

Deutsche Bank
Research



Is there a bubble in financial markets?

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DISCLOSURES AND ANALYST CERTIFICATIONS ARE LOCATED IN APPENDIX 1. MCI (P) 064/04/2020. DURING THE PERIOD NOVEMBER 2018 TO MARCH 2020 DISCLOSURES MAY HAVE DISPLAYED INCOMPLETE INFORMATION, PLEASE SEE APPENDIX 1 FOR FURTHER DETAILS.

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Attribution

The authors wish to acknowledge the contributions made by Rajsekhar Bhattacharyya and Suvir Ranjan, employees of Acuity Knowledge Partners, a third-party provider to Deutsche Bank in the preparation of this report.



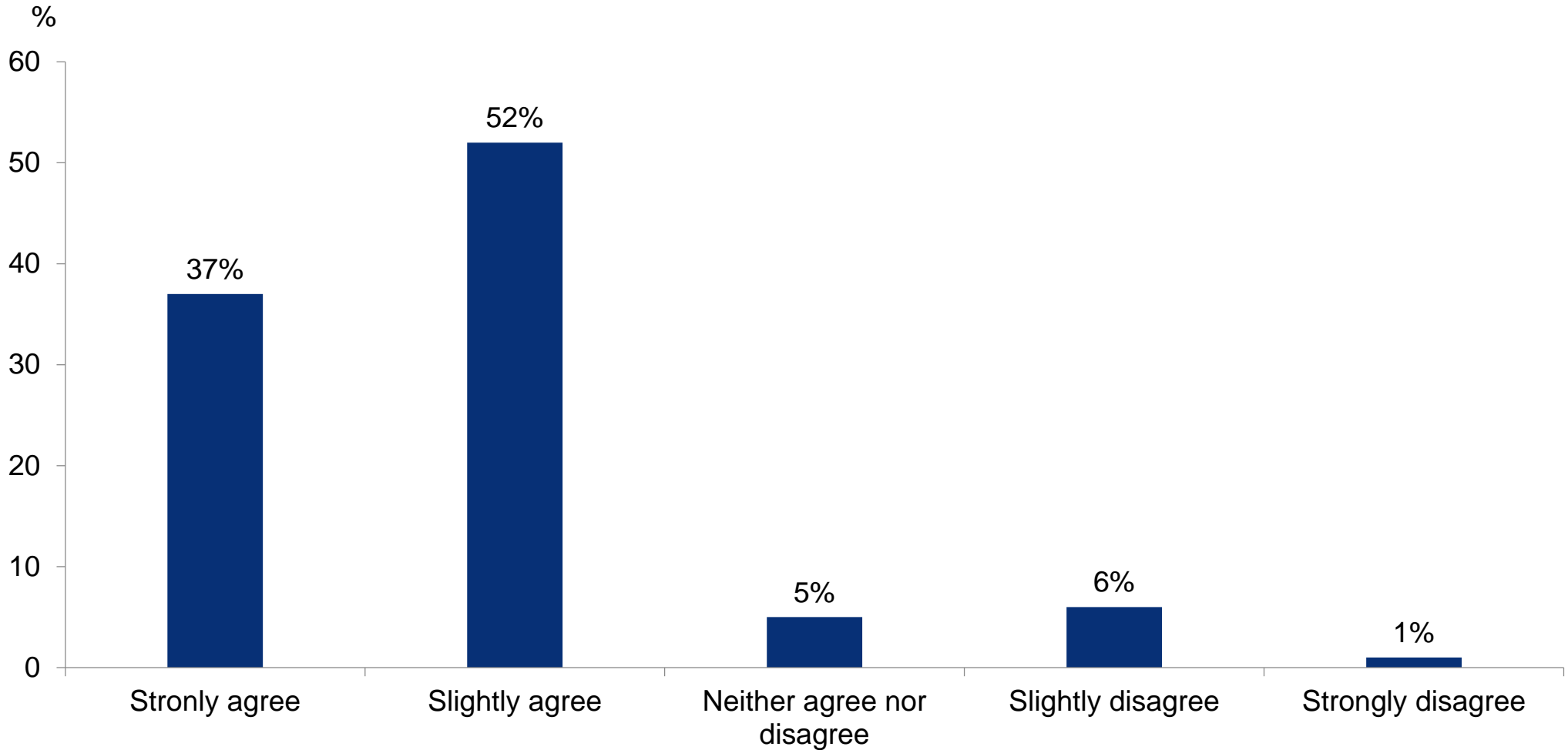
Investors very specific as to where they see bubbles..

From our January 13-15th 2021 survey of 627 global market professionals (full survey [here](#))

Very few market participants see no bubbles whatsoever....



How much do you agree or disagree with the following statement... 'Currently, there are many bubbles in financial markets'.

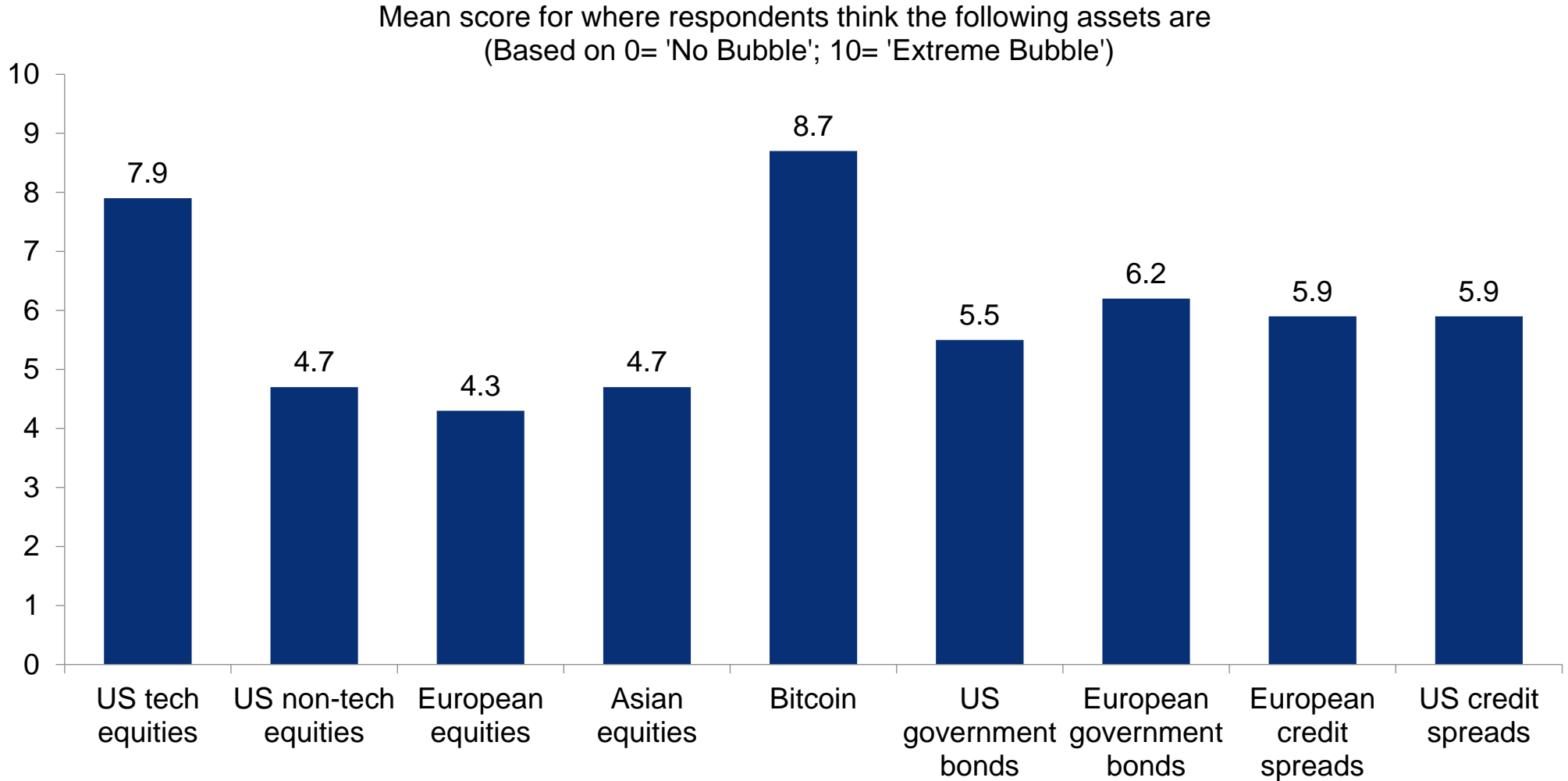


Source: dbDIG Survey, Deutsche Bank Research

.... But think virtually all are concentrated in Bitcoin or US tech....



Looking at the following assets and using a scale of 0 to 10 where 0 means 'No Bubble' and 10 means 'Extreme Bubble', where do you think these assets currently are?



Source: dbDIG Survey, Deutsche Bank Research

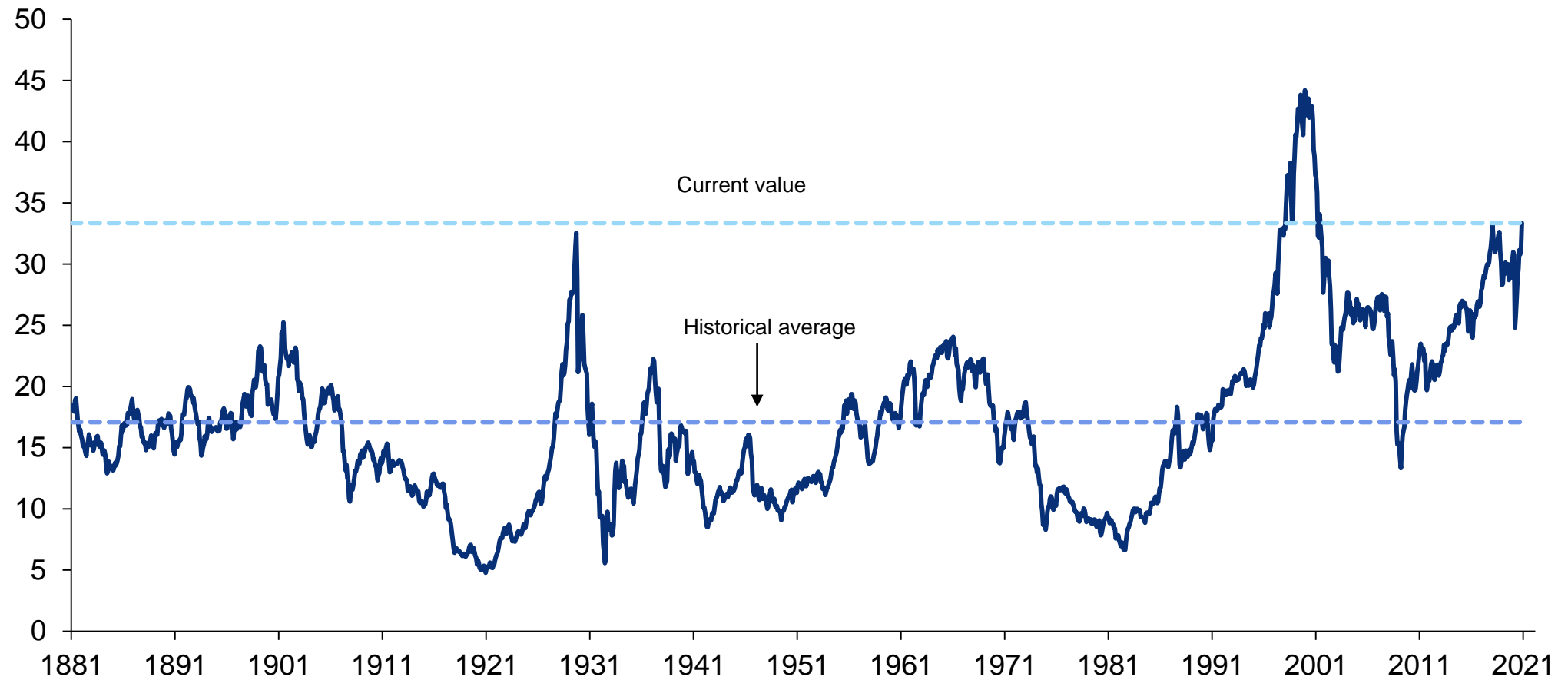


No doubt that in aggregate US equity valuations are at, or close to, all time highs..

Just past 1929.....



S&P 500 CAPE ratio now above 1929 levels for the only time outside of 1998-2001..



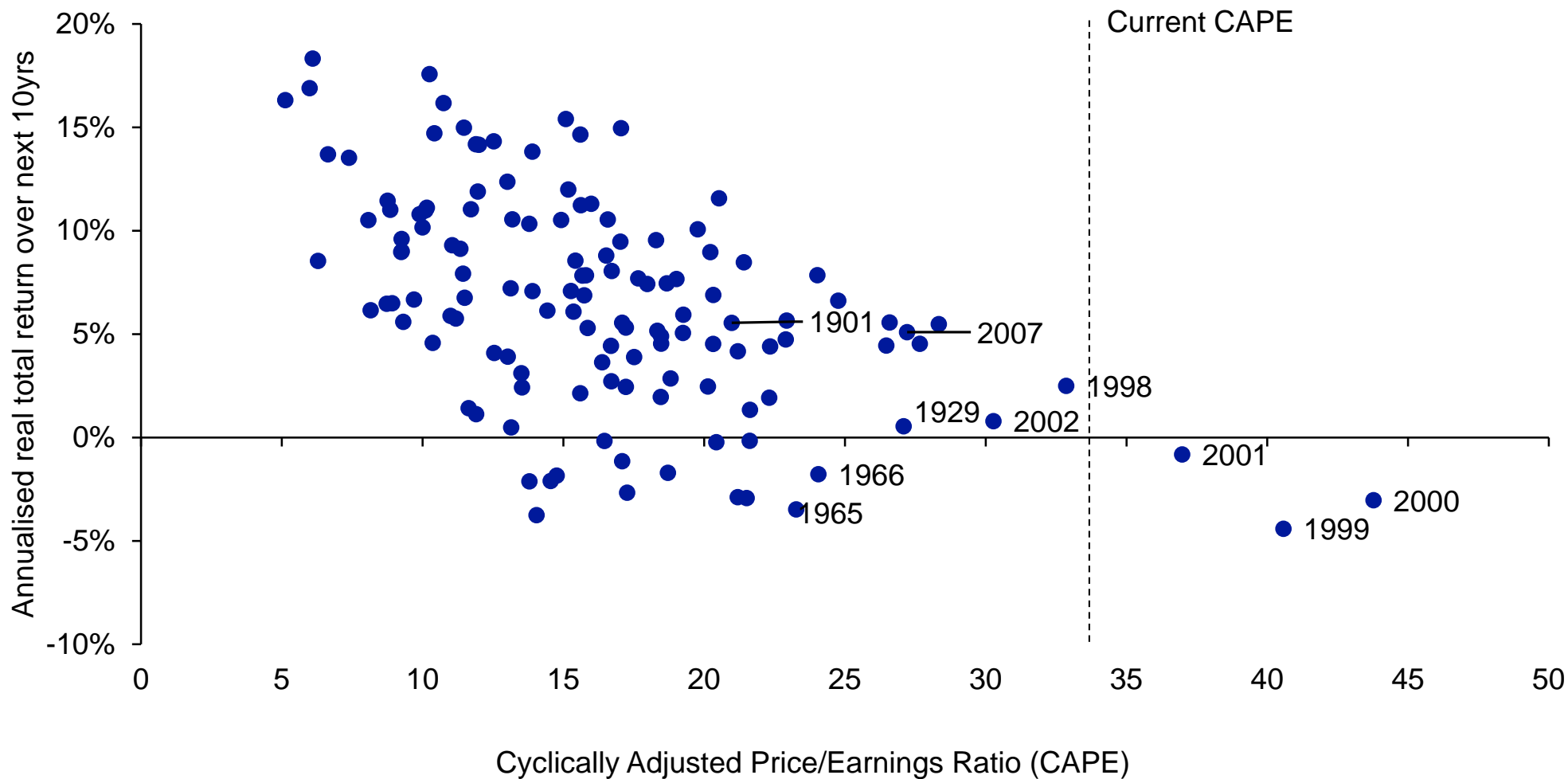
Note: Cyclically Adjusted Price Earnings Ratio P/E10 or CAPE

Source : Robert Shiller, Bloomberg Finance LP, Deutsche Bank

Just past 1929 part 2...



S&P 500 CAPE plotted against annualised real total returns for the S&P 500 over the following decade, 1881- 2010. Peak valuation years highlighted.

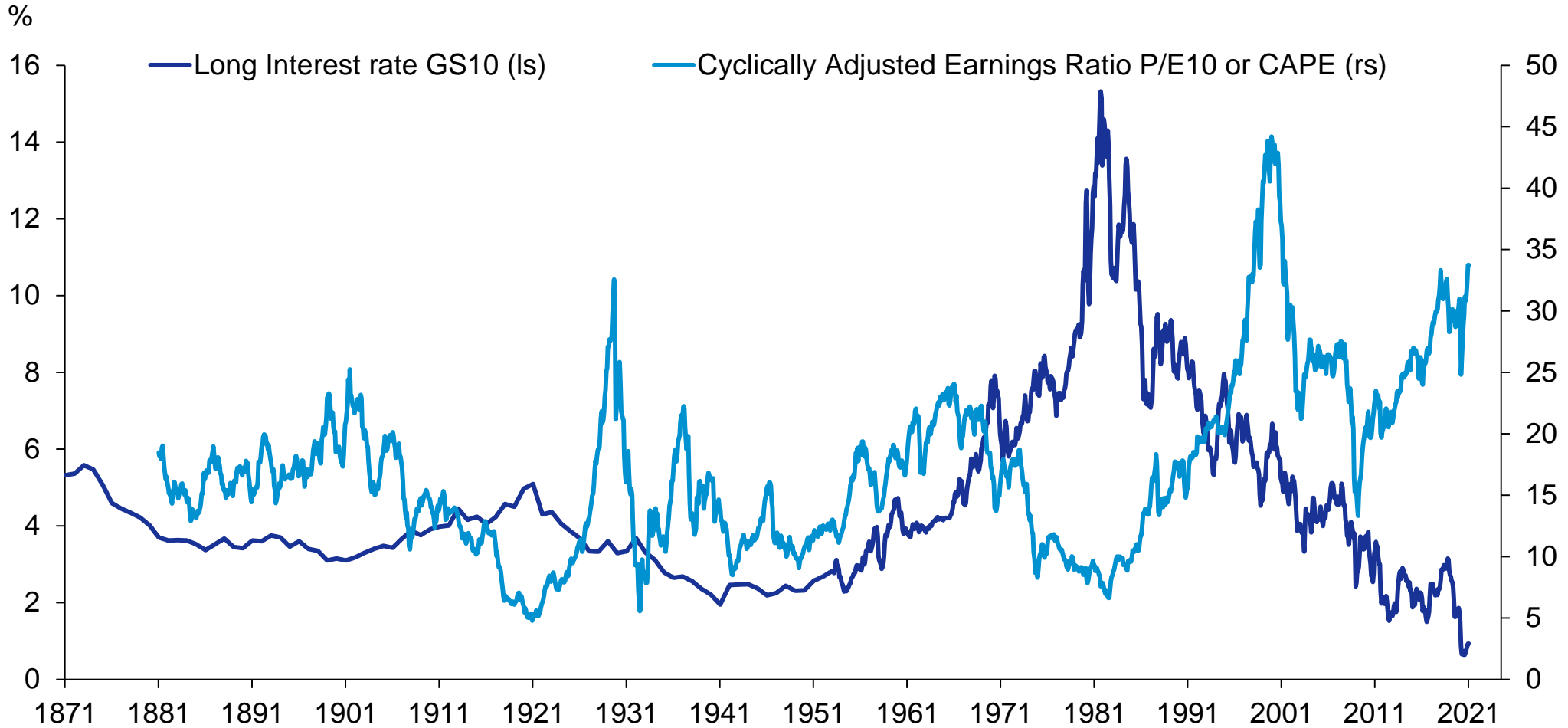


Source : Robert Shiller, Deutsche Bank

Although Shiller S&P CAPE edged above 1929 levels and at record highs outside of 2000 bubble, long-term rates have never been as low before...



S&P 500 CAPE and US yields

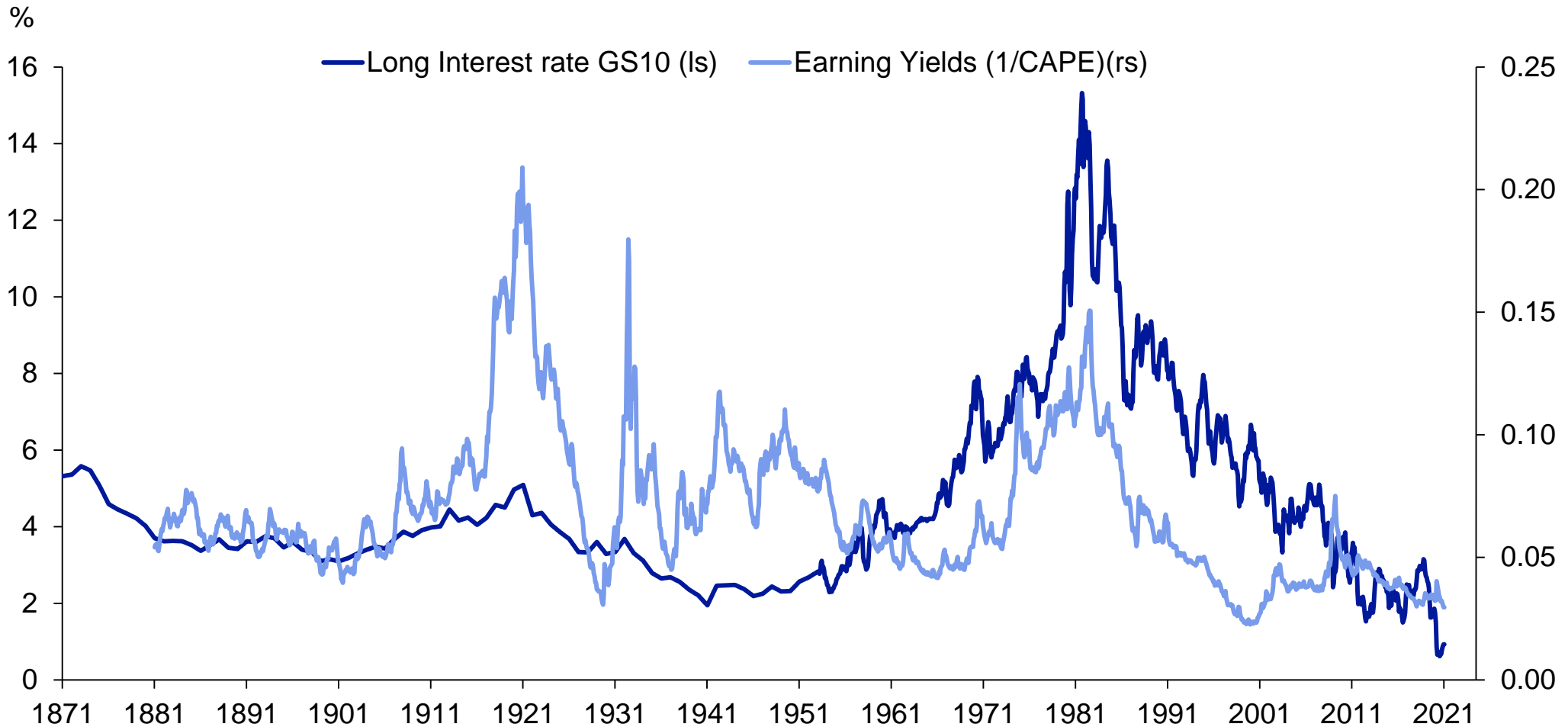


Source: Robert Shiller, Deutsche Bank

Earnings yield (1/CAPE) very low but above long-term yields.... Not happened much in last 60 years...



S&P 500 Earnings yield and Treasury yields

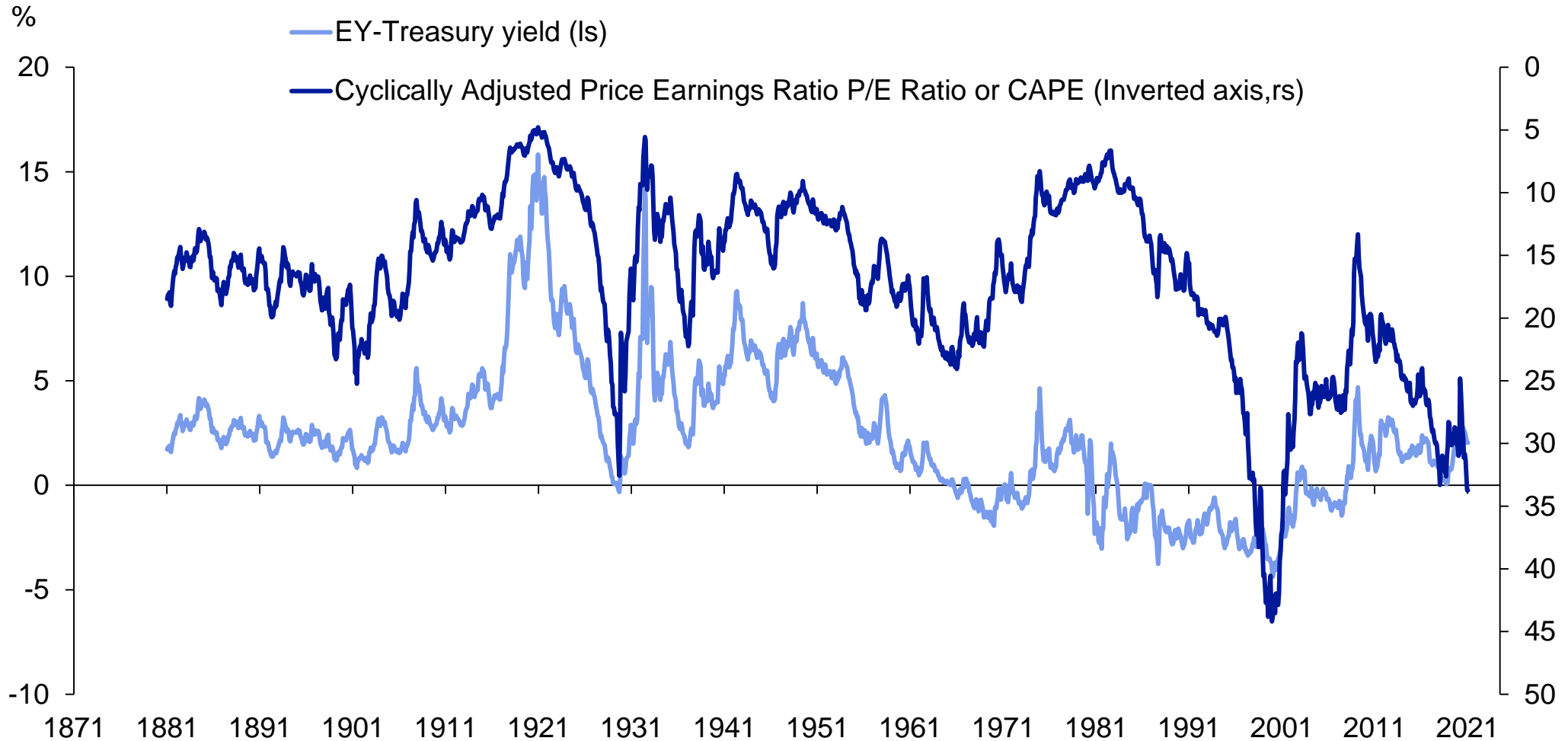


Source: Robert Shiller, Deutsche Bank

“Excess” equity yield doesn’t suggest as strong an overvaluation.. Or is it only relative not absolute?



Earnings yield minus treasury yields (excess yield) vs S&P 500 CAPE (inverted)....

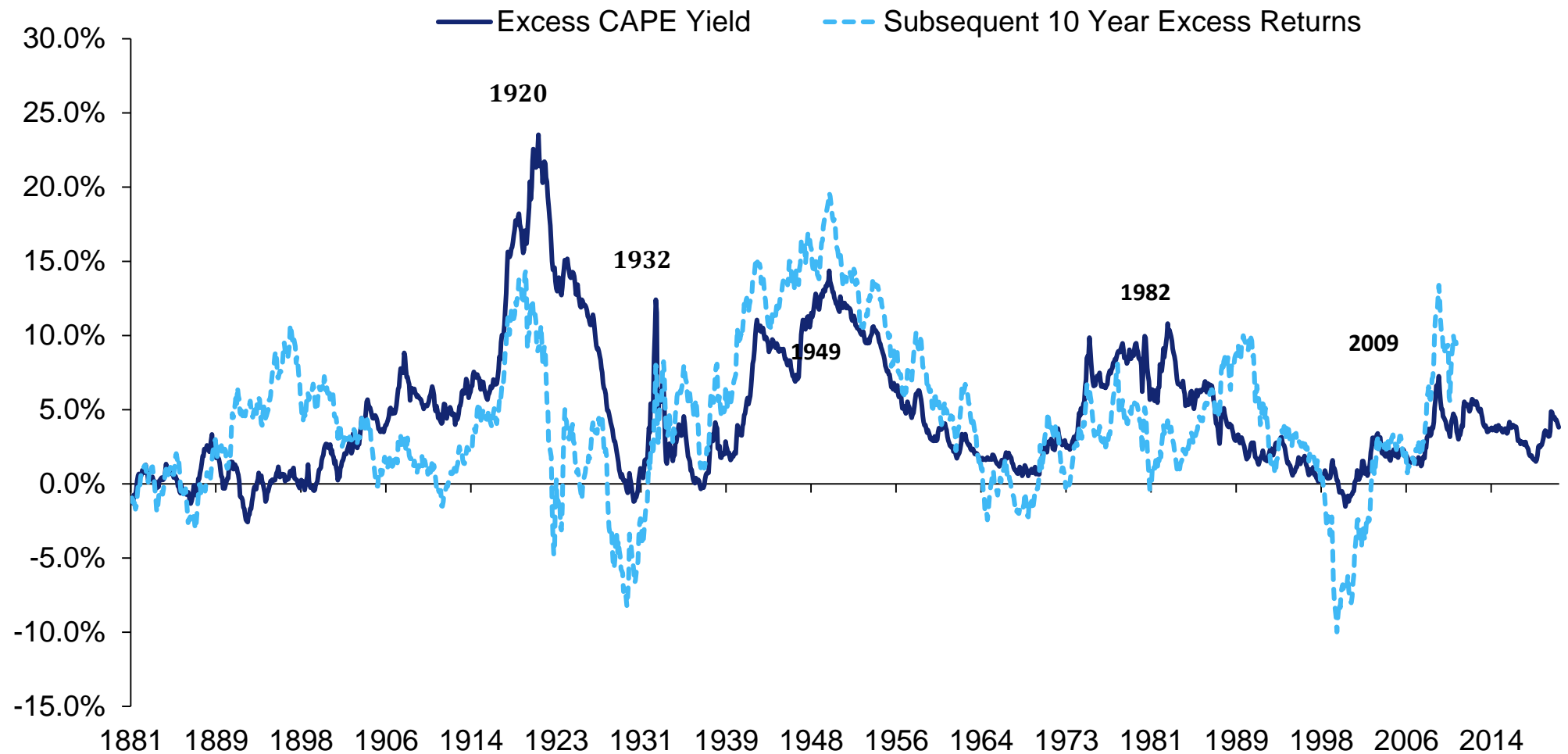


Source: Robert Shiller, Deutsche Bank

When valuations are high, tough to see strong returns but equities still could beat treasuries even if absolute returns weak going forward..



Excess CAPE Yield (ECY) and Annualized Subsequent 10 Year Total Excess Returns

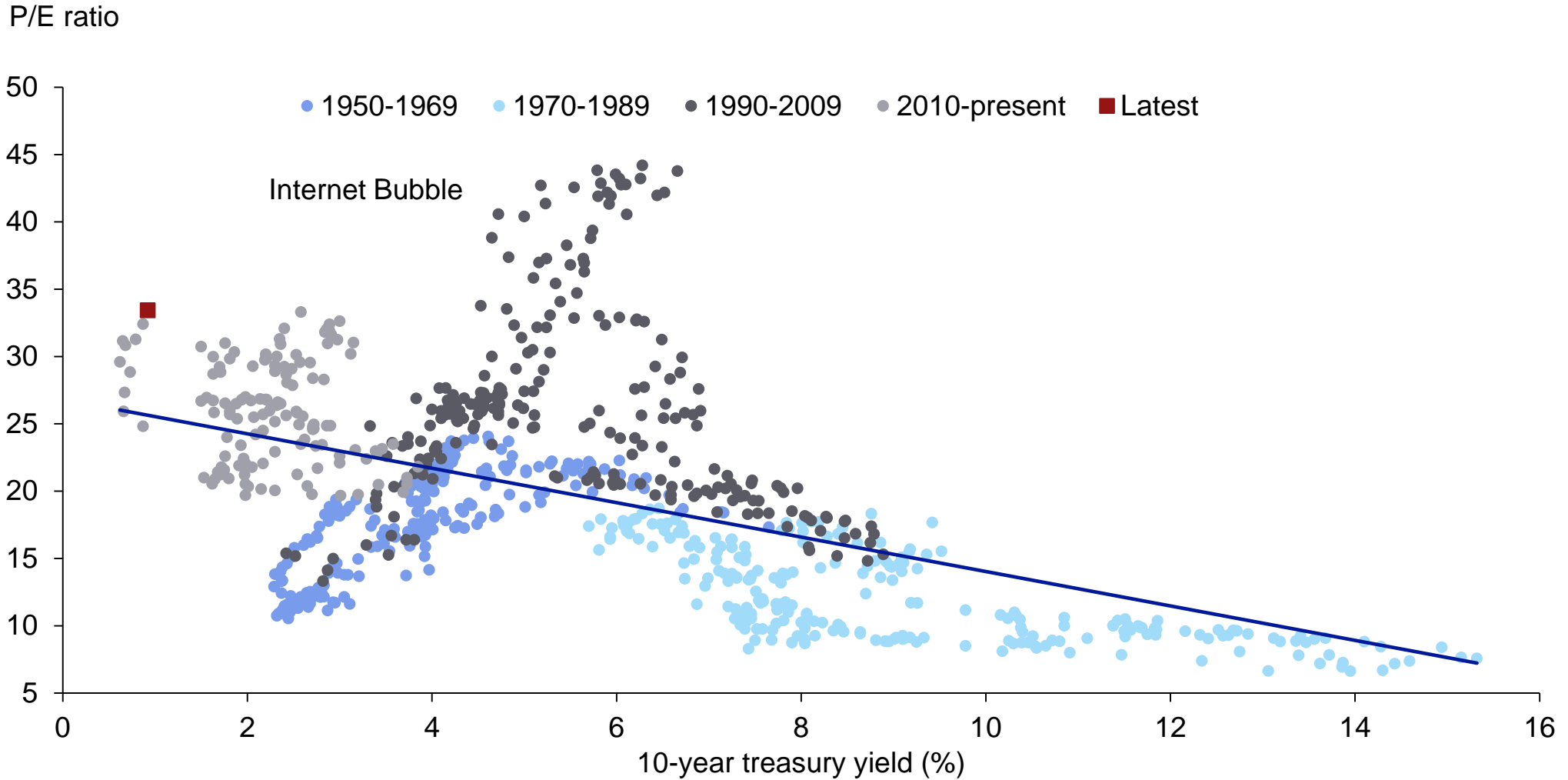


Source: Robert Shiller, Deutsche Bank

Low yields justify higher valuations... but how high???



S&P 500 CAPE ratio vs 10 year yield

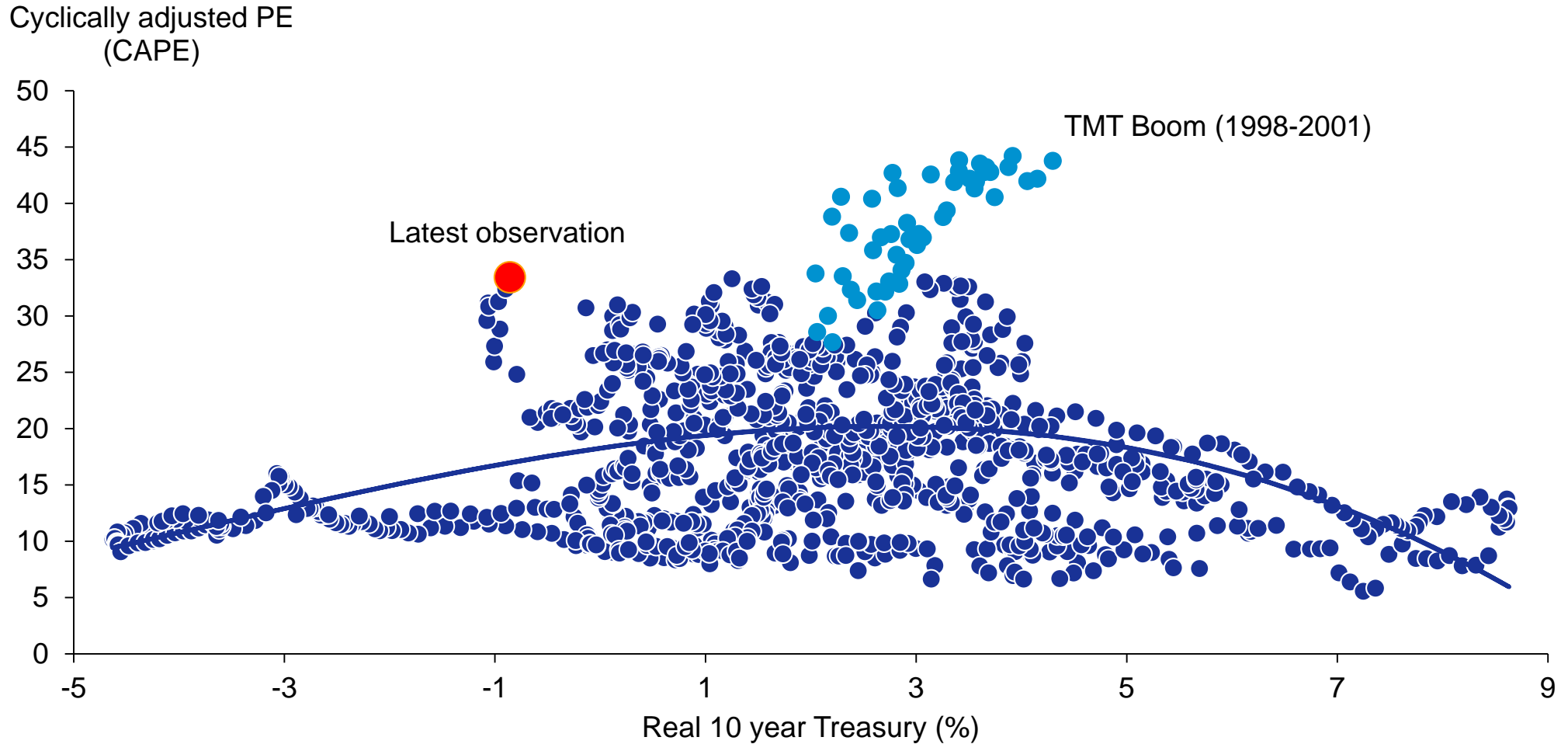


Source: Robert Shiller, FRB, Deutsche Bank

History actually says real yields not hugely correlated to valuations over long term... maybe its more of a modern day phenomena?



US Cycle- adjusted PE and Real 10 year yield (1925 to present)



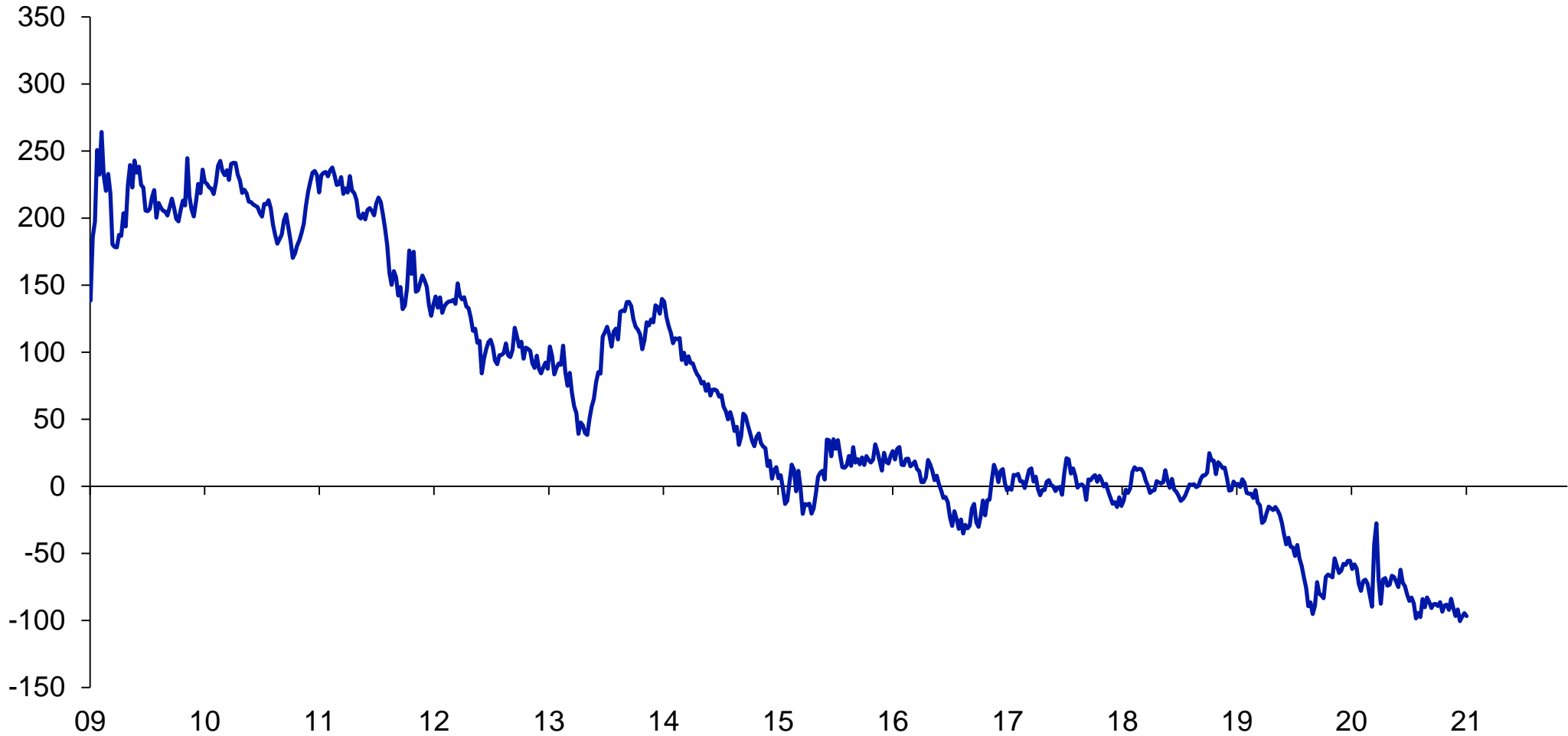
Note: Real is 10 year treasury yield deflated by 5year moving average of CPI inflation

Source: Robert Shiller, BLS, Deutsche Bank

For now funding costs and financial conditions are extremely accommodative supporting all risk assets...



Average GDP weighted 5yr5yr real rates in US, Europe, UK and Japan (bps)

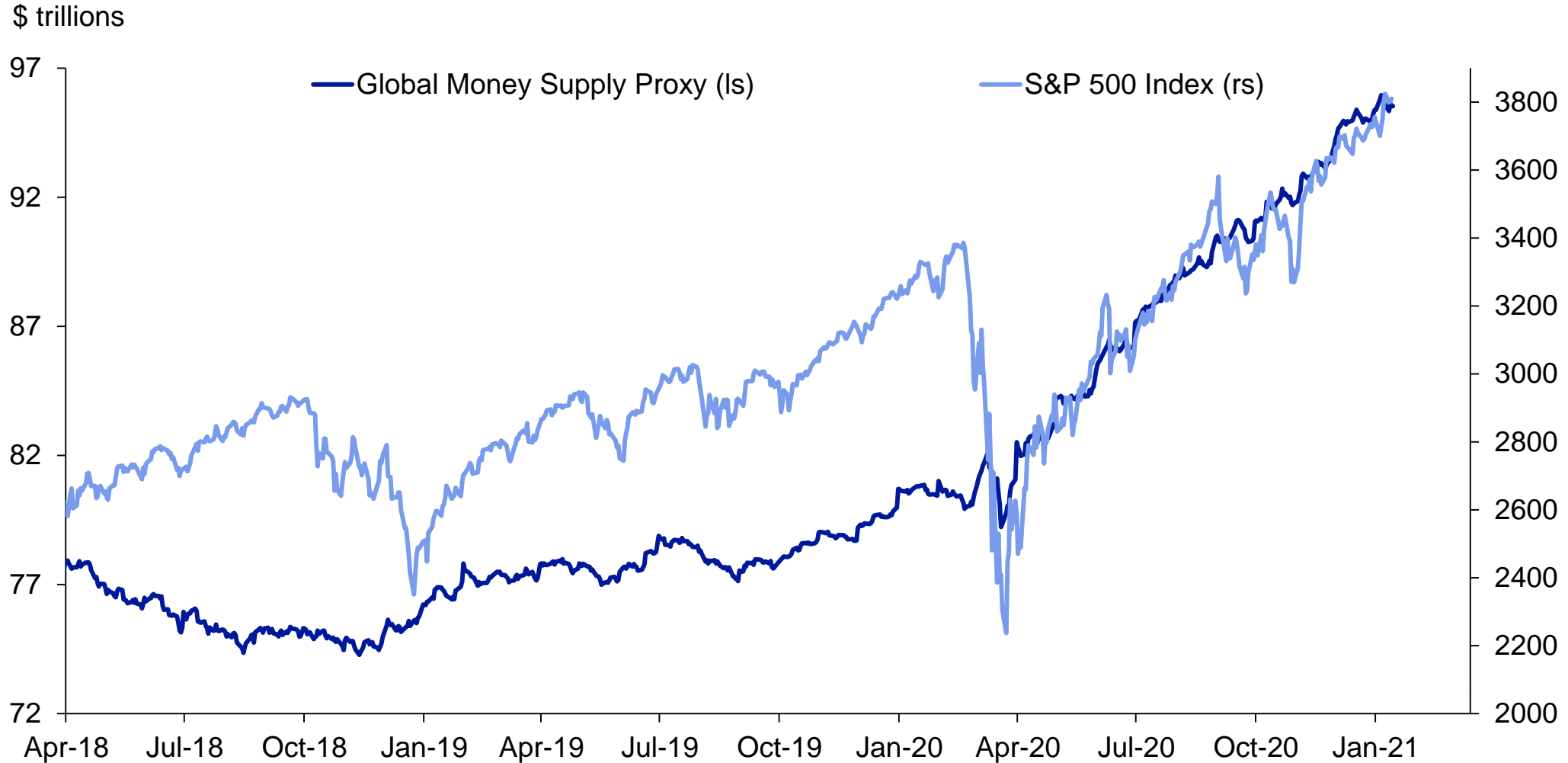


Source: Bloomberg Finance LP, Deutsche Bank



Little doubt central banks have helped pushed markets higher, especially since March... but the trend was there pre-pandemic...

S&P 500 and Global Liquidity



Source: Bloomberg Finance LP, Deutsche Bank

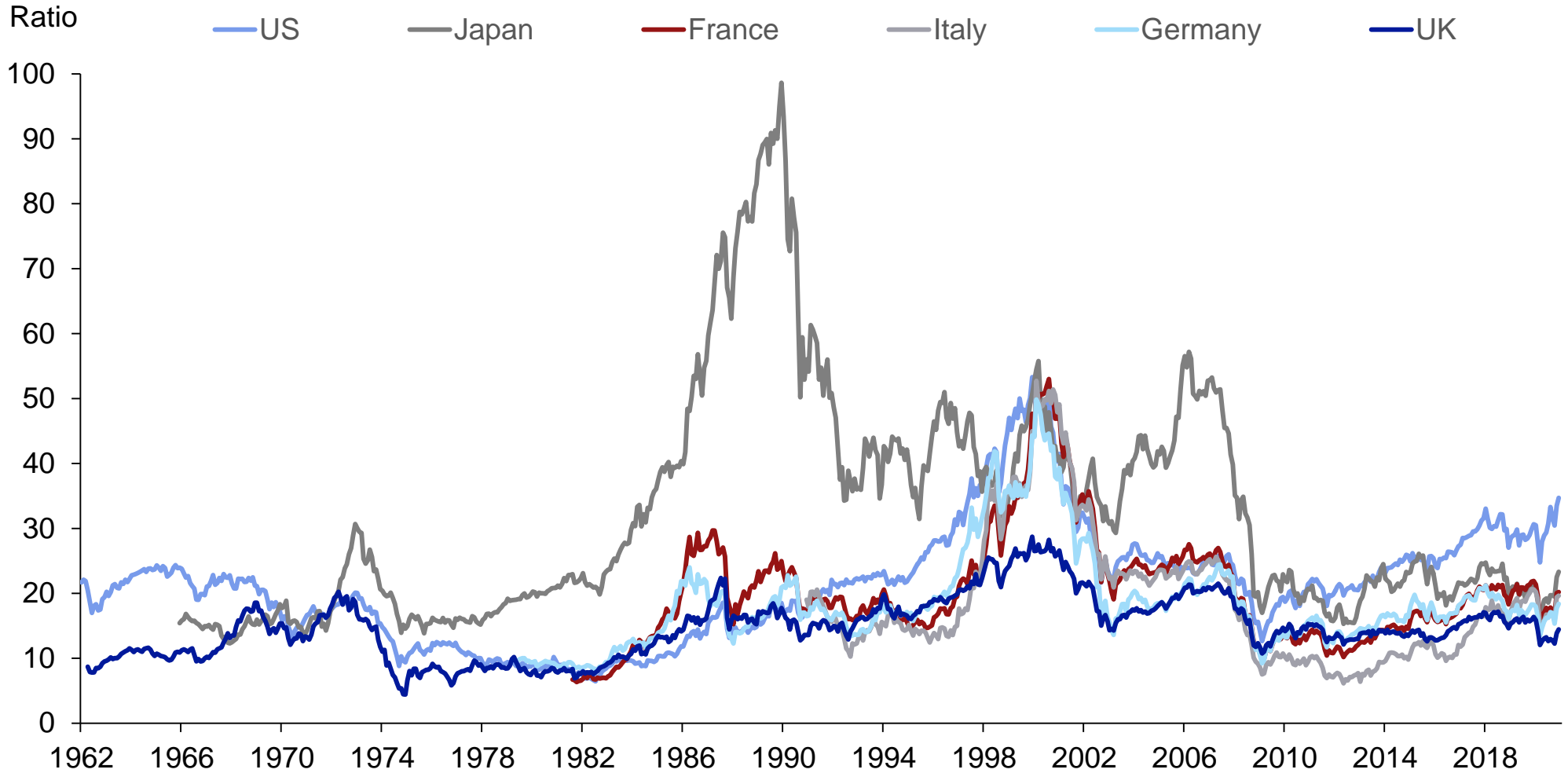


No sign of a bubble in non-US DM
equities..

International equities at significantly lower valuations than US... n.b. Japan's bubble c.1990 was remarkable...



CAPE ratio of major developed market equities...



Note: Legend arranged from high to low based on the current value.

Source: Bloomberg Finance LP, Deutsche Bank

International equities at significantly lower valuations than US...



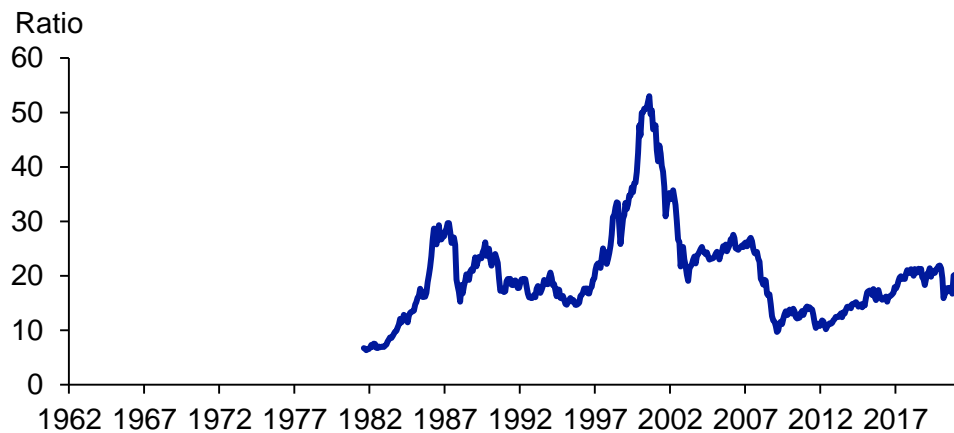
CAPE ratio: UK



CAPE ratio: Germany



CAPE ratio: France



CAPE ratio: Japan

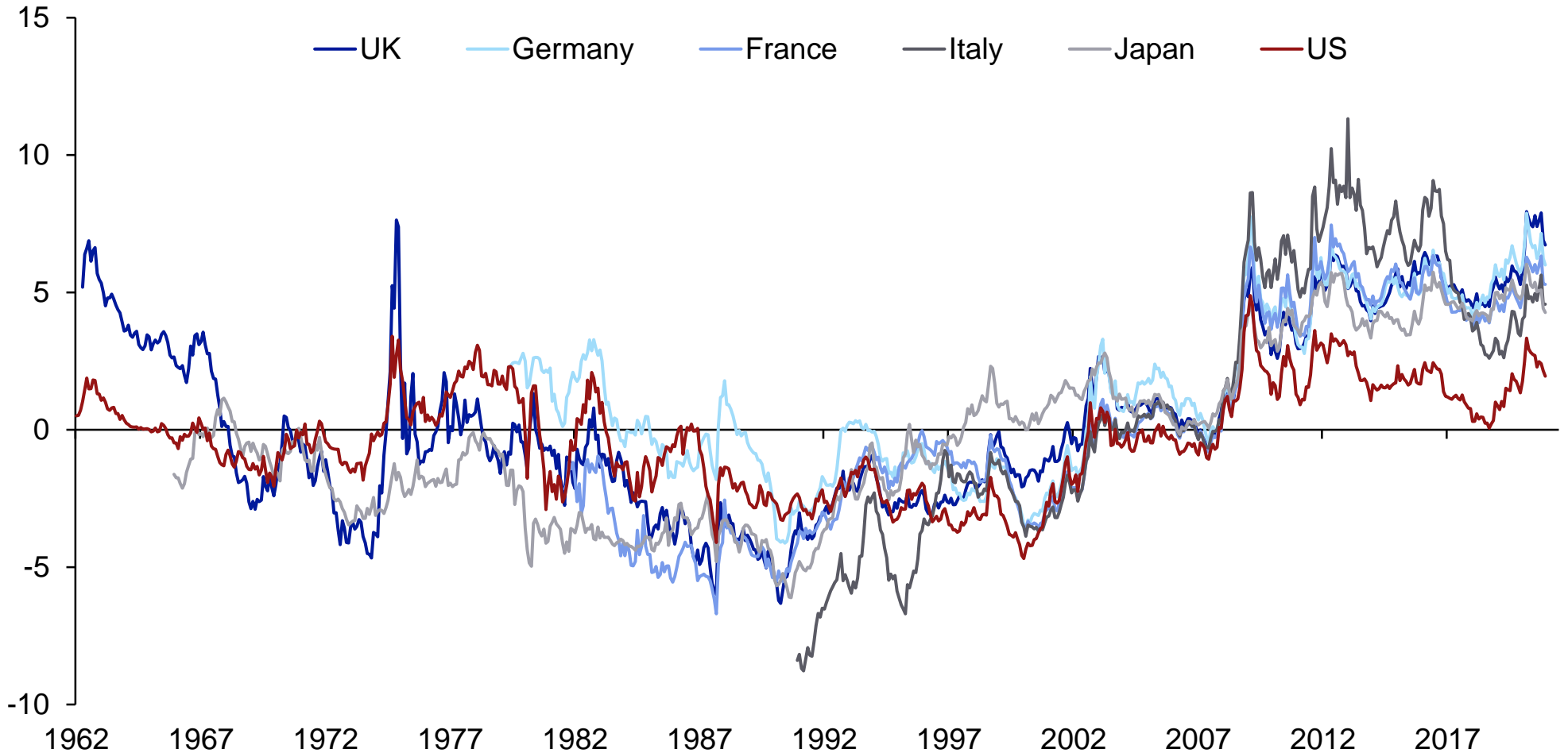


Source: GFD, Deutsche Bank

Equities very 'cheap' to bonds outside of the US. As we've seen earlier US equities slightly cheap to bonds.



Earnings Yield minus Bond Yield using CAPE ratios

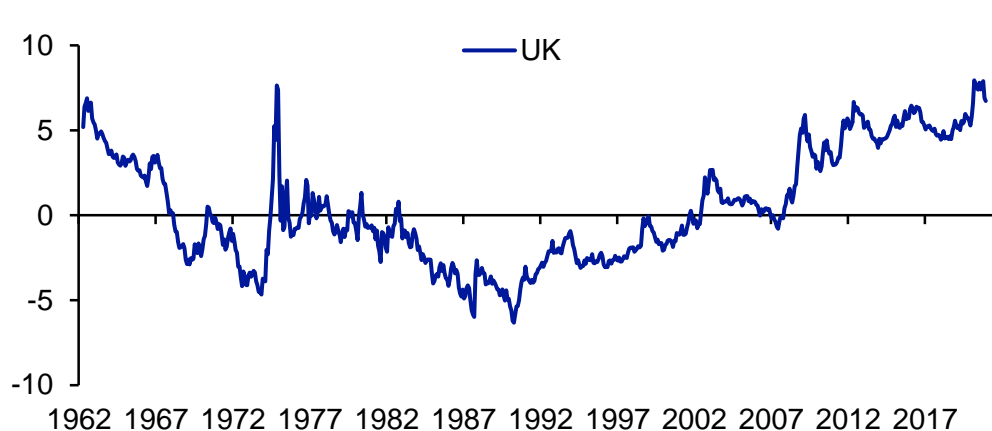


Source: GFD, Deutsche Bank

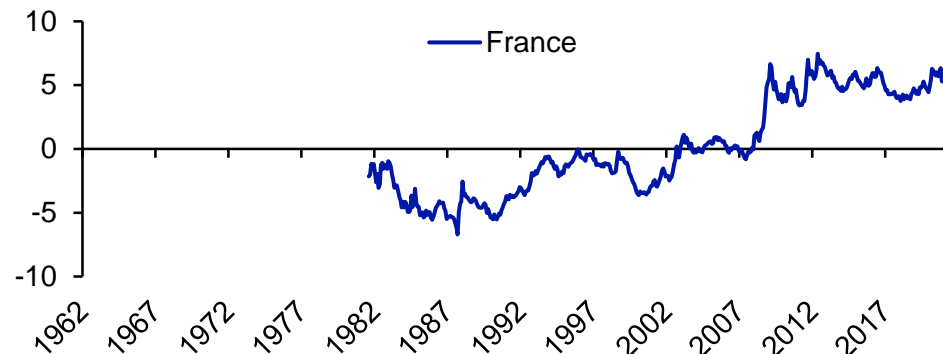
Breaking down equity vs bond valuations by country...



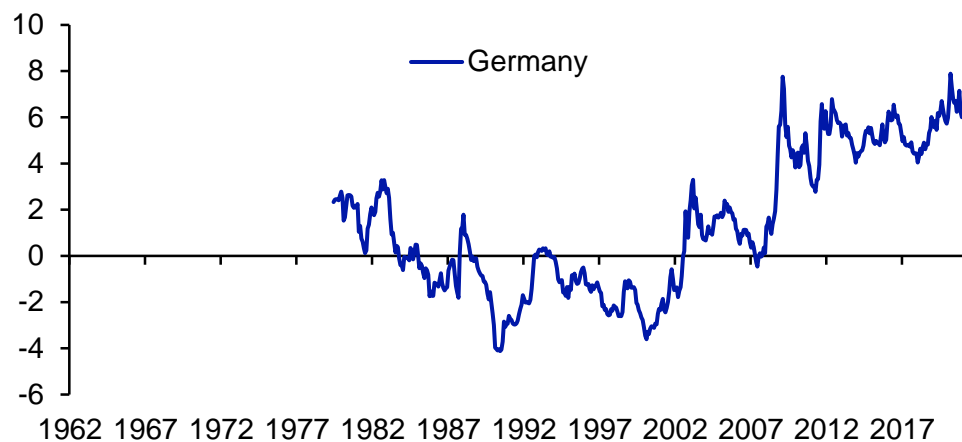
Earnings Yield minus Bond Yield using CAPE ratio



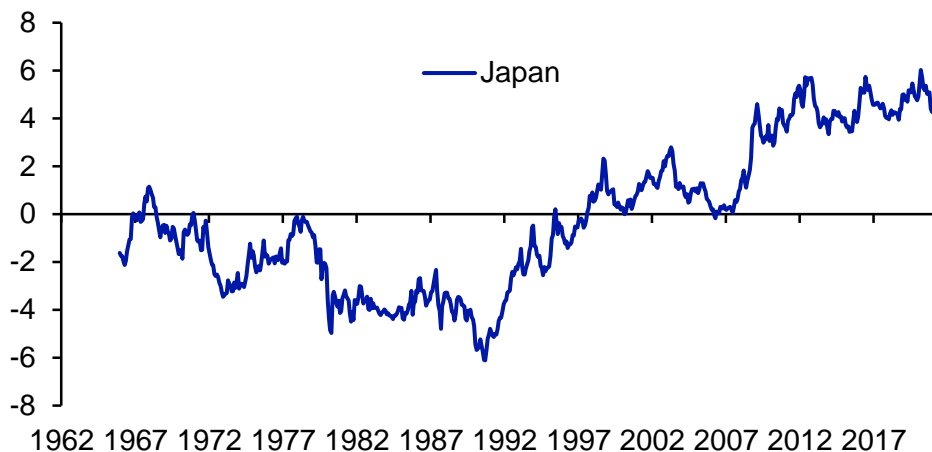
Earnings Yield minus Bond Yield using CAPE ratio



Earnings Yield minus Bond Yield using CAPE ratio



Earnings Yield minus Bond Yield using CAPE ratio



Source: GFD, Deutsche Bank

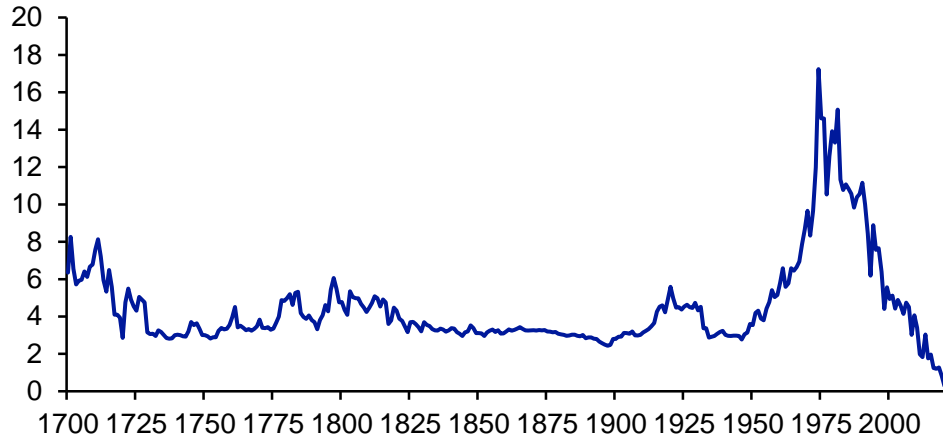


Equities cheap to bonds, but are bonds in a bubble..?

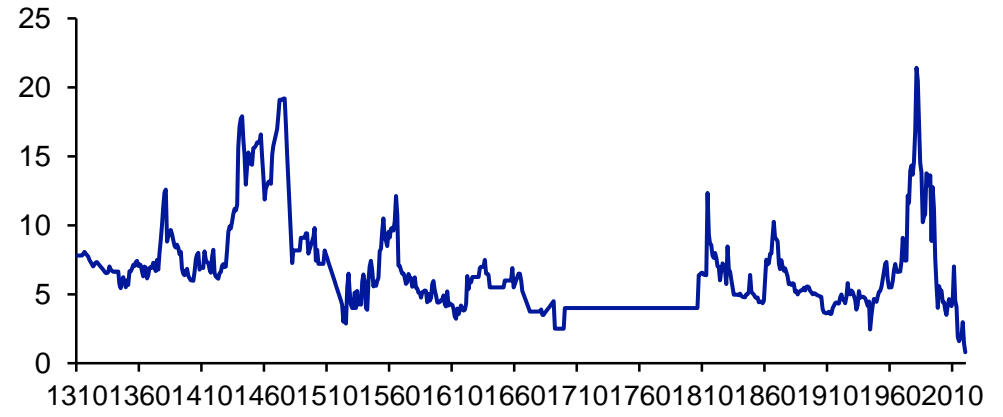
Are bonds in one immense 'once in a millennium' bubble? Albeit one that has lasted a few years now.



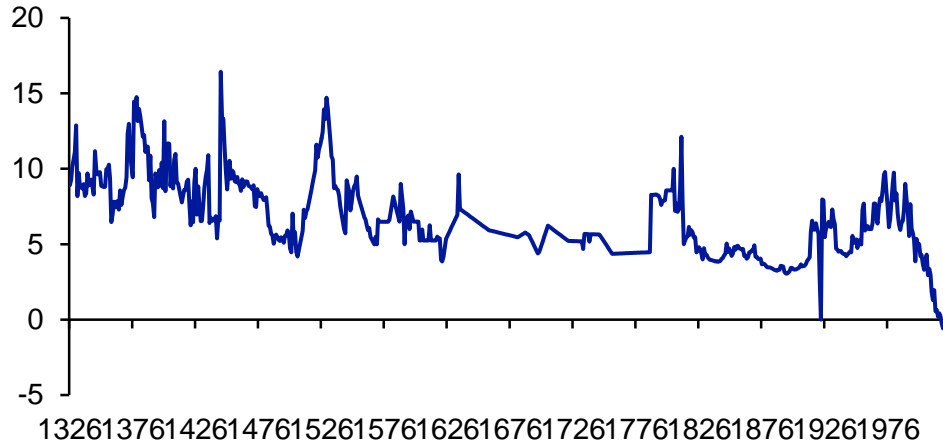
10 year yield : United Kingdom



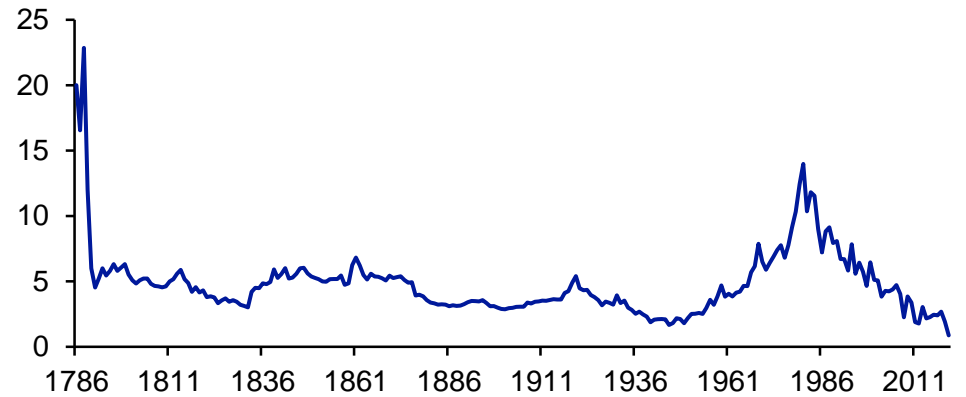
10 year yield : Italy



10 year yield : Germany



10 year yield : United States

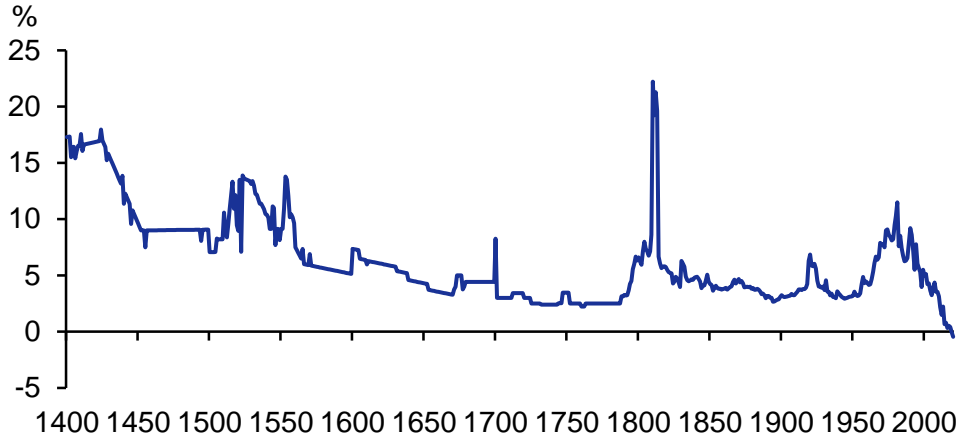


Source: GFD, Bloomberg Finance LP, Deutsche Bank. Where actual 10yr bonds were not available, various proxies have been used through history.

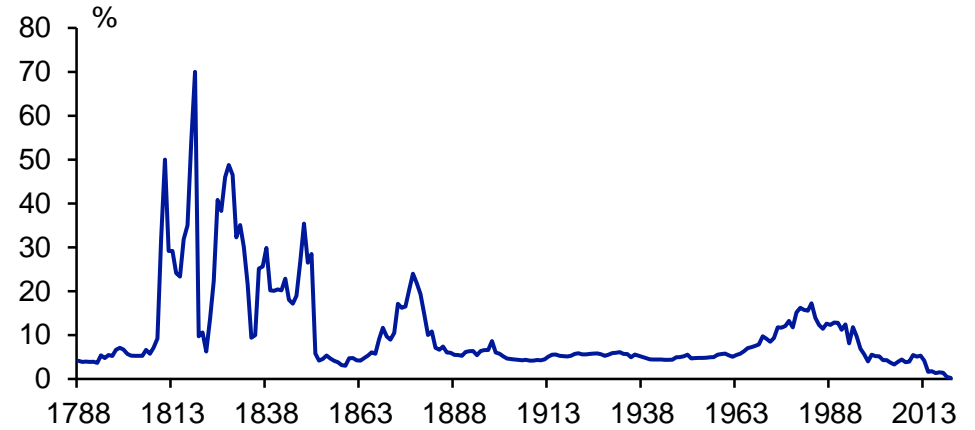
But are bonds in one immense 'once in a millennium' bubble? Albeit one that has lasted a few years now. Part 2.



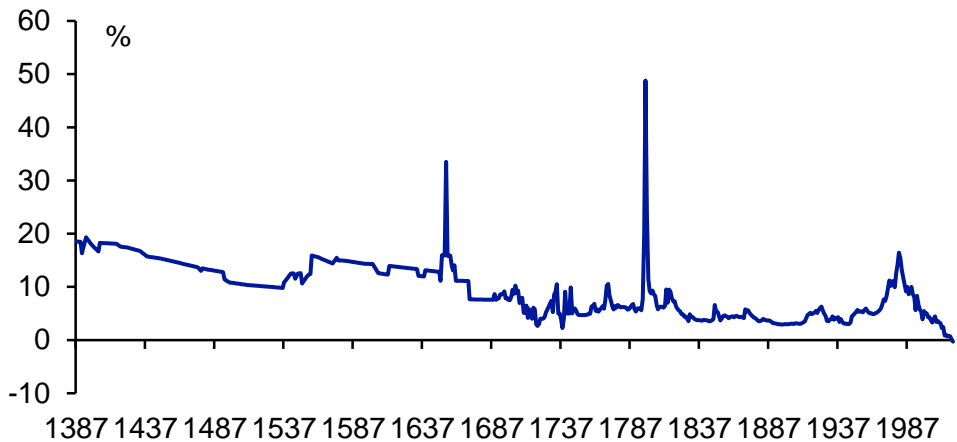
10 year yield : Netherlands



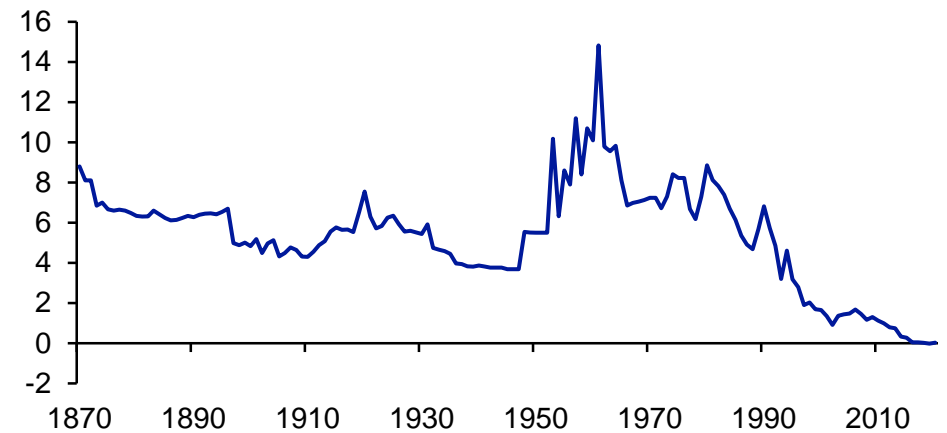
10 year yield : Spain



10 year yield : France



10 year yield : Japan

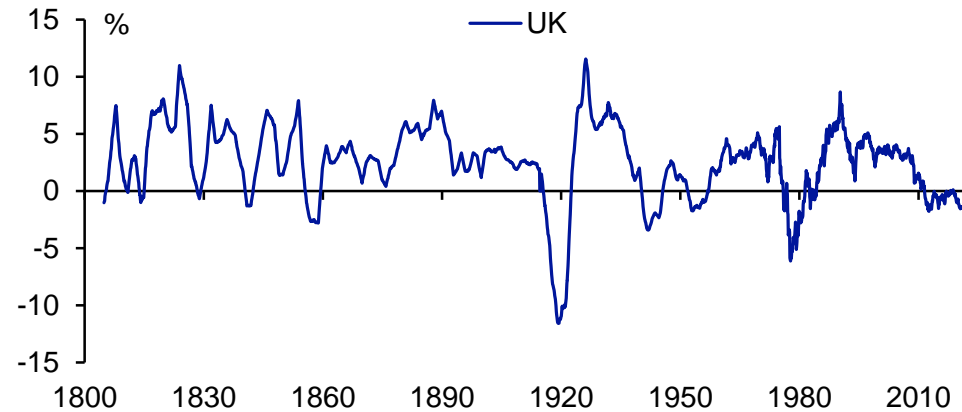


Source: GFD, Bloomberg Finance LP, Deutsche Bank

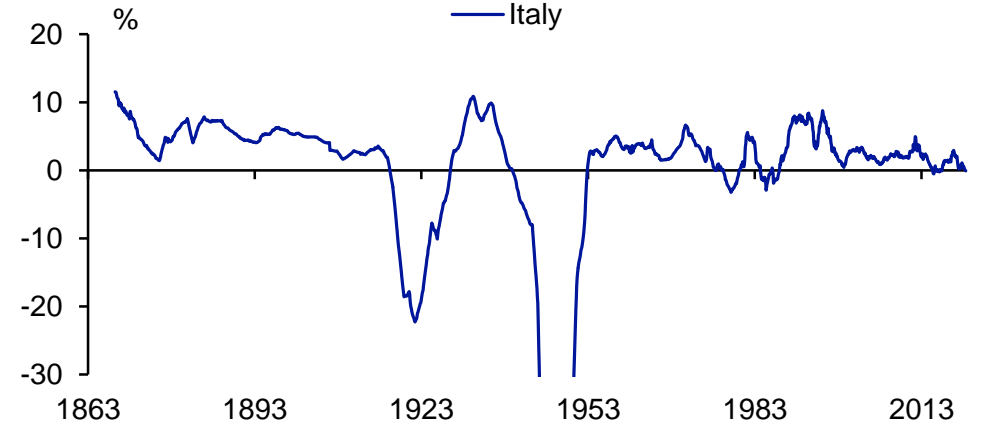


Less of a bubble in real yields but most still negative and historically low....

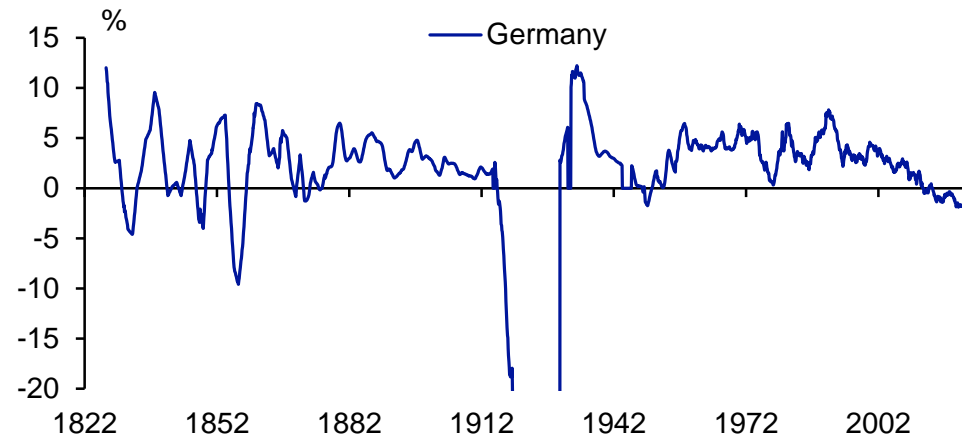
Real yield : UK



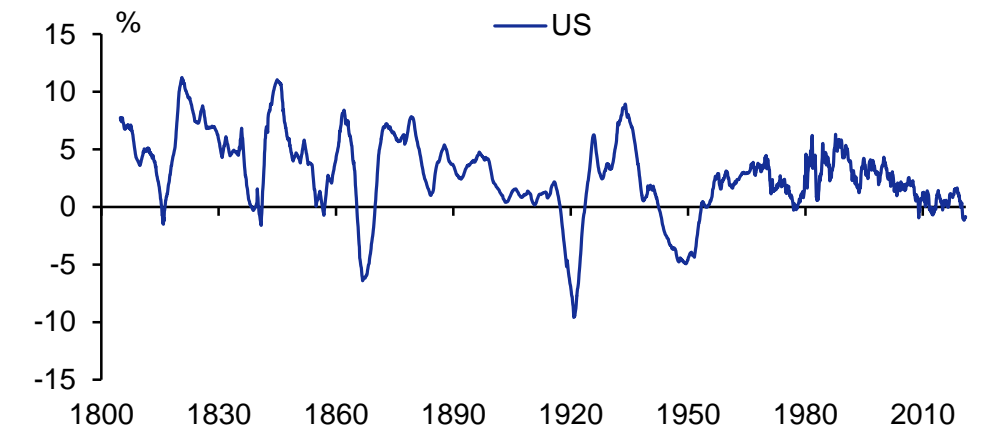
Real yield : Italy



Real yield: Germany



Real yield: United States

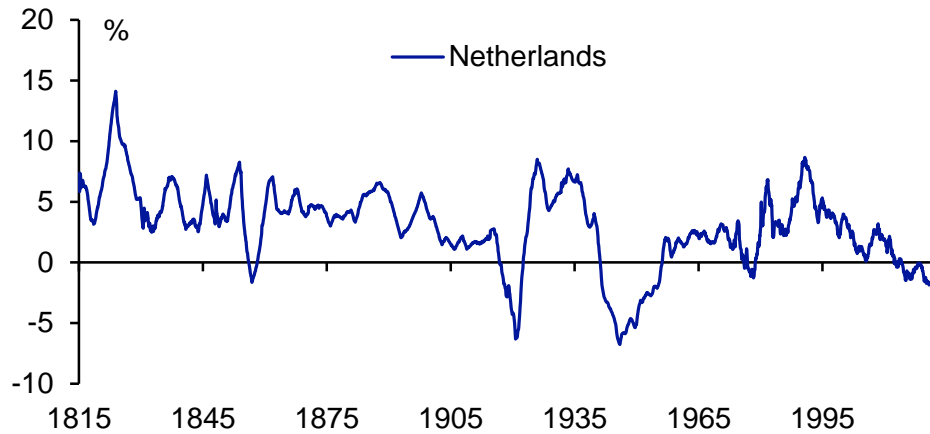


Source: GFD, Bloomberg Finance LP, Deutsche Bank. Real yields calculated by subtracting average of last 5yrs of inflation from current bond yields.

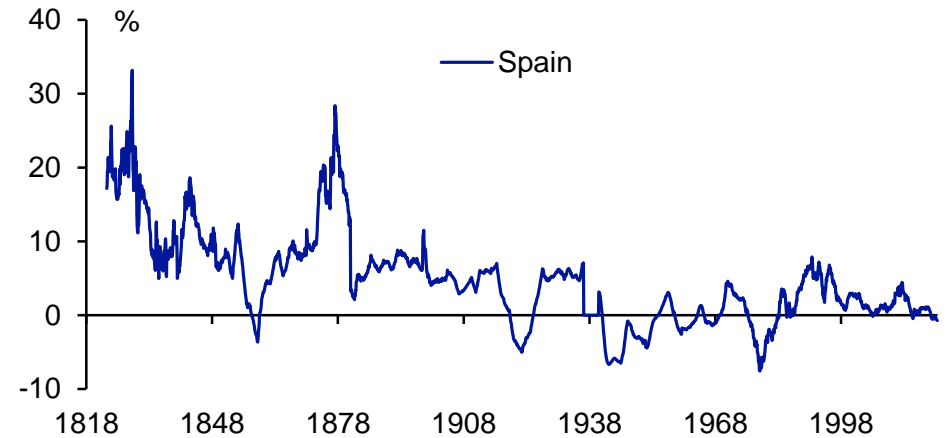
Less of a bubble in real yields but most still negative and historically low....



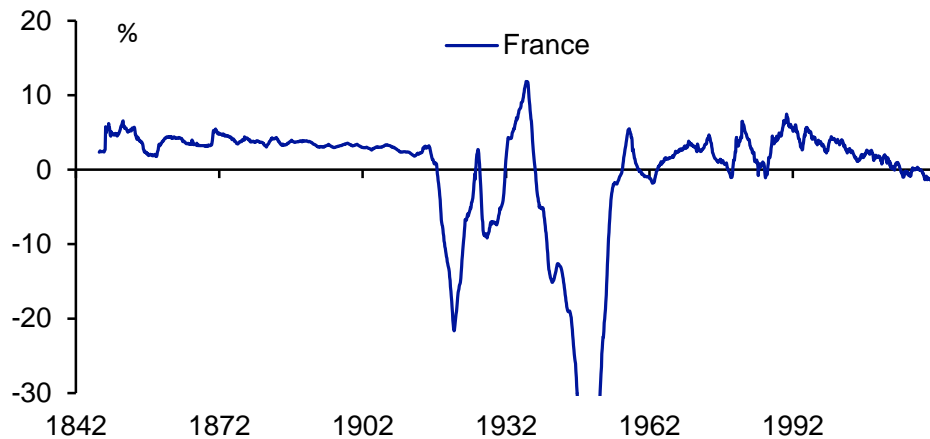
Real yield : Netherlands



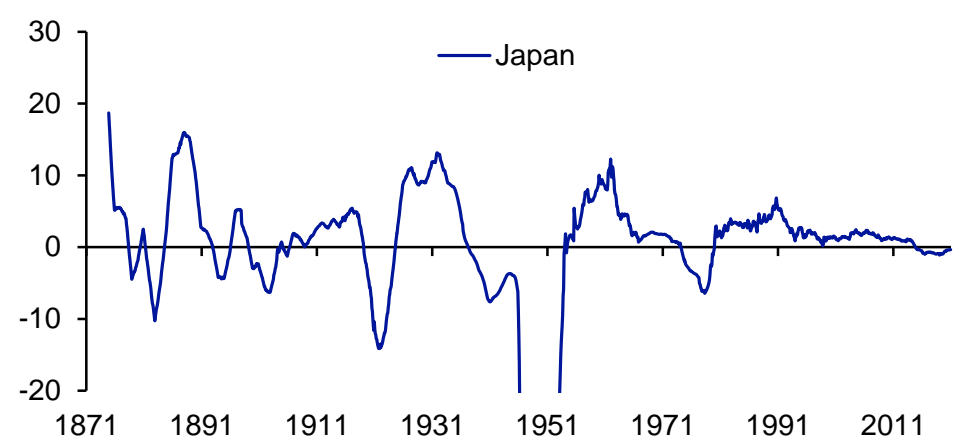
Real yield : Spain



Real yield : France



Real yield: Japan



Source: GFD, Bloomberg Finance LP, Deutsche Bank. Real yields calculated by subtracting average of last 5yrs of inflation from current bond yields.

Volume of global negative yielding debt close to record highs...



Global Aggregate Negative Yielding Debt Market Value

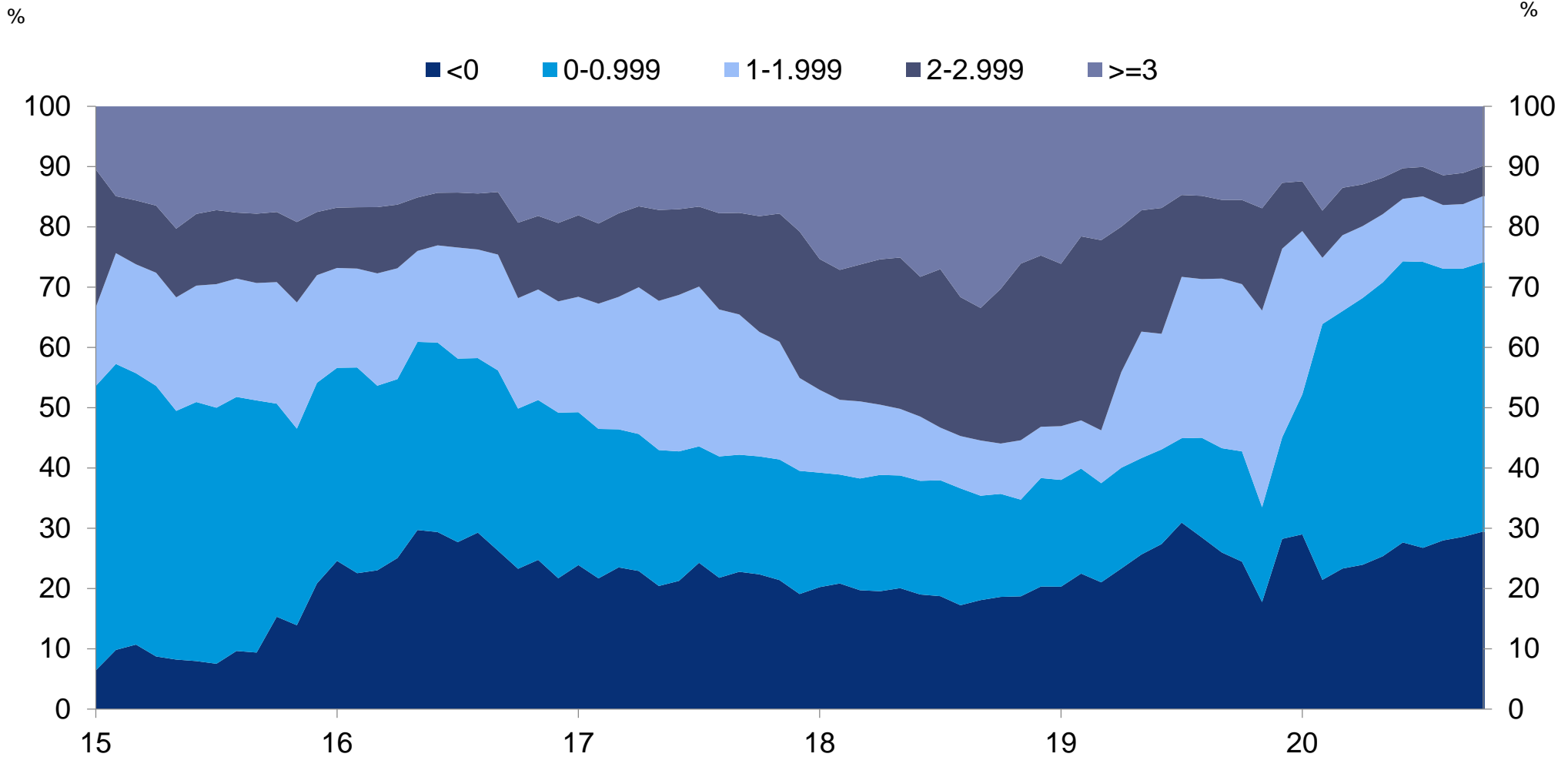


Source: Bloomberg Finance LP, Deutsche Bank

Big 12 month increase in sub-1% global yielding paper (Govt plus non-Govt).. Over 70% now below 1%



Share of various bonds outstanding in global bond market by yield bucket

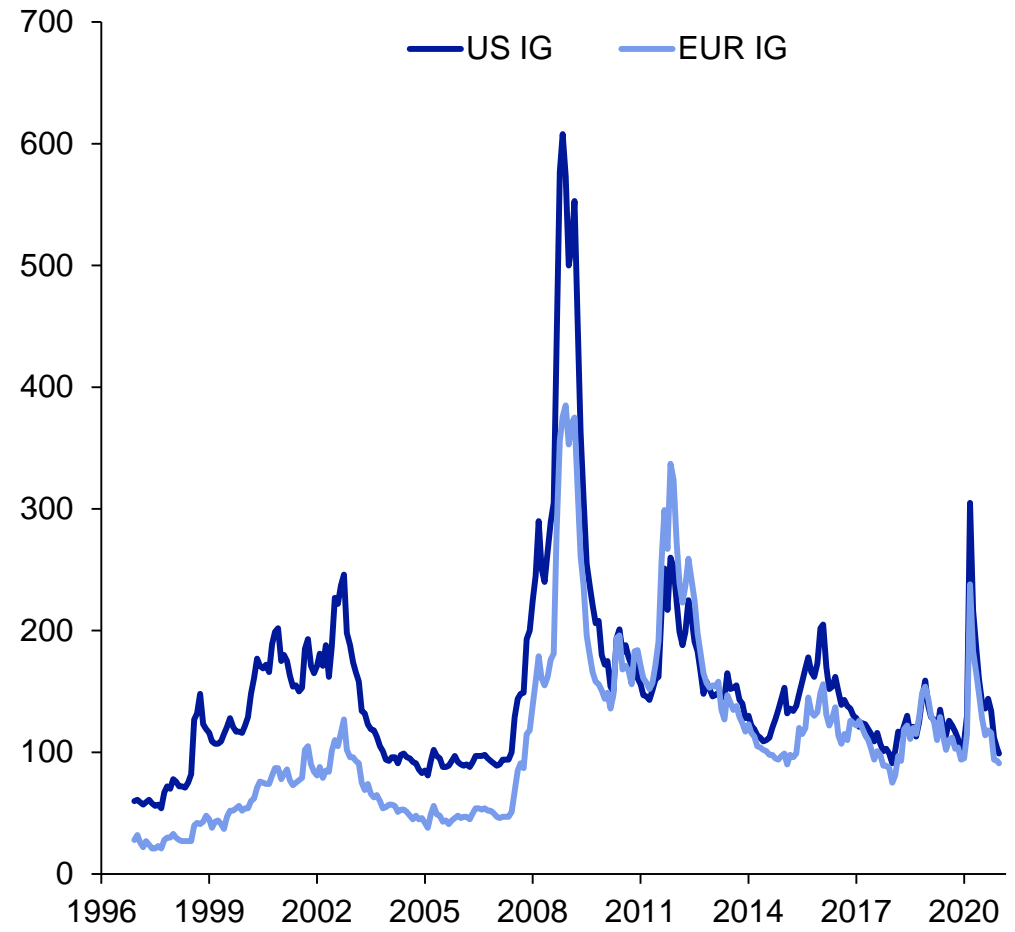
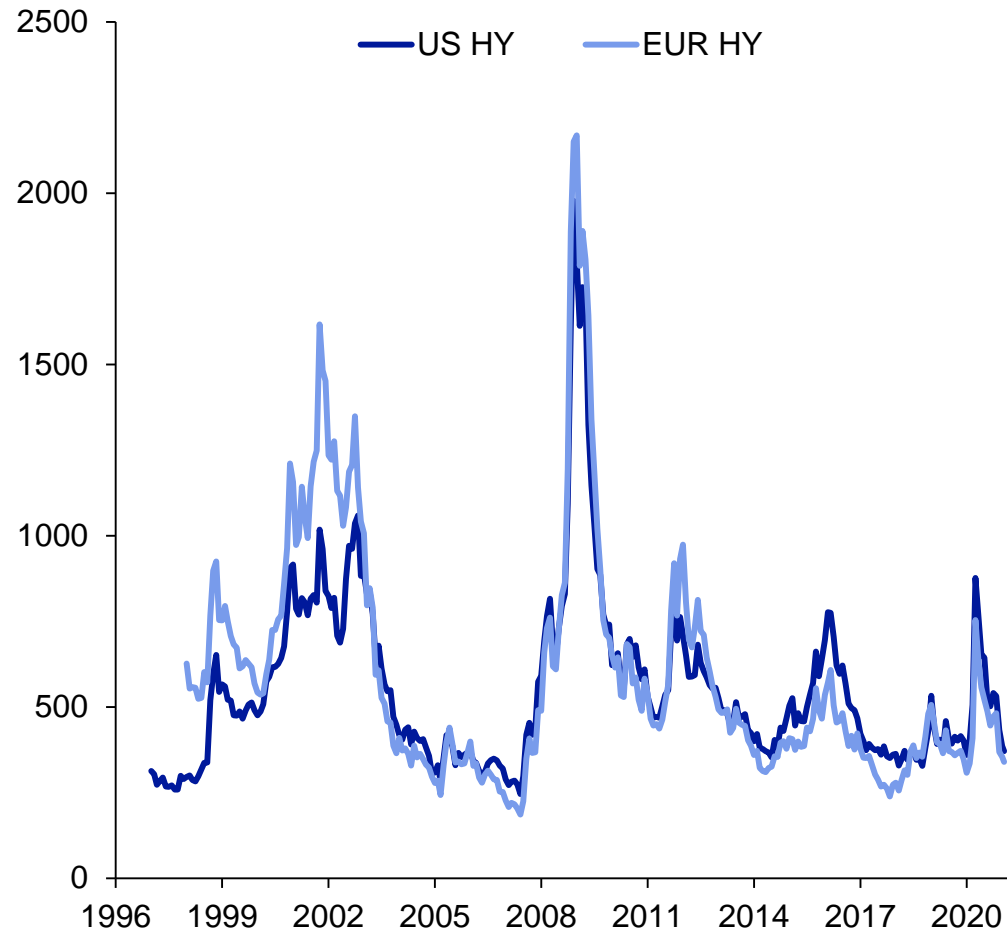


Source: Bloomberg Finance LP, Deutsche Bank

Credit spreads tight but they typically spend long periods very tight before intense spikes higher in recessions/crises....



US and European HY and IG credit spreads...

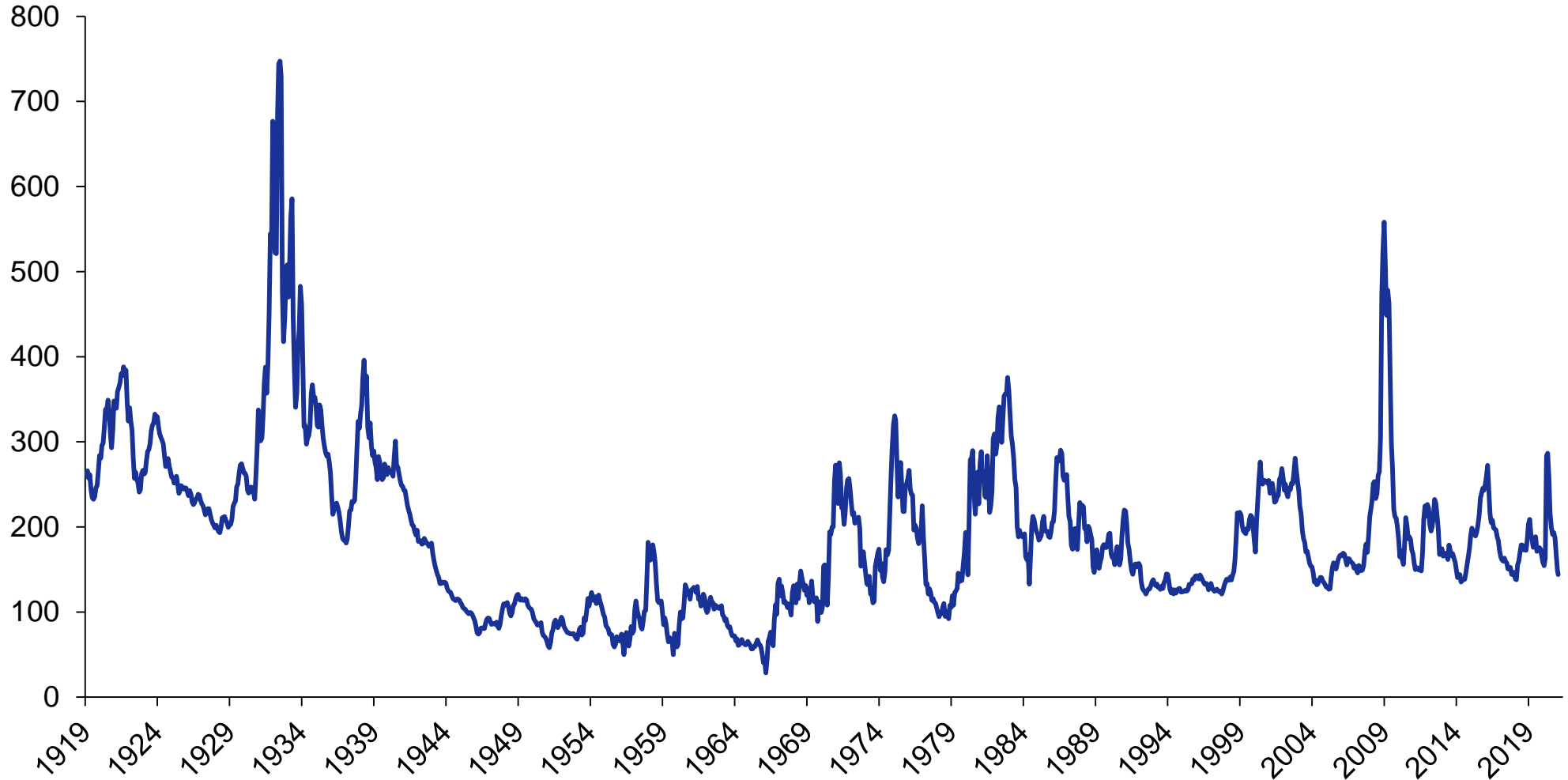


Source: GFD, Bloomberg Finance LP, Deutsche Bank

Credit spreads tight but they typically spend long periods very tight before intense spikes higher in recessions/crises....



Moody's Baa Spread



Source: GFD, Bloomberg Finance LP, Deutsche Bank



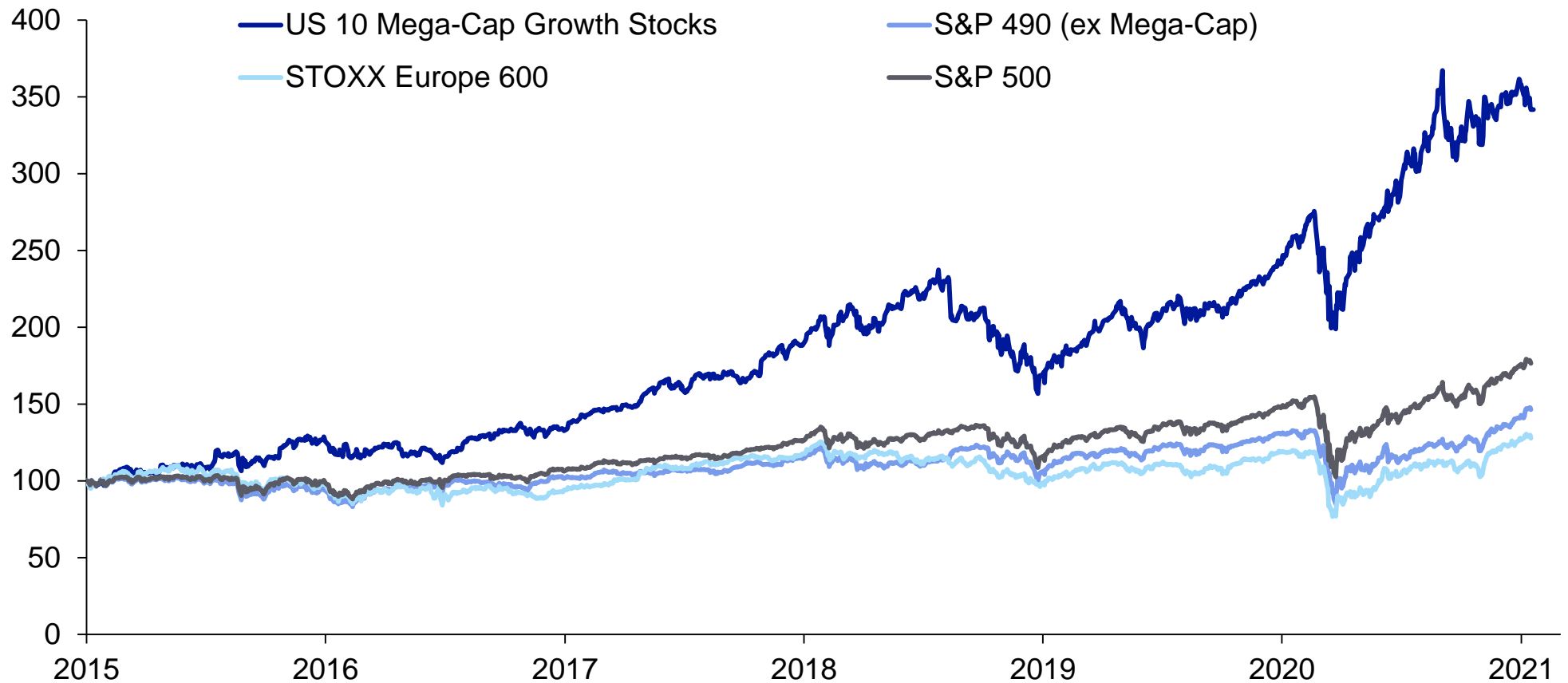
Bubble potential more obvious in US tech than in wider US market?

10 Mega-cap growth stocks (c.30% of S&P 500) propelling market in recent years. Other 490 only just ahead of Stoxx 600 over last 6 years...



Outside 10 mega-cap growth stocks, the S&P 500 market cap tracks much closer to the Stoxx 600 in USD terms

Reindexed Dec 31, 2014=100

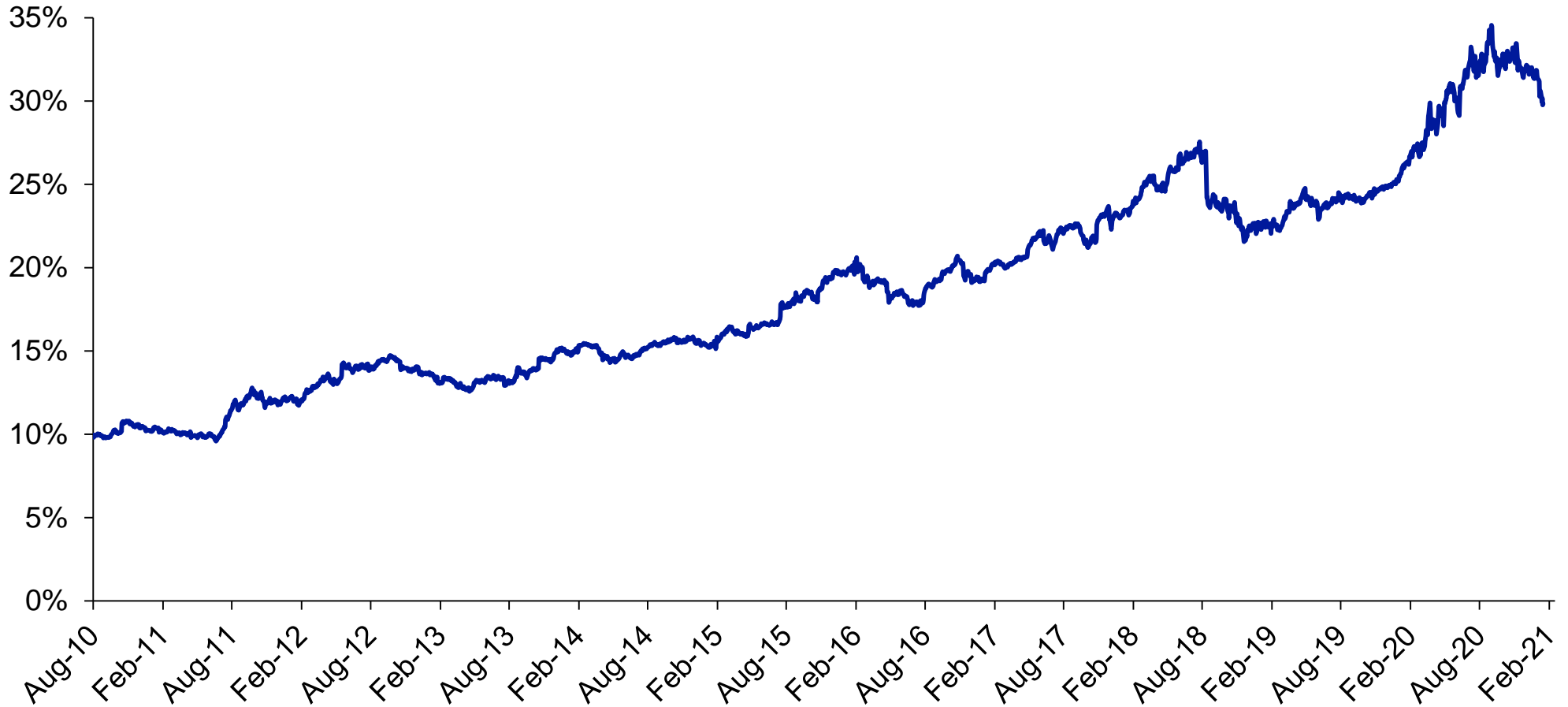


Source: Bloomberg Finance LP, Deutsche Bank

The 10 US Mega-Cap Growth stocks have just grown and grown but slightly off their peak weighting...



Proportion of S&P 500 contributed by the top-ten mega-cap growth stocks *



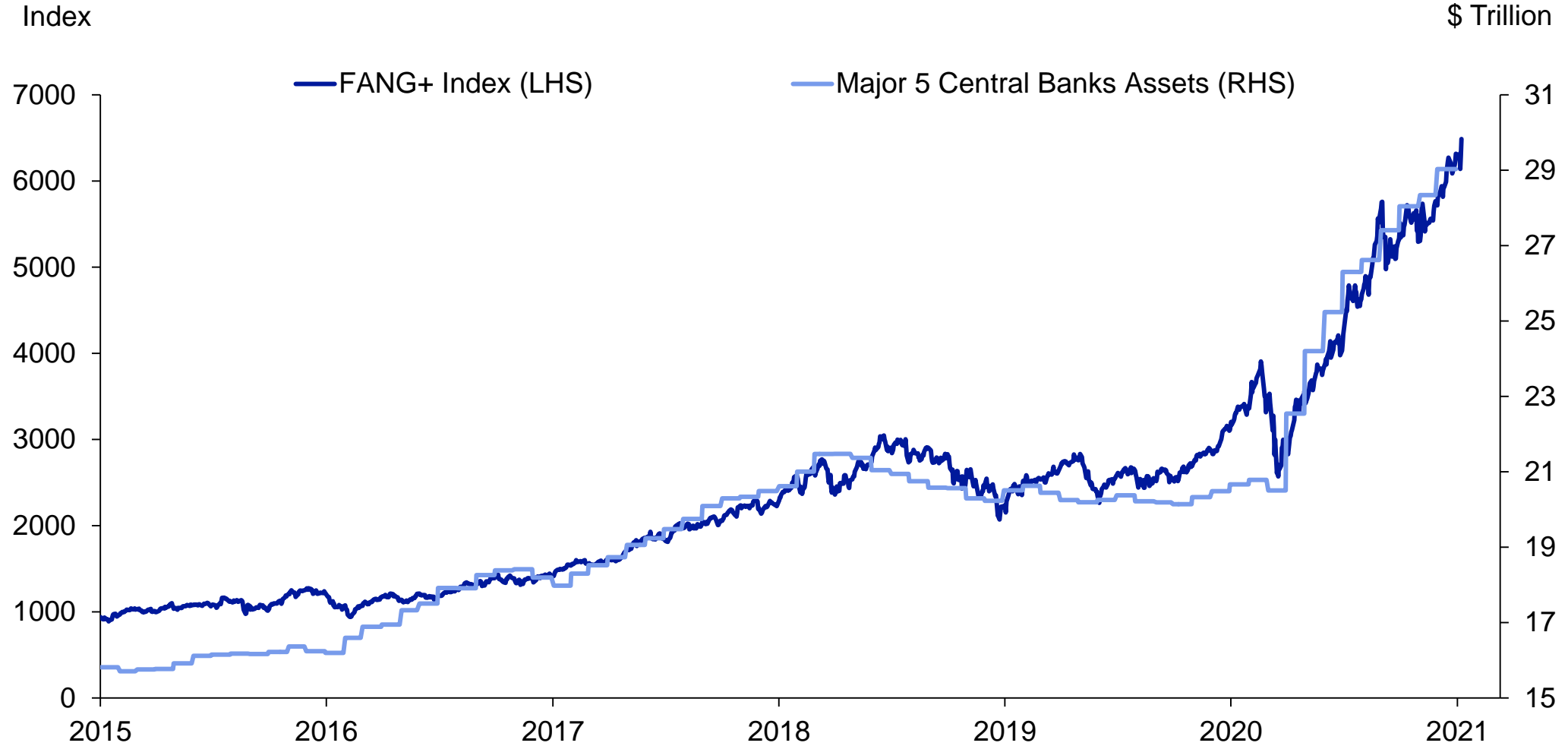
* Note, Facebook listed its stock in 2012

Source : Bloomberg Finance LP, Deutsche Bank

The FANG+ index has tracked the large Central Bank stimulus.... Could valuations cope with normalization?



FANG+ Index vs. major 5 Central Banks Index

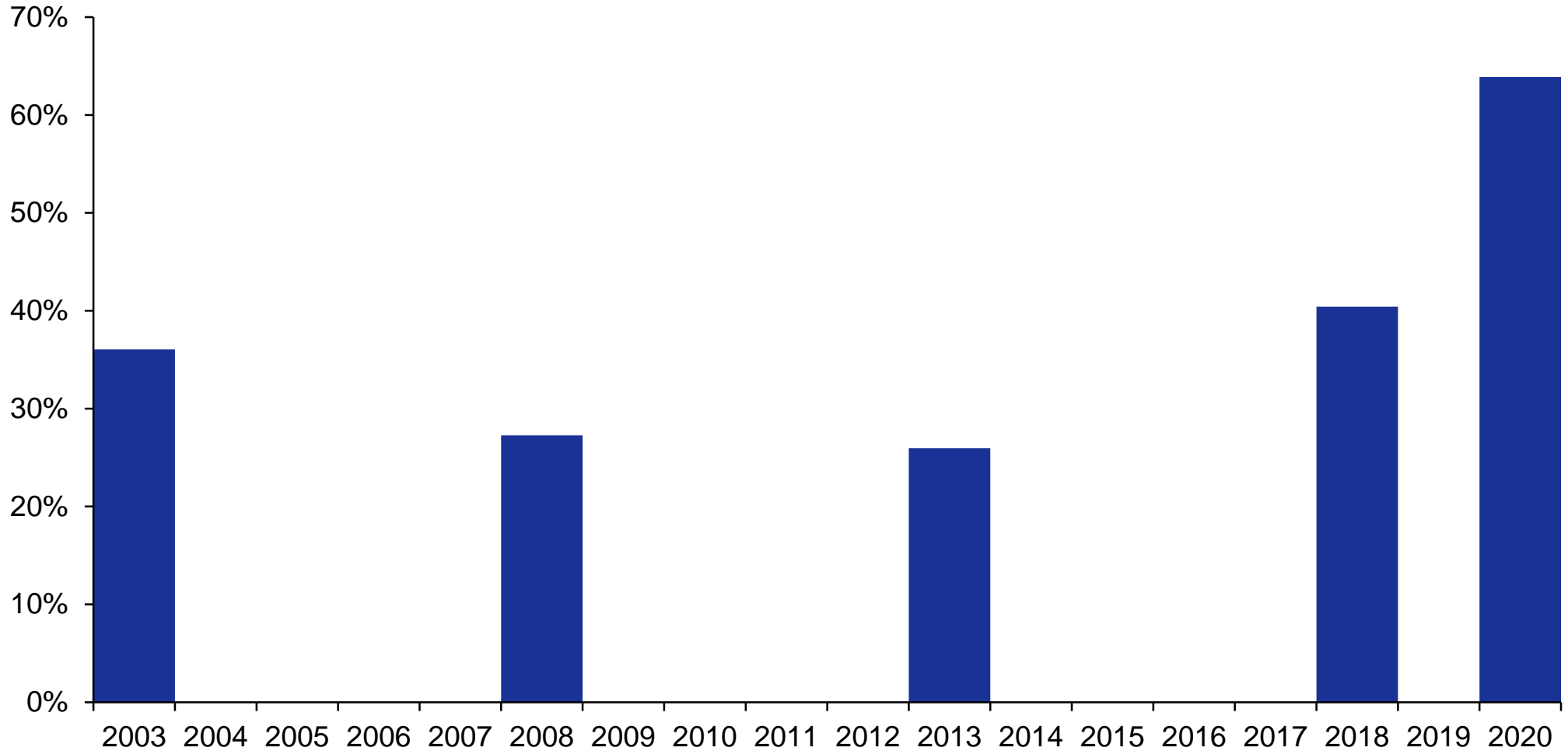


Source: Bloomberg Finance LP, Haver Analytics, Deutsche Bank

The biggest have never been so big... 9 out of 10 are currently tech and 6 are US companies...



Market cap of the 10 largest global companies relative to the next 90

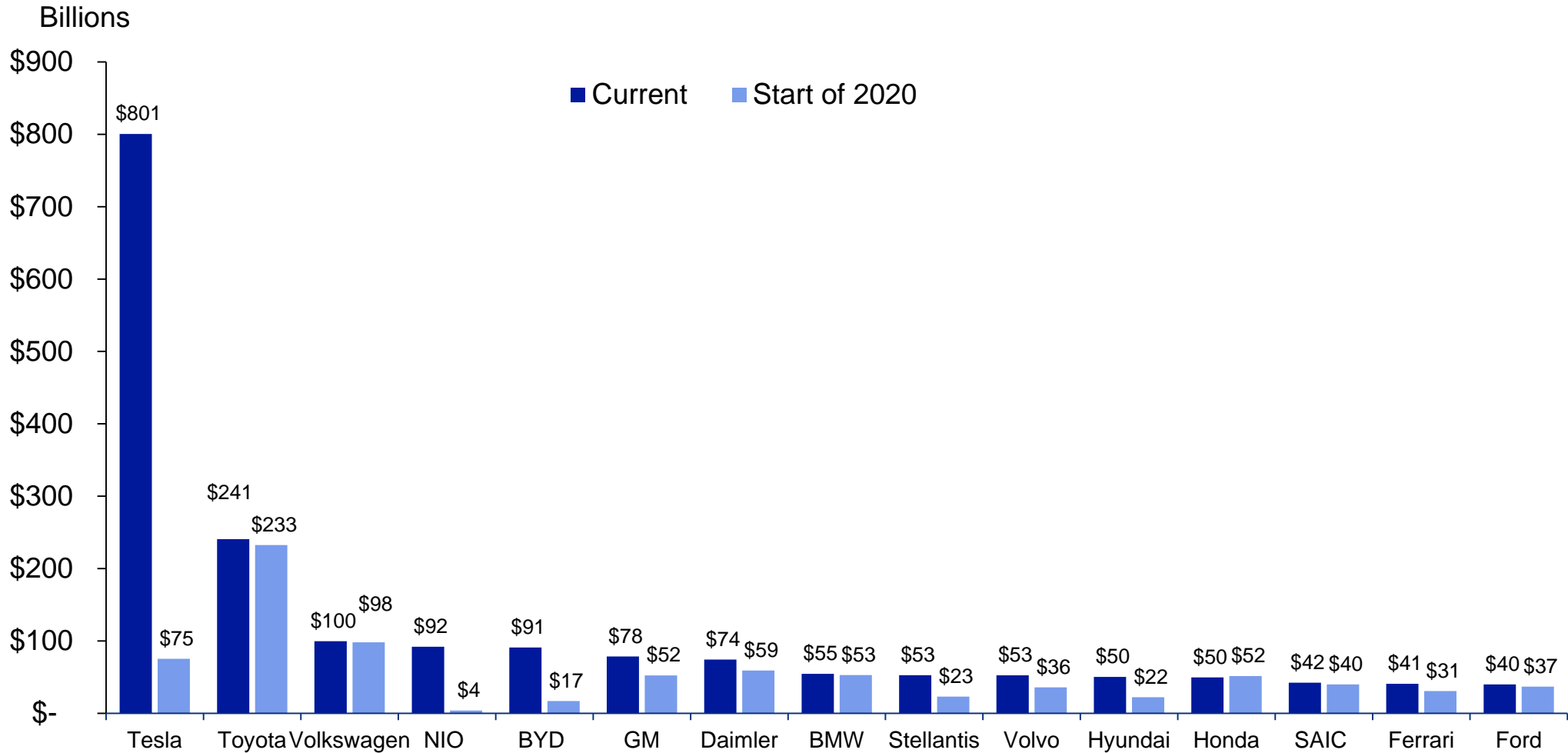


Source : Bloomberg Finance LP, Deutsche Bank Note: Data as of August in given year, except for 2020 when November is used

Tesla's rise remarkable.... Is it justified?



Market Value of Tesla plus next largest 14 global auto manufacturers. Tesla is now larger than the next eight largest combined..

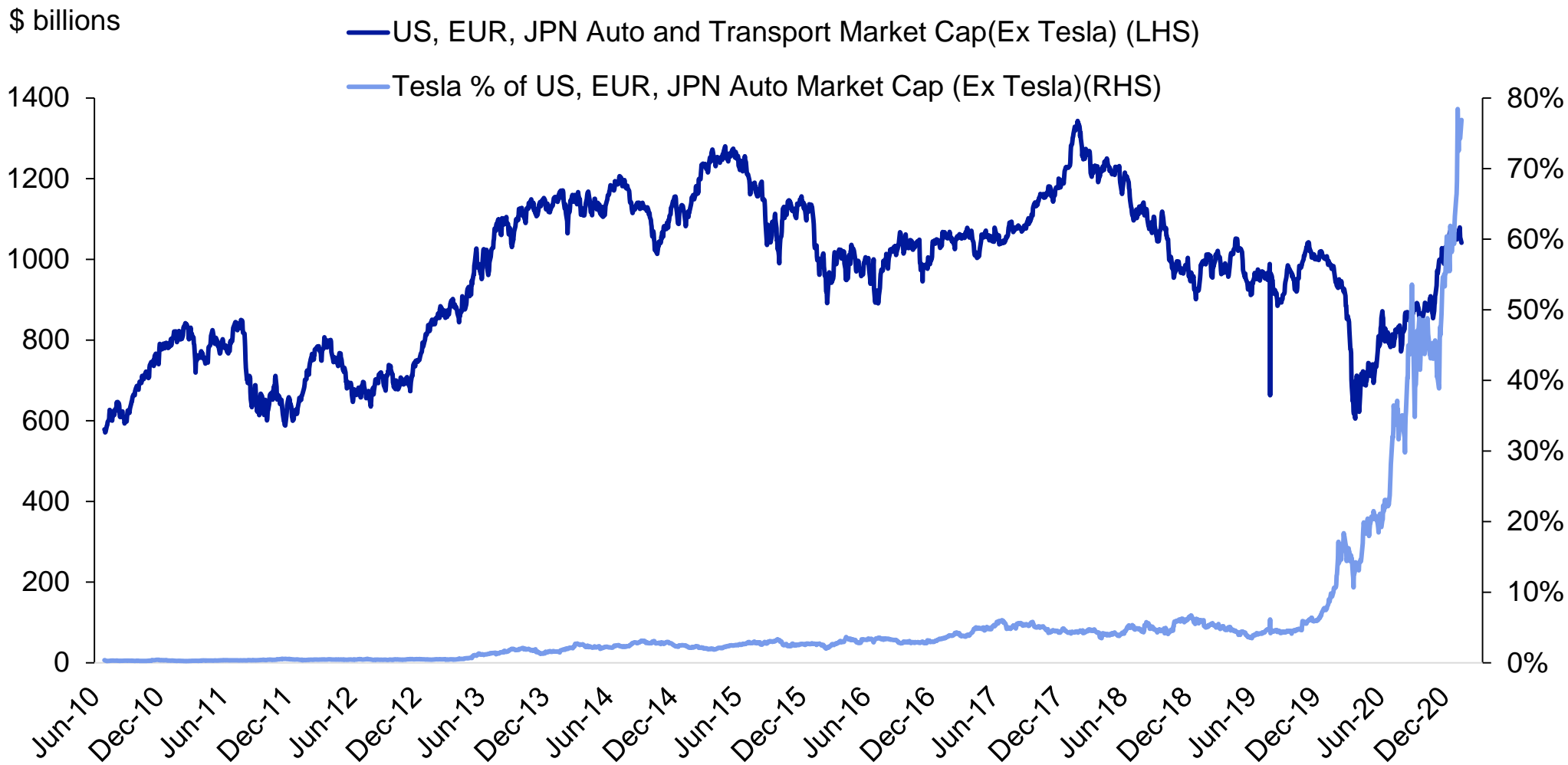


Source :Bloomberg Finance LP, Deutsche Bank



Is Tesla a sign of bubble like tendencies in “growth” US equities? Or the start of a new era? It is now in top 6 biggest companies in the world and c.80% the size of the entire US, EU and Japanese Auto markets (ex Tesla)

Tesla market cap relative to US, EU and JPN equity auto sectors

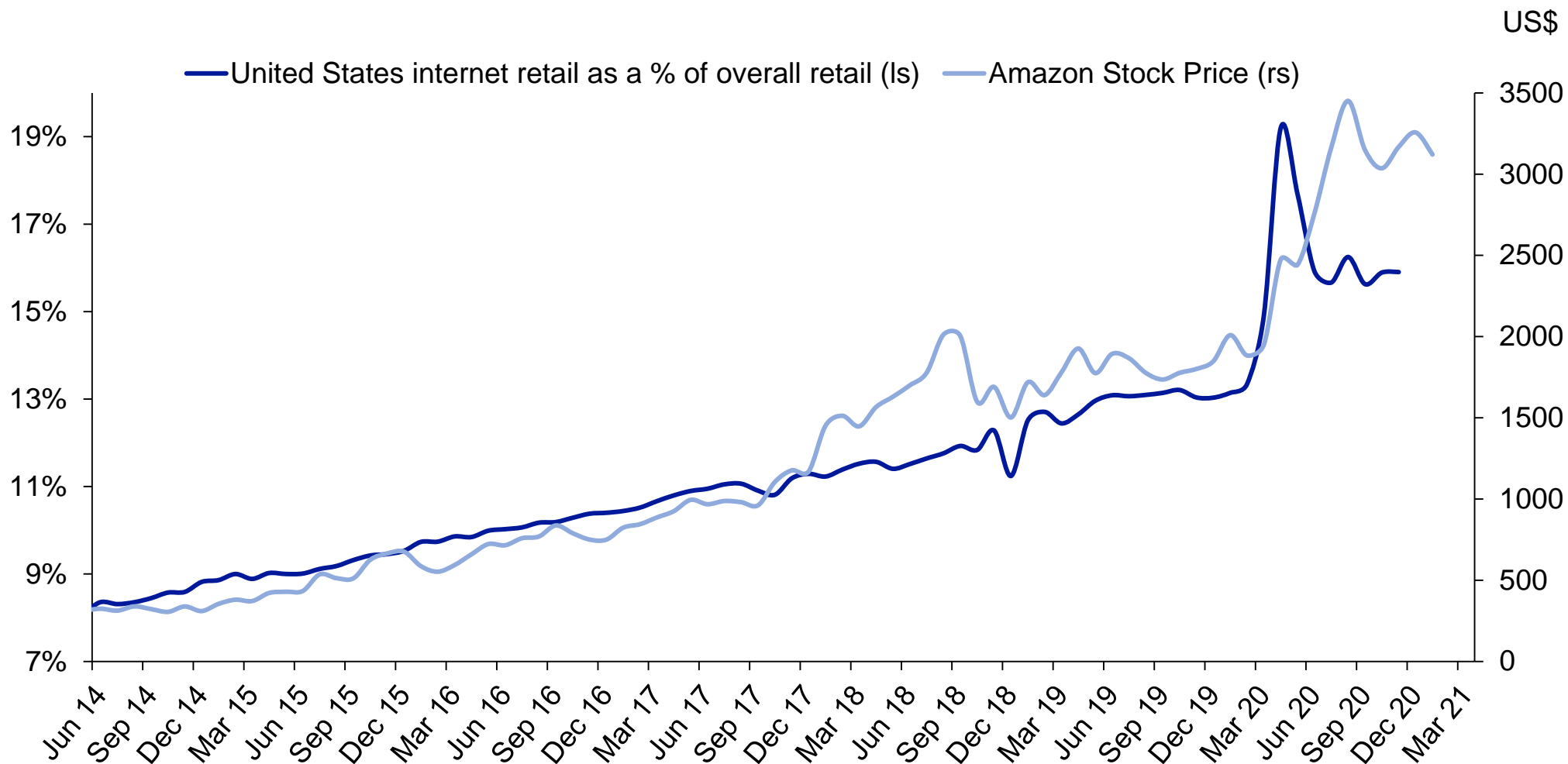


Source: Bloomberg Finance LP, DB Asset Allocation, DB Global Research

Amazon's recent rally coincided with a spike in online retail sales as a percentage of the overall US retail market... However although online sales will stay structurally higher, does that justify current valuations...? Especially if normality returns in H1.



Amazon Stock price and internet sales in United States

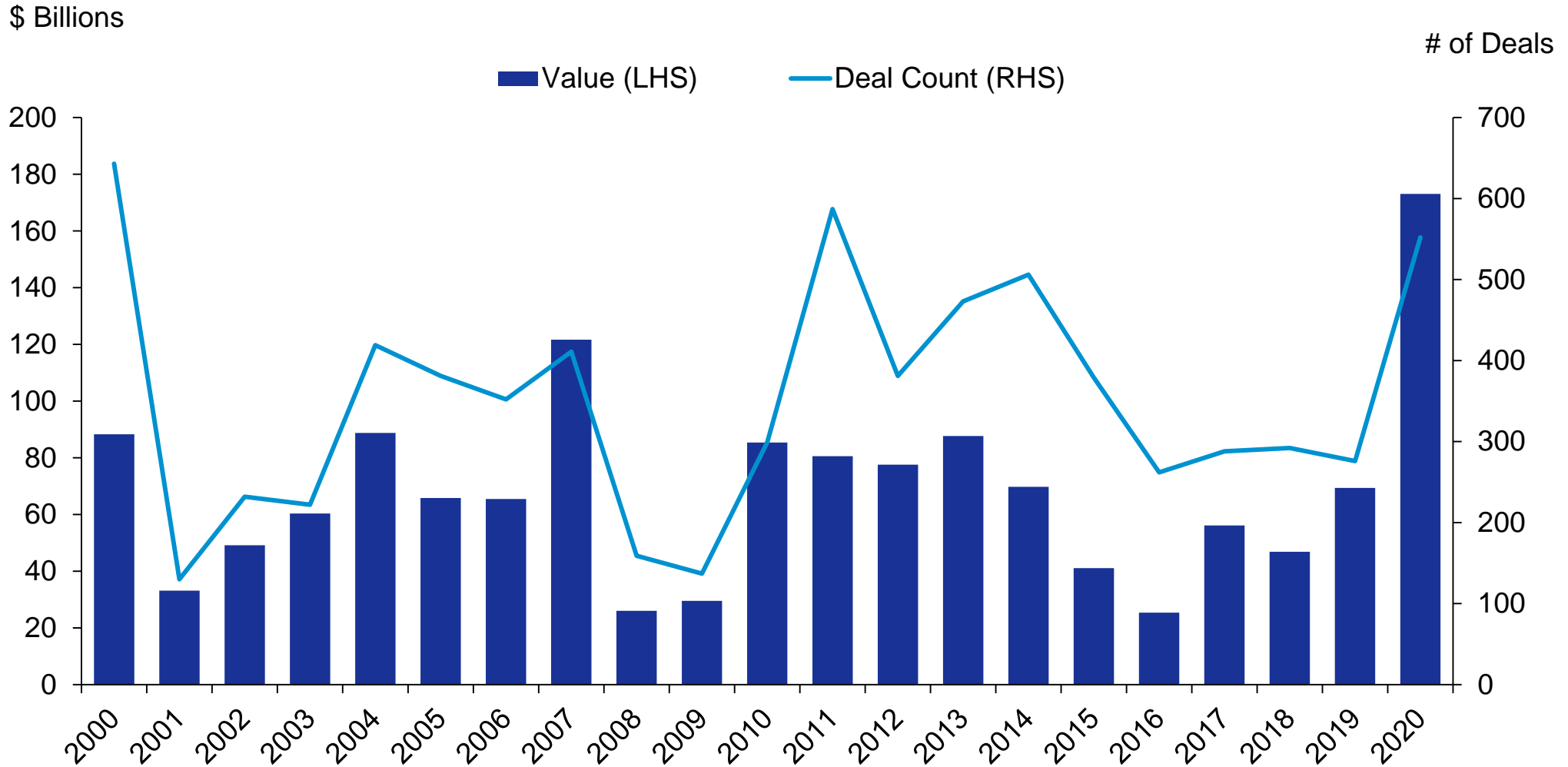


Source: US Census Bureau, Haver Analytics. Bloomberg Finance LP, Deutsche Bank

2020 saw a surge in IPOs to near record levels (by deal count) even though the global economy was largely in lockdown...



United States: IPOs by year (aggregated by Announced Date)



Source: Bloomberg Finance LP. Deutsche Bank

The start of a long reversal...?? Value has started to rally against growth but from low relative valuations...



NASDAQ Composite to Russell 2000 ratio

Ratio



Source: WSJ, Haver Analytics,, Deutsche Bank

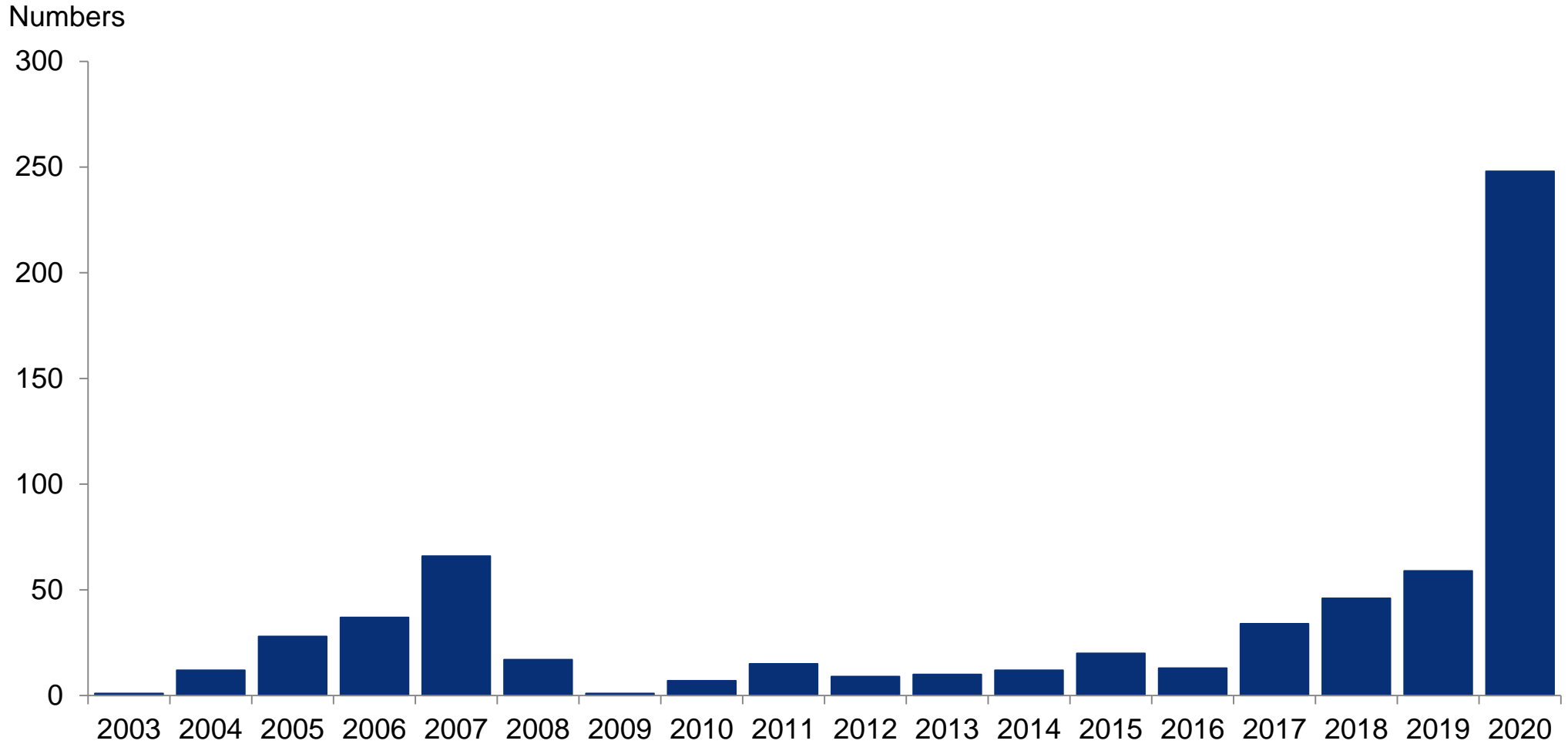


Are SPACs where we see most bubble like tendencies?

SPACs have gained an increased amount of interest... a huge bubble sign?



SPAC IPO deal count..



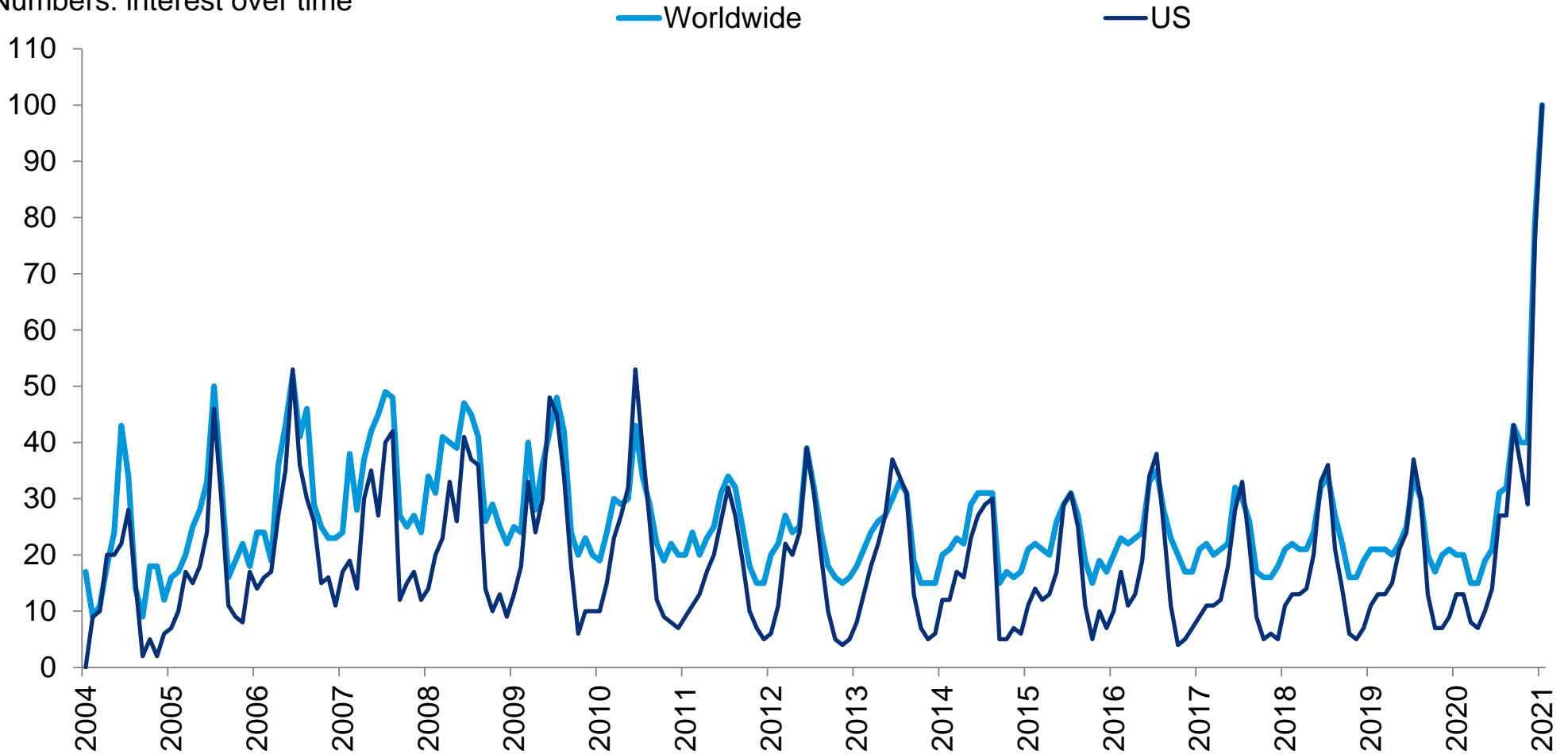
Source : SPAC, Deutsche Bank

Huge increase in search stats for SPACs...



Google trend strength of SPAC search

Numbers: interest over time



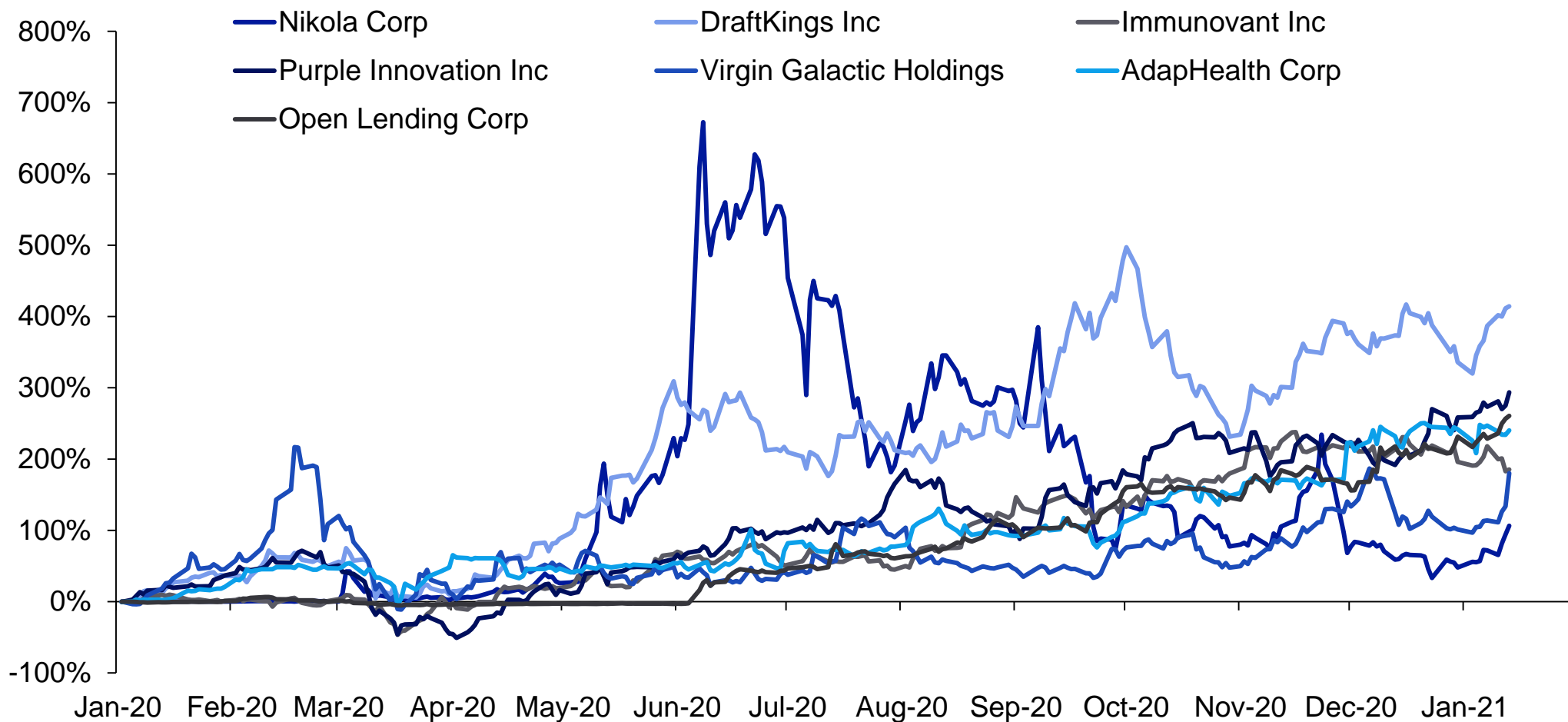
Note: Numbers represent search interest relative to the highest point on the chart for the given region and time. A value of 100 is the peak popularity for the term. A value of 50 means that the term is half as popular..

Source: Google, Deutsche Bank

A good year for SPACs...



Growth in prices since the start 2020 in top SPACs (% change)

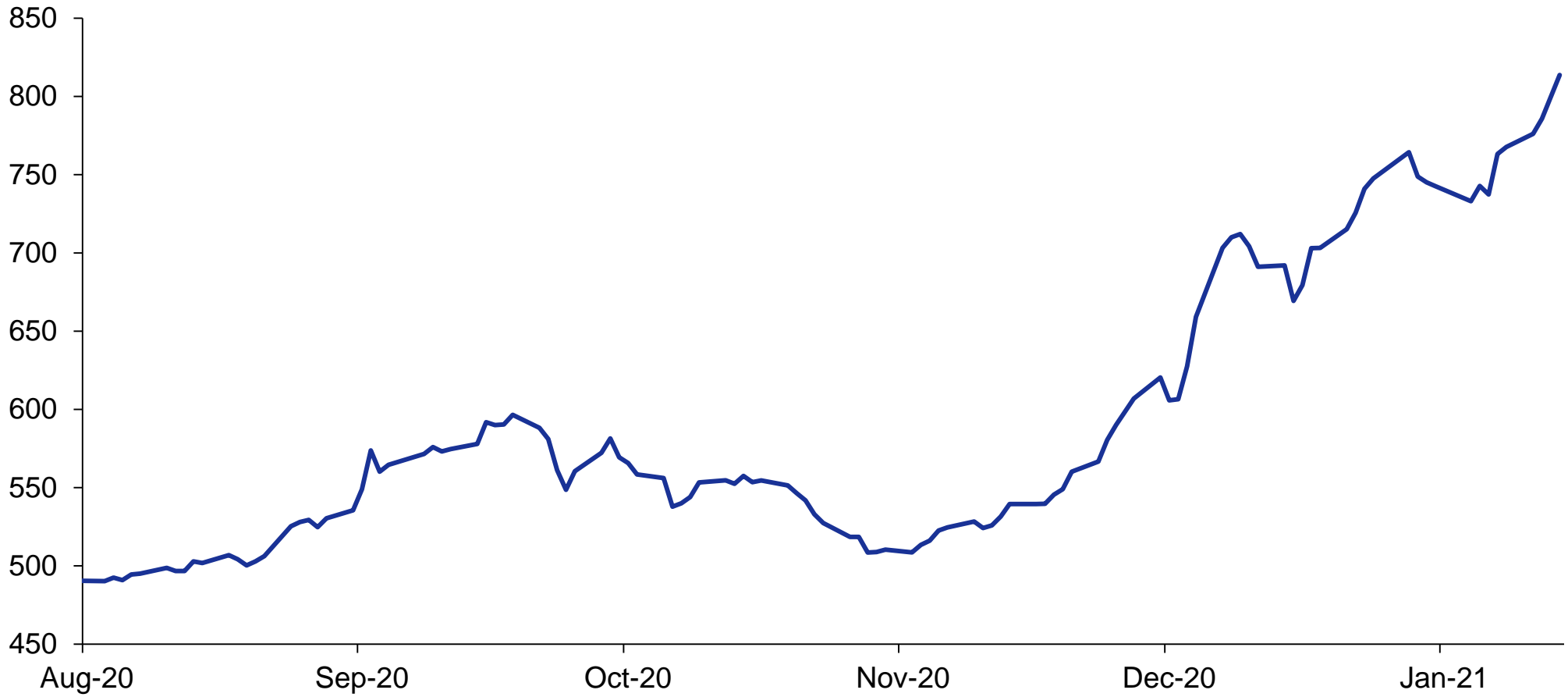


Source: Bloomberg Finance LP, Deutsche Bank

A good year for SPACs accelerated over the last three months.....



Performance of IPOX SPAC Index



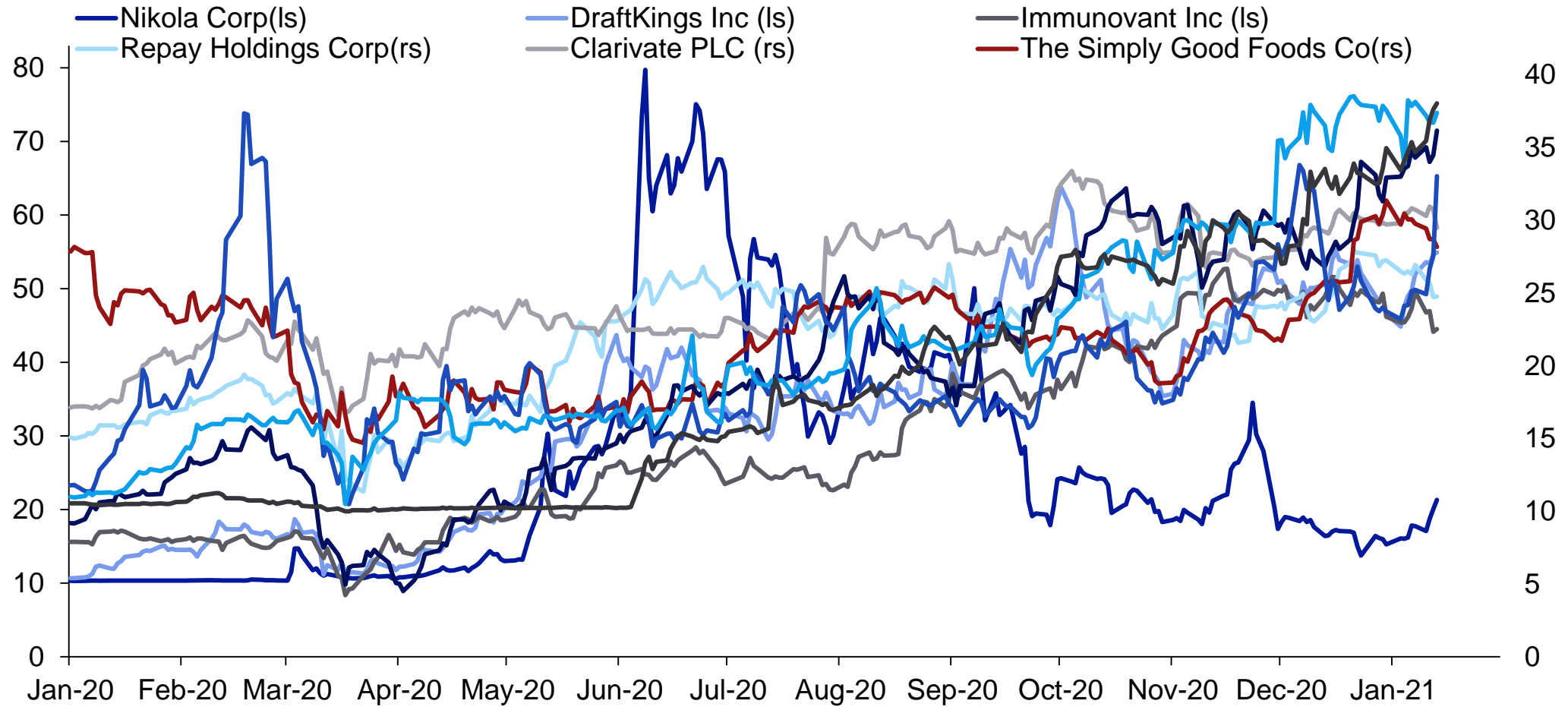
Note: The IPOX SPAC Index is a benchmark for the performance of a broad universe of Special Purpose Acquisition Vehicles (SPACs) by applying the IPOX Indexes Technology.

Source: Bloomberg Finance LP, Deutsche Bank

Robinhood and SPACs.. A lethal bubble Venn Diagram?



Top 10 SPACs performances in Robinhood



Source: Bloomberg Finance LP, Deutsche Bank

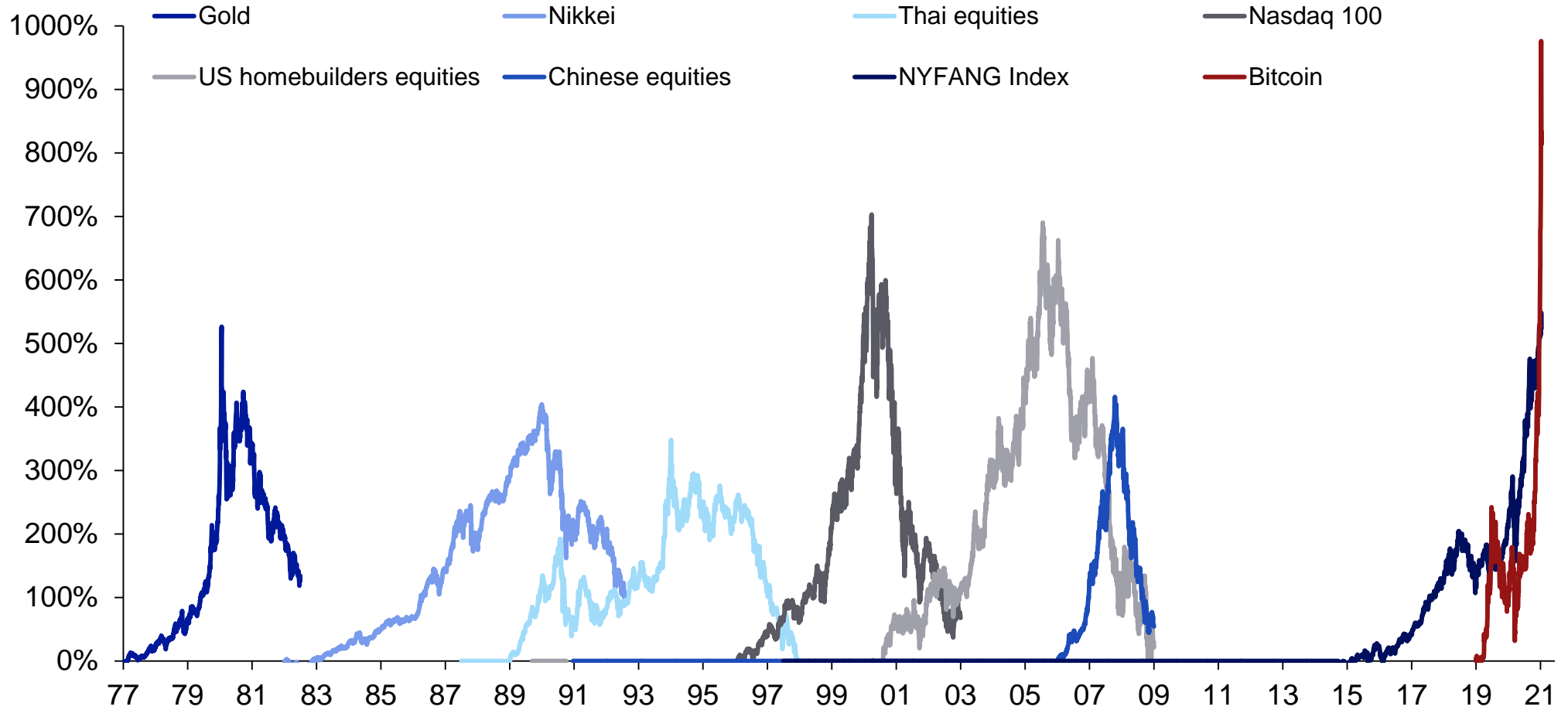


Bitcoin deserves a special section....

Bitcoin makes bubbles over recent decades seem pedestrian...



45 years of asset bubbles....

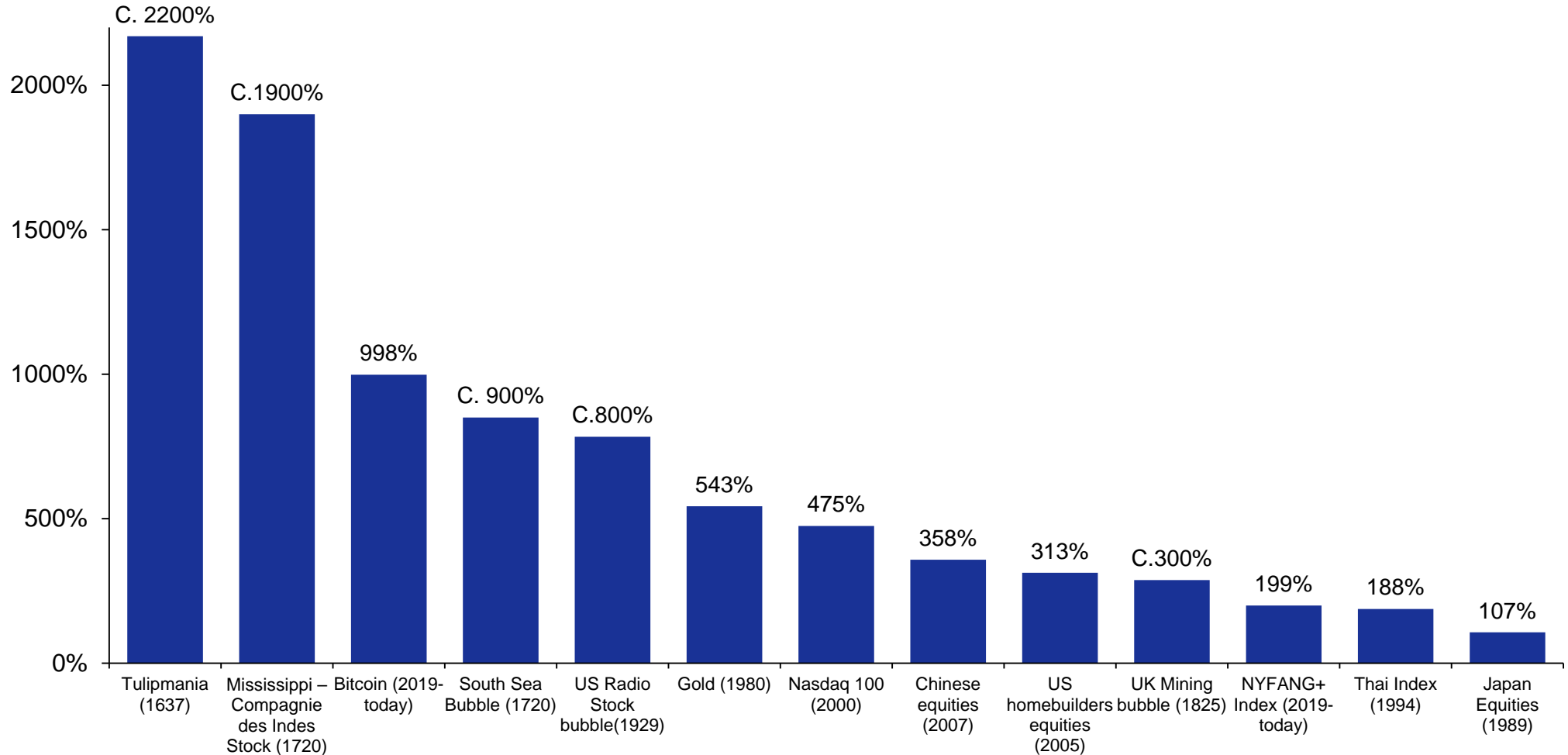


Source: Bloomberg Finance LP, Deutsche Bank

Looking at 400 years of bubbles, Bitcoin is approaching roughly half the tulip bubble run up... The question is whether it's a sustainable new asset class...



Trough to peak price move (%) within 3 years of the peak



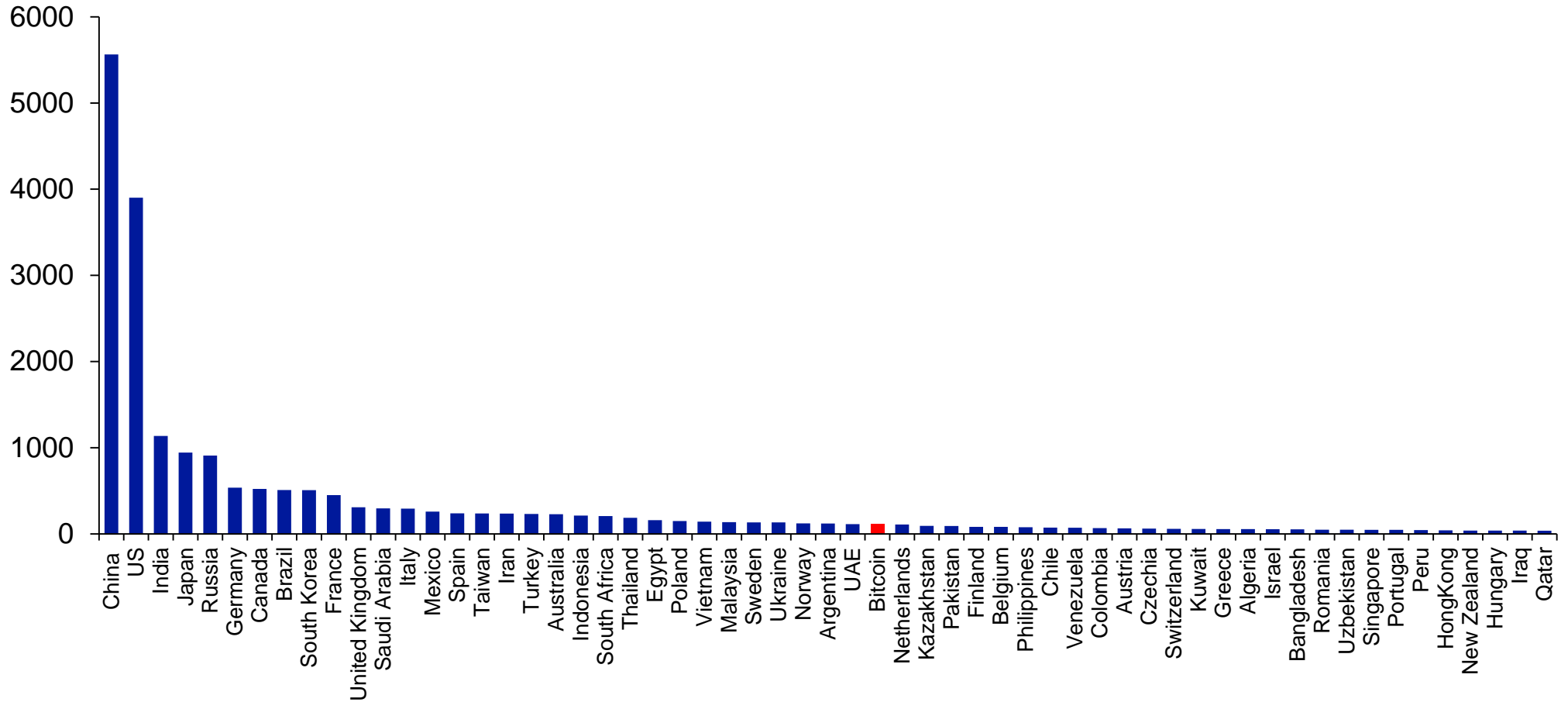
Source: GFD, Thompson, E. A. (2006), Bloomberg Finance LP, Deutsche Bank



If Bitcoin was a country it would be around the 32nd highest annual electricity consumer in the world, using more than the entire population of Holland (17.3m) ... so not very ESG friendly....

Country Ranking : Annual Electricity Consumption and Bitcoin

TWh per year



Source: University of Cambridge, Deutsche Bank

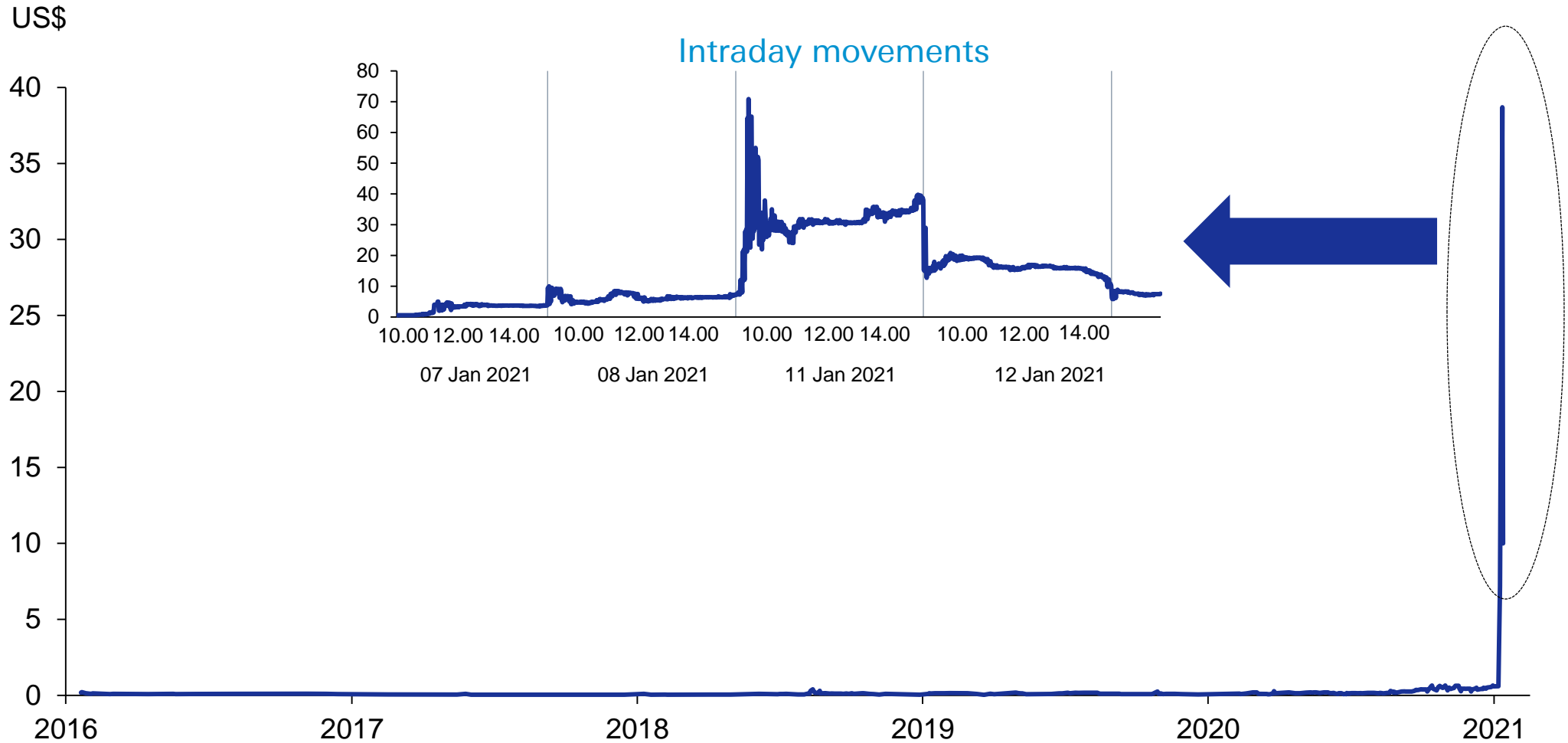


Crazy bubble signs....



Sign of the times... a very small Texan healthcare company went from a \$7mn company to nearly a billion dollar company in 36 hours of trading on the back of one misinterpreted tweet...

Signal Advance Inc stock price with a surge after Elon Musk's misinterpreted tweet



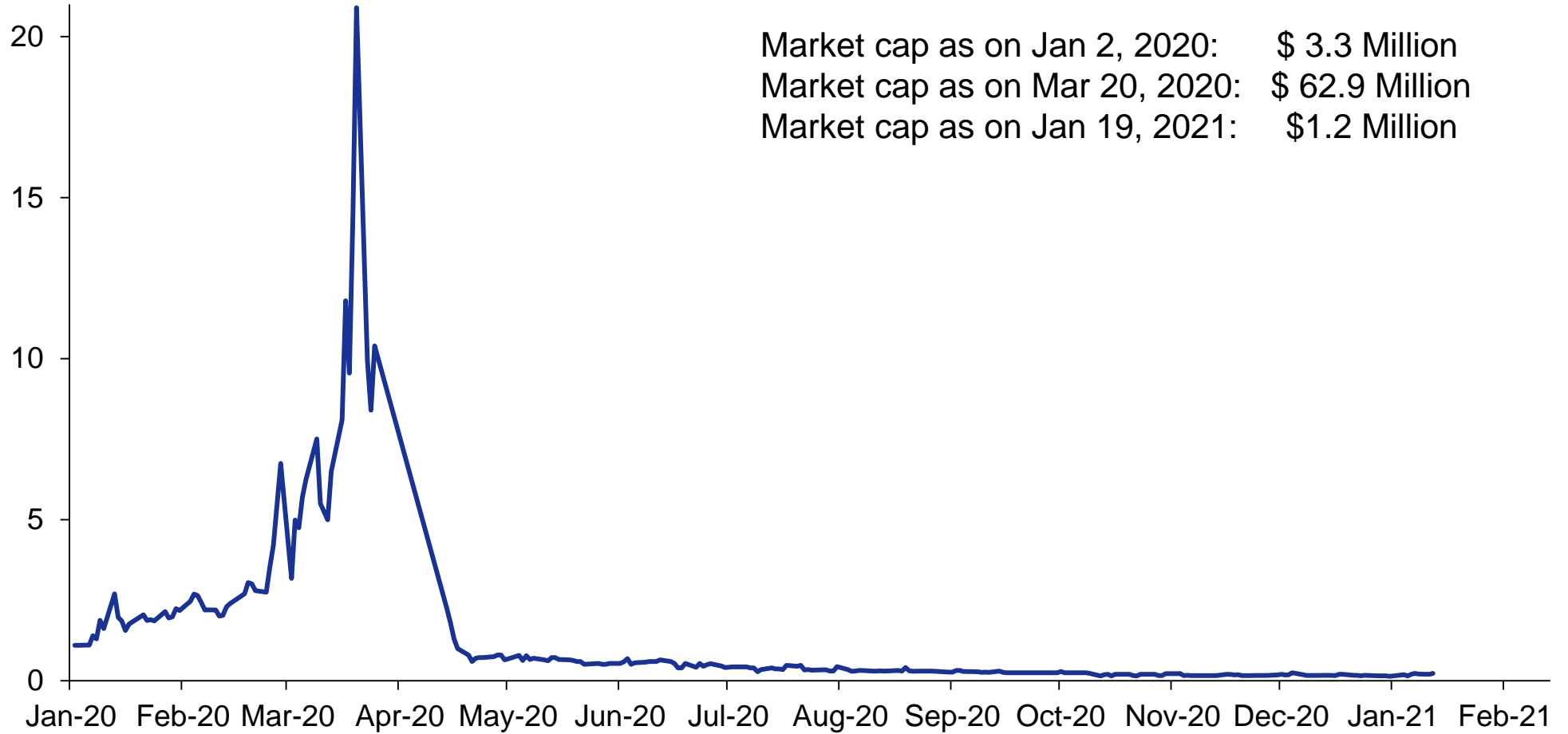
Source: Bloomberg Finance LP, Deutsche Bank

It was good to have a company with a sound-a-like name to Zoom in 2020...



“Zoom Technologies Inc.” stock prices surged after investors’ confusion with a similarly named Nasdaq-listed issuer ‘Zoom Video Communications’

US\$



Source :Bloomberg Finance LP, Deutsche Bank

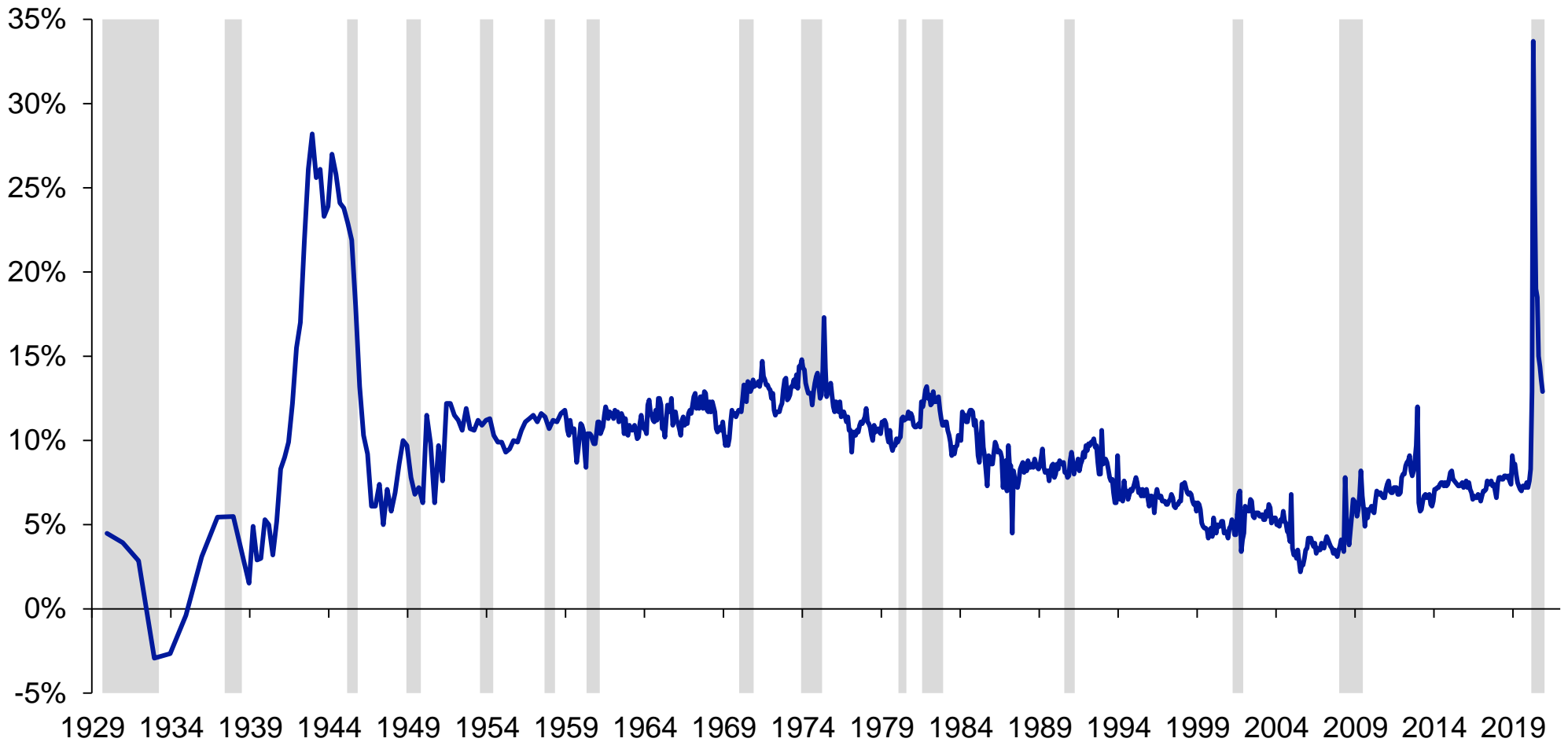


Money on the side-lines and a return of retail?

Is the surge in savings a sign of comfort or a sign of cautious consumers..?



Personal savings rate in United States

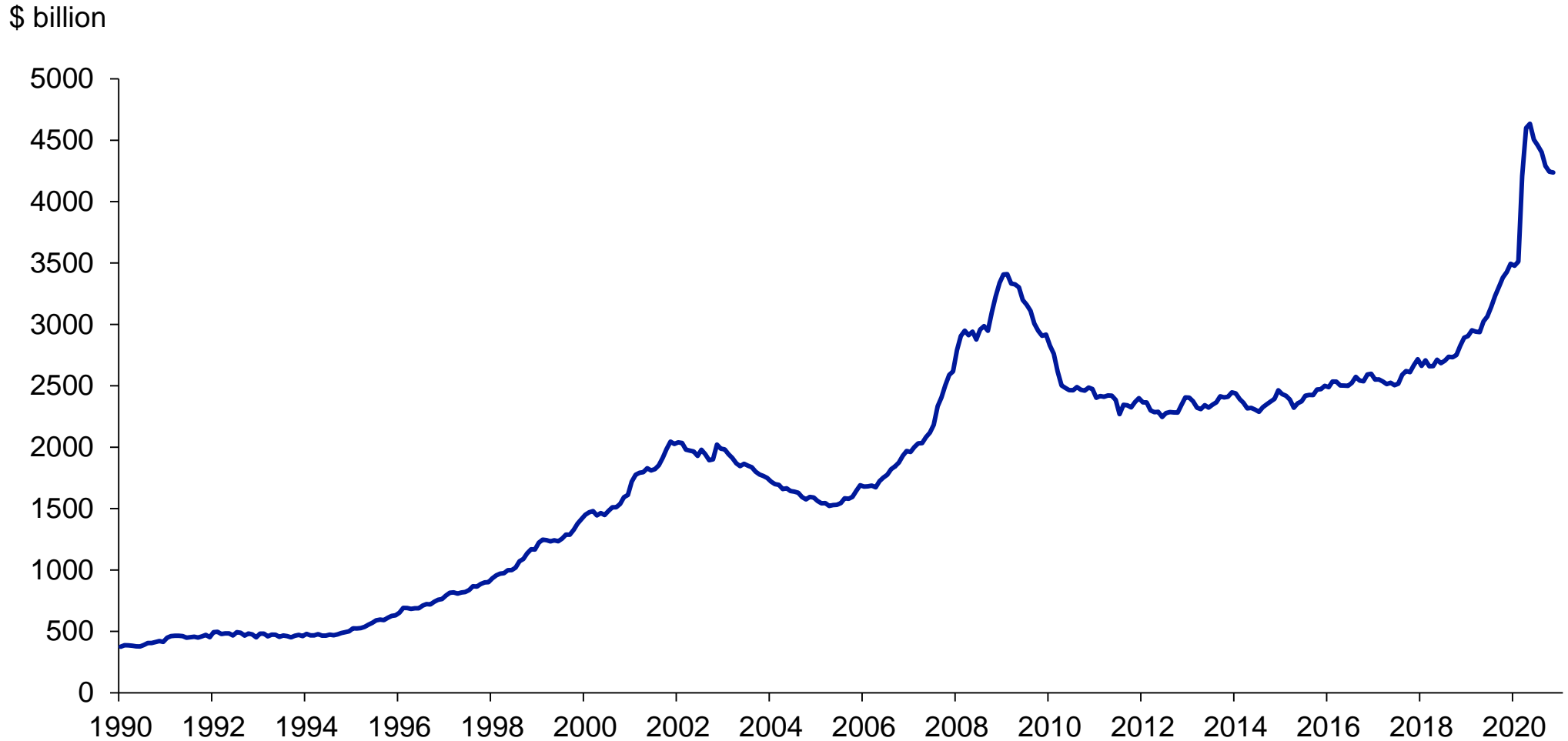


Source: Historical Statistics of United States, US Census Bureau, BEA, FRED, Haver Analytics, Deutsche Bank

Lots of money on the sidelines.... But isn't there always?



Total Net Assets: Taxable Money Market

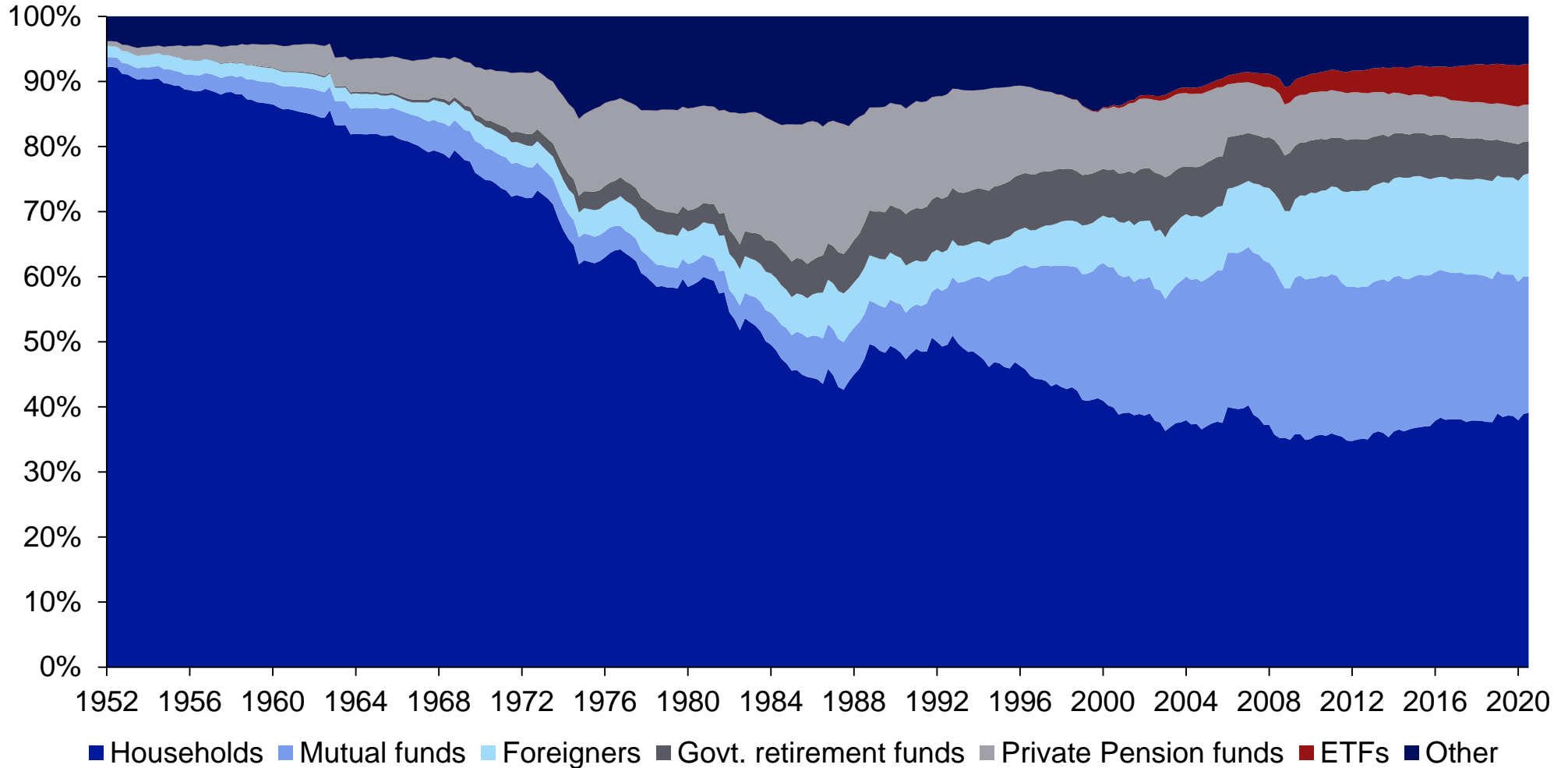


Source: ICI, Bloomberg Finance LP, Haver Analytics, Deutsche Bank

Are households starting to structurally make a come back as a growing investor..? Is that a good or warning sign? Will next stimulus cheques increase this further?



Who Owns the Equity Market in US?

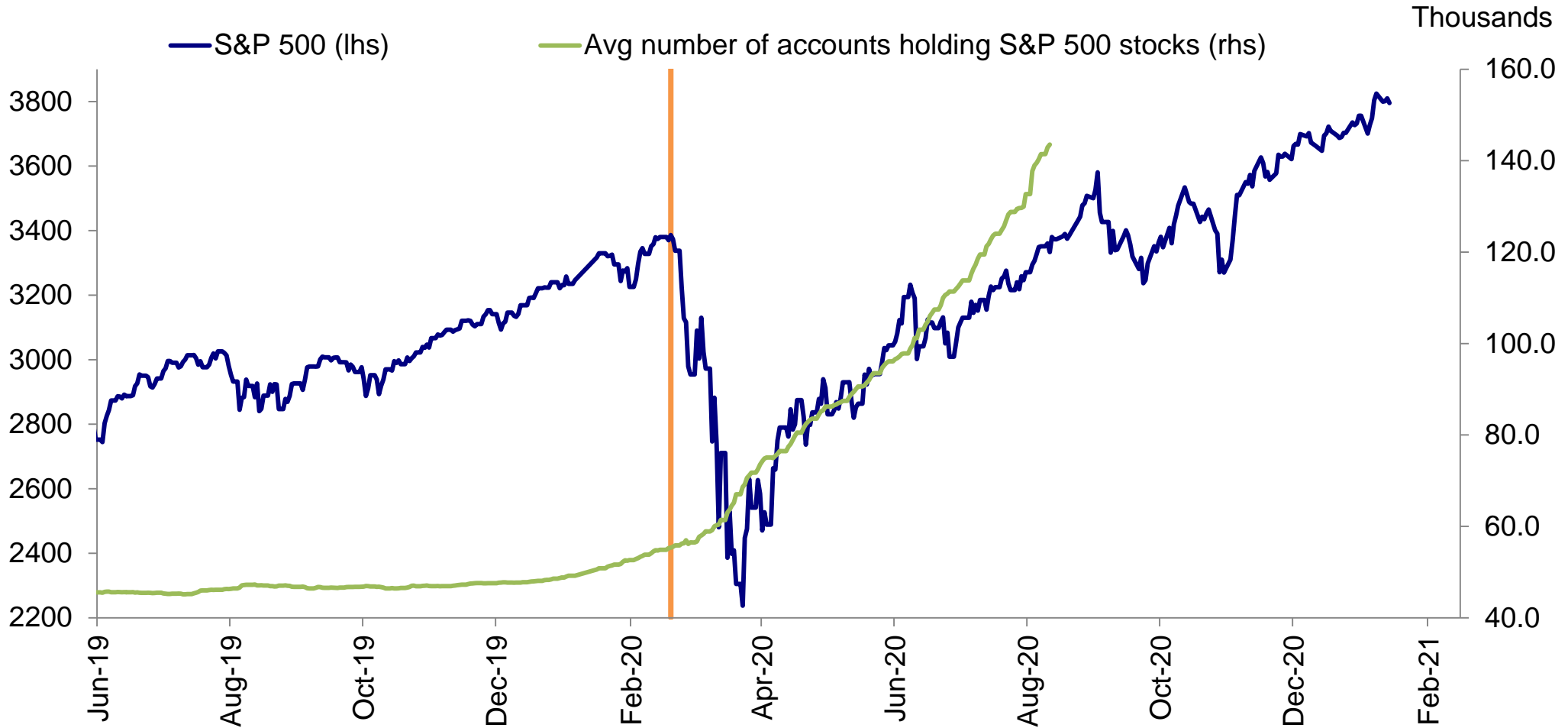


Source: FRB, Haver Analytics, Deutsche Bank

The return of retail... good or bad news? Will next stimulus cheques increase this further?



Robinhood accounts



Source: Robintrack, Haver, DB Asset Allocation



What does our equity strategist Binky Chadha think of the US market?

For Binky Chadha's latest 2021 Outlook report, click [here](#)

For Binky Chadha's latest Investor Positioning report, click [here](#)

For Binky Chadha's latest Asset Allocation report, click [here](#)

Valuations are extremely high regardless of measure...



S&P 500 valuations...

Current percentile of S&P 500 valuation metrics

	Ex Tech bubble	Whole sample
LTM PE ¹	99.8	97.5
Price to trend EPS ¹	99.4	93.6
NTM PE ²	100.0	95.7
EV/EBIT ³	100.0	100.0
EV/EBITDA ³	100.0	100.0
EV/EOCF ³	100.0	98.1

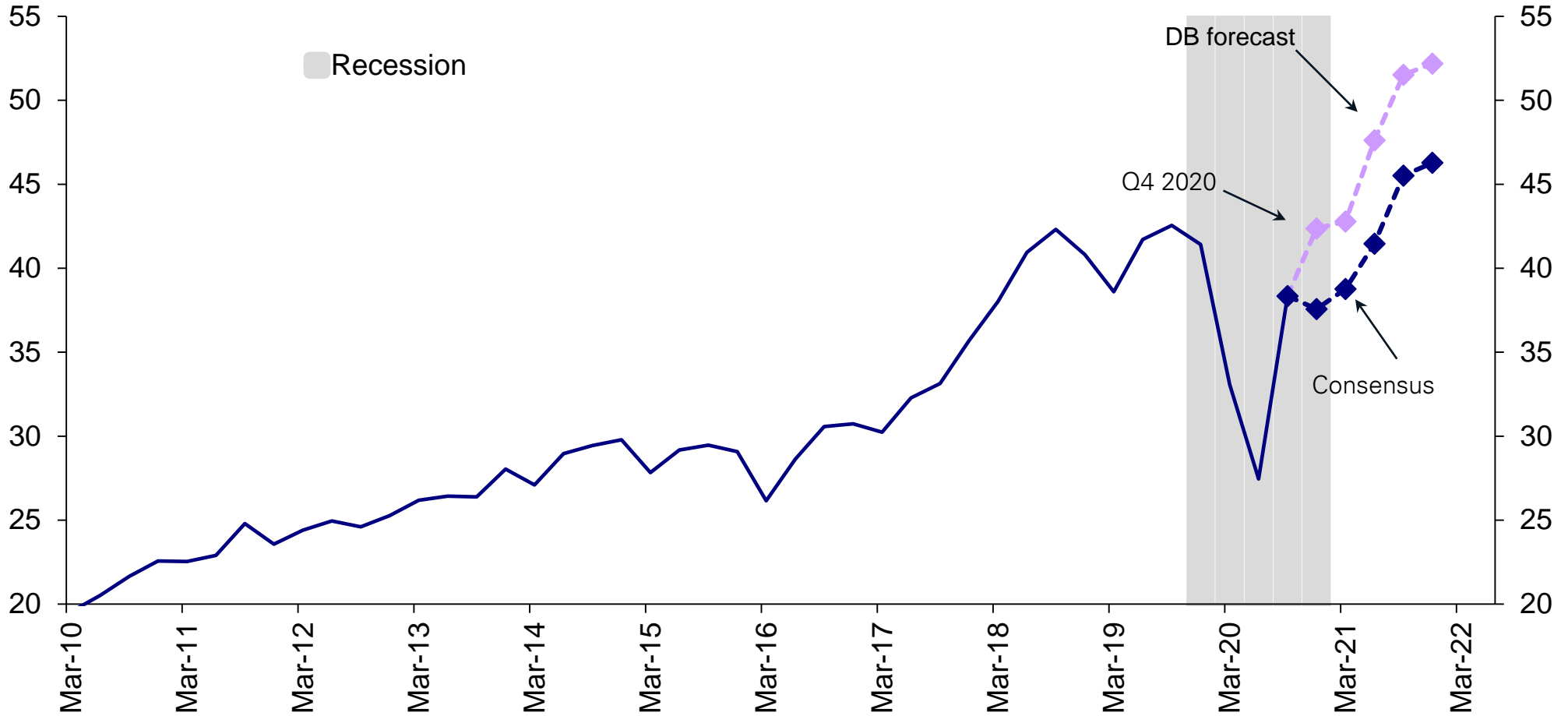
1. since 1935; 2. since 1988; 3. since 1966

Source: DB Asset Allocation, Deutsche Bank

... but earnings should have a very strong 2021...



S&P 500 Quarterly EPS (\$ per share)



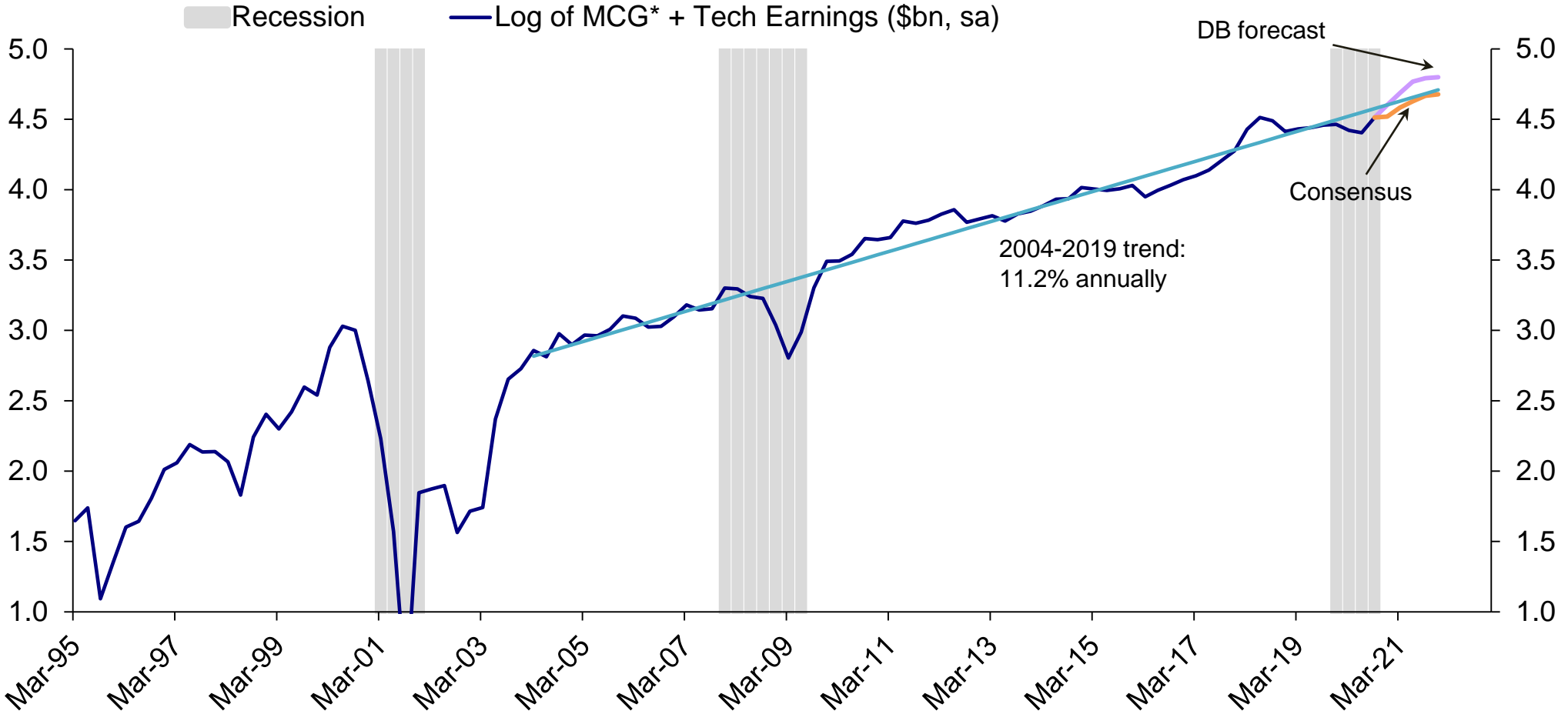
*Consensus Q4 earnings assumes cos yet to report meet estimates

Source: DB Asset Allocation, Deutsche Bank

The mega-cap and tech stocks should still grow their earnings....



The secular growth group of mega-cap growth stocks and tech have had a strong trend in earnings since 2004



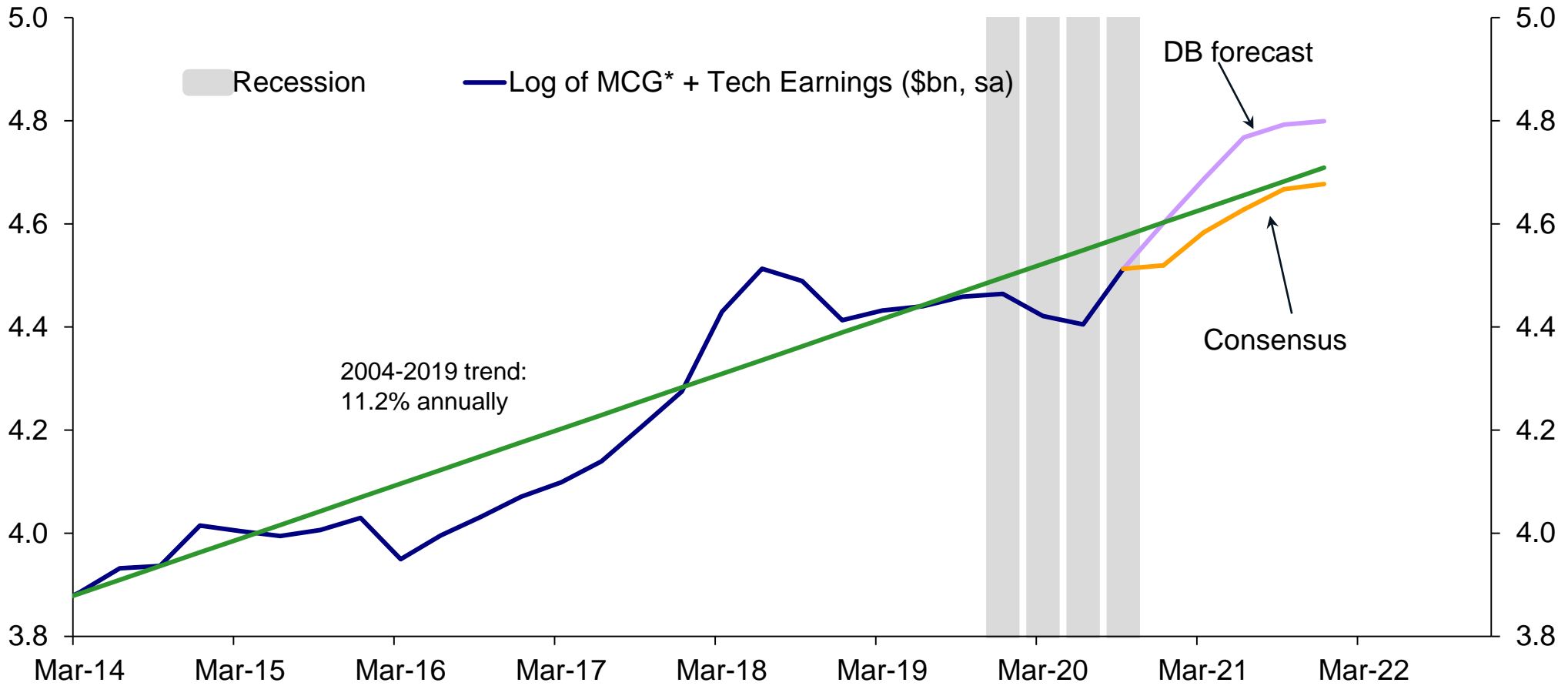
*MCG is MSFT, AAPL, AMZN, GOOGL, GOOG, FB, V, MA, NVDA, NFLX, ADBE

Source: DB Asset Allocation, Deutsche Bank

... driven partly by the macro and the weaker dollar...



A combination of faster macro growth and weaker dollar points to earnings rebounding sharply and going above trend next year



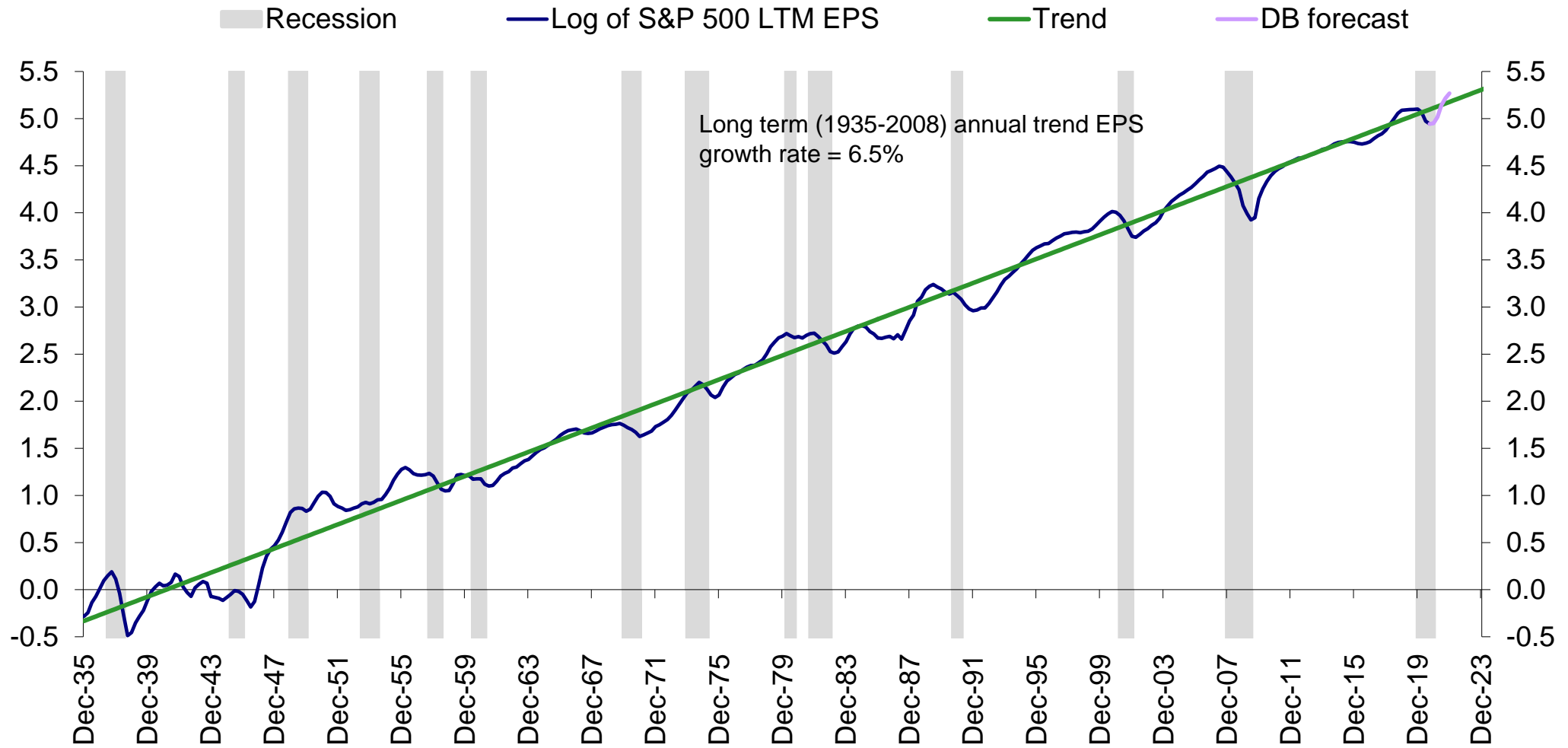
*MCG is MSFT, AAPL, AMZN, GOOGL, GOOG, FB, V, MA, NVDA, NFLX, ADBE

Source: DB Asset Allocation, Deutsche Bank

Earnings staying on their 85 year trend... even as economic growth slows....



S&P 500 LTM EPS

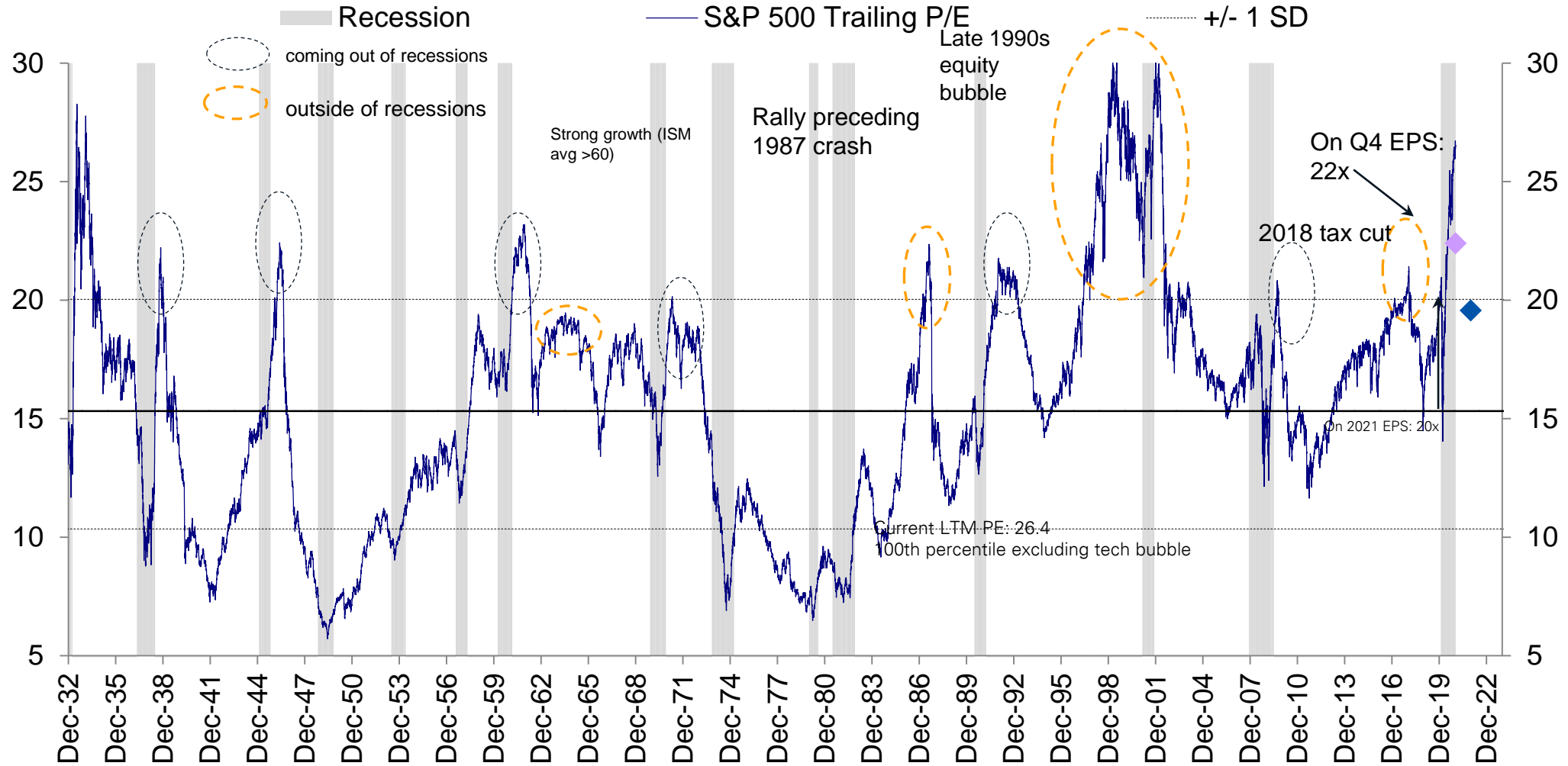


Source: DB Asset Allocation, Deutsche Bank

Binky thinks valuations stretched....



S&P 500 trailing PE...

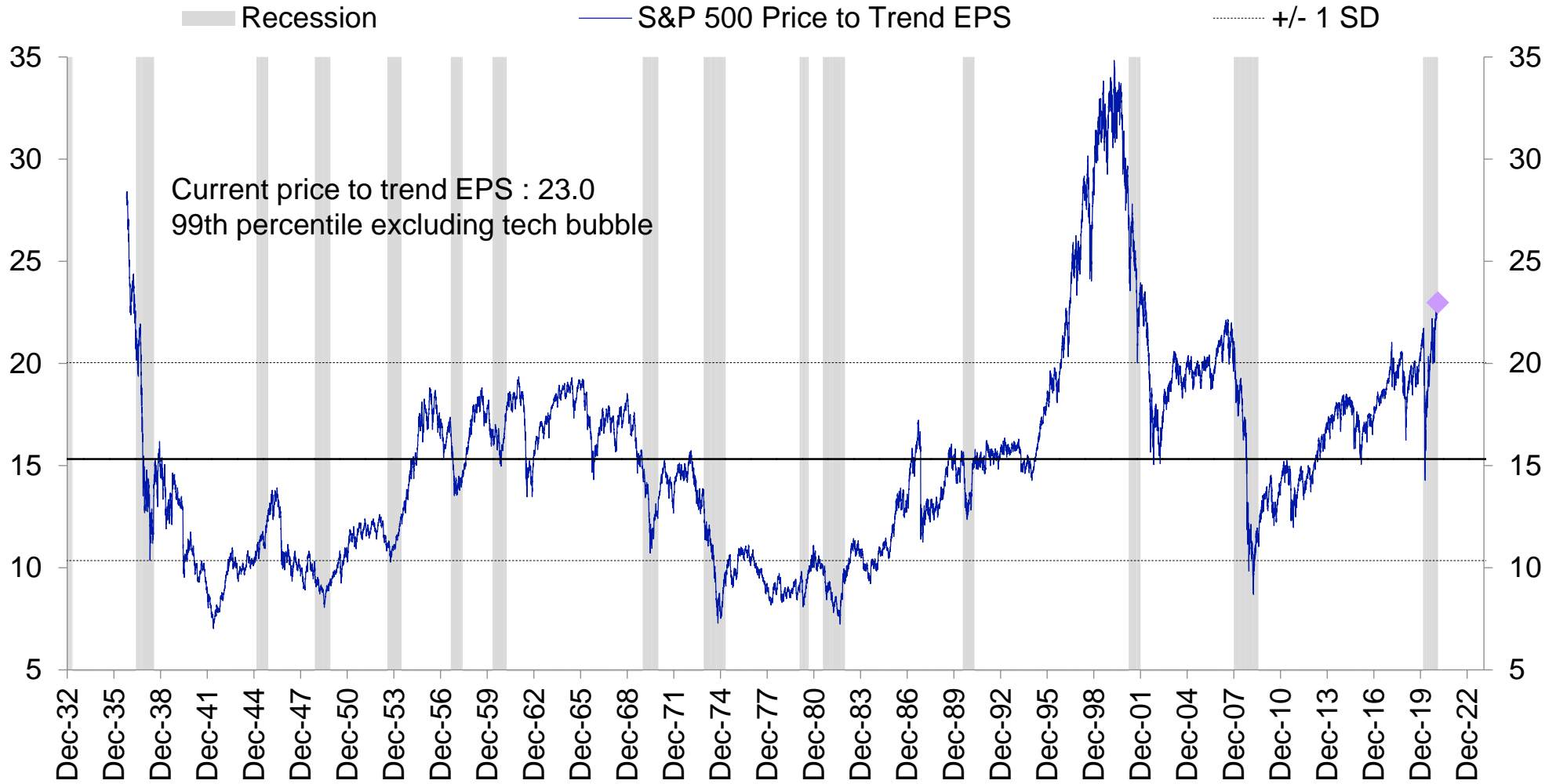


Source: DB Asset Allocation, Deutsche Bank

.. and are at the 99th percentile excluding the tech bubble...



S&P 500 price to trend EPS

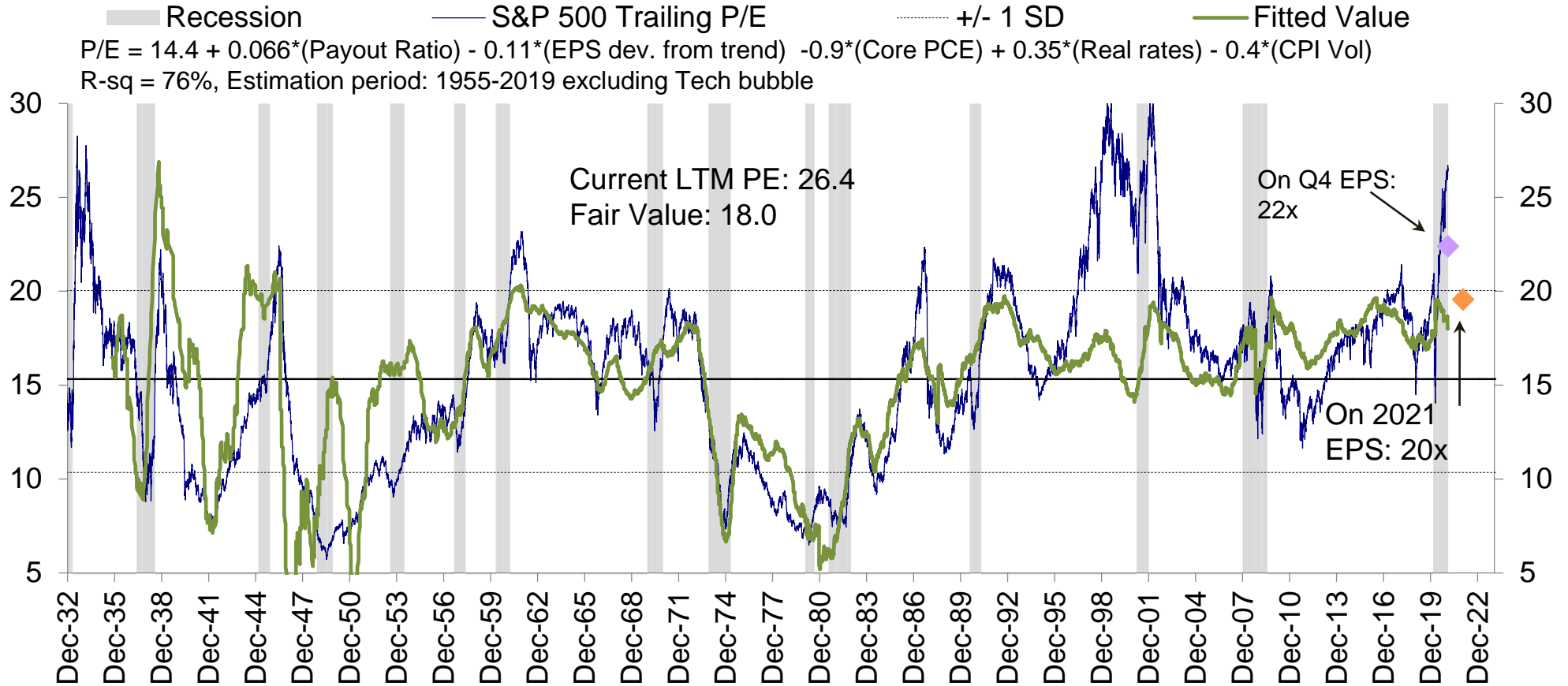


Source: DB Asset Allocation, Deutsche Bank



Binky's model suggests high valuations can't be explained by traditional drivers...

S&P 500 valuation model..



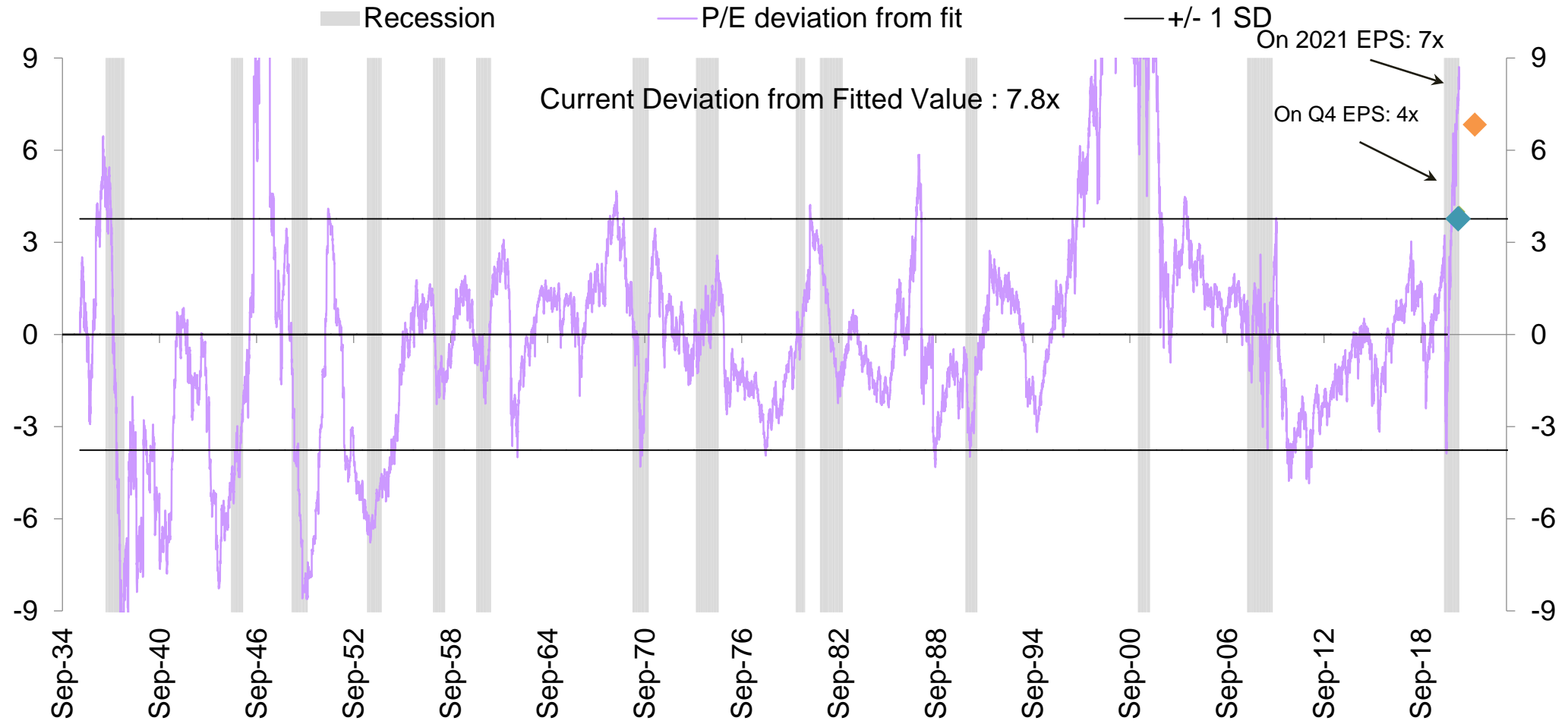
Note: Estimated equation allows for historical non-linearity with reversal in sign (with a beta of -0.21) when real rates were above 4% between 1981 and 1986

Source: DB Asset Allocation, Deutsche Bank

Binky's model suggests high valuations can't be explained by traditional drivers... part 2



S&P 500 valuation model... deviation from the fitted value

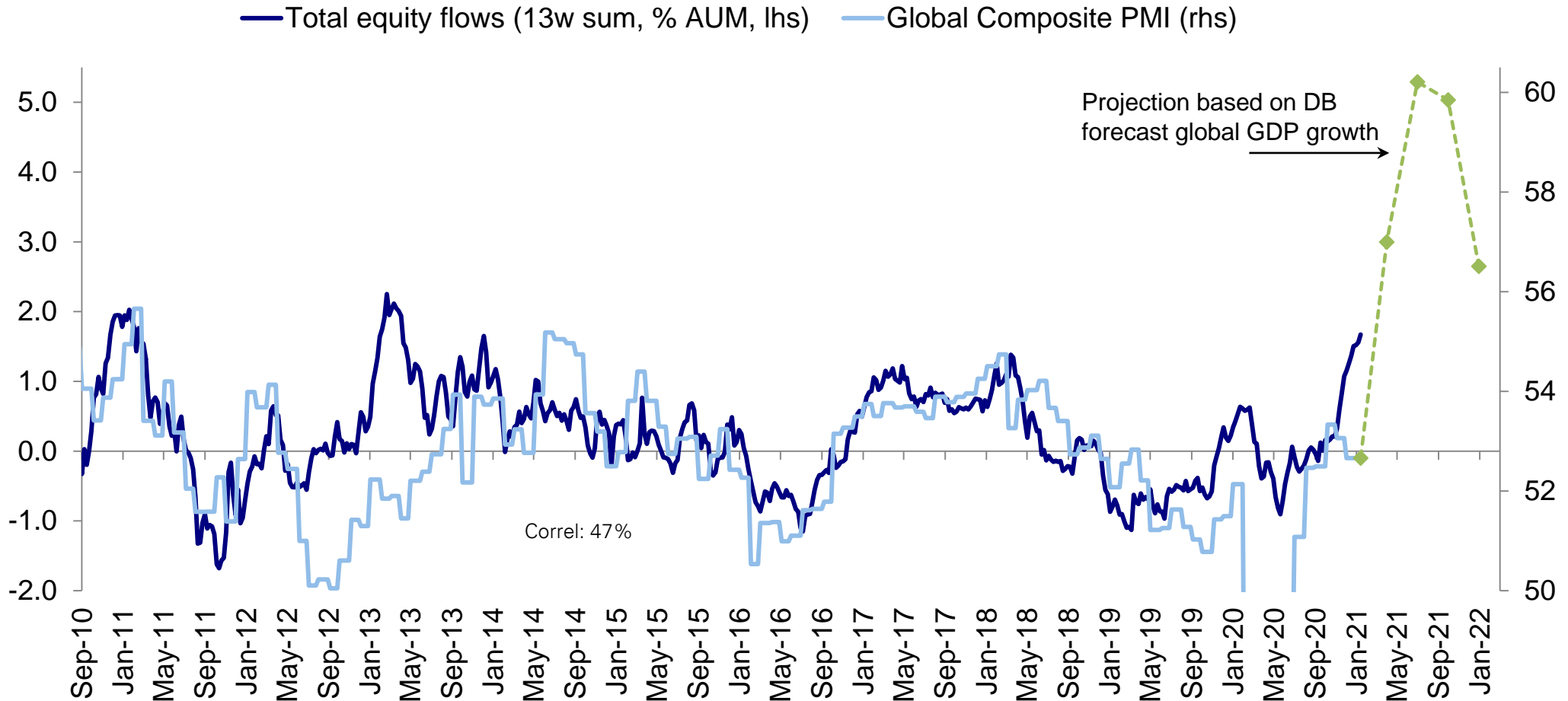


Source: DB Asset Allocation, Deutsche Bank

... But expected economic rebound could still bring inflows...



Total equity fund flows vs Global Composite PMI

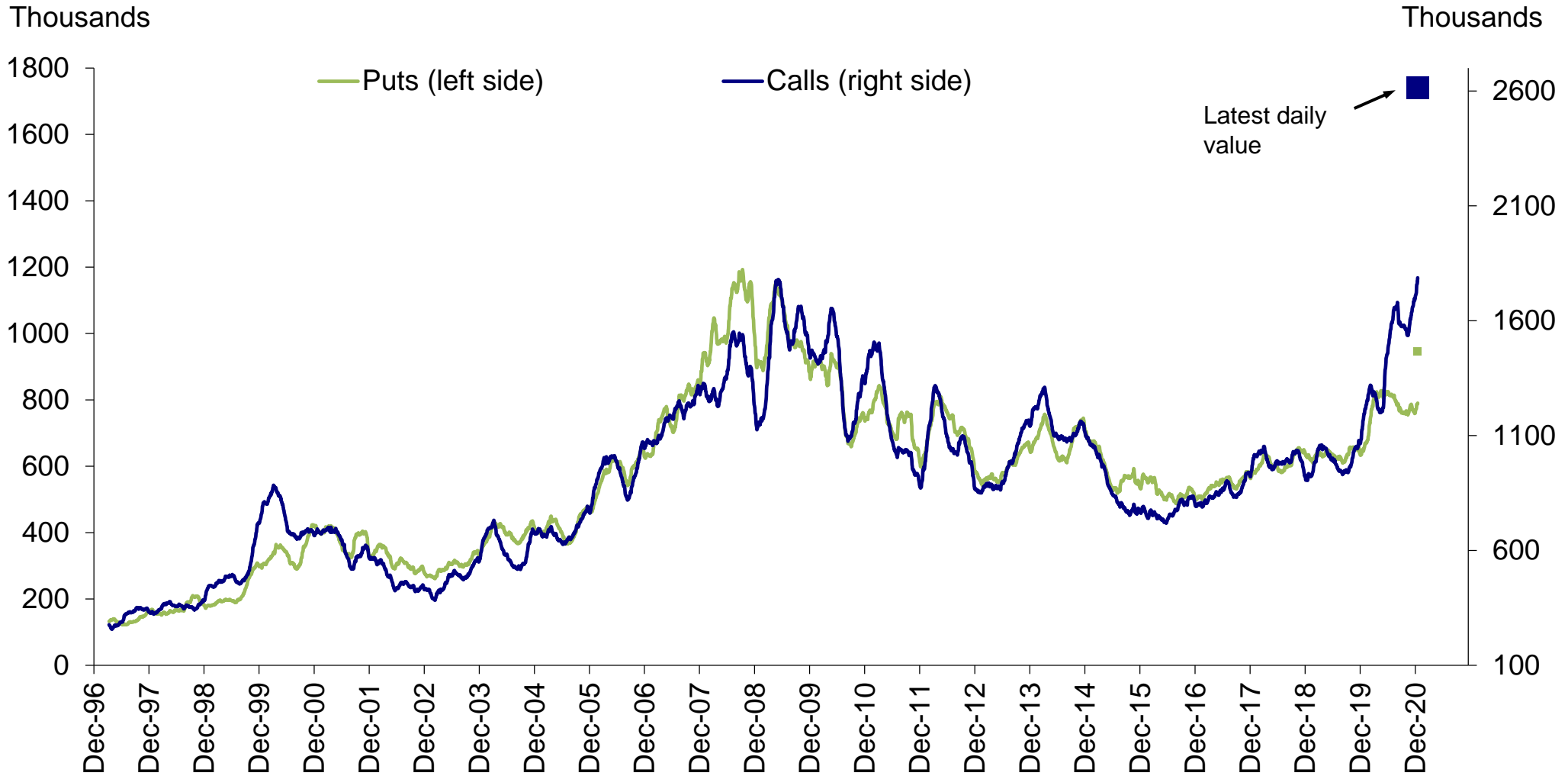


Source: EPFR Global, Markit, Haver, DB Asset Allocation, Deutsche Bank

Call to put ratio at extreme levels recently....



Equity options volumes (3m ma, thous)

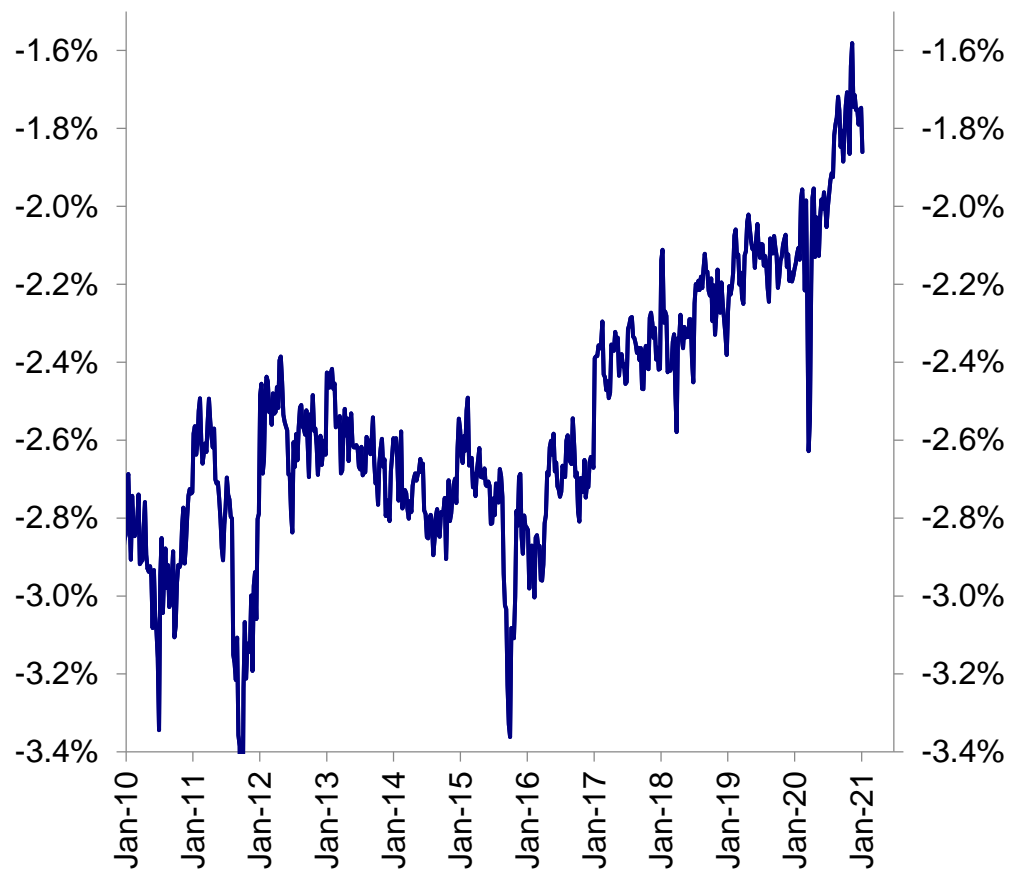


Source: DB Asset Allocation, Deutsche Bank

Shorts have been squeezed.....



Single stock plus ETF shorts (shown as negative) as % of S&P 500 mkt cap



Note: Short interest data as of Dec 31

Net longs in futures minus shorts in cash equities and ETFs



Note: Futures net longs minus single stock and ETF shorts. Shorts data as of Dec 31, S&P futures Jan 05

Source: Source: CFTC, Compustat, Bloomberg Finance LP, Haver, DB Asset Allocation

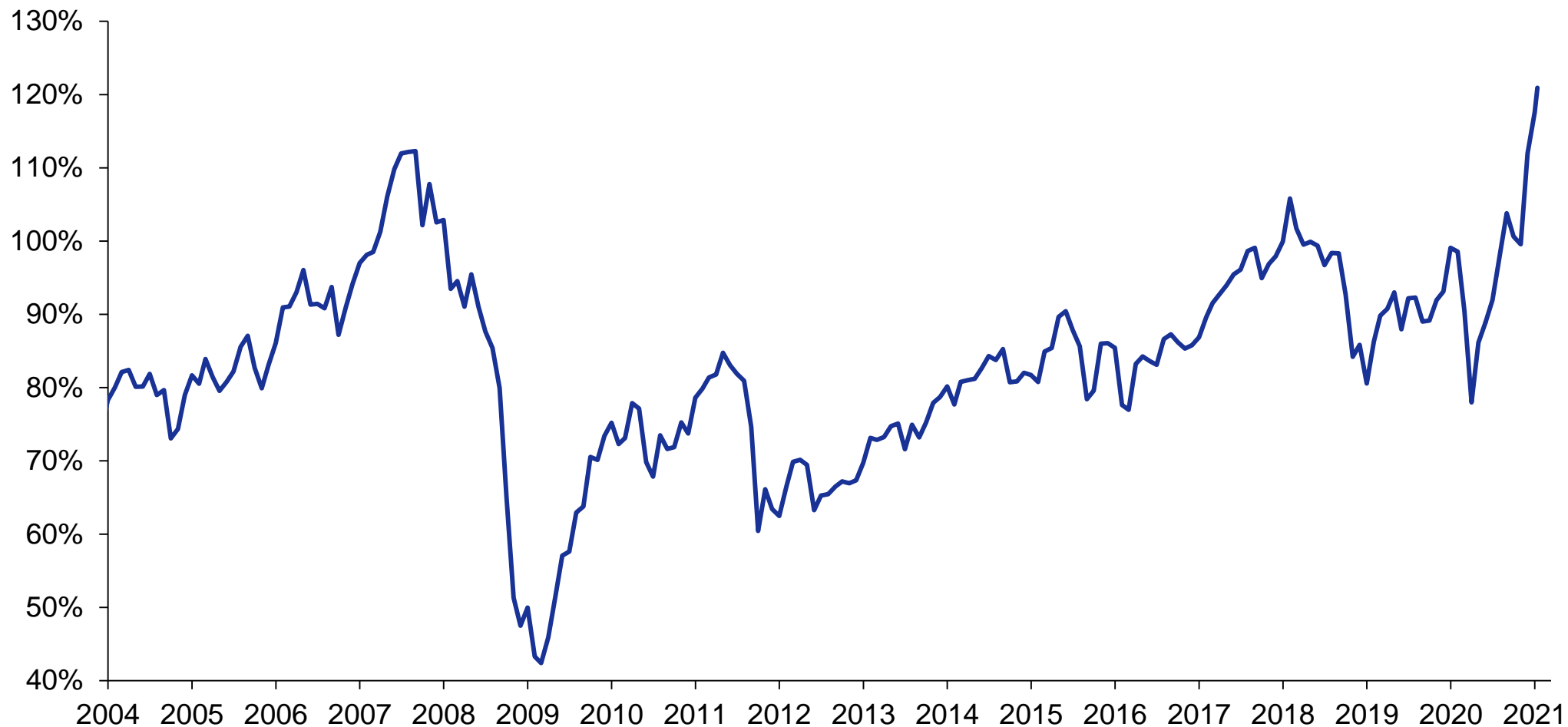


Other valuations measures that make US equities look rich in aggregate..

What would Warren say?



Buffett Indicator: World Market Cap as % of World GDP

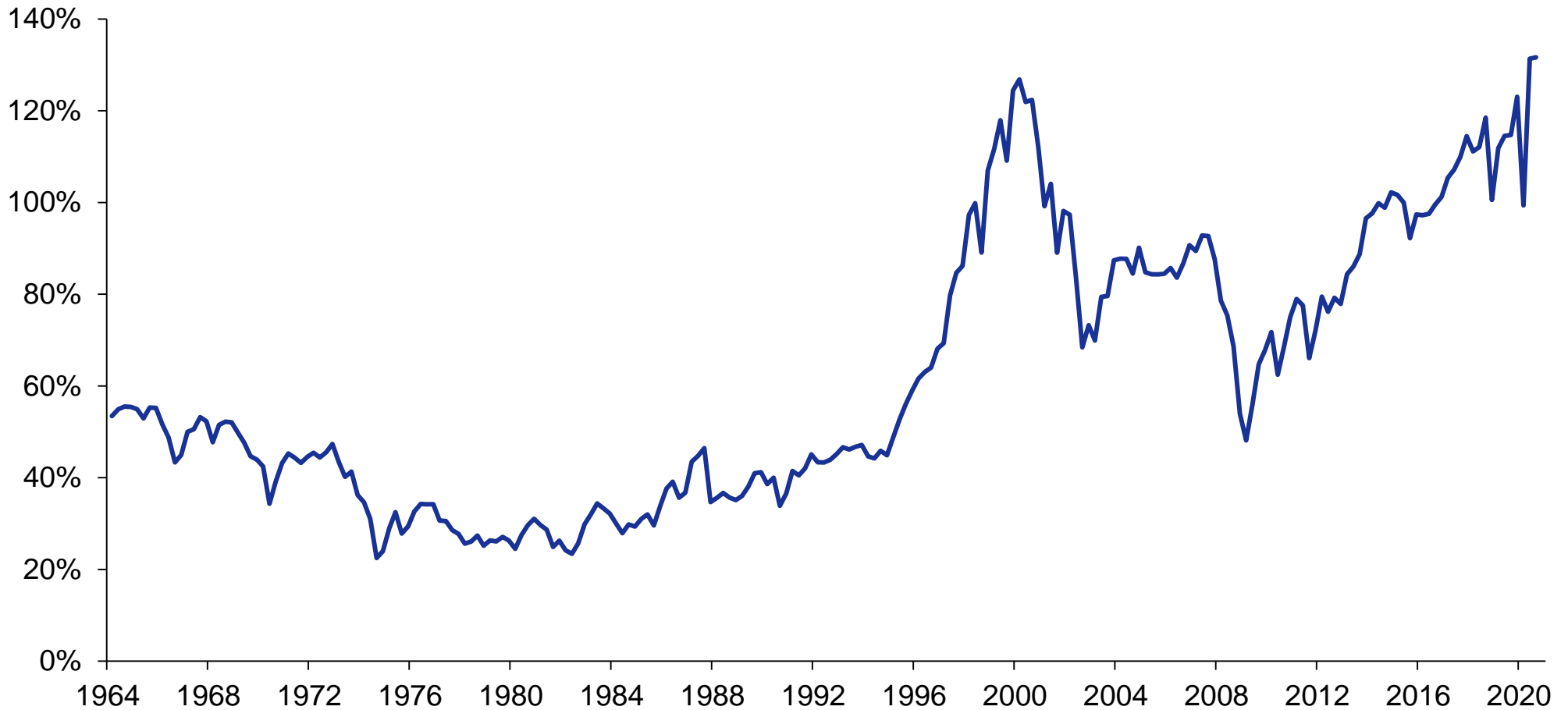


Source :Bloomberg Finance LP, World Bank, Deutsche Bank

S&P 500 never been as high relative to US GDP



S&P 500 Market Capitalization as % of US GDP

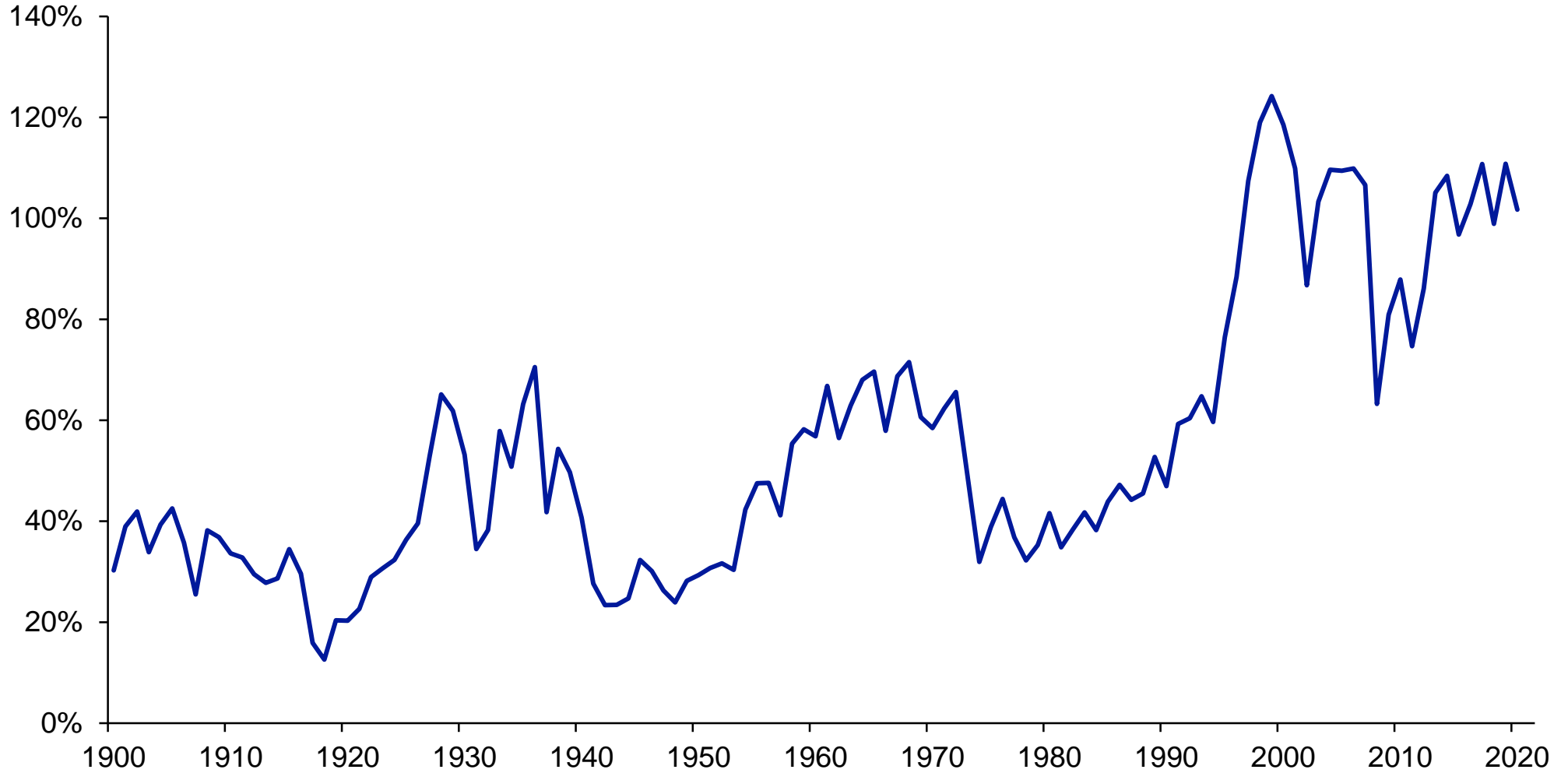


Source: S&P, BEA, Haver Analytics, Deutsche Bank

The long-term rise in US equity valuations....



NYSE Stock Market Capitalisation relative to US GDP

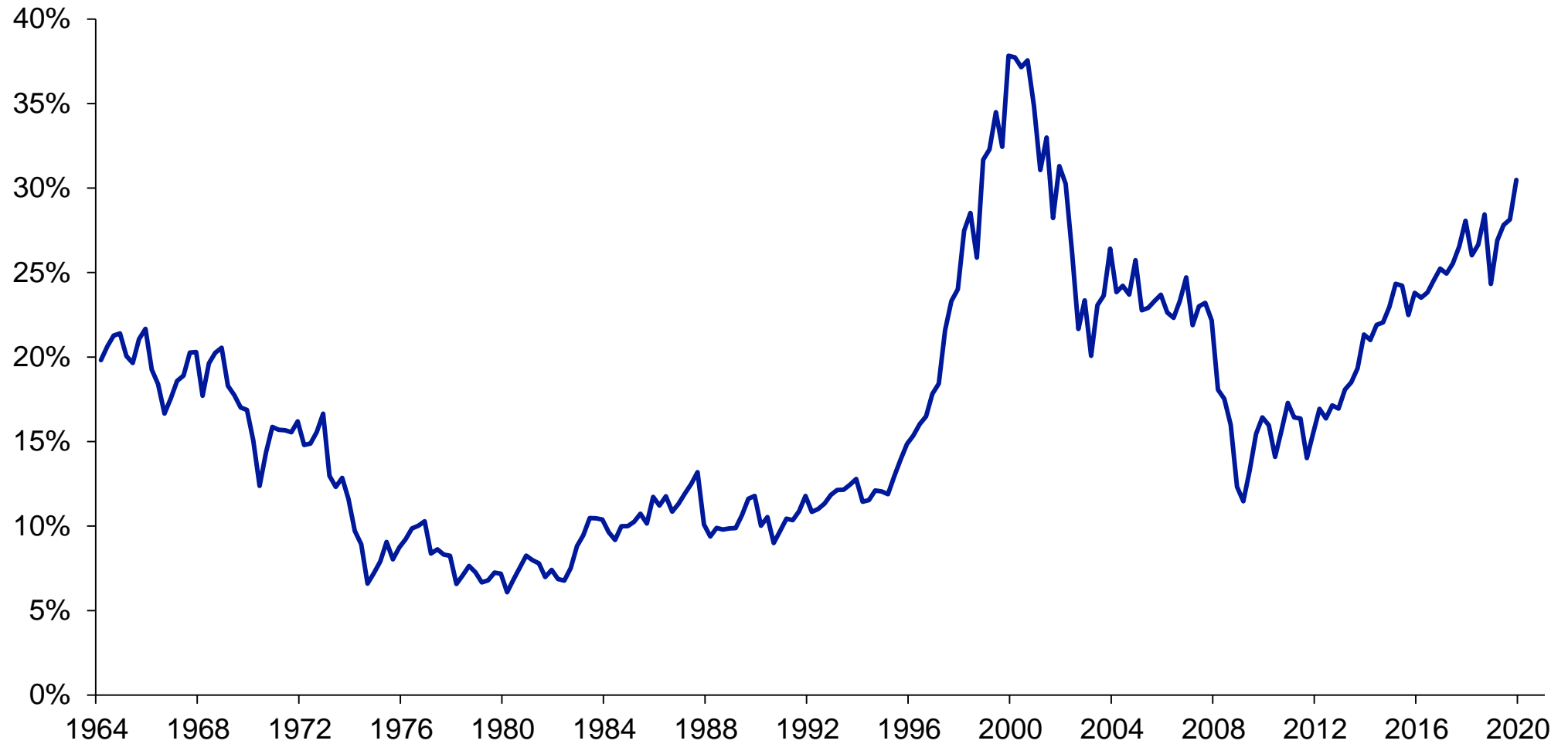


Source: GFD, Deutsche Bank

US equities approaching 2000 peak relative to World GDP...



S&P 500 Market Capitalization as % of World GDP

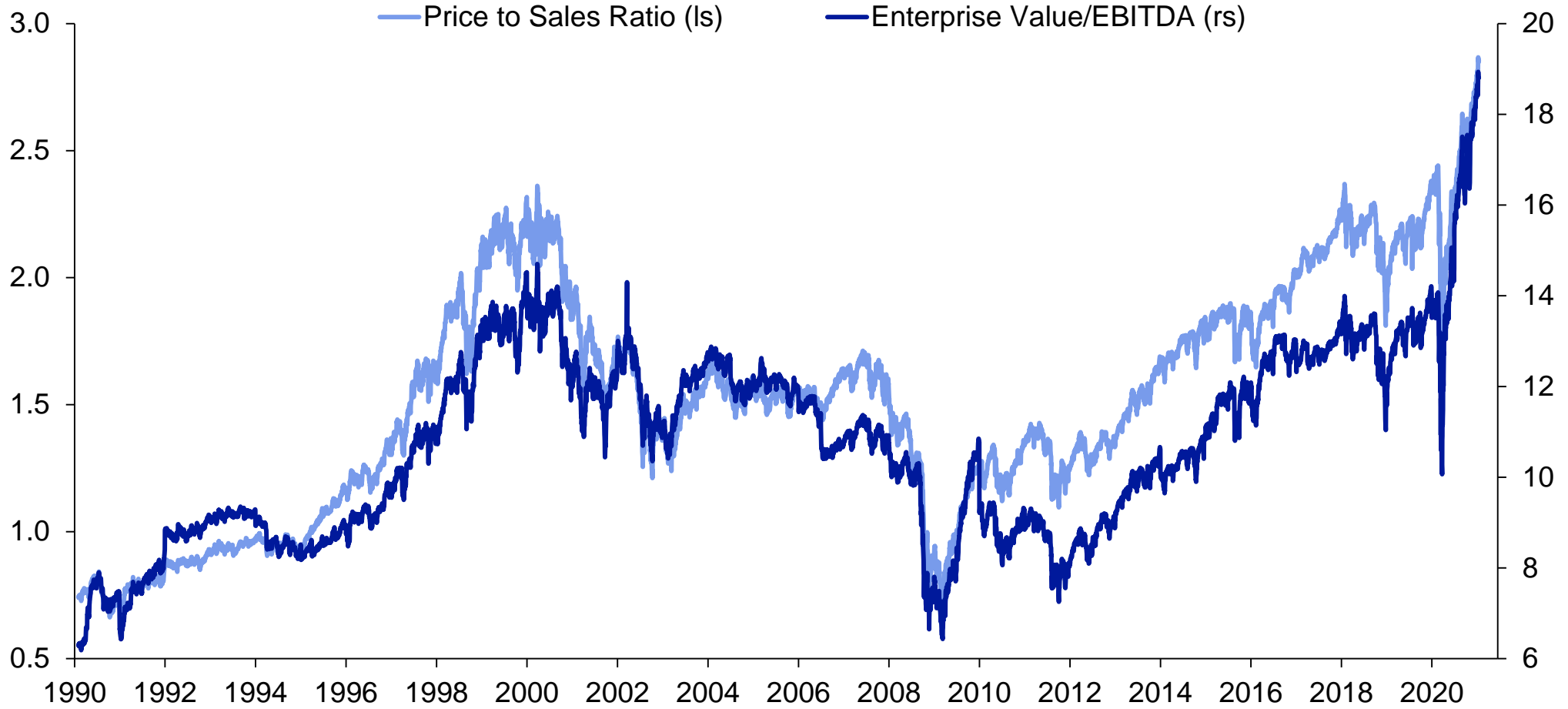


Source: S&P, World Bank, Haver Analytics, Deutsche Bank

S&P 500 price to sales and enterprise value/EBITDA at the highs...



S&P 500 Enterprise value/EBITDA and Price to Sales Ratio

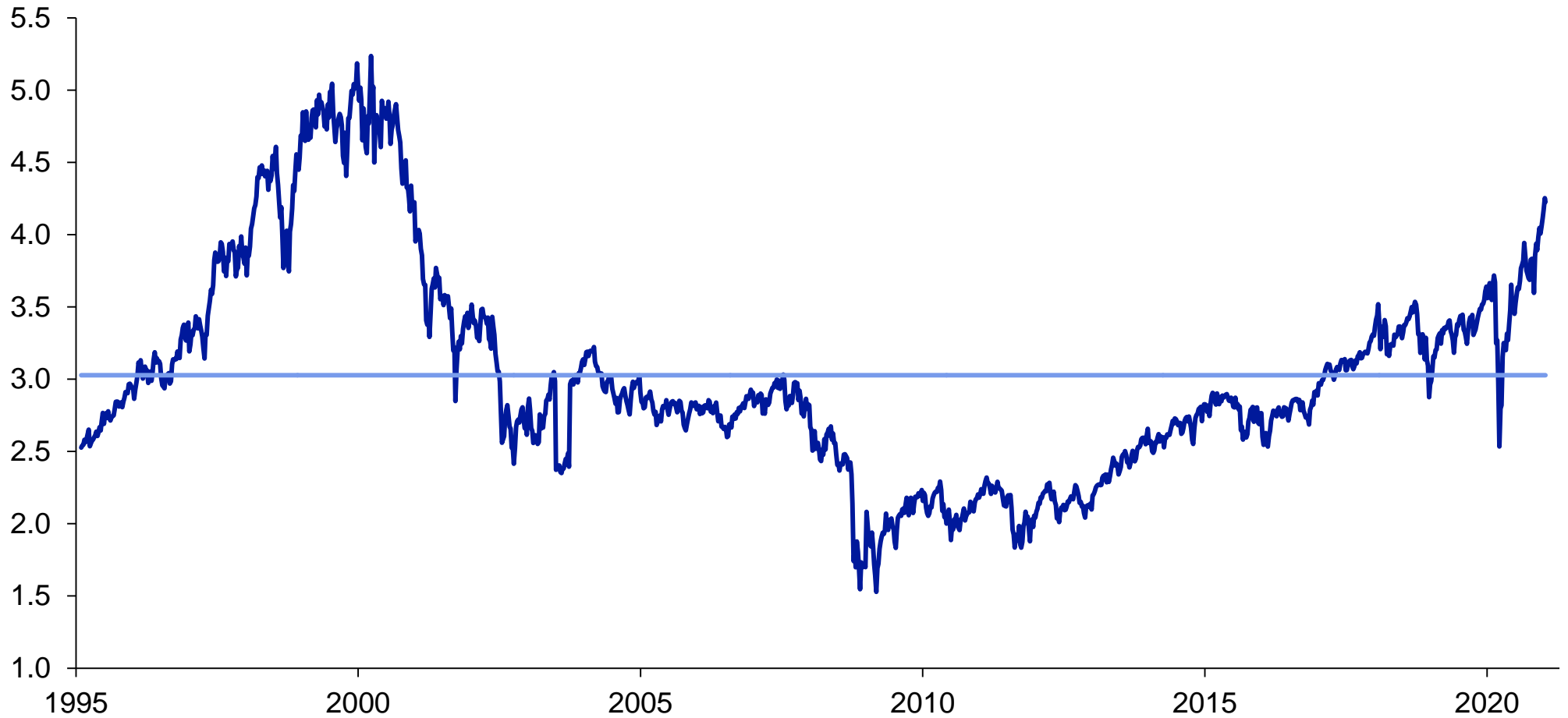


Source: Bloomberg Finance LP, Deutsche Bank

S&P 500 price to book not as high as but approaching 2000 levels...



S&P 500: Price to Book Ratio

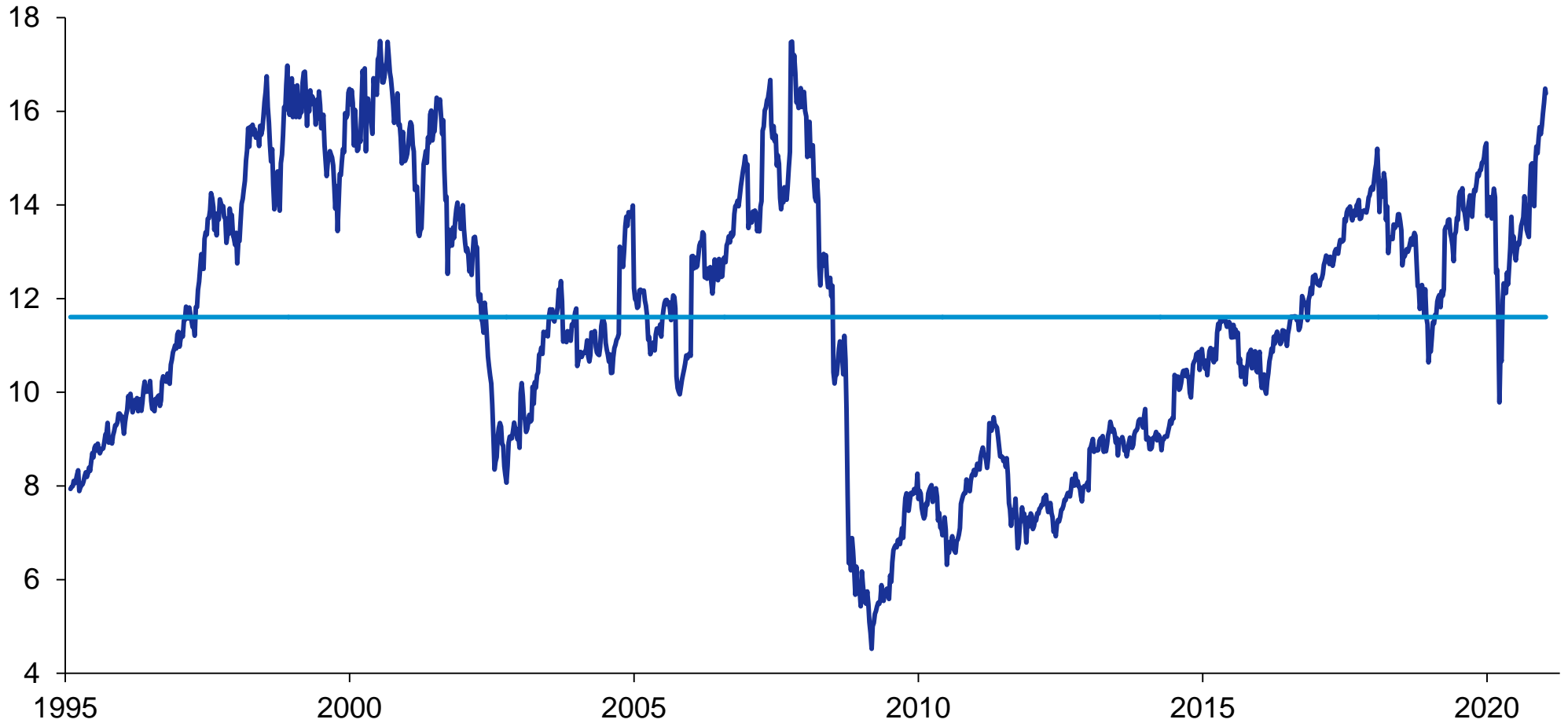


Source: Bloomberg Finance LP, Deutsche Bank

S&P 500 price to cash flow approaching previous peaks...



S&P 500: Price/Cash Flow

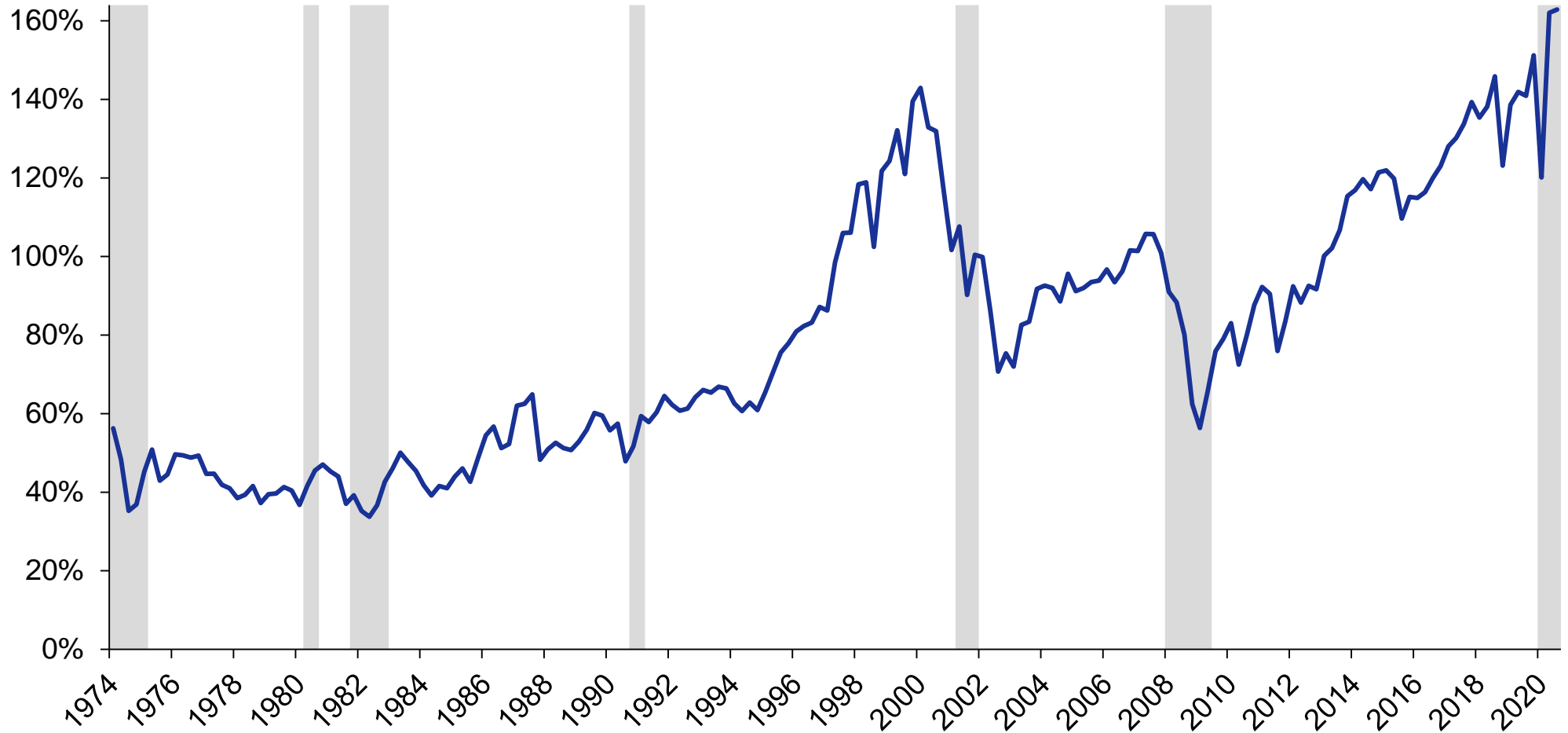


Source: Bloomberg Finance LP, Deutsche Bank

The broader indices are also stretched relative to GDP..



US Stock market valuation: Wilshire 5000 Total Market Index to GDP



Source: Bloomberg Finance LP, BEA, Haver Analytics, Deutsche Bank

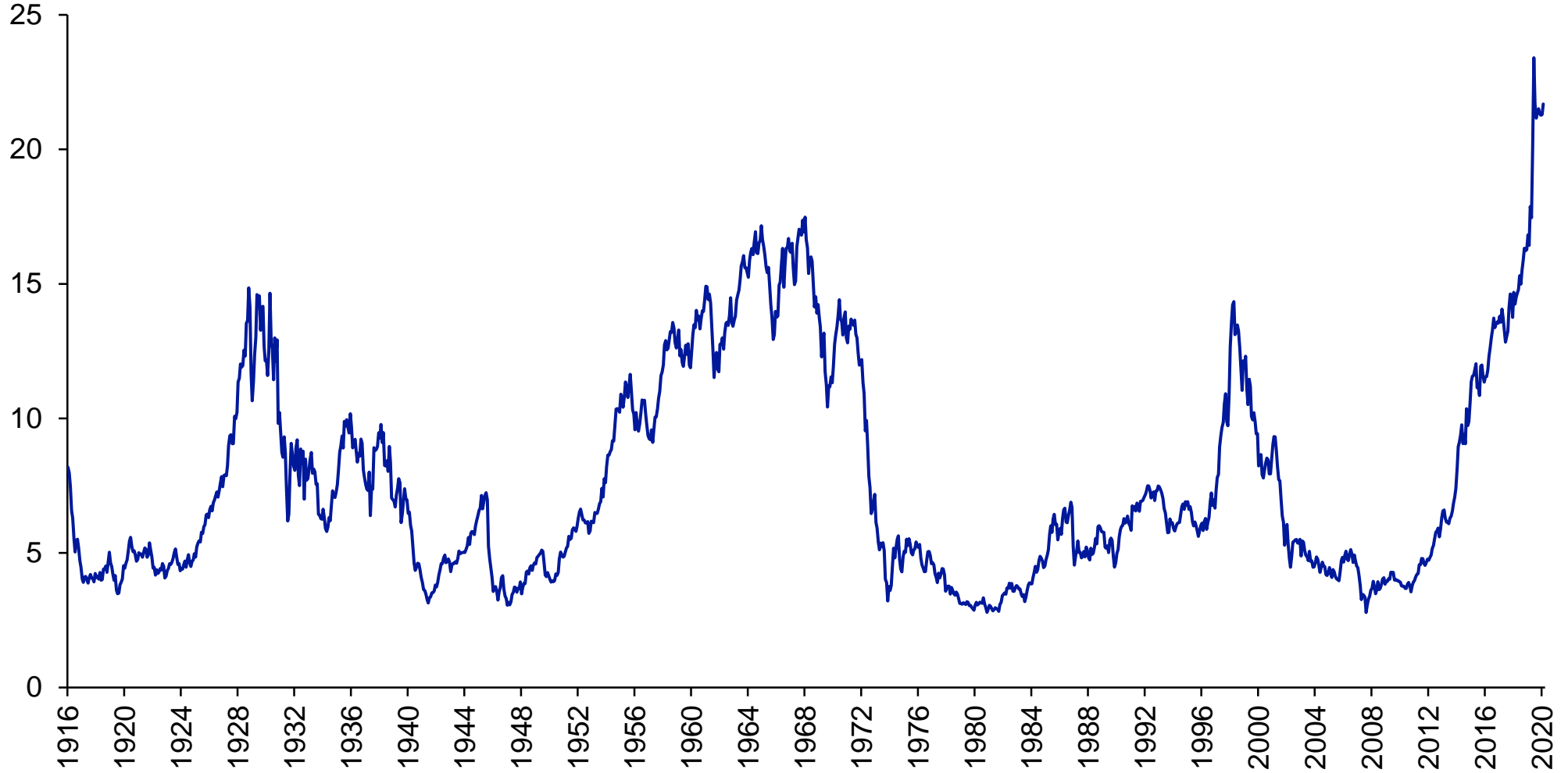


Hard pressed to say commodities are in a bubble

S&P 500 never been as high relative to Commodities as they were in 2020... just off the peaks now...



S&P 500 Price Index / CRY(B) Index



Source : GFD, Deutsche Bank

Commodities index has declined over time relative to inflation...



CRB Index (Real adjusted: US inflation)

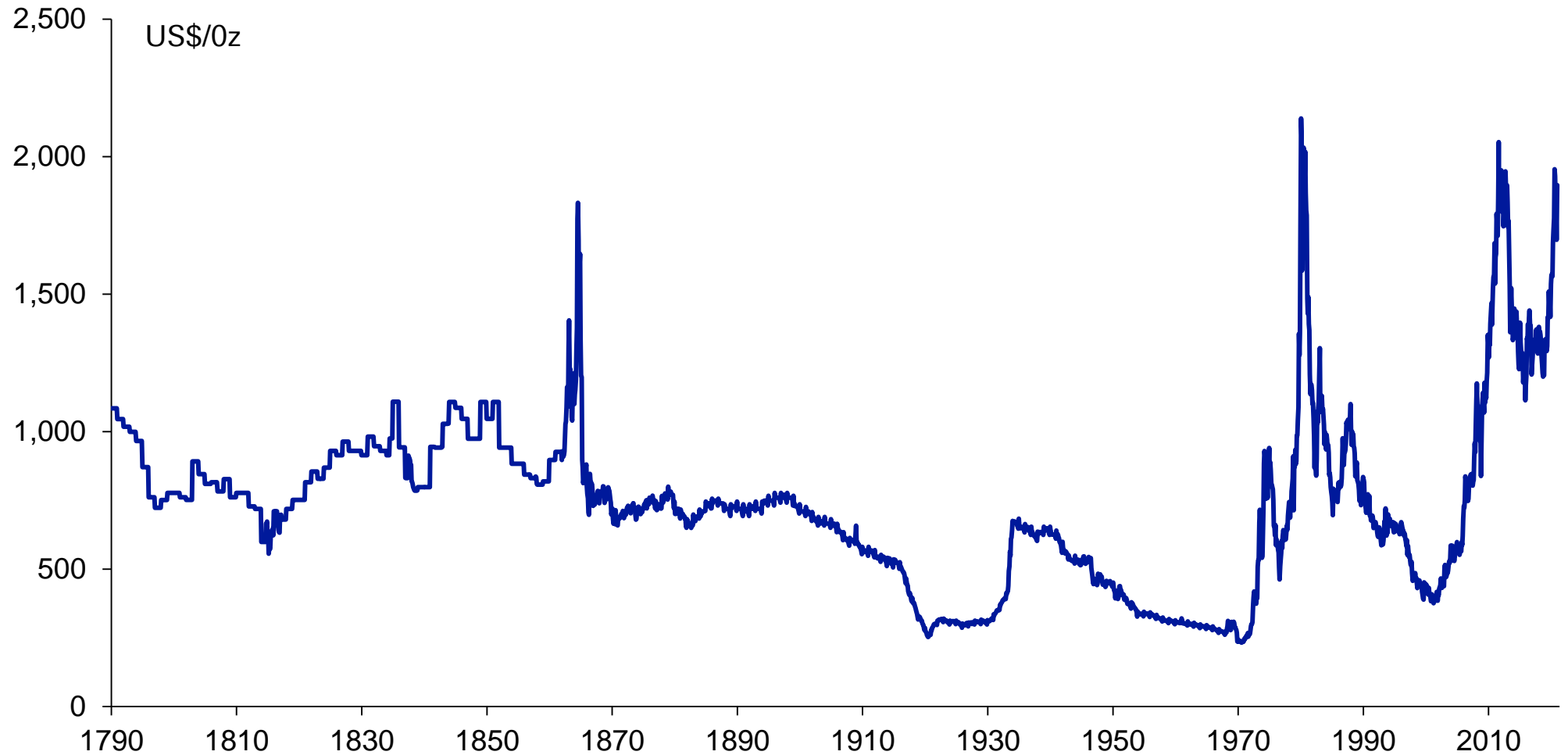


Source: GFD, Deutsche Bank

Gold has been the exception but has only doubled to inflation over 230 years... although up 7.8 times since 1971 and the end of gold-based money....



Real Gold price since 1790

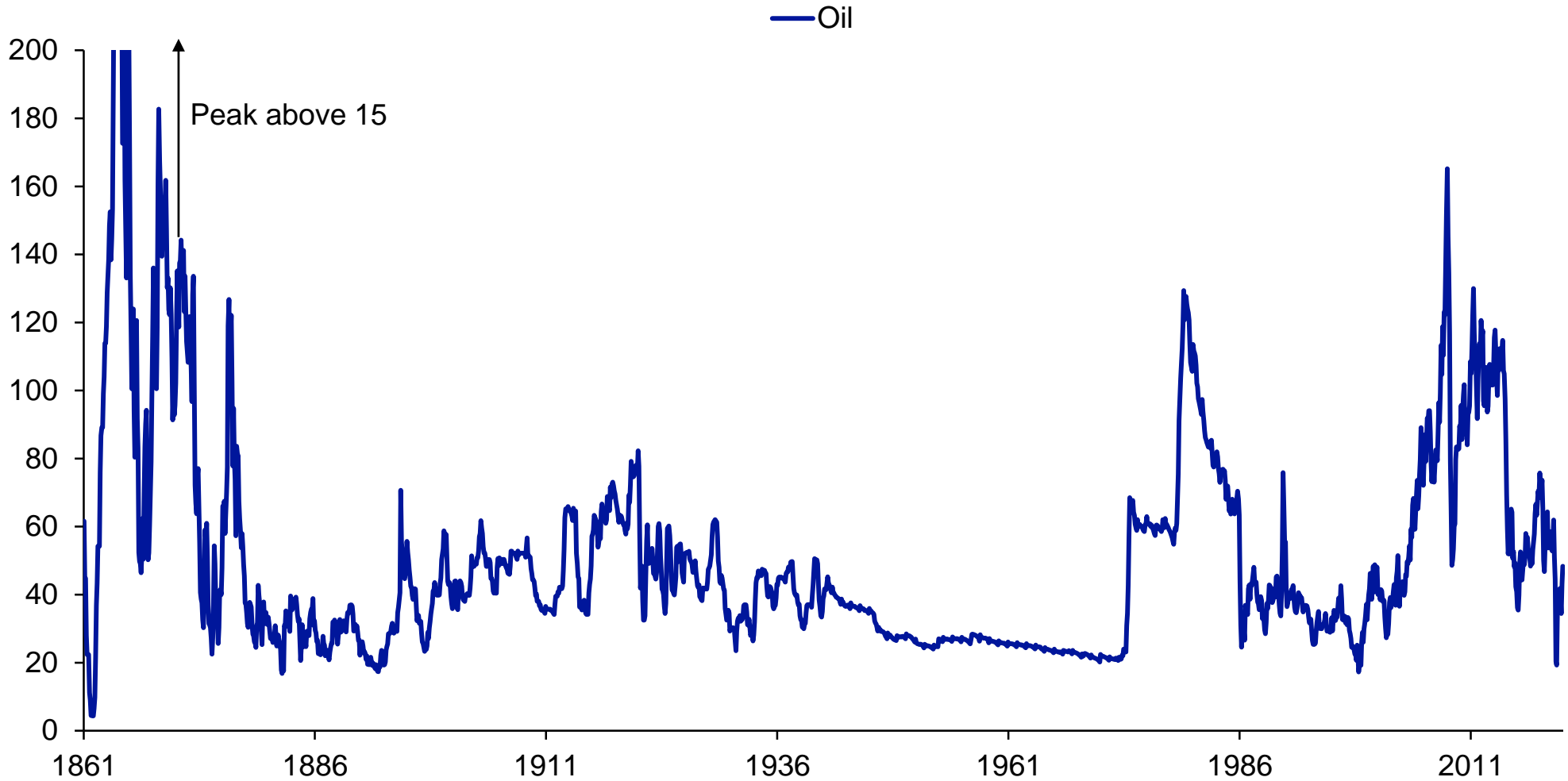


Source: GFD, Deutsche Bank

Oil struggles for long-term real price appreciation.... So maybe pre-GFC was the oil bubble...



Real Oil price since 1861



Source: GFD, Deutsche Bank



Appendix 1

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