

HEDGEYE



# Q4 2021 Macro Themes

Reflation's Finale?  
Mid-Quarter Update

September 23<sup>rd</sup>, 2021

Updated on December 1<sup>st</sup>, 2021



## MACRO

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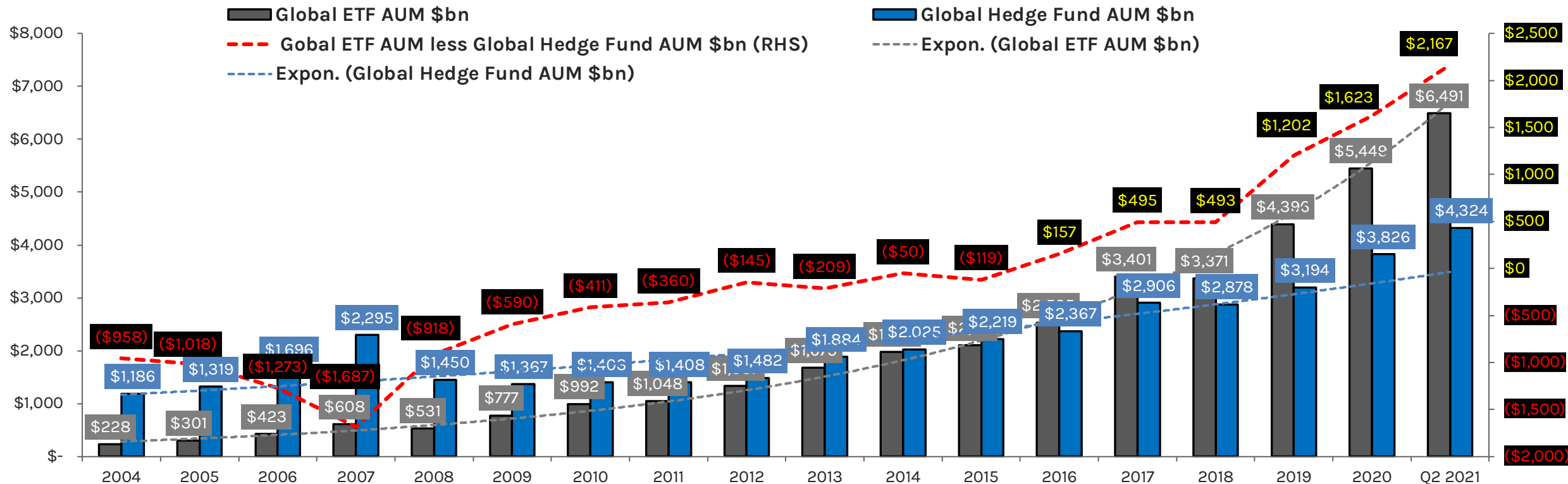
Please submit questions\* to  
**qa@hedgeye.com**

\*Answered at the end of the call

# The Investment Landscape Has Evolved Tremendously

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

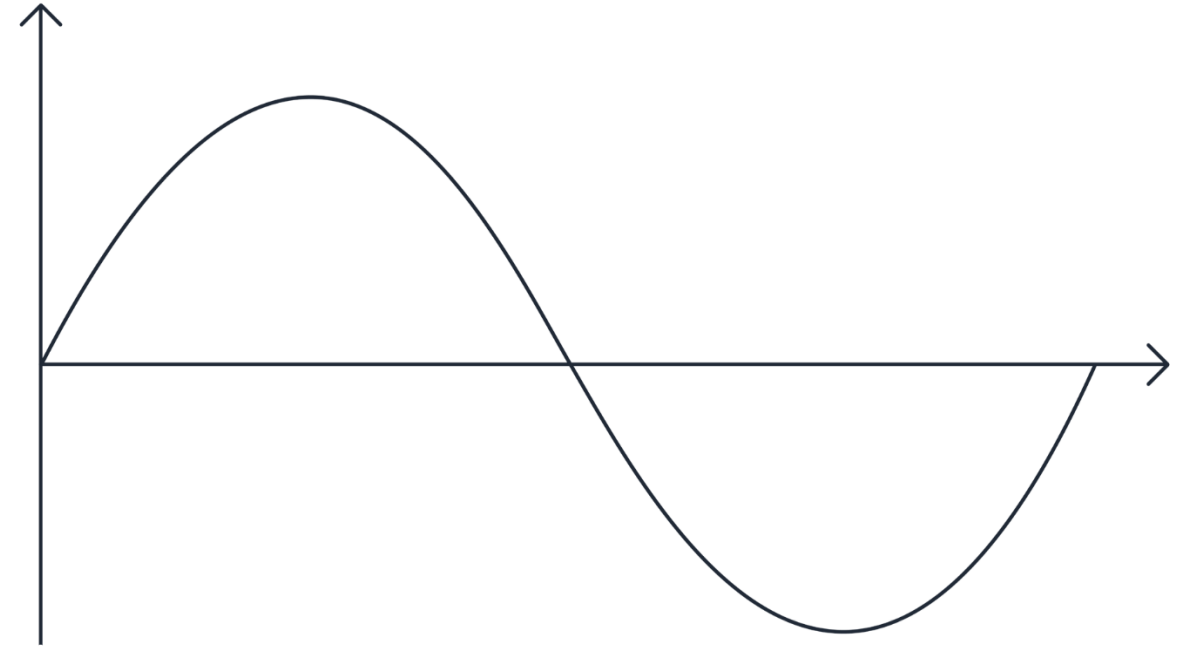
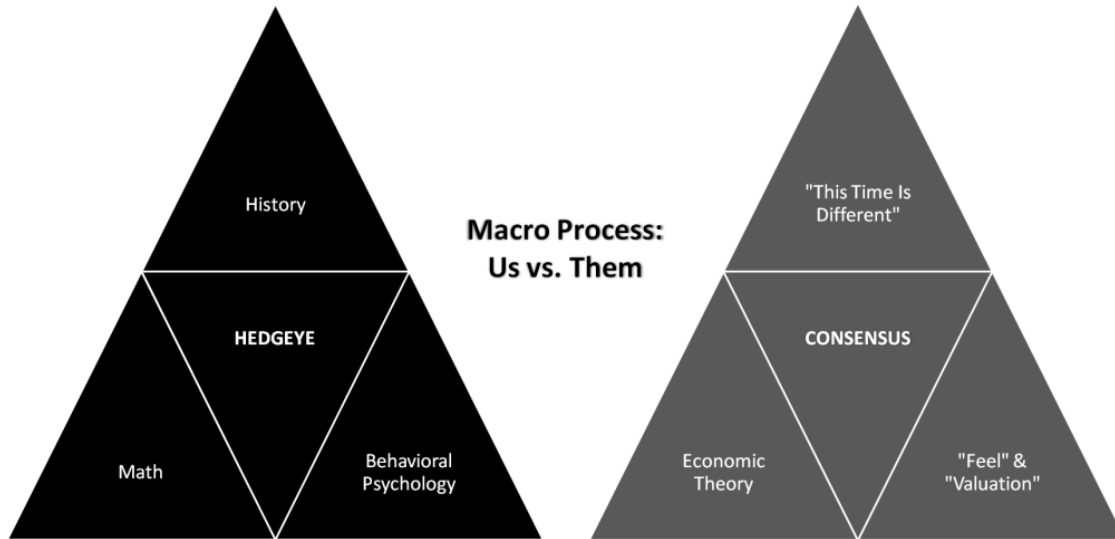


## Skate To Where The Puck Is Going Within Asset Management

AUM in listed ETFs and ETPs surpassed \$6 trillion globally as of YE 2019, topping global hedge fund assets by over \$3 trillion. Moreover, BlackRock anticipates ETF/ETP AUM to double to \$12 trillion over the next 5 years. Regardless of whether you agree with this projection, you must agree that the proliferation of factor-based index investing and the concentration of hedge fund AUM at market-neutral platforms has made financial markets more sensitive to Macro risks than ever before. For example, JPM estimates systematic trading accounts for over 90% of US equity trading volume. Are your research and risk management processes equipped to compete for alpha in this new regime?



# ... So We Evolved Alongside It



## WE ARE DIFFERENTIATED FROM THE HERD

**Macroeconomic Research** and **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.**

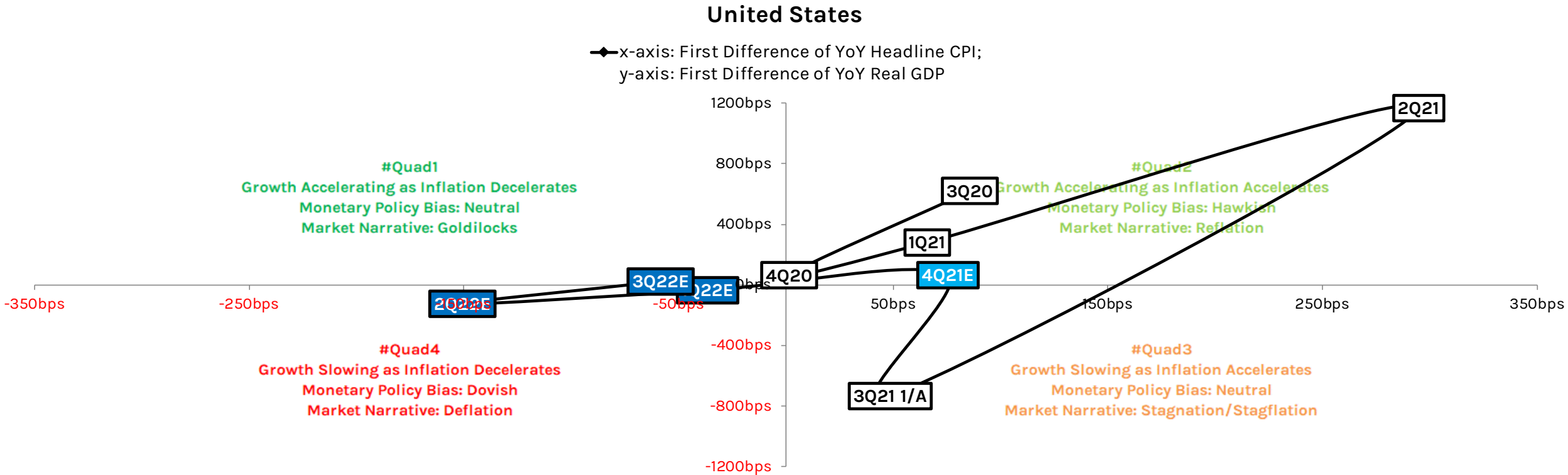
## ...BECAUSE WE FOCUS ON THE FACTS

**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 by triangulating the three factors that matter most to Macro Risk Management – i.e. GROWTH, INFLATION, and POLICY.

United States	4Q18	1Q19	2Q19	3Q19	4Q19	1Q20	2Q20	3Q20	4Q20	1Q21	2Q21	3Q21 1/A	← Actuals   Estimates →	4Q21E	1Q22E	2Q22E	3Q22E
Real GDP QoQ SAAR	0.90%	2.40%	3.20%	2.80%	1.90%	-5.10%	-31.20%	33.80%	4.50%	6.30%	6.70%	2.10%	Real GDP QoQ SAAR	7.04%	4.77%	1.72%	2.92%
Real GDP YoY	2.32%	2.15%	2.11%	2.32%	2.57%	0.63%	-9.08%	-2.89%	-2.26%	0.55%	12.23%	4.90%	Real GDP YoY	5.54%	5.18%	3.93%	4.17%
2yr Comparative Base Effects	2.36%	2.45%	2.72%	2.66%	2.52%	2.58%	2.70%	2.69%	2.45%	1.39%	-3.49%	-0.28%	2yr Comparative Base Effects	0.15%	0.59%	1.57%	1.00%
Headline CPI YoY	2.20%	1.64%	1.81%	1.76%	2.03%	2.12%	0.36%	1.22%	1.24%	1.90%	4.85%	5.34%	Headline CPI YoY	6.09%	5.73%	4.22%	3.64%
2yr Comparative Base Effects	1.96%	2.38%	2.31%	2.30%	2.16%	1.93%	2.26%	2.20%	2.12%	1.83%	1.09%	1.49%	2yr Comparative Base Effects	1.64%	2.01%	2.61%	3.28%



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

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Quarterly Expected Values By GIP Model Quad Regime

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Hedgeye Macro US GIP Model Backtest	EV by Quadrant				Shallow GDP Δ				Deep GDP Δ				Fed Easing				Fed On Hold				Fed Tightening				Quad 1 Prior				Quad 2 Prior				Quad 3 Prior				Quad 4 Prior				China Quad			
Exposure	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	11	12	13	14	21	22	23	24	31	32	33	34	41	42	43	44	1	2	3	4
S&P 500 INDEX (SPY)	6.8%	3.0%	1.0%	-1.4%	4.8%	2.3%	3.1%	5.0%	9.0%	1.8%	-3.7%	-6.6%	9.1%	7.0%	1.2%	-3.8%	3.7%	-0.4%	-0.8%	-0.2%	6.7%	2.9%	3.8%	0.9%	15.1%	2.3%	1.8%	-1.7%	3.7%	3.8%	4.0%	-19.6%	3.6%	0.7%	-2.0%	-1.1%	7.9%	6.5%	4.7%	1.2%	3.2%	4.1%	-1.0%	1.9%
Communication Services (XLC)	7.0%	-0.9%	0.7%	0.1%	8.7%	-1.7%	4.5%	6.8%	6.4%	-3.2%	-6.2%	-3.7%	10.0%	4.8%	2.6%	-2.6%	2.0%	-5.2%	-2.2%	3.5%	7.9%	-1.8%	3.2%	1.0%	17.1%	-2.3%	0.5%	1.1%	5.0%	0.1%	5.4%	-17.0%	4.0%	-2.4%	-1.6%	1.9%	6.8%	1.7%	2.7%	-0.3%	2.5%	2.9%	-0.6%	1.3%
Consumer Cyclical (XLY)	8.4%	3.2%	1.1%	-0.3%	4.8%	2.1%	2.1%	6.0%	13.5%	2.2%	-2.0%	-5.4%	10.8%	6.6%	-0.2%	-1.5%	5.9%	-0.9%	1.3%	-0.3%	7.3%	4.6%	2.5%	1.2%	20.2%	3.9%	2.6%	-2.0%	2.7%	5.2%	0.4%	-19.3%	2.4%	-2.5%	-1.1%	-1.3%	11.7%	3.7%	4.4%	4.8%	4.2%	4.4%	-0.3%	3.0%
Consumer Non-Cyclical (XLP)	4.9%	1.2%	0.8%	1.8%	1.4%	-1.8%	1.6%	8.2%	7.1%	3.9%	0.4%	-1.0%	6.2%	3.9%	1.1%	-0.3%	3.4%	-1.1%	0.9%	8.0%	4.7%	1.3%	0.2%	0.0%	12.8%	2.2%	0.7%	2.2%	3.5%	0.4%	-1.9%	-12.7%	1.2%	2.1%	0.7%	4.3%	5.3%	0.4%	3.8%	0.8%	1.7%	2.8%	1.5%	2.1%
Energy (XLE)	6.3%	4.4%	1.8%	-3.8%	3.9%	3.3%	6.4%	1.5%	6.8%	1.7%	-6.9%	-9.6%	7.1%	12.5%	5.9%	-9.8%	2.8%	1.7%	-4.2%	2.0%	9.0%	-1.6%	6.7%	-0.4%	5.9%	-0.9%	3.7%	-6.7%	2.1%	6.7%	2.8%	-50.5%	6.4%	7.2%	-2.0%	-0.3%	9.2%	3.9%	6.9%	0.8%	7.7%	4.5%	-3.9%	-0.3%
Financials (XLF)	6.2%	3.6%	0.1%	-1.4%	3.3%	0.5%	-0.9%	4.5%	10.2%	1.9%	-1.1%	-8.4%	8.3%	9.0%	-2.4%	-6.2%	3.4%	2.7%	0.3%	2.1%	5.8%	-1.5%	3.1%	2.2%	16.2%	1.0%	1.7%	-0.7%	1.9%	7.5%	9.0%	-31.9%	1.1%	-3.4%	-5.7%	-0.3%	8.4%	7.5%	3.6%	1.2%	1.7%	5.0%	-3.2%	1.9%
Health Care (XLV)	6.3%	2.4%	0.8%	0.6%	5.7%	-0.4%	2.0%	4.8%	6.2%	4.7%	-1.9%	-1.6%	7.8%	7.1%	1.7%	-1.7%	4.0%	-2.7%	0.6%	5.8%	6.5%	3.8%	0.1%	-0.2%	10.9%	0.7%	2.1%	0.8%	4.6%	1.0%	3.3%	-12.7%	5.2%	5.7%	-1.8%	3.1%	6.5%	7.7%	2.7%	-0.6%	1.8%	3.5%	-0.6%	3.8%
Industrials (XLI)	7.2%	3.8%	1.1%	-1.8%	4.7%	0.1%	2.9%	5.2%	8.6%	4.0%	-3.3%	-6.8%	9.6%	9.1%	1.2%	-3.8%	3.5%	0.5%	-1.3%	-0.8%	7.4%	1.8%	5.1%	-0.1%	14.6%	3.5%	1.2%	-3.7%	5.2%	4.5%	4.5%	-27.0%	4.2%	1.9%	-2.0%	-0.8%	7.7%	4.8%	6.1%	2.0%	2.8%	5.6%	-1.1%	0.9%
Information Technology (XLK)	9.0%	5.2%	2.5%	-2.6%	6.8%	8.3%	6.6%	4.0%	12.4%	1.2%	-5.4%	-10.0%	13.6%	7.7%	2.1%	-4.1%	3.7%	0.2%	0.6%	-7.4%	7.7%	9.0%	6.3%	2.8%	23.2%	3.8%	1.9%	-3.9%	5.6%	5.2%	8.6%	-11.9%	4.5%	3.2%	-1.0%	-6.8%	9.1%	13.6%	7.1%	4.5%	4.1%	4.9%	0.4%	3.6%
Materials (XLB)	7.3%	3.1%	0.6%	-0.5%	3.7%	2.9%	5.2%	1.2%	10.2%	0.8%	-7.0%	-3.5%	7.9%	8.0%	4.7%	-5.4%	6.5%	1.2%	-4.4%	3.9%	7.3%	-0.2%	3.9%	2.5%	10.8%	6.9%	3.4%	-5.9%	4.0%	2.7%	-0.3%	-2.61%	3.8%	-2.6%	-2.9%	1.8%	10.3%	5.0%	4.8%	4.3%	6.8%	4.4%	-1.3%	0.0%
REITS (XLRE)	4.0%	0.6%	0.2%	0.9%	3.0%	-1.1%	-1.1%	9.1%	7.8%	4.7%	0.4%	-6.3%	4.6%	4.8%	0.3%	-3.8%	2.9%	-2.1%	-1.0%	6.0%	4.4%	-0.8%	2.1%	3.4%	5.9%	2.5%	-2.2%	6.3%	-0.6%	0.7%	1.9%	-24.6%	1.5%	-1.5%	0.7%	-0.4%	7.9%	-1.6%	2.3%	2.2%	3.6%	2.3%	-2.0%	1.0%
Utilities (XLU)	3.5%	-0.9%	4.0%	1.3%	5.5%	-3.7%	5.3%	9.7%	1.5%	0.4%	3.3%	-2.2%	4.4%	3.1%	3.1%	-2.5%	2.8%	-5.3%	3.1%	5.7%	2.8%	0.4%	6.6%	3.2%	4.4%	-0.2%	1.8%	7.1%	1.2%	-2.3%	12.9%	-13.5%	8.4%	2.0%	1.9%	3.7%	1.9%	-2.6%	5.4%	-3.4%	3.2%	3.0%	2.0%	0.5%
Growth (IWF)	7.4%	4.0%	1.2%	-2.2%	4.9%	4.2%	3.5%	4.8%	10.4%	2.3%	-4.5%	-8.5%	10.3%	7.0%	1.8%	-4.2%	3.7%	-0.4%	-0.7%	-4.0%	7.0%	6.5%	3.8%	1.8%	18.1%	3.4%	2.1%	-2.4%	4.0%	4.8%	4.5%	-14.1%	3.3%	1.4%	-2.0%	-3.9%	8.4%	7.6%	4.9%	1.7%	2.9%	4.6%	-0.5%	2.1%
Value (IWD)	6.4%	2.3%	1.0%	-0.7%	4.7%	0.3%	2.7%	5.2%	8.3%	1.4%	-2.8%	-5.4%	8.1%	7.9%	1.2%	-3.9%	3.9%	-0.2%	-1.2%	3.0%	6.6%	-0.9%	4.5%	0.7%	12.6%	1.7%	1.5%	-0.8%	3.1%	3.5%	5.2%	-26.7%	4.0%	-1.1%	-2.3%	1.1%	7.9%	5.4%	4.7%	1.0%	3.8%	4.0%	-1.7%	1.5%
Cyclical (RSP)	8.0%	4.0%	1.2%	-2.8%	5.3%	3.8%	4.1%	4.1%	12.1%	1.6%	-5.3%	-10.6%	11.0%	9.3%	2.3%	-6.0%	3.9%	-0.1%	-1.9%	-3.3%	7.7%	3.4%	5.2%	1.8%	18.8%	2.5%	2.9%	-3.0%	3.3%	6.0%	6.6%	-23.4%	3.9%	-1.1%	-3.5%	-4.1%	9.8%	9.7%	5.2%	1.9%	4.1%	5.2%	-2.3%	1.7%
Defensives (DEF)	6.0%	2.4%	1.0%	-0.1%	4.4%	1.1%	2.2%	5.9%	7.1%	2.2%	-2.3%	-3.7%	7.7%	5.3%	0.7%	-2.0%	3.6%	-0.6%	0.0%	2.1%	6.0%	2.9%	3.1%	0.9%	12.6%	2.6%	0.8%	-0.3%	3.7%	2.3%	3.0%	-17.0%	3.6%	1.8%	-0.9%	1.1%	6.7%	3.4%	4.5%	1.3%	2.6%	3.6%	0.0%	2.0%
High Beta (SPHB)	9.6%	5.8%	1.2%	-4.0%	8.2%	3.6%	4.9%	2.8%	14.1%	3.0%	-6.9%	-15.6%	15.8%	15.0%	2.7%	-7.6%	2.8%	-1.1%	-3.3%	-6.9%	7.1%	4.3%	6.9%	2.6%	19.8%	-0.6%	2.8%	-5.2%	3.2%	10.8%	12.1%	-36.2%	6.3%	0.9%	-6.7%	-7.8%	12.3%	12.8%	8.3%	5.7%	4.2%	6.8%	-3.5%	2.1%
Low Beta (SPLV)	4.5%	1.3%	1.6%	2.2%	3.8%	-1.6%	2.3%	8.4%	5.3%	3.1%	0.3%	-1.1%	4.8%	4.1%	0.7%	0.0%	4.4%	-0.8%	1.1%	6.8%	4.2%	0.6%	3.6%	1.9%	8.0%	3.4%	-0.4%	2.8%	2.7%	0.4%	3.7%	-19.0%	3.6%	0.9%	1.5%	4.0%	5.1%	-0.5%	4.2%	2.8%	3.6%	3.0%	0.9%	1.8%
Momentum (MTUM)	8.1%	3.9%	1.7%	-3.0%	5.2%	5.4%	4.3%	5.8%	10.5%	2.1%	-4.1%	-10.0%	9.7%	5.1%	1.5%	-5.1%	5.3%	0.1%	-0.4%	-3.2%	8.7%	7.6%	5.5%	-0.3%	19.5%	4.2%	3.0%	-1.5%	4.6%	5.4%	3.4%	-13.8%	5.0%	0.4%	-1.7%	-4.2%	8.4%	3.7%	6.3%	-1.3%	3.7%	4.1%	-0.8%	2.6%
Quality (QUAL)	7.3%	3.4%	1.4%	0.0%	6.0%	1.3%	3.7%	6.0%	9.1%	3.7%	-2.8%	-4.1%	9.3%	6.8%	2.0%	-2.0%	4.3%	0.2%	-0.5%	2.2%	7.3%	3.7%	3.6%	1.1%	14.9%	2.6%	1.7%	-1.9%	4.8%	3.2%	4.1%	-17.6%	5.3%	3.7%	-1.3%	0.7%	7.5%	5.7%	5.2%	3.2%	3.3%	4.6%	0.4%	2.3%
Dividend Yield (SDY)	6.8%	2.1%	0.8%	1.7%	4.5%	-0.3%	1.7%	6.9%	9.2%	2.4%	-1.1%	-2.0%	8.2%	7.0%	0.5%	-0.4%	4.7%	0.2%	0.1%	5.9%	6.8%	-0.5%	2.4%	1.3%	13.3%	3.2%	0.1%	0.6%	3.4%	2.5%	1.5%	-23.3%	4.0%	-1.0%	0.0%	3.7%	8.4%	3.4%	4.0%	3.7%	3.8%	3.7%	0.3%	2.5%
Size (OEF)	6.9%	3.2%	1.1%	-1.7%	4.8%	3.1%	3.1%	4.4%	8.6%	1.7%	-3.8%	-5.8%	9.4%	6.6%	0.7%	-3.8%	3.3%	-0.3%	-0.2%	-0.2%	6.9%	3.8%	3.8%	0.0%	15.5%	2.0%	2.0%	-2.3%	4.1%	3.9%	3.8%	-17.2%	3.4%	1.3%	-1.7%	-1.3%	7.8%	7.0%	3.8%	0.6%	2.8%	3.9%	-0.6%	2.0%
Secular Growth (QQQ)	7.8%	5.8%	2.6%	-2.7%	8.0%	9.8%	6.2%	3.8%	9.2%	1.1%	-6.0%	-9.0%	12.6%	8.6%	2.2%	-4.4%	1.2%	-0.8%	-0.4%	-7.4%	7.9%	11.3%	7.5%	2.7%	18.2%	3.2%	0.3%	-3.6%	6.0%	7.9%	11.0%	-1.3%	5.1%	1.8%	-1.0%	-6.3%	7.8%	11.8%	8.0%	3.0%	3.9%	5.1%	0.8%	1.9%
Mid-Caps (MDV)	7.5%	4.4%	1.7%	-0.9%	4.1%	2.6%	3.1%	5.7%	12.7%	3.0%	-2.8%	-8.2%	9.3%	10.2%	3.2%	-3.5%	5.1%	1.0%	-2.1%	-0.2%	7.2%	2.3%	6.4%	1.8%	18.3%	3.1%	1.2%	-1.3%	1.8%	7.2%	8.7%	-29.7%	3.5%	-0.4%	-1.6%	-1.5%	9.8%	5.6%	5.3%	4.1%	5.5%	5.9%	-1.5%	1.2%
Small-Caps (IWM)	6.8%	5.3%	0.5%	-1.2%	5.3%	5.2%	2.5%	6.2%	10.8%	2.0%	-4.8%	-8.6%	8.1%	11.3%	2.0%	-3.2%	4.9%	1.3%	-3.5%	0.0%	6.9%	3.5%	5.6%	0.4%	13.3%																			

# Highest/Lowest Expected Values By Quad Regime

## Quad 1: Goldilocks

### Best Asset Classes:

Equities, Credit, Commodities, FX

### Worst Asset Classes:

Fixed Income, USD

### Best Equity Sectors:

Tech, Consumer Discretionary, Materials, Industrials, Telecom

### Worst Equity Sectors:

Utilities, REITS, Consumer Staples, Financials, Energy

### Best Equity Style Factors:

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

### Worst Equity Style Factors:

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

### Best Fixed Income Sectors:

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

### Worst Fixed Income Sectors:

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

## Quad 2: Reflation

### Best Asset Classes:

Commodities, Equities, Credit, FX

### Worst Asset Classes:

Fixed Income, USD

### Best Equity Sectors:

Tech, Consumer Discretionary, Industrials, Energy, Financials

### Worst Equity Sectors:

Telecom, Utilities, REITS, Consumer Staples, Health Care

### Best Equity Style Factors:

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

### Worst Equity Style Factors:

Low Beta, Dividend Yield, Value, Defensives, Size

### Best Fixed Income Sectors:

Convertibles, BDCs, Preferreds, Leveraged Loans, HY Credit

### Worst Fixed Income Sectors:

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

## Quad 3: Stagflation

### Best Asset Classes:

Gold, Commodities, Fixed Income

### Worst Asset Classes:

Credit

### Best Equity Sectors:

Utilities, Tech, Energy, Industrials, Consumer Discretionary

### Worst Equity Sectors:

Financials, REITS, Materials, Telecom, Consumer Staples

### Best Equity Style Factors:

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

### Worst Equity Style Factors:

Small Caps, Dividend Yield, Value, Defensives, Size

### Best Fixed Income Sectors:

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

### Worst Fixed Income Sectors:

BDCs, Preferreds, Convertibles, Leveraged Loans, HY Credit

## Quad 4: Deflation

### Best Asset Classes:

Fixed Income, Gold, USD

### Worst Asset Classes:

Commodities, Equities, Credit, FX

### Best Equity Sectors:

Consumer Staples, Utilities, REITS, Health Care, Telecom

### Worst Equity Sectors:

Energy, Tech, Industrials, Financials, Materials

### Best Equity Style Factors:

Low Beta, Dividend Yield, Quality, Defensives, Value

### Worst Equity Style Factors:

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

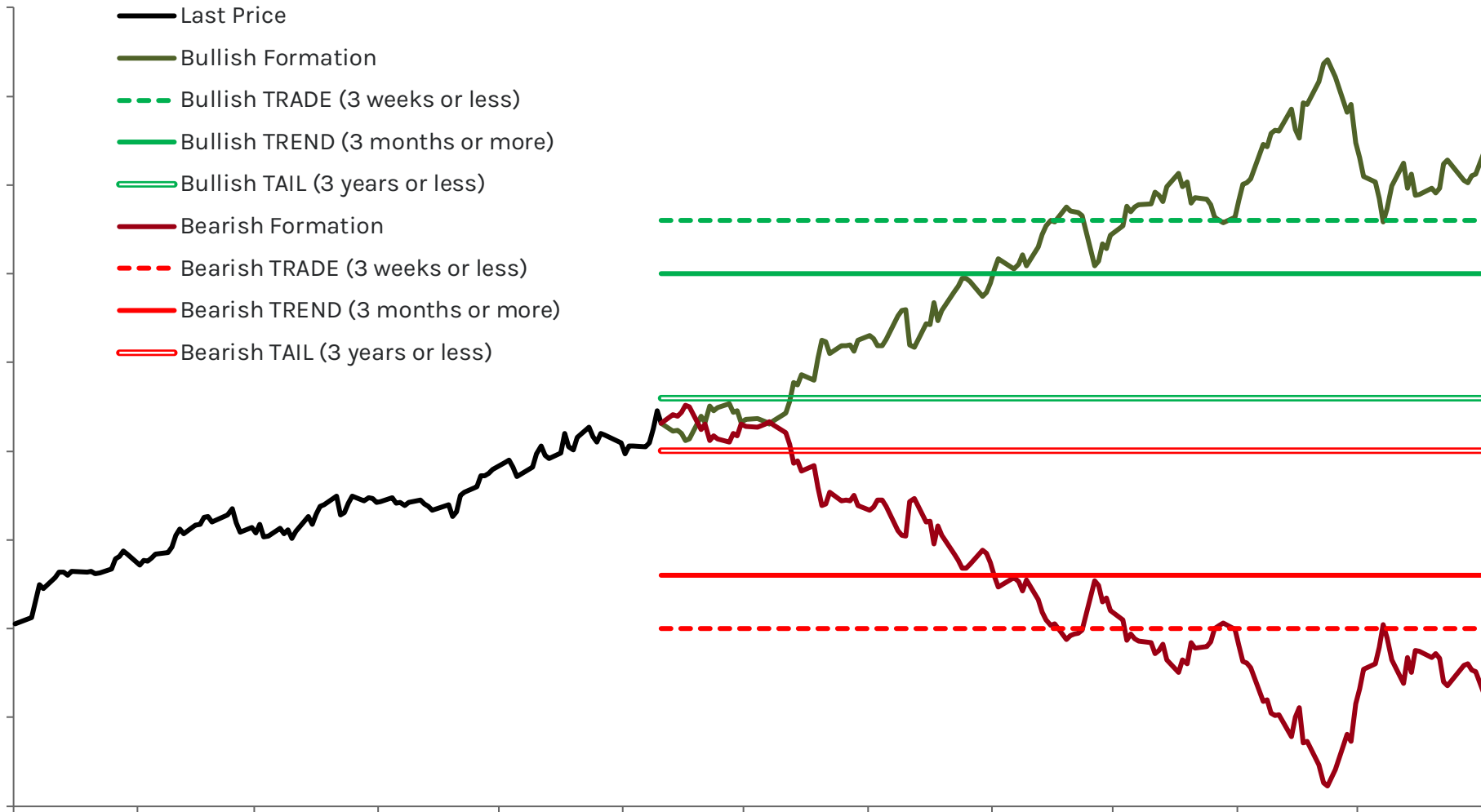
### Best Fixed Income Sectors:

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

### Worst Fixed Income Sectors:

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

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



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

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



# A | B Testing Process: Quantify Investor Consensus

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

## STYLE FACTOR PERFORMANCE\*

	FACTOR	1D % Chg	1W % Chg	1M % Chg	3M % Chg	6M % Chg	YTD % Chg
Debt	High Debt/EV	-1.9%	-8.1%	-9.0%	-7.8%	-11.5%	15.0%
	Low Debt/EV	-1.5%	-3.5%	-3.3%	-1.2%	13.5%	23.0%
SI	High Short Interest	-2.1%	-6.7%	-6.9%	-5.5%	-3.8%	17.2%
	Low Short Interest	-0.8%	-4.7%	-4.1%	-3.3%	5.0%	20.1%
BETA	High Beta	-2.1%	-7.9%	-6.7%	-2.7%	-3.9%	24.2%
	Low Beta	-1.1%	-3.4%	-3.3%	-4.4%	3.2%	12.6%
YIELD	High Yield	-1.0%	-5.9%	-5.8%	-5.9%	-8.0%	10.9%
	Low Yield	-2.5%	-6.1%	-7.2%	-5.3%	4.7%	18.4%
MKT CAP	MCAP Bottom 25%	-1.9%	-7.8%	-8.2%	-9.1%	-11.3%	9.4%
	MCAP Top 25%	-1.0%	-3.9%	-3.1%	-1.0%	6.4%	22.9%
Sales	Top 25% Sales Growth	-2.6%	-7.1%	-7.9%	-2.1%	3.8%	24.8%
	Bottom 25% Sales Growth	-0.8%	-5.6%	-4.9%	-5.8%	-4.7%	16.0%
EPS	Top 25% EPS Growth	-1.9%	-6.5%	-6.6%	-0.8%	2.5%	21.4%
	Bottom 25% EPS Growth	-2.0%	-6.8%	-7.4%	-6.4%	-4.7%	20.8%

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

## CFTC NON-COMMERCIAL NET LONG POSITIONING

CFTC NON-COMMERCIAL NET LONG POSITIONING							3Y		Z-Score	
METRIC		Latest	W/W Chg	3M Ave	6M Ave	1Y Ave	Max	Min	1Y	3Y
EQUITIES	SPX (Index + E-mini)	127,280	16,663	112,974	44,192	14,859	186,840	(333,489)	2.15X	1.50X
	VIX	(81,936)	(19,449)	(91,604)	(79,626)	(85,833)	44,245	(218,362)	0.14X	0.41X
	Russell 2000 (mini)	(22,411)	(2,444)	(30,741)	(56,166)	(37,484)	58,474	(88,708)	0.52X	-0.32X
	Dow Jones (mini)	(2,130)	2,009	1,996	(3,097)	(6,727)	51,359	(28,732)	0.62X	-0.41X
	Nasdaq (mini)	27,303	14,176	11,041	540	(3,930)	47,085	(133,005)	1.98X	0.78X
	Nikkei Index	756	(697)	258	(3,868)	(4,059)	4,738	(16,298)	1.43X	1.43X
RATES	10Y UST	(255,962)	(14,404)	(239,250)	71,569	77,086	238,882	(434,970)	-2.69X	-1.15X
	2Y UST	(45,739)	(39,791)	(42,837)	(35,947)	(139,774)	34,641	(421,551)	0.81X	1.42X
	5Y UST	(302,625)	34,592	(334,816)	(156,850)	(84,296)	148,962	(448,910)	-1.52X	-1.23X
	UST Bonds	(1,526)	5,645	(26,125)	(81,619)	(105,336)	2,332	(241,003)	1.87X	1.58X
	30D Fed Funds	(82,005)	(16,799)	(65,209)	(76,524)	(142,619)	488,558	(320,917)	0.58X	-0.70X
	Eurodollar	(688,899)	(115,195)	(548,012)	(305,591)	21,393	2,134,274	(1,888,429)	-1.38X	-1.37X
CURRENCIES	USD	35,726	860	35,202	26,899	11,507	43,033	(15,000)	1.43X	1.39X
	JPY	(105,692)	(4,674)	(112,384)	(79,163)	(56,637)	52,239	(117,217)	-0.94X	-1.91X
	EUR	(22,672)	(14,043)	235	11,108	58,727	212,535	(123,765)	-1.43X	-0.59X
	GBP	(36,323)	(4,331)	2,115	(2,693)	13,100	40,671	(107,406)	-2.77X	-0.77X
	AUD	(69,087)	(3,737)	(69,550)	(70,405)	(31,601)	15,665	(89,923)	-1.14X	-1.45X
	CAD	(3,367)	(13,155)	7,707	(3,824)	12,821	53,332	(67,121)	-0.83X	-0.02X
	MXN	(49,250)	(1,691)	(49,542)	(29,197)	(18,957)	170,379	(50,690)	-1.74X	-1.47X
	NZD	13,831	(124)	13,321	5,501	6,191	17,126	(42,544)	1.46X	1.27X
COMMODITIES	CHF	(14,091)	(2,895)	(18,403)	(7,427)	(66)	17,848	(40,715)	-1.38X	-0.77X
	CRUDE OIL	452,111	(9,163)	495,465	468,229	521,795	594,465	332,714	-1.49X	-0.69X
	GOLD	118,729	(45,314)	122,604	83,789	84,245	292,066	(22,328)	1.16X	-0.36X
	COPPER	14,255	(6,154)	27,754	25,167	33,045	80,564	(60,135)	-0.83X	0.04X
	Natural Gas	(139,196)	6,817	(141,615)	(141,511)	(92,659)	71,340	(262,534)	-0.69X	-0.61X
	RBOB Gasoline	54,674	1,683	46,250	42,740	47,389	129,000	29,497	0.53X	-0.65X
	ULSD Heating Oil	16,074	(1,863)	22,439	32,473	21,618	40,330	(27,674)	-0.54X	0.72X
	Silver	41,023	(5,713)	35,276	24,510	35,351	80,646	(26,016)	0.45X	0.09X
	Platinum	13,339	(9,313)	17,851	9,201	18,782	69,306	(1,557)	-0.56X	-0.75X
	Corn	429,467	20,909	390,729	319,268	387,694	557,581	(270,560)	0.47X	1.19X
	Soybeans	74,922	21,144	51,657	61,569	122,736	270,935	(148,817)	-0.68X	0.02X
	Wheat	27,533	3,832	9,890	11,074	18,115	60,302	(69,231)	0.62X	0.52X
	Live Cattle	88,560	18,571	62,257	75,388	85,859	183,134	20,158	0.15X	0.32X
	Lean Hogs	59,891	5,729	51,695	81,431	85,997	101,947	4,913	-1.42X	0.08X
	Sugar	251,588	22,752	203,527	252,460	249,397	316,046	(205,161)	0.07X	0.90X
	Cotton	112,545	(1,784)	110,455	108,717	88,600	127,919	(37,827)	1.37X	1.61X
	Coffee	66,063	2,096	58,776	55,854	51,316	66,063	(70,193)	1.40X	1.23X
	Cocoa	9,034	11,533	(1,316)	18,163	21,011	81,269	(31,483)	-0.77X	-0.62X
	Orange Juice	(257)	(41)	(450)	2,855	1,260	4,745	(9,416)	-0.76X	0.41X

# 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.

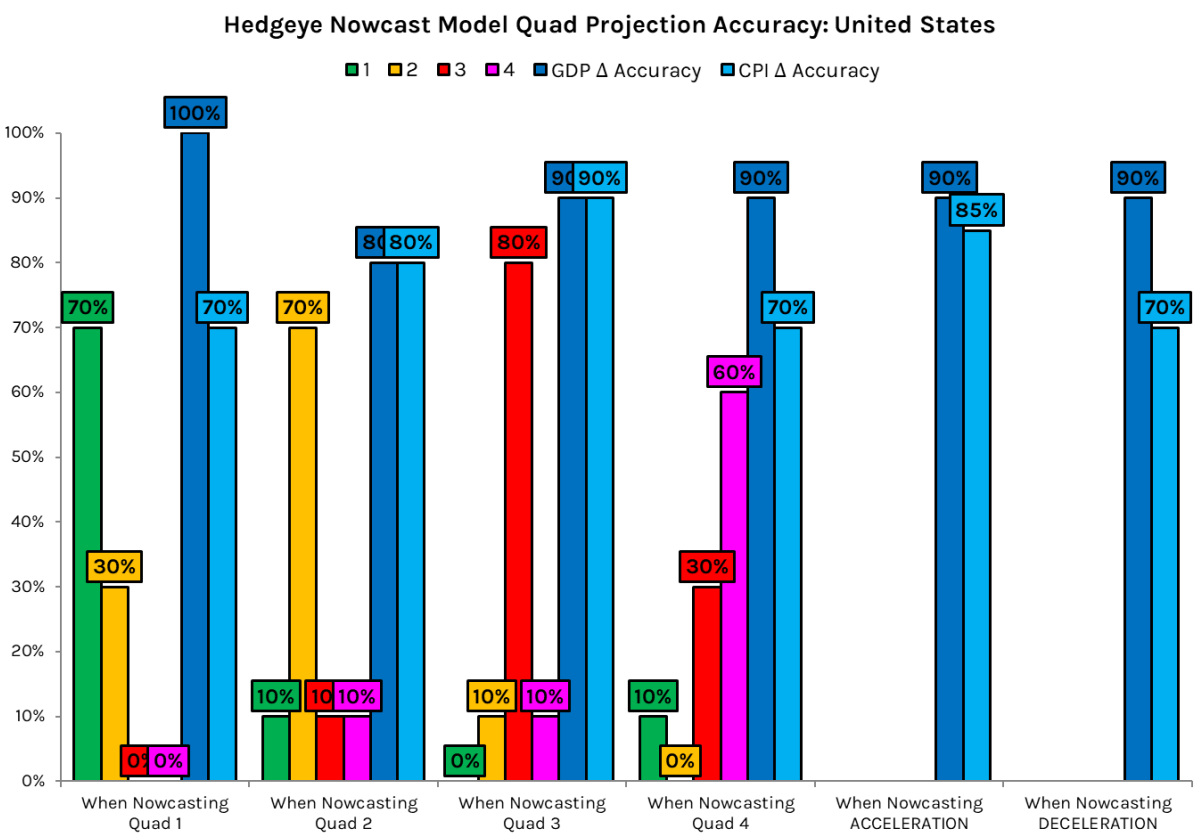
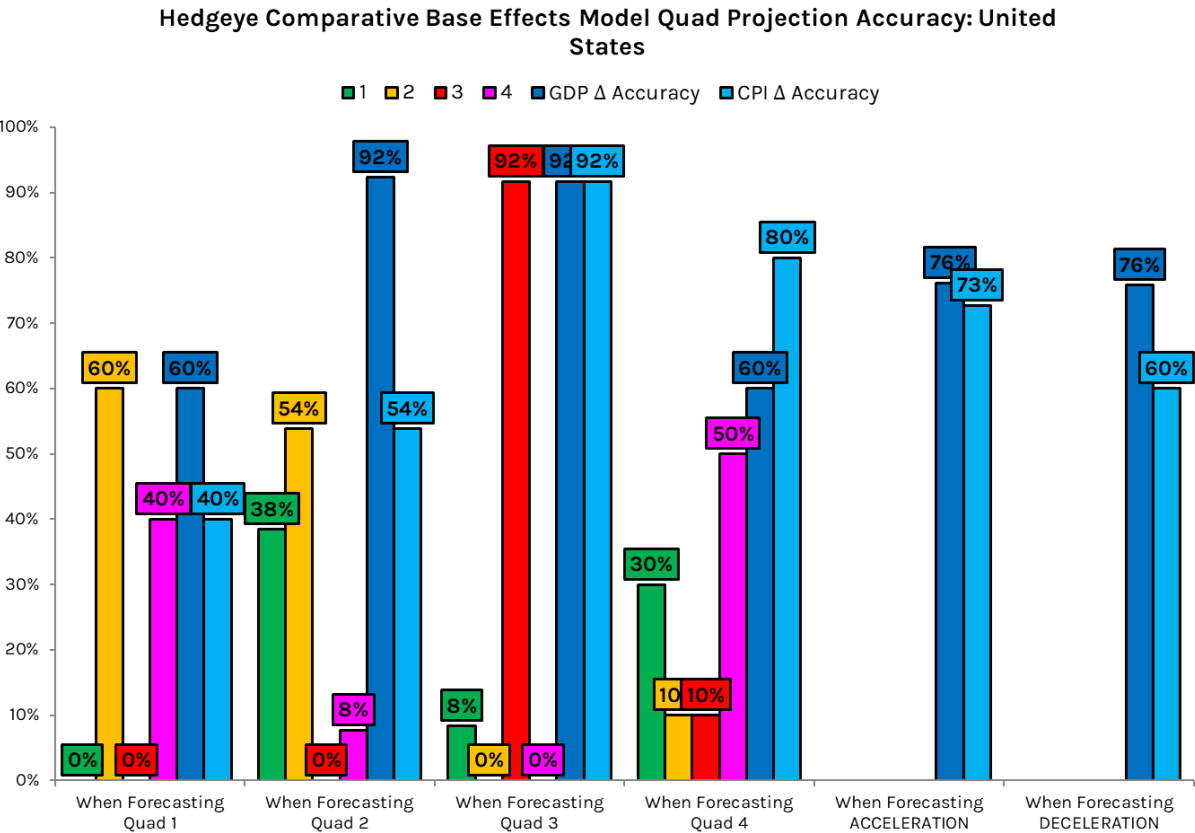
TIME WINDOW SETTING:		TOTAL RETURN		IVOL PREMIUM/DISCOUNT					REALIZED VOLATILITY TRENDS			IMPLIED VOLATILITY TRENDS		
VOLATILITY_30D		PERFORMANCE	IVOL PREM %						RVOL		PERCENTILE	IVOL		PERCENTILE
PUT_IMP_VOL_30D	TICKER	YTD %	IVOL / RVOL	Yesterday	1W Ago	1M Ago	TTM Z-Score	3Yr Z-Score	CURRENT	MM %	10YR	CURRENT	MM %	10YR
US EQUITIES		CURRENT												
Energy Sector SPDR ETF	XLE US EQUITY	47.27%	36%	25%	18%	10%	1.7	1.5	28.1	12%	75%	38.2	38%	90%
Real Estate Sector SPDR ETF	XLRE US EQUITY	30.74%	36%	27%	42%	7%	1.0	1.3	16.1	9%	64%	21.9	38%	81%
Financials Sector SPDR ETF	XLF US EQUITY	28.98%	59%	66%	41%	-7%	1.2	1.5	17.6	-3%	63%	27.9	66%	91%
Technology Sector SPDR ETF	XLK US EQUITY	28.72%	73%	63%	74%	-12%	1.5	1.8	16.5	-8%	62%	28.4	82%	93%
Consumer Discretionary Sector SPDR ETF	XLY US EQUITY	25.43%	32%	26%	23%	17%	0.2	0.4	20.3	31%	82%	26.9	49%	95%
Power Shares QQQ Trust ETF	QQQ US EQUITY	23.82%	70%	66%	73%	-6%	1.2	1.7	15.9	-2%	60%	27.1	77%	93%
SPDR S&P 500 ETF Trust	SPY US EQUITY	21.68%	92%	79%	107%	-10%	2.2	2.4	12.2	-7%	52%	23.3	97%	95%
Materials Sector SPDR ETF	XLB US EQUITY	17.25%	95%	80%	73%	68%	2.0	2.0	14.6	-2%	38%	28.5	14%	92%
Health Care Sector SPDR ETF	XLV US EQUITY	15.40%	85%	61%	56%	-1%	2.2	2.2	10.4	-29%	26%	19.2	34%	86%
Industrials Sector SPDR ETF	XLI US EQUITY	13.28%	92%	55%	42%	48%	2.1	2.2	14.4	2%	51%	27.7	32%	94%
Communication Services SPDR ETF	XLC US EQUITY	9.69%	46%	36%	50%	-10%	0.7	1.0	16.6	-2%	39%	24.2	59%	70%
I-Shares Russell 2000 ETF	IWM US EQUITY	9.47%	69%	42%	39%	2%	2.7	2.2	21.6	23%	80%	36.4	103%	97%
Utilities Sector SPDR ETF	XLU US EQUITY	7.50%	130%	34%	13%	0%	2.6	2.7	14.7	1%	62%	33.8	132%	98%
Consumer Staples Sector SPDR ETF	XLP US EQUITY	5.59%	195%	17%	245%	-4%	2.6	2.0	11.6	16%	57%	34.1	256%	98%
INTERNATIONAL EQUITIES														
Euro Stoxx 50 Index	SX5E INDEX	18.86%	7%	38%	102%	-17%	-0.2	0.1	19.1	16%	68%	20.3	48%	73%
I-Shares MSCI Japan ETF	EWJ US EQUITY	-1.62%	20%	40%	27%	0%	1.0	0.6	14.9	-1%	51%	17.8	19%	68%
I-Shares MSCI Emerging Markets ETF	EEM US EQUITY	-4.72%	66%	56%	54%	14%	2.1	2.1	14.5	-3%	25%	24.1	42%	83%
I-Shares China Large-Cap ETF	FXI US EQUITY	-17.67%	21%	21%	2%	-5%	1.8	1.1	23.3	-3%	60%	28.2	25%	88%
CURRENCIES														
PowerShares US Dollar Index ETF	UUP US EQUITY	6.31%	14%	16%	30%	11%	-0.3	-0.2	6.7	29%	62%	7.6	33%	57%
Currency Shares British Pound ETF	FXB US EQUITY	-3.37%	14%	12%	3%	-1%	0.6	0.3	6.9	-6%	29%	7.9	9%	48%
Currency Shares Euro Trust ETF	FXE US EQUITY	-8.30%	-8%	-7%	-1%	-9%	-0.8	-0.8	7.6	31%	58%	7.0	34%	38%
Currency Shares Japanese Yen ETF	FXJ US EQUITY	-8.97%	-9%	-1%	32%	12%	-1.0	-0.7	8.9	48%	69%	8.1	22%	48%
COMMODITIES														
iPath Coffee Subindex ETN	JO US EQUITY	67.67%	17%	30%	36%	-2%	0.1	0.3	32.6	-17%	59%	38.2	0%	72%
United States Natural Gas Fund ETF	UNG US EQUITY	51.20%	-14%	-4%	21%	6%	-0.7	-0.7	81.1	-3%	98%	69.5	-22%	95%
United States Oil Fund ETF	USO US EQUITY	42.50%	33%	30%	20%	57%	0.5	0.8	46.0	121%	88%	61.2	88%	97%
Teucrium Corn ETF	CORN US EQUITY	35.24%	36%	42%	43%	33%	0.6	0.2	17.9	-5%	46%	24.4	-3%	61%
SPDR Gold Shares ETF	GLD US EQUITY	-6.84%	23%	19%	7%	12%	1.3	0.8	12.4	1%	42%	15.4	11%	61%
iPath Cocoa Subindex ETN	NIB US EQUITY	-14.84%	-2%	-3%	1%	-10%	0.1	-0.2	25.3	-2%	41%	24.9	7%	39%
FIXED INCOME														
I-Shares IBOXx HY Corporate Bond ETF	HYG US EQUITY	1.44%	99%	60%	24%	29%	1.9	2.2	4.7	30%	42%	9.3	100%	83%
I-Shares IBOXx IG Corporate Bond ETF	LQD US EQUITY	-1.80%	7%	9%	-1%	1%	-0.3	-0.1	7.7	15%	92%	8.3	23%	93%
I-Shares 20+ Year Treasury Bond ETF	TLT US EQUITY	-2.04%	-9%	-8%	-6%	0%	-1.1	-0.5	17.6	16%	92%	16.1	6%	89%
I-Shares 7-10 Year Treasury Bond ETF	IEF US EQUITY	-2.64%	-2%	-3%	14%	32%	-0.6	-0.6	7.3	44%	91%	7.2	7%	85%
I-Shares J.P. Morgan USD EM Bond ETF	EMB US EQUITY	-3.64%	0%	0%	-6%	8%	-0.7	-0.5	8.8	58%	88%	8.8	46%	73%
MEGA-CAP TECH														
Alphabet	GOOGL US EQUITY	60.96%	5%	-2%	-6%	-22%	-0.2	0.0	27.9	1%	75%	29.4	37%	81%
Microsoft	MSFT US EQUITY	49.65%	35%	24%	26%	-23%	0.7	0.9	20.7	-15%	47%	27.8	50%	86%
Apple	AAPL US EQUITY	24.94%	38%	26%	56%	5%	1.1	1.2	22.3	15%	43%	30.9	51%	77%
Facebook	FB US EQUITY	13.71%	6%	8%	5%	-16%	-0.2	0.0	35.9	2%	66%	38.1	29%	71%
Amazon	AMZN US EQUITY	5.74%	6%	5%	-1%	-8%	-0.4	-0.2	28.9	24%	60%	30.6	43%	62%

Data Source: CBOE, CME, Bloomberg

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

## US Comparative Base Effects Model Backtest

## US Nowcast Model Backtest

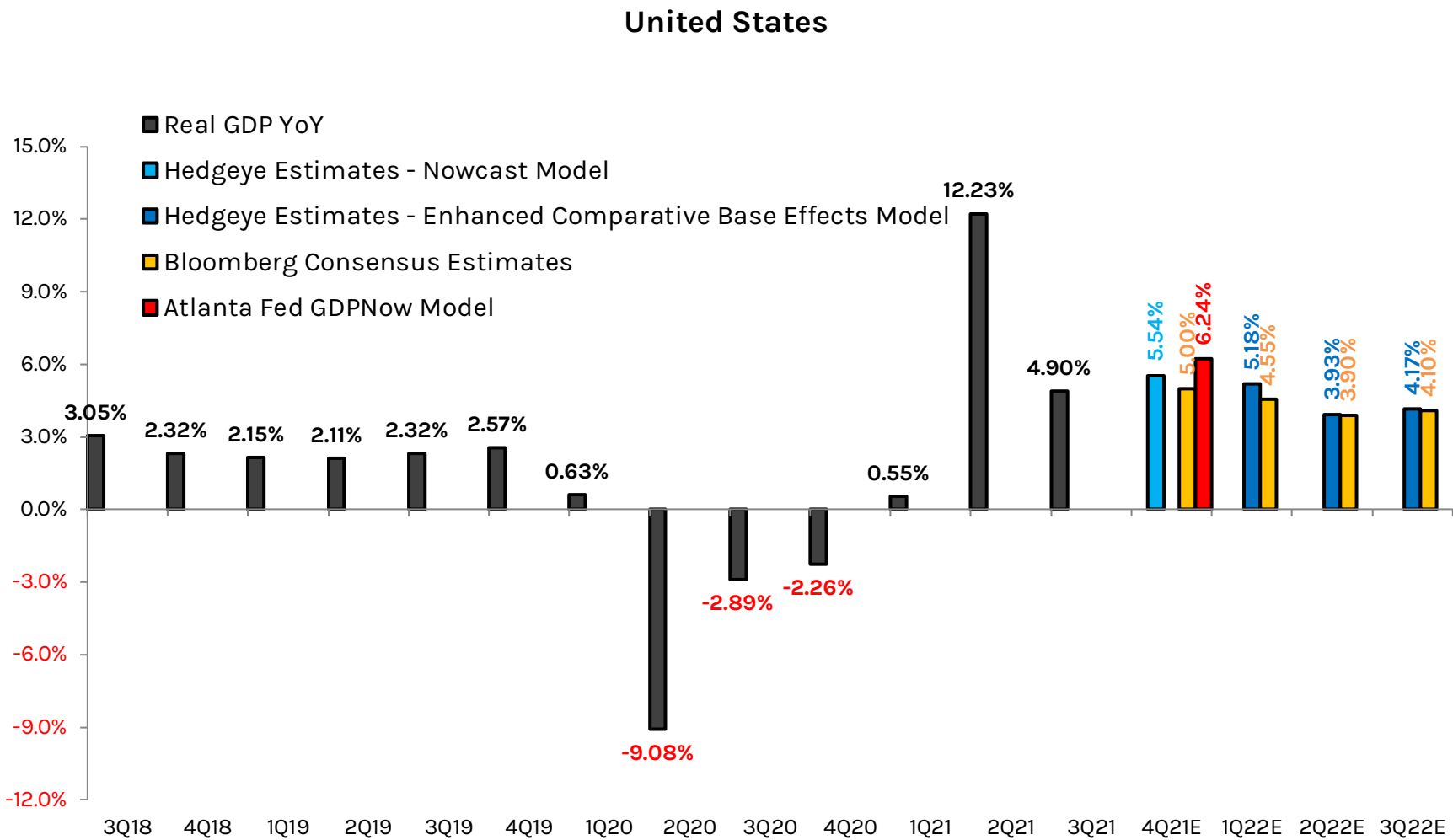


Data Source: Bloomberg

Data Source: Bloomberg



# US Real GDP YoY Projections

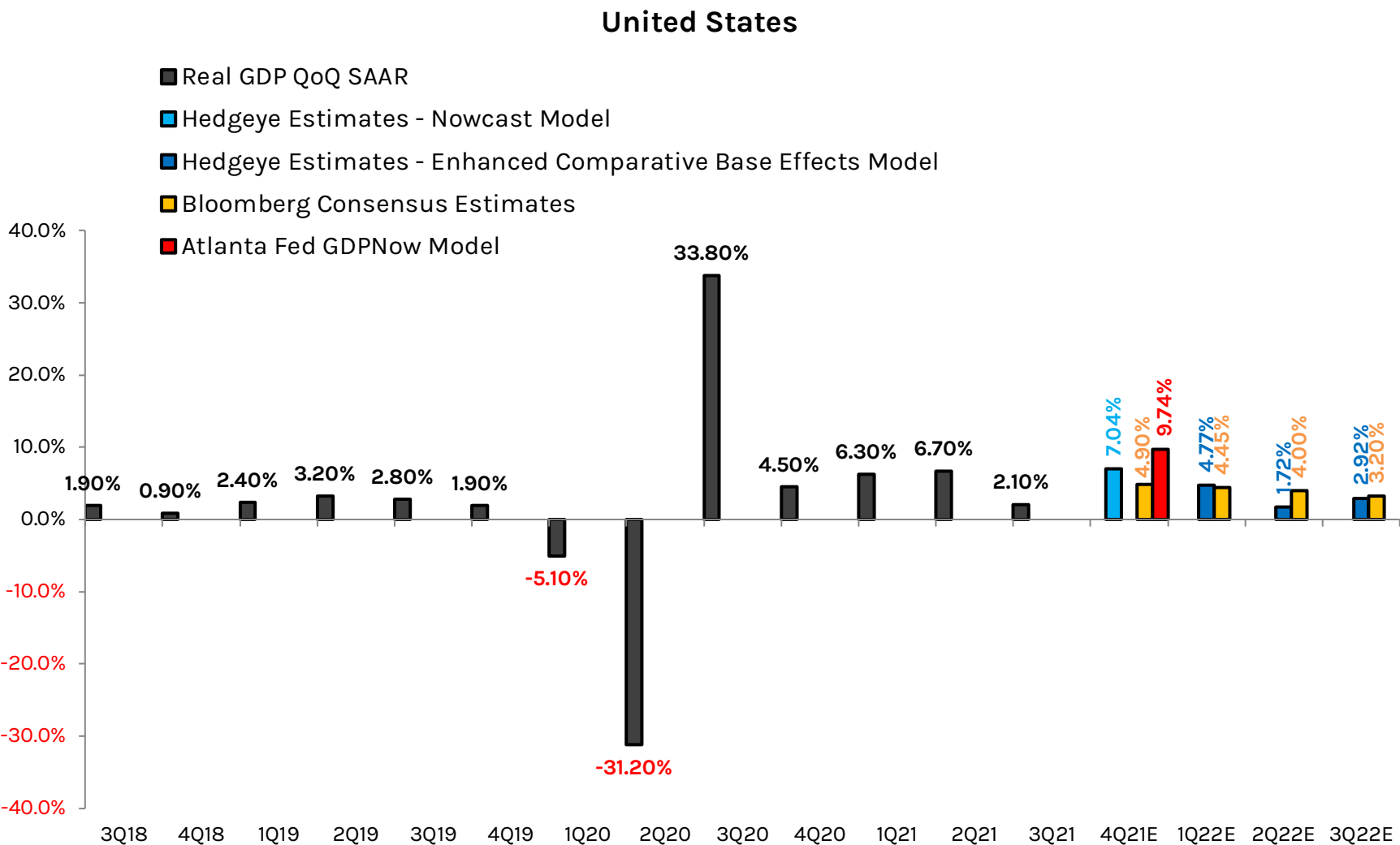


We use two distinct models to forecast the YoY growth rate of Real GDP and the combination of the two allows us to develop both a highly accurate real-time assessment of near-term economic momentum, as well as a high-probability scenario for where growth is likely to trend over the NTM.

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

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

# US Real GDP QoQ SAAR Projections

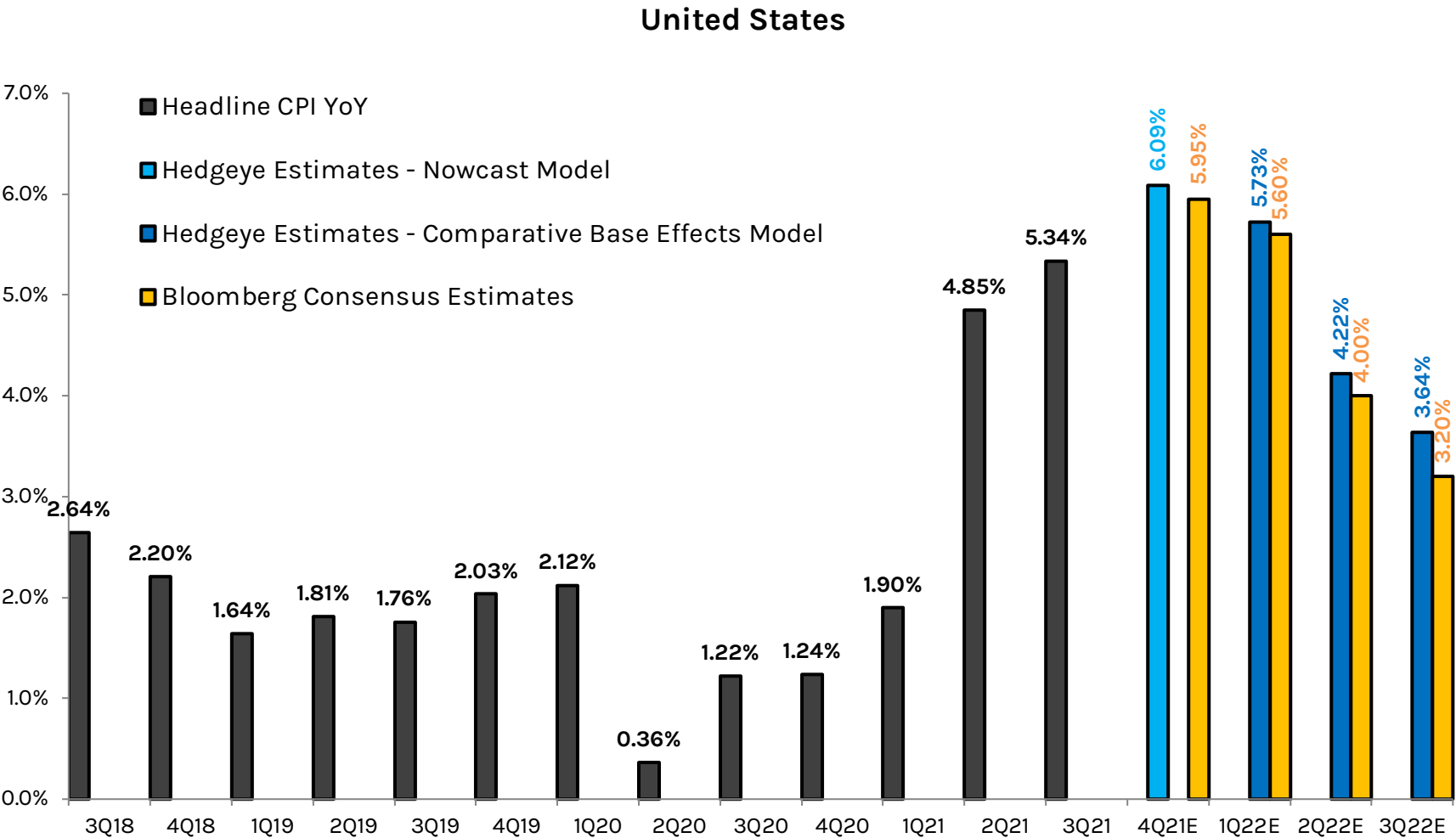


One differentiating factor of our forecasting process is that we aim to solve for where the economy is trending on a **Full Investing Cycle** basis, rather than trying to identify super short-term economic momentum.

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

As such, we are comfortable departing from the [perceived] “best” practices of economist consensus by interpolating our QoQ SAAR forecasts from our forecasted YoY growth rates. Macroeconomic Theory ≠ Macro Risk Management.

# US Headline CPI YoY Projections



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

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

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

# US Real GDP Nowcast Model

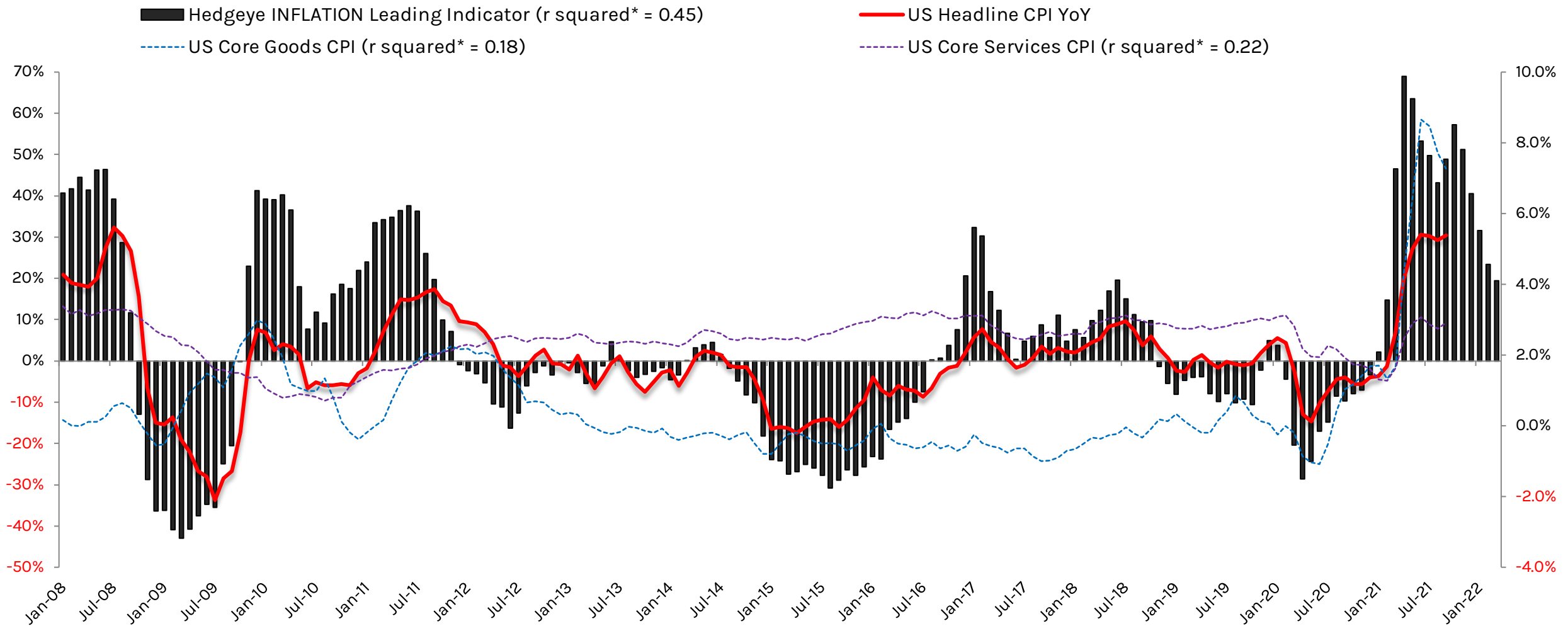
Each of the following 30 features backtests as statistically significant with respect to predicting the rate of change of Real GDP growth and each feature's contribution to the overall signal is dynamically re-trained each quarter according to the relative strength of its first difference regression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

HEDGEYE US NOWCAST MODEL SUMMARY	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	3Q21	4Q21	Δ	
Real PCE YoY (1)	2.77	2.82	-4.65	-16.43	-9.58	-4.56	-3.46	-3.08	-1.91	-1.57	-2.44	-3.26	-0.80	-2.16	9.65	25.42	15.07	9.35	7.41	7.42	6.31	6.62	-	-	7.05	6.62	-0.43	
Real Disposable Personal Income YoY (14)	1.78	2.22	0.76	16.98	11.31	9.33	9.85	5.25	5.64	5.04	3.23	3.70	13.43	3.18	28.80	-5.96	-4.06	-2.83	-2.55	1.09	-1.12	-0.92	-	-	-0.86	-0.92	-0.06	
Personal Savings Rate % of DPI (6)	7.8	8.3	13.1	33.8	24.8	19.3	18.7	15.0	14.3	13.6	13.0	14.0	19.9	13.5	26.6	12.6	10.4	9.5	10.6	9.9	8.2	7.3	-	-	9.6	7.3	-2.3	
Headline Retail Sales YoY (9)	4.81	4.61	-5.86	-20.01	-5.76	1.99	2.71	3.09	5.90	5.29	3.78	2.31	9.40	6.50	29.71	53.42	28.05	18.86	15.32	15.69	14.26	16.31	-	-	15.09	16.31	1.22	
Retail Sales Control Group YoY (13)	3.86	4.36	6.33	-7.14	1.81	7.19	8.54	8.47	10.51	10.13	9.33	6.00	14.07	10.23	16.27	31.71	18.34	13.47	9.54	12.31	11.22	12.86	-	-	11.02	12.86	1.84	
Auto Sales YoY (10)	1.45	1.63	-35.03	-47.68	-29.42	-24.57	-13.67	-10.49	-4.94	-2.05	-9.01	-2.57	-1.25	-6.89	56.11	115.73	39.15	17.70	1.58	-14.02	-25.46	-19.86	-17.30	-	-	-12.63	-18.58	-5.95
MBA Mortgage Purchase Index YoY (24)	9.09	10.61	-2.10	-29.85	-1.13	15.98	17.46	26.46	22.26	22.95	20.54	24.68	14.18	8.28	17.32	48.33	3.24	-16.25	-17.27	-17.56	-14.14	-11.03	-6.98	-	-	-16.32	-9.01	7.31
Total Employees On Nonfarm Payrolls YoY (7)	1.39	1.62	0.38	-13.50	-11.66	-8.55	-7.52	-6.59	-6.25	-5.93	-5.90	-6.20	-6.24	-6.07	-4.50	10.88	8.98	5.85	5.32	4.48	4.18	4.05	-	-	4.66	4.05	-0.61	
Aggregate Hours Worked YoY (2)	0.80	1.62	-0.78	-14.01	-10.89	-8.01	-6.71	-5.78	-5.16	-4.83	-4.53	-5.10	-4.33	-5.52	-2.26	13.15	9.30	6.15	5.63	4.18	4.18	3.75	-	-	4.66	3.75	-0.91	
Aggregate Labor Income YoY (4)	3.87	4.66	2.72	-6.99	-4.94	-3.44	-2.29	-1.39	-0.62	-0.52	-0.21	0.08	0.69	-0.58	1.93	13.53	11.39	10.10	9.87	8.42	8.94	8.81	-	-	9.08	8.81	-0.27	
Monthly Initial Jobless Claims YoY (3)	-7.27	-7.33	1070.82	2217.69	1010.90	571.73	507.64	368.48	368.23	289.58	225.08	199.08	227.45	276.33	-69.47	-86.89	-79.22	-73.95	-71.29	-63.50	-63.70	-65.87	-66.05	-	-	-66.16	-65.96	0.20
Bloomberg Consumer Comfort Index (12)	66.1	65.3	60.9	43.8	36.0	40.9	44.1	44.3	48.7	47.3	48.8	47.3	44.3	46.7	49.3	53.8	54.7	55.9	52.6	56.0	56.7	50.3	51.1	-	-	55.1	50.7	-4.4
Industrial Production YoY (8)	-2.14	-1.37	-5.27	-17.65	-16.21	-10.96	-7.02	-6.62	-6.56	-4.75	-4.73	-3.28	-1.67	-4.86	1.76	17.86	16.40	10.17	6.71	5.60	4.58	5.14	-	-	5.63	5.14	-0.49	
Capacity Utilization (5)	76.1	76.3	73.4	63.4	64.7	68.7	71.5	72.3	72.1	72.9	73.3	74.1	75.0	72.7	74.8	74.8	75.3	75.6	76.2	76.2	75.2	76.4	-	-	75.9	76.4	0.5	
Durable Goods New Orders YoY (22)	-9.29	-5.07	-28.49	-35.95	-25.38	-18.59	-12.41	-9.18	-7.60	-8.71	-0.14	-1.21	6.24	6.65	36.31	53.02	42.78	29.33	18.33	17.60	15.28	13.66	-	-	17.07	13.66	-3.41	
Core Capital Goods New Orders YoY (28)	-0.12	-0.52	-3.54	-8.92	-6.09	-2.78	0.56	3.35	5.31	6.07	8.24	10.11	10.07	11.20	14.38	25.79	23.57	19.02	15.93	13.73	13.81	12.87	-	-	14.49	12.87	-1.62	
Factory Orders YoY (18)	-5.36	-4.28	-18.61	-26.48	-20.48	-13.85	-9.95	-7.74	-6.69	-6.83	-2.11	-2.03	3.17	3.96	21.19	34.69	31.16	22.35	16.25	15.80	14.88	-	-	-	15.64	-	-	
Manufacturing & Trade Inventories YoY (26)	1.31	0.26	-0.15	-2.02	-4.64	-5.78	-6.00	-5.54	-4.73	-3.85	-3.16	-2.55	-1.62	-0.44	0.06	1.54	4.60	6.67	7.27	7.51	7.46	-	-	-	7.41	-	-	
Nonresidential Construction Spending YoY (30)	13.71	10.95	8.99	1.97	1.79	-0.19	-3.42	-4.97	-6.86	-7.22	-8.82	-9.05	-8.65	-9.94	-9.77	-6.40	-6.19	-5.50	-3.09	-0.71	0.70	1.96	-	-	-1.03	1.96	2.99	
Residential Construction Spending YoY (29)	14.30	17.59	18.70	13.59	10.04	9.37	10.67	13.87	15.94	18.30	19.60	21.09	23.32	19.29	20.36	25.61	30.13	31.71	26.99	22.99	19.75	16.44	-	-	23.24	16.44	-6.80	
ISM Manufacturing PMI (23)	51.1	50.3	49.7	41.7	43.1	52.2	53.7	55.6	55.7	58.8	57.7	60.5	58.7	60.8	64.7	60.7	61.2	60.6	59.5	59.9	61.1	60.8	61.1	-	-	60.2	61.0	0.8
ISM Non-Manufacturing PMI (15)	55.9	56.7	53.6	41.6	45.4	56.5	56.6	57.2	57.2	56.2	56.8	57.7	58.7	55.3	63.7	62.7	64.0	60.1	64.1	61.7	61.9	66.7	-	-	62.6	66.7	4.1	
NFIB Small Business Optimism Index (19)	104.3	104.5	96.4	90.9	94.4	100.6	98.8	100.2	104.0	104.0	101.4	95.9	95.0	95.8	98.2	99.8	99.6	102.5	99.7	100.1	99.1	98.2	-	-	99.6	98.2	-1.4	
Exports YoY (11)	-1.91	-2.53	-12.31	-28.63	-31.72	-24.59	-19.18	-17.19	-14.71	-13.05	-11.71	-9.06	-5.21	-7.02	9.32	37.83	42.87	32.29	24.45	22.79	16.56	-	-	-	21.27	-	-	
Imports YoY (16)	-2.85	-4.53	-10.98	-22.02	-24.39	-19.73	-11.39	-8.76	-6.36	-2.56	0.86	0.54	3.81	4.93	18.13	34.71	37.93	35.24	22.17	20.50	19.86	-	-	-	20.84	-	-	
Rail Traffic YoY (17)	-6.22	-6.74	-10.10	-20.89	-20.62	-14.29	-8.21	-5.96	-1.42	1.70	2.43	4.92	4.76	-4.40	12.87	27.34	27.81	13.89	6.26	-0.04	-2.20	-2.34	-4.45	-	1.34	-3.39	-4.73	
Headline CPI YoY (25)	2.49	2.33	1.54	0.33	0.12	0.65	0.99	1.31	1.37	1.18	1.17	1.36	1.40	1.68	2.62	4.16	4.99	5.39	5.37	5.25	5.39	6.22	-	-	5.34	6.22	0.89	
PCE Deflator YoY (27)	1.90	1.87	1.34	0.41	0.51	0.91	1.04	1.30	1.38	1.17	1.11	1.29	1.41	1.63	2.45	3.58	3.97	4.03	4.14	4.22	4.42	5.05	-	-	4.26	5.05	0.79	
Core PCE Deflator YoY (21)	1.78	1.91	1.70	0.91	1.00	1.13	1.30	1.50	1.57	1.42	1.38	1.48	1.51	1.49	1.97	3.08	3.46	3.59	3.58	3.58	3.69	4.12	-	-	3.62	4.12	0.51	
M2 Money Supply YoY (20)	6.67	6.79	10.17	16.96	21.96	22.92	23.28	23.05	23.79	23.72	24.31	24.82	25.87	27.12	24.37	18.19	14.05	12.40	12.35	13.35	12.86	13.01	-	-	12.85	13.01	0.16	

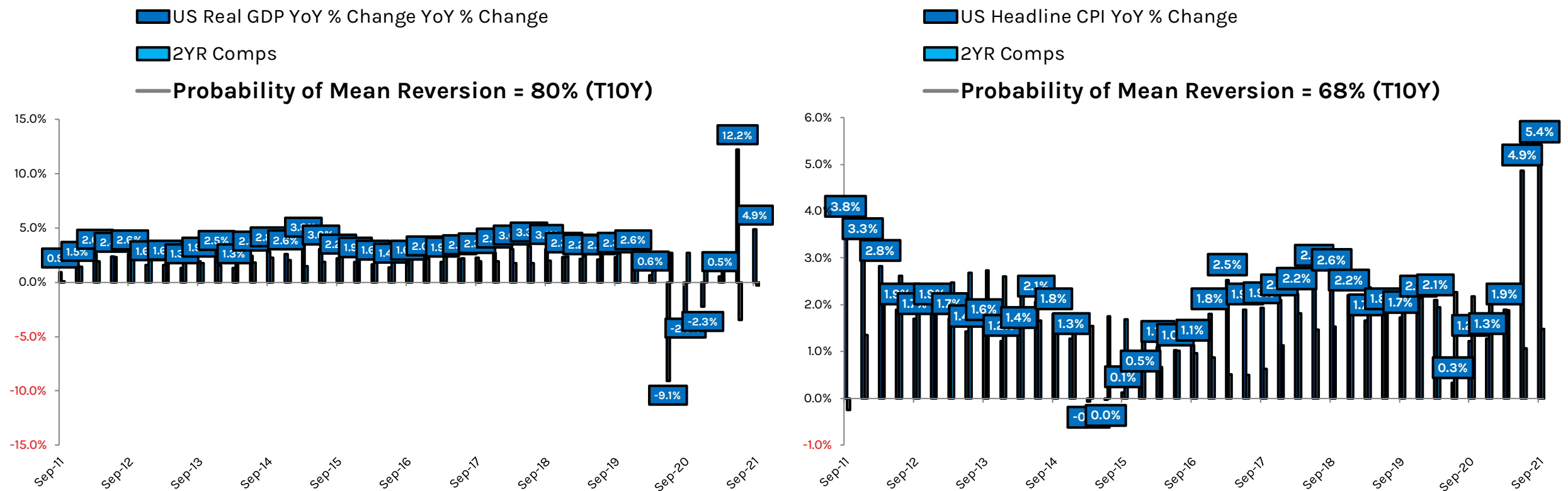
Data Source: Bloomberg. Intellectual Property of Hedgeye Risk Management. Nowcast feature rank shown in parenthesis.

# US Headline CPI Nowcast Model

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.



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



Using the US economy as an example, the sign of the first difference of 2yr base effects explains INFLECTIONS in GROWTH and INFLATION 80% and 70% of the time, respectively. Moreover, easing or steepening base effects perpetuate MOMENTUM in GROWTH and INFLATION 80% and 76% of the time, respectively. These figures are near the modal outcomes of the GROWTH and INFLATION backtests across the near-50 economies we maintain detailed GIP Models for – which means base effects matter a lot to projecting the probable path forward for any economy.

# Ipso Facto, Our Bayesian Inference #Process Is Built Upon Stochastic Principles

United States																									
GROWTH		2018	3Q18	4Q18	1Q19	2Q19	3Q19	4Q19	1Q20	2Q20	3Q20	4Q20	1Q21	2Q21	3Q21	4Q21E	1Q22E	2Q22E	3Q22E						
Base Effects		1.74%	1.96%	2.36%	2.45%	2.72%	2.66%	2.52%	2.56%	2.70%	2.69%	2.45%	1.39%	-3.49%	-0.28%	0.15%	0.59%	1.57%	1.00%						
Real GDP YoY		3.30%	3.05%	2.32%	2.15%	2.11%	2.32%	2.57%	0.63%	-9.08%	-2.89%	-2.26%	0.55%	12.23%	4.90%	5.54%	5.18%	3.93%	4.17%						
GIP Model Quad		2	4	4	4	3	1	2	3	4	2	2	2	2	3	2	4	4	1						



# The Quads Are Global

## G20 GIP Model Summary

12/2/2021	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				
	3Q19	4Q19	1Q20	2Q20	3Q20	4Q20	1Q21	2Q21	3Q21	4Q21E	1Q22E	2Q22E	3Q22E	COUNTRY	3Q21	4Q21E	1Q22E	2Q22E	3Q22E	3Q22E Less 4Q21E	4Q21E	1Q22E	2Q22E	3Q22E	COUNTRY	3Q21	4Q21E	1Q22E	2Q22E	3Q22E	3Q22E Less 4Q21E	4Q21E	1Q22E	2Q22E	3Q22E
Argentina	4	1	4	4	1	1	2	2	3	4	4	1	3	Argentina	7.38	3.24	1.04	2.79	2.44	-80bps	98	79	73	55	Argentina	51.97	50.17	48.79	46.43	47.43	-274bps	70	65	76	61
Australia	1	1	3	4	2	2	2	2	4	3	4	1	1	Australia	3.90	1.85	1.81	2.37	6.45	460bps	98	52	73	98	Australia	2.64	2.70	2.23	1.90	1.88	-83bps	61	98	98	54
Brazil	4	2	3	4	2	2	2	2	3	3	4	4	1	Brazil	5.13	1.27	0.68	0.64	0.80	-47bps	98	65	51	54	Brazil	9.64	10.22	9.45	8.33	6.62	-360bps	82	93	98	98
Canada	4	3	4	4	2	2	2	2	3	2	1	4	4	Canada	3.97	4.43	4.83	4.20	3.85	-58bps	64	62	69	60	Canada	4.06	4.76	3.92	3.85	3.38	-138bps	98	98	57	98
China	3	2	3	1	1	1	1	3	4	3	3	2	2	China	3.60	2.57	2.36	3.62	4.92	235bps	72	54	76	77	China	0.83	1.53	1.57	2.17	2.36	84bps	98	54	98	67
Eurozone	1	3	3	4	1	4	2	2	3	2	1	4	4	Eurozone	3.70	4.99	6.23	4.03	3.03	-196bps	86	85	98	78	Eurozone	2.87	4.13	2.97	2.25	1.37	-277bps	98	98	98	98
France	4	3	3	4	2	4	2	2	3	2	1	4	4	France	3.27	4.95	5.45	5.11	3.04	-191bps	87	61	57	96	France	2.20	3.21	2.33	2.21	1.98	-123bps	98	98	64	78
Germany	1	3	3	4	1	1	3	2	3	3	1	4	4	Germany	2.50	2.47	5.27	4.62	3.22	75bps	51	98	65	83	Germany	3.53	5.13	3.07	2.75	2.02	-312bps	98	98	78	98
India	3	3	3	4	2	1	1	2	4	3	2	1	3	India	8.39	5.60	5.65	15.12	7.43	183bps	83	51	98	98	India	5.08	5.09	5.25	4.94	5.03	-5bps	50	58	64	55
Indonesia	3	4	3	4	1	2	1	2	3	2	2	2	2	Indonesia	3.51	4.54	4.79	5.05	5.91	138bps	98	64	64	98	Indonesia	1.57	1.89	2.12	2.42	2.54	66bps	72	66	70	59
Italy	1	4	4	4	1	4	2	2	3	2	1	4	4	Italy	3.95	6.20	6.96	4.82	3.60	-260bps	98	68	98	79	Italy	2.13	3.22	1.66	1.42	0.96	-227bps	98	98	74	98
Japan	1	3	4	4	2	1	3	1	3	2	1	3	1	Japan	1.40	1.42	2.47	2.27	3.07	165bps	51	78	55	72	Japan	-0.17	0.52	-0.15	0.33	0.21	-32bps	98	98	97	62
Mexico	1	4	3	4	2	1	2	2	4	3	4	4	1	Mexico	4.53	3.21	3.05	2.18	2.70	-51bps	75	53	66	60	Mexico	5.80	6.34	5.29	4.11	3.67	-267bps	94	98	98	86
Russia	1	1	4	3	2	2	2	2	3	3	1	4	1	Russia	4.30	3.56	3.75	2.77	3.69	12bps	68	55	74	72	Russia	6.85	7.62	6.70	6.24	5.10	-252bps	77	82	66	90
South Africa	4	4	2	4	2	2	1	2	3	3	4	2	1	South Africa	3.99	2.60	2.10	2.30	3.35	75bps	83	62	55	75	South Africa	4.83	5.07	4.76	4.79	4.16	-91bps	69	75	53	98
South Korea	4	2	3	4	2	4	2	2	3	3	4	4	1	South Korea	4.00	3.70	2.75	2.75	2.95	-75bps	65	98	50	60	South Korea	2.57	2.77	1.22	0.97	0.84	-193bps	74	98	79	65
Spain	4	3	3	4	1	4	2	2	3	2	1	1	4	Spain	2.70	4.87	6.57	6.82	5.07	20bps	94	85	55	86	Spain	3.40	5.05	3.70	1.97	1.42	-363bps	98	98	98	90
Turkey	1	1	3	4	2	3	2	2	3	3	1	1	1	Turkey	7.38	4.11	4.17	4.30	4.63	53bps	94	51	52	55	Turkey	19.26	19.86	19.51	19.25	19.10	-75bps	70	62	59	55
United Kingdom	4	4	3	4	1	1	2	2	3	2	2	3	4	United Kingdom	6.60	6.64	9.19	4.09	3.69	-295bps	51	98	98	58	United Kingdom	2.77	4.27	4.31	4.36	3.52	-75bps	98	53	55	98
United States	1	2	3	4	2	2	2	2	3	2	4	4	1	United States	4.90	5.54	5.18	3.93	4.17	-137bps	72	62	93	58	United States	5.34	6.09	5.73	4.22	3.64	-245bps	98	87	98	98
MODE/MEDIAN	1	3	3	4	2	1	2	2	3	3	1	4	1	MODE/MEDIAN	3.98	3.90	4.48	3.98	3.64	-26bps	83	63	67	74	MODE/MEDIAN	3.47	4.90	3.81	3.30	2.96	-194bps	96	95	77	88

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

LIGHT BLUE header = Hedgeye Nowcast Model estimates. BLUE header = Hedgeye Comparative Base Effects Model estimates. GREEN/RED shading in GDP and CPI projections denotes sequential acceleration/deceleration.

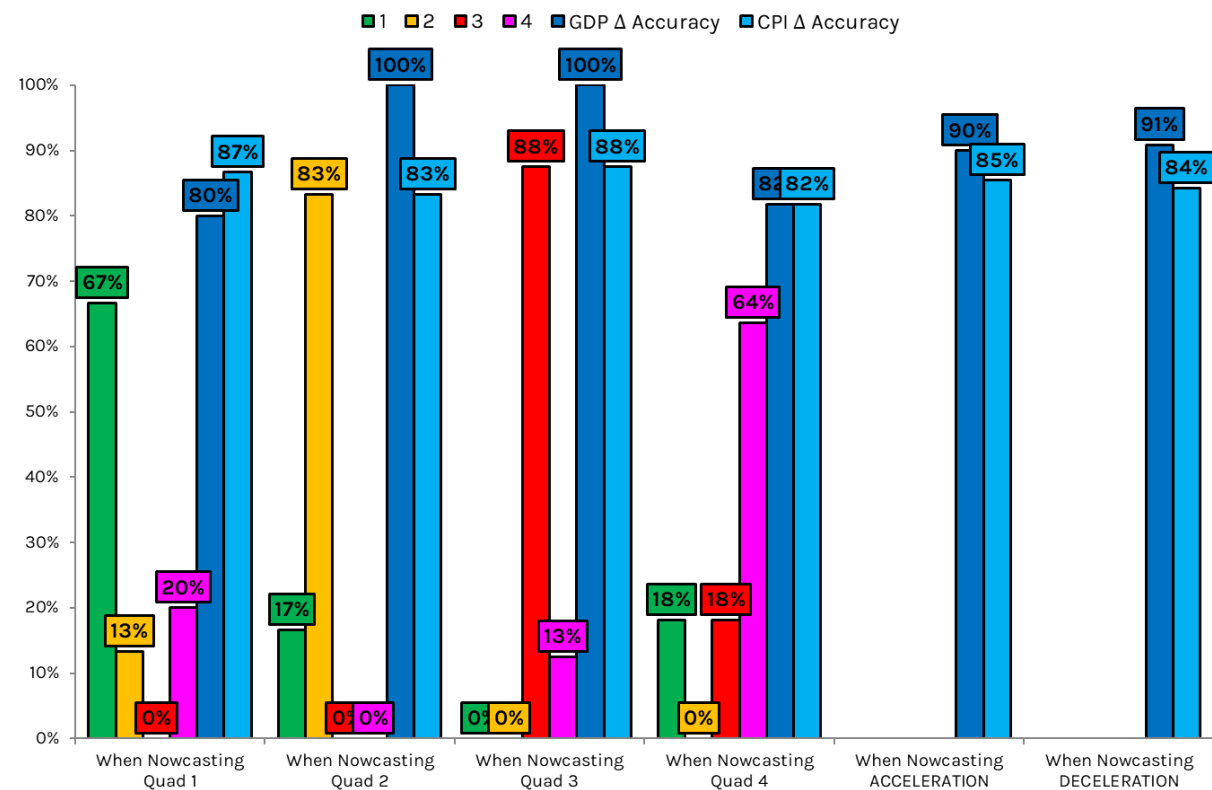
Conditional probability inversely proportional to the prior base rate's percentile score within a 95% confidence interval band around the projected GROWTH or INFLATION rate in a given quarter.



# ... As Are The Models

## Germany Nowcast Model Backtest

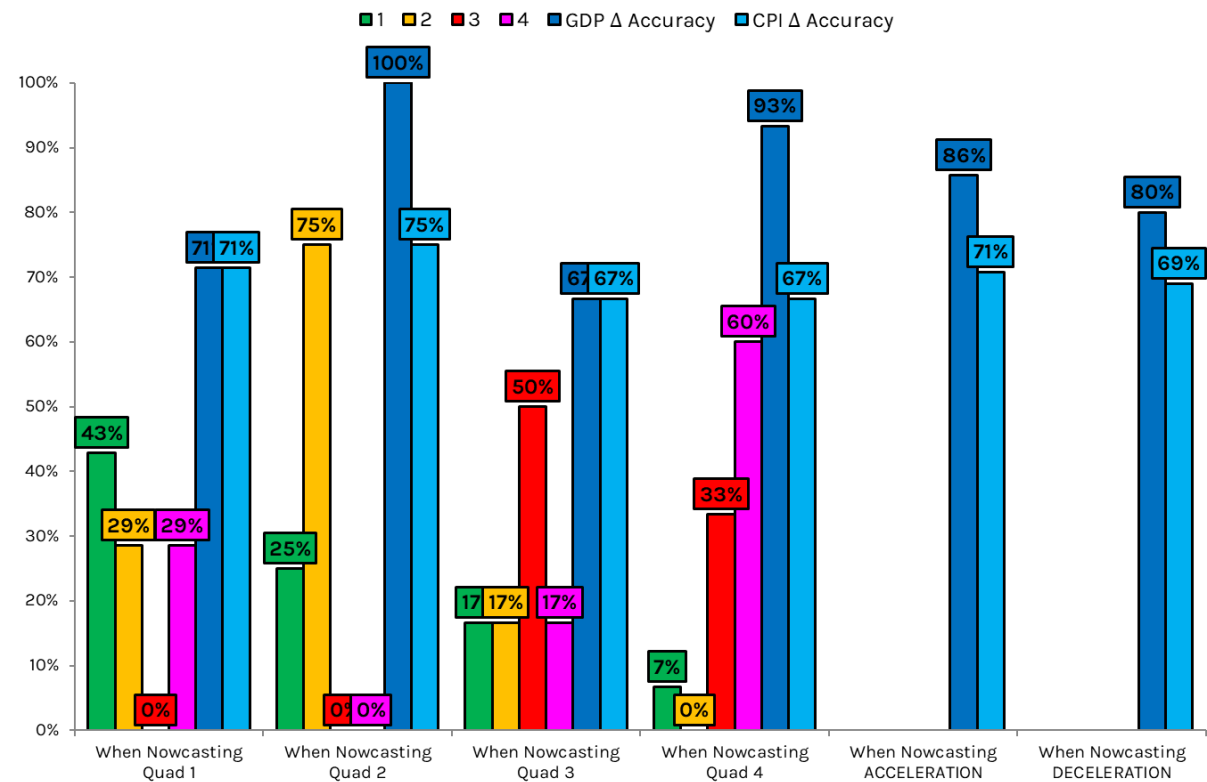
Hedgeye Nowcast Model Quad Projection Accuracy: Germany



Data Source: Bloomberg

## China Nowcast Model Backtest

Hedgeye Nowcast Model Quad Projection Accuracy: China

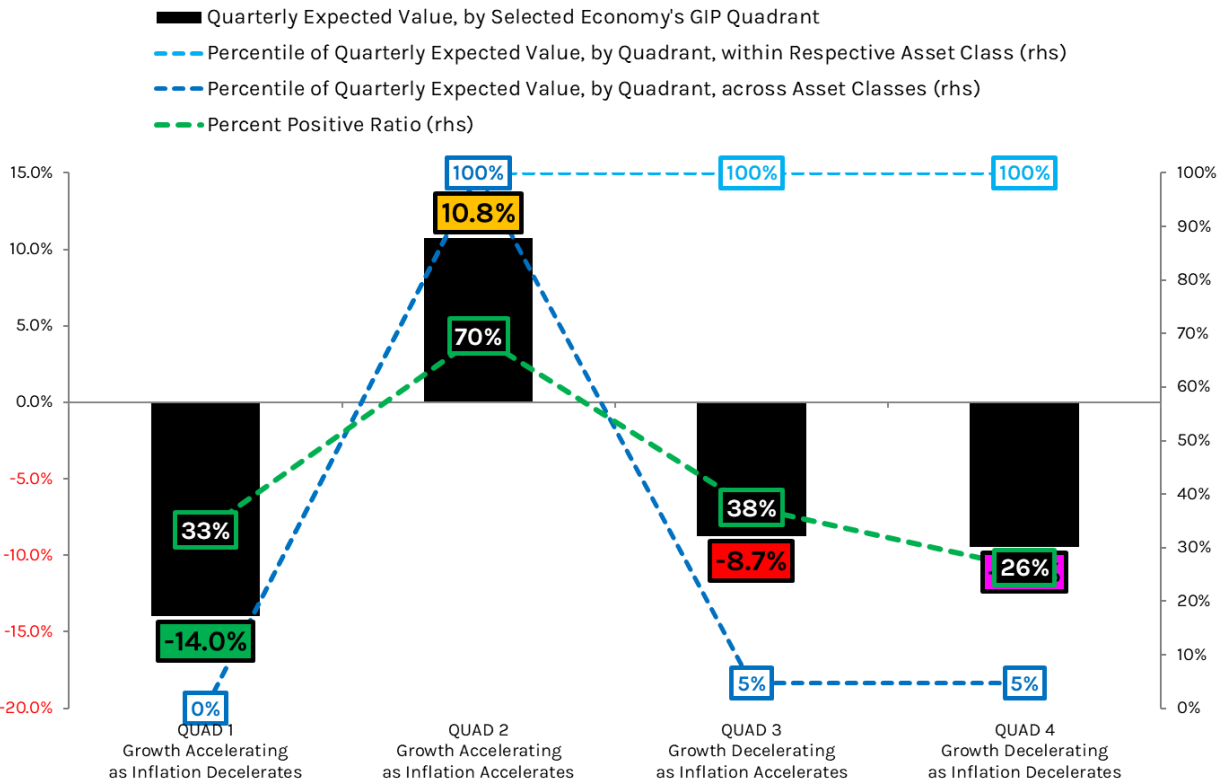


Data Source: Bloomberg

# ... As Are The Market Implications

## Germany GIP Model Market History Backtest: 10yr Bund Yield

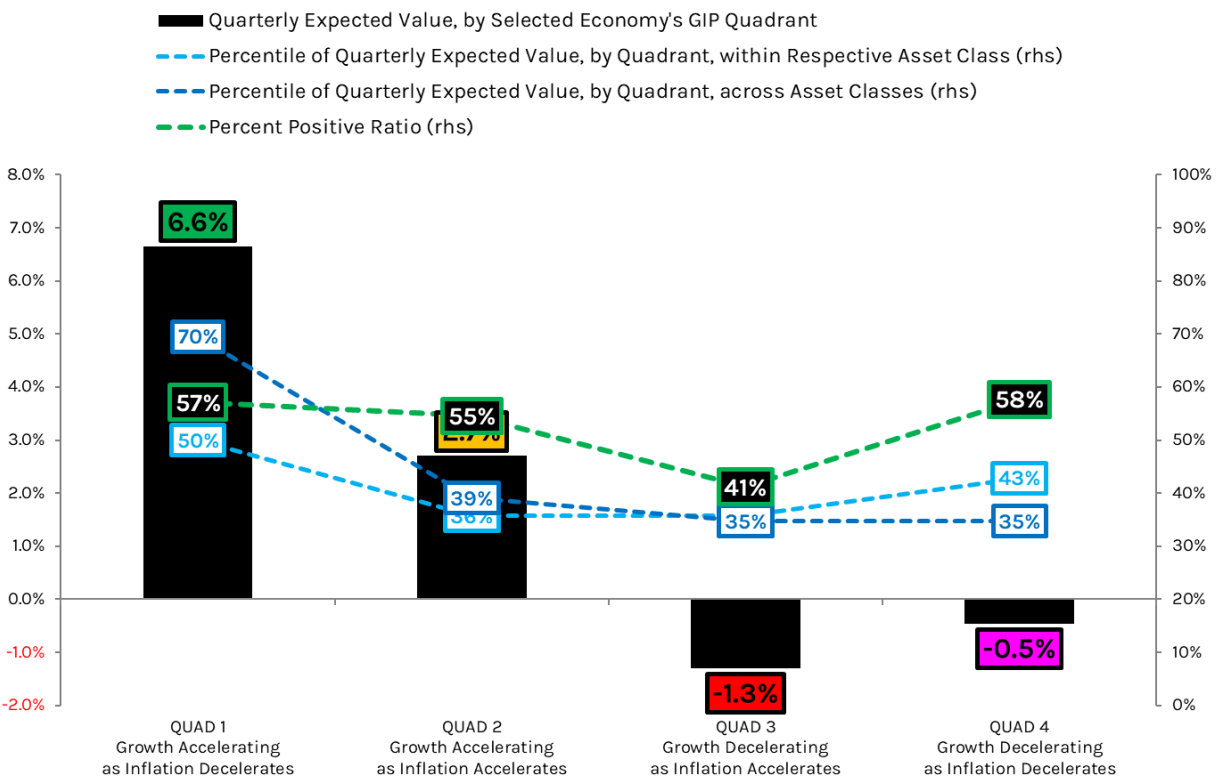
GERMANY GOVT BND 10 YR DBR



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

## China GIP Model Market History Backtest: Chinese Consumer Stocks

MSCI China Index



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

# The Quads Are Global

## Emerging Market GIP Model Summary

12/2/2021	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			
	3Q19	4Q19	1Q20	2Q20	3Q20	4Q20	1Q21	2Q21	3Q21	4Q21E	1Q22E	2Q22E	3Q22E	COUNTRY	3Q21	4Q21E	1Q22E	2Q22E	3Q22E	3Q22E Less 4Q21E	4Q21E	1Q22E	2Q22E	3Q22E	COUNTRY	3Q21	4Q21E	1Q22E	2Q22E	3Q22E	3Q22E Less 4Q21E	4Q21E	1Q22E	2Q22E	3Q22E
Argentina	4	1	4	4	1	1	2	2	3	4	4	1	3	Argentina	7.38	3.24	1.04	2.79	2.44	-80bps	98	79	73	55	Argentina	51.97	50.17	48.79	46.43	47.43	-274bps	70	65	76	61
Brazil	4	2	3	4	2	2	2	2	3	3	4	4	1	Brazil	5.13	1.27	0.68	0.64	0.80	-47bps	98	65	51	54	Brazil	9.64	10.22	9.45	8.33	6.62	-360bps	82	93	98	98
Chile	1	3	2	4	1	2	3	2	3	3	4	3	4	Chile	17.22	12.72	8.08	4.82	1.64	-1108bps	98	98	98	98	Chile	4.89	5.64	5.59	5.70	4.37	-126bps	98	54	59	98
China	3	2	3	1	1	1	1	3	4	3	3	2	2	China	3.60	2.57	2.36	3.62	4.92	235bps	72	54	76	77	China	0.83	1.53	1.57	2.17	2.36	84bps	98	54	98	67
Colombia	3	2	4	4	4	1	1	2	2	3	3	1	4	Colombia	10.30	5.37	2.65	5.70	3.10	-228bps	98	98	98	98	Colombia	4.31	4.88	4.96	3.95	3.73	-115bps	94	56	98	67
Czech Republic	2	3	3	4	2	1	1	2	3	2	2	4	1	Czech Republic	2.80	3.52	4.42	4.27	4.52	100bps	67	72	54	56	Czech Republic	4.13	6.18	6.64	5.49	3.81	-237bps	98	93	98	98
Greece	1	3	3	4	1	2	2	2	3	3	4	4	1	Greece	11.33	9.48	5.82	3.54	5.21	-426bps	79	98	85	76	Greece	1.27	1.48	0.53	0.36	-0.04	-152bps	64	98	61	76
Hong Kong	3	4	4	1	1	2	2	4	3	4	4	2	2	Hong Kong	5.40	5.30	2.25	2.90	3.30	-200bps	53	98	72	64	Hong Kong	2.23	2.10	1.65	1.92	2.34	24bps	57	74	64	73
India	3	3	3	4	2	1	1	2	4	3	2	1	3	India	8.39	5.60	5.65	15.12	7.43	183bps	83	51	98	98	India	5.08	5.09	5.25	4.94	5.03	-5bps	50	58	64	55
Indonesia	3	4	3	4	1	2	1	2	3	2	2	2	2	Indonesia	3.51	4.54	4.79	5.05	5.91	138bps	98	64	64	98	Indonesia	1.57	1.89	2.12	2.42	2.54	66bps	72	66	70	59
Israel	1	1	4	4	2	2	2	2	3	3	1	4	4	Israel	5.90	4.70	5.96	4.64	4.44	-26bps	85	87	89	56	Israel	2.20	2.31	1.37	1.28	0.65	-166bps	61	98	59	98
Malaysia	3	4	4	4	2	4	2	2	4	2	1	1	2	Malaysia	-4.50	3.39	3.44	4.34	9.14	575bps	98	51	67	98	Malaysia	2.14	2.91	2.22	1.49	2.25	-66bps	94	89	91	93
Mexico	1	4	3	4	2	1	2	2	4	3	4	4	1	Mexico	4.53	3.21	3.05	2.18	2.70	-51bps	75	53	66	60	Mexico	5.80	6.34	5.29	4.11	3.67	-267bps	94	98	98	86
Peru	1	4	4	4	2	2	2	2	3	3	4	2	1	Peru	11.47	3.47	2.41	3.35	4.35	88bps	98	61	60	61	Peru	4.66	5.08	4.16	4.20	2.57	-251bps	94	98	55	98
Philippines	1	1	3	4	2	2	2	1	3	3	1	2	4	Philippines	7.10	5.62	6.62	7.37	6.92	130bps	82	72	66	60	Philippines	4.57	4.58	3.05	3.38	3.35	-123bps	51	98	73	52
Poland	3	3	3	4	1	4	1	2	3	2	4	4	4	Poland	5.30	6.00	4.90	4.60	4.55	-145bps	71	82	59	51	Poland	5.47	7.08	6.46	5.76	5.35	-173bps	98	91	97	78
Russia	1	1	4	3	2	2	2	2	3	3	1	4	1	Russia	4.30	3.56	3.75	2.77	3.69	12bps	68	55	74	72	Russia	6.85	7.62	6.70	6.24	5.10	-252bps	77	82	66	90
Saudi Arabia	3	2	3	4	2	1	1	2	1	3	3	1	3	Saudi Arabia	6.82	6.51	5.64	5.70	3.30	-321bps	56	68	51	98	Saudi Arabia	0.45	1.21	3.26	3.16	3.51	230bps	80	98	54	64
South Africa	4	4	2	4	2	2	1	2	3	3	4	2	1	South Africa	3.99	2.60	2.10	2.30	3.35	75bps	83	62	55	75	South Africa	4.83	5.07	4.76	4.79	4.16	-91bps	69	75	53	98
South Korea	4	2	3	4	2	4	2	2	3	3	4	4	1	South Korea	4.00	3.70	2.75	2.75	2.95	-75bps	65	98	50	60	South Korea	2.57	2.77	1.22	0.97	0.84	-193bps	74	98	79	65
Taiwan	1	2	4	4	2	2	2	3	3	3	4	2	1	Taiwan	3.70	3.68	2.08	3.98	4.17	50bps	51	98	98	57	Taiwan	2.29	2.64	1.43	1.53	1.44	-120bps	76	98	57	56
Thailand	1	4	3	4	2	2	1	2	4	2	2	2	1	Thailand	-0.30	0.91	1.81	2.21	5.81	490bps	70	65	57	98	Thailand	0.70	1.54	1.63	1.73	0.94	-60bps	98	57	57	98
Turkey	1	1	3	4	2	3	2	2	3	3	1	1	1	Turkey	7.38	4.11	4.17	4.30	4.63	53bps	94	51	52	55	Turkey	19.26	19.86	19.51	19.25	19.10	-75bps	70	62	59	55
MODE/MEDIAN	1	4	3	4	2	2	2	2	3	3	4	4	1	MODE/MEDIAN	5.30	3.70	3.44	3.98	4.35	65bps	82	68	66	64	MODE/MEDIAN	4.31	4.88	4.16	3.95	3.51	-137bps	77	89	66	76

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

LIGHT BLUE header = Hedgeye Nowcast Model estimates. BLUE header = Hedgeye Comparative Base Effects 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

## Global Macro Risk Monitor

12/2/2021	GIP Model Signals												High-Frequency Economic Data Signals												12/2/2021	Structural Economic Risk Factors								Financial Market Valuation Signals							
	Actuals												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		
	4Q19	1Q20	2Q20	3Q20	4Q20	1Q21	2Q21	3Q21	4Q21E	1Q22E	2Q22E	3Q22E	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)	6-12M Trend	Percentile of Latest Reading (T3Y)		6-12M Trend	Percentile of Latest Reading (T3Y)	6-12M Trend	Percentile of Latest Reading (T3Y)	Private Nonfinancial Sector Leverage (Z-Score; T5Y)	Private Nonfinancial Sector Debt Service Ratio (Z-Score; T5Y)	Headline Unemployment Rate	35-54 Year-Old Population Cohort (5Y-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)	10Y Sovereign Yield Spread vs. 10Y German Bund Yield (Z-Score; T3Y)	Broad Real Effective Exchange Rate (Z-Score; T3Y)		
Hedgeye Global Macro Risk Monitor																																									
Argentina	1	4	4	1	1	2	2	3	4	4	1	3	88%	82%	88%	82%	91%	-	-	84%	71%	97%	71%	97%	71%	97%	71%	97%	0.1x	0.0x	11.0%	15%	-9.0%	0.6%	-	-0.2x	0.0x	2.4x			
Australia	1	3	4	2	2	2	2	4	3	4	1	1	82%	91%	82%	85%	94%	84%	74%	71%	97%	71%	97%	71%	97%	71%	97%	0.1x	-0.4x	6.6%	13%	-7.8%	2.6%	-	-0.7x	1.6x	0.7x				
Austria	4	3	4	2	4	2	2	3	2	1	4	4	33%	70%	32%	94%	85%	94%	71%	97%	71%	97%	71%	97%	71%	97%	71%	97%	3.6x	0.0x	6.4%	-11%	-10.0%	1.9%	-	-2.1x	0.3x	-0.2x			
Belgium	4	3	4	2	4	2	2	3	2	4	4	4	32%	94%	32%	94%	85%	94%	71%	97%	71%	97%	71%	97%	71%	97%	71%	97%	1.0x	-0.9x	5.9%	-0.4%	-10.3%	0.8%	-	-0.1x	0.1x	0.3x			
Brazil	2	3	4	2	2	2	2	3	3	4	4	1	6%	70%	6%	15%	77%	94%	71%	97%	71%	97%	71%	97%	71%	97%	71%	97%	1.4x	-1.2x	13.9%	12%	-15.3%	-1.5%	-16.8%	-1.1x	2.3x	-0.9x			
Canada	3	4	4	2	2	2	2	3	2	1	4	4	70%	79%	70%	79%	85%	94%	71%	97%	71%	97%	71%	97%	71%	97%	71%	97%	3.1x	0.5x	8.8%	0.4%	-15.0%	-1.8%	-16.8%	-0.4x	0.9x	1.6x			
Chile	3	2	4	1	2	3	2	3	3	4	3	4	88%	62%	88%	62%	71%	-	-	59%	34%	100%	100%	100%	100%	100%	100%	2.9x	0.0x	10.9%	0.8%	-8.7%	1.3%	-	-2.0x	0.0x	-1.3x				
China	2	3	1	1	1	1	3	4	3	3	2	2	74%	100%	74%	100%	82%	94%	71%	97%	71%	97%	71%	97%	71%	97%	2.9x	3.0x	5.2%	0.1%	-6.7%	1.8%	-	0.1x	-0.7x	1.8x					
Colombia	2	4	4	4	1	1	2	2	3	3	1	4	82%	85%	82%	85%	84%	97%	94%	-	-	100%	100%	100%	100%	100%	44%	2.3x	0.0x	15.9%	10%	-8.9%	-3.7%	-12.6%	-1.1x	2.8x	-1.1x				
Czech Republic	3	3	4	2	1	1	2	3	2	2	4	1	42%	27%	42%	27%	33%	80%	94%	6%	37%	100%	100%	100%	100%	100%	0.9x	1.3x	3.1%	0.2%	-7.4%	3.6%	-	0.8x	2.8x	1.7x					
Denmark	3	4	4	2	1	2	2	3	3	1	4	1	9%	67%	9%	67%	52%	94%	34%	34%	37%	100%	100%	100%	100%	100%	0.8x	-1.0x	6.0%	-1.0%	-4.1%	8.1%	-	-1.6x	1.3x	-1.0x					
Emerging Markets	3	3	4	1	1	2	2	3	3	1	2	3	89%	100%	89%	100%	33%	80%	-	-	89%	100%	100%	100%	100%	100%	-	-	6.0%	-	-	1.4%	14%	-1.3x	-0.6x	-5.8x					
Eurozone	3	3	4	1	4	2	2	3	2	1	4	4	64%	85%	64%	85%	82%	94%	71%	97%	71%	97%	71%	97%	71%	97%	1.9x	1.7x	8.1%	-1.2%	-9.5%	2.0%	-	-1.0x	0.3x	-0.2x					
Finland	4	3	4	2	1	2	2	4	3	1	3	1	0%	94%	0%	94%	100%	-	-	83%	100%	100%	100%	100%	100%	100%	1.8x	0.9x	7.4%	-0.3%	-8.0%	0.8%	-	-1.1x	0.5x	-1.2x					
France	3	3	4	2	4	2	2	3	2	1	4	4	15%	70%	15%	70%	85%	94%	71%	97%	71%	97%	71%	97%	71%	97%	3.0x	3.5x	7.8%	-0.3%	-11.1%	-1.9%	-13.0%	-0.7x	0.5x	-1.7x					
Germany	3	3	4	1	1	3	2	3	3	1	4	4	6%	73%	6%	73%	82%	94%	71%	97%	71%	97%	71%	97%	71%	97%	2.9x	2.7x	6.1%	-1.5%	-6.5%	6.9%	-	-1.6x	0.3x	0.2x					
Greece	3	3	4	1	2	2	2	3	3	4	4	1	88%	91%	88%	91%	94%	71%	20%	97%	100%	100%	100%	100%	80%	0.7x	0.0x	16.0%	-1.2%	-8.0%	-6.6%	-14.6%	0.3x	-0.4x	-0.2x						
Hong Kong	4	4	1	1	2	2	4	3	4	4	2	2	91%	100%	91%	100%	76%	94%	85%	-	-	47%	-	-	47%	-	2.1x	1.9x	6.3%	-0.6%	-8.5%	6.5%	-	0.5x	0.0x	-1.0x					
India	3	3	4	2	1	1	2	4	3	2	1	3	-	67%	-	67%	88%	94%	-	-	-	38%	-	-	38%	-	1.7x	-0.1x	-	2.1%	-4.1%	1.3%	-	1.0x	0.0x	0.8x					
Indonesia	4	3	4	1	2	1	2	3	2	2	2	2	-	86%	-	86%	91%	91%	-	-	-	46%	-	-	46%	-	0.2x	-0.6x	7.1%	0.8%	-6.3%	-0.4%	-6.7%	0.5x	-1.3x	-0.1x					
Ireland	3	1	4	1	4	2	2	3	1	4	4	4	9%	100%	9%	100%	86%	80%	94%	-	-	100%	100%	100%	100%	100%	97%	0.5x	0.0x	6.8%	0.2%	-6.3%	-2.7%	-9.0%	0.8x	0.4x	-0.7x				
Israel	1	4	4	2	2	2	2	3	3	1	4	4	13%	58%	13%	58%	21%	-	-	47%	91%	97%	100%	100%	100%	100%	97%	0.5x	0.0x	4.7%	1.5%	-12.0%	5.4%	-	-0.1x	-0.7x	1.7x				
Italy	4	4	4	1	4	2	2	3	2	1	4	4	82%	85%	82%	85%	82%	100%	94%	71%	97%	100%	100%	100%	91%	0.8x	-0.4x	9.8%	-1.9%	-11.5%	3.8%	-	-1.0x	-0.5x	-1.4x						
Japan	3	4	4	2	1	3	1	3	2	1	3	1	68%	75%	68%	75%	79%	100%	80%	97%	100%	100%	100%	100%	50%	3.3x	3.5x	3.0%	-0.9%	-12.7%	3.0%	-	-0.8x	0.4x	-2.3x						
Malaysia	4	4	4	2	4	2	2	4	2	1	1	2	-	70%	-	70%	88%	97%	0%	0%	89%	100%	100%	100%	100%	100%	3.4x	2.7x	4.8%	0.0%	-6.3%	4.4%	-	-0.5x	1.0x	-1.2x					
Mexico	4	3	4	2	1	2	2	4	3	4	4	1	85%	85%	85%	85%	88%	71%	0%	89%	100%	100%	100%	100%	100%	2.9x	1.8x	4.3%	1.6%	-4.9%	2.3%	-	-0.9x	0.9x	0.1x						
Netherlands	4	4	4	1	4	2	2	3	3	1	4	4	79%	88%	79%	88%	88%	77%	-	100%	100%	100%	100%	100%	91%	0.5x	-1.3x	4.1%	-1.3%	-6.9%	7.0%	-	1.9x	0.2x	0.4x						
New Zealand	3	3	4	1	4	2	2	3	2	4	4	1	35%	100%	35%	100%	91%	82%	3%	59%	100%	100%	100%	100%	100%	2.4x	0.0x	4.8%	-0.3%	-8.5%	-1.4%	-9.9%	1.5x	2.3x	1.9x						
Norway	1	4	3	2	4	3	1	3	4	1	3	4	0%	97%	0%	97%	97%	100%	75%	-	-	97%	97%	97%	3%	1.6x	1.9x	5.0%	0.2%	-2.2%	2.0%	-	-1.7x	1.0x	1.0x						
Peru	4	4	4	2	2	2	2	3	3	4	2	1	-	82%	-	82%	87%	-	-	-	-	97%	-	-	97%	-	0.0x	0.0x	15.1%	19%	-8.9%	0.8%	-	-0.6x	1.6x	-1.7x					
Philippines	1	3	4	2	2	2	1	3	3	1	2	4	-	85%	-	85%	76%	63%	-	-	0%	88%	-	-	88%	-	0.0x	0.0x	8.7%	1.7%	-8.6%	3.5%	-	1.3x	0.0x	0.2x					
Poland	3	3	4	1	4	1	2	3	2	4	4	4	91%	74%	91%	74%	73%	89%	40%	83%	94%	94%	94%	94%	94%	97%	0.0x	-1.5x	3.3%	1.2%	-9.5%	2.5%	-	-1.0x	2.6x	-0.6x					
Portugal	2	3	4	1	4	2	1	3	2	1	3	4	50%	21%	50%	21%	82%	-	-	34%	80%	100%	100%	88%	88%	97%	0.7x	-0.8x	7.3%	-1.2%	-8.0%	-1.1%	-9.1%	2.3x	-0.4x	-1.9x					
Russia	1	4	3	2	2	2	2	3	3	1	4	1	76%	88%	76%	88%	85%	89%	42%	94%	94%	94%	94%	94%	94%	2.1x	-0.8x	6.1%	1.5%	-4.4%	2.6%	-	-1.3x	1.9x	0.2x						
Singapore	2	4	4	2	2	2	2	3	3	4	1	4	91%	79%	91%	79%	100%	76%	73%	94%	100%	100%	100%	100%	100%	3.2x	0.0x	3.3%	-0.5%	-14.0%	17.6%	-	1.3x	0.8x	-1.1x						
Saudi Arabia	2	3	4	2	1	1	2	1	3	3	1	3	-	-	-	-	-	91%	-	-	-	50%	-	-	50%																

## [1] #Quad2 Phase Transition

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

## [2] #LaborInflation = Sticky Stagflation

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

## [3] Long Europe, Short China #Reiterated

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

## [1] USA: #Quad2 in Q4?

Sticky-high inflation enduring through Q4 remains the high probability setup amid still pervasive demand-supply imbalances, the widest PPI-CPI gap in over 40 years, containerized freight shipping cost indices making fresh ATHs on a daily basis and Shelter CPI lagging by the widest margin ever the explosion in home prices. But what about growth? Delta rampaged through August and has continued to suppress activity into September but with case counts rolling over both domestically and abroad the prospects for delayed activity resurgence in Q4 is driving up the probability of a growth acceleration in Q4

## [2] Global Inflation's Acceleration

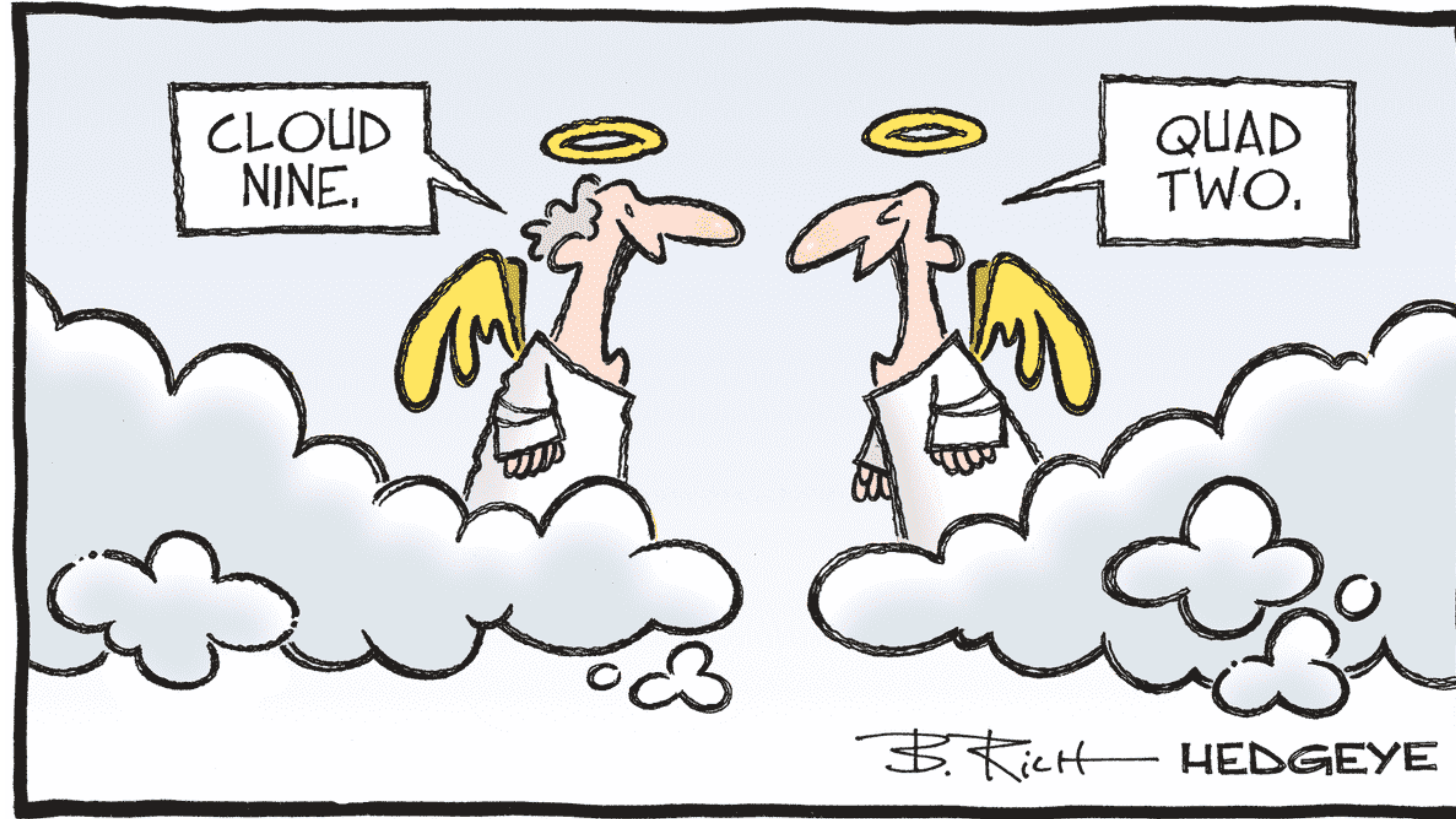
The Cantillon effect is on full display as the fastest growth in money printing globally has predictably produced not just the fastest pace of asset price inflation on record but also (and right on cue) the highest rates of global price inflation in decades. Both China and Europe are poised to see the strongest inflationary pressures in years over the next few quarters which, coupled with the US' already decades-high inflation, will create an enduring Quad 2/Quad 3 backdrop over the intermediate term.

## [3] Long Emerging Markets?

The only quad in which the dollar goes up is Quad 4 and we don't see a hard Quad 4 until 2Q of 2022. Meanwhile, Quad 2 is the second worst Quad for the dollar and the odds of Quad 2 are rising. Given that, the outlook for EM over the intermediate term is getting interesting, but not all EM countries look the same. We'll be focusing in on countries with favorable Signal and Quad Count setups, i.e. adjacent Quad 1/Quad 2 setups for EM long opportunities over the next 1-2 Quarters.



# Q4 2021 Macro Themes



USA: #QUAD2 IN Q4?

# INFLATION: NEW QUARTER | SAME ADJECTIVES

**sticky** adjective

\ 'sti-kē  \

**stickier; stickiest**

**1** : tending to cling like glue

**high** adjective

\ 'hī  \

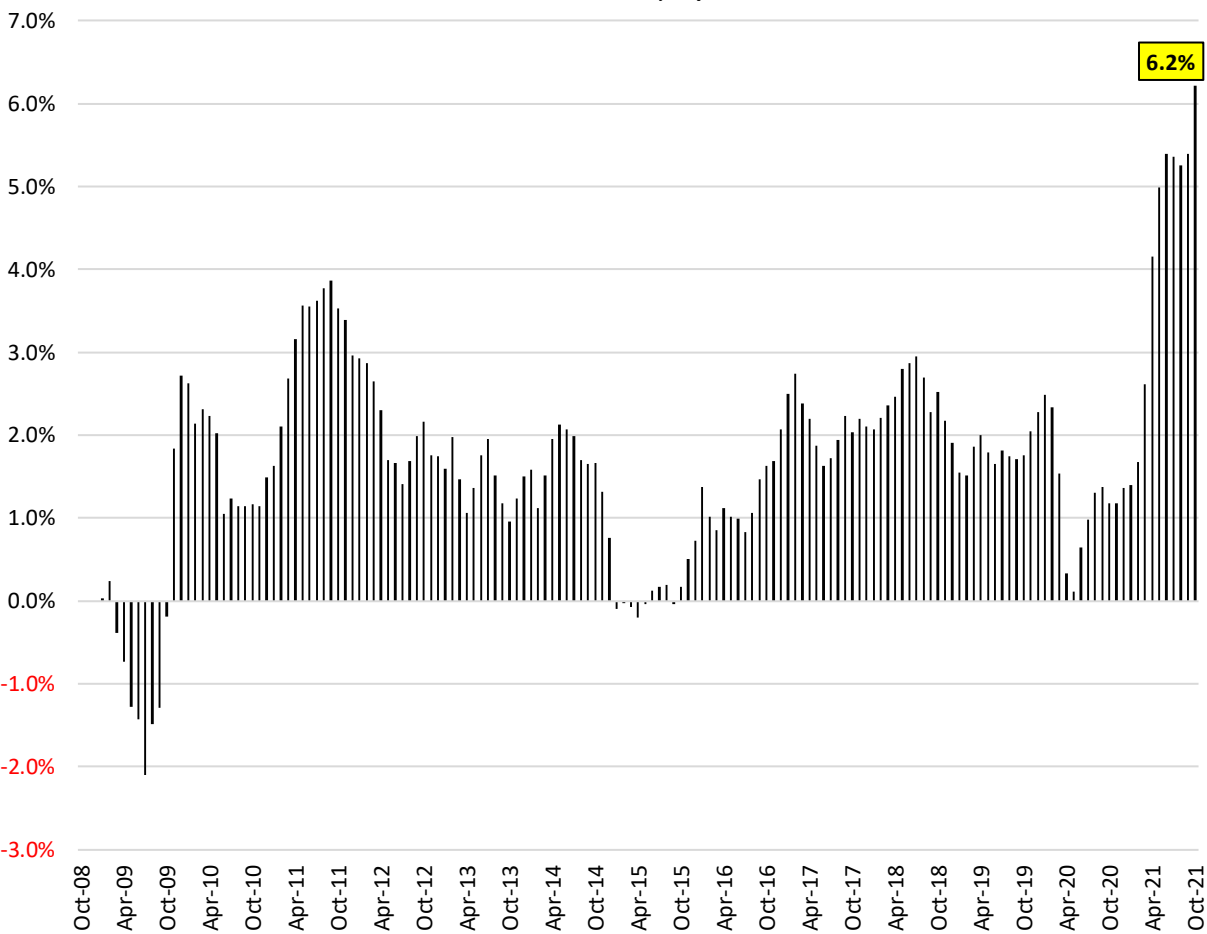
: rising or extending upward a great distance : taller than average, usual, or expected



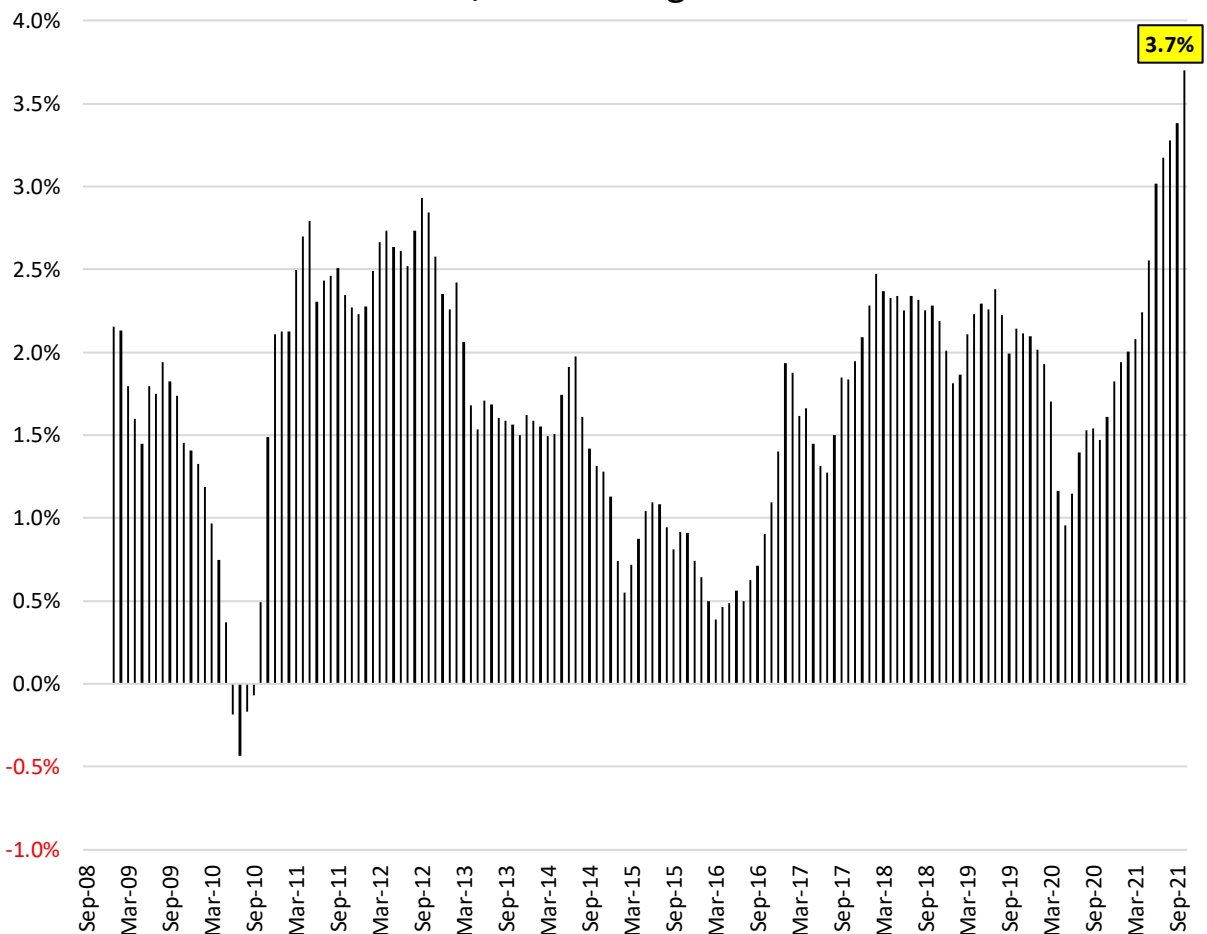
# CPI ... Still Peaking

October saw a reacceleration in Y/Y growth and continued acceleration on a 2Y avg growth basis.

Headline CPI, Y/Y %

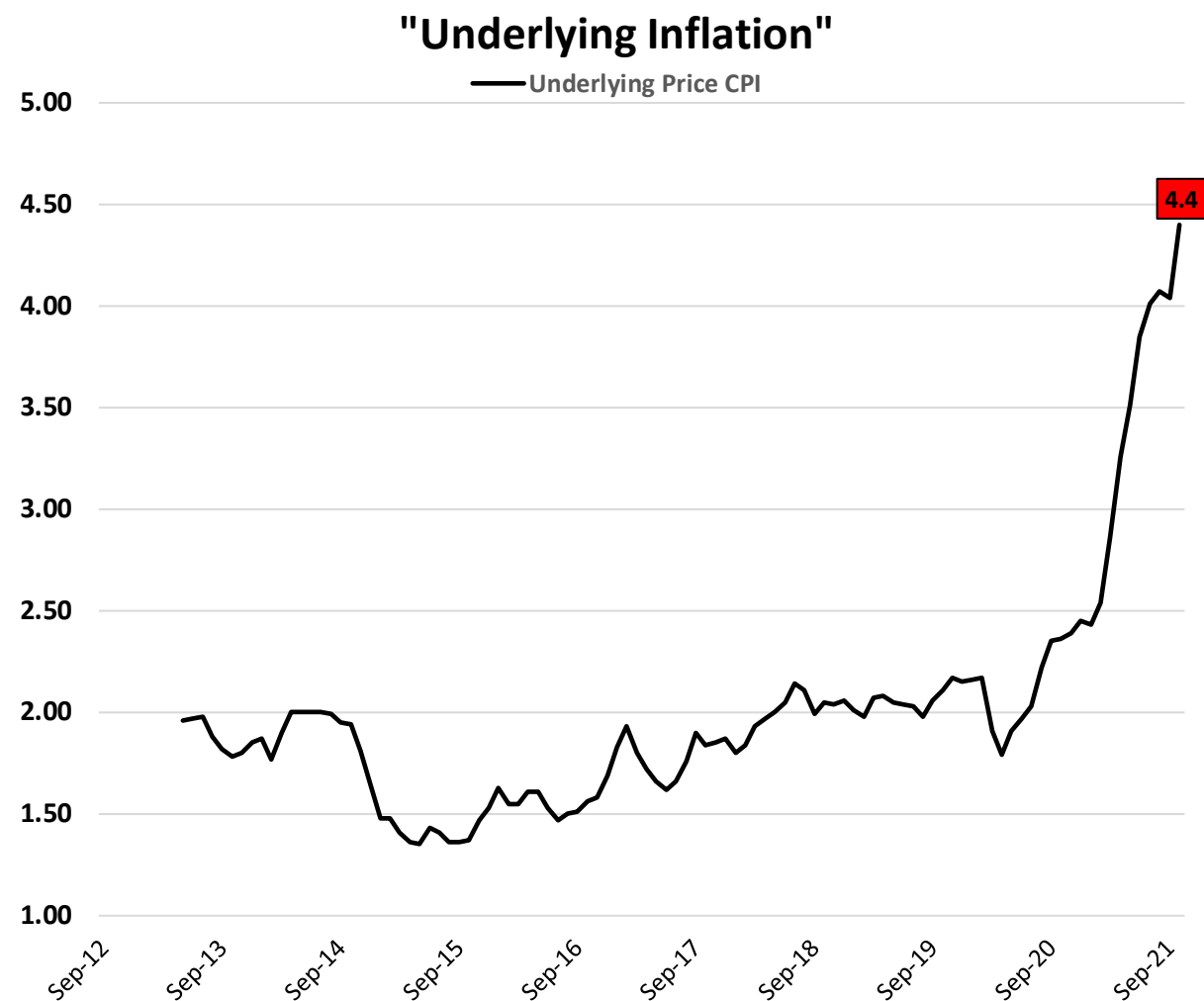
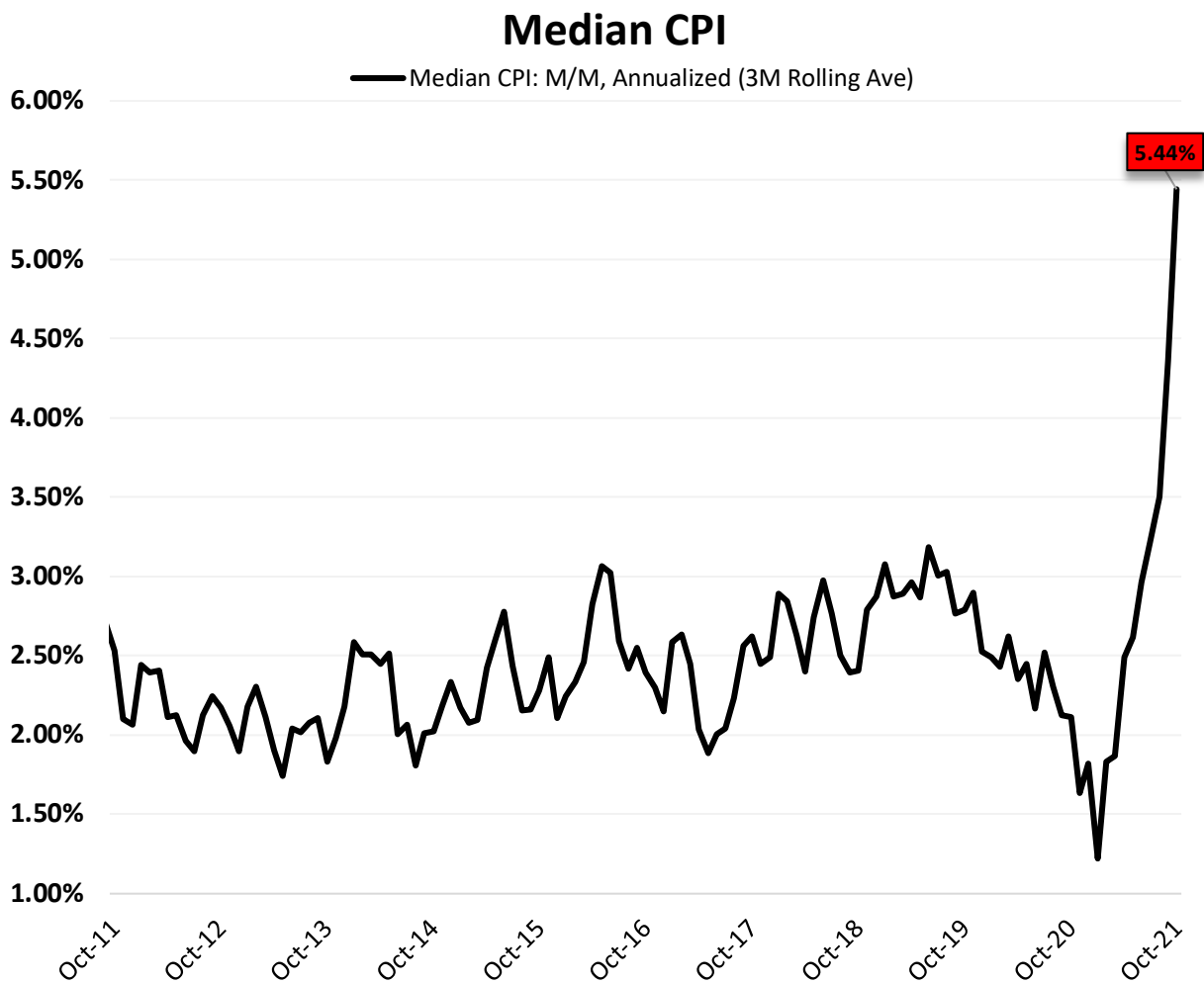


CPI Y/Y %: 2Y Avg Growth



# Indeed, Underlying Inflation Continues to Accelerate

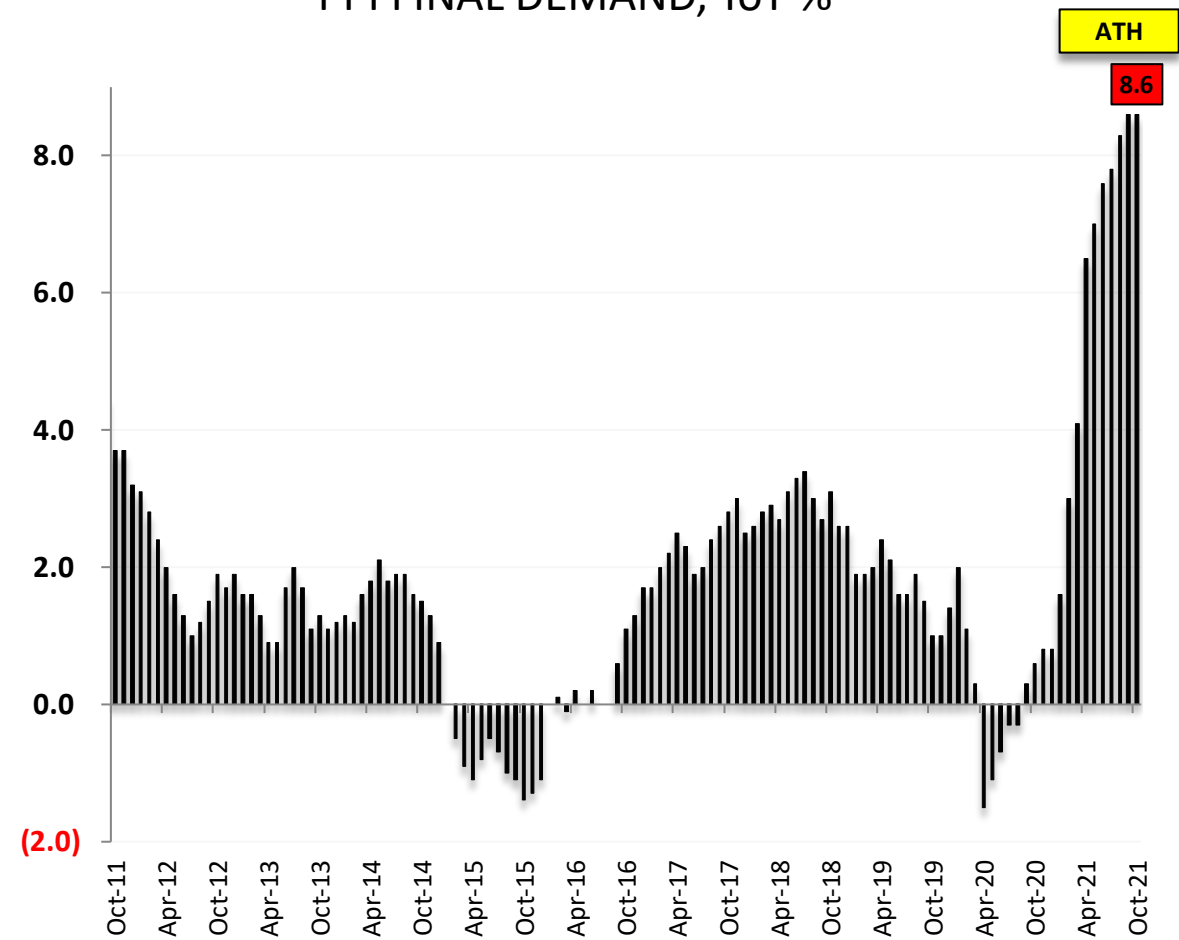
While some of the outsized/idiosyncratic pandemic series decelerated modestly in the latest Aug/Sept data, the breadth of inflation widened with Median CPI and “Underlying Price CPI” accelerating



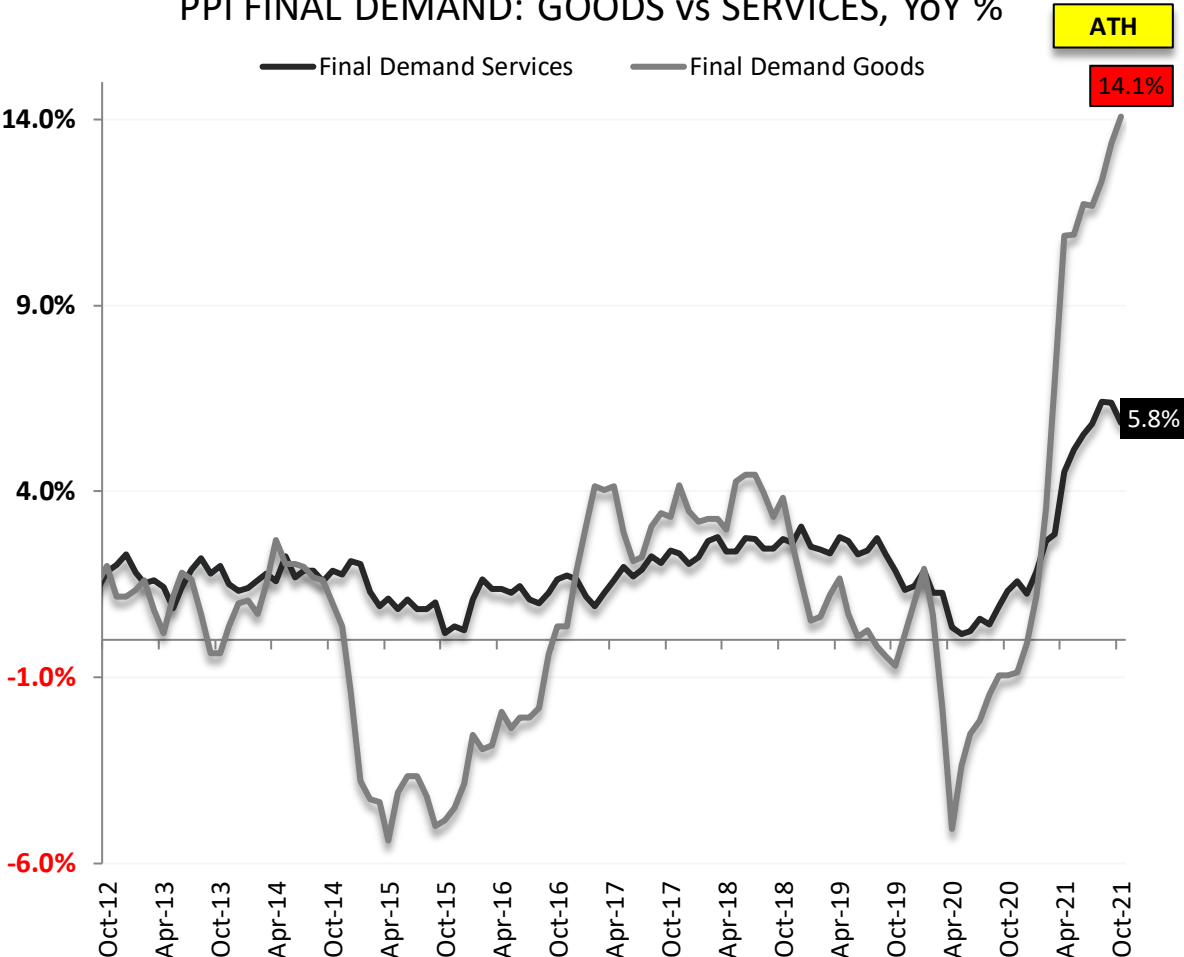
# PPI Hasn't Even Peaked Yet!

Wholesale price inflation showed no RoC relent, again accelerating to all-time highs.

PPI FINAL DEMAND, YoY %

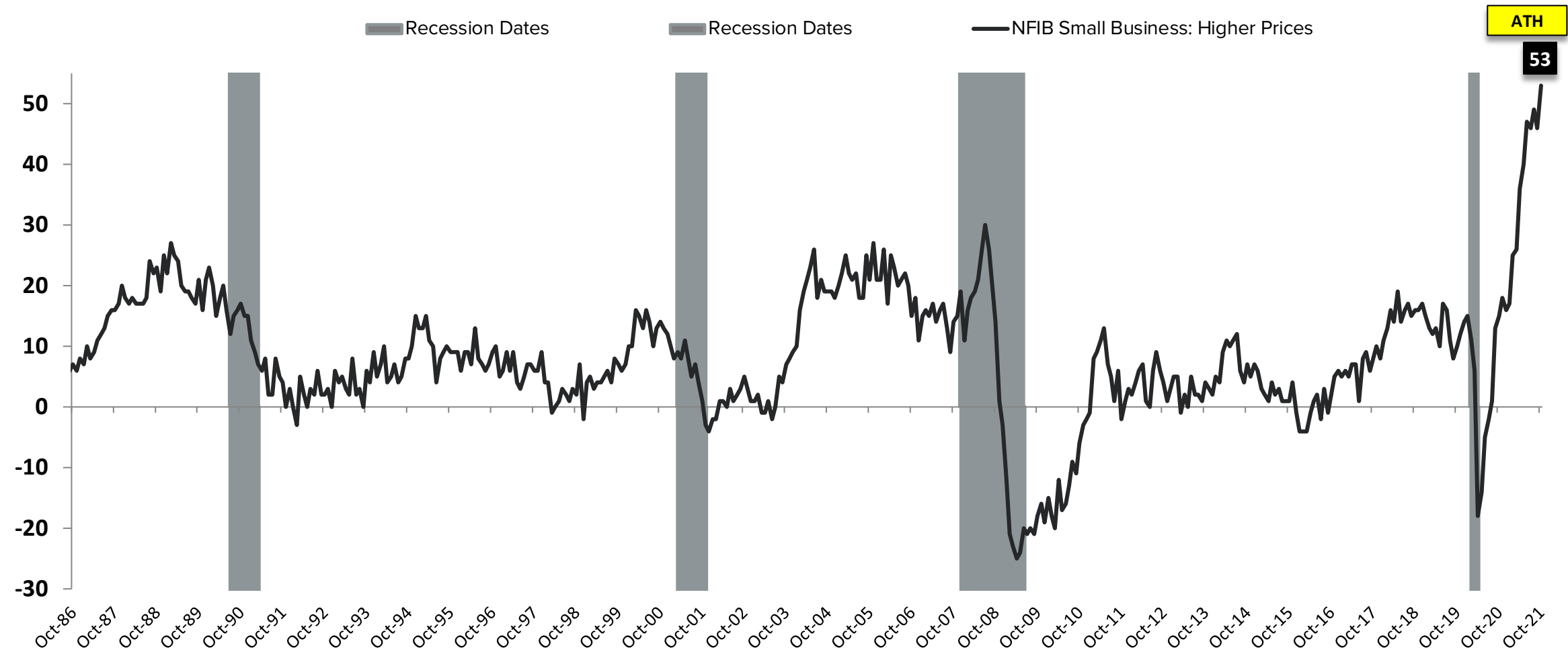


PPI FINAL DEMAND: GOODS vs SERVICES, YoY %



# Neither Have Small Business Prices

SMALL BUSINESS: HIGHER PRICES

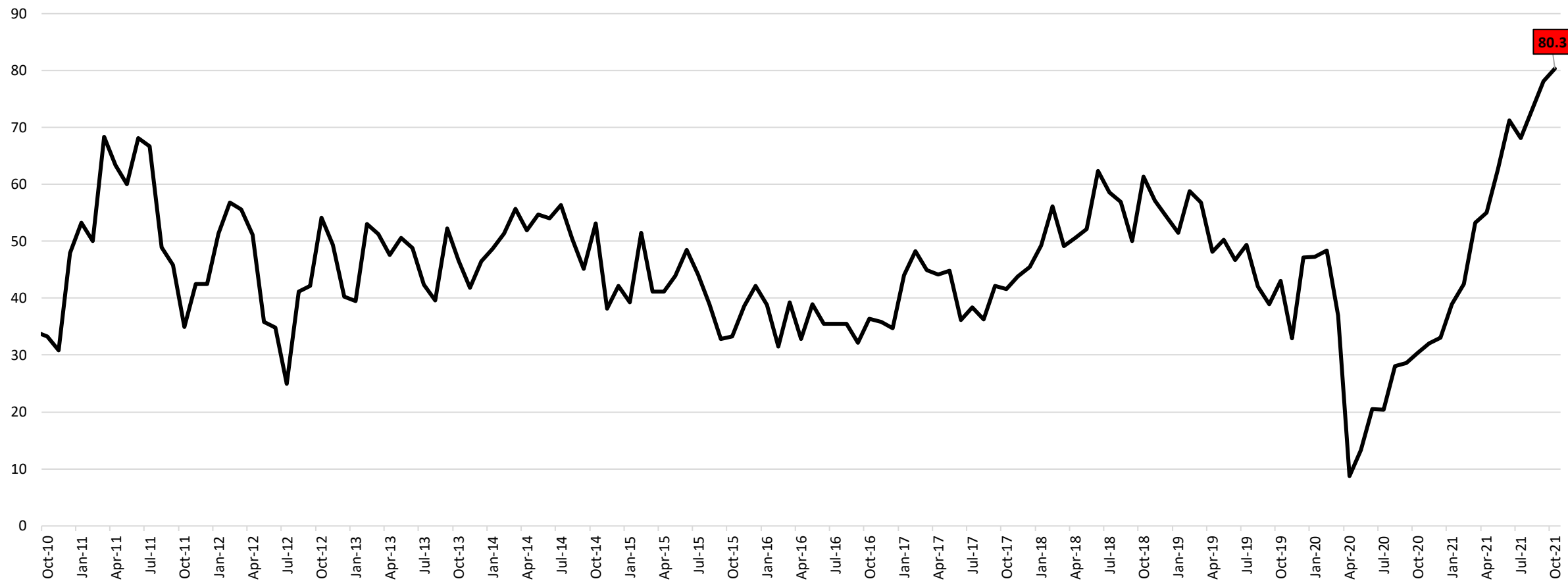


# OCTOBER SERVICES PRICES? ... SORRY, **NO PEAK**

The Service Sector data for October showed that the peak in Services prices remains a search in progress.

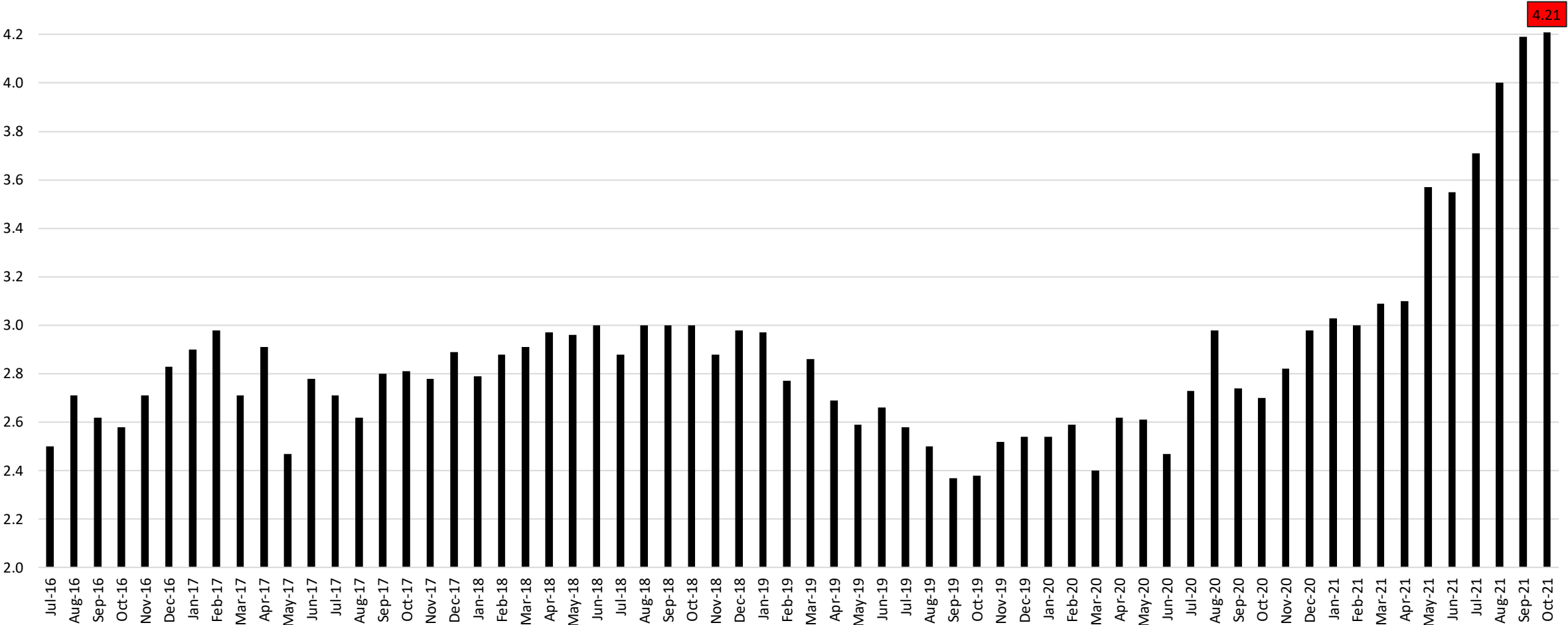
NY FED: SERVICES PRICES PAID

— FRBNY: SERVICES PRICES PAID



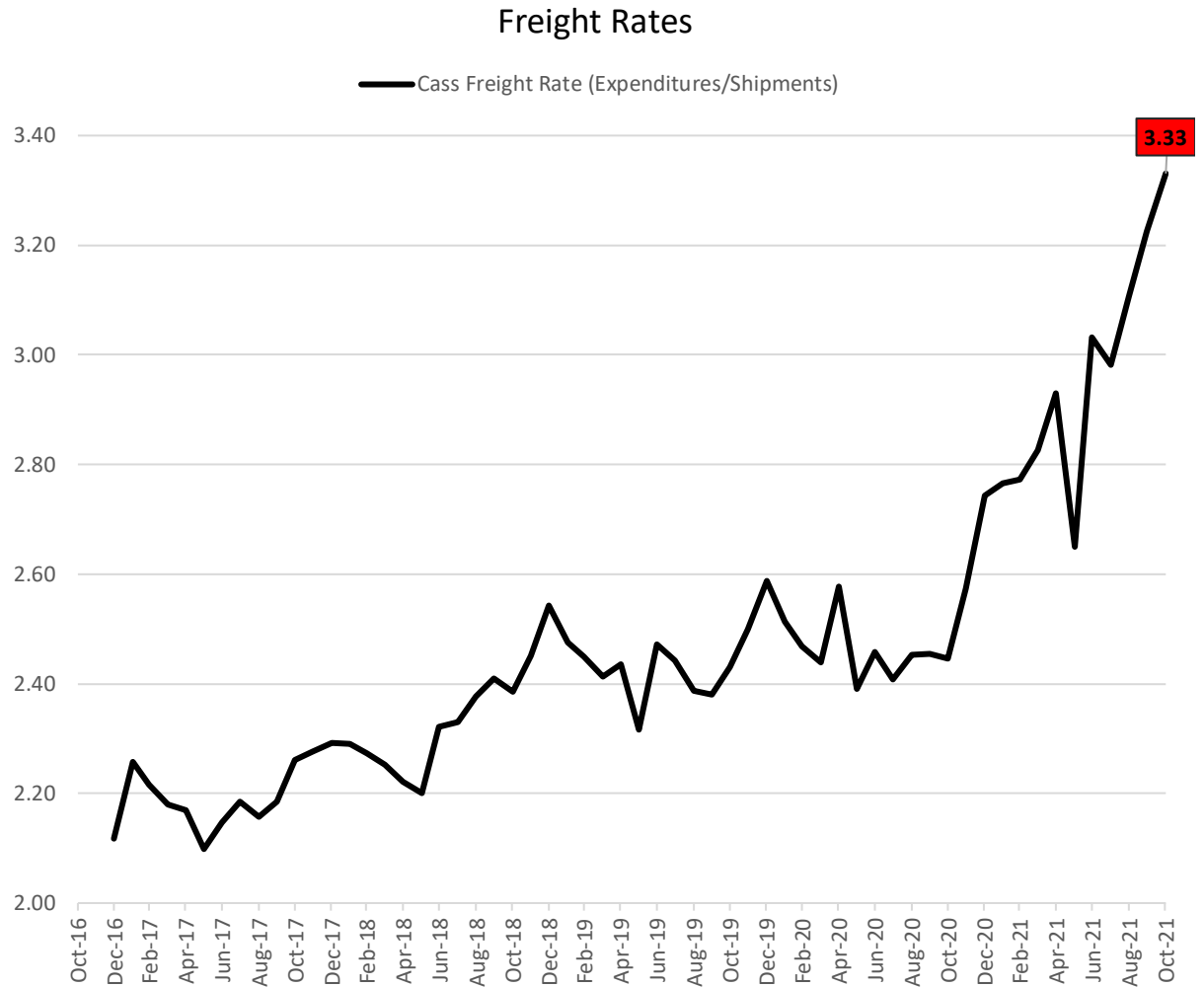
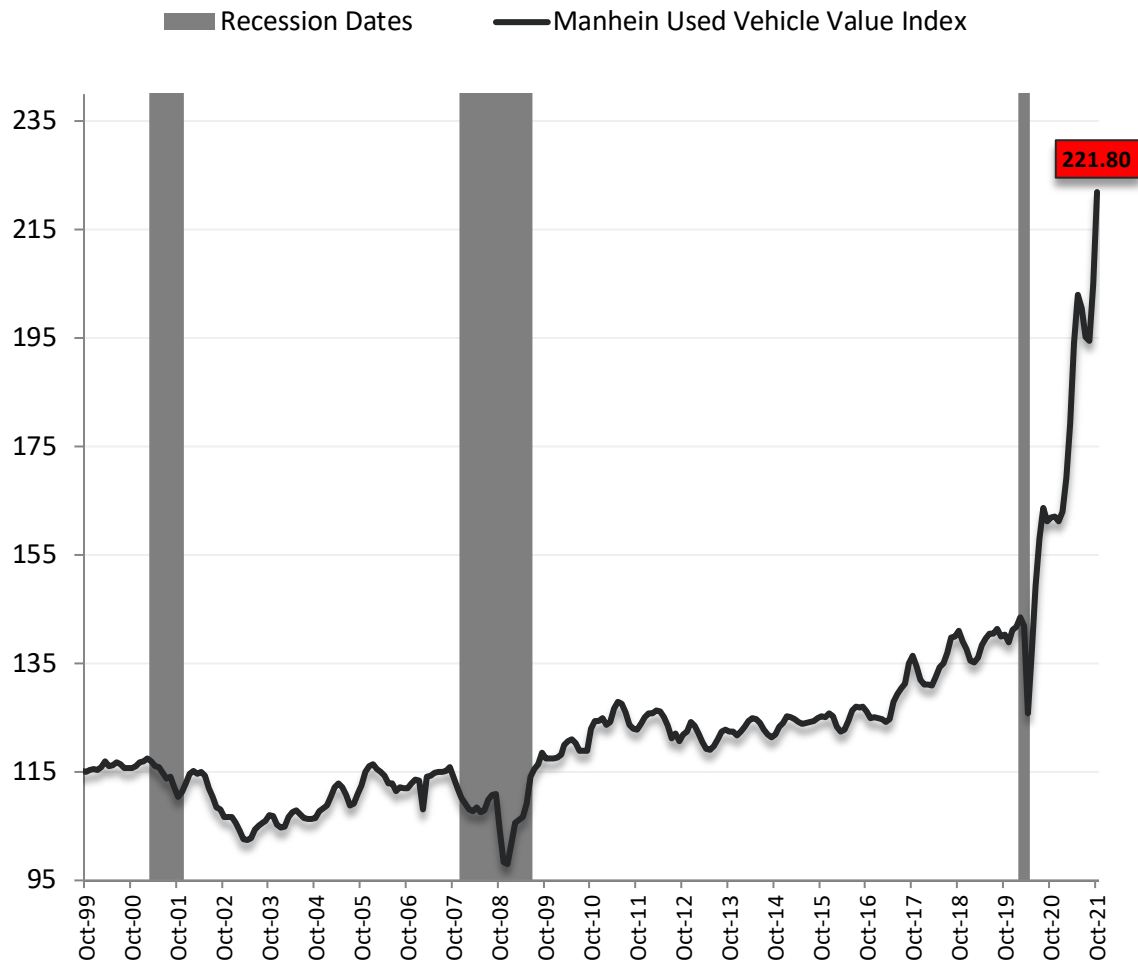
# Non “Transitory” Inflation Expectations ... **No Peak** Here

Inflation Expectations: 3 Years Ahead



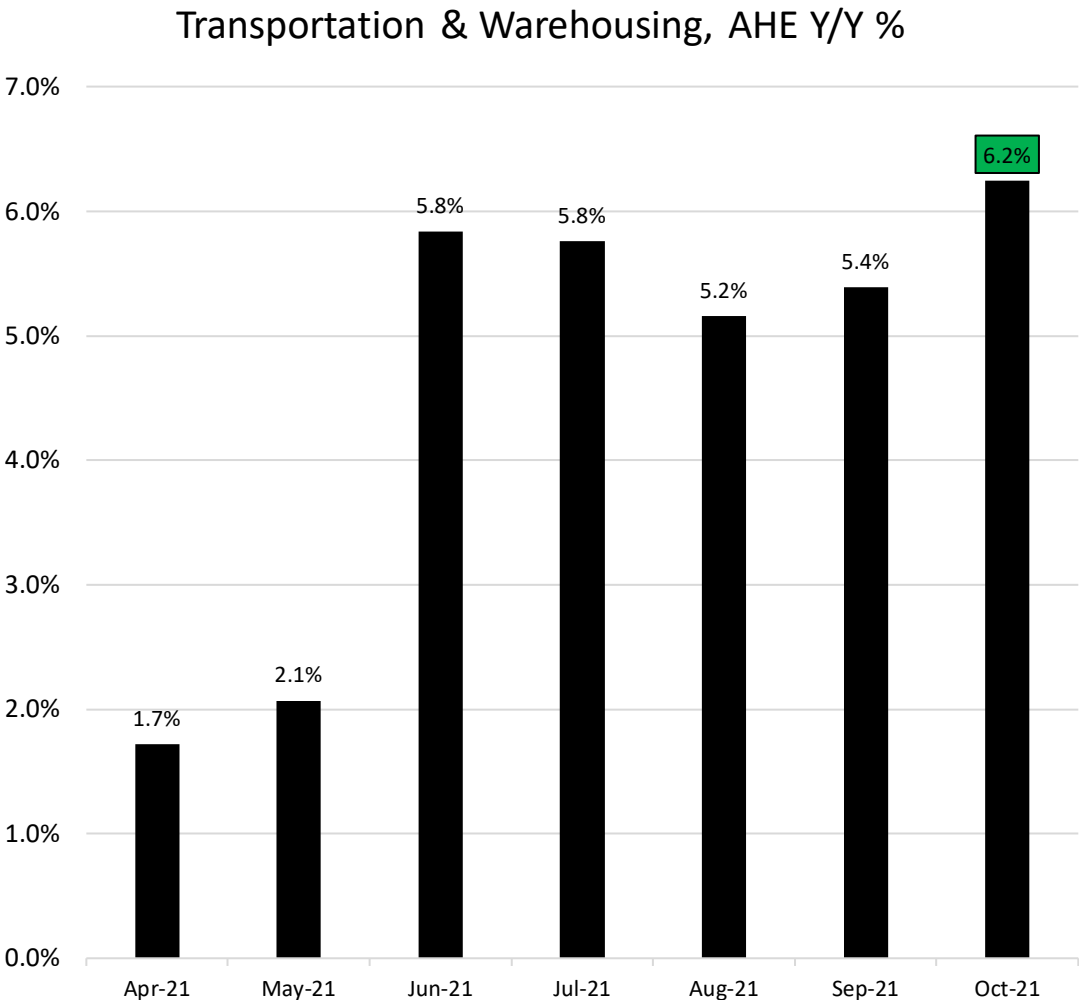
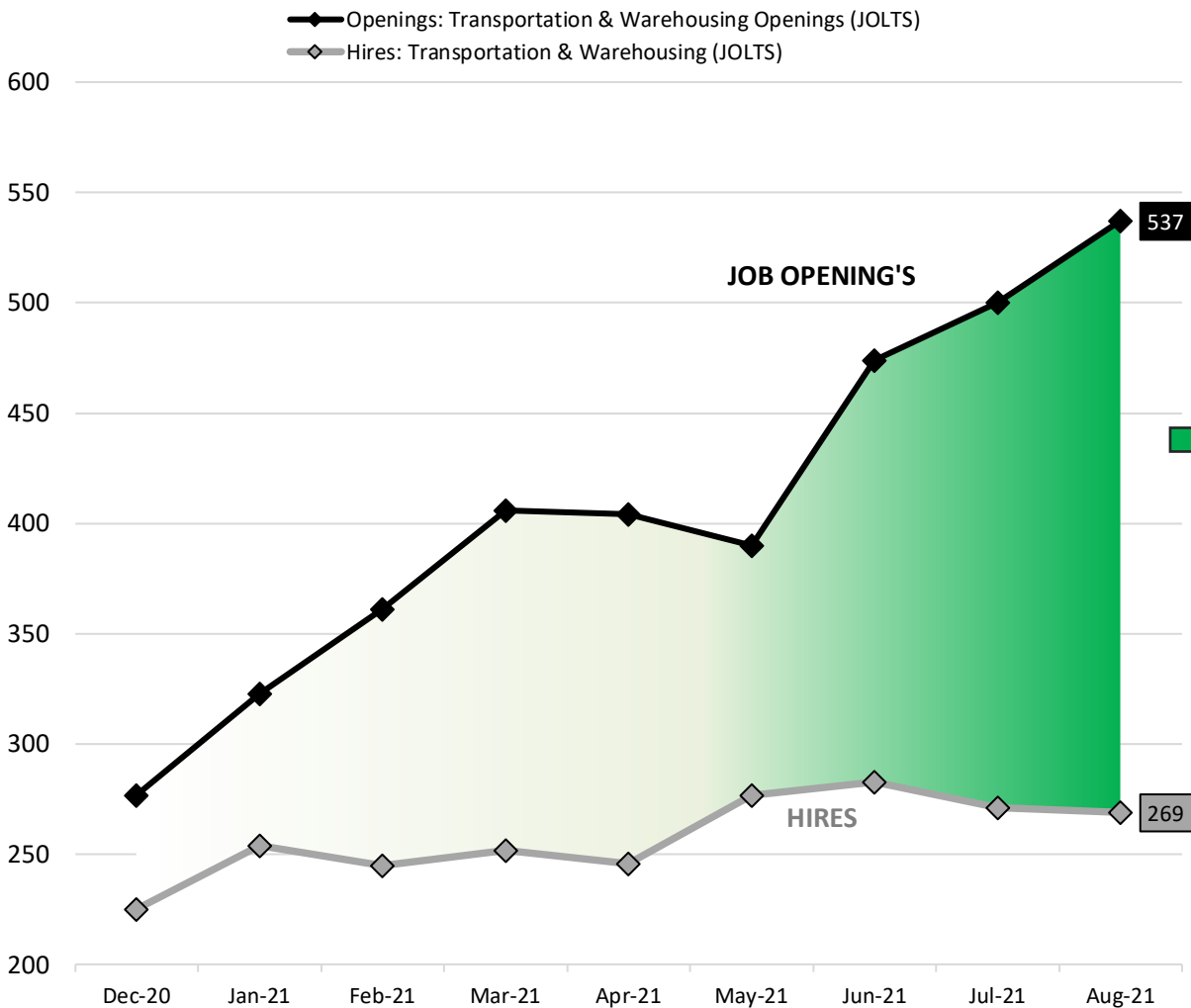
# No Peak in Transport Inflation... Freight (Costs) = Frightening

Freight Costs have definitely not been passed through to consumers, yet. Container rates may have peaked after more than 500 straight days of increase while domestic freight rates continue to accelerate. Direct Transport costs (used vehicle prices) remain in full nosebleed formation.



# Transport Pressure Is Leaking Through to Labor Prices

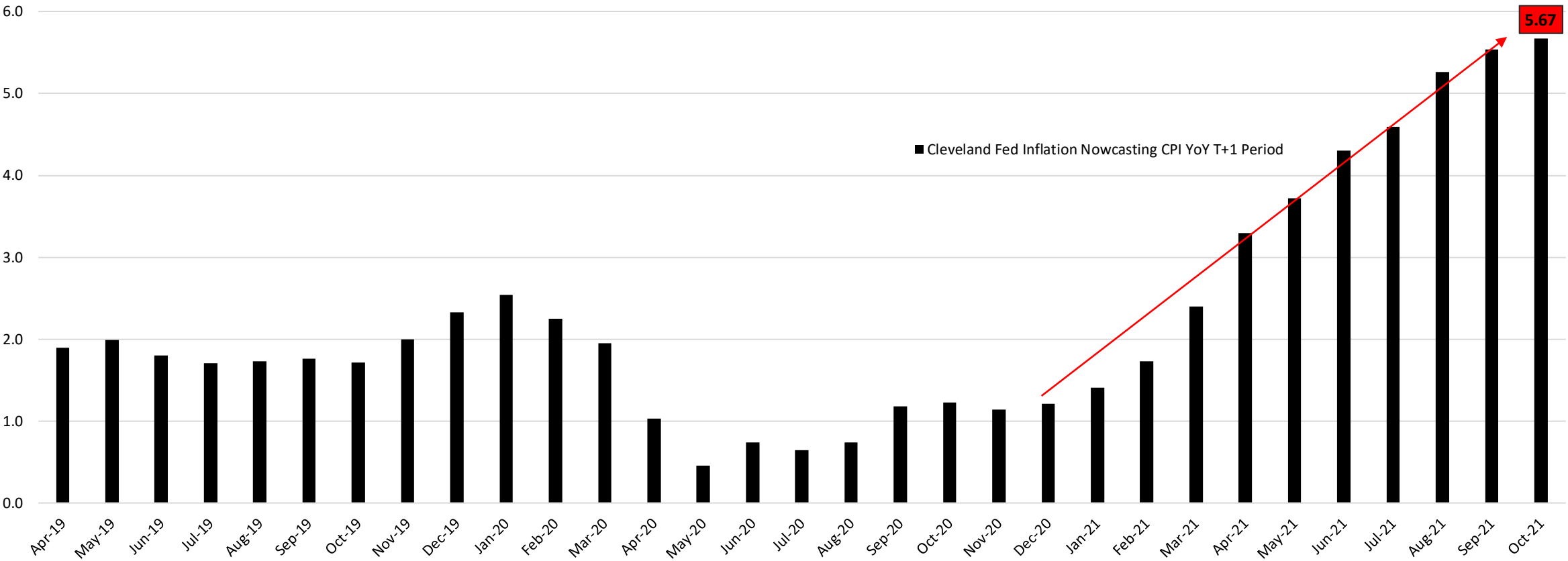
Container Availability/Rates are an acute cost stress. A principle contributing factor is a shortage of truck drivers/transport/warehouse labor to move and store that inventory. Transportation & Warehousing Sector Wage Growth has followed the growing spread between Openings and actual Hires.





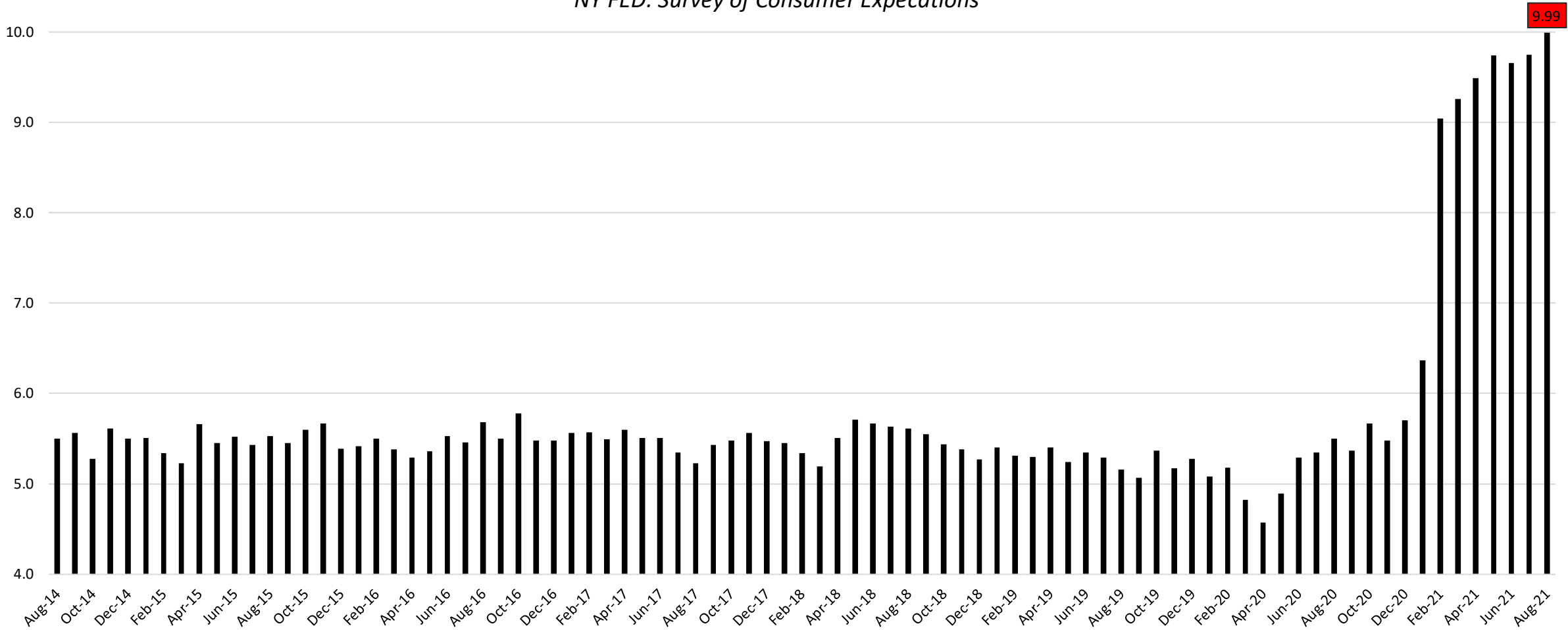
# Surely The Fed Can Finagle A Peak RoC Projection... Nope

FED CPI NOWCAST  
*Cleveland FED: Forecast for Period T+1*



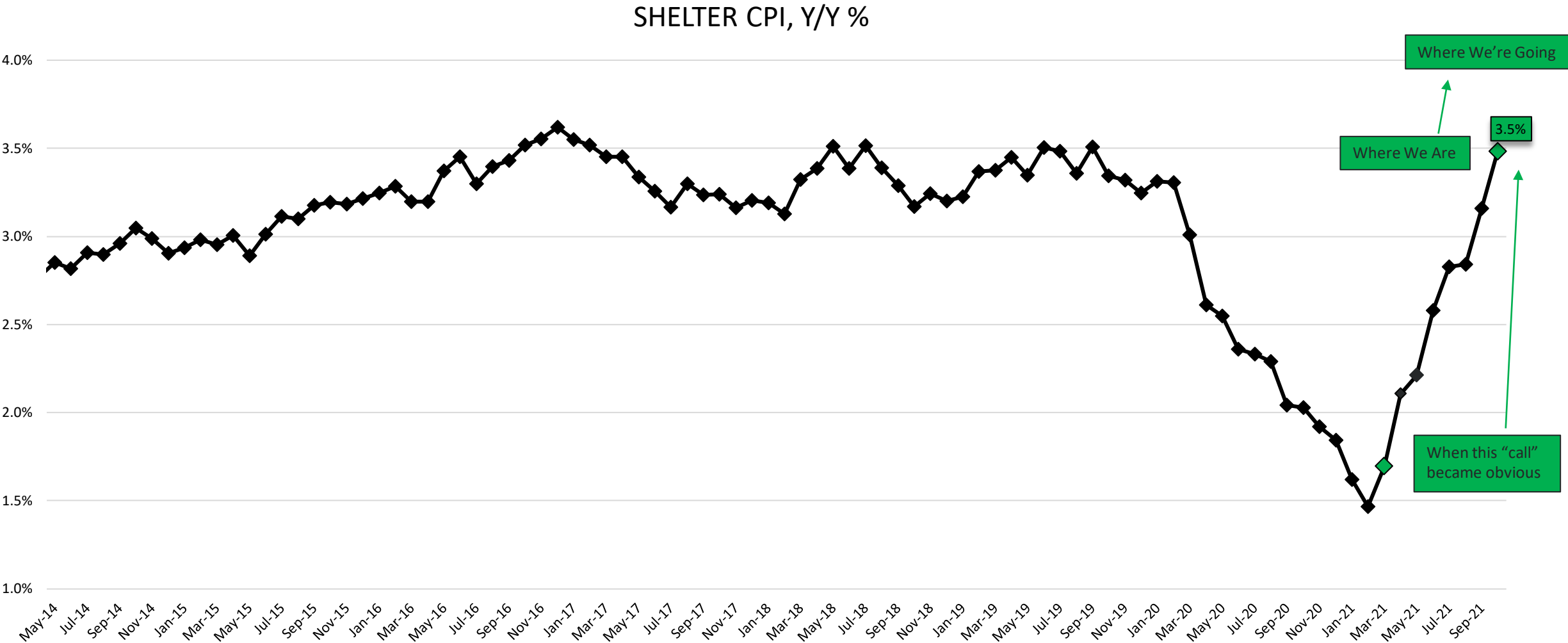
# RENT INFLATION? ... No Peak For You!

Rent Price Expectation 1 Year Ahead  
*NY FED: Survey of Consumer Expecations*



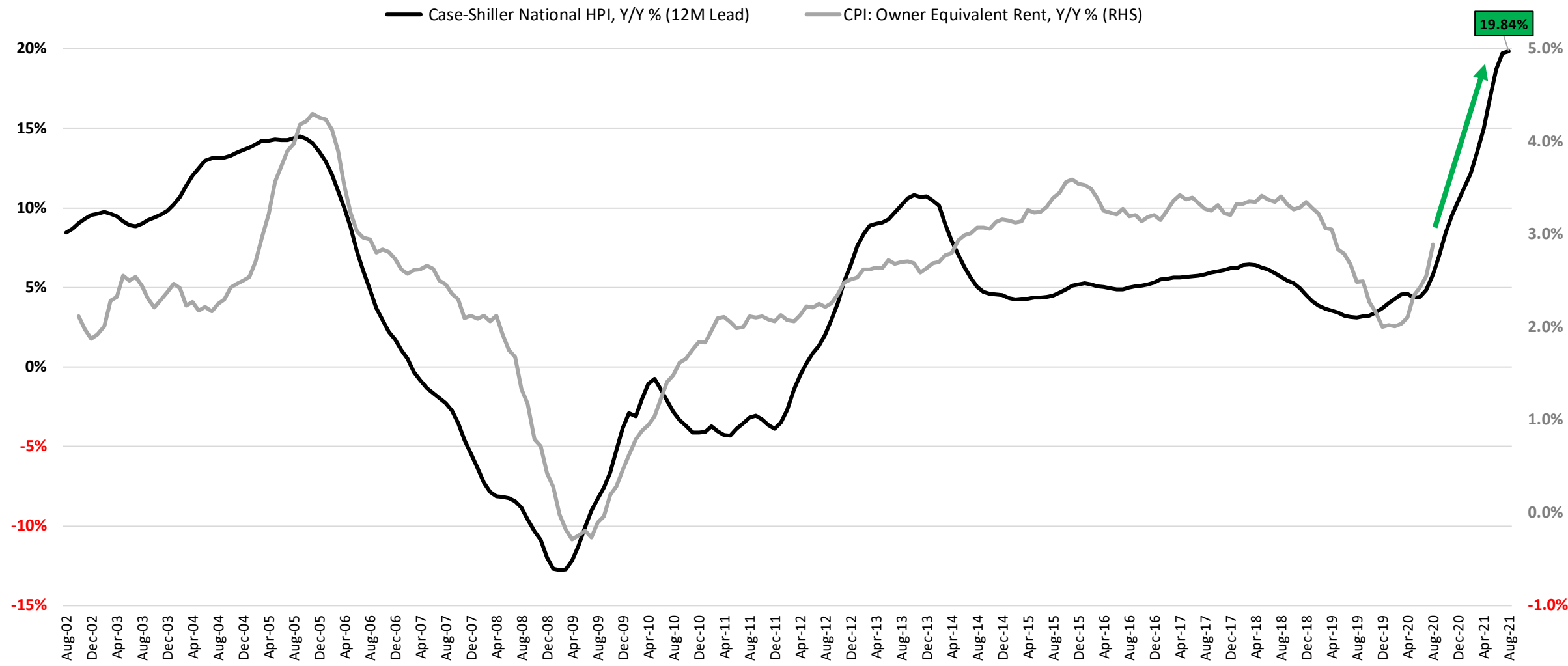
# We're Just Going To Keep Showing This Chart

Deurbanization and eviction moratoria drove shelter inflation to multi-decade lows in 1Q. The trend has now inflected and will continue to accelerate as moratoria end, tenant turnover accelerates and pricing plays catchup to HPI.



# AND THIS ONE

Home Price Growth has breached new all-time RoC highs in recent months and CPI Owner's Equivalent rent will play catch up over the next year+



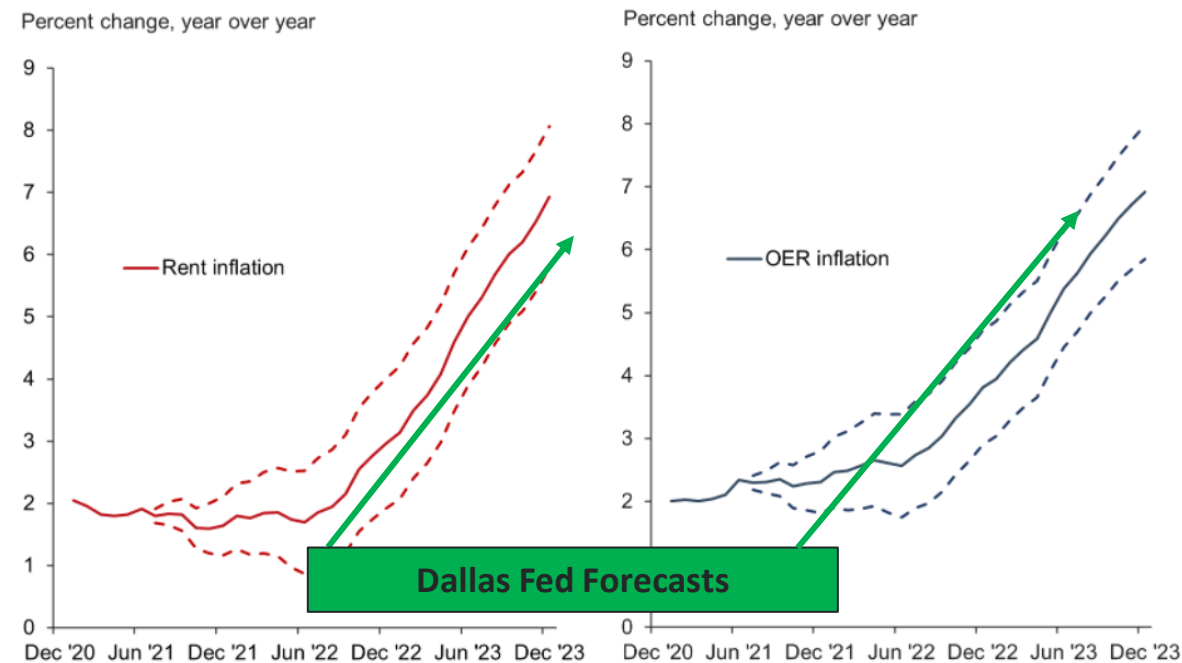
# Even The Fed Now Concedes How Obvious This Is

Below is a July research paper from the Dallas Fed which effectively argues that rent/OER inflation will follow home price growth on a lag. How you get meaningful disinflation at the Headline level when a third of the calculation is accelerating to high single digits wasn't discussed.

## Forecasting Rent, OER Inflation

The high correlations between current house price growth and future inflation of rent and OER suggest that house price growth is useful for forecasting the inflation rates of these housing components. This motivates the use of a vector autoregressive model that captures the dynamic relationships between house price growth, rent inflation and OER inflation. Chart 4 shows forecasts of the 12-month PCE inflation rates for rent and OER through December 2023.

**Chart 4**  
**Inflation Forecasts for Rent, OER Indicate Steadily Rising Rates**



NOTES: Forecasts are based on authors' estimation of a vector autoregressive model. Solid lines show actual inflation rates (before July 2021) and point forecasts (from July 2021 onward); dashed lines indicate 90 percent prediction intervals.  
SOURCES: Authors' estimates based on data from the Bureau of Economic Analysis and Zillow.

# It's Easy to Forecast ... When It's Already Happening

Below is the Rental Rate Tracker from our REIT Team. The table below reflects actual transacted rates on same store units

## Apartment Rental Rate Growth Tracker - Key REIT Submarkets

Y/Y Rate-of-Change (ROC):

	2020												2021										
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	
Birmingham, AL	2.3%	2.1%	1.7%	0.7%	0.3%	-0.4%	1.0%	1.7%	2.8%	2.2%	2.6%	2.7%	2.9%	3.1%	3.7%	5.4%	7.7%	9.2%	10.3%	10.7%	10.5%	9.8%	Birmingham, AL
Phoenix, AZ	8.2%	8.2%	7.8%	5.8%	3.7%	2.2%	2.3%	2.9%	3.8%	4.1%	4.6%	4.7%	4.7%	5.2%	6.5%	9.5%	13.1%	17.2%	20.8%	23.9%	26.4%	27.4%	Phoenix, AZ
Anaheim, CA	1.6%	1.5%	1.9%	0.4%	-	-0.6%	0.1%	0.4%	1.0%	1.8%	2.3%	2.8%	2.1%	1.5%	1.3%	2.6%	4.7%	7.1%	9.7%	12.6%	14.7%	15.4%	Anaheim, CA
Los Angeles, CA	0.9%	0.9%	0.6%	-0.7%	-2.5%	-4.3%	-5.3%	-6.5%	-7.2%	-8.0%	-8.2%	-8.7%	-8.5%	-8.4%	-7.6%	-5.7%	-3.2%	-0.6%	1.9%	5.2%	8.2%	10.4%	Los Angeles, CA
Oakland, CA	-1.5%	-1.2%	-3.3%	-3.4%	-4.1%	-2.9%	-5.7%	-7.4%	-9.5%	-9.6%	-9.9%	-11.2%	-12.5%	-14.0%	-12.5%	-13.4%	-12.7%	-13.2%	-9.7%	-6.3%	-3.2%	-2.0%	Oakland, CA
San Diego, CA	1.7%	2.3%	2.8%	1.7%	-0.3%	-2.2%	-2.7%	-2.4%	-1.4%	-0.4%	0.1%	0.6%	0.8%	1.1%	1.0%	2.7%	5.7%	9.3%	12.0%	14.6%	16.7%	17.9%	San Diego, CA
San Francisco, CA	-1.6%	-1.6%	-2.4%	-3.4%	-5.3%	-6.8%	-10.1%	-13.8%	-18.4%	-21.6%	-23.9%	-25.1%	-25.1%	-24.4%	-22.3%	-20.4%	-16.7%	-13.6%	-7.9%	-1.3%	5.7%	9.7%	San Francisco, CA
San Jose, CA	1.1%	1.4%	1.9%	0.4%	-1.7%	-4.9%	-7.1%	-8.8%	-9.9%	-10.6%	-11.4%	-11.6%	-11.8%	-12.3%	-12.7%	-11.5%	-9.2%	-5.7%	-1.8%	2.3%	6.3%	8.1%	San Jose, CA
Denver, CO	1.0%	1.4%	1.7%	0.4%	-1.6%	-3.5%	-4.5%	-4.6%	-4.6%	-4.3%	-4.4%	-4.7%	-4.8%	-4.7%	-4.0%	-1.9%	1.5%	5.8%	9.5%	12.5%	15.2%	16.1%	Denver, CO
Washington, DC	1.3%	1.6%	2.0%	0.2%	-1.3%	-3.2%	-3.5%	-5.8%	-8.1%	-9.9%	-11.4%	-12.0%	-11.8%	-11.7%	-11.3%	-9.7%	-7.9%	-4.8%	-2.4%	1.9%	5.8%	8.4%	Washington, DC
Fort Lauderdale, FL	-	0.8%	1.9%	1.3%	0.1%	-0.7%	-1.3%	-1.3%	-2.1%	-2.2%	-1.3%	-0.6%	0.4%	-0.2%	0.2%	1.7%	5.4%	9.0%	13.0%	15.9%	19.3%	21.4%	Fort Lauderdale, FL
Jacksonville, FL	1.7%	2.2%	2.4%	1.5%	0.5%	-	0.4%	1.3%	1.9%	2.6%	3.2%	3.8%	4.3%	4.4%	5.0%	7.5%	11.1%	15.0%	18.9%	22.2%	25.1%	26.1%	Jacksonville, FL
Miami, FL	0.2%	0.7%	0.6%	-0.2%	-1.3%	-2.3%	-2.7%	-2.9%	-3.2%	-3.7%	-3.9%	-3.5%	-2.2%	-1.4%	0.3%	2.8%	6.7%	11.0%	15.4%	20.0%	24.2%	27.5%	Miami, FL
Orlando, FL	2.4%	2.3%	1.5%	-0.7%	-3.1%	-5.0%	-5.3%	-5.4%	-5.4%	-5.3%	-4.8%	-5.0%	-4.3%	-3.3%	-1.4%	1.7%	6.4%	11.7%	16.2%	20.8%	25.3%	28.1%	Orlando, FL
Tampa, FL	2.8%	3.4%	3.3%	1.9%	0.3%	-0.6%	-0.5%	0.2%	1.1%	1.8%	2.8%	3.1%	3.7%	4.2%	5.9%	9.2%	14.1%	19.4%	24.7%	30.0%	33.6%	34.5%	Tampa, FL
Atlanta, GA	-0.3%	-0.2%	-0.4%	-1.1%	-2.0%	-2.6%	-2.6%	-2.7%	-2.5%	-2.0%	-1.1%	-0.4%	0.2%	0.3%	0.9%	2.9%	6.4%	9.7%	12.5%	15.4%	17.9%	19.0%	Atlanta, GA
Baltimore, MD	-0.4%	0.3%	0.4%	-0.7%	-2.1%	-2.2%	-1.9%	-1.4%	-1.1%	-1.5%	-1.4%	-1.3%	-0.7%	-0.9%	-0.2%	1.9%	4.9%	7.5%	9.9%	12.4%	14.8%	16.7%	Baltimore, MD
Boston, MA	2.5%	1.1%	1.9%	0.7%	-2.4%	-5.0%	-7.6%	-8.8%	-11.0%	-14.6%	-17.6%	-18.1%	-16.4%	-14.8%	-13.4%	-10.7%	-6.0%	-1.4%	3.8%	7.6%	12.1%	17.4%	Boston, MA
Cambridge, MA	5.1%	4.9%	4.8%	2.1%	-2.3%	-6.6%	-9.2%	-10.3%	-12.3%	-15.8%	-18.1%	-19.2%	-17.3%	-16.1%	-14.7%	-11.5%	-6.9%	-0.6%	5.1%	10.3%	16.0%	20.7%	Cambridge, MA
Kansas City, MO	0.2%	1.5%	2.2%	2.3%	1.1%	0.3%	0.9%	1.4%	1.4%	0.8%	0.3%	0.1%	0.1%	-	0.7%	1.9%	3.5%	4.9%	5.2%	5.2%	6.1%	7.4%	Kansas City, MO
Jersey City, NJ	0.9%	0.7%	1.1%	0.2%	-1.6%	-3.4%	-4.8%	-5.6%	-7.0%	-8.8%	-9.9%	-10.8%	-10.5%	-10.2%	-9.3%	-8.2%	-6.1%	-3.6%	-0.1%	3.5%	8.4%	12.5%	Jersey City, NJ
New York, NY	2.3%	3.2%	3.4%	2.6%	-0.1%	-3.2%	-6.6%	-9.8%	-12.4%	-15.4%	-17.2%	-18.4%	-18.0%	-17.5%	-17.1%	-15.8%	-12.8%	-7.6%	-0.1%	7.3%	12.7%	19.0%	New York, NY
Charlotte, NC	1.4%	1.5%	2.3%	0.8%	-1.1%	-2.3%	-2.3%	-2.1%	-2.4%	-2.1%	-1.5%	-0.7%	-0.4%	-0.1%	0.6%	3.4%	7.3%	10.4%	12.6%	15.5%	18.4%	20.0%	Charlotte, NC
Raleigh, NC	3.4%	3.6%	3.8%	2.6%	0.7%	-0.4%	-0.7%	-0.5%	-0.1%	0.8%	1.2%	1.5%	1.2%	1.2%	1.7%	3.5%	6.9%	10.8%	14.6%	18.5%	22.0%	23.1%	Raleigh, NC
Charleston, SC	2.8%	1.9%	1.2%	1.0%	0.4%	-0.3%	-1.1%	-1.4%	-1.6%	-1.7%	-0.4%	0.6%	1.7%	1.9%	2.1%	2.9%	4.9%	8.1%	11.0%	14.6%	18.1%	20.8%	Charleston, SC
Memphis, TN	2.5%	2.5%	2.8%	1.7%	0.9%	0.4%	1.0%	2.8%	4.5%	6.0%	6.4%	6.7%	6.9%	8.1%	8.4%	10.1%	11.5%	14.4%	16.6%	17.6%	18.2%	17.2%	Memphis, TN
Nashville, TN	3.9%	4.0%	4.5%	3.0%	1.1%	-0.7%	-1.5%	-1.9%	-2.4%	-2.8%	-2.8%	-2.7%	-2.6%	-2.5%	-2.4%	-0.4%	2.7%	6.4%	9.9%	13.0%	16.3%	18.4%	Nashville, TN
Austin, TX	3.6%	3.7%	3.4%	2.0%	-0.1%	-2.3%	-3.4%	-4.2%	-4.8%	-5.2%	-5.3%	-5.0%	-4.4%	-3.3%	-1.8%	1.0%	5.3%	10.0%	14.5%	18.6%	22.1%	24.2%	Austin, TX
Dallas, TX	1.8%	1.7%	1.6%	0.9%	-	-1.2%	-1.7%	-2.1%	-2.1%	-2.2%	-2.0%	-1.9%	-1.6%	-1.2%	-0.5%	1.0%	3.2%	5.8%	8.4%	11.3%	13.0%	14.3%	Dallas, TX
Fort Worth, TX	-0.6%	-0.1%	0.1%	-0.5%	-1.0%	-2.1%	-2.0%	-2.0%	-1.4%	-0.7%	0.1%	0.9%	1.4%	1.3%	1.8%	2.9%	5.0%	7.2%	8.7%	10.2%	11.3%	12.6%	Fort Worth, TX
Houston, TX	0.2%	0.5%	0.5%	-0.1%	-1.2%	-2.0%	-2.6%	-2.7%	-2.5%	-2.5%	-2.5%	-2.5%	-2.5%	-2.6%	-2.1%	-1.0%	1.2%	3.6%	5.7%	7.4%	8.9%	9.5%	Houston, TX
San Antonio, TX	1.1%	0.9%	0.7%	-0.2%	-1.1%	-1.8%	-1.4%	-1.3%	-0.9%	-1.3%	-0.8%	-0.7%	-	0.4%	1.3%	3.0%	4.9%	7.0%	8.5%	10.7%	12.5%	13.9%	San Antonio, TX
Seattle, WA	5.2%	5.9%	5.6%	4.3%	1.9%	-1.0%	-3.6%	-5.8%	-8.6%	-11.6%	-15.0%	-17.4%	-18.4%	-18.2%	-17.0%	-14.7%	-10.7%	-5.8%	-0.4%	4.8%	10.6%	15.4%	Seattle, WA
Spokane, WA	3.6%	4.3%	5.0%	5.1%	4.3%	3.8%	3.8%	4.5%	4.6%	4.9%	5.3%	7.2%	7.9%	8.6%	9.1%	12.6%	16.5%	23.5%	27.5%	31.1%	30.4%	29.8%	Spokane, WA

Source: Apartmentlist.com, Hedgeye

# And Easy to See → STICKY HIGH 100<sup>th</sup> Percentile

Sept-Nov is well past trough comps and still trending at/near the 100<sup>th</sup> Percentile on a 5Y basis.

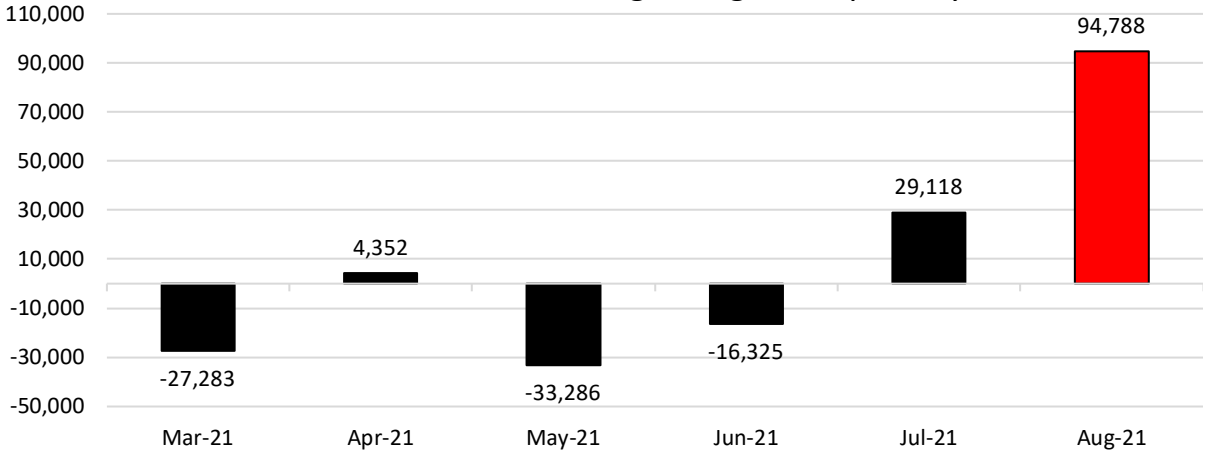
INFLATION INDICATOR	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21
PCE Y/Y %	1.65	1.90	1.87	1.34	0.41	0.51	0.91	1.04	1.30	1.38	1.17	1.11	1.29	1.41	1.63	2.45	3.58	3.97	4.03	4.14	4.22	4.42	5.05	-	-
PCE M/M %	0.20	0.19	0.06	-0.24	-0.53	0.16	0.48	0.27	0.31	0.16	0.03	0.01	0.38	0.31	0.27	0.57	0.57	0.53	0.54	0.38	0.38	0.35	0.63	-	-
Core PCE Y/Y %	1.64	1.78	1.91	1.70	0.91	1.00	1.13	1.30	1.50	1.57	1.42	1.38	1.48	1.51	1.49	1.97	3.08	3.46	3.59	3.58	3.58	3.69	4.12	-	-
Core PCE M/M %	0.22	0.19	0.15	-0.06	-0.46	0.21	0.36	0.30	0.32	0.14	0.01	0.00	0.32	0.22	0.13	0.42	0.62	0.57	0.48	0.30	0.31	0.25	0.43	-	-
CPI Y/Y % (NSA)	2.29	2.49	2.33	1.54	0.33	0.12	0.65	0.99	1.31	1.37	1.18	1.17	1.36	1.40	1.68	2.62	4.16	4.99	5.39	5.37	5.25	5.39	6.22	-	-
CPI M/M % (SA)	0.08	0.19	0.05	-0.32	-0.70	-0.10	0.52	0.51	0.35	0.25	0.12	0.18	0.24	0.26	0.35	0.62	0.77	0.64	0.90	0.47	0.27	0.41	0.94	-	-
Core CPI Y/Y % (NSA)	2.26	2.26	2.36	2.09	1.43	1.22	1.19	1.57	1.74	1.71	1.61	1.65	1.62	1.41	1.28	1.65	2.96	3.80	4.47	4.27	4.00	4.03	4.56	-	-
Core CPI M/M % (SA)	0.08	0.25	0.21	-0.02	-0.37	-0.07	0.24	0.54	0.35	0.19	0.07	0.17	0.04	0.03	0.10	0.34	0.92	0.74	0.88	0.33	0.10	0.24	0.60	-	-
PPI Y/Y % (NSA)	1.37	1.97	1.11	0.34	-1.52	-1.10	-0.68	-0.25	-0.25	0.34	0.59	0.85	0.84	1.60	2.96	4.15	6.51	6.99	7.56	7.77	8.27	8.59	8.62	-	-
PPI M/M % (SA)	0.25	0.34	-0.50	-0.51	-1.10	0.43	0.34	0.51	0.17	0.25	0.59	0.00	0.34	1.17	0.66	0.82	0.98	0.89	0.88	0.71	0.71	0.55	0.62	-	-
Core PPI Y/Y % (NSA)	1.29	1.63	1.20	1.11	0.34	0.25	0.34	0.59	0.51	1.02	1.18	1.53	1.36	1.94	2.62	3.04	4.57	5.34	5.84	6.23	6.73	6.91	6.76	-	-
Core PPI M/M % (SA)	0.25	0.34	-0.34	0.08	-0.34	0.00	0.25	0.42	0.17	0.17	0.50	-0.08	0.17	0.92	0.33	0.49	1.15	0.73	0.72	0.80	0.63	0.24	0.39	-	-
Import Prices Y/Y % (NSA)	0.48	0.48	-1.27	-4.19	-6.78	-6.30	-3.98	-2.79	-1.36	-1.28	-0.96	-1.04	-0.32	1.04	2.98	7.09	10.91	11.60	11.28	10.24	9.01	9.32	10.71	-	-
Import Prices M/M % (NSA)	0.24	0.16	-0.72	-2.41	-2.56	0.68	1.34	1.24	0.90	0.16	-0.08	0.08	0.97	1.52	1.19	1.48	0.92	1.30	1.05	0.30	-0.22	0.45	1.19	-	-
Import Prices Ex-Petroleum, Y/Y %	-1.50	-0.80	-0.80	-0.97	-1.06	-0.71	-0.09	0.18	1.07	1.70	1.70	1.61	1.88	2.68	3.03	4.10	5.47	6.45	6.88	6.78	5.93	5.45	6.07	-	-
Case-Shiller National HPI, Y/Y % (NSA)	3.70	4.01	4.29	4.57	4.61	4.38	4.40	4.85	5.84	7.05	8.43	9.53	10.43	11.29	12.16	13.44	14.97	16.90	18.68	19.69	19.79	19.51	-	-	
FHFA HPI Y/Y % (NSA)	5.83	5.93	6.40	6.30	5.94	5.28	6.16	6.93	8.40	9.44	10.56	11.24	11.75	12.31	12.64	14.19	16.02	18.27	19.00	19.29	18.52	17.73	-	-	
Daily National Avg Gasoline Price	2.57	2.55	2.45	2.23	1.84	1.89	2.10	2.19	2.19	2.20	2.17	2.12	2.20	2.36	2.56	2.84	2.88	3.01	3.07	3.15	3.17	3.19	3.32	3.41	3.38
Manheim Used Car Prices, Y/Y	2.54	4.58	6.14	4.34	-9.10	-1.86	6.26	12.46	15.85	15.23	15.40	16.63	14.17	15.11	17.91	26.29	54.21	48.18	34.20	24.60	18.80	27.00	38.20	44.90	-
Atlanta Fed Sticky CPI Y/Y %	2.72	2.78	2.78	2.63	2.26	2.15	2.15	2.42	2.36	2.21	2.01	1.97	1.89	1.71	1.70	1.85	2.40	2.72	2.73	2.54	2.57	2.84	3.23	-	-
Atlanta Fed Sticky CPI M/M %	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-
Cyclical Core PCE Inflation	3.03	3.14	3.24	3.11	2.95	3.12	2.93	2.90	2.88	2.87	2.72	2.77	2.95	2.67	2.58	2.64	2.87	3.03	3.36	3.41	3.78	4.06	4.56	-	-
Dallas Fed Trimmed Mean 1Y PCE Inflation Annual Rate	1.94	2.09	2.11	2.04	1.87	1.93	1.94	1.96	1.98	1.99	1.87	1.80	1.81	1.69	1.70	1.74	1.84	1.90	1.94	1.97	2.01	2.28	2.56	-	-
Dallas Fed CPI Comp. Rose faster than 10% Rate	12.79	8.42	11.75	9.36	13.83	10.90	14.05	13.48	13.05	17.01	6.04	8.62	15.01	18.75	15.92	20.05	19.56	18.99	22.19	21.54	19.94	18.21	28.07	-	-
Cleveland Fed Median CPI Y/Y % (NSA)	2.88	2.85	2.84	2.81	2.69	2.74	2.55	2.57	2.55	2.38	2.39	2.23	2.20	2.07	2.07	2.01	2.10	2.11	2.21	2.28	2.42	2.78	3.14	-	-
Cleveland 16% Trimmed-Mean CPI Y/Y %	2.37	2.41	2.42	2.32	2.15	2.25	2.23	2.35	2.40	2.34	2.24	2.14	2.14	1.98	2.04	2.12	2.44	2.62	2.90	2.99	3.17	3.55	4.12	-	-
Cleveland Fed Nowcast CPI Y/Y %	2.23	2.42	2.36	2.03	1.00	0.38	0.48	0.64	0.94	1.29	1.28	1.14	1.24	1.42	1.59	2.20	3.10	4.15	4.72	5.09	5.34	5.39	5.60	6.31	6.60
Cleveland Fed Nowcast Core CPI Y/Y %	2.31	2.23	2.26	2.37	2.19	1.65	1.16	1.02	1.31	1.64	1.72	1.61	1.62	1.57	1.38	1.39	1.90	2.90	3.69	4.13	4.25	4.21	4.26	4.60	4.76
Cleveland Fed Nowcast PCE Y/Y %	1.46	1.60	1.81	1.68	1.37	0.56	0.50	0.79	0.92	1.17	1.48	1.26	1.22	1.13	1.35	1.72	2.25	3.30	3.80	3.98	4.08	4.13	4.45	5.05	5.50
Cleveland Fed Nowcast PCE Y/Y %	1.56	1.56	1.71	1.77	1.78	1.29	0.91	0.90	1.13	1.34	1.66	1.49	1.45	1.25	1.35	1.51	1.76	2.79	3.30	3.57	3.52	3.48	3.74	4.12	4.48
Cleveland Fed Nowcast CPI M/M %	0.25	0.21	0.10	-0.03	-0.43	-0.19	0.37	0.40	0.23	0.17	0.14	0.14	0.29	0.32	0.31	0.39	0.22	0.14	0.30	0.38	0.40	0.38	0.42	0.54	0.57
Cleveland Fed Nowcast Core CPI M/M %	0.14	0.11	0.16	0.15	0.03	-0.14	0.01	0.14	0.31	0.23	0.15	0.08	0.14	0.09	0.07	0.11	0.20	0.48	0.41	0.51	0.27	0.19	0.26	0.37	0.34
NY Fed 1Y Ahead Median Expectation	2.53	2.50	2.54	2.54	2.62	3.00	2.68	2.89	3.00	2.98	2.84	2.96	3.00	3.05	3.09	3.24	3.36	4.00	4.80	4.84	5.18	5.31	5.65	-	-
NY Fed 1Y Ahead Rent Inflation Expectation	5.28	5.08	5.18	4.82	4.57	4.89	5.29	5.35	5.50	5.37	5.67	5.48	5.70	6.37	9.04	9.26	9.49	9.74	9.66	9.75	9.99	9.70	10.05	-	-
Cleveland Fed Expected Inflation 1Y	1.70	1.80	1.65	0.99	-0.05	-0.22	0.51	1.57	1.68	1.58	1.40	1.42	1.65	1.45	1.68	1.51	1.75	1.87	2.06	2.07	2.46	2.68	1.85	2.46	-
Conference Board Consumer Inflation Expectations	4.40	4.40	4.50	4.50	5.40	6.40	6.60	6.10	5.80	5.70	5.60	5.70	6.00	6.10	6.50	6.40	6.20	6.50	6.70	6.60	6.70	6.50	7.10	7.60	-
Umich Median Expected Inflation in 1Y	2.30	2.50	2.40	2.20	2.10	3.20	3.00	3.00	3.10	2.60	2.60	2.80	2.50	3.00	3.30	3.10	3.40	4.60	4.20	4.70	4.60	4.60	4.80	4.90	-
ISM Mfg Prices Paid (NSA)	51.70	53.30	45.90	37.40	35.30	40.80	51.30	53.20	59.50	62.80	65.50	65.40	77.60	82.10	86.00	85.60	89.60	88.00	92.10	85.70	79.40	81.20	85.70	82.40	-
ISM Services Prices Paid (SA)	59.10	55.80	52.30	50.90	56.10	56.40	62.10	57.60	63.40	58.00	62.70	63.90	64.40	64.20	71.80	74.00	76.80	80.60	79.50	82.30	75.40	77.50	82.90	-	-
NFIB Small Business Higher Prices Series	14.00	15.00	11.00	6.00	-18.00	-14.00	-5.00	-2.00	1.00	13.00	15.00	18.00	16.00	17.00	25.00	26.00	36.00	40.00	47.00	46.00	49.00	46.00	53.00	-	-
Empire State Survey Prices Paid	15.20	31.50	25.00	24.50	5.80	4.10	16.90	14.90	16.00	25.20	27.80	29.10	37.10	45.50	57.80	64.40	74.70	83.50	79.80	76.80	76.10	75.70	78.70	83.00	-
Richmond Fed Prices Paid (NSA)	2.70	1.22	3.01	1.65	1.64	1.16	1.05	1.02	1.43	1.76	2.10	2.55	2.48	3.69	4.91	5.90	6.96	9.44	8.57	11.16	11.05	14.01	13.04	12.28	-
Philly Fed Survey Prices Paid (SA)	15.90	22.10	16.40	4.80	-9.30	3.20	11.10	15.70	15.30	25.10	28.50	38.90	27.10	47.40	55.20	72.60	69.10	76.80	80.70	69.70	71.20	67.30	70.30	80.00	-
Dallas Fed Prices Paid	12.90	7.90	11.00	-7.30	-21.20	2.90	13.00	11.10	20.80	27.80	31.30	36.90	50.80	55.00	57.40	66.00	71.40	79.90	80.80	73.50	74.90	80.40	76.30	82.10	-
Kansas Fed Prices Paid	13.00	28.00	14.00	-13.00	-16.00	-6.00	1.00	3.00	17.00	24.00	34.00	32.00	53.00	65.00	68.00	66.00	73.00	86.00	79.00	78.00	80.00	80.00	87.00	77.00	-
Empire State Survey Prices Received	10.10	17.10	21.20	15.10	5.20	4.10	8.10	5.20	8.70	11.50	11.90	15.90	13.60	22.80	26.00	27.50	37.70	39.30	36.80	41.40	47.80	50.40	46.30	51.70	-
Richmond Fed Prices Received (NSA)	2.99	1.26	3.95	1.42	1.03	1.11	1.06	0.29	0.90	0.94	0.98	1.22	2.03	2.23	3.15	3.66	4.84	5.26	4.89	6.65	8.82	9.09	9.30	7.57	-
Philly Fed Survey Prices Received (SA)	11.00	14.70	17.10	6.80	-10.60	-3.10	11.00	11.50	12.40	18.40	14.00	25.40	18.00	36.30	18.20	30.20	34.50	41.00	49.70	46.80	53.90	52.90	51.10	62.90	-
Dallas Fed Prices Received	0.00	-2.40	-0.30	-9.60	-24.50	-18.80	-3.90	-0.80	1.60	5.70	7.50	6.20	19.00	13.90	23.00	32.20	39.10	38.40	42.80	40.90	38.10	44.00	49.80	42.20	-
Kansas Fed Prices Received	-2.00	-3.00	9.00	-6.00	-14.00	-9.00	7.00	6.00	4.00	12.00	4.00	7.00	9.00	19											



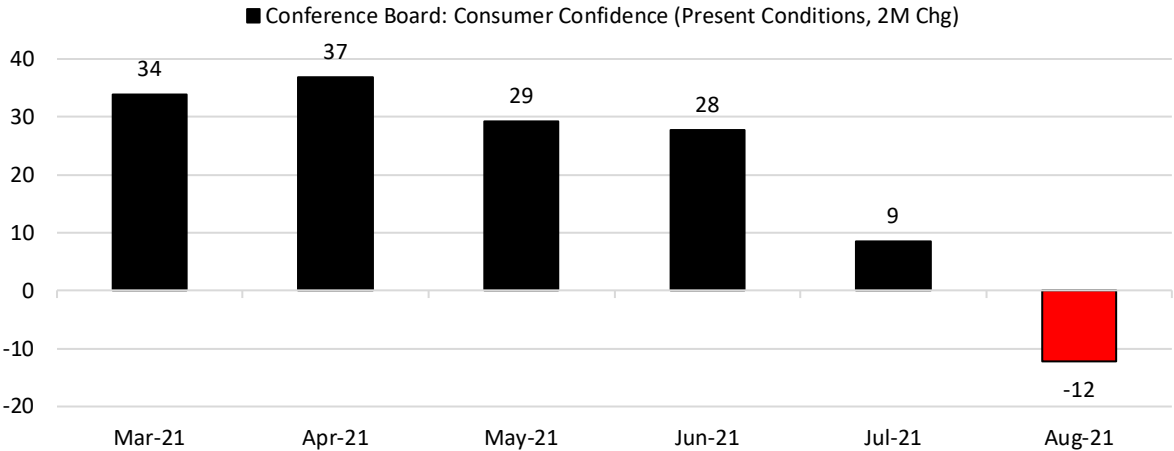
# GROWTH: DELTA Dented Macro Momentum in August

COVID ↑ → Consumer Confidence ↓ → Services Activity ↓ → Service Sector Employment ↓

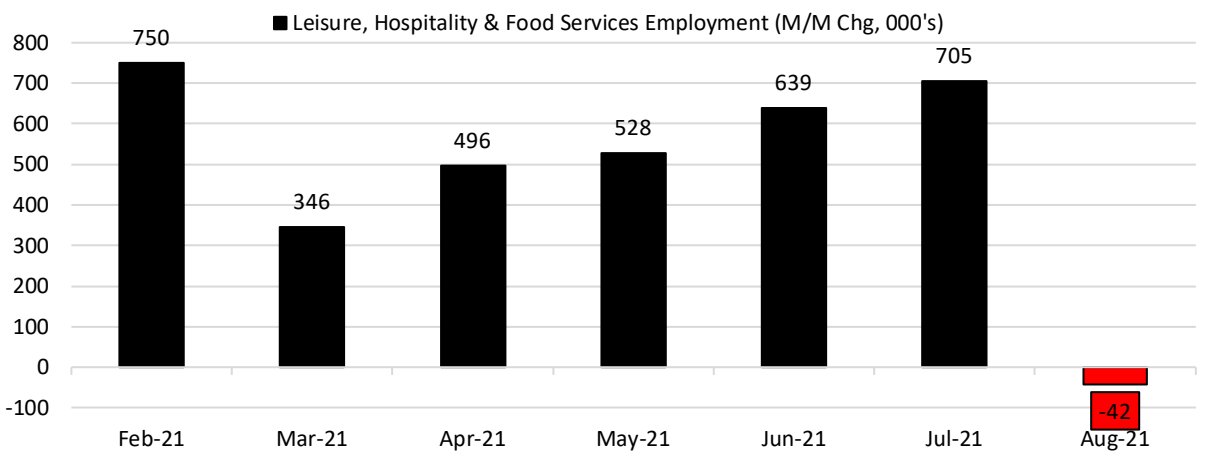
U.S. Covid Cases: M/M Chg in Avg Cases per Day



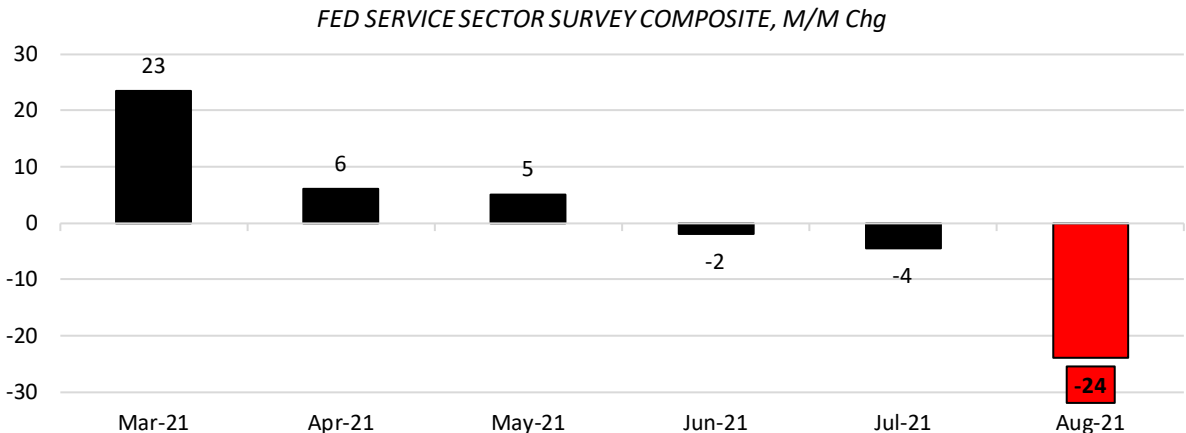
Consumer Confidence: Present Conditions



SERVICE SECTOR EMPLOYMENT

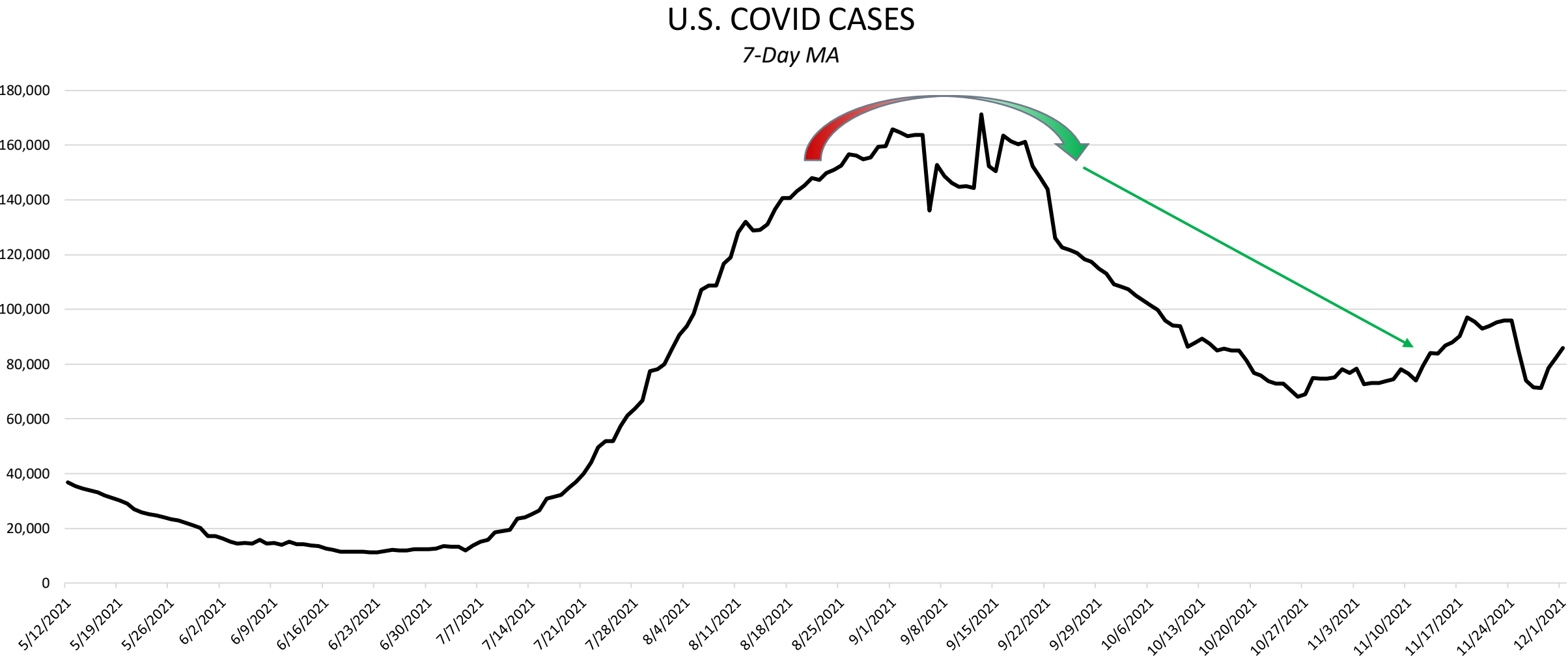


SERVICES ACTIVITY



# Finally, A Peak (in Delta)!

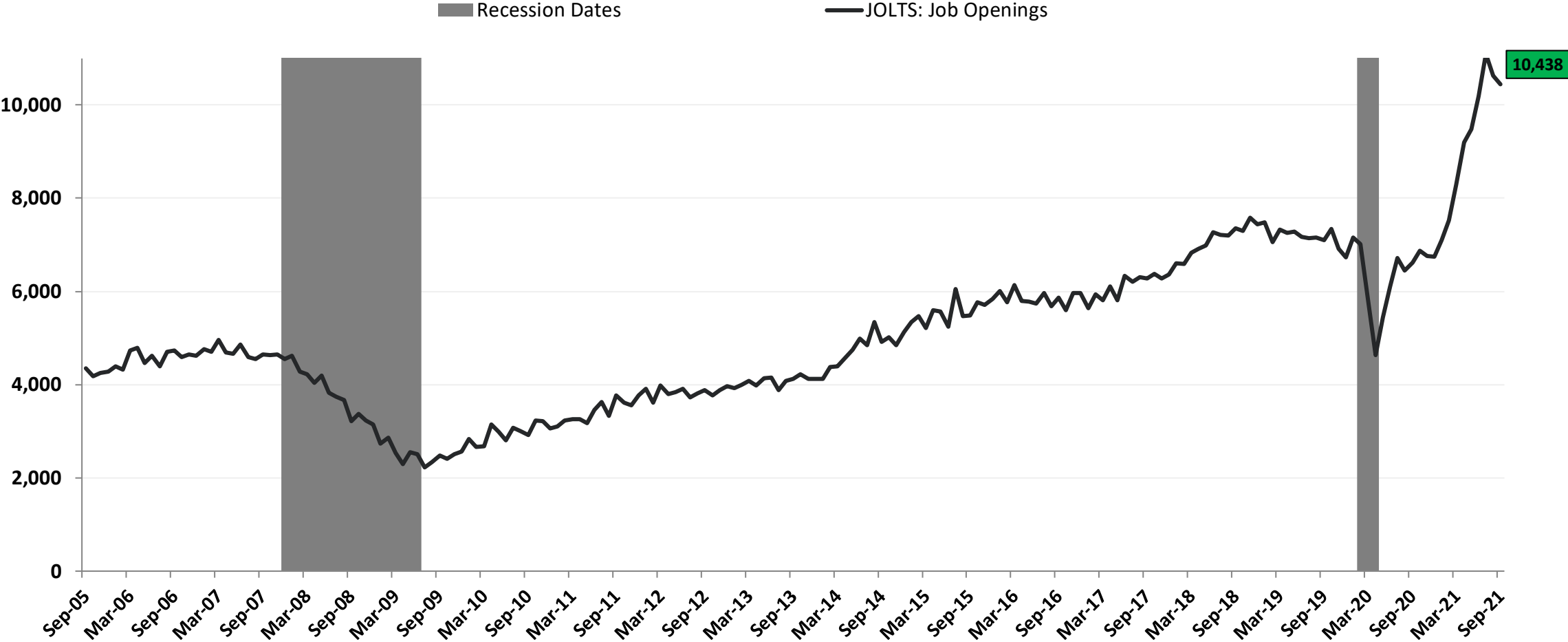
The latest Covid wave peaked in late August/early September.



# Labor Demand Is Clearly Not The Problem

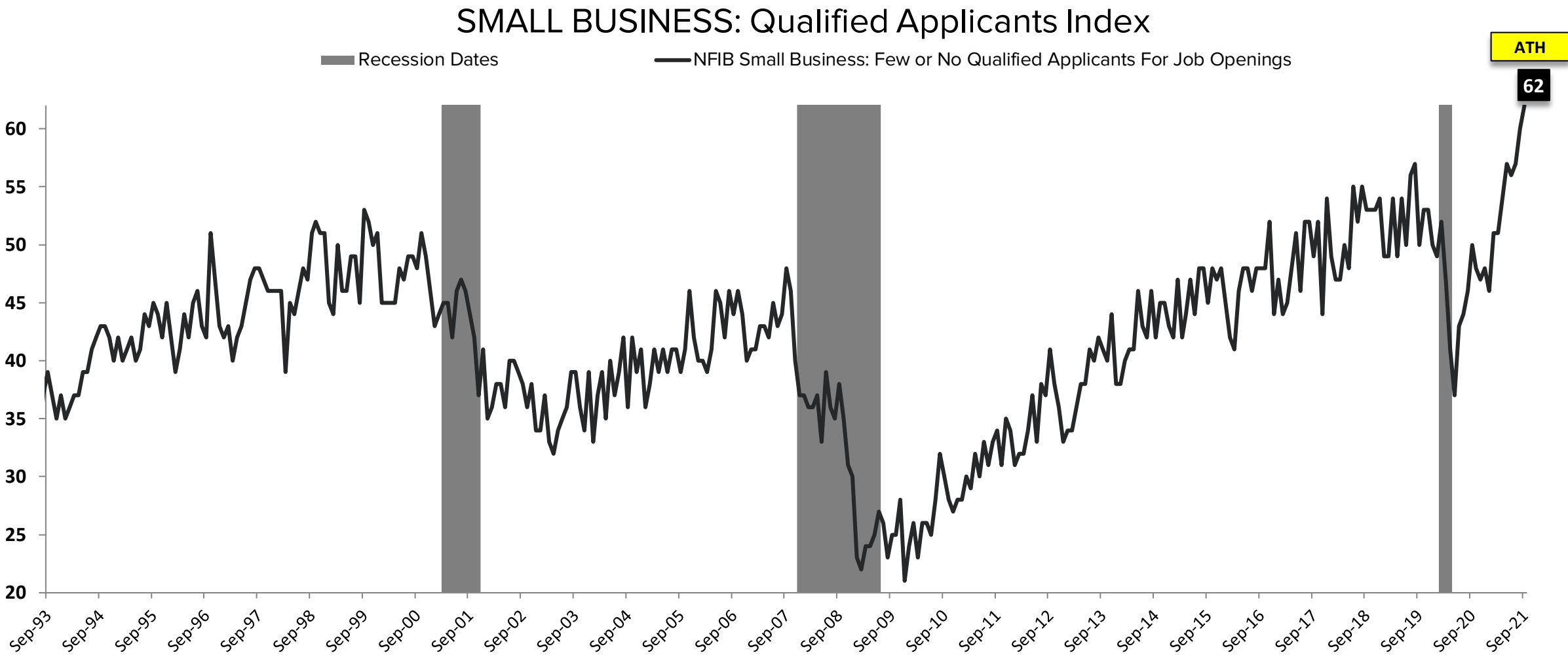
Another month of high-altitude heroics with Job Openings again hovering around an ATH

JOLTS: Job Openings



# Labor Supply Remains The Gating Factor

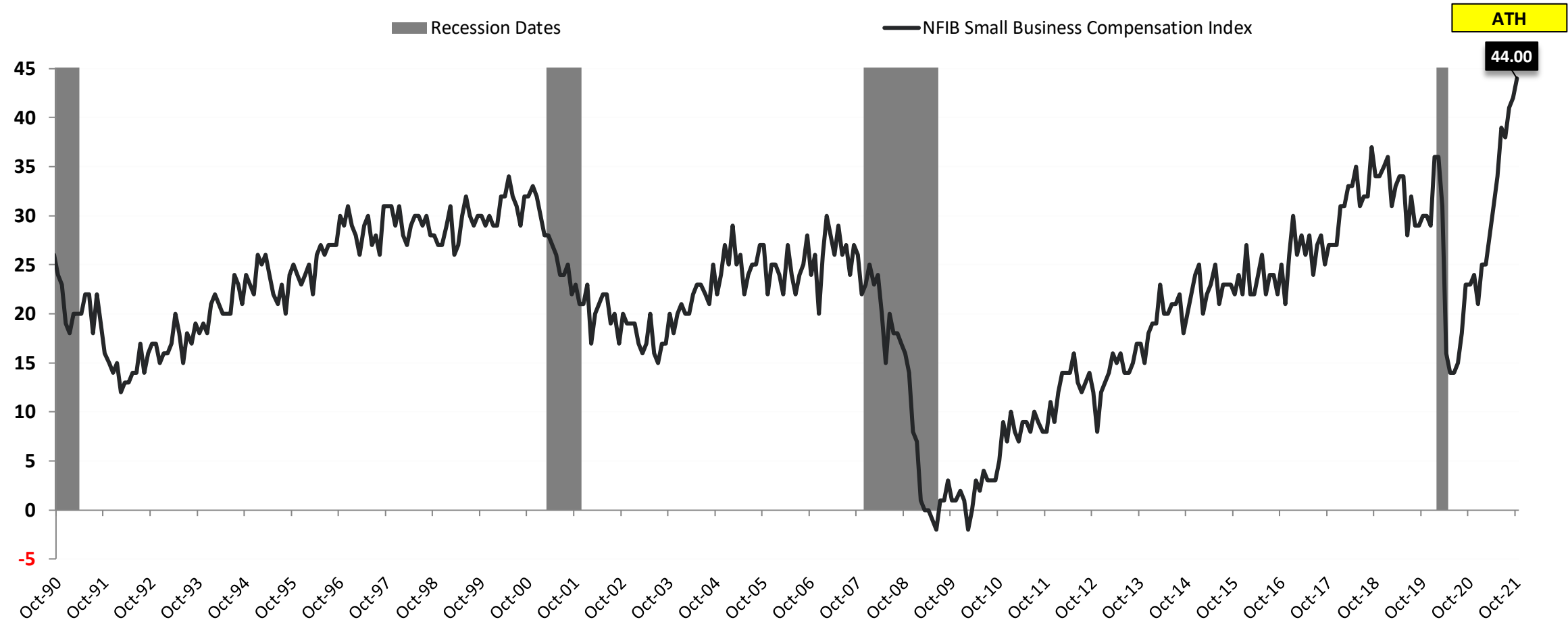
Labor supply remains the fulcrum factor to reacceleration in payroll growth and supply renormalization.



Demand ↑, Supply ↓ ..... Price ↑↑

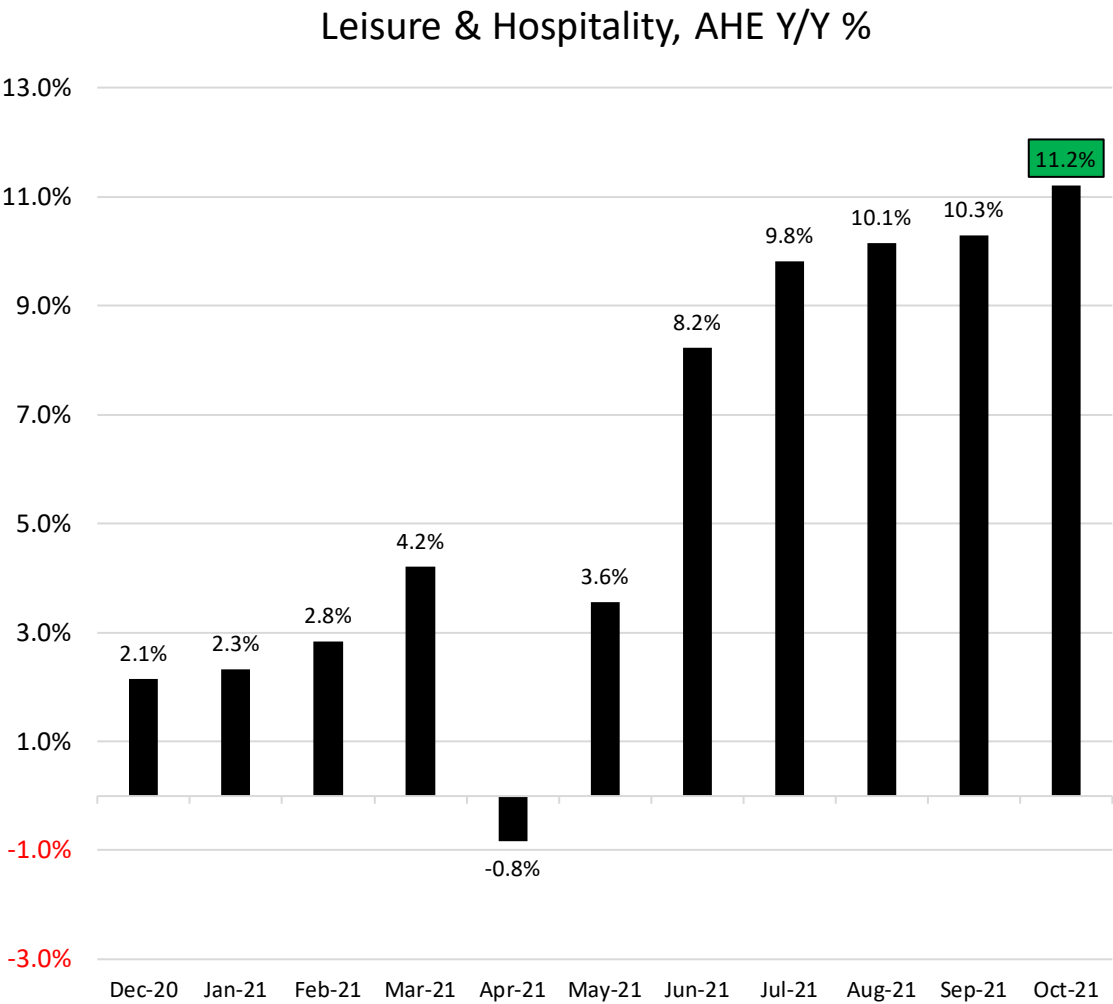
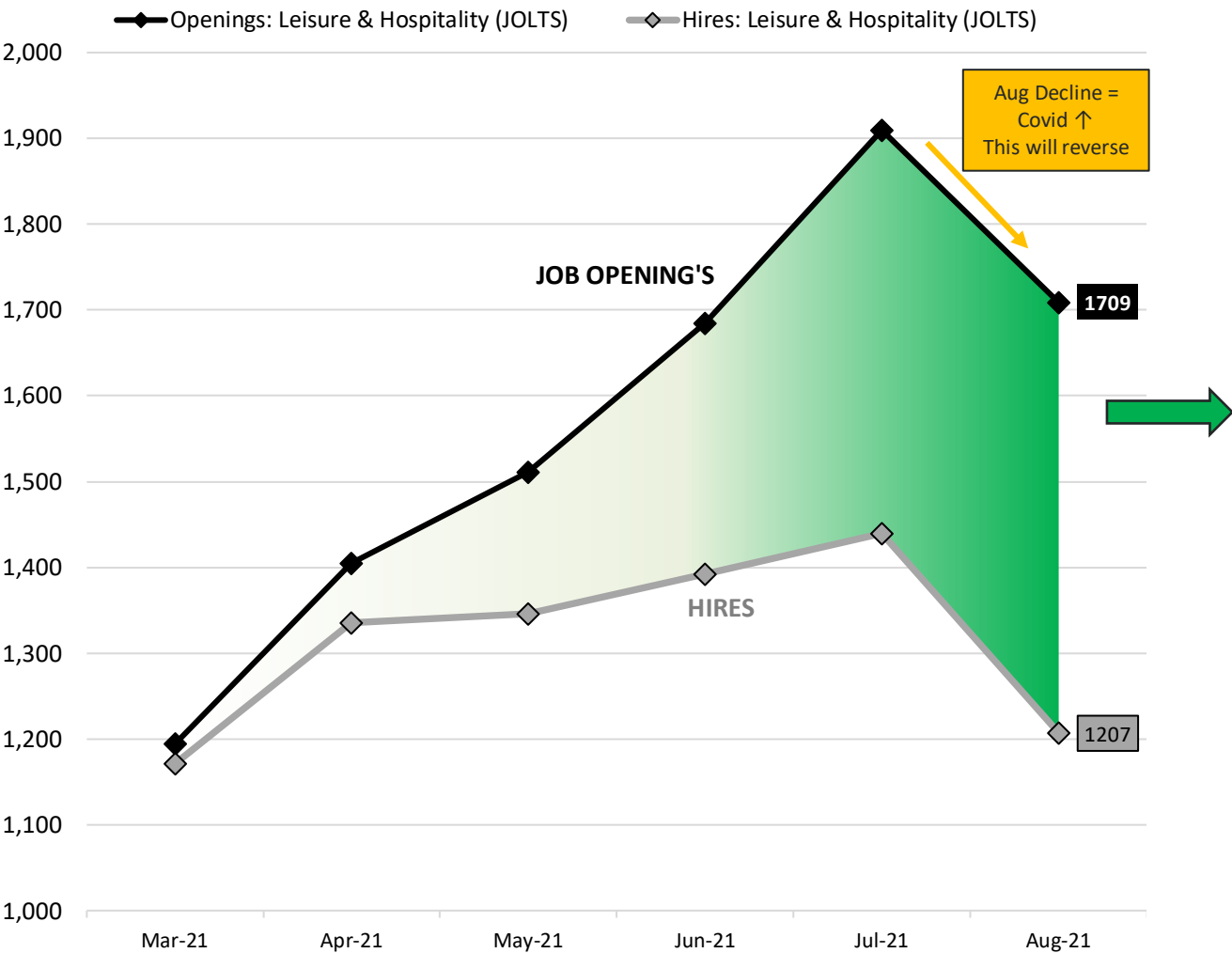
Both the Compensation and Compensation Plans series made higher all-time highs in the latest month.

NFIB: Compensation



# Labor Market Imbalances ↑, Cost of Labor ↑

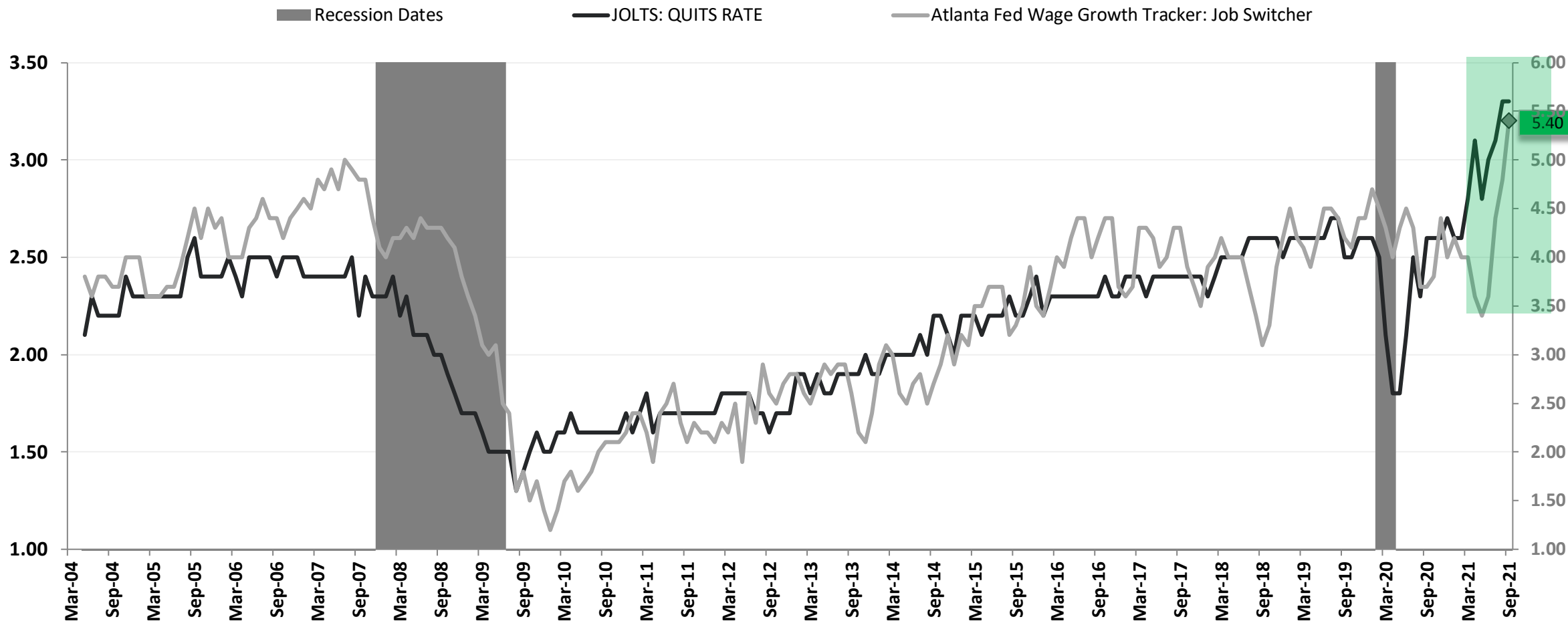
Burgeoning demand-supply imbalances have driven massive acceleration in wages in the Leisure and Hospitality sector. This is obviously the most conspicuous example. An important question is whether dynamics here are a harbinger for broader wage trends(?).



# Advantage Labor : Quits Rate ATH → Job Switcher Wage Growth Acceleration

On a short-lag to the surge in the Quits rate, wage growth for “Job Switchers” accelerated to a cycle high. That acceleration is likely to remain ongoing with labor in the driver’s seat.

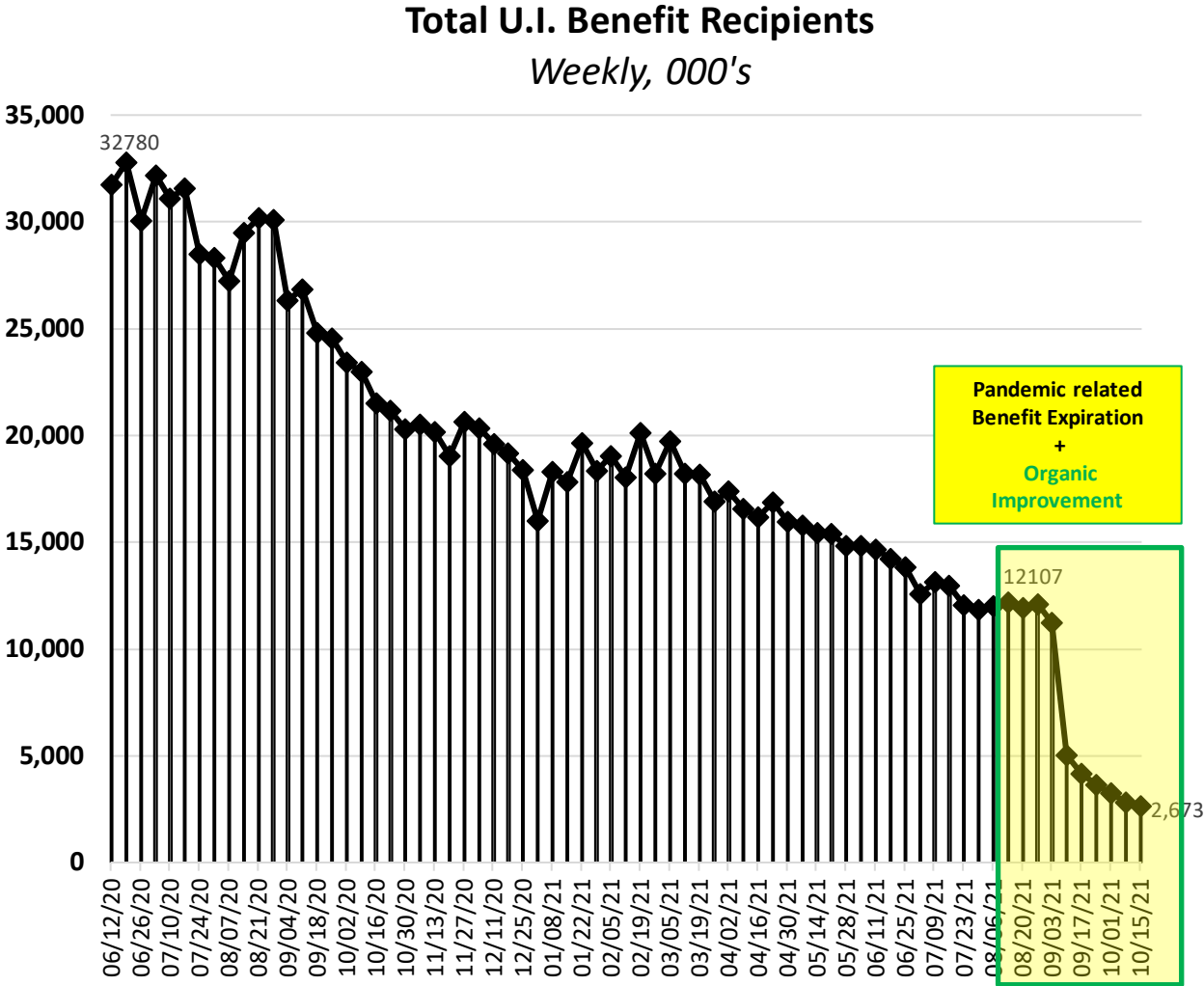
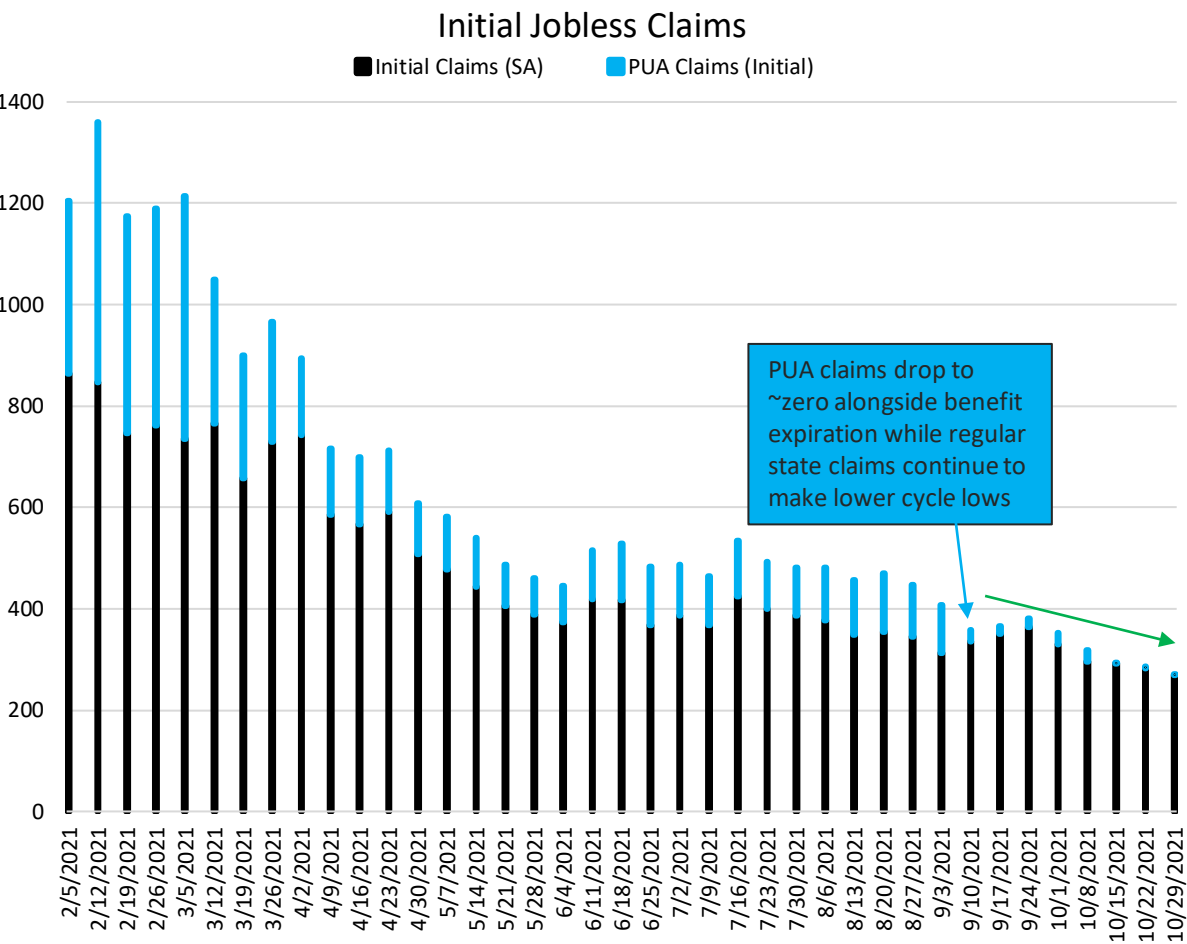
## Quits Rate vs Job Switcher Wage Growth





# (+) Labor Supply Shock In Queue?

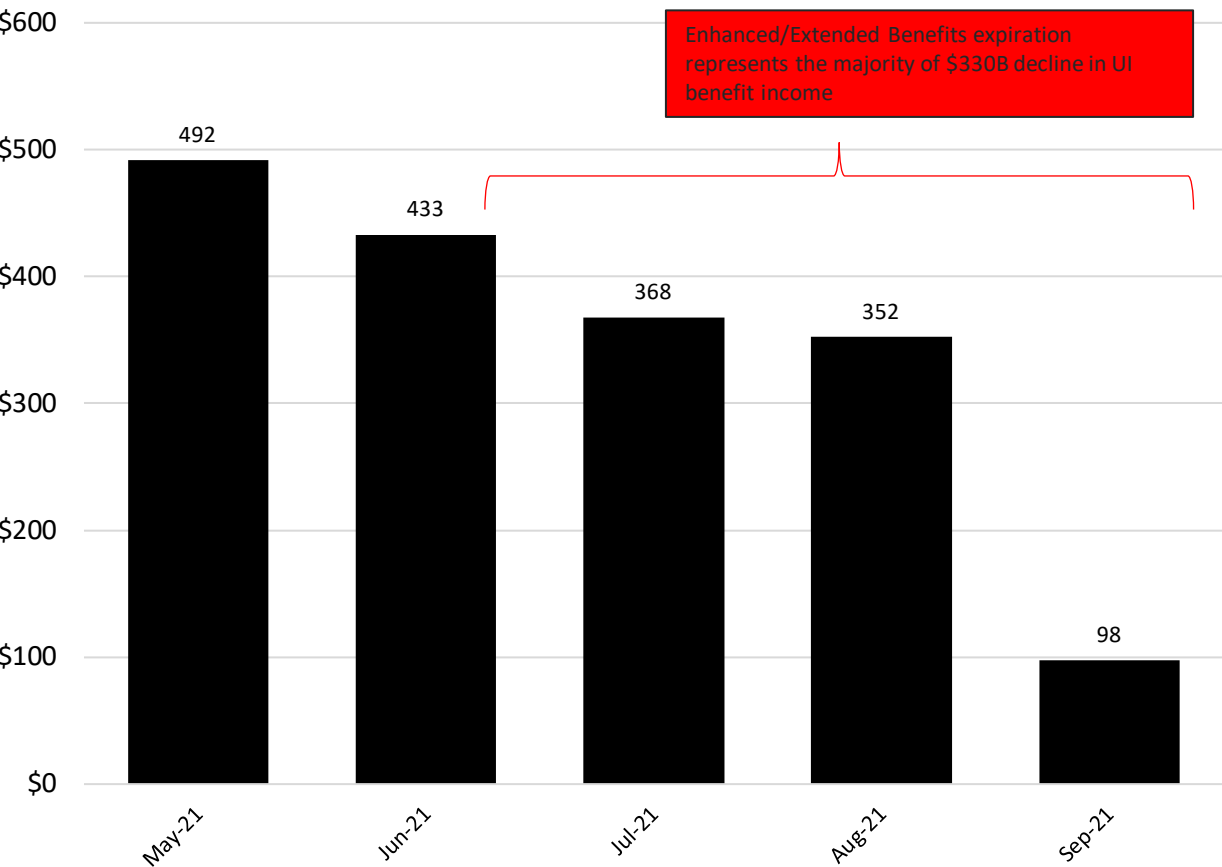
Pandemic related enhanced/extended UI benefits have already expired, leaving millions without jobless benefits. Note that PUA/PEUC claims & Total Beneficiaries are reported on a lag, so benefit expiration will continue to flow through the reported data in the coming weeks. The principal question remains: to what extent will benefit expiration support a positive labor supply shock.



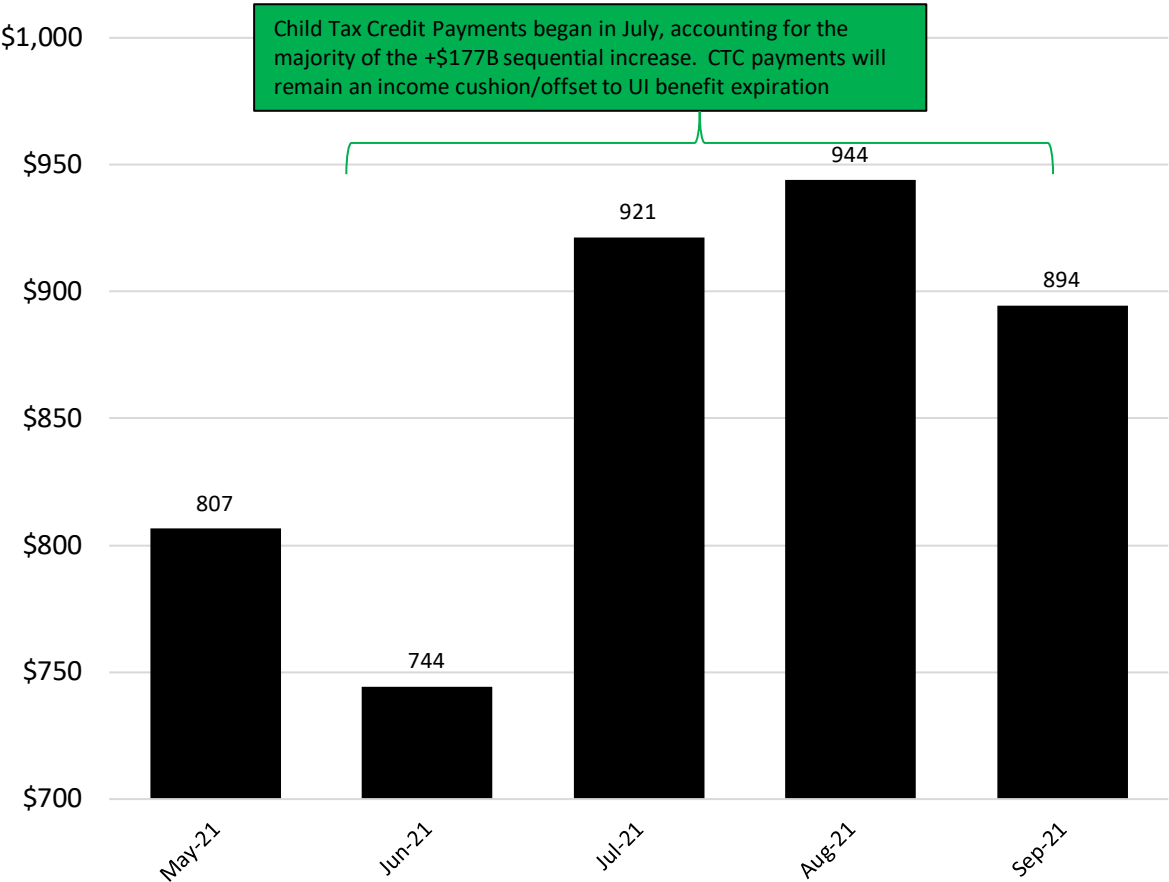
# Income: UI Benefits ↓ ... But “Other Social Benefits” ↑

Monthly Child Tax Credit (CTC) payments began in July, right when UI benefit expirations began to hit. CTC payments will act as a partial but sizeable offset for lost jobless benefits.

UI Benefit Payments  
\$B's

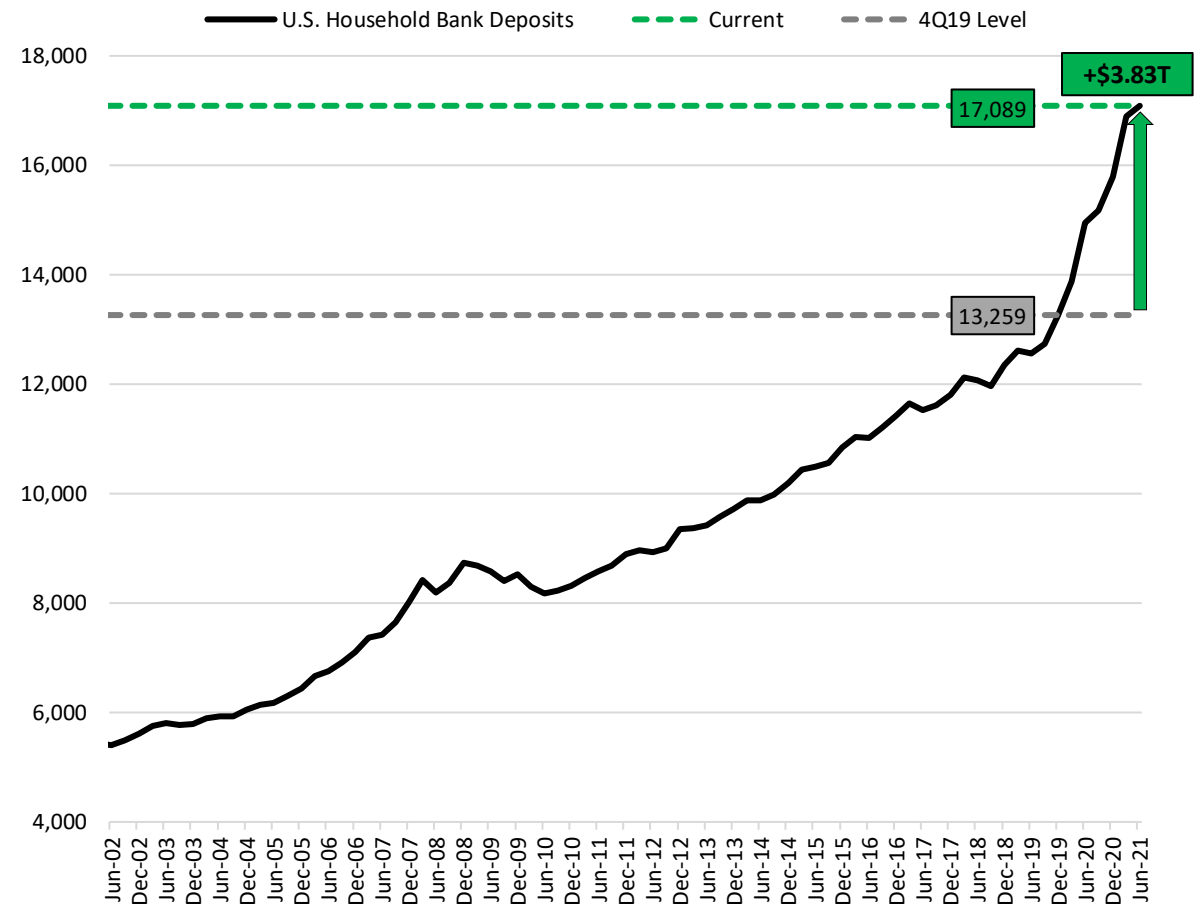


Personal Income via Other Social Benefits  
\$B's

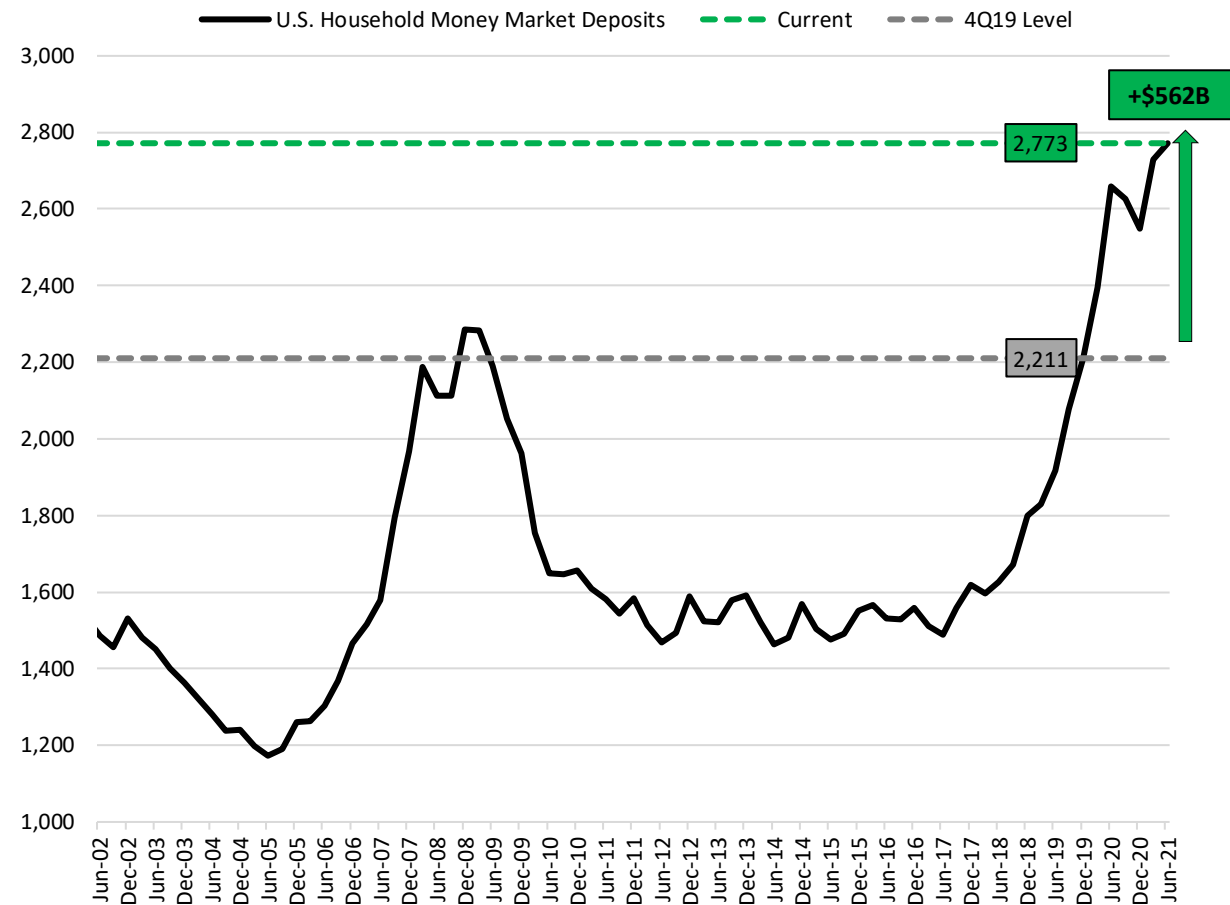


# Savings: The Consumption Cushion Remains > \$4T

U.S. Household Bank Deposits

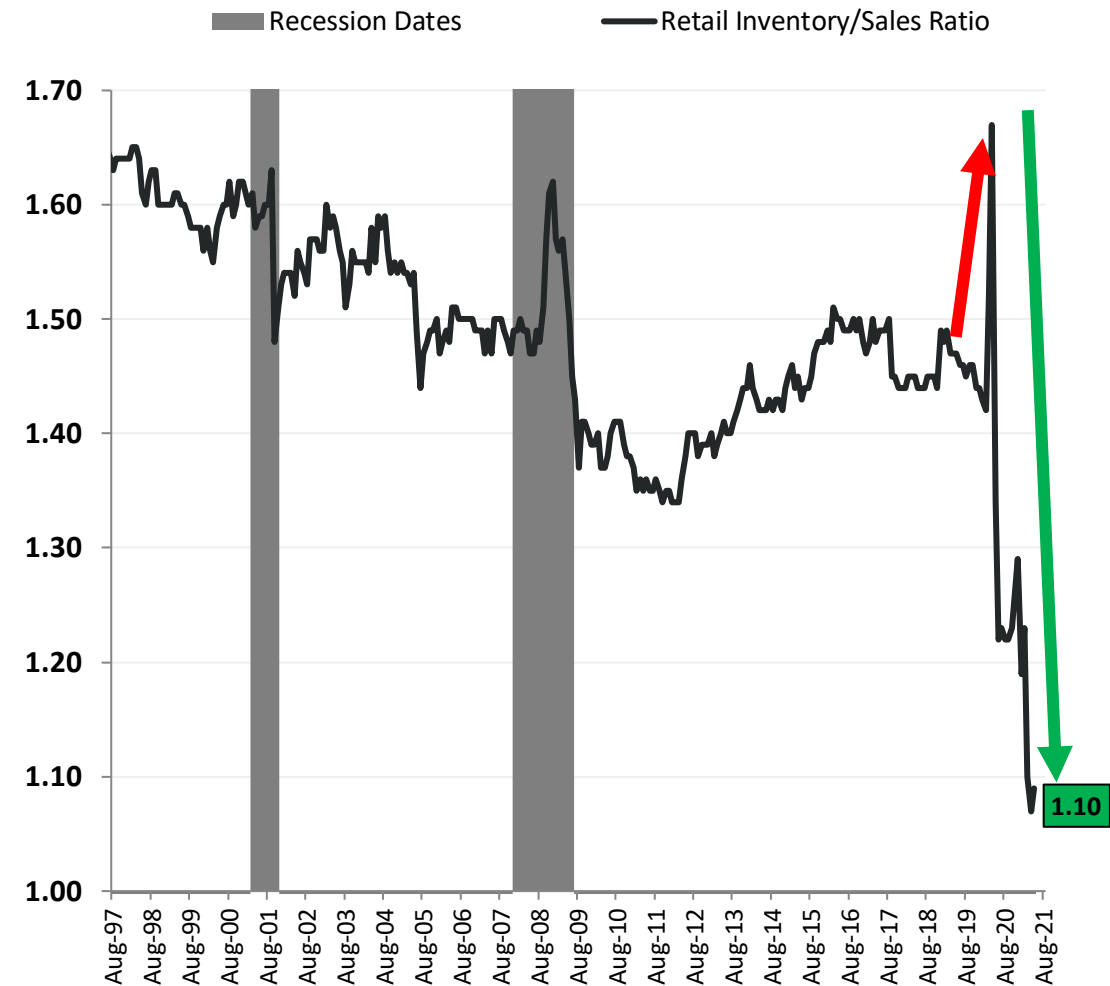
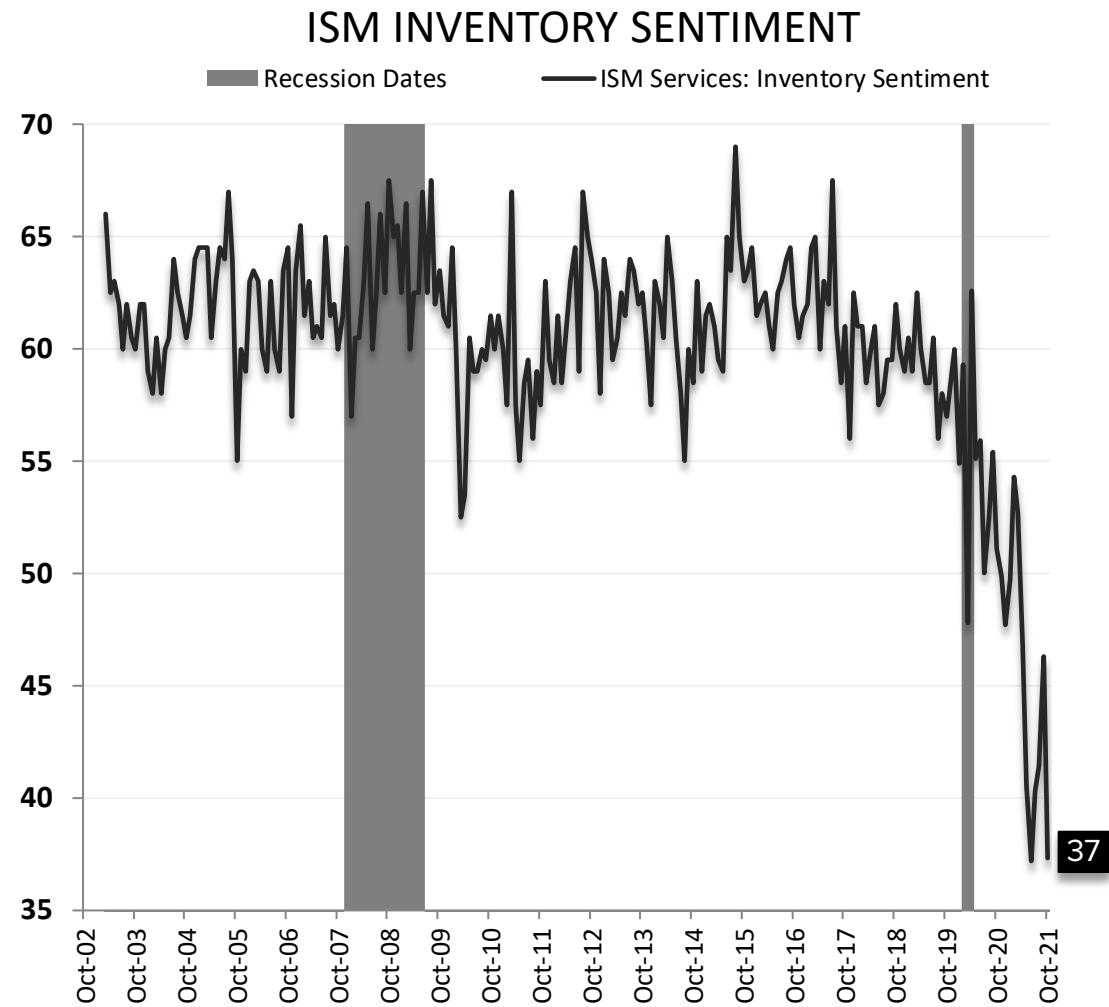


U.S. Household Money Market Deposits



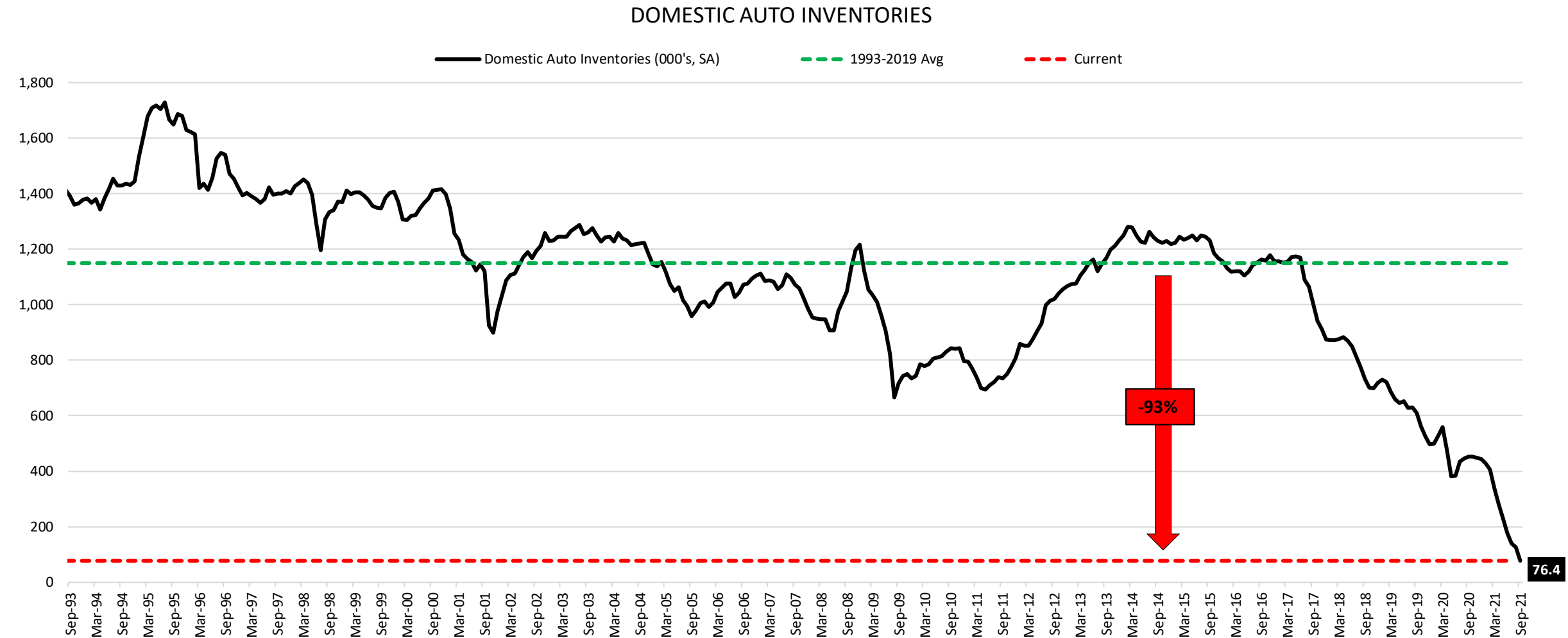
# Meanwhile, The Inventory Cycle Remains Early Cycle

Demand solidity and inventory re-stocking amidst cycle/multi-decade/all-time lows across the supply channel will continue as a tailwind to manufacturing activity.



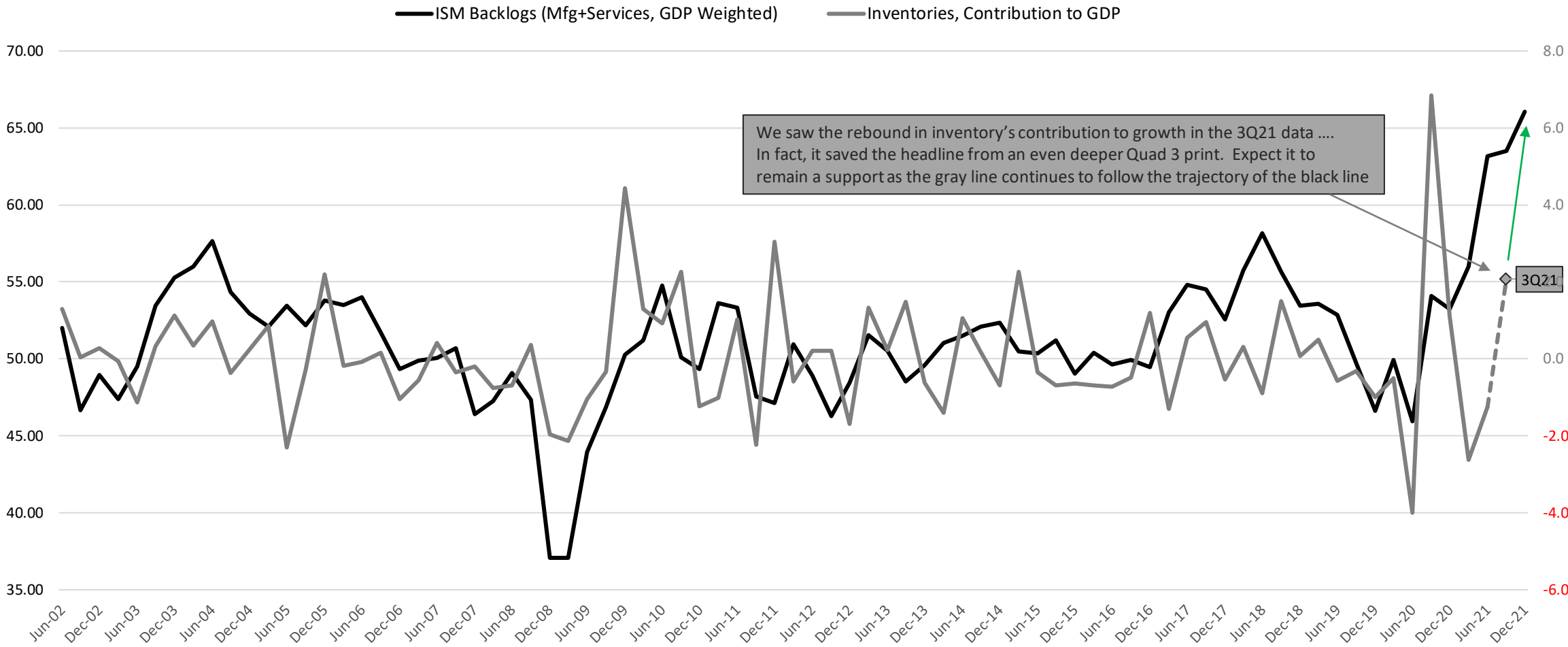
# Today's Supply Constraints = Tomorrow's Growth

Domestic auto inventories are down -93% off of normalized levels as chip shortages and broader production constraints have crushed production capacity. It will take years to renormalize inventory levels ... a dynamic that will provide protracted support to industrial-manufacturing activity and Headline Retail Sales.



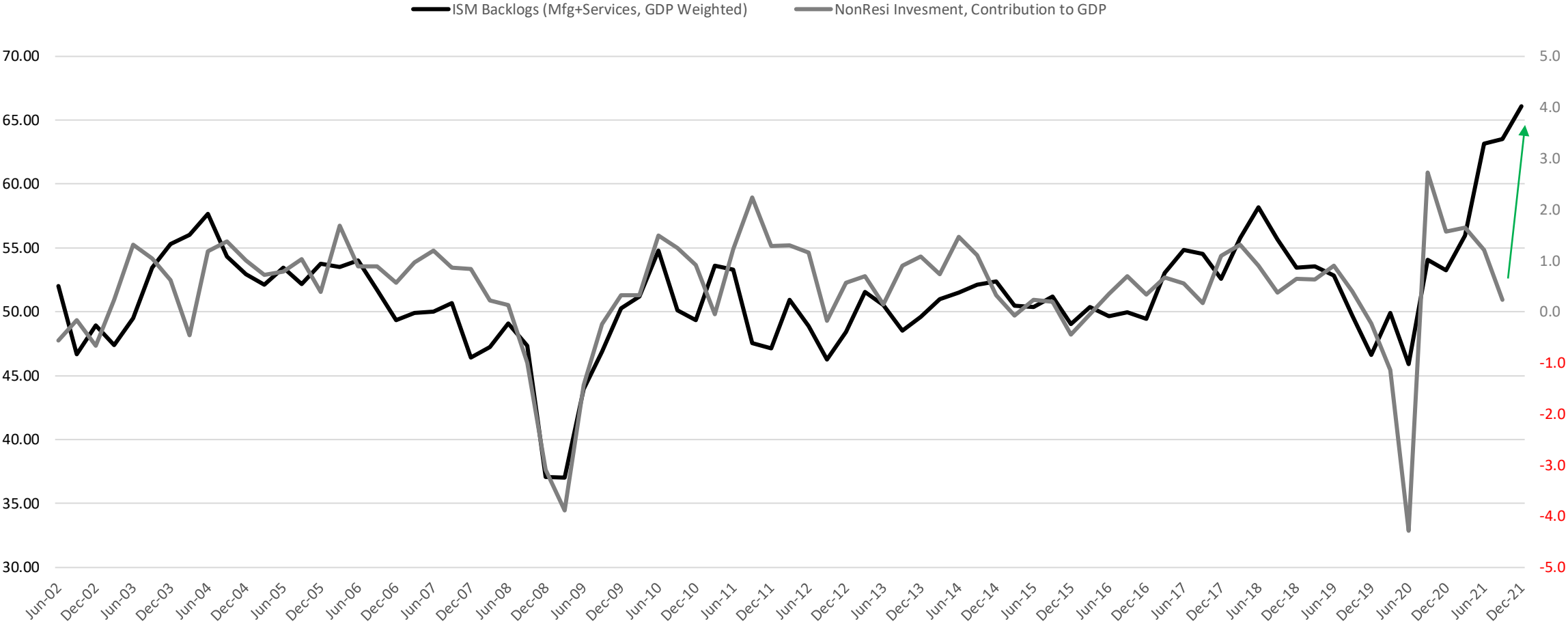
# Today's Supply Constraints = Tomorrow's GDP Amplifier

Inventory rebuilding will emerge as an outsized (positive) contributor to reported GDP in the coming quarters. It did, in fact, emerge in the latest 3Q21 data. The outlook remains asymmetric with respect to inventories helping juice headline growth.



# Backlogs/Spare Capacity ↓, Capex ↑ (GDP ↑)

If demand is solid, capacity is tight and the labor supply outlook is uncertain then ... the likelihood that investment increases at the margin is high probability. Historically, the empirical data supports that expectation.





# Don't Overthink It, Yet ...

HEDGEYE

Covid ↓ = Hiring ↑ + Service Sector Activity ↑ = Income Acceleration ↑ = Consumption Capacity ↑ = Quad 2 Probability ↑

Income Acceleration Should Continue

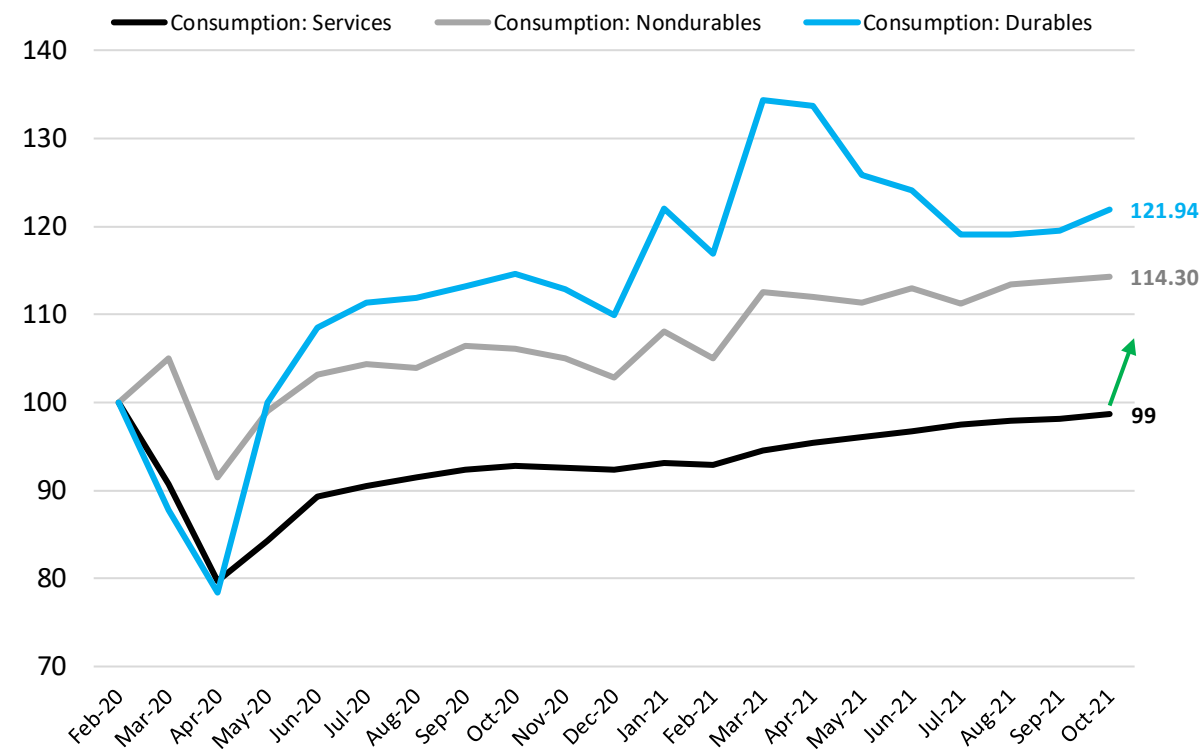
Services Consumption Renormalization Should Continue

Total Aggregate Private Sector Salaries & Wages, 2Y Growth

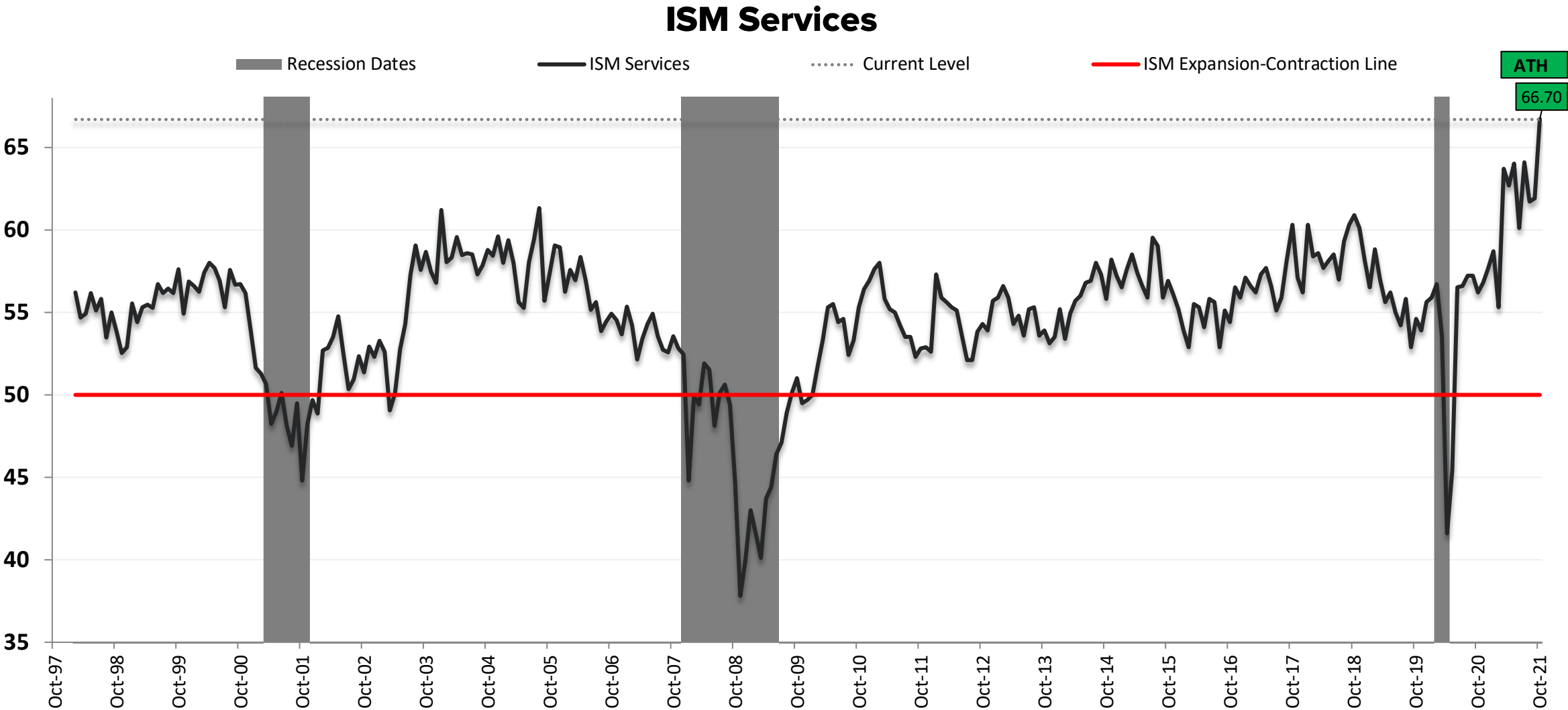


CONSUMPTION BY EXPENDITURE TYPE

Indexed to pre-pandemic level (Feb 2020 = 100)



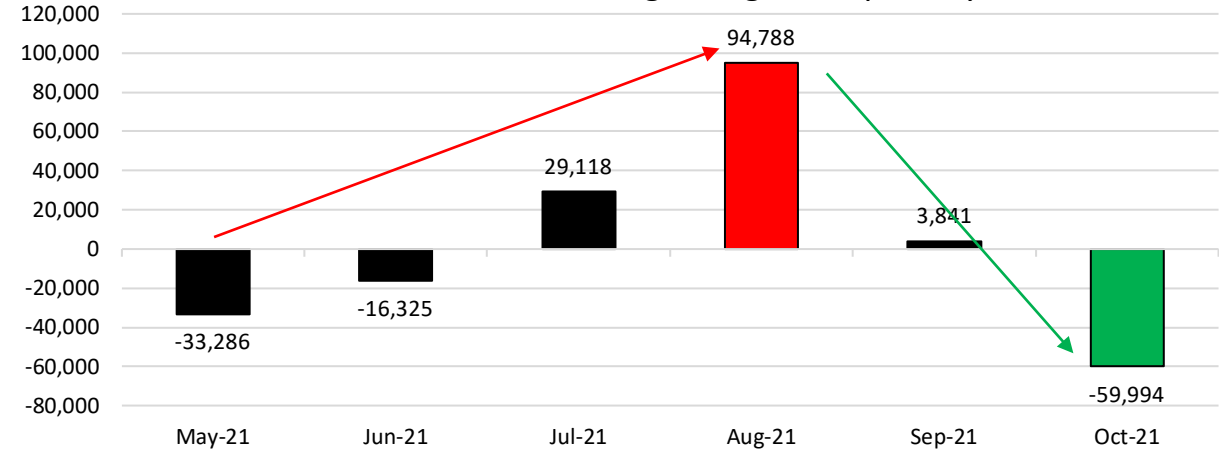
#ProbablyNothing → Largest Part of Economy in October = ATH



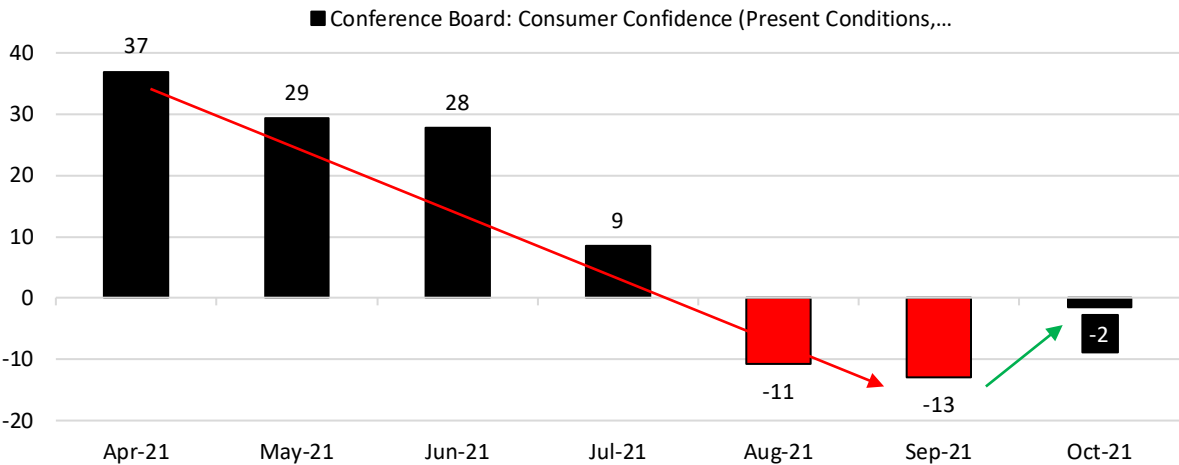
# DELTA DATA: From $\Delta$ Negative $\rightarrow$ $\Delta$ Positive

COVID  $\downarrow$   $\rightarrow$  Consumer Confidence  $\uparrow$   $\rightarrow$  Services Activity  $\uparrow$   $\rightarrow$  Service Sector Employment  $\uparrow$

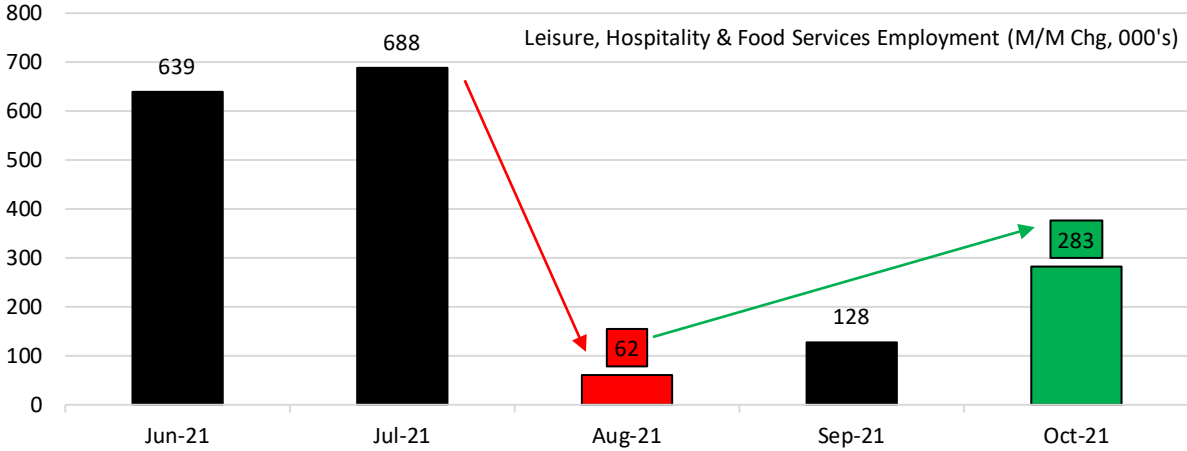
U.S. Covid Cases: M/M Chg in Avg Cases per Day



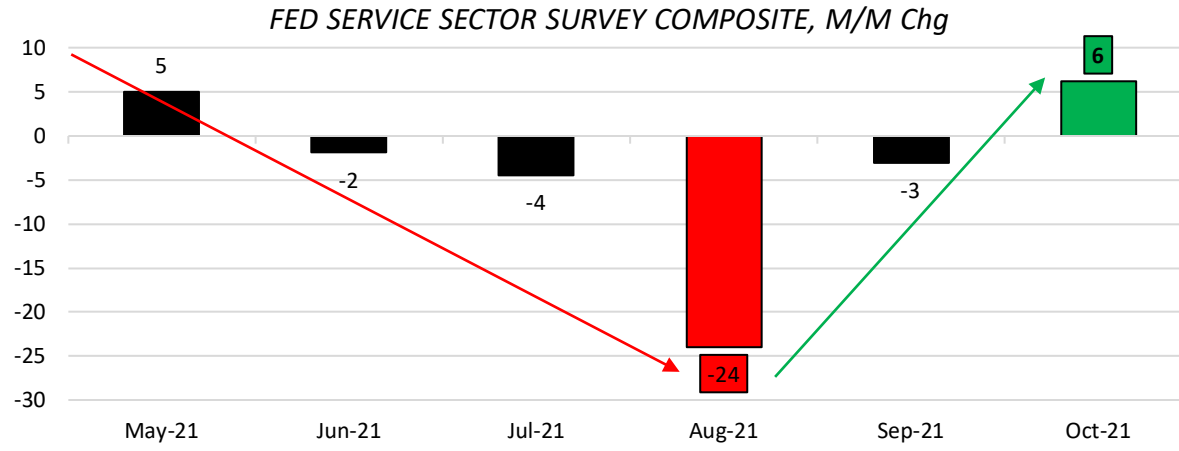
Consumer Confidence: Present Conditions



SERVICE SECTOR EMPLOYMENT



SERVICES ACTIVITY



# Q4 2021 Macro Themes

HEDGEYE



## GLOBAL INFLATION'S ACCELERATION

# U.S. Inflation: 11-Months Later ... Same Question

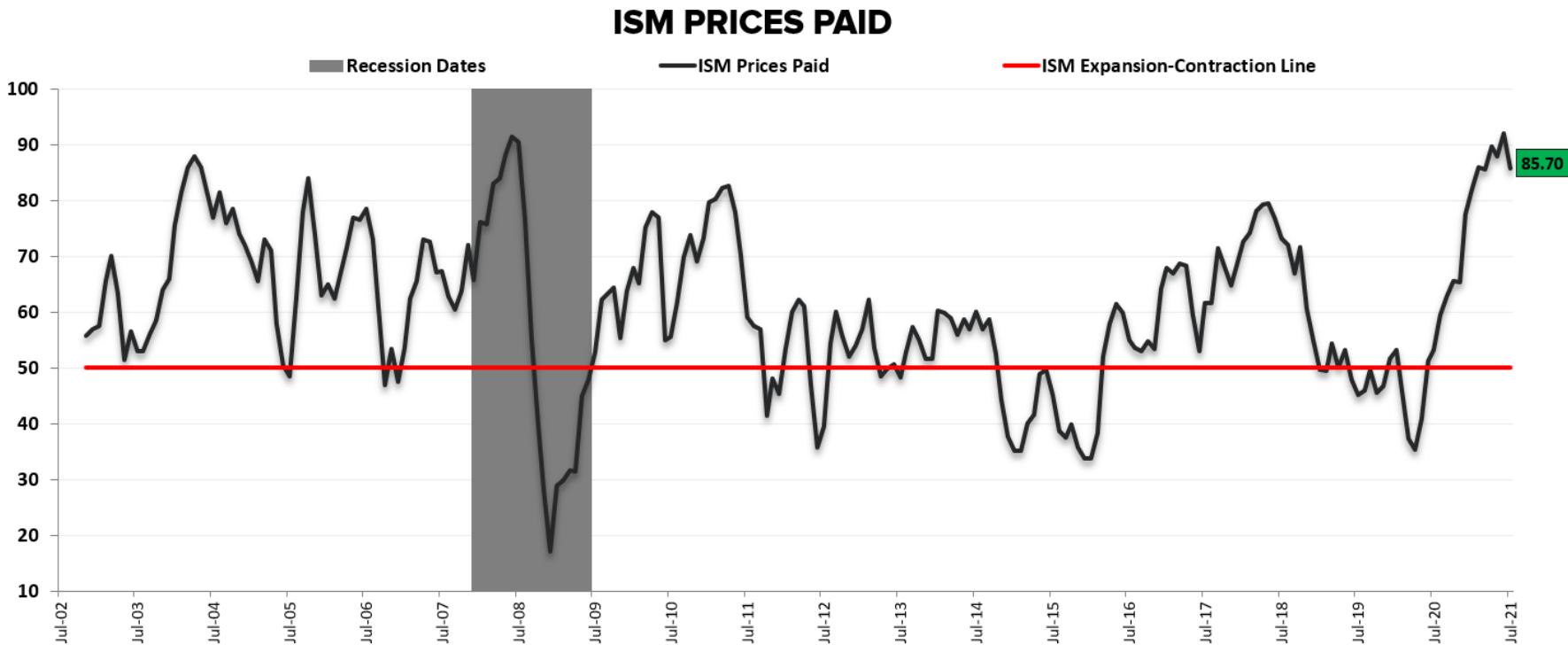
We posed the chart and (rhetorical) question below .... [In our 2Q Themes Call](#). It was rhetorical at the time and the answer remains outstanding currently, both locally and globally.



## Do You Really Think This (fully) Resolves Next Month ... or Next Qtr?

HEDGEYE

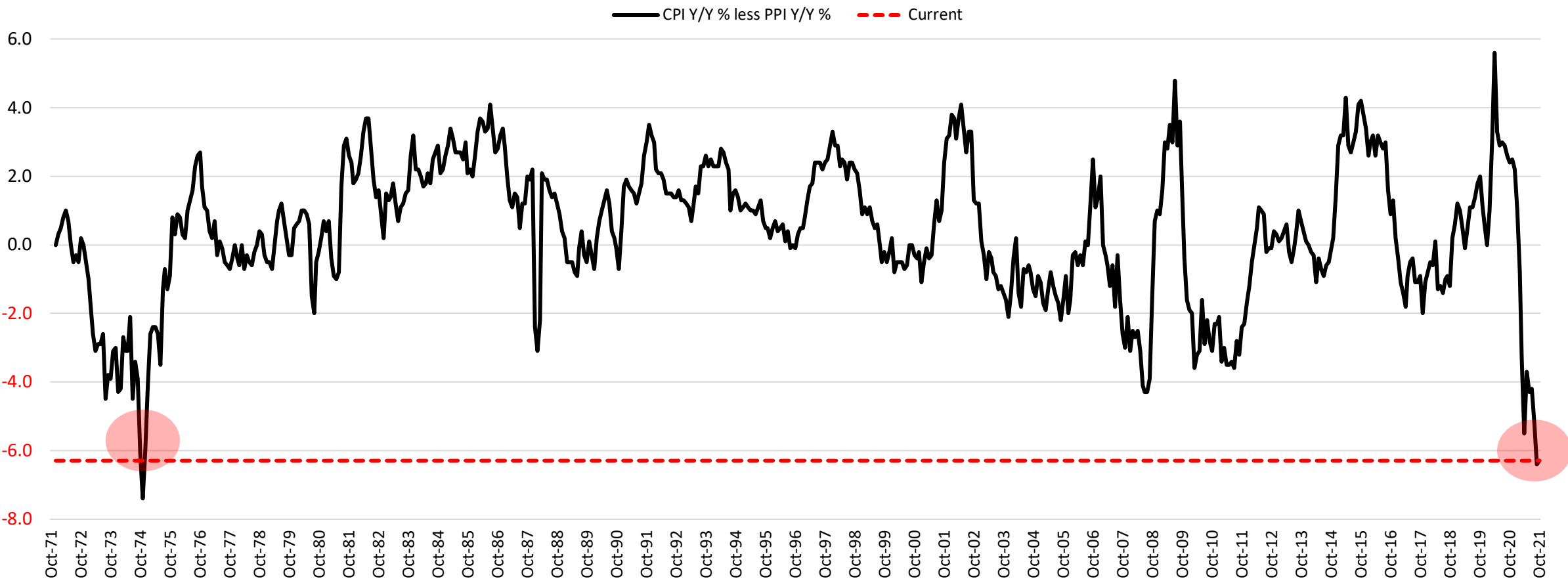
As hiring progresses (domestically & globally), supply chain issues in the Goods economy will resolve and the prevailing, acute demand-supply imbalances will re-equilibrate ... but that re-equilibration will be a trudging multi-month/multi-quarter affair.



# U.S. Inflation Spread = 40Y Lows

Either CPI recouples higher, margins get squeezed or supply/production constraints resolve and we get a meeting-in-the-middle of sorts. None of those scenarios presage an imminent extrication from sticky high prices. Besides, it's not like the 70's were characterized by supply shortages or non-transitory inflation or anything!

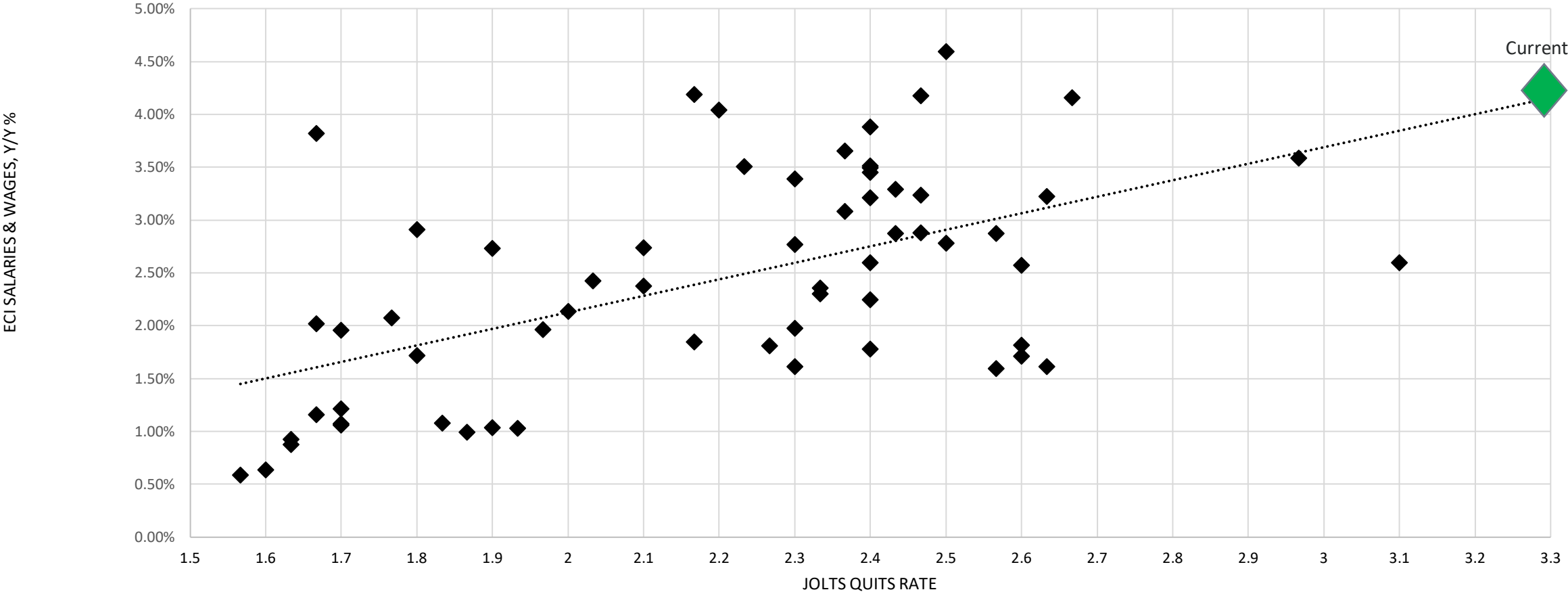
INFLATION SPREAD: CPI less PPI



# Domestic Wage Acceleration Will Be a Multi-Quarter Affair

The QUILTS RATE and Unit Labor Cost Growth (both lead by ~3 qtrs.) are signaling multi-quarter acceleration in Wage and Core CPI growth

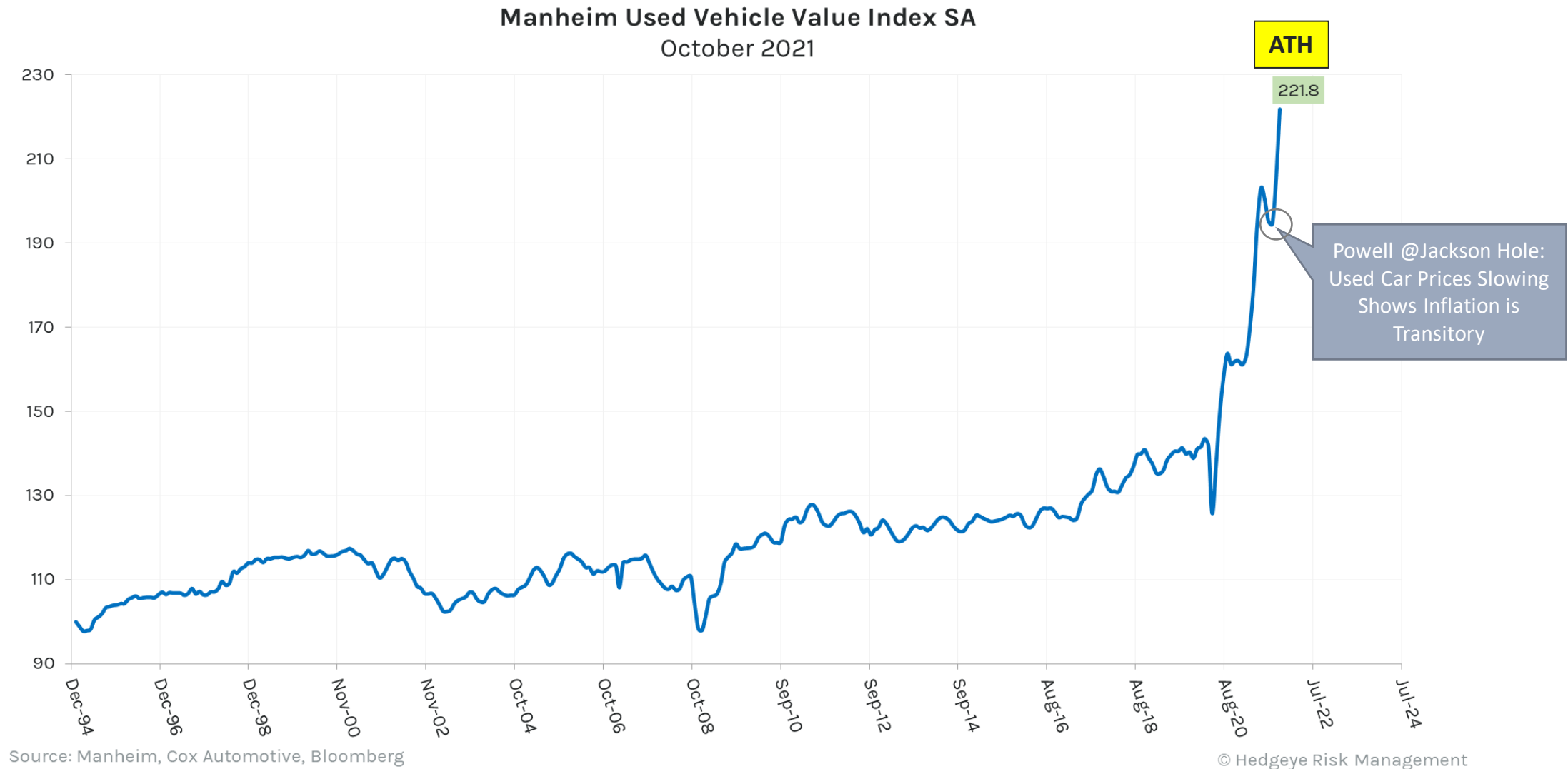
JOLTS QUILTS RATE vs. ECI SALARIES & WAGES Y/Y %  
QUILTS RATE = 3Qtr Lead, 2004-Present





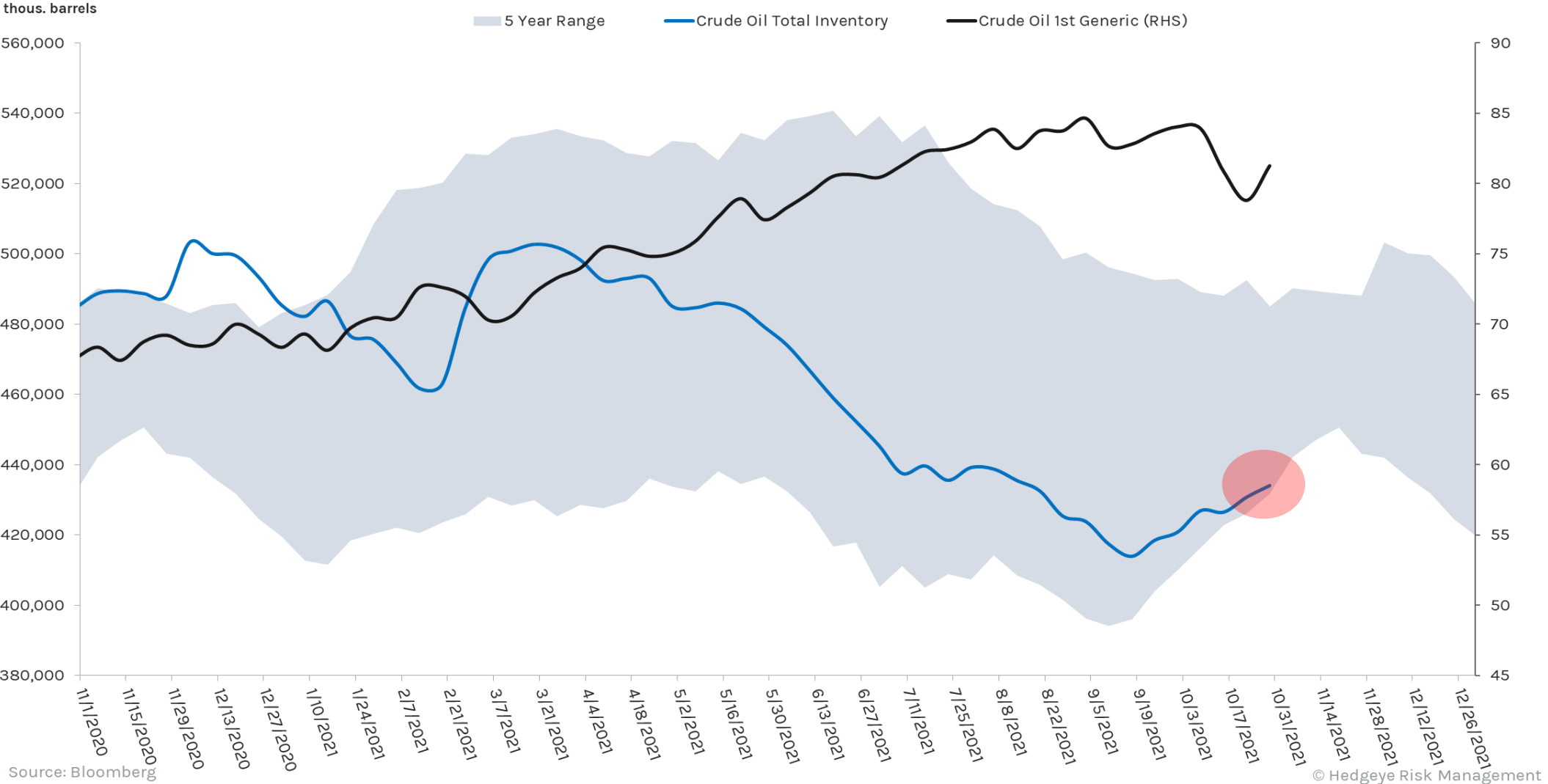
# ATH: Manheim Used Vehicle Index is up +37% YoY

October: +9.2% MoM (SA) & the first ever MoM NSA acceleration for October



# As Inventory Levels ↓ → Energy Prices ↑

U.S. Crude Oil inventories are approaching its lowest levels in 5 years

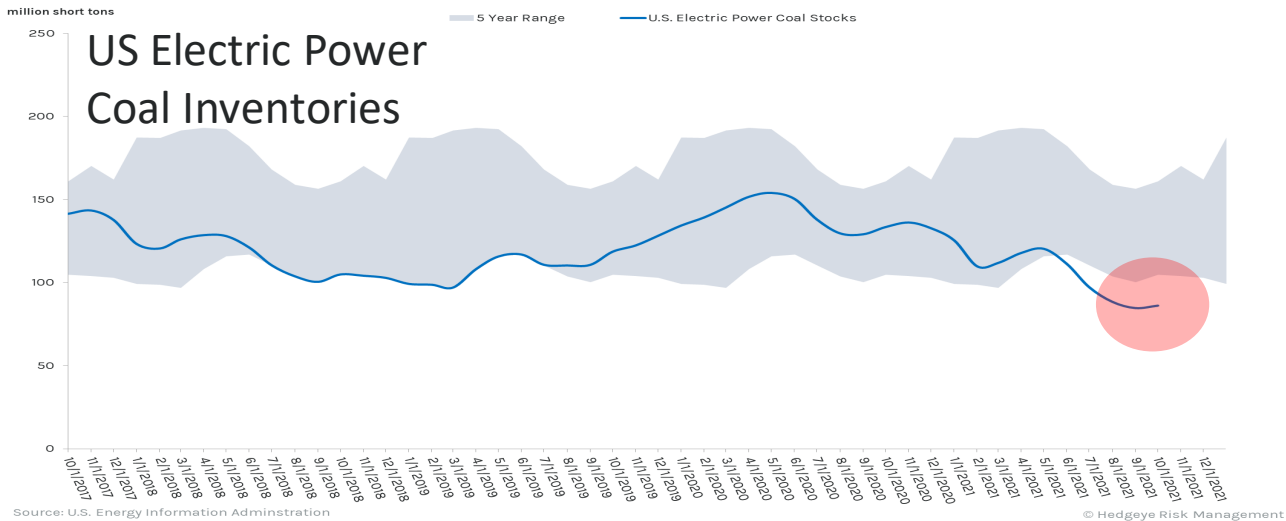
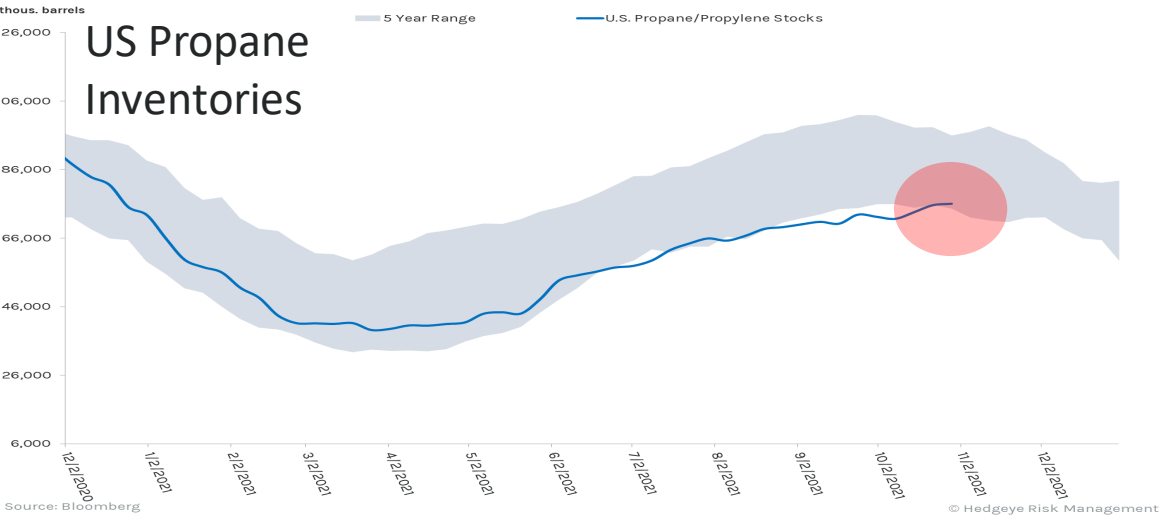
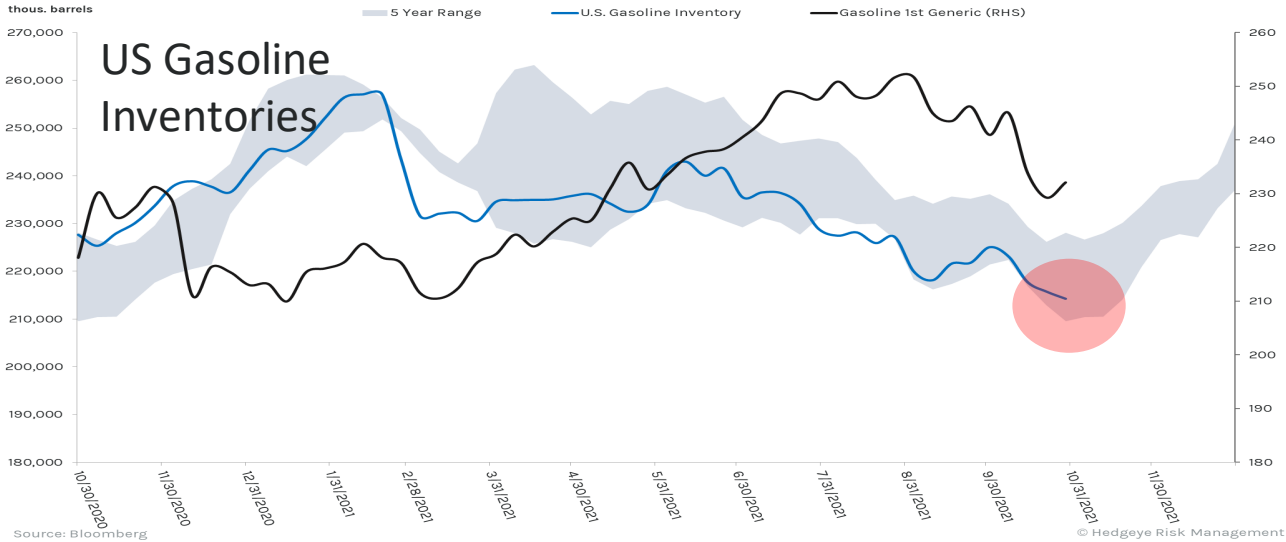
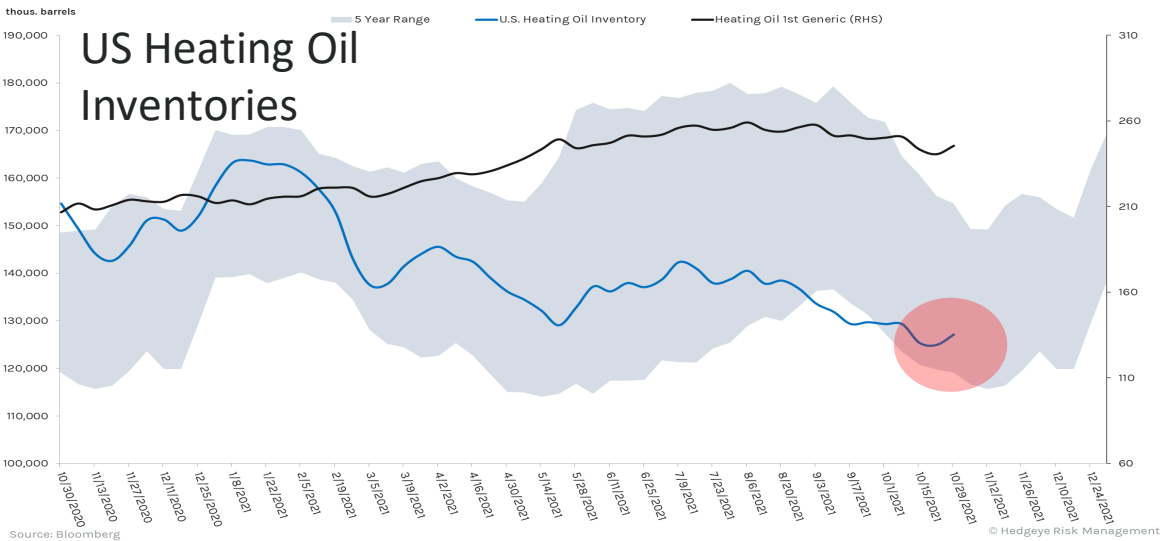


Source: Bloomberg

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# Low Inventory Levels Are Seen Throughout Energy

Heating Oil, Gasoline, Propane, and Electric Power Coal are all at or near 5-year lows

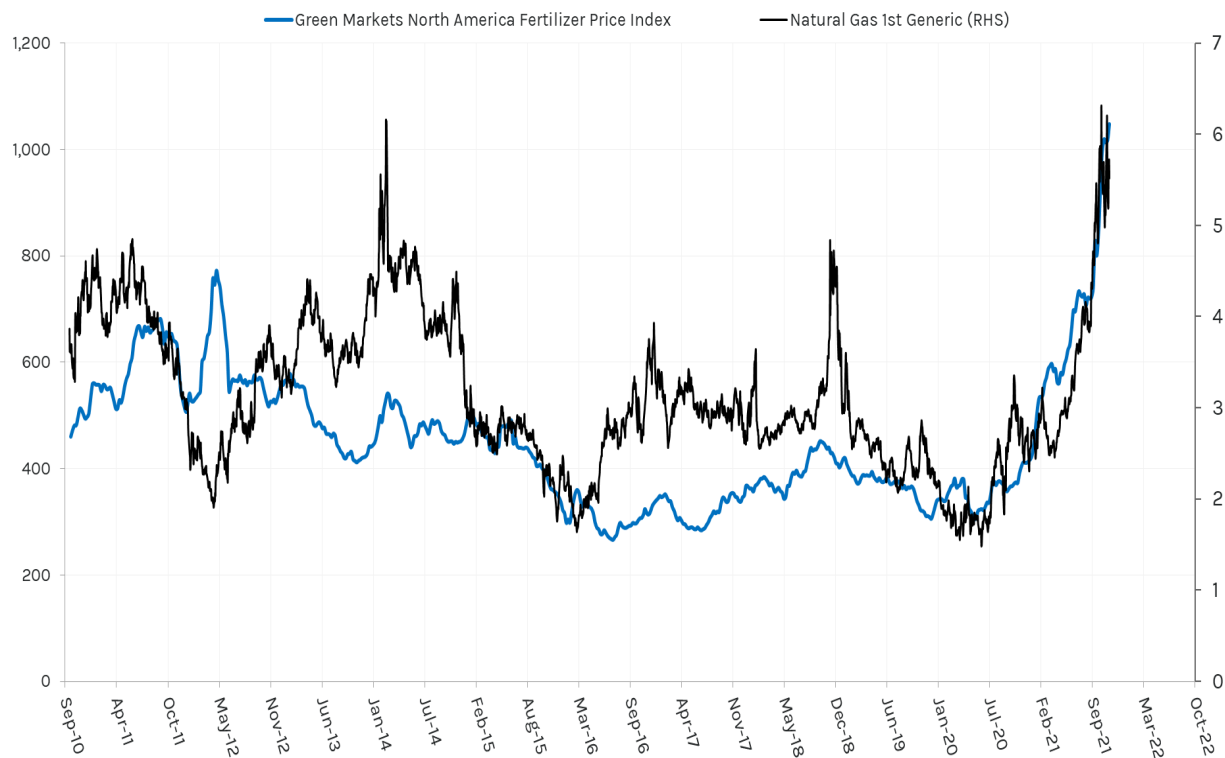


# As Energy Prices $\uparrow \rightarrow$ Fertilizer Cost $\uparrow$

HEDGEYE

Fertilizer cost are up 180% YoY and are 138% above its 5-year high

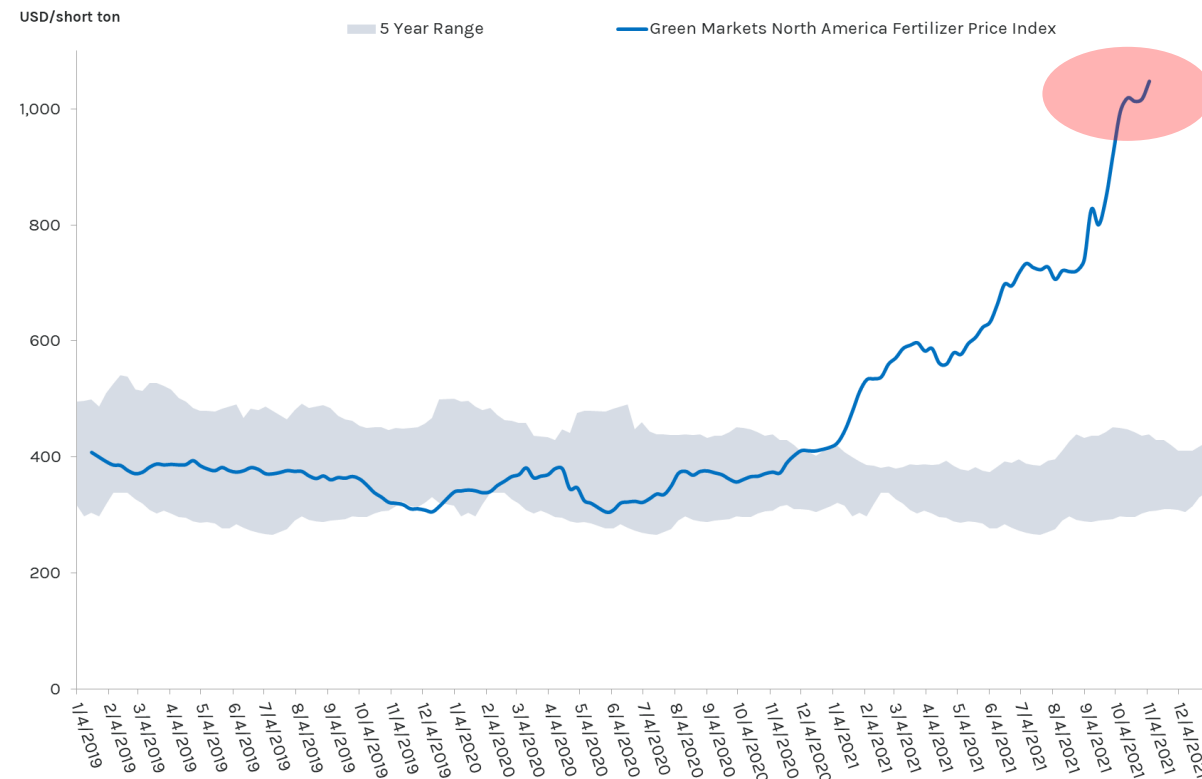
Fertilizer Cost vs. Natural Gas Prices



Source: Bloomberg

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U.S. Fertilizer Cost



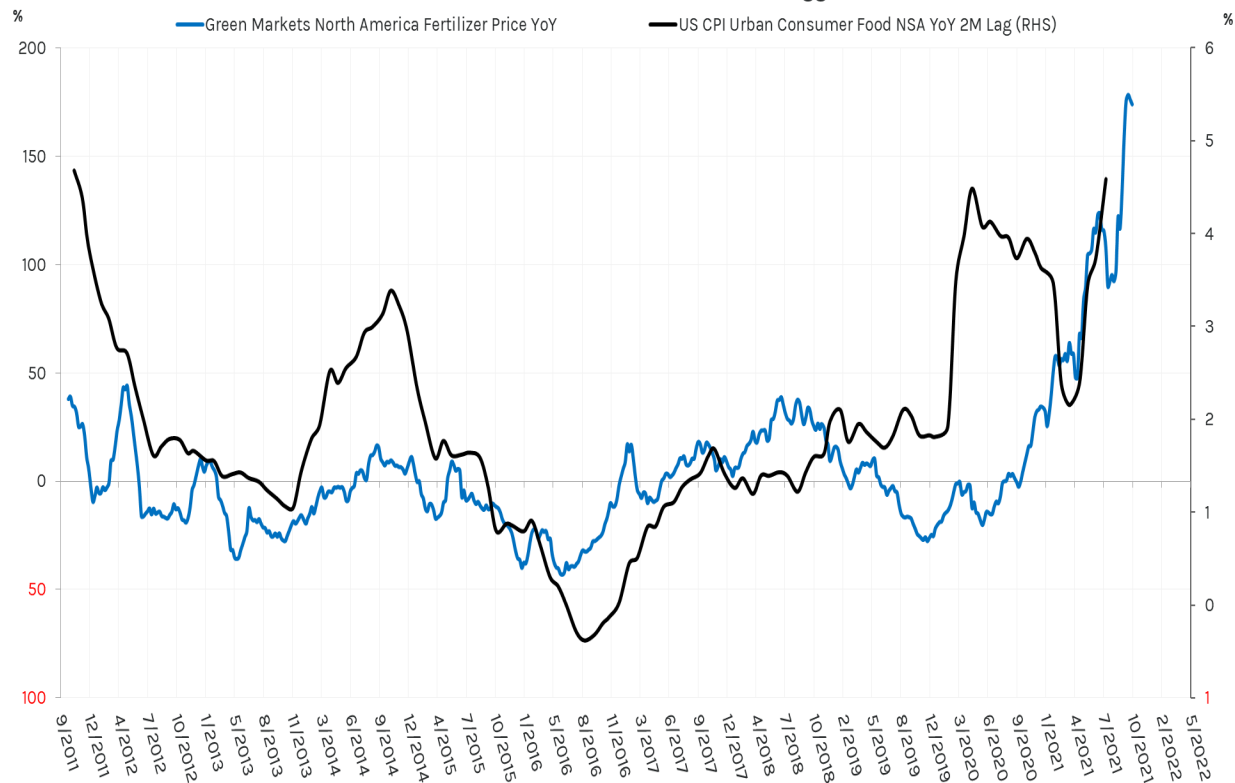
Source: Bloomberg

© Hedgeye Risk Management

# As Fertilizer Cost $\uparrow \rightarrow$ Food Prices $\uparrow$

Fertilizer costs lead consumer food prices by 2 Months and corn prices by 12 weeks

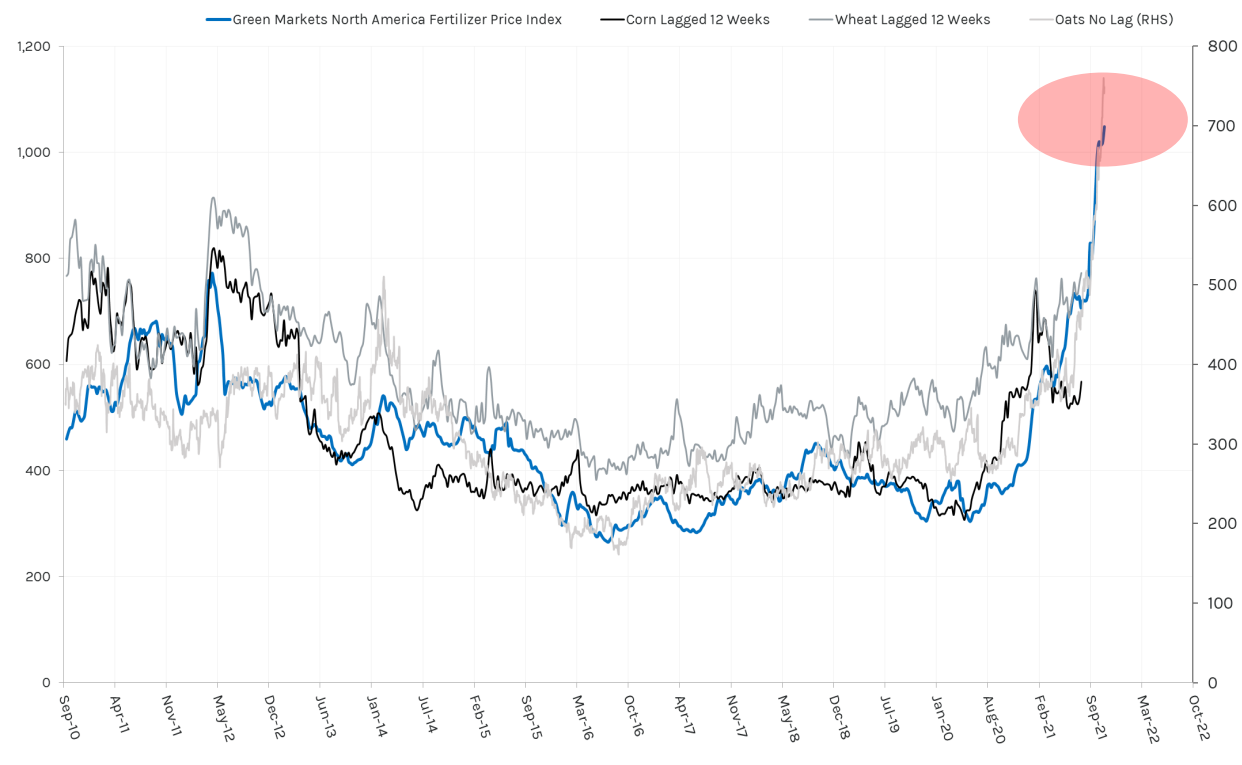
Fertilizer Cost vs. US Food Inflation Lagged



Source: Bloomberg

© Hedgeye Risk Management

Fertilizer Cost vs. Commodities Lagged

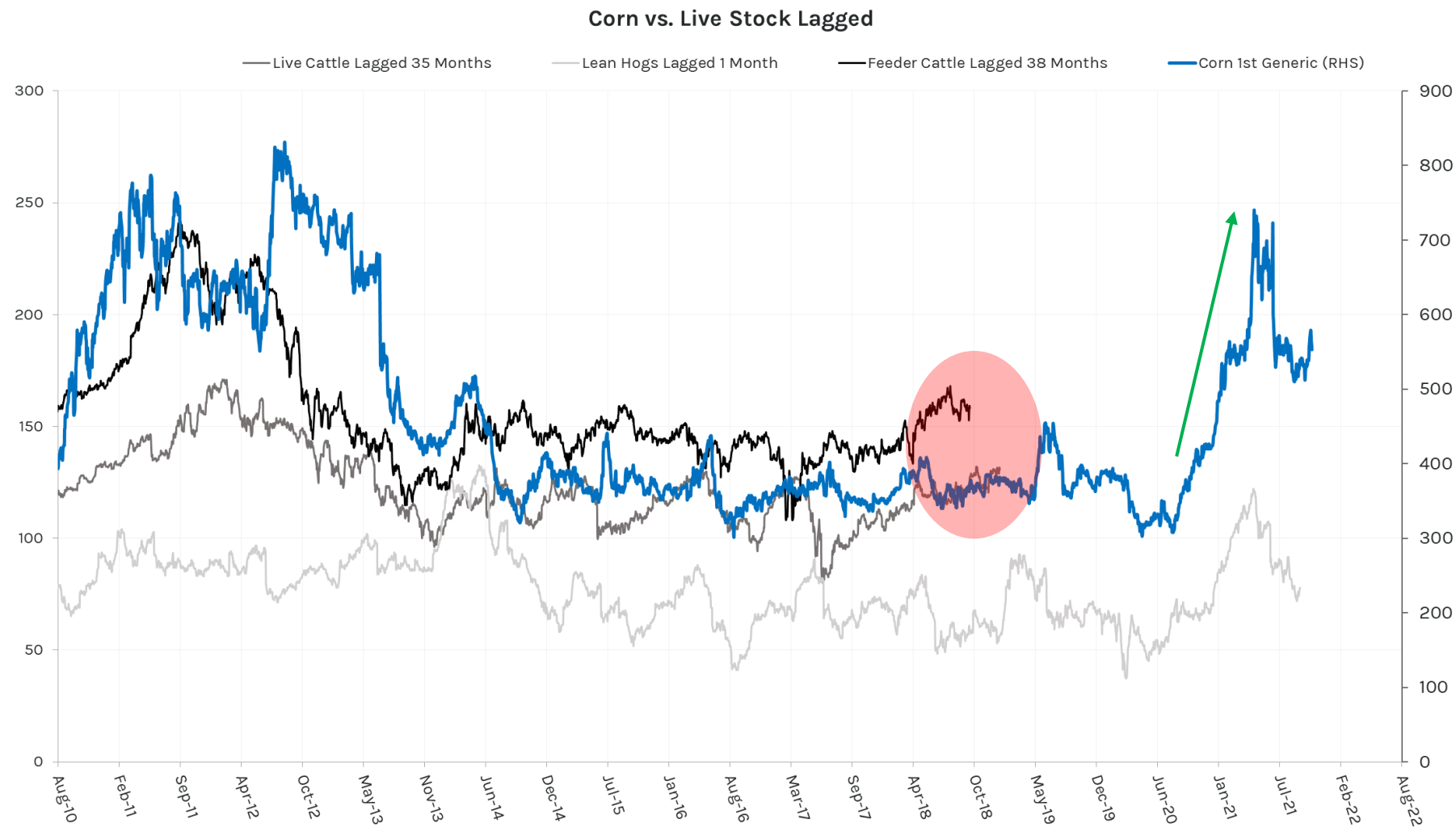


Source: Bloomberg

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# As Food Prices $\uparrow \rightarrow$ Livestock Prices $\uparrow$

Corn prices lead Live Cattle by 35 months, Feeder Cattle by 38 months, and Lean Hogs by 1 month

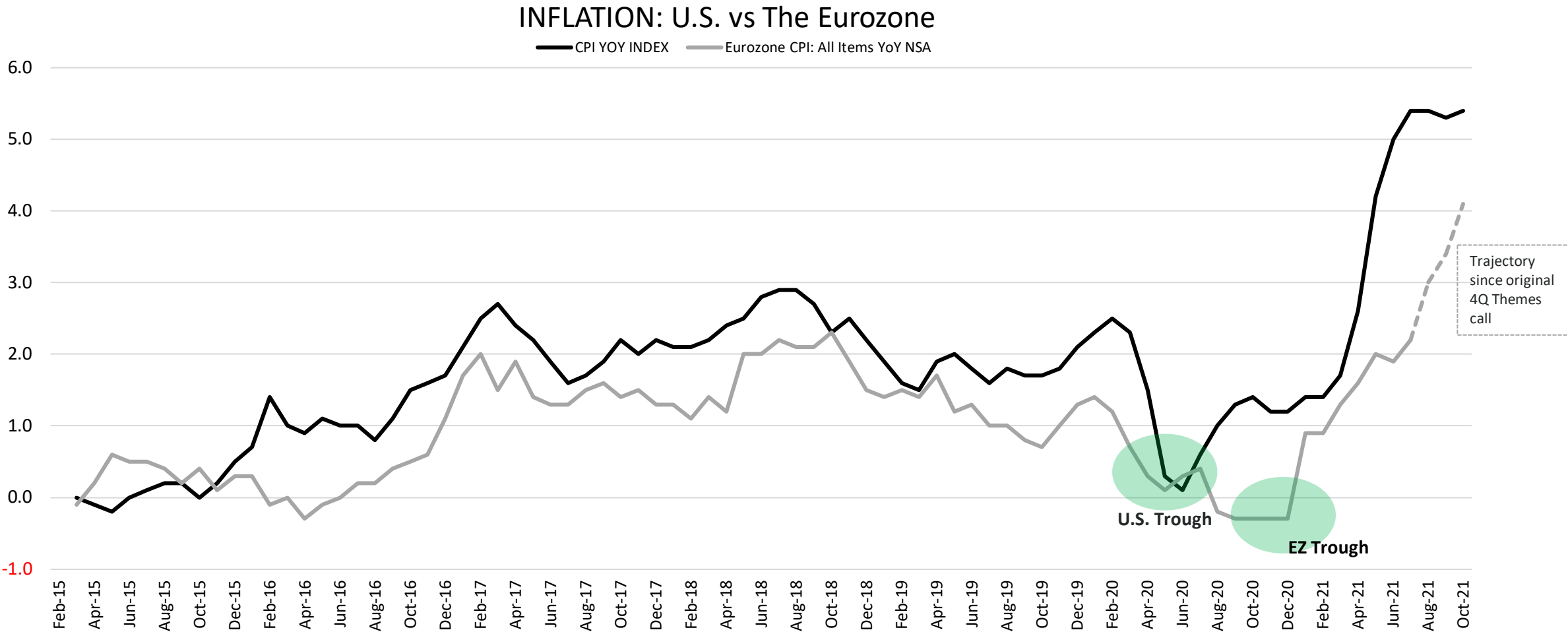


Source: Bloomberg

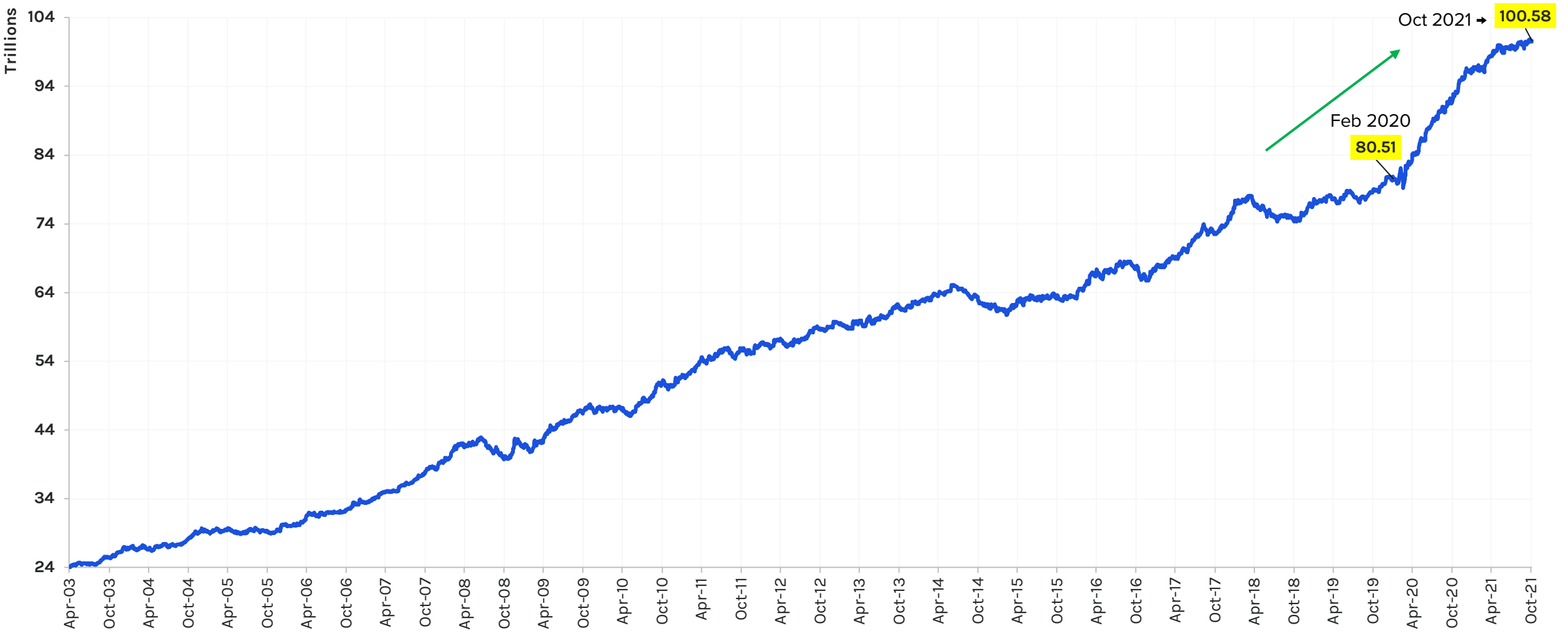
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# U.S. = The Lead Edge of Reopening & Renormalization

The point here is simple: The U.S. was on the lead edge of large-scale inoculation and global reopening. However, demand-supply imbalance and sticky high price growth remain intractable. If RoW follows the U.S. trajectory on a lag, they will be facing quarters (years?) of imbalance and elevated prices.



Governments Remain Undisciplined in Use of Printing Press (+\$20 Trillion in Last 20 Months)



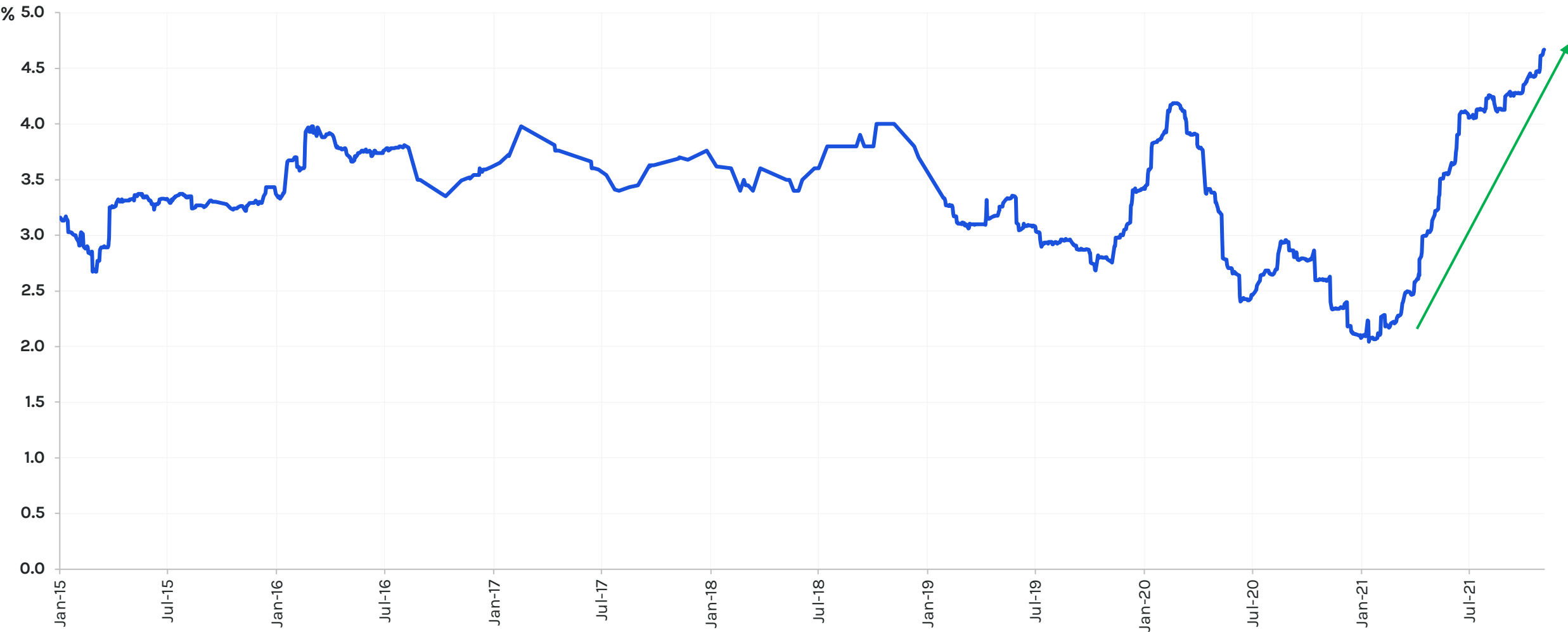
Source: Bloomberg

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# New Cycle Highs = World Economy Weighted Inflation YoY

## Global CPI Inflation Above 5-Year High

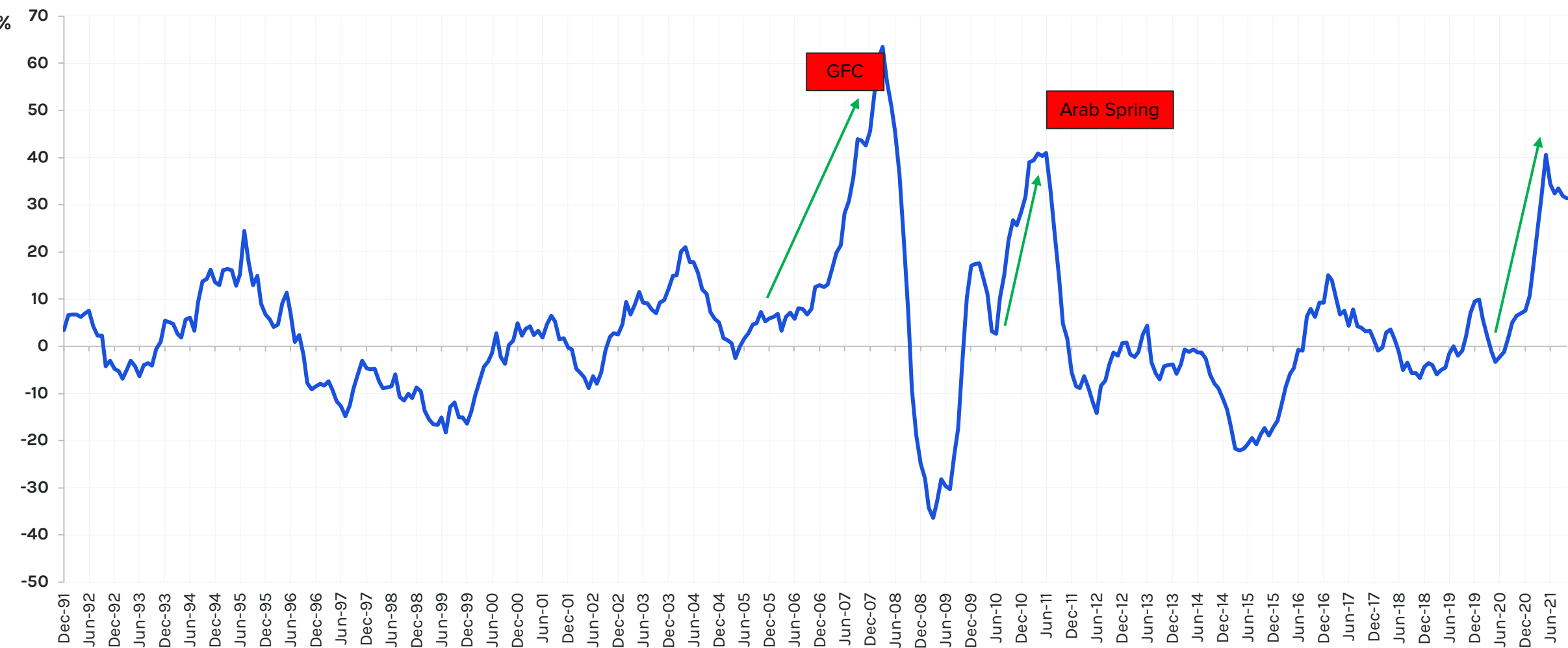


Source: Bloomberg

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# It's Not 2007, Yet ... But Food Prices Could (Easily) Go There

UN Food and Agriculture World Food Price YoY

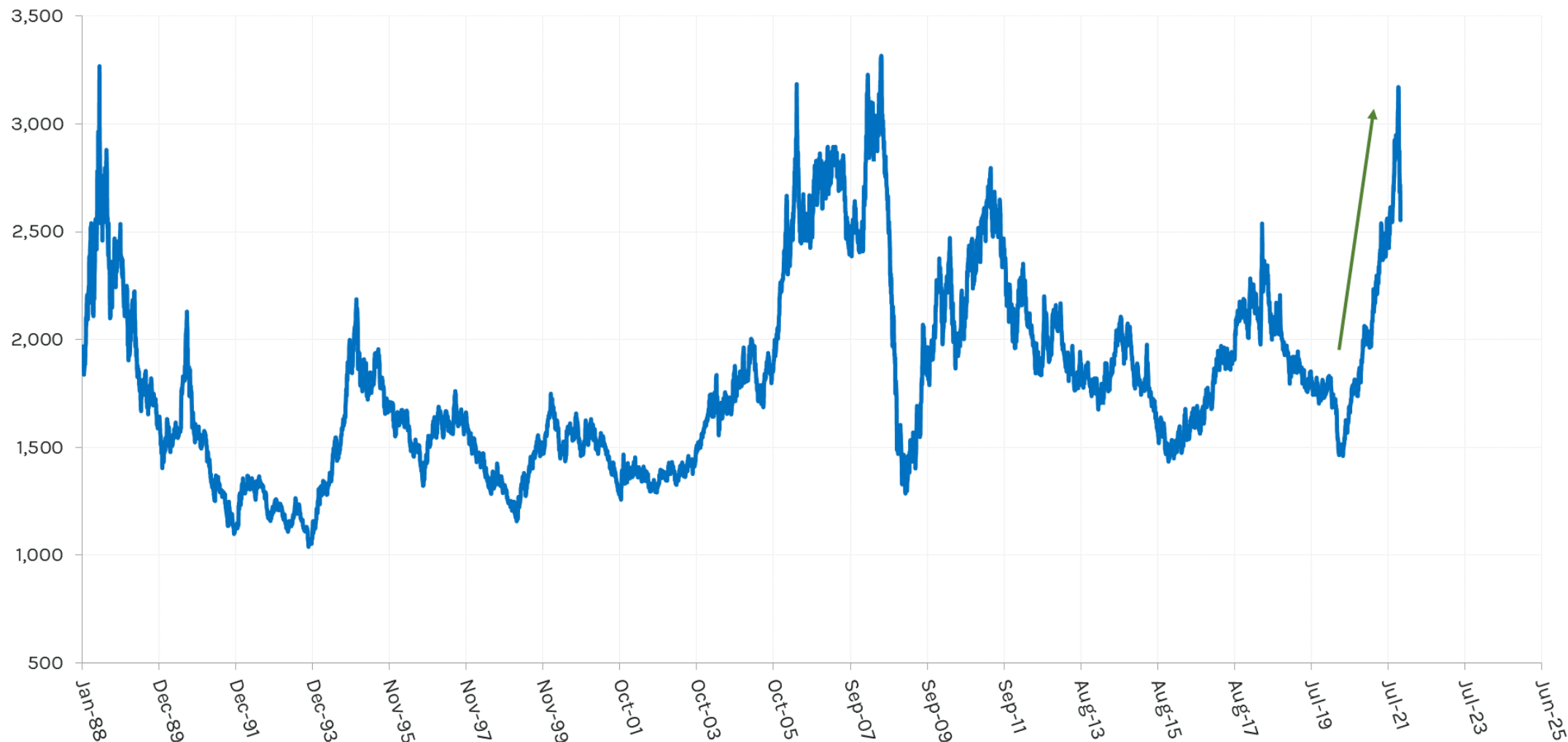


Source: Bloomberg

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# Aluminum Prices → Highest in 13 Years

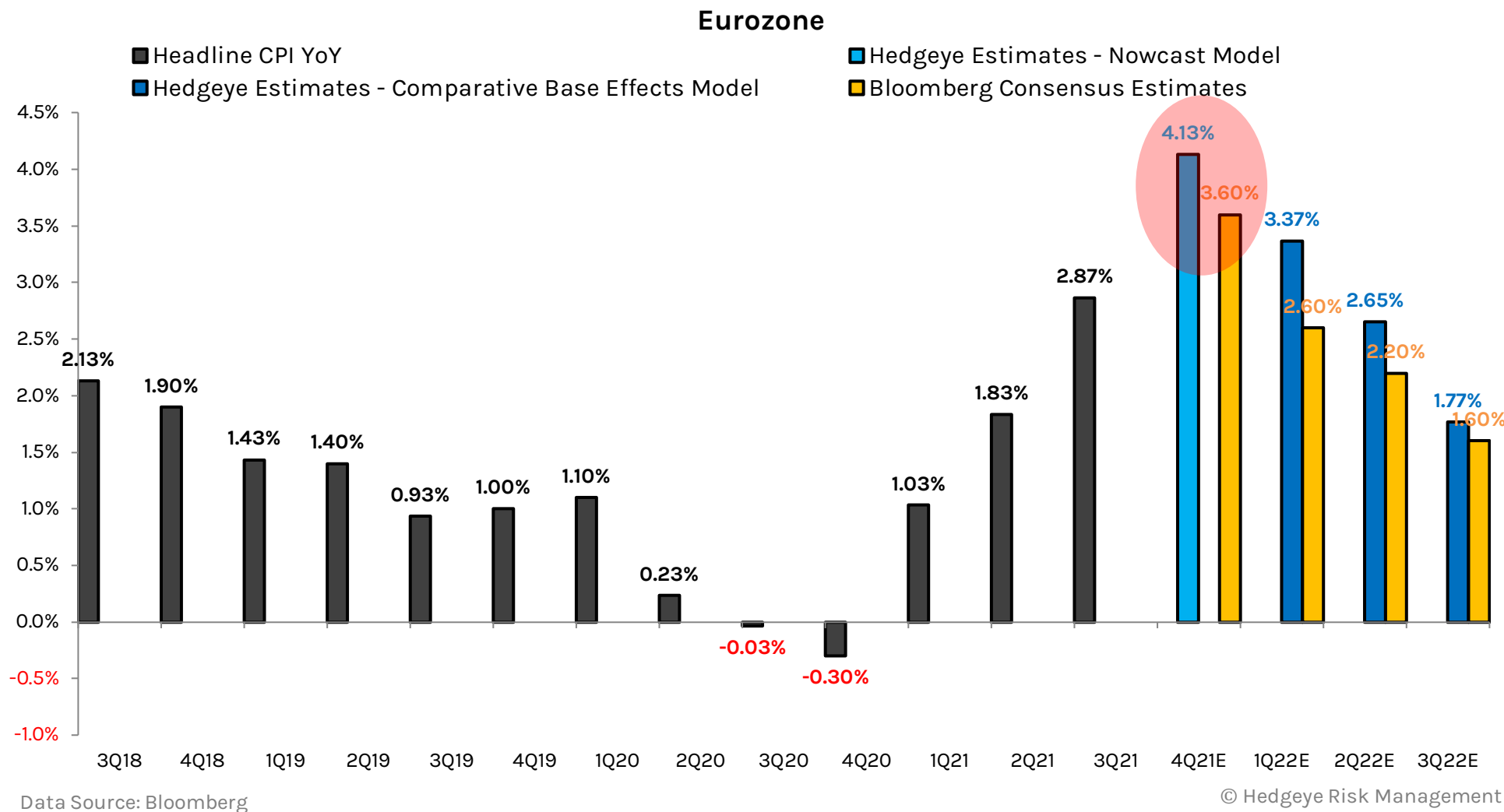
In Order To Get Carbon Emissions ↓ → Aluminum Prices ↑ ↑



Source: Bloomberg

© Hedgeye Risk Management

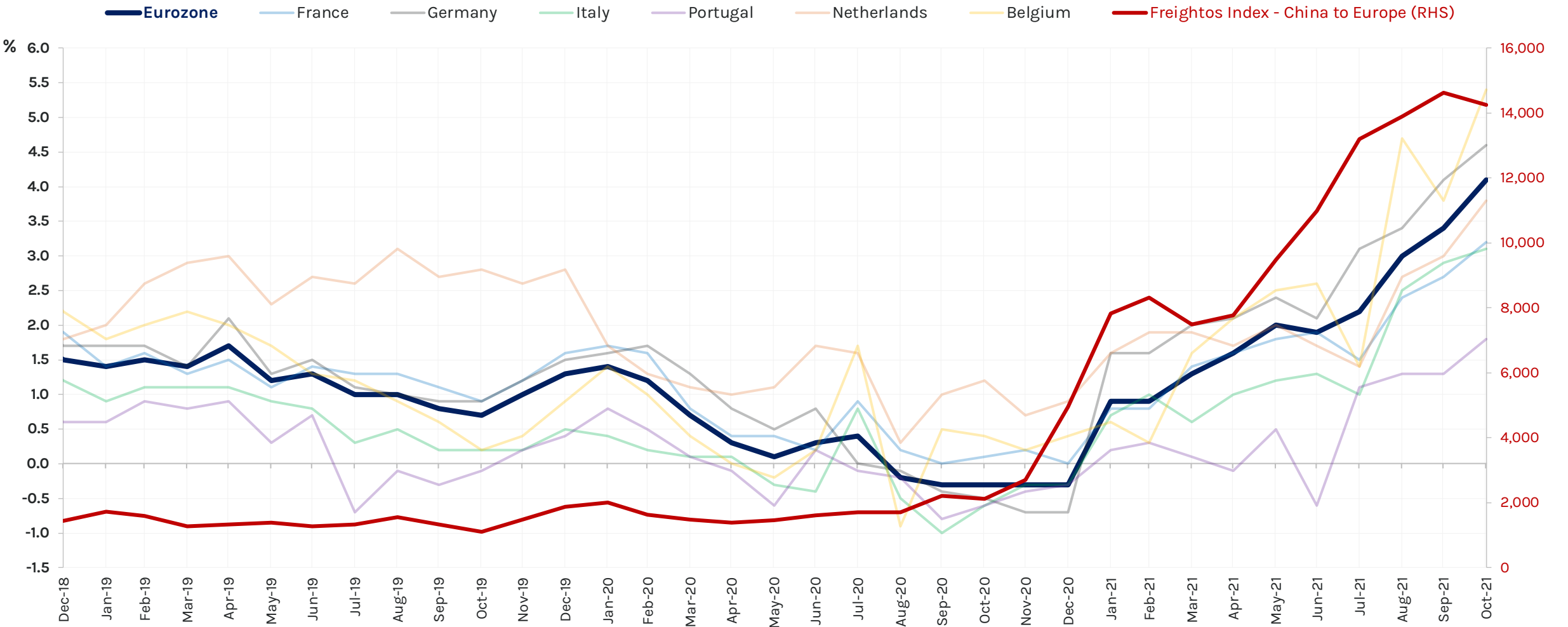
# Eurozone Headline CPI YoY Projections



Inflation is expected to climb higher through the end of the year and decelerate at the start of 2022 as the comp setup steepens materially.

# Eurozone CPI YoY

## Consumer Inflation Accelerating

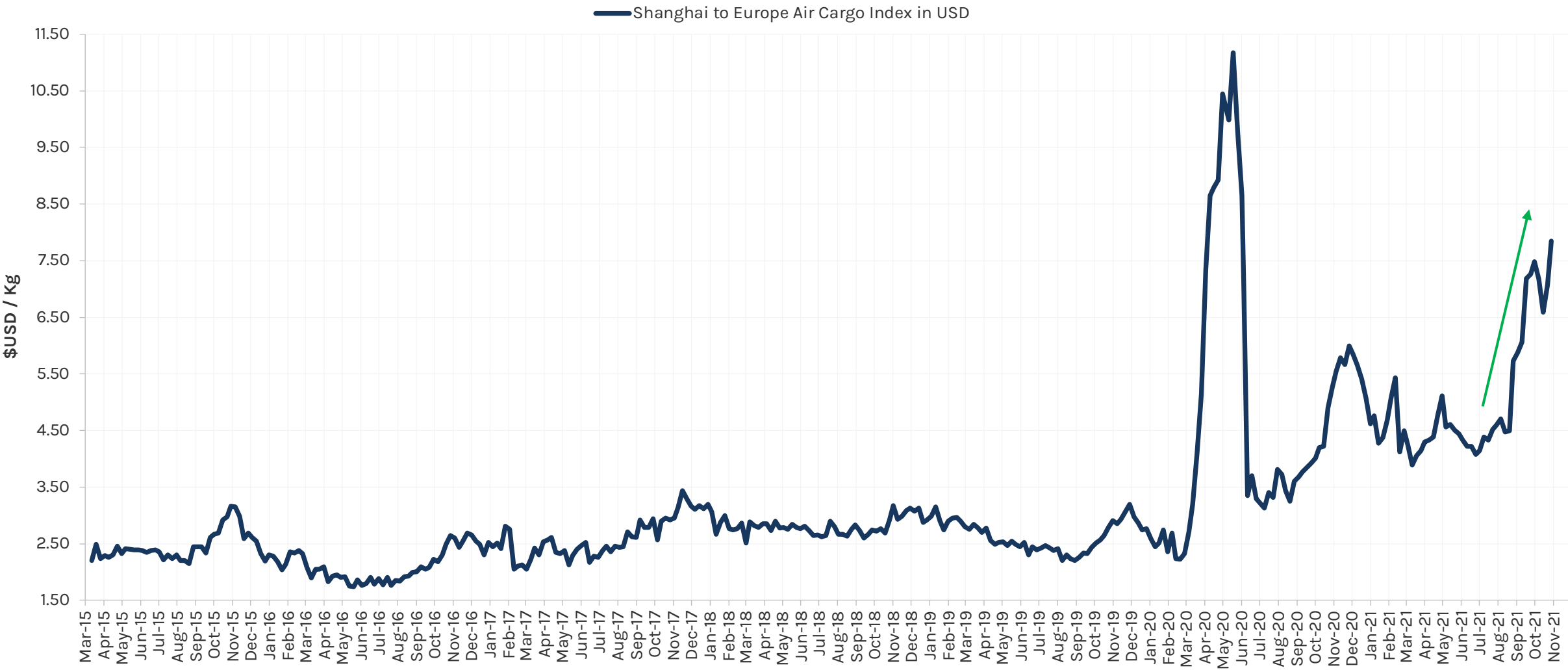


Source: Bloomberg

© Hedgeye Risk Management

# Shanghai to Europe Air Cargo Index

## Freight Costs Moving Steadily Higher

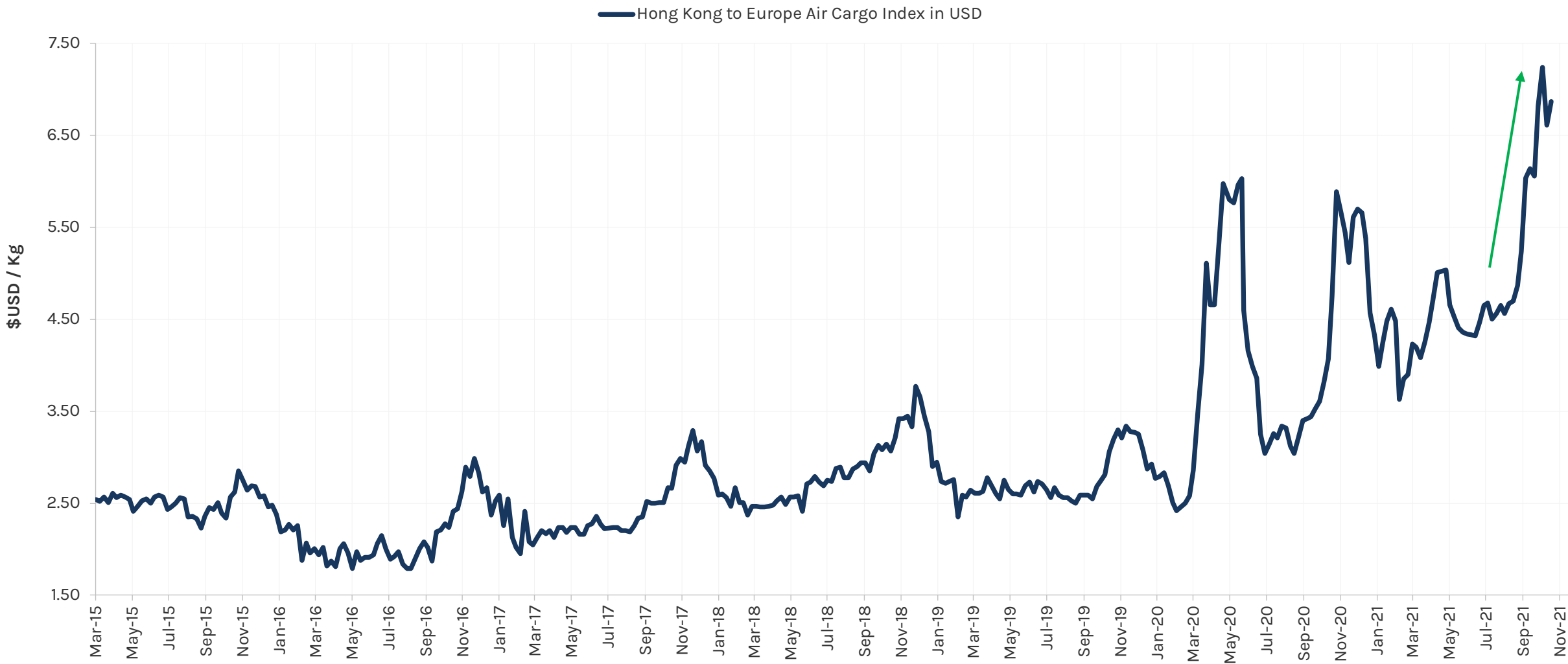


DATA SOURCE: TAC, HRM ESTIMATES

© HEDGEYE RISK MANAGEMENT

# Hong Kong to Europe Air Cargo Index

## Freight Costs Moving Steadily Higher

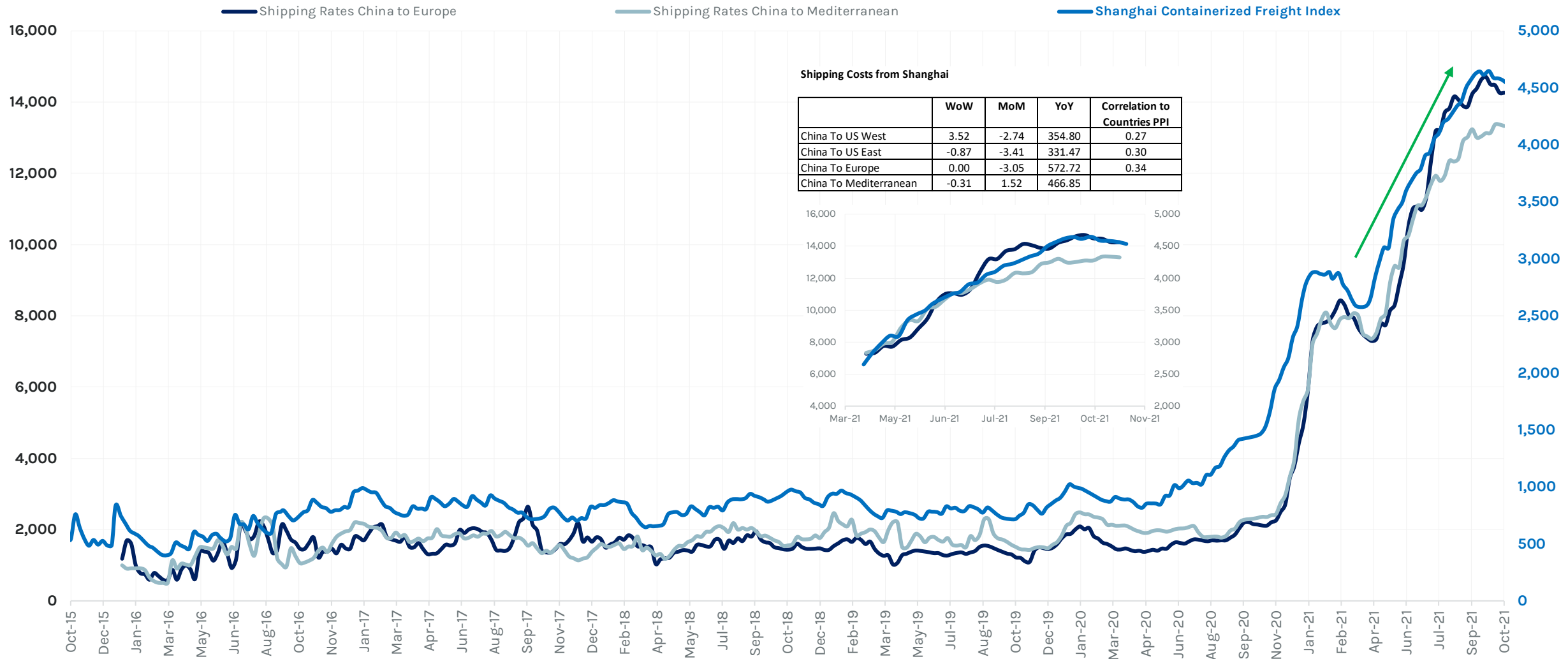


DATA SOURCE: TAC, HRM ESTIMATES

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# Shipping Rates from Shanghai

## Freight Costs are Soaring



Source: Bloomberg

© Hedgeye Risk Management



# Eurozone NowCast – All Inflation Measures ↑

## Core & Headline CPI + Headline PPI Accelerating

HEDGEYE EUROZONE NOWCAST MODEL SUMMARY		Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	3Q21	4Q21	Δ
Retail Sales YoY (2)		2.20	2.30	-7.80	-18.90	-2.40	1.70	0.50	4.50	2.50	4.60	-1.30	1.50	-4.80	-1.30	13.80	23.70	8.70	5.60	3.30	1.50	2.50	-	-	-	2.43	-	-
Industrial Production YoY (1)		-2.10	-1.90	-13.30	-28.70	-20.20	-11.80	-6.90	-7.00	-6.60	-3.60	-0.70	-0.10	0.40	-1.70	12.00	39.80	20.50	10.60	8.00	5.10	-	-	-	-	6.55	-	-
Exports YoY (5)		0.23	1.38	-5.59	-29.99	-29.89	-10.35	-10.51	-12.42	-3.27	-8.94	-0.99	2.70	-8.98	-2.34	12.45	46.81	34.98	23.70	11.45	18.22	-	-	-	-	14.83	-	-
Manufacturing PMI (4)		47.9	49.2	44.5	33.4	39.4	47.4	51.8	51.7	53.7	54.8	53.8	55.2	54.8	57.9	62.5	62.9	63.1	63.4	62.8	61.4	58.6	58.3	-	-	60.9	58.3	-2.63
Consumer Confidence (3)		-7.8	-6.4	-11.5	-21.9	-18.9	-14.6	-14.9	-14.6	-13.6	-15.5	-17.6	-13.8	-15.5	-14.8	-10.8	-8.1	-5.1	-3.3	-4.4	-5.3	-4.0	-4.8	-	-	-4.6	-4.8	-0.23
Business Confidence (6)		25.6	10.4	-49.5	25.2	46.0	58.6	59.6	64.0	73.9	52.3	32.8	54.4	58.3	69.6	74.0	66.3	84.0	81.3	61.2	42.7	31.1	21.0	-	-	45.0	21.0	-24.00
Headline CPI YoY (7)		1.40	1.20	0.70	0.30	0.10	0.30	0.40	-0.20	-0.30	-0.30	-0.30	-0.30	0.90	0.90	1.30	1.60	2.00	1.90	2.20	3.00	3.40	4.10	-	-	2.87	4.10	1.23
Core CPI YoY (9)		1.10	1.20	1.00	0.90	0.90	0.80	1.20	0.40	0.20	0.20	0.20	0.20	1.40	1.10	0.90	0.70	1.00	0.90	0.70	1.60	1.90	2.10	-	-	1.40	2.10	0.70
Headline PPI YoY (8)		-0.80	-1.40	-2.80	-4.60	-5.00	-3.70	-3.20	-2.60	-2.30	-2.00	-2.00	-1.10	0.40	1.50	4.40	7.60	9.60	10.30	12.40	13.40	16.00	-	-	-	13.93	-	-
Benchmark Equity Market - Mean Closing Price		133	133	100	101	104	115	117	117	116	114	122	127	130	132	136	142	143	147	146	151	150	149	154	-	149	151	2
Benchmark Policy Rate - Mean Closing Price		-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-	-0.50	-0.50	0.00
1Y OIS Spread - Mean Closing Price		-46	-50	-57	-49	-50	-50	-50	-49	-51	-52	-51	-51	-50	-49	-49	-49	-49	-48	-48	-49	-48	-46	-46	-	-49	-46	3
2Y Sovereign Note Yield - Mean Closing Price		-0.61	-0.66	-0.79	-0.66	-0.71	-0.65	-0.68	-0.67	-0.70	-0.75	-0.75	-0.73	-0.71	-0.70	-0.69	-0.70	-0.67	-0.66	-0.70	-0.75	-0.70	-0.66	-0.67	-	-0.72	-0.67	0.05
10Y Sovereign Note Yield - Mean Closing Price		-0.27	-0.43	-0.52	-0.43	-0.50	-0.40	-0.46	-0.47	-0.49	-0.57	-0.57	-0.57	-0.53	-0.39	-0.32	-0.28	-0.17	-0.21	-0.35	-0.46	-0.30	-0.15	-0.19	-	-0.37	-0.17	0.20
10Y Breakeven Rate - Mean Closing Price		1.31	1.22	0.91	0.96	0.89	1.06	1.13	1.22	1.18	1.14	1.16	1.25	1.31	1.34	1.47	1.54	1.58	1.57	1.60	1.68	1.75	1.90	1.90	-	1.68	1.90	0.22
EUR - Mean Closing Price		1.11	1.09	1.11	1.09	1.09	1.13	1.15	1.18	1.18	1.18	1.18	1.22	1.22	1.21	1.19	1.20	1.21	1.20	1.18	1.18	1.18	1.16	1.16	-	1.18	1.16	-0.02
Real Effective Exchange Rate		90.7	89.9	94.1	94.5	94.6	95.8	96.0	97.2	97.1	97.0	96.0	97.1	96.3	95.3	95.9	96.6	96.8	96.1	95.1	94.8	94.9	-	-	-	94.9	-	-

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

# Germany NowCast – All Inflation Measures ↑

## Core & Headline CPI + Headline PPI Accelerating

HEDGEYE GERMANY NOWCAST MODEL SUMMARY		Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	3Q21	4Q21	Δ
Retail Sales YoY (6)		2.10	2.10	0.70	-5.30	8.20	4.20	5.00	6.90	5.30	8.90	9.50	1.90	-5.30	-2.20	7.90	7.60	0.20	5.50	0.90	0.80	-	-	-	-	0.85	-	-
Industrial Production YoY (2)		-1.50	-1.32	-10.51	-24.95	-18.78	-10.50	-9.47	-9.00	-6.93	-3.05	-2.48	0.83	-3.70	-6.58	4.88	27.49	16.83	5.65	5.98	2.16	-1.01	-	-	-	2.38	-	-
Exports YoY (1)		-2.10	0.28	-7.57	-30.97	-29.47	-9.61	-10.61	-10.21	-3.68	-6.32	-1.03	3.21	-7.72	-1.27	16.14	47.38	35.94	23.65	11.97	14.54	-	-	-	-	13.25	-	-
Manufacturing PMI (5)		45.3	48.0	45.4	34.5	36.6	45.2	51.0	52.2	56.4	58.2	57.8	58.3	57.1	60.7	66.6	66.2	64.4	65.1	65.9	62.6	58.4	57.8	-	-	62.3	57.8	-4.50
Consumer Confidence (4)		93.0	94.0	88.0	73.0	76.0	82.0	-	85.0	88.0	87.0	84.0	-	82.0	85.0	89.0	-	96.0	101.0	-	-	-	-	-	-	-	-	-
Business Confidence (3)		96.0	96.2	86.7	75.5	80.5	86.0	89.7	91.7	92.5	92.2	91.3	92.8	90.8	93.0	96.7	96.5	99.3	102.0	100.8	99.7	98.9	97.7	-	-	99.8	97.7	-2.06
Headline CPI YoY (7)		1.60	1.70	1.30	0.80	0.50	0.80	0.00	-0.10	-0.40	-0.50	-0.70	-0.70	1.60	1.60	2.00	2.10	2.40	2.10	3.10	3.40	4.10	4.60	-	-	3.53	4.60	1.07
Core CPI YoY (9)		1.30	1.40	1.30	1.00	1.10	1.10	0.70	0.60	0.30	0.10	-0.10	-0.10	2.00	1.70	1.60	1.10	1.60	1.20	1.80	2.10	2.50	2.80	-	-	2.13	2.80	0.67
Headline PPI YoY (8)		0.50	0.10	-0.50	-1.50	-1.90	-1.60	-1.50	-1.10	-0.90	-0.70	-0.60	0.00	0.40	1.40	3.00	4.40	6.40	7.60	9.40	10.90	13.30	-	-	-	11.20	-	-
Benchmark Equity Market - Mean Closing Price		155	154	116	120	126	140	144	145	146	142	144	150	155	157	162	169	167	171	171	173	170	168	173	-	171	170	-1
Benchmark Policy Rate - Mean Closing Price		-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-	-0.50	-0.50	0.00
1Y OIS Spread - Mean Closing Price		-46	-50	-57	-49	-50	-50	-50	-49	-51	-52	-51	-51	-50	-49	-49	-49	-49	-48	-48	-49	-48	-46	-46	-	-49	-46	3
2Y Sovereign Note Yield - Mean Closing Price		-0.61	-0.66	-0.79	-0.66	-0.71	-0.65	-0.68	-0.67	-0.70	-0.75	-0.75	-0.73	-0.71	-0.70	-0.69	-0.70	-0.67	-0.66	-0.70	-0.75	-0.70	-0.66	-0.67	-	-0.72	-0.67	0.05
10Y Sovereign Note Yield - Mean Closing Price		-0.27	-0.43	-0.52	-0.43	-0.50	-0.40	-0.46	-0.47	-0.49	-0.57	-0.57	-0.57	-0.53	-0.39	-0.32	-0.28	-0.17	-0.21	-0.35	-0.46	-0.30	-0.15	-0.19	-	-0.37	-0.17	0.20
10Y Breakeven Rate - Mean Closing Price		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.66	1.54	-	-	1.60	-
EUR - Mean Closing Price		1.11	1.09	1.11	1.09	1.09	1.13	1.15	1.18	1.18	1.18	1.18	1.22	1.22	1.21	1.19	1.20	1.21	1.20	1.18	1.18	1.18	1.16	1.16	-	1.18	1.16	-0.02
Real Effective Exchange Rate		94.3	94.1	96.4	96.9	97.0	98.0	97.8	98.6	98.4	98.3	97.1	97.9	98.0	97.8	98.0	98.5	98.9	98.5	98.8	98.2	97.9	-	-	-	98.3	-	-

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

# France NowCast - All Inflation Measures ↑

## Core & Headline CPI + Headline PPI Accelerating

HEDGEYE FRANCE NOWCAST MODEL SUMMARY		Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	3Q21	4Q21	Δ
Retail Sales YoY (5)		-0.69	-1.06	-14.48	-31.02	-7.13	3.73	2.75	4.72	1.21	4.25	-13.65	4.50	0.48	1.11	16.68	31.75	7.73	-2.24	-4.28	-5.42	-2.31	-	-	-	-4.00	-	-
Industrial Production YoY (2)		-3.06	-1.05	-17.66	-34.87	-23.54	-11.62	-9.13	-7.19	-6.63	-4.44	-4.90	-3.20	0.00	-6.20	14.30	43.90	20.47	7.16	3.88	3.87	0.80	-	-	-	2.85	-	-
Exports YoY (4)		-5.39	-0.67	-19.15	-43.54	-37.00	-22.25	-15.42	-17.38	-9.74	-9.63	-6.92	-6.05	-1.17	-8.57	12.78	70.42	40.22	27.08	14.24	19.40	-	-	-	-	16.82	-	-
Manufacturing PMI (1)		51.1	49.8	43.2	31.5	40.6	52.3	52.4	49.8	51.2	51.3	49.6	51.1	51.6	56.1	59.3	58.9	59.4	59.0	58.0	57.5	55.0	53.6	-	-	56.8	53.6	-3.23
Consumer Confidence (6)		104.0	105.0	103.0	94.0	91.0	95.0	92.0	93.0	94.0	93.0	89.0	95.0	92.0	92.0	95.0	95.0	98.0	102.0	100.0	98.0	101.0	99.0	-	-	99.7	99.0	-0.67
Business Confidence (3)		105.8	105.6	93.9	48.0	59.6	83.8	90.1	93.6	93.2	90.0	78.3	92.3	93.4	90.9	97.5	95.6	109.2	113.5	112.1	109.9	110.6	113.4	-	-	110.9	113.4	2.53
Headline CPI YoY (7)		1.70	1.60	0.80	0.40	0.40	0.20	0.90	0.20	0.00	0.10	0.20	0.00	0.80	0.80	1.40	1.60	1.80	1.90	1.50	2.40	2.70	3.20	-	-	2.20	3.20	1.00
Core CPI YoY (9)		0.90	1.20	0.70	0.30	0.70	0.40	1.40	0.60	0.40	0.30	0.40	0.20	1.10	0.60	1.00	1.10	1.10	1.30	0.30	1.30	1.70	1.80	-	-	1.10	1.80	0.70
Headline PPI YoY (8)		0.10	-1.10	-2.50	-4.40	-3.90	-2.50	-2.50	-2.50	-2.30	-2.10	-1.90	-0.90	0.40	2.10	4.70	6.90	7.30	7.80	9.00	10.00	11.60	-	-	-	10.20	-	-
Benchmark Equity Market - Mean Closing Price		173	171	130	128	131	144	145	144	144	141	155	161	162	165	172	180	183	189	187	193	191	191	199	-	190	195	5
Benchmark Policy Rate - Mean Closing Price		-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-	-0.50	-0.50	0.00
1Y OIS Spread - Mean Closing Price		-46	-50	-57	-49	-50	-50	-50	-49	-51	-52	-51	-51	-50	-49	-49	-49	-49	-48	-48	-49	-48	-46	-46	-	-49	-46	3
2Y Sovereign Note Yield - Mean Closing Price		-0.57	-0.62	-0.61	-0.49	-0.53	-0.55	-0.61	-0.60	-0.63	-0.69	-0.68	-0.69	-0.63	-0.62	-0.61	-0.66	-0.63	-0.64	-0.66	-0.71	-0.69	-0.66	-0.68	-	-0.68	-0.67	0.01
10Y Sovereign Note Yield - Mean Closing Price		0.00	-0.18	-0.05	0.06	-0.04	-0.04	-0.15	-0.17	-0.21	-0.30	-0.32	-0.33	-0.31	-0.15	-0.07	0.01	0.21	0.15	-0.01	-0.12	0.04	0.20	0.16	-	-0.03	0.18	0.21
10Y Breakeven Rate - Mean Closing Price		1.03	0.94	0.51	0.51	0.48	0.61	0.71	0.81	0.73	0.73	0.79	0.90	1.00	1.07	1.22	1.34	1.40	1.36	1.33	1.43	1.60	1.81	1.72	-	1.45	1.76	0.31
EUR - Mean Closing Price		1.11	1.09	1.11	1.09	1.09	1.13	1.15	1.18	1.18	1.18	1.18	1.22	1.22	1.21	1.19	1.20	1.21	1.20	1.18	1.18	1.18	1.16	1.16	-	1.18	1.16	-0.02
Real Effective Exchange Rate		93.0	92.4	94.1	94.0	94.3	94.7	95.5	96.2	95.6	95.3	95.5	95.9	95.4	94.7	94.8	94.7	95.0	94.5	93.8	94.0	93.6	-	-	-	93.8	-	-

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

# Italy NowCast – Headline CPI & Headline PPI ↑

## Core & Headline CPI + Headline PPI Accelerating

HEDGEYE ITALY NOWCAST MODEL SUMMARY		Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	3Q21	4Q21	Δ
Retail Sales YoY (2)		1.36	5.84	-19.36	-26.84	-10.18	-2.35	-4.46	0.81	1.29	3.20	-8.42	-3.30	-6.71	-5.74	23.50	30.39	13.56	7.91	6.71	2.22	5.30	-	-	-	4.74	-	-
Industrial Production YoY (1)		-0.30	-2.77	-29.63	-43.64	-20.67	-13.90	-8.32	-0.71	-4.69	-1.85	-4.11	-1.45	-2.09	-0.76	38.43	78.99	21.19	13.84	7.22	0.00	-	-	-	-	3.61	-	-
Exports YoY (3)		1.13	6.05	-14.83	-43.03	-30.43	-12.87	-8.62	-7.02	1.14	-8.44	1.07	3.31	-8.52	-4.35	28.10	97.57	41.89	25.43	16.13	17.80	-	-	-	-	16.97	-	-
Manufacturing PMI (4)		48.9	48.7	40.3	31.1	45.4	47.5	51.9	53.1	53.2	53.8	51.5	52.8	55.1	56.9	59.8	60.7	62.3	62.2	60.3	60.9	59.7	61.1	-	-	60.3	61.1	0.80
Consumer Confidence (6)		112.0	110.8	100.7	-	92.6	98.9	99.4	100.7	103.7	100.2	96.0	101.1	100.7	101.4	100.9	102.3	110.6	115.1	116.6	116.2	119.6	118.4	-	-	117.5	118.4	0.93
Business Confidence (5)		99.5	99.3	86.7	-	71.7	79.7	84.6	86.7	92.5	95.8	91.6	97.3	96.9	100.7	102.7	106.5	110.6	114.3	115.1	113.3	113.2	114.9	-	-	113.9	114.9	1.03
Headline CPI YoY (7)		0.40	0.20	0.10	0.10	-0.30	-0.40	0.80	-0.50	-1.00	-0.60	-0.30	-0.30	0.70	1.00	0.60	1.00	1.20	1.30	1.00	2.50	2.90	3.10	-	-	2.13	3.10	0.97
Core CPI YoY (9)		0.50	0.50	0.60	0.60	0.60	0.50	2.10	0.30	-0.50	-0.10	0.30	0.40	1.30	1.50	0.70	0.30	0.20	0.30	-0.90	0.80	1.40	1.30	-	-	0.43	1.30	0.87
Headline PPI YoY (8)		-3.40	-3.80	-4.90	-6.80	-7.20	-6.10	-4.50	-4.00	-3.80	-2.90	-2.80	-2.30	-0.40	0.70	3.00	8.20	10.00	11.00	13.50	13.80	15.60	-	-	-	14.30	-	-
Benchmark Equity Market - Mean Closing Price		64	65	47	45	46	51	53	52	51	50	55	57	58	60	62	64	64	66	65	67	66	67	70	-	66	69	3
Benchmark Policy Rate - Mean Closing Price		-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-	-	-0.50	-0.50	0.00
1Y OIS Spread - Mean Closing Price		-46	-50	-57	-49	-50	-50	-50	-49	-51	-52	-51	-51	-50	-49	-49	-49	-49	-48	-48	-49	-48	-46	-46	-	-49	-46	3
2Y Sovereign Note Yield - Mean Closing Price		-0.07	-0.19	0.46	0.75	0.59	0.19	0.03	-0.10	-0.16	-0.33	-0.39	-0.42	-0.34	-0.36	-0.38	-0.35	-0.27	-0.36	-0.41	-0.49	-0.48	-0.38	-0.20	-	-0.46	-0.29	0.17
10Y Sovereign Note Yield - Mean Closing Price		1.28	0.96	1.51	1.74	1.72	1.40	1.13	0.97	0.95	0.74	0.67	0.57	0.62	0.59	0.66	0.75	0.98	0.85	0.70	0.58	0.73	0.92	1.03	-	0.67	0.98	0.31
10Y Breakeven Rate - Mean Closing Price		0.71	0.63	0.12	0.16	0.41	0.55	0.63	0.73	0.65	0.68	0.76	0.85	0.96	1.05	1.20	1.32	1.37	1.31	1.27	1.38	1.52	1.70	1.64	-	1.39	1.67	0.28
EUR - Mean Closing Price		1.11	1.09	1.11	1.09	1.09	1.13	1.15	1.18	1.18	1.18	1.18	1.22	1.22	1.21	1.19	1.20	1.21	1.20	1.18	1.18	1.18	1.16	1.16	-	1.18	1.16	-0.02
Real Effective Exchange Rate		93.7	93.0	95.0	95.1	95.1	95.5	95.7	96.9	96.2	96.2	96.0	96.4	96.5	95.8	95.7	95.9	95.8	95.3	95.0	94.9	94.5	-	-	-	94.8	-	-

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

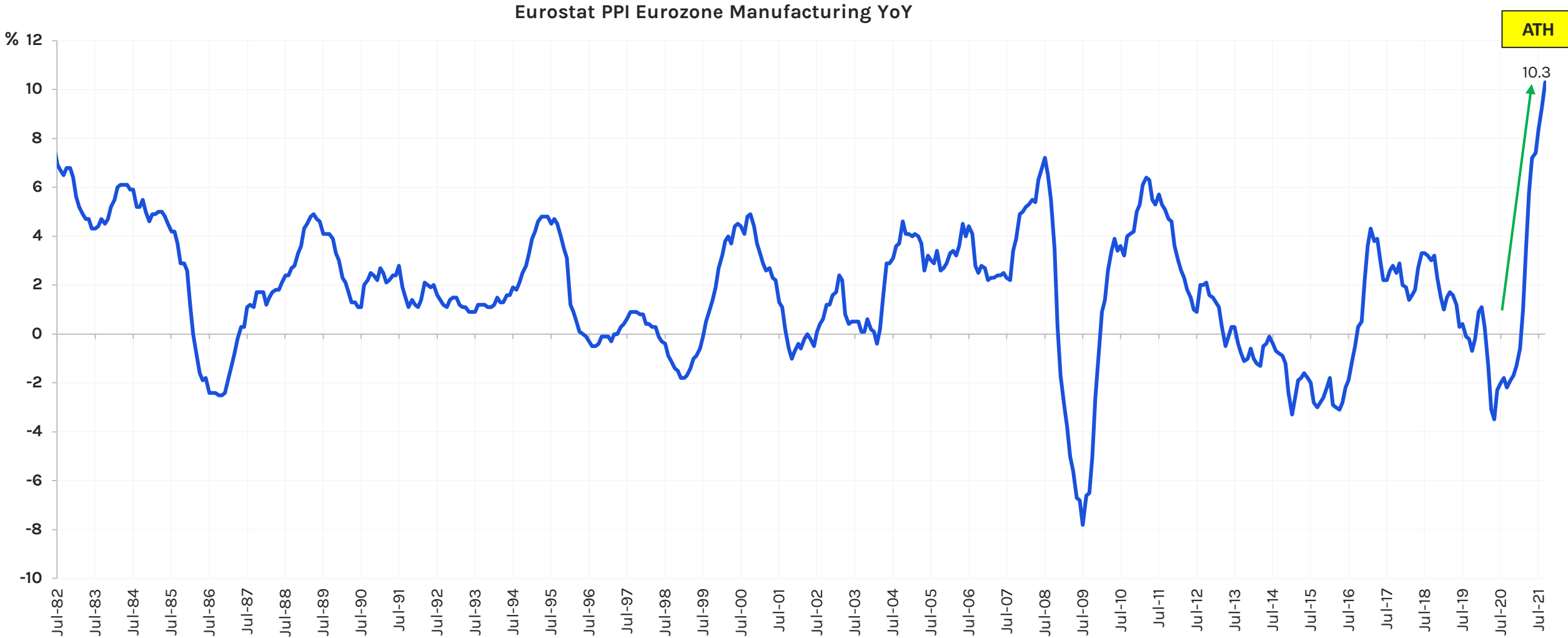
# Spain NowCast - All Inflation Measures ↑

## Core & Headline CPI + Headline PPI Accelerating

HEDGEYE SPAIN NOWCAST MODEL SUMMARY		Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	3Q21	4Q21	Δ
Retail Sales YoY (1)		1.70	1.80	-14.20	-31.60	-18.90	-4.70	-3.90	-2.90	-3.30	-3.00	-3.90	-1.50	-9.40	-6.10	14.30	40.50	19.70	1.20	0.10	-0.70	-0.10	-	-	-	-0.23	-	-
Industrial Production YoY (2)		-3.10	-2.40	-14.20	-34.40	-23.30	-13.50	-6.50	-5.80	-3.30	-1.60	-3.90	-1.20	-2.00	-1.90	13.00	48.40	24.70	10.80	3.30	1.80	1.20	-	-	-	2.10	-	-
Exports YoY (5)		2.74	4.23	-14.53	-39.26	-34.38	-9.22	-7.52	-9.12	-0.93	-5.88	-1.32	0.87	-11.43	-1.88	29.85	71.79	55.31	21.95	13.61	25.09	-	-	-	-	19.35	-	-
Manufacturing PMI (4)		48.5	50.4	45.7	30.8	38.3	49.0	53.5	49.9	50.8	52.5	49.8	51.0	49.3	52.9	56.9	57.7	59.4	60.4	59.0	59.5	58.1	57.4	-	-	58.9	57.4	-1.47
Consumer Confidence (6)		-11.5	-7.9	-11.6	-29.2	-28.8	-25.6	-25.6	-28.7	-26.3	-26.7	-29.0	-23.1	-23.7	-25.2	-17.4	-11.6	-9.9	-11.7	-10.2	-8.5	-8.6	-6.8	-	-	-9.1	-6.8	2.30
Business Confidence (3)		102.0	103.2	100.2	75.2	76.4	84.0	91.4	88.9	90.6	90.3	88.5	91.5	93.9	90.7	96.9	106.0	108.3	107.2	108.9	107.7	109.4	111.9	-	-	108.7	111.9	3.23
Headline CPI YoY (7)		1.10	0.90	0.10	-0.70	-0.90	-0.30	-0.70	-0.60	-0.60	-0.90	-0.80	-0.60	0.40	-0.10	1.20	2.00	2.40	2.50	2.90	3.30	4.00	5.50	-	-	3.40	5.50	2.10
Core CPI YoY (9)		1.10	1.30	1.10	0.90	0.90	0.80	0.20	0.10	0.00	-0.10	0.00	-0.10	0.40	0.00	0.00	-0.30	-0.10	-0.10	0.50	0.60	1.00	-	-	-	0.70	-	-
Headline PPI YoY (8)		-1.00	-2.20	-4.90	-8.40	-8.80	-5.90	-4.90	-3.50	-3.30	-4.20	-2.70	-1.50	1.00	0.50	6.40	12.90	15.30	15.40	15.60	17.90	23.60	-	-	-	19.03	-	-
Benchmark Equity Market - Mean Closing Price		113	114	85	80	80	88	88	84	81	81	91	98	98	98	101	102	108	109	104	106	105	107	109	-	105	108	3
Benchmark Policy Rate - Mean Closing Price		-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-	-	-0.50	-0.50	0.00
1Y OIS Spread - Mean Closing Price		-46	-50	-57	-49	-50	-50	-50	-49	-51	-52	-51	-51	-50	-49	-49	-49	-49	-48	-48	-49	-48	-46	-46	-	-49	-46	3
2Y Sovereign Note Yield - Mean Closing Price		-0.38	-0.44	-0.27	-0.02	-0.25	-0.37	-0.40	-0.45	-0.49	-0.55	-0.58	-0.61	-0.53	-0.49	-0.48	-0.49	-0.50	-0.52	-0.54	-0.61	-0.60	-0.58	-0.60	-	-0.59	-0.59	-0.01
10Y Sovereign Note Yield - Mean Closing Price		0.40	0.27	0.58	0.84	0.71	0.54	0.39	0.33	0.29	0.18	0.10	0.05	0.07	0.24	0.34	0.39	0.52	0.43	0.31	0.24	0.36	0.49	0.51	-	0.30	0.50	0.20
10Y Breakeven Rate - Mean Closing Price		1.13	1.05	0.65	0.72	0.67	0.79	0.85	0.93	0.83	0.81	0.88	0.98	1.07	1.15	1.29	1.41	1.47	1.41	1.35	1.43	1.61	1.79	1.71	-	1.46	1.75	0.29
EUR - Mean Closing Price		1.11	1.09	1.11	1.09	1.09	1.13	1.15	1.18	1.18	1.18	1.18	1.22	1.22	1.21	1.19	1.20	1.21	1.20	1.18	1.18	1.18	1.16	1.16	-	1.18	1.16	-0.02
Real Effective Exchange Rate		95.1	94.5	95.7	96.1	96.3	97.0	96.4	97.2	97.4	97.7	97.7	98.1	97.5	96.2	96.7	97.7	98.1	98.0	96.6	96.5	97.2	-	-	-	96.8	-	-

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

# All-time Remains A Long Time – Eurozone PPI Surges Past ATHs

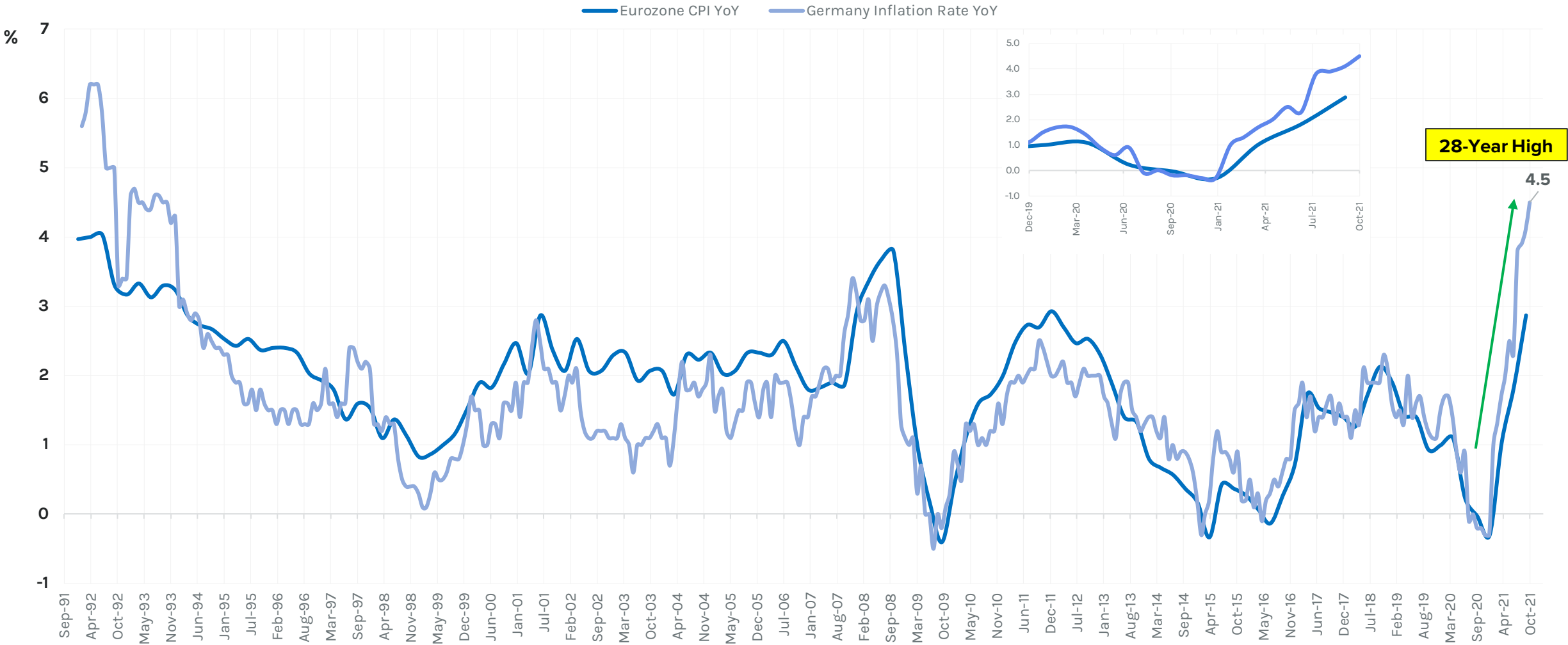


Source: Bloomberg

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# German Consumer Price Indicators

## German Inflation Leading the Eurozone Charge

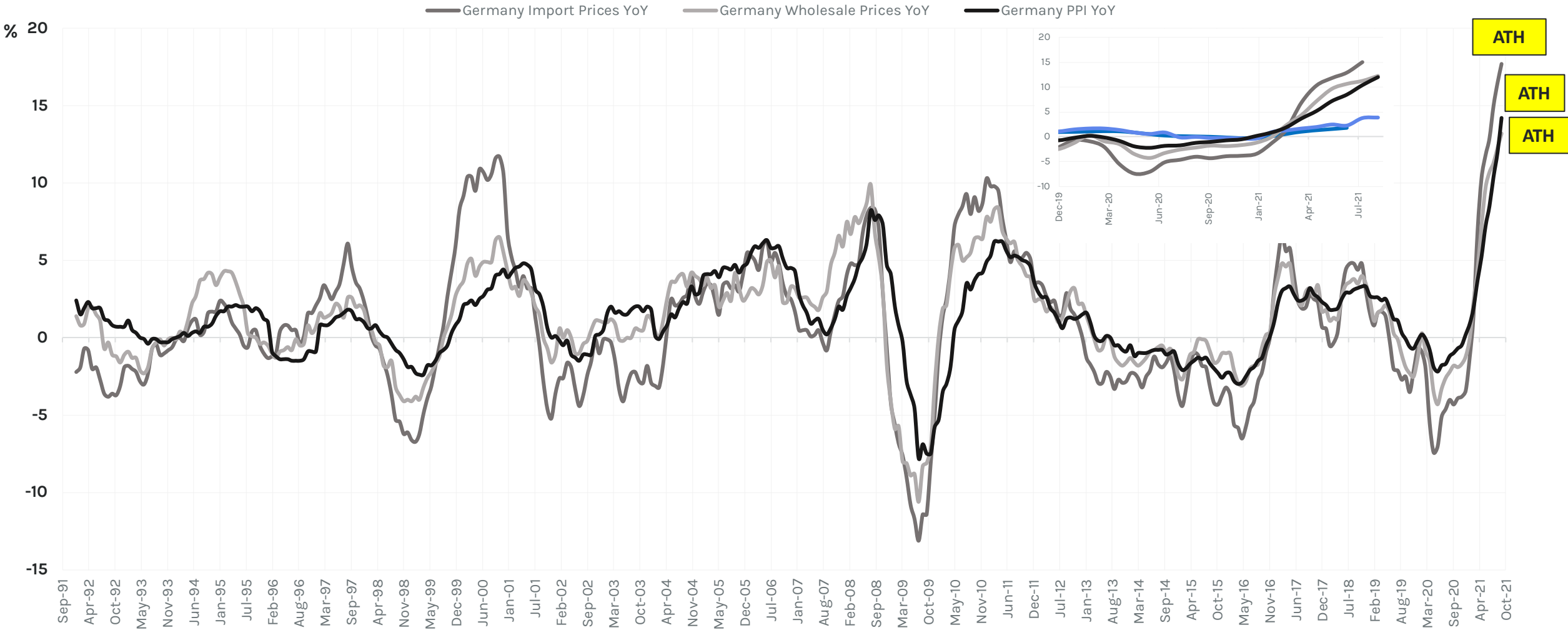


Source: Bloomberg

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# German Wholesale Price Indicators

## Import Prices, Wholesale Prices, PPI are All Ripping



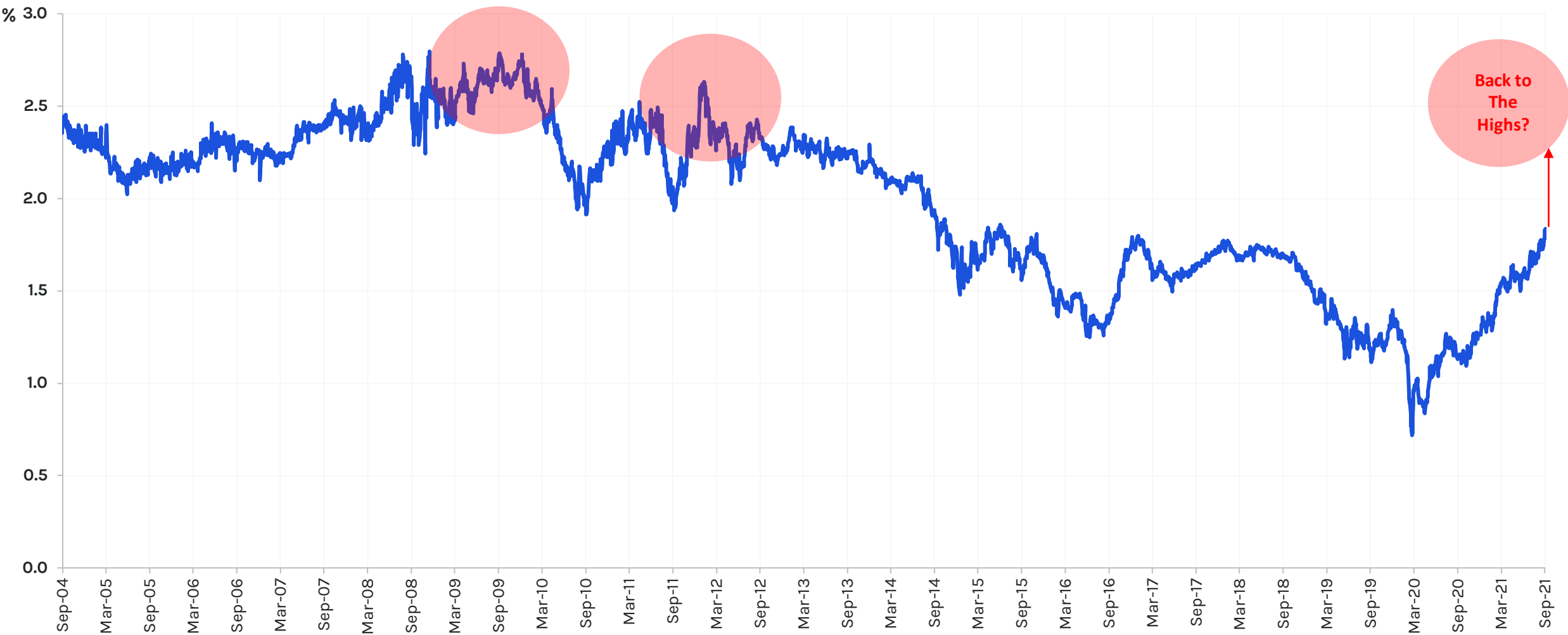
Source: Bloomberg

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# Where's This Chart Headed Next in #Quad2?

## Longer-Term Inflation Expectations on the Rise: 5-Year, 5-Year Euro Inflation Swap Rate

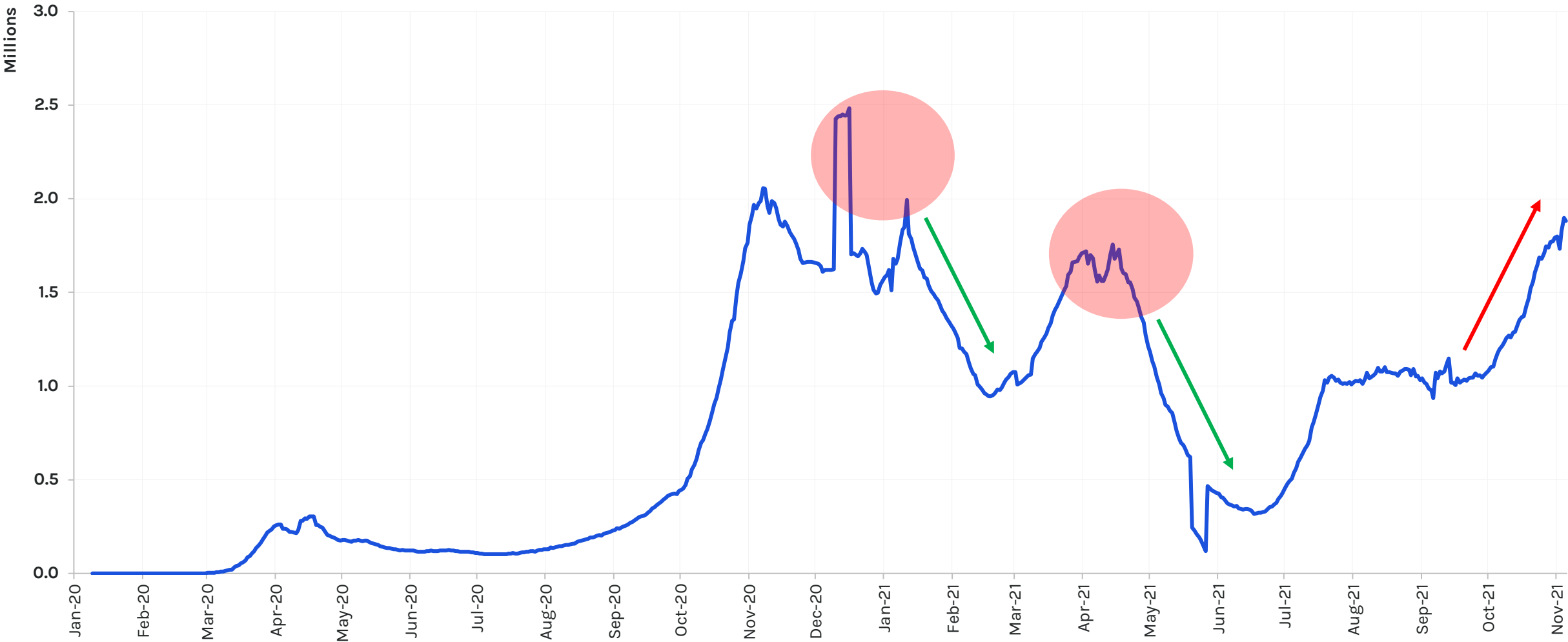


Source: Bloomberg

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# ΔW/W in Confirmed Covid Cases, Europe

Delta has Reaccelerated in Europe Since Our 9/23 Presentation & Inflation Is Still Ripping.



Source: Bloomberg

© Hedgeye Risk Management

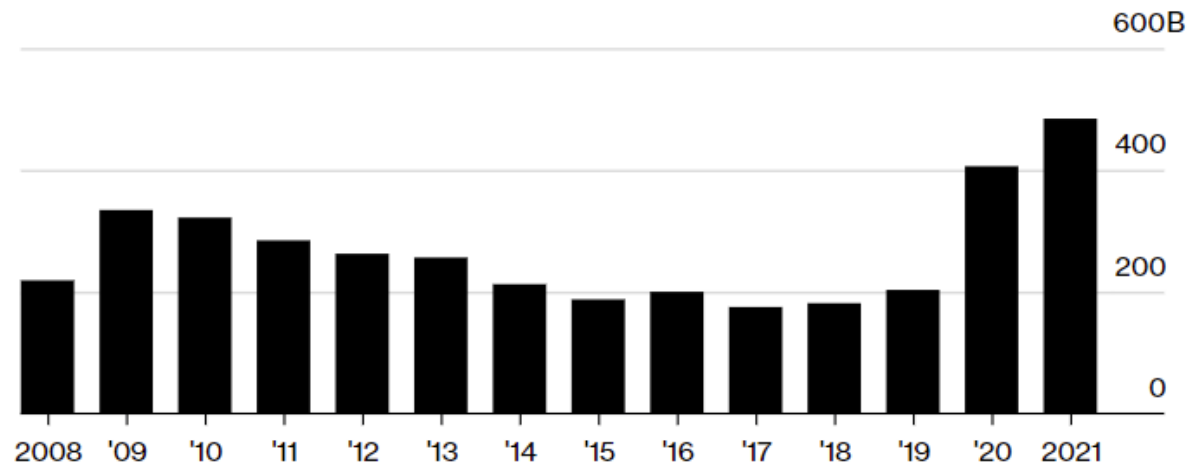
# German Spending Poised to ↑

After decades of conservative fiscal policy, Germany is poised to loosen the purse strings.

## Debt Splurge

Germany ramped up borrowing to help deal with the pandemic fallout

■ Debt sales in billions of euros



Source: Federal Finance Agency  
(Amount for 2021 is projected maximum volume)

## Economics

# Merkel Cabinet Backs 2022 Net Borrowing of 100 Billion Euros

By [Birgit Jennen](#) and [Arne Delfs](#)

June 23, 2021, 4:57 AM EDT Updated on June 23, 2021, 5:11 AM EDT

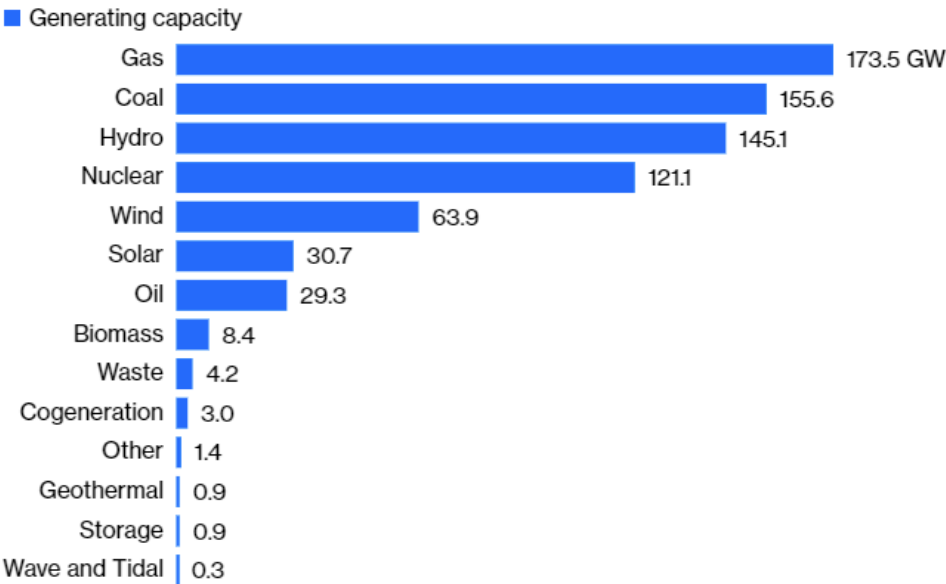
- ▶ Government spending freely to offset damage from pandemic
- ▶ Next administration will likely make changes to Scholz plans

# ESG? What Could Possibly Go Wrong

## European Natural Gas Dependence

### European Power

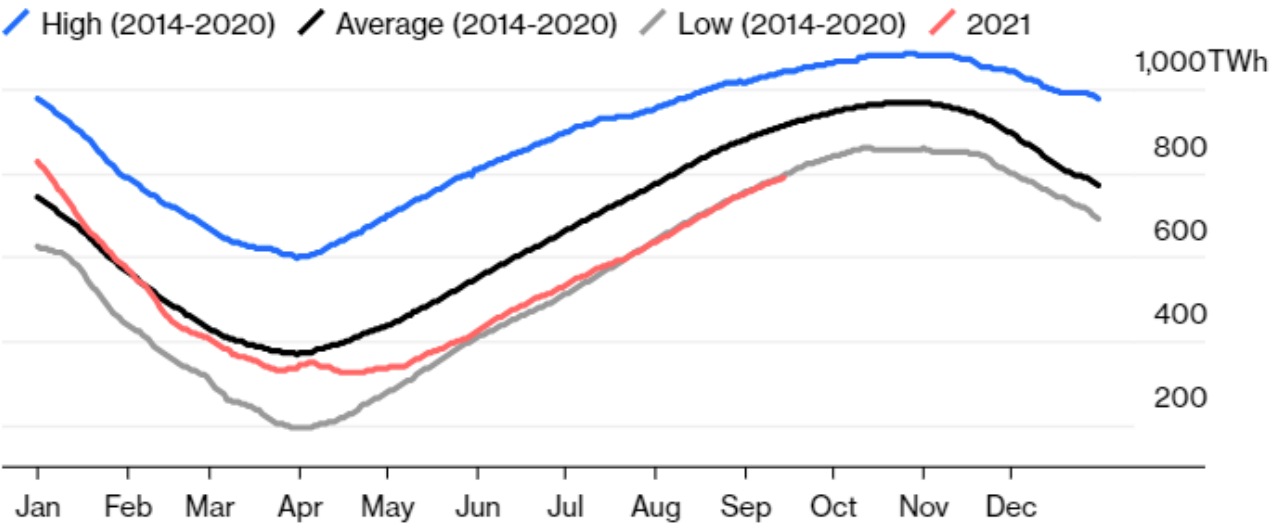
Natural gas is the major fuel for power generation in Europe



Source: World Resources Institute  
Note: EU-27 plus Norway and the U.K.

### Running Low

European gas stockpiles are the lowest for the time of year since 2013

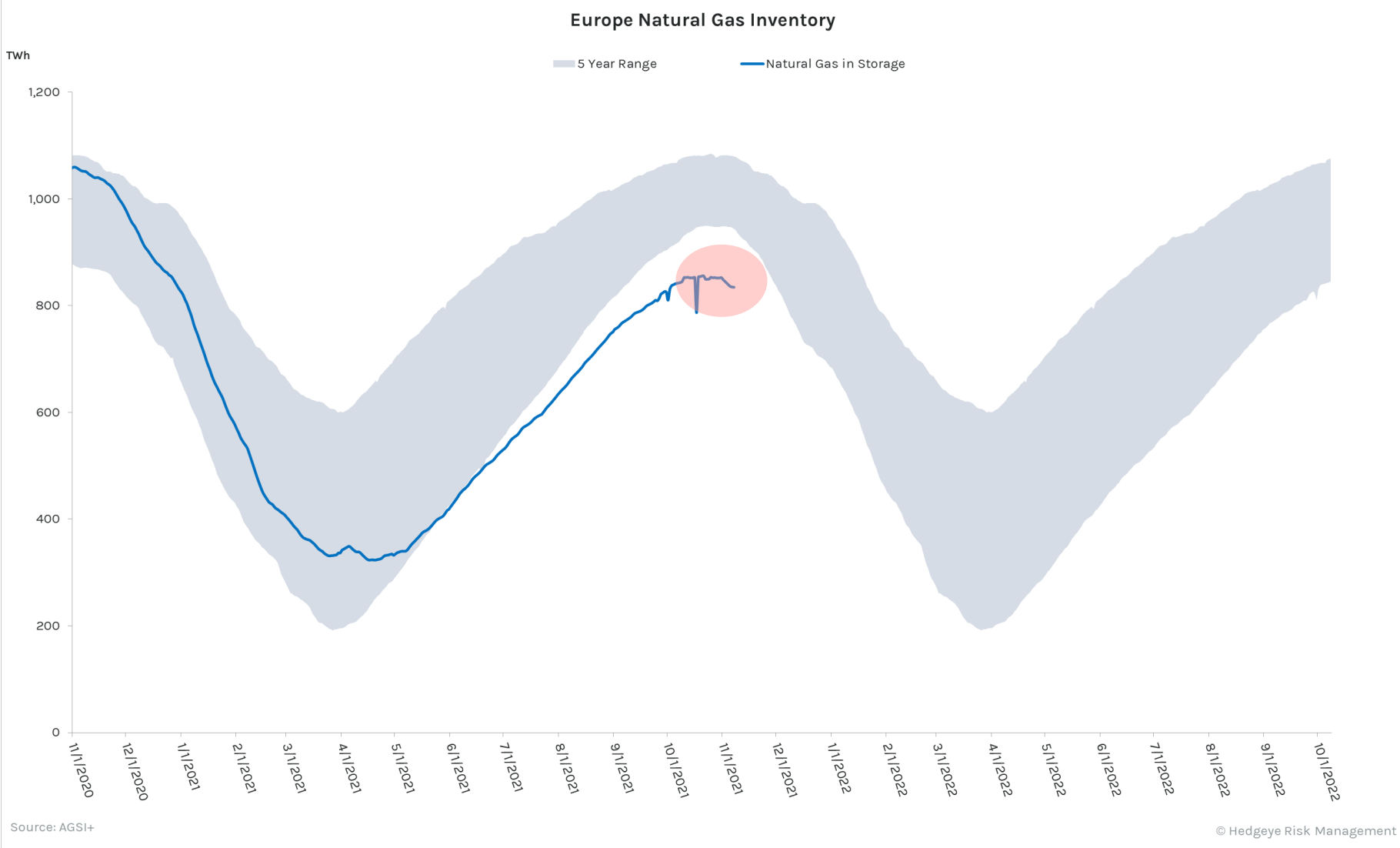


Source: Gas Infrastructure Europe

Europe is heavily dependent on natural gas. With prices at a 7-yr high and stockpiles low compared to prior years, this inflationary energy dynamic could be exacerbated by an upcoming cold winter.

# Energy Inventory Levels Remain Low Across the World

EU Natural Gas in Storage is below its 5 year low with winter starting



# Why Not \$6, \$10, or \$14 Gas in America?

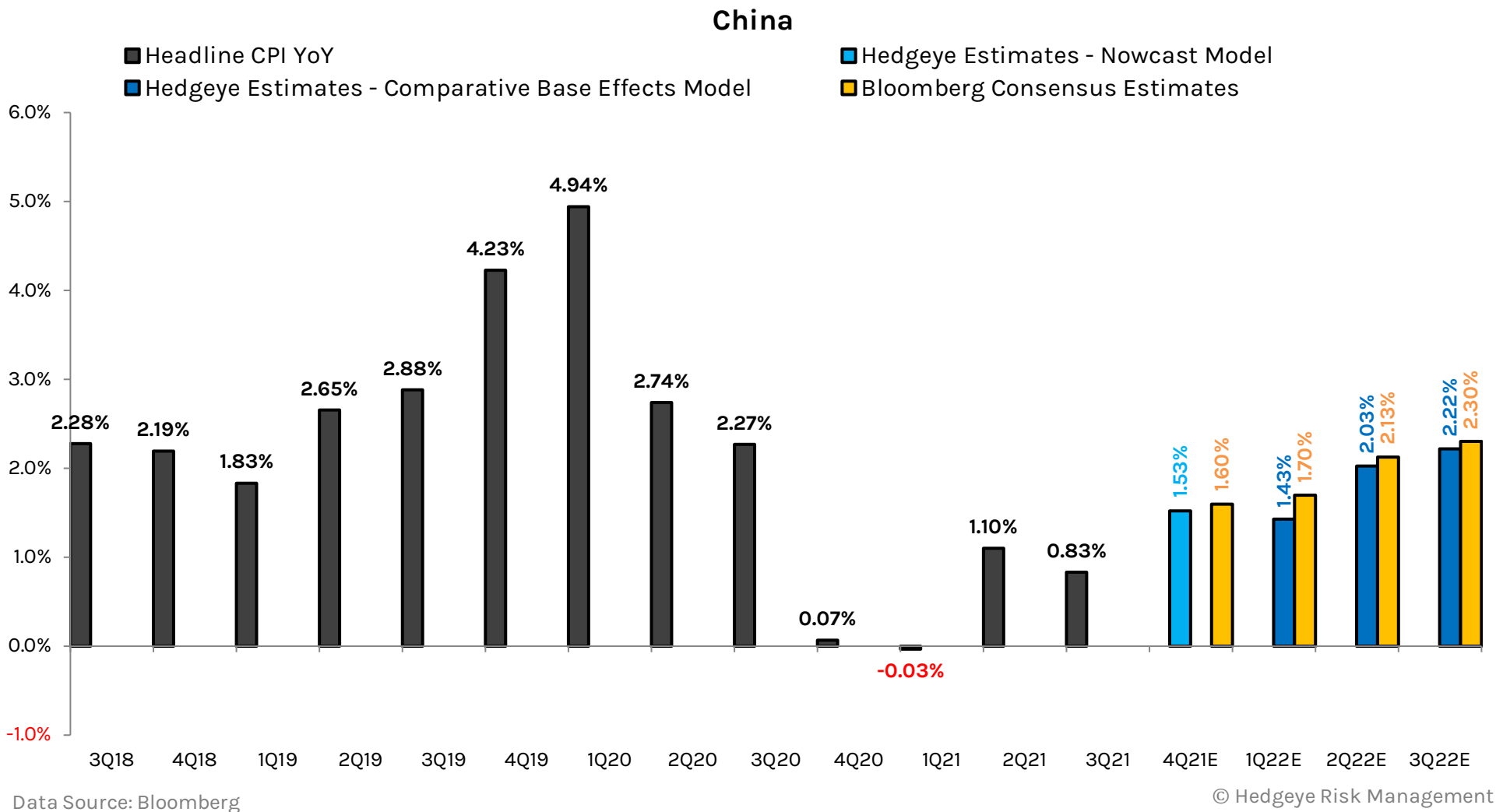
## Generic 1<sup>st</sup> Natural Gas Future: Prices at a 7-Year High



Source: Bloomberg

© Hedgeye Risk Management

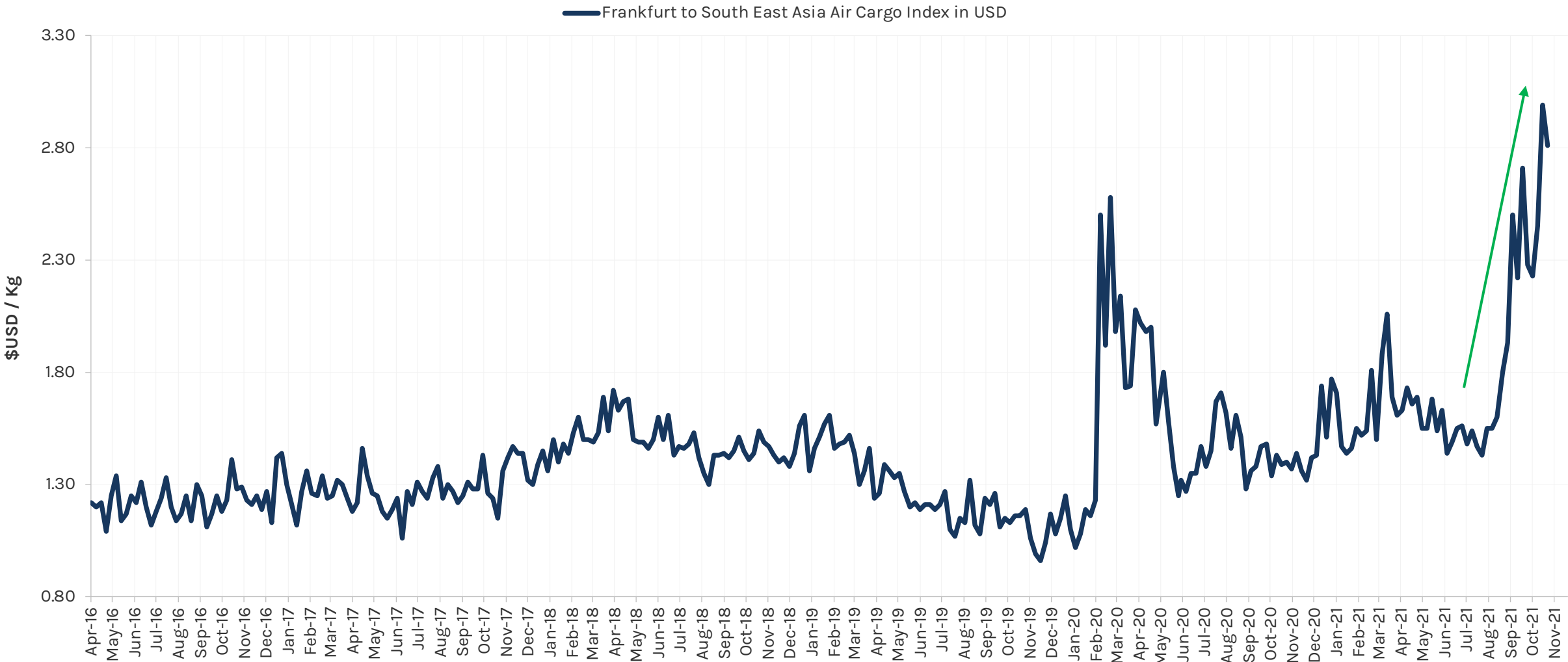
# China Headline CPI YoY Projections



We expect accelerating inflation through the end of the year, with the beginning of 2022 most likely to produce disinflation against steepening compares.

# Frankfurt to Southeast Asia Air Cargo Index

## Freight Cost Increases Go Both Ways



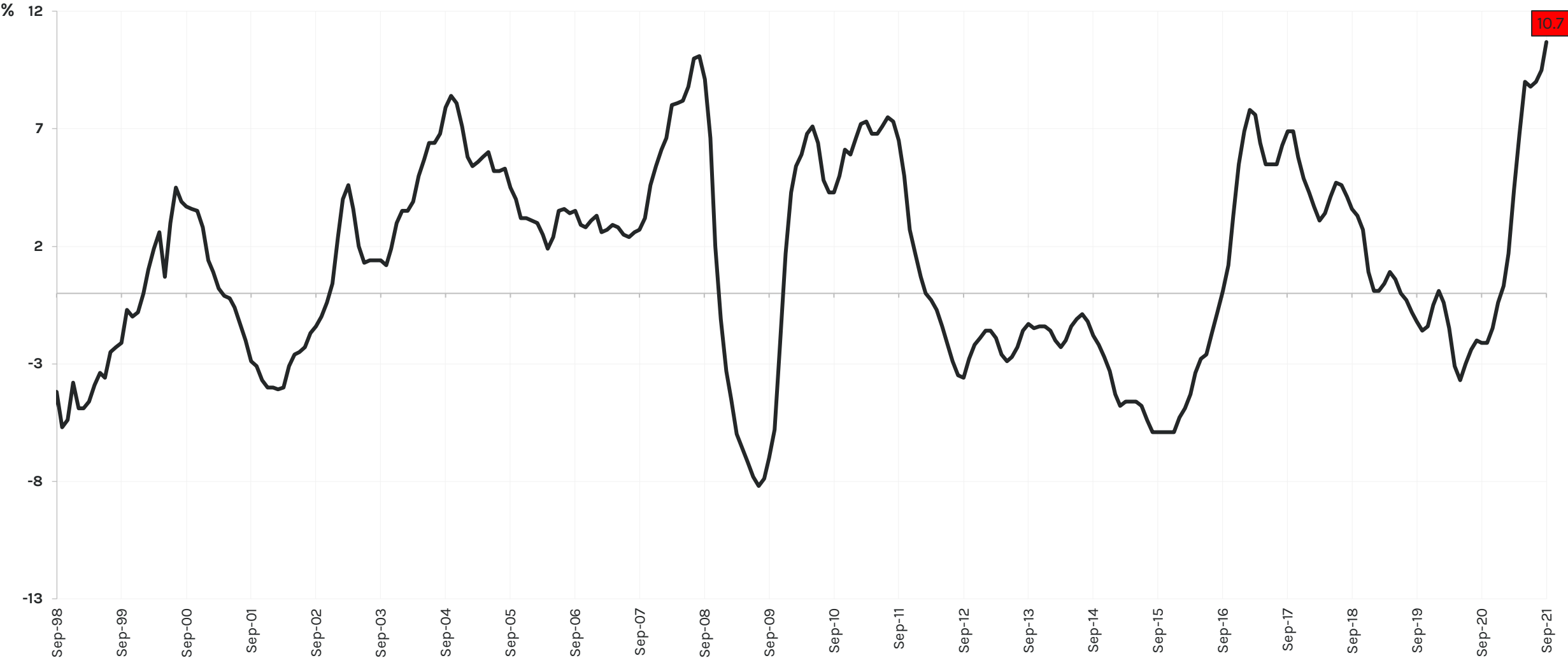
DATA SOURCE: TAC, HRM ESTIMATES

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# Why Do You Think China Is Selling Commodities?

## China PPI YoY: Producer Price Inflation at 13-Year High

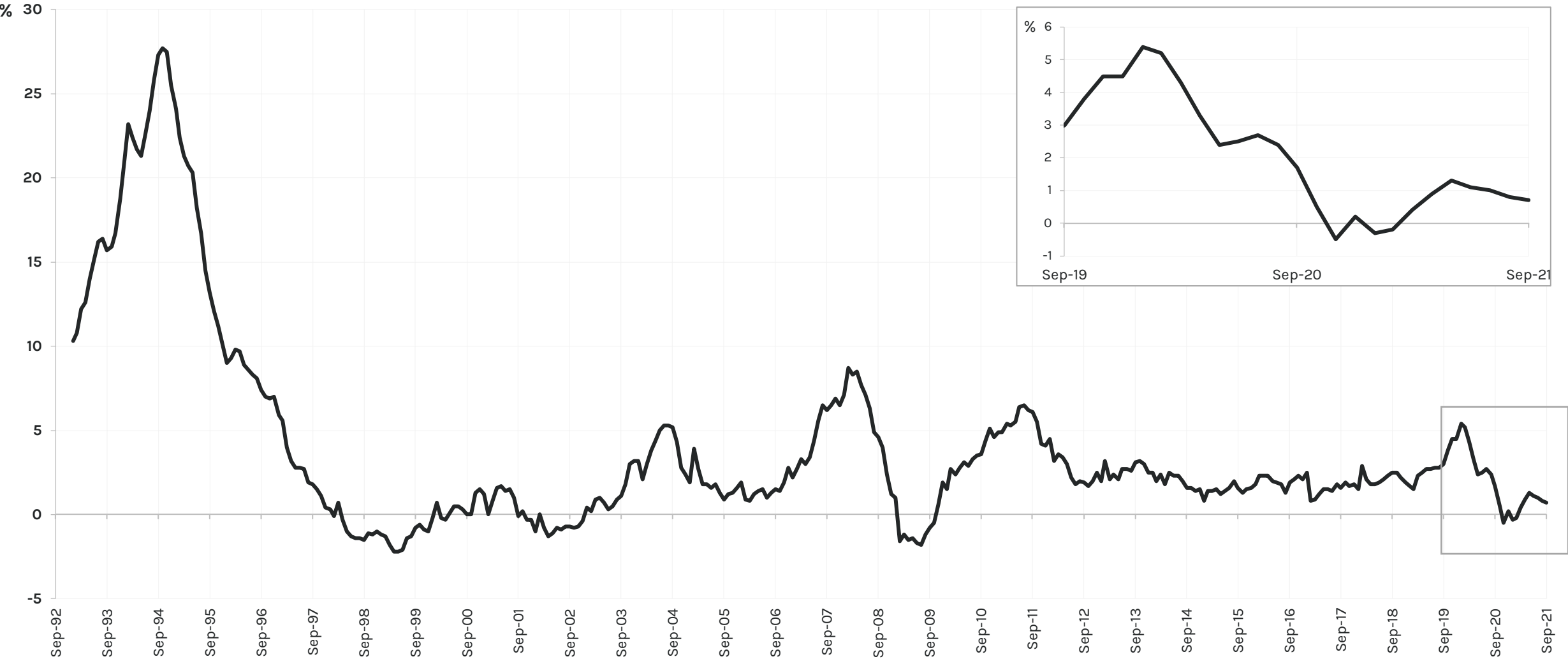


Source: Bloomberg

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# China CPI Looks Benign

## Consumer Inflation Still Sub-2%

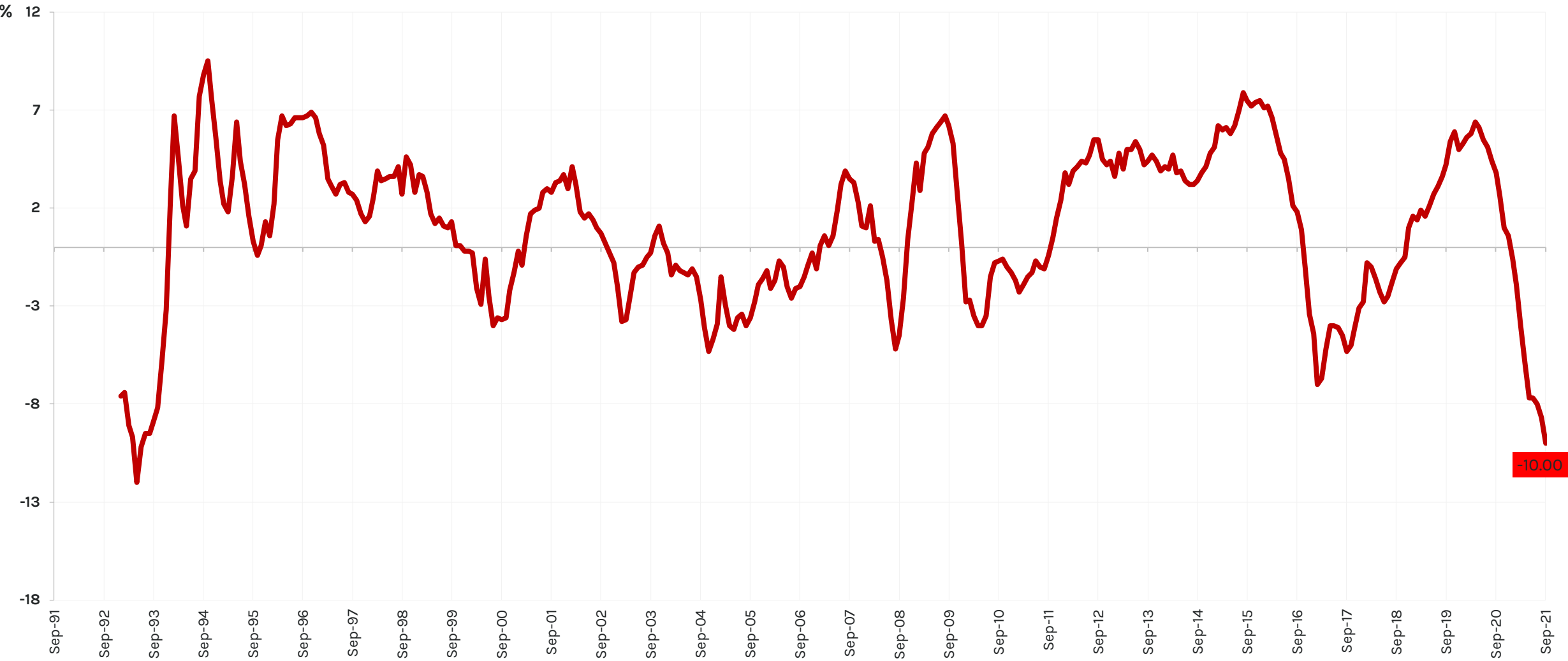


Source: Bloomberg

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# But China's CPI (YoY) – PPI (YoY) Divergence is the Widest in 28 Years

## Inflationary Pressures are Headed for the Consumer

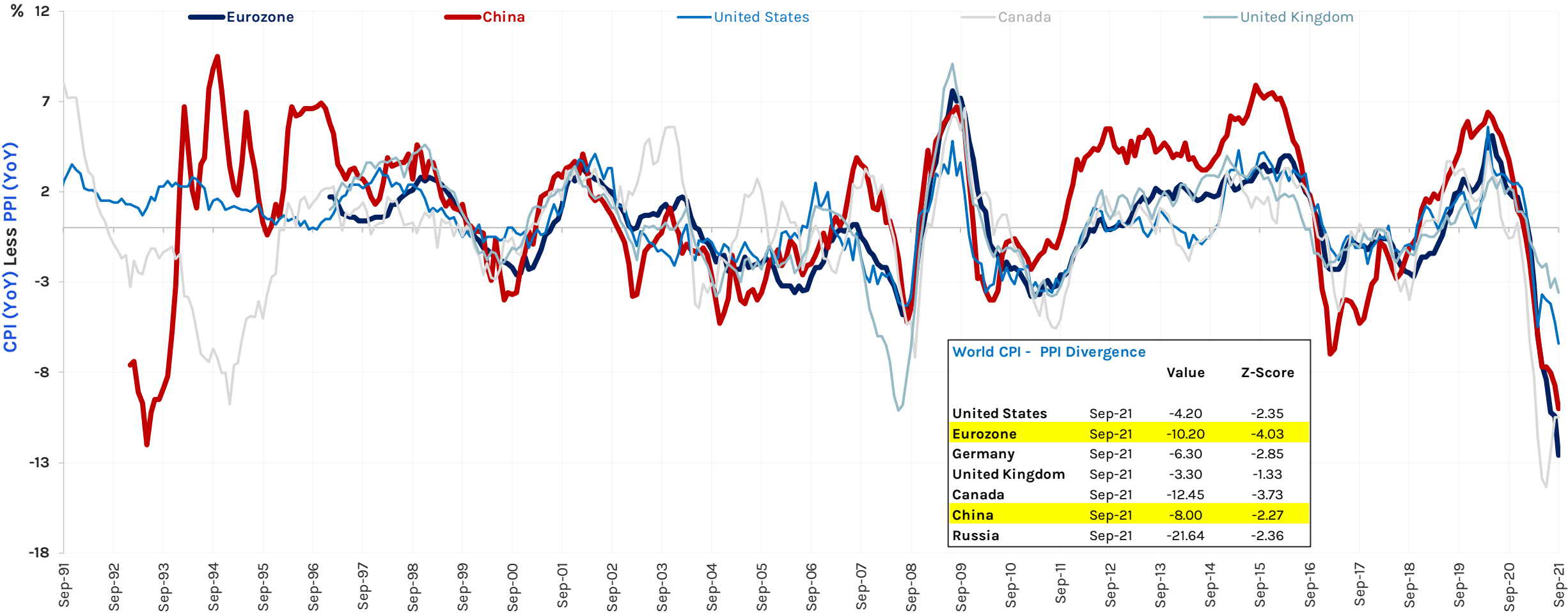


Source: Bloomberg

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# CPI (YoY) – PPI (YoY) Divergence

## Inflationary Pressures Headed for the Consumer



Source: Bloomberg

© Hedgeye Risk Management

Headline PPI Accelerating & Core CPI Sticky High

HEDGEYE CHINA NOWCAST MODEL SUMMARY		Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	3Q21	4Q21	Δ
Retail Sales YoY (3)		-	-20.50	-19.00	-16.20	-13.50	-11.40	-9.90	-8.60	-7.20	-5.90	-4.80	-3.90	-	33.80	33.90	29.60	25.70	23.00	20.70	18.10	16.40	-	-	-	18.40	-	-
Industrial Production* YoY (8)		-0.60	-0.70	-1.20	-2.20	-2.40	-2.00	-1.80	-1.40	-1.30	-1.20	-0.80	0.00	1.00	1.70	3.40	5.40	7.40	7.40	7.50	8.00	8.90	-	-	-	8.13	-	-
Exports YoY (4)		-2.94	-40.61	-6.89	3.04	-3.50	0.18	6.79	9.07	9.35	10.92	20.53	18.04	24.63	154.68	30.52	32.15	27.79	32.21	19.35	25.57	28.13	-	-	-	24.35	-	-
Manufacturing PMI (1)		50.0	35.7	52.0	50.8	50.6	50.9	51.1	51.0	51.5	51.4	52.1	51.9	51.3	50.6	51.9	51.1	51.0	50.9	50.4	50.1	49.6	49.2	-	-	50.0	49.2	-0.83
Consumer Confidence (7)		126.4	118.9	122.2	116.4	115.8	112.6	117.2	116.4	120.5	121.7	124.0	122.1	122.8	127.0	122.2	121.5	121.8	122.8	117.8	117.5	121.2	-	-	-	118.8	-	-
Business Confidence (2)		95.4	93.8	96.1	98.0	98.8	99.2	99.2	99.3	99.5	99.6	99.8	99.7	99.5	99.3	99.4	99.3	99.1	98.9	98.6	98.3	97.9	-	-	-	98.3	-	-
Headline CPI YoY (5)		5.38	5.17	4.27	3.29	2.44	2.48	2.70	2.40	1.70	0.50	-0.50	0.20	-0.30	-0.20	0.40	0.90	1.30	1.10	1.00	0.80	0.70	-	-	-	0.83	-	-
Core CPI YoY (9)		1.50	1.00	1.20	1.10	1.10	0.90	0.50	0.50	0.50	0.50	0.50	0.40	-0.30	0.00	0.30	0.70	0.90	0.90	1.30	1.20	1.20	-	-	-	1.23	-	-
Headline PPI YoY (6)		0.10	-0.40	-1.50	-3.10	-3.70	-3.00	-2.40	-2.00	-2.10	-2.10	-1.50	-0.40	0.30	1.70	4.40	6.80	9.00	8.80	9.00	9.50	10.70	-	-	-	9.73	-	-
Benchmark Equity Market - Mean Closing Price		87	85	77	79	81	86	95	98	98	102	107	106	116	124	112	110	107	109	102	93	93	93	91	-	96	92	-4
Benchmark Policy Rate - Mean Closing Price		12.56	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.23	12.00	12.00	12.00	12.00	-	12.08	12.00	-0.08
1Y OIS Spread - Mean Closing Price		7	7	16	-4	-4	-3	15	13	23	5	4	36	16	34	44	41	31	14	17	12	11	16	18	-	13	17	3
2Y Sovereign Note Yield - Mean Closing Price		2.61	2.39	2.23	1.66	1.66	2.32	2.55	2.77	2.89	2.96	3.04	2.96	2.79	2.88	2.89	2.81	2.73	2.79	2.63	2.54	2.54	2.65	2.63	-	2.57	2.64	0.07
10Y Sovereign Note Yield - Mean Closing Price		3.09	2.84	2.66	2.53	2.66	2.84	2.96	2.99	3.12	3.19	3.27	3.26	3.15	3.24	3.24	3.18	3.11	3.12	2.97	2.86	2.87	2.98	2.92	-	2.90	2.95	0.05
10Y Breakeven Rate - Mean Closing Price		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CNY - Mean Closing Price		6.92	7.00	7.02	7.07	7.11	7.08	7.01	6.93	6.81	6.70	6.60	6.54	6.47	6.46	6.51	6.52	6.42	6.43	6.48	6.48	6.46	6.41	6.40	-	6.47	6.41	-0.06
Real Effective Exchange Rate		124.8	126.4	126.2	125.7	123.6	121.5	122.5	122.8	124.9	125.8	126.3	126.4	127.6	129.6	128.8	127.2	127.0	126.9	127.7	127.7	127.9	-	-	-	127.8	-	-

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

# China → Revisiting a Structural Inflation Concern

## The Lewis Turning Point – 2020 to 2025

IMF Working Paper

Research Department and Asia and Pacific Department

**Chronicle of a Decline Foretold: Has China Reached the Lewis Turning Point?**

**Prepared by Mitali Das and Papa N'Diaye**

Authorized for distribution by Steven Phillips and Steven Barnett

January 2013

**This Working Paper should not be reported as representing the views of the IMF.** The views expressed in this Working Paper are those of the author(s) and do not necessarily represent those of the IMF or IMF policy. Working Papers describe research in progress by the author(s) and are published to elicit comments and to further debate.

### Abstract

China is on the eve of a demographic shift that will have profound consequences on its economic and social landscape. Within a few years the working age population will reach a historical peak, and then begin a precipitous decline. This fact, along with anecdotes of rapidly rising migrant wages and episodic labor shortages, has raised questions about whether China is poised to cross the Lewis Turning Point, a point at which it would move from a vast supply of low-cost workers to a labor shortage economy. Crossing this threshold will have far-reaching implications for both China and the rest of the world. This paper empirically assesses when the transition to a labor shortage economy is likely to occur. Our central result is that on current trends, the Lewis Turning Point will emerge between 2020 and 2025. Alternative scenarios—with higher fertility, greater labor participation rates, financial reform or higher productivity—may peripherally delay or accelerate the onset of the turning point, but demographics will be the dominant force driving the depletion of surplus labor.

# China → Reaching the Lewis Turning Point?

The Lewis Turning Point occurs when an industrializing nation runs out of cheap, rural labor causing wage pressures to rise. This could trigger a protracted rise in global inflation.

Figure 6. Baseline Scenario: Surplus Labor  
(In millions)

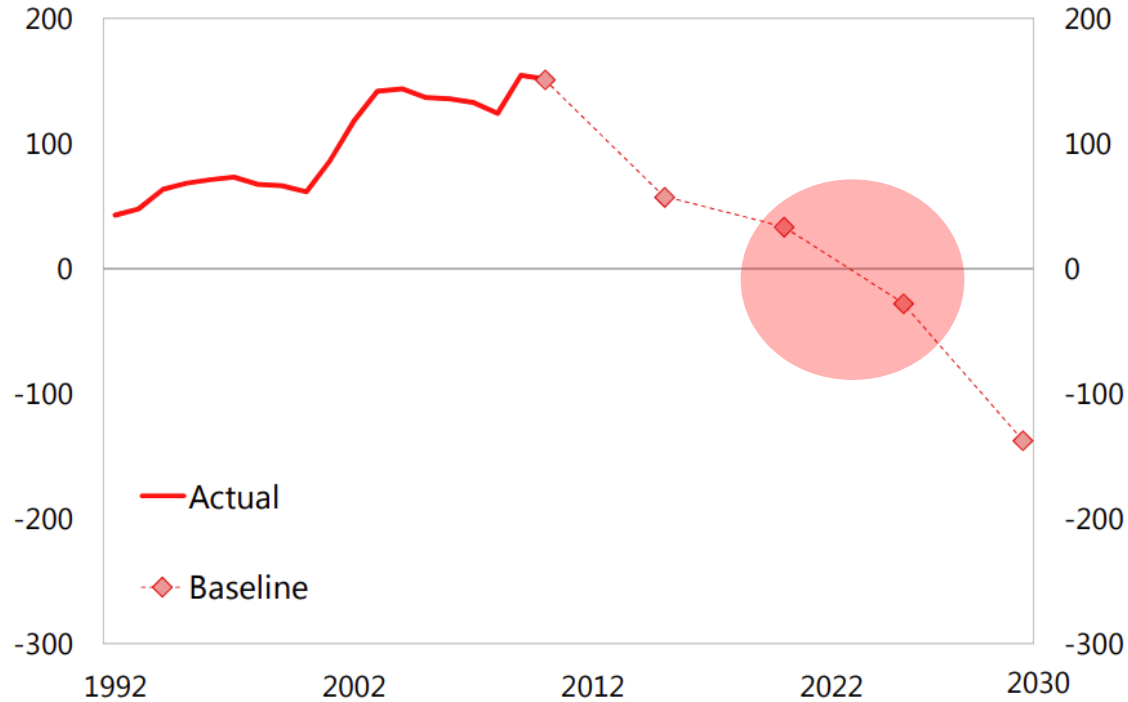
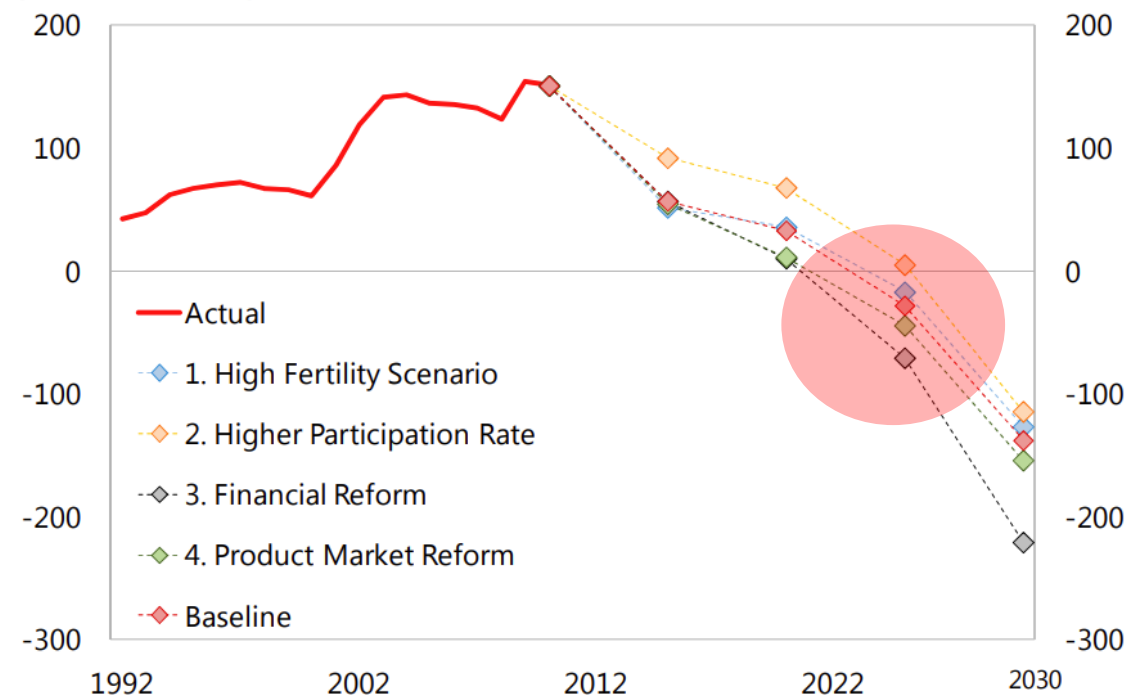
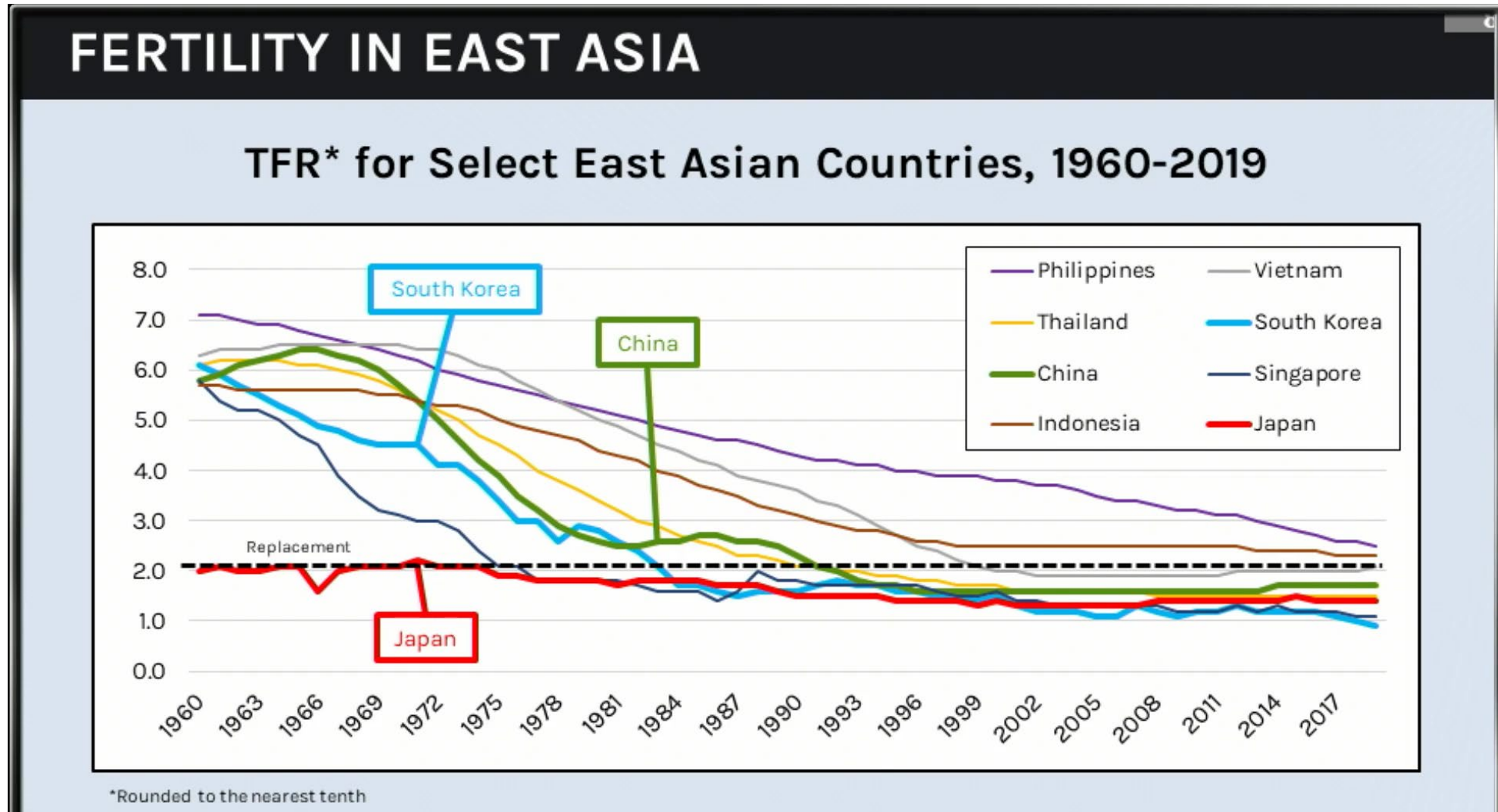


Figure 7. Alternative Scenarios: Surplus Labor  
(In millions)



# China's Total Fertility Rate → Below Replacement

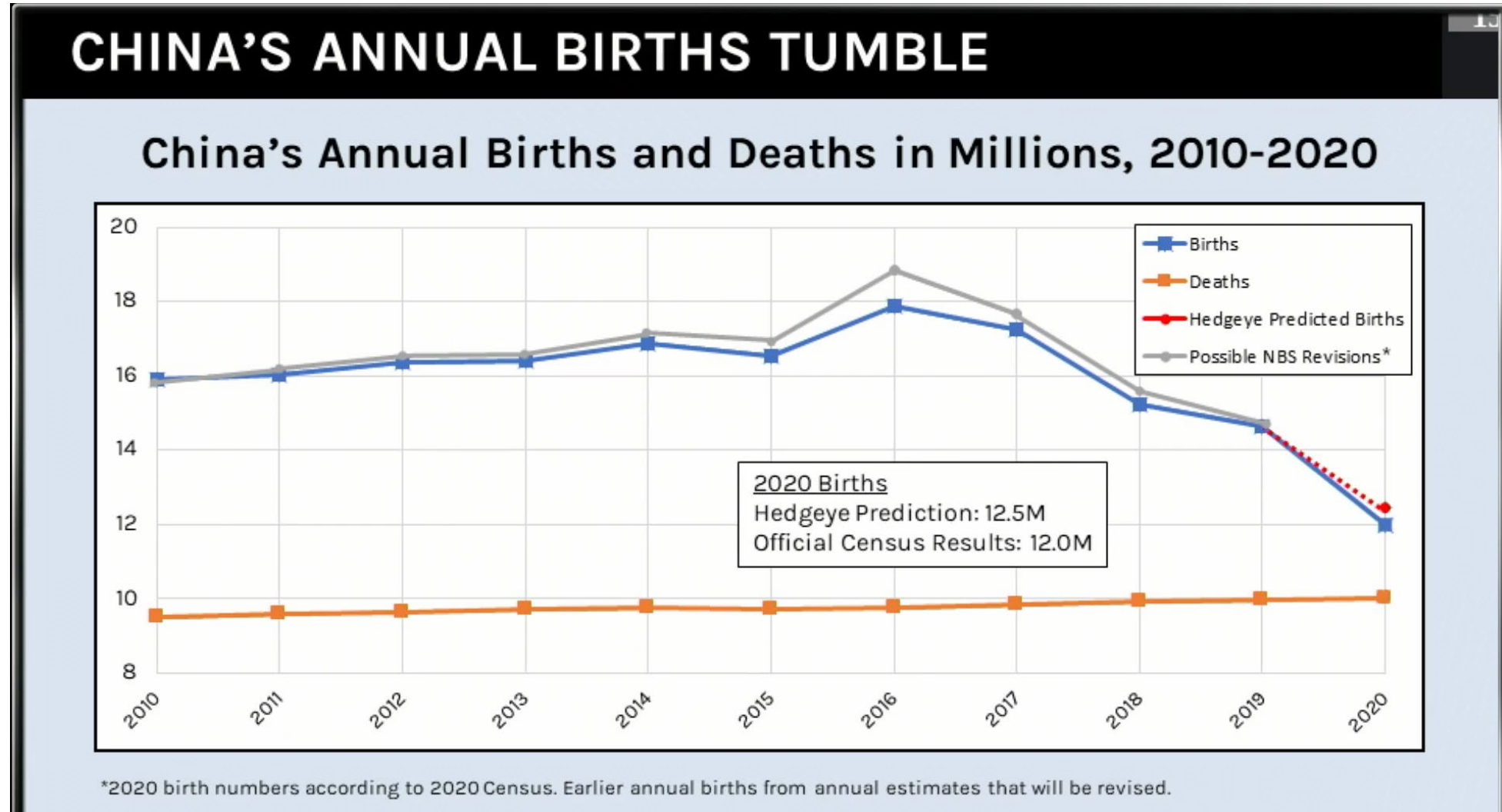
Actual TFR is tracking closer to 1.3 than the 1.7 reflected in the UN numbers.





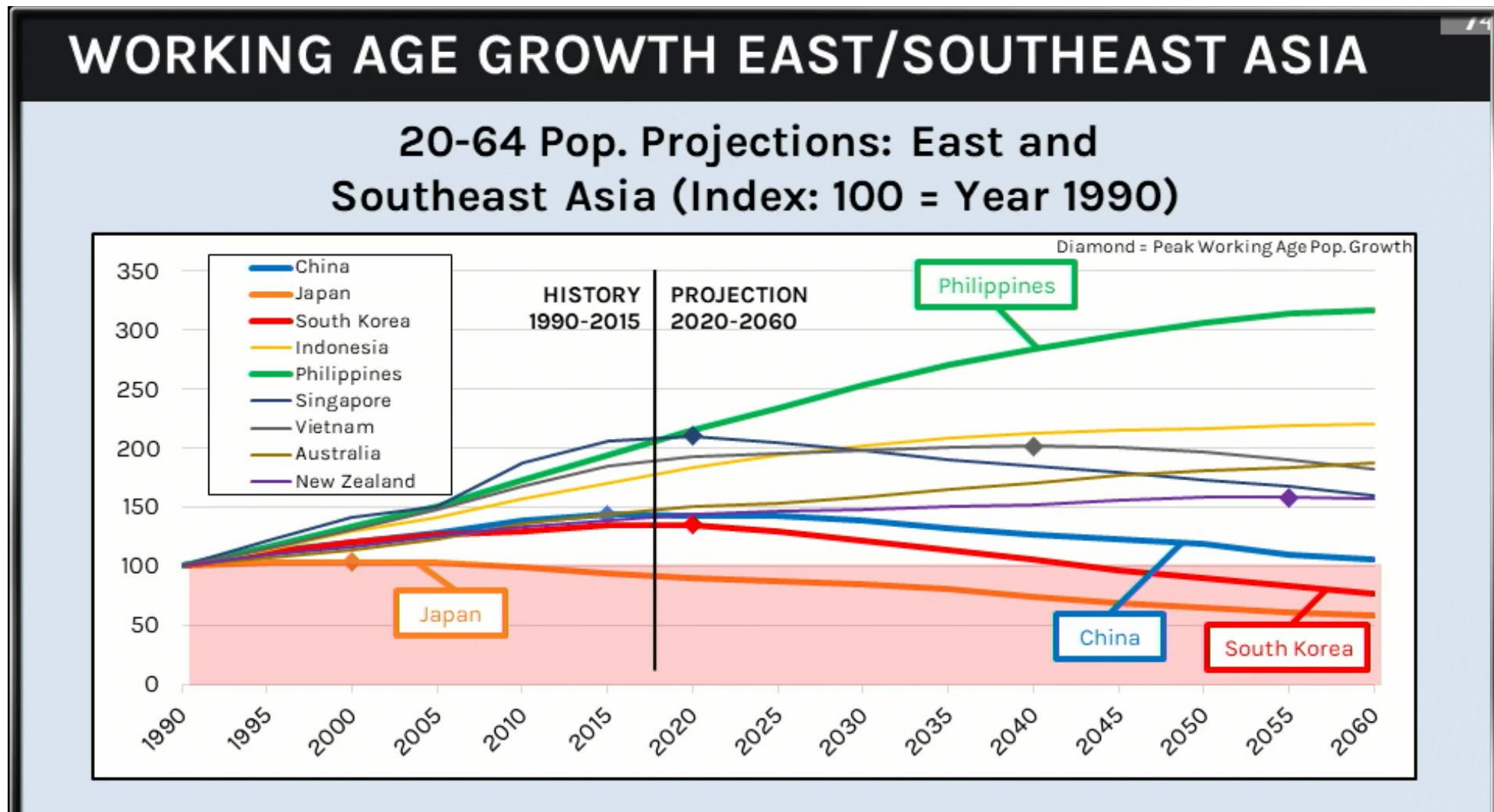
# China's Birth Rate → Falling Sharply ↓

Downshifting rapidly.



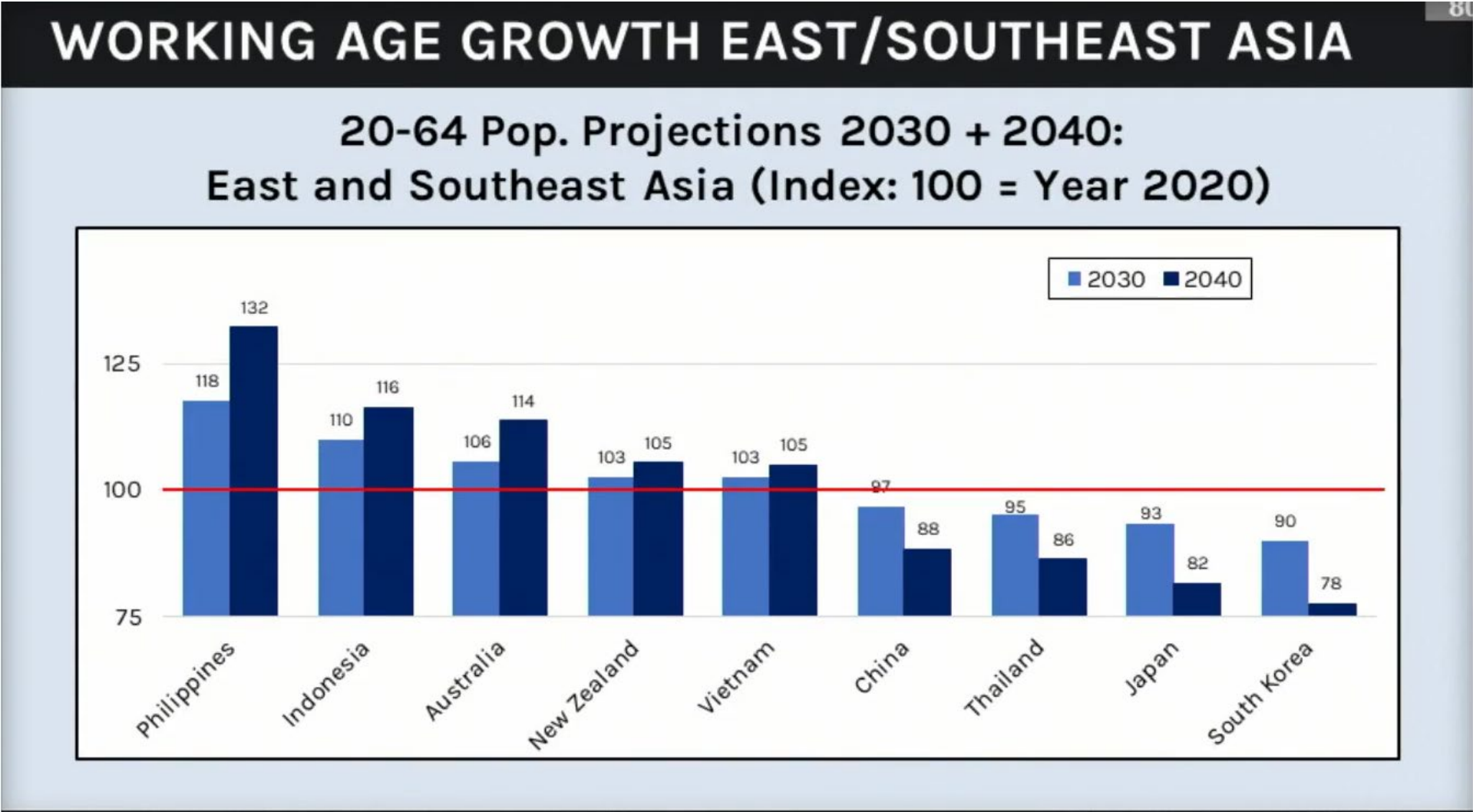
# China's Working Age Population → Past Peak

China's working age population peaked ~5 years ago and is poised to decline by one-third over the next 4 decades.



# China's Working Age Population 2020 → 2030 → 2040

100% to 97% to 88%.



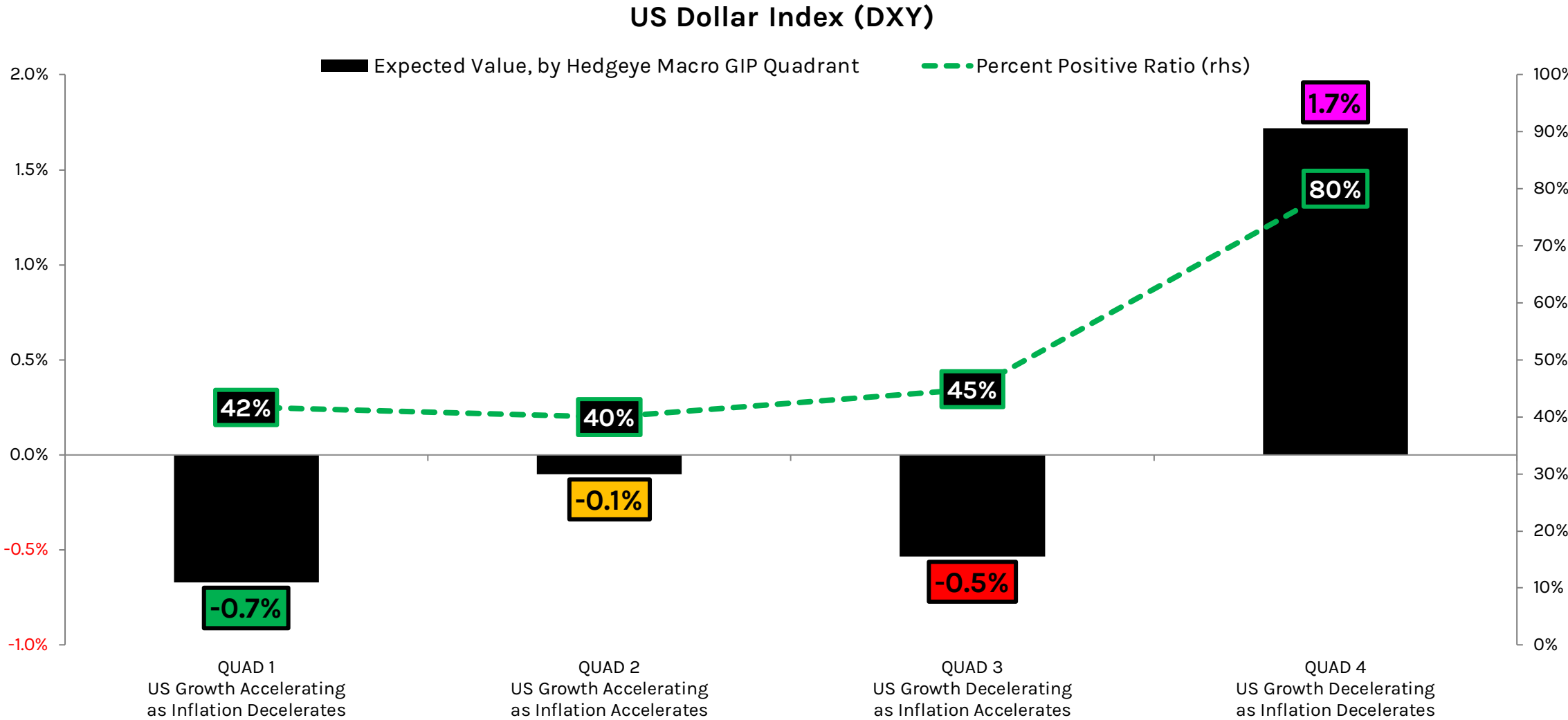
# Q4 2021 Macro Themes

HEDGEYE



LONG EMERGING MARKETS?

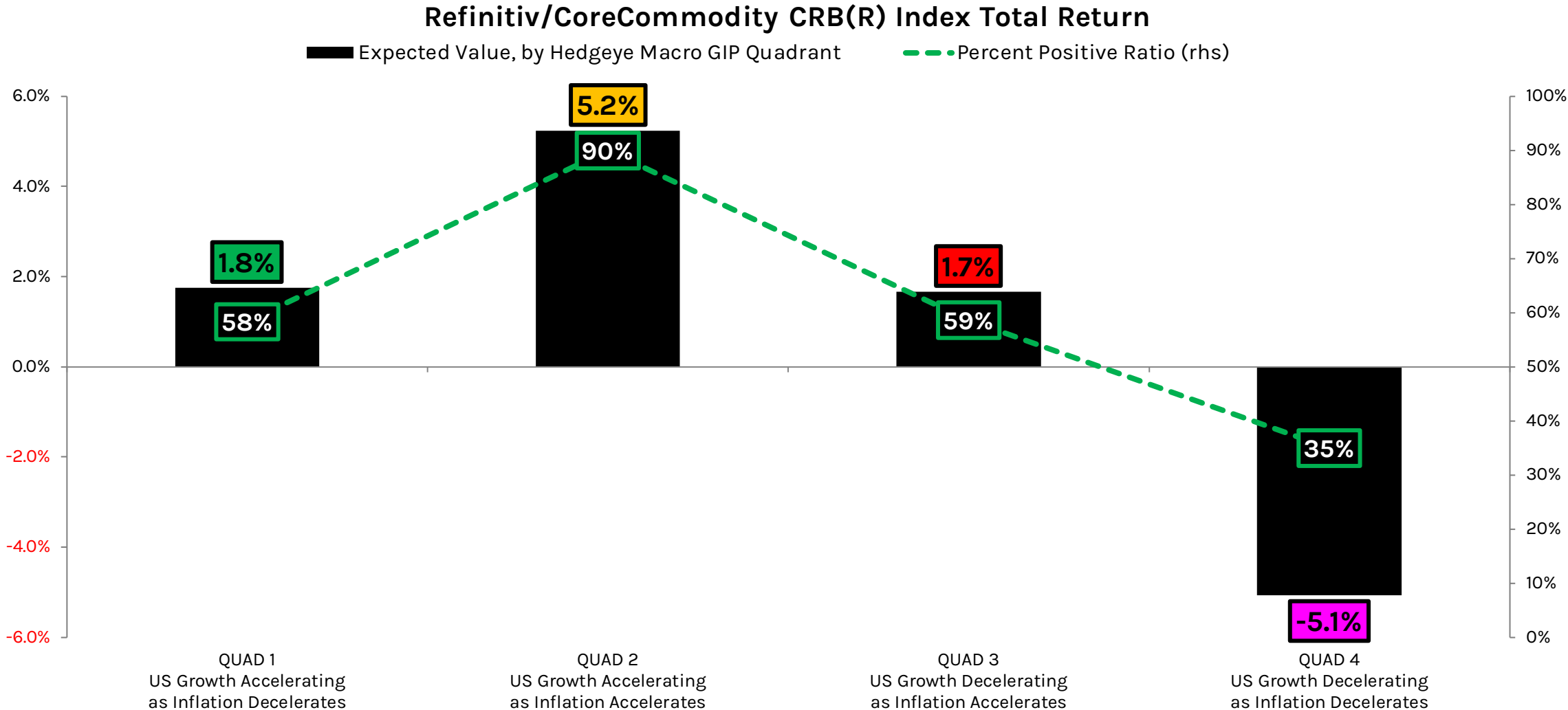
The Dollar Shines Only in Quad IV



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

# Did Someone Say Commodities Are Priced in US Dollars?

Dollar Weakness = Commodities Strength. Commodities fare best in Quad 2.



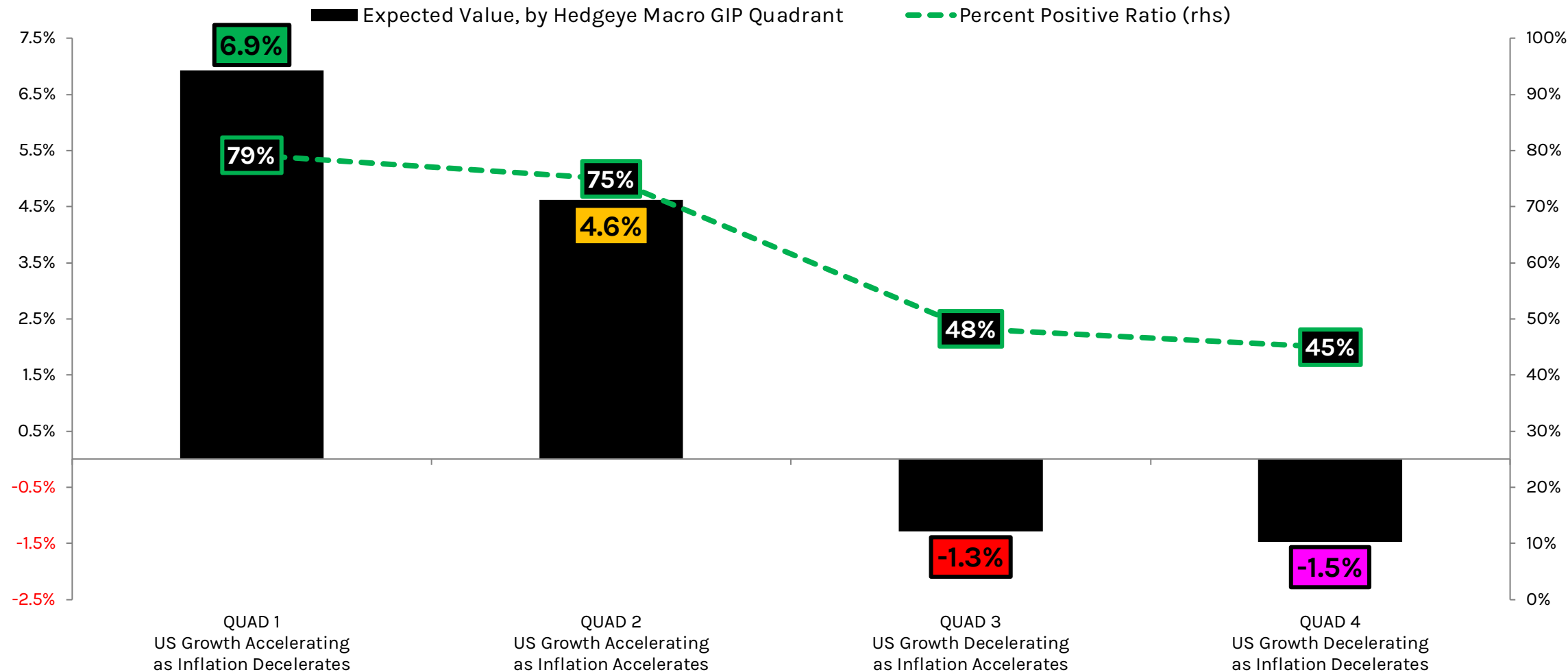
Data Source: Bloomberg. Asset classes include equities, fixed income, currencies and commodities. Quarterly observations starting in 1Q98.



# Get USD and The Quads Right, You Get EM Right

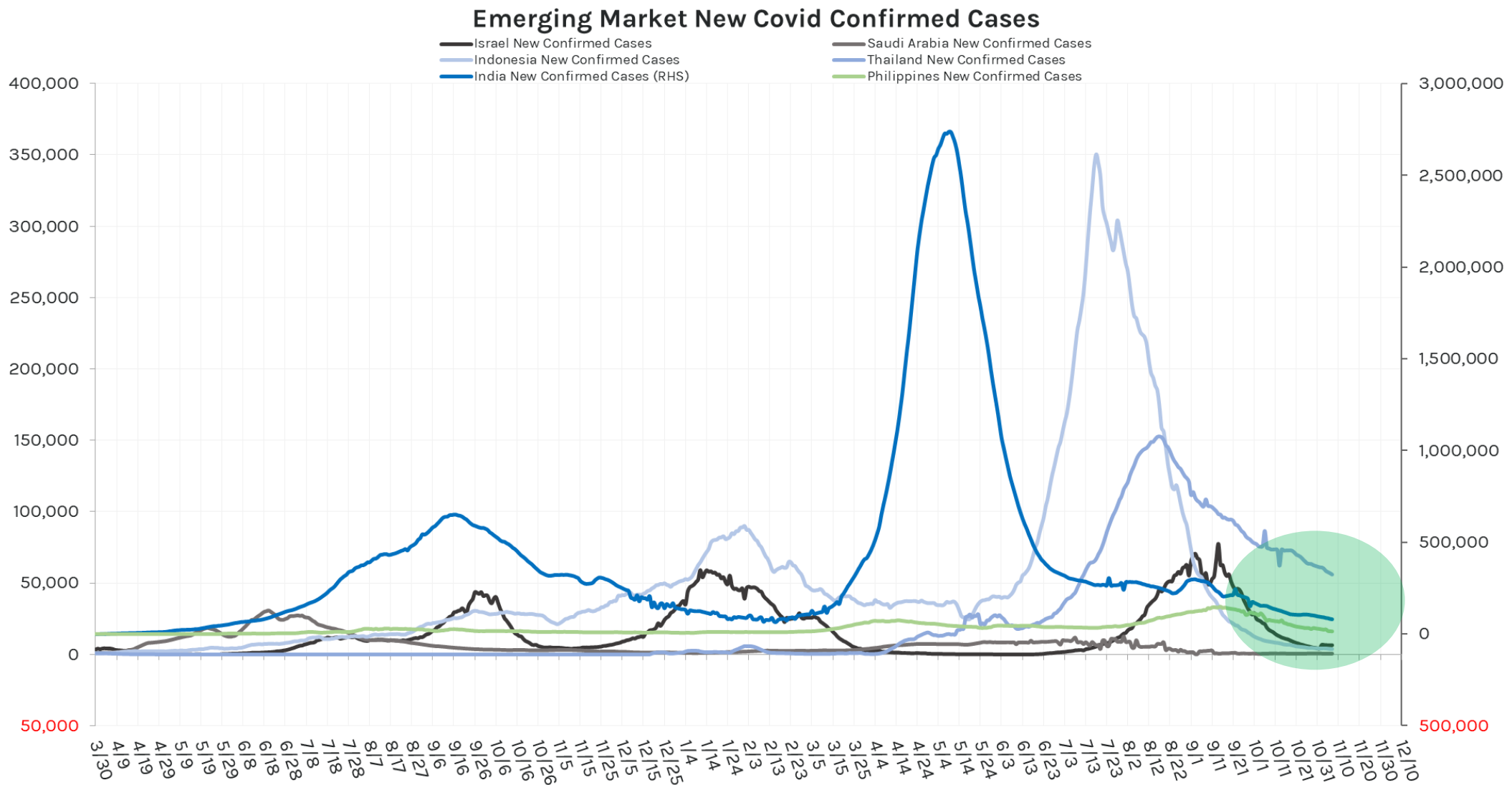
## Strong Commodity Markets Give Way to Strong Emerging Market Performance

MSCI Emerging Markets Index



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

# Emerging Market New COVID Cases Steadily Decline



Source: Bloomberg

© Hedgeye Risk Management



# Emerging Market Quad Outlook

Through the next three quarters, Czech Republic, Malaysia, Philippines, Saudi Arabia, Thailand, and Turkey spend most of their time in Quads I or II.

11/7/2021	Hedgeye Macro GIP Model Signals												
	Actuals									Estimates			
	3Q19	4Q19	1Q20	2Q20	3Q20	4Q20	1Q21	2Q21	3Q21	4Q21E	1Q22E	2Q22E	3Q22E
Argentina	4	1	4	4	1	1	2	2	2	4	4	1	4
Brazil	4	2	3	4	2	2	2	2	3	3	4	4	1
Chile	1	3	2	4	1	2	2	2	3	3	4	3	4
China	3	2	3	1	1	1	1	3	4	3	4	2	2
Colombia	3	2	4	4	1	1	1	2	3	3	3	1	1
Czech Republic	2	3	3	4	2	1	1	2	3	3	2	1	4
Greece	1	3	3	4	1	2	2	2	3	3	4	4	1
Hong Kong	3	4	4	1	1	2	2	4	3	1	4	2	3
India	3	3	3	4	2	1	1	2	4	3	2	1	3
Indonesia	3	4	3	4	1	2	1	2	3	2	2	2	2
Israel	1	1	4	4	2	2	2	2	3	3	1	4	4
Malaysia	3	4	4	4	2	4	2	2	4	3	1	1	2
Mexico	1	4	3	4	2	1	2	2	4	3	1	4	4
Peru	1	4	4	4	2	2	2	2	3	3	1	2	1
Philippines	1	1	3	4	2	2	2	1	3	3	1	2	4
Poland	3	3	3	4	1	4	1	2	3	3	4	4	4
Russia	1	1	4	3	2	2	2	2	3	3	4	4	1
Saudi Arabia	3	2	3	4	2	1	1	2	1	3	2	1	3
South Africa	4	4	2	4	2	2	1	2	3	3	4	3	1
South Korea	4	2	3	4	2	4	2	2	3	3	4	4	1
Taiwan	1	2	4	4	2	2	2	3	3	3	4	2	4
Thailand	1	4	3	4	2	2	1	2	4	3	2	2	1
Turkey	1	1	3	4	2	3	2	2	3	3	1	1	4
MODE/MEDIAN	1	4	3	4	2	2	2	2	3	3	4	1	4
Data Source: Bloomberg, BIS, World Bank, and IMF. Intellectual Property of Hedgeye Risk Management. LIGHT BLUE header = Hedgeye Nowcast Model estimates. BLUE header = Hedgeye Comparative Base Effects 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.													

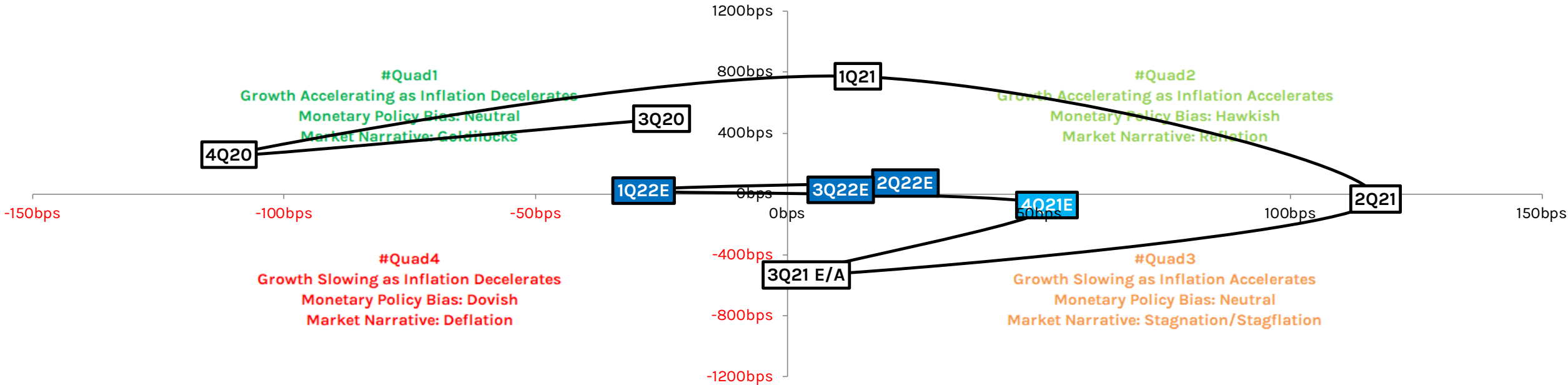
# Emerging Markets Quad Outlook

Quad 1: 1Q22E ; Quad 2: 2Q22E, 3Q22E

Emerging Markets	4Q18	1Q19	2Q19	3Q19	4Q19	1Q20	2Q20	3Q20	4Q20	1Q21	2Q21	3Q21 E/A	← Actuals   Estimates →	4Q21E	1Q22E	2Q22E	3Q22E
Real GDP QoQ	-	-	-	-	-	-	-	-	-	-	-	-	Real GDP QoQ	-	-	-	-
Real GDP YoY	5.01%	4.64%	4.61%	4.51%	4.32%	-3.34%	-4.45%	0.48%	3.07%	10.79%	10.46%	5.15%	Real GDP YoY	4.43%	4.65%	5.37%	5.65%
2yr Comparative Base Effects	5.26%	5.93%	5.80%	5.31%	5.22%	5.64%	5.43%	4.86%	4.67%	0.65%	0.08%	2.50%	2yr Comparative Base Effects	3.70%	3.73%	3.01%	2.82%
Headline CPI YoY	3.83%	3.65%	4.21%	4.06%	4.88%	5.31%	3.67%	3.42%	2.31%	2.45%	3.62%	3.66%	Headline CPI YoY	4.18%	3.89%	4.12%	4.23%
2yr Comparative Base Effects	3.97%	3.64%	3.36%	3.56%	3.65%	3.58%	3.79%	3.93%	4.36%	4.48%	3.94%	3.74%	2yr Comparative Base Effects	3.60%	3.88%	3.65%	3.54%

## Emerging Markets

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

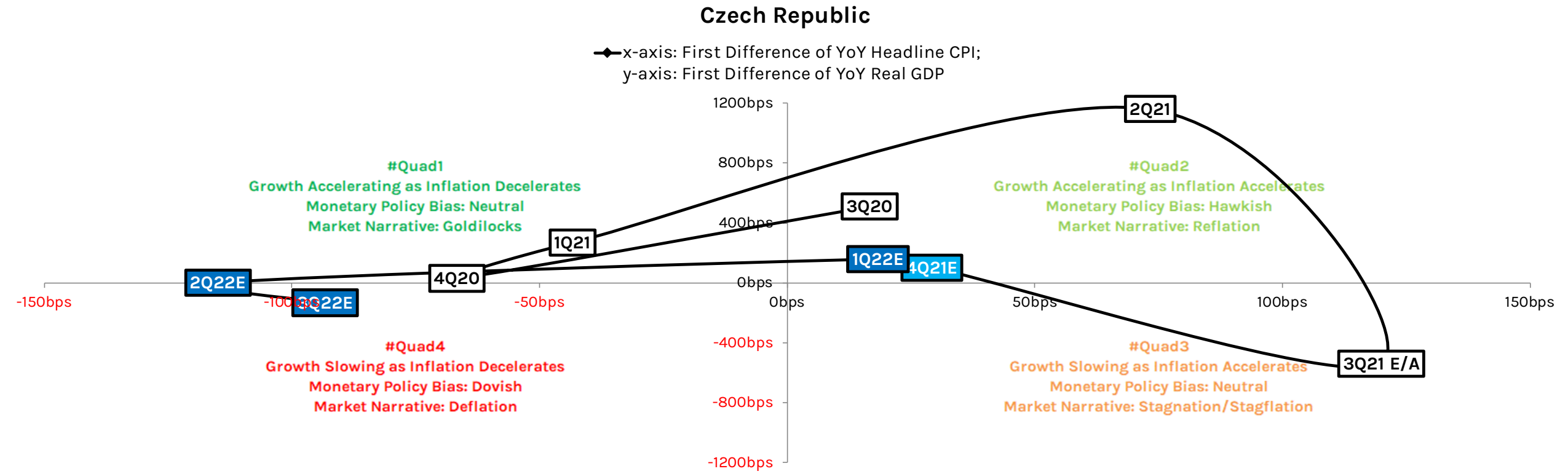


Data Source: Bloomberg. Light Blue box = Hedgeye Nowcast Model estimate. Dark Blue boxes = Hedgeye Comparative Base Effects Model estimates.

# Czech Republic Quad Outlook

Quad 2: 4Q21E, 1Q22E ; Quad 1: 2Q22E

Czech Republic	4Q18	1Q19	2Q19	3Q19	4Q19	1Q20	2Q20	3Q20	4Q20	1Q21	2Q21	3Q21 E/A	← Actuals   Estimates →	4Q21E	1Q22E	2Q22E	3Q22E
Real GDP QoQ	-	-	-	-	-	-	-	-	-	-	-	-	Real GDP QoQ	-	-	-	-
Real GDP YoY	2.90%	3.10%	2.70%	3.80%	2.50%	-1.00%	-10.80%	-5.70%	-5.40%	-2.70%	8.90%	3.52%	Real GDP YoY	4.55%	6.13%	6.14%	4.81%
2yr Comparative Base Effects	3.95%	4.35%	3.90%	4.10%	4.35%	3.65%	2.90%	3.25%	2.70%	1.05%	-4.05%	-0.95%	2yr Comparative Base Effects	-1.45%	-1.85%	-0.95%	-1.09%
Headline CPI YoY	2.07%	2.73%	2.80%	2.83%	3.00%	3.57%	3.13%	3.30%	2.63%	2.20%	2.93%	4.13%	Headline CPI YoY	4.43%	4.61%	3.46%	2.53%
2yr Comparative Base Effects	2.03%	2.17%	2.23%	2.47%	2.35%	2.32%	2.52%	2.60%	2.53%	3.15%	2.97%	3.07%	2yr Comparative Base Effects	2.82%	2.88%	3.03%	3.72%

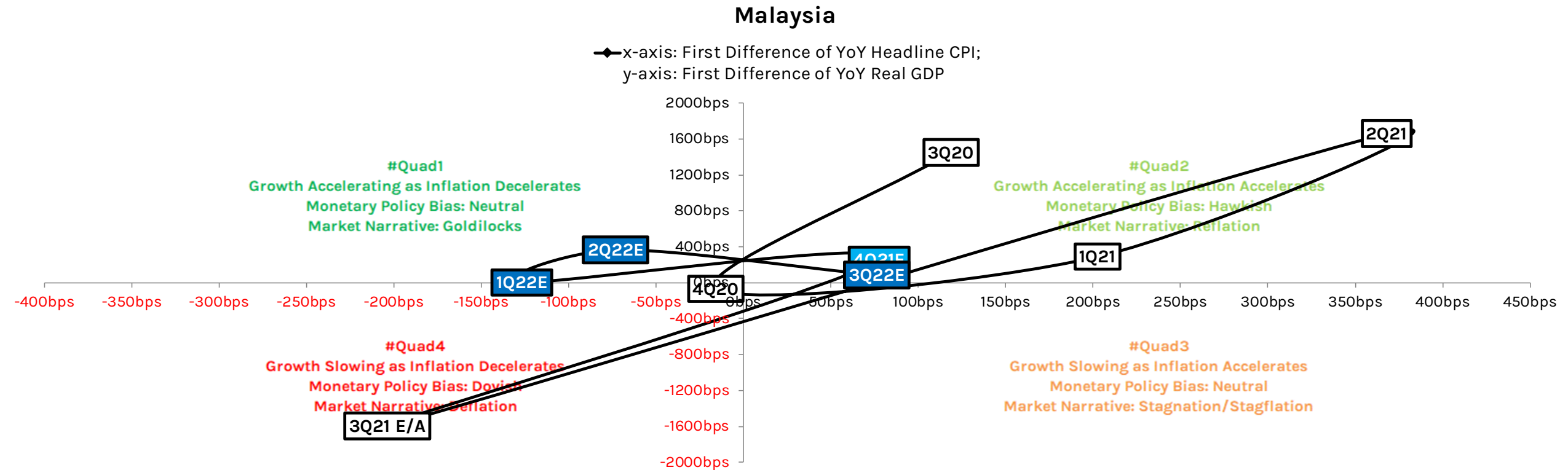


Data Source: Bloomberg. Light Blue box = Hedgeye Nowcast Model estimate. Dark Blue boxes = Hedgeye Comparative Base Effects Model estimates. © Hedgeye Risk Management

# Malaysia Quad Outlook

Quad 2: 4Q21E, 3Q22E ; Quad 1: 1Q22E, 2Q22E

Malaysia	4Q18	1Q19	2Q19	3Q19	4Q19	1Q20	2Q20	3Q20	4Q20	1Q21	2Q21	3Q21 E/A	← Actuals   Estimates →	4Q21E	1Q22E	2Q22E	3Q22E
Real GDP QoQ	-	-	-	-	-	-	-	-	-	-	-	-	Real GDP QoQ	-	-	-	-
Real GDP YoY	4.80%	4.70%	5.00%	4.50%	3.70%	0.70%	-17.20%	-2.70%	-3.40%	-0.50%	16.10%	0.16%	Real GDP YoY	2.74%	2.79%	6.44%	7.29%
2yr Comparative Base Effects	5.30%	5.45%	5.25%	5.30%	5.30%	5.00%	4.90%	4.50%	4.25%	2.70%	-6.10%	0.90%	2yr Comparative Base Effects	0.15%	0.10%	-0.55%	-1.27%
Headline CPI YoY	0.30%	-0.30%	0.64%	1.33%	0.99%	0.91%	-2.56%	-1.37%	-1.53%	0.50%	4.18%	2.14%	Headline CPI YoY	2.91%	1.65%	0.92%	1.68%
2yr Comparative Base Effects	2.59%	2.98%	2.58%	2.06%	1.98%	0.75%	0.98%	0.90%	0.65%	0.30%	-0.96%	-0.02%	2yr Comparative Base Effects	-0.27%	0.70%	0.81%	0.38%



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

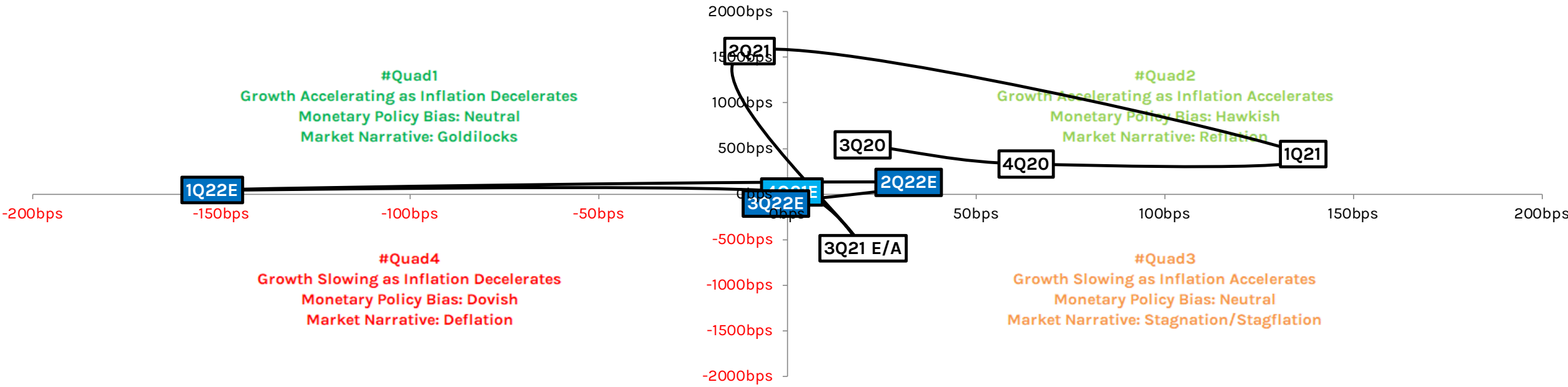
# Philippines Quad Outlook

Quad 1: 1Q22E, 3Q22E ; Quad 2: 4Q21E, 2Q22E

Philippines	4Q18	1Q19	2Q19	3Q19	4Q19	1Q20	2Q20	3Q20	4Q20	1Q21	2Q21	3Q21 E/A	← Actuals   Estimates →	4Q21E	1Q22E	2Q22E	3Q22E
Real GDP QoQ	-	-	-	-	-	-	-	-	-	-	-	-	Real GDP QoQ	-	-	-	-
Real GDP YoY	6.40%	5.90%	5.60%	6.30%	6.60%	-0.70%	-17.00%	-11.60%	-8.30%	-3.90%	11.80%	5.89%	Real GDP YoY	6.12%	6.57%	7.87%	6.87%
2yr Comparative Base Effects	6.75%	6.45%	6.80%	6.80%	6.50%	6.20%	6.00%	6.20%	6.50%	2.60%	-5.70%	-2.65%	2yr Comparative Base Effects	-0.85%	-2.80%	-2.60%	-2.85%
Headline CPI YoY	5.93%	3.83%	2.97%	1.67%	1.53%	2.67%	2.27%	2.47%	3.10%	4.47%	4.37%	4.57%	Headline CPI YoY	4.58%	3.05%	3.38%	3.35%
2yr Comparative Base Effects	2.52%	3.37%	3.82%	4.47%	4.47%	3.83%	3.87%	3.97%	3.73%	3.25%	2.62%	2.07%	2yr Comparative Base Effects	2.32%	3.57%	3.32%	3.52%

## Philippines

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

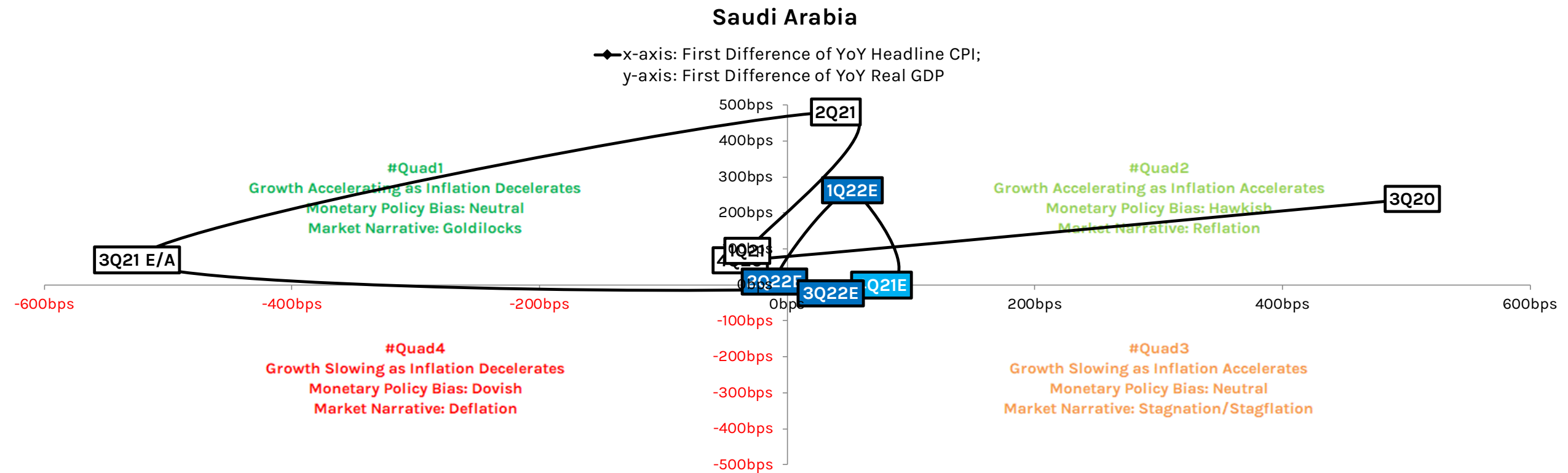


Data Source: Bloomberg. Light Blue box = Hedgeye Nowcast Model estimate. Dark Blue boxes = Hedgeye Comparative Base Effects Model estimates.

# Saudi Arabia Quad Outlook

## Quad 2: 4Q21E, 1Q22E, 2Q22E

Saudi Arabia	4Q18	1Q19	2Q19	3Q19	4Q19	1Q20	2Q20	3Q20	4Q20	1Q21	2Q21	3Q21 E/A	← Actuals   Estimates →	4Q21E	1Q22E	2Q22E	3Q22E
Real GDP QoQ	-	-	-	-	-	-	-	-	-	-	-	-	Real GDP QoQ	-	-	-	-
Real GDP YoY	4.26%	1.66%	0.46%	-0.46%	-0.30%	-1.01%	-6.99%	-4.60%	-3.92%	-2.97%	1.83%	2.53%	Real GDP YoY	2.52%	5.15%	5.24%	5.01%
2yr Comparative Base Effects	0.41%	0.32%	0.45%	1.12%	1.48%	1.52%	1.02%	1.00%	1.98%	0.33%	-3.27%	-2.53%	2yr Comparative Base Effects	-2.11%	-1.99%	-2.58%	-1.04%
Headline CPI YoY	2.23%	-3.20%	-2.70%	-1.82%	-0.63%	1.15%	0.96%	6.01%	5.63%	5.31%	5.70%	0.45%	Headline CPI YoY	1.21%	1.73%	1.63%	1.98%
2yr Comparative Base Effects	-0.03%	1.19%	0.88%	0.72%	0.45%	-0.11%	-0.15%	0.19%	0.80%	-1.03%	-0.87%	2.10%	2yr Comparative Base Effects	2.50%	3.23%	3.33%	3.23%

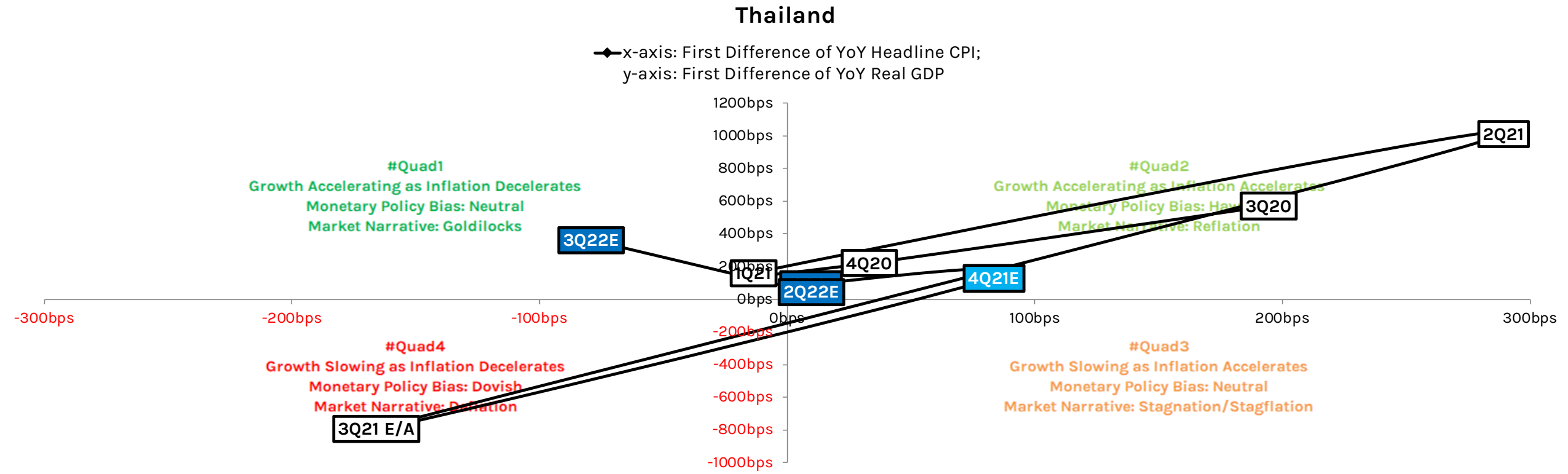


Data Source: Bloomberg. Light Blue box = Hedgeye Nowcast Model estimate. Dark Blue boxes = Hedgeye Comparative Base Effects Model estimates. © Hedgeye Risk Management

# Thailand Quad Outlook

Quad 2: 4Q21E, 1Q22E, 2Q22E ; Quad 1: 3Q22E

Thailand	4Q18	1Q19	2Q19	3Q19	4Q19	1Q20	2Q20	3Q20	4Q20	1Q21	2Q21	3Q21 E/A	← Actuals   Estimates →	4Q21E	1Q22E	2Q22E	3Q22E
Real GDP QoQ	0.30%	1.60%	1.00%	-0.20%	-1.40%	-1.50%	-9.20%	6.10%	0.80%	0.20%	0.40%	-	Real GDP QoQ	-	-	-	-
Real GDP YoY	3.80%	2.80%	2.40%	2.70%	1.30%	-2.10%	-12.10%	-6.40%	-4.20%	-2.60%	7.50%	-0.44%	Real GDP YoY	0.84%	1.74%	2.19%	5.79%
2yr Comparative Base Effects	3.75%	4.45%	4.45%	3.85%	3.95%	3.95%	3.50%	2.95%	2.55%	0.35%	-4.85%	-1.85%	2yr Comparative Base Effects	-1.45%	-2.35%	-2.30%	-3.42%
Headline CPI YoY	0.84%	0.74%	1.08%	0.61%	0.40%	0.42%	-2.67%	-0.72%	-0.39%	-0.53%	2.36%	0.70%	Headline CPI YoY	1.54%	1.63%	1.73%	0.94%
2yr Comparative Base Effects	0.78%	0.94%	0.71%	0.96%	0.86%	0.69%	1.20%	1.04%	0.62%	0.58%	-0.79%	-0.06%	2yr Comparative Base Effects	0.00%	-0.06%	-0.15%	-0.01%

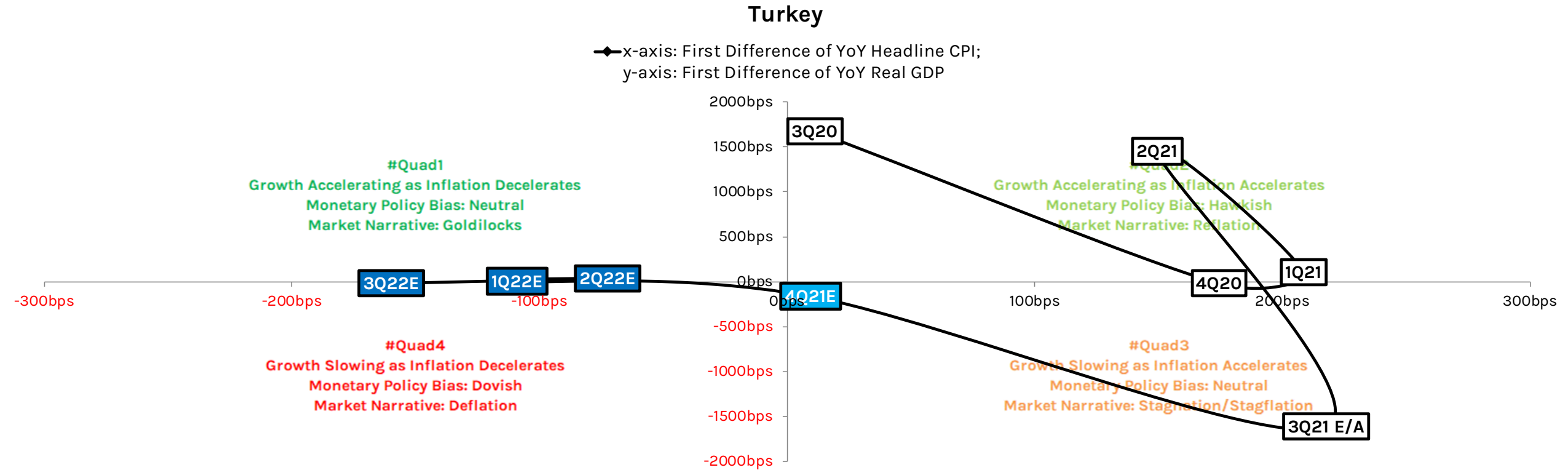


Data Source: Bloomberg. Light Blue box = Hedgeye Nowcast Model estimate. Dark Blue boxes = Hedgeye Comparative Base Effects Model estimates. © Hedgeye Risk Management

# Turkey Quad Outlook

## Quad 1: 1Q22E, 2Q22E

Turkey	4Q18	1Q19	2Q19	3Q19	4Q19	1Q20	2Q20	3Q20	4Q20	1Q21	2Q21	3Q21 E/A	← Actuals   Estimates →	4Q21E	1Q22E	2Q22E	3Q22E
Real GDP QoQ	-3.18%	1.90%	2.38%	0.05%	1.36%	0.45%	-10.77%	16.40%	1.20%	2.17%	0.90%	-	Real GDP QoQ	-	-	-	-
Real GDP YoY	-2.64%	-2.46%	-1.57%	1.02%	6.05%	4.35%	-10.40%	6.33%	6.16%	7.23%	21.73%	5.64%	Real GDP YoY	4.04%	4.10%	4.48%	4.31%
2yr Comparative Base Effects	5.85%	6.38%	5.57%	7.14%	2.31%	2.51%	2.13%	1.76%	1.71%	0.94%	-5.98%	3.68%	2yr Comparative Base Effects	6.11%	5.79%	5.67%	5.98%
Headline CPI YoY	22.39%	19.91%	17.98%	13.64%	10.32%	12.13%	11.65%	11.76%	13.51%	15.59%	17.09%	19.26%	Headline CPI YoY	19.36%	18.26%	17.54%	15.94%
2yr Comparative Base Effects	9.92%	10.25%	12.15%	14.99%	17.33%	15.10%	15.39%	16.53%	16.35%	16.02%	14.81%	12.70%	2yr Comparative Base Effects	11.91%	13.86%	14.37%	15.51%



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



# Top 6 Emerging Markets Ranked for Signal Strength

1. Israel (EIS)
2. India (INDA)
3. Indonesia (IDX)
4. Philippines (EPHE)
5. Thailand (THD)
6. Russia (RSX)

# Current Investment Positions

## [1] Immediate-term TRADE (introduced this quarter)

**LONGS:** Coffee (JO), Israel (EIS), India (INDA), Indonesia (IDX), Philippines (EPHE), Renaissance IPO (IPO), Russell 2000 (IWM), Expanded Tech-Software (IGV), U.S. Home Construction (ITB)

**SHORTS:** China Consumer (CHIQ), South Korea (EWY), Brazil (EWZ), Gold (GLD), 20+Yr Treasuries (TLT), 25+Yr Zeros (ZROZ), New Zealand (ENZL)

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

**LONGS:** Real Estate (XLRE), Tech (XLK), Natural Gas (UNG), Consumer Discretionary (XLY), Industrials (XLI), Russia (RSX), Energy E&P (XOP), Inflation Beneficiaries (INFL), Germany (EWG), Switzerland (EWL)

**SHORTS:** China (FXI), Hong Kong (EWH), Short-term Treasuries (SHY)

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

**LONGS:** Energy (XLE)

**SHORTS:** Nothing

# Q4 2021 Macro Themes

HEDGEYE

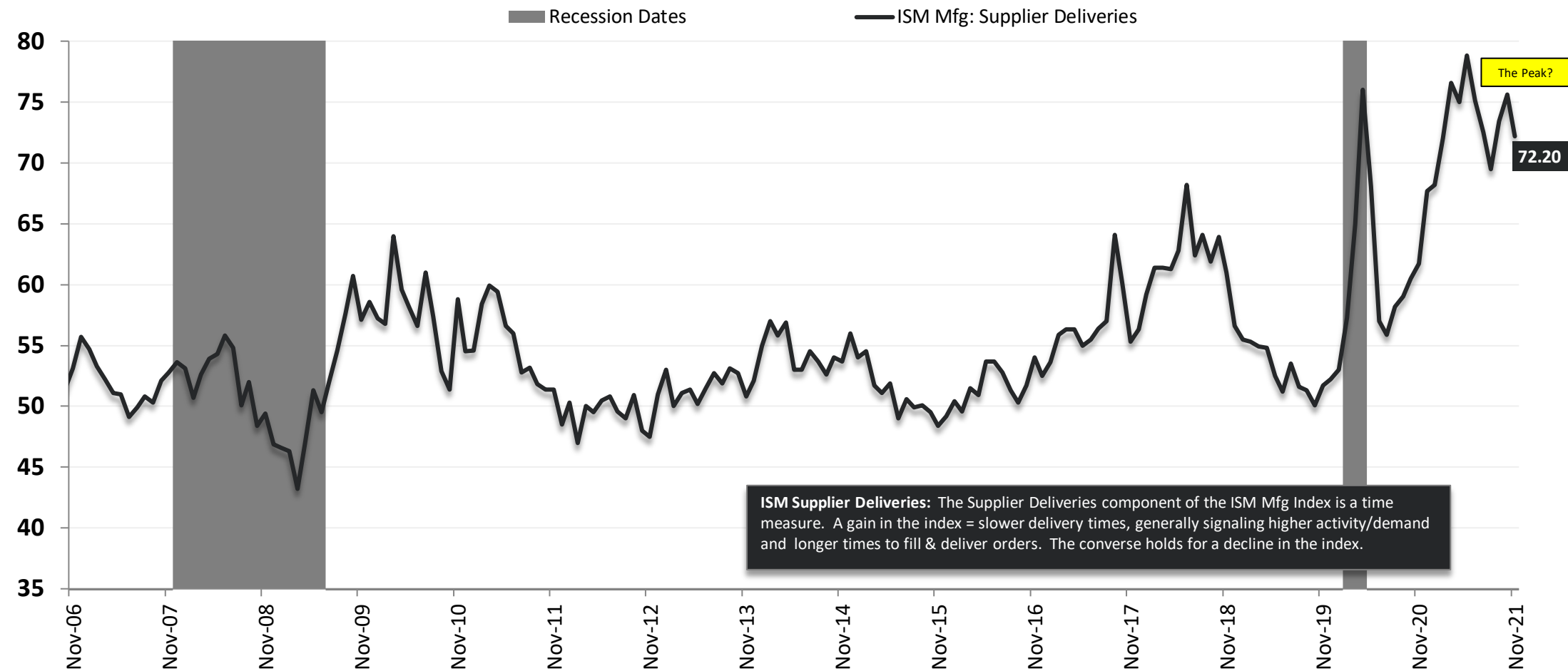


Appendix

# PAST PEAK? Manufacturing Labor/Supply Constraints

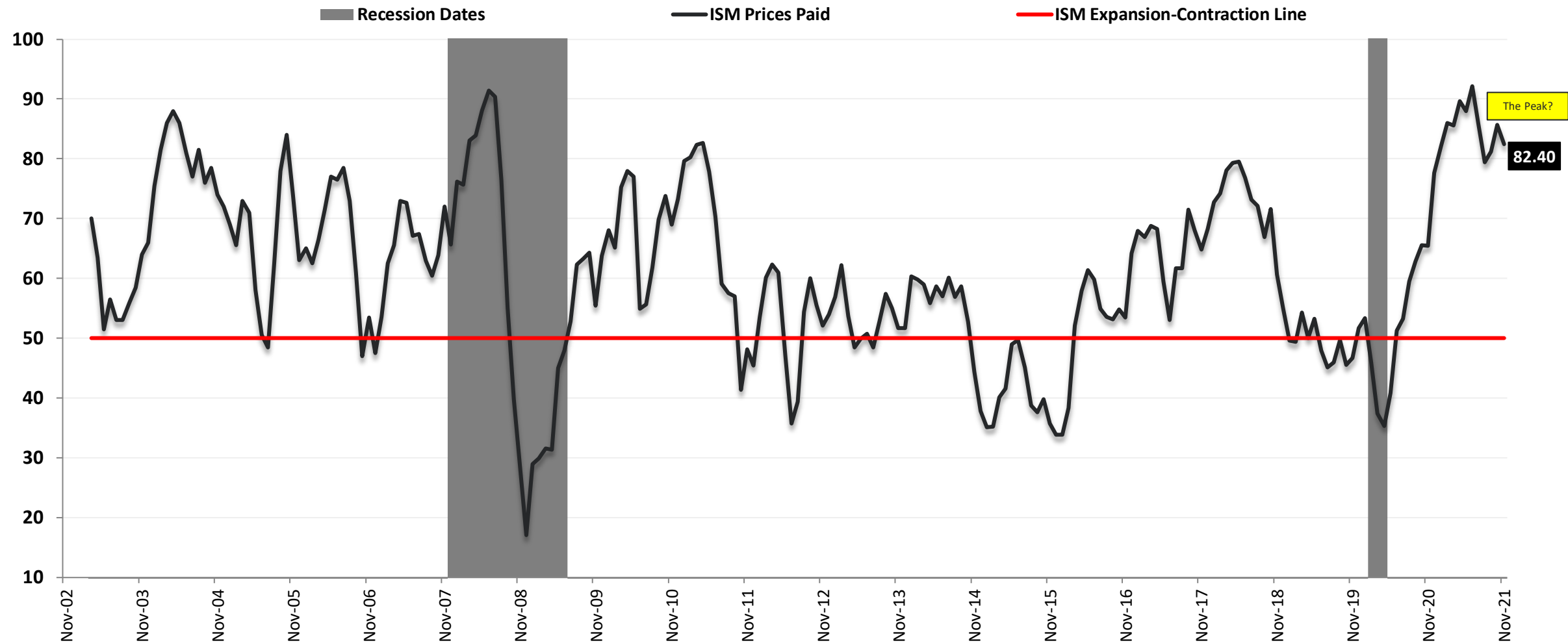
*“The U.S. manufacturing sector remains in a demand-driven, supply chain-constrained environment, with some indications of slight labor and supplier delivery improvement.”*  
- ISM, November Commentary (12/1/21)

## ISM: SUPPLIER DELIVERIES



# PAST PEAK? #Quad2 in 4Q Price Pressure

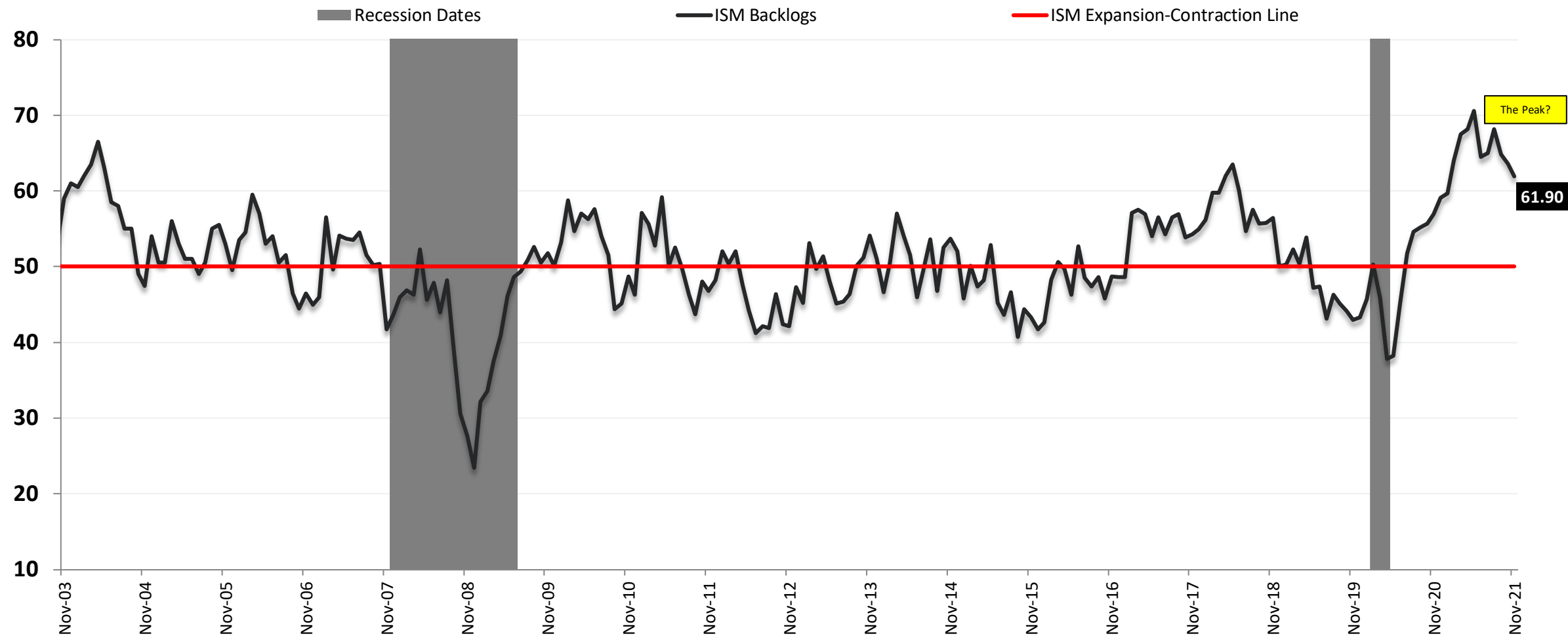
## ISM PRICES PAID



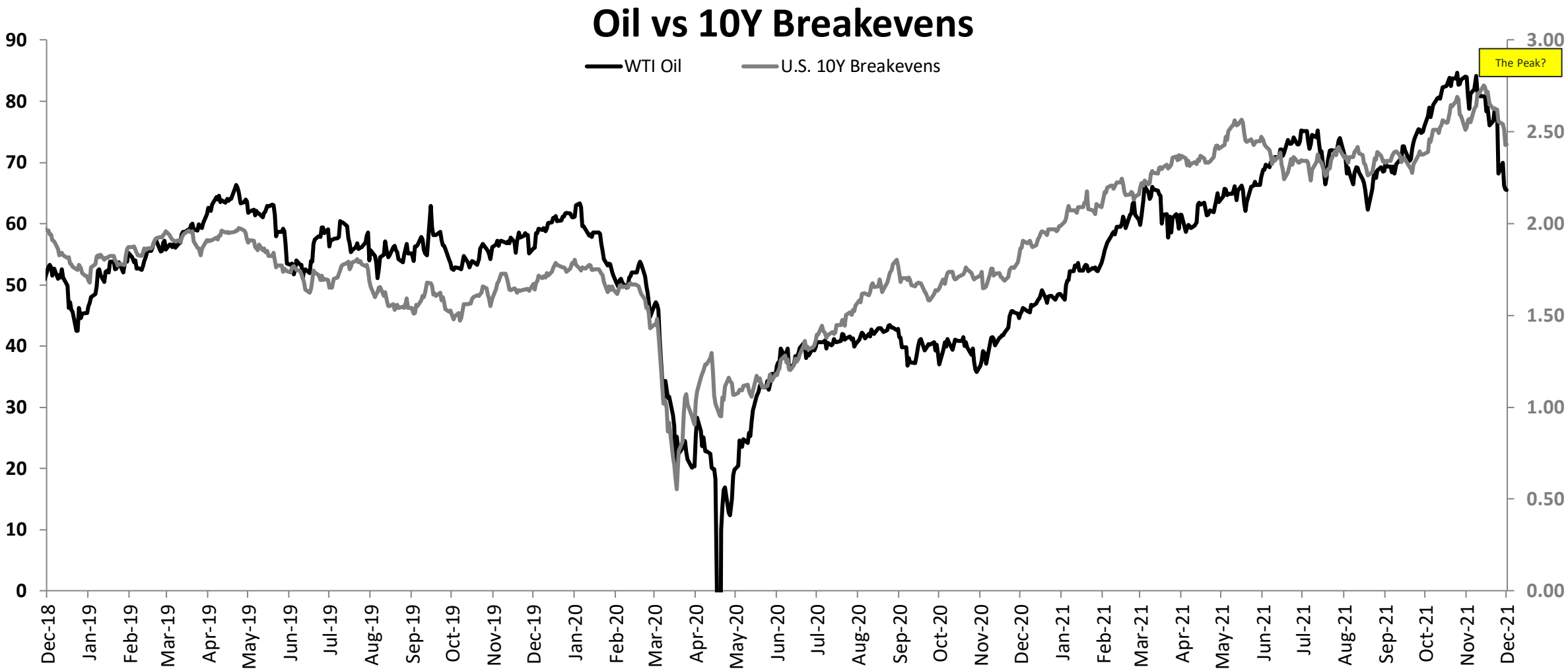
# PAST PEAK? Backlogs

Backlogs clearing as employment rises suggests some easing supply/production constraints. Price trajectory should follow concurrently or on a short lag.

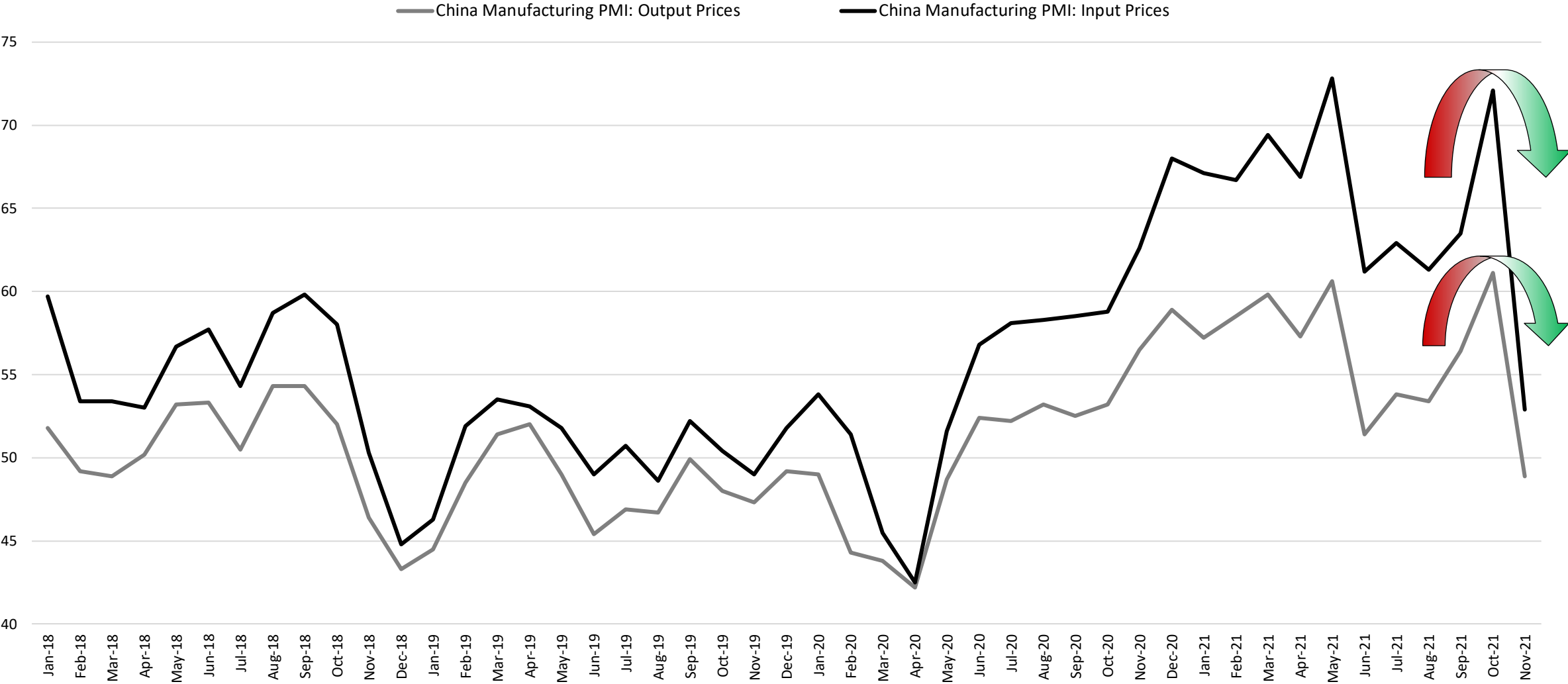
## ISM BACKLOGS



# PAST PEAK? Oil/CRB Prices and Inflation Expectations



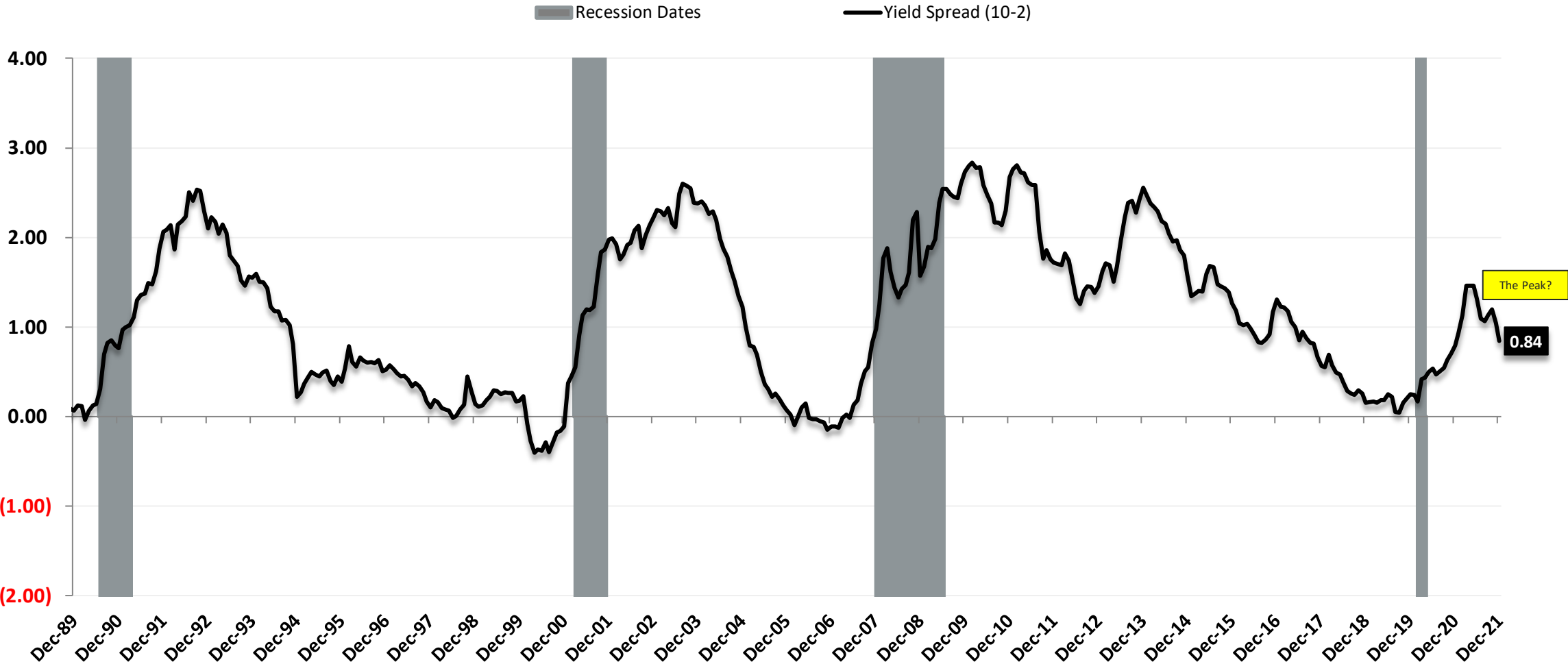
# PAST PEAK? China PMI Price Pressure



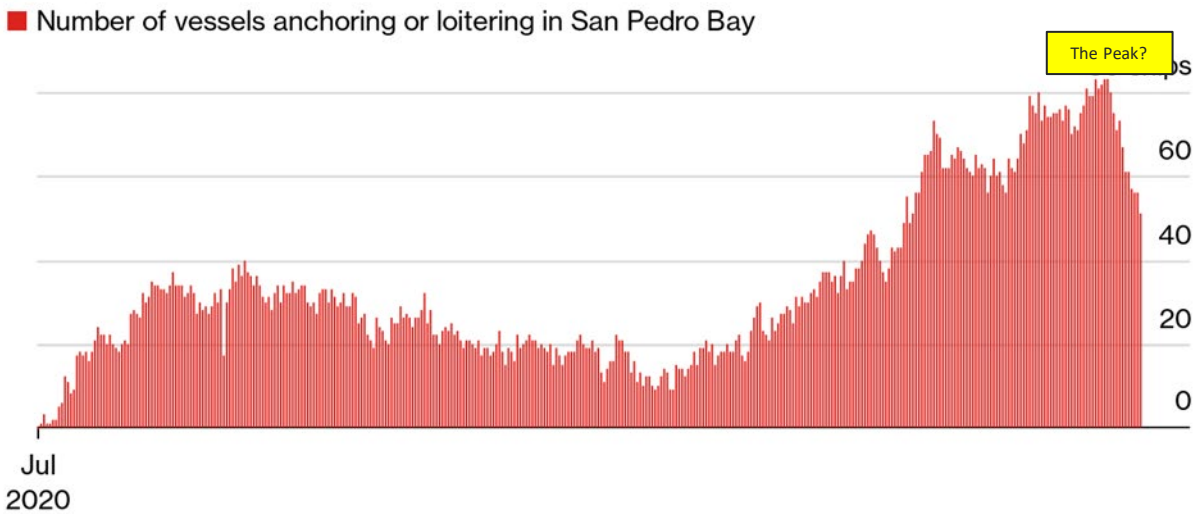
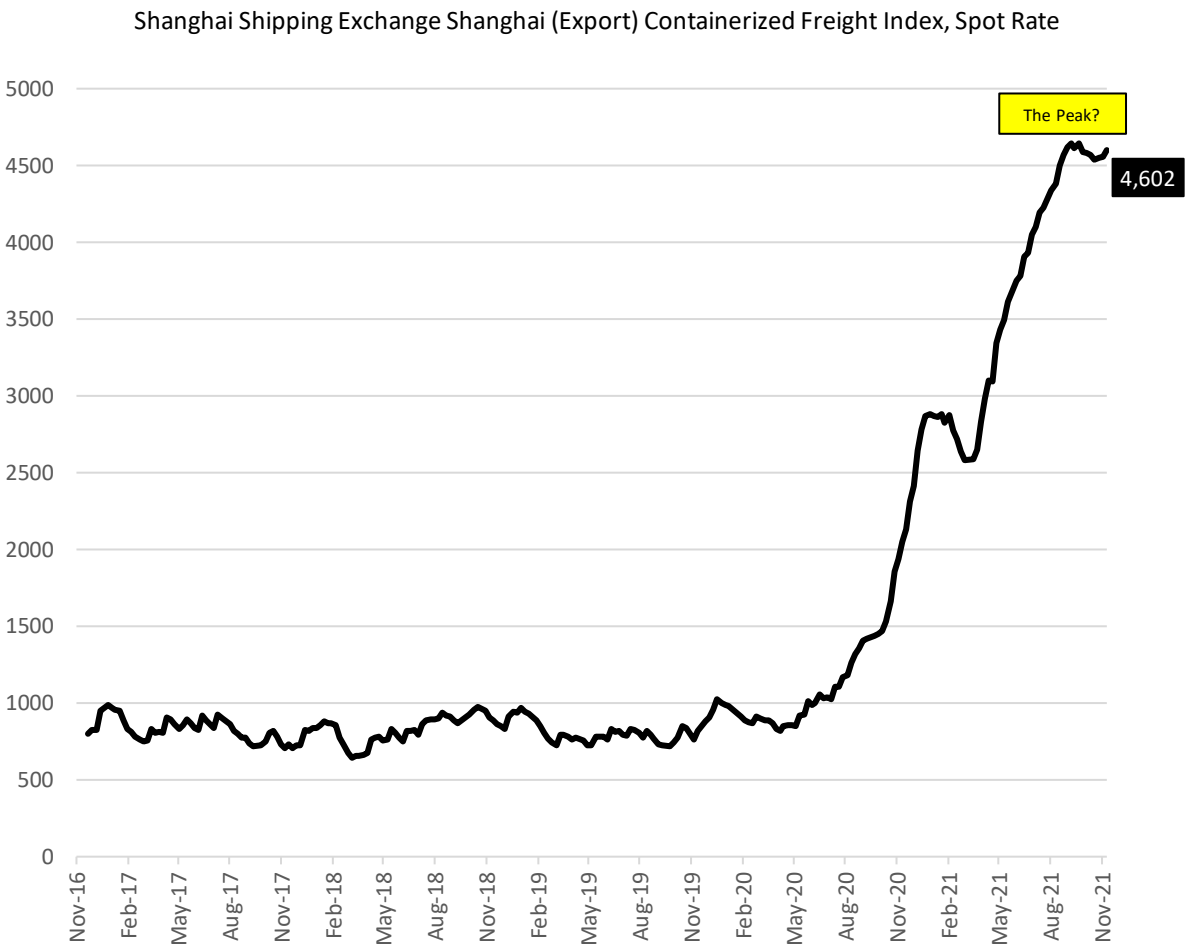


# PAST PEAK? Quad 2 Yield Spread Expansion

## YIELD SPREAD: 10Y - 2Y



# PAST PEAK? Shipping Prices & Port Bottlenecks



Source: Marine Exchange of Southern California & Vessel Traffic Service L.A./Long Beach

Bloomberg

# PAST PEAK? Domestic Supply Constraints

HEDGEYE

Employment ↑ = Supply ↑ = Demand-Supply Imbalance ↓ = Inflationary Pressure ↓

## Supplies Unchained

Strains in the U.S. are elevated but easing

U.S. supply constraint indicator



Source: Bloomberg Economics

Note: Positive numbers indicate supply deficit and negative numbers mean supply surplus.

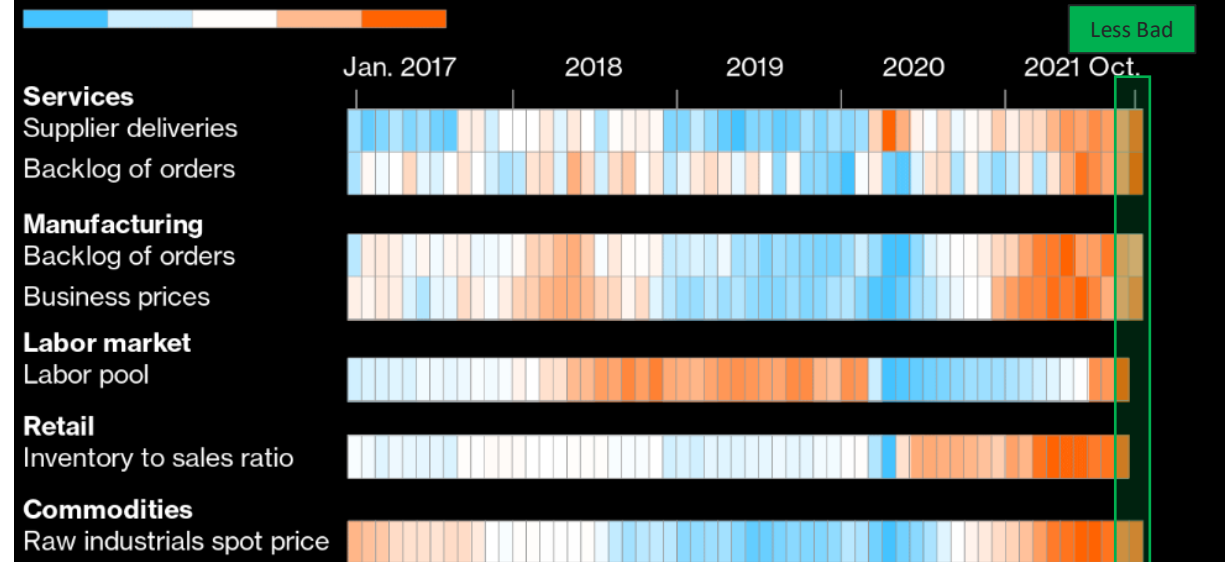
Bloomberg

## Not Getting Worse

Some supply gauges show summer strains easing slightly

Supply surplus

Deficit



Sources: Bloomberg Economics, ISM, BLS, Census Bureau

Bloomberg

# Visa November Update ↑↑

## Item 7.01 Regulation FD Disclosure.

Visa continues to monitor the COVID-19 impact globally. We have provided performance metrics for November year-over-year growth rates as well as relative to 2019.

November U.S. payments volume was 133% of 2019 levels, flat with October, with Credit up 3 points and Debit down 4 points from October. Card not present excluding travel was 152% of 2019, flat with October, while card present fell 2 points to 117% of 2019. Across categories relative to 2019, November spending remained well above 2019 levels, with monthly travel spending above 2019 levels for the first time since the pandemic began.

International market payments volume in November versus the same period in 2019 generally increased several points from October levels in most countries, with notable increases in India, Australia and New Zealand.

Cross-border volume excluding intra-Europe transactions improved 11 points from October to 106% of 2019 in November, with card not present excluding travel volume up 7 points from October to 155% of 2019. Total card present and card not present travel cross-border volume excluding intra-Europe transactions increased 9 points from October to 75% of 2019, reflecting travel improvements in most parts of the world. Many countries reopened borders and relaxed restrictions at the beginning of November, especially in Asia and Latin America. With the border opening in the U.S. on November 8, inbound U.S. card present cross-border spending in the week ended November 30 was approximately 25 points above the month of October levels compared to 2019. Total November cross-border volume increased to 116% of 2019.

Global processed transactions were 126% of 2019 in November, in line with October.

Visa flagged in an 8k on 12/2/21 that when the US borders reopened on November 8<sup>th</sup>, it saw a 25 PPT rise in cross-border card-present spending for the week ended Nov 30<sup>th</sup> vs October compared with 2019 levels.

# Visa November Update ↑↑

## Increase / (Decrease) Year-over-Year

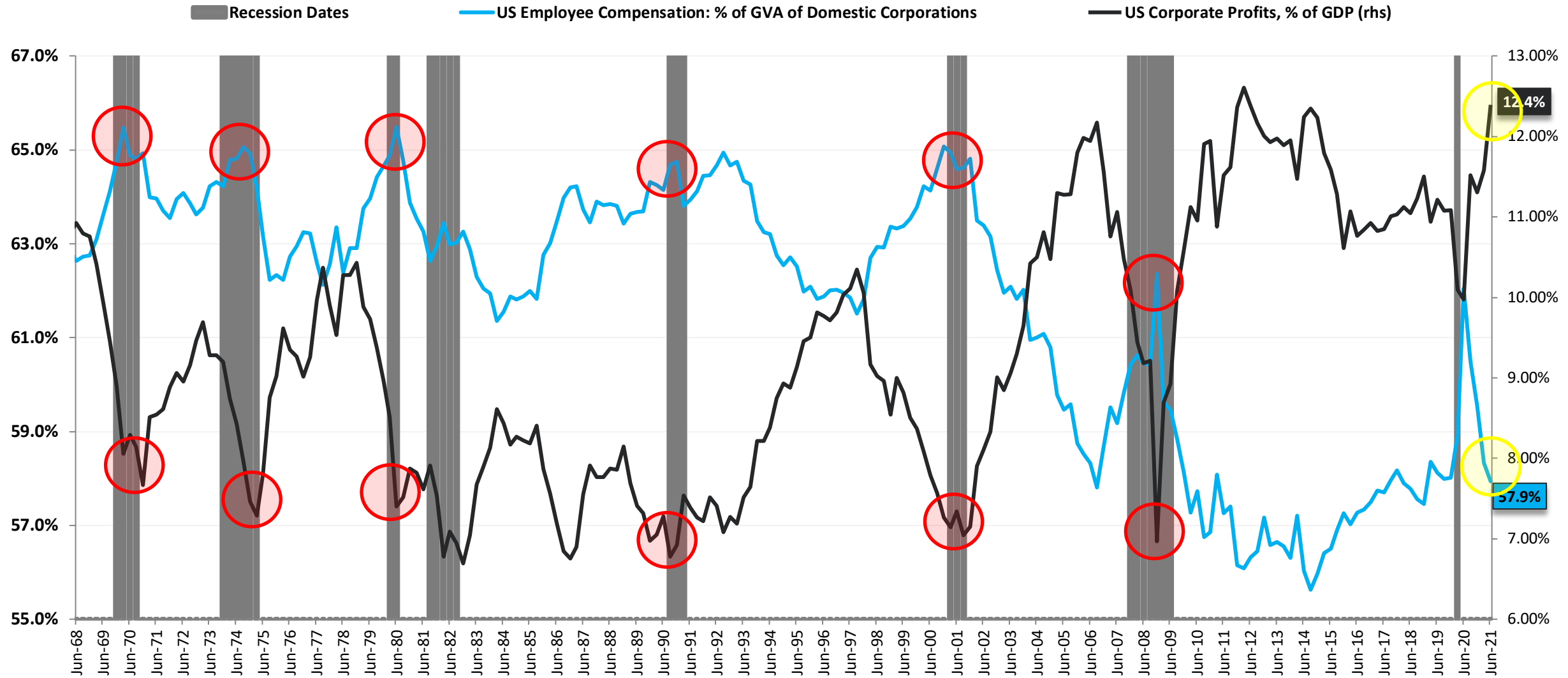
	October	November	Quarter-to-Date
U.S. Payments Volume	21%	25%	23%
Credit	25%	31%	28%
Debit	18%	20%	19%
Cross-Border Volume Excluding Intra-Europe Transactions*	49%	56%	53%
Cross-Border Volume Total*	43%	44%	43%
Processed Transactions	21%	23%	22%

## Indexed to 2019 with a Baseline of 100

	October	November	Quarter-to-Date
U.S. Payments Volume	133	133	133
Credit	122	125	123
Debit	146	142	144
Cross-Border Volume Excluding Intra-Europe Transactions*	95	106	100
Cross-Border Volume Total*	107	116	112
Processed Transactions	126	126	126

Every major measure of US payments volume accelerated Y/Y in November vs October. Meanwhile, cross-border activity surged by 9 PPTs vs 2019 levels.

Automation, Offshoring, And Private Equity Have Been Laying The Groundwork For #MMT For The Past Two Decades. Demand-Supply Imbalance In The Labor Market (& Macro Mean Reversion) = Upside In The Blue Line



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