

2 March 2021

# The Anatomy of Bubbles



# Agenda



Part 1:	Bubbles of Past and Present	3
Part 2:	How I Spot Bubbles	10
Part 3:	Are We in a Bubble Now?	19
Appendix A	How Ray Dalio Spots Bubbles	31
Appendix B	The Six Megatrends	40

## Part 1

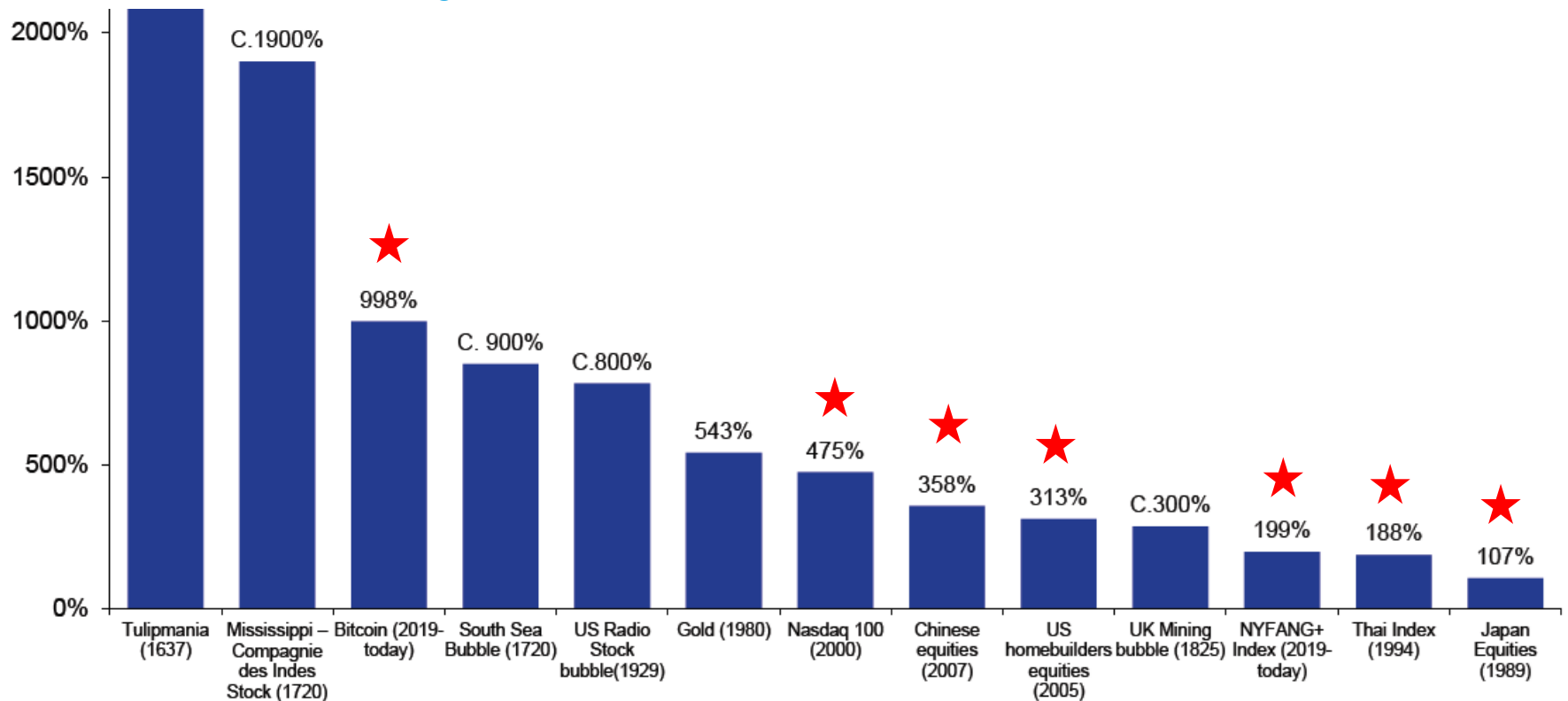
# BUBBLES OF PAST AND PRESENT



For hundreds of years, bubbles have formed at regular intervals, and I have experienced at least seven of them since I joined the industry in 1984.

### The Biggest Bubbles of the Last 400 Years

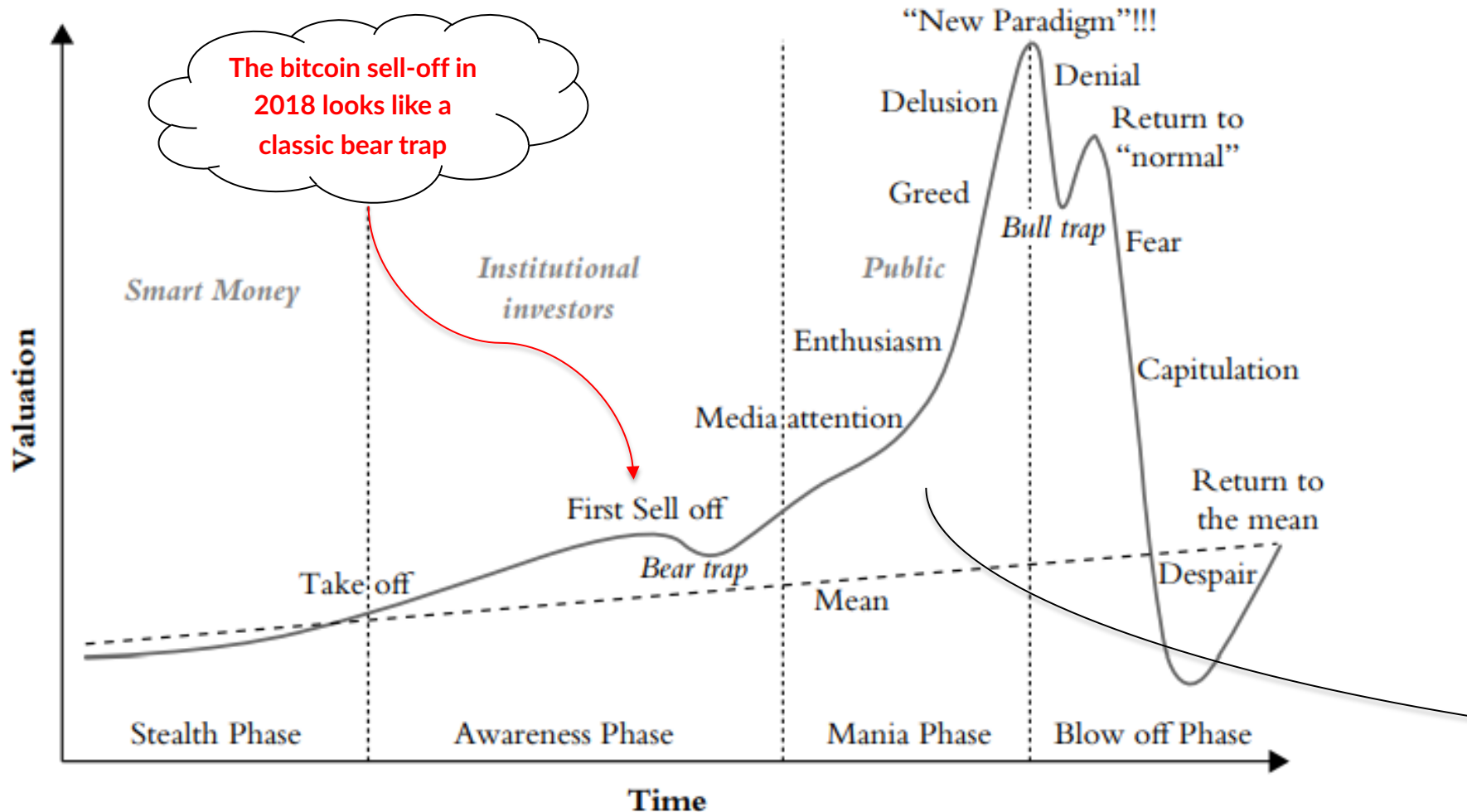
Trough-to-Peak Price Move within 3 Years of the Peak (%)



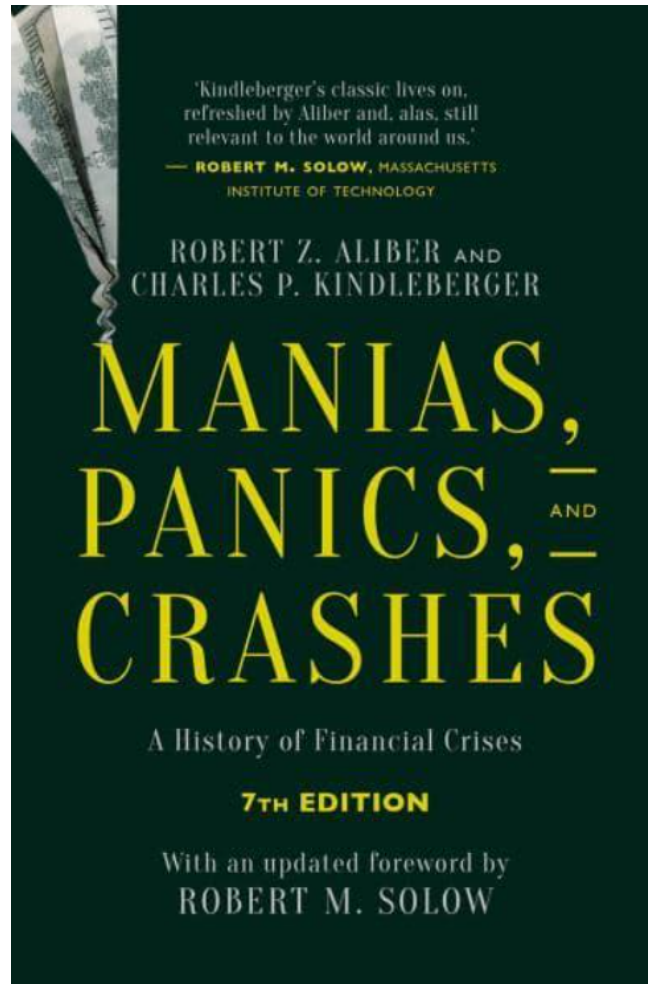
★ : Bubbles since 1984.

Most bubbles follow a rather predictable pattern.

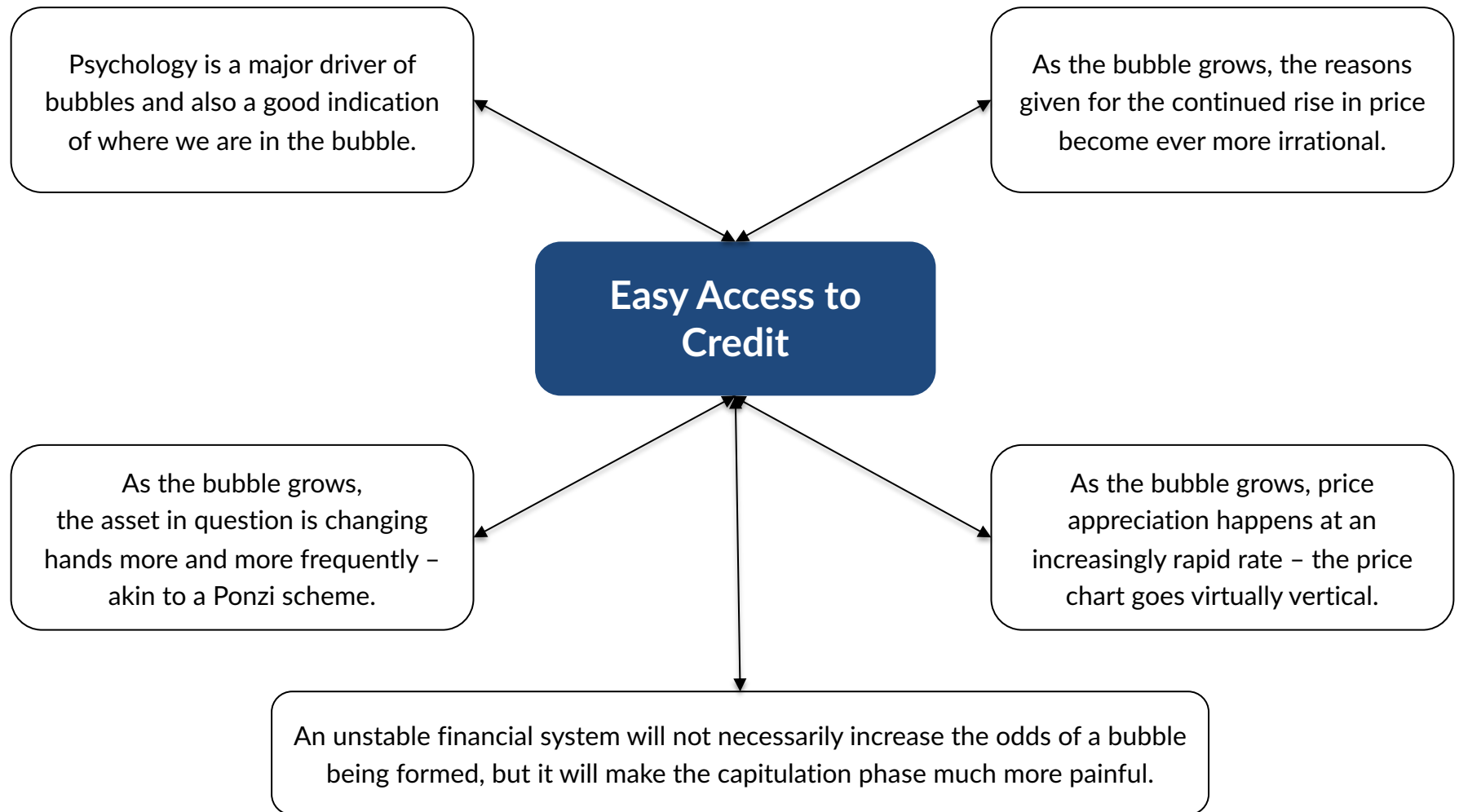
## The Anatomy of a Bubble



Aliber and Kindleberger's book on bubbles was first published in 1978, and the 7<sup>th</sup> and latest edition came in 2015.



According to Aliber & Kindleberger, there is one overriding driver of bubbles – easy access to credit – but several other factors are considered valuable signs of excess.



It certainly looks as if bitcoin is now in a bubble.

**Bitcoin (BTC)**  
Trading Value, 2014-2021

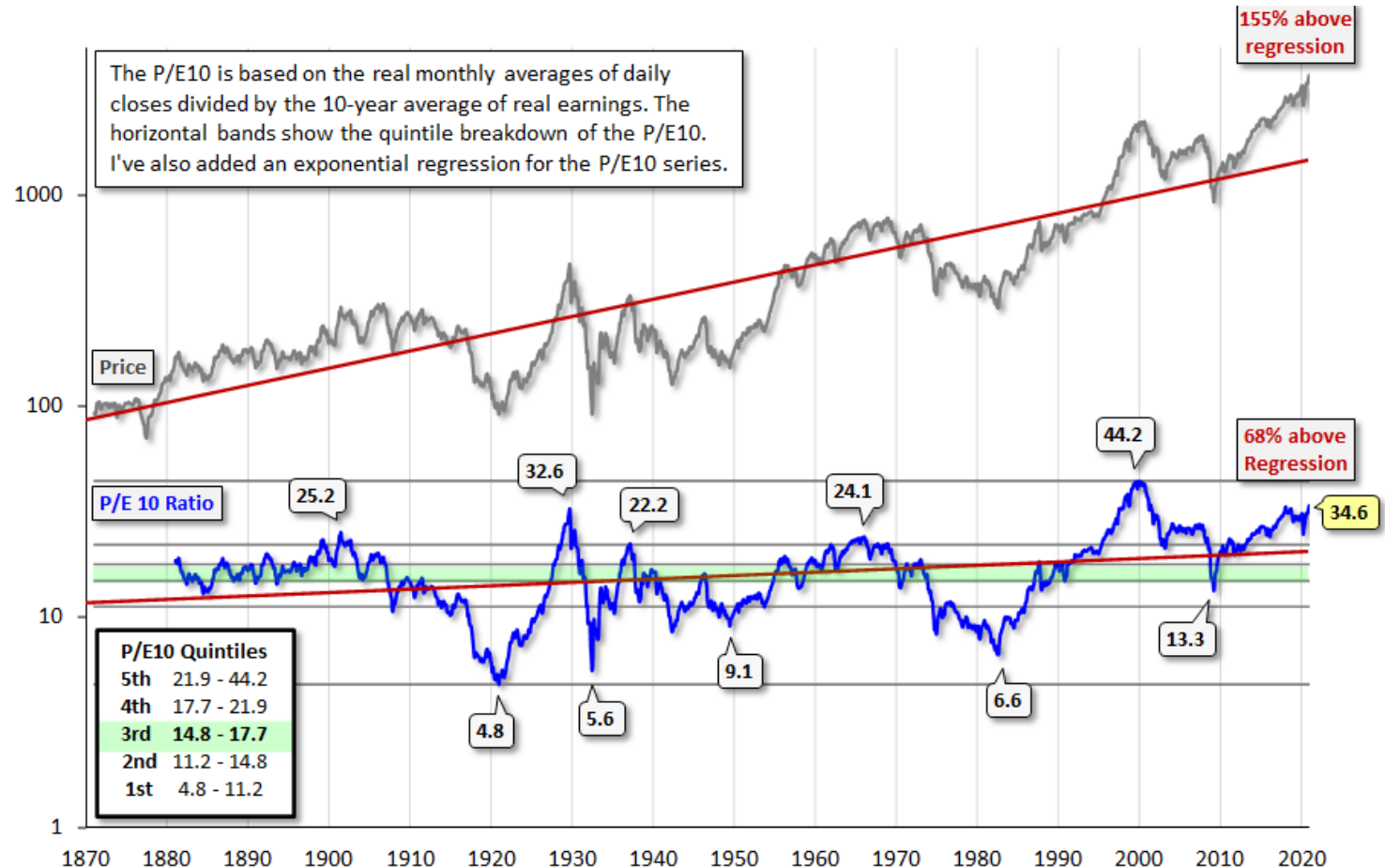




Is another bubble forming in US equities at present?

Following the recent rally in Big Tech, US equities certainly look pricey.

### S&P Composite in Real Terms Absolute Price & CAPE Ratio



## Part 2

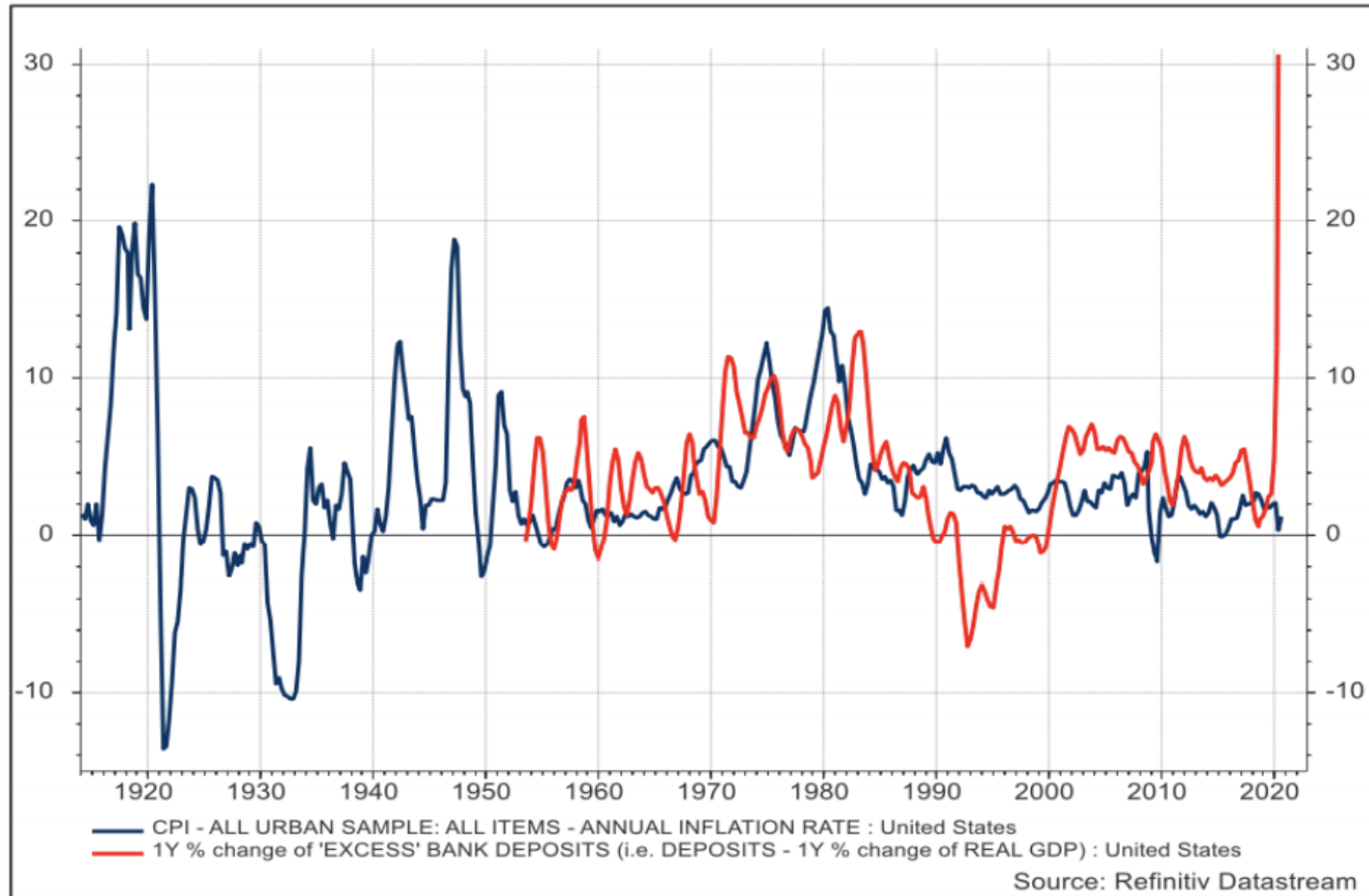
# HOW I SPOT BUBBLES



My bubble sign #1: When access to credit is easy.

The US is currently drowning in liquidity.

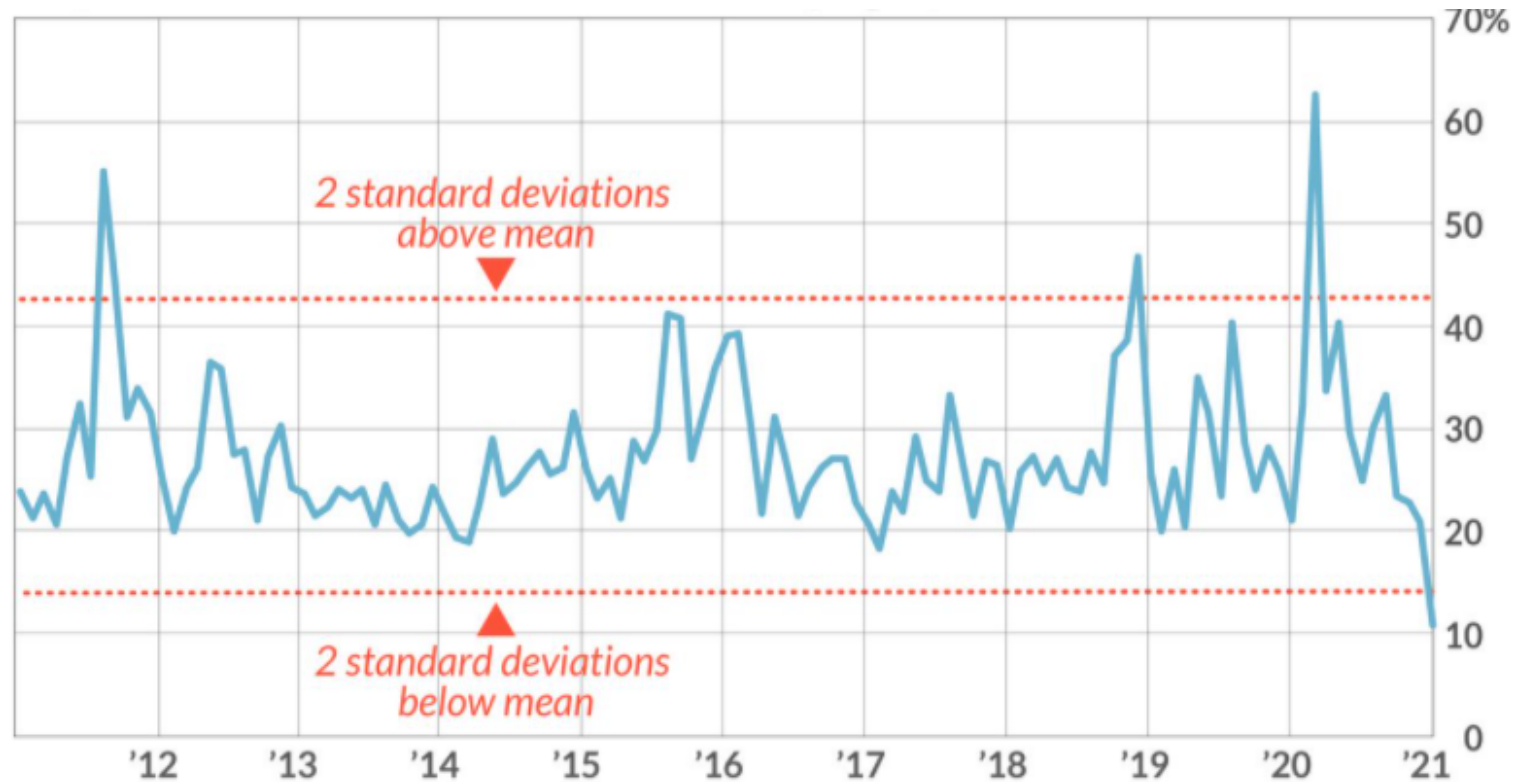
Growth in US Bank Deposits (red line) vs. US CPI (blue line) in %



My bubble sign #2: When insiders do not share investor optimism.

Recently, US insiders have been reluctant to buy their own shares.

### Proportion of Firms for Which Net Insider Buying Is Positive



My bubble sign #3: When intrinsic value is being ignored by investors.  
Value is being largely ignored by investors at present.

MSCI US Growth Index / MSCI US Value Index



My bubble sign #4: When retail investors dominate trading.

Recently, retail investors have accounted for much of US trading.

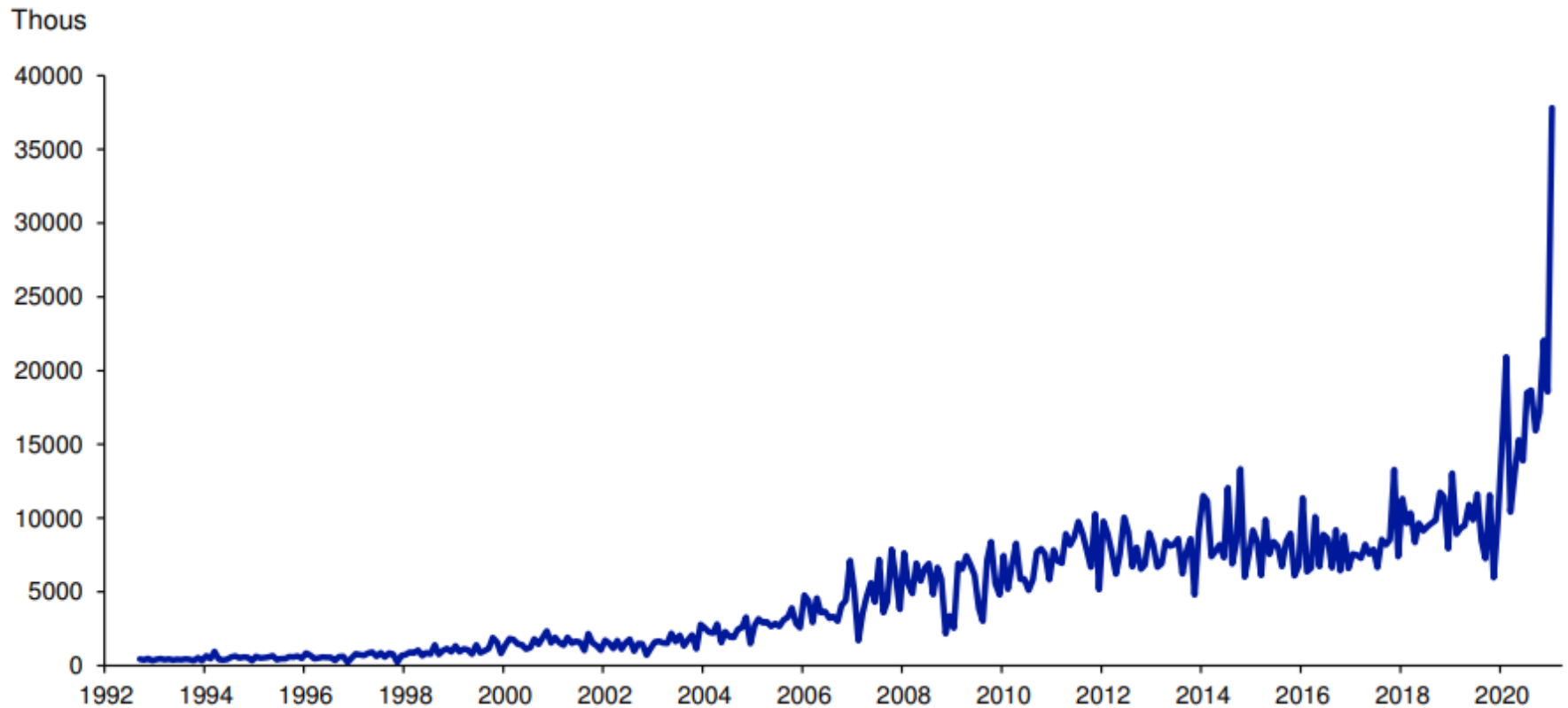
Average Daily Trades for E-Trade, TD Ameritrade and Charles Schwab (mill.)



My bubble sign #5: When option activity skyrockets.

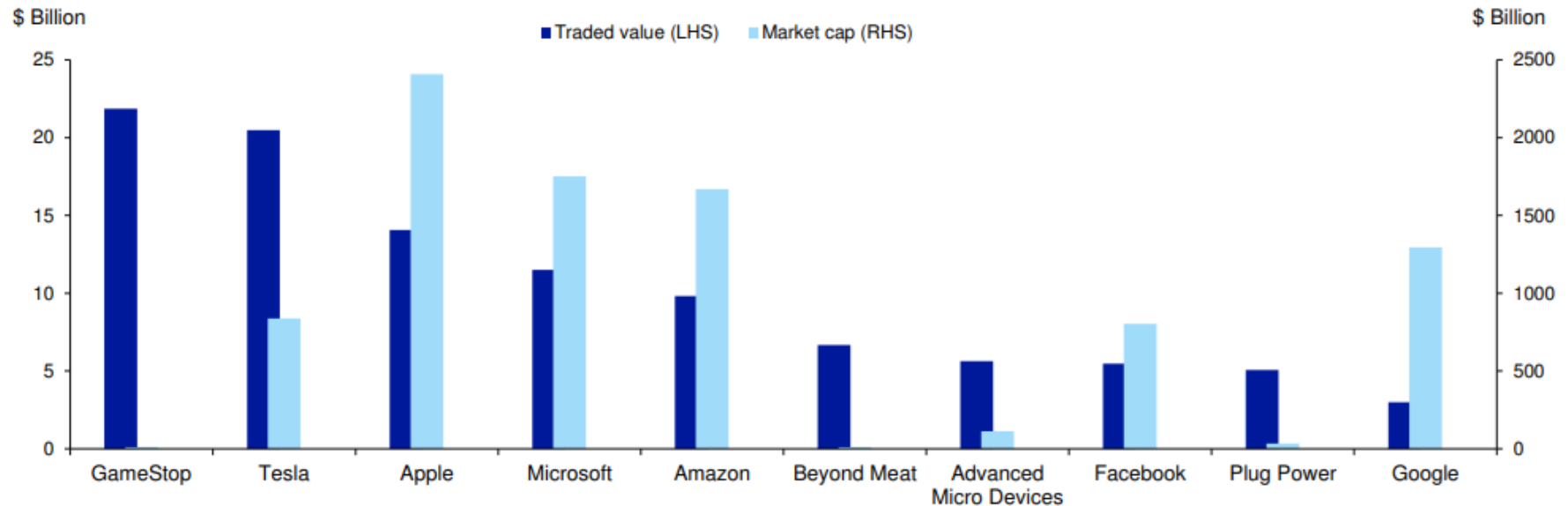
Activity in call options has indeed spiked recently.

### Total Call Option Volume



My bubble sign #6: When trading volumes are disproportionate to market caps.  
Trading activity in some companies has been almost absurd.

### Top 10 US Stocks traded on 26<sup>th</sup> January vs. Market Caps

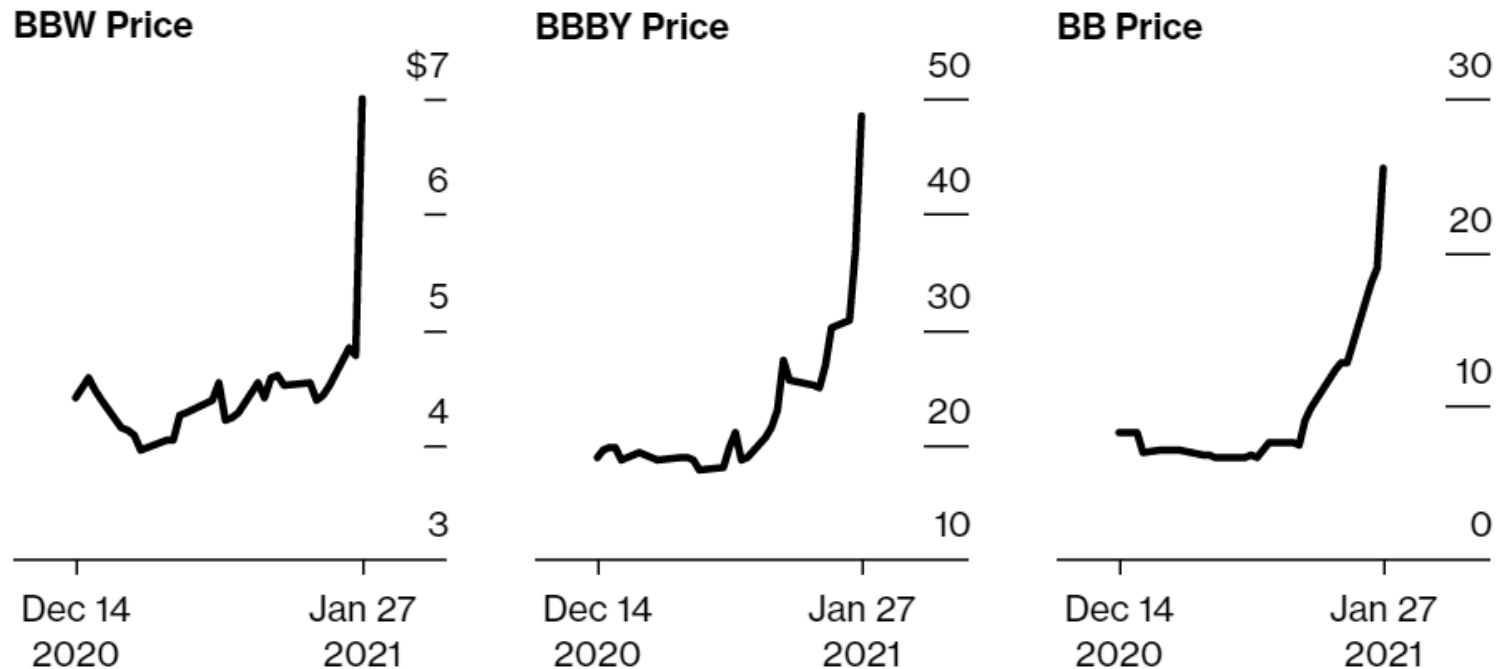




My bubble sign #7: When irrational behaviour drives the price of the asset.  
Retail investors have behaved rather strangely recently.

### The BB Phenomenon

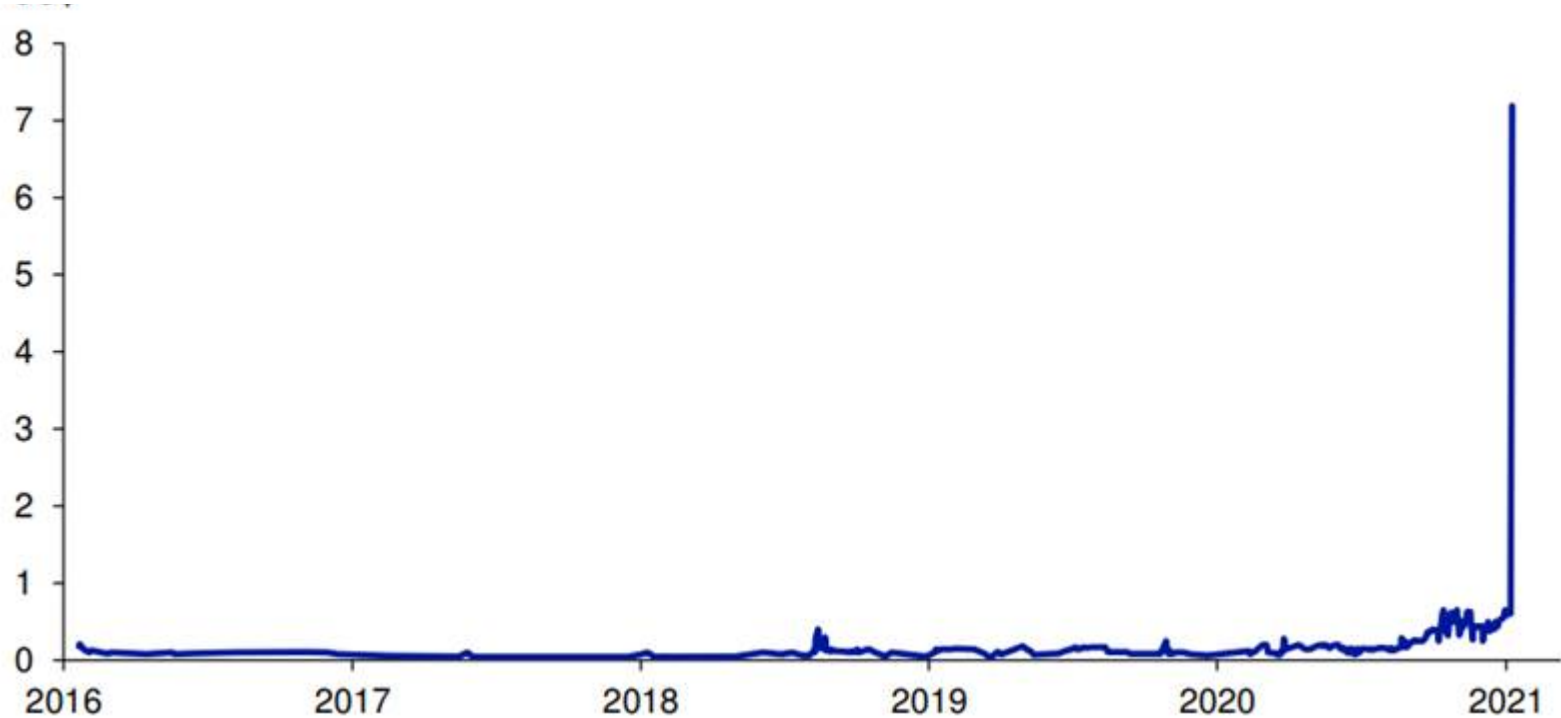
The Behaviour of Stocks Starting With BB on the 27<sup>th</sup> January



My bubble sign #8: When the bull market is fueled by misinterpreted information.  
Social media – do I need to say more?

### Signal Advance Inc. Stock Price

After Elon Musk's (Misinterpreted) Tweet in January 2021



## Part 3

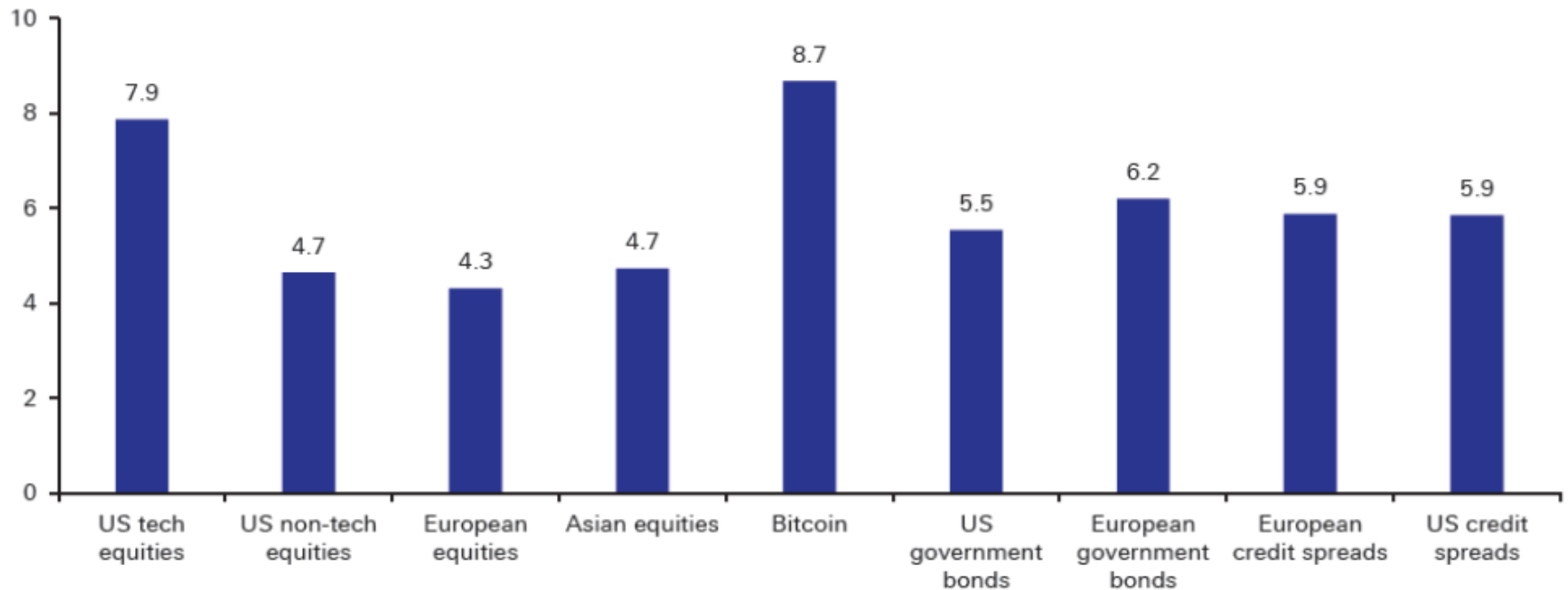
ARE WE IN A BUBBLE NOW?



In a recent survey conducted by Deutsche Bank, investors reckoned that bitcoin and US tech equities form the biggest bubbles at present.

### 2021 Survey

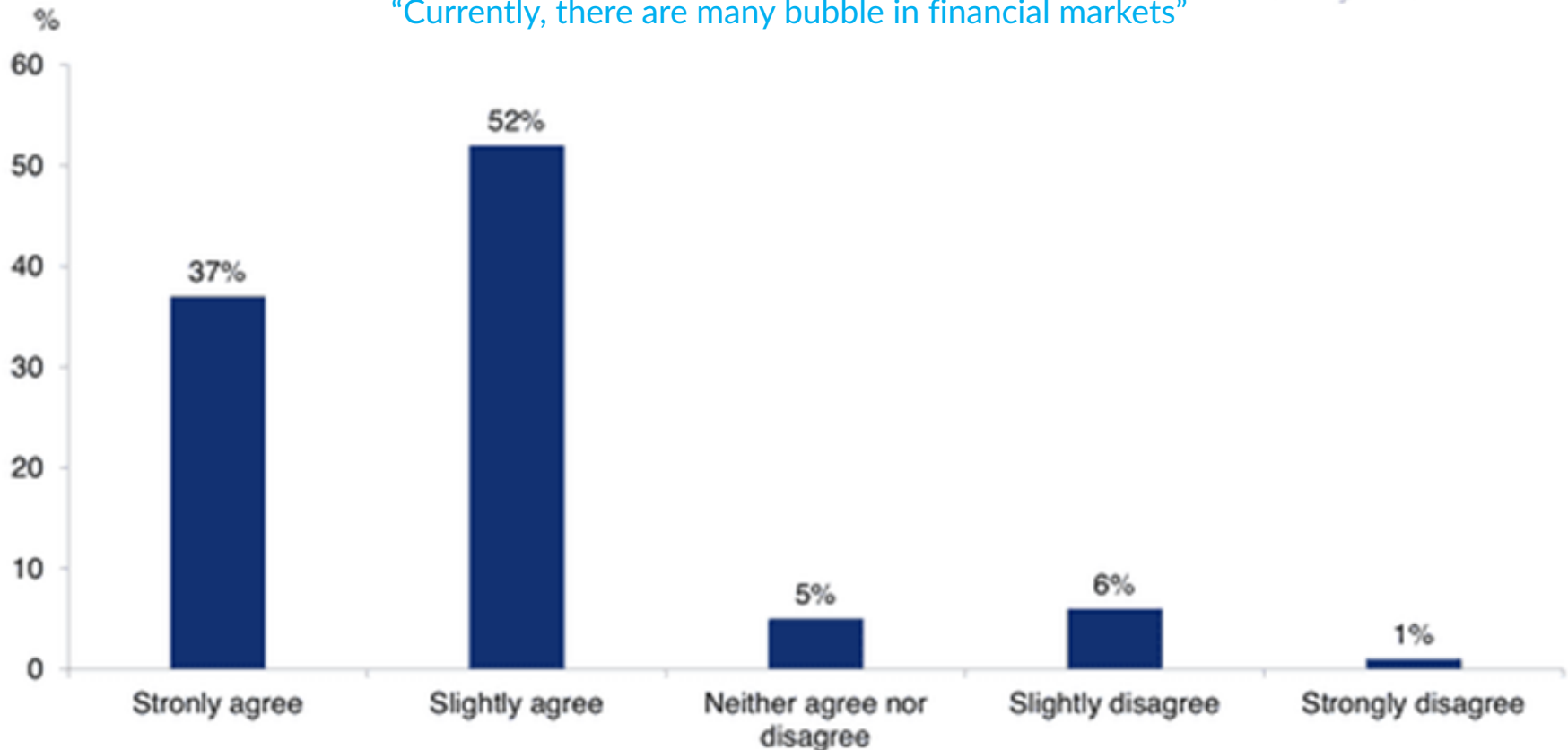
“Looking at the following assets and using a scale of 0 to 10 where 0 means ‘No Bubble’ and 10 means ‘Extreme Bubble, where do you think these assets currently are?’



... and almost 90% of those surveyed think there are more bubbles than those two.

### 2021 Survey

How much do you agree or disagree with the following statement?  
“Currently, there are many bubble in financial markets”



Is bitcoin in a bubble? If so, at which stage of the bubble are we?

## Is Bitcoin Boom a 'Better Gold' or Just Another Bubble?

By [Olga Kharif](#) and [Edward Robinson](#)

14 January 2021, 10:20 GMT Updated on 9 February 2021, 12:14 GMT

## 'Bitcoin will touch \$100,000 soon, it's not a bubble,' say cryptocurrency experts

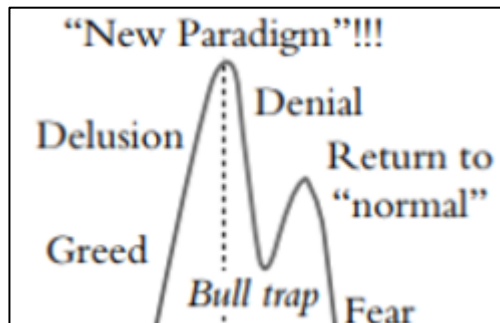
Bitcoin breached \$50,000 mark for the first time on Tuesday, mainly due to increasing interest and participation from institutional investors

Avneet Kaur | February 17, 2021 | Updated 15:44 IST

## Tesla drives up bitcoin price to over \$47,000 with \$1.5 billion purchase

The announcements, buried deep in Tesla's 2020 annual report, drove a roughly 20% surge in the world's most widely held cryptocurrency to over \$47,000

[Reuters](#) | February 9, 2021 | Updated 12:35 IST



TECH

Why is the bitcoin price crashing?



TECH

Bitcoin price crashes spectacularly, wiping \$10k from value



NEWS

How bad is bitcoin for the environment really?



TECH

Bitcoin's value tops \$1 trillion

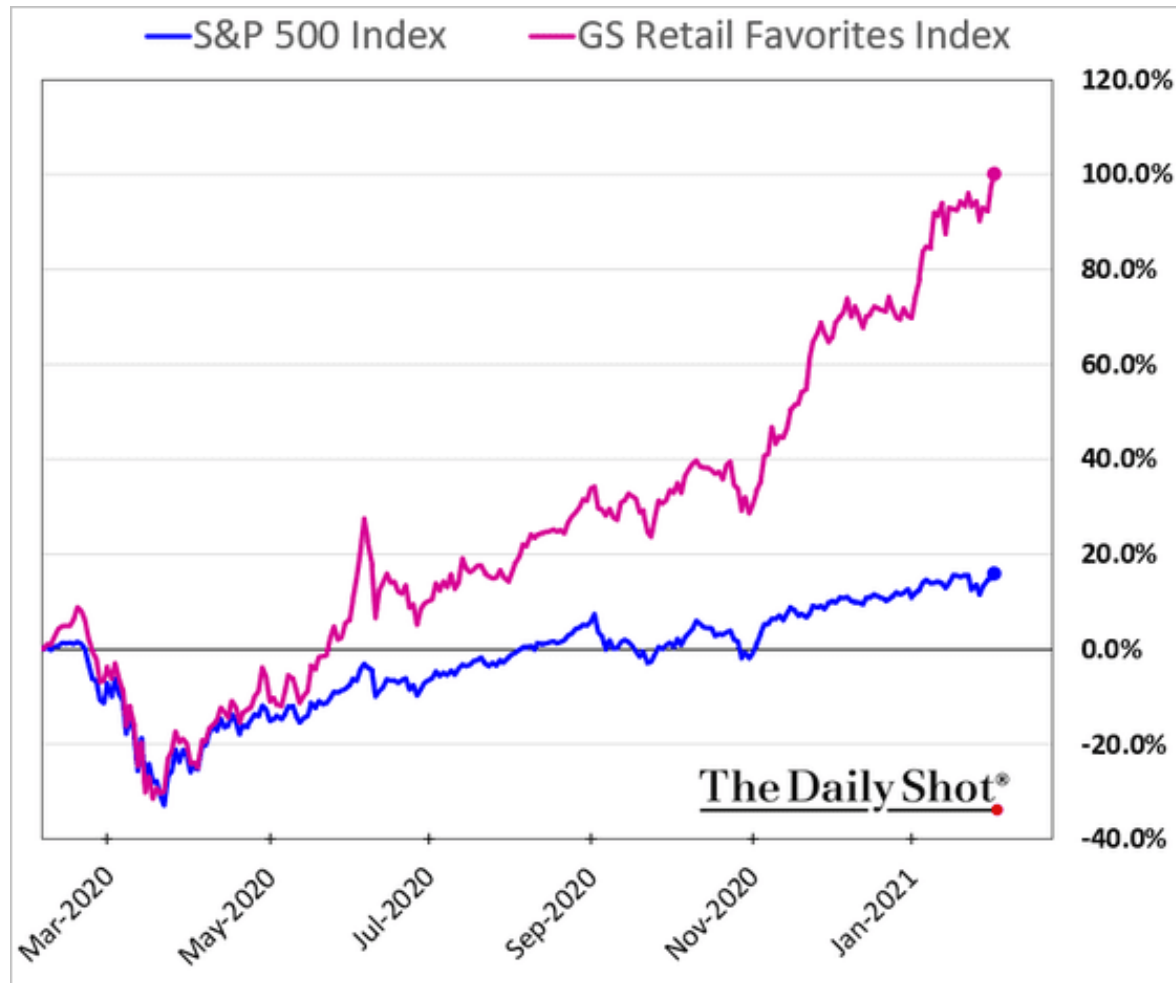


TECH

Bitcoin price hits new record high as market cap nears \$1 trillion

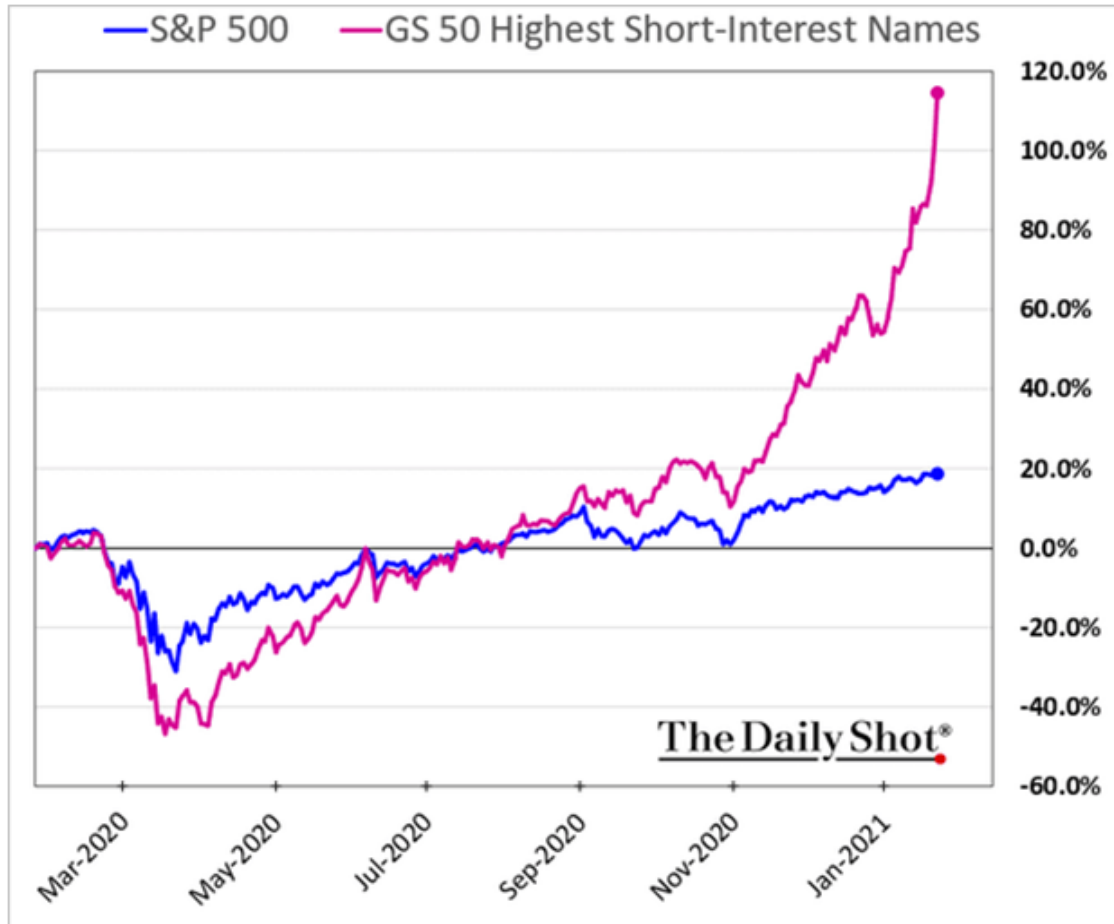
As far as equities are concerned, recent behaviour of those stocks favoured by retail investors seems to confirm that we are indeed in some sort of a bubble.

### S&P 500 vs. Goldman Sachs Retail Favourites Index



Short-sellers were squeezed by retail investors in early 2021, leading to massive losses in some hedge funds, as they were forced to cover their shorts.

### S&P 500 vs. Goldman Sachs Highest Short-Interest Names

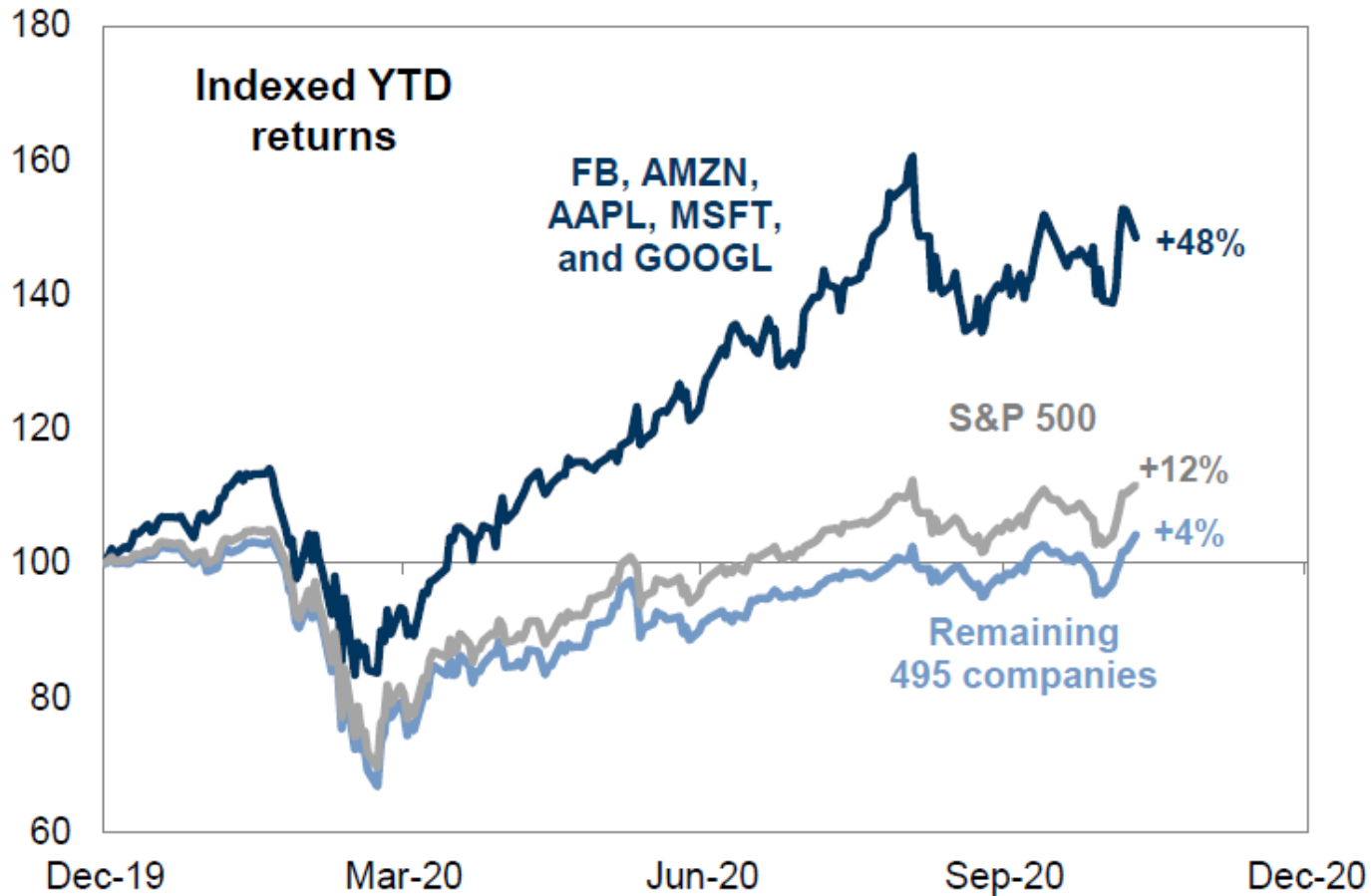




The FAAMGs accounted for a massive share of the 2020 rally in the S&P 500, leading some commentators to argue that the FAAMGs are now in a bubble too.

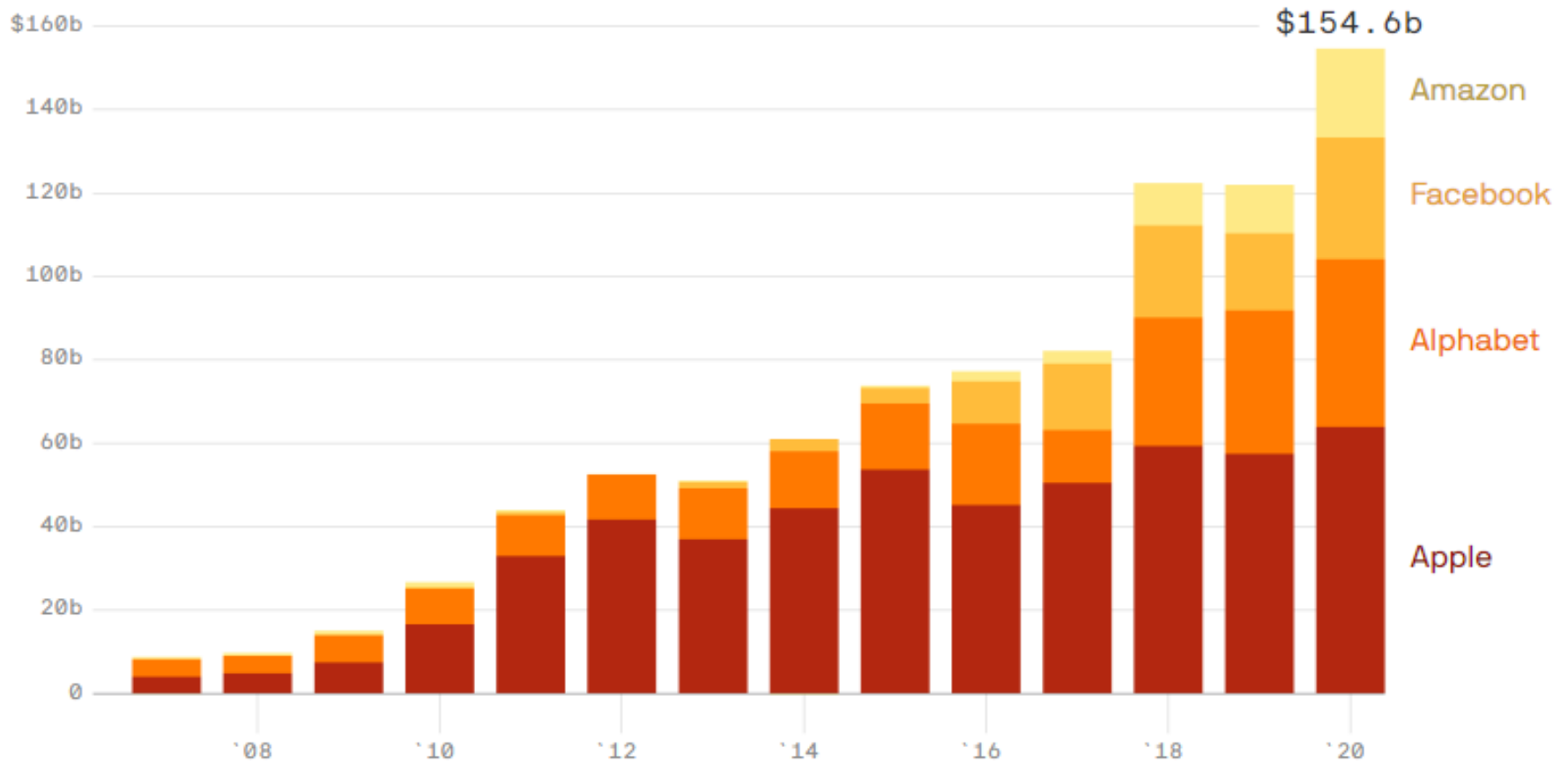
### 2020 Performance of FAAMGs vs. S&P 500

01/01/2020 – 09/11/2020



That said, the 2020 gains in Big Tech stocks were largely supported by strong gains in profitability.

### Big Tech Annual Profits



Bottom line: There are indeed some examples of irrational exuberance, suggesting that a bubble may be forming in corners of the market ...

### Market Value of Tesla vs. Bitcoin



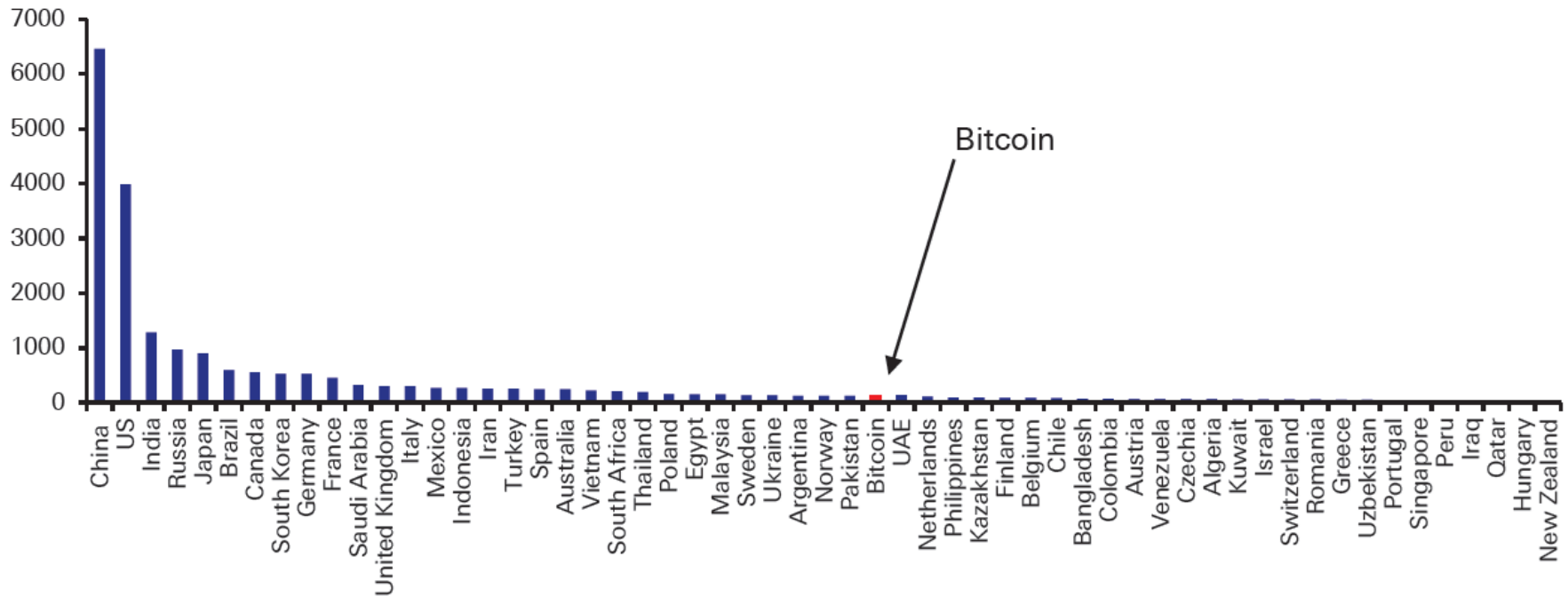
... but tech stock valuations are not at bubble levels (yet), assuming we can use dotcom valuation levels as a yardstick.

### Ratio of Market Value to Total Revenues for Nasdaq 100 Index



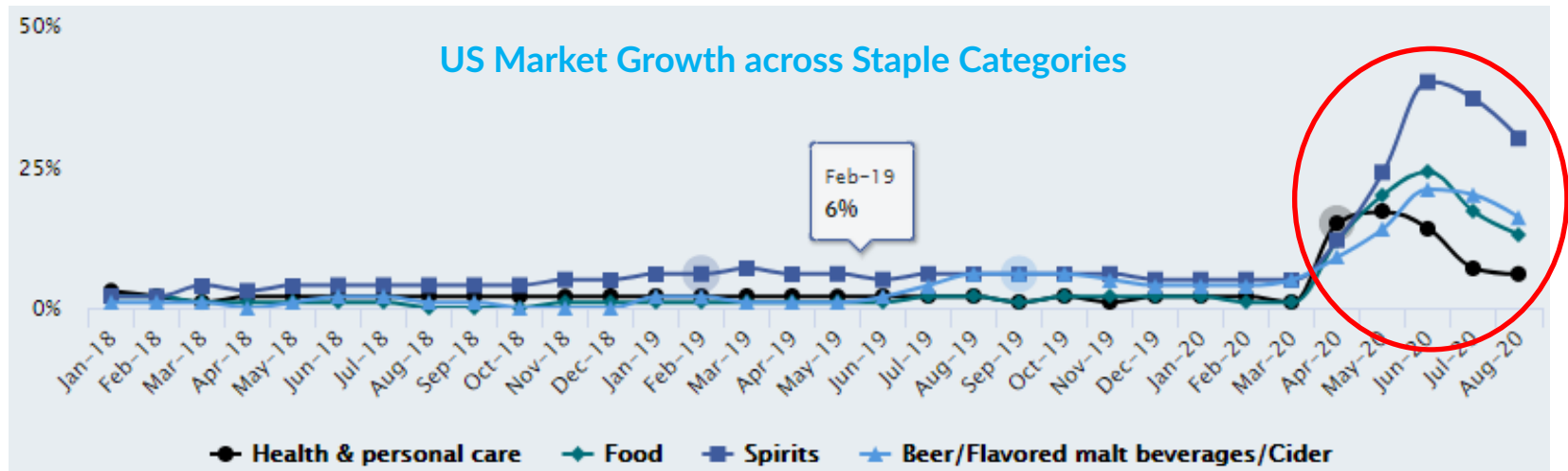
One final word of warning on bitcoin: its excessive use of electricity could turn many large, ESG-conscious investors against it. Could that cause the bubble to burst?

### Annual Electricity Consumption (TWh per year) by Country



## Conclusion

- The digital revolution has provided a very favourable backdrop to Big Tech, and COVID-19 has resulted in different spending patterns – both in businesses and in households.



- The combination of the two has led to extraordinarily benign business conditions for certain types of businesses, while it has spelled death for others.
- Therefore, it is not at all illogical that equity returns in general were modest in 2020, but that certain types of technology companies did, and continue to do, very well.
- **Bottom line:** don't avoid equities in general, but avoid the potholes created by retail investors.

## Appendix A

# HOW RAY DALIO SPOTS BUBBLES



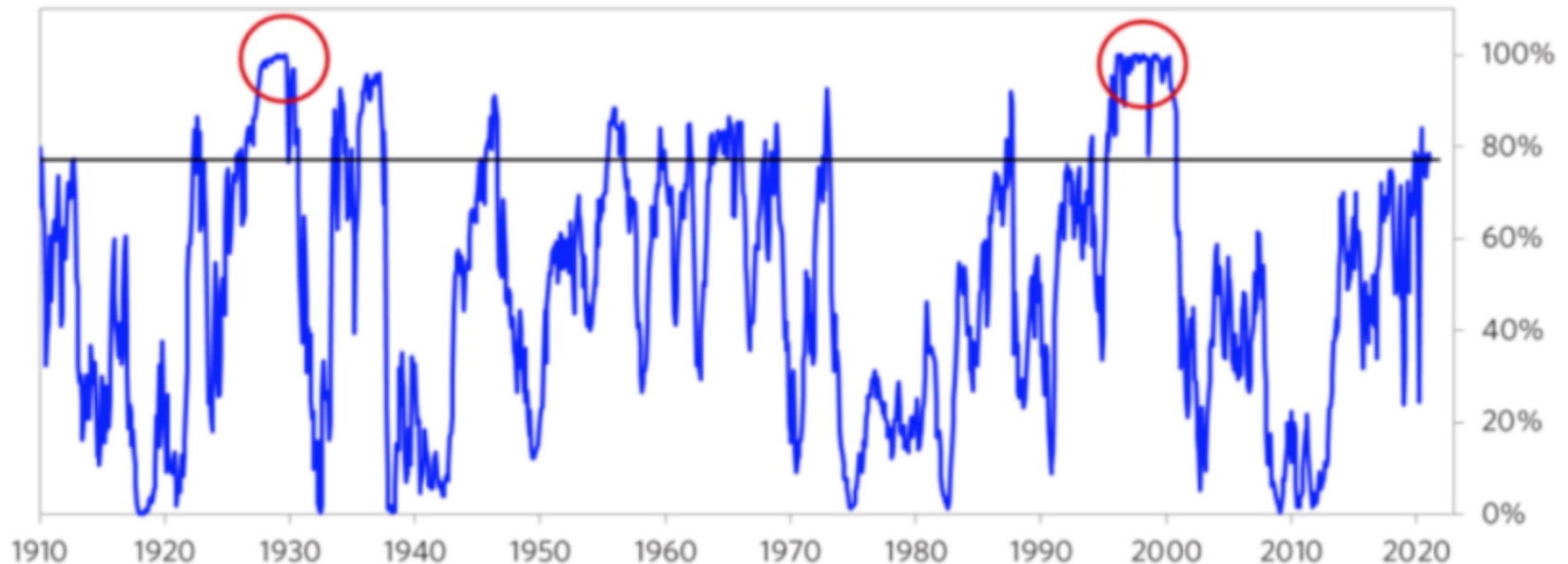
Ray Dalio uses six measures to determine whether we are in a bubble or not. Those six measures add up to his aggregate bubble gauge (see next page).

1. How high are prices relative to traditional measures?
2. Are prices discounting unsustainable conditions?
3. How many new buyers (i.e., those who weren't previously in the market) have entered the market?
4. How broadly bullish is sentiment?
5. Are purchases being financed by high leverage?
6. Have buyers made exceptionally extended forward purchases (e.g., built inventory, contracted forward purchases, etc.) to speculate or protect themselves against future price gains?



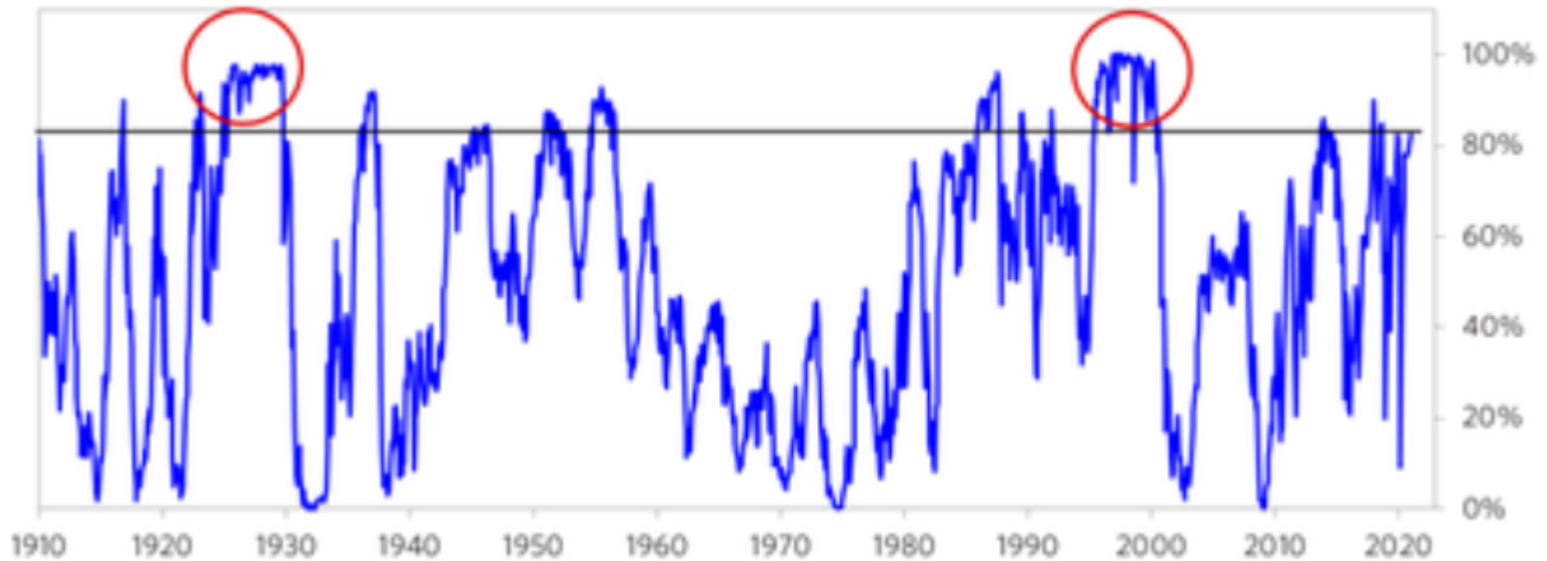
Ray Dalio's aggregate bubble gauge for US equities is around the 77<sup>th</sup> percentile. In the 1929 bubble, and in the 2000 bubble, the aggregate gauge had a 100% read.

### USA Aggregate Bubble Gauge Percentile



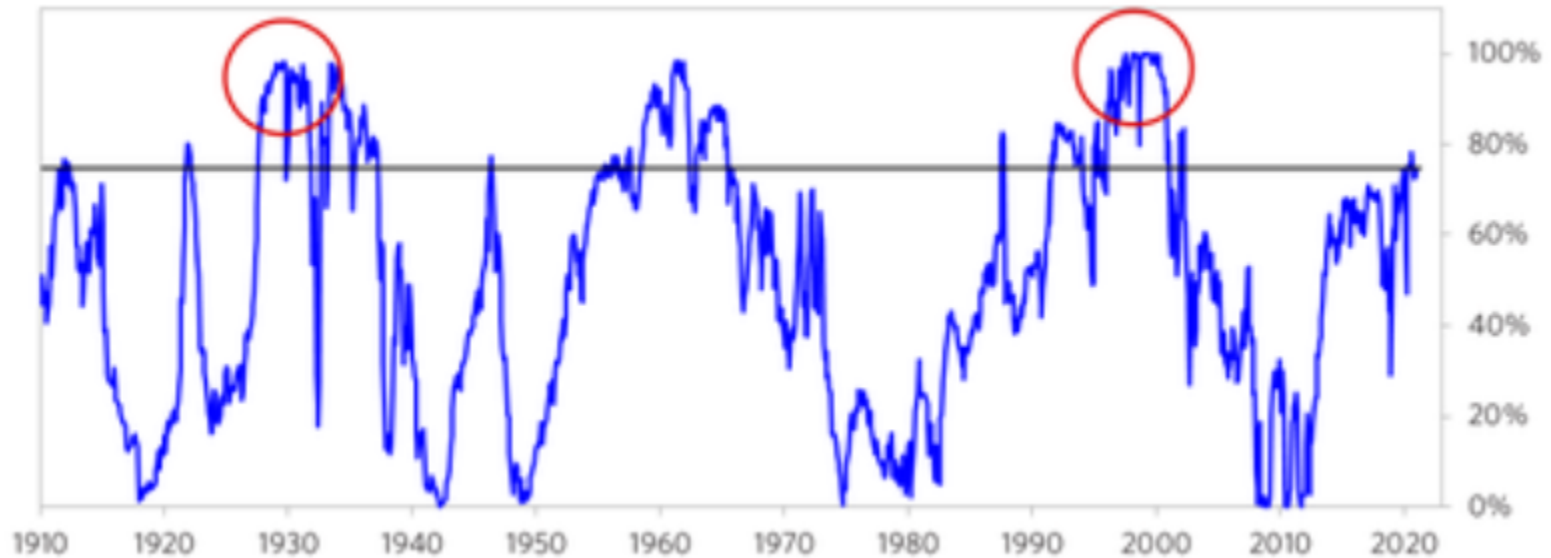
Ray Dalio's sign #1: The current read on the price gauge is around the 82<sup>nd</sup> percentile, less than the levels experienced in 1929 and in 2000.

### USA Price Gauge Percentile



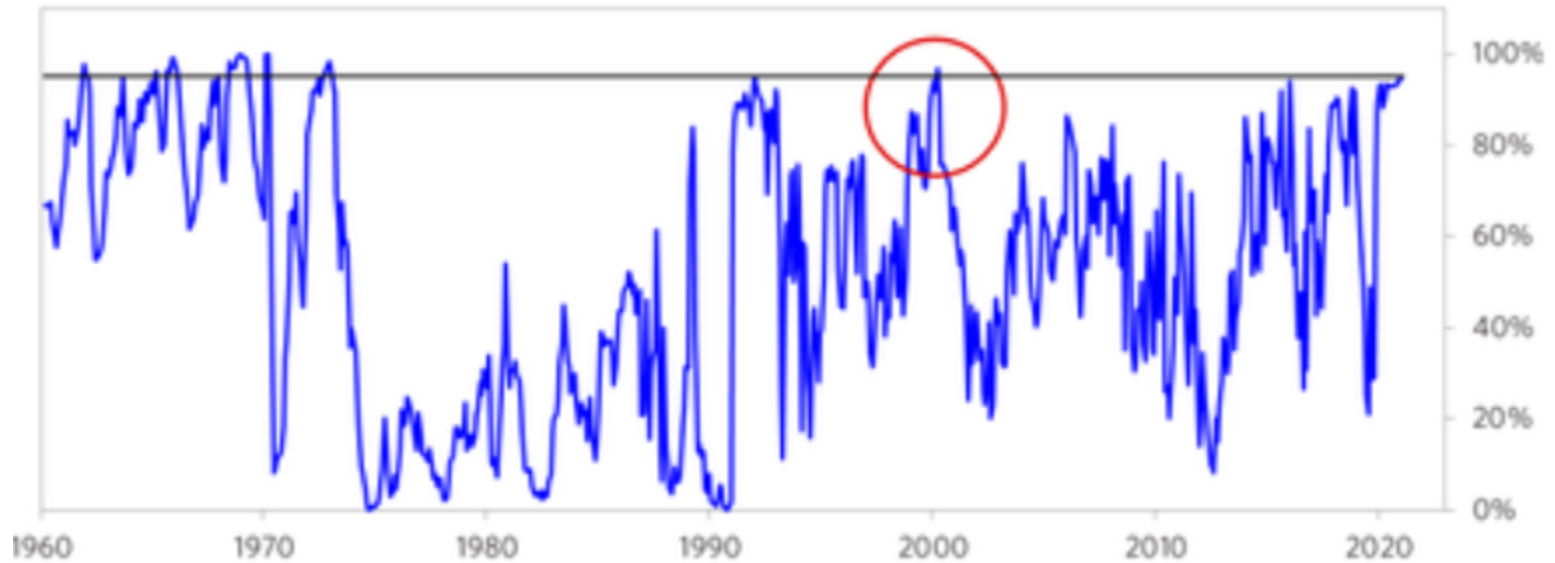
Ray Dalio's sign #2: The read on this gauge is around the 77<sup>th</sup> percentile, indicating that equities are not excessively valued relative to bonds.

### USA Discounting Gauge Percentile



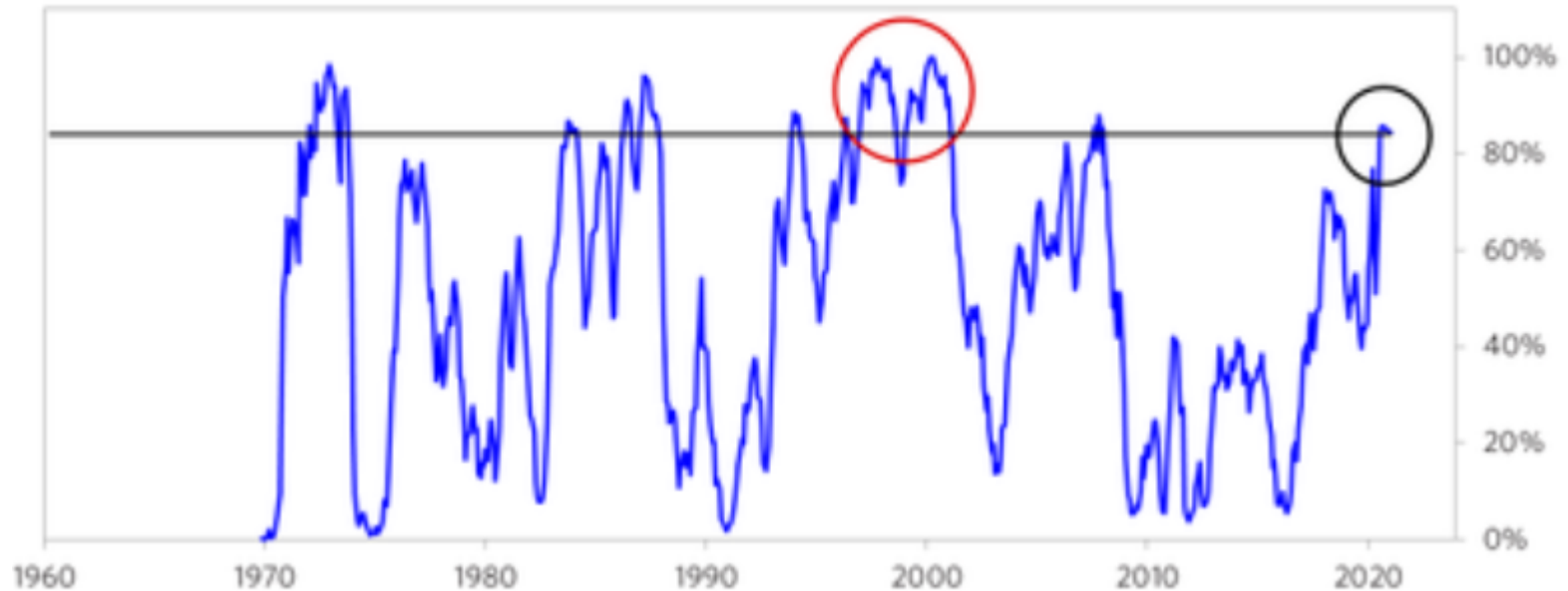
Ray Dalio's sign #3: The new entrants gauge is close to prior peaks as a result of the flood of new retail investors more recently.

### USA Entrants Gauge Percentile



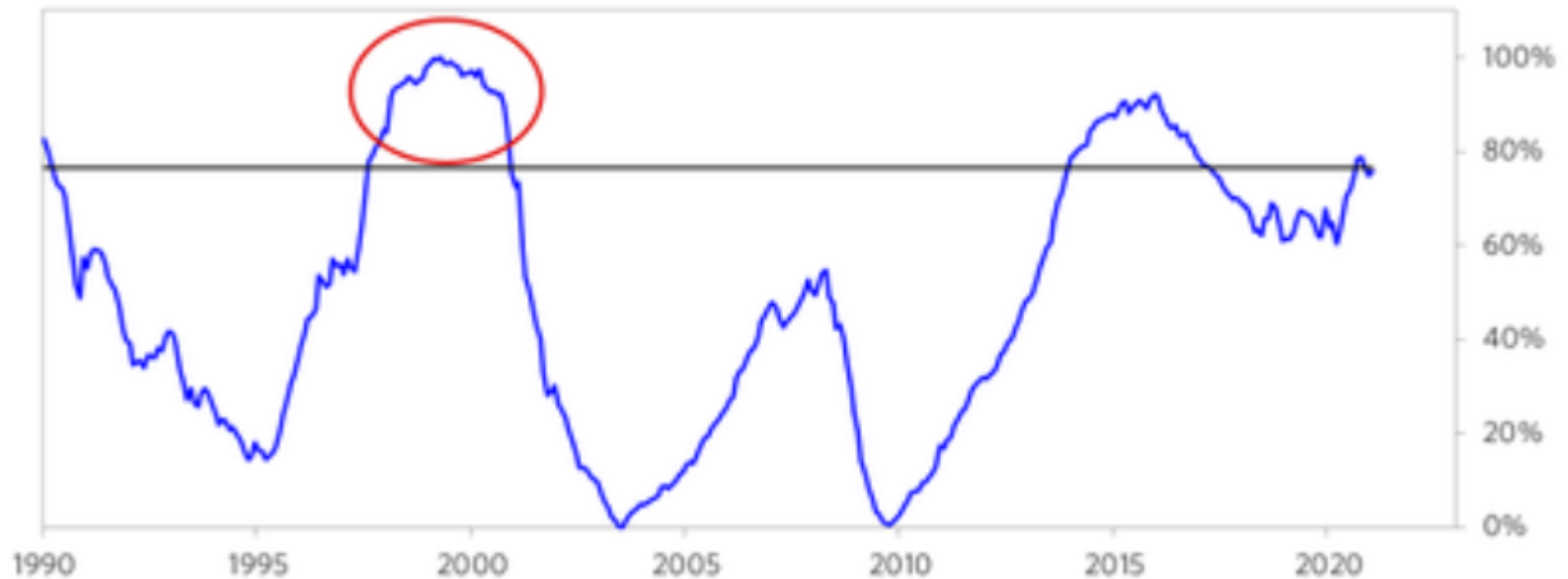
Ray Dalio's sign #4: The sentiment gauge is at a lofty 85% but is heavily concentrated in 'bubble stocks', i.e. mostly emerging tech.

### USA Sentiment Gauge Percentile



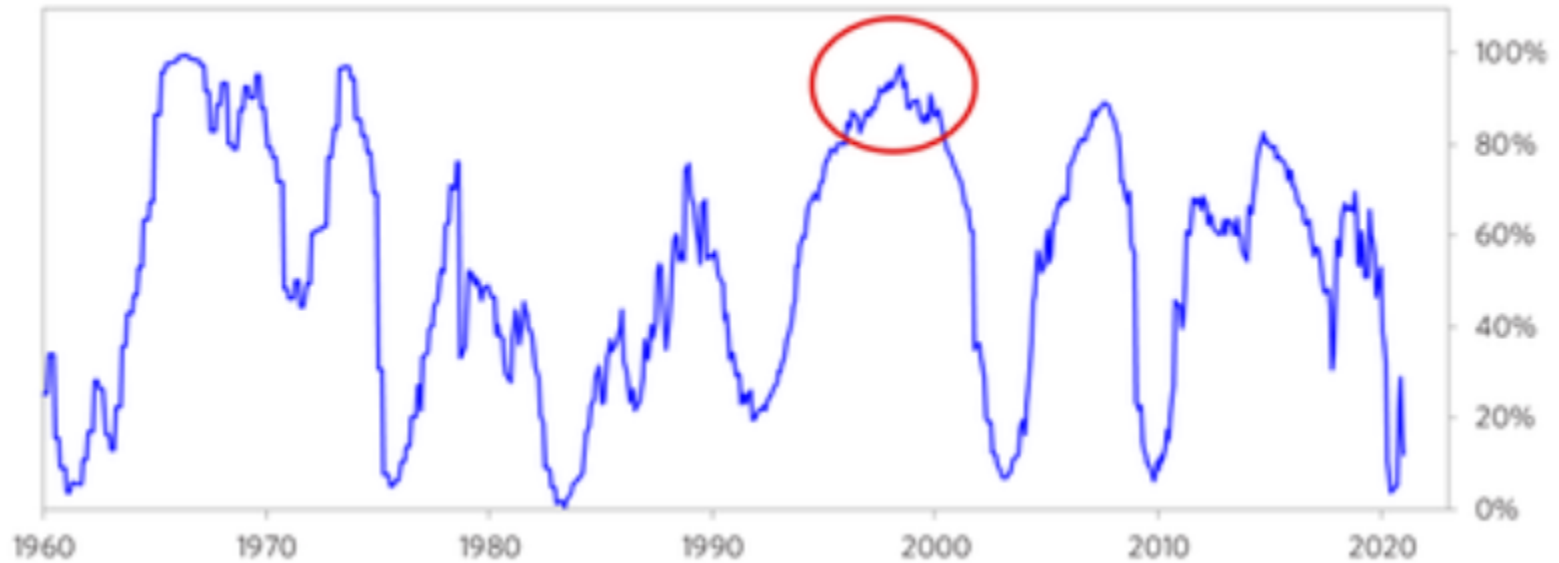
Ray Dalio's sign #5: The leverage gauge is heavily impacted by retail investors and their love affair with emerging tech.

### USA Leverage Gauge Percentile



Ray Dalio's sign #6: This gauge is by far the weakest of his six measures, pulling down the aggregate gauge.

### USA Forward Purchase Gauge Percentile



## Appendix B

# THE SIX MEGATRENDS





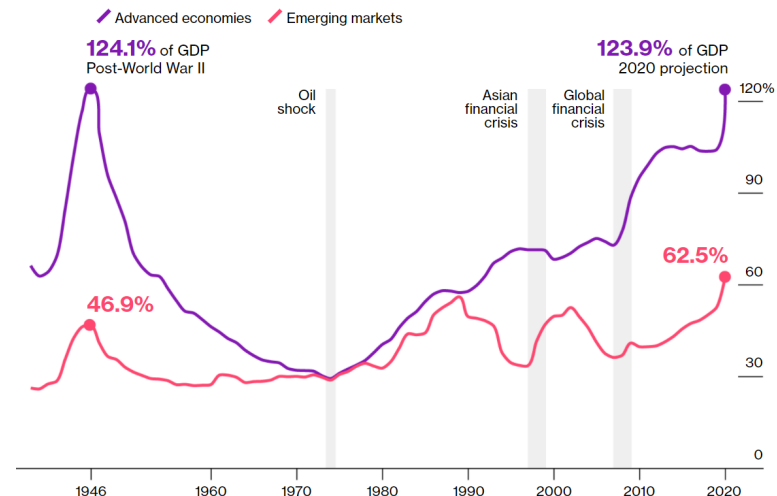
## Megatrend #1

### Last Stages of the Debt Supercycle



- In the early stages of a typical debt supercycle, GDP and debt grows 1:1, but that ratio deteriorates as the cycle matures. All prior debt supercycles have come to an end when GDP grows only \$0.20-0.25 for every dollar of added debt. China is now at 0.21 and the US at 0.28.
- The fact that  $\Delta$ Productivity and  $\Delta$ GDP are both struggling to gain momentum at present are powerful indications that we are fast approaching the end of the current debt supercycle.
- The pandemic has driven global government indebtedness to the highs of the previous supercycle and has moved the end of this supercycle closer.

**Total Govt. Debt:**  
(% of GDP)

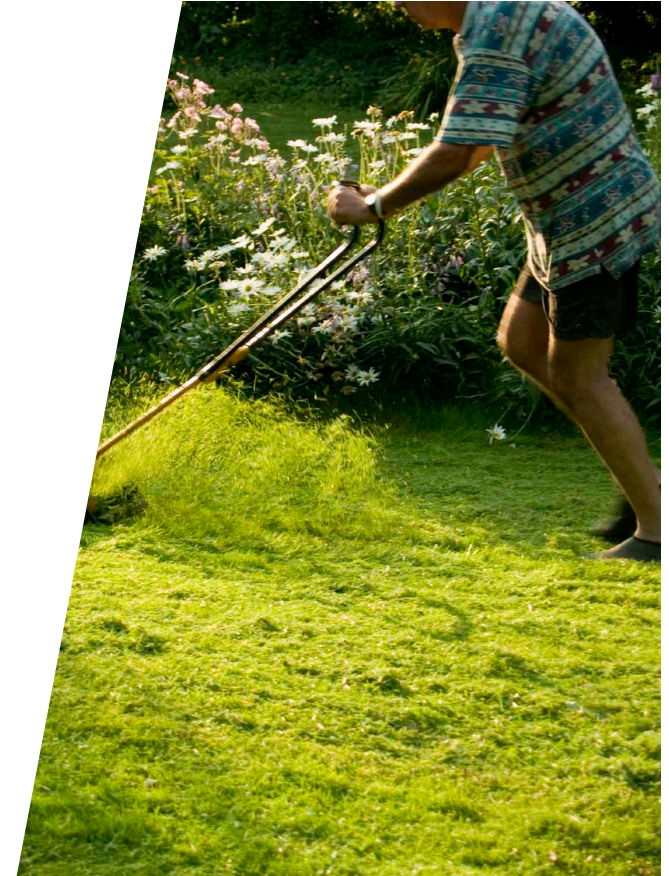
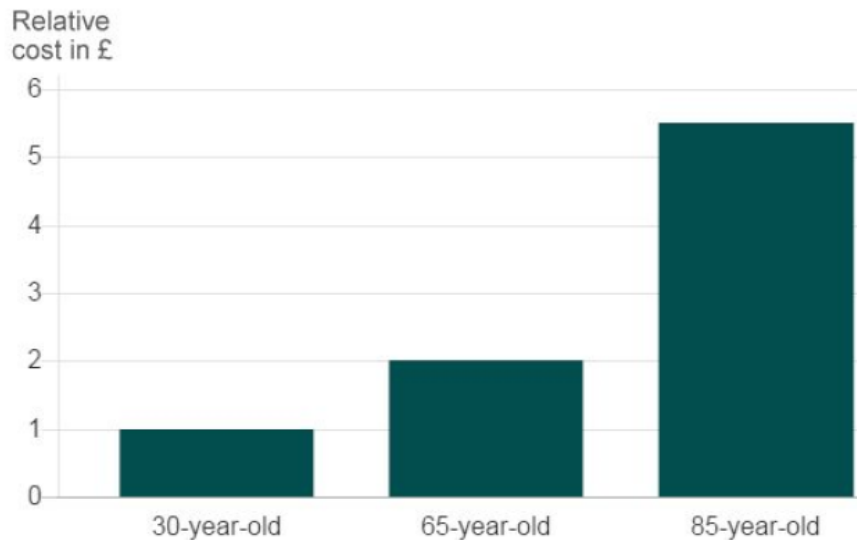


## Megatrend #2

### Changing Demographics

- 150 million OECD workers will retire between now and 2050.
- Servicing the elderly is extremely costly. According to the NHS, servicing a man in his mid-80s is 5-6 times more expensive than servicing a man at the age of 30.

**NHS Spending on People by Age**



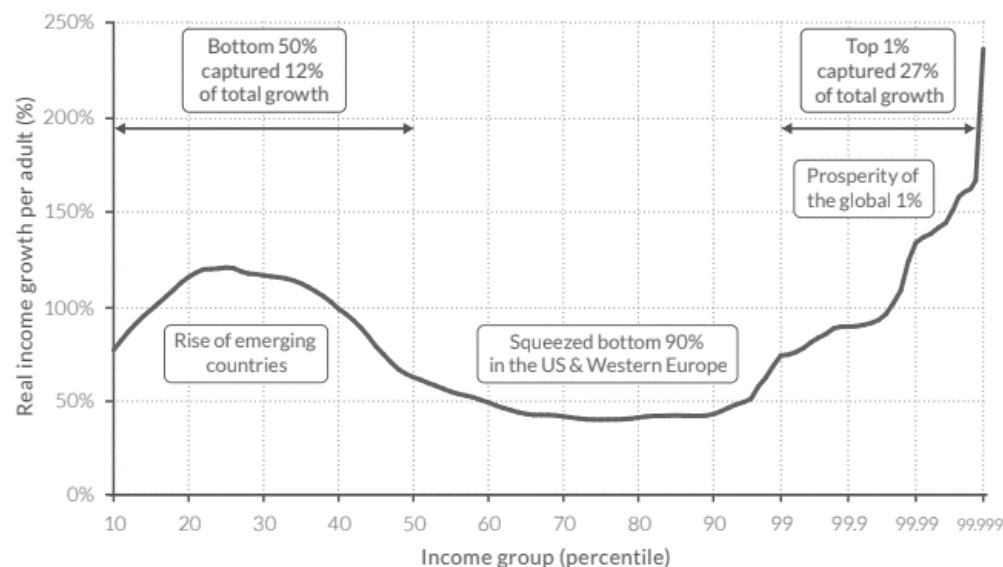
## Megatrend #3

### The Rising Gap between Rich and Poor

- Workers in many countries have not experienced any meaningful growth in real wages for years.
- Low or no real wage growth negatively affects aggregate demand and partly explains why GDP growth is so low everywhere.



Global Inequality



## Megatrend #4

### Rise of the East

- In PPP terms, China has more middle class families now than the US.
- The first thing people spend more money on when living standards improve is more and better quality food – almost always more protein-rich food.
- One should seek exposure to the phenomenal growth in the Chinese economy without being exposed to the over-leveraged financial system in China.



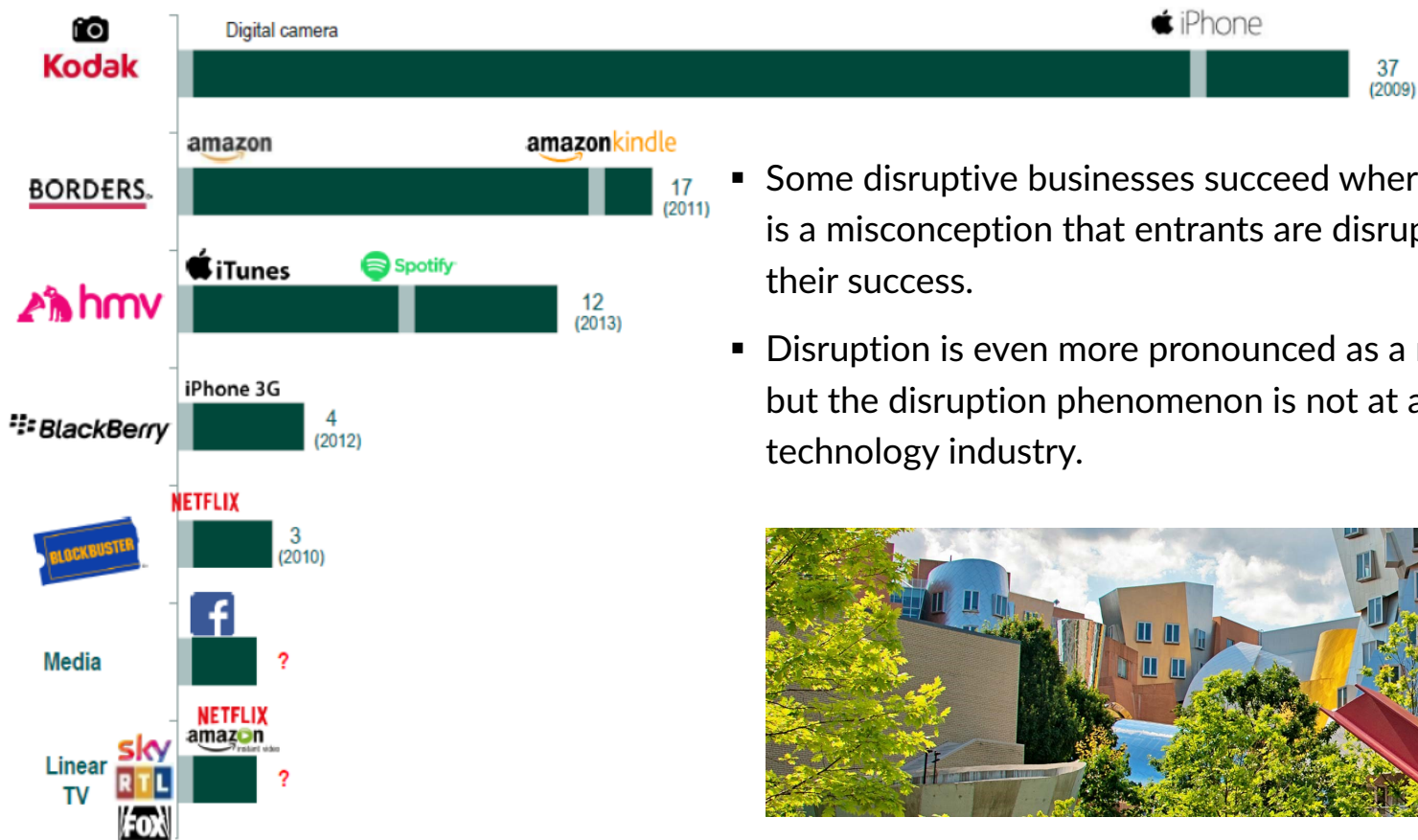
#### Chinese GDP Catch-Up under Various Assumptions

		Annual Chinese GDP Growth		
		3.00%	5.00%	7.00%
Annual	1.00%	2047	2032	2027
US GDP	1.50%	2057	2034	2028
Growth	2.50%	n/a	2041	2030

## Megatrend #5

### The Era of Disruption

No. of Years to Disrupt Incumbent's Businesses



- Some disruptive businesses succeed whereas others don't; it is a misconception that entrants are disruptive by virtue of their success.
- Disruption is even more pronounced as a result of digitisation, but the disruption phenomenon is not at all limited to the technology industry.



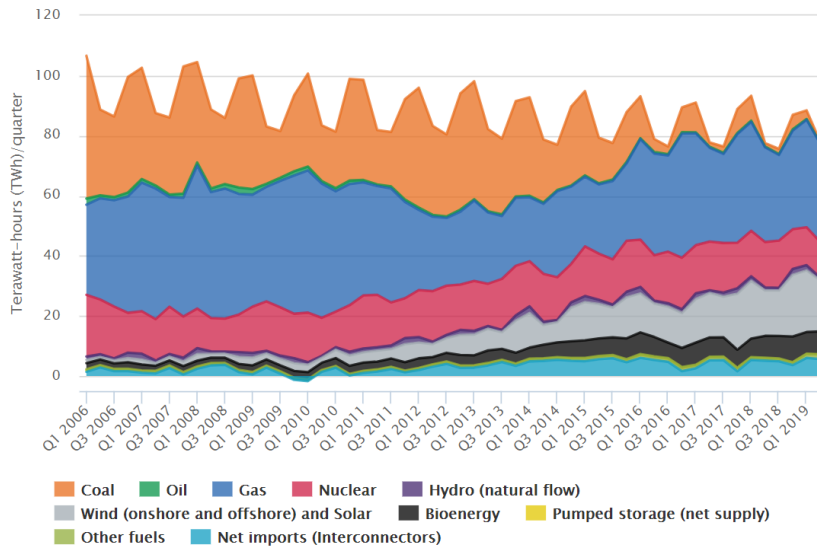


## Megatrend #6

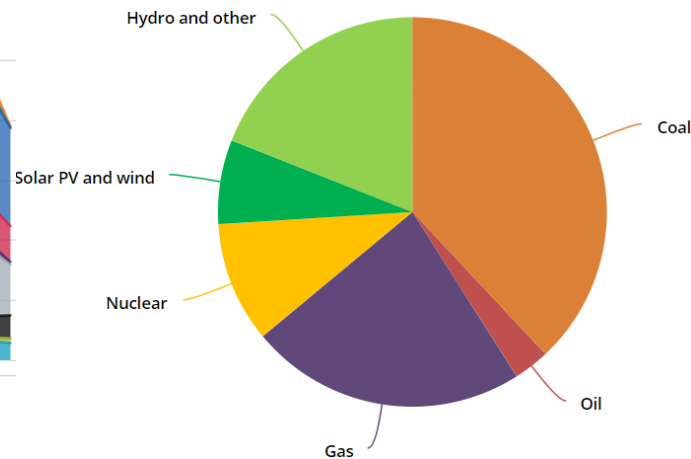
### Climate Change

- The fight against global warming will drive governments all over the world to electrify most transportation and heating, dramatically reducing demand for fossil fuels.
- Food production must rise 60% in the next 20 years, and food production accounts for nearly 70% of all freshwater consumption globally. With the climate change doing damage to our water supplies, how will this pan out?

UK Fuel Mix in Electricity Generation



Global Fuel Mix (2018)



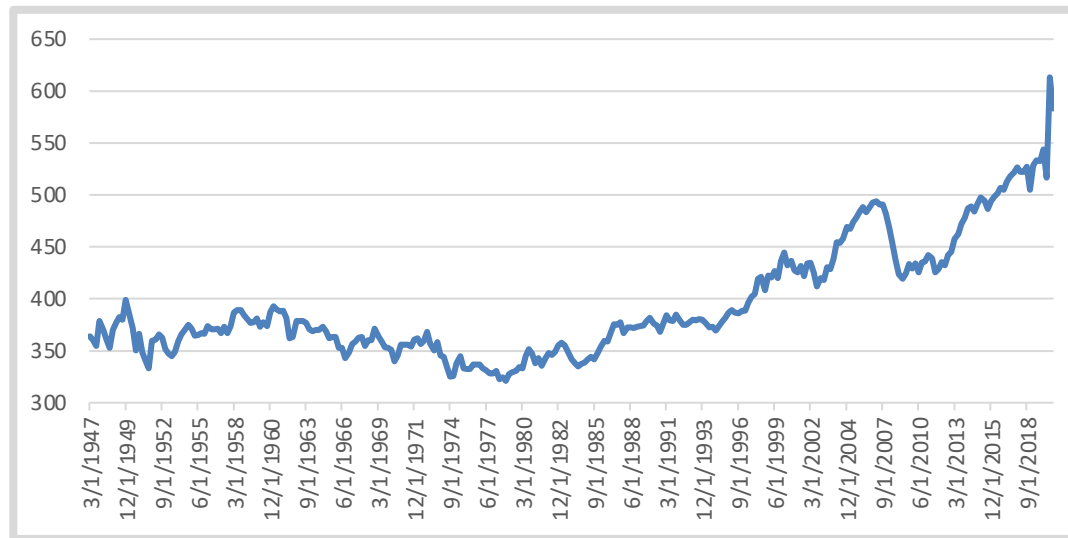
... and the aggregate result of those six megatrends

## Mean Reversion of Wealth-to-GDP

- Asset prices have grown much faster than GDP since the 1980s and, in the long run, one *cannot* outgrow the other.
- Every single time wealth has deviated meaningfully from its long-term mean value (380%), it has regressed to the mean, and US wealth is now (as of the 30<sup>th</sup> September 2020) almost 600% of US nominal GDP.



**Total US Household Wealth-to-GDP since 1950**



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