



**CRESCAT CAPITAL®**  
THE VALUE OF GLOBAL MACRO INVESTING

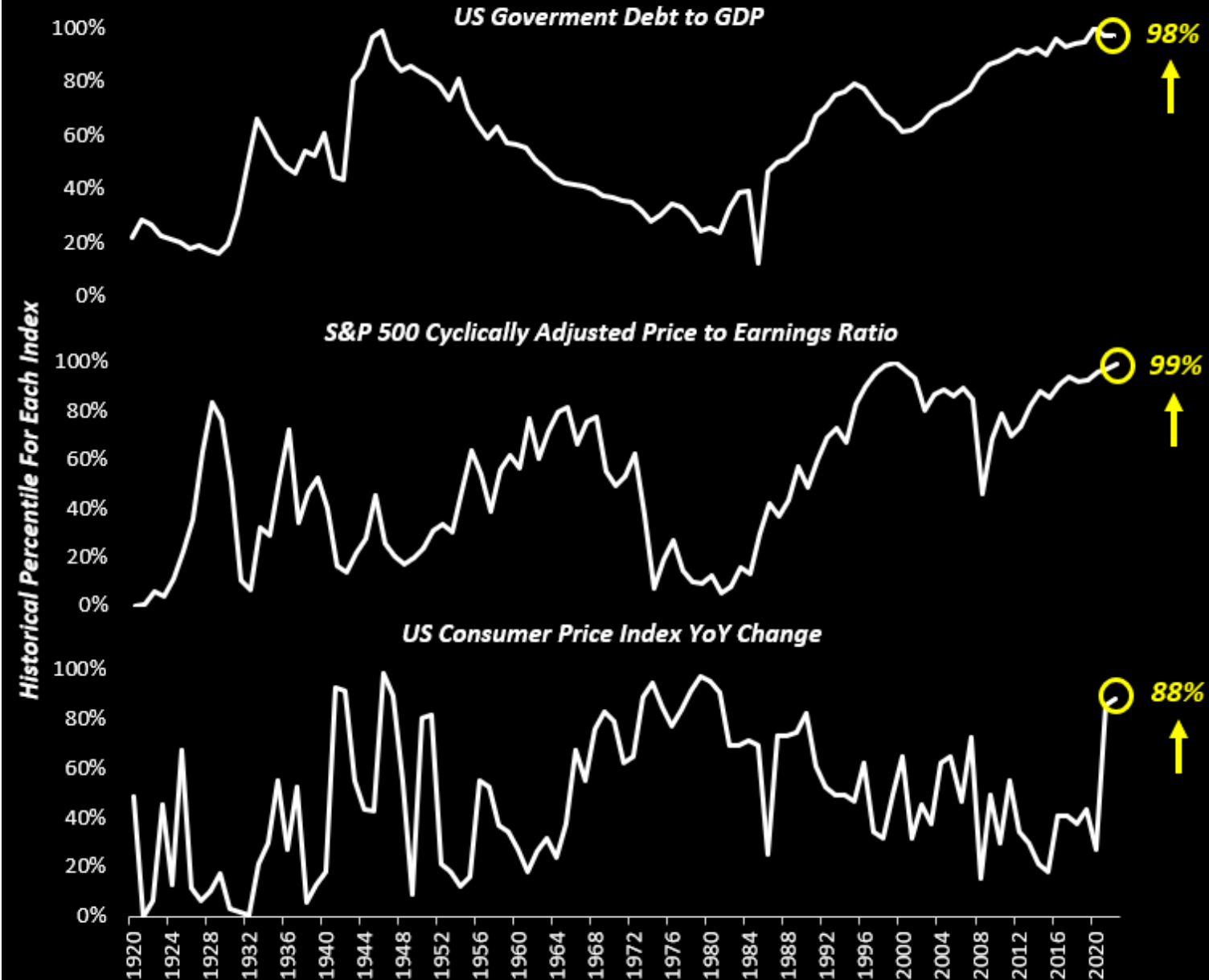
# MACRO PRESENTATION

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# Important Disclosures

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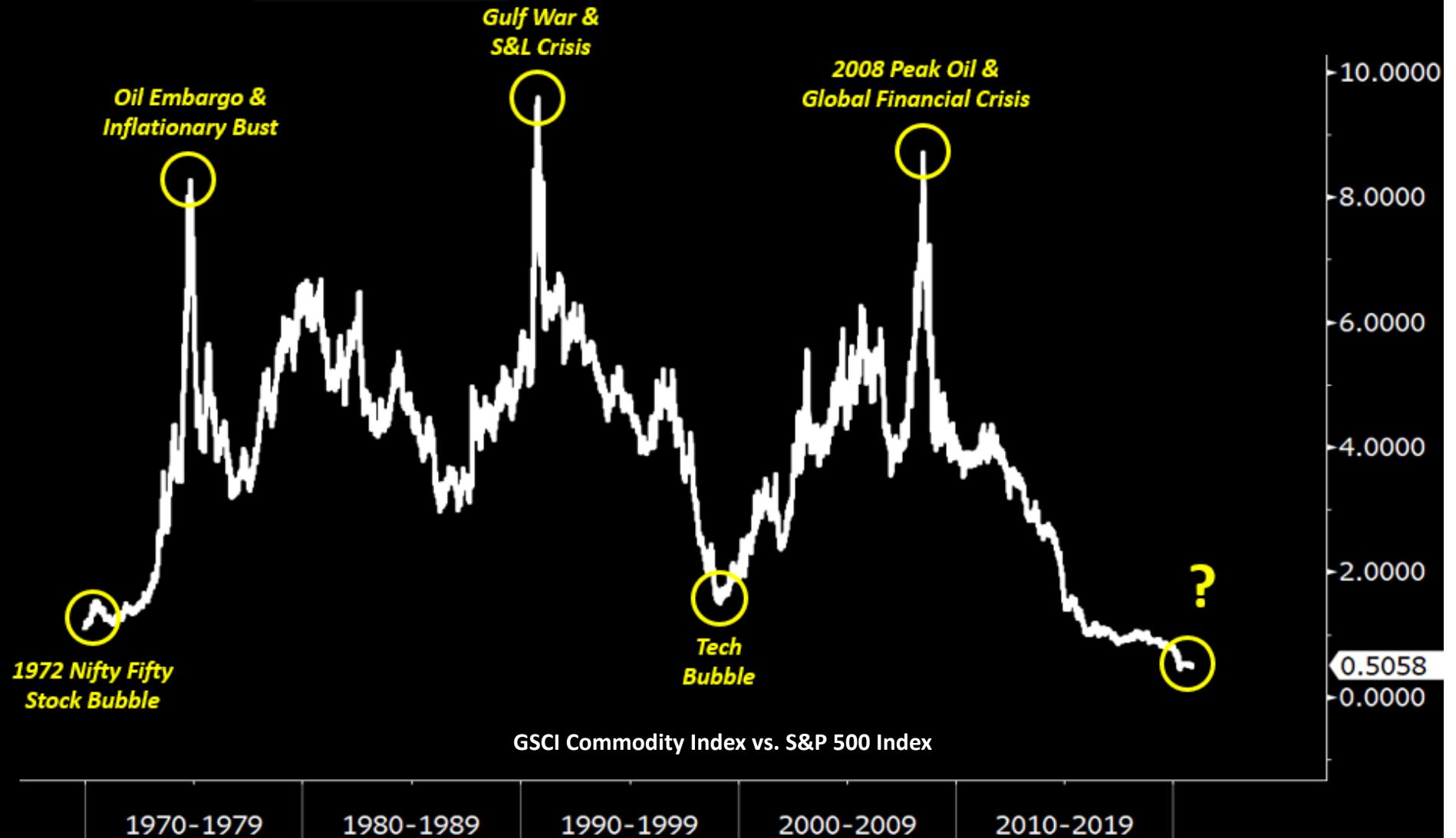
# Debt, Valuation & Inflation



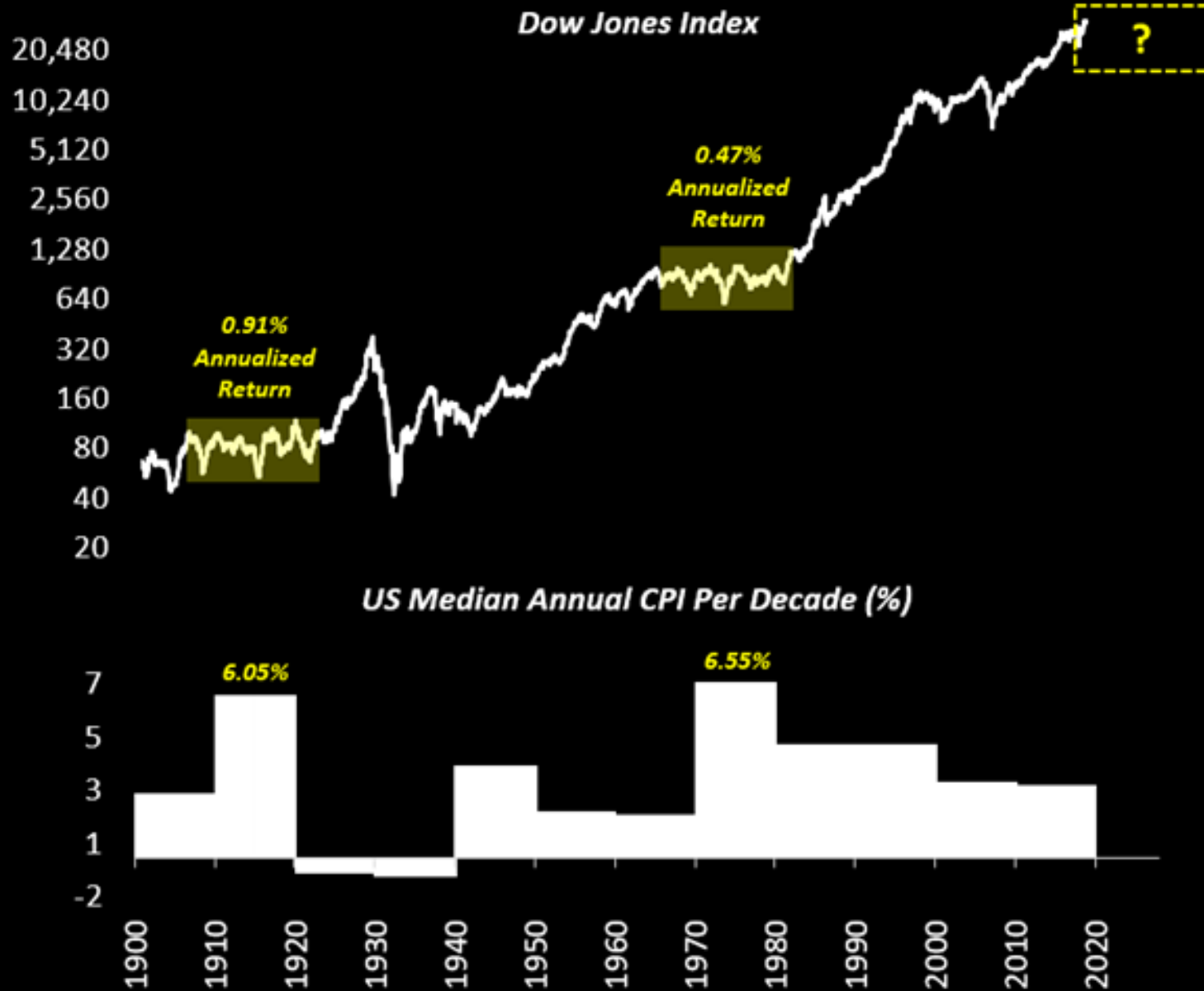
Source: Federal Reserve, Yale University, Robert J. Shiller

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# Commodities to Equities Ratio



# Stocks During Inflationary Periods



Source: Federal Reserve

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# Crescat Macro Model

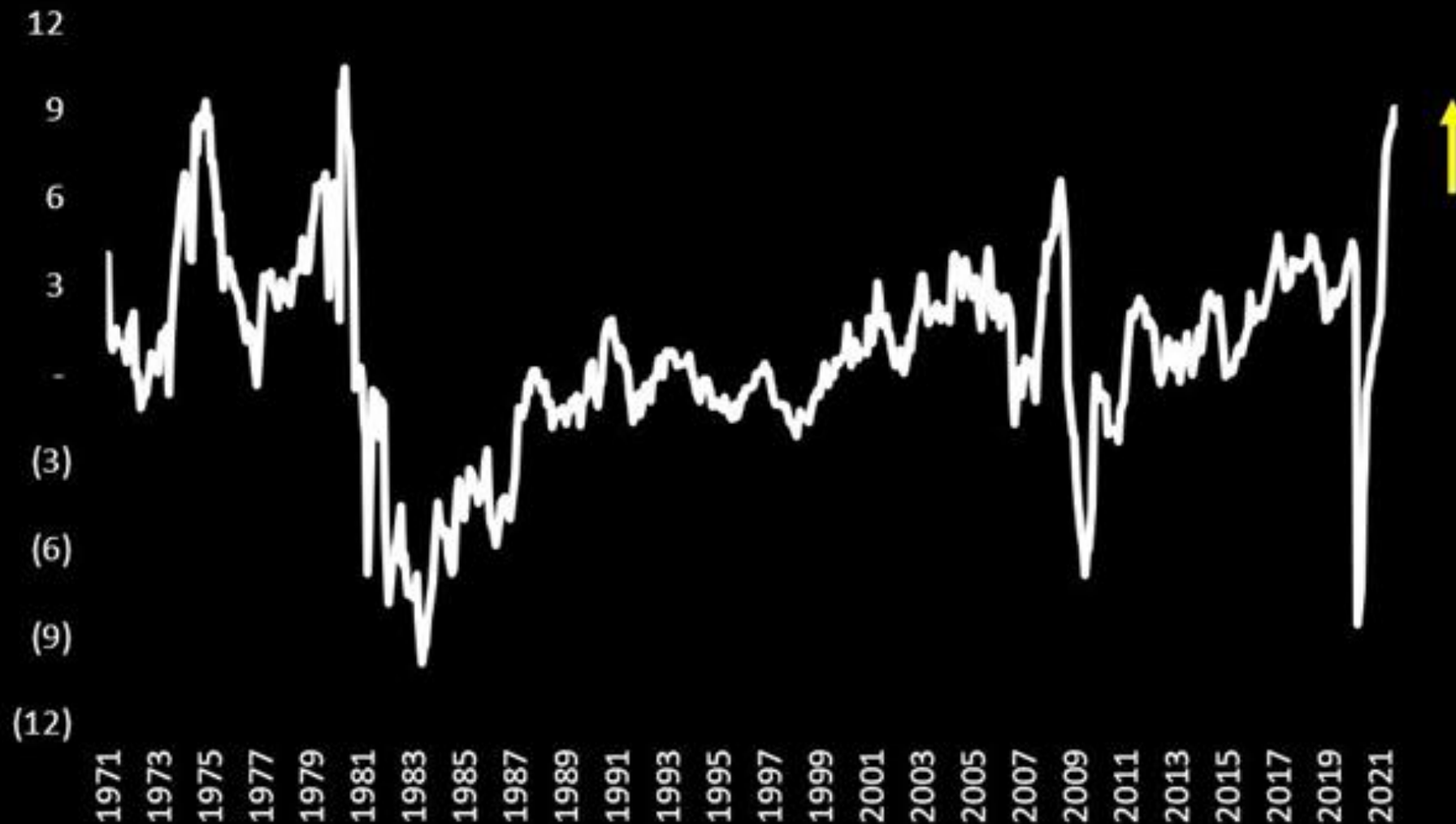


Source: BIS, IMF, BLS, Fed, Conference Board, Bloomberg

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# Taylor Rule to Fed Funds Rate Spread (%)

*Baseline Model Using CPI Rather Than PCE*



Source: Federal Reserve; Bloomberg

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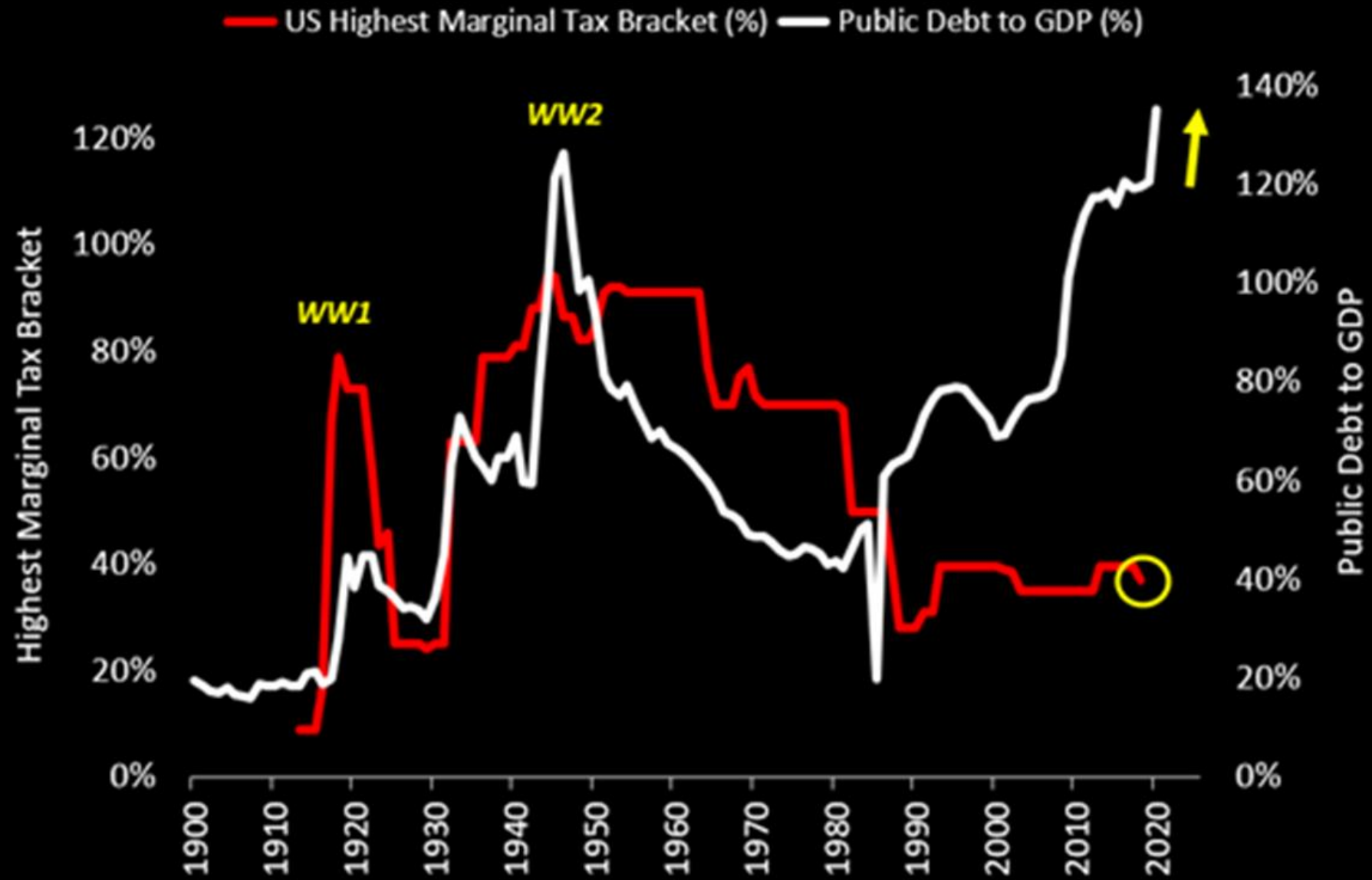


# Inflation vs. Financial Conditions





# US Marginal Tax Bracket vs. Government Debt



Source: Federal Reserve

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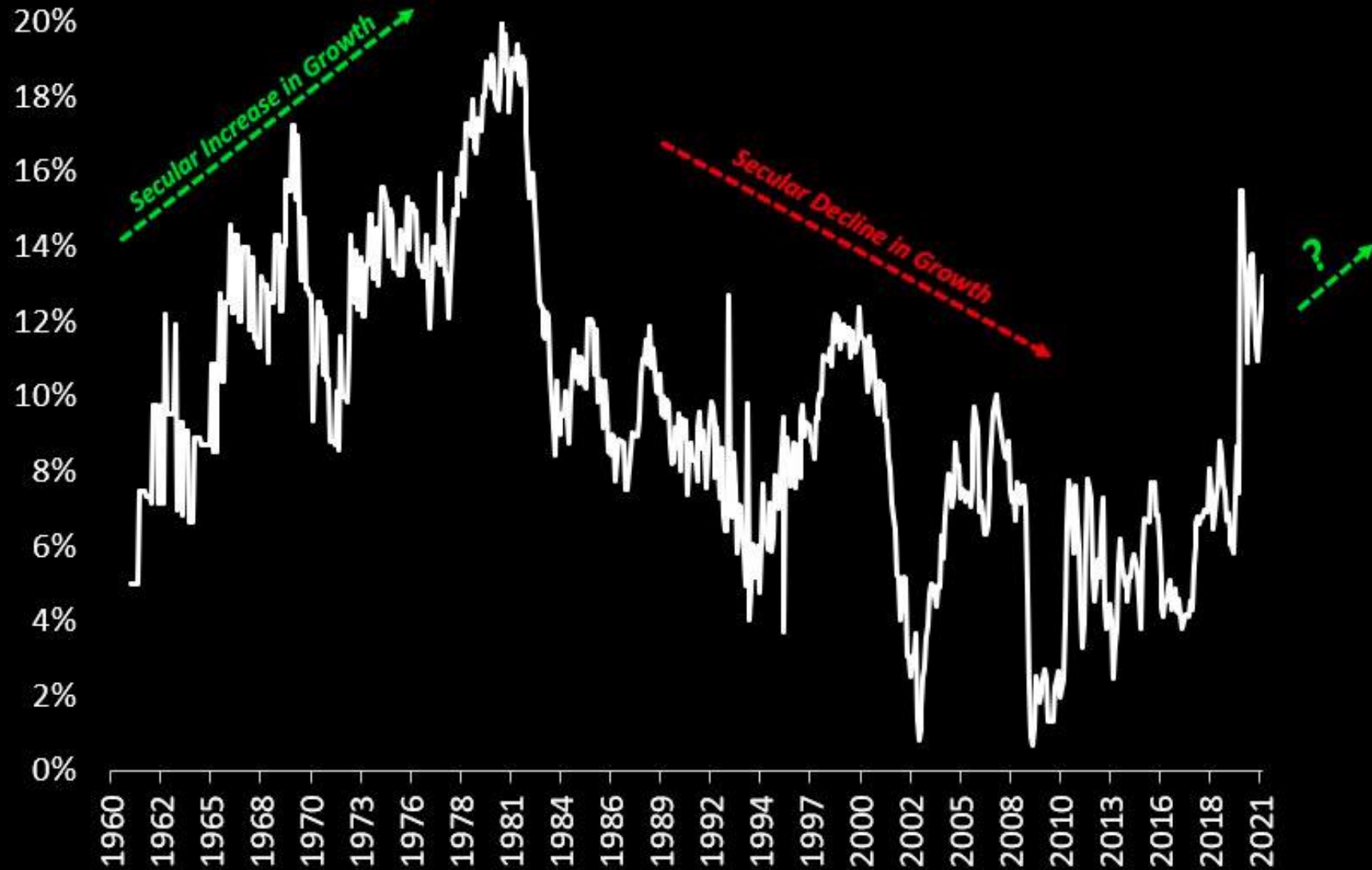
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# DEBT-TO-GDP RESOLUTION

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# Growth in Wages & Salaries Per Employed Person

24-Month Change (%)

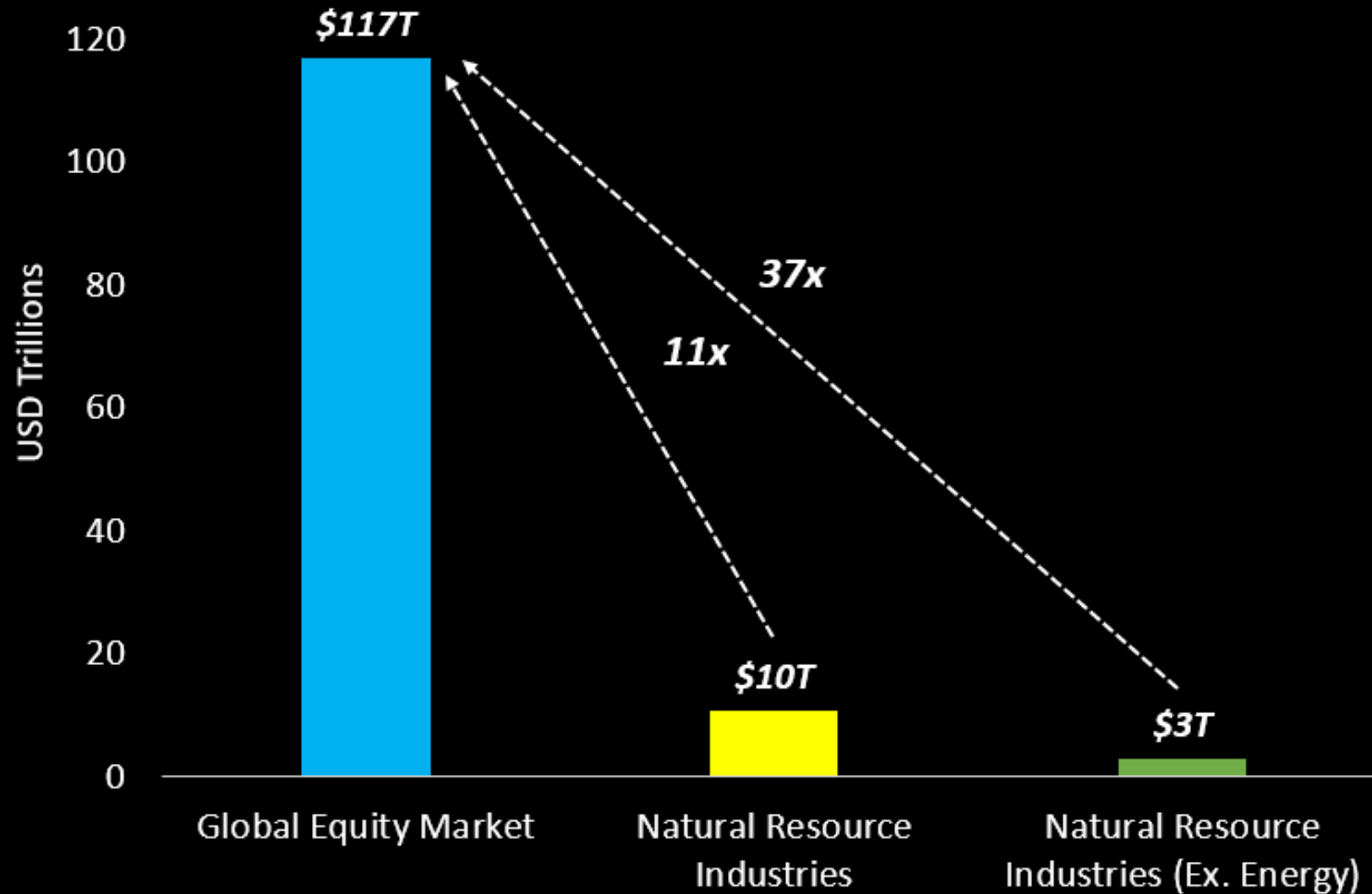


Source: Federal Reserve

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# Natural Resource Industries vs. Global Equity Markets

*Public Companies Aggregate Market Cap Worldwide*

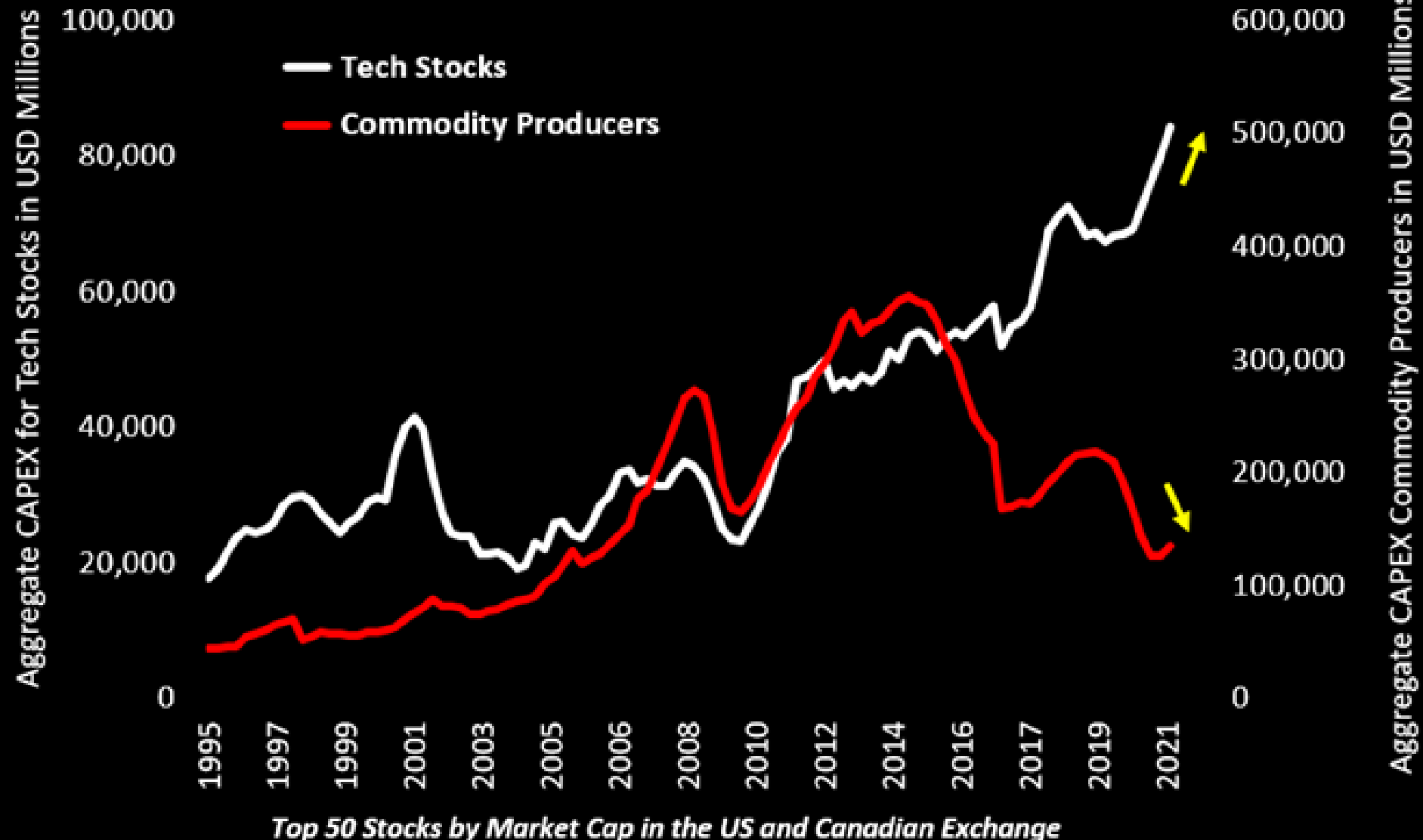


Source: Bloomberg

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# CAPEX Cycle: Tech Stocks vs. Commodity Producers

*Trailing 12-Months CAPEX in USD Millions*

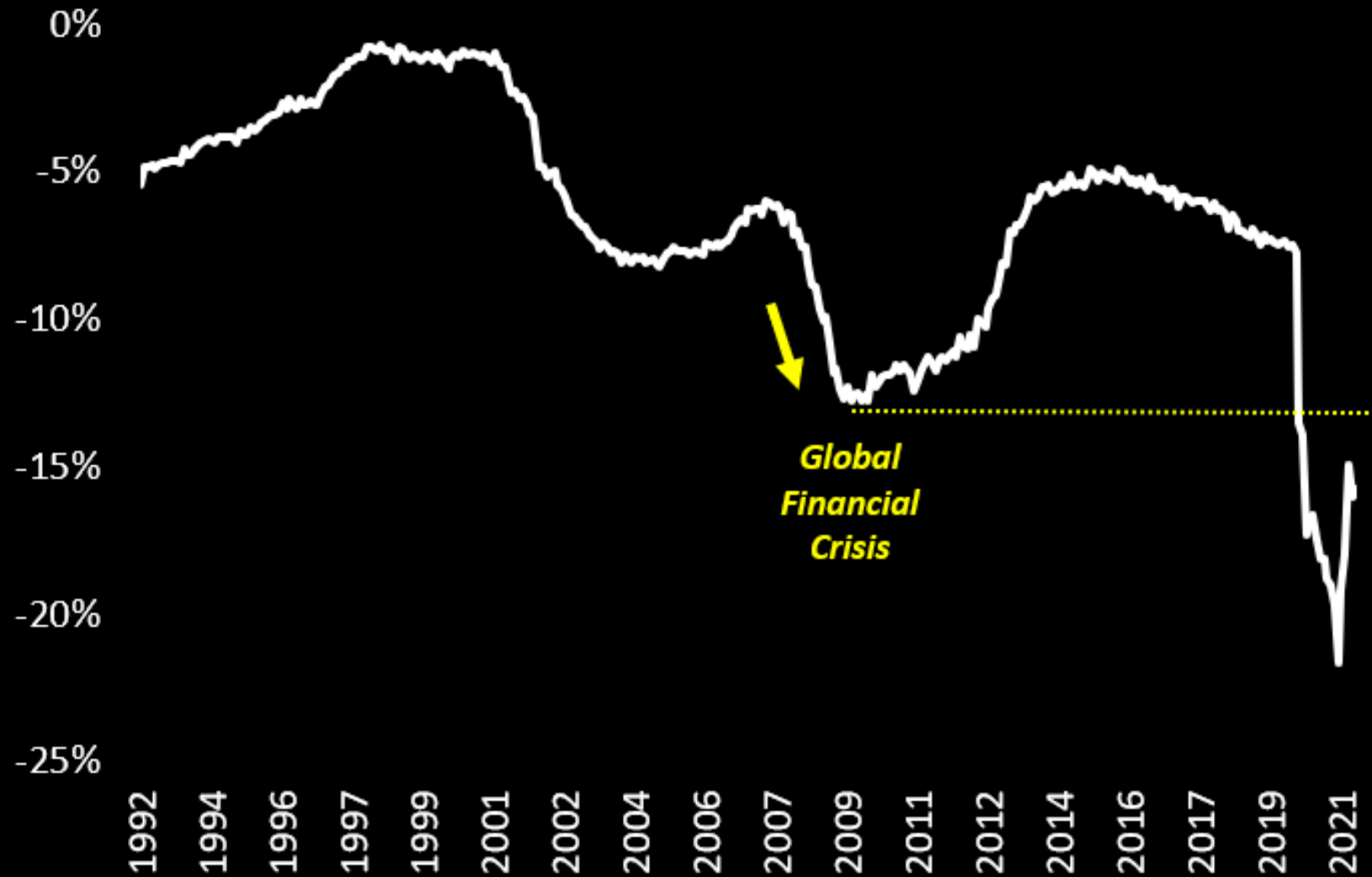


Source: Bloomberg

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# US Twin Deficit

*US Current + Fiscal Account Relative to Nominal GDP*

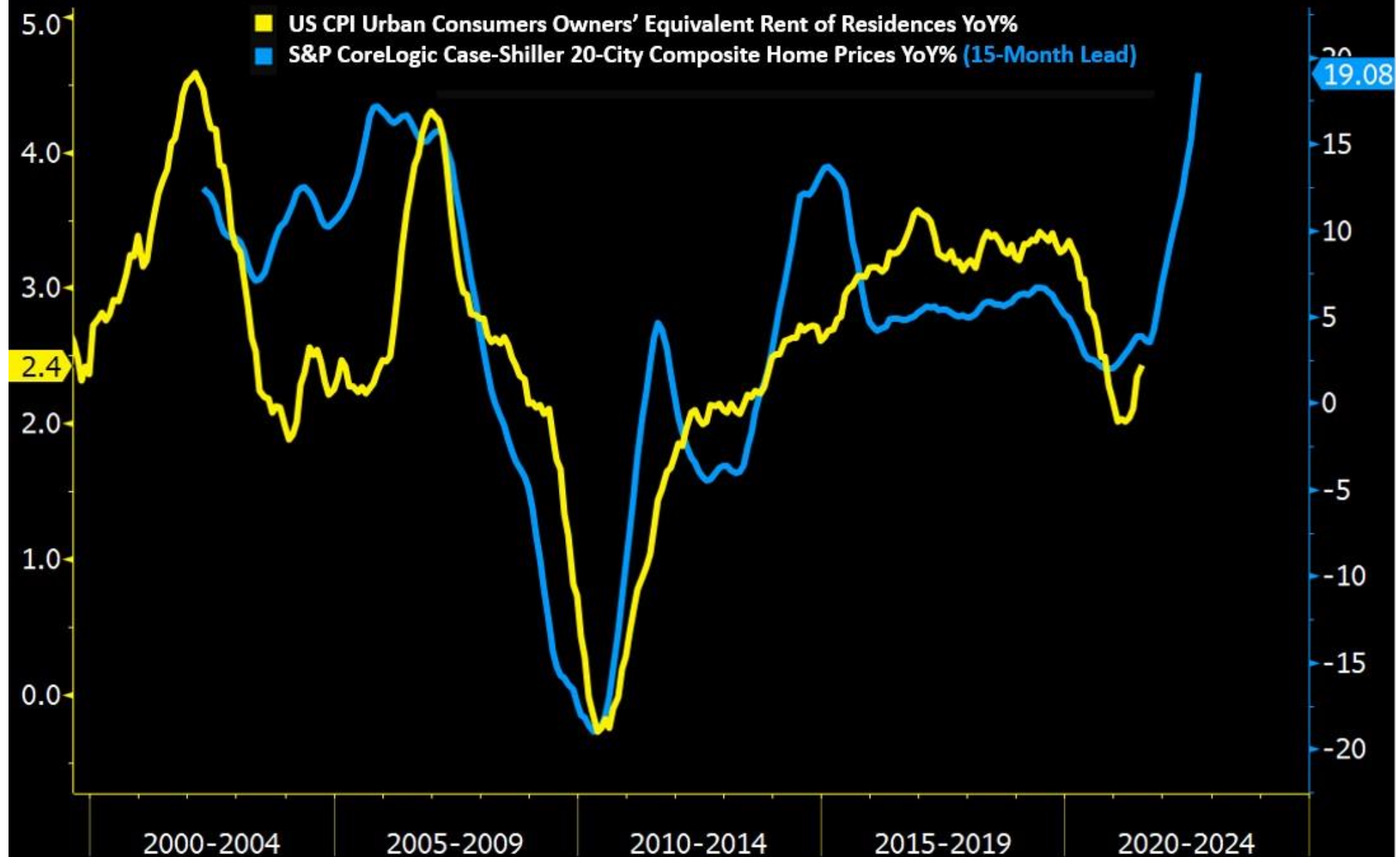


Source: Federal Reserve

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# CPI Owners Equivalent Rent vs. Home Prices

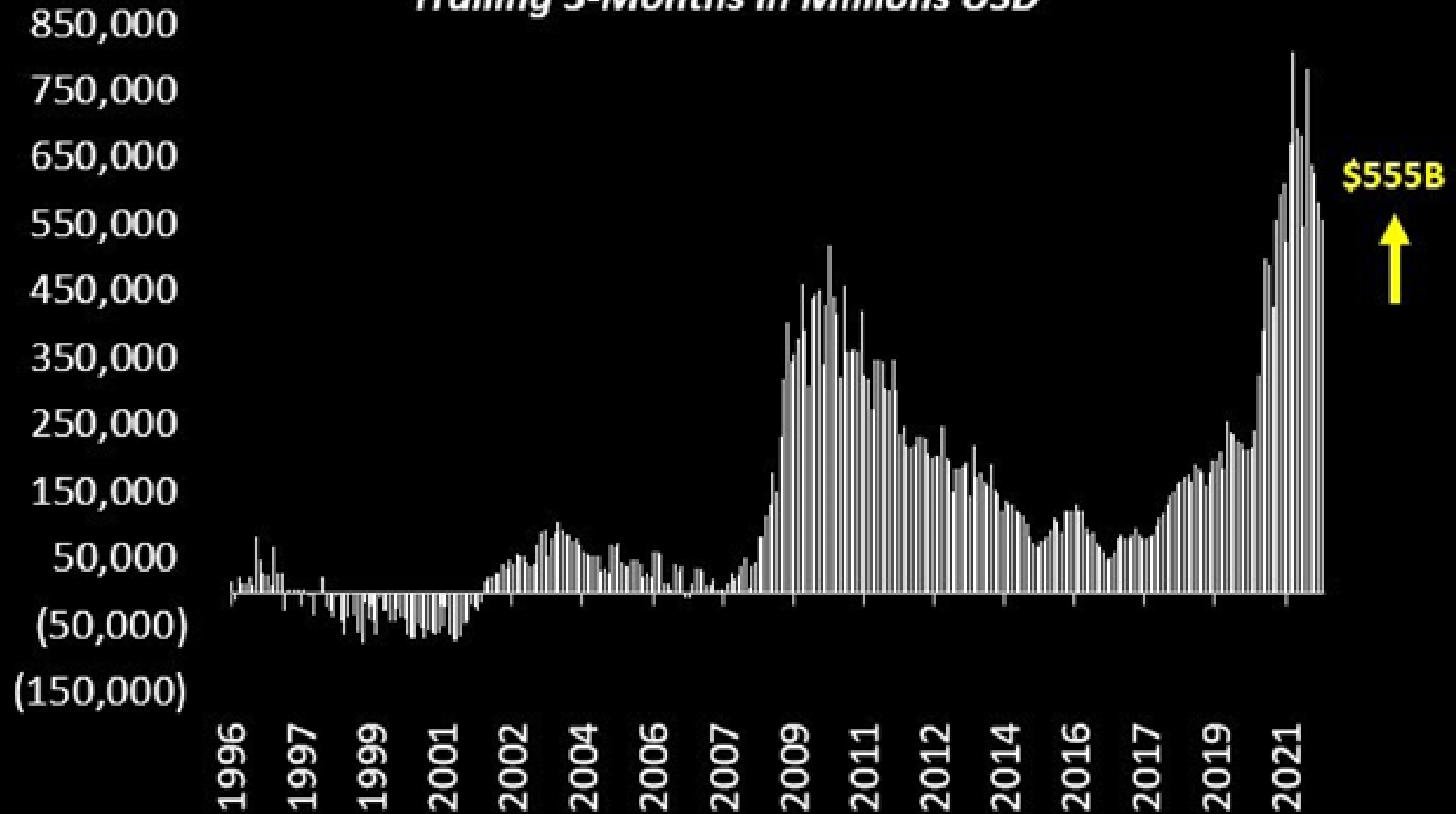


Source: US Bureau of Labor Statistics, S&P CoreLogic

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# Issuances of Treasury Bonds & Notes

*Trailing 3-Months in Millions USD*



Source: Federal Reserve

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# US Treasury Holdings

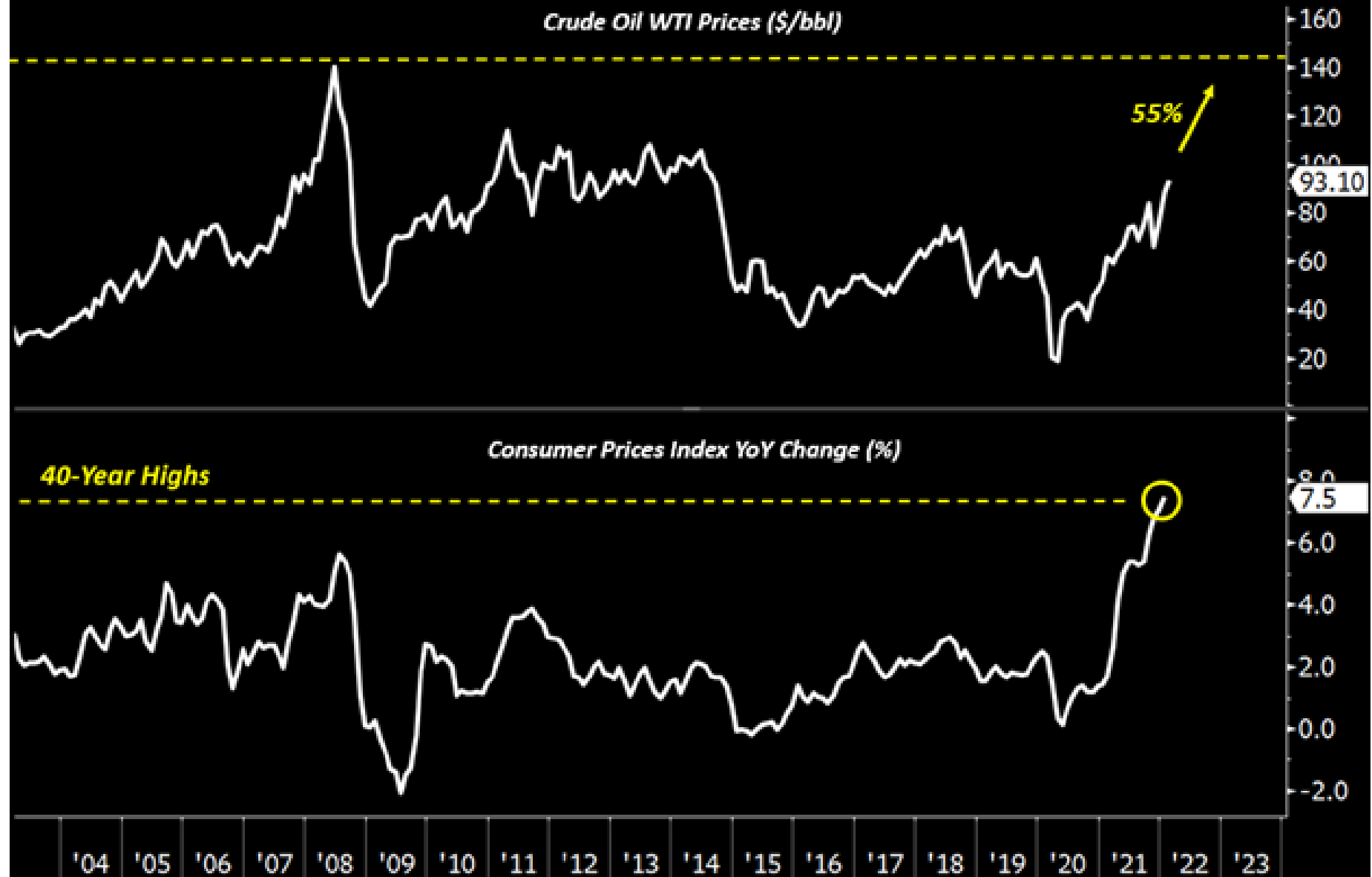
*% of Ownership of Marketable Securities*



Source: Federal Reserve

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# Oil Prices vs. Inflation

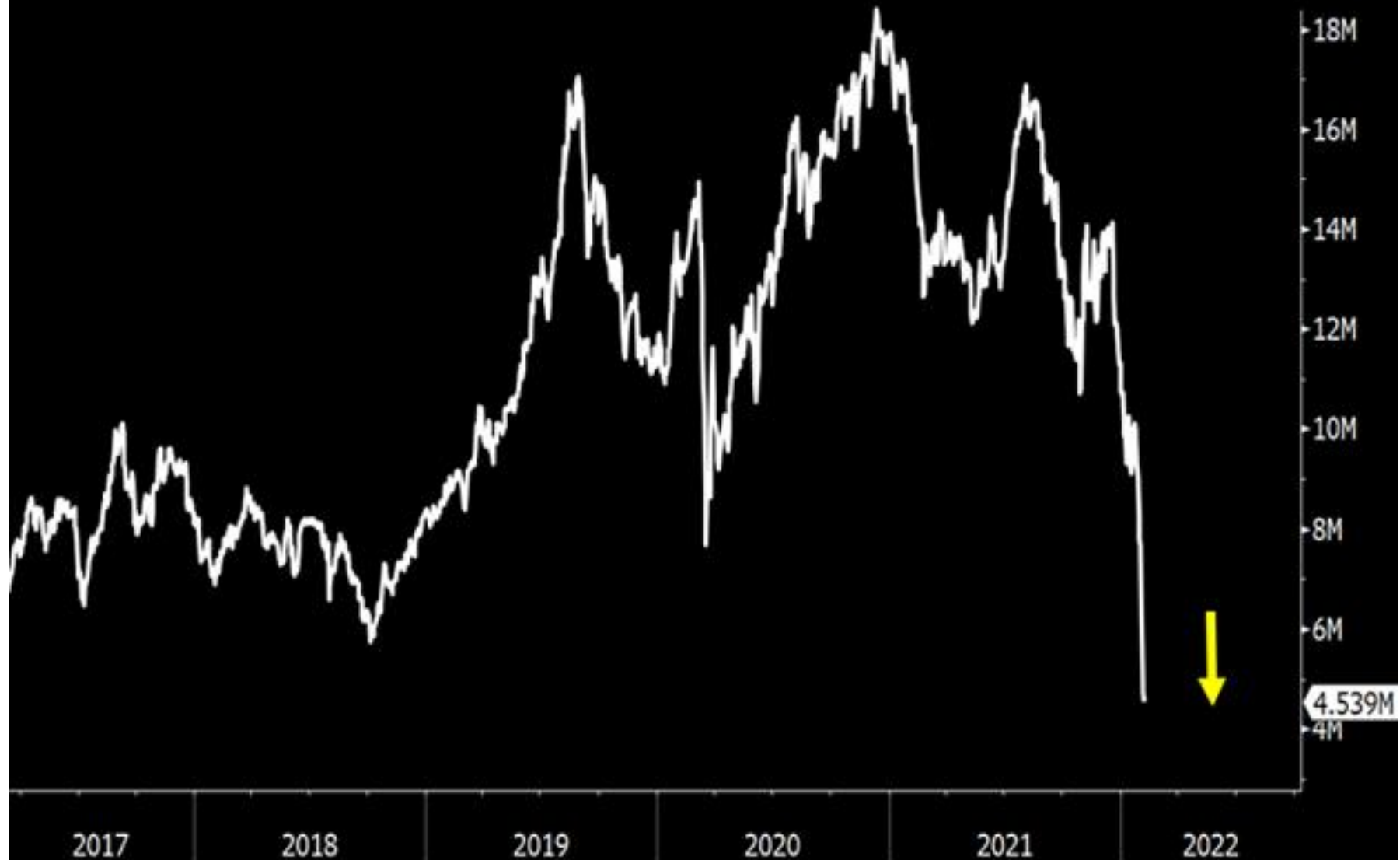


Source: Bloomberg

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# Global Negative Yielding Bonds

*USD Millions*

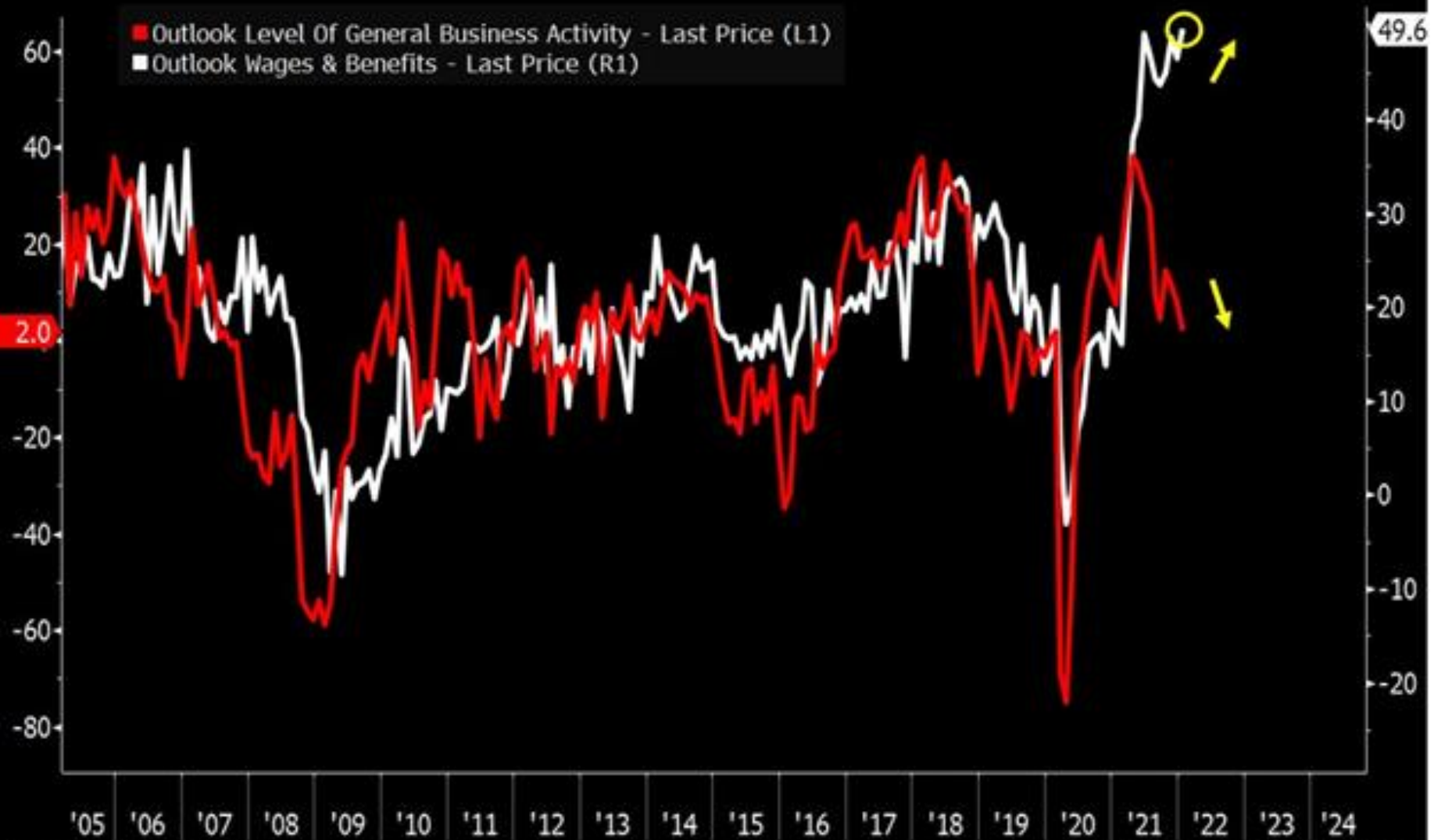


Source: Bloomberg

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# Outlook for Wages & Salaries vs. Business Activity

*Dallas Fed Manufacturing Index*



Source: Bloomberg

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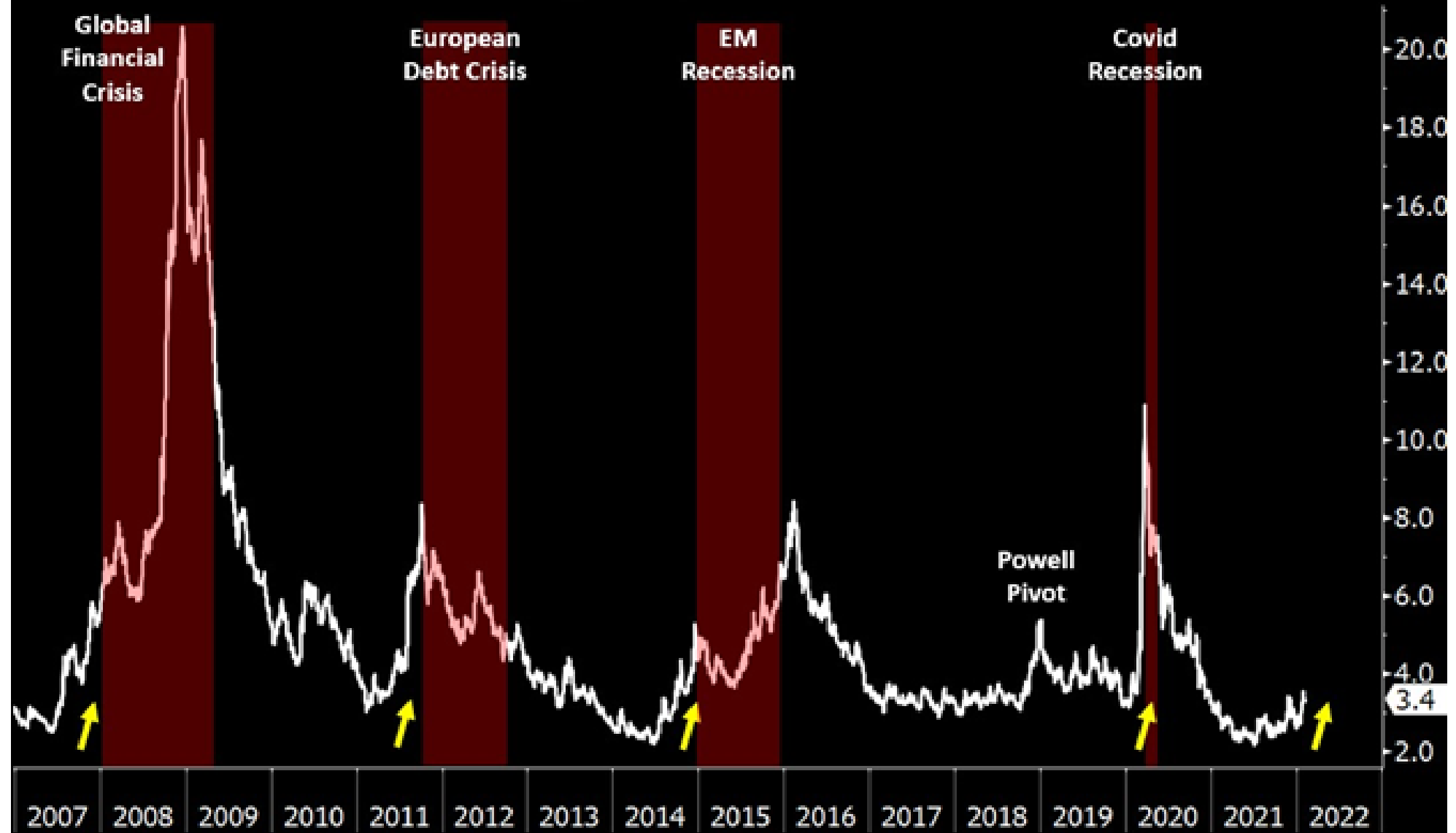
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# MISPRICED COST OF CAPITAL

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# High Yield Credit Spreads

*BarCap US Corp HY YTW vs. UST 10s*



Source: Bloomberg

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# Operating Margins vs. Junk Bond Yields (Inverted)

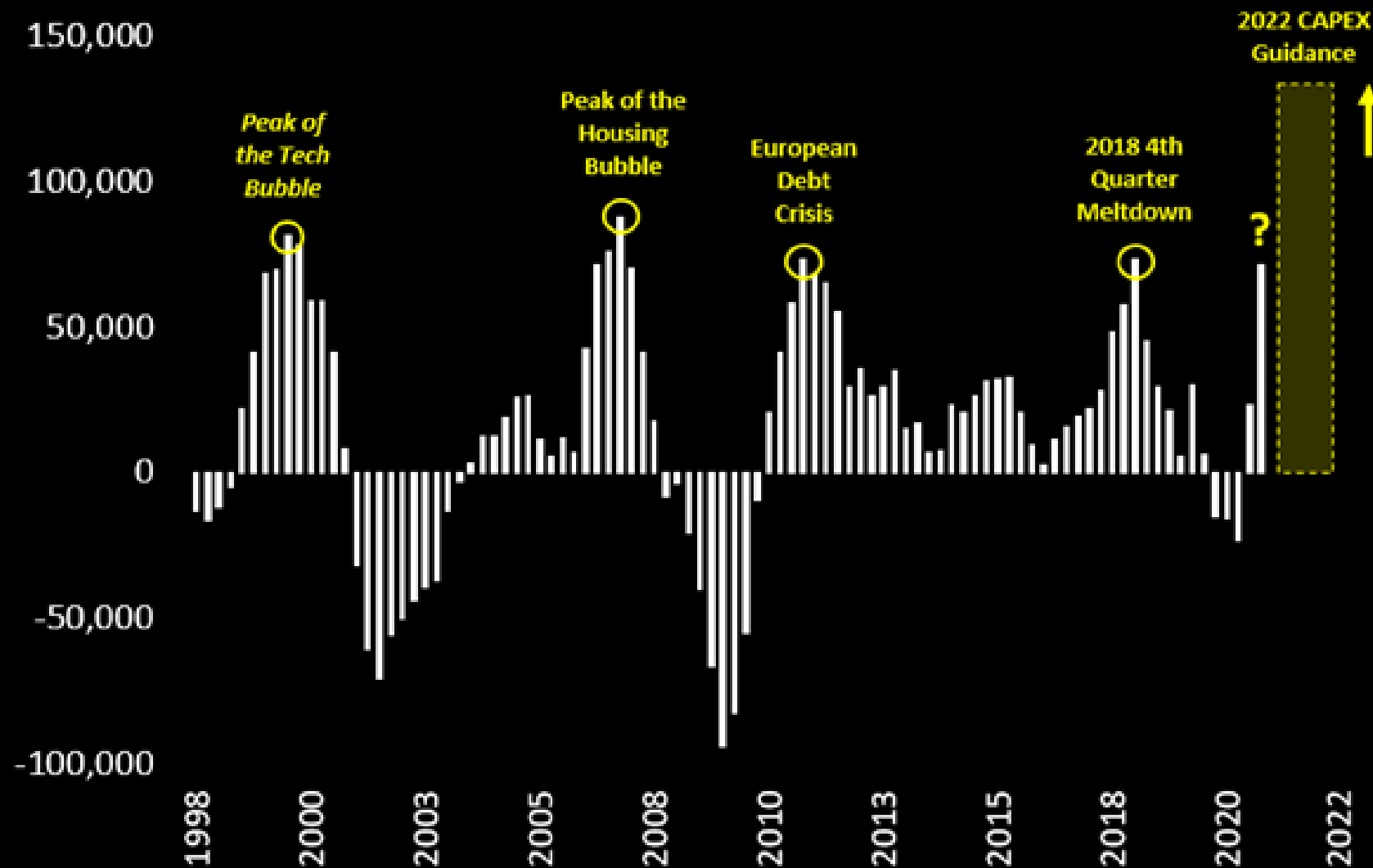


Source: Bloomberg

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# S&P 500 Index Excluding Energy & Financials

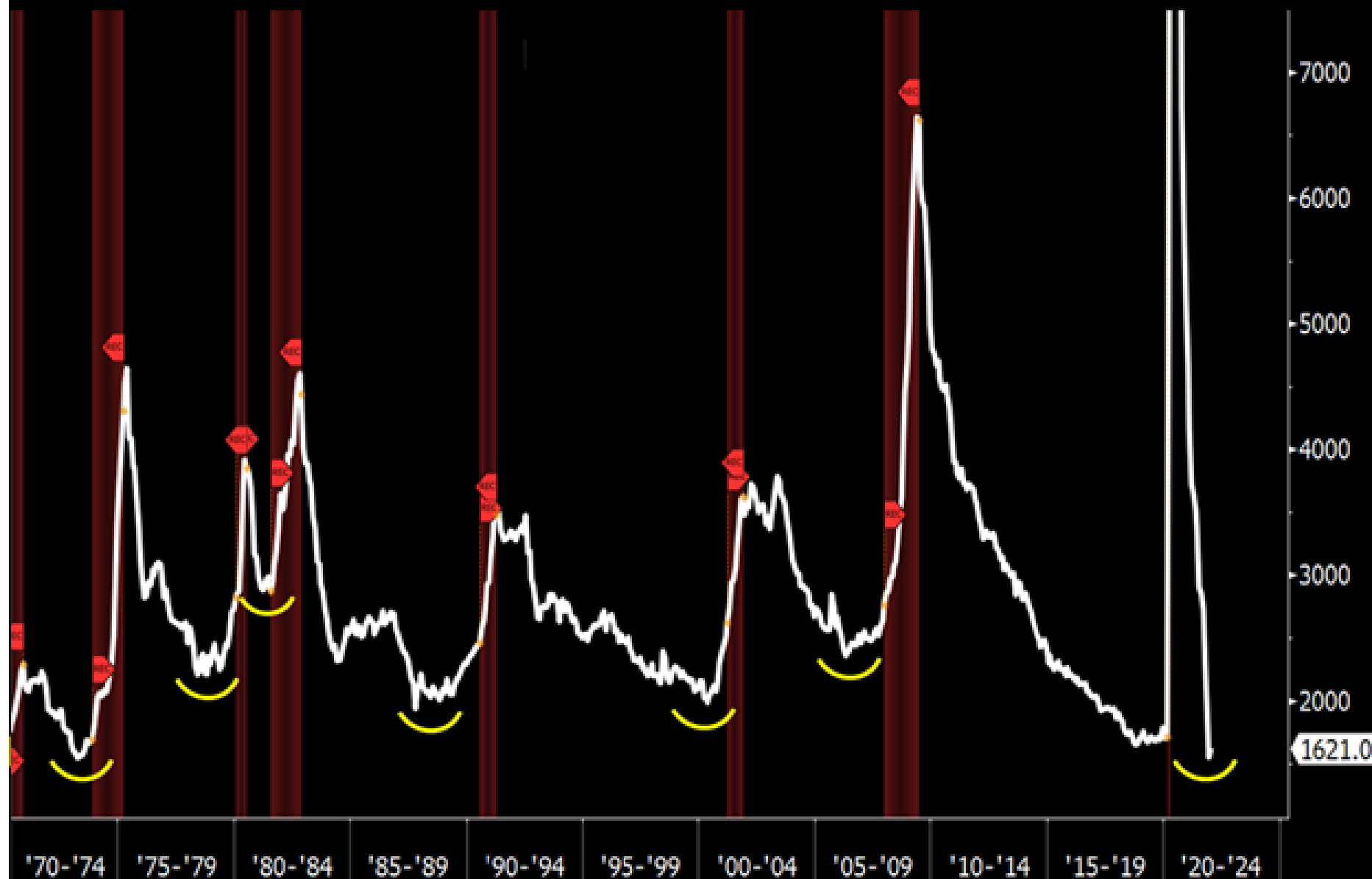
*Annual Change in Aggregate CAPEX in USD Millions*



Source: Bloomberg

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# US Continuing Jobless Claims

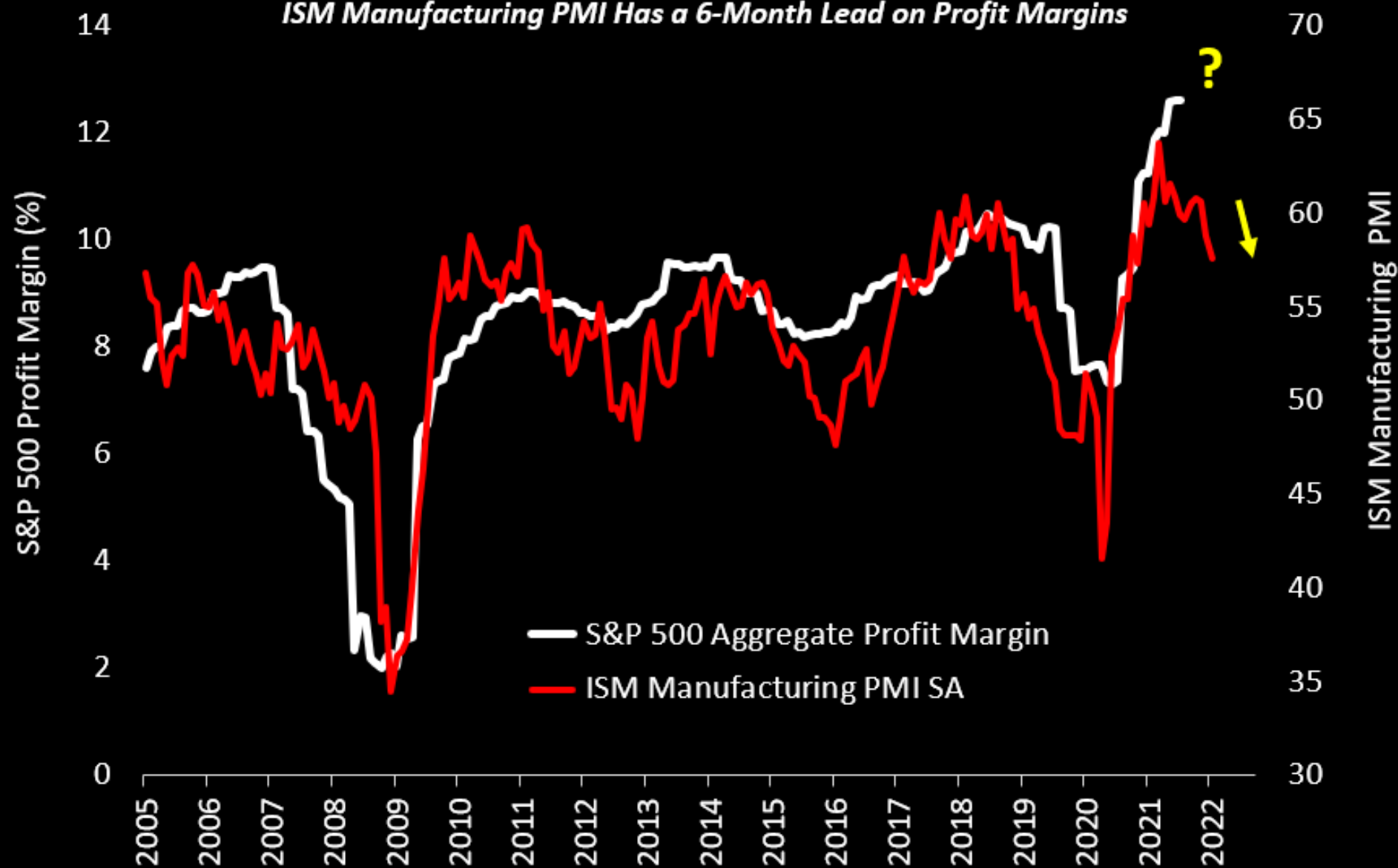


Source: Bloomberg

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# S&P 500 Profit Margin vs. ISM Manufacturing

*ISM Manufacturing PMI Has a 6-Month Lead on Profit Margins*

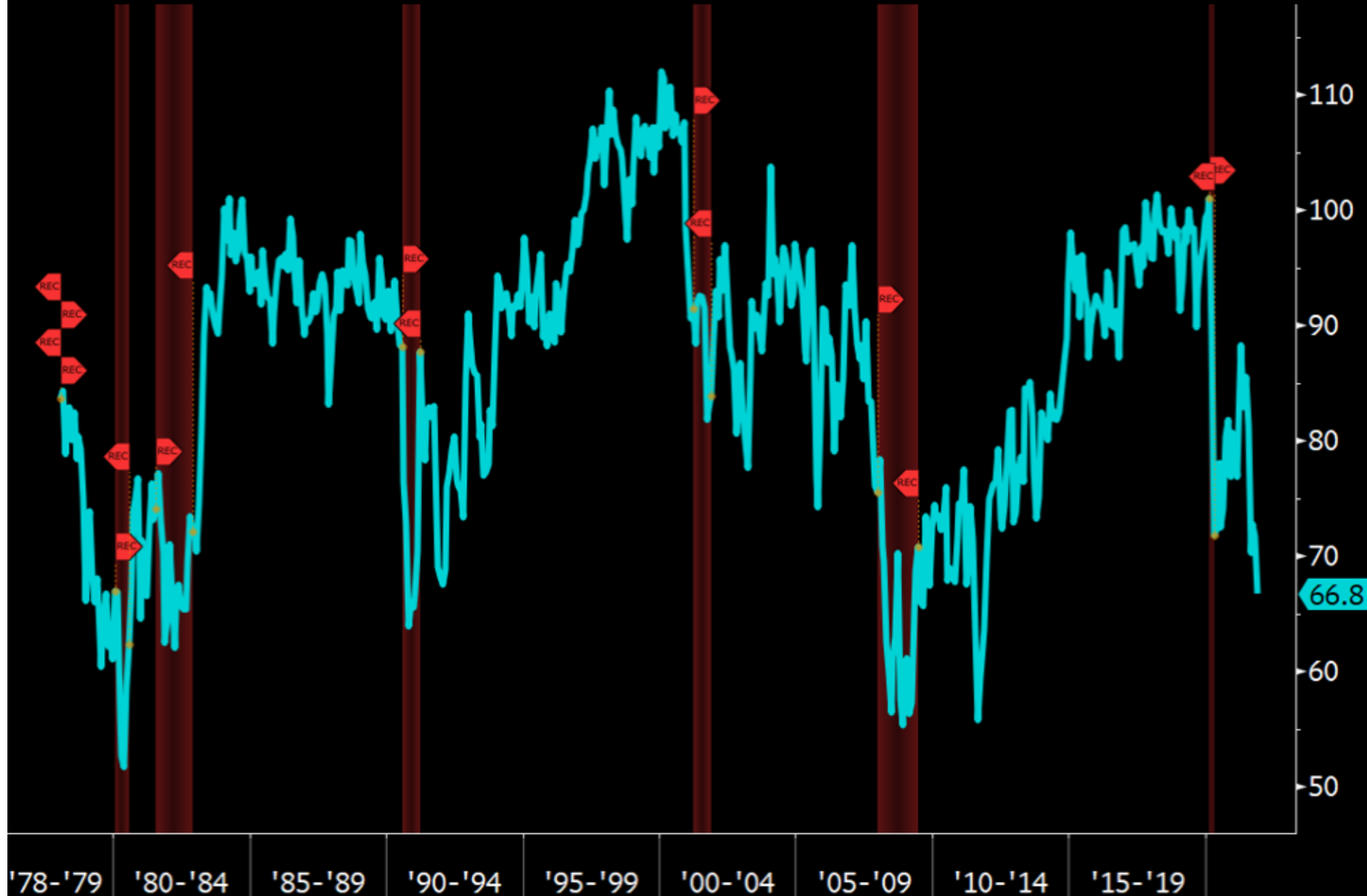


Source: Bloomberg

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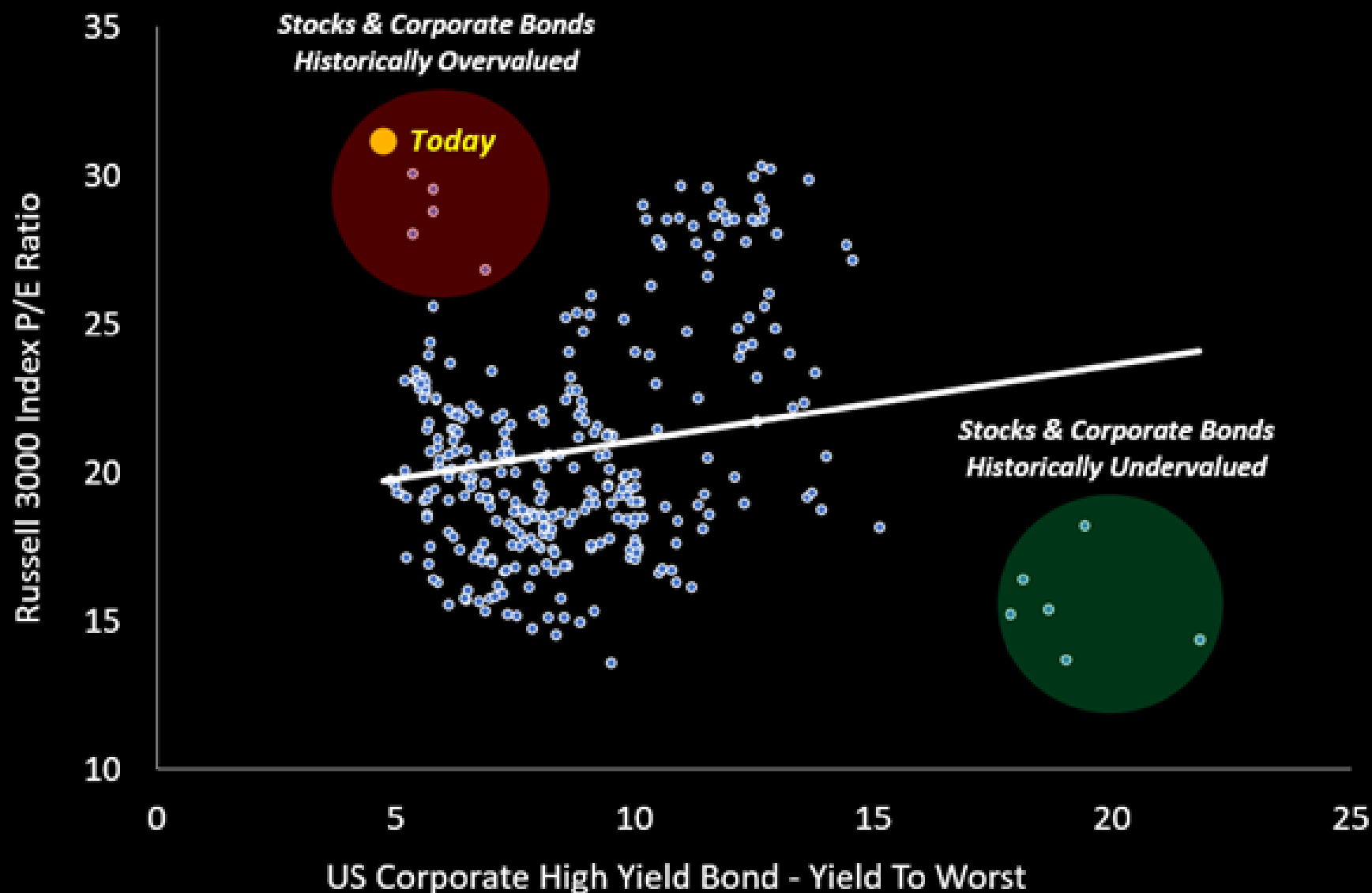
# U. of Michigan Consumer Sentiment Index



Source: Bloomberg

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# Valuation of US Stocks vs. Junk Bonds

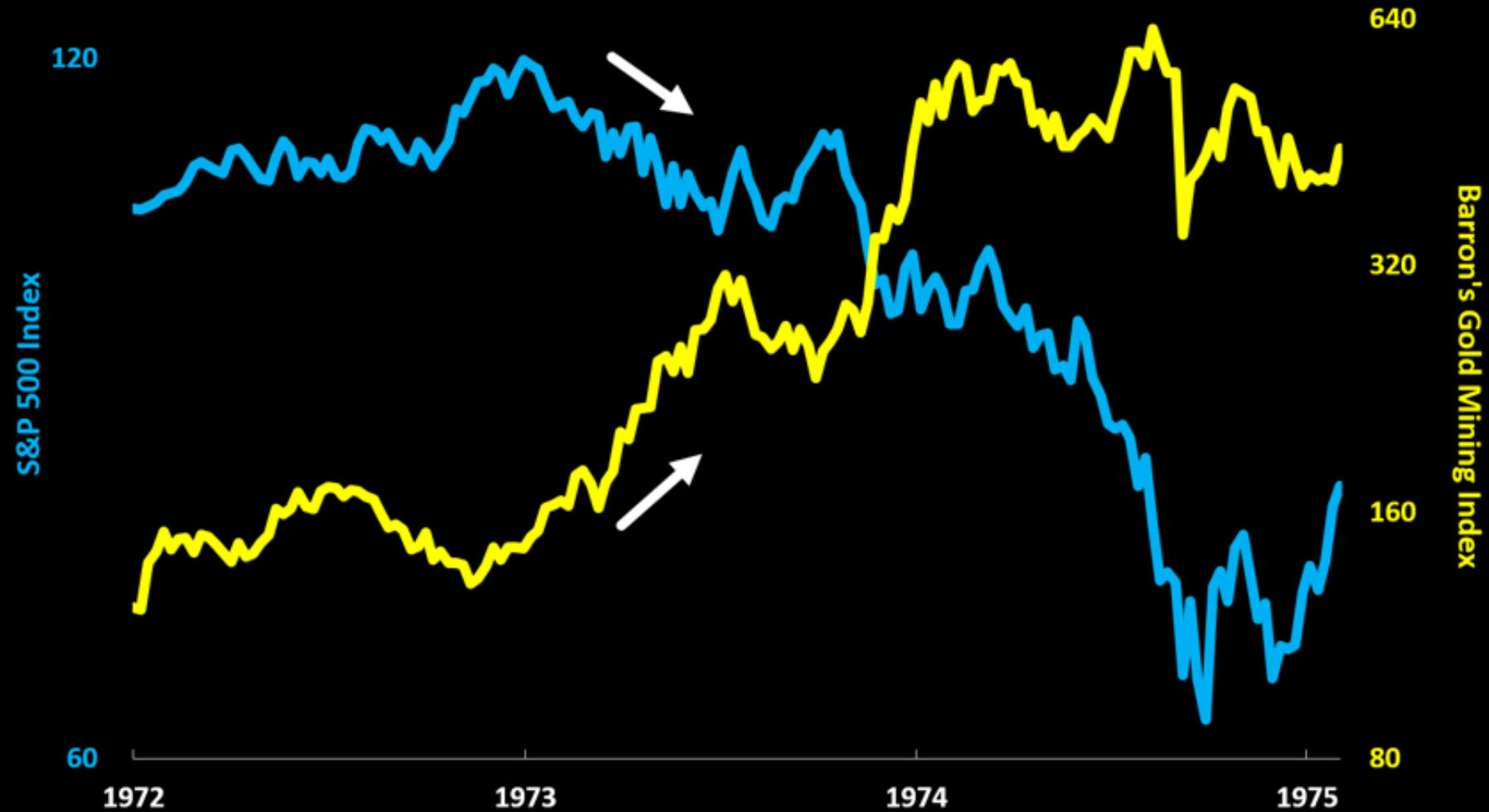


Source: Bloomberg

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# Inflationary Recession of 1973-74

*Barron's Gold Mining Index vs. S&P 500*

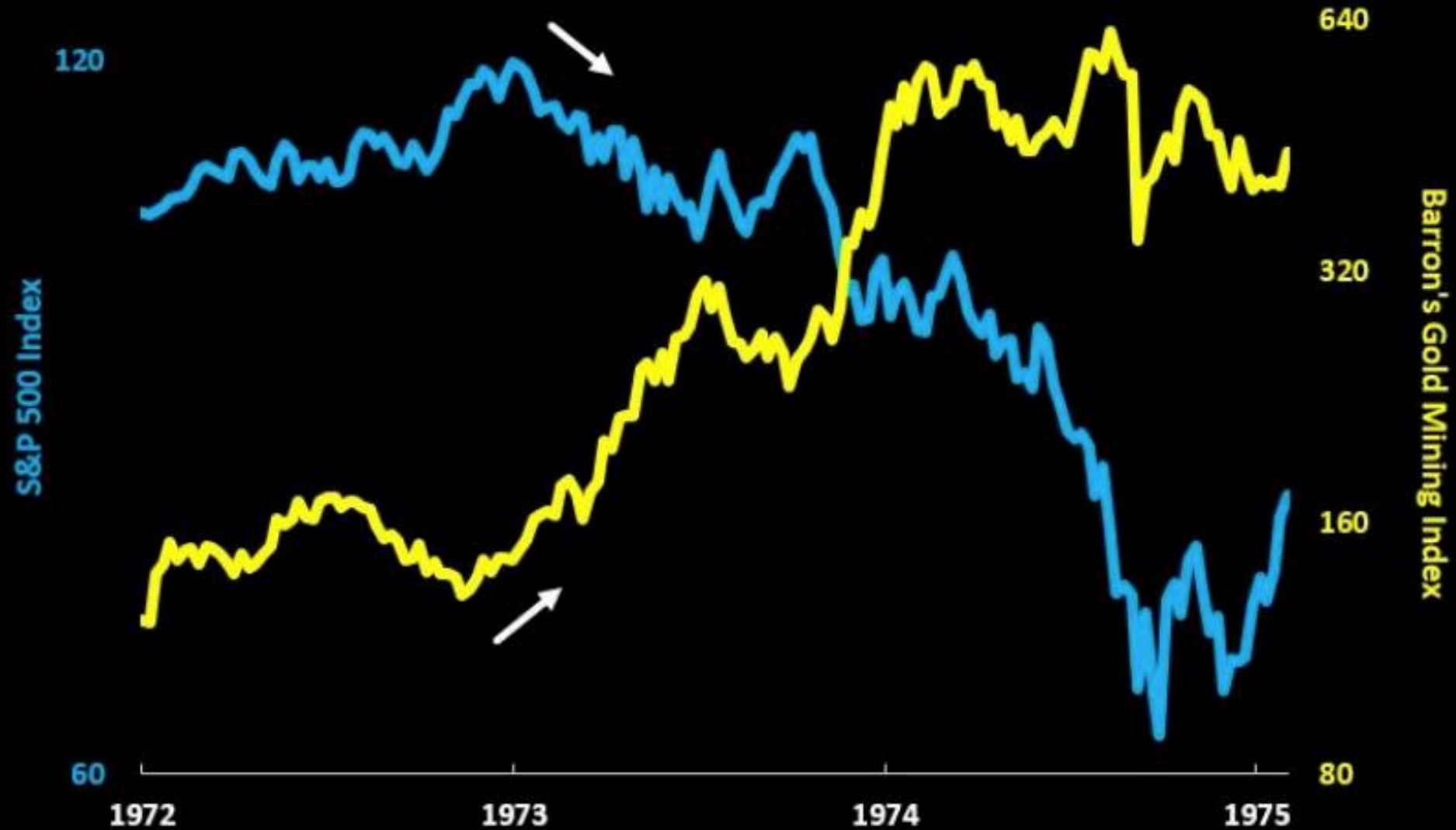


Source: GCRU, Barron's

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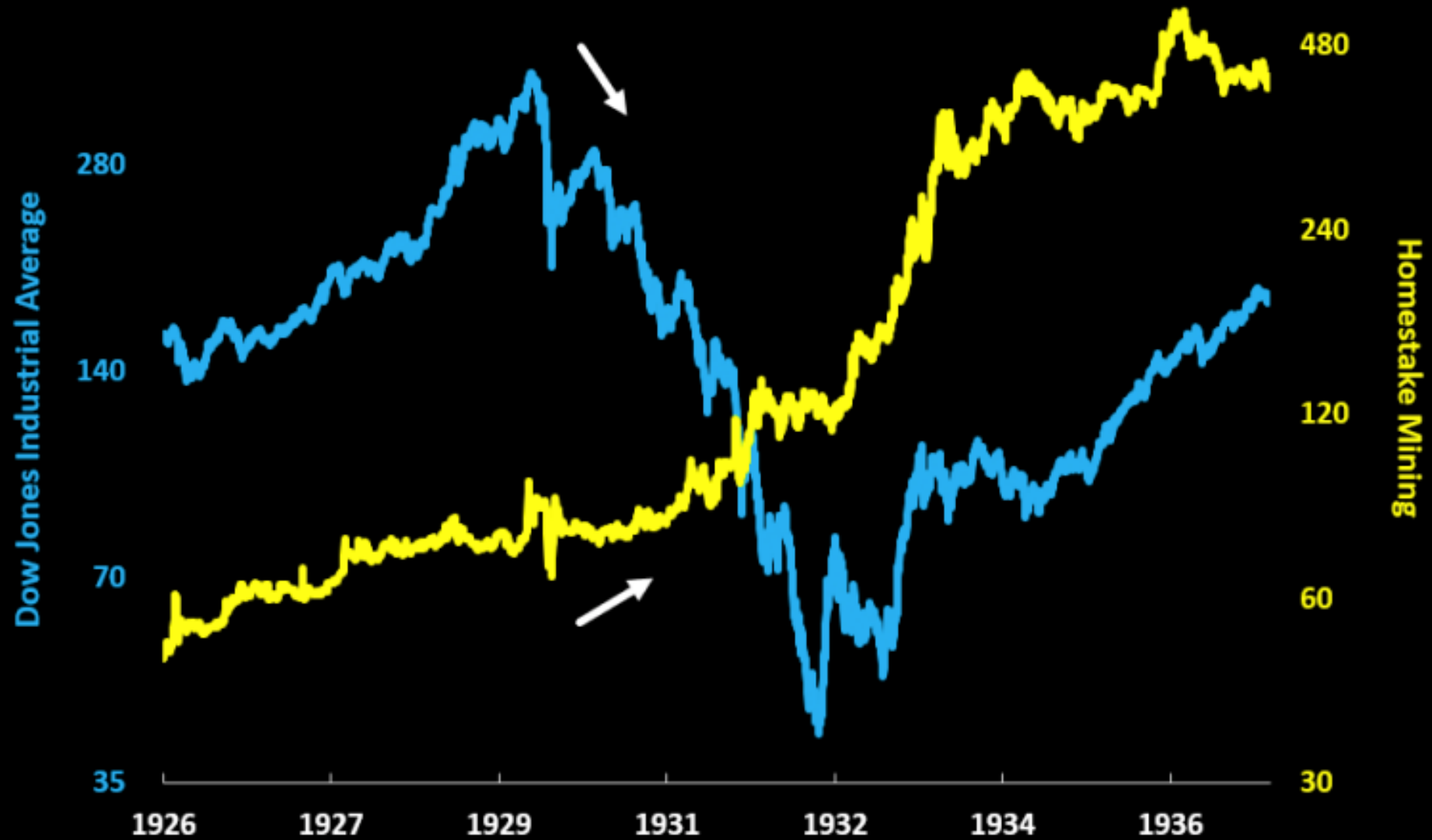
# Inflationary Recession of 1973-74

*Barron's Gold Mining Index vs. S&P 500*



# Great Depression

*Homestake Mining vs. Dow Jones*



Source: CRSP

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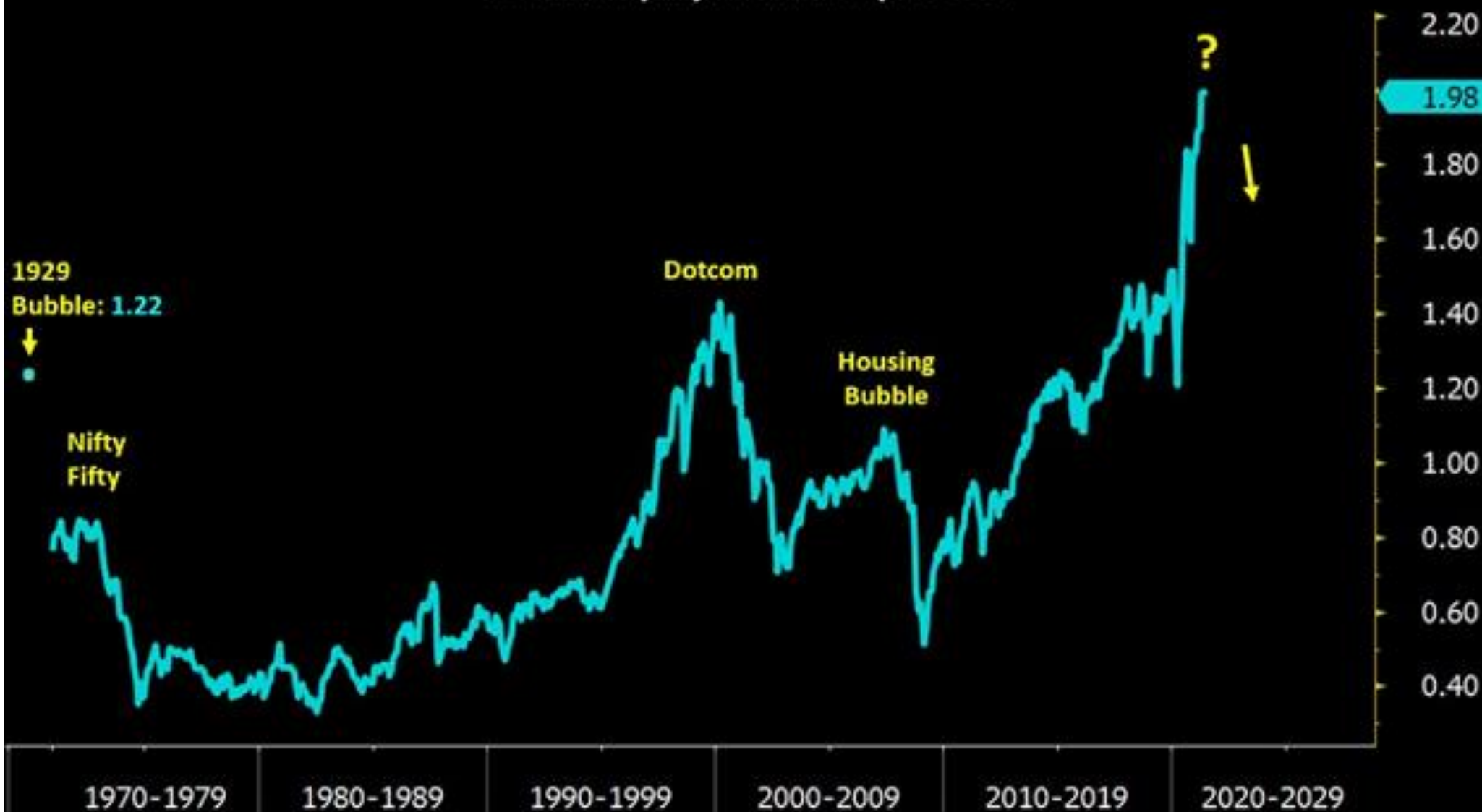
# MEGA CAP GROWTH CEILING

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# America's Biggest Stock Market Manias

*US Total Equity Market Cap to GDP*



Source: Wilshire Associates, Bloomberg, Global Financial Data

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# S&P 500 5-Year Cyclically Adjusted Earnings Yield



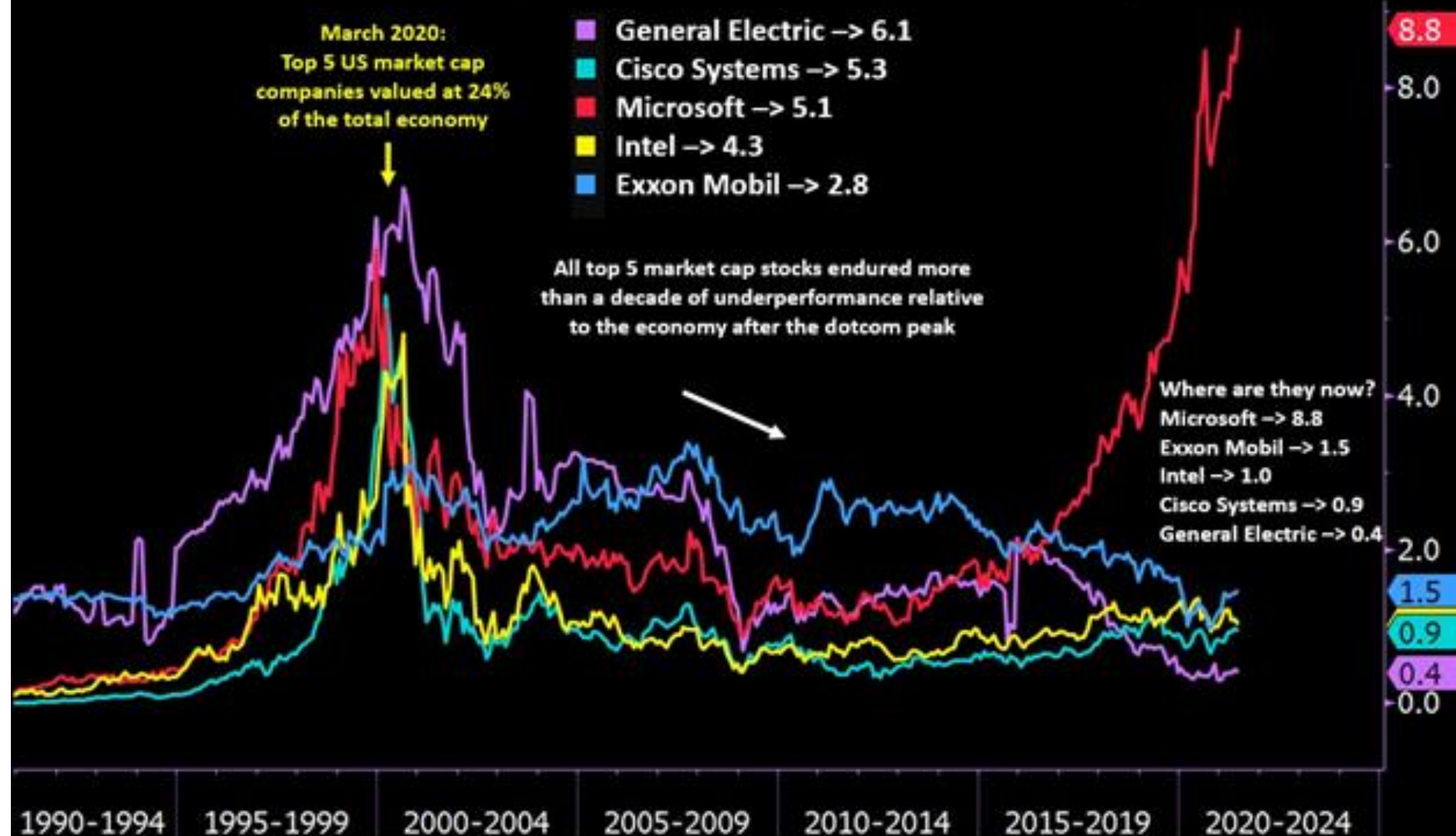
Source: Yale University, Robert Shiller

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Market Periods	5-Year Cyclically Adjusted Earnings Yield	Subsequent S&P 500 Performance			
		1-Year	2-Year	3-Year	5-Year
1929 Peak	3.8%	-30%	-59%	-84%	-74%
1937 Peak	3.5%	-37%	-29%	-33%	-51%
Tech Bubble	2.8%	-17%	-26%	-43%	-21%
Average at Peak	3.4%	-28%	-38%	-53%	-49%
Today	2.8%	?	?	?	?

# The Tech Bubble Then

Top 5 US Market Cap Stocks at 2000 Peak: Enterprise Value as % of GDP

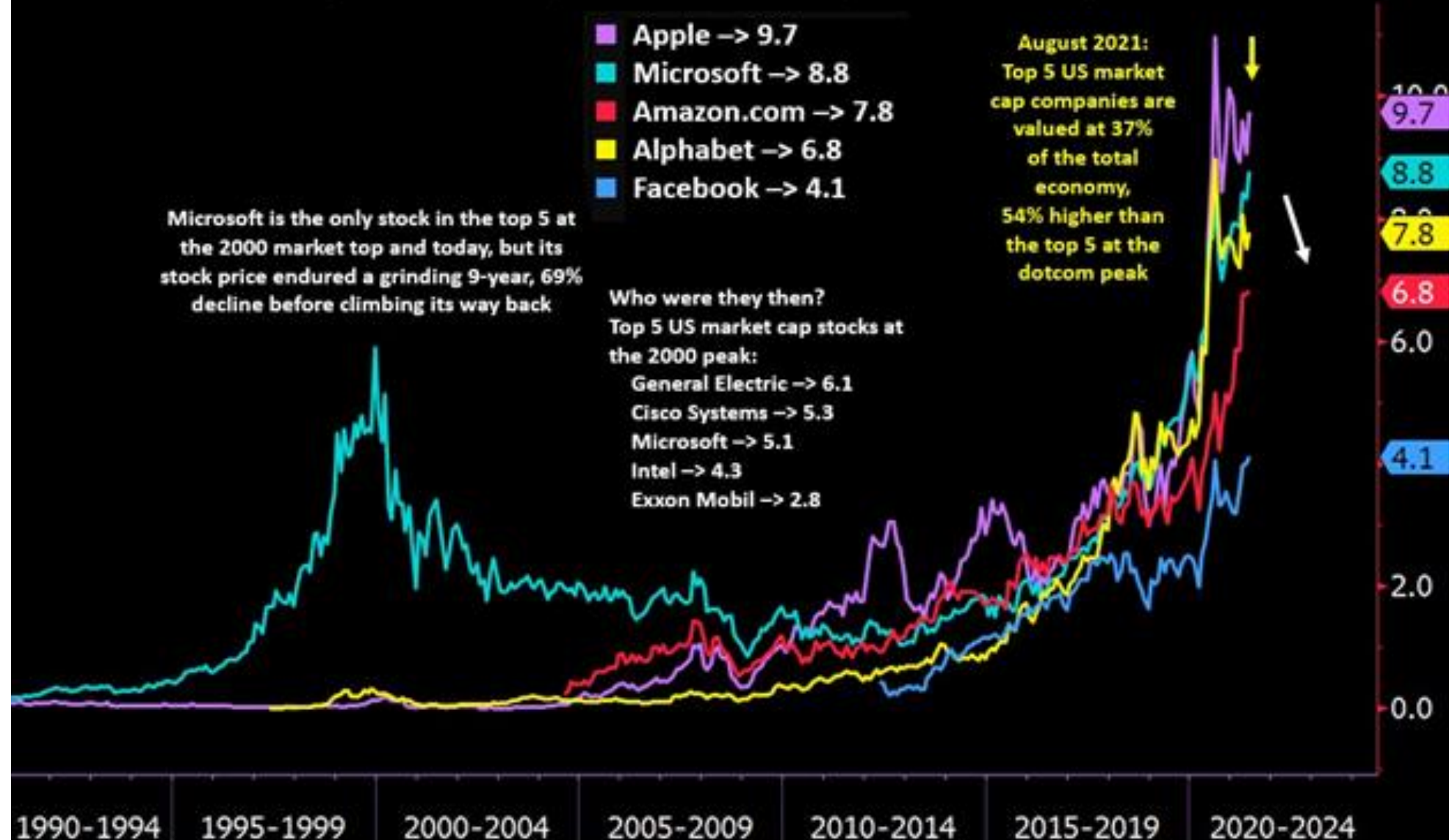


Source: Bloomberg

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# The Tech Bubble Now

Top 5 US Market Cap Stocks in 2021: Enterprise Value as % of GDP



Source: Bloomberg

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# P/E Ratio: Top 10 Largest Stocks in the US

*Median Price to Trailing 12-Months Earnings*



Source: Bloomberg

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# Tech Stocks: Real Free-Cash-Flow Yield

*Aggregate Free-Cash-Flow Yield Minus CPI YoY Change*



Source: Bloomberg

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# SaaS RATIONALIZATION

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# Growth vs. Value Stocks

*Russell Growth vs. Value Index: Enterprise Value to Trailing 12-Months Sales Differential*



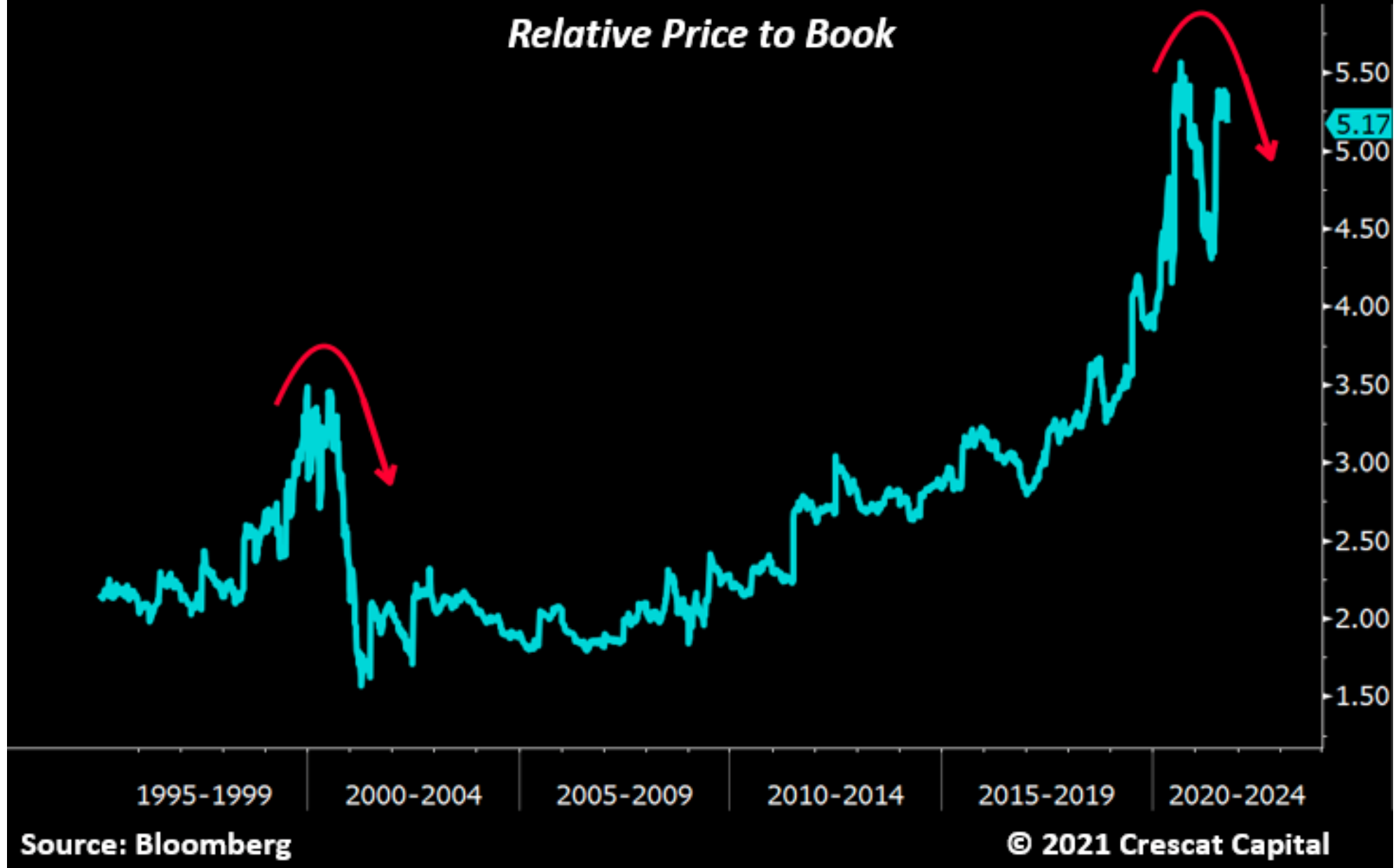
Source: Bloomberg

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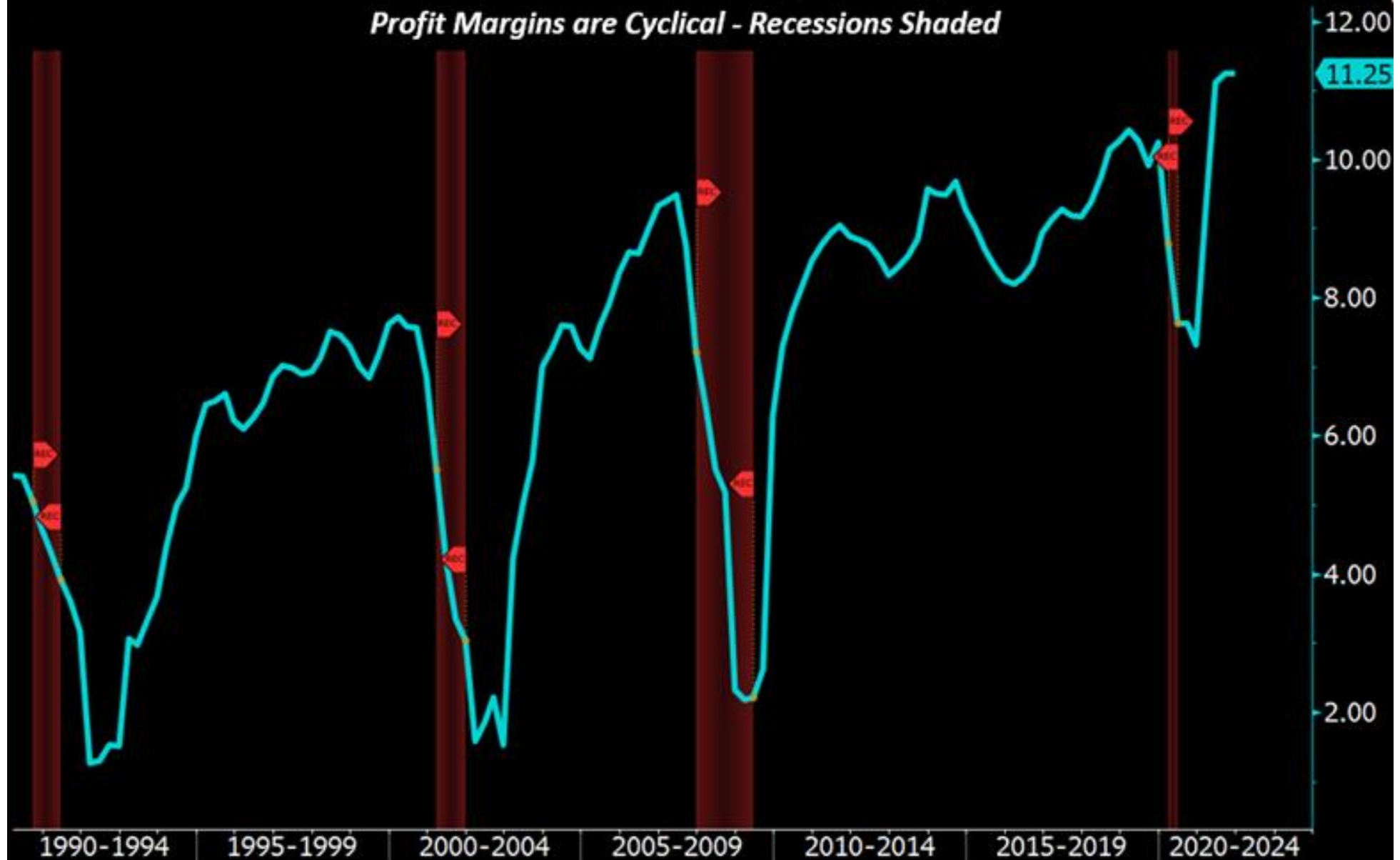
# Russell 1000 Growth vs. Value

*Relative Price to Book*



# S&P 500 Net Profit Margins (Trailing 12m)

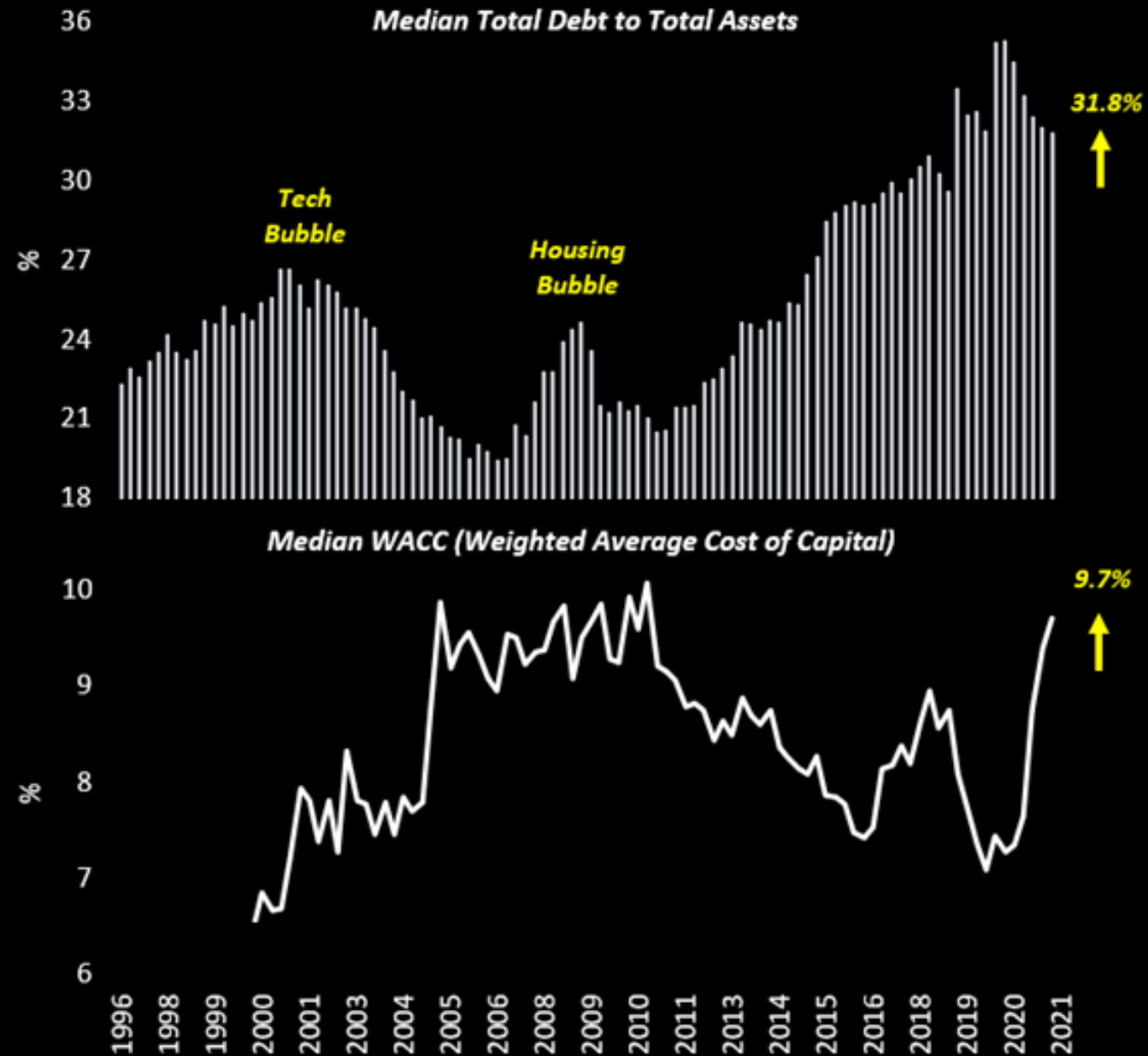
*Profit Margins are Cyclical - Recessions Shaded*



Source: Bloomberg

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# S&P 500 Index



Source: Bloomberg

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# Software Stocks-to-S&P 500 Ratio

\$XSW ETF / \$SPY ETF

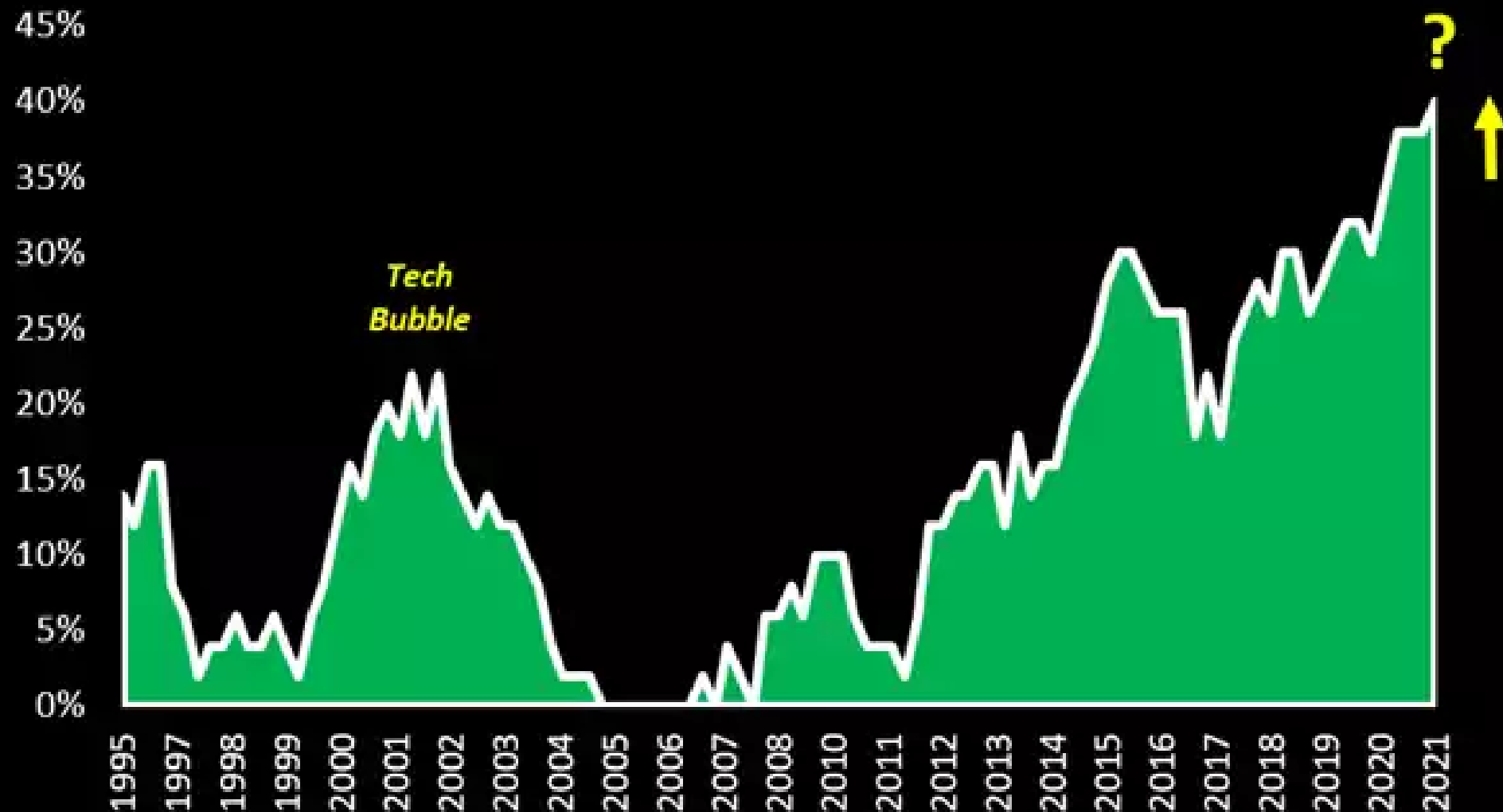


Source: Bloomberg

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# % of Non-Profitable Software Stocks

*Top 50 Software Stocks With or Above \$1B Market Cap in the US Stock Exchanges*

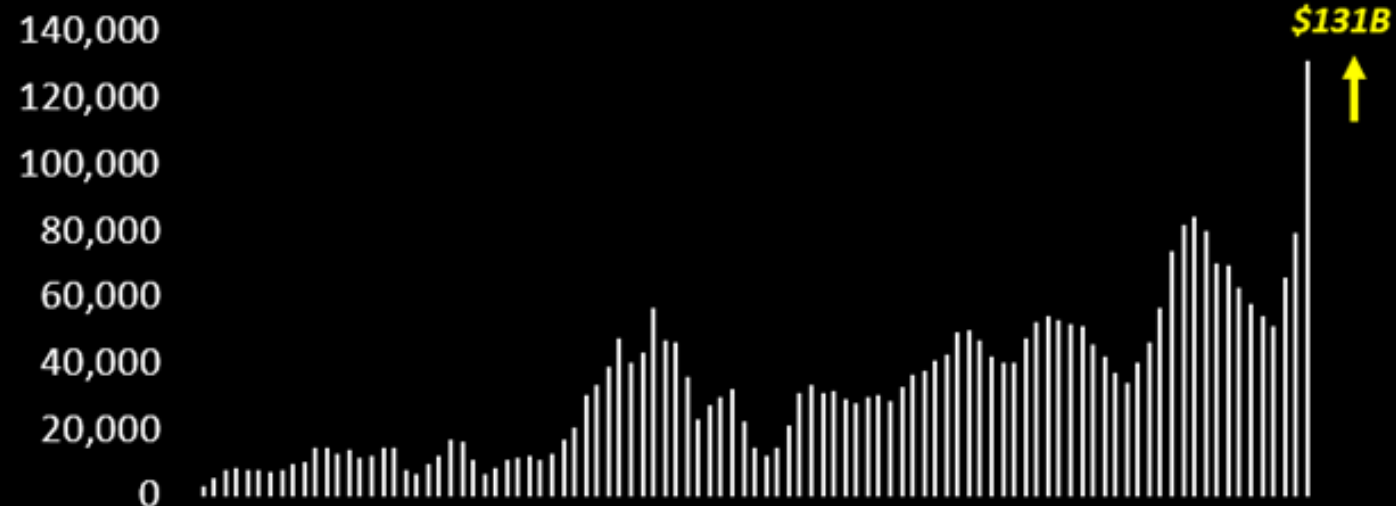


Source: Bloomberg

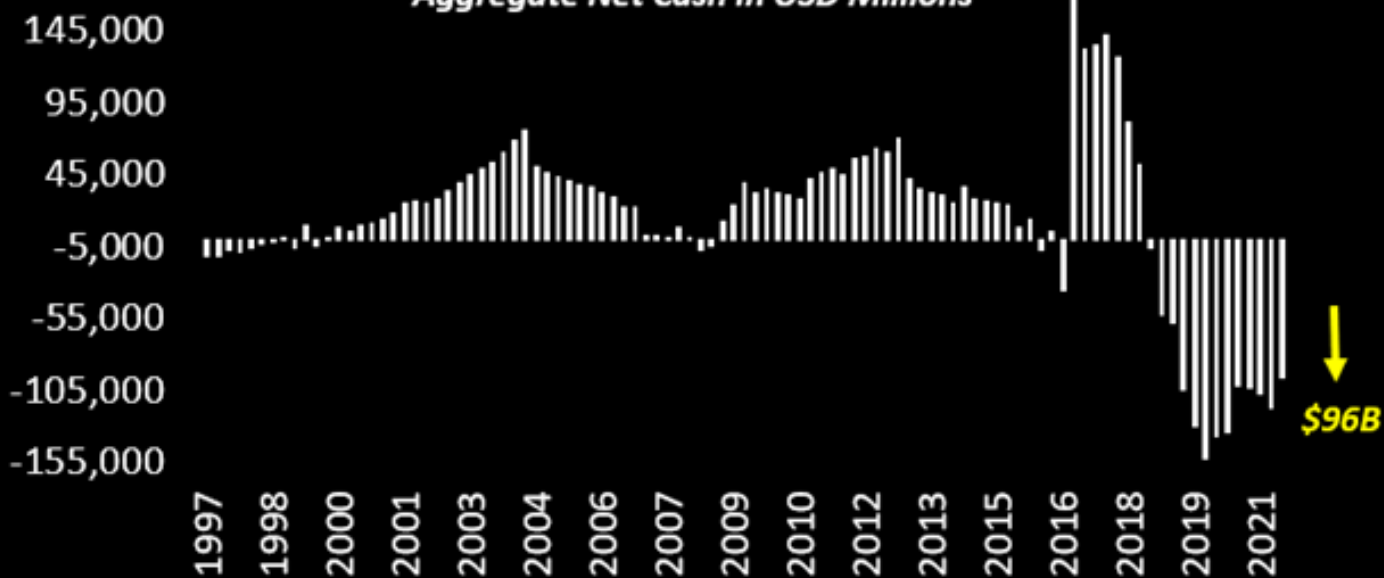
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# Software Stocks: Share Buybacks vs. Net Cash

*Aggregate Repurchase of Equity Net of Issuances in USD Millions*



*Aggregate Net Cash in USD Millions*



Source: Bloomberg

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# S&P 500 Sectors: Performance Since The Pandemic Lows



Source: Bloomberg

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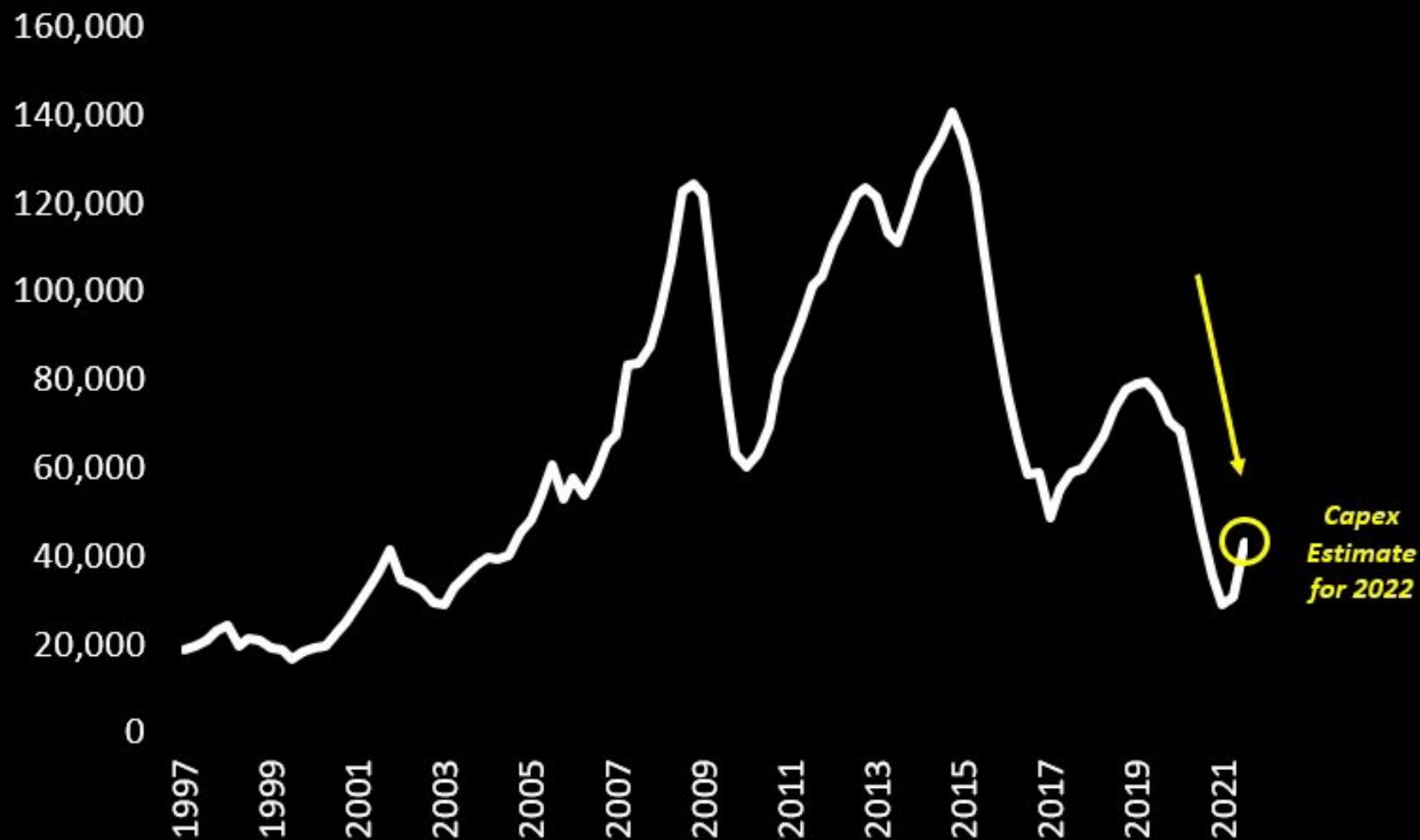
# ENERGY TRANSITION

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# US Oil and Gas Exploration & Production

*Aggregate Capex in USD Millions*

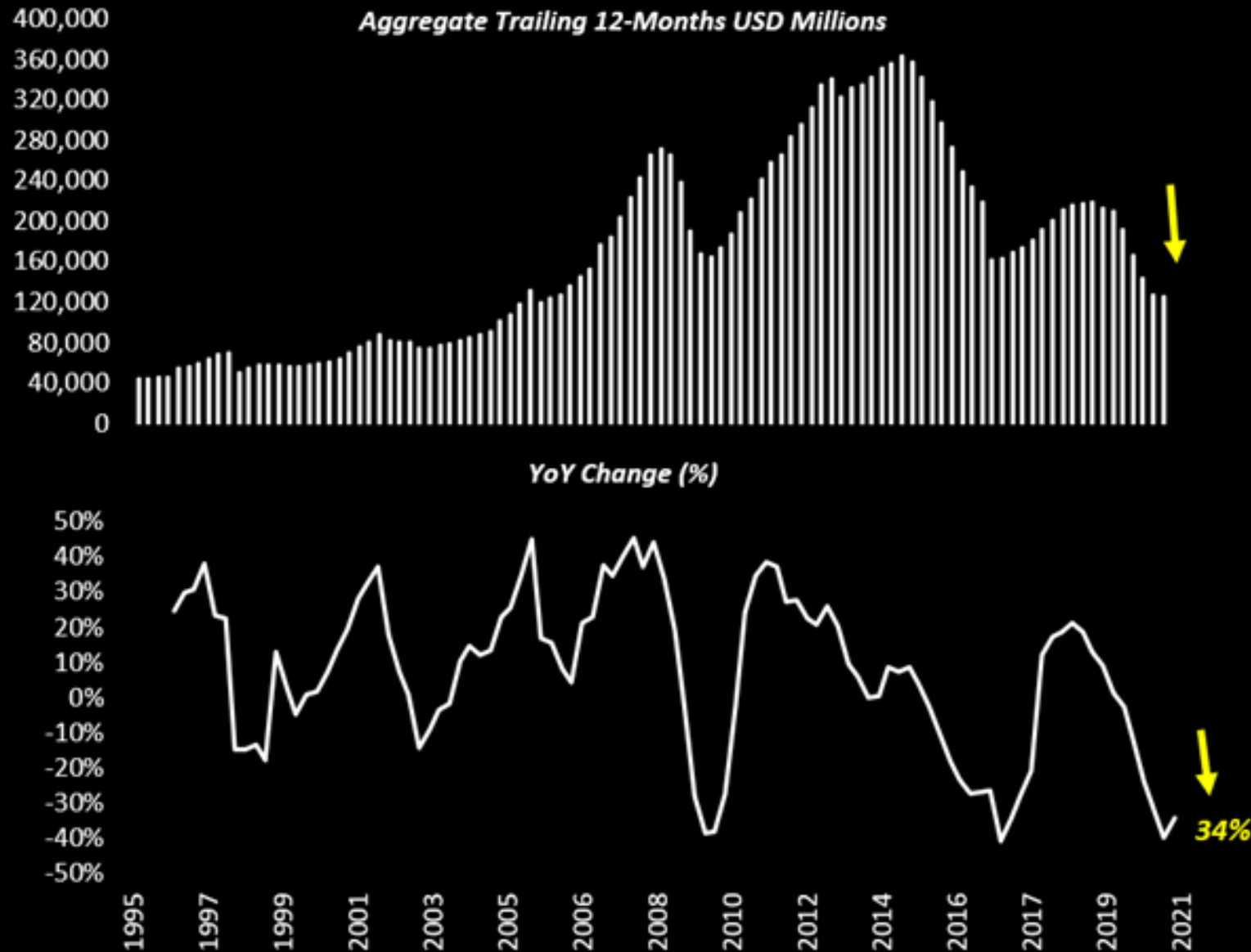


*Top 50 E&Ps by Enterprise Value in the US Stock Exchanges*

Source: Bloomberg

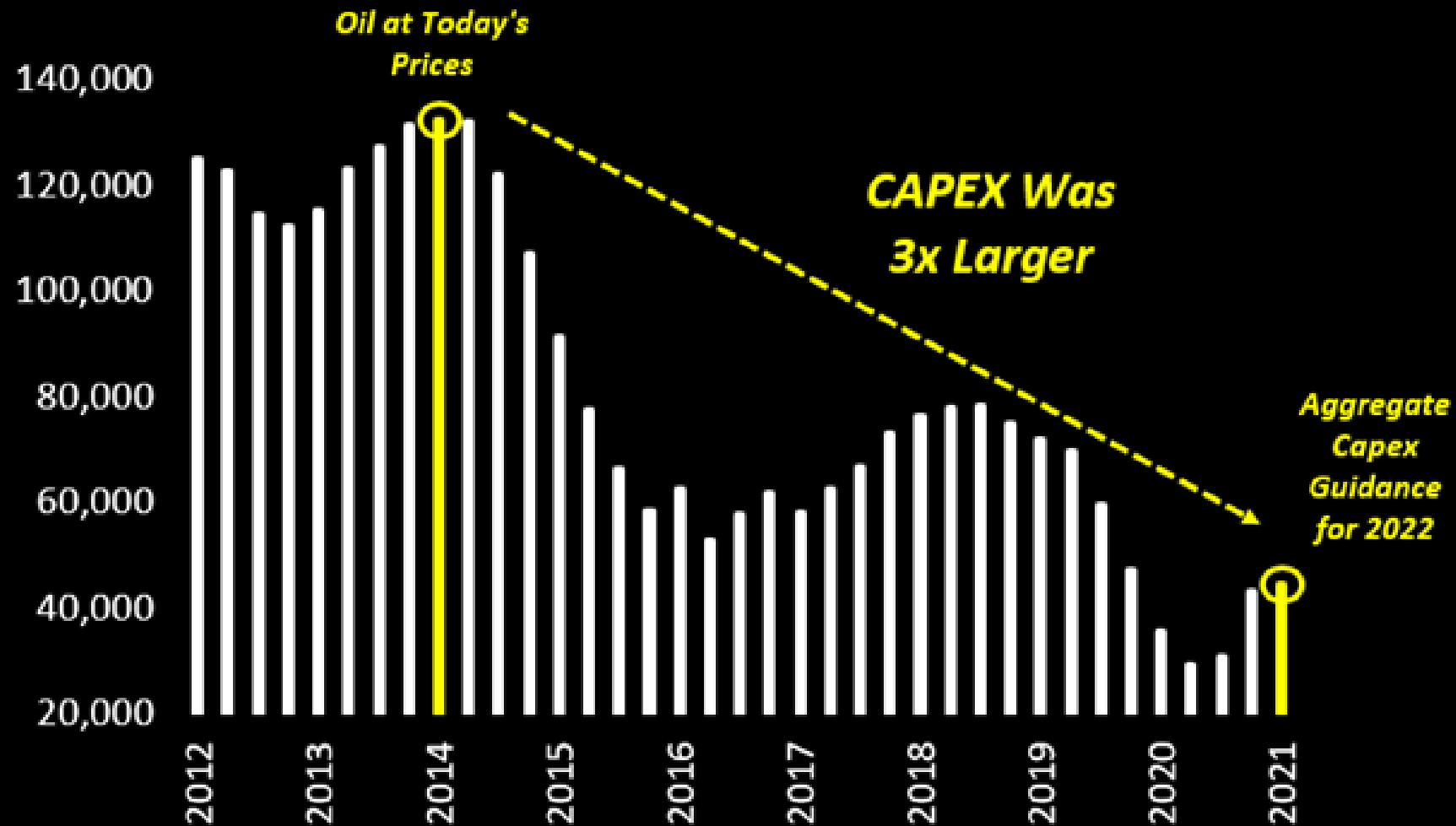
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# Commodity Producers Capex Cycle



# US Oil and Gas Exploration & Production

*Aggregate Capex in USD Millions*

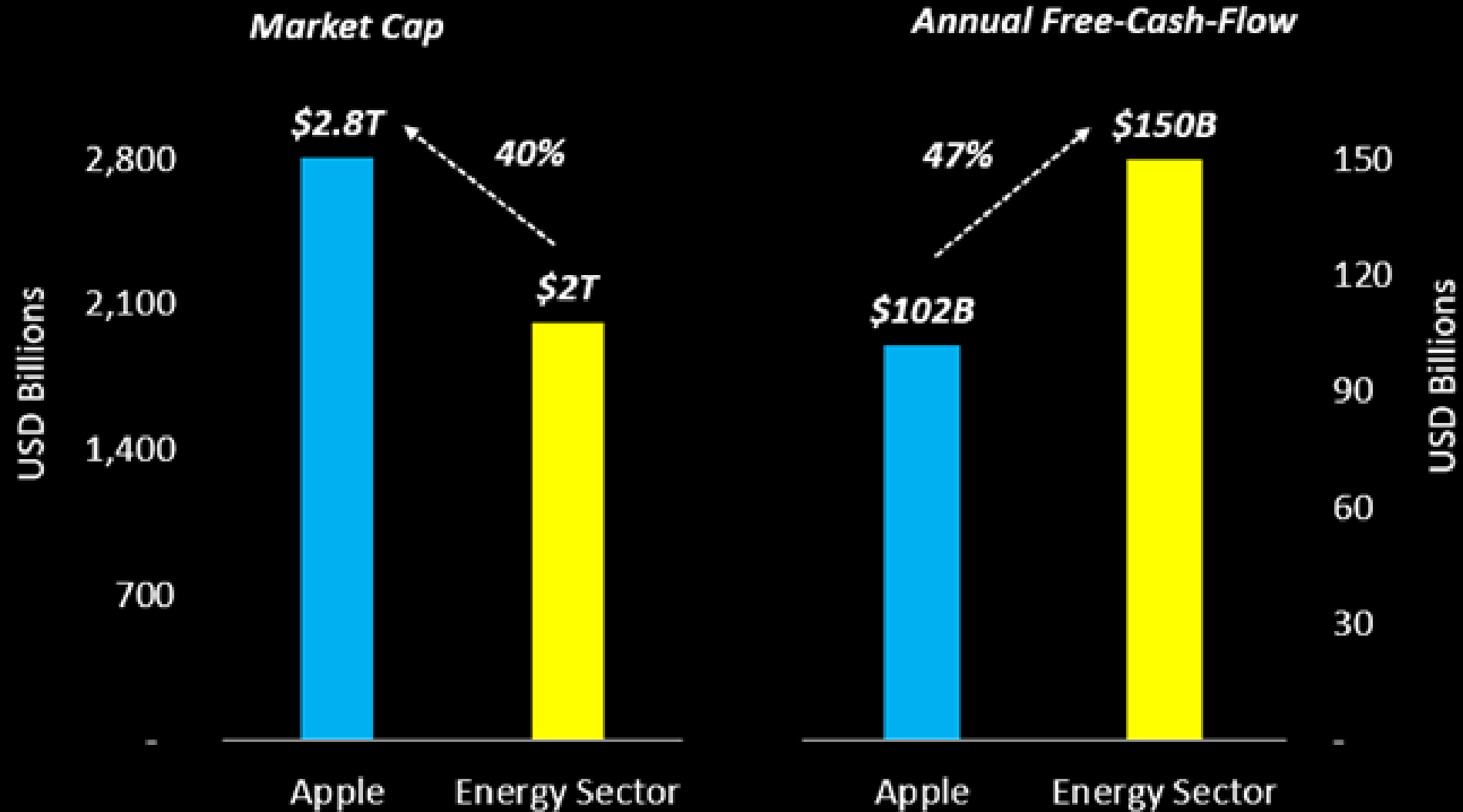


*Top 50 E&Ps by Enterprise Value in the US Stock Exchanges*

Source: Bloomberg

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# Apple vs. Energy Stocks

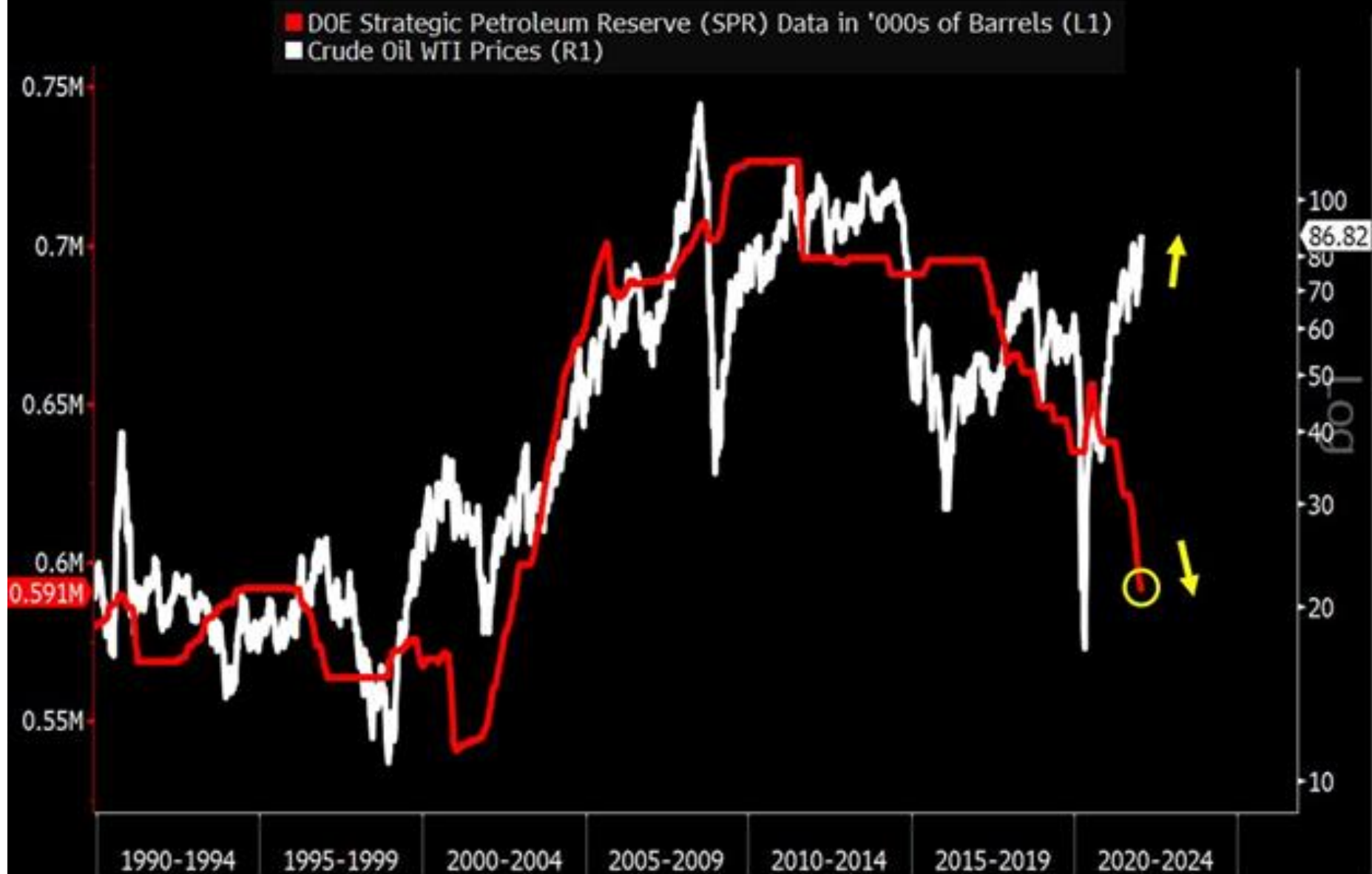


Source: Bloomberg

Universe: S&P 500 Sector

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# US Strategic Petroleum Reserve vs. Crude Oil WTI Prices

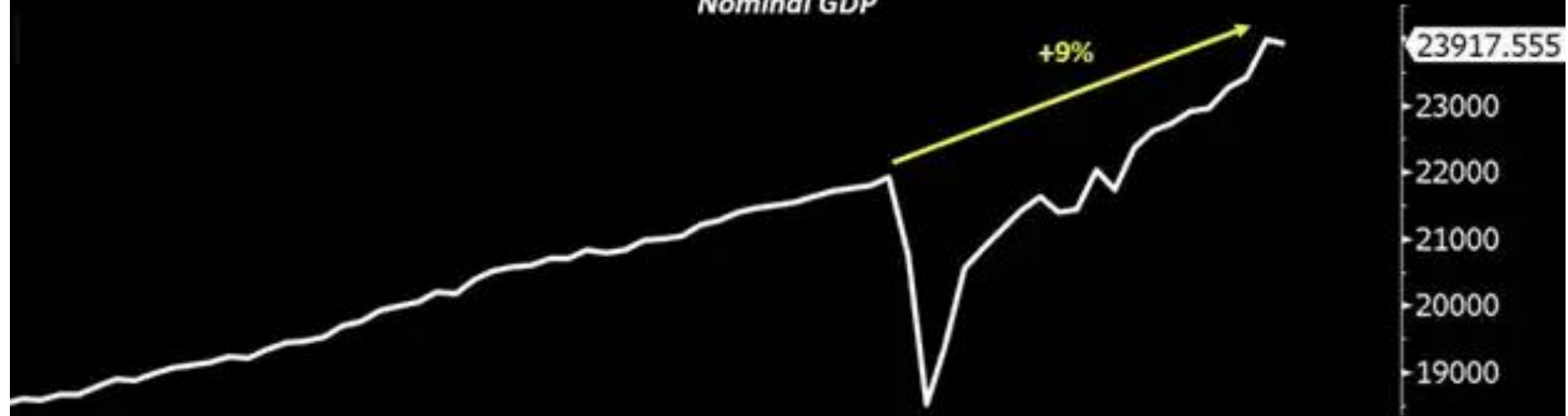


Source: Bloomberg

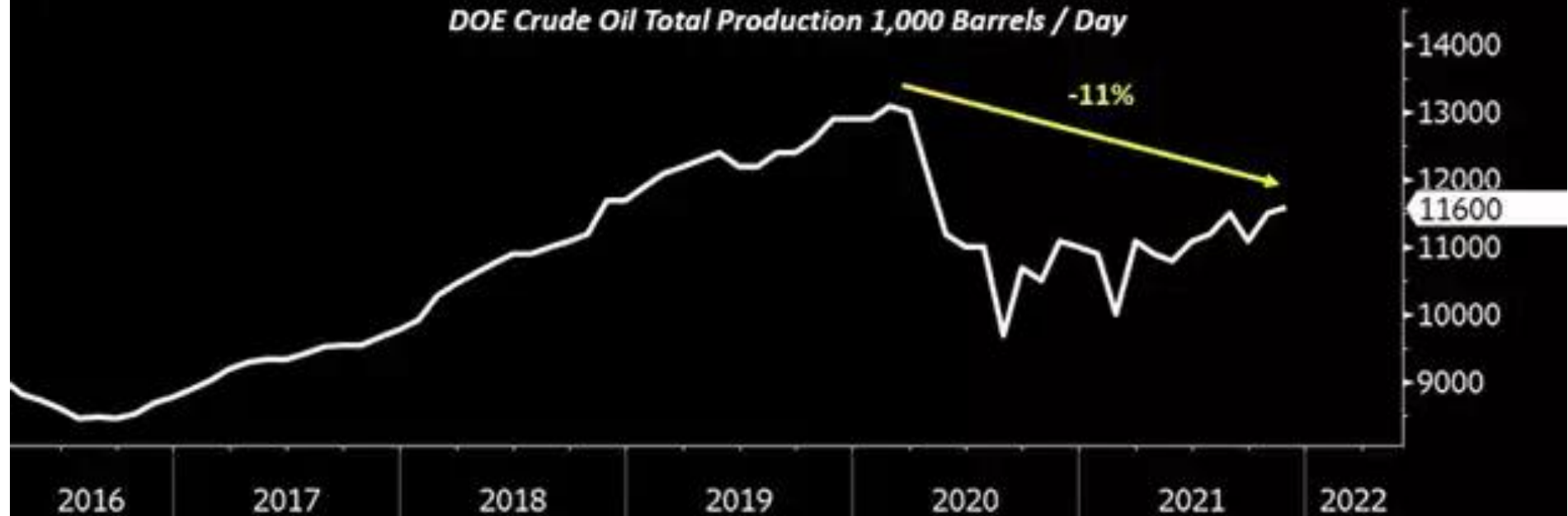
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# US GDP vs. Oil Production

*Nominal GDP*



*DOE Crude Oil Total Production 1,000 Barrels / Day*



Source: Bloomberg

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# RESOURCE UNDERINVESTMENT

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# Commodity Producers Relative to Global Equities (%)

*Aggregate Market Cap Ratio: MSCI ACWI Commodity Producers Index / MSCI World Index*

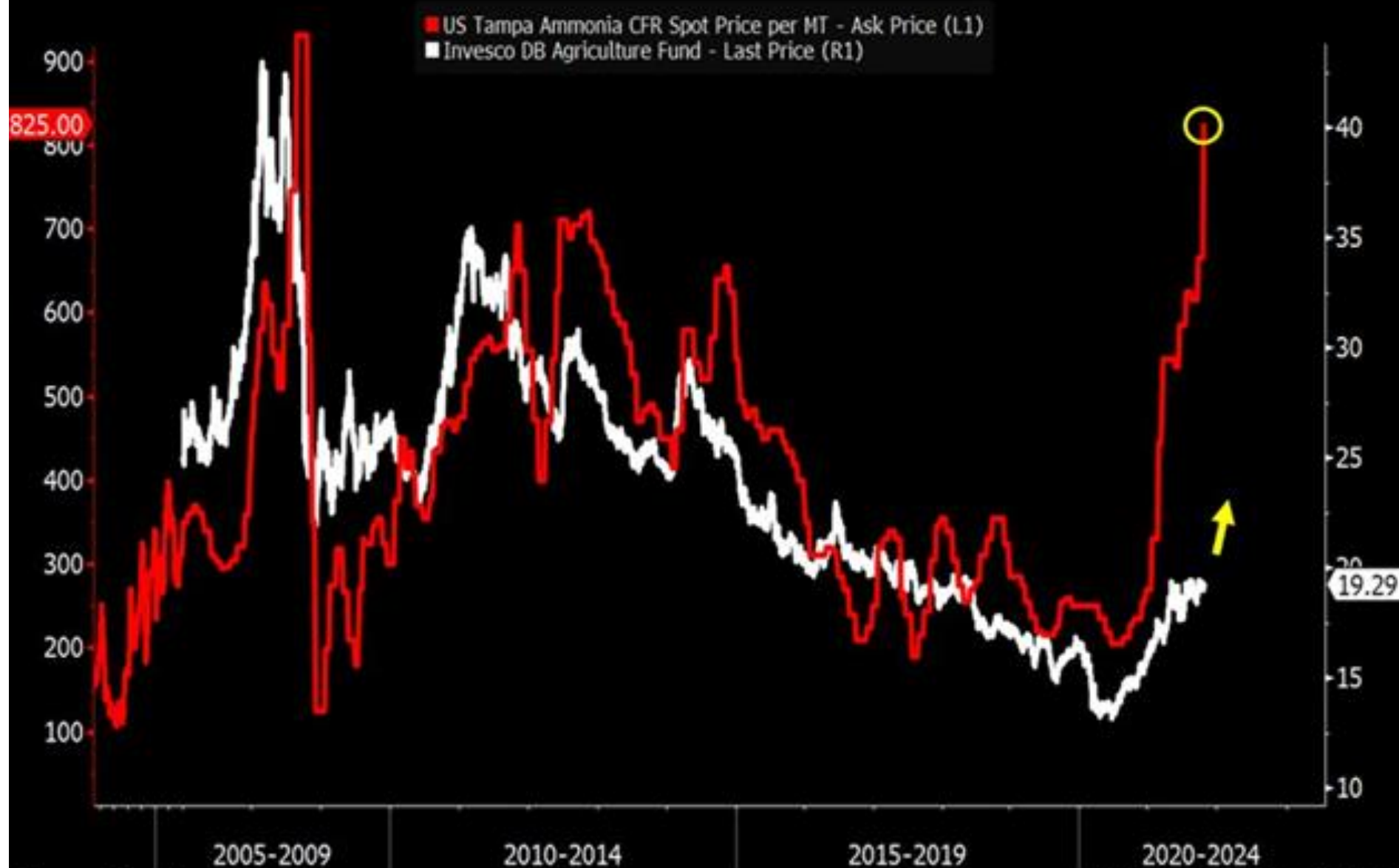


Source: Bloomberg

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# Agricultural Commodities vs. Ammonia Prices



# Agricultural Commodities

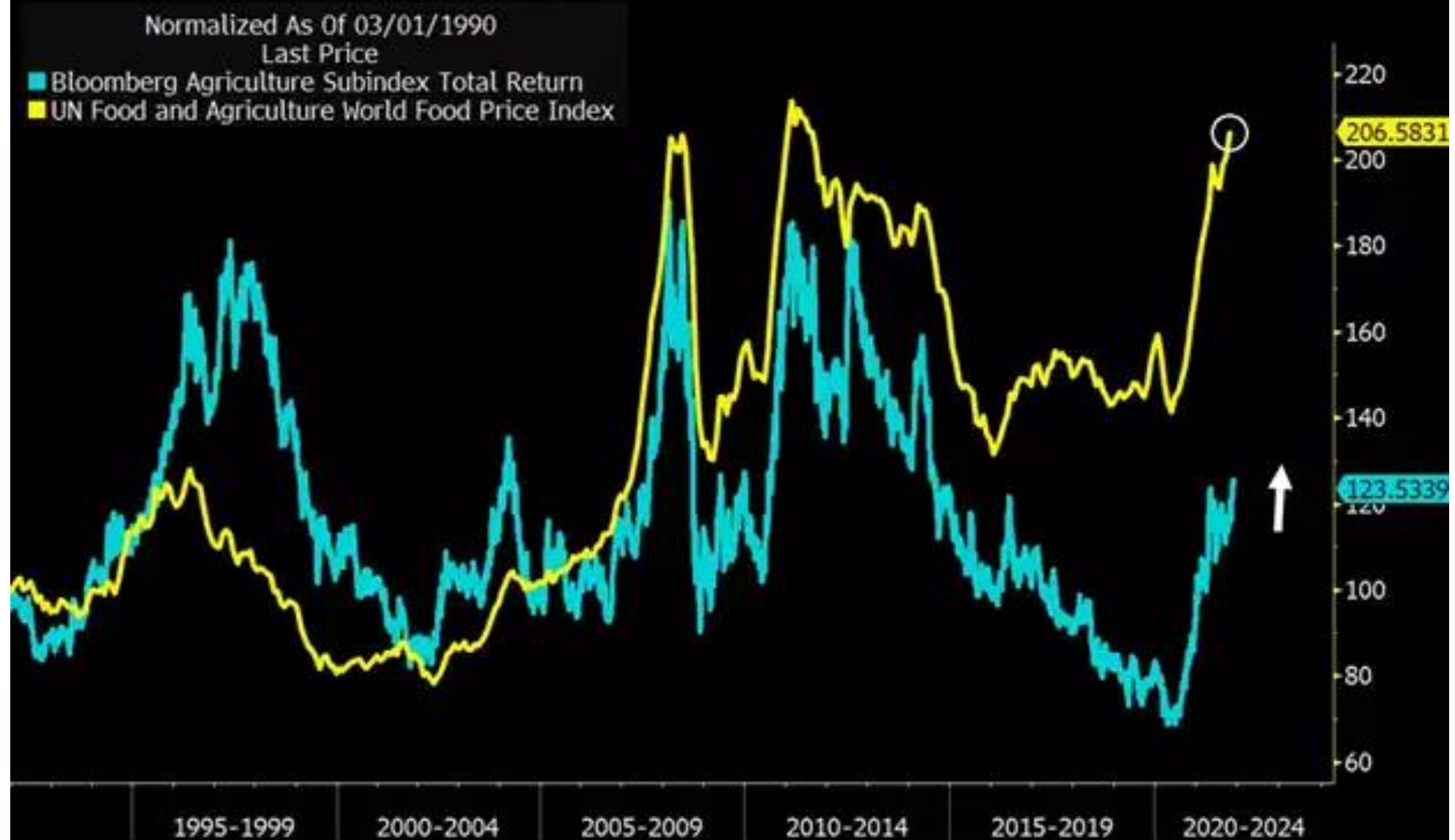


Source: Bloomberg

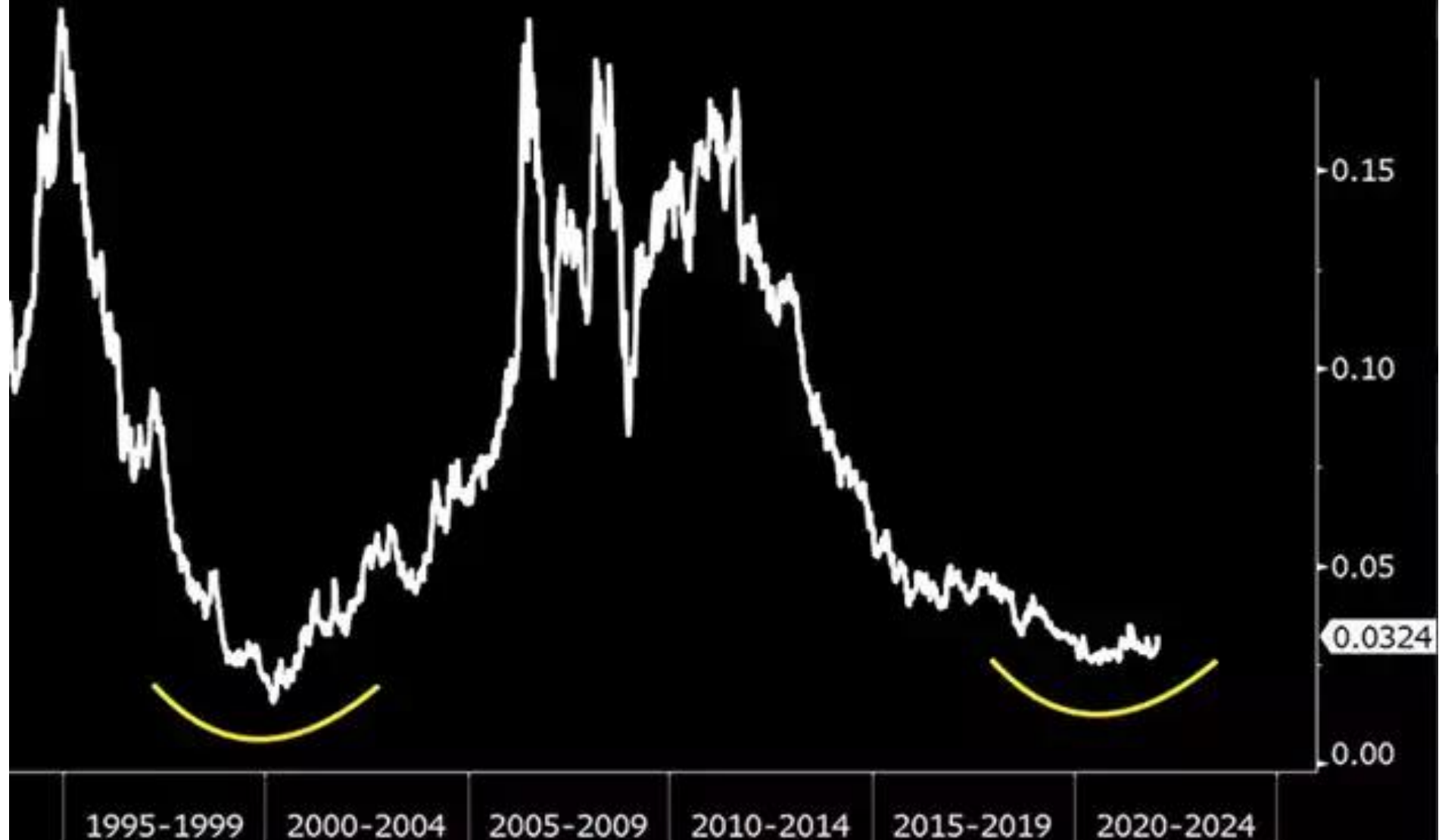
Bloomberg Agricultural Spot Subindex

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# Agricultural Commodities vs. Food Prices



# Copper-to-Nasdaq Ratio



Source: Federal Reserve

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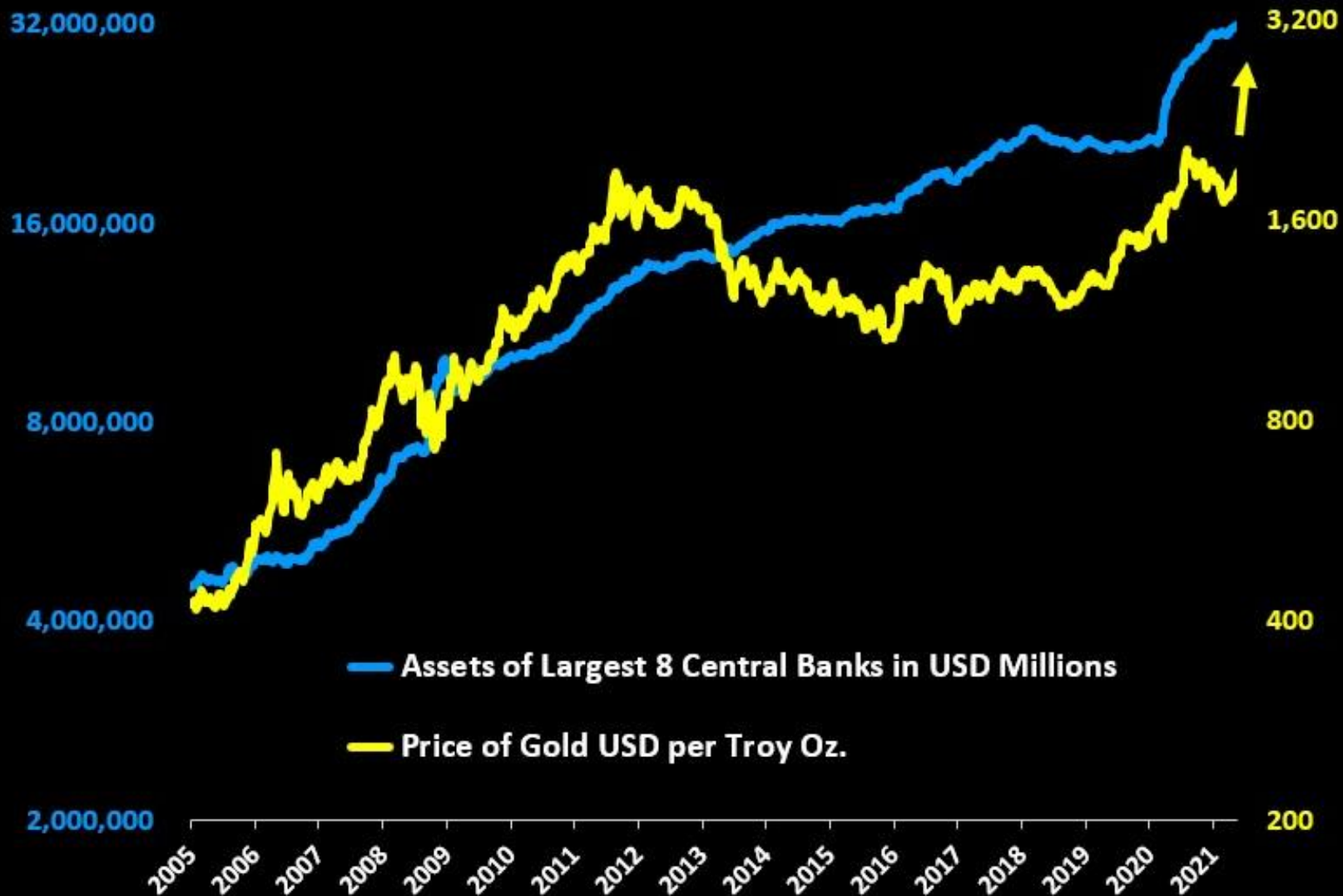
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# GLOBAL FIAT CURRENCY DEBASEMENT

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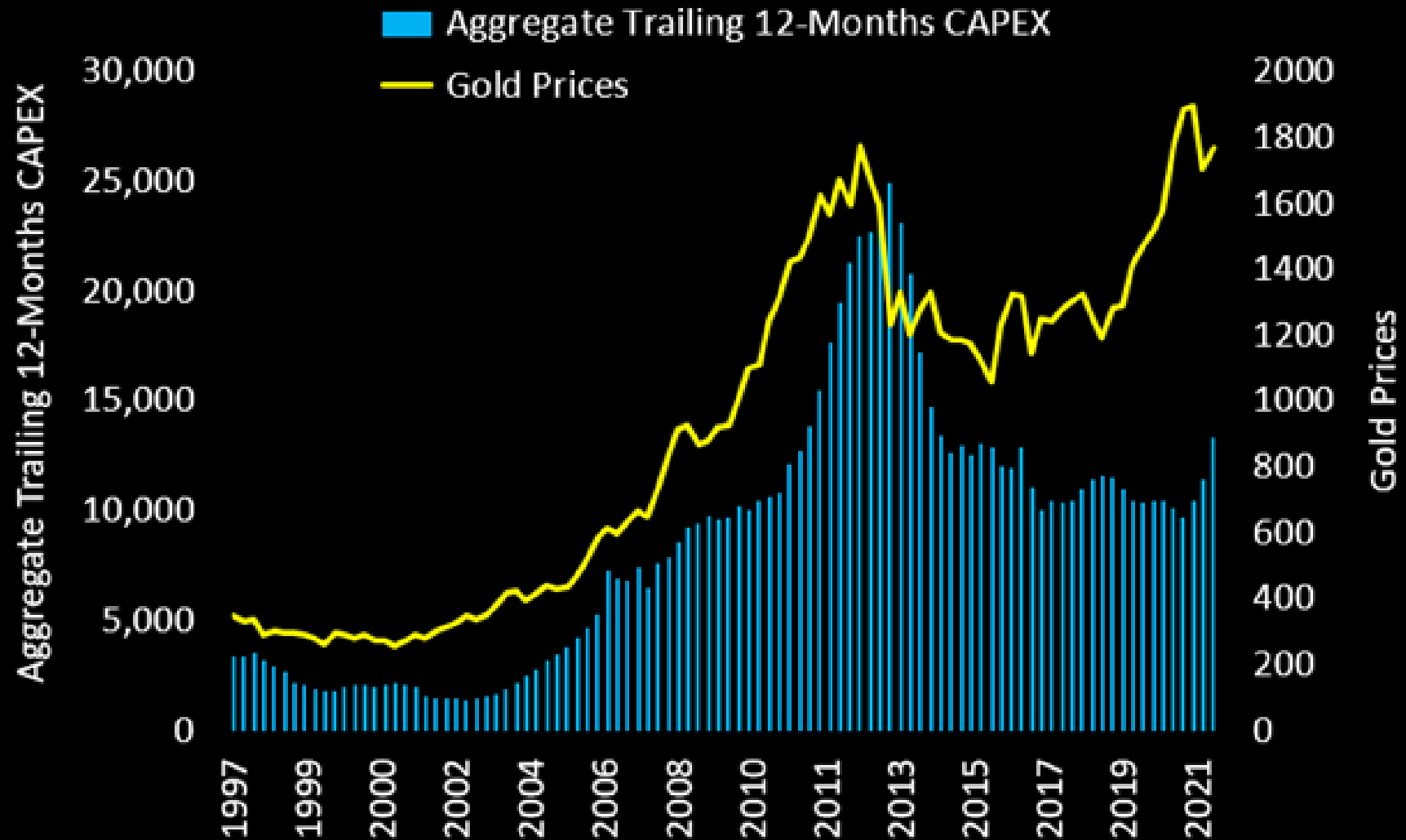
# Global Central Bank Assets vs. Gold



Source: Bloomberg, Central Banks

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# Gold & Silver Miners Capex Cycle



*Top 50 Miners by Market Cap in the Canadian & US Stock Exchanges*

# Silver Miners CAPEX Cycle

*Aggregate Trailing 12-Month CAPEX in USD Millions*



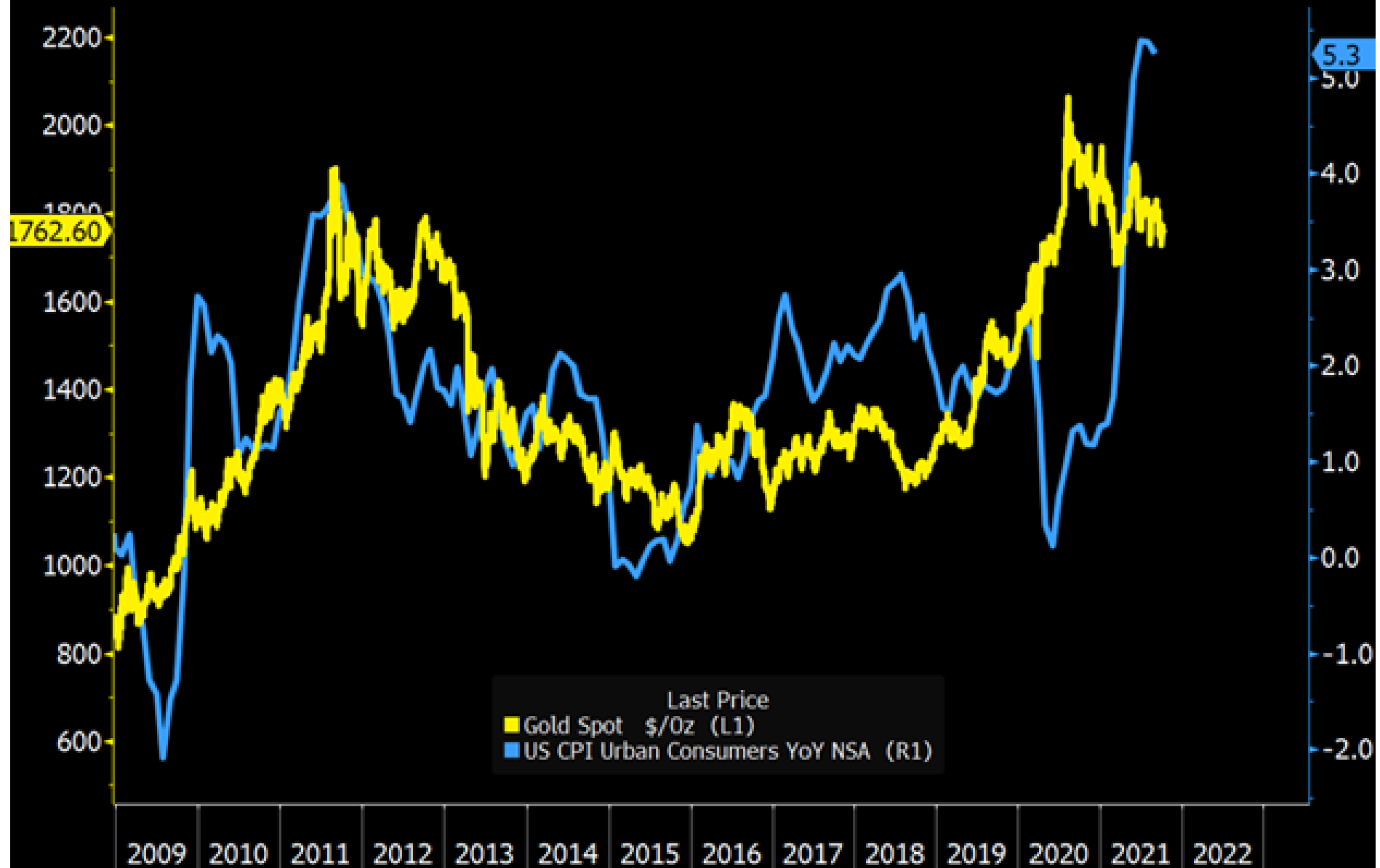
Source: Bloomberg

Universe: All Members of the SIJ ETF

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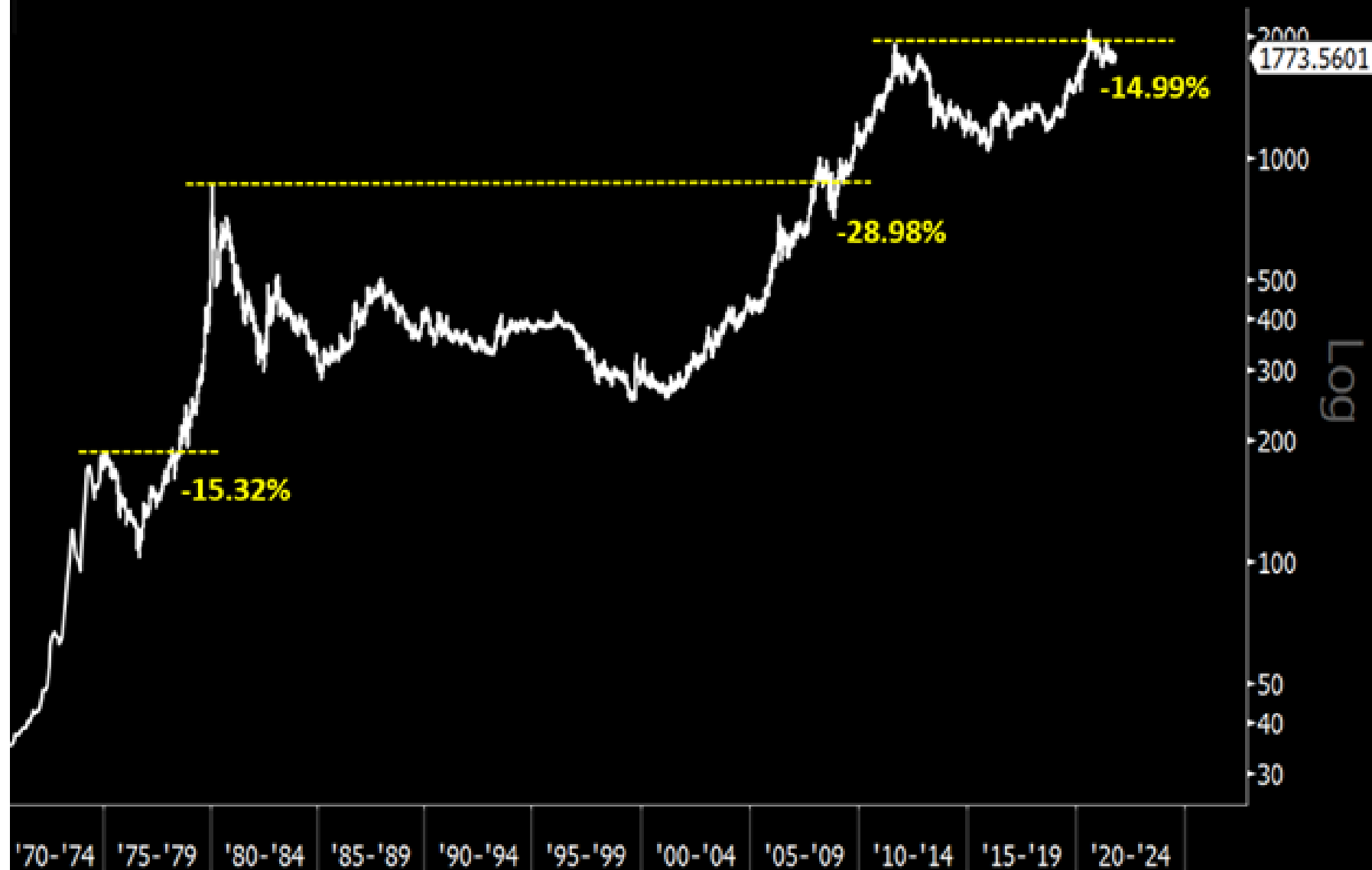
# Gold vs Inflation



Source: Bloomberg

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# Gold Tends to Struggle After Hitting New Highs



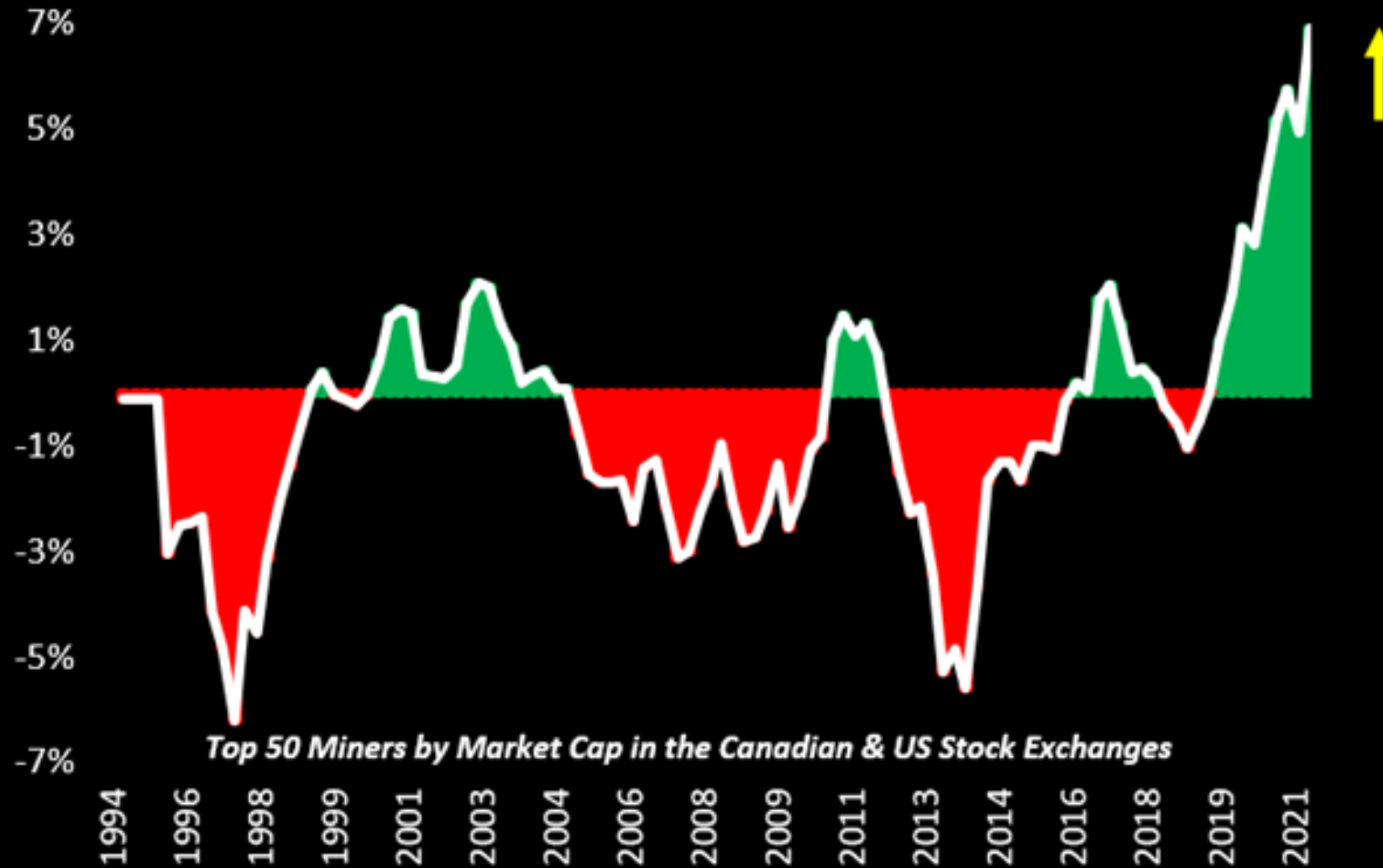
Source: Bloomberg

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# Gold & Silver Miners

*Aggregate Free-Cash-Flow Yield With Enterprise Value*

2022  
Free-Cash-Flow  
Estimate

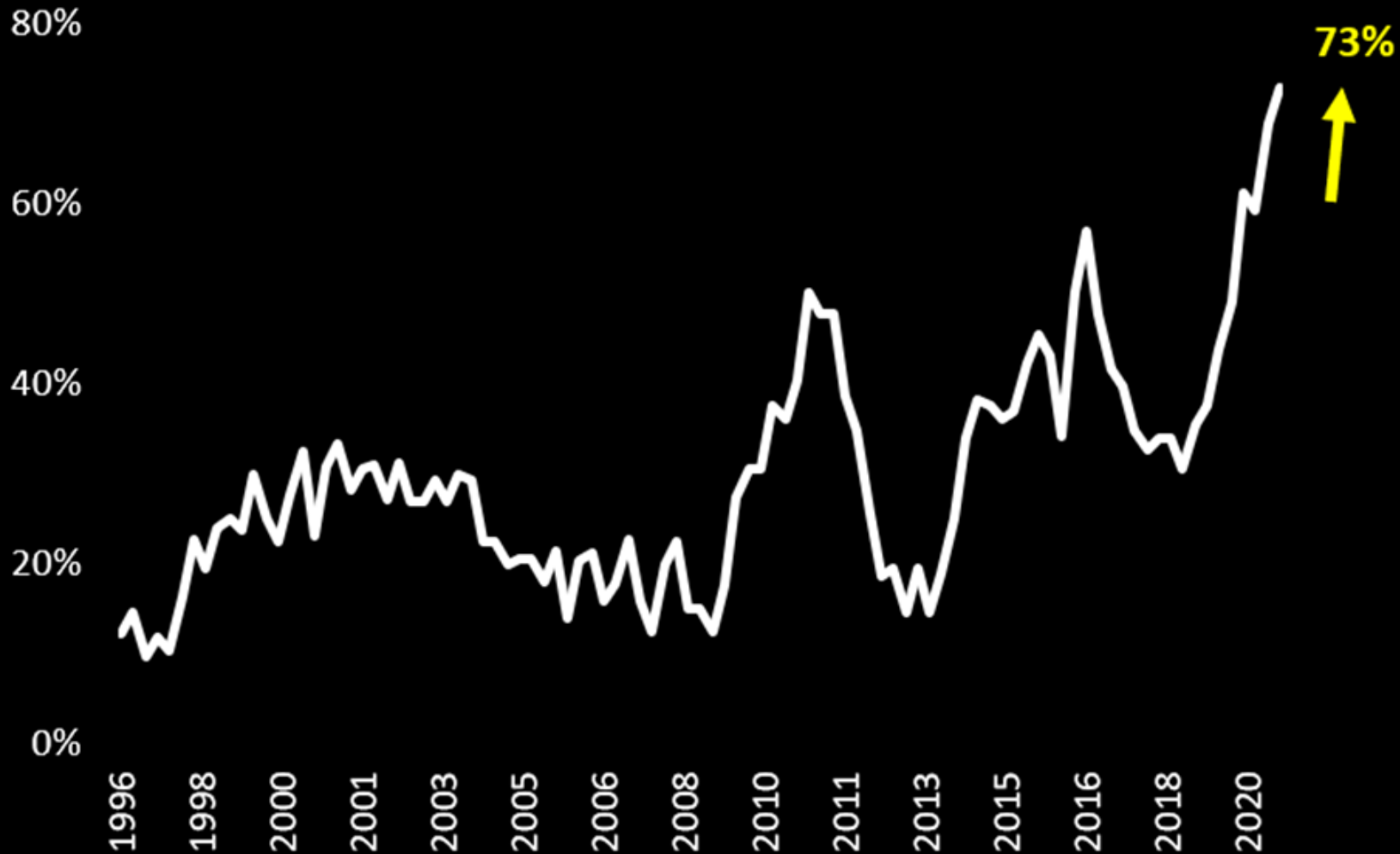


Source: Bloomberg

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# Gold & Silver Miners

*% of Miners With Positive Free-Cash-Flow Annually*



*Top 50 Miners by Market Cap in the Canadian & US Stock Exchanges*

Source: Bloomberg

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# Gold & Silver Miners

*Aggregate Net Debt Issuance in USD Millions*



*Aggregate Net Equity Issuance in USD Millions*



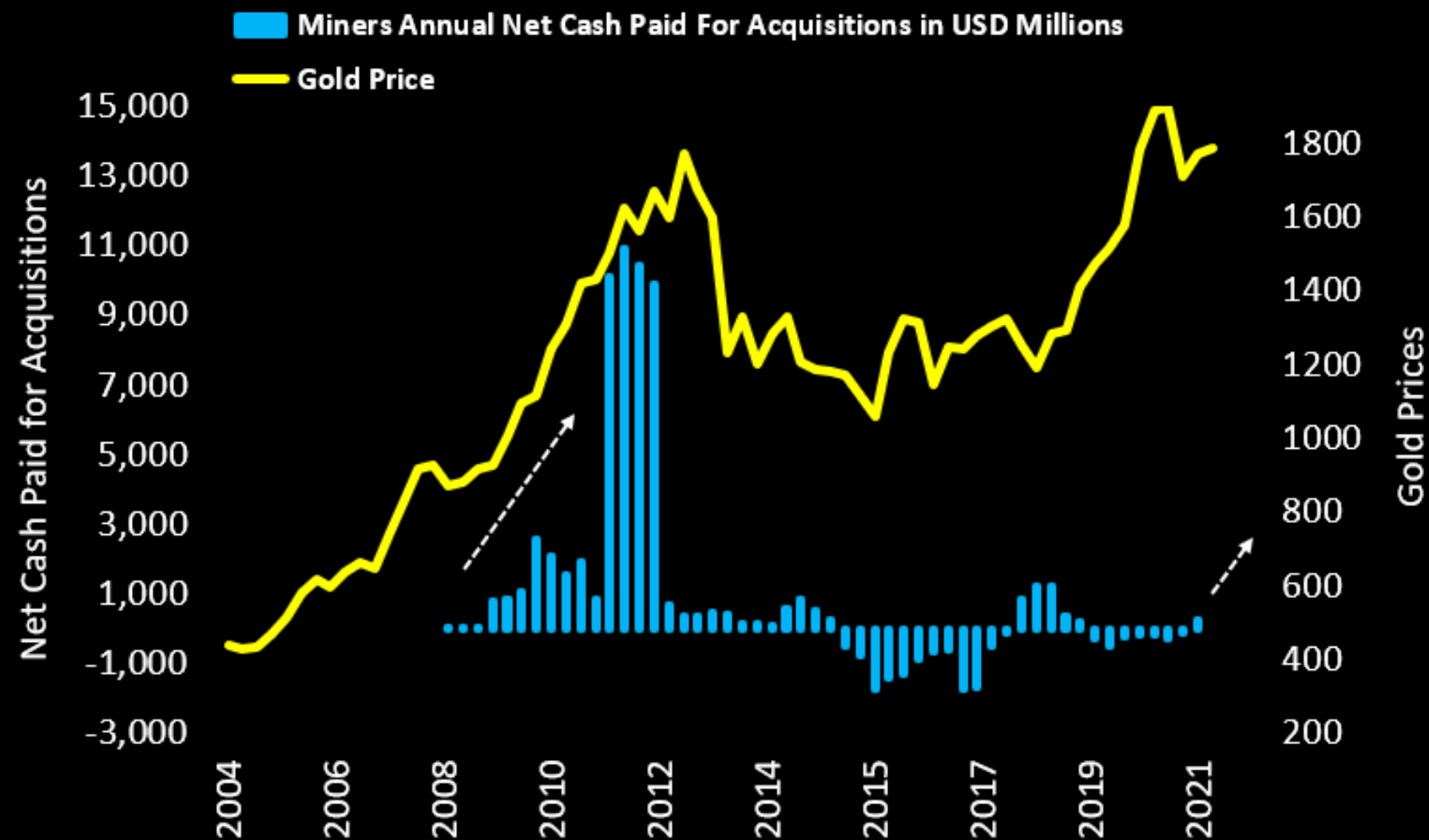
*Top 50 Miners by Market Cap in the Canadian & US Stock Exchanges*



Source: Bloomberg

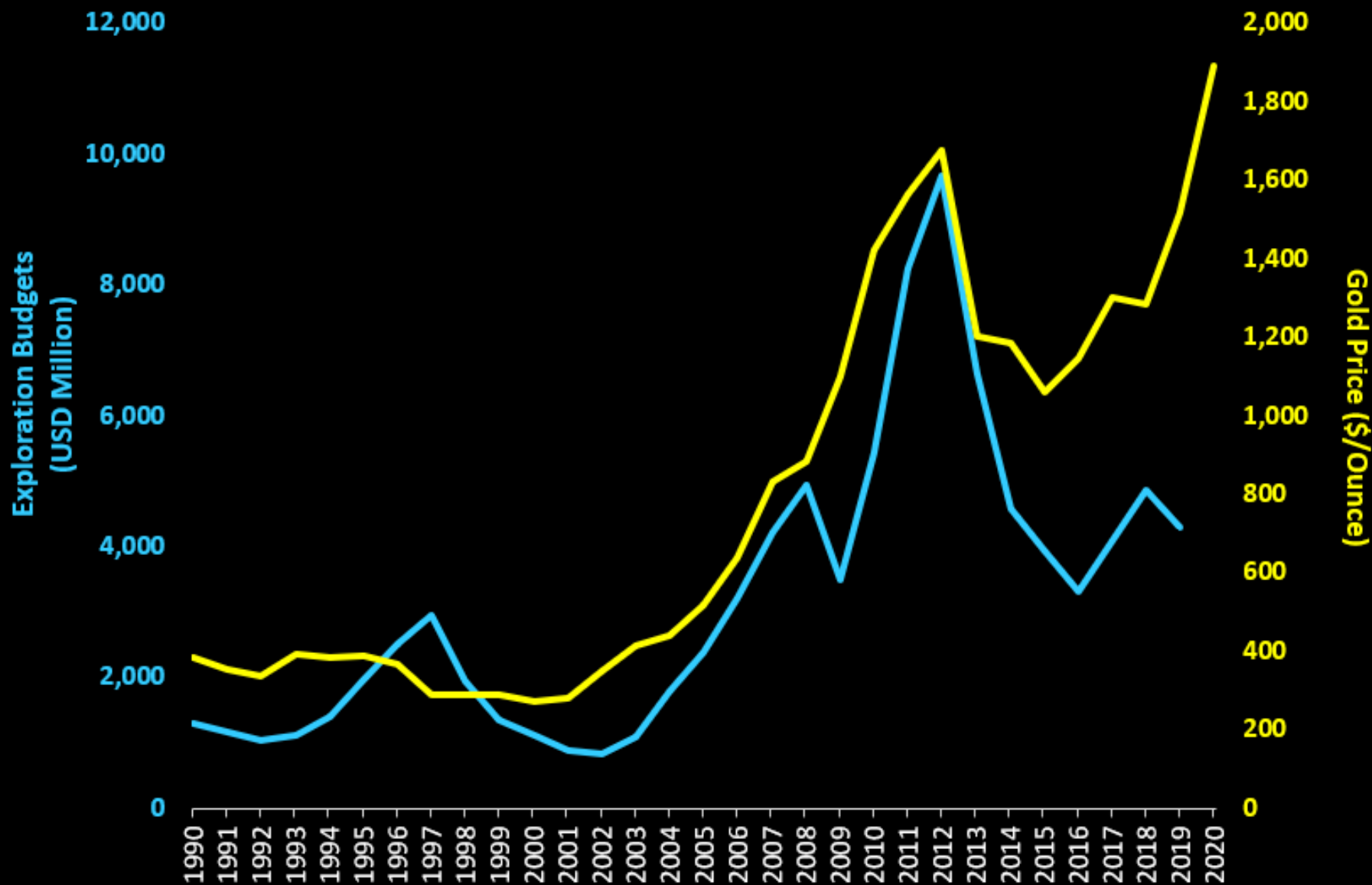
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# Precious Metals' Miners M&A Cycle



*Top 50 Miners by Market Cap in the Canadian & US Stock Exchanges*

# Gold Price vs. Exploration Budgets



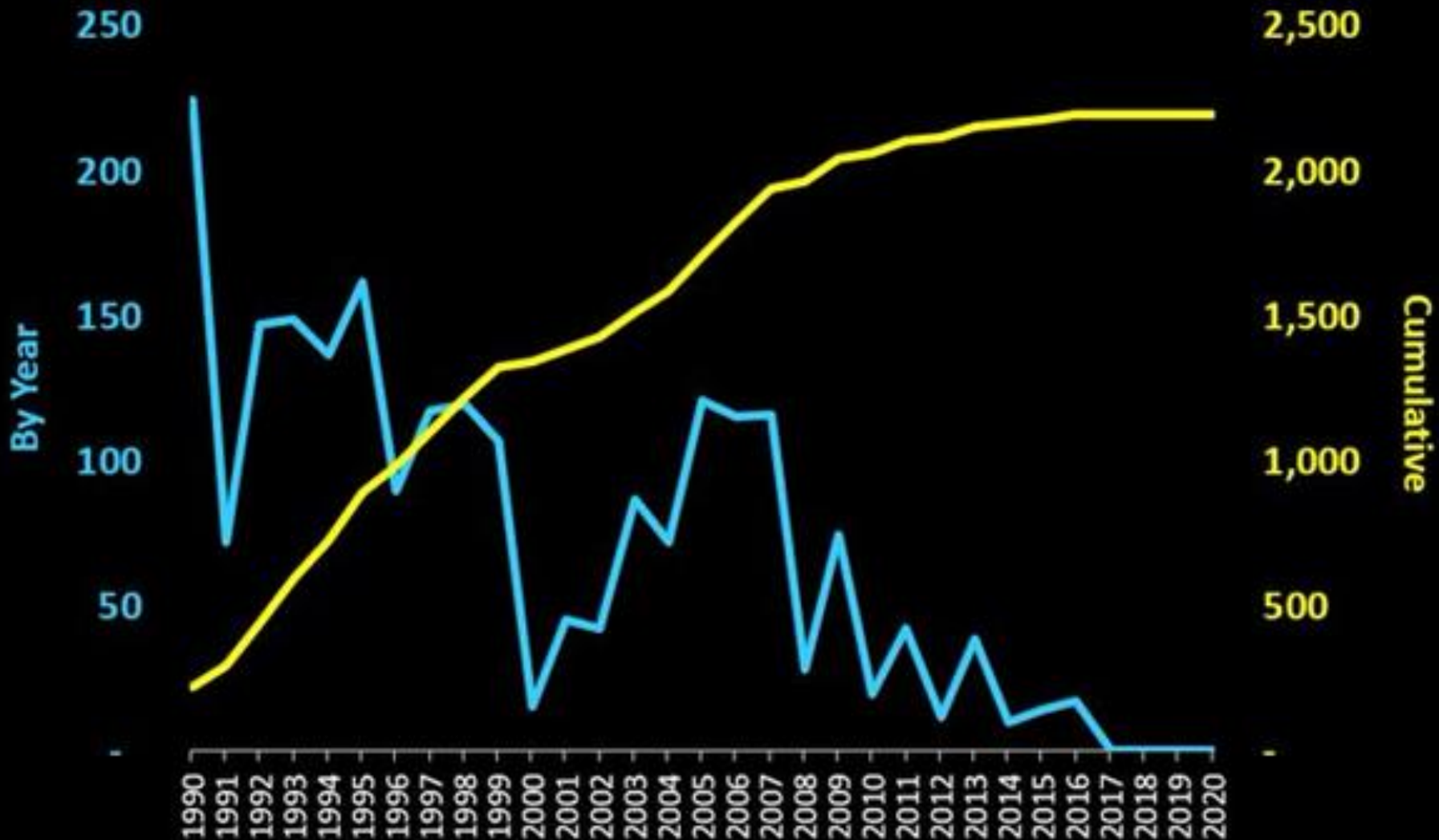
Source: S&P Global Market Intelligence

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# Gold Discoveries

>2M Ounces (Millions of Troy Ounces)

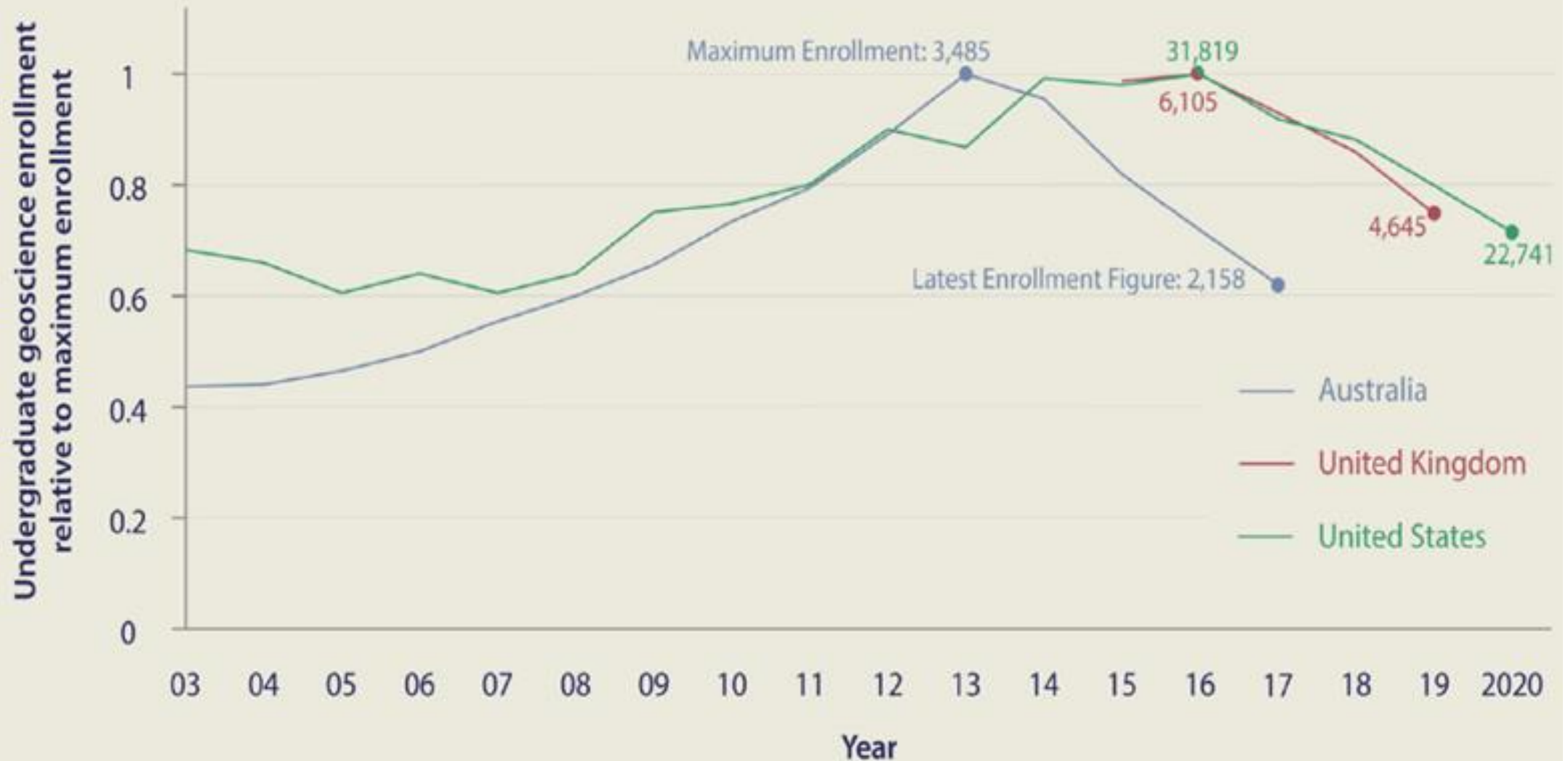


Source: S&P Global Market Intelligence

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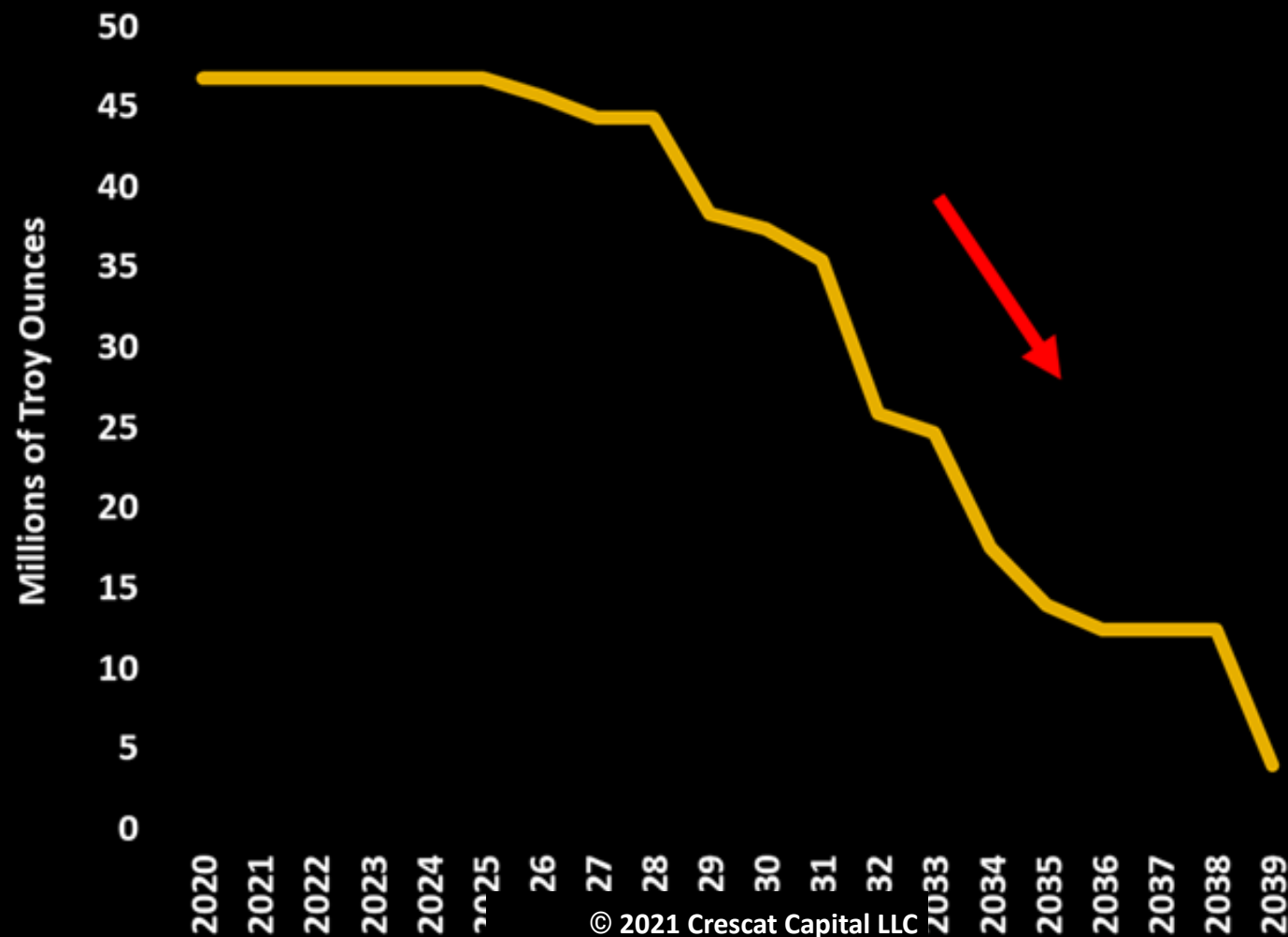
## Undergraduate Geoscience Enrollment

# GLOBAL TRENDS



# Gold Supply Cliff

Top 20 Global Gold Producers  
Projected Production from Proven and Probable Reserves



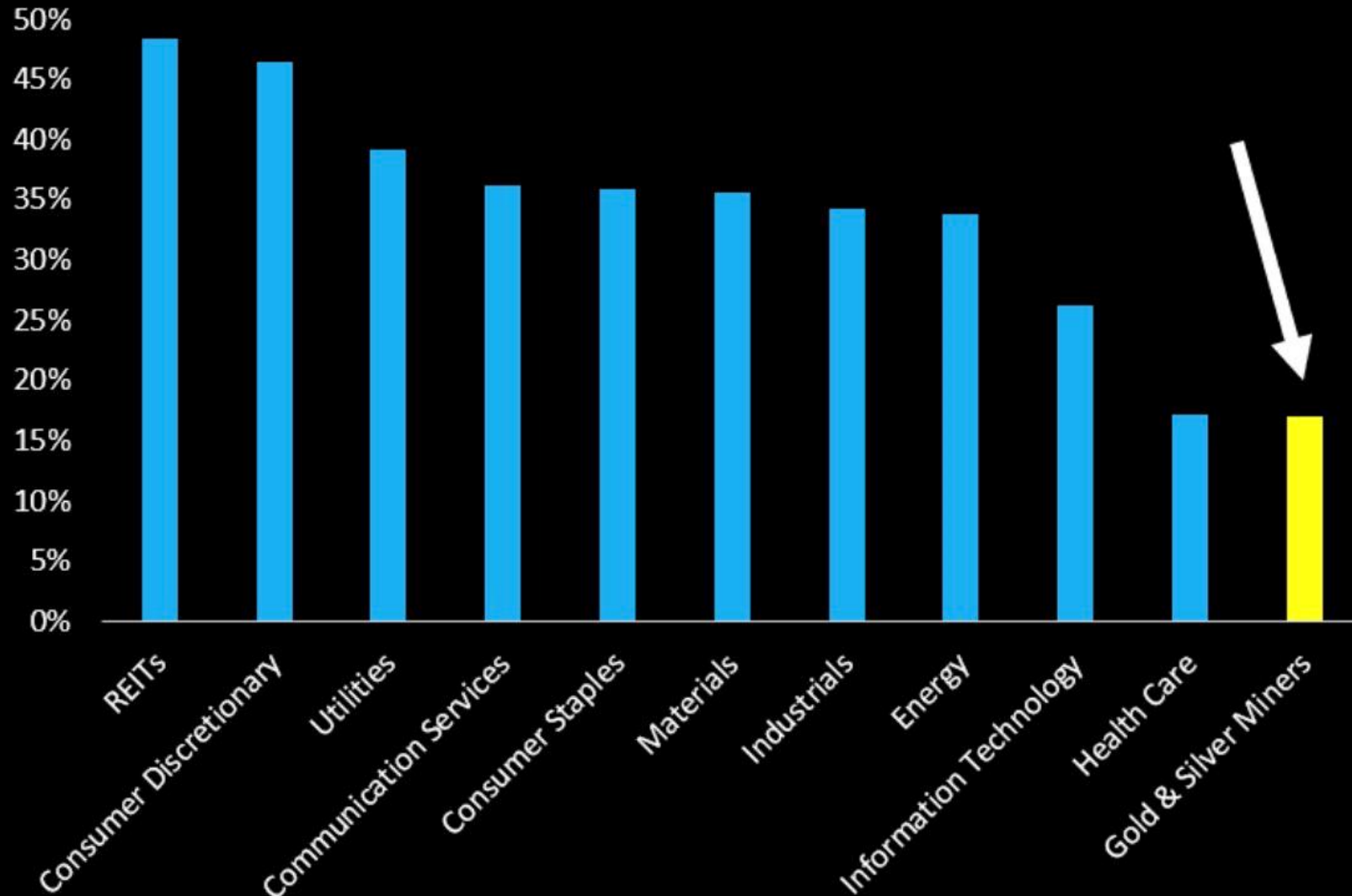
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Source: S&P Global Market Intelligence

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# Median Total Debt to Assets Ratio

*Russell 3000 Index & Top 50 Precious Metals Miners By Market Cap*

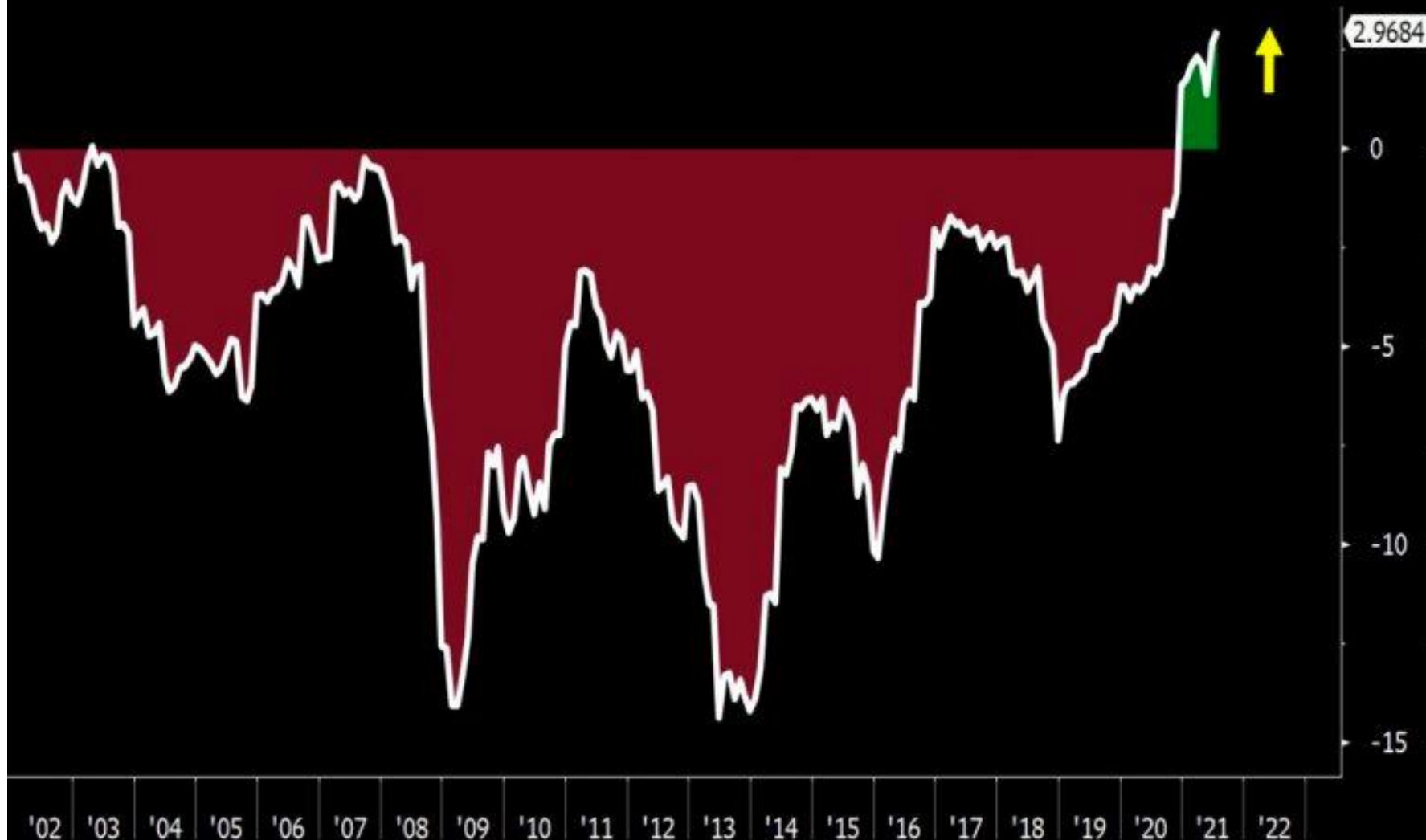


Source: Bloomberg

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# Precious Metals Miners vs. S&P 500

*Free Cash Flow Yield Spread (%)*



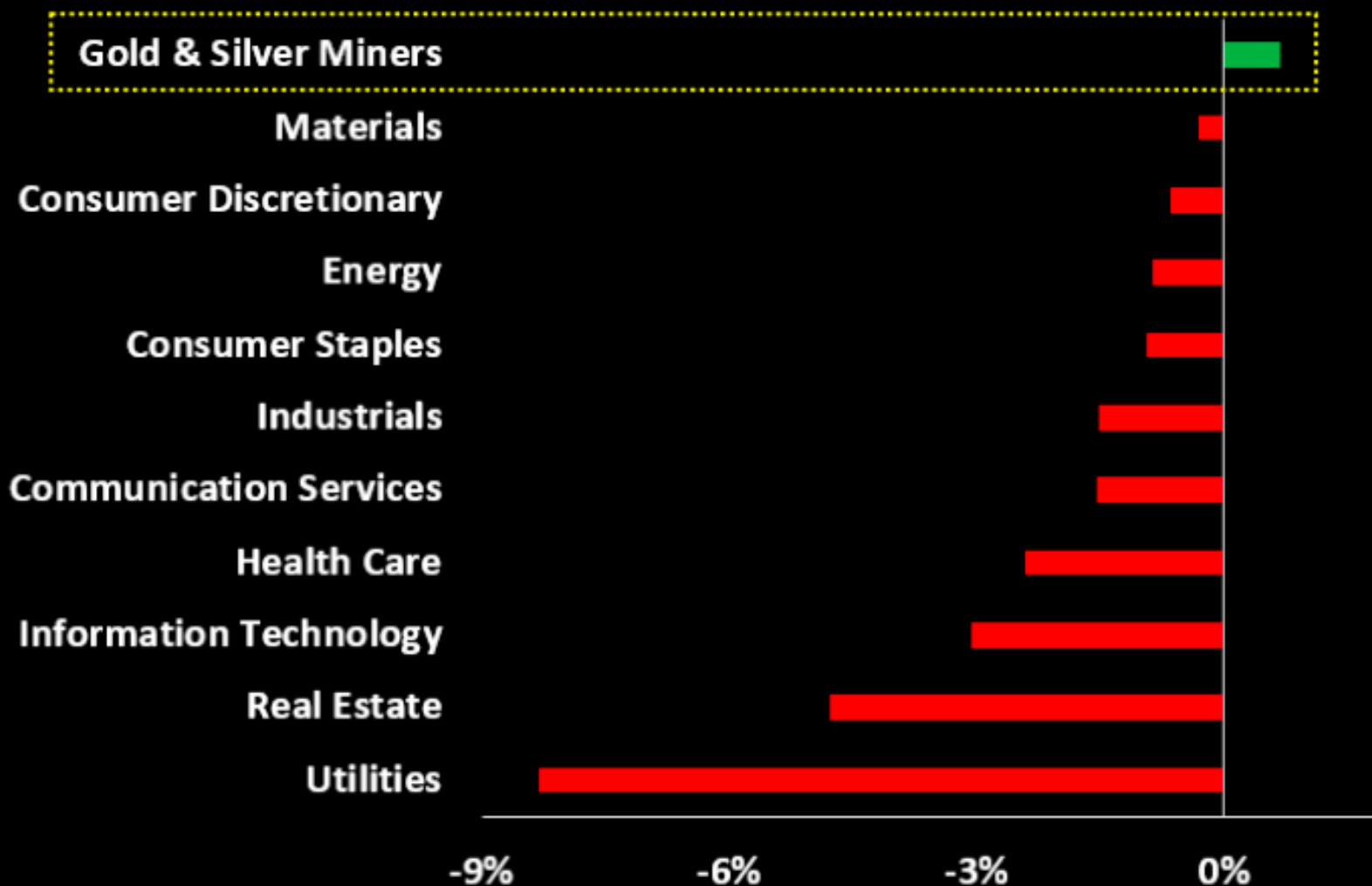
Source: Bloomberg

Universe: Philadelphia Stock Exchange Gold and Silver Index

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# Real Free-Cash-Flow Yield by Sector

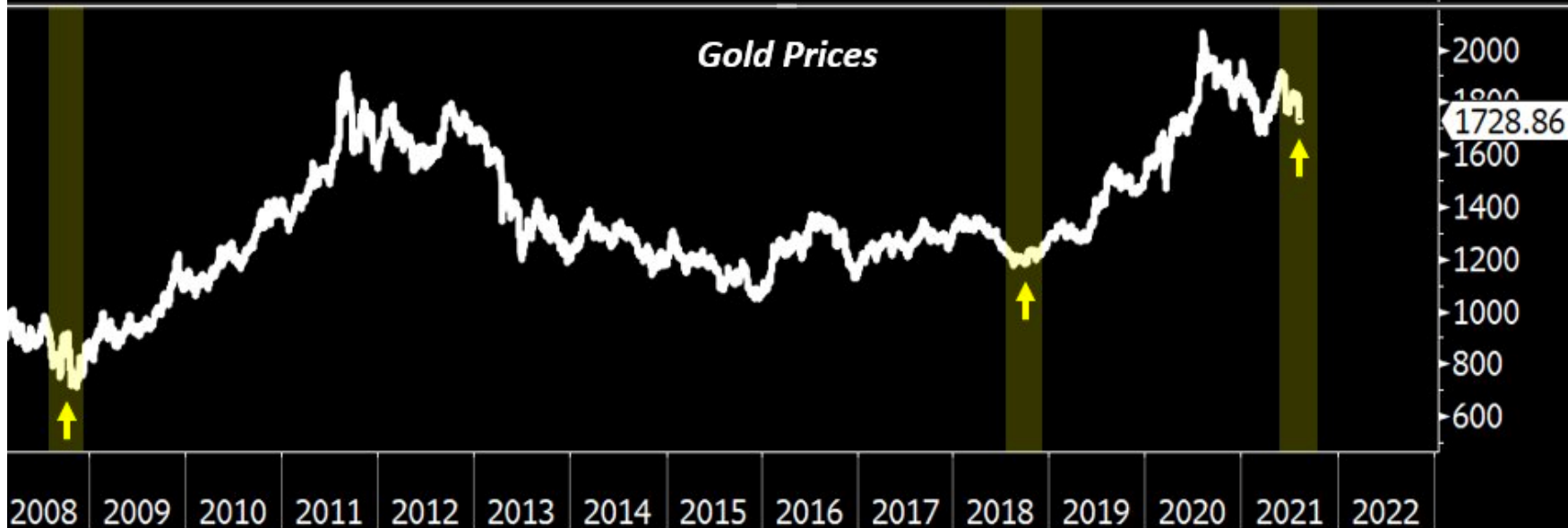
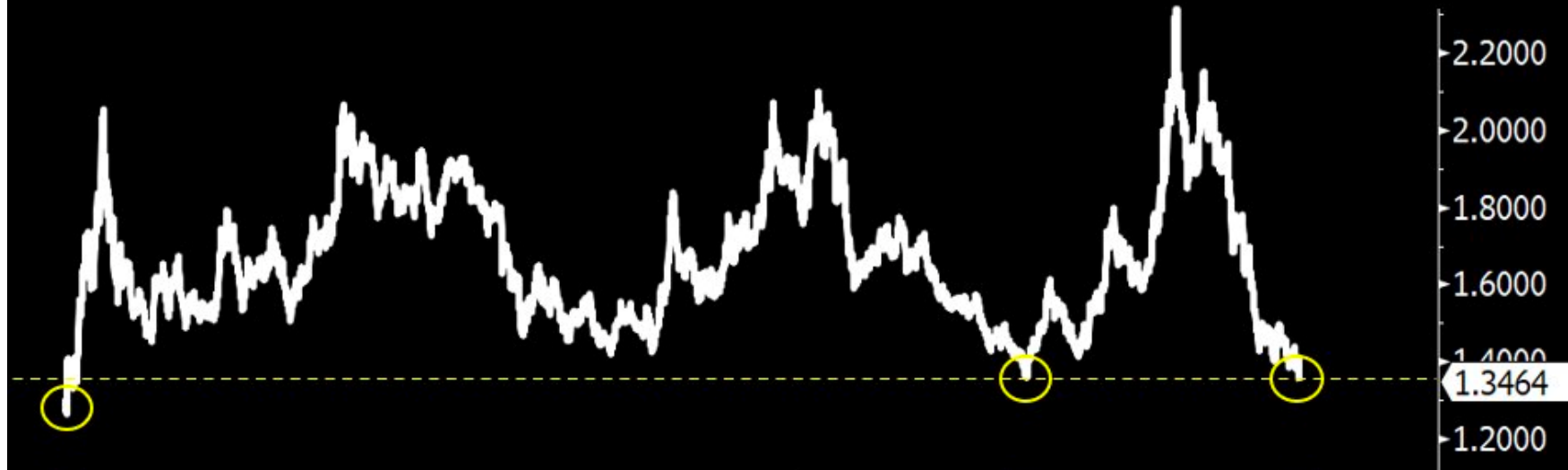
*Aggregate Free-Cash-Flow Yield Net of Consumer Prices Index YoY Change*





# Precious Metals to Commodities Ratio

*Bloomberg Precious Metals Subindex / S&P GSCI Equal Weight Commodity Sector*



Source: Bloomberg

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# Gold to Silver Ratio Remains Historically Elevated

*Gold to Silver Ratio*



*Philadelphia Stock Exchange Gold & Silver Index*



Source: Bloomberg

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# Gold & Silver Miners

*Philadelphia Stock Exchange Gold and Silver Index*



Source: Bloomberg

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# Junior Miners Outperforming Precious Metals

*Gold Junior Miners-to-Gold Ratio*

*\$GDXJ ETF / \$GLD ETF*



*Silver Junior Miners-to-Silver Ratio*

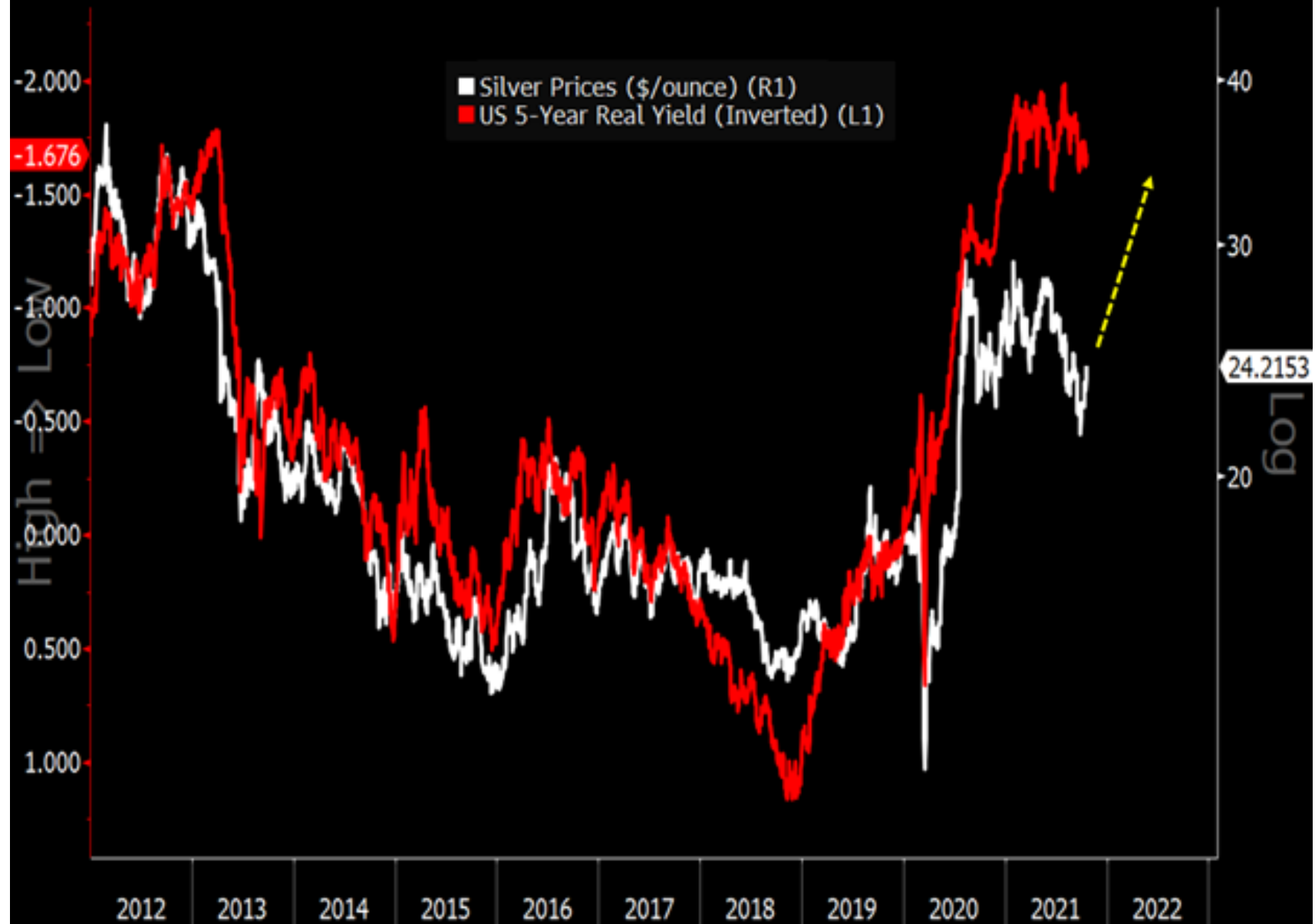
*\$SILJ ETF / \$SLV ETF*



Source: Bloomberg

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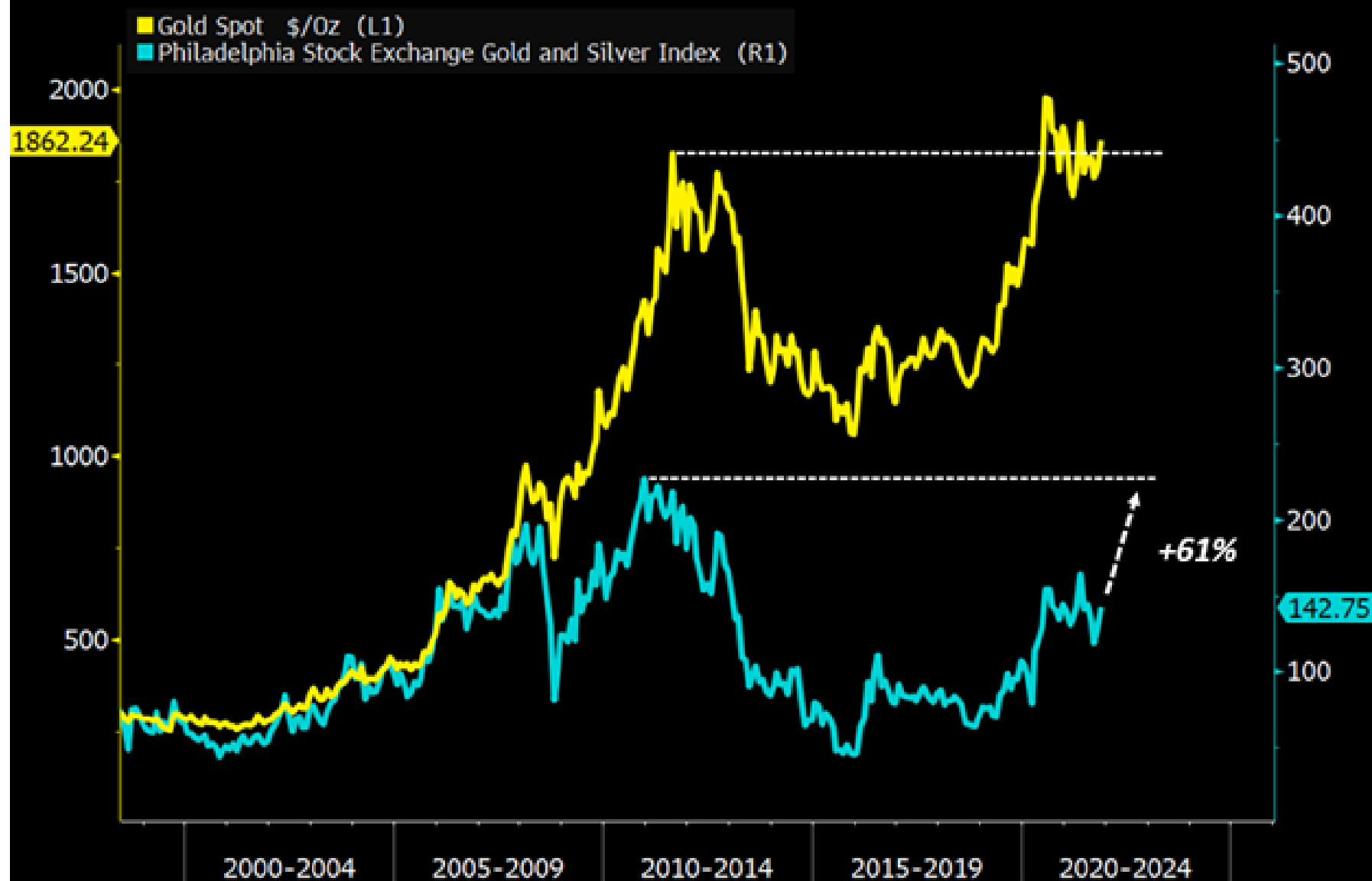
# Silver vs. Real Interest Rates



Source: Bloomberg

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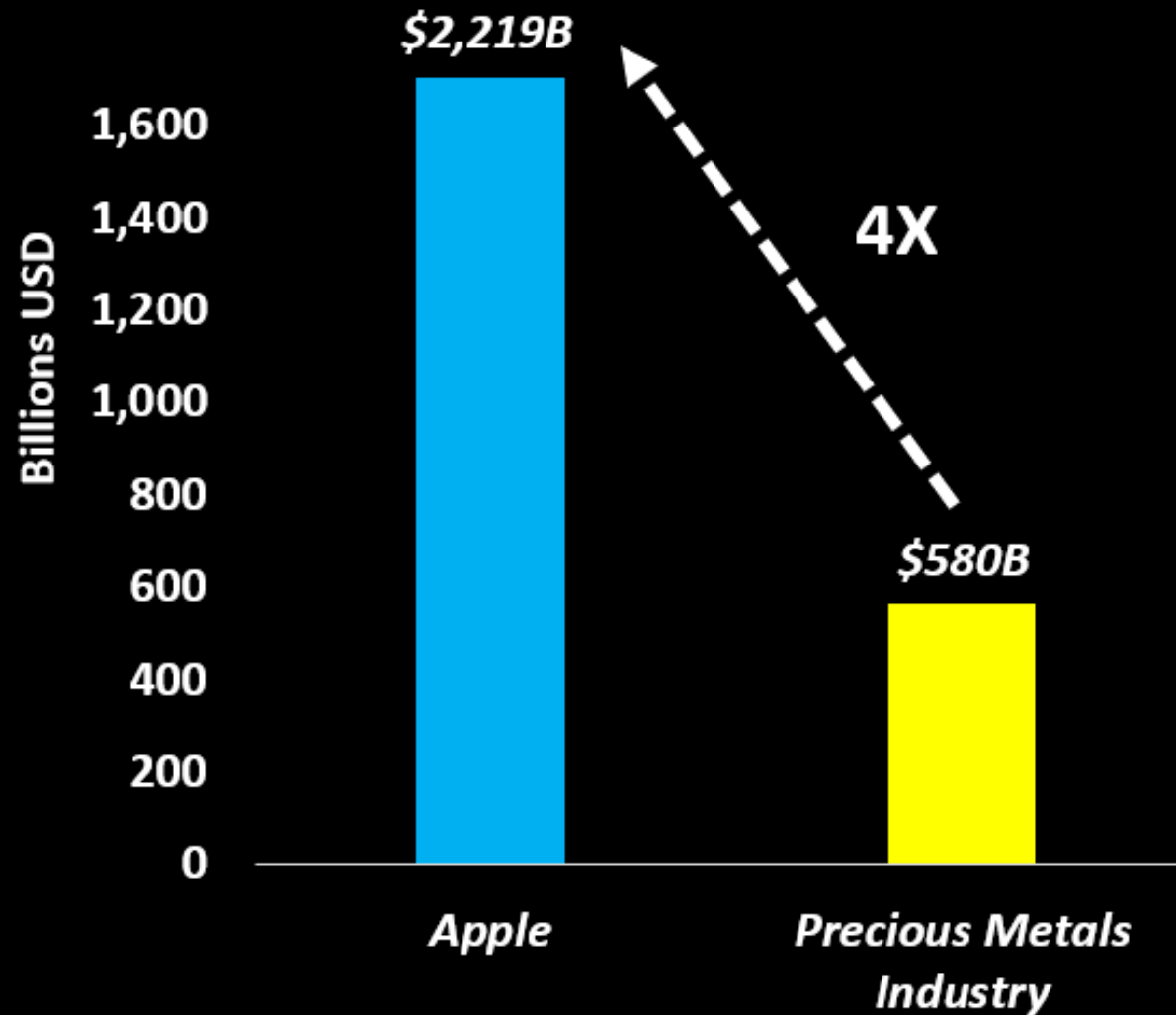
# Gold vs Miners



Source: Bloomberg

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# Total Market Cap



Source: Bloomberg

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# Silver to Money Supply

*Silver / M2 Money Supply*

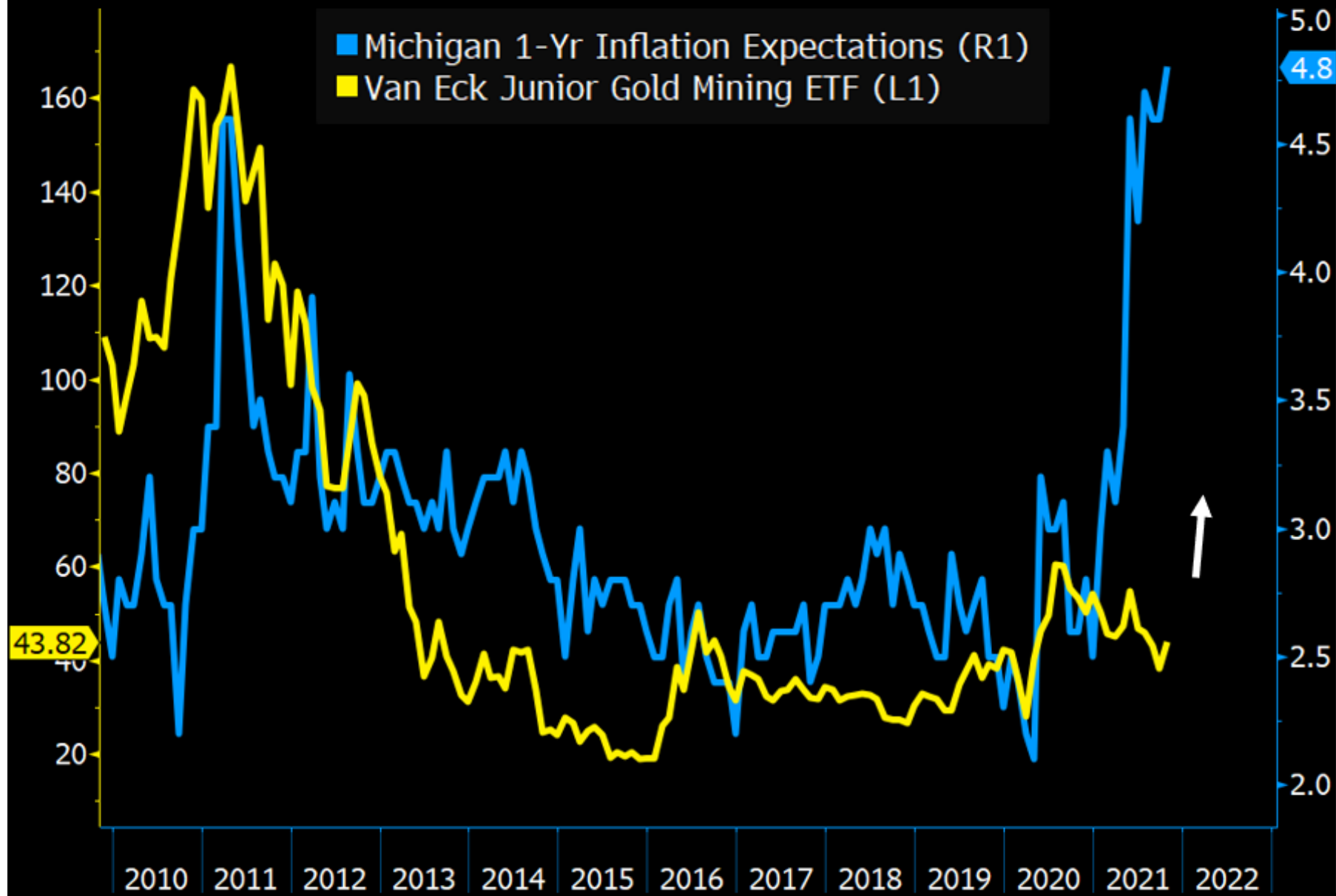


Source: Bloomberg

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# GDXJ vs. Inflation Expectations



Source: Bloomberg

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THE VALUE OF GLOBAL MACRO INVESTING

# CHINA CURRENCY DEVALUATION

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# Chinese Banking Assets to GDP (%)



Source: Bloomberg

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# China FXI ETF vs. USDCNY (Inverted)



Source: Bloomberg

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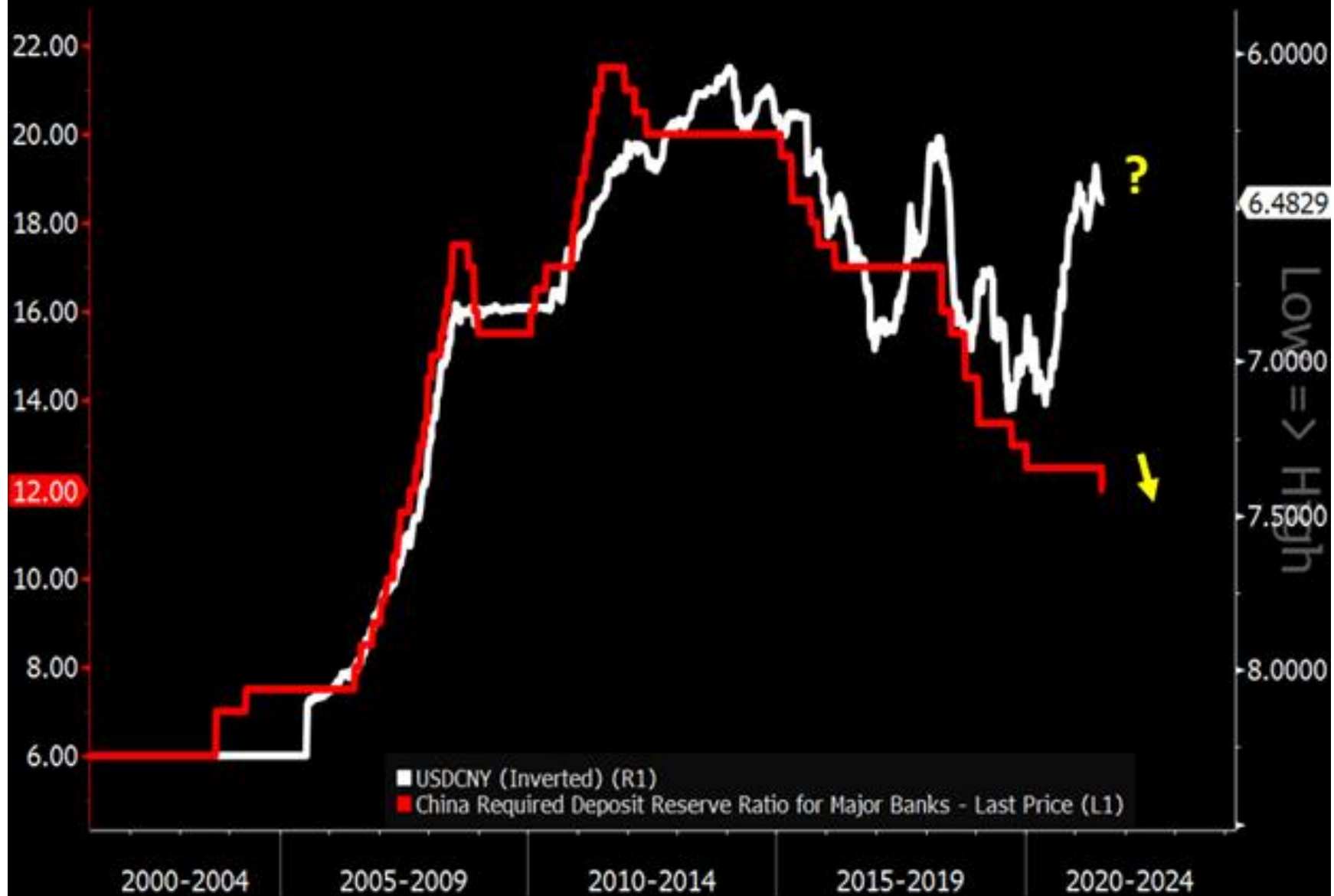
# Chinese Growth Stocks Leads the Changes in CNY



Source: Bloomberg

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## Chinese Yuan vs. Required Deposit Reserve Ratio For Banks

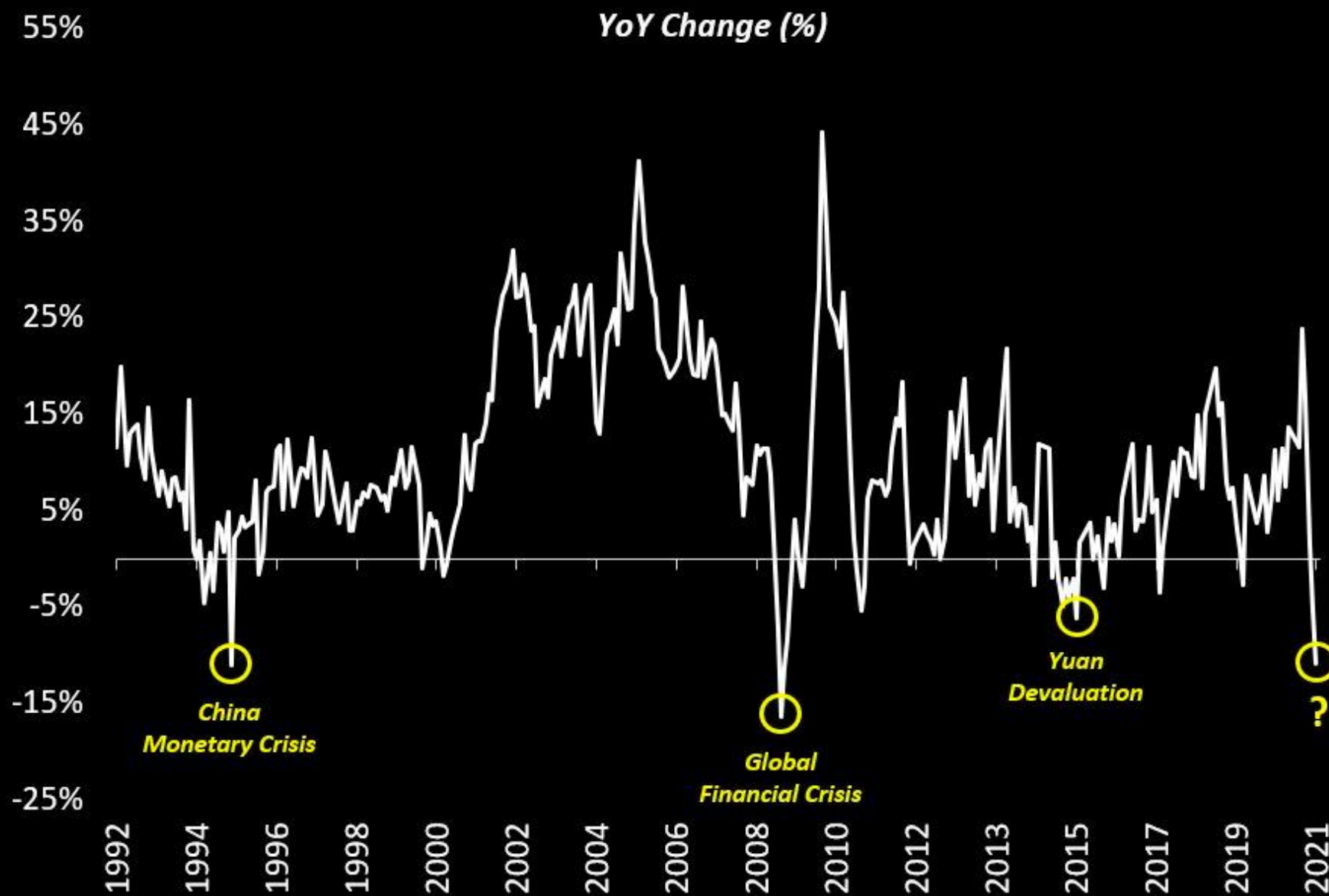


Source: Bloomberg

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# China Industrial Production of Crude Steel



Source: National Bureau of Statistics of China

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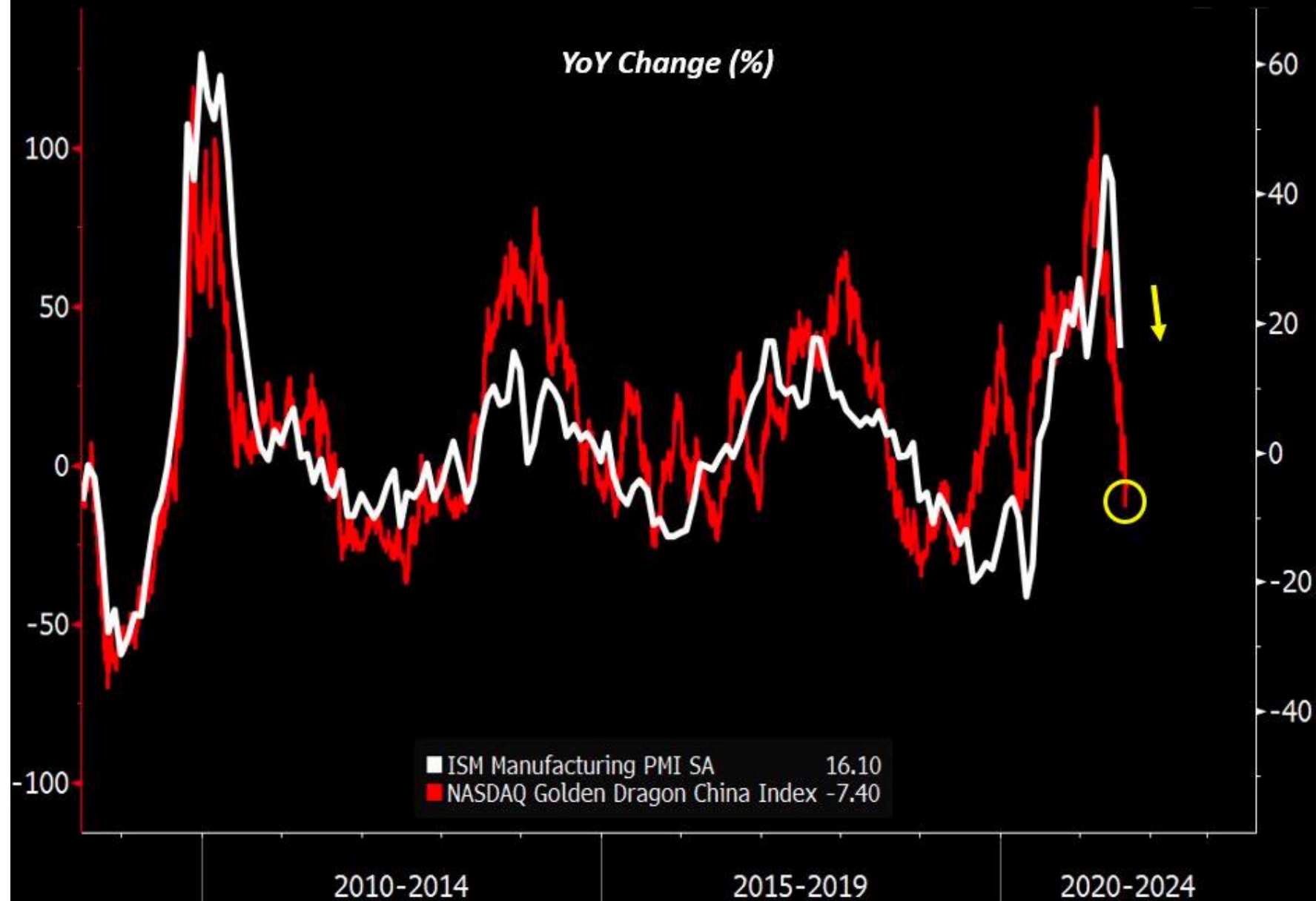
# Asian vs. Global Stocks



Source: Bloomberg

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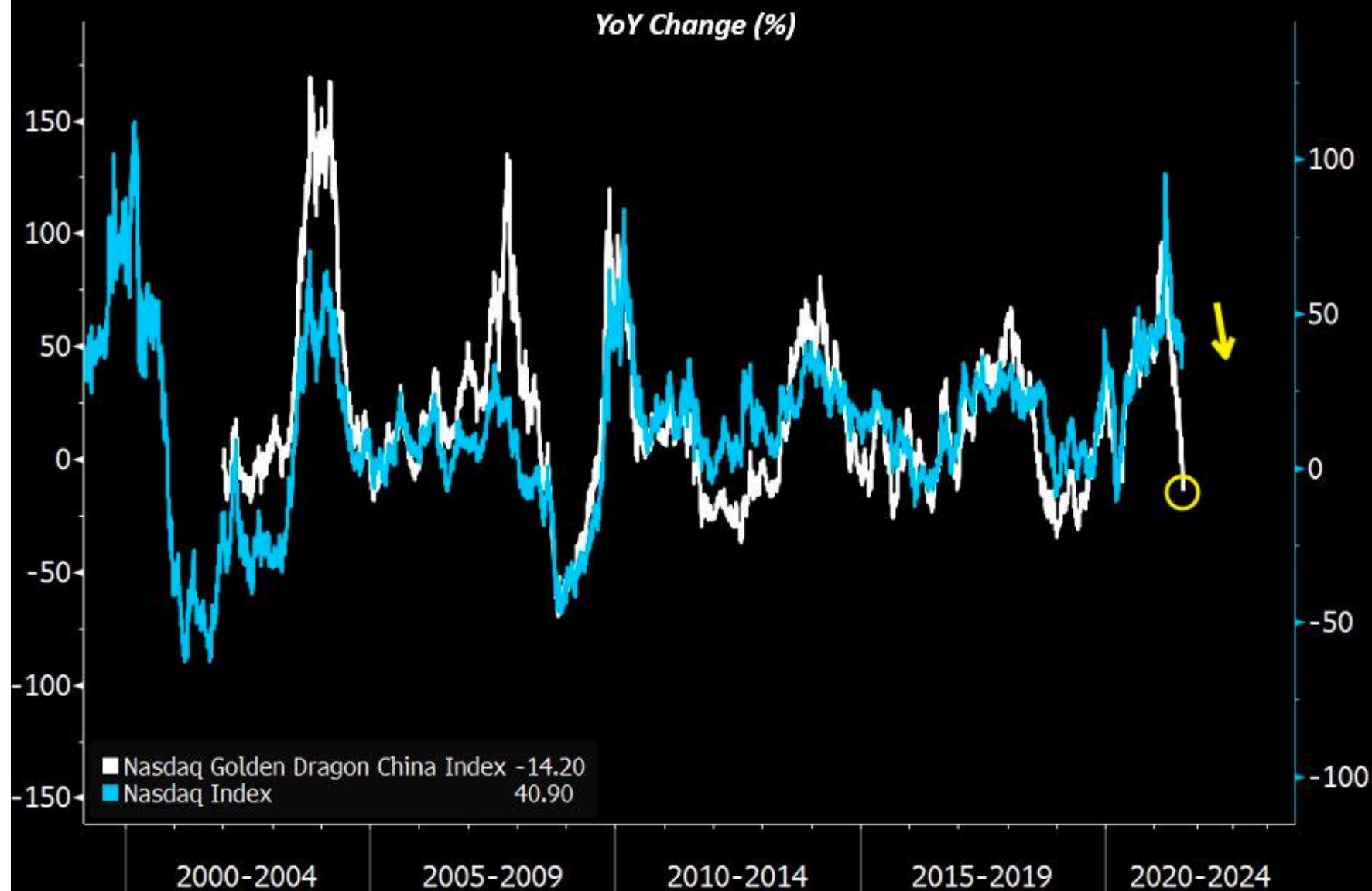
# US ISM PMI vs. Chinese ADRs



Source: Bloomberg

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# Nasdaq vs. Chinese ADRs



Source: Bloomberg

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