Introduction

"There is an inevitable divergence between the world as it is and the world as men perceive it," said J. William Fulbright, the long-term senator from Arkansas and namesake of the Fulbright Scholarship program. Fulbright served on the Senate Foreign Relations committee, and his words were directed at the ties that bind the world together and how different people view those bonds. But his words could have equally applied to the machinations of the stock market and the economy and how we perceive them. For right now, we are witnessing a great deal many divergences in the world of finance, both in terms of conflicting real-time data points and conflicting comparisons of past vs. present data. We hope this newsletter helps tie up the loose ends of these divergences. And perhaps, we hope to shed some light on the path ahead.

Recap

2023 was the first year in a decade that the stock market did not make a new all-time high. Despite missing that mark, some indices had a good year. The chart below shows the annualized returns over various time periods.

	1-Yr Return[8]	3-Yr Avg Return[8]	5-Yr Avg Return[8]	10-Yr Avg Return[8]
US Large Companies (Broad) [1]	26.29%	10.00%	15.68%	12.03%
US Large Companies (Tech) [2]	55.13%	10.18%	22.65%	17.90%
US Mid-Size Companies [3]	16.44%	8.09%	12.61%	9.27%
US Small Companies [4]	16.93%	2.22%	9.97%	7.15%
International Companies [5]	18.85%	4.53%	8.69%	4.77%
Bonds [6]	5.53%	-3.31%	1.10%	1.81%
Commodities [7]	-7.91%	10.76%	7.23%	-1.11%

[1] Return based on S&P 500 total return index per Morningstar.
[2] Return based on Nasdaq 100 total return index per Morningstar.
[3] Return based on S&P 400 total return index per Morningstar.
[4] Return based on Russell 2000 total return index per Morningstar.
[5] Return based on MSCI EAFE gross return index per Morningstar.
[6] Return based on Bloomberg Barclays US Aggregate Bond total return index per Morni
[7] Return based on Bloomberg Commodity total return index per Morningstar.
[8] Returns are given in annualized percentages.

We noted above that the stock market did not make a new all-time high in 2023. The last all-time high was on January 4, 2022. Since that time, the major indices – S&P 500, NASDAQ, Russell 2000, and the Barclays Agg – are all **negative**. It's been a tough two years for both aggressive and conservative investors.

Even more remarkable is the dispersion in returns in the stock index. Sure, the S&P 500 was up 26% for the year. But 2023 was really a tale of the Magnificent 7 vs the S&P 500. The Magnificent 7 refer to the seven largest companies by market cap: Apple, Microsoft, Alphabet (Google), Amazon, Nvidia, Meta (Facebook), and Tesla. Sorry to break it to you, but if you didn't own these 7 stocks in 2023, you basically didn't make any money last year. The Mag 7 accounted for 25% of the 26.3% return of the index. Out of the 500 biggest stocks in the U.S., only 7 accounted for virtually all of the stock market return last year (See Figure 1)!

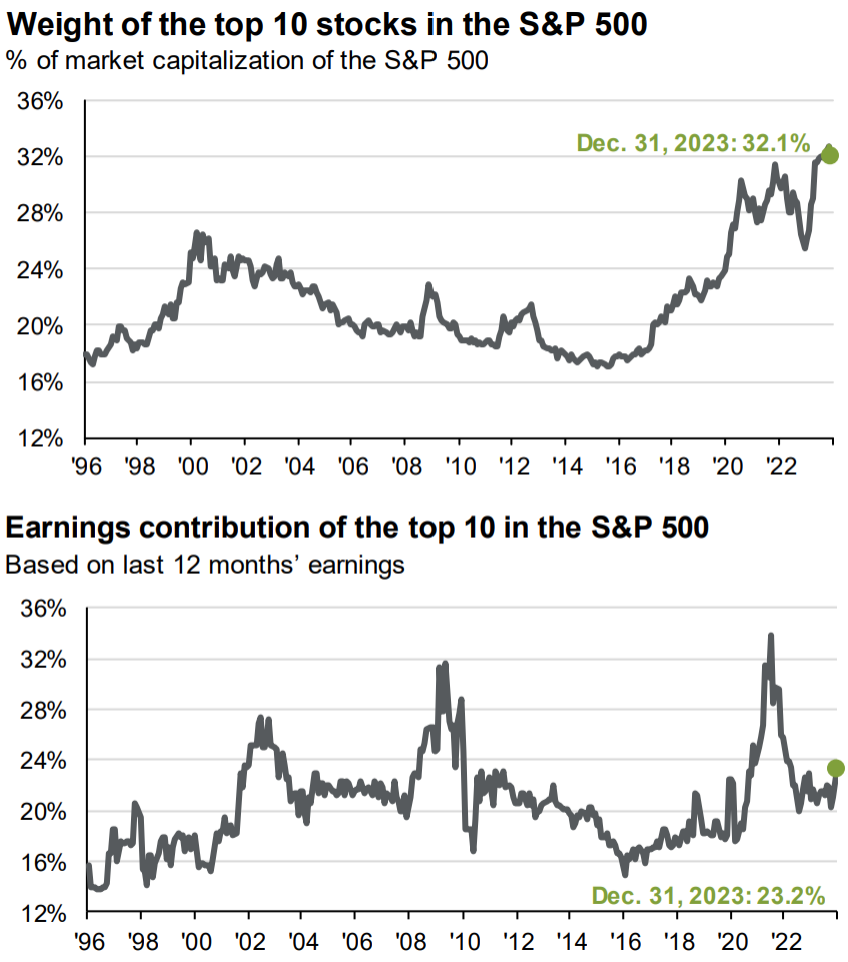
Figure 1: S&P 500 Attribution for 2023

	Company	S&P Weight	YTD Return	Weighted Return	
Magnificant 7	Apple	6.8%	48.2%	3.3%	
	Microsoft	6.3%	56.8%	3.6%	
	Google	4.0%	58.8%	2.3%	
	Amazon	3.6%	80.9%	2.9%	
	Nvidia	2.8%	238.9%	6.6%	
	Facebook	2.1%	194.1%	4.0%	
	Tesla	1.8%	101.7%	1.8%	
		27.2%		24.5%	A
	Other 493	72.8%		1.8%	B
	S&P 500	100.0%		26.3%	C=A+B

This bifurcation of the few haves and the many have-nots is not normal. Neither is the excessive weighting of the Mag 7 in the index. As Figure 1 highlights, the Mag 7 comprise almost 30% of the entire weight of the S&P 500.

The last time we saw concentration at this level was prior to the Dotcom bubble. Figure 2 shows this is in graphical form, showing the concentration of the 10 largest companies over time. The stock market is more concentrated now than it was back in the Dotcom era (top graph). Not only that, but the 10 companies with the biggest weightings are contributing less to the earnings of the index than in the Dotcom era (bottom graph). For a discussion of why this concentration matters, see the discussion in our 2023 mid-year commentary here.

Figure 2: Market Concentration of S&P 500 Over Time



The correlation to the Dotcom bubble does not end here. Concentration is not necessarily a bad thing. But it becomes a bad thing when combined with the right ingredient: an overvalued stock market.

We talked extensively about the S&P 500 price to sales ratio in our past two commentaries. In our analog of today's

investing environment to that of the Dotcom era, it helps to revisit this conversation.

For a detailed examination of the Mag 7 and their potential negative impact on the stock market, we encourage you to read the section titled "Passive and glamorous" in John Hussman's November 2023 newsletter.

Stock Valuations

Here is a graphic[1] of the S&P 500 price to sales (P/S) ratio over time, with an ending date of December 1998.

Figure 3: S&P 500 Price to Sales Through 1998

The average P/S ratio is 1.09. A ratio higher than the average implies that the stock market is overvalued. The further away from the average, the more over- or undervalued the market is.

In December 1998, the stock market was clearly very overvalued. The P/S ratio in that month was nearly double the long-term average.

It is safe to say that a prudent investor in December 1998 would have looked at this data, in conjunction with the market concentration of the top 10 companies and other data points, and concluded that he should become more conservative in his investment selections. How would that have played out?

Suppose in December 1998, the investor decided to reallocate to a more conservative (e.g. a bond-focused portfolio). In 1999, returns for the major indices were:

- S&P 500 = +21.0% [Stock Index]
- NASDAQ 100 = +102.0% [Stock Index]
- Bloomberg US Agg = (0.80%) [Bond Index]

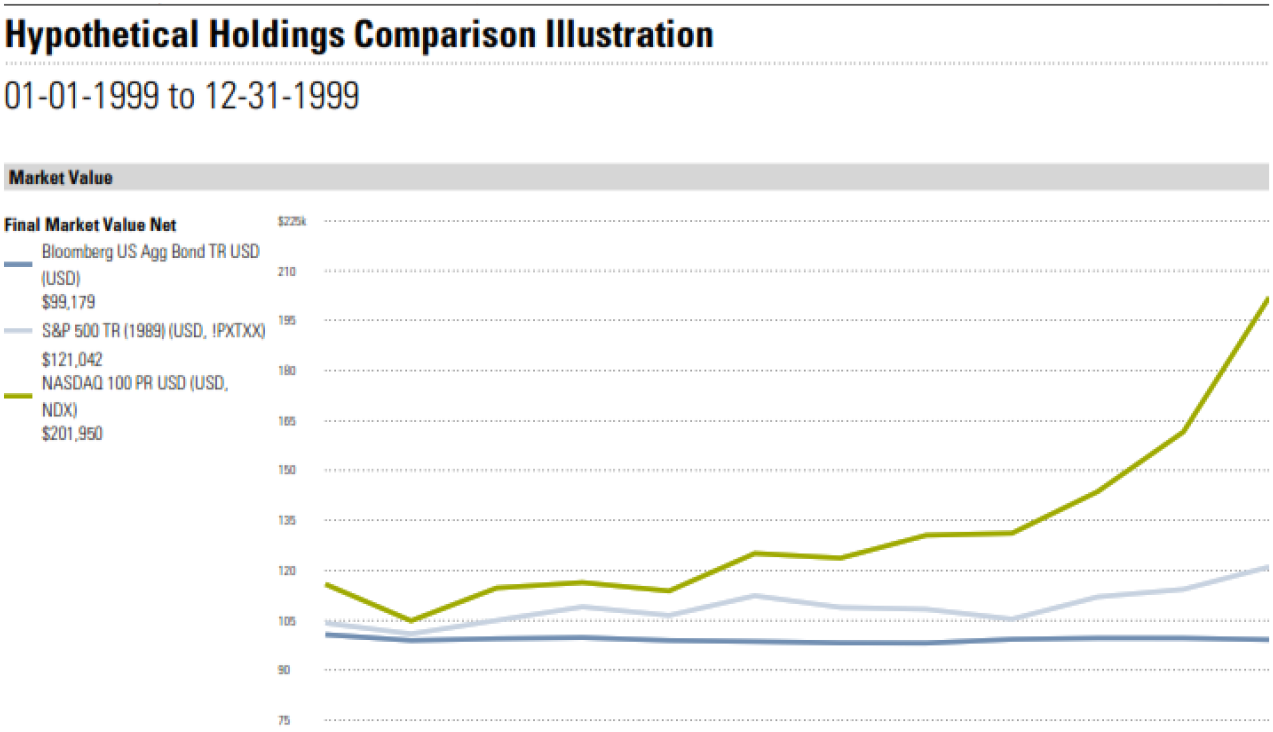
[1] Source: https://dqydj.com/sp-500-ps-ratio/

Figure 4 shows how $100,000 invested into each of these indices would have grown (or declined) in 1999.

By the end of the year, a conservative investor lagged behind the aggressive investor. This was in spite of the clear evidence that the stock market was grossly overvalued at the end of 1998. Now it was even more overvalued at the end of 1999.

Bubbles have this characteristic: they can continue to nosebleed levels before they pop.

Figure 4: Index Returns in 1999



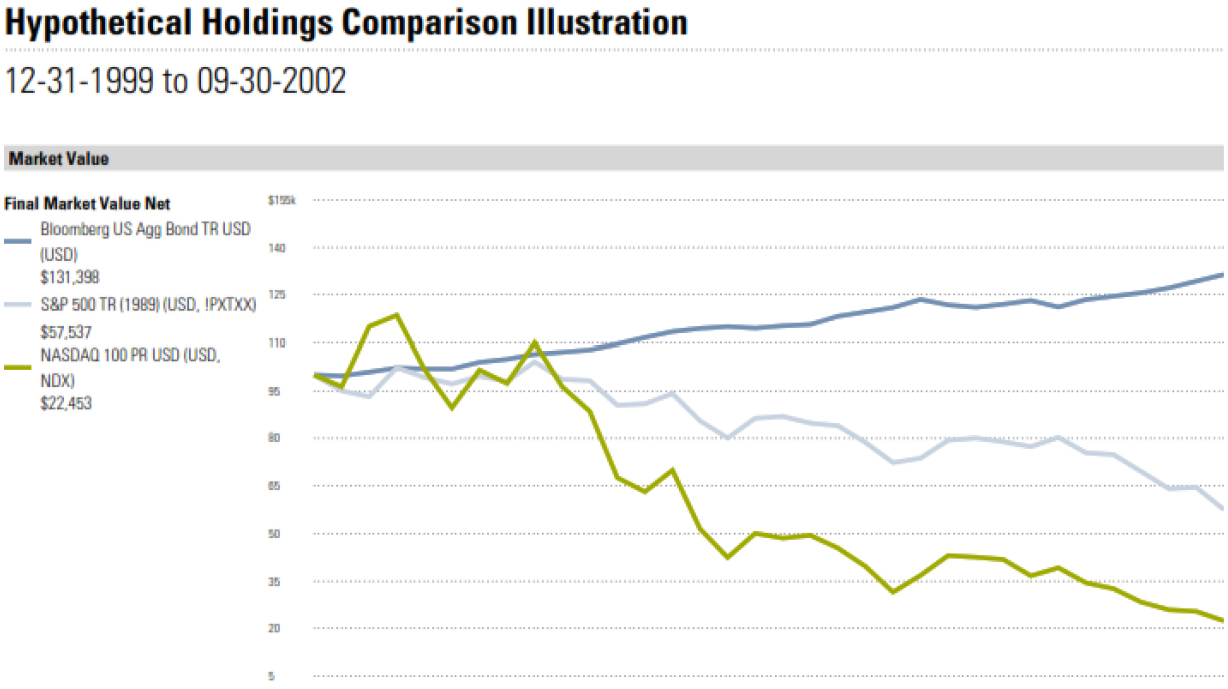
But then, in March 2000, the Dotcom bubble burst. Valuations finally mattered. From March 2000 through September 2002, the stock market experienced an epic recession, the largest decline outside of the Great Depression.

From January 2000 through September 2002, the returns of the same indices were:

- S&P 500 = (42.5%) [Stock Index]
- NASDAQ 100 = (77.6%) [Stock Index]
- Bloomberg US Agg = +31.4% [Bond Index]

Figure 5 shows how $100,000 invested into each of these indices would have grown (or declined) from January 2000 through September 2002.

Figure 5: Index Returns from 2000-2002



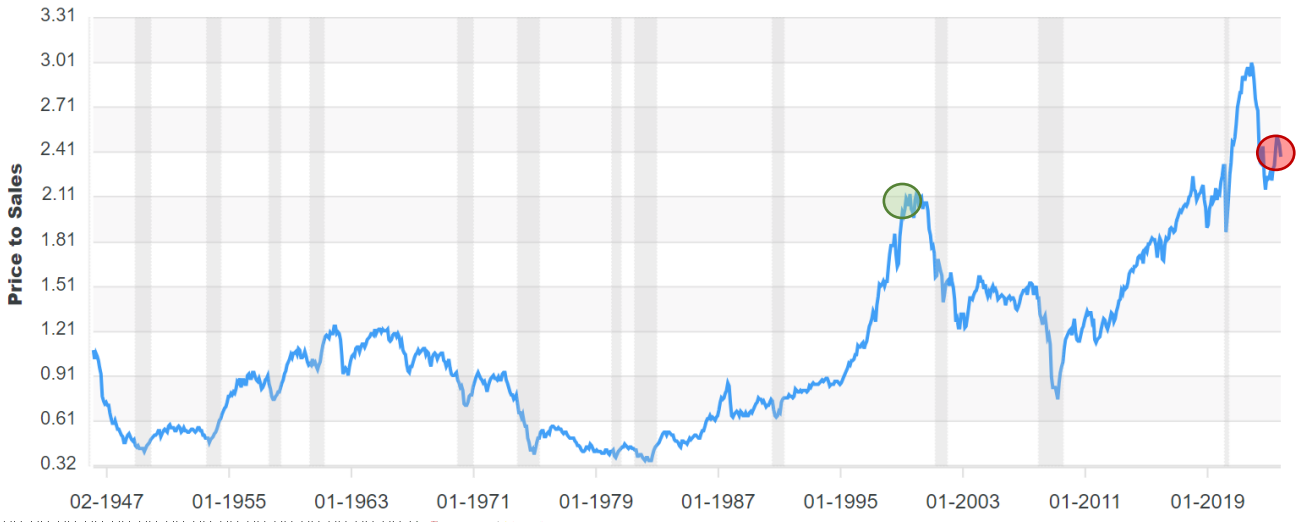
The math here isn't hard. Here's how the full round trip looks from January 1999 until September 2002:

	S&P 500	NASDAQ	US Agg
Initial Investment	100,000	100,000	100,000
Return in 1999	21.4%	102.0%	-0.8%
Total @ Dec 1999	121,400	202,000	99,200
Return from 2000 to 2002	-42.5%	-77.6%	31.4%
Total @ Sept 2002	69,805	45,248	130,349

The key observation: In December 1998, the prudent investor acted on valid evidence and made his move early. He looked the fool in 1999. But his research and patience paid massive dividends once valuations finally caught up. Getting the timing perfect is a fool's errand; no one accurately called the exact top in 2000 (or the bottom in 2002). So instead of timing the market, act on the evidence.

So how does all this tie back to today? In Figure 3 on page 3, we highlighted how stretched the stock market was in December 1998 using the P/S ratio. Figure 6 shows the same chart P/S from that page, but this time, it includes all dates through 2023.

Figure 6: S&P 500 Price to Sales Through 2023



Yep, the P/S today (**red dot**) exceeds the level from December 1998 (**green dot**). In fact, outside of late 2021, the ratio is the highest in history. Combine this with the concentration in the stock market (another analog to 1998), and one can safely say the stock market is widely overvalued.

At the risk of beating the drum too hard, we would like to explore another mathematical method for examining how over- or undervalued the stock market is: the discounted cash flow (DCF) method. We chose to highlight DCF because it is a foundational valuation model taught in every collegiate business school in every corner of the country. It is as close to Business 101 as it gets. It may be the most-widely used method to value any asset. The best part: it is just middle school math!

The easiest way to see it in action is with an example. Assume you buy Stock ABC today @ $100 (purchase price) and sell it one year (timing) from now @ $125 (income produced). The DCF model looks like this:

100 (cost) = $125/(1+x)^1$ where x = percentage return

In this case x = .25, or 25%. Without even doing the math, this result is intuitive. For 100 to grow to 125 in one year, it needs to increase by 25% over that year.

Now, add one layer of complexity to this example. Assume you buy Stock ABC today @ $100, assume it pays a $5 dividend each year, and assume you sell it for $125 after two years. Now the cash flows look like:

Year 0 = -100
Year 1 = 5
Year 2 = 130 [5 +125]

The DCF models looks like this:

100 (cost) = $5/(1+x)^1 + 130/(1+x)^2$

[NOTE: The exponent refers to the year of the cash flow. For example, the $130 cash flow occurs in year 2, hence the exponent of 2.]

In this case, x = .165, or 16.5%. The initial investment grew at 16.5% per year.

The percentage return of any asset is simply a function of three inputs:

1. The purchase price of the asset,
2. The income produced from the asset, and
3. The timing of the income produced from the asset.

The math is not as important as the context: If we know the three inputs – purchase price, income, and timing, we can calculate the rate of return.

Now let's put this to work.

The S&P 500 current annual dividend is $68.71[2].

This dividend tends to increase over time. The annual dividend increase has been 4.9%[3]. Thus, we can estimate future dividends. The dividend one year from now is 72.08 [68.71 * 1.049], the dividend two years from now is 75.62 [68.71 * 1.049 *1.049], so on and so forth.

Finally, we know the value of the S&P 500 as of December 31, 2023: 4,769.

So we know the purchase price (value on 12/31/23 = 4,769), we know the income produced (all dividends), and we know the timing of the income (each year). As such we can calculate the expected rate of return of the S&P 500 using DCF. It looks like this:

$$4{,}769 = 68.71/(1+x)^1 + 75.62/(1+x)^2 + 79.32/(1+x)^3 + \ldots.$$

Solving for x, we get 6.23%. **Thus, the S&P 500 is expected to grow at 6.23% each year in perpetuity.**

This figure means nothing without context. Is 6.23% a good rate?

For perspective, the average return for the S&P 500 has been about 10.3%[4] since its inception.

Knowing this, the projected return of 6.23% seems low.

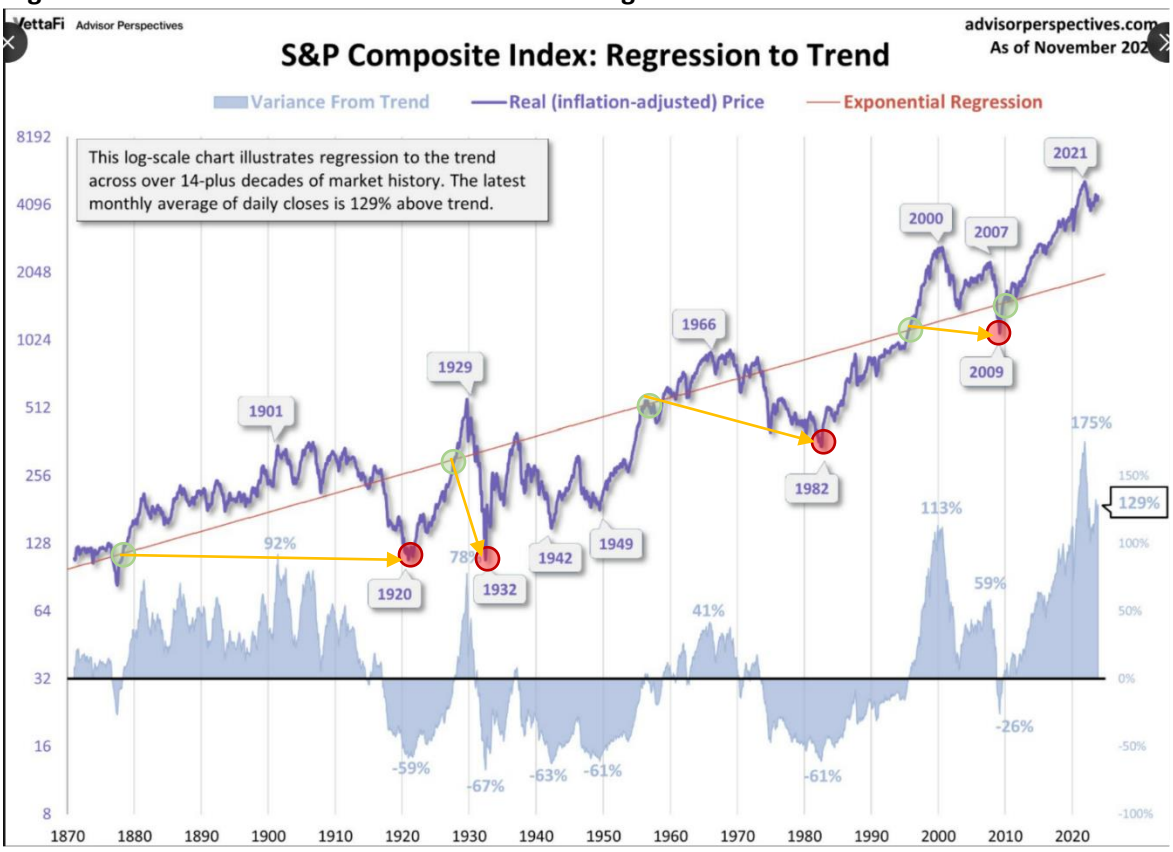
What does this mean? It means either:

(1) The future returns of the S&P 500 will be permanently lower (e.g. 6.23%) than the historical returns (e.g. 10.3%), or
(2) The current value of the S&P 500 (e.g. 4,769) is too high.

Scenario #1 is plausible but unlikely. First, S&P 500 returns tend to mean-revert. In other words, long-term future returns tend to be similar to the past historical average return. Figure 7[5] shows a visualization of this mean reversion. The **red line** shows the average return for the S&P 500. The **purple line** shows the actual S&P 500 values. The index oscillates around the average. More importantly, when the index has been running above average, it tends to run below the average in the future. A final observation: Note the **green dots**; these represent the first time in each cycle that the index moved above the average. And note the **red dots**; these represent the ultimate low in each cycle. It tends to be the case that the ultimate lows are

[2] Source: http://www.econ.yale.edu/~shiller/data.htm
[3] Source: http://www.econ.yale.edu/~shiller/data.htm
[4] Source: https://www.slickcharts.com/sp500/returns
[5] Source: https://www.advisorperspectives.com/dshort/updates/2023/12/04/regression-to-trend-s-p-composite-129-above-trend-in-november

Figure 7: Current S&P 500 Value vs. S&P 500 Average Return



lower than the initial green dot. In other words, the index gives up all its gains and then some in a recession. We called attention to this via the orange arrows in Figure 7.

Second, as the bulk of this paper argues, the stock market is overvalued, thus suggesting that Scenario #2 is more likely.

What if we use the DCF model to estimate a current value of the S&P 500 assuming the same dividends above and an average return of 10.3%? the DCF model looks like this:

$$\text{S\&P 500 projected value} = 68.71/(1+.103)^1 + 75.62/(1+.103)^2 + 79.32/(1+10.3)^3 + \ldots.$$

Solving this equation yields a projected value for the S&P 500 of 1,294.

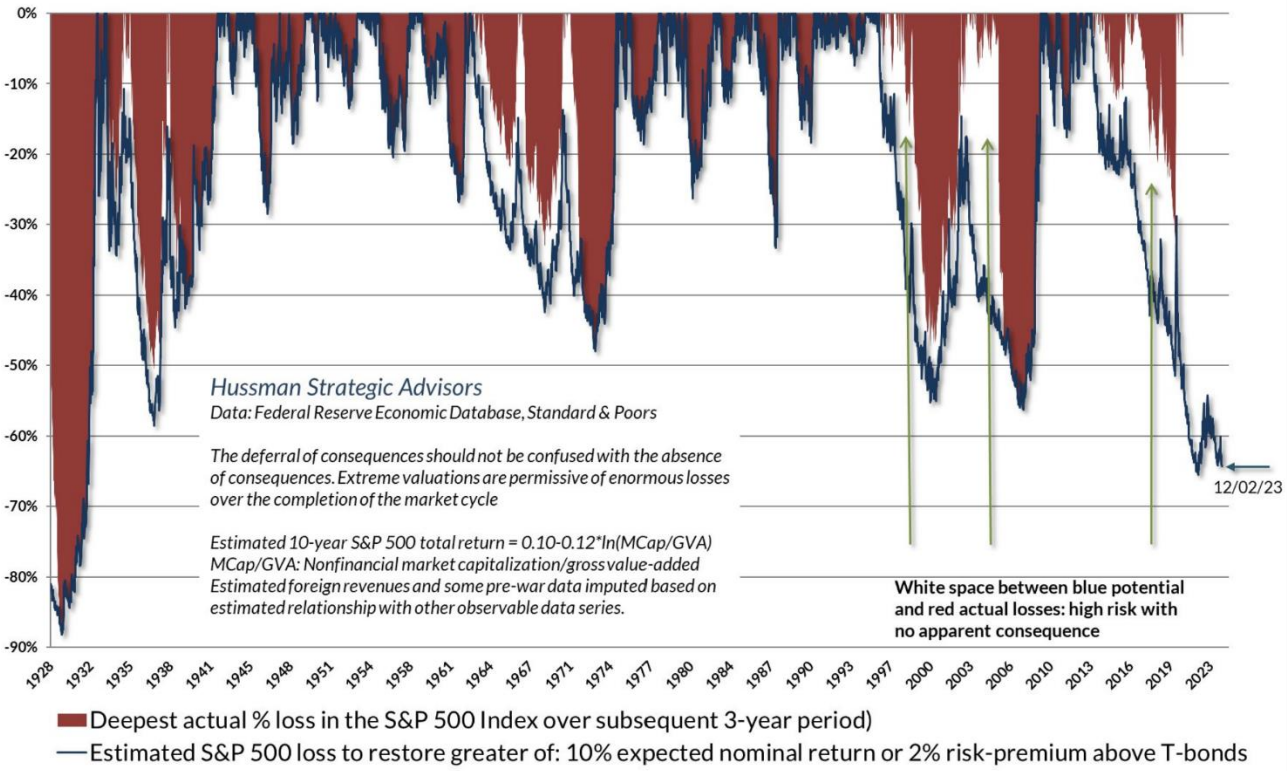
Yes, this figure seems preposterous. Preposterously low. It is 70% below the current value of the S&P 500. But let's put some context behind this. Surely the stock market cannot fall this far, right? Figure 8[6] illustrates a slight variation of the DCF argument. The **blue line** shows how far the S&P 500 must decline so that the long-term expected returns get back to 10%. Think of the blue line as a prediction; the blue line is essentially the DCF model from above. in It indicates that the stock market needs to decline. (Remember, we showed that the long-term expected return of the stock market is 6.23% based on the current S&P 500

[6] Source: https://twitter.com/hussmanjp/status/1732405977968726472

value. The long-term expected return can get back to the historical average return, 10.3%, if the stock market declines). The **red fill** indicates how far the stock market actually fell in the next three years.

A prediction is only as accurate as the eventual outcome. In this case, the prediction is pretty darn accurate: the red fill (actual stock market declines) typically touches the blue line (estimated stock market declines). Look at the current blue line value. That's a long way down: 63% down to be exact!

Figure 8: Projected S&P 500 Drawdown (Blue) vs. Actual S&P 500 Drawdown (Red)

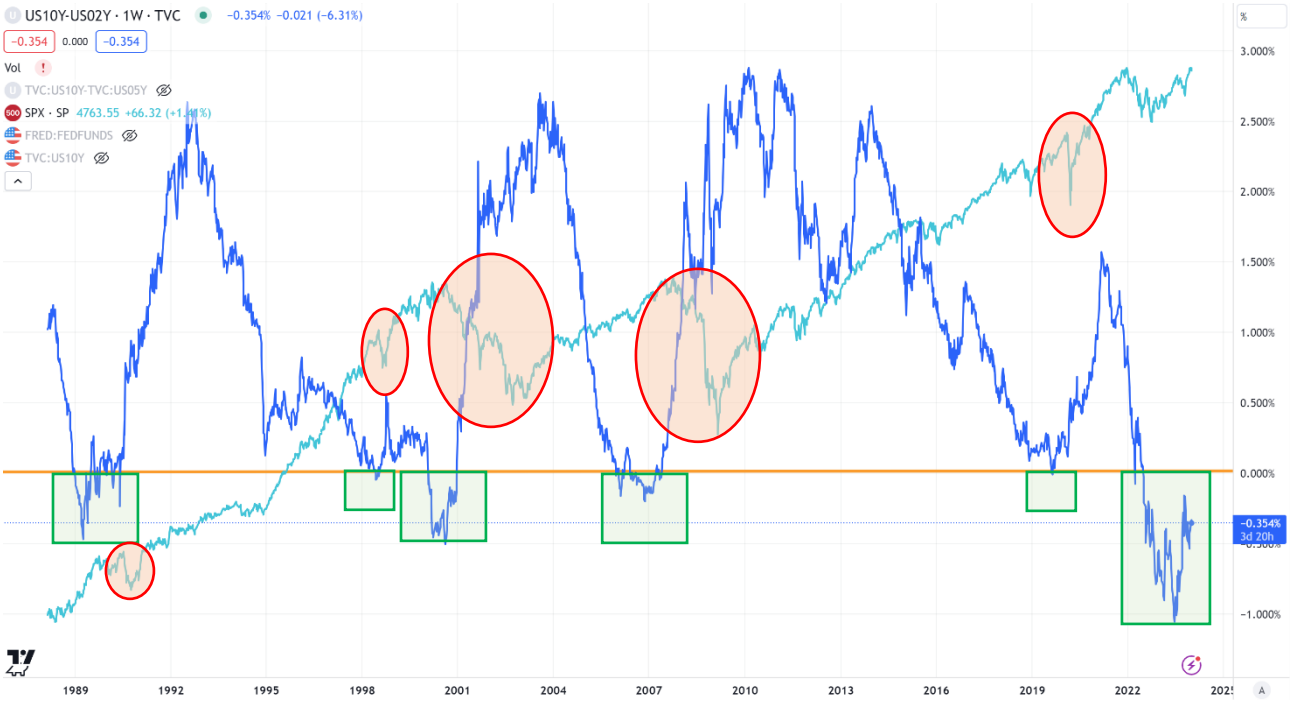


We would like to tie this all back to our comment from page 5 about the difficulty of timing the market. In past commentaries, we discussed the yield curve inversion. To summarize, an inverted yield curve means that short-term interest rates are higher than long-term interest rates. Anytime this has happened in the past, a recession has followed.

Figure 8 overlays interest rate inversions with the S&P 500 going to the late 1980s. The **dark blue** line is the difference between the 2y Treasury and the 10y Treasury. When the dark blue line goes below 0, interest rates are inverted. We added green boxes to call out the inversions.

The **light blue** line is the S&P 500. Notice how the index goes down – usually by a large percentage – after each inversion. We added red circles to call out these drawdowns.

Figure 9: Yield Curve Inversions + S&P 500 Returns



In conjunction with Figure 7, Figure 10[7] might be the most important chart for those with FOMO (For those not up on the lingo, FOMO means "fear of missing out"!). If you reallocated your investments in October 2022 when the S&P 500 was down 25%, only to miss out on the 26% return in 2023, you may suffer from FOMO. But Figure 9 is your medicine. The graphic shows each yield curve inversion going back to 1950. For each inversion, it shows the return of the S&P 500 from the date the inversion started until the ultimate low point for the index.

For example, let's look at the **brownish bar** for 2006-2009. This is the Housing bubble period. The squiggly brown line starts in 2006 when the yield curve first inverted. This squiggly brown line is the return of the S&P 500. Notice the index climbed over 20% over the course of 442 days from the date the curve first inverted. And then, the bottom dropped out. And the index finished almost 50% below the value on the date it first inverted. Here is the sequence:

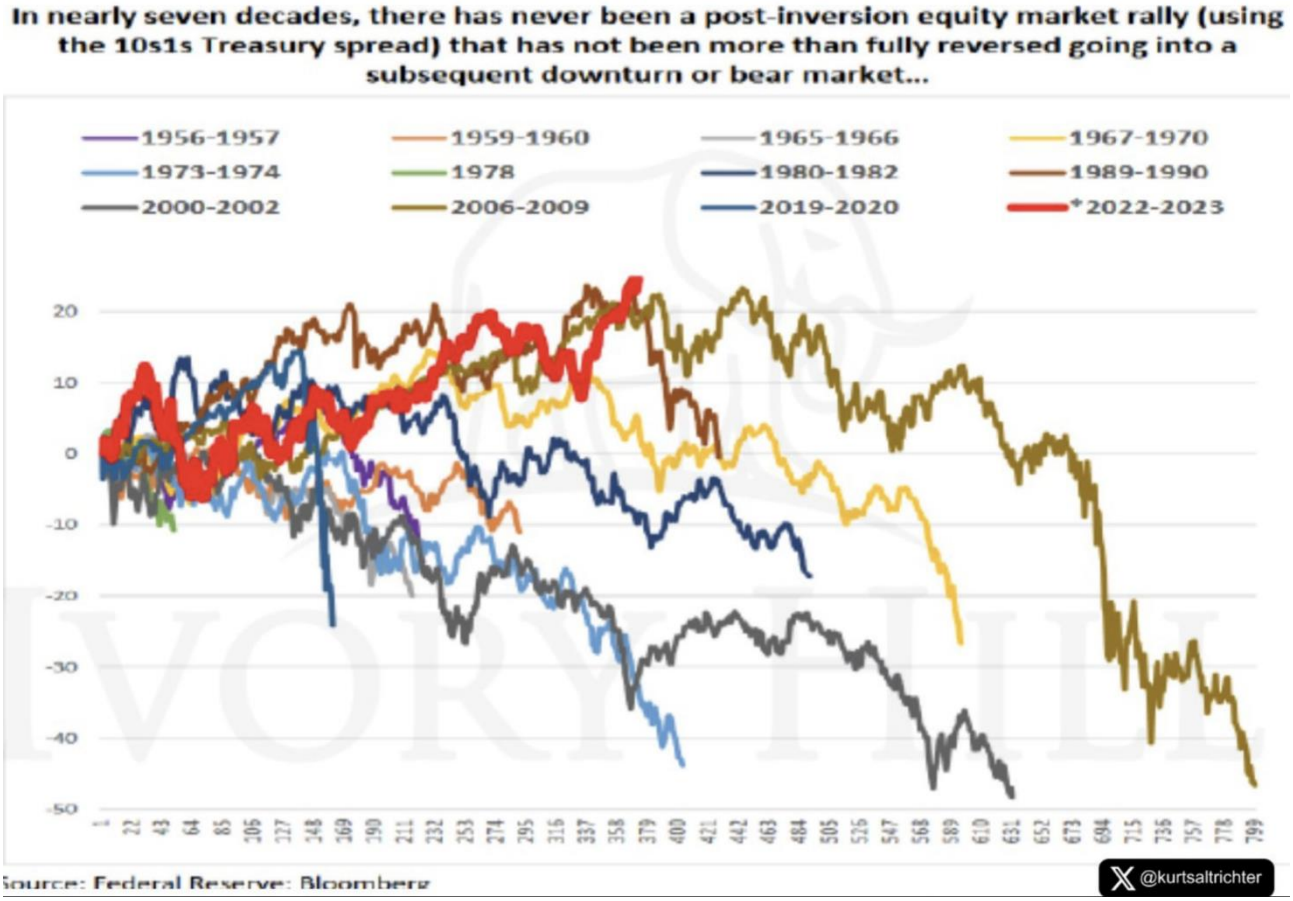
- Date of Inversion = 01/13/2006 (Day 0 in Figure 10 for the brownish line)
  - S&P 500 value = 1,287
- High point of rally = 10/09/2007 (Day 442 in for brownish line)
  - S&P 500 value = 1,565
- Low point of recession = 03/06/2009 (Day 799 for brownish line)
  - S&P 500 value = 683

For the investor who (rightfully) got more conservative on January 13, 2006 when the curve inverted, that investor had FOMO on October 9, 2007. But his patience was rewarded when the index ultimately fell about 50% from the Day 0 value.

[7] Source: https://twitter.com/saxena_puru/status/1739968965424918637

Each inversion has this same pattern. Unless this time is different, buyer beware. The S&P 500 was around 3,800 when the yield curve inverted in 2022.

Figure 10: S&P 500 Returns from Date of First Yield Inversions



Before we move beyond the conversation of stock valuations, we'd like to offer an opinion of why valuations have gotten too frothy. The futurist Roy Amara[8] offered an interesting hypothesis:

> "We tend to overestimate the effect of a technology in the short run and underestimate the effect in the long run."

Today, this hypothesis is known as Amara's Law. How does it work in practice? Back in the late 1990s, the internet was transitioning from a boutique technology accessible to large institutions and the government to a ubiquitous technology accessible to everyone. Countless miles of cable were laid underground and underwater to connect the globe. Well-established companies and start-ups alike were creating their first websites, and e-commerce was in its infancy. The excitement around the internet manifested itself in a speculative frenzy in the stock market. Everyone wanted to own a piece of this exciting future, and everyone piled into the stock market, especially technology stocks.

[8] Source: https://en.wikipedia.org/wiki/Roy_Amara

The internet did change the world. But it took time. It did not happen overnight. Roy Amara was right. Folks overestimated the power of the internet in the short-run, bidding stocks to stratospheric levels. The internet could not possibly live up to that hype that quickly. When the Dotcom bubble burst, the S&P 500 fell 50% and the NASDAQ fell 80%. Folks overestimated the effect in the short-run.

Now, more two decades later, we could not have imagined how far the internet would have propelled us to this point. And we underestimated the effect in the long-run.

Today's version of Amara's Law is artificial intelligence. There is no doubt that AI will change our society. It may even revolutionize our society. We are already seeing the impact of AI in our lives. ChatGPT can write entire essays for students. Customer service chatbots greet us on many websites. AI bots can create beautiful "paintings" that look every bit as authentic as a Rembrandt. But the pace of AI evolution may be incremental, much like the pace the internet permeated the world.

And here is where we reintroduce the Magnificent 7. Here is the same chart we presented on page 2, except this chart has the P/S ratio for each stock added. Recall that the long-run average P/S for the stock market is about 1.00.

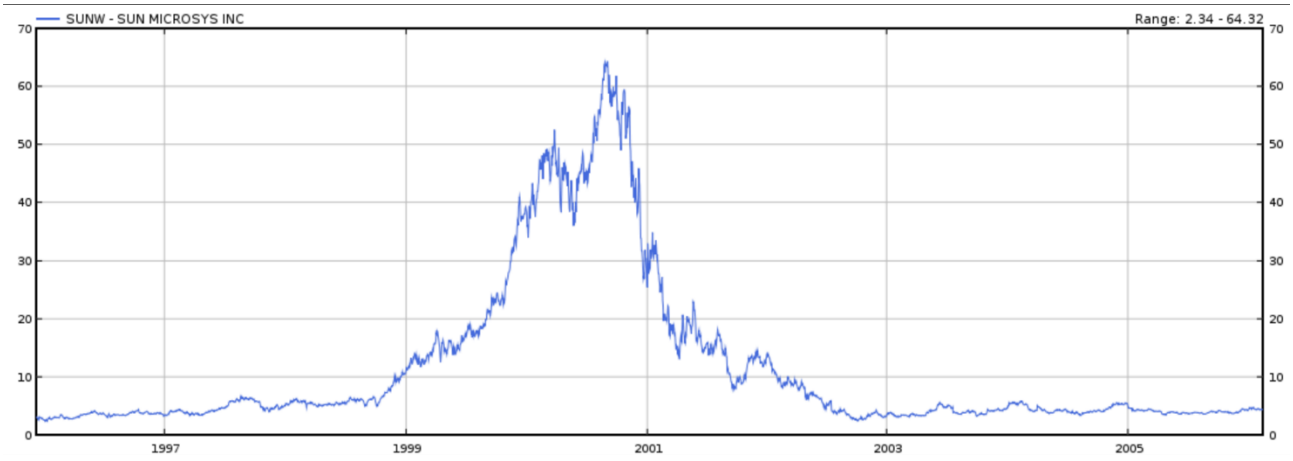
	Company	S&P Weight	2023 Return	Weighted Return	P/S Ratio	
Magnificant 7	Apple	6.8%	48.2%	3.3%	7.85	
	Microsoft	6.3%	56.8%	3.6%	13.16	
	Google	4.0%	58.8%	2.3%	6.25	
	Amazon	3.6%	80.9%	2.9%	3.08	
	Nvidia	2.8%	238.9%	6.6%	45.35	
	Facebook	2.1%	194.1%	4.0%	7.90	
	Tesla	1.8%	101.7%	1.8%	9.88	
		27.2%		24.5%		**A**
	Other 493	72.8%		1.8%		**B**
	S&P 500	100.0%		26.3%		**C=A+B**

To understand how absurd (absurdly high) those ratios are, we defer to Scott McNealy. Scott was the CEO of Sun Microsystems, a darling of the tech industry during the Dotcom bubble. At its peak, Sun's P/S ratio was 10. Here is Scott's assessment of this valuation, delivered in 2002, after Sun felt the wrath of the Dotcom implosion:

> *At **10** times [price to sales], to give you a **10**-year payback, I have to pay you 100% of revenues for **10** straight years in dividends. That assumes I can get that by my shareholders. That assumes I have zero cost of goods sold, which is very hard for a computer company. That assumes zero expenses, which is really hard with 39,000 employees. That assumes I pay no taxes, which is very hard. And that assumes you pay no taxes on your dividends, which is kind of illegal. And that assumes with zero R&D for the next **10** years, I can maintain the current revenue run rate. Now, having done that, would any of you like to buy my stock at $64? **Do you realize how ridiculous those basic assumptions are**?* [Emphasis added] *You don't need any transparency. You don't need any footnotes. What were you thinking?*[9]

[9] Source: https://kailashconcepts.com/sun-microsystems-the-greatest-quote-the-rise-of-the-reckless/

Here is Sun's stock chart[10] during the Dotcom bubble.



We intentionally bolded, underlined, and used red font for the "10"s in Scott's quote. Replace these 10s with the actual P/S for any of the Magnificent 7 stocks. His assessment applies equally well to these seven stocks. Current Mag 7 valuations are ridiculous.

Microsoft, Google, and Nvidia, in particular, are on the forefront of the AI movement. Each has an absurdly high P/S ratio. We had better hope that Amara's Law does not ring true this time.

Stock Technicals

Technical analysis is the study of chart patterns to inform future movements in stock prices. Whereas fundamental analysis looks at things like ratios, cash flows, etc., technical analysis simply looks at pictures.

There are two technical set-ups that we would like to highlight. The first is called a double top. Think of a gigantic circus tent with two main poles. Each pole represents a top, with a small valley in the middle of the poles.

Occasionally, stocks make a pattern that resembles a double top. In the world of technical analysis, a double top is considered a bearish (i.e. negative) message for the stock. You can read more about double tops here.

As we write this, the S&P 500 may be forming a massive double top[11]. Figure 11 shows the S&P 500 going back a few years. The first peak occurred in early January 2022. The second peak occurred in late December 2023. We have circled these peaks in yellow.

[10] Source: https://thefelderreport.com/wp-content/uploads/2017/10/SUNW.png
[11] Source: https://www.tradingview.com/chart/YnRMCZfp/

At the bottom of the chart, there is a purple bar. This bar measures the RSI, or relative strength index. This is a measure of momentum in the stock market. As a general rule, when stocks are going up, so is the RSI. When stocks peak, go down, and then go back up to the previous peak, the RSI should be the same at both peaks. Notice how the RSI has a small negative slope (**red line**) over time. The pre-COVID February 2020 peak saw the RSI around 80. The first yellow circle peak had a RSI around 72. The second yellow peak had a RSI around 70. Each subsequent peak in the S&P 500 saw lower RSIs. This is a negative divergence: increasing stock prices with decreasing momentum. Negative divergences are called negative for a reason; they often indicate weakness in the stock market.

Figure 11: S&P 500 Returns

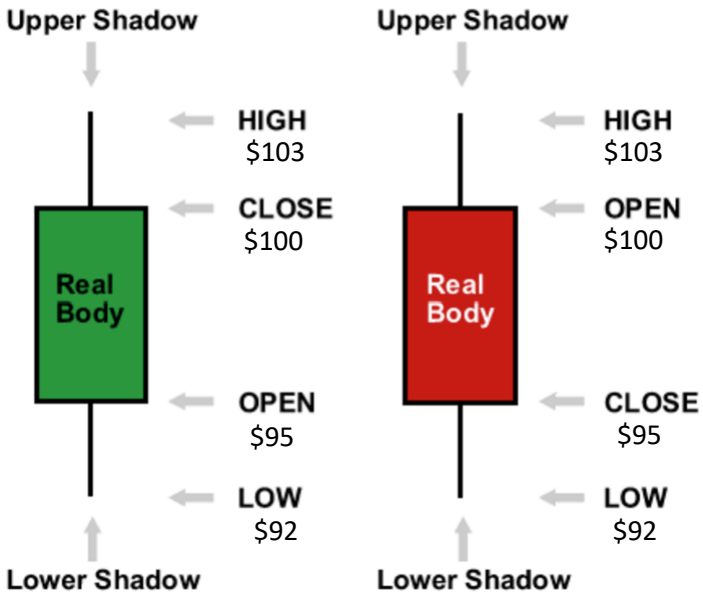
Complementing the negative divergence on the RSI is a negative divergence on the cumulative advance-decline line[12]; see Figure 12. The advance-decline is a simple concept. Advancing stocks are stocks that go up on any given day. Declining stocks are the opposite. If you subtract the # of declining stocks from the # of advancing stocks, you get the net advances for the day. Suppose there are 320 advancing stocks and 180 declining stocks. The net advances is +140. If the advance-decline line is increasing, it means that the net advance figure is positive day after day. This is a good sign. It means positive momentum. The opposite is also true; if the net advances is negative day after day, it's a bad sign.

Much the same way that when stocks peak, go down, and the go back to the previous peak the RSI should be the same at both peaks, the advance-decline should also be the same at both peaks. Ideally, it's higher at the second peak. Currently, the advance-decline is negatively-sloped, or lower at the second peak than the first. This, too, is a negative divergence. The red line shows the negative slope.

[12] Source: https://stockcharts.com/h-sc/ui

Figure 12: Cumulative Advance-Decline Line

The second technical setup is gap analysis. A gap is just what it sounds like: an opening between two different points. Let's start with a picture, again. Notice the chart in Figure 11 on the prior page. That zig-zagging line of green bars and red bars represents the daily moves of the S&P 500. Each bar is known as a candlestick. We've supersized a candlestick at left.



The "real body", or just "body", represents the difference between the opening and closing prices for the day. For example, for the **green bar** on the left, the stock opened at $95 and closed at $100. Because the price increased for the day, the body is green. The **red bar** uses the same logic, except the stock decreased from $100 to $95. Decreasing prices are shown as red.

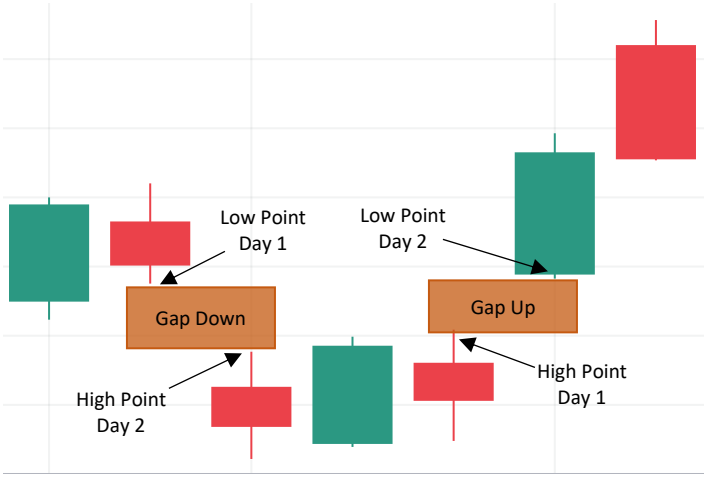
The "shadows", also known as "wicks", represent the highest and lowest prices for the day. For example, looking at the green bar on the left: (1) the stock opened at $95; (2) the price dropped temporarily to $92; (3) the price then climbed to $103; and (4) finally, the stock closed at $100. Even though the stock only increased $5 [$100 close price - $95 open price], it traded within a range of $11 [$103 high price - $92 low price].

Suppose a stock has the following price movement:

- On Day 1, a stock opens @ $95 and closes @ $100. It traded as **high as $103** on the day.
- On Day 2, the stock opens @ $106, closes @ $108, and trades as **low as $105**.

There are two very important observations here. First, it is possible for a stock to open at a price that is different from the closing price on the prior day. In our example, the stock closed @ $100 on Day 1 and opened @ $106 on Day 2. Not only is this possible, it happens to almost every stock on almost every day.

The second observation is that the high price on Day 1 was lower than the low price on Day 2. Think about that for a second. In our example, the high price on Day 1 was $103. The low price on Day 2 was $105. The **gap** between the two days was $2 [$105 - $103]. The graphic at right shows both a gap up and a gap down.



Why does all this matter? There is a common saying on Wall Street that all gaps get filled. In other words, if a stock gaps up from $103 to $105, like it did in our example, at some point, the stock will move back down to $103. That gap of $2 will get backfilled at some point in the future. It may get backfilled the next day. It may get backfilled a week later. It may get backfilled years later. The point is that almost all gaps get filled as some point. **In fact, statistics suggest that roughly 90% of all gaps get filled**[13].

Figure 13 shows the S&P 500 candlesticks back to the COVID crash in 2020. Since that time, the market has gapped up nine times[14]. Those gaps are noted with the blue bars. If statistics suggest that 90% of all gaps get filled, and there are nine gaps, then at least eight of these gaps should get filled.

Figure 13: S&P 500 Gaps Since COVID

[13] Source: https://bioequity.org/statistics-do-stock-price-gaps-always-get-filled/

[14] The dates of the gaps are 3/21/2020, 4/4/2020, 5/16/2020, 11/4/2020, 3/29/2023, 5/5/2023, 11/2/2023, 11/3/2023, and 11/14/2023.

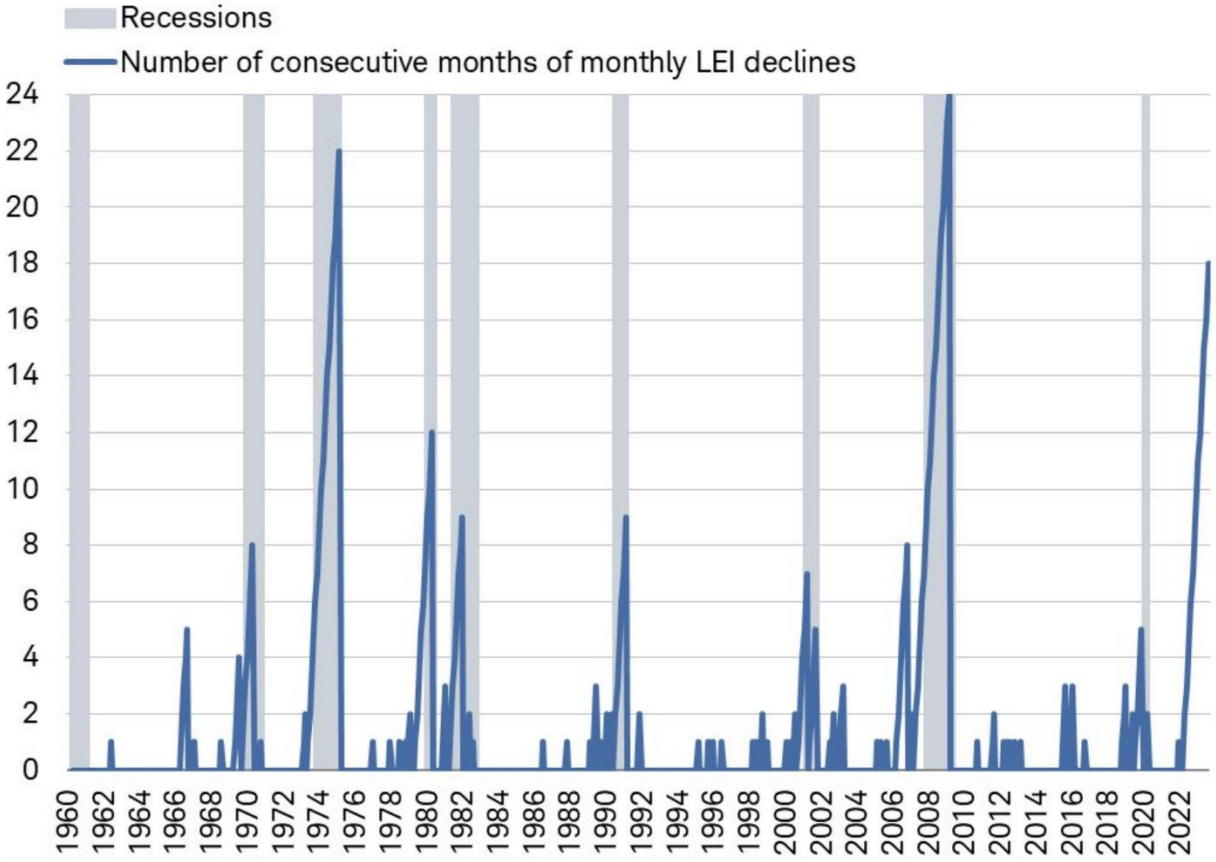
Assuming that the top-most eight gaps are filled, the market would need to decline to roughly 2,600. Should that come to fruition, it represents a 45% decline from the closing S&P 500 price as of December 31, 2023.

The Economy

Thus far, we have focused strictly on market fundamentals and technicals. Now we will shift gears and examine the health of the economy and how it correlates to recessions and the stock market.

First up is the Conference Board's measure of Leading Economic Indicators ("LEI") (Figure 14[15]). We covered this data series in our June 2023 commentary. Since then, it has continued to decline. The LEI is a collection of 10 different economic indicators that tend to lead economic activity. Put simply, the LEI typically declines before a recession hits. November 2023 marketed the 20 consecutive month of declining LEI. We are approaching a record streak of declines.

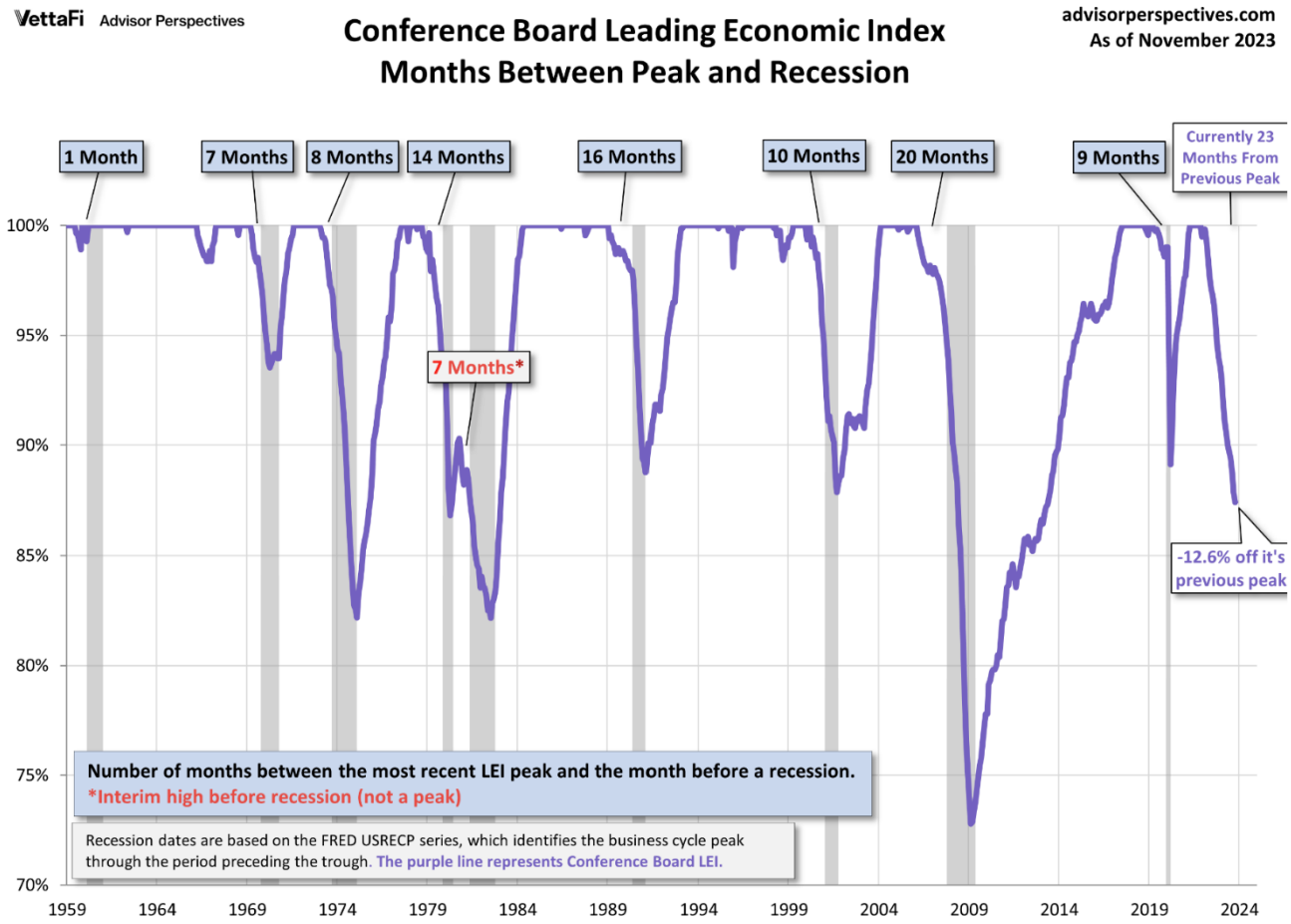
Figure 14: Consecutive Monthly Declines in the LEI



[15] Source: https://twitter.com/LizAnnSonders/status/1715306596744503325

So when does the recession start? Great question. Figure 15[16] shows the gap in time between the peak in LEI and the onset of recession. On average, a recession starts 12 months after the LEI has peaked. Currently, the LEI peaked 23 months ago. If it feels like the recession should be here but hasn't yet arrived, this is why. But make no mistake about it: each time the LEI has declined with such vigor as it currently has, a recession occurred.

Figure 15: Time Difference Between LEI Peak and Start of Recession



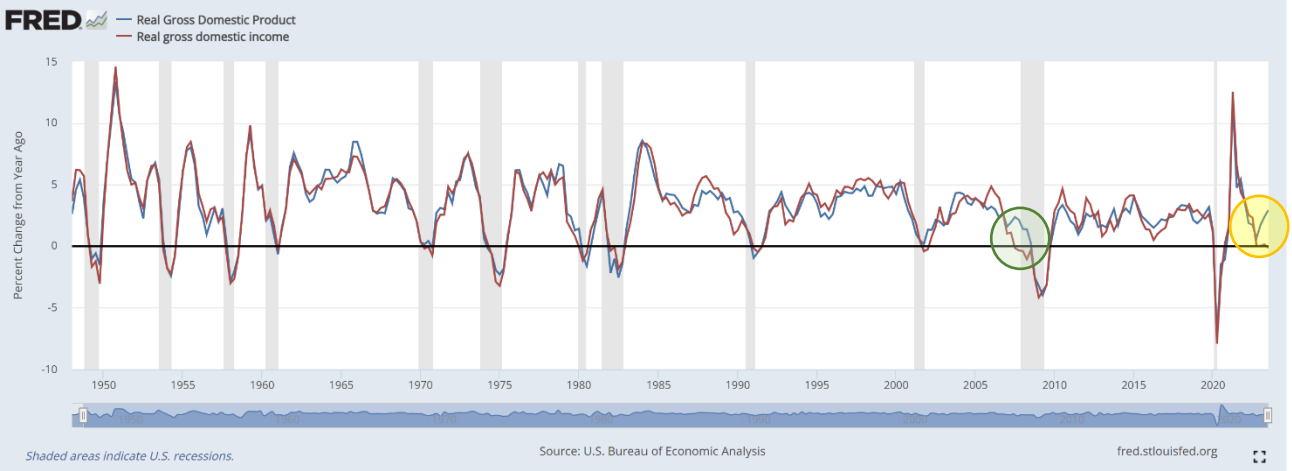
Next up is GDP, one of the most cited figures in all economics. Gross Domestic Product, or GDP, is fundamentally the value of all goods and services consumed plus all investments made. Think of it this way: When we receive income, we can do two things with it. We can either (1) spend it (consume goods and services) or we can (2) save it (make investments). So at its core, GDP = spending + savings[17].

Well, if all income is either spent or saved, the logic dictates that GDP is also equal to all income earned. Simply stated: income in = GDP (income spent + income saved). This income component is known as GDI[18], or gross domestic income. And now we have an identity equation: **GDI = GDP**.

[16] Source: https://www.advisorperspectives.com/dshort/updates/2023/12/26/leading-economic-index-conference-board-ecnomic-activiy-downshift-ahead#:~:text=The%20latest%20Conference%20Board%20Leading,lowest%20reading%20since%20May%202020.
[17] This is clearly a simplification of a more complex topic.
[18] Again, this definition of GDI is basic. It, too, is a bit more complex.

It stands to reason, then, that GDP and GDI should equal each other over time. After all, they are different sides of the same coin. And it just happens that this is the case. Figure 16[19] shows the year-over-year change in GDP and GDI over time. Both GDI and GDP move in virtual lockstep, with two notable exceptions.

Figure 16: YoY Change in GDP and GDI



Leading up to the housing bubble in 2008, there was a distinct divergence between GDP and GDI. During this period, GDI was deteriorating while GDP continued to grow. However, as the bubble burst and recession took hold, GDP deteriorated and caught up to GDI. This divergence is circled in green above.

The second exception is now. It is hard to see on the chart, but GDI has turned negative lately. Meanwhile, GDP continues to grow. This divergence is circled in yellow above.

So which measure is correct? Only twice in the past 70 years have the measures diverged. Based on the prior occurrence, GDI was a better indicator of future activity vs. GDP (GDI moved negative before GDP, and a recession followed. As such, GDI accurately reflected the recession sooner.). Furthermore, an economist for the Federal Reserve Bank has argued that GDI is a better indicator since it is closer to the final estimates of both figures[20]. While the sample size is small (just two occurrences), there are reasons to put more merit into GDI figures vs. GDP figures.

Now we turn our attention to employment. Some in the financial press have cited continued strong employment data, notably the strength in monthly jobs-added numbers. It seems like the actual number of jobs added each month exceeds the estimates for that month. That should be a good thing, right? We are apparently adding more jobs than expected.

[19] Source: https://www.stlouisfed.org/on-the-economy/2016/march/better-measurement-output-gdp-gdi

[20] Recall that GDI and GDP are both estimates of economic activity. As such, they go through revisions over time. Both data points include initial estimates and final estimates. Initial estimates are released shortly after each quarter ends. Final estimates are released well after each quarter ends. Consequently, final estimates are more accurate than initial estimates. The Fed economist found that initial estimates of GDI were much closer to the final estimates of GDI and GDP then initial estimates of GDP were to final estimates of GDP and GDI.

Except, much like GDP and GDI figures, jobs numbers have both initial and final estimates. Figure 17[21] shows the jobs added data for each month in 2023. The **blue bar** shows initial estimates. The **brown bar** shows final estimates. The **red bar** shows the difference between initial and final. For 10 of the first 11 months of 2023, final figures were less than initial figures (December final figures are not yet available).

The press tends to report on the initial estimates while spending far less time on the final estimates. But should it even matter? Even if the figures are revised down, clearly the brown bars indicate that lots of new jobs have been added. This is an empirically true statement. Like many things in economics and finance, though, it's the trend that matters more than the absolute number.

Figure 17: Monthly Jobs-Added in 2023

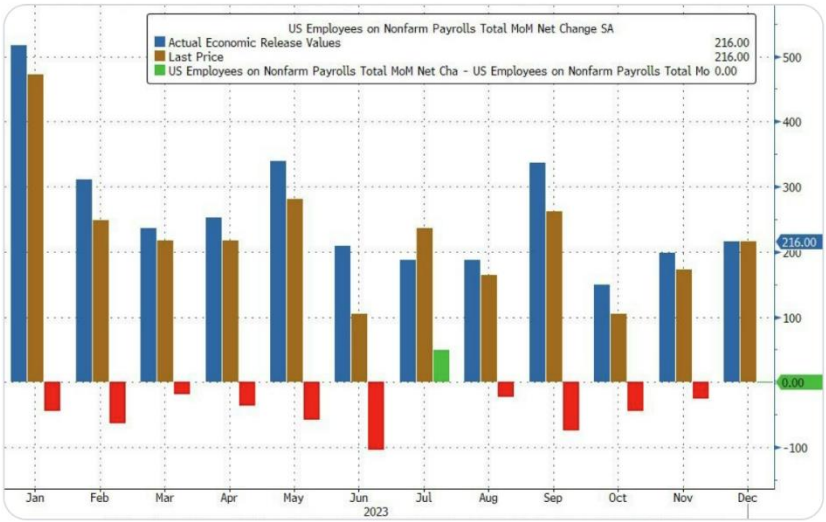
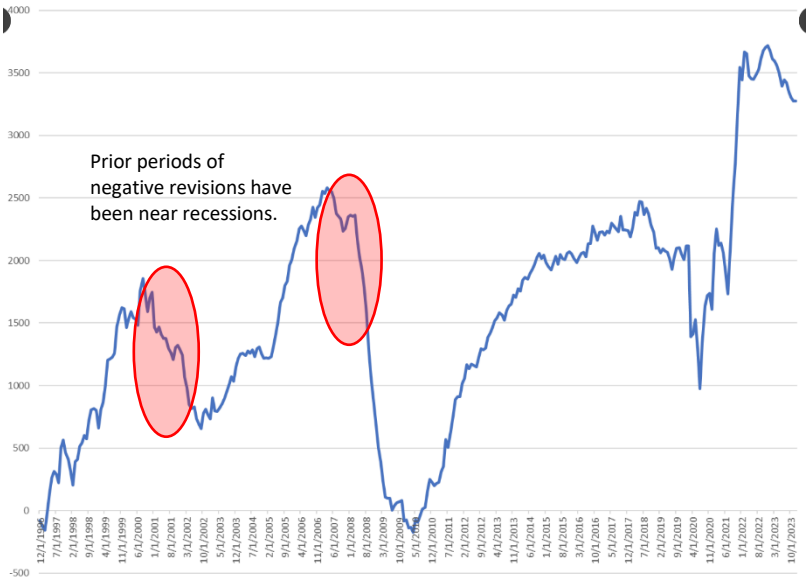


Figure 18[22] shows the net revisions over time. In plain English: when the line is rising, final estimates were larger than initial estimates (e.g. green bar from Figure 17). When the line is falling, final estimates were smaller than initial estimates (e.g. red bars from Figure 17). By and large, negative revisions to jobs data is clustered around recessions. Notice falling revisions around the Dotcom bubble starting in 2000; around the housing bubble in 2008; and now. Perhaps this is a canary in the coal mine.

Figure 18: Net Revisions to Jobs-Added Figures



For all the talk around employment figures, it is still the case that employment, or the lack thereof, is a lagging economic indicator. In other words, unemployment does not start rising in earnest until a recession is well underway. A simple Google search will confirm this.

However, there is one measure of employment that seems to be highly correlated to the stock market and the economy. The Bureau of Labor Statistics publishes the Jon Openings and Labor Turnover Survey, or JOLTS for short. The JOLTS essentially shows the number of job openings in the U.S. economy. It also happens to be closely correlated to the S&P 500. Figure 19 overlays the S&P 500 with the JOLTS data. The

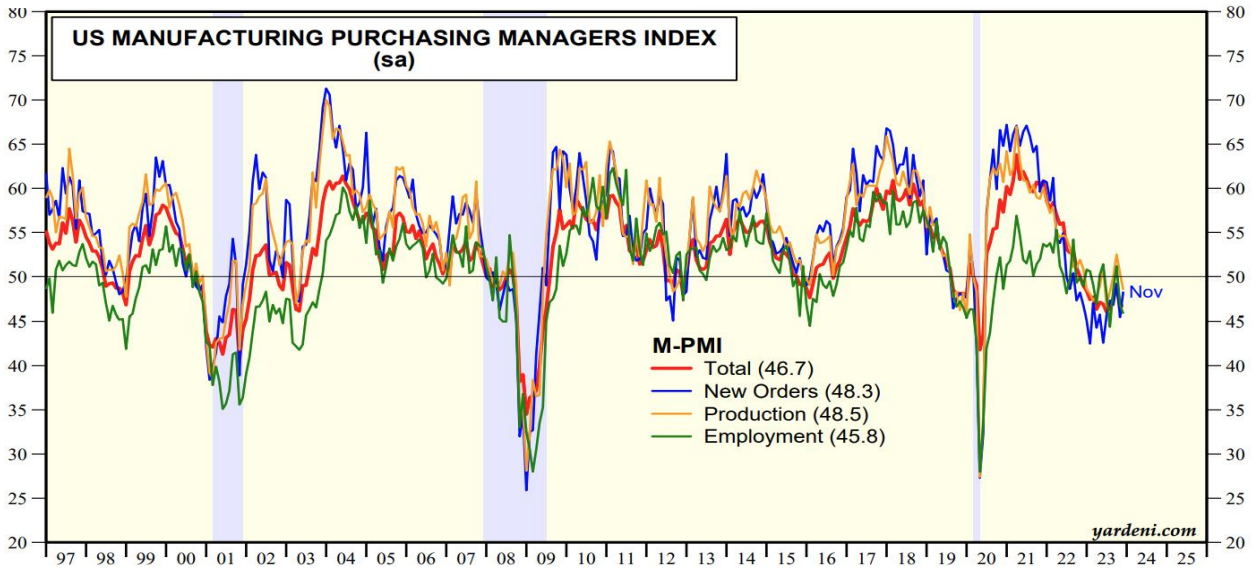
[21] Source: https://twitter.com/RealEJAntoni/status/1743304571038888366
[22] Source: https://twitter.com/donnelly_brent/status/1743353025593237798

S&P 500 is the red and green candlesticks. The JOLTS is the **orange** line. It is evident that the two series are highly correlated. Until now. The two series have moved in lockstep for two decades. But over the last year, the two series have diverged – and by quite a large margin. We've highlighted this divergence in red. Either the JOLTS data is lying, or the stock market is overvalued.

Figure 19: S&P 500 + JOLTS

In our last newsletter, we talked about Manufacturing PMIs and how they suggest the economy is slowing down. As Figure 20[23] shows, manufacturing PMIs remain below 50, indicating that the manufacturing sector is shrinking.

Figure 20: Manufacturing PMI

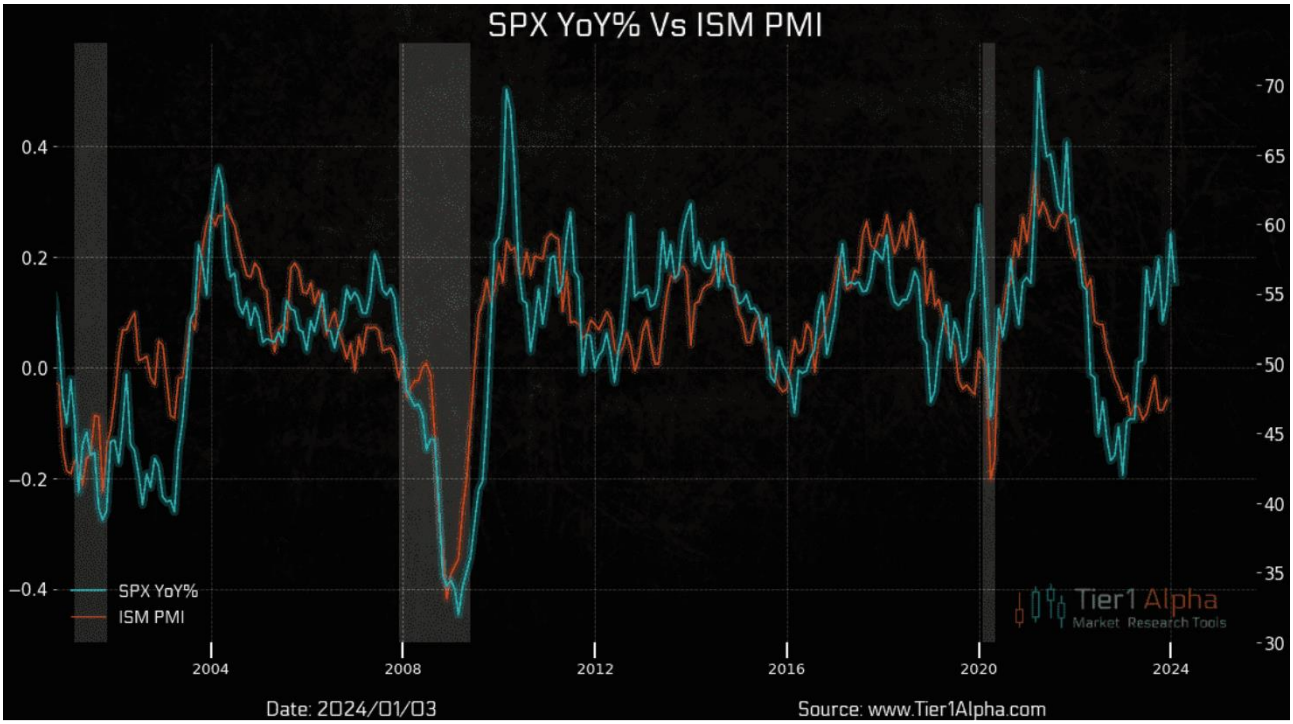


Note: Shaded areas are recessions according to the National Bureau of Economic Research.
Source: Institute for Supply Management.

[23] Source: https://archive.yardeni.com/pub/pmimfgnonmfg.pdf

Historically, year-over-year (YoY) changes in manufacturing PMI are correlated to stock returns, as Figure 21[24] highlights. Consistent with the trend in this newsletter, we are witnessing another divergence from the norm. The S&P 500 has become uncoupled from PMI. This chart suggests stocks are overvalued.

Figure 21: YoY Change in S&P 500 + YoY Change in Manufacturing PMI



One last point about the economy and recessions. We talked extensively in the early pages of this newsletter about the stock market from 1999 through 2002 and its analog in today. A fascinating aspect of all bubbles is that companies look fantastic until they aren't. And the transition can happen very fast.

The Dotcom bubble burst at the end of Q1 2000. Over the next two and a half years, the S&P 500 lost 50% and the NASDAQ lost 80%. But if you looked at the revenue and net income figures for the largest companies leading up to the Dotcom bust, you wouldn't really suspect that such sinister returns were possible.

Figure 22[25] lists the 10 largest companies by market cap in 1999[26]. Next to each company are listed revenue and net income figures for the 12 months ending 03/30/1999 and the 12 months ending 03/30/2000. The 12 months ending 03/30/2000 was right as the bubble burst.

[24] Source: https://app.hedgeye.com/insights/144576-protracted-manufacturing-downturn-represents-economic-reality?type=macro
[25] Source: https://www.sec.gov/edgar/search-and-access
[26] Note that data for NTT, Lucent, and Nokia was not available on Edgar or was not easily convertible to US Dollars.

Figure 22: Selected Financials Right at the Dotcom High

	Q1 1999		Q1 2000		Revenue	Profit	Profit Marg	Profit Marg	Dotcom
	Revenue	Net Income	Revenue	Net Income	Growth	Growth	Beginning	Ending	Decrease
Microsoft	4,595	1,917	5,656	2,385	23.1%	24.4%	41.7%	42.2%	-62.5%
GE	24,165	2,155	29,996	2,592	24.1%	20.3%	8.9%	8.6%	-49.4%
Cisco	3,171	636	4,919	662	55.1%	4.1%	20.1%	13.5%	-80.4%
Exxon	38,682	1,484	54,081	3,025	39.8%	103.8%	3.8%	5.6%	-15.3%
WalMart	34,717	916	42,985	1,326	23.8%	44.8%	2.6%	3.1%	-27.8%
Intel	7,103	1,999	7,993	2,696	12.5%	34.9%	28.1%	33.7%	-66.0%
NTT									
Lucent									
Nokia									
BP	101,180	5,008	161,826	11,868	59.9%	137.0%	4.9%	7.3%	-27.7%

Notice how both top-line (e.g. revenue) and bottom-line (e.g. net income) figures were quite good in the year ending Q1 2000. Again, to reiterate, the Dotcom bubble burst at the end of Q1 2000. All companies, except for Intel, saw revenue growth of at least 20% YoY. And Intel saw sales growth of 12.5%, which is still quite good. Profit growth was the same story. Again, all companies had at least 20% YoY net income growth, except for Cisco at 4.1%. Finally, all companies had healthy profit margins at the end of Q1 2000.

The point here is straightforward: financials for the 10 largest companies looked great right up to the very peak of the bubble. From another perspective, you would never know that stocks were in a bubble simply by looking at financials. This point is salient today since the 10 largest companies today have healthy revenue and net income figures. Stating that companies will be fine because they have plenty of revenue and net income is masking a larger truth: stock valuations remain alarmingly high and the economy remains rather shaky.

How It All Shakes Out

The stock market is a complex thing. And the economy even more so. We take our cues from the tidbits of data laid before us and the relative positions of that data in historical context.

The data – and the history – firmly suggest that caution is warranted. Caution in the economic outlook. Caution in the allocation of investments. Caution despite the rabid animal sentiments that exist on Wall Street today. The number of similarities in today's stock market to famous stock bubbles in the past is concerning. The divergences in economic data and stock behavior is equal parts thought-provoking and anxiety-inducing.

How will it all shake out? We hope this time is different. But those are the four most famous words in investing: This time is different. Is it?

Parting Thoughts

Presidential Election and Market Returns

To wrap it all up, we take a look at how the stock market has performed in election years. We have heard a lot of chatter recently about how the government may not allow a recession to happen since it's an election year.

Year	President	S&P 500 Return
2020	Biden	18.4%
2016	Trump	12.0%
2012	Obama	16.0%
2008	Obama	-37.0%
2004	Bush W.	10.9%
2000	Bush W.	-9.1%
1996	Clinton	23.1%
1992	Clinton	7.7%
1988	Bush H.W.	16.8%
1984	Reagan	6.3%
1980	Reagan	32.4%
1976	Carter	23.8%
1972	Nixon	19.0%
1968	Nixon	11.1%
1964	Johnson	16.5%
1960	Kennedy	0.5%
1956	Eisenhower	6.6%
1952	Eisenhower	18.4%
1948	Truman	5.5%
1944	Roosevelt	19.8%
1940	Roosevelt	-9.8%
1936	Roosevelt	33.9%
1932	Roosevelt	-8.2%
1928	Hoover	43.6%

First, the government does have some power to intervene in the economy. This can take many forms, such as fiscal stimulus like the TARP bailout in 2009 or the COVID payments in 2020. It can take the form of tax reductions or other legislative actions. Fiscal stimulus has typically been enacted in reaction to recessions, not to prevent recessions. And legislative actions typically take a long time to filter through the economy. So even assuming our dividend government can pass some sort of legislation, it might not have an immediate impact.

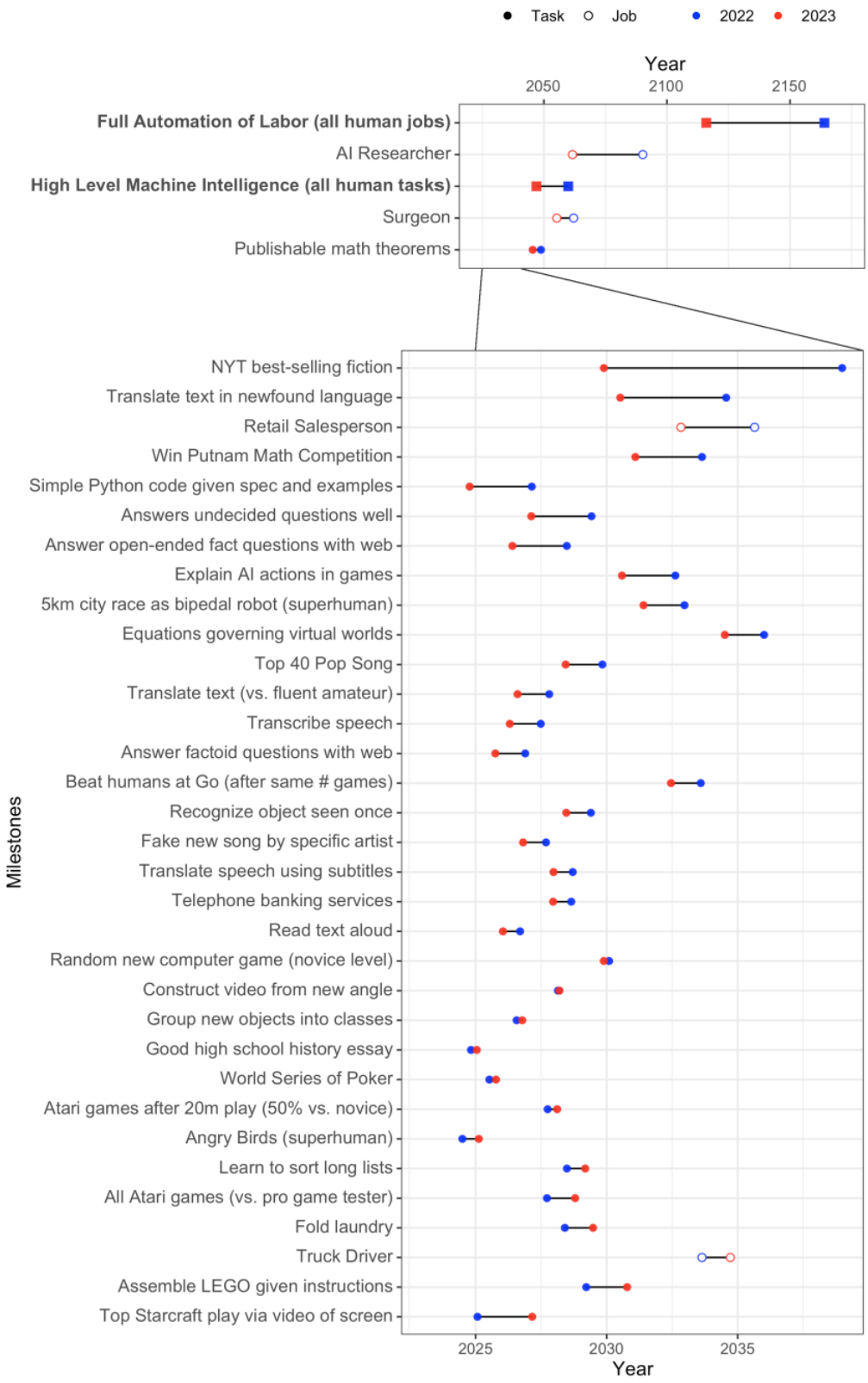
Second, and perhaps more importantly, there is precedent for the stock market to falter during election years. Notice the four election years in which the S&P 500 was negative. What did they have in common? All four occurred at the time that stock valuations were at similar levels as today. As we've argued extensively throughout this newsletter, the stock market is overvalued, and the economy is weaker than meets the eye. These two factors also existed in 2008, 2000, 1940, and 1932. And these factors may outweigh any impact the government intervention in the economy.

Artificial Intelligence

Before we wrap this newsletter up, we wanted to share something interesting we came across the other day. In an academic paper currently in preprint[27], some notable university AI researchers released results from a recent survey they conducted amongst their colleagues regarding the ability of AI to do certain tasks. The graphic below lists various tasks that can be theoretically done by AI and when these researchers think AI will actually be able to perform these tasks. In 2022, these researchers were asked when AI will first be able to perform these tasks. The authors then asked the same researchers the same questions in 2023. In almost all cases, researchers thought AI was closer to performing each task in 2023 than it was in 2022. Is this another case of Amara's Law? A graphic of the questions and projections appears in Figure 23 on page 25.

[27] Source: https://aiimpacts.org/wp-content/uploads/2023/04/Thousands_of_AI_authors_on_the_future_of_AI.pdf

Figure 23: Projected Dates When AI Will First Perform Selected Tasks



Let's add some levity to wrap it up. Capitalism may not be a perfect system, but it certainly beats the alternatives. Just ask the cows. The late syndicated advice columnist Ann Landers had this to say…

Ann Landers

SYNDICATED COLUMNIST

Dear Ann: I am an inner city English teacher, and my students are reading George Orwell's *1984*. I am having a difficult time explaining communism, socialism and fascism without giving a full-blown, time-consuming history lesson. I recall you printed a humorous column some time ago explaining these concepts. Will you please print it again? I'm sure it will kick-start a lively class discussion. — **A Teacher in Mississippi**

Dear Mississippi Teacher: Thank you for asking. It's an "oldie," but a "goldie." Here it is:

Socialism: You have two cows. Give one cow to your neighbor.

Communism: You have two cows. Give both cows to the government, and they might give you some of the milk.

Fascism: You have two cows. You give all of the milk to the government, and the government sells it.

Nazism: You have two cows. The government shoots you and takes both cows.

Anarchism: You have two cows. Keep both of the cows, shoot the government agent and steal another cow.

Capitalism: You have two cows. Sell one cow and buy a bull.

Surrealism: You have two giraffes. The government makes you take harmonica lessons.

We hope you have a safe, blessed, and healthy 2024. Thanks for reading!

The opinions voiced in this material are for general information only and are not intended to provide specific advice or recommendations for any individual. All performance referenced is historical and is no guarantee of future results. All indices are unmanaged and may not be invested into directly.

There is no guarantee that a diversified portfolio will enhance overall returns or outperform a non-diversified portfolio. Diversification does not protect against market risk.

Stock investing involves risk including loss of principal.

No strategy assures success or protects against loss.