

# An analysis of the stock market - are we facing a market bubble?



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# How does the bubble form in the stock market ?

- When the market participants drive stock prices way above their intrinsic values

In the past 20+ years, we had market bubbles during 2000's DotCom, 2008's housing bubbles

Are we heading to the same direction?





We are trying to answer:

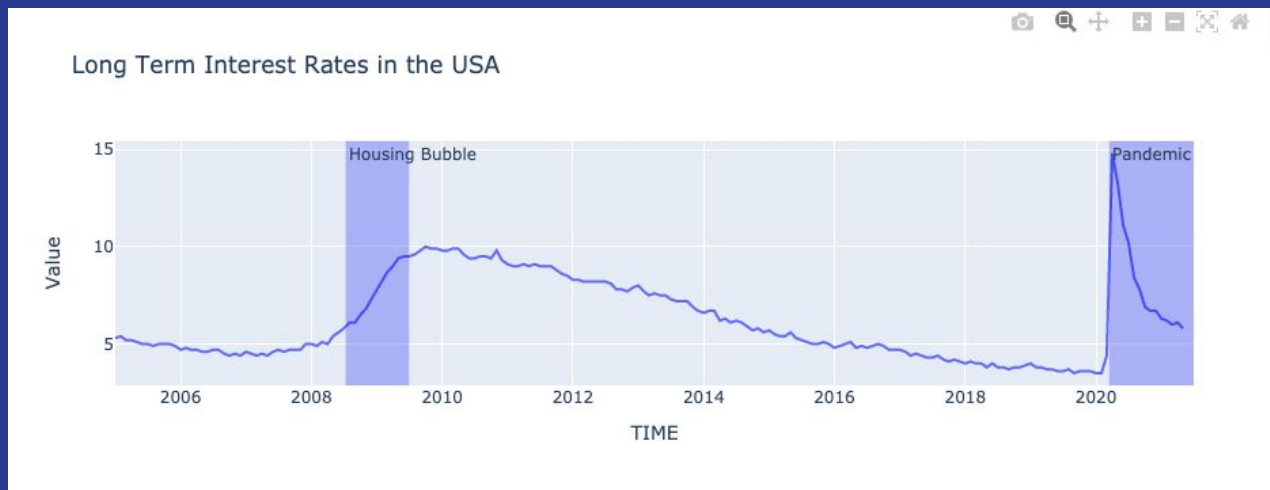
Are the interest rates and economic growth showing signs of a bubble?

What is the impact of the current money supply scenario?  
And how is the S&P500 and GDP performing currently?

Is there Bullish sentiment in the US market and more specifically US tech stocks?

Can the market be sustainable to such a high grow environment?

# The impact of interest rates and what it means to the bubble scenario.



# GDP in the US

GDP



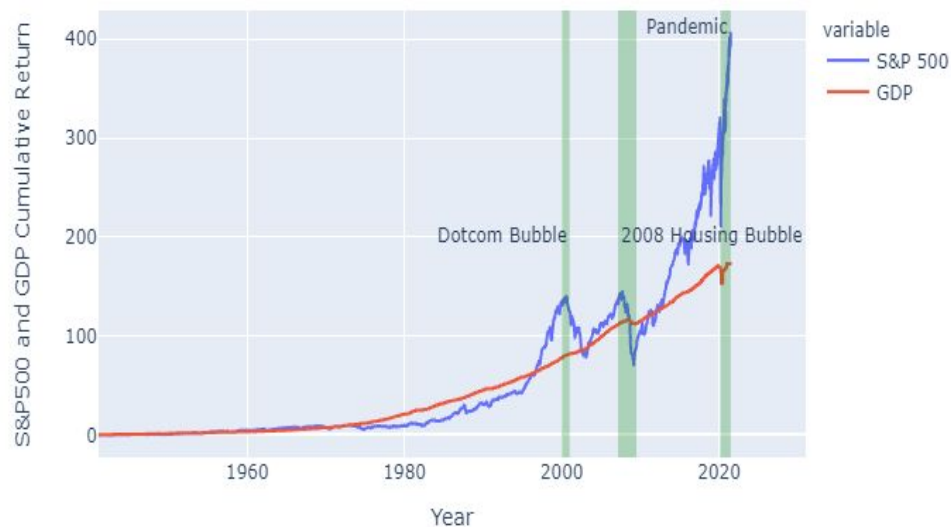
# S&P 500 Performance

S&P500 Performance over the years

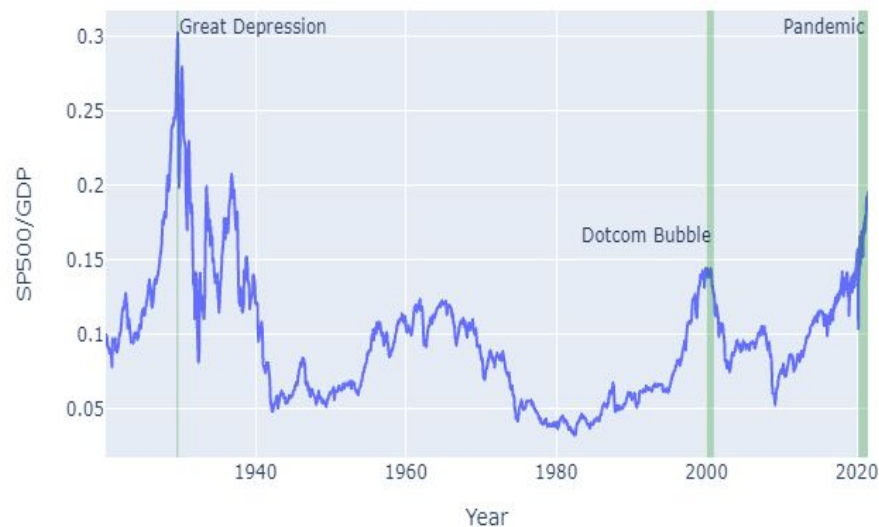


# S&P 500 vs GDP

Cumulative Growth of SP500 and GDP

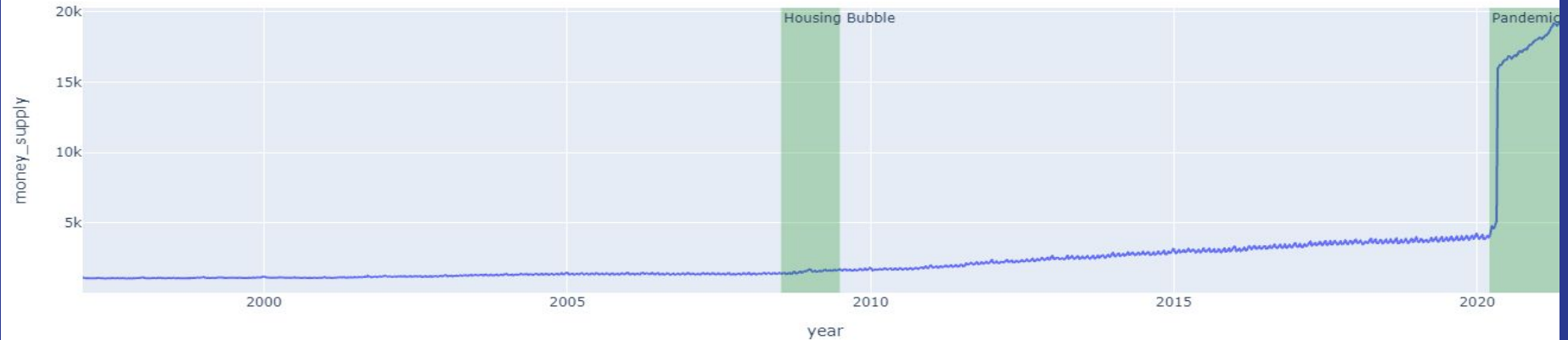
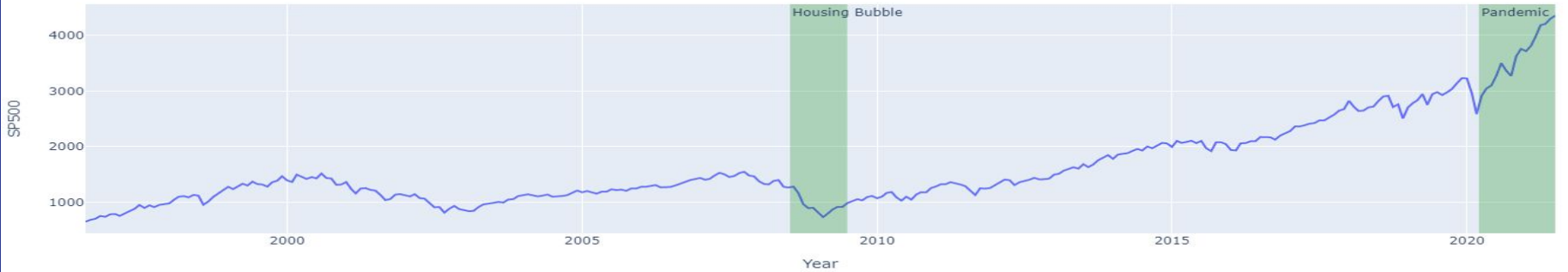


Ratio of S&P500 to GDP



# The economic indicator - Money Supply

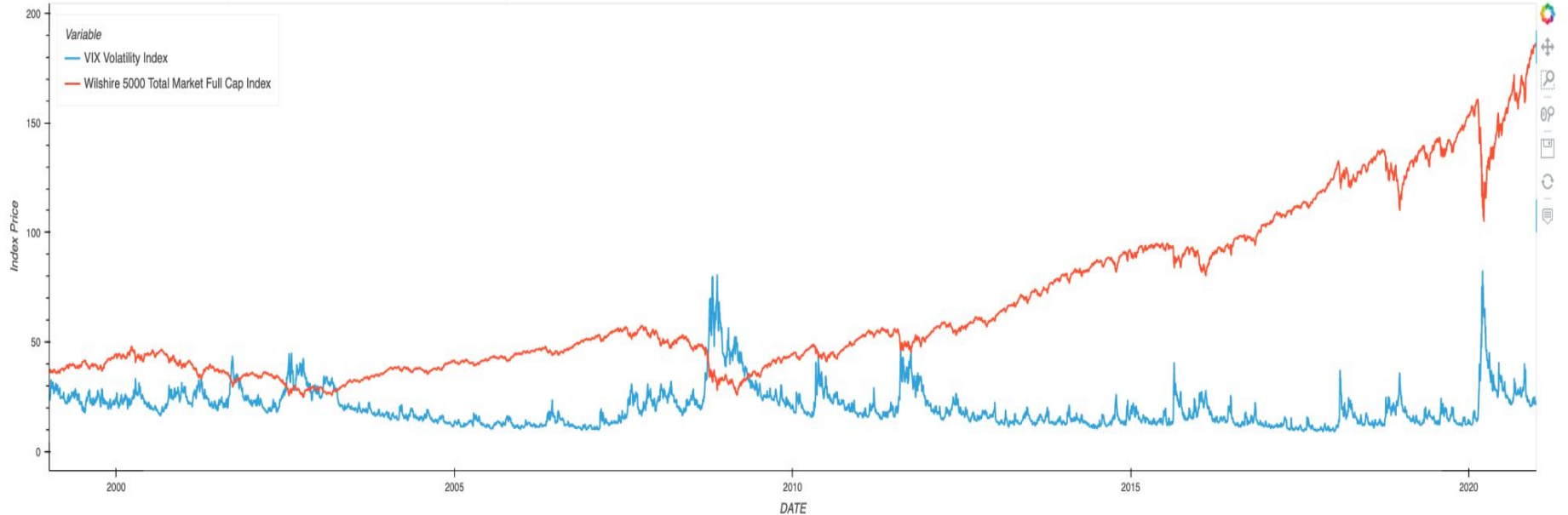
S&P500 Performance over the years





## Question Three: Is there Bullish Sentiment in the Market?

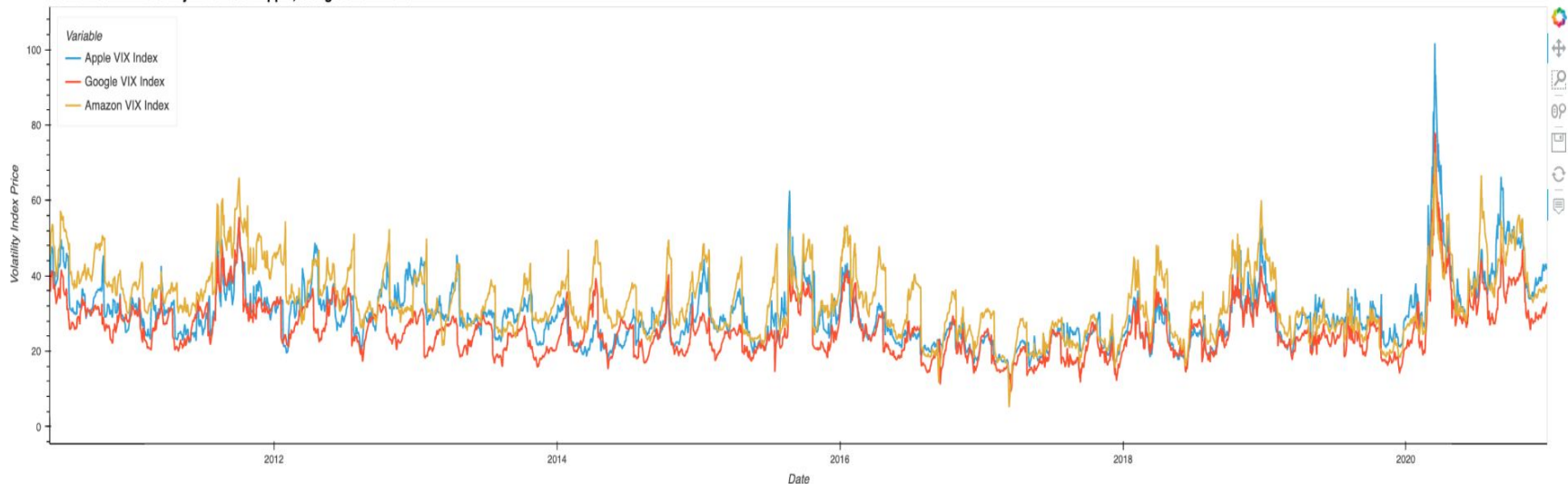
CBOE VIX Volatility Index compared to the Wilshire 5000 Total Market Full Cap Index



- (VIX) is a measure of expected price fluctuations in the S&P 500 Index options over the next 30 days. The VIX, often referred to as the "fear index," is calculated in real time by the Chicago Board Options Exchange (CBOE).
- The Wilshire 5000 Total Market Index is a market-capitalization-weighted index of the market value of all American-stocks actively traded in the United States

## Question Three: Is there Bullish sentiment in large US tech stocks?

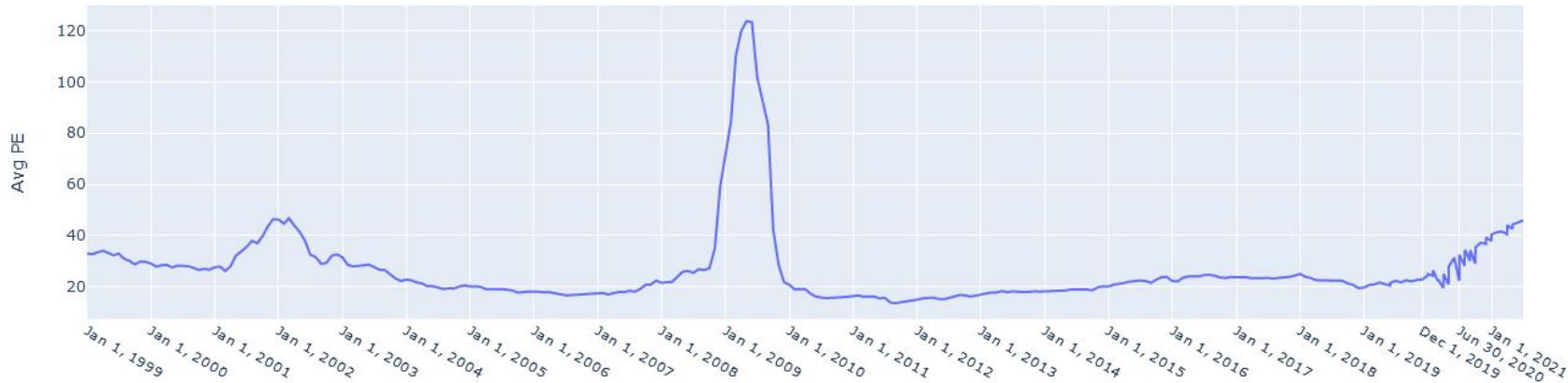
Combined VIX Volatility Indexes of Apple, Google and Amazon



- The **VIX** Index rises because of the increased demand for puts but also swells because the put options demand increase will cause the implied volatility to rise.
- If institutions think the market is turning bearish, they can't quickly unload the stock. Instead, they buy put option contracts and/or sell call option contracts to offset some of the expected losses
- (The VIX indexes data for Apple, Amazon and Google have only been calculated from 2010 to the present)

# Average PE Ratio SP500

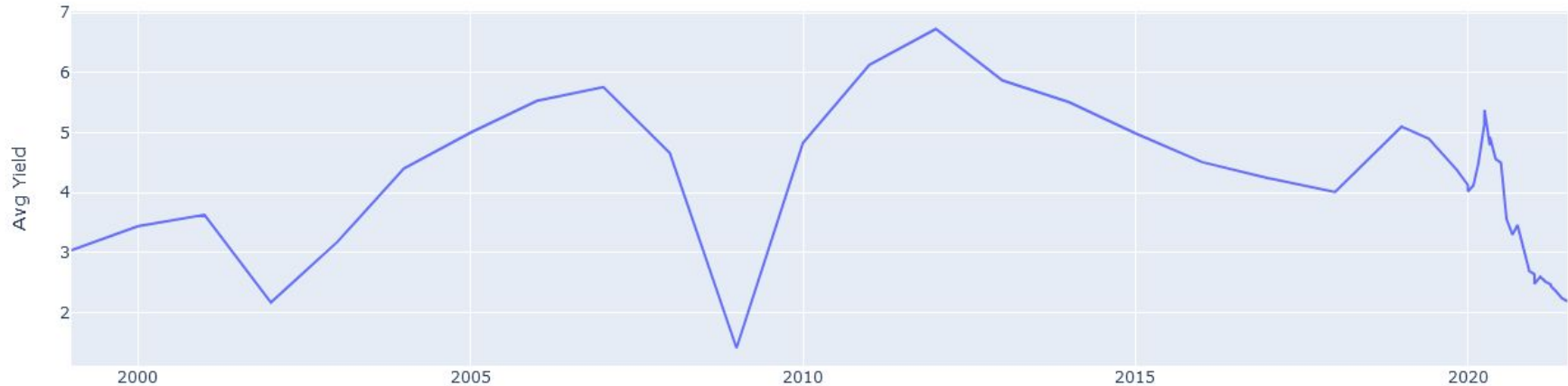
Average PE Ratio Chart



Average PE is getting close to Dotcom Bubble hovering around 45, although that seems high is but not nearly as high as 2009 peak. A high PE ratio shows how investors are willing to pay more for a share of a company either expecting a higher growth in future years or mainly a speculative wave happening.

# Average Yield

Yield Chart



The average yield on an investment or a portfolio is the sum of all interest, dividends, or other income that the investment generates, divided by the age of the investment or the length of time the investor has held it.

The graph displays how yield is declining over the years and investors are getting less returns.

# Conclusion: Implications of the findings

- Indicators show that it's hard to determine a bubble
- Unprecedented times with low interest rates and high money supply, new money has flooded equity markets.
- Sectorial bubble rather than overall market bubble (Tech)

