Shopping Without Price Tags

An Inside Look Into Our Generation's Most Expensive Stock Market

The purpose of this article is to address the bizarre, disjointed, and somewhat unsettling nature of today's American stock market. To do that, we will briefly touch on three areas:

1. Addressing the S&P 500's startling decade-long rise
2. Quantifying the costliness of the S&P 500 as shown by the Price-to-Earnings ratio
3. Exploring the trajectory of Corporate Profits and their disjointed relationship with the current market

Sticking to Fundamentals When They Are No Longer Fun

Let's work through a scenario: how much would you pay for a one-way flight from NYC to LA? Let's assume you wanted to buy a cross-country ticket in the next month and you knew the average ticket would run you $200. If you were searching for that flight and saw a seat for $400, what would you do? Economics 101 says you would be much less likely to buy - demand should decrease as prices increase. One could safely assume that you would postpone the cross-country trip until prices got back down to a more reasonable level. So why is this same logic not employed in today's stock market?

This article is not about airfare, it's about the price level that the current stock market is trading at – prices that large banks, our 401K funds, and we individual traders have pushed the market up to. The S&P 500 is currently trading at twice the historical Price-to-Earnings ratio (the equivalent of the $400 round-trip ticket in the previous scenario). If we can deftly assess when airfare is overpriced, why are we not applying that same analytical framework when our financial futures are on the line?

If you're like me, then you've become increasingly aware of the peculiarity of the current equity market. For every research paper forecasting an imminent bubble burst, there is an opposing voice saying there should be perpetual market growth for the next "x" years. This contrast is confusing to small-scale investors like myself who are merely trying to play smart defense for our modest portfolios – not be on the cutting edge of every exotic trading strategy. But take heart! Successful investing frequently depends on simply limiting the external noise and sticking to fundamentals. Buying low and selling high will still be the hottest strategy in 2022, as well as 2222. So, if you are an investor trying to cut through the noisy fluff and focus on the hard facts of the current market, *you should read this article*.

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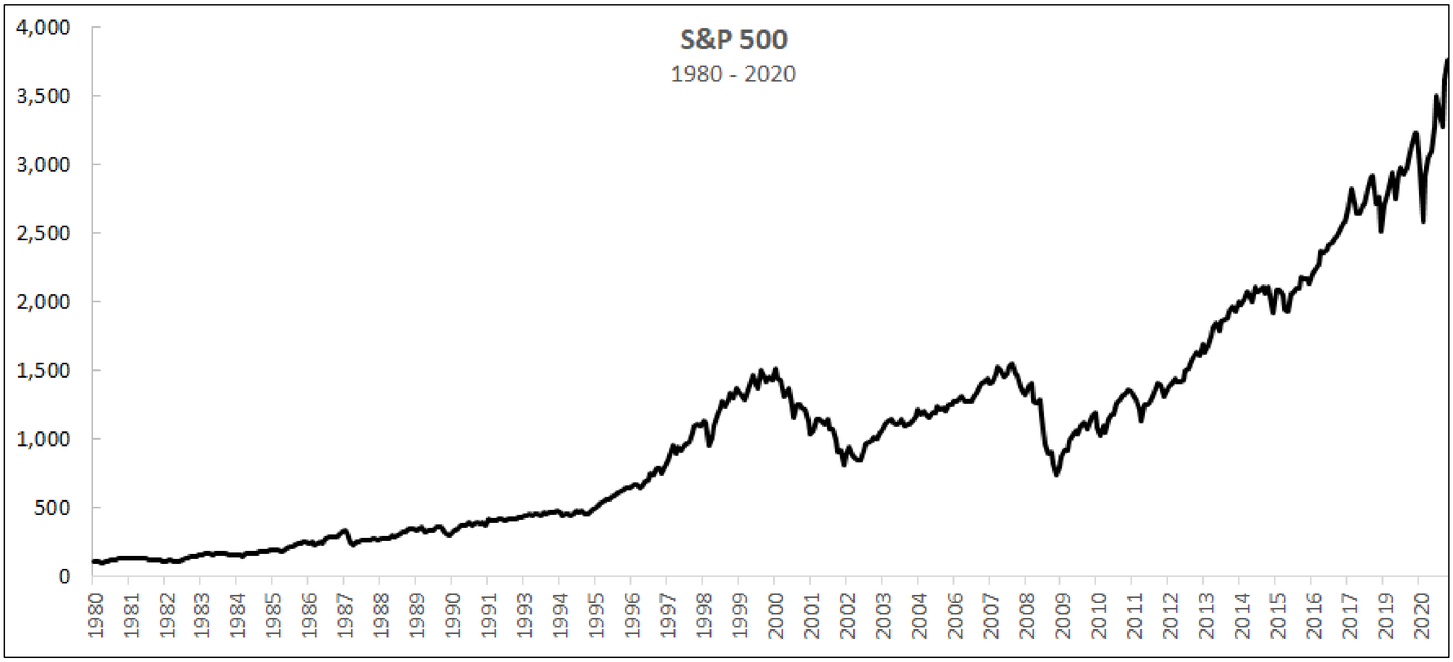
A Decade of Easy Money

Did you know the longest bull market to ever occur in the US stock market ended just over a year ago[1]? Even more recently, from January 2016 to December 2020, the S&P 500 grew by 83%[2], with 16% of that growth coming from 2020 alone. Yes, 16% investment return in 2020. In case you needed to be reminded of 2020's backdrop:

- 360,000+[3] people died from a virus that experts are still struggling to fully understand
- 100,000+ small businesses shut down permanently[4]
- The unemployment rate temporarily spiked to 15% (and still has not fully recovered)
- Half of the country vehemently opposed the then-standing US president
- Deep frustrations surfaced over racial relations across the country



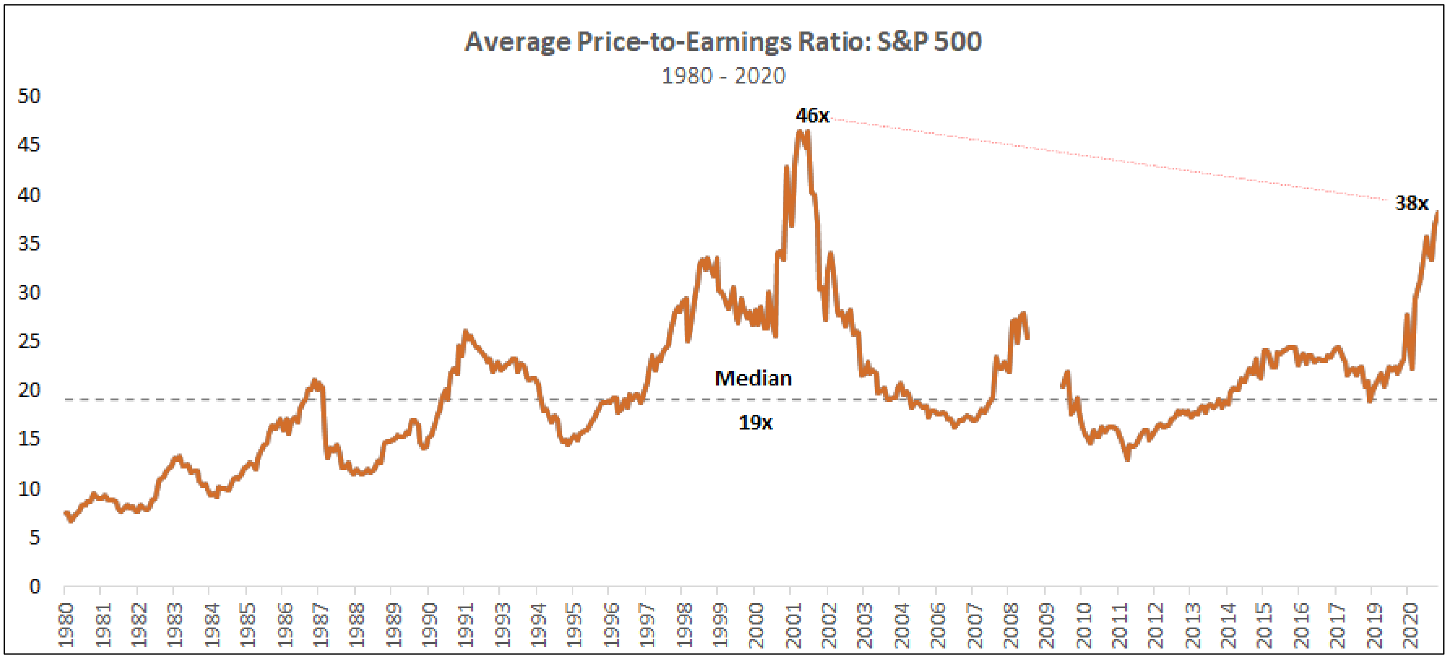
How could the stock market grow to record levels in such a chaotic environment? Was this growth based on a solid foundation or was it driven by over-optimism? Truthfully, the answer to this question is much more nuanced than a binary response could provide. Market movements, on their own, cannot fully quantify *costliness*. A market growing quickly or growing for a long time tell us if it is overpriced, underpriced, or fairly priced. So we have to go a level deeper to quantify the *costliness* of the market. Enter the *Price-to-Earnings* ratio (P/E ratio)…

Commonly Cited but Currently Ignored…the P/E Ratio

If you have read any investment article or watched CNBC for more than 12 consecutive seconds, then you have probably encountered the term "*P/E ratio*". And for good reason - it is a widely-used signal that provides insight into the level of investor optimism.

For the sake of clarity, here is a brief definition of the P/E ratio referenced in this article: The "P" refers to the price of an asset (this article focuses on the price of the S&P 500 index). The "E" refers to earnings, the amount that investors are compensated by the assets' profit. Combining the two into a ratio provides a relative proxy for cost vs. benefit.

Between January 1980 and December 2020, the S&P 500 had a median P/E ratio of 19x[6] - meaning, on average, investors were willing to pay $19.00 of price for each $1.00 of company earnings. Is a P/E ratio of 19x low or high? Well, with investments, the answer to that question tends to be relative – not absolute. However, if we assessed this metric over a long period of time, we could at least make a judgment on its current level relatively compared to the prior 41 years. So let's visualize that…

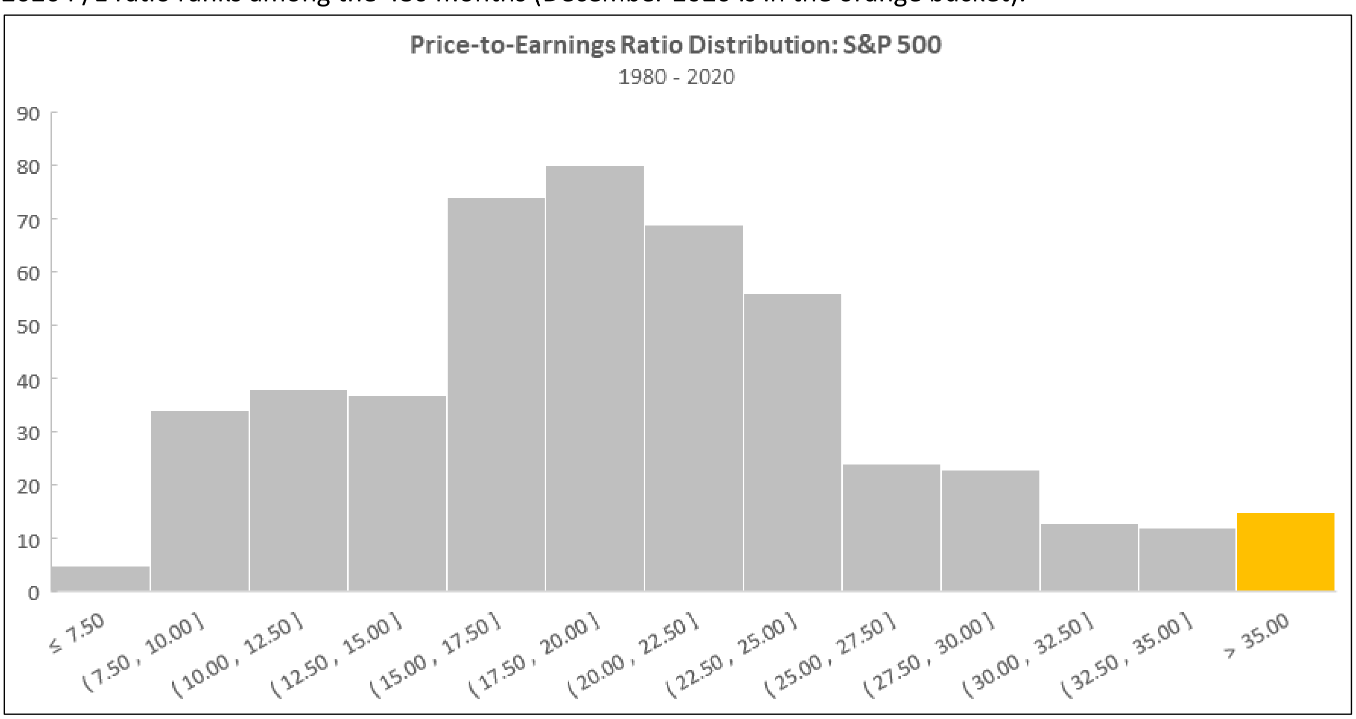


There are a few valuable learnings we can get from this visual:

1. The P/E ratio of 38x in December 2020 is extremely high when compared to the preceding 479 months. *The only time P/E ratios have been higher was during the dot-com bust of the early 2000s*. In fact, it's exactly twice as high as the historical median of 19x.

2. There are continual rises and falls of the P/E ratio over the 41 years with a persistent reversion back to the median of 19x – usually within a short number of years. The market is showing that it cannot sustain an overly expensive or an overly cheap market for very long – investor sentiment will change and the price profile of the market will correct back to its central point of 19x.

When compared to P/E ratios from all other months, December 2020's ratio of 38x ranks in the 97th percentile of all other months from 1980 and 2020[5]. To visually hit this point home, using a histogram, we can see where the December 2020 P/E ratio ranks among the 480 months (December 2020 is in the orange bucket).



Your eyes don't lie - this is abnormal. The 97th percentile on the SAT results in high-fives and a scholarship, but the 97th percentile on an investment's price scale should make investors sweaty under the collar.

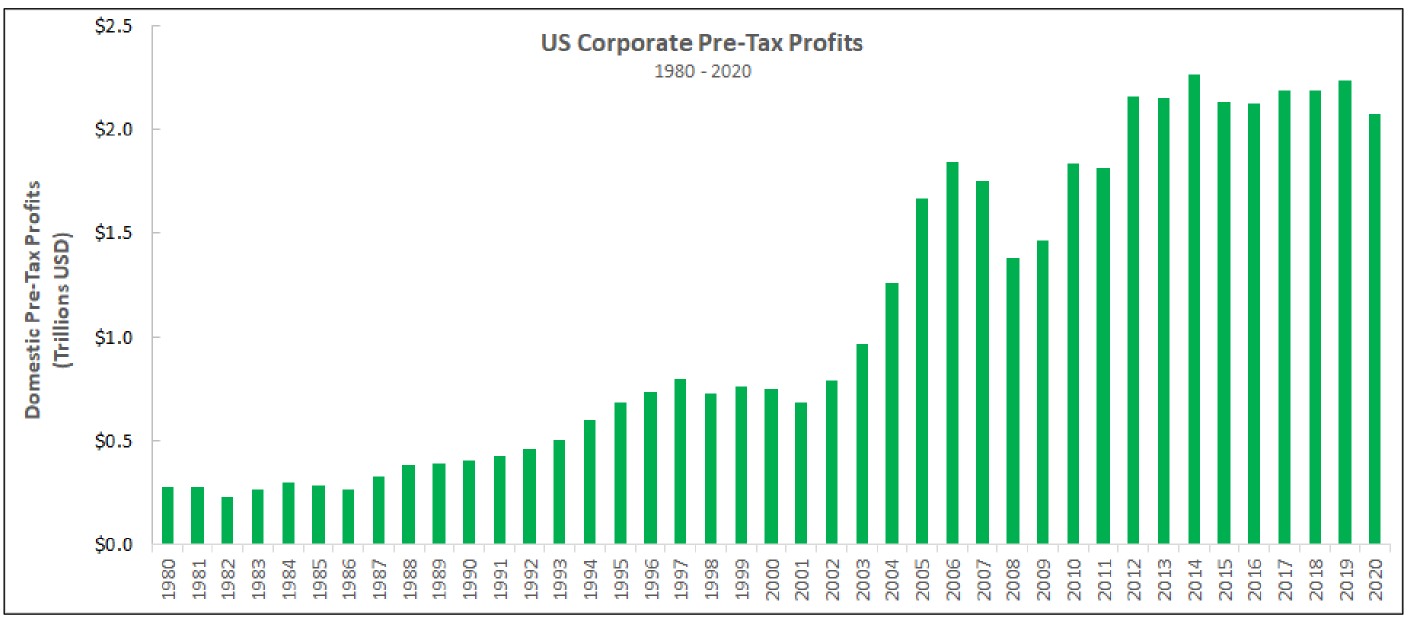
So we have established that the current P/E ratio is high when compared to the past, but if we leave off here, we would be missing a crucial part of the story – corporate earnings.

The Bottom Line is the Bottom Line

Corporate Earnings[7], when averaged on a large scale, grow steadily. It's why we invest in companies in the first place – the companies' goal is to make ever-increasing profits – and so our investments increase as well. And for the most part, American companies have done just that. They have grown profit steadily decade after decade; between 1980 and 2020, pre-tax corporate profit has grown at an annual rate of **5%[8]**. This annual rate has fluctuated wildly between +32% growth in 2005 down to -21% in 2008 (the Great Recession), and many points in-between.

With regards to the Price-to-Earnings ratio, earnings are more intellectually involved than price. Price can be gotten instantly from a computer screen, but earnings have an extra layer of complexity; they require the investor to make assumptions and forecasts for the future. Hypothetically, if we wanted to do our own earnings forecast, a logical place to start would be to look at the past few decades of profit growth.

We can visually see that there is a definitive growth in earnings over the long term. But there is one valuable insight that you might need to stare at a bit longer to discover…*American corporate profits have been practically flat since 2012*. Even if 2020 were excluded (because it was an anomaly), the annual growth rate between 2012 and 2019 would be only



a meager 0.5%. Want to guess what the S&P annual growth rate was over this period? *A blazing 13% annual return*. This would seem to demonstrate a large disconnect between the domestic stock market and the underlying corporate performance it is supposed to reflect. We can also show that visually…

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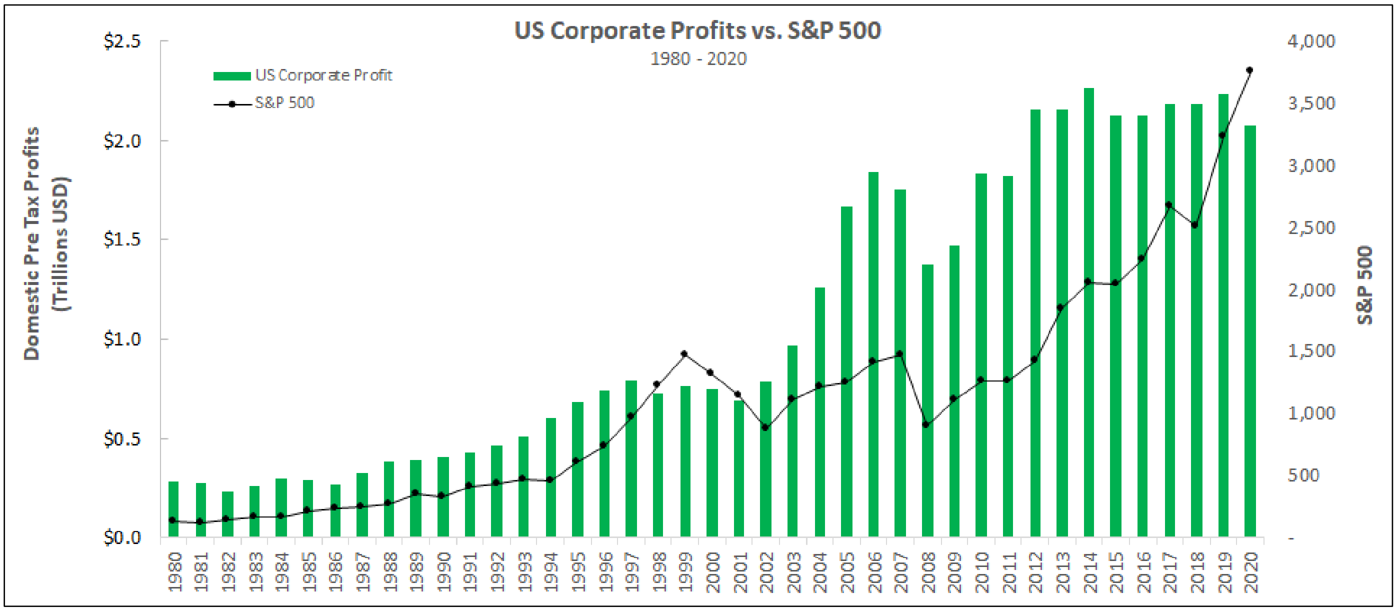
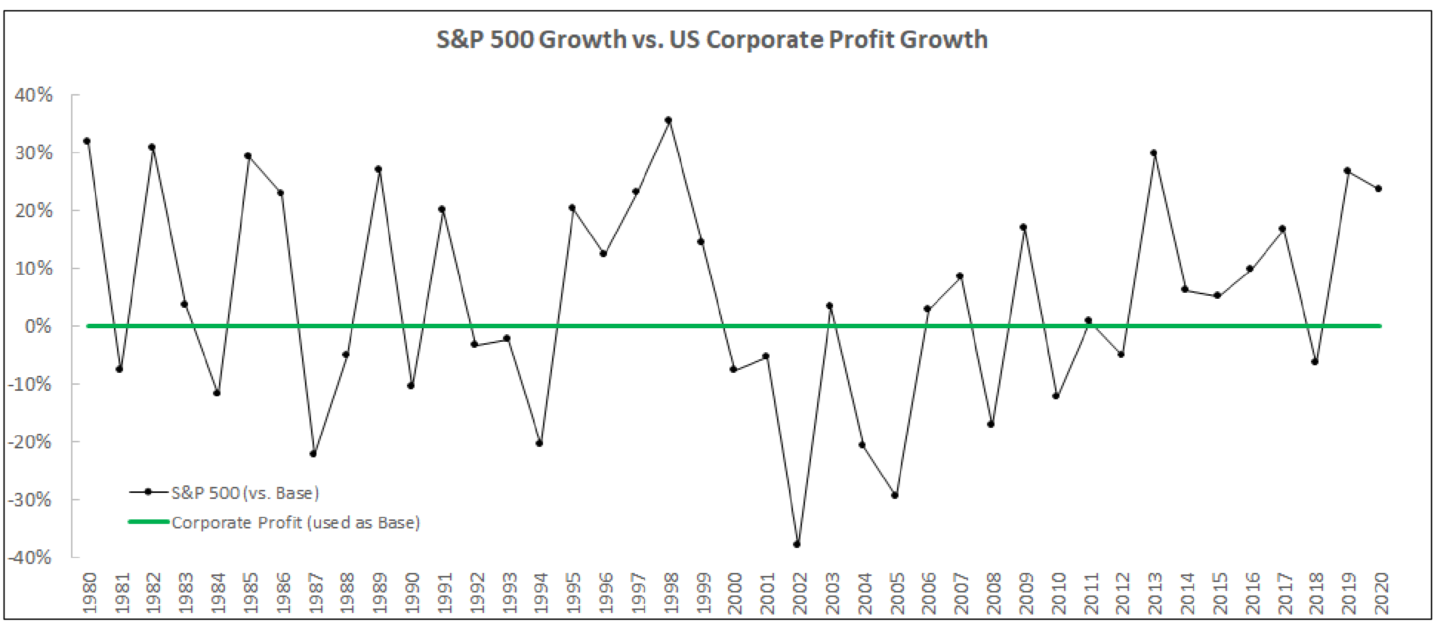


The two measures seem to be well correlated between 1980 and 2012. As corporate profits increase, so does the market. And when corporate profits took a dive, so did the market. This makes intuitive sense. But then, circa 2012, a disconnect surfaces - the S&P 500 (black line) continues on a rocket-ship trajectory while corporate profit (green columns) remains relatively flat and even *decreases* in 2020. In a perfectly logical world, one would expect the annual return of the stock market to match the annual growth of corporate earnings continually. But investing and economics are inexact sciences, and hence, mismatches often occur between what is mathematically expected and what actually occurs. But this specific case seems particularly problematic.

When we plot and visualize these mismatches (the difference between stock market returns and corporate earnings performance), it offers a striking visual. The green line is the annual year-over-year % growth of corporate earnings, and



the black line is the S&P 500's return *vs*. corporate earnings. Said another way, the black line is the margin difference between the two measures. To be clear, corporate earnings did not grow at 0%, we merely lay it flat along the x-axis so that the marginal differences between it and the stock market returns are easily understood. This graph should be read: "*in 1980, the S&P 500 returned more than 30% above the growth in corporate profits, but in 1981, the S&P returned 8% less than what corporate earnings grew by, etc, etc".*

In the last 8 years, the S&P 500 growth outpaced corporate profit growth for 7 of them, by an average of 13%, signaling a highly over-enthusiastic stock market. This point is crucial to understand. If stock market returns outpace the underlying corporate earnings growth for one year, we could say the market might be *slightly* overvalued. But if that exact scenario played out repeatedly for almost a decade, shouldn't that set off cautionary alarm bells in the investment community?

Tying It All Together

Let's boil this down into a few digestible bullet points:

- The S&P 500 has gained a staggering 83% in 5 years and over 370% from March 2009 to December 2019 – *the longest American bull-market on record*
- The S&P 500 gained an outstanding 16% in a year when a health pandemic ravaged the US economy
- The P/E ratio of the US stock market was 38x in December 2020 – twice the previous four-decade median of 19x (and it's even higher in 2021)
- US Corporate Earnings growth have been relatively stagnant since 2012, while the S&P 500 has grown at an average annual rate of 13% over the same period

So what? The P/E ratio is abnormally high and the trend of Corporate Earnings doesn't fully support the current outlook, but why should we care?

Because of this: *history says the market's P/E ratio will eventually come back down to its median*. Mathematically speaking, that is a 50% drop, from 38x to 19x. As inquisitive investors, we should be asking ourselves if that 50% drop will come via a large uptick in corporate profit (denominator increases), or a stock market price correction (numerator decreases). It's a difficult question that lends itself to two different scenarios; would it be more likely for (1) US companies to expedite earnings growth by 2x (this would be needed to balance the P/E ratio to 19x) OR (2) the market to simply drop to a more affordable level? In truth, if companies could simply grow profit at will, they would. But anyone who works in Corporate America knows that profits are a hard-fought battle, and not something that grows easily. On the other hand, the market has shown that it can swiftly and efficiently correct itself downward, often to the detriment of investors that failed to see the warning signs, so why would this time be any different? I believe that it is time to recognize the market's fundamentals in their full historical context, not disregarding them in exchange for a more whimsical outlook. Stocks are like airfare, there are always better deals in the future if you wait – but if you are forcing yourself to buy right now, you are probably overpaying.

> ***"…it is time to recognize the market's fundamentals in their full historical context, not disregarding them in exchange for a more whimsical outlook."***

References

1. https://grow.acorns.com/stock-market-remarkable-decade-in-10-numbers/
2. January 2016 open 2,038.20 | December 2020 close 3,732.04
   https://finance.yahoo.com/quote/%5EGSPC/history?period1=1451606400&period2=1609372800&interval=1d&filter=history&frequency=1d&includeAdjustedClose=true
3. https://www.worldometers.info/coronavirus/country/us/
4. https://fortune.com/2020/09/28/covid-buisnesses-shut-down-closed/
5. The P/E ratio referenced in this analysis refers to an aggregate average of the entire S&P 500
6. A total of 492 months of P/E ratios were downloaded from https://www.macrotrends.net/2577/sp-500-pe-ratio-price-to-earnings-chart but the 12 months of ratios affected by the Great Recession (Oct 2008 – Sep 2009) *were excluded* since they were outliers. Many earnings were negative during this period and thereby corrupted the intuition behind the P/E ratio. After exclusion of the Great Recession data, there are 480 months of data left.
7. *Corporate Pre-Tax Profit* as measured by the BEA is used as a barometer for *Corporate Earnings* in this article
8. Domestic pre-tax corporate profit: BEA numbers are adjusted for an annual rate so an ***average*** of 4 quarters = numbers used in my analysis
   Data was gathered from https://fred.stlouisfed.org/series/A053RC1Q027SBEA
   Further explanation can be gathered from https://www.bea.gov/data/gdp/gross-domestic-product