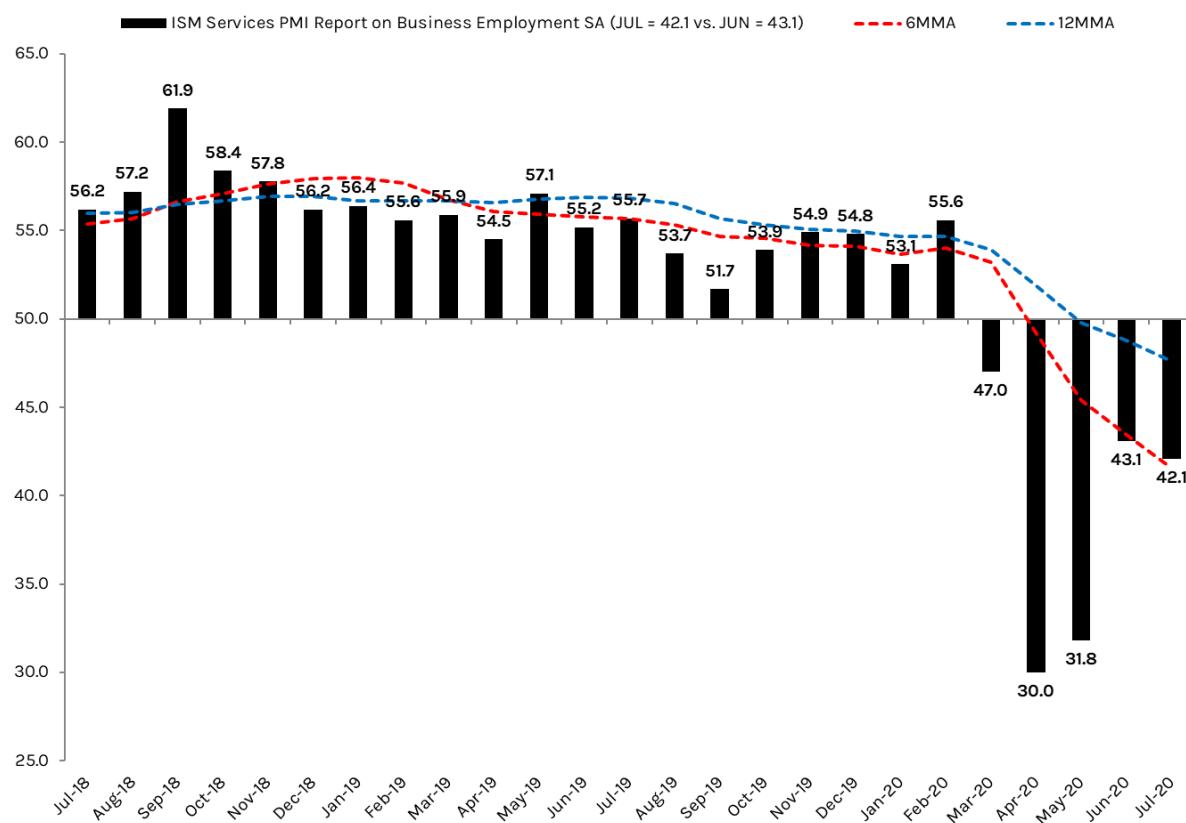
ISM Non-Manufacturing PMI – Headline Index



Data Source: Bloomberg

© Hedgeye Risk Management

ISM Non-Manufacturing PMI – Employment Index

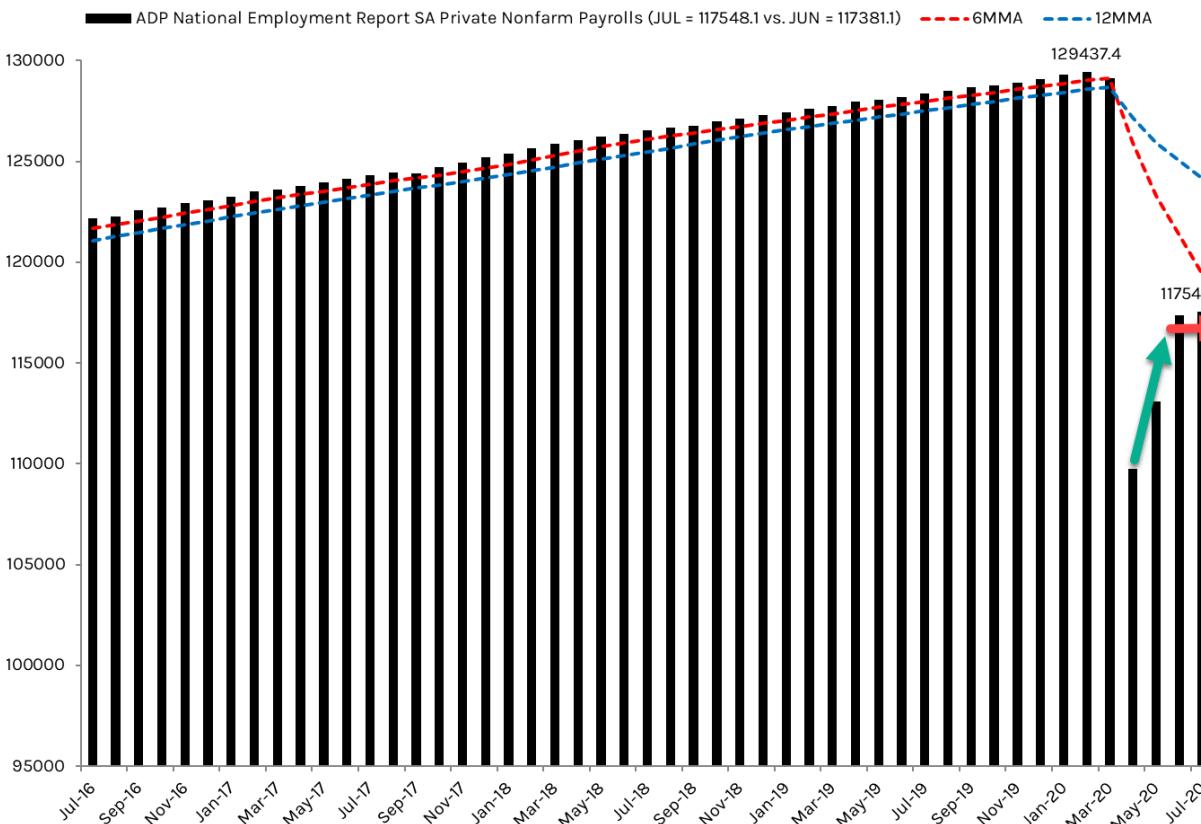


© Hedgeye Risk Management LLC.

# As Predicted, Job Growth Is Lagging The [Unsustainable] Bounce In Economic Activity Throughout Phase 2

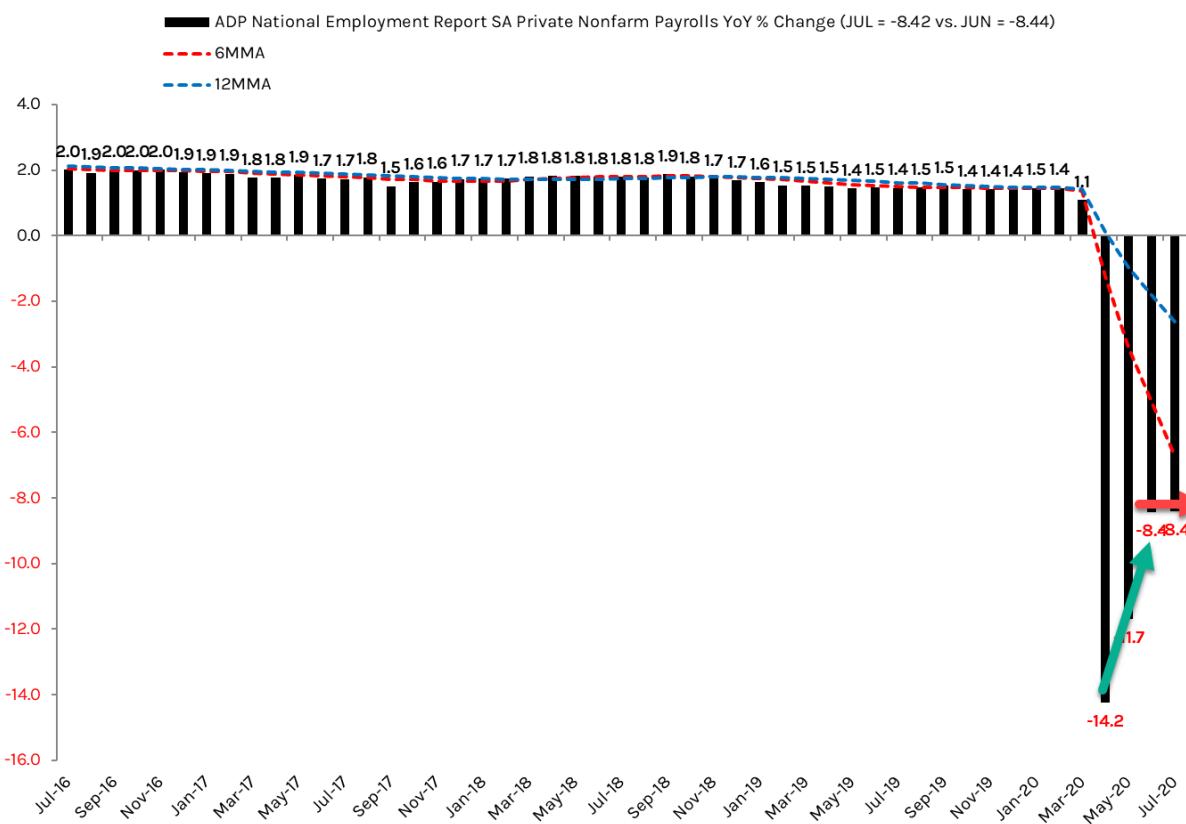
HEDGEYE

ADP Employment Report – Nonfarm Payrolls



© Hedgeye Risk Management

ADP Employment Report – Nonfarm Payrolls YoY

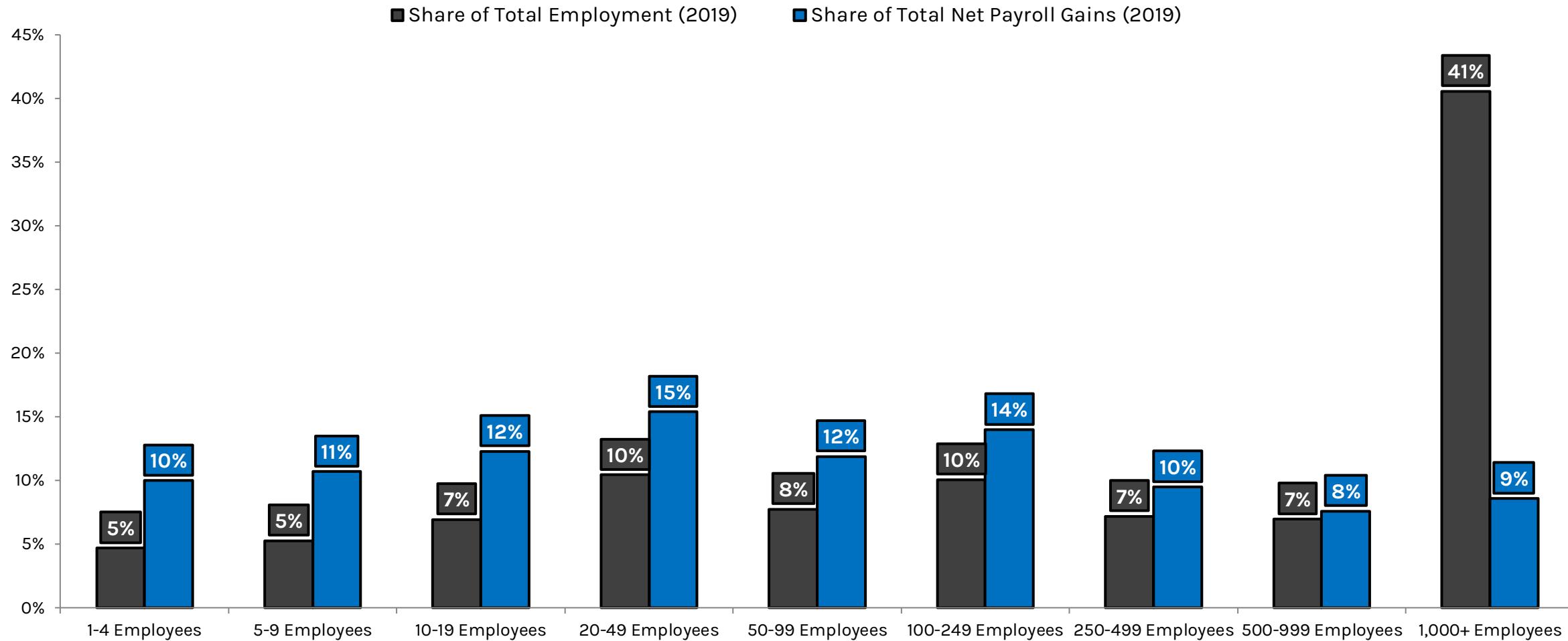


© Hedgeye Risk Management

# Small Businesses Are Meaningful To The US Labor Market

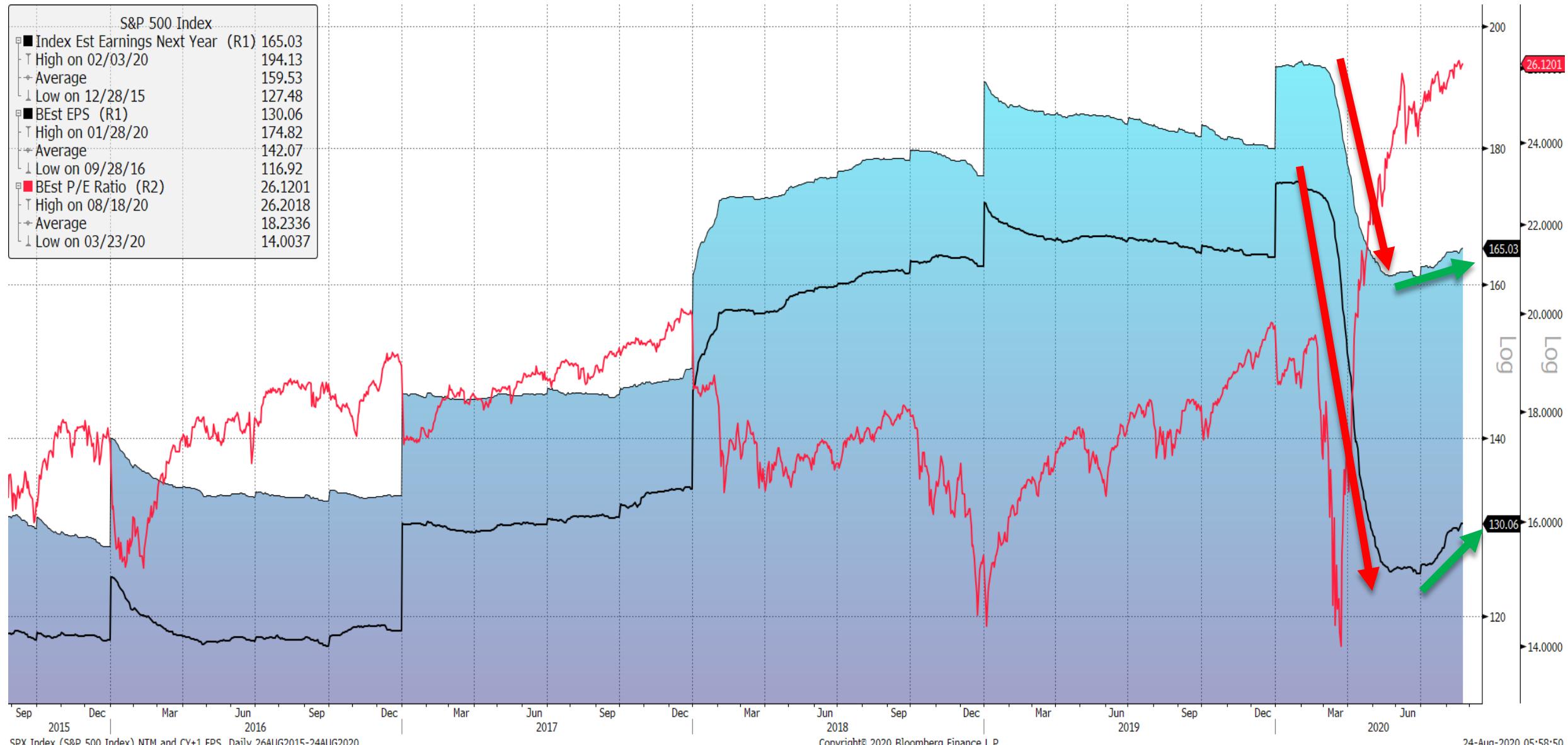
HEDGEYE

Applying the NFIB's definition of "small business" (i.e. firm headcount < 500 employees) to the latest full year of BLS data, we see that small businesses in the US account for over half of total employment and greater than four-fifths of all incremental hiring.



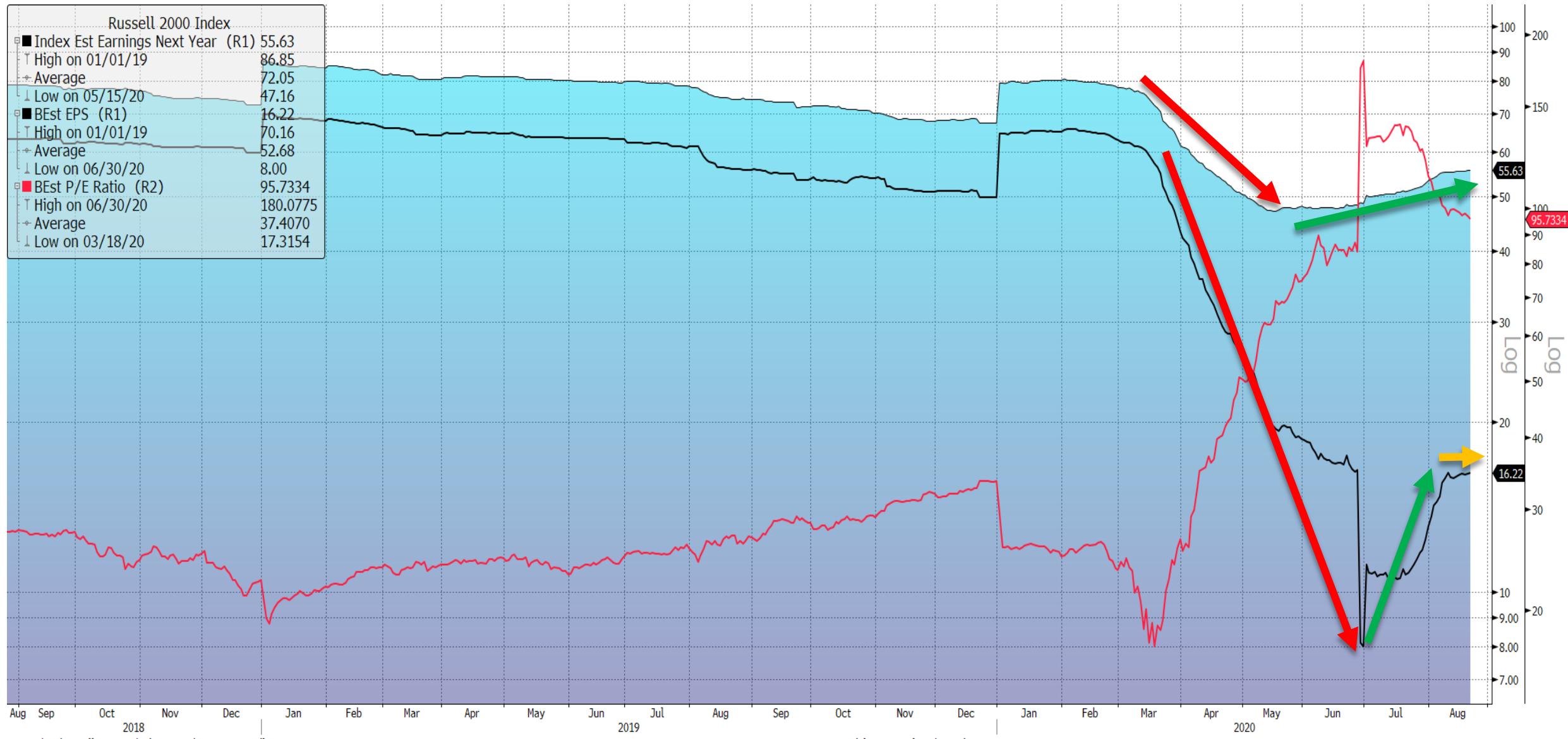
# S&P 500 NTM and CY21E Earnings Estimates Amid Phase 1 & Phase 2

HEDGEYE



# Russell 2000 NTM and CY21E Earnings Estimates Amid Phase 1 & Phase 2

HEDGEYE

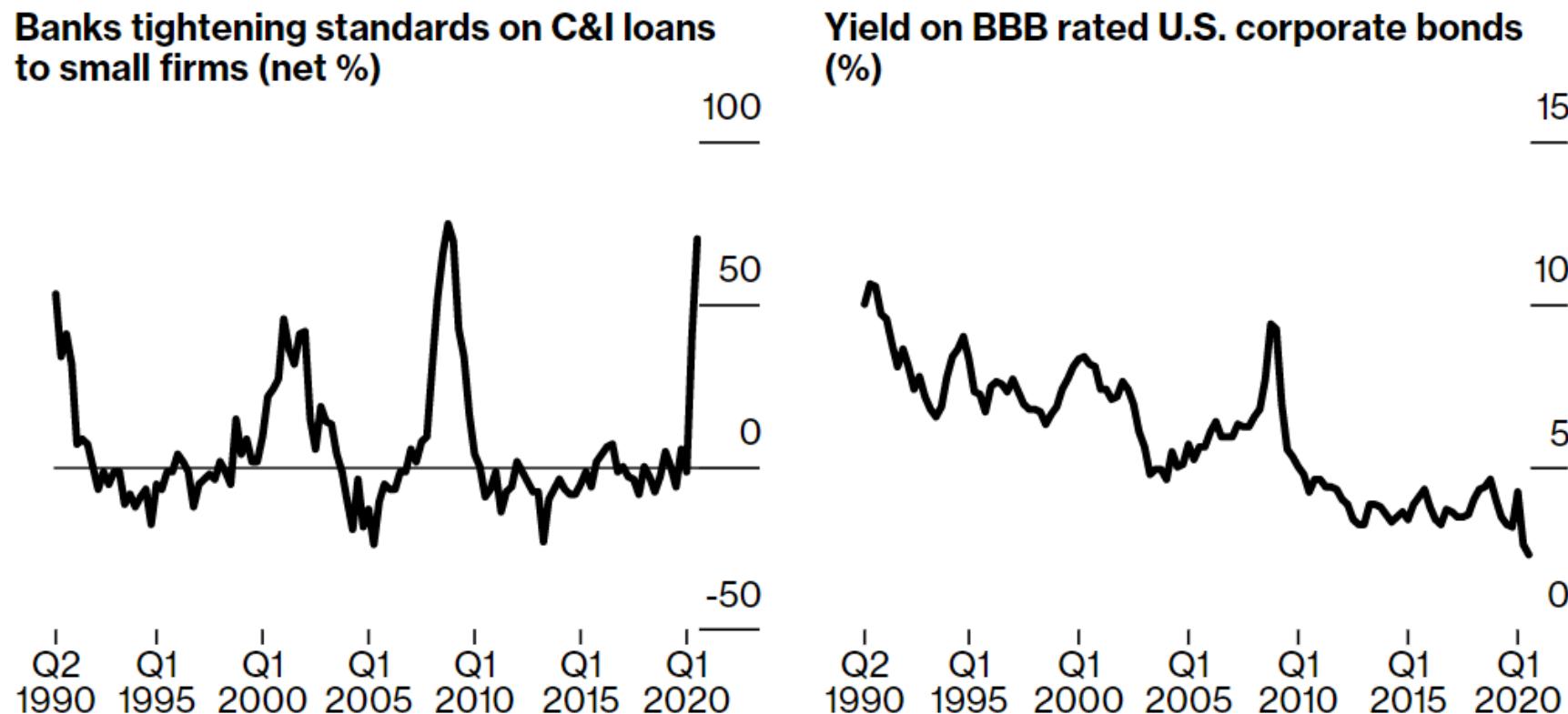


# When Trickle Down Monetary Policy Fails To Actually Trickle Down, Income & Wealth Generation Gets Concentrated At The Top

HEDGEYE

## Worst of Times, Best of Times

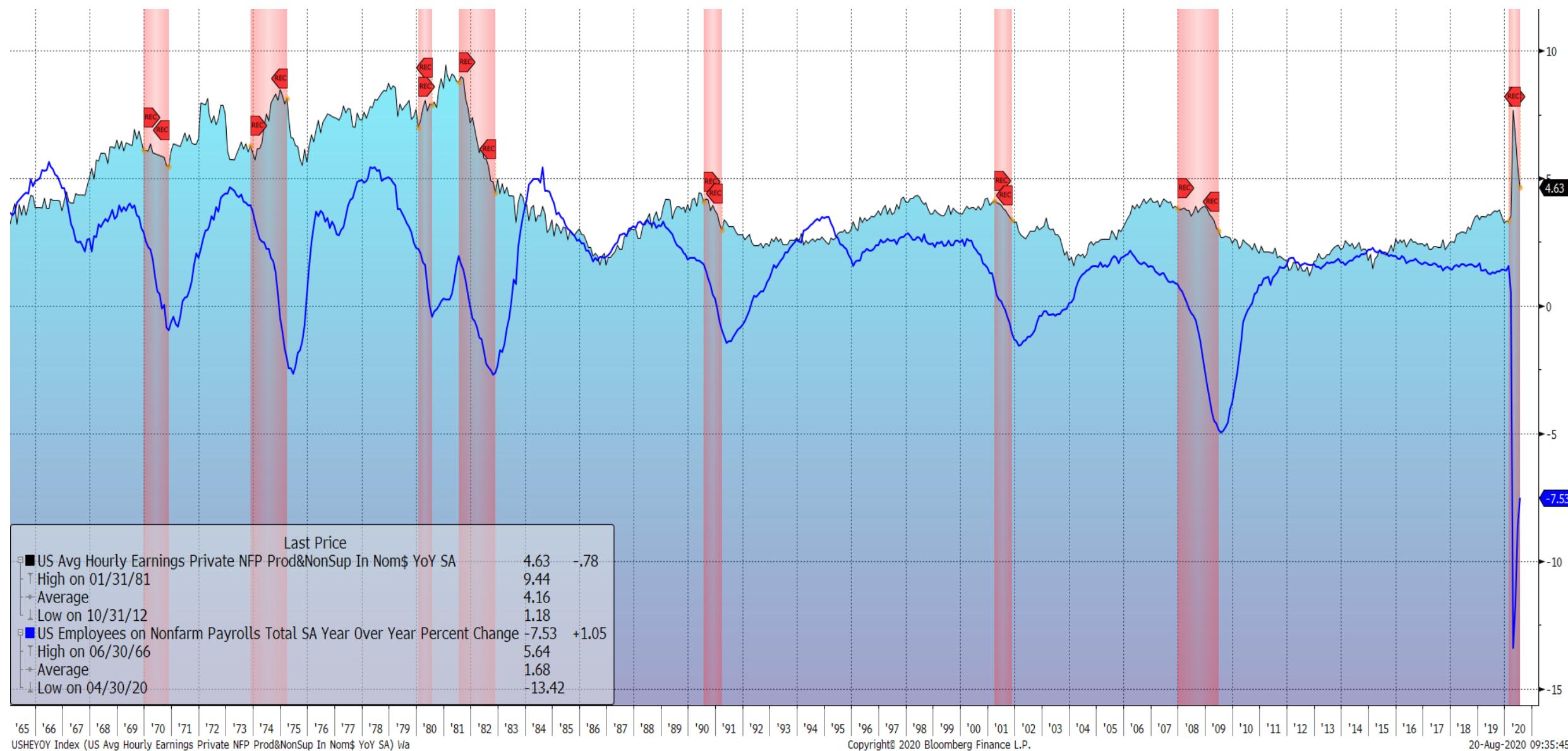
Loans tightest since 2008 as bond markets turn cheapest on record



Source: Federal Reserve, Bloomberg Barclays indices  
Note: 3Q BBB yield as of 8/11

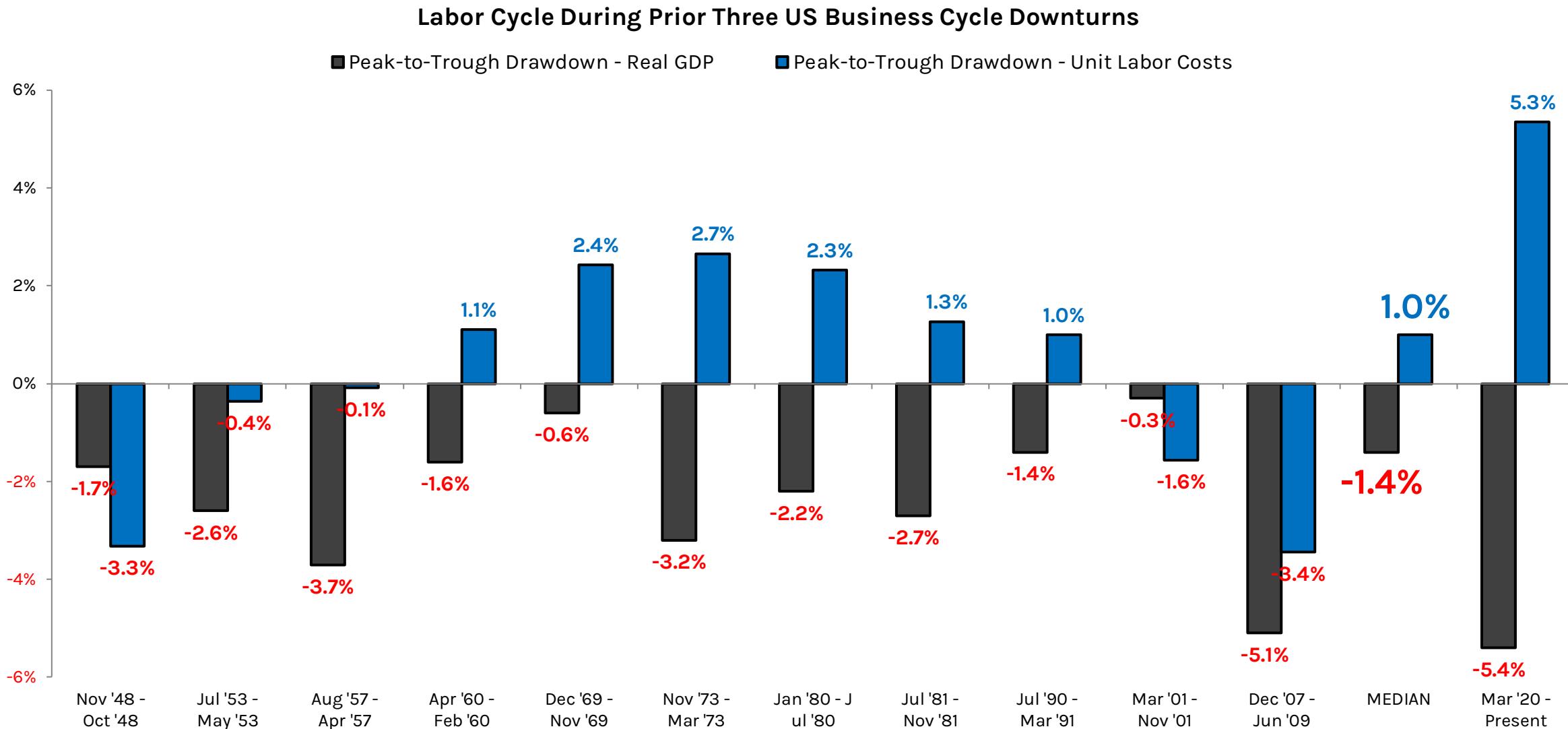
# Wage Growth Never Falls Below 0% During Recession

HEDGEYE



# In Fact, Unit Labor Costs Are A Lagging Indicator That, On Balance, Tend To Rise During Recession – With 2020 Seeing The Fastest Acceleration Ever

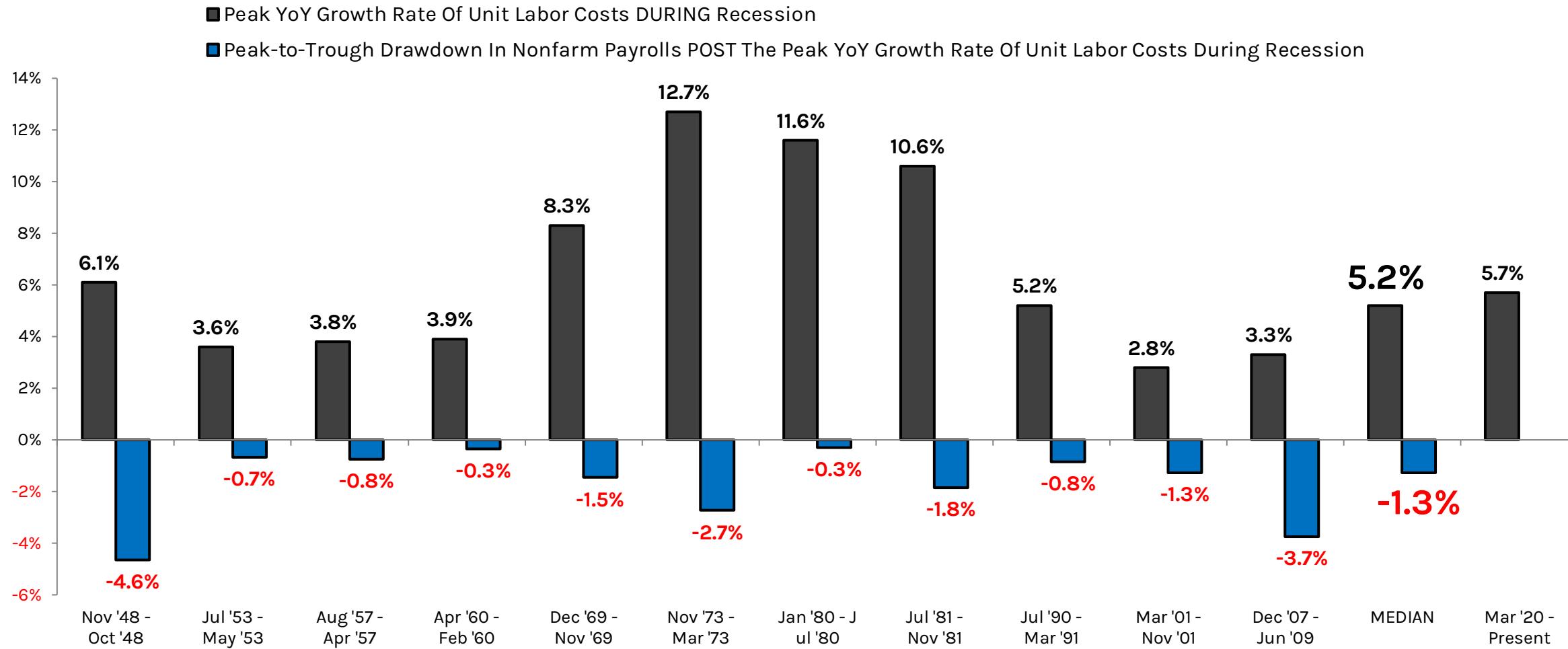
HEDGEYE



# Rising Unit Labor Costs Portend A Further Decline In Total Employment, Post The Culmination Of Phase 2 Reopening Processes

HEDGEYE

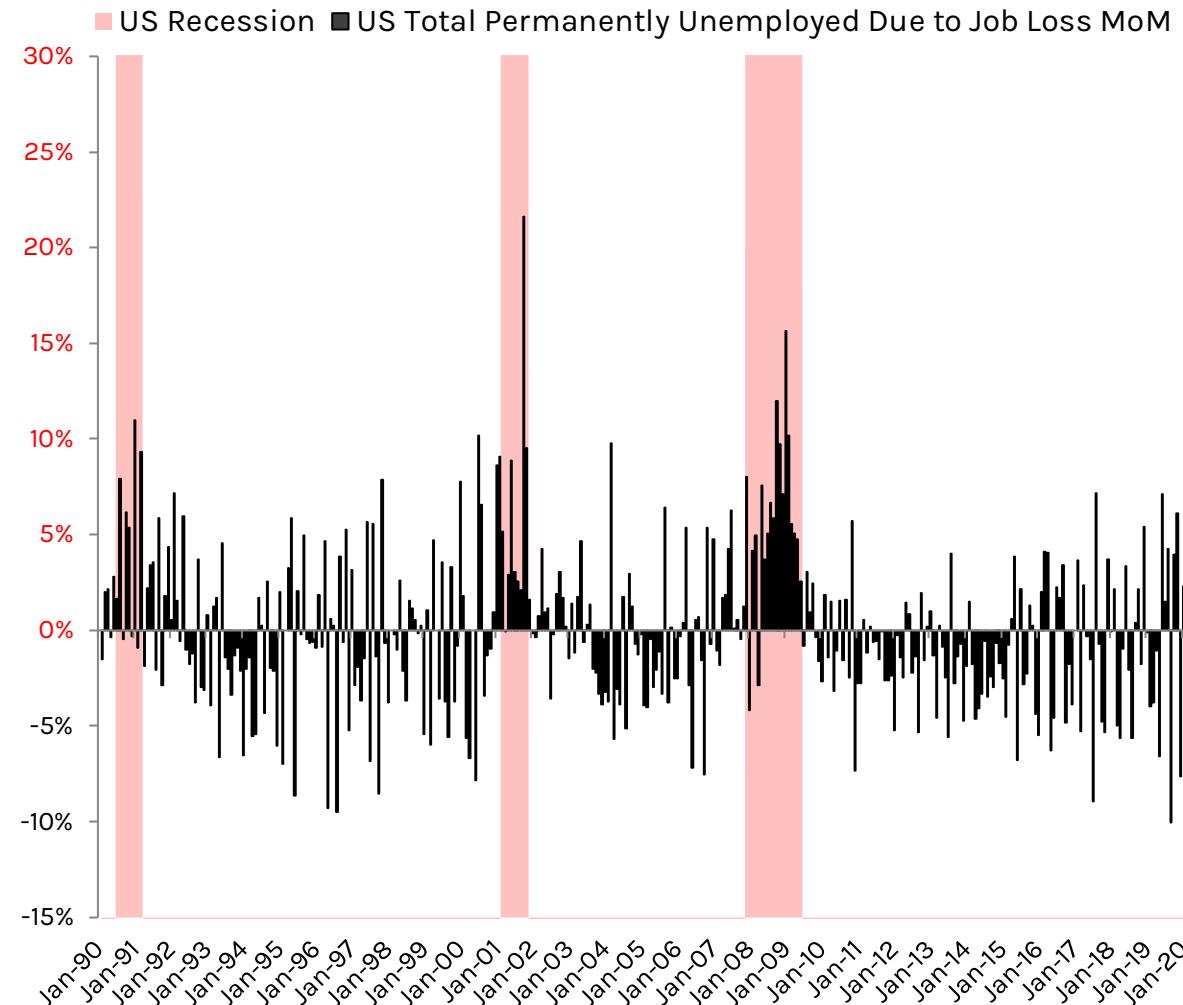
## Labor Cycle During Prior Three US Business Cycle Downturns



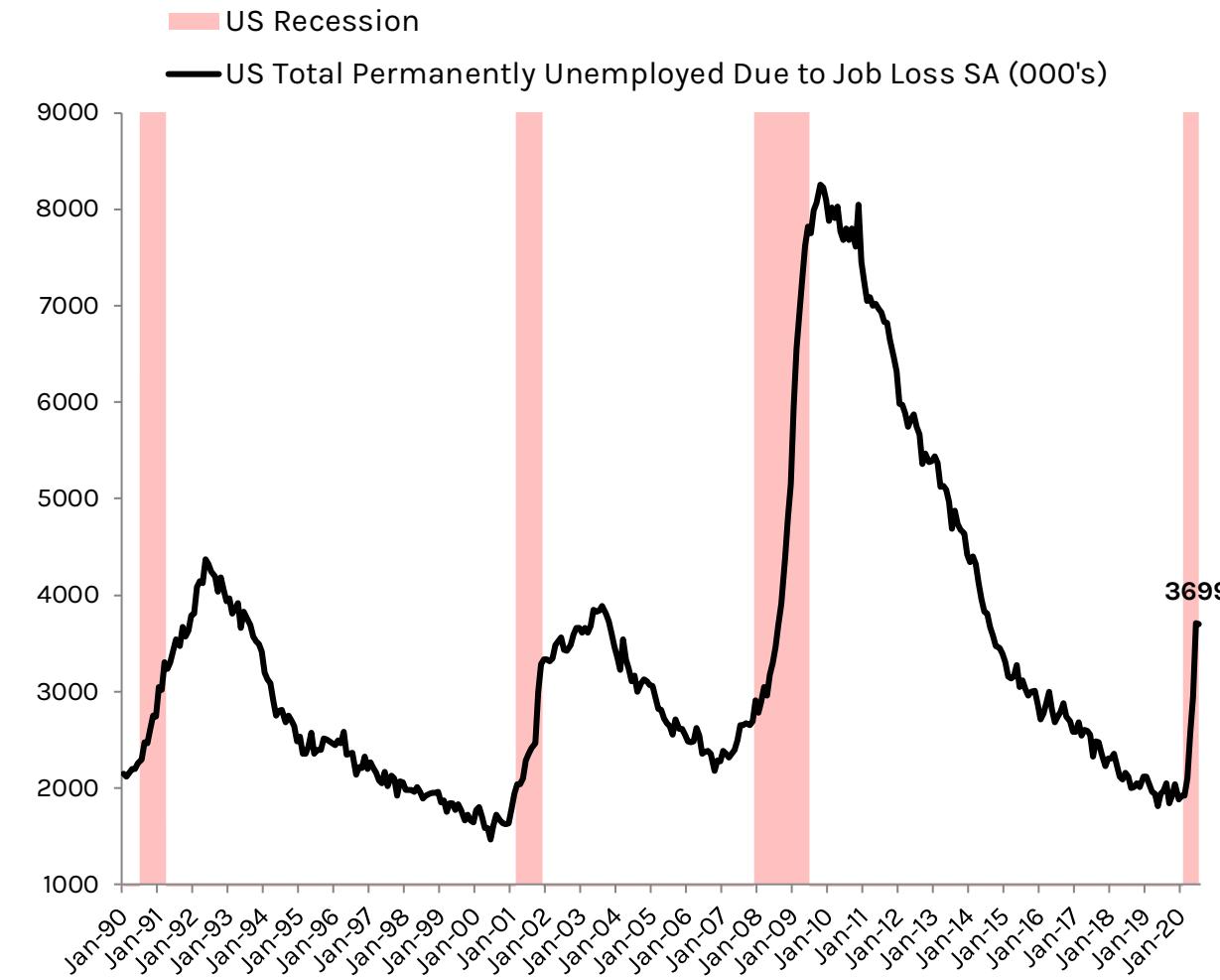
# Permanent Unemployment: Just Getting Started?

HEDGEYE

Sequential Rate Of Change

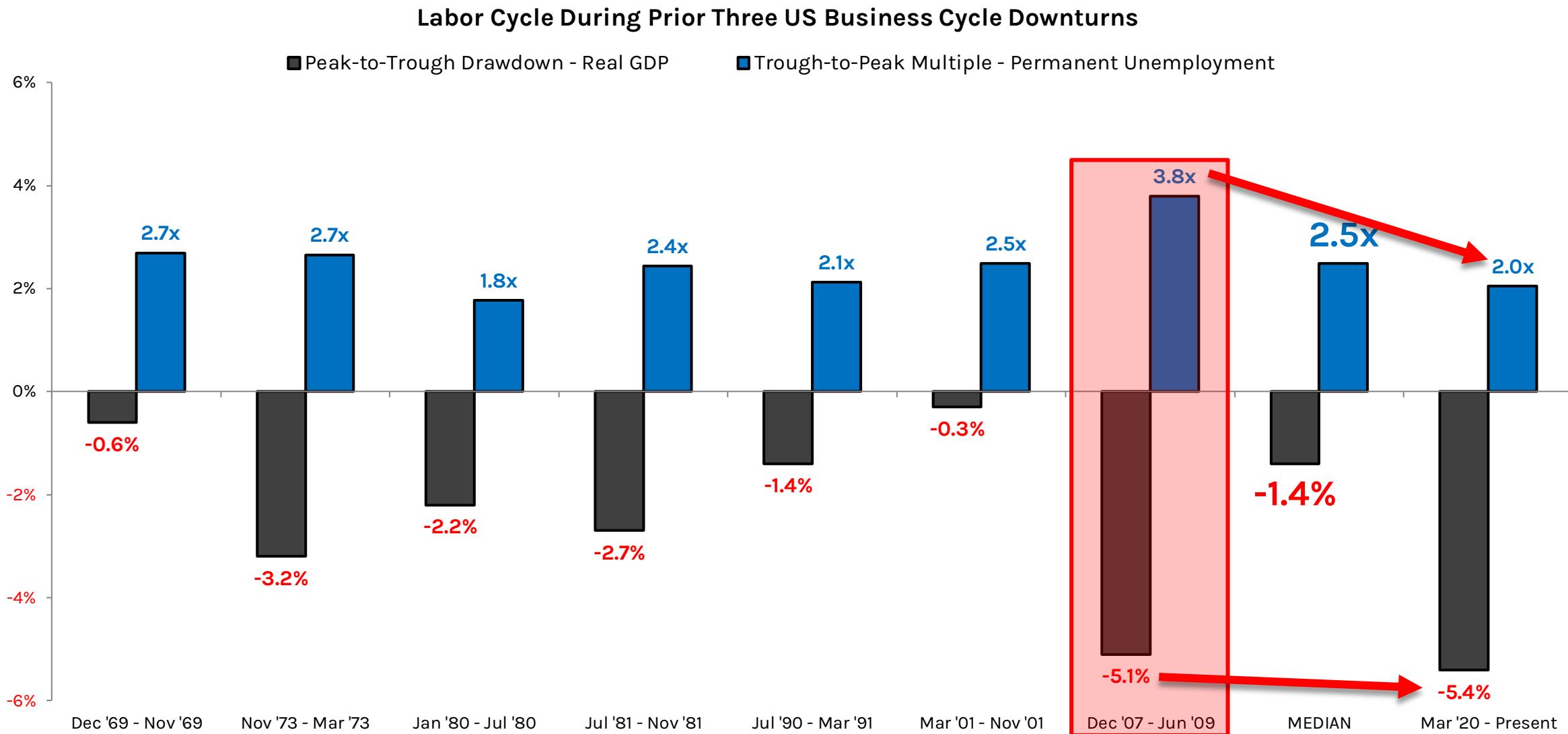


Nominal Level



# Permanent Unemployment: Could Double Again From Here

HEDGEYE

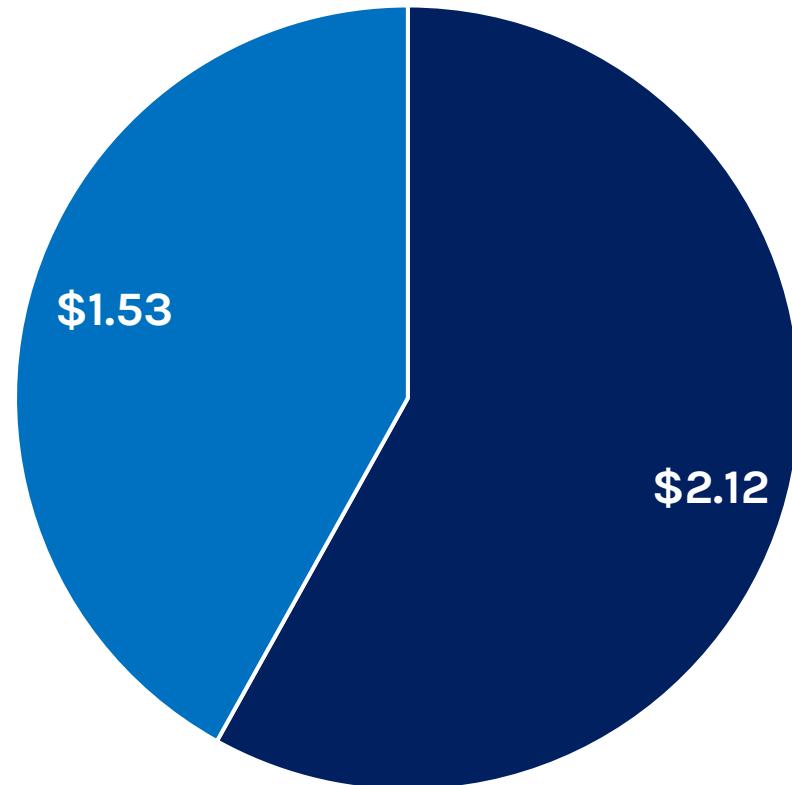


# Banks Are Overly Exposed To The Commercial Real Estate Market

HEDGEYE

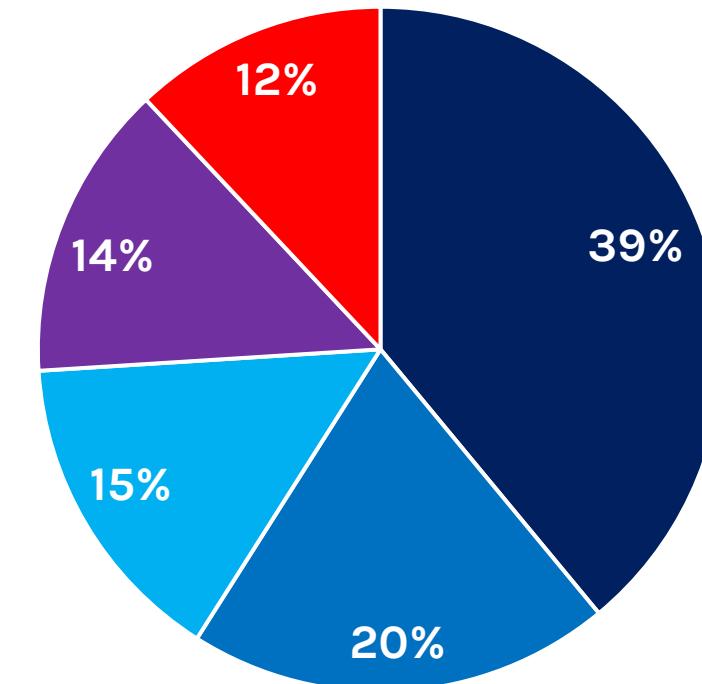
Commercial Mortgage Debt Outstanding by Sector \$tn

■ Commercial ■ Multi-Family



Commercial Mortgage Debt Outstanding by Creditor Type (%)

■ Commercial Banks ■ Life Insurance ■ Other  
■ Agency/GSE/MBS Portfolios ■ CMBS/CDO/ABS



For more information, contact us at:

**sales@hedgeye.com**  
**(203) 562-6500**