



CM FINANCIAL ADVISORS

Introduction

Some of us had Spanish in high school. Some French. For those of us who went to Catholic school, you may have even had Latin. But who ever had Greek? Few of us, until now. Alpha, Beta, Gamma, Delta, Omicron. As confusing as navigating this crazy world has been, the confusion is spilling over into the financial markets as well. It’s like speaking Greek. Does the Fed raise rates to fight inflation? Will higher rates put an end to the bull market? Can the bull market push higher in the face of economic, geopolitical, and societal uncertainty? All great questions. For insights on these topics, we invite you to read below.

For the cliff notes version, you can skip to the section labeled “Impact on the Financial Markets.” But, since there is great stuff tucked away on every page, we encourage you to take a few minutes to explore and enjoy the entire piece. Questions and comments are always welcome, or course.

Brief 2021 Recap

In our June 30, 2021 commentary, we discussed at length the resilience of the stocks markets despite record high historical comparisons. The second half of the year mirrored the first, and as of December 31, stocks sat precariously on a cliff, high up but flirting with the edge.

	2021 Return ⁸	3-Yr Avg Return ⁸	5-Yr Avg Return ⁸	10-Yr Avg Return ⁸
US Large Companies (Broad) ¹	28.71%	26.04%	18.46%	16.54%
US Large Companies (Tech) ²	27.51%	38.29%	28.62%	23.13%
US Mid-Size Companies ³	24.76%	21.39%	13.08%	14.19%
US Small Companies ⁴	14.82%	20.00%	12.01%	13.22%
International Companies ⁵	11.78%	14.06%	10.06%	8.53%
Bonds ⁶	-1.54%	4.79%	3.57%	2.90%
Commodities ⁷	27.11%	9.86%	3.66%	-2.85%

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 Morningstar.

⁷ Return based on Bloomberg Commodity total return index per Morningstar.

⁸ Returns are given in annualized percentages.

We talk about the outlook for the market a bit later in “Impact on the Financial Markets,” but for now, we would like to highlight a few points:

- The large company performance is being dominated by just a few players. Facebook, Amazon, Apple, Netflix, Google, and Microsoft have accounted for 23% of the large company return since 2013. Put another way, the S&P 500 index has 500 stocks. Without those seven names, the S&P 500 would be 23% lower. That is a very concentrated (and potentially unhealthy) market.

- The S&P 600 tracks US small companies. Despite a rise of over 25% in 2021, almost 200 of the 600 stocks in the index – a full 1/3 of the index – have net losses, not net profits. That’s like taking six courses this semester, failing two, and still making Dean’s List.
- Since 1980, bonds have only had four losing years. The next year, performance is generally good.
 - 1994: (2.92%); 1995: 18.47%
 - 1999: (0.82%); 2000: 11.63%
 - 2013: (2.02%); 2014: 5.97%
 - 2021: (1.54%); 2022: ????
 - In 2018, bonds squeaked out a 0.01% return. In 2019, they were up 8.72%

The morale of the story is that diversification, while a prudent strategy for building sustainable, long-term wealth, does not always translate into short-term performance (e.g. 2021). That does not mean it does not work. Especially when the markets are disconnected from reality, as they are now, it is important to stay patient and stay diversified.

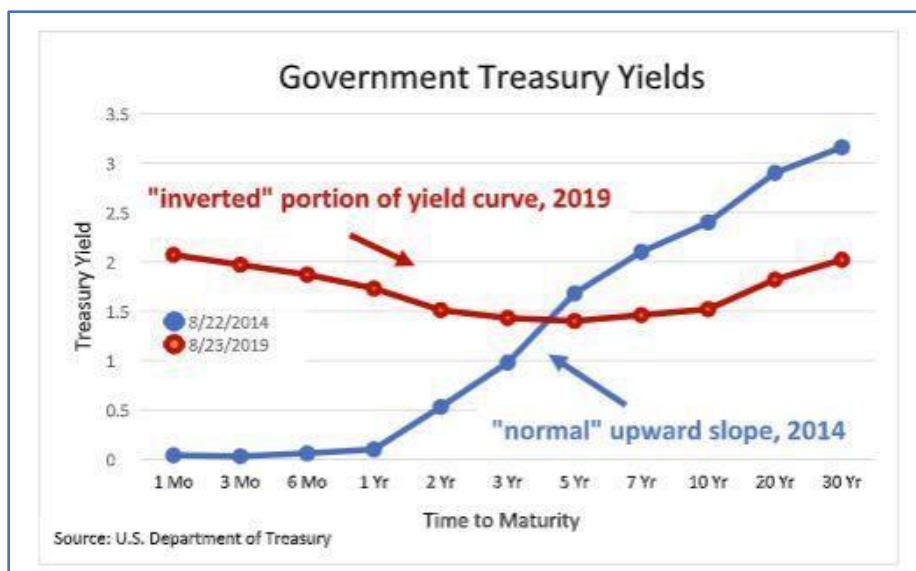
Interest Rates

The US government issues debt with various expiration dates. At a high level, the types of debt include:

- Treasury Bills – Maturities from 4 weeks to 52 weeks
- Treasury Notes – Maturities from 2 years to 10 years
- Treasury Bonds – Maturities of 20 years and 30 years

Intuitively, what is riskier: a 4-week bill or a 30-year bond? As else equal, the 30-year bond is riskier as there is relatively more uncertainty over a longer period. Interest rates are a proxy for risk. In other words, it is normal for the rates on bills to be lower than rates on notes which are lower than rates on bonds.

The blue line shows a “normal” yield curve: interest rates for shorter maturities are lower than rates for longer maturities.



Sometimes, interest rates get funky. Sometimes, rates for shorter maturities are higher than those for longer maturities. This is called an “inverted” yield curve. The red line is an example of an inverted yield curve.

A conventional, easy way to determine if the yield curve is normal (or not) is to measure the difference between the 10-year Treasury rate

and the 2-year Treasury rate. Recall, in a normal market, a 10-year is riskier than a 2-year, so the 10-year rate should be greater than the 2-year rate. Vice versa for a risky market.

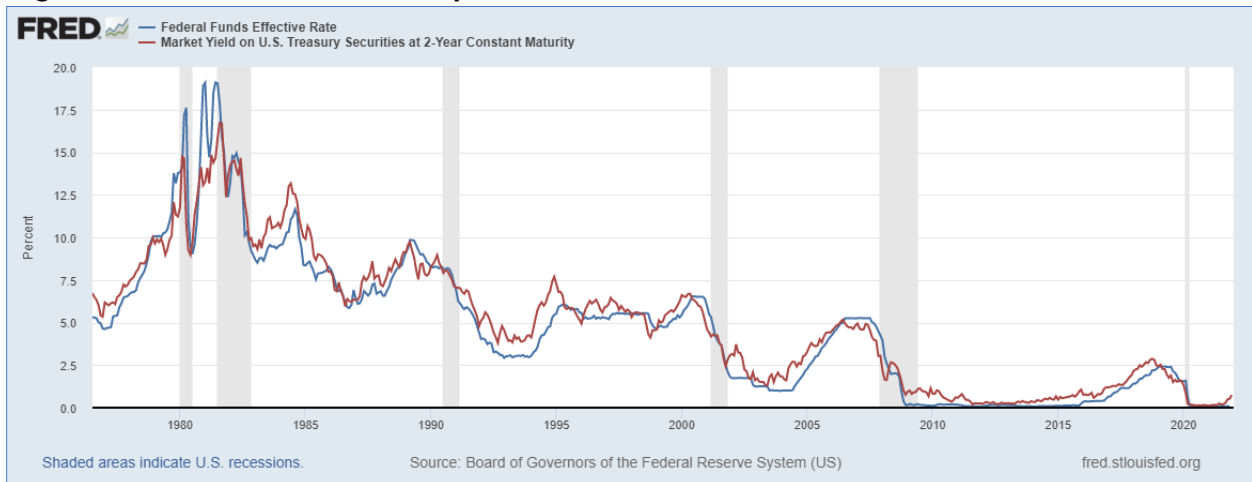
Below is the graph of the 10-year rate less the 2-year rate since 1975 (**Figure 1**). Notice the glaring message in this graph: Every time the difference is negative – otherwise known as an “inverted” yield curve – a recession shortly follows. Recessions are shaded in gray.

Figure 1: 10-Yr Rate Treasury Less 2-Yr Treasury Rate



Why mention this now? The Federal Reserve essentially controls very short-term interest rates (e.g. Fed Funds Rate). There is a very strong correlation between the Fed Funds Rate and the 2-year Treasury rate (**Figure 2**). Given the current high inflation environment, the bond market is expecting the Federal Reserve to begin raising the Fed Fund Rate in 2022. Currently, expectations are for 2 to 3 rate hikes of 0.25% each, or a total of 0.50% to 0.75% in rate hikes.

Figure 2: Correlation of 2-Yr Treasury Rate to Fed Funds Rate



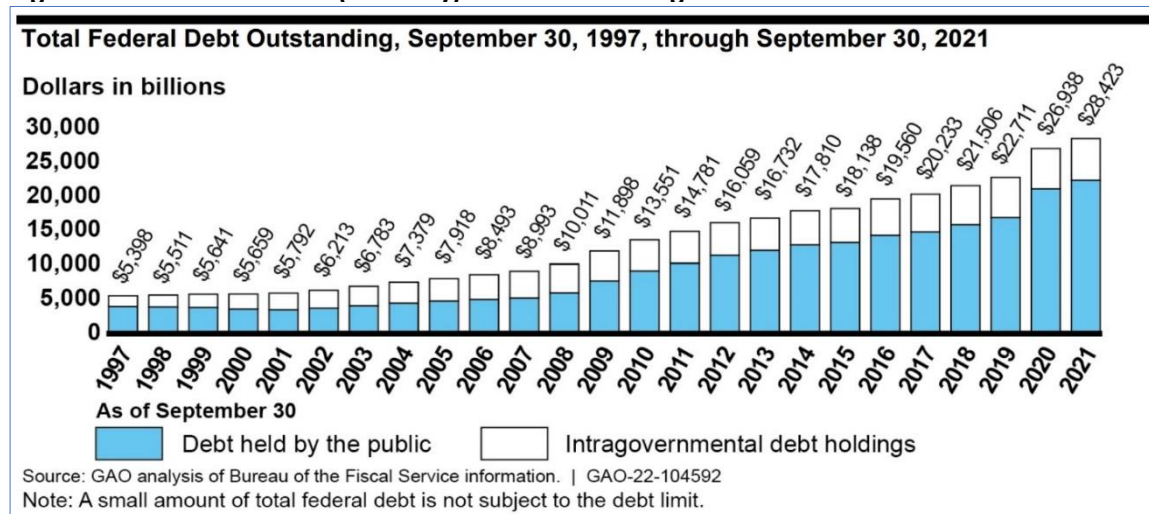
Today, the difference between the 10-Year Treasury and 2-Year Treasury is around 0.75%. If the Fed hikes the Fed Funds Rate by 0.75%, it is likely the 2-Year Treasury Yield will rise by a similar amount. This

may cause the Treasury yield curve to invert. As previously established, an inverted yield curve is historically a bad omen.

Of course, this narrative could change if **(1)** the 10-Year rate (or other maturities) rises or if **(2)** the Fed decides not to raise the Fed Funds rate. While either scenario is plausible, there are strong reasons to remain skeptical of both.

With respect to a potential rising of the 10-Yr Treasury, the following is a chart of the U.S. Federal debt outstanding over the last two decades (**Figure 3**). [The source data for this chart and Figures 4 & 5 can be found at https://www.treasurydirect.gov/govt/reports/pd/feddebt/feddebt_ann2021.pdf].

Figure 3: U.S. Government (Treasury) Debt Outstanding



From 1997 to 2007, debt increased \$3.53 trillion, or 5.23% per year. From 2007 to 2021, debt increased \$19.43 trillion, or 8.57% per year. Why the large increase since 2007? Simple: the government spent unprecedented amounts of money to revive the economy during the Great Recession and double-downed on the policy with massive relief during the onset of the COVID pandemic in 2020 and 2021.

All this debt creates a large liability for the government: huge interest payments. As of September 30, 2021, the average interest rate on publicly held government debt was 1.29% (**Figure 4**).

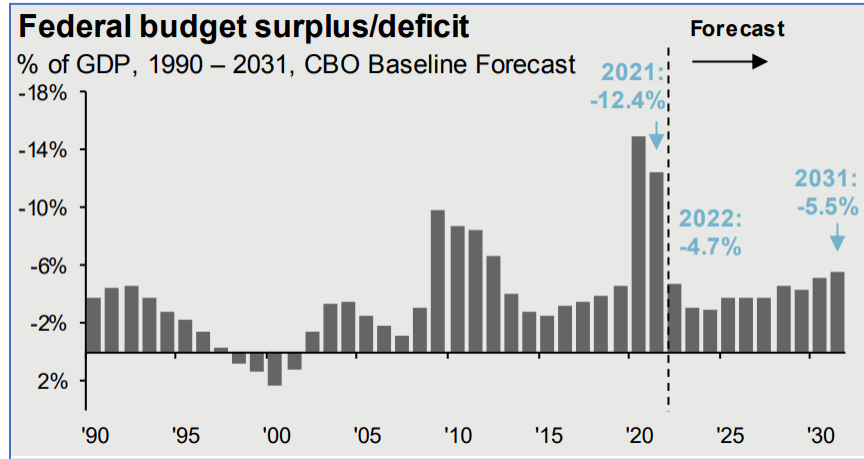
Figure 4: Average Treasury Interest Rates by Maturity

Note 2. Federal Debt Held by the Public
 As of September 30, 2021 and 2020, Federal Debt Held by the Public consisted of the following:

	2021		2020	
	Amount	Average Interest Rates	Amount	Average Interest Rates
Marketable:				
Treasury Bills	\$3,712,952	0.1 %	\$5,028,127	0.2 %
Treasury Notes	12,570,463	1.4 %	10,655,969	1.9 %
Treasury Bonds	3,340,760	3.1 %	2,668,116	3.5 %
TIPS	1,651,998	0.5 %	1,522,418	0.7 %
Floating Rate Notes	579,292	0.4 %	478,320	0.3 %
Total Marketable	\$21,855,465		\$20,352,950	
Nonmarketable	\$427,435	1.3 %	\$666,002	1.1 %
Total Federal Debt Held by the Public	\$22,282,900		\$21,018,952	

Total debt of \$28.4 trillion multiplied by an assumed interest rate of 1.29% is an annual interest bill of \$366 billion. Raising the interest rate by just 0.10% increases the debt cost by \$28.4 billion per year. These are not insignificant figures.

Figure 5: Projected Budget Surplus/Deficit

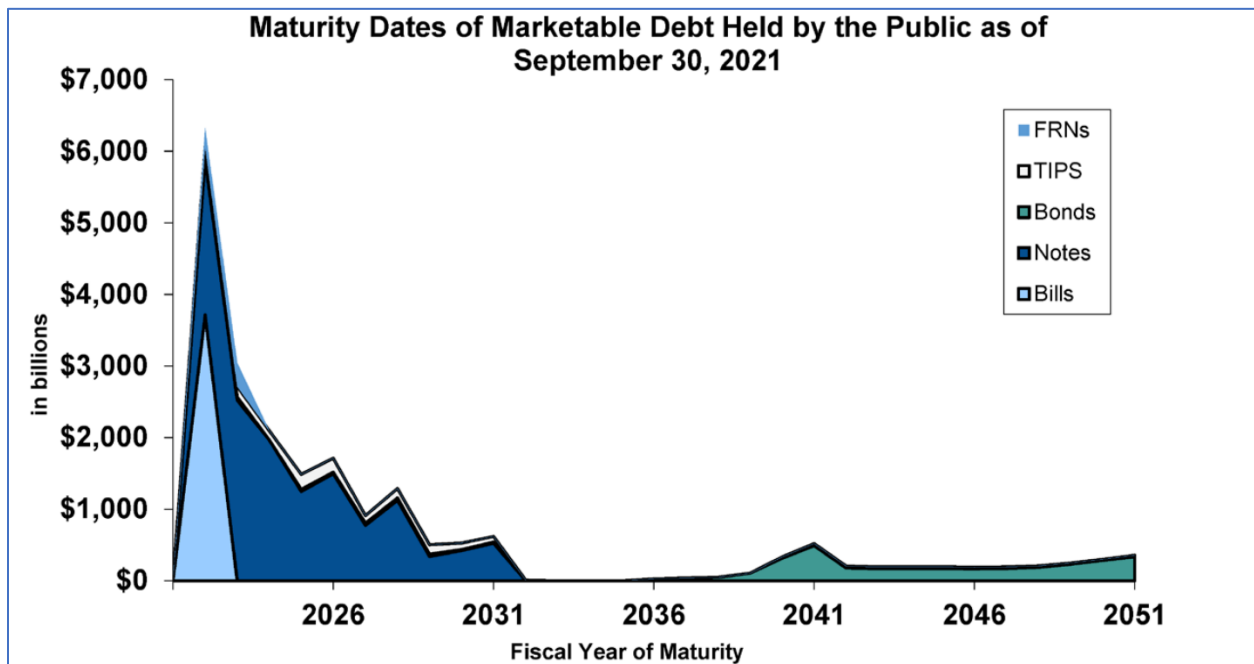


The amount of debt outstanding is projected to increase moving forward. According to Congressional Budget Office data, the government is expected to fund fiscal deficits (i.e. issue more debt) over the next decade (**Figure 5**).

Not only will more debt be issued, but a massive portion of the existing \$28.4 trillion in debt is set to mature in the

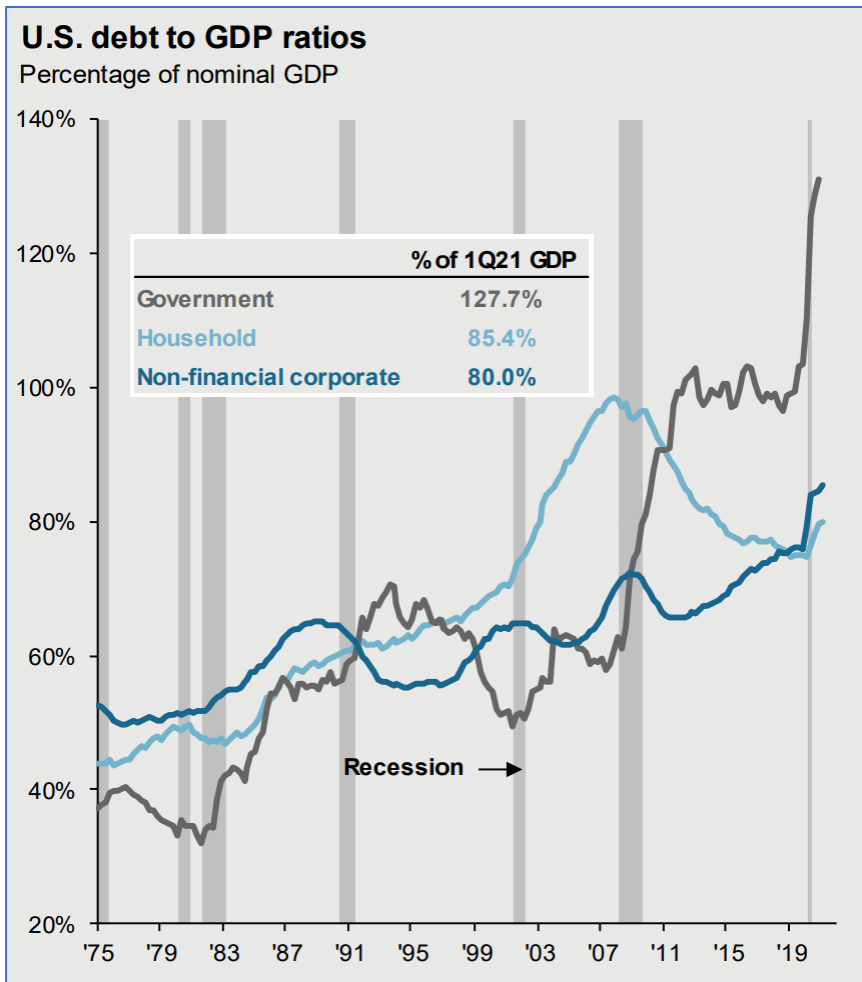
next few years (**Figure 6**). The government does not repay this debt when it matures. Instead, the government refinances the debt with new debt. As such, the newly-issued debt carries whatever interest rate is prevailing at that time. For example, if the expiring debt carried an interest rate of 2.00% and the new debt was refinanced at 2.50%, interest payments would increase.

Figure 6: Amount of Maturing Treasury Debt by Year



Thus, the government is faced with rising debt levels due to projected fiscal deficits moving forward. And it must contend with refinancing a massive amount of maturing debt in the next few years. With this backdrop, a lower 10-yr rate (and for that matter, rates on all maturities) is highly preferred.

Figure 7: Debt as % of GDP for Various Borrowers



The U.S. government isn't the only body binging on debt. With interest rates at artificially-low levels for well over a decade, corporations have borrowed at a record pace. Based on data compiled by JP Morgan, Federal government borrowing stands at ~130% of GDP and corporate borrowing stands at ~90% of GDP (**Figure 7**). These are staggering figures compared to historical norms.

One phenomenon of this swelling in debt issuance is the rise of "zombie" companies. While not an official term, a zombie company is any company whose revenue is only large enough to cover its interest payments. Put another way, imagine your income was only enough to cover the interest on your mortgage and the interest on your car

loan and the interest on your credit cards. How could you afford to buy groceries and other necessities? You would need to borrow more. This is how a zombie company survives. It has so little revenue that it only covers its interest expenses, and it must keep borrowing to buy everything else it needs to survive.

The Swiss Bank of International Settlements estimated zombie companies made up 12% of all worldwide publicly traded companies. Deutsche Bank estimated that 18% of publicly traded U.S. companies are zombies, while Bloomberg has that number at 20% [Source: <https://tinyurl.com/zombeeco>]. Whichever is the real number, the point is the same: these companies are only surviving because debt is so cheap.

If rates rise, it doesn't take an active imagination to speculate what follows.

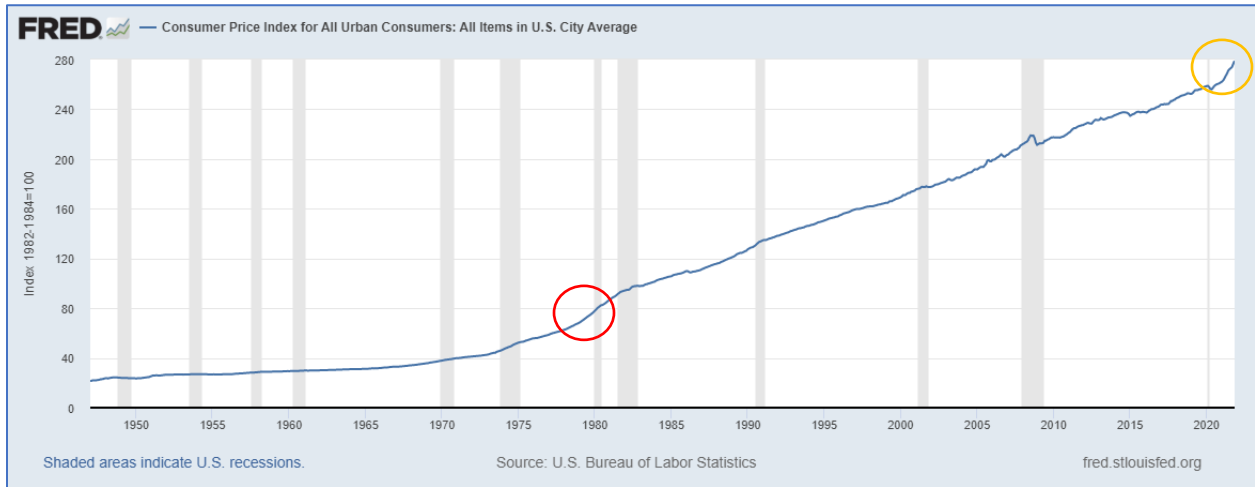
Back to the second question posed at the top of page 4: What if the Fed does not raise the Fed Funds Rate? And that leads us to...

Inflation

Right next to “crypto,” inflation might be the finance work of the year.

Let’s establish some groundwork. Inflation is always present. It is the amount of inflation that matters. This is a chart of the Consumer Price Index (CPI), the most common and quoted inflation statistic. Notice that the line is almost always rising (Figure 8).

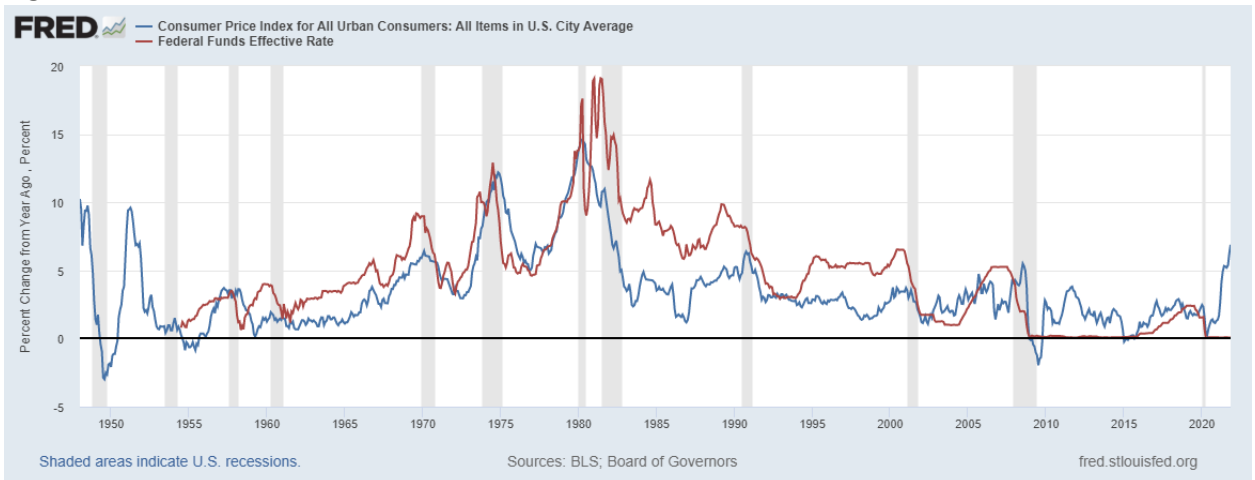
Figure 8: Consumer Price Index (CPI)



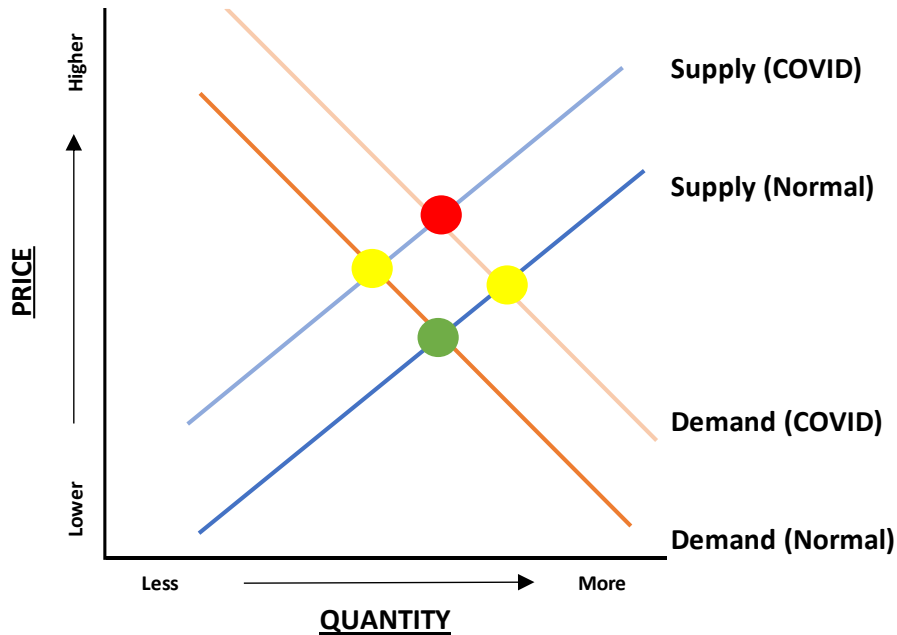
It is the steepness of the line that matters. A steeper line means sharper price increases (“faster” inflation). The red circle highlights the fast inflation of the 1970s. This eventually ended with Paul Volcker, then the chairperson of the Federal Reserve, raising the Federal Funds Rate way up to put a lid on inflation.

The orange circle is, of course, today. Once again, we are in a fast inflation environment. As Volcker raised the Federal Funds Rate to stomp out fast inflation many decades ago, Powell today may have to take the same path. The chart below shows the relationship between the change in inflation (blue) and the Fed Funds Rate (red) (Figure 9). Again, there is a strong correlation. In other words, the Fed may help manage inflation by raising or lowering the Fed Funds Rate.

Figure 9: CPI vs. Fed Funds Rate



Why the huge surge in inflation lately? It boils down to Economics 101: supply and demand. First, a quick one-minute primer.



In a normal market, consumers (demand) buy more widgets as prices decrease; if something is cheaper, we can buy more of it. Conversely, producers (suppliers) make more widgets as price increases; if something costs more, the company makes more money. At some point, normal demand balances with normal supply, and you get the market price. Here, normal market price is ●.

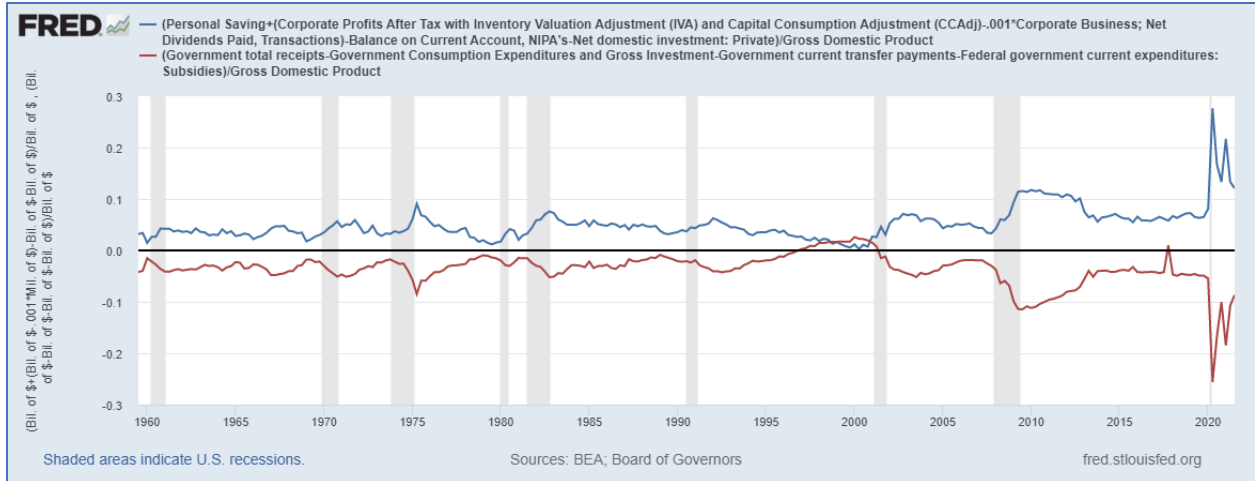
Sometimes, demand increases and supply stays static. For example, companies give year-end bonuses, and employees have more cash than normal. Demand goes up, and supply stays the same. When this happens, prices increase. This is one of the ● above.

Sometimes, the opposite happens: supply decreases and demand stays the same. For example, Napa Valley has a bad climate year, and grape production decreases. Wine supply goes down, but demand stays the same. When this happens, prices increase (and we're all grumpy!). This is the other ● above.

And sometimes the stars align where both demand increases and supply decreases. For example, large COVID relief payments stoke demand while multitude of businesses reduce or stop production, thus curtailing supply. When this happens, prices really increase, as noted by ●.

Today, we face the red dot! On the demand side, the COVID stimulus caused a surge in demand. Here is an interesting visual, courtesy of Hussman Research, which shows the large surge ([Figure 10](#)).

Figure 10: Government Deficit (Red) vs. Private Economy Surplus (Blue)



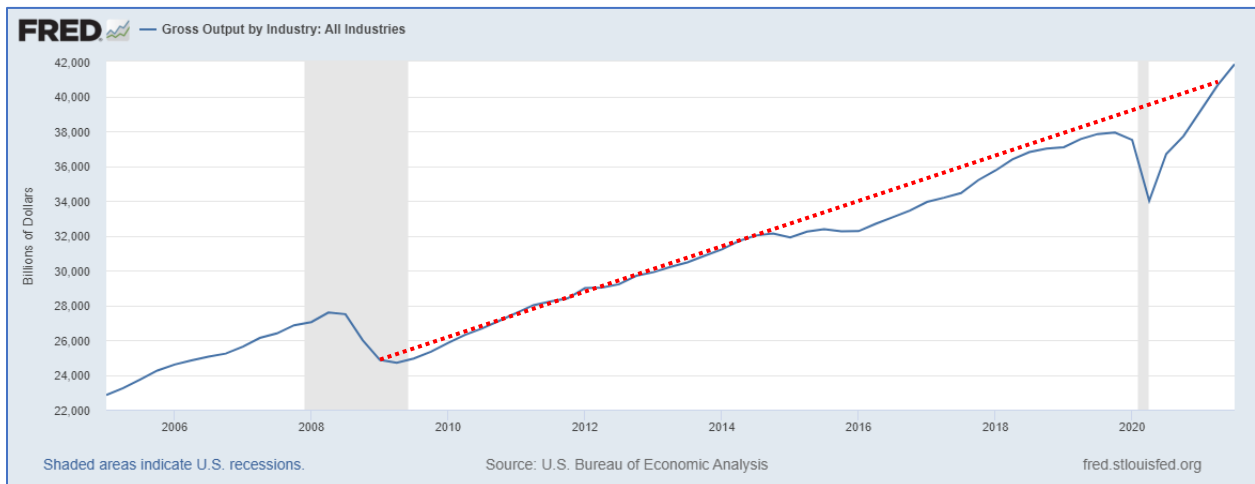
In a nutshell, the **red** line is a measure of government spending (as percent of GDP). Bigger spikes mean more money spend (and larger budget deficits). When the government spends money, that money must flow somewhere.

In this case, that “somewhere” was into the hands of consumers and corporations in the form of COVID relief payments, PPP loans, and the myriad other COVID stimulus measures. This flow to consumers and companies is the **blue** line.

The government spent a **TON** of money at one time, and this money increased the bottom line of consumers and companies. More money to spend = higher demand.

On the supply side, GDP is a catch-all bucket that shows the value of all goods produced and services provided in the U.S. In other words, it shows aggregate supply. Below is a chart of GDP (**Figure 11**).

Figure 11: Gross Domestic Product (GDP)



The large dip in the first half of 2020 was the economy shutting down during the onset of COVID. Never before have we just shut down the entire economy. A new precedent was set, and as a result, GDP, and hence supply, fell sharply. [Notice the rounded bottom in 2009 vs. the V-shaped bottom in 2020. The V-

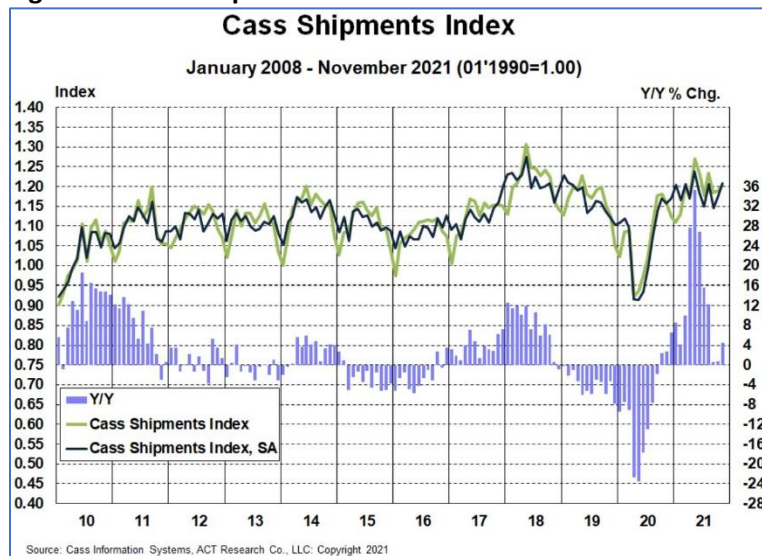
shaped bottom is indicative of whole industries re-opening on-demand in 2020 vs. the typical digging out of financial malaise at the end of normal recessions (e.g. 2009).]

With COVID, we experienced both a demand increase and supply decrease simultaneously. This is the red dot scenario that results in large price increases.

Where do we go from here? The good news is on the demand side: the COVID relief is unwinding. Government spending is expected to return to pre-COVID levels (see **Figure 5**). As that happens, is it reasonable to project that demand will fall.

On the supply side, residual issues remain. The GDP chart in **Figure 11** suggests that GDP is back on the linear trend that held prior to COVID (**red dotted line** in **Figure 11**). However, parts of the supply chain remain in stressed territory.

Figure 12: Cass Shipment Index

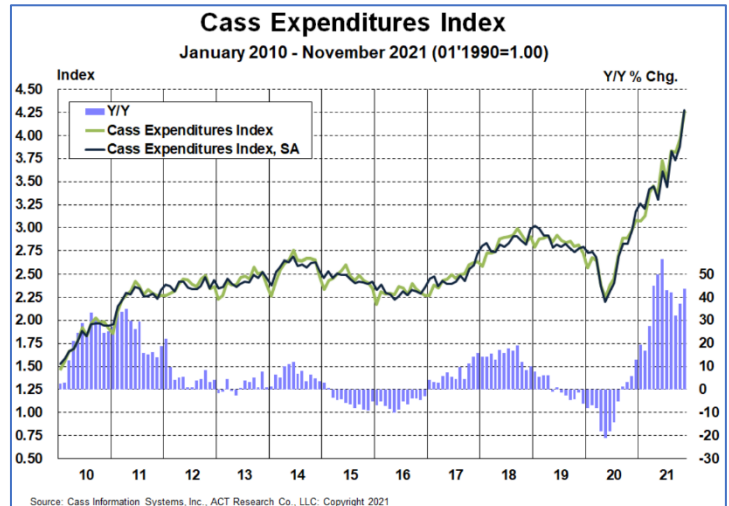


The Cass Freight Indices, which measures domestic shipping, remain elevated compared to pre-pandemic levels.

At left is the Cass Shipment Index (**Figure 12**), which measures domestic shipping volume. Shipping volume (a measure of the supply of goods) is back to pre-pandemic levels. Notice that volume had a V-shape during the depths of the pandemic, consistent with the rapid and large decline in supply. By volume of shipping, supply looks to be normalizing.

However, shipping expenses are anything but normal. The chart at right in the Cass Expenditures Index (**Figure 13**). This index measures the cost to ship goods. Obviously, the cost to ship goods has risen dramatically since COVID started. The reason: There is a lack of workers in the transportation industry. A lack of workers means all the good produced cannot get from point A to point B. This bottleneck is like a mini supply-and-demand problem, with demand for workers high and supply of workers low. This, of course, pushes up shipping costs.

Figure 13: Cass Expenditures Index



Below are charts from the Bureau of Labor Statistics website that shows employment in the trucking transportation (**Figure 14**) and water transportation (**Figure 15**) industries. Trucking is getting back to normal, but water is way behind pre-pandemic levels.

Figure 14: BLS Trucking Employment Index

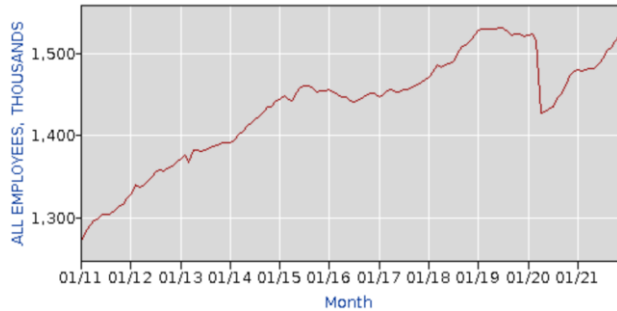
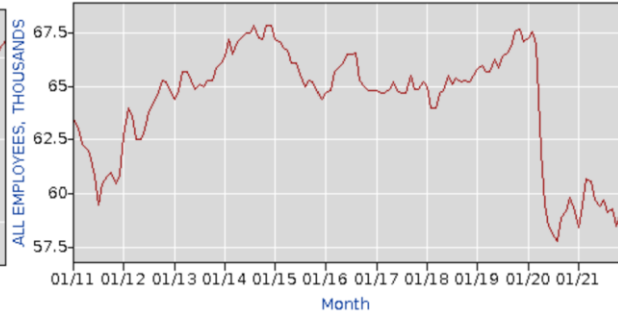
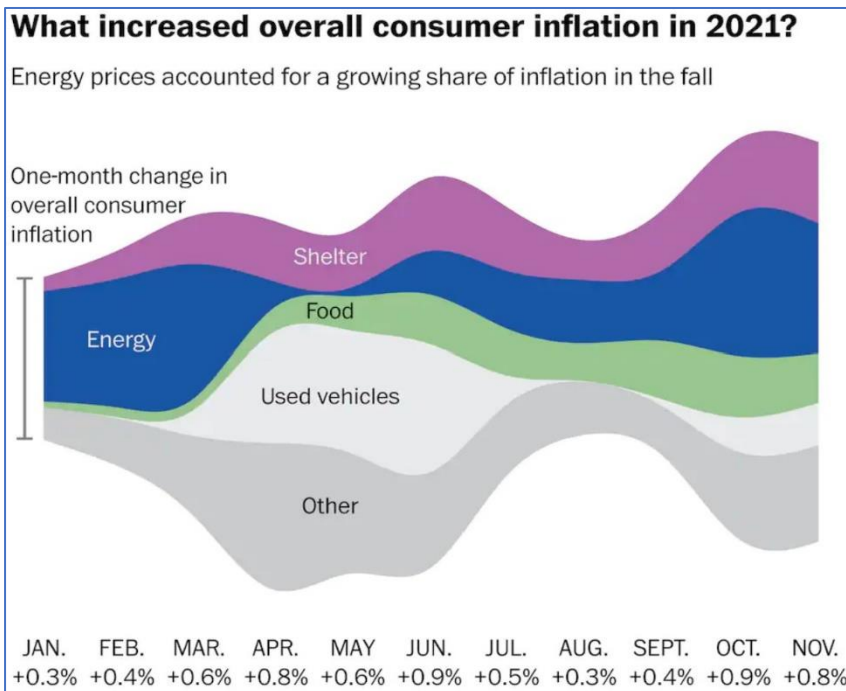


Figure 15: BLS Water Transport Employment Index



Until employment normalizes in transportation, the supply-side price pressures may persist.

Figure 16: Sources of Inflation Pressure



These are not the only cost pressures the economy is facing. This chart from the Washington Post shows, at a high-level, the sources of CPI growth over 2021 (**Figure 16**).

The easy-money, low-interest rate environment has helped fuel housing costs. Couple this with the lack of existing homes for sales from the work-from-home effect, and housing costs have skyrocketed. Previous commentaries discussed housing prices, notable how unsustainable they are. For now, high home prices (and rent) remain a headwind.

Energy and food also accounted for a large portion of inflation in the last year. Here again, supply chain issues have affected prices. This [article](#) from the Washington Post succinctly highlights food inflation while offering a glimmer of hope.

In short, demand appears to be moderating, but supply continues to be a problem. As such, peak inflation may be occurring. But it is reasonable to project inflation running hotter than normal for a bit longer. This being the case, the Federal Reserve may raise the Fed Funds Rate attempting to keep long-term inflation in check.

Impact on the Financial Markets

By most, if not all, empirical measures, the stock market is very (maybe more so, extremely) overvalued.

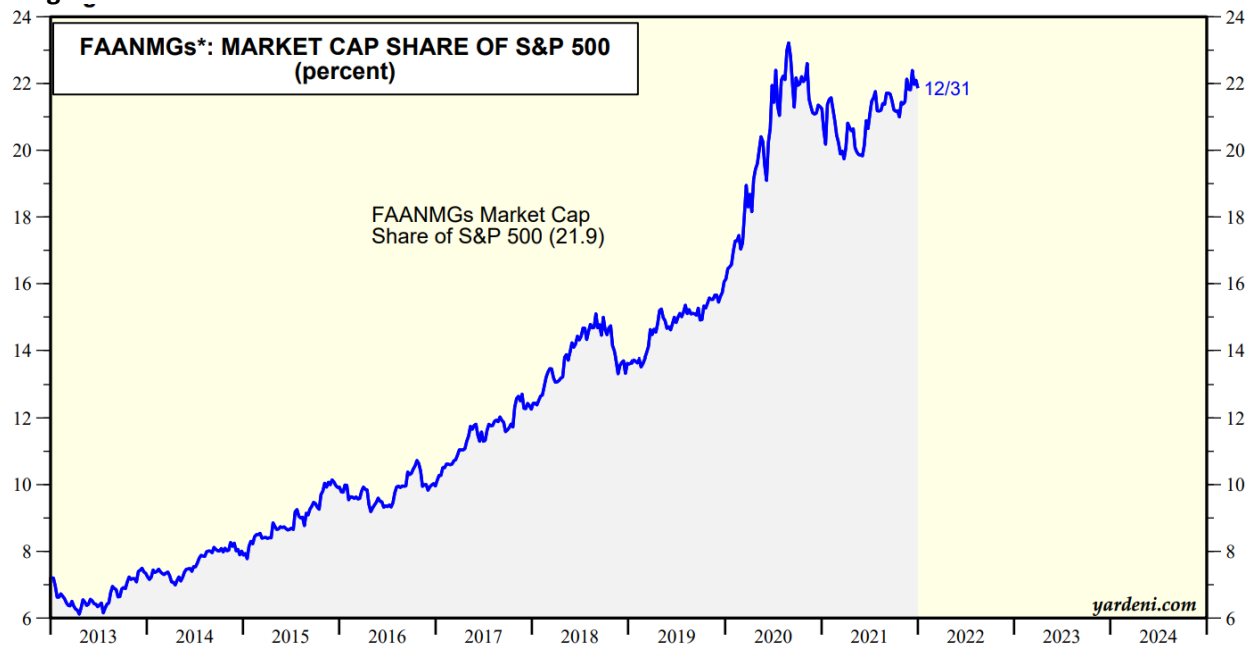
In a 2002 Bloomberg interview, Scott McNealy, then CEO of Sun Microsystems, famously said of Sun's stock price before the Dotcom crash:

...2 years ago we were selling at 10 times revenues when we were at \$64. At 10 times revenues, 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? You don't need any transparency. You don't need any footnotes. What were you thinking?

He nailed it. Valuations don't matter until they do. That is Scott's point. When everyone was making easy money prior to Dotcom, valuation did not seem to matter. But eventually, when enough speculation permeates the market, valuations matter. And they matter in a hurry.

Facebook, Amazon, Apple, Netflix, Google, and Microsoft dominate the market. The S&P 500 has 500 stocks, and these six account for 22% of the entire market capitalization (**Figure 17**). Yes, that's akin to Dotcom-era concentration.

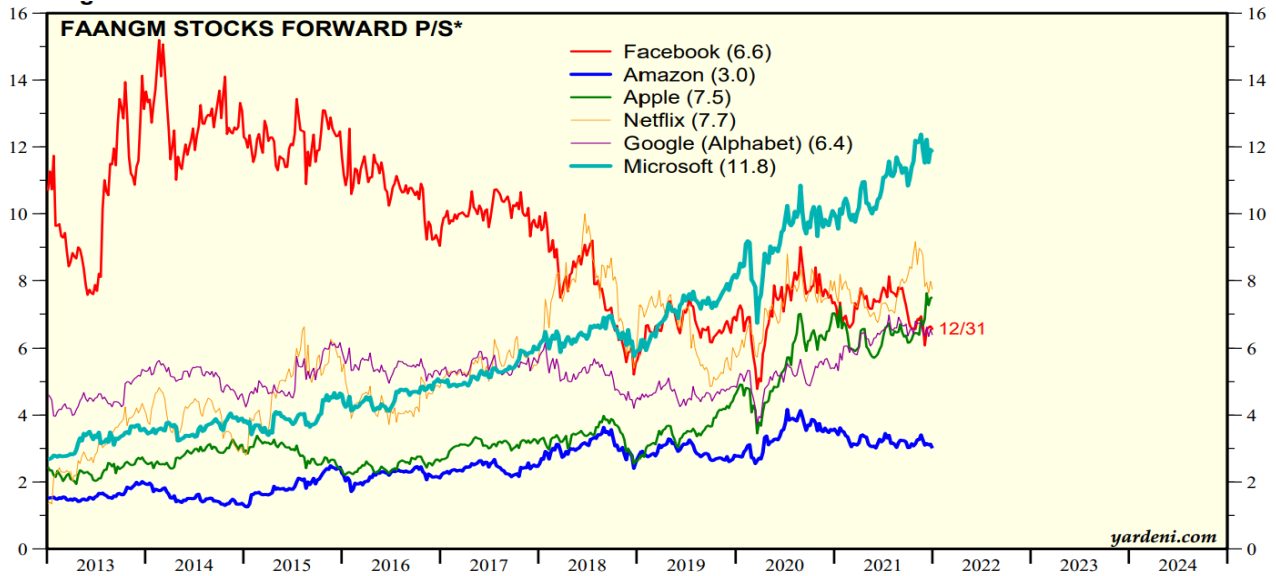
Figure 17: FAANMG Market Share



* FAANMGs stocks include Facebook, Amazon, Apple, Netflix, Google (Alphabet), and Microsoft. Both classes of Alphabet are included. Source: Standard & Poor's and I/B/E/S data by Refinitiv.

More to Scott's point, here are the price to sales ratios for these six stocks (**Figure 18**). Recall, Sun was trading at a price to sales ratio of 10 in Scott's reference. For additional perspective, the average P/S ratio for the S&P 500 tends to hover between 1.5-2.0.

Figure 18: FAANGM Price/Sales Ratios

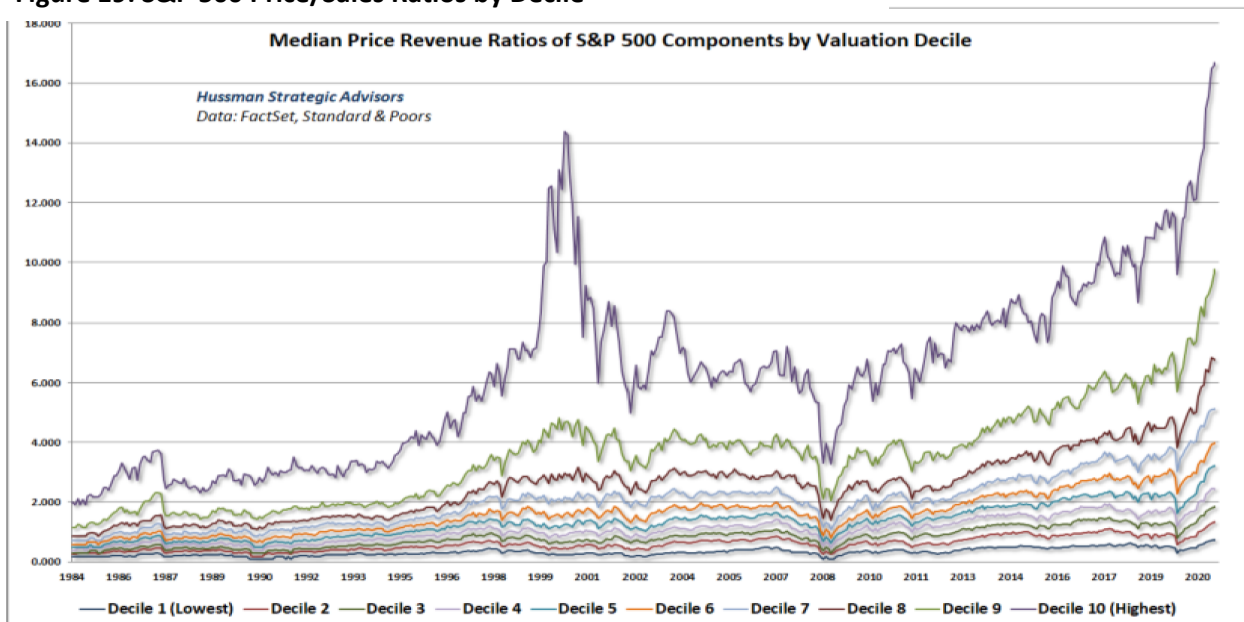


* Price divided by 12-month forward consensus expected revenues per share.
Source: I/B/E/S data by Refinitiv.

The six biggest names in the index – names that account for a 22% weight in the index, all have relatively stratospheric P/S ratios.

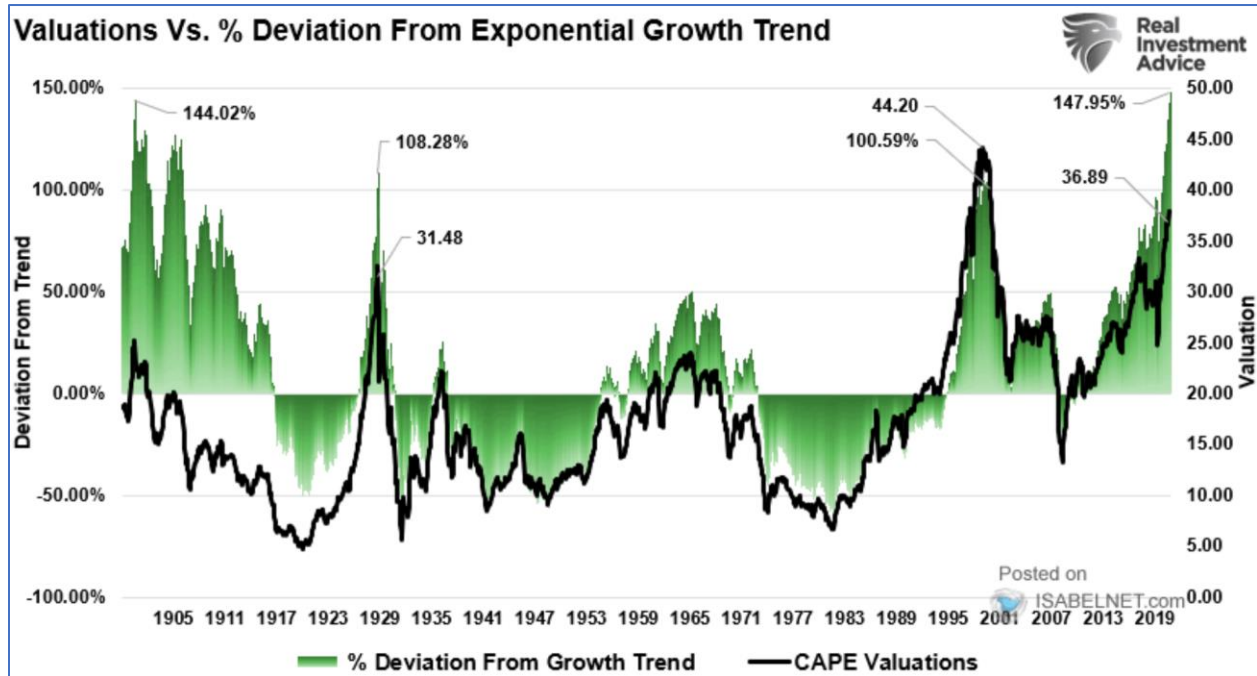
It doesn't stop there, however. What about the remaining 494 index components? What do P/S ratios look like for those stocks? This chart (**Figure 19**) compiled by Hussman Research is as of August 2021, but the data has not changed much since then. 50 stocks in the S&P 500 have an average P/S of 16.5; another 50 have an average of almost 10.0; another 50 have an average of 7.0; etc. You get the idea. It's not just the FAANGM stocks that are overvalued, it is the entire market.

Figure 19: S&P 500 Price/Sales Ratios by Decile



Relative trends are one of the best tools we have: How does today compare to the past? That is why the P/S numbers above are so illuminating. It's also why this final valuation chart (**Figure 20**) is powerful. It shows just how above trend the current stock market is.

Figure 20: Current S&P 500 Valuation vs. History



For our grand finale, we present bonds vs. stocks. In the 84-year period from 1929 through 2013, U.S. government debt (e.g. Treasuries) – yes, those same bond with very low interest rates – outperformed stocks in 50 years. Put another way:

- From 1929 to 1947, Treasuries outperformed stocks
- From 1966 to 1985, Treasuries outperformed stocks
- From 2000 to 2013, Treasuries outperformed stocks

What did each of these periods have in common? Look at the chart above (**Figure 20**). In 1929 and 1966 and 2000, stock valuations were way above historical trend. When the starting point is super high, the only way forward is down.

Will this time be different?

A Moment of Levity

Let's end with a fun note. For those of you on Twitter, we often re-Tweet interesting economic and stock market charts and commentary on handle [@cmfadvisors](#). These were two of our favorite non-market related tweets from the past six months (next page)...

We wish you the very best for 2022. May your year be filled with hearty laughs, good cheer, a few hugs, and a little pi (Greek pun intended!).

Thank you for your continued friendship, partnership, and loyalty.



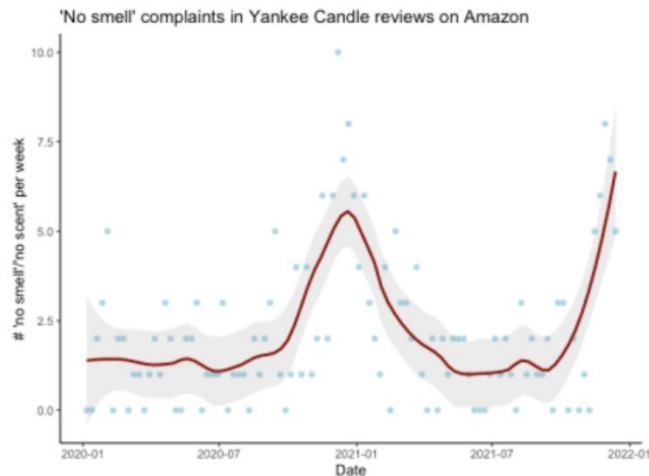
Jon Erlichman ✓ @JonErlichman · Dec 25, 2021
 Phones used on Christmas in 2005:

...



Amazing chart from @daillydirtnap

This is the chart of the year:



It's a chart of people posting reviews on Amazon of Yankee candles complaining that they can't smell them.

Corresponds exactly with COVID waves. That's some Freakonomics for you.

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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.