~~Greed~~ Fear is Good

I started my career as a tech analyst in 1992 so I thought I would compare today's tech-heavy market excesses to the Nasdaq/tech stock bubble in 2000 since I lived through it. For reference, I will focus on the Nasdaq which is much more tech heavy and momentum driven.

In the background data below, you will see the runup from the prior low to the tech bubble top and the subsequent fall, and then our current runup to the high in late November 2021 and the current drop. The runup numbers are not too dissimilar. There is also the Fed Funds comparison. From 1990 to 1994 the Fed Funds rate fell from 8% to as low as 3%, then started heading up to roughly 6.5% at the peak of the tech bubble. This is the biggest difference. The final six years of the increase in the 2000 tech bubble saw rising interest rates. This meant that interest rate sensitive industries were affected/left behind while tech continued ripping higher. Our current equity runup has seen the Fed Funds rate go from 4.5% after the Global Financial Crisis in 2007 to 0%, where it stayed for years. Only in the last few months has it started moving higher. This means most everything has been up big the last ten years so there isn't the bifurcation we saw in the 1990s. Most other historical market declines have seen more Fed Funds hikes than we have already witnessed so it will be interesting to see how much longer and how much more pain the Fed can inflict on the markets before reversing course. The other significant difference of the two time periods is that beginning in 2008 the government printed massive amounts of currency, via quantitative easing (QE), which didn't happen between 1990 and 2000. This has clearly added more fuel to the fire on the way up and is more of a buffer on the way down, which we are experiencing right now.

	Date	Nasdaq	Total Return	Return from High
Low	October 17, 1990	$326.78		
High	March 10, 2000	$5,048.62	1,445%	
Next Low	October 9, 2002	$1,114.11	241%	-78%

Low	March 9, 2009	$1.268.64		
High	November 19, 2021	$16,057.44	1,166%	
Current	June 10, 2022	$11,099.02	794%	-31%
Next Low	??		??	

One final note on the 1990s history. It is easy, in hindsight, to look at the total return of 1,445% from the bottom in 1990 to the top in 2000 and recognize that it was not sustainable. To give a little more granularity, from the low in 1990 to the end of 1994 the Nasdaq returned 130%. But that was just the start. In the roughly six years from the end of 1994 to the Nasdaq peak in March 2000, the index went up 671%. Why was it so much better from the end of 1994 on you ask? Rarely can you point to one thing that causes such a change but in this case you can. The world's first internet browser, Netscape, was launched on December 15th, 1994, and with that the start of the internet revolution and more importantly, the hysteria over "limitless" internet growth.

It isn't too much hyperbole to say that Netscape truly launched the internet, given the browser is the tool that allows easy access to it. (Side note, if you would like an interesting read about the history of all this, the 2018 book, *How the Internet Happened* by Brian McCullough was good.) Netscape was the first and only web browser when it launched. Microsoft soon rushed out a me-too product but it wasn't very good. At the end of 1995 Netscape had over 70% market share, which does not seem great given Microsoft's inferior product, but keep in mind the built-in dominance of Microsoft between Windows and Office. Netscape went public on Aug 9th, 1995. More importantly, this was the start of the heyday of companies going public based on growth hope/hype, as opposed to profits or even much revenue. The Netscape IPO was going to be priced at $14 but ended up coming out at $28 and traded as high as $75 before closing at $58, which gave it a 1st day closing market cap of $2.9bb. Netscape had revenue of $1.4mm in 1994 and $85mm in 1995. Profits? No.

In August 1996 Microsoft launched an updated browser and used its dominance to wage the browser war with Netscape which spelled the beginning of the end of Netscape. Netscape was taken out of its misery by AOL in late 1998, using its own ridiculously priced stock as currency, for $4.2bb. That swelled to $10bb at its peak, as AOL stock kept going up, before AOL crashed and burned, but not before buying Time Warner with their stock in January 2000, which may be the single smartest financial move during the dot com boom.

After Netscape a multitude of absurd companies with no prospect of profits and little to no current revenue, but a great story of future unlimited growth, went public. The poster child is Pets.com. This was the early version of today's Chewy. Pets.com was launched in November 1998. Venture capitalists, including Amazon, invested $10.5mm in March 1999. They even bought their biggest online competitor, Petstore.com, in June 2000 for $10.6mm. The company went public in February 2000 raising $82.5mm. Between VC rounds and their IPO the company raised approximately $300mm in cash. Sadly, between building out their infrastructure, and more importantly, selling pet products at a negative gross margin, they burned through their cash quite quickly. Their revenue in their first year was $619,000 with just their ad spend that year totaling $11.8mm.

Keep in mind the timing of all this. They IPO'd in Feb 2000. The Nasdaq peaked less than one month later in March 2000. The Nasdaq then dropped 40% in the 2½ months between mid-March 2000 and late-May 2000. It then had a bear market rally and recaptured 50% of that drop by early September 2000. "Buy the dip" was the mantra. Oops. Then from Sept 2000 to April 2001 the market fell another 50%. During this whole market drop, including the dead cat bounce in the middle, the financing window was shut to small profitless companies. There were some IPOs and secondaries, but they were no longer the profitless, "trust me" story stocks. Because of this, Pets.com, and the like, were unable to finance their losses while they "built scale" and many went bankrupt or were acquired for pennies on the dollar. On November 7th, 2000, Pets.com stopped taking orders and laid off most of their employees. In less than 18 months they raised over $300mm, went public, spent all the money and went bankrupt. Pretty astounding.

There are many other stories like this, but the point is their net income losses were so high that their capital raised wasn't enough to survive a period where financing shut off. This is the main difference from today. Most of today's VC backed companies raised ungodly amounts of venture capital, let alone the IPO money, so they don't need to raise money to fund their losses and thus have a long runway before they run out of money. In fact, a few companies attracted so much venture capital that when they wanted to go public they did a "direct" offering, meaning no money was raised. A couple examples of this are Spotify and Slack (subsequently acquired by Salesforce.com). The additional cash today has allowed for a much longer runway to see if they can achieve scale and success, but it also means we might not know yet whether all these companies will survive. The problem is while raising more cash has made today's VC backed tech companies safer than similar start-ups in the 1990s, that doesn't mean they are not still wildly overvalued. Maybe it is different this time, but selling pet supplies online, delivering stuff, etc. all proved to be poor businesses before and only time will tell this time around.

Here are the five biggest companies, by market cap, during the tech bubble:

	Chg from high ('00) to low ('02)	'99 rev growth	'02 rev growth	Price/Sales ('00)	Price/Sales ('02)	Price / Earnings ('02)
Microsoft	-63.0%	29.4%	10.2%	28.4x	8.6x	20.3x
Intel	-82.0%	11.9%	-21.0%	15.7x	3.4x	16.3x
Cisco	-88.0%	43.9%	-15.2%	62.6x	3.7x	23.5x
Amazon	-92.0%	168.0%	13.1%	28.1x	0.7x	67.0x
Nokia	-83.0%	48.4%	-3.8%	13.5x	1.8x	15.8x

And the five biggest tech stocks today:

	Chg from high ('21) to current	'21 rev growth	'22 rev growth expected*	Price/Sales ('21)	Current Price /Sales	Current Price / Earnings
Apple	-24.0%	33.3%	7.9%	8.2x	5.8x	22.4x
Microsoft	-26.0%	17.5%	18.0%	14.7x	9.9x	28.0x
Amazon	-41.0%	37.6%	12.0%	5.3x	2.3x	62.5x
Google	-25.0%	41.0%	-4.4%	8.8x	5.5x	21.3x
Nvidia	-49.0%	61.4%	25.6%	41.0x	14.4x	169.7x

I put the asterisk next to the 2022 expected revenue growth expected because when the Fed-induced recession starts my guess is these growth expectations will prove to be very wrong. As a quick example, it was interesting to see Target (the big retail store) reiterate their guidance at an analyst meeting in March 2022 and then less than two months later revise it down so dramatically that the stock fell 25% in one day. Keep in mind that the growth in 2000, during the tech bubble, was also vastly lower and different from the expectations at the start of 2000.

You can decide if the current decline in stocks will continue but while stocks have gone down meaningfully since the peak in late 2021, they are still far from cheap.

Continuing with the Nasdaq today, here are a few interesting stats:

- An additional 15% decline from here brings you back to the high before the drop in February 2020.
- An additional 40% decline from here brings you back to the start of 2019.
- An additional 50% decline from here brings you back to the start of 2017.

Let's move on to the massive runup in technology stocks. In August 1995 the percentage of the S&P500 that was tech was 10.8%, which subsequently rose to a peak of 32.1% in August 2000. Today, the percentage of the S&P500 that is tech is currently at 27%, down from roughly 34% at the peak in November, 2021, but up from 17.6% at the bottom in 2009. This number is a hair tricky to get at since some internet names have been reclassified as communications, but it is close. These numbers aren't too different from each other, so tech stocks boomed then and they boomed now. If you think only the biggest tech companies today have boomed versus all the tiny tech companies in the 1990s that went away, that isn't quite right. We have all seen the charts of how well the "zombie" (ie, companies with negative EBITDA) companies have done today, which is similar to the tiny, laughable companies that were around in the late 1990s.

As mentioned earlier it is the breadth of the increases, across many industries, now that makes it different and more painful. There are very few areas to hide/seek value now versus 2000. Today, tech stocks have boomed, but most stocks have gone up meaningfully, especially anything hinting at growth. Back in 2000 the massive upside was more limited to the tech stocks. I specifically recall certain sectors of the market getting hit while tech was booming, such as real estate. Yes, today interest rates have moved higher, but that is only the last few months and the rates are still very low compared to 2000 and have only begun to rise quite recently. Further, Fed Funds rates are still way below inflation, so our negative real interest rates today are massive.

Looking at the performance of the individual companies in the Nasdaq then versus now is interesting. Today the Nasdaq is down 31% from the peak and this is the carnage under the water, so to speak:

- 45% of Nasdaq companies are down >50%.
- 22% of Nasdaq companies are down >75%.
- 5% of Nasdaq companies are down >90%.

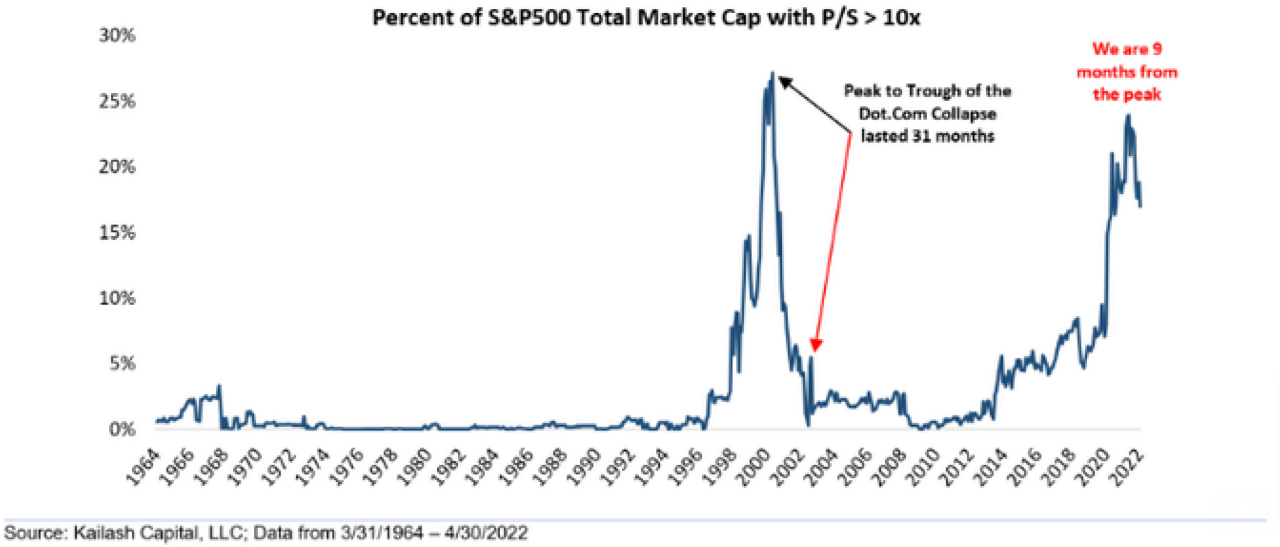
Compare that with the Nasdaq at the bottom in October 2002, after the 78% drop:

- 62% of Nasdaq companies were down >50%
- 49% of Nasdaq companies were down >75%
- 34% of Nasdaq companies were down >90%

Based on the above, it isn't a stretch to think there may be more downside ahead of us.

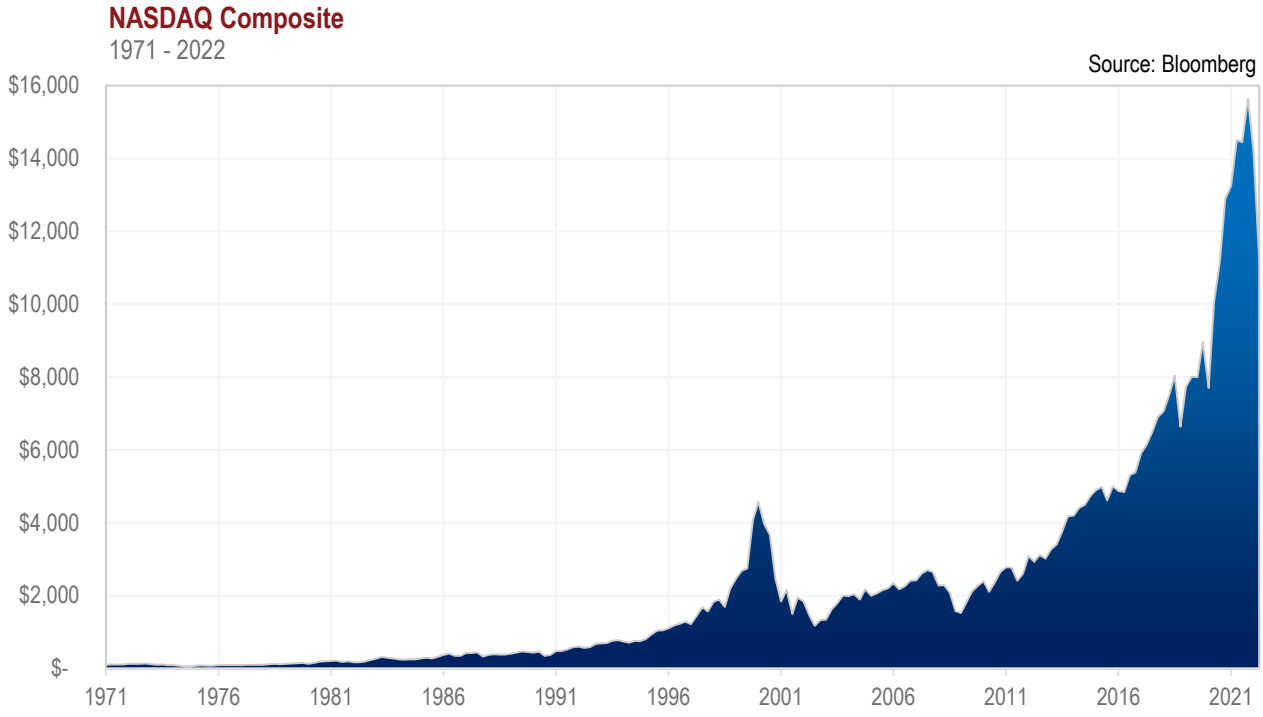
At the top of the next page below is a chart of the percentage of the S&P500 companies that trade at >10x Price/Sales ratio. As you can see it was slightly higher at the peak in 2000, then crashed toward 0%. While down from the peak in this cycle, it is far closer to the high than zero which would imply there is still a further drop looming.

Another Problem Faced by Index Funds is the Highest Weight of Indefensible Valuations Since 2000

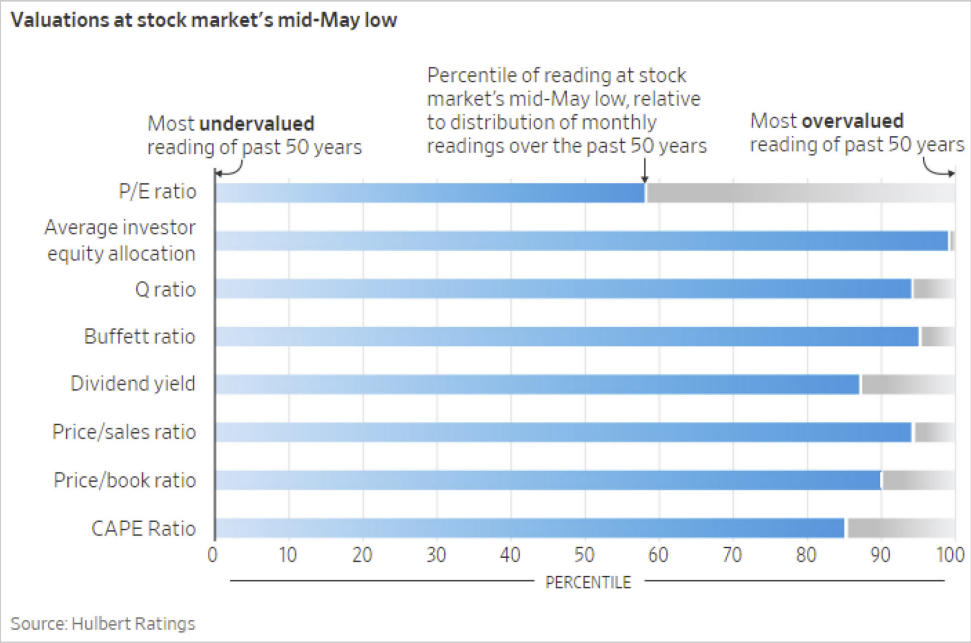


Source: Kailash Capital, LLC; Data from 3/31/1964 – 4/30/2022

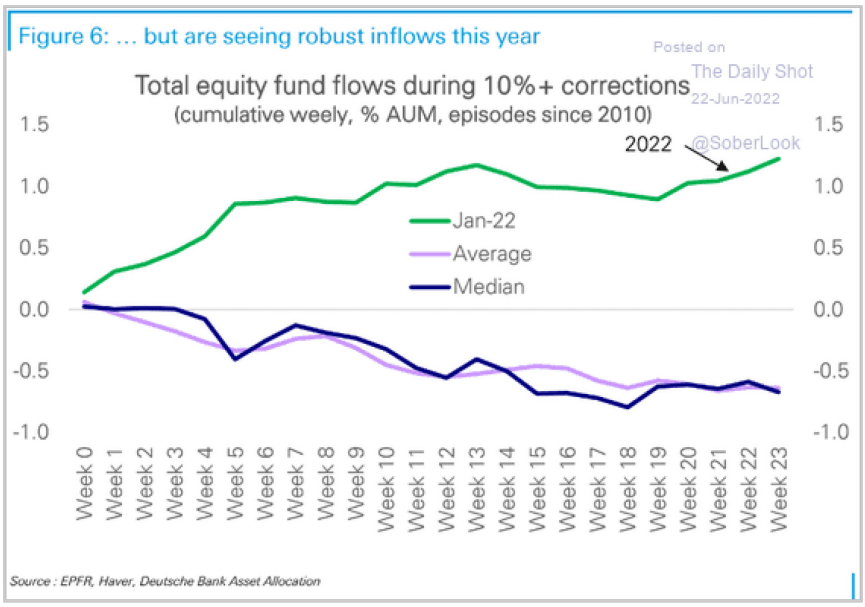
While I am not at all a chartist, sometimes the trends they highlight are interesting to observe. Based on the Nasdaq chart below, if you extrapolate a trend line from the early 1970s the current Nasdaq price should be 4,900, which is 57% lower than currently. If you believe that we are in a new dawn of tech brilliance and the trend line should slope higher starting in 2007, then the extrapolated current price should be 8,600, which is still 24% lower than currently trading.



Below is another interesting chart showing many different valuation metrics and where we are now versus history in different percentiles. Again, hard to argue that the market is not overvalued, other than based on P/E. Even then, to justify a slightly above average P/E, you have to assume that current profit margins hold, which are much higher than average and history will say won't hold assuming the Fed-driven recession is coming soon.



Lastly, I found the chart below interesting. It shows that normally when the market has a 10%+ correction, AUM flows turn negative, which is logical. This time with the S&P500 down 20%+, AUM flows are up, and a lot. It is strange how little fear there seems to be.



Comparisons to the tech bubble aside, even though startups today are better funded, one by one, the manias of the past few years are unwinding spectacularly. Let's go through a few.

Meme/random story stocks. In early 2021 the Reddit boards went crazy with stories of the average retail investor piling into massively shorted stocks to squeeze the shorts. While they have all fallen markedly from the ludicrous highs, they are still a long way from the pre-mania bottom. That said, many did raise money at the top, so the risk of bankruptcy is at least further off making them potentially worth more. (For all the tables below "current" or "cur" is as of June 28th, 2022.) As examples:

Company	2020 low to peak	Current price below 2021 high	Current Price vs 12/20
AMC	2200%	-79%	395%
GameStop	1500%	-76%	540%
Express	583%	-66%	134%
Beyond Meat	251%	-90%	-65%*
Peloton	725%	-94%	-63%*

* the declines listed are versus their IPO prices which were May and September 2019 respectively, since these weren't really Reddit driven stocks.

Crypto Currencies (listed in order from biggest market cap to smallest, excluding those coins supposedly tied to the U.S. Dollar):

Name	% Change from High	Name	% Change from High
Bitcoin	-68%	Polkadot	-85%
Ethereum	-75%	Doge	-92%
BNB	67%	Tron	-79%
Cardano	-90%	Shiba Inu	-89%
XRP	-90%	Avalanche	-88%
Solana	-90%	Litecoin	-87%

The other thing to remember is the market capitalization of these cryptocurrencies. Terra is now essentially gone. It had a market cap of $60bb at its high. Bitcoin is the biggest cryptocurrency with a market value oft $420bb. Given it is now down 68%, that means it has lost over $750bb in value from the high. Crytocurrencies, in total, have a market cap of $996bb. This is down from $3tt at the al time high. That is $2tt of money lost. Some of that loss was built-in gain, but not all of it. This is real economic pain.

I won't go into the oxymoron that is "crypto lending" but it is ironic that the crypto lending company, Celsius, who frequently said in advertisements that you should "unbank yourself because banking is broken" just broke and is liquidating. Additionally, another crypto lender, BlockFi, just announced they are being acquired by FTX, a private crypto exchange, for $25mm. That isn't meaningful until you know that at their last funding round in July 2021 BlockFi was valued at $4.8bb. That's a 99% drop for those of you keeping score.

As a quick aside, it is fascinating that, according to Bloomberg, 94% of buyers of cryptocurrencies are Gen Z and Millennials. Those same groups are the biggest groups concerned about the environment. And yet Bitcoin mining, by itself, uses more energy than Netflix, Apple, Facebook, Microsoft and Google combined, let alone more than many countries in the world.

Initial Coin Offerings (ICO):

This was quite a scam in hindsight. Essentially people were starting random companies and selling coins, which could be used as currency in that app, to fund the development of the app/program. These were coming fast and furiously until the SEC essentially shut it down, albeit too late to save investors from losing virtually all their money in virtually all ICOs.

Electric Vehicles (and related) which came public via Special Purpose Acquisition Vehicles (SPACs):

Company	Cur Mkt Cap	% Chg from High	P/Sales	P/E
Arrival	$975mm	-96%	n/a	n/a
Velodyne Lidar	$275mm	-95%	5.6x	n/a
Lordstown Mot	$335mm	-94%	n/a	n/a
Rivian	$25.5bb	-78%	128x	n/a
Canoo	$700mm	-79%	3.0x	n/a
Lion Electric	$975mm	-78%	14.5x	n/a
Quantumscape	$44b	-77%	n/a	n/a

Company	Cur Mkt Cap	% Chg from High	P/Sales	P/E
Proterra	$1.3bb	-69%	2.9x	n/a
Lucid	$30.0bb	-68%	352x	n/a
Nikola	$2.5bb	-68%	n/a	n/a
Nio	$30.3bb	-66%	5.3x	n/a
Blink Charging	$675mm	-66%	23.5x	n/a
Chargepoint	$5.0bb	-65%	16.6x	n/a
Fisker	$2.7bb	-62%	n/a	n/a

There are too many other SPACs trading way down to count, but the EV mania within SPACs seemed to be the most extreme. I didn't list it above but an EV SPAC called Electric Last Mile Solutions is officially the first of all these names to declare bankruptcy. At it's peak it had a market cap of $1.2bb. Now it is worth $0. There will be many more from the list above.

Assorted top tech names:

Company	Cur Mkt Cap	% Chg from High	P/Sales Current	P/E
Robinhood	$6.8bb	-89%	2.1x	n/a
Coinbase	$13.0bb	-84%	1.7x	4.0x
Roku	$11.3bb	-83%	3.8x	84x
Teledoc	$5.1bb	-82%	2.4x	n/a
RingCentral	$5.2bb	-82%	2.9x	n/a
DraftKings	$5.7bb	-80%	3.8x	n/a
Shopify	$44.0bb	-79%	9.1x	240x
Twilio	$16.5bb	-78%	5.2x	n/a

Company	Cur Mkt Cap	% Chg from High	P/Sales High	P/E
Square	$41.7bb	-75%	13.9x	n/a
Unity Software	$10.9x	-75%	55.2x	n/a
Paypal	$91.8x	-74%	16.7x	27x
UI Path	$10.2x	-74%	17.8x	n/a
Zoom	$32.5x	-73%	118.2x	37x
Spotify	$19.7x	-66%	7.2x	n/a
Cloudflare	$15.5x	-64%	113.0x	n/a
Snowflake	$39.0x	-64%	115.7x	n/a

For the above tech stocks, just look at the price/sales high before it fell. It's one thing to be a growth investor, but to be a growth investor at any price seems negligent.

One last note here. Within the last couple weeks, the "tech" company Enjoy Technology went bankrupt. This is the first bankruptcy that feels like what happened all the time in 2000. As Yogi Berra once said, "It's like déjà vu, all over again." The company was started in 2015 and raised over $300mm privately and another $375mm via the SPAC IPO. Their business was to bring a tech retail store to your house. You would select what product you want, or accessories, and then they would send a salesperson to your house with many product options. You can buy the product and they would walk you through the setup, service, etc. The CEO was Ron Johnson who was a senior exec at Target, then the head of Apple stores. On the company website he says that customers tell them all the time that "it seems too good to be true." It was. From an April 2021 merger with the SPAC and a high value of over $1.3 billion to a July 1, 2022 bankruptcy. Evidently $675mm cumulatively wasn't enough capital. Oops.

Marijuana Stocks:

Company	Cur Mkt Cap	% Chg from High	P/Sales	P/E
Aurora Cannabis	$415mm	-99%	1.6x	n/a
HEXO	$115mm	-99%	0.4x	n/a
Sundial Growers	$785mm	-98%	13.9x	n/a
Tilray	$1.7bb	-95%	1.9x	n/a

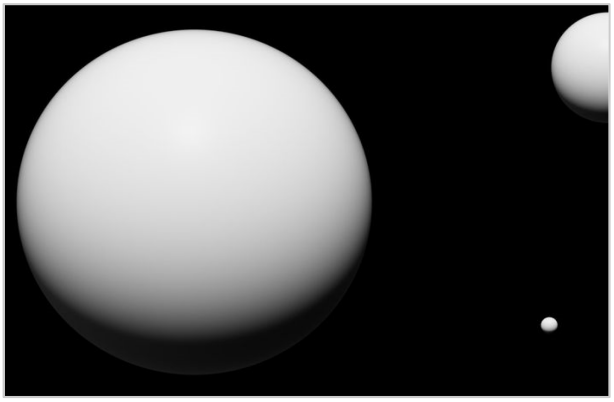
Company	Cur Mkt Cap	% Chg from High	P/Sales	P/E
Canopy Growth	$1.8bb	-93%	49.1x	409x
Cronos Group	$1.0bb	-88%	117.6x	n/a
OrganiGram	$330mm	-87%	17.2x	n/a
Village Farms	$245mm	-84%	6.5x	n/a

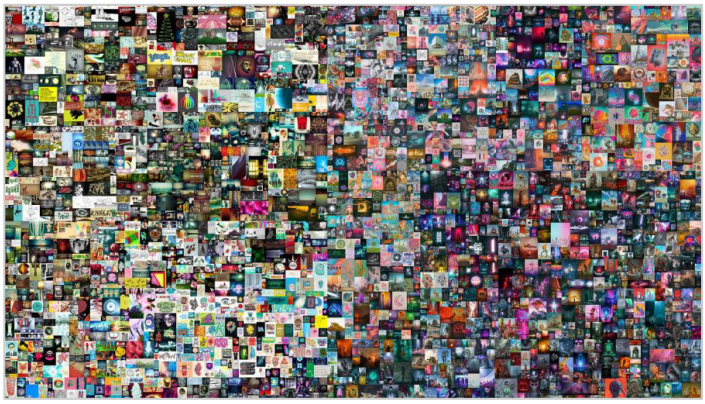
The drops in this "industry" are truly breathtaking. Tilray and Canopy are the biggest and thought of as the best. They both have market caps of roughly $1.75bb, and yet are down 93-95% from their highs. This means Tilray used to be worth $35bb and Canopy was roughly $25bb. Ouch. Talk about coming down off a high.

NFT (Non-Fungible Tokens):

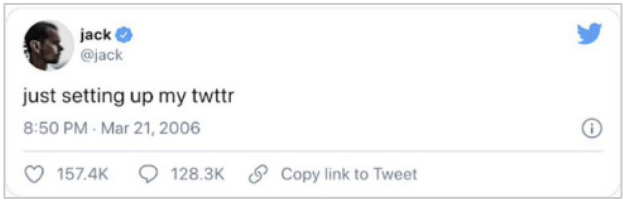
This next segment is so wild, it demands more context. An NFT is defined as a financial security consisting of digital data stored in the blockchain. That's a lot of buzzwords. In my words, an NFT is some form of digital picture or text which is unique and by storing it on the blockchain that proves ownership. I say "should" because there have been plenty of thefts from the blockchain which shouldn't happen given all transaction history is stored there, but happen it does. When these first came out I imagined they were the digital equivalent to what Getty Images does, which is have unique images they license for reprint. Thus, there is a rent component to owning it. I.e., if you have a digital image of LeBron James dunking on somebody, that could be reprinted somewhere and monetized, so I can see value there. But no, how wrong I was. Most of them seem to be a random digital picture or text.

To the bottom left is the artist Pak's creation called "The Merge." It is the most expensive NFT ever sold. It was purchased for $91.8mm. Yes, you read that amount correctly. To the bottom on the right is the #2 most expensive NFT ever sold. This one is from the artist, Beeple, entitled "The First 5000 Days." It sold for $69mm.





If you think the above is true art and thus is worth a lot of money, I understand the argument, but how about a couple crazier examples? To the bottom left is an NFT entitled "CryptoPunk 5822." It sold for $23mm. Below in the middle is "CryptoPunk 7523" which sold for $11.75mm. Below and to the right is Jack Dorsey's (the co-founder of Twitter) first tweet which sold in March 2021 for $2.9mm. The buyer relisted it for sale in April 2022 for $48mm. The highest bid was $280. Oops.



The sale of NFTs in December 2021 fell 92% from the peak in early 2021, according to the website www.nonfungible.com. Similarly the number of active wallets in the NFT market have fallen close to 90% from the peak.

I could go on but you get the point about this madness. That said, if you love this "asset class" maybe you can search and bid for the NFT that McDonald's sold commemorating the re-release of its McRib sandwich. No joke.

Lastly on NFTs/Blockchain (this underlying technology behind cryptocurrencies). I'm sure you know that the basis of the hype around blockchain was/is trust. This is because every record/transaction is stored and always viewable in the blockchain therefore you should trust it more than using a bank or any other product with a middle man. In fact, in the white paper that introduced Bitcoin the word trust is mentioned thirteen times and summarized Bitcoin as "a system for electronic transactions without relying on trust." Somehow, however, there continue to be thefts on the blockchain, including millions of NFTs and hundreds of millions of cryptocurrencies. If we can always see everything on the blockchain how are any thefts possible? You can ponder that.

Let's continue with a few final speed round topics. We all know the power the U.S. wields in general worldwide, but especially because the U.S. dollar is the reserve currency of the world. The dollar has been the reserve currency for a long time, but it was super charged in 1974 when Saudi Arabia cut a deal with the U.S. to exclusively sell oil in U.S. dollars in exchange for security agreements with the U.S. (ie, our military will protect them) and our defense companies being cleared to sell them weapons. This led to the the trading of virtually all commodities and many other items in U.S. dollars, no matter from where and to who the world. Today, as an example, if a Taiwanese company exports any electronic component they sell it in U.S. dollars. Same with exporters of steel, copper, iron ore, etc from anywhere in the world. This probably wouldn't make much of a difference if the exporter took the dollars from their sales and converted them back to their local currency. However, because they sell in dollars, they also buy many things in dollars so they like to hold dollars and frequently have dollar debt. Using this same example, the Taiwanese company sells a component in dollars, then keeps those dollars in their local bank. All else equal, this drives up the demand and value of dollars, and depresses the value of the Taiwanese dollar. Lastly, most emerging markets have had bouts of higher inflation and currency weakness which means most of those countries and companies want to hold U.S. dollars as a "hedge." Again, this drives up the value of the dollar and depresses the value of their local currency.

I think the above is fairly understood. The more important point and what is impossible to know is how big an impact this has on relative currency values, especially as it pertains to the U.S. dollar. Perhaps until now. The decision by Russia to counter some of the sanctions against them for the invasion of Ukraine to sell oil and gas to "unfriendly" countries in Rubles, as opposed to U.S. dollars, gives us a potential glimpse into the power of the reserve currency. Russia exports roughly 5% of the annual oil pumped worldwide (they export roughly 45% of their production) and roughly 7.5% of the natural gas produced worldwide (they export roughly 26% of their production), so in the scheme of things this isn't a massive deal in terms of the flow of U.S. dollars. Yet a glimpse at the chart below demonstrates the impact.

Notice the decline (up on the chart) in the value of the Ruble in 2015 and early 2016. This is a result of sanctions/world reaction to the 2014 Russian aggression in Ukraine which resulted in Ukrainian referendums to make parts of Ukraine "independent" including Crimea

and the Donbas region. While there were elections held which overwhelmingly approved this within Ukraine, the Western world still views these results as fraudulent. Then things settled down and the value of the Ruble held steady in the mid-70s level. The newest invasion of Ukraine and the western world's enormous sanctions had a huge effect up front and the Ruble dropped to 140. In fact, U.S. President Biden said the Russian Ruble has turned into "Rubble" at basically the bottom. Well… Then Russia mandated that sales of its oil and gas would only be sold in Rubles to "unfriendly" (ie, the Western world) buyers instead of U.S. dollars. The Ruble immediately rebounded and has continued strengthening. It has since appreciated 60% from the lows, and is at its strongest level in over 7 years. This is pretty amazing, and gives a glance into the power of not selling exports in U.S. dollars. It cannot be proven that this is the sole reason for the Ruble strength, but the timing makes the correlation seem more than a coincidence.

Since then, China has discussed selling more items in Renminbi. Saudi Arabia has even discussed selling oil to China in Renminbi, which would violate the 1974 agreement with the U.S. that mandated all energy exports would be priced in U.S. dollars. Imagine what would/could happen if all exporters started selling their products in their local currencies? This seems to be the direction the non-Western world is headed, albeit slowly as of now, especially after the U.S. seized Russia's dollar deposits in the U.S.. Whether this move was justified or legal or not, it sent a message to the rest of the world. It will be interesting to watch where this goes.

Moving on. I have written a lot recently about inflation and I won't do too much more here as it is, sadly, playing out pretty much as expected. The important thing is that we are starting to see the insidious side of it. When Target and Walmart recently provided terrible earnings guidance and their stocks plunged, they both said they are seeing customers buying less and trading down as those customers can't afford many items now. The major trucking companies have also warned of huge declines in demand based on the fuel surcharge-driven trucking rate increases. The term stagflation is always thought of as terrible, and it is. However, as described above, inflation leads to lowering the affordability of almost everything, especially to the bulk of the population. Thus the direct response to inflation is to buy fewer things and trade down which forces the economy to fall, all else equal. Given stagflation is merely the inevitable byproduct of the primary inflation, which is almost always caused by the actions of the government and/or central bank, it seems to me that inflation should be considered the bad word.

While official CPI is currently stated at 8.6%, year over year, in reality it is higher than that, especially in the things people spend the most money on. As stated above this is becoming a real problem to many individuals and families and to the entire economy. The average American that lives in or near a big city most likely does not own a home as they have always been too expensive. The problem is that rents continue to increase by double digits so now this is becoming even more problematic. Food is up double digits. Oil/gas is up even more in the last year. These are the 3 biggest items the average American spends money on. If you want to broaden this discussion, keep in mind the Arab Spring issues were all about food inflation in 2010 and led to riots throughout the developing world as people were literally starving. Back to the U.S., yes, wages are going up, but not nearly as quickly as everything else. So the recent Target/Walmart/trucking company commentary/guidance is the first real glimpse into the pain our current inflation is causing the average citizen and the U.S. economy. It would be nice if there were an easy solution but there isn't.

The Fed/Government can raise rates massively to squelch the inflation, as they claim they will do, but that would absolutely crush the economy. Further, the interest rate increases create a vicious cycle of the government needing to run huge deficits and print massive amounts of money just to pay the interest on our debt, which exacerbates the inflation. Alternatively, option B is to let the inflation run really hot and squash interest rates, via yield curve control, to keep borrowing costs down, like Japan is currently doing. Keep in mind that to keep interest rates at 0.25% for the 10-year bond Japan is printing and buying roughly 10 trillion yen in government bonds every month. To put that number in context, it is roughly equivalent to the Fed doing more than $300 billion of QE per month, adjusted for QE. Our maximum QE in the U.S. was $120bb per month. Both of the above are terrible scenarios, but these are seemingly the government's only options. That said, don't think the government will ever tell the population the truth about this horrible choice.

One other relevant point here. All governments that collect income taxes have benefited tremendously from the equity market returns and subsequent capital gains taxes. With the market now way down, this will reverse and hit government revenues hard, which for the federal government, also means that it will increase their budget deficits and necessitate the need for more bond issuance and interest expense. This is all such a vicious cycle with no way out.

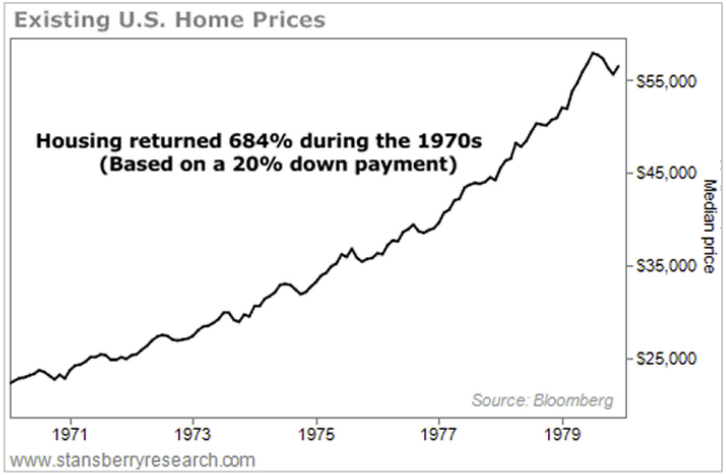
Relatedly, here is a funny quote on the Fed moving us toward a recession from Elon Musk. When asked whether a recession was on its way, he said, "Yes, but this is actually a good thing. It has been raining money on fools for too long."

Here are several other good quotes on inflation.

- "The best way to destroy the capitalist system was to debauch the currency." Vladimir Lenin.
- "By a continuing process of inflation, governments can confiscate, secretly and unobserved, an important part of the wealth of their citizens." John Maynard Keynes
- "The first panacea of a mismanaged nation is inflation of the currency; the second is war. Both bring a temporary prosperity; both bring a permanent ruin. But both are the refuge of political and economic opportunists." Ernest Hemingway

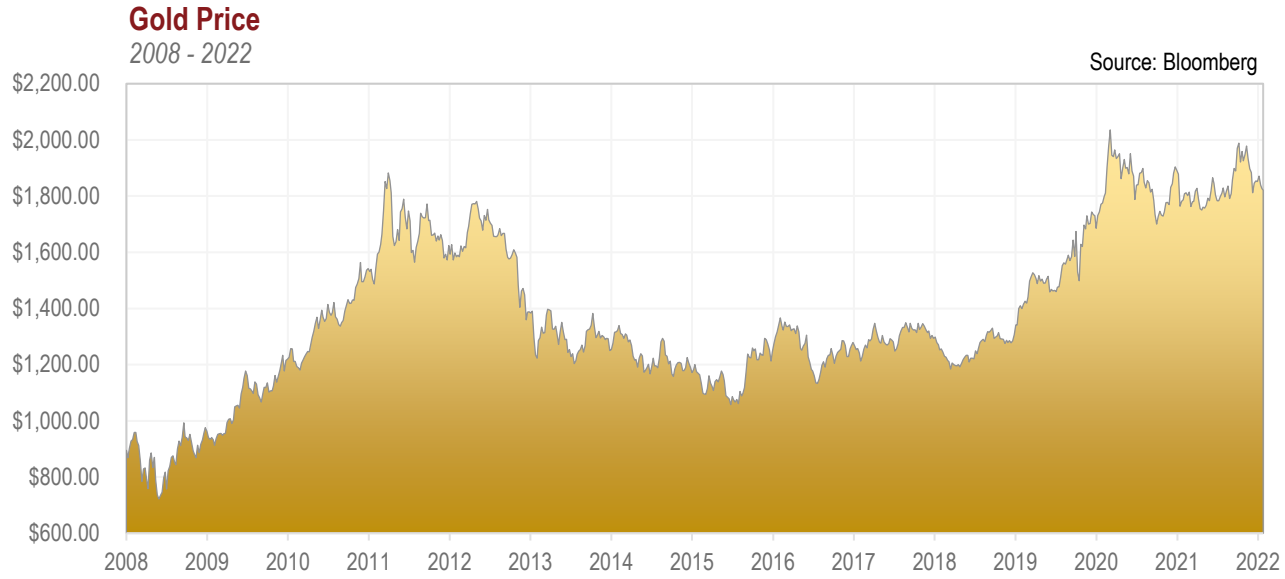
I have written in the past about the historic changes to the calculation of the CPI and how it, magically, always has the effect of lowering the stated CPI. The website, www.shadowstats.com, goes into what CPI would be without these historic adjustments. For reference Shadowstats shows inflation currently at roughly 12% based on the 1990 methodology and 16.5% based on the 1980 methodology. A new but equally interesting inflation source is Truflation (www.truflation.com). As opposed to the CPI, which relies on surveys to a large extent, especially on housing, not to mention their hedonic and substitution adjustments, Truflation looks only at actual price data, while keeping the same component weights as the CPI. It shows the current annual inflation at 10.77% vs the CPI of 8.6%.

I have one last point on inflation, and it is an important one. How do real estate prices react in an inflationary environment? U.S. housing prices have been booming but will it continue? High inflation should help hard assets, like real estate, but much higher interest rates are reflected in much higher mortgage rates, which makes homes much less affordable and thus should drive real estate prices down. It is hard to imagine when U.S. mortgage rates go from 2.5% to 6.0% as fast as they have it won't have a major impact on housing prices. An interesting chart, to the right, answers this question in the 1970s inflationary environment. In the 1970s, mortgage rates jumped from 7.5% in the early 1970s to a peak of over 18% in 1981 and yet housing prices still went up dramatically. Today housing prices to incomes are at all time highs so it will be interesting to see if our current strength in housing prices continues.



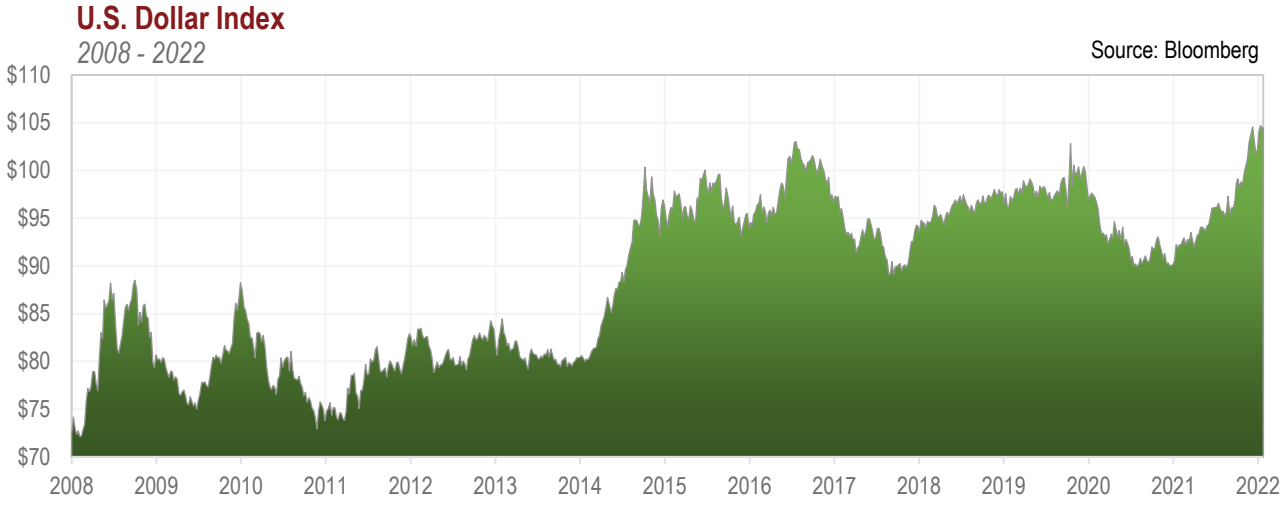
As the U.S. Federal Reserve continues to tell us they have inflation under control, keep in mind they could have stopped QE, started quantitative tightening (QT) or raised the Fed Funds rate at any time, but they didn't. Perhaps they are that oblivious, but my guess is that this is all planned. Former President Franklin Delano Roosevelt once said, "In politics, nothing happens by accident. If it happens, you can bet it was planned that way."

Let's pivot to the final point. Since inflation is, by nature, a reduction in purchasing power via devaluation of the currency, this should be good for gold, right? Since QE began in November 2008, there are many people who thought gold would/should perform very well. As you can see on the chart below, gold is up 115% since then, so it has been a good performer. But given the economist Milton Friedman's historic quote, "Inflation is always and everywhere a monetary phenomenon" why hasn't gold gone up more? Since QE started in late 2008, U.S. M1 is up from $1.5tt to over $20.6tt (+1,275%) and M2 is up from roughly $8tt to $21.7tt (+175%). M2 has also increased 50% in just the last 3 years. The only other times when M2 increased by >40% in a 3-yr period are 1973 and 1978. Both were followed by high inflation, recessions (1973-1975, 1980-1982) and bear markets. Gold was also up, but it is hard to compare now to then since gold had long been suppressed by the government to maintain the peg to the U.S. dollar. When that ended, gold ripped higher, but that was years in the making.



With all this said, it is easy to see why many people think gold should be up more. Furthermore, as we have said in the past, since 2008 we have had inflation, but it was mainly in the form of asset inflation, as opposed to CPI. Now that this has rotated to CPI inflation will we see the bigger move in gold that many people forecasted? Time will tell. Kopernik continues to look at gold, and more specifically gold miners, partially as cheap insurance against the bad outcomes of the rampant money printing by the government. We also think there is a huge arbitrage in many gold stocks between the value of the proven gold in the ground, and the price of gold, even accounting for the cost to mine the gold.

More important to this discussion, one answer for why gold has not kept up with the money printing is the strength of the U.S. Dollar. The entire world is experiencing high inflation right now based on our money printing because of the reserve currency status of the U.S. dollar, not to mention the equally horrific central bank actions, primarily in Europe and Japan. As the ex U.S. Treasury Secretary, John Connally, said in 1971, "The dollar is our currency, but it's your problem." In times of economic uncertainty/stress, frequently people rush to what they perceive as safe. Historically, in the world of currencies, that is the U.S. dollar. Since the bottom of 2008, the U.S. dollar has risen versus most other currencies in the world. Hence, when you think about the gold price keep in mind that it is generally quoted in U.S. dollars and the U.S. dollar index (below) is up 45% since 2008. This is masking some of the strength of gold.



If you chart gold in various other world currencies you see that gold has performed much better than it appears since we are only seeing the gold price quoted in U.S. dollars.

Currency	Gold price chg from 2008 to July 1, 2022
U.S. Dollar	115%
Brazilian Real	505%
Indian Rupee	330%
Euros	204%
Canadian Dollar	178%
Japanese Yen	170%

The obvious question is whether the U.S. Dollar will maintain its dominance. If it slips at all then the above would imply you will see a much bigger move in gold, priced in U.S. dollars, than we have seen so far.

To conclude and to finally tie into the title of this commentary, in 1987 the movie *Wall Street* opened starring Michael Douglas and Charlie Sheen. The famous quote from Michael Douglas' character, Gordon Gekko, was "Greed is good." He meant that the pursuit of (short term) profits makes companies act in very efficient ways, which is good. We will leave aside whether this point is valid or not, given the focus on short-term profits, but I would change this to say, as it relates to investors, "Fear is good." By that I mean that investors should fear overexuberance, fear of overpaying for stocks/assets, fear of forecasting events into an unknown future, etc. Some amount of fear is healthy and leads us to, hopefully, be more thoughtful about the price we are paying for stocks/assets. When other investors get caught up in the excitement of a rising market, and thus not fearful, we remained disciplined and thoughtful about the price we pay for stocks/assets. We view some amount of fear as helping to create a favorable balance between risk and reward. Conversely greed is driven more by emotion, like the well known phrase "let your winners run." This might work in the short-term but we fear that any strategy lacking a strong valuation component is fraught with risk. To us staying disciplined is the key to success over the long-term.

Lastly, in a recent interview Stanley Druckenmiller used the term "ruthlessly disciplined" about his investing style. I would say the same about Kopernik. We attempt to remain 'ruthlessly disciplined' in seeking value stocks and weighing the company and industry risks since we view value as the best path for long-term performance/success.

Thanks again for your support.

Mark McKinney
Co-Portfolio Manager – Kopernik International Fund / Analyst
Kopernik Global Investors, LLC
June 2022

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