The Nine Most Terrifying Words in The English Language

In 1986 President Ronald Reagan famously said "The nine most terrifying words in the English language are: I'm from the government and I'm here to help." Leaving aside any political leanings, the point is history shows that when the government steps in to "help" it almost always continues to "help." The "help" almost always stems from good intentions but ultimately means spending money it doesn't have and accumulating debt. Hence the great Milton Friedman quote, "Nothing is so permanent as a temporary government program." A funnier, related quote is from P.J. O'Rourke, an American journalist and author, "Giving money and power to government is like giving whiskey and car keys to teenage boys." To tie it in to today, President Elect Joe Biden tweeted on December 1st, "My message to everyone struggling right now is this: help is on the way." Then on January 8th, he was more specific by saying the $3.3 trillion of total stimulus spending so far (from Covid) "is just the beginning" and "the price will be high." Now the week before he takes office he is throwing out $1.9 trillion in incremental stimulus.

Back to the original quote. Stimulus packages and reducing interest rates have been around forever to help deal with economic weakness, so this is nothing new, although you could certainly argue the scale is. Quantitative Easing (QE) starts in Japan and spreads to Europe and the U.S. where the central bank buys assets (starts with government bonds to lower rates, but has taken many turns including stocks, corporate bonds, real estate via REITS, etc.). This spigot has been on pretty much ever since.

The current pandemic has certainly taken it to a whole new level, including the latest $900bb stimulus package just approved, with more certainly on the way, either from Trump in his waning days or Biden, or both. Whether people agree with these spending packages or not isn't the point. Most importantly the debt is here to stay and will keep growing, which is why the QE must continue. This all begs the obvious question; is a market that needs constant government assistance to function really a functioning market?

I have written before about Modern Monetary Theory (MMT), or sometimes also called Magic Money Tree, since it seems like a fairy tale. As the proponents of MMT theorize the only downside is that it is *possible* that inflation comes with the money printing. Sticking with Milton Friedman, "Inflation is always and everywhere a monetary phenomenon in the sense that it is and can be produced only by a more rapid increase in the quantity of money than in output."

Let's take a quick step back into economics class. We have all learned the formula MV = PQ. (M = money supply, V = the velocity (number of times per year the average dollar is spent), P = the price of goods and services and Q = the quantity of goods and services.) For money supply, it is easy enough to get the data. For P we crudely use Consumer Price Index (CPI) and Q we use Gross Domestic Product (GDP). All that is pretty straightforward. The problem is velocity. While it is analogous to asset turns in a business, which is easy enough to calculate for an individual company, money supply velocity is virtually impossible to compute in the real world. In the end, it becomes the plug to make the formula balance. While I have no great insights into a better way to calculate V, I will posit that P (ie, the CPI number that the government tells us) is altogether wrong.

I have previously written about the U.S. Government's changes to the methodology of calculating CPI (*These Go To Eleven*) and the flaws therein, but, in my opinion, there are some parts that are obviously wrong and other things are missing altogether. Keep in mind many of the changes fall under the Hedonic or Substitution adjustments. Hedonic tries to adjust for quality improvements, ie, a car today is far safer than an old car so in the government's mind the car "costs" less today than it used to since it is better. Substitution effectively says if one item gets too expensive you can and should substitute a related item that is cheaper and you are no worse off. In other words, if steak goes up in price, buy ground beef and have a hamburger instead. While this is theoretically true from a calorie point of view, it certainly misses the apples-to-apples comparison of prices, which logically should be the point of CPI.

Picking on a few categories, the owners adjusted rent calculation is confusing at best and fraudulent at worst. As rates have fallen, so have rental yields so rents have not gone up as fast as housing prices. This is true, but this doesn't help people that want to buy a house. If you wanted to buy but now have to rent, you feel the inflation but the government says it is very low. More specifically the Case-Shiller Home Price Index shows aggregate U.S. housing prices up 6% nationwide over the trailing twelve months. The Bureau of Labor Statistics (BLS) estimates that the rent index has increased 2.5% in the past 12 months, or 350 basis points below the rise in actual house prices. If the actual housing price increase was used, the actual CPI would have been 3% instead of the 1.6% reported over the trailing twelve months.

If owning a car (car, insurance, gas, maintenance, etc.) becomes too expensive, you can take public transportation and that will cost you less. Again true, but can we really say you are no worse off? In other words, is this an even trade? Of course not.

If your medical insurance goes up by 5% is that capturing all the medical inflation? Not even close. How about if your co-pay goes up? How about if your deductible goes up? Drug payment? Etc. No way that is all captured.

Where on the list is any form of investment? It is certainly more expensive now than it has ever been to buy virtually anything you would buy as an investment. Stocks? Yep. Bonds? Yep. Gold? Yep. Rental property? Yep. Art? Yep. Etc.

Education? If you haven't noticed, the growth in the enrollment of the big public universities has dwarfed the growth at the private colleges. This is logical from the affordability factor. However, is the private college/high school/middle school, really substitutable for public schools <u>everywhere</u>? Clearly not. Again, not fully reflected in CPI.

There are many other examples, but you get the point. The P in MV=PQ isn't accurate.

The next question is, does the P matter? It should, as inflation (rising P) strips everyone's standard of living if their wages are not keeping up. Hence the quote that the economist John Maynard Keynes attributes to Vladimir Lenin, "The best way to destroy the capitalist system is to debauch the currency." Keep this in mind as more and more young people in America embrace "Democratic Socialism."

Working backwards, P is one of the main drivers of interest rates. The other factors include a real interest rate (ie, ex-inflation) which the collective market decides what is fair plus a risk premium for the issuer. So, if P (ie, inflation) is actually higher than the CPI shows do people not realize it? Maybe, but hard to imagine. If you start with the US Bond rate today and subtract the stated CPI, you end up with a negative real rate. This is also true in virtually all parts of the "developed world" (not necessarily emerging markets, although some of those are getting close to having negative real rates as well). This is all from government/Central Bank buying of bonds in an attempt to drive/keep interest rates as low as possible.

There are people that talk about this normalizing and rates rising, which is logical and should happen, but in my opinion, there is no turning back for the central banks. They can't possibly willingly let the market dictate rates again. They will give us academic reasons why it is okay and makes sense, but it isn't and it doesn't. The real reason is they flat out can't afford to pay the interest on market rates so they have to manipulate them down. Sadly, one of the great modern economists, Walter Williams, just passed away. He, like the more famous modern economist, Thomas Sowell, have so many great quotes it is hard to keep track but one of my favorites from Mr. Williams is, "Politicians exploit economic illiteracy."

Let's add some data to the previous paragraph. If the current U.S. debt is roughly $27.5 trillion. (that is almost $85,000 per citizen and 128% of our GDP). The current interest expense on that debt is roughly $522 billion. This implies an average interest rate of 1.9%. The 20-year average interest expense is 3.5%. (The 30-year average is 5.8%.) If our interest rate went up to the 20-year average, the interest expense would go up to almost $1 trillion. Our U.S. Federal tax revenue is roughly $3.5 trillion. So today interest expense is roughly 15% of our tax revenue. If rates reverted to the 20-year average the interest expense would be almost 30% of tax revenues. It goes without saying, although I am, that this can NOT happen. For this reason, the government will buy enough bonds to keep rates low "forever" (Yes, of course, yield curve control is coming). The only potential release valves are prices and/or the value of the currency.

But, you ask, if this is all so obvious why haven't we seen any of this in Japan? They have been running massive deficits /accumulating record federal debt for roughly 30 years without widespread inflation. Thus, printing money is costless, right? Economics is simple when there is only one factor, but when you introduce the complexities of the real world it gets hard. All that said, here goes my theory. Let's assume money printing has to lead to inflation in one form or another but running against that are a few other items.

- The global outsourcing push that started decades ago to offshore the manufacturing of low-priced items to low labor cost countries. Thus, when those goods are imported vs manufactured domestically as they were before that appears deflationary.
- Further, when you think about the basic law of supply and demand, when supply is flat and demand falls that generally leads to lower prices, or said another way, that looks deflationary. Isn't that the situation you have when your population falls? I.e., spending tends to be lower for senior citizens vs young, working people so as your population ages, there is a downward trend on spending. Additionally, when you have very little inbound migration and a low birth rate the population actually declines, which is also clearly bad for demand. Those two combined appear deflationary.
- There were some key industries in Japan that were deregulated which had the effect of lowering prices.
- The country has been easing import tariffs, forcing the domestic producers to become more cost competitive, which looks deflationary.
- Japan has done their own version of substitution / Hedonic adjustments and "owners adjusted rent" as opposed to land prices which has caused reported CPI to be lower than what the average person feels.
- Lastly, it started with the mother of all asset bubbles. (ie, their P leading up to the peak was understating the inflation in asset prices, just like the U.S.). The stories of prices in Japan in the late 80s / early 90s are crazy. Further, it doesn't include many assets (real estate, stocks, bonds, art, etc.) that have appreciated in value in Japan since then, identical to the U.S.

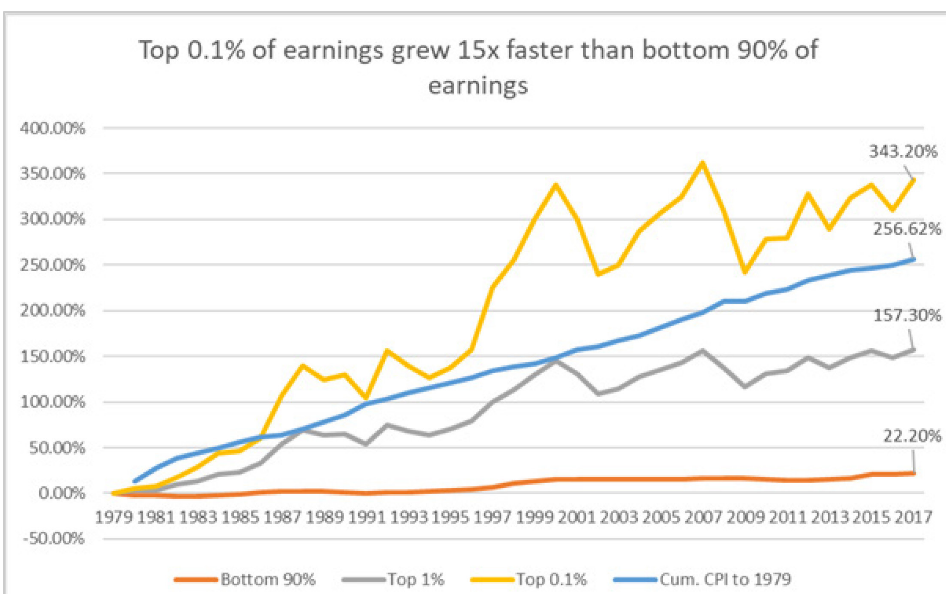
How all these mix together is uncertain, but it feels wrong to assume that because their government published CPI number appears low, their money printing hasn't affected prices. Further, it is erroneous to assume that because money printing has NOT produced CPI in that country, MEANS that it won't anywhere.

If you have never heard of it there is a great book from 2011 titled, *This Time Is Different* by Kenneth Rogoff and Carmen Reinhart. It depicts in great detail that when massive expansions in budget deficits led to increases in government debt beyond 100% of GDP, and were funded with big rises in monetary aggregates, then in every case, other than one, that country experienced some combination of a currency collapse, a surge in inflation or a debt default. <u>Every country (sixty-six countries, across five continents), except for Japan</u>. Now we can theorize that the U.S. having the world's reserve currency will be different, but I wouldn't bet on it.

In case you were wondering, here is a chart of many leading developed countries and their debt figures. (Bloomberg)

	2020 Gov Debt (US$ tt)	Population (mm)	2020 Gov Debt per Capita (US$)	2020 Debt/GDP
USA	$27.00	330.0	$85,000	128.0%
Canada	$0.76	37.6	$20,300	47.8%
UK	$2.68	66.6	$40,176	101.5%
Germany	$2.12	83.0	$25,571	62.4%
France	$2.92	66.9	$43,552	121.7%
Italy	$2.85	60.3	$47,157	158.3%
Japan	$9.01	126.5	$71,192	266.0%
China	$9.65	1393.0	$6,931	63.5%

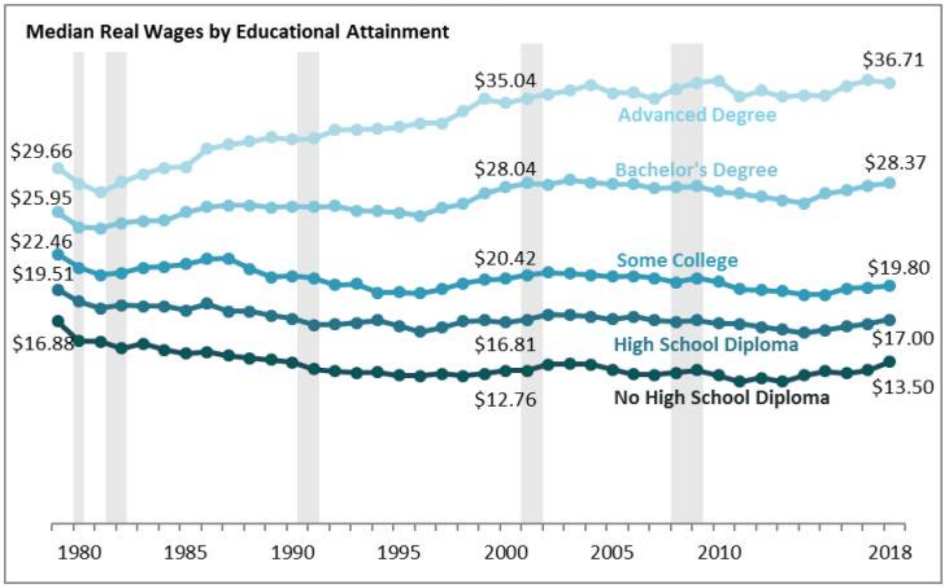
Circling back to the P, as it relates to inflation, while we all know about the growing wealth divide, here are a couple astounding charts for you. They are both specific to the U.S. The first chart (below) shows earnings growth by percentile. Yes, since 1980 only, the top 0.5% of earners, roughly, have grown their income faster than the stated CPI (the top 1% earns roughly $1.5mm annually.) That is just stated CPI; the correct CPI is clearly higher. Why isn't this reported more?



Source: Social Security Administration wage statistics

Next up are real wages since 1980 for different academic levels.

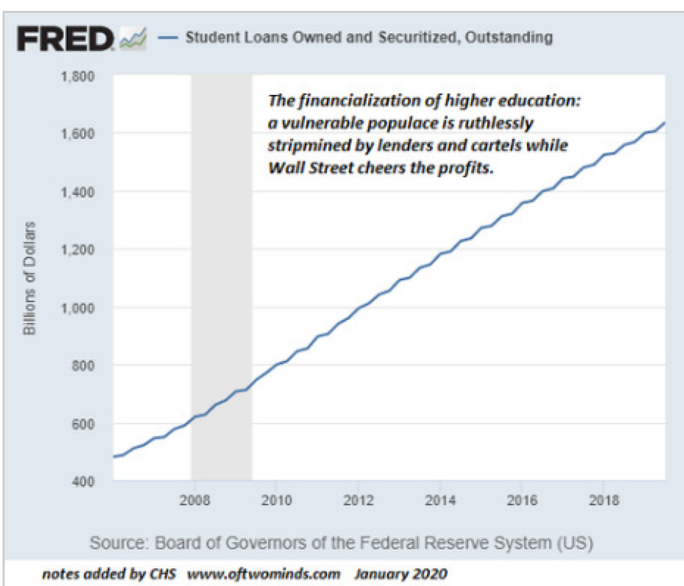
Figure 4. Median Wage by Educational Attainment
Wages in 2018 dollars



Source: CRS estimates using Current Population Survey Outgoing Rotation Group data for 1979-2018. Recession data (in gray) are from the National Bureau of Economic Research, at http://www.nber.org/cycles.html.

Notes: Sample comprises nonfarm wage and salary workers who are 25-64 years old and provide sufficient information to compute an hourly wage. Periods of recession are shaded in gray. Dollar amounts are adjusted for inflation using the CPI-U.

Keep in mind these are real, ie, post inflation, again using stated CPI. So, since 1980 real wages have gone up 25% for people with advanced degrees, 9% for those with bachelor's degrees, but have fallen by 12%, 13% and 20% respectively for those with some college, High School diploma and no High School diploma. Wow. Add to this the shocking rise in student loans (left), and you can see most people's quality of life isn't rising. Thus, the idea that everybody should take on debt to attend college may have instead doomed them to a life of barely squeaking by post their interest payments, let alone the cost of life. Relatedly, the day of reckoning for the less elite private colleges charging high tuition is coming.



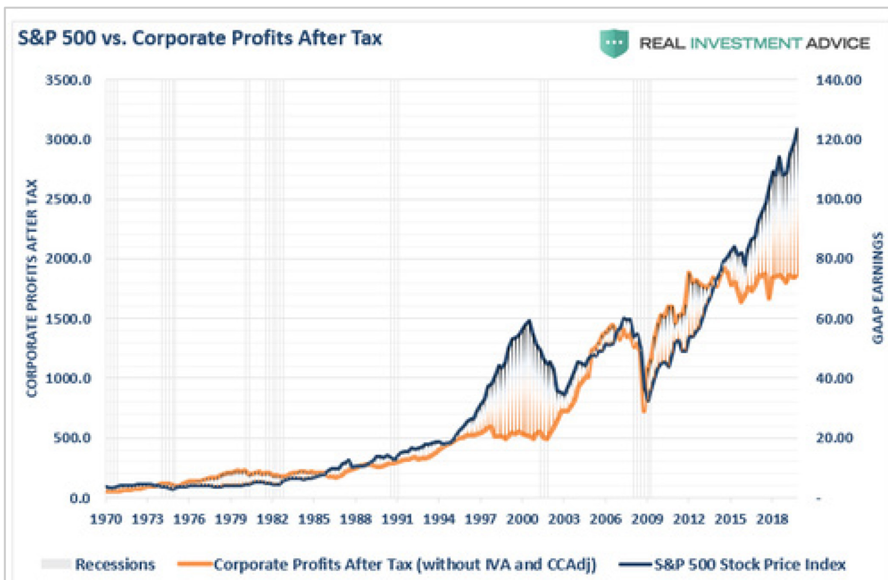
The U.S. Economist Hyman Minsky argued that the economic cycle is driven more by surges in the banking system and in the supply of credit than by the relationship between companies and workers in the labor market which is traditionally thought to be more important. Thus, because economic cycles are effectively driven by credit, there is inherent instability in financial markets. This is because excess credit leads to reckless, speculative activity, which ultimately must collapse. This is the famous "Minsky Moment."

Another interesting book from ten years ago is *The Cost of Capitalism*. In it, the author, Robert Barbera, lays out the last five major global cyclical events:

- The early 1990s recession — largely occasioned by the U.S. Savings & Loan crisis,
- The collapse of Japan Inc. after the stock market crash of 1990,
- The Asian crisis of the mid-1990s,
- The fabulous technology boom/bust cycle at the turn of the millennium, and
- The unprecedented rise and then collapse for U.S. residential real estate in 2007-2008.

All five episodes delivered recessions, either global or regional. In all five cases there was NOT a significant prior acceleration of wages and general prices. Further, in each case, an investment boom and an associated asset market ran to improbable heights and then collapsed. The key conclusion was that from 1945 to 1985 there was NO recession caused by the instability of investment prompted by financial speculation. Since 1985 there has been no recession that has NOT been caused by these factors. A fascinating point.

However, it hasn't just been governments loading up on debt; corporations have gorged on debt for unproductive spending, dividend issuance, and share buybacks. The problem with debt, of course, is that it is leverage that has to be serviced by underlying cash flows of the business. While asset prices have surged to historic highs, what is interesting is that corporate profits for the entirety of U.S. businesses have remained flat since 2014. This implies that the massive leverage that companies have taken on is NOT being done to grow profits but more to keep profits flat.



Returning to Minsky, there is one other key item he said was needed for the bubble to grow large enough to be susceptible to a "Minsky Moment;" complacency.

In the ridiculous, but funny, 1994 movie *Dumb and Dumber* starring Jim Carrey and Jeff Daniels, there is a scene where the two characters decide to drive to Aspen on a tiny motor scooter, in the winter. When they get there and are almost frozen, Jim Carrey shiveringly says "We're there dude." Same for the complacency in today's markets.

It seems clear that global credit has been grossly misallocated, global credit risk is being seriously mispriced, world stock markets are generally priced to perfection, and yet markets and governments seem remarkably calm. Volatility is going back toward the lows we saw earlier this year. It is as if both markets and governments can't imagine what might cause an issue. Keep in mind, as shown earlier, all economic corrections in the past 30 years have stemmed from markets falling first, not the other way around.

Minsky wrote that markets have short memories, and that they repeatedly fool themselves into believing that 'this time is different.' Sadly, judging by today's market exuberance in the face of mounting economic and political risks, once again, Minsky is likely to be proved correct. At this point in the cycle, the next *"Minsky Moment"* is inevitable.

If we move to the root cause of the increase in P, that is money supply growth, here are some “fun” facts of the monetary base increase.

- **35% of all U.S. dollars in existence have been printed in the last 10 months**
- The U.S. has increased its debt by 170% in 12 years and expanded its money supply 4x in the same time frame. Debt increased by $17 trillion in those 12 years.
- Switching to the world, combined, the U.S. Federal Reserve Bank, the European Central Bank and the Bank of Japan have printed $7.5tt since March 2020.
- In 2007, the global stock market capitalization was $65 Trillion. In 2019, the global stock market capitalization hit $85 Trillion, **which was an increase of $20 Trillion, or roughly equivalent to the expansion of the Central Bank balance sheets**. It’s obviously up big from there as of early 2021.

To (finally) conclude this macro section, let’s review the chart below. Quoting Sesame Street, “One of These Things Is Not Like The Other.” (Bloomberg)

	1972 - 1982	1998 - 2008	2009 – 2019
M1 % growth	87.6%	30.3%	301.0%
M2 % growth	141.5%	87.6%	130.0%
CPI % growth	132.7%	34.8%	22.3%
Real GDP % growth	27.2%	30.1%	23.0%

In the prior two “crisis” periods, CPI wasn’t that far off from money growth (M1, M2, a mix?), but the last 10 plus years is waaay off. You can draw your own conclusions, but I hope mine is clear.

To go from the really big picture stuff, let’s dive deeper to show some of these specific areas of bubbles in the market in the past and present.

Bonds

Maybe one of the greatest quotes ever is Jim Grant calling bonds “return free risk.” Nothing could be more true. Let’s start by saying I feel really bad for anybody that wants/needs to invest in bonds for safety/income as neither exists anymore. The big picture stats of bond yields are shocking enough (source: Citibank):

- 30% of all global bonds have negative yields ($18.5 trillion)
- 45% of global bonds yield between 0-1%
    - Last week Australia sold A$1.5 billion in three-month notes at yields as low as minus 0.1%, its first such issuance in negative territory. The offering was more than five times oversubscribed.
- 10% of global bonds have a yield between 1-2%
- 5% of global bonds have a yield between 2-3%
- 10% of global bonds have a yield above 3%
    - This includes a recently issued $4bb 101-year U.S. dollar pay bonds by Peru yielding 3.23%. Peru’s currency has lost over 40% of its value vs the U.S. $ since 2013 so if that trend continues this might be harder to pay than the stated coupon implies.
- 41% of European corporate investment grade bonds have negative yields. 10% more have yields less than 0.25%.
- U.S. investment grade corporate bond yields are at their all-time low of 1.8%, less than what 10-year U.S. Treasuries were yielding earlier this year.
- The U.S. leveraged loan market has increased to more than $1.3 trillion and the global leveraged loan market is more than two and a half times the size of the U.S. subprime market in 2008.
- The ECB will soon own a majority of all sovereign bonds in Europe.
    - They own roughly 45% of Germany’s bond market (up from 30% at the end of 2019) and 60% of Italy’s bond market (up from 25% at the end of 2019).
        - When the ECB started buying bonds they had a rule to limit the purchases to 33.3% of the country’s bonds. All these rules were thrown out this year when Christine Lagarde scrapped those limits for the central bank’s pandemic purchase program (“Never let a good crisis go to waste.” - Winston Churchill).

Staying in Europe for a second, you remember the acronym, PIGS (Portugal, Italy, Greece and Spain) from roughly a decade ago. During the European debt crisis in 2008 these four countries were the weakest in terms of slow GDP growth, high unemployment, budget deficits and debt so they were not so nicely nicknamed the PIGS and were not far off from defaulting on their debts. Since then, things have not gotten much/any better in terms of debt, and if deficits are better that is only because their interest payments have plummeted with interest rates down so much, and yet let’s see their bond yields.

	Debt as % of GDP in 2007	Debt as % of GDP in 2019	Deficit as % of gov rev 2007	Deficit as % of gov rev 2019	10 year bond yield 2007	10 year bond yield 2019
Portugal	81%	136%	-2.9%	0.1%	4.45%	0.05%
Italy	110%	155%	-1.3%	-1.6%	4.54%	0.92%
Greece	113%	200%	-6.7%	1.5%	4.51%	1.37%
Spain	42%	117%	1.9%	-2.9%	4.35%	0.44%

Source: FRED (Federal Reserve Economic Data)

Clearly it is this insatiable ECB demand that drives rates down for countries that were effectively bankrupt less than a decade ago and are trading at or below 0% at the low end of the curve.

The elephant in the room, so to speak, has always been how will/can this debt load be brought down. The obvious, but painful, answer is the only thing politicians are willing to do is debase their currencies to inflate the debt lower. There is virtually zero chance we see tough austerity any time soon. Europe briefly tried it but the pain to the population was too great so they gave up. In the U.S. there is also virtually zero chance we tell pensioners they are out of luck on a big portion of their retirement money, historically or going forward. That all but guarantees a politician being voted out of office and I will cynically say the only thing most politicians care about is being reelected for the sake of power.

I have written before about how the government frequently mentions little things that seem sort of crazy, historically speaking, but what they are doing is moving the Overton Window, which is essentially what is politically acceptable to say at any given period of time. They keep dropping hints and justifying until it seems normal. How about this? Riccardo Fraccaro, a senior aide to Italian prime minister Giuseppe Conte, declared in a November 2020 Bloomberg interview that "monetary policy must support member states' expansionary fiscal policies in every possible way, including potentially cancelling sovereign bonds bought during the pandemic or perpetually extending their maturity." This is surely coming in one form or another in all developed countries.

With Europe now just like Japan in pegging rates at zero to negative, the obvious next question is, when will the U.S. follow? It is hard to know exactly, but it will. As a side note, according to Bloomberg, the Merrill Lynch Option Volatility Estimate (MOVE) index, or the bond market CBOE Volatility Index (VIX) is close to record lows so the market anticipates this as well.

Convertible Bonds

I have also spoken before about convertible bonds, but the absurdity there has reached unprecedented heights. Sounding like an old-timer, in the old days convertible bond premium of the underlying stock was 3-5 years of the coupon of the bond. I.e., a 5% coupon convertible bond would have a premium to the stock at conversion of 15-25%, depending on the issuer. Now? It's a whole new ballgame. Here is a sampling of a few of the convertible bonds issued in 2020. (Bloomberg)

Company	Amount Raised	Maturity	Coupon	Stock Premium
Square	$500mm	5.5 years	0.0%	62.5%
Square	$500mm	7 years	0.25%	62.5%
SolarEdge	$633mm	5 years	0.0%	50.0%
Shopify	$920mm	5.1 years	0.125%	60.0%
RingCentral	$650mm	5.5 years	0.0%	50.0%
Etsy	$650mm	7 years	0.125%	52.5%
Redfin	$661mm	5 years	0.0%	40.0%
Microstrategy*	$550mm	5 years	0.75%	40.0%

- A special shout out needs to be given to Microstrategy. Its convert has traded up to $160 which gives it a yield to maturity of -8.5%. More interesting, the company announced that all the proceeds would be used to buy Bitcoin. At that date the price of Bitcoin was $18,300, so in the short run this has been good since Bitcoin is currently trading at $32,000. But, in mid-March 2020 the price of Bitcoin was $5,000. If this is such a good idea, why wait for Bitcoin to almost quadruple to buy?

So now a hot "growth" company can issue a convert with a 5 to 7 year maturity with a coupon of roughly 0% and a premium to the underlying stock of 40-60%. **Seriously, why are there not more converts being issued?** Short-sighted shareholders should be upset that the companies are not taking advantage of this specific bubble. I say this assuming companies/investors assume these stocks will keep going up. If they understand the risk is if the stock goes down the convert is a bond that is owed back, maybe we can give a pass, but I doubt that is the answer for most given the short-sightedness of the market and its participants. And even then, if the coupon is close to 0, now the risk is just that you can't refinance.

Going from Bonds to Stocks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Should You Borrow to the Hilt and Put It All Into Stocks?

These types of headlines only happen at market tops. Let's start with some fun quotes.

- "It's easier to fool people than to convince them that they have been fooled." Mark Twain
- "A bubble market has allowed the creation of bubble companies, entities designed more with an eye to making money off investors rather than for them" Warren Buffet (2001). History rhymes.
- "I haven't seen anything like this in over 20 years," said Eric Paley, an investor at the venture firm Founder Collective. "The party is as loud and the drinks are flowing as freely as the dot-com boom, despite that we're all drinking at home and alone." From a recent NYT article

Now, how about some facts?

- The tech-heavy Nasdaq has gained roughly 90% in the 9 months since the lows in March.
- The S&P has gained roughly 65% in the 9 months since the lows in March.
- The MSCI Emerging Market index has gained roughly 65% in the 9 months since the lows in March.
- The South Korean market has gained roughly 90% in the 9 months since the lows in March.
- The Japanese market has gained roughly 60% in the 9 months since the lows in March.
- In the U.S., 2020 has seen the largest dollar volume of IPOs ever (35% higher than the tech bubble prior peak) and the highest number of IPO issuances.
  - Amazingly only 9% of all IPOs were profitable.
- The top 5 stocks in the U.S. (Apple, Microsoft, Amazon, Alphabet and Facebook) represent close to 25% of the S&P500 index, vs the 2000 previous high of just under 18% (Microsoft, GE, Cisco, Intel and Walmart).
- At least 19 domestic stocks have enjoyed gains of at least 100% on their first trading day this year, the most since 2000 and more than the 17 such IPOs over the last six years combined.
- Overall, 203 IPO's priced in 2020 according to data from Renaissance Capital, up over 33% from last year's level. Total proceeds of $75 billion were up 65% from 2019.
  - These last two facts are from the University of Florida professor, Jay Ritter. If you don't know of him, he is a really good source of information on IPOs, especially in times like now (crazy).
- More broadly, global capital market issuance across all asset classes has reached a record $11 trillion in 2020 according to Refinitv, 27% above 2007 and triple that of 1999.

Items not specifically sourced above come from Bloomberg.

At the risk of saying we are in a bubble… oh wait, this is clearly a bubble. Even the current U.S. Federal Reserve Chairman Powell recently said, "We are monitoring the asset bubble very carefully." So he acknowledges the bubble, which is a start, but the best he can do is monitor it? He surely knows bubbles don't deflate slowly and painlessly. Powell further said, "The Fed is committed to using its economic tools until it achieves its economic goals." Said another way, The Fed will continue to print massive amount of money forever in order to show economic growth. Per the evidence shown in the book mentioned above, it won't work.

That said, like all bubbles we don't know when it will end or how much bigger the bubble will get. But, the real question is, what should we all do?

The strategy that works the best in bubble markets is the greater fool theory: buy the stocks that are going up the most and watch them go up more. More and more investment managers are quoted as saying that in today's market valuations don't matter and may not going forward. The first part, they don't matter now, is clearly true, but to deduce that may never matter again is quite a stretch. Shouldn't these same investment managers be paying any price to buy whatever art they like, or whatever house they like at any price? Maybe they are but the lunacy of saying they don't care about price in stocks since they are investing other people's money is astounding.

I was recently turned on to a random twitter guy, Dr. Parik Patel, who has some really sarcastically funny tweets about the financial markets. One of his best plays off a well-known Buffett quote, "Be greedy when others are fearful, and be even greedier when others are greedy."

In rational markets EVERY investor says they care about price/value. Even a growth stock investor would justify a high P/E ratio with the underlying growth of the business. But in bubble markets, career risk takes over. You just need to keep up so you don't underperform and risk losing your job. This is all understandable, but it doesn't make it better for the investor when it eventually ends.

Overheated markets are always followed by corrections as investor expectations are reset to a more rational level in the face of the pain of negative returns. After the tech bubble burst, Buffett said: "A pin lies in wait for every bubble. And when the two eventually meet, a new wave of investors learns some very old lessons: . . . speculation is most dangerous when it looks easiest." Buffett is a great quote machine given his commonsense approach to things. But as good as Buffett is I actually prefer his partner's quotes. Charlie Munger is a little less politically correct and a little more direct but with the same commonsense approach that a grandfather gives life lessons. You may not want to hear them at the time, but looking back they were always right.

Speaking of Mr. Munger, he was recently interviewed and had some nuggets. (Let's also say that we should all hope to be as lucid mentally as he is at 96 years old.)

While speaking of the current market environment, **"**Nobody knows when bubbles are going to blow-up. . . [but] this has been unbelievable. There has never been anything quite like it. . . It's been the most dramatic thing that has almost ever happened in the entire world history of finance." That's quite a statement.

More specific to what to do about it, "The single most important thing that you want to do is avoid stupid errors. Know the edge of your own competency. That's very hard to do because the human mind naturally tries to make you think you're way smarter than you are." He later says, "You have to know a lot, but partly it's temperament, partly it's deferred gratification, you gotta be willing to wait. Good investing requires a weird combination of patience and aggression and not many people have it. It also requires a big amount of self-awareness about how much you know and what you don't know. You have to know the edge of your own competency, and a lot of brilliant people think they're way smarter than they are. And, of course, that's dangerous and causes trouble."

Now some specific examples of the craziness, both past and present.

Blockchain Bubble of 2017

In previous commentaries I remarked on the euphoria in BlockChain stocks so I thought I would take a quick second and update you on how those turned out, then highlight a few others, past and present. As you will see these all follow the lyric from Britney Spears, "Oops, I did it again," that is, fool investors, for a short period of time. Or as WC Fields once said, "If you can't dazzle them with brilliance, baffle them with bullshit." To be clear, Bitcoin is rallying hard these days, which we will save for a future discussion, but this is specifically referring to the Blockchain, which sits underneath Bitcoin, but was the specific source of much frenzy.

- Nova LifeStyle announced that it intended to accelerate the use of blockchain technology to "further enhance the brand recognition of Nova's traditional furniture business while also creating a platform to offer other potential products and services." Umm, what? Based on that announcement the stock was up 150% but this was after it had started running on its way to being up over 900%. Since then? Yep, down 90% to where it started. Market cap of $15mm.
- Rich Cigars decided to switch from making cigars to mining cryptocurrencies. The stock went from $0.03 cents to over $1.50 before settling back at $0.03 today.
- Longfin Financial (LFIN) stock went from $5.17 on 12/13/17 (IPO) to $142 (intraday on 12/18/17) to $0.32 today. Their business is providing finance and foreign exchange hedging solutions to importers and exporters. One day post-IPO they announced they are acquiring Ziddu for 2.5 million LFIN shares ($13 million at time of announcements), "a Blockchain empowered solutions provider that offers Microfinance Lending against Collateralized Warehouse Receipts in the form of Ziddu coins." What? At the peak they had a market cap of over $10bb. Today it is worth $23mm and has no revenue.
- MGT Capital Investments mines Bitcoin and went from $1.00 in late June to $6.33 at the peak with a market cap of $350 million. They have $1.5 million in revenue in the trailing twelve months. Since then? They now trade at $0.05/share with a market cap of $24mm.
- Glance Technologies (now called Perk Labs) operates Glance Pay, a payment system designed to allow smartphone users to choose where they want to eat, order goods and services, send payments, access receipts, earn rewards and interact with merchants. It announced it was working on a rewards-based cryptocurrency it planned to integrate into its platform, when it purchased Blockimpact cryptocurrency from Ztudium in December, 2017. On September 1, the stock was $.20 per share. Following the Blockimpact acquisition the stock reached $3.84 in late November. The company had virtually no revenue, book value or anything else. Today? Yep, you guessed it. It is down 99% to $0.09/sh with a market cap of $14mm and they still have no revenue.
- In early November 2017 a sleepy biopharmaceutical firm named Bioptix Pharma with a market cap of $340 million changed its name to Riot Blockchain. That stock went from $7 on that early November day to above $46 intraday on December 19. The company's goal is to "brand itself as a leading blockchain authority and offer investment exposure to the blockchain environment." They have "strategic" investments in random bitcoin/blockchain companies. Since then, with Bitcoin running up so much in 2020, it has a new life and now trades at $27 for a market cap of just under $1.8bb. In the words of the great Chicago Cubs announcer, Harry Carey, "Let's play two." That is, we will get to see this company fall into oblivion for a second time. (ps, their trailing twelve-month revenue is $8mm.)
- The Long Island Iced Tea Corp (now Long Blockchain Corp) sold iced tea with $5 million in revenue and a market capitalization of $20 million, decided to shift its primary focus toward the "exploration of and investment in opportunities that leverage the benefits of the once-in-a-generation opportunity of blockchain technology." Yep, the stock went up 200% that day. You know the rest. Today the company trades at $0.16/sh (down 99%) with a market cap of $4.5mm with no revenue.
- Lest you think this is only a U.S. scam, in China a company named Future Fintech Group, formerly known as SkyPeople Fruit Juice, was up 220% after it announced it would pivot to financial technology including Blockchain as part of a 700% move higher to have a peak market cap of $125mm. Yep, again, it fell over 95% for a market cap of $5.7mm. They have revenues of $500,000.

Relatedly, do you remember in 2017 when Initial Coin Offerings (ICOs) were all the rage? An Initial Coin Offering was an offering of some kind of crypto coin (token) that would be used as a medium of payment or exchange specifically in a start-up company's product? That company was literally just starting so it was essentially the Angel round of venture financing. Yes, many were placed for hundreds of millions of dollars, and yes virtually all of those businesses didn't work and went away. So much for your ICO wealth.

2000 Tech Bubble

This period is so infamous for its extremes and so many people have written about it, including some of my previous commentaries, so I won't go further, other than to ask if you knew that between 1998 and 2001 there were 183 companies that changed their corporate name to simply add ".com" thinking that was enough to drive their stock valuation higher. Between 2001 and 2002 there were 67 of those 183 that dropped the .com from their name. Virtually all those companies literally went away once the outrageously cheap equity money dried up.

3D (additive) Manufacturing Mania

For those of you who don't remember there was a time in 2013 when the idea that anything plastic or metal would be printed with a "3D" or "additive" printer very soon. The companies that made those machines were worth huge premiums and shot up multiple hundreds of percent. Like many new technologies the outlook is very positive, and the businesses continue to grow, but the hype was too much in the stocks and they have all fallen almost 90%. (Bloomberg)

Company	Ticker	Start Date	Start Price	Starting Trailing 12 Mo Sales	ATH Date	ATH Price	Current Price	% down from ATH	Trailing 12 Mo Sales
3D Systems	DDD	Jan '10	$3.50	$160mm	1/3/2014	$96	$10.86	-88%	$550mm
Stratasys	SSYS	Jan '10	$23.00	$135mm	1/3/2014	$136	$20.59	-85%	$636mm
Exone	XONE	Feb '13	$27.00	$39mm	8/13/2013	$75	$11.60	-85%	$59mm
SLM Solutions	AM3D GR	Feb '13	$20.70	$28mm	1/5/2018	$58	$18.90	-68%	$69mm

Current Super Hype – SPACs and Electric Vehicles (EV)

SPACs (Special Purpose Acquisition Companies) need a much longer discussion, but I will try to keep it brief. The basic gist is a promoter puts up a few million dollars to fund the expenses of going public (legal, accounting and ½ of the normal investment banking fee) and for that they get roughly 20% ownership in a public company, post the IPO proceed raise. The company raises $250mm in cash (25mm shares @ $10 each) and the cash is held in an escrow account. Within 18 months the company must close an acquisition, which the shareholders must approve or the shareholder gets their money back. In addition to the shares the IPO buyers receive ½ of a warrant for every share with a strike price of $11.50. (SPACs are not all the same but this is a good proxy for the average deal.) The appeal is if the IPO buyer doesn't like the acquisition announced they can ask for their money back. Thus, they can't lose money. The only cost is time as they have to wait. In another sign of a market top, what actually happens is generally it is a hedge fund who buys the IPO shares with no thought as to who the promoter is or what the potential focus of acquisition is. Forty-Five days post IPO the shares and warrants are separated and can be traded independently. Since short-term interest rates are essentially 0% there is virtually no time value of money discount for holding the stock until an acquisition is announced so the share price remains at $10/share, even without the ½ warrant attached. So the hedge fund IPO buyer sells the share for $10 and keeps the ½ warrant they have. Thus, they have their entire investment back and have an option. A no brainer right? In today's world it has been.

In the first iteration of SPACs, or "blank check" companies, the shares would trade at a discount when you sold them without the ½ warrant and the market demanded that the acquisition be a cash flow generating business. So, it was a publicly funded private equity deal via this funky structure. In today's speculative frenzy the best SPACs are acquiring story stocks with very little to no current revenue but a great hockey stick revenue growth story. Given the market will pay up for these, the SPACs can pay up for the acquisition and everyone wins. If the stock goes from $10 to $20 post acquisition, yes, you sold the stock for $10, but you still have the ½ warrant with a strike price of $11.50. This is why there are so many SPACs coming now. In today's market it truly is a no lose proposition for the investment bank's best clients who they allocate these shares to. One of these days the frenzy will end and the pre-acquisition $10 share will trade at a discount because the Robinhood buyer won't assume the share itself will automatically go up because every acquisition is deemed a good one.

When you think deeper about these things, in the above example post IPO there would be 25mm shares sold in the IPO plus the 20% more shares for the promoters plus 12.5mm warrants for the IPO buyers. If the stock were to go above $11.50/share the shares outstanding jumps to 42.5mm. Granted they raised more cash via the warrants but at a presumably very low price. So historically this dilution was a major hurdle to getting a SPAC done. In other words, for a buyer to buy the SPAC they had to believe the promoter would find an acquisition so good it would overcome this dilution. Unfortunately, most didn't. According to data from Bloomberg from 2015 to 2019 (I'm excluding the real frenzy which started in 2020) 89 SPACs completed an acquisition. Of those, the average SPAC lost 18.8% with the median loss being 36%. During that same time regular IPOs returned 37%. Further, only 29% of SPACs had positive returns. But how the markets have changed. Last week saw 15 separate SPACs were priced in 1 day and over 30 for the entire week. That doesn't happen unless the buyers buy on blind faith. To close this example out, the promoter that funded the IPO with roughly $5mm now has 5mm shares @ $20/share = $100mm. And public shareholders don't care. It is no wonder that SPAC promoters are trying to price as many deals as possible as quickly as possible.

The hottest acquisitions of SPACs today are companies with ties to the electric vehicle space, be it the vehicles, components, electric charging stations, etc... Let's start with the fact that, other than Tesla, the last two car companies started that are still around were Hyundai in 1967 and Subaru in 1950. So, leaving aside all the failed attempts to enter the auto business, we now are deluged with new EV-focused companies that all are hoping to make it and are all priced as if they will win. History clearly shows that virtually none will make it but that never matters in a full-blown mania. Further, most of the start-ups of years past that are not around anymore were not acquired by somebody else, they just went bankrupt and went away. The majority of auto makers were slow to focus on EVs in mass, because they couldn't lose money like Tesla during the investment period without their stock tanking, but they are coming fast now and with their scale it is strange to see so many people think all these start-ups will survive. The bulk of these start-ups will literally go away, and the stocks will go to $0, but for fun, let's review some of the names. (Bloomberg)

Company	Description	2020 Low Price	Current Price	Current / Estimated Market Cap	Trailing 12 Mo Sales
Tesla	EV cars / truck soon	$72.00	$880.00	$835bb	$28bb
Nio	EV cars (China)	$2.40	$59.00	$93bb	$2bb
Niu	EV scooters (China)	$6.00	$35.00	$2.6bb	$2bb
Fisker	EV cars	SPAC	$16.00	$4.5bb	$0
Nikola*	EV trucks	SPAC	$80 (ATH)	$30bb (ATH)	$0
Lordstown	EV cars	SPAC	$22.00	$3.6bb	$0
Arrival	EV trucks/vans	SPAC	$27.00	$17.7bb	$0
Canoo	EV vans	SPAC	$16.00	$4.8bb	$0
Hyliion	EV systems	SPAC	$17.00	$7bb	$0
EV Box	EV charging stations	SPAC	$24.00	$3.6bb	n/a
Chargepoint	EV charging stations	SPAC	$43.00	$11.9bb	$147mm
Velodyne Lidar	Lidar/Radar sensors	SPAC	$24.00	$4.2bb	$32mm
QuantumScape	Batteries	SPAC	$95.00	$45bb	$0

Below is a description of some of the craziness in the above names and a couple others.

- Tesla – The combined market cap of the top ten automakers by volume (they cumulatively produce almost 75% of the world's cars and roughly 125x as many cars as Tesla) is the same as Tesla. Enough said.
- Nikola at the peak had a market cap of $30bb until a short seller report describing fraud at the company hammered the stock by almost 80% and now the market cap is $6.5bb, which is still absurd. They seemingly have nothing other than cash and a desire to assemble other people's parts to make an electric heavy-duty truck. Good luck. This one will likely be gone in a few years. When it goes bankrupt, we can all say how was that worth $30bb at the peak, let alone $6.5bb today?
- Fisker has tried and failed a couple times to be a super high-end performance car maker, none of which worked, so the last try is to hype building an EV. Ahh. Makes total sense. Now it is worth $4.5bb.
- Lordstown/Arrival/Canoo, etc. Who? Good luck. They will likely be gone in a few years as well.
- EV Box – The French utility bought the company in 2017 to appear more environmentally positive. Now they are selling it to a U.S. listed SPAC with a market cap of $3.6bb. Granted they have grown their charging ports from 40k to 190k since Engie acquired it. Now keep in mind, gas stations today are not great businesses and are well known for making no money selling gas and only making money from the convenience store attached to it. Many of these charging ports have no convenience store and are actually attached to a different business (think Tesla charging

stations in a grocery store parking lot). So, if the cost to "fill" up an EV with power is roughly 20% of filling up a gas car, each car needing to be filled up produces 1/5th the revenue of a gas station with no ancillary revenue. How can this business ever make material money? No worries, they are growing revenue, so it is all fine.

- Chargepoint – see above.
- Velodyne – IF fully autonomous cars become a reality (they are already way behind where the pundits thought they would be 5 years ago), then lidar, which is a more accurate radar, is seemingly necessary, but how big a market might that be, let alone the multitude of competitors?
- QuantumScape - $45bb at the peak for an unproven solid-state battery technology. IF they get it right the market will be big, but are we to think that the current massive scale players in batteries (LG Chemical, Samsung SDI, CATL in China, Panasonic, etc) won't have a competitive offering? How about Toyota, which is by all accounts the leader in developing the same solid-state battery technology, and yet Toyota is up 2% in 2020? A few days after the peak a short seller said QuantumScape's "technology is good but their batteries are small and unproven." Umm. Yes, we know that already. But just that criticism was enough to send the stock down 50%.
- Aurora Mobile is a small company you have never heard of based in China that "designs and develops software including push notifications, instant messaging, analytics, etc." It had $130mm in rev in 2019. On Dec 22nd they announced a partnership agreement with an unnamed "new energy" vehicle manufacturer to help "enhance its operational and service efficiency and deliver an enhanced intelligent driving experience for customers." Again, what? But the point is they are now in the EV space, so bingo, the stock was up 65% on the day to a market cap over $600mm
- Details are nebulous, but a week or so ago Apple spoke vaguely about entering the EV business and the stock was up 4.5% on the day. That may not sound like much, but it is $100bb in market cap. To put that in perspective that amount of market cap change is the same as the total market cap of the 65th biggest company in the S&P500 (3M).
- A few days ago LG Electronics (yes, the manufacturer of TVs, Washing Machines, etc.) announced they would spin out their auto components business into a joint venture with Magna. LG Electronics had a market cap of $13.5bb pre-announcement but then jumped 50% over the next week. To put this in perspective, that means they added over $7bb in market value on a division that comprised 0.22% of their revenue, which is roughly $100mm.
- Lastly, last week Hyundai Motor Group was rumored to be working with Apple on their EV car. That alone drove Hyundai's stock up 30% over the following week. That is a market cap increase of $12bb.

I will end with a comment on an interview I recently saw between Kiril Sokoloff who publishes the 13D (What I Learned This Week) publication and Sam Zell. I view Sam Zell as one of the greatest investors ever because he has a track record of not just buying low, but selling high. You also don't get the nickname the *Grave Dancer* without being a deep value/contrarian investor, which I can relate to. Here are a few of his memorable lines.

"Over my life I have looked at certain things and I tried to relate to what I call "conventional wisdom" and conventional wisdom, in my judgement, was wrong. Except I had a hard time finding anybody else who agreed with me. Somewhere along the line I figured out that if nobody in the world agrees with me if we're right we will get pretty serious returns… The message is to think for yourself. Don't let conventional wisdom overwhelm you so you can't think for yourself."

"I am always thinking, how do I protect myself from the insanity of others?"

Tying the interview back to the original premise of this commentary he was asked how developed economies come out from under all the debt/deficits we see. Zell, "It's hard to come up with an answer that says we can protect ourselves. The only answer is the debasement of the currency...Unlimited debt and irresponsible activity doesn't lead to positive outcomes. Weimar republic is still the example of crazed inflation. I am much more worried about inflation than deflation. Ultimately, the only way these sovereigns are going to solve the problem is inflating their way out of it. The outcome is predictable."

Predicable indeed if you think for yourself. The only question is when.

That is all scary stuff from a macro point of view, but Kopernik believes there will always be pockets of exciting investment opportunities in great under-valued businesses somewhere in the world, which we continue to find. They are often in out of the way places and frequently in smaller companies that others have not heard of, but offer tremendous upside, which should be all that matters.

Lastly, a quote from Jim Rogers, who I have always respected for his long-term view and his independent, logical thought process. "In all my years in investing, there's one rule I've prized beyond every other: Always bet against central banks and with the real world. When a central bank is defending something, the smart investor always goes the other way. It's a golden rule of investing."

Thanks again for your support.

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