

THE GREATER THE SUFFERING, THE GREATER THE PEACE

At the risk of sounding too gloomy, it appears that for years our leaders (i.e., government, and to be clear I mean both political parties, media pundits, business leaders) have been saying things that best case aren't quite right and worse case are outright lies. Social media is the accelerant which has allowed this to magnify exponentially, seemingly dividing our country and in many ways, the entire world, into hyper-partisanship, which is really sad. It reminds me of the great line in George Orwell's book, *1984*, "The very concept of objective truth is fading out of the world. Lies will pass into history." Or similarly from the other famous dystopian book, *Brave New World*, by Aldous Huxley, "It's sad that we live in a 'don't let the facts interfere with a good story world, but just because the facts are being ignored doesn't mean they don't exist.'"

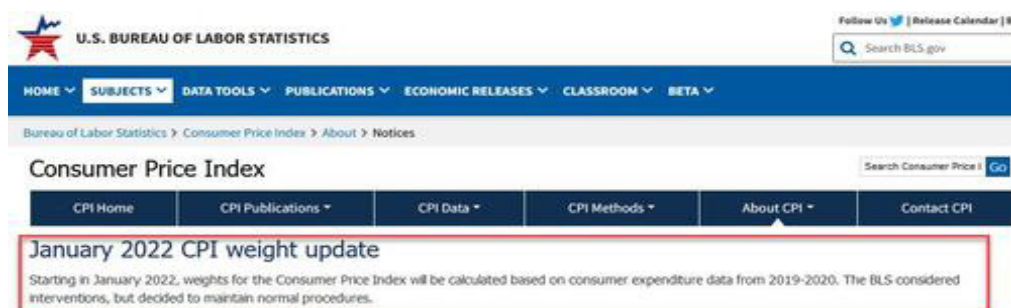
In the most recent Mission Impossible movie, *Fallout*, the bad guys are a group of anarchists that view the world as irredeemable and the only way to save it, ie, change it to their view of what is right, is to break it down first. Their credo, so to speak, says "There has never been peace without first a great suffering. The greater the suffering, the greater the peace. As mankind is drawn to a self-destruction like a moth to the candle the so called defenders of peace, the church, the government, the law, work tirelessly to save humanity from itself. But by averting disaster they serve to delay a peace that can only come through in an inevitable baptism of fire. The suffering I bring you is not the beginning of the end. It is the beginning of a greater mutual understanding through common suffering."

Giving politicians the benefit of the doubt, which is hard a lot of the time, this sounds like today. We have one crisis after another and the policies put in place to "avert disaster," that they initially created, create more fragility in our economic system and in our social fabric. From an investment point of view, the easiest place to see this is with inflation. I have written plenty about inflation and I started this commentary thinking I wouldn't say much about it but it is that important. So, as the kids say these days, sorry, not sorry. That said, bear with me and I will discuss the markets following the inflation topic.

You have, no doubt, seen the headlines on inflation. In November it was 0.8% for the month. That's close to 10% annualized and gave us a trailing twelve month (TTM) number of 6.7%. This was the fastest increase since June 1982, when it hit 7.1%. More importantly, since this comparison is against 1982, it is critical to remember that the U.S. Government has ~~wholesale changed~~ tweaked the Consumer Price Index (CPI) calculation many times, but in a big way both in 1980 and again in 1990. According to ShadowStats.com, if we used the 1980 methodology today our current 6.8% inflation would equate to roughly 14.9%, which is higher than the peak in March of 1980 (14.8%). This is still below our all-time high of 17.6% in June 1947, which occurred in the midst of WWII.

Given it is hard to know if the Shadow Stats site is accurately calculating today's inflation in the 1980 methodology, here is a double check for you. It has been shown that house prices/rents were up close to 20% in 2021, pretty much across the U.S. With housing at roughly 35% of the CPI weighting, true housing inflation alone gets you to 7% inflation (20% x 35%). This assumes no other sources of inflation, which is clearly inaccurate as prices of everything are going up. Further, Bloomberg just reported that we just hit an all-time low vacancy rate in apartments of 2.5%, which likely means rents will keep going higher. Lastly on rent/house prices, in my last commentary I predicted we will see 40-year mortgages at some point in the not so distant future in order to lower monthly payments. Well, it has started. In the UK a mortgage lender, Habito, is allowing a larger loan to income ratio if you sign up for their "fixed-for-life" mortgage, ie, fixed-rate 40-year mortgage.

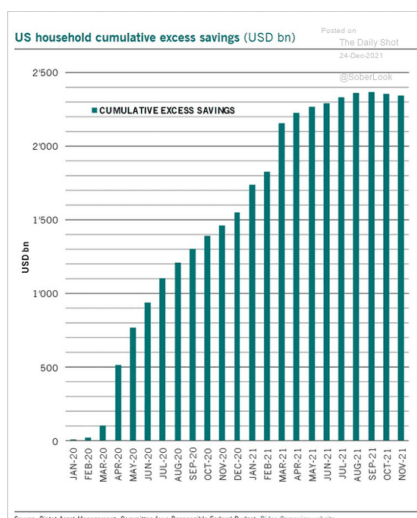
As a related side note, just recently, the Bureau of Labor Statistics (BLS) said it is going to further adjust the weights on the CPI basket. There is no additional information on this but it is hard to imagine these adjustments will make the CPI go up, all else equal.





The narrative is that the inflation is due to our booming Gross Domestic Product (GDP) and, according to President Biden, solely due to supply chain issues. Hmm. It is interesting to note that U.S. Employment is still 2.6% below (5mm people) where it was prior to the pandemic setting in. More specific to GDP, if we use the U.S. Bureau of Economic Analysis numbers (curiously different U.S. government agencies have different GDP numbers) then the U.S. GDP was 19.2tt in Q4, 2019 (pre-pandemic shut downs.) It bottomed in Q2, 2020 at \$17.26tt. It is currently at \$19.47tt, so 1.0% higher than the pre-pandemic high. More specifically, last quarter's GDP number annualized gets us to 2.1% from the prior twelve months. I wouldn't describe that as booming. As for the supply chain excuse, it is clearly part of the issue but housing, fuel, etc. have nothing to do with supply chain so that is clearly not all of it.

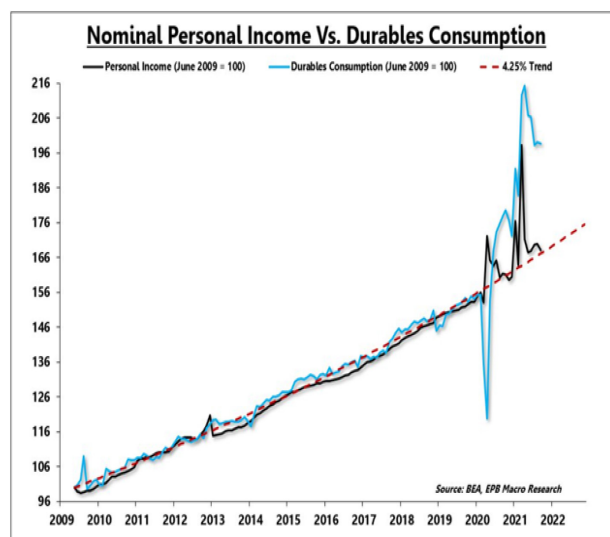
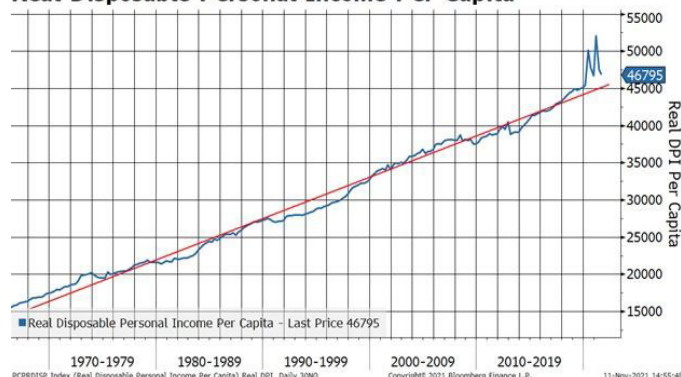
For the past 10+ years many people have predicted that Quantitative Easing (QE) would create inflation while others claimed that there is no inflation and the inflation forecasters were the equivalent of Chicken Little (the sky is falling.) Let's begin with why this is just now hitting the CPI. Kopernik, and many others, have argued for years that we were experiencing inflation. It just wasn't in the CPI. It was in asset prices. It has finally spread to the CPI and people went from being surprised to "yea but it is transitory," to the present "it will still come down but it will take longer." The seemingly obvious answer to why it is now reflected in the CPI is there was much more money recently thrown directly at the consumers (helicopter money) as opposed to the Fed printing money solely for buying bonds. If you want a few charts to demonstrate this, here you go. Notice, that while the inequality of wealth increased, the bottom 50% of the economic ladder still grew their wealth meaningfully and everyone is using this newfound money to buy stuff.



Wealth	Pre-Pandemic (Q4 2019)	Most Recent (Q3 2021)	Growth
Top 1%	\$33.8 trillion	\$43.9 trillion	29.8%
90-99%	\$42.5 trillion	\$51.4 trillion	20.8%
50-90%	\$31.6 trillion	\$38.1 trillion	20.6%
Bottom 50%	\$2.0 trillion	\$3.4 trillion	74.0%

Source: Federal Reserve

Real Disposable Personal Income Per Capita



When the government throws money at people while simultaneously eliminating the need for some to pay rent, is it a shock to see savings go way up? When you hear stories of people making more on unemployment than working is it a shock to see a blip higher in income per capita? Is it a shock that people take that money and buy stuff? At the same time, manufacturers of said stuff worry that this is a one-time demand blip so they don't want to add huge factory capacity in case it falls. The result is that many things are in short supply and prices go up, especially for used stuff since new stuff is in short supply.



It is beyond fascinating to see inflation spiking meaningfully and yet the Fed is only slowly cutting back on buying bonds and mortgages. I'm sure somebody said it first but it is hard to put a fire out by throwing a little less fuel on it, but that is what they are figuratively doing. The Fed added \$1.3 trillion to its balance sheet in 2021 while keeping rates at 0%. One of the key pillars of the Fed is to keep prices (inflation) stable. Based on the proverb, "judge a man by his actions not by his words," the Fed is then telling us they don't really care, or more likely, they are caught between two forces, both of which lead to terrible outcomes.

In ballpark terms the 2021 U.S. government budget/spending was roughly \$6.8 trillion annually but the tax revenue was only \$4 trillion. So, there is a neat annual deficit of a mere \$2.8 trillion or 41% of the U.S. budget.

Based on the current \$29tr in federal debt and today's annual interest expense of roughly \$350bb that equates to an average interest rate paid of roughly 1.2%, or 8.75% of the budget. That rate seems low but keep in mind that the bulk of our debt is at the very short end of the curve, including commercial paper that is closer to 0%. Based off of today's debt levels, let alone as it keeps growing, if our average interest expense were 5% that would equate to \$1.5tr in interest expense or roughly 38% of today's budget. How is this possible when we already can't control our spending and have massive deficits every year? (It is really hard to imagine.)

Relatedly, years ago it wasn't uncommon to see pay-in-kind (PIK) bonds. This was a mechanism that allowed you to pay the interest owed on a bond in shares of stock when you literally couldn't afford to make the cash interest payment. Today's zombie companies that don't earn enough earnings before interest and tax (EBIT) to even pay the interest have learned that they don't need to issue PIK bonds. The bond market will let them keep issuing more and more bonds with no repercussions to their rating and their rate still goes down over time as the entire yield curve keeps moving down due to the government's manipulation. This has worked, and will continue to work, until it doesn't. The rub was, if you were unable to pay interest, odds are your stock was weak so the calculation to issue shares in lieu of cash interest meant that you were issuing a lot of shares. This happened every quarter so once you started down the path of paying in shares, these bonds created a "death spiral" for the company. Doesn't the above interest expense as a percentage of the federal budget remind you of this? It seems obvious there are only 2 things the government (Fed) can do.

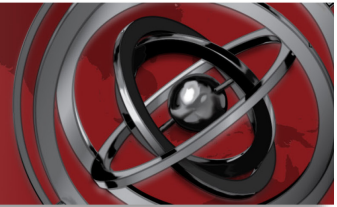
- 1) Keep squeezing interest rates on the short duration part of the yield curve and issue primarily bonds on the low end to keep the interest expense low. Given that, debt will keep rising this also means the Fed will need to keep buying bonds. Then the Fed needs to hope the population doesn't get too upset at the resultant inflation and continue manipulating the inflation figures down so it isn't so obvious what is happening. There isn't an unlimited demand for bonds whose yields are way below inflation in the U.S., even with the U.S. dollar being the world's reserve currency, which means for the all the talk of QE ending and Quantitative Tightening (QT) starting, the Fed needs to keep buying bonds, over the medium to long term.

- 2) Let rates rise to squash inflation and by doing so a) will crush the economy and b) the government blows out the deficit and can't really claim it is temporary, like now, which results in more debt. Rinse and repeat.

Those are the two options. Which will they choose? In an environment where politicians care much more about their career and power/post career speaking engagements and money than actually helping the country, isn't option 1 above the obvious choice? This answers today's more pertinent question: will our current inflation continue? With that said, there is clearly some part of today's inflation caused by pandemic/lock-down led supply chain issues and those will ease but the core problem will remain.

Given that today's inflation is actually higher than it was in 1980, using the same methodology, I thought it might be instructive to see the brief details of what we did back then.

First, we can all agree that causation is hard to prove, and while there are numerous legitimate reasons/theories as to why the inflation happened in the 1970s/1980s, I will quote the economist, Allan Meltzer, who said in his book, *The History of the Federal Reserve*, that it was monetary policy, set by the Fed, that primarily created the inflation. More specifically he said, "The Great Inflation resulted from policy choices that placed much more weight on maintaining high or full employment than on preventing or reducing inflation... For much of the period, this choice reflected both political pressures and popular opinion as expressed in polls." Does that sound like now? Back to today, if it was tough to balance unemployment (ie, the economy) and inflation in the 1970s and early 1980s, how about now when you have publicly said you are adding two additional goals; climate change and diversity? Then, there is still the fifth, seemingly covert, goal of keeping the stock market high. These are impossible trade-offs.



Let's continue this historical journey on February 1st, 1972 when the Fed Funds rate was 3.3%, which was a multi-year low. Inflation hit over 12% by the end of 1974. Based on that the Fed Funds rate was increased to 11% by late 1974. But inflation wasn't quelled so the Fed increased the Fed Funds rate to 16% in March of 1975. With these increases came a recession from 1973 to 1975. The public didn't like that and the Fed was under all kinds of pressure so it caved and lowered the Fed Funds rate down to 5.25% by April 1975. This allowed the GDP to grow by roughly 5% for a couple years, which was good, but inflation remained high, which was bad. The economy weakened again in 1979 and inflation roared higher again leading then, newly elected, Fed Chairman Volker to hike the Fed Funds rate to just under 20% in July, 1981 and keep it high for over a year. This created another recession, but did get inflation somewhat under control. Yes, the Fed Funds rate was almost 20%.

Can you imagine the economic and market turmoil if the current politicized Fed raised the Fed Funds rate to 20% today? Or said another way, hired a Federal Reserve Chairman that would do such a thing?

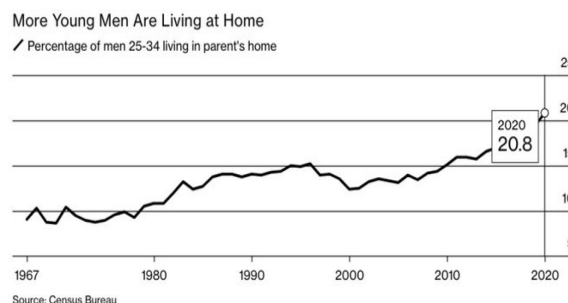
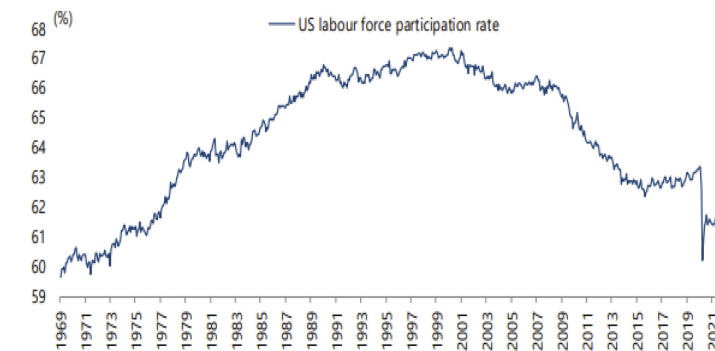
As it is the current Fed is saying we will end the QE by March of this year and raise the Fed Funds rate to 2% by the end of 2024. So they appear to be afraid to raise rates to more than 2% in a 3-year time frame. And yet this is what many in the media are calling the current "war on inflation." Keep in mind that in 1980 the U.S. debt/GDP was roughly 35%. This means it could handle higher interest payments for a period of time without creating massive further deficits and needing more debt/QE. Now debt/GDP is quickly approaching 135% and that is just the Federal government debt. How well would it work if the states, counties, cities, not to mention all corporations had to issue debt at double digit yields? As unpopular as Volker was back in the day for taking rates that high to squash inflation, imagine the ire directed toward the people who did that today.

The Fed recently spooked the market on January 6th when their meeting minutes showed they are considering raising rates faster and thinking about thinking about Quantitative Tightening (QT), which means not replacing the bonds they hold so their balance sheet assets shrink as the bonds mature. Wait, quick time out. We tried this a few years ago. The Fed balance sheet did shrink from roughly \$4.4 trillion in January, 2018 to \$3.75 trillion in September of 2019. The problem was that the S&P fell roughly 20% from September, 2018 through December, 2018. Then the Fed said they would stop the QT and go back to QE. The economy was okay during this period, so the change of heart seemingly was entirely caused by the stock market decline. Then we had the pandemic and it was really off to the races with more QE.

In December 2021, there was an interesting article in Politico that discussed some of the history of when Thomas Hoenig was the President of the Federal Reserve regional bank in Kansas City. In the face of the QE printing after the global financial crisis of 2008, he was the only voice dissenting to the broad easing of every financial instrument (lower rates, QE, etc.) More importantly, he specifically said the outcome, if they did all the easing, "would include deepening income inequality, stoking dangerous asset bubbles and enrich the biggest banks over everyone else." He also warned that it would suck the Fed into a money-printing quagmire from which the central bank would not be able to escape without destabilizing the entire financial system. He further said, "There is no painless solution. It's going to be difficult and the longer you wait the more painful it will end up being."

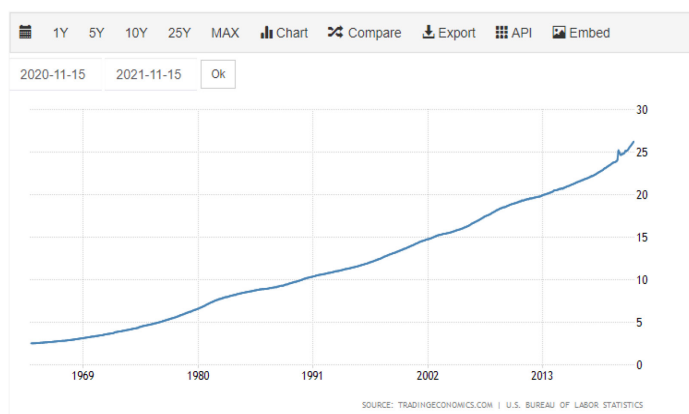
Sadly, for being a voice of reason, but literally the only dissenting voice he ~~was run off~~ retired from the Fed in late 2011.

One last point on inflation. It rarely starts with wages, but rather with prices of stuff. Check. Then it spreads to wages. Check. This is happening everywhere. The high wage jobs are less affected, but at the low end of the pay spectrum not only are there wage pressures but there are worker shortages everywhere. This is especially weird given that our economy is barely above where it was pre-pandemic. So where are all the low wage workers? Are they all home trading crypto currencies? Have they become drug addicts? Have they all become social media influencers? Have they found ways to live off the government? Have they given up and chose to live at home? Probably yes to these and many other reasons, but I will go with the last two as the bulk of the explanation. Relatedly, here are a couple of charts that show part of the problem, although these are longer term issues.



The above left chart shows the overall labor force participation rate falling since roughly 2000. Keep in mind the participation rate excludes retirees, so an older population doesn't explain it. More recently it fell from the pandemic, no doubt lock downs and free government money was the primary reason, but it hasn't come all the way back even though the economy is roughly the same now as pre-pandemic. Why? A troubling comparison is that even though the participation rate looks low now at 61.6%, it is currently 55% in France and 50% in Italy. It sure seems like we are headed in that direction? The above right chart, which goes back to the mid 1960s, is societally troubling. There used to only be roughly 8%-9% of men age 25-34 that live at home, for whatever reason. Now that is up to roughly 21%. That doesn't mean they aren't working or they can't afford to have their own place, but it probably explains some of it. I don't have a chart for it, but, relatedly, since Lyndon B. Johnson's "War on Poverty" started in 1965 the labor-force participation rate of bottom-quintile earners has fallen from almost 70% to 36%, which is interesting to say the least.

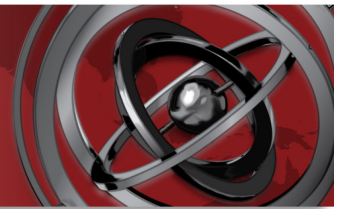
A long term chart of average wage per hour looks like this. It's interesting to note that it never really goes down. Wages are incredibly sticky on the way up. My guess is there is no time in the U.S. history when we were seemingly as short of low wage labor workers as we are now. With this in mind, the chart to the right shows a steady growth of wages per hour. But now if we remain chronically short of workers, you will see a kink in this line soon where wage growth accelerates way above the trend line. Think McDonalds going from an average of \$10-12/hr to \$15/hr now. Truck driver wages are spiking. I recently saw that John Deere's new union contract includes raises of 8%/yr for 4 years + \$8,500 bonus (which is roughly 8% by itself). This is happening everywhere.



We went from prices of stuff going up to prices of labor going up. The next step, businesses raise prices to make up for the rising wages. You can see how this is a circular problem. As described earlier, this is another "death spiral." Based on historical data there is a time-lag from when broad wage growth begins until it hits the CPI, so this would imply that IF the Fed acts more aggressively to tame the inflation, it won't help for at least 6-9 months.

So, as economist Walter Williams once said, "Politicians exploit economic illiteracy." More to the point he said, "Most of the great problems we face are caused by politicians creating solutions to problems they created in the first place." That describes today's inflation. Sadly the solution is to falsely claim that the inflation is caused by "greedy" corporations and vilify them for "gouging" the consumer. While this is all political, and hopefully most people know that, here is a quick example to show it as such. One of the current boogymen are grocery stores and food companies. Their profits are said to be at all-time highs (ATH), so they must be gouging the consumer right?

- Albertson's. 2020 revenue grew by 12% and the TTM revenue grew by 1.3%. This is logical since people ate out far less with the lock-downs and cooked at home far more often. Their net profit went from slightly below 1% to 2% today. This is at the higher end of their historical range, but it is not their all-time high (ATH) profit margin.



- Kroger. 2020 revenue grew by 8.5% and the TTM revenue grew by 3.5%. Their net profit margin went from 1.5% to 2%. Again, not their ATH profit margin.
- Tyson (chicken, beef and pork) – 2020 revenue grew by 6% and the TTM revenue grew by 15%. Their net profit margin went from 6% in 2018 to 6.4% now. Not the ATH in % margin.
- Pilgrim's Pride - (Chicken) – 2020 revenue grew by 6% and the TTM revenue grew by 4.5%. Their net profit margin went from 3.4% in 2019 to 3.4% now. Not the ATH in % margin.

Do these numbers prove gouging? Hardly. While they are all near their all-time highs, which have peaked a few times, none of them are actually there.

More troubling is that the gouging narrative can lead to price controls. While this happens all the time in third-world and/or socialist countries it tends to only happen to first-world countries after a war. This is also the only time we have seen it here in the U.S., other than when Nixon infamously imposed a ninety-day wage and price control in 1971. When those price controls ended those prices jumped to where they would have been without the controls proving yet again that price controls don't work. That said, the Overton Window is now opening wider by the day to discuss this "strategic option" as the media calls it. That leads you down a really troubling road of manufacturers not supplying things, because why would they at an insufficient profit or even a loss (ie, price controlled), and actual shortages appearing.

Relatedly, on the other side of the world, the government of Kazakhstan had to eliminate their subsidy/price caps on liquid propane (used to heat homes and for cooking, like we use natural gas) because the cost to the government was too great. In other words, they used cheap gas, subsidized by the gov, as a tool to buy votes and now that energy prices have gone up to a point where it is too expensive to keep so they have to drop the price cap and let the prices float. Needless to say the population wasn't too happy about this and there have been deadly protests. I don't think many people in the U.S. follow, or frankly care, too much about what goes on in Kazakhstan, but it is interesting to note this as the U.S. starts discussing ways to keep prices down. You don't need to study economics to understand that price caps lead to underproduction of that item, which then creates shortages. This is likely coming if we venture down this path.

Lastly, again repeating a Ronald Reagan quote from a prior commentary, "Inflation is as violent as a mugger, as frightening as an armed robber and as deadly as a hit man." This is generally not true as it relates to the wealthiest of Americans, but it is absolutely true for everyone else. Wages generally don't keep up with inflation so the cost of living is higher for everything thus people can buy less of everything. This means your standard of living is down. I can't stress how bad this is for the general population. It is thus especially worrying when economists like Paul Krugman send tweets like he did on December 7th, 2021, "Is there any good reason to believe that inflation hits low-income households especially hard?" If the logical fallacy of this statement isn't enough, how about, according to BLS, for the bottom quartile of the U.S., in terms of income, they spend 28% of their income on gas and food vs 19% for the top quartile? Thus an increase in gas and food hits the less wealthy way harder as a percentage of their income. The worst part of all this is that the government created it, yet acts like they had nothing to do with it. It is sad how politicians' hunger for power trumps their ability to actually care about the population, even though they seemingly spend all day virtue signaling about how much they care.

As for investors, this isn't just a societal problem. It is critical that we all think about how the companies that we own pieces of are able to protect their assets from the ravaging nature of inflation.

I will conclude this section on inflation with a few great quotes.

"With regard to inflation, we must emphasize three points. First: Inflationary or expansionist policy must result in overconsumption on the one hand and in mal-investment on the other. It thus squanders capital and impairs the future state of want-satisfaction. Second: The inflationary process does not remove the necessity of adjusting production and reallocating resources. It merely postpones it and thereby makes it more troublesome. Third: Inflation cannot be employed as a permanent policy because it must when continued, finally result in a breakdown of the monetary system." Austria economist Ludwig von Mises.

"So you think that money is the root of all evil. Have you ever asked what is the root of all money?" Ayn Rand.

"Evil is the root of all fiat money." Egon von Greyerz



"The Central Bank is an institution of the most-deadly hostility existing against the principles and form of our Constitution."
Thomas Jefferson

"The first panacea for a mismanaged nation is inflation of the currency; the second is war. Both bring a temporary prosperity; both bring a permanent ruin." Ernest Hemingway

"The best way to destroy the capitalist system is to debauch the currency." Vladimir Lenin

Sorry that went so long but let's shift to the markets. Let's start with a quote that sums up Kopernik's research/investment process pretty well. "People are always asking me where the outlook is good, but that's the wrong question. The right question is, 'Where is the outlook most miserable?' John Templeton. Said with more nuance, the broader markets are very emotional, so where the outlook is good, valuations are usually high. Where the outlook is miserable the valuations are usually depressed. Given we are bottom-up value investors, you will find us fishing in the depressed valuation/miserable outlook ponds worldwide, trying to ascertain which ones are unduly depressed.

The U.S. markets are a fascinating study right now. While most valuation metrics are at all-time highs, there are starting to be cracks. So far this is primarily with the uber growth, small cap names that were multiples too expensive to start with. In the fourth quarter of 2018, the S&P500 declined 20%. On the day it bottomed, December 24th, 2018, there were 380 stocks down 25% or more in the previous 30 days. Today, with the S&P500 down roughly 10% from all-time highs, we have over 40% of all stocks down 25% or more in the last 30ish days. Further, we are approaching 50% of the entire Nasdaq companies that are down 50%+.

The Russell 3000 Index tells a similar story for small caps. The entire index is down 11% from its all-time high a couple months ago. Within the index, over 50% of the stocks are down 25% or more and over 20% of the stocks are down 50% or more.

From the movie, *There's Something about Mary*, "First chink in the armor Ted."

I'm sure everyone has seen that the big tech companies are driving the index but the magnitude of it is pretty astounding.

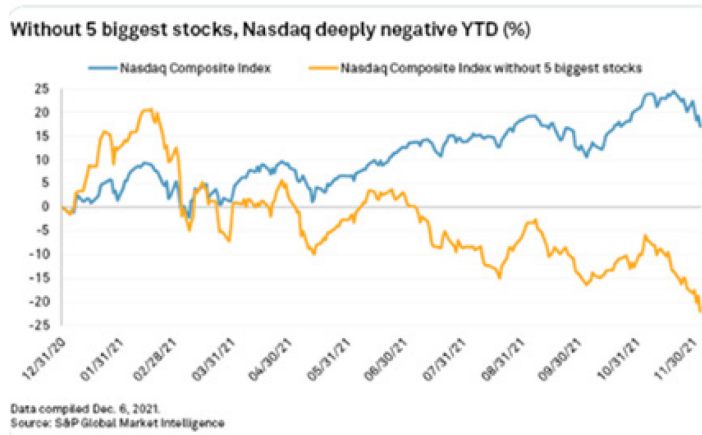
The S&P500, as a whole, was up in value almost \$9 trillion dollars in 2021. That amount of money is more than 43% of the U.S. GDP. The comparison is especially interesting given Warren Buffett always said his favorite metric for knowing the stock market as a whole is expensive is when the total market cap to GDP is greater than 1.0x (currently greater than 2.0x). The market cap of only the top 10 biggest U.S. public companies is over 64% of the total U.S. GDP.

Switching to the big tech stocks, Apple added \$700bb in mkt cap for 2021 (+37%). Microsoft added \$844bb (+54%). Google has added \$800bb (+68%). The increase in each of their market caps is greater than 495 of the S&P500 components overall market cap.

Nvidia is now the 7th largest stock in the U.S. Its market cap increase for 2021 was almost \$450bb (+125%), which is more than the total market cap of 490 of the S&P500 components market cap to start 2021.

Poor Tesla. It only went up 45% in 2021, which equated to an additional \$300bb in market cap for the year. That market cap increase is more than the total market cap of 485 of the S&P500 components market cap to start 2021. It is also bigger than the market cap of EVERY OTHER auto manufacturer worldwide, COMBINED.

Let's tie this back around to margins. There are always charts showing that the S&P500 profit margins are at all-time highs. That is correct, but it is hardly because most companies are at all-time high margins, which is the assumption. I have seen charts showing 12.3% net profit margins for U.S. companies but that must be some version of pro-forma earnings as I can't recreate that number or anything close. As I calculate the TTM GAAP profits, via Bloomberg data, the total net income/total revenue numbers are as follows:





- S&P500 GAAP net margin = 7.1% (median = 10.3%. ie, there are many companies losing money)
- S&P"Big6" tech companies net margin = 18.2% (Apple, Microsoft, Google, Amazon, Facebook, Nvidia)
- S&P494 GAAP net margin = 6.1% (not an all-time high)

Clearly the reason for the all-time high margins is the HUGE growth in the biggest tech companies, which are also some of the most profitable companies in the world. These 6 tech companies comprise 25% of the total S&P500 market cap. They also make up roughly 20% of all profits earned by the S&P500. Most importantly, to this discussion, is that a decade ago the top tech companies in the index comprised less than 10% of the index and less than 7% of the total profits. Thus, the entire reason the S&P500 profits are at all-time highs is because the index is now dominated by a few, really profitable companies, as opposed to most companies having a higher margin. This isn't to say other than the big tech companies everything else is cheap. That isn't the point. I am simply saying that the big tech companies are driving the average index valuations higher but by looking below the surface there are potentially opportunities.

Here are a couple other quick thoughts on the cracks emerging. I have written before about the SPAC bubble so I won't rehash it other than to say that according to Bloomberg data, of the 177 SPACs that have gone public and announced deals in 2020/2021, only 2% are down less than 10% from their all-time high. On average they are down over 50%. Further only 28% are above \$10/share, which is where every SPAC comes public. Given the SPAC sponsors get shares/warrants at less than \$1/share, on average, needless to say history again proves that SPACs are, on average, good for the sponsors and bad for the shareholder.

IPOs across the world always offer an interesting look into the sentiment around stocks in general and that country. By that I mean valuations as well as the sectors that are going public versus those that are not. When the environment is positive, more IPOs happen and vice versa. When the environment is positive AND people are enamored with growth (meaning growth stocks are massively outperforming value stocks) then the number of IPOs with negative earnings is much higher. Hmm. More importantly, let's look at the data going back 40 years for a glimpse into where this may lead.

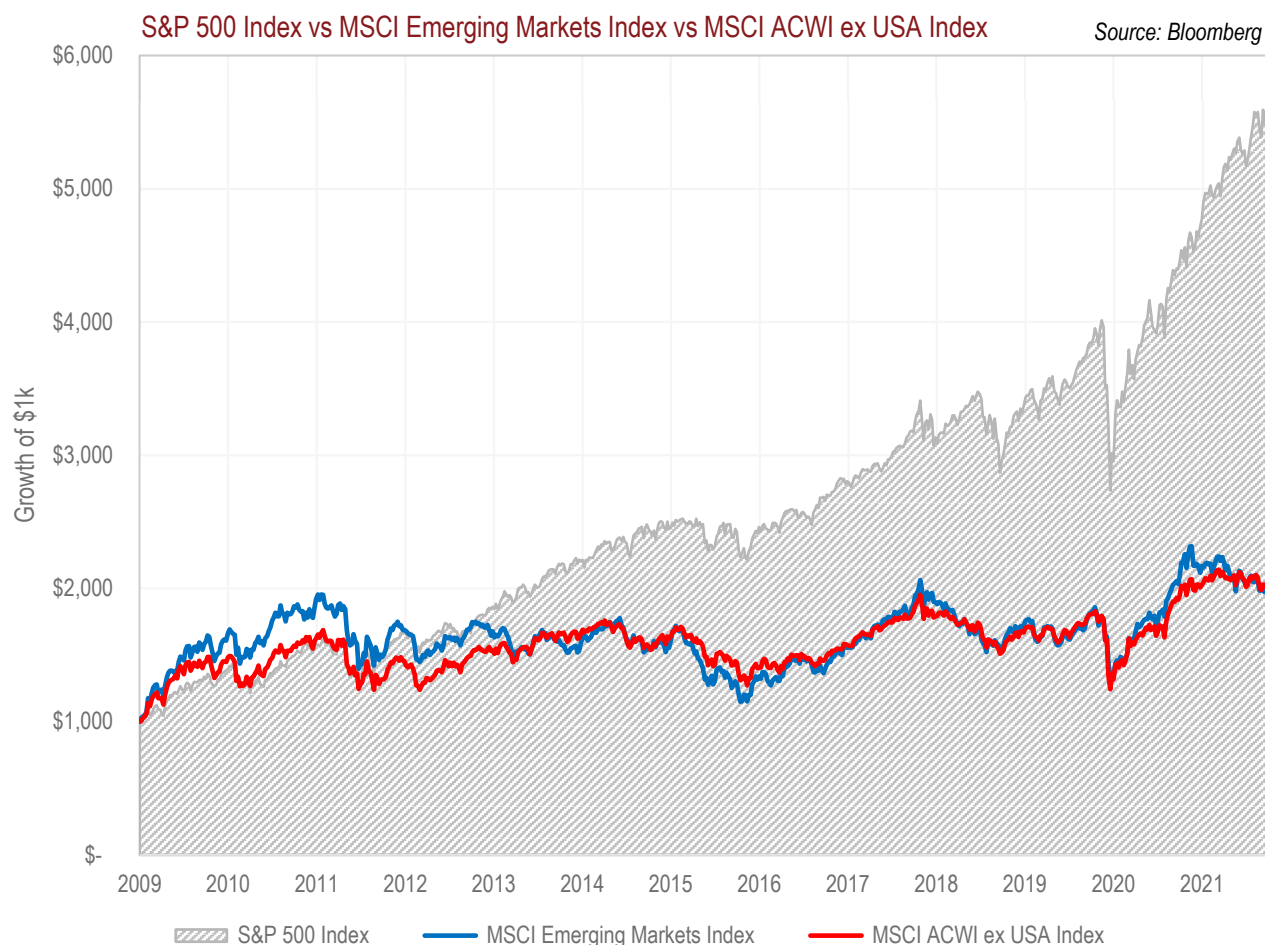
Year	# of IPOs	% of IPOs with neg earnings	Median Price / Sales	Year	# of IPOs	% of IPOs with neg earnings	Median Price / Sales
1980	71	24.0%	3.8	2001	80	49.0%	13.4
1981	192	17.0%	3.6	2002	66	45.0%	3.1
1982	77	19.0%	4.5	2003	63	44.0%	4.6
1983	451	22.0%	6.6	2004	173	50.0%	7.1
1984	171	16.0%	2.5	2005	159	45.0%	4.5
1985	186	15.0%	2.4	2006	157	40.0%	6.3
1986	393	21.0%	3.6	2007	159	55.0%	7.8
1987	285	17.0%	3.2	2008	21	43.0%	5.7
1988	105	18.0%	3.4	2009	41	29.0%	3.6
1989	116	22.0%	4.0	2010	91	41.0%	3.9
1990	110	15.0%	4.0	2011	81	57.0%	6.6
1991	286	24.0%	3.6	2012	93	46.0%	5.0
1992	412	29.0%	3.7	2013	158	63.0%	6.1
1993	510	28.0%	3.6	2014	206	71.0%	6.8
1994	402	26.0%	4.2	2015	118	70.0%	6.2
1995	462	30.0%	5.8	2016	75	67.0%	4.3
1996	677	41.0%	8.2	2017	106	77.0%	6.3
1997	474	36.0%	5.7	2018	134	81.0%	11.7
1998	281	46.0%	11.9	2019	112	77.0%	10.4
1999	476	76.0%	43.0	2020	165	80.0%	23.3
2000	380	81.0%	49.5				



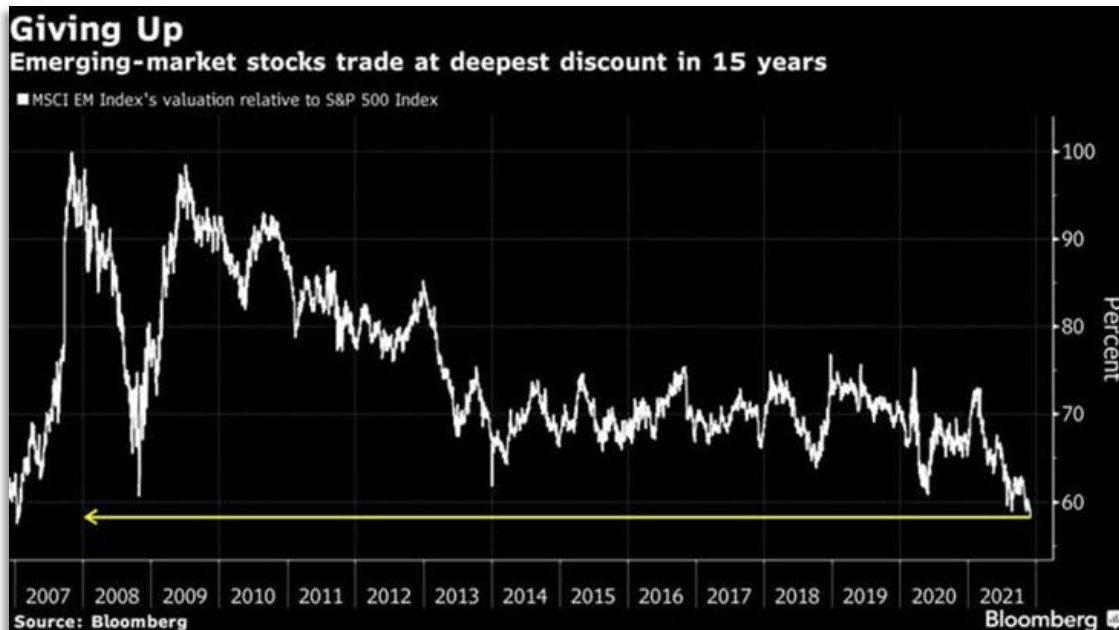
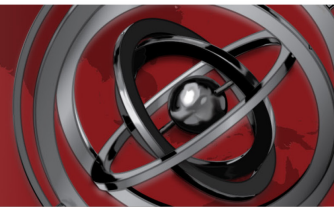
The percentage of IPOs with negative earnings, if you exclude the tech bubble years of 1998-2000, as well as the QE years of 2010 to the present, is 30.4% (44% just for 2001-2009). Meaning on average 70% of the companies coming public have earnings. In 2000 that dropped to 19% and again today it is at 20%. It is hard to imagine the world has changed and at some point the blind faith that these IPOs that are growing revenue but the lack of earnings is based on a "trust me they will come" will hold up. Also, not surprisingly the median price to sales ratio from 1980-1997 and 2001-2009 is 5.2. While that sounds high, it is a far cry from the 2000 median price to sales ratio of 50x and today's 23.3x. Keep in mind that the big difference between today's IPOs and those in the tech bubble is that there were more companies coming public in 1998-early 2000 that literally had no revenue, thereby inflating the average multiple of sales.

In Q1 2000 (the last quarter and highest froth of the tech bubble), there were 122 companies that had IPOs. Maybe it would be instructive to see how they have done since then? Of those 122 IPOs, 39% went bankrupt, 32% currently still sell below the IPO price, and usually big discounts, and 29% currently trade at premiums to the IPO price or the company sold for more than the IPO price, although in many of the acquisitions it was a decade plus post IPO to eke out a marginal gain. Those don't seem like great odds if you were to extrapolate to today's crop of IPOs.

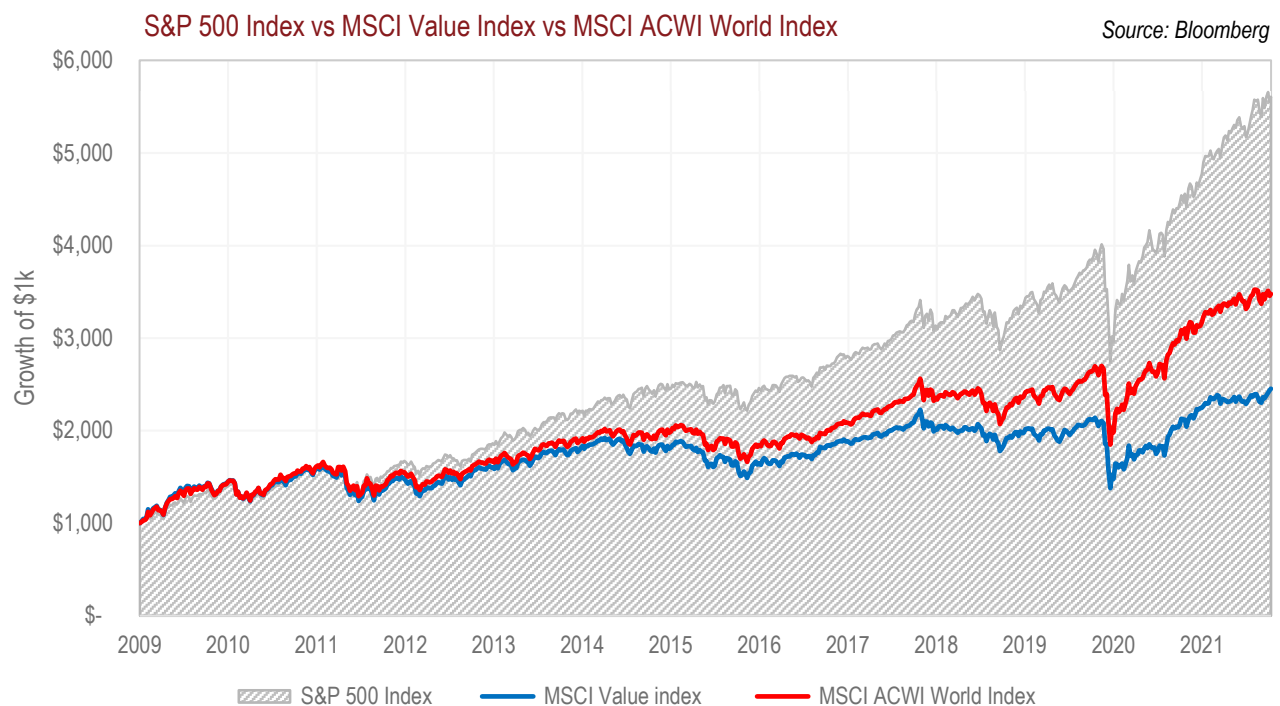
For some broader comparisons of the markets, while the U.S. markets are really expensive and the country looks really poor fiscally, the rest of the world is significantly cheaper and EMs are cheaper still and generally much better off fiscally. The chart below is the S&P500 index vs MSCI Emerging Market (EM) Index (Blue line) & MSCI ACWI ex-US Index (red line). Quite a divergence.



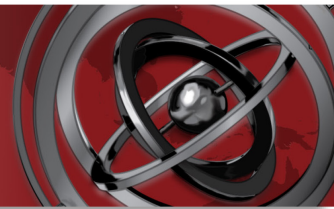
This leaves EM stocks at discounts to the S&P500 not seen in 15 years, as seen in the chart below.



The chart below is the S&P500 vs MSCI Value index (blue line) & MSCI ACWI World Index (red line). Maybe value will always underperform, but we doubt it and you can see the discount as of now.

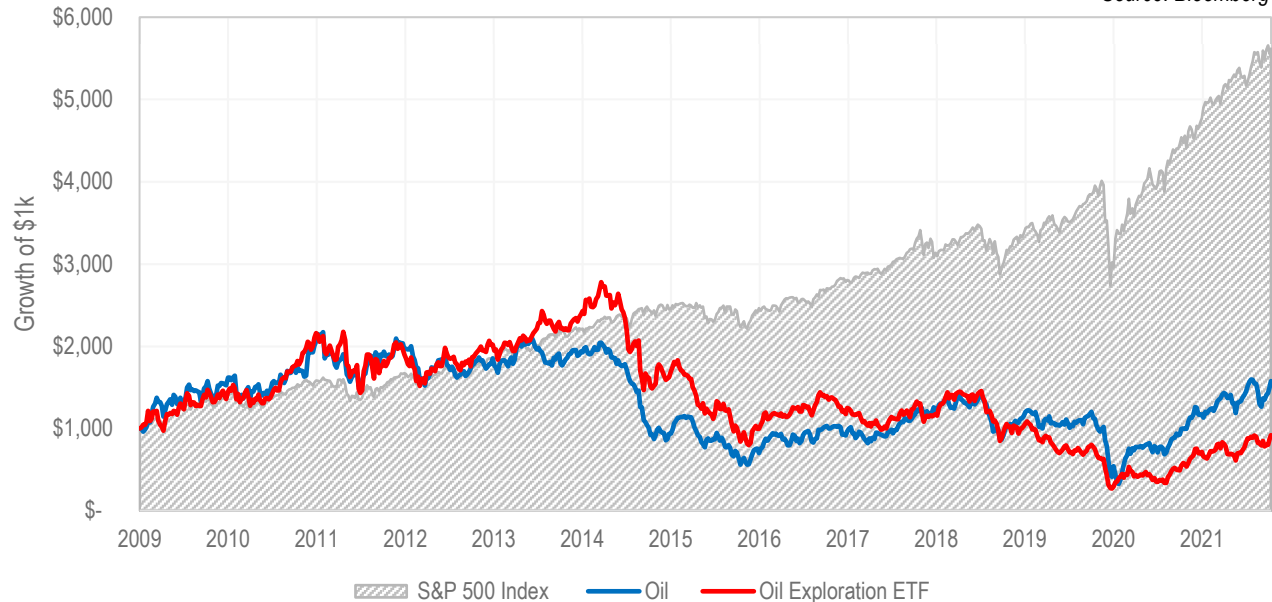


The chart below is the S&P500 Index vs oil (blue line) and an oil exploration ETF (red line). Given the big bounce off the bottom for oil it is interesting to see that it is still waaay below the S&P500 performance in an inflationary environment which should be very supportive.



S&P 500 Index vs Oil vs an Oil Exploration ETF

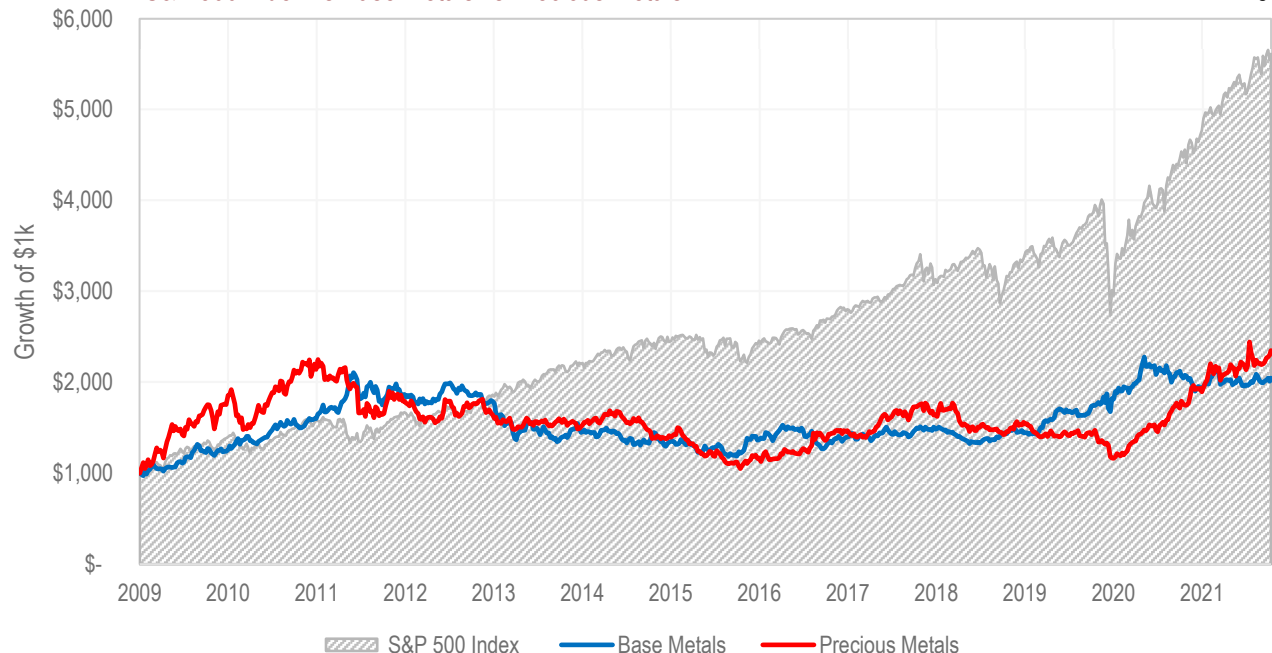
Source: Bloomberg



The chart below is the S&P500 Index vs base metals (blue line) and precious metals (red line). Both are miles away from the index performance, which is especially interesting in an inflationary environment. People frequently say we are gold bugs, as if we will always love gold, which is not true. The reality is that we align ourselves with the great Herbert Hoover quote, albeit at the right price, “We have gold because we cannot trust governments.”

S&P 500 Index vs Base Metals vs Precious Metals

Source: Bloomberg





A P/E ratio is a crude way of looking at many companies, especially ones that don't have consistent earnings so it isn't always a fair valuation comparison metric, but here is a table of P/E ratios around the world (Bloomberg data as of 12/31/2021).

Country / Index	2021 P/E Ratio	2022 P/E Ratio (est)
S&P 500	29.5x	22.4x
MSCI ACWI (60% US)	26.3x	17.6x
MSCI ACWI ex US	21.5x	19.5x
MSCI Asia Ex-Japan	16.3x	13.5x
MSCI Asia	16.1x	15.4x
STOXX Europe 600	15.9x	15.3x
Hong Kong / Hang Seng	15.1x	10.7x
MSCI EM	12.5x	12.2x

The main takeaway is that while there are always reasons things look cheaper in certain industries or countries, if there is materially more upside in those companies, net of the appropriate risk discount, that is where we will be investing.

Now for somewhat of a speed round to finish things off.

If you haven't read it, I highly recommend our energy analyst, Steve Rosenthal's, [recent commentary on energy](#). In it, he went into great detail about how the green movement is very unlikely to move the needle in terms of fossil fuel demand in the near or medium term, but I thought I would add a little.

As Steve says, it appears that the shift to renewables will be far more costly and painful than most people think. As evidence, look today at a) Germany's power prices and b) Europe's increase in natural gas demand, and price, because of inconsistency in renewable generation. As for the why, look no further than U.S. and European oil and gas companies. These oil and gas companies are under enormous pressure to curtail exploration for new reserves in oil and gas because of a) political impediments/pressure and b) the ESG activist movement of investors telling the public companies to stop exploring and shift more towards renewables. This political/shareholder pressure is absolutely contributing to the rapid depletion of global reserves. What is now a dearth of new reserves being found will soon enough turn into a kink down in actual supply when the current wells deplete. To put some numbers to this, according to the Rystad, a Norwegian energy research firm, in 2021, 4.9bb barrels of oil and natural gas were discovered, which was the lowest since 1946 and down from 12.5bb barrels discovered in 2020. It is also noteworthy that these new reserves found are less than the annual demand. This is setting up for the world to be structurally short hydrocarbon energy. The irony of both pressures is if demand holds and the supply shrinks, the benefit of the higher energy prices, and profits, and jobs, will accrue to the Russians and OPEC companies.

A couple interesting recent industry quotes about this.

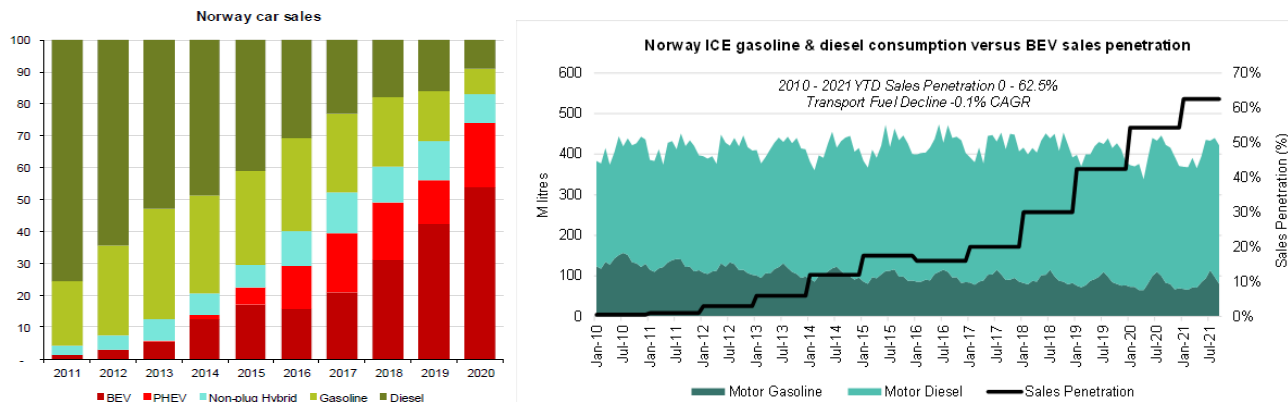
"Global oil production could drop 30% by the end of the decade due to falling investment in fossil fuels. We're heading toward a phase that could be dangerous if there's not enough spending on energy. The result will be an energy crisis." Abdulaziz bin Salman, Saudi Oil Minister.

"I think that for the first time in a long time, we will see a buyer looking for a barrel of oil, as opposed to a barrel of oil looking for a buyer." Jeff Miller, CEO Halliburton.

Given the political push for electric vehicles (EVs) to reduce our burning of oil, Bernstein recently did an analysis in Norway on this very issue. Norway is the perfect case study because their EV subsidies make it virtually impossible to want to buy a gas powered car. Because of this, Norway is now over 80% battery only or hybrid new cars sold. The Bernstein analysis showed that even with this the Norwegian oil demand, specifically for cars, has barely gone down (see the chart to the right below). The implication is that this transition, EVEN if we get to 100% battery cars, is going to take a LONG TIME. Most developed countries can't offer the subsidies Norway does so the changeover to EVs will be much slower and all the while emerging markets will keep buying more gas powered cars.









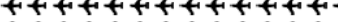














EXHIBIT 1: In less than a decade Norway went from trivial EV sales to majority EV sales



There are slightly over 1 billion cars with internal combustion engines (ICE) today in the world, and the table below suggests that this figure is expected to rise to 2 billion before it peaks. Global automakers sell roughly 100 million cars a year, and they each stay on the road close to 15 years. So even if EV sales were to realize all of their potential by 2040 (50 million EVs sold vs 4mm sold in 2021), the turnover of the fleet would mean that demand for gasoline and diesel wouldn't change much. As the emerging markets develop they will buy more cars, and no matter what the "experts" say EVs are nowhere near as cheap to purchase as gas cars, apples to apples. EM countries will keep buying gas cars which will offset the quantities of EVs sold in the developed world, assuming they continue giving subsidies to buy the EVs. As a side note, China has said they will eliminate all EV subsidies at the end of 2022. We will see what happens to their sales mix of gas vs EV after that.

Cars are, of course, a proxy for the broader economy, where oil products are literally woven in the fabric of our daily lives, so if even EVs change oil demand, albeit slowly, imagine how much slower it would be for other uses like jet fuel, plastics, road paving, etc.

Exhibit 1:
There Will Be An Enormous Increase In The Number of Cars and Trucks, RPK, Trade Volume, Ethylene Production, Population and Real GDP In the Next 25 Years

Number of Cars billion	2015		1.1 billion cars
	2025		1.5 billion cars
	2040		2.0 billion cars
Number of Trucks million	2015		377 million trucks
	2025		507 million trucks
	2040		790 million trucks
Air Revenue Passenger Km Trillion RPK	2015		9 trillion RPK
	2025		12 trillion RPK
	2040		20 trillion RPK
Seaborne Trade Trillion ton miles	2015		54 trillion ton miles
	2025		78 trillion ton miles
	2040		116 trillion ton miles
Ethylene Million Tons	2015		141 million tons
	2025		208 million tons
	2040		286 million tons
Population billion	2015		7.3 billion people
	2025		8.1 billion people
	2040		9.2 billion people
Real GDP Trillion	2015		69 trillion dollars
	2025		100 trillion dollars
2005\$ USD	2040		164 trillion dollars

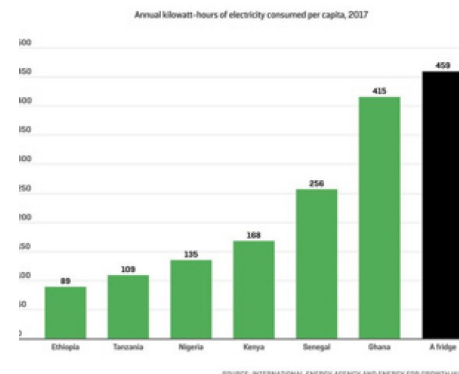
Source: IHS, IATA, World Bank, IMF, Bernstein analysis and estimates



Tangentially, the chart to the right shows how some less developed countries in Africa, on average, use less energy per capita than the average American spends ONLY on the energy for their refrigerator. The point again is that the less developed nations desires for a better life are somewhat predicated on power, and their economic growth and power generation will overwhelm the decline from the more developed nations.

To ram this point home, below is a table showing the Developed world vs the Emerging Market demand for oil. As you can see Developed Market (DM) demand is flat over the 25 years, while the EM demand is up 3.1%/yr. That equates to total growth of 27mm barrels per day in EM over those entire 25 years. More interestingly, if the growth rate in EM falls to only +2%/yr for the next 25 years, then DM demand for oil can fall by 60%, vs the recent peak in 2019, and total global oil demand still doesn't fall overall. All of this in an environment where reserves are falling dramatically and annual production seems on track to fall in the not too distant future.

Energy Use Per Person in Africa vs. a Typical American Refrigerator



	2019			2020			2009-2019			1994-2019			2020-2045		
	Use	% of Tot		Use	% of Tot	% Chg	Use	% of Tot	% Chg	Use	% of Tot	% Chg	% of Tot	% Chg	Use
Developed Market Countries (barrels/day)	46.1	47.2%		40.3	45.5%	-12.5%	45.3	54.1%	0.2%	44.8	64.9%	0.0%	19.0%	0.0%	18.5
Emerging Market Countries (barrels/day)	51.5	52.8%		48.2	54.5%	-6.5%	38.4	45.9%	3.0%	24.2	35.1%	3.1%	81.0%	2.0%	79.1
Total	97.6			88.5			83.7			69					97.6

On to the next speed round switch. Let's quickly talk about the amount of cash in our International Portfolio, in light of the inflationary environment we are living, which presents us with a conflict. One thing that we will never do is abandon our value discipline and in that respect, cash is merely a byproduct of not finding enough great investment opportunities. That said, we understand that in an inflationary environment and rising market we are probably giving up returns, over the short to intermediate term, by not being fully invested. With little to no inflation it is easier to sit on cash and wait for the "fat pitch" as Charlie Munger says. With inflation this conflict is much greater but our discipline will always win.

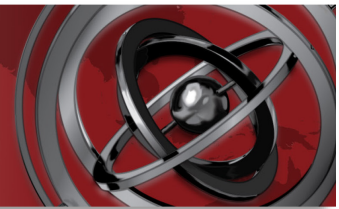
We recognize that not everyone appreciates that we have generally held higher cash levels in the portfolio than others. That said, I hope it is crystal clear that our discipline and patience should not be confused with inactivity. It is frequently during periods of overvaluation that we have the time to spend researching and learning about things that we didn't have time for during more active investment periods.

Further, we are big believers in optionality in a business. Our portfolios are the same. While we don't seek to hold cash in any of our portfolios, when we do so, we are certainly not apologetic about it, as it is the residual of our process. I believe that our valuation discipline makes us less emotional than others about the companies we own in the sense that value is of paramount importance and we are not wed to any of them. However, if something becomes cheaper we hope everyone recognizes that it is undesirable to have to sell a cheap stock that is down in order to be able to buy a new company that is even cheaper. So holding cash can be a useful tool in volatile market times and being able to act quickly on those opportunities as they arise.

Further, our focus is on long-term returns. We are believers that discipline to value is what ultimately generates the best returns over time. This is very different from trying to "time the market" as some attempt to do. It is also different from being a relative value investor. We don't make any investment decision based on top-down predictions. Investors like Stanley Druckenmiller seem to be great at that, but we readily admit that is not our forte so we don't try. While this makes perfect sense to us, I wanted to address the topic and related questions we periodically receive. Others have noticed that holding cash has allowed us to take advantage of the downturns in late 2018, early 2020, and presumably we will do so again when the current uber-expensive market next takes a breather.

To tie into my prior comments about many stocks having already fallen significantly, as cracks are emerging in a world with generally expensive stock valuations, it is interesting to note, and hopefully not surprising, that the cash in our International Portfolio has been decreasing accordingly. We are, in fact, finding more companies trading at prices that are appealing to us and are taking advantage of those opportunities.

Though genuine values remain scarce, especially among larger market capitalization companies, we are optimistic that our willingness to be patient will ultimately pay significant dividends. While a strategy of patience and preparation may be uncomfortable for many, we remain



convinced it is the best way to invest for the long run. If holding no cash is the consensus choice, and as Margaret Thatcher once said, "Consensus seems to be the process of abandoning all beliefs, principles, values," then we will go against the current, ebullient consensus and we will stick to our beliefs, principles and values.

In conclusion, despite some downer tones in this commentary, I hope you have also seen the positive that even in an environment with arguably the most expensive valuations for equities of all-time, at least in the U.S., our global mandate allows us to look far and wide to find investment opportunities worldwide. More importantly, we continue to find and buy excellent companies trading a deeply discounted prices which we believe will benefit our clients tremendously over the long run.

Since I am an alumnus of UCLA, and a basketball fan, I will end with a great John Wooden quote, "I am just a common man who is true to his beliefs." In this case, the belief is that value stocks will continue to be the best place to earn better returns over the long run.

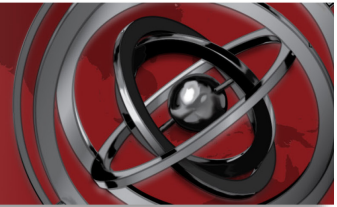
Thanks again for your support.

Mark McKinney

Co-Portfolio Manager – Kopernik International Fund/Analyst

Kopernik Global Investors, LLC

January, 2022



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