HORIZON KINETICS

1st Quarter Commentary

April 2020

This review is taking place at a time of extremes. Record-breaking extremes in the economy, in Central Bank policy and the national debt, and in securities price volatility. And, certainly, in the performance swings our portfolios. I'm afraid this is going to be a bit long, and I apologize for that, but there's a lot of ground to cover. If we don't cover that ground, then we can't know why prices are changing the way they are, or what those prices mean. Without being oriented, we don't know which way to turn except to see that the price of something is up or down and react to that or to the last thing someone said about it. You can end up knowing the price of everything but the value of nothing. I also know that some of you listened to a couple of prior audio presentations Murray Stahl or Peter Doyle or I made, so some of this will be repetitive, but if I don't at least identify and describe that subject matter, then important context is lost for someone who didn't listen. There will be heavy and hopefully sufficient abridging, though.

Before starting, I will mention the obvious – so that you're not distracted by its absence – that our accounts and various equity funds were down a lot more than the S&P 500 through the March 31st statement date. Interestingly, once the CARES Act was passed on March 27th – which has long lasting implications for monetary debasement and future inflation – our holdings overall appreciated by a lot more than the market. I'll suggest that's because our portfolios are rich in certain types of asset-light, low-debt, inflation beneficiary businesses, and that some investors figured out pretty quickly what the future will look like. There's already budding interest in gold, and so forth, but it's still far from rising to the level of public media discourse.

I'll briefly mention the holding that was responsible for the lion's share of the performance swings, along with a review of the basic posture of our equity strategies. Then I'll cover the economic backdrop for why we hold these types of securities. After that, I'll review our posture on new purchases: what we've done so far, what we've not done and why, and where we want to go. Our equity strategies and mutual funds are already positioned – I'd suggest uniquely so – for the investment world of the coming decade, or decades, rather. I'd be surprised if one can find this combination of exposures anywhere else; although I'd be very interested to learn about it if someone else is doing something similar.

We believe that what's coming down the road is going to be a reversal of the conditions that existed for the prior three decades; all the accepted wisdom and the statistics and correlations will be out the window. Understanding that is probably the single most important preparation any investor can undertake right now. And I hope it will make clear why we own what we own.

The performance swing factor. This was primarily Texas Pacific Land Trust. TPL was down 51% at March 31st, and it's typically our largest holding. At the price last week that I used while preparing this, $515/share, it is up 35% from the March 31st price. Prices change by the hour, so I haven't been slavish about trying to update them all. That makes it now down 34% for the year. I covered TPL at some length in an audio presentation a few weeks ago, but I'll add a bit more later on. The most I can say, with the fewest words, is that we believe TPL is one of the most strategically important investments we own, both for ourselves and our clients.

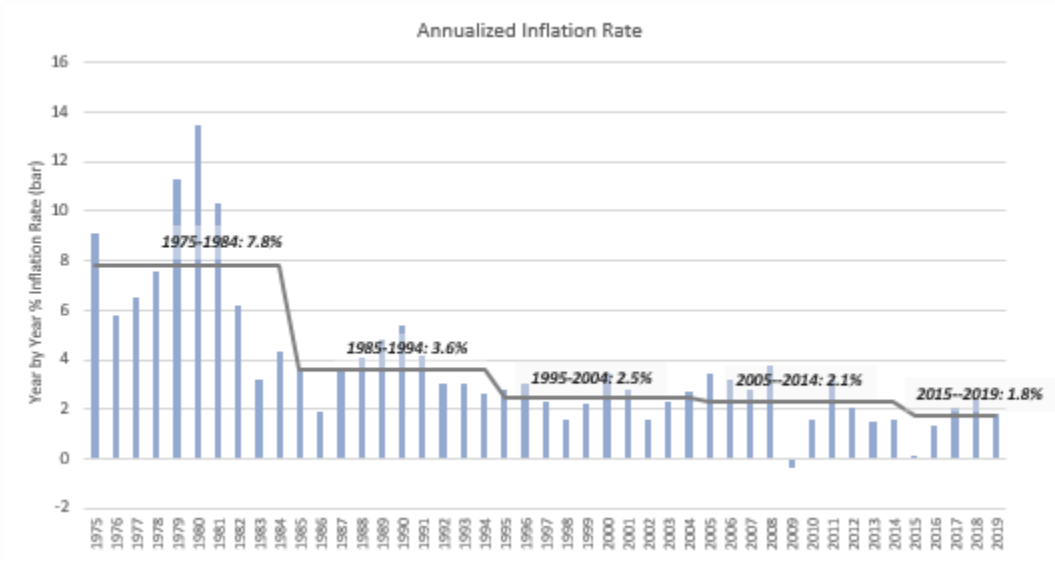
Regarding the equity portfolios overall, I can give a generalized view of their sector weightings, though individual accounts can vary greatly, depending on how long they've been invested and other account-specific considerations. In January, pre-dating the market impact of the new coronavirus outbreak, the average Core Value or Strategic Value account would have had roughly one-third invested in asset-light, sustainable-ROE, inflation-beneficiary types of businesses or asset classes. These include precious metals royalty companies, futures and commodities exchanges, marine shipping brokers. All of truly high business quality, much superior to the average company. Add in a holding that is also an asset-light business that is relatively protected from the typical inflationary pressures – defense electronics – and the complement is closer to 40%. Since then, we've made some modest additions of the same character, which I'll cover later.

There is a strategic reason that we made those sectoral allocations and business model selections. It was our expectation of an upending of the established ways of investing that have worked for the past two to three decades. But they became increasingly distorted and bubble-like in the past 10 years and particularly the last several, and it couldn't be sustained. So we began to prepare for the eventual transition. Here are the elements we were aware of through the end of this year, before the COVID-19 pandemic. Those are worth understanding, because not only hasn't the impact of the pandemic altered the course of those trends and risks, it is accelerating and magnifying them.

Conditions Before the Pandemic: Already Poised for Monetary Debasement and Inflation

Following the Credit Crisis of 2008/2009, the Federal Reserve never let go of the easy money policy it properly engaged in to support the financial system. It continued to artificially suppress interest rates. By last year, a 10-Year U.S. Treasury yielded less than the rate of inflation, guaranteeing a negative real return if held to maturity.

As to **inflation**, it has been heading down for over 3 decades. For the 10 years ended 1994, the Consumer Price Index rose at a 3.6% annual rate. For the next 10 years ended 2004, the CPI had contracted to a 2.5% rate, then down to 2.1% for the 10 years ended 2014 and, finally to 1.8% for the five years ended 2019. There were reasons.



Source: U.S. Department of Labor Bureau of Labor Statistic

- First, was the **exporting of Inflation**. In the mid-1990s, U.S. companies began to make use of a global cost arbitrage by shifting production and employment to lower-wage nations around the world, initially and especially to China. Ergo, Apple Computer's renowned global supply chain management network. While this devastated large portions of the U.S. manufacturing base, it reduced domestic price pressure, counteracting the Fed's inflationary monetary policy.

- A second factor was that the massive Fed spending during the Credit Crisis was directed to the financial institutions that were the center of the crisis, to help them deleverage their balance sheets. The money stayed largely within the finance sector and was not transmitted to the broader consumer economy.

- A third factor was the **Consumer Price Index** itself. Those figures are highly suspect and we believe that they understated the rate of inflation. The methodology has been revised periodically, and each such change seemed to lower the reported rate. The transparent measure of inflation is the money supply, and that had been rising not at the 2% CPI rate, but at 6%.

Other inflationary risks besides money creation were building, too. There was the half-decade-plus of reduced exploration expenditures by the world's energy and mining companies. Oil had been $100/barrel for several years through 2014, and gold and silver prices had been falling since about 2012. What such companies do when they don't anticipate receiving an adequate return on new capital investments at prevailing prices, is they reduce or eliminate new development. They continue to produce from existing wells and mines, but they are actually depleting their reserves. As a consequence, eventual supply shortages, with the attendant price pressures, could be anticipated. That's the way it works in the commodities markets.

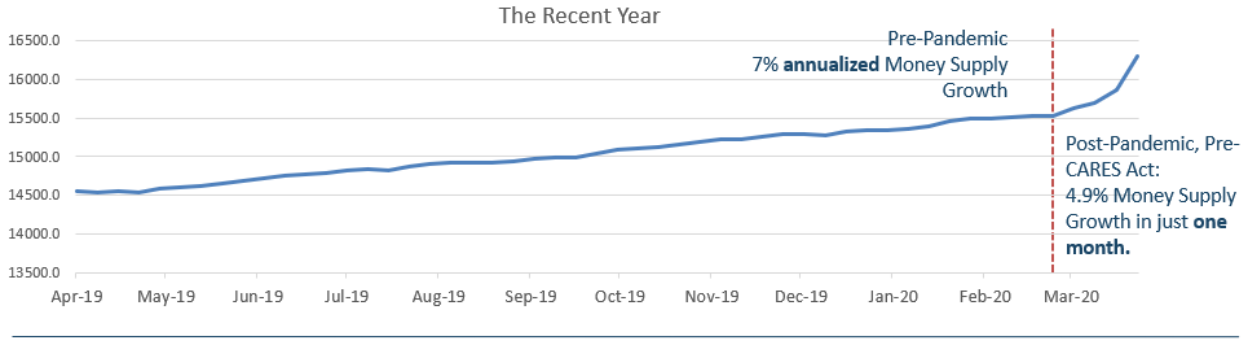
Then there was the matter of the **federal debt leverage.** We didn't come into 2020, after a one-decade economic expansion, in a healthy position**.** When the Fed failed to choose its moment to reduce the

growth of the money supply after the Credit Crisis --presumably to avoid a recession – the point of no return passed, and it did not use the recovery period to repair its balance sheet. By year-end 2019, the U.S. federal debt to GDP ratio had risen to the 4th highest since 1929. That was not considered problematic in public conversation, because the interest rate on the Federal debt was only about 2%

The problem is that the historically normal interest rate that existed just before the Credit Crisis was 5%. This illustrates the Fed's policy dilemma: all the debt in the U.S. last year was about $76 trillion – that's federal, auto loans, mortgages, the whole lot. Just a 1%-point increase across all that debt would amount to $760 billion of additional interest expense, effectively a nationwide tax. That's equivalent to a 3.6% reduction in GDP, a deeper recession than the Credit Crisis recession (3.25%).

The point of these statistics is this: the Fed really could not afford to let interest rates rise, no matter what it might otherwise say. So, part of the money creation statistics reflected the Fed buying bonds to suppress their prices, and to do so, it needed to create more money – it was monetizing the debt.

Thus, investors were unwittingly facing a twinned long-term disaster: 1) an insufficient yield on fixed income securities, more or less 1 or 2 percent, and 2) a real money debasement rate of 6%, and which was likely to accelerate over time. That is inflationary, because a saved dollar, or $100,000, becomes an ever-smaller piece of an expanding pie – purchasing power is eroded.



Source: St. Louis Federal Reserve Bank

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Consequently, we emphasized inflation beneficiaries, with a focus on the highest quality or highest contingent return assets we could find. And not just for the year or two ahead, but for the decade or two ahead.

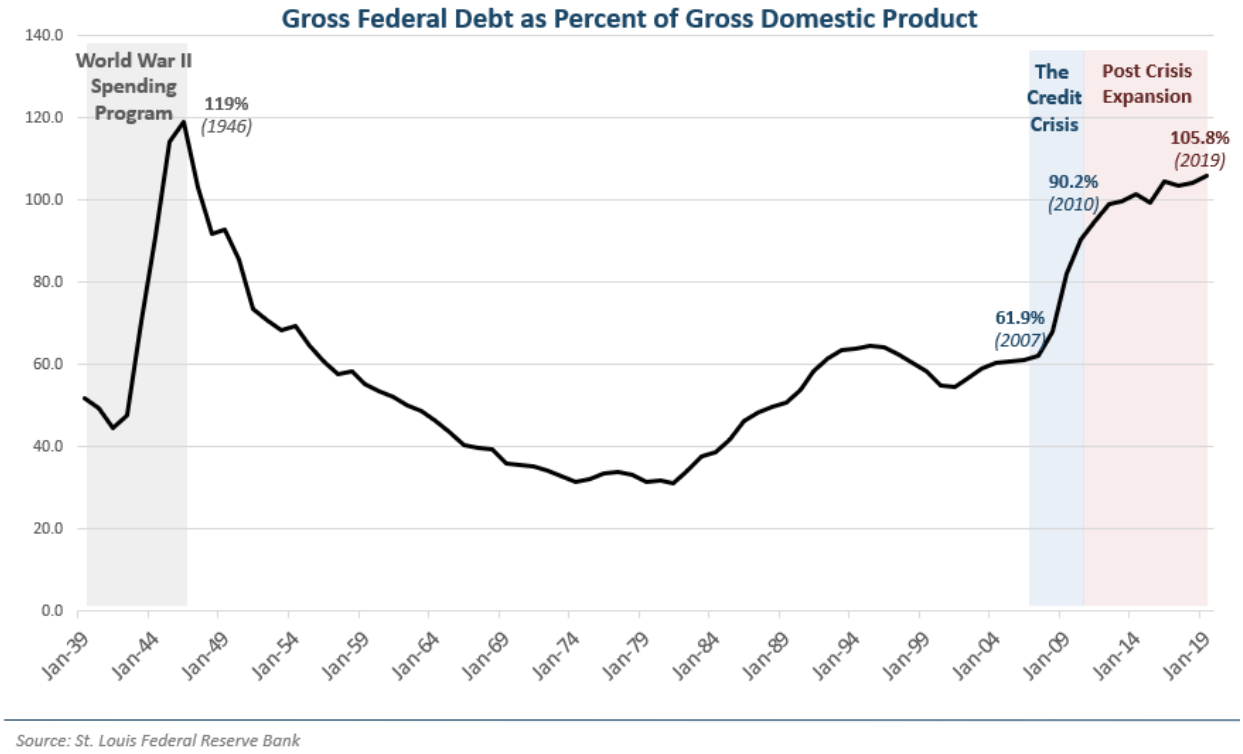
That Was Then; What's Happened Since

So that was then. All of those debt and money growth figures I just gave you are now anachronisms. The government is now spending heretofore unimagined quantities of money, and enlarging its balance sheet on an unimagined scale, in order to support the economy during this mandated shut-down of businesses. This is in no way a criticism. It's just the reality.

The scale of that spending is best appreciated with respect to some base figures. At year-end 2019, the Federal Debt was $23.2 trillion, GDP was $21.7 trillion for the year, and the budget deficit, rounded up, was $1.0 trillion.

On March 23rd, the Federal Reserve, which had previously announced that it would buy at least $700 billion in Treasury and mortgage-backed securities, made a pretty extraordinary statement. It said that it would spend **any** amount of money necessary to support the flow of credit to employers, businesses and consumers.

On March 27th, the $2 trillion stimulus bill was approved – the CARES Act. What does $2 trillion mean, in some relatable framework? Far and away the greatest debt/GDP ratio we ever had was in 1946, following the massive 5-year World War II spending. The ratio then was 119%. That figure, if you look at a long-term chart, stands like a mountain above all other periods. If $2 trillion were to be the limit of the current excess spending, and if the economy this year were to shrink by just 2% -- which would be a mild recession – then the U.S. debt/GDP ratio would be the same record 119%.



Source: St. Louis Federal Reserve Bank

But that's not the half of it; literally. Because within the CARES Act, there is $454 billion allocated for the Treasury to make loans and other investments in various kinds of financial assets. This will be done through a variety of Special Purpose Vehicles – SPVs – that the Treasury seeds with some equity capital, and which the Federal reserve tops up with up to 10 times that amount. With up to 10:1 leverage, that $454 billion could easily be another $3 trillion or more, even without any other spending, of which there will be plenty, and some more was approved just this week.

And with those SPV trillions, the Fed will be buying all sorts of securities, including corporate bonds and bond ETFs in the open market. Americans thought it was weird when Japan did this. Japan, owns pretty much all of its government bond market, and effectively nationalized it. You couldn't know what the real value of a Japanese bond would be, since the government made the price. Now the U.S. is doing it.

It also means that, through the SPV program, the Treasury is, in a fashion, directing the Federal Reserve to create more money. That's a very big deal. The Treasury Secretary reports to the President. Every president wants stock and bond prices to be higher. On April 7th, perhaps for other reasons, President Trump removed the Pentagon Inspector General, newly appointed by Congress to oversee the management of the stimulus package. It cannot be ignored that one of the most highly valued features of our financial system, which enabled the U.S. Dollar to be the reserve currency of the world, is that the Federal Reserve is presumed to operate independently, free from political pressure. Now there's a link that's never existed before, not one that you could circle on a document, between the White House and the Federal Reserve.

So the U.S. budget deficit will be in the many trillions of dollars. The debt/GDP ratio will balloon to Italy and Greece levels, which means beyond the ability of the economy to grow rapidly enough to allow government to pay down its debt. The only way out is to debase the currency, allowing debt to be repaid over a long period of time with ever cheaper money. It will be a wealth transfer from savers who own bonds to the debtors who borrowed the money.

It amazes us that no one is talking about this on financial news networks. The discussion is still about which quarter will be the recovery quarter, whether GDP will be down 2% or 5% this year, all the regular fare.

In the financial markets, the most direct, or at least easily measurable impact, will be on fixed income. For the near term, bonds should be fine, because of the government support. Also, we're not quite yet at the end of the debt bubble, because people still see safety in bonds and still buy them even at near zero or negative interest rates.

But beyond the near term, as an asset class, bonds will be more dangerous than equities, because the return prospects for bonds are now defined by a binary set of possibilities, neither of which works.

- Either the government is able to maintain interest rates where they are or even lower, in which case you lose money relatively slowly, via monetary debasement.
- Or rates rise, in which case you lose money fast. What could make rates rise? In 3 months or so, when governments around the world publish the size of their budget deficits, there will be credit rating downgrades of sovereign debt. Debt rating agencies like Moody's follow strict criteria, such as debt/GDP ratios, so the downgrades are coming.
    - A 10-year Treasury, now has a 0.57% yield. If the yield rises to just 3%, the price drops over 20%. A 30-year Treasury, at a 3% yield, loses over 35%.

So there's no scenario in which investors escape losing money in bonds. The asset allocation models haven't been revised yet, because they are all backward looking, statistical series-based models.

Eventually, investors will figure it out. Since the ultimate danger is in the bond market, equities are where the defensive shift needs to be. Their character will have to be different, though, and they'll have to be managed differently.

To compare the two, a bond has a fixed return, which expires at maturity, and the value of the coupon is eroded with every year of inflation. A stock is a perpetuity and the underlying business generates cash flow that can be reinvested to produce more capital, more earnings and higher value; it compounds, whereas a bond can't. Also, a business can reduce expenses and wait for the crisis to abate.

Which brings us to TPL. The recent questions or doubts about TPL derive largely from the oil output war between Russia and Saudi Arabia, and the fact that TPL fell by even more than ExxonMobil and Chevron. Let's cover this in two parts, beginning with the oil markets.

Without belaboring the details of the oil market disarray, the essential thing to understand is that it is temporary. There's no ambiguity about that. And one should recognize that every time events change, the most-often repeated news reports are often false – no one is trying to deceive, they just get things wrong because they rely on second-hand accounts and don't do original-source research. At first it was the repetition that Saudi Arabia was flooding the market with oil. They had to have been false, because global oil consumption had just dropped by something on the order of 30%. How, then, could Saudi Arabia sell more oil than it had been, if the world was consuming **less** than it had been?

What's happened was that the oil was being put into storage facilities, whether on land or in offshore tankers. But there's finite capacity. Depending on the nation, storage capacity is generally designed to accommodate about 90 days' supply. But it varies. There is an estimate, for instance for Chinese above-ground storage, but satellites can't detect the size of underground storage facilities. In any case, the world's storage facilities didn't start empty – their purpose is not to be empty. The key Cushing, Oklahoma storage hub in the U.S. was roughly half full. So, global storage capacity will fill up well before the three-month mark, and this process started at the beginning of April. Of course, where there's a will, there's a way, so producers and buyers began seeking out floating storage as well. But the limitations are showing up in surging lease rates for oil tankers. That helps Clarkson PLC, by the way. And once the capacity is used up, production **must** drop – there will be no place for the output when it comes out of the well head.

And there are people who know this quite well, people in the oil markets. Last week, on April 16th, the May contract for WTI oil had plunged to $19.66/barrel, and that was found to be very alarming, because it's natural for people to think that that will represent the new normal price – that's the price that was referred to over and over again in the news. On the other hand, the 6-month October contract price, on the very same day, was $33/barrel. That price better reflected what people who actually buy and sell oil think the prices will be.

Well, that was last week. This week, on Monday, something happened that I had already prepared to talk about in this presentation. Here's what I was going to say: "It is certainly possible that oil will go lower first, maybe a lot lower, as producers become desperate to place production volumes as the final storage capacity dries up. But those prices can't stay there." On Monday, as it happens, oil for May delivery went to a ***negative*** $15/barrel. Actually, the mid-day low was negative $40. Naturally, there was alarm about what this would mean for Chevron or, for anyone who even knows the name, TPL, but there shouldn't be.

Because there are two kinds of oil futures traders – meaning two different pricing phenomena can occur simultaneously. The question is, which is correct? As an aside, please bear in mind that we're not oil traders, we're not even oil analysts. While I wouldn't be happy to get something wrong here, I don't know that I'd be terribly surprised if a true oil professional were to correct me on a point or two or three. Anyway, with that proviso, the trading volume of what might be termed financial or paper traders of oil futures dwarfs the volume of businesses that actually need to purchase physical oil, like a refiner or utility. It could be on the order of 10x greater, a 100x greater. The paper traders never expect to take delivery of physical oil; they expect to close – which is to say, sell – those contracts in the day or so before they expire.

But whoever ordered oil two months ago for delivery in May, couldn't have anticipated a worldwide travel shutdown and 30% decline in demand and the simultaneous flooding of storage facilities. That holder of the May contract was about to have real, physical oil, with a minimum contract size of 1,000 barrels, delivered to them. If it couldn't take place at the prescribed delivery facilities like Cushing storage in Oklahoma, I'll presume it could be, in extremis, in a truck or a train car. It doesn't exactly say so in Chapter 200 of the Nymex Rulebook – it's the very last two paragraphs of that chapter, but those paragraphs basically just indemnify the exchange for whatever might happen. The point is, the holders of those May contracts couldn't find storage to put that oil. Where would they put it? So they have to pay someone, give them money, to take the oil away.

By the way, the same phenomenon of negative pricing occurs in the electric power market when there's suddenly insufficient demand, because the utility can't shut down. It has to offload the excess supply. In our cryptocurrency mining operations, I believe we recently paid less than a penny for electric power – free, essentially – for a short period of time. But that's a passing problem. And as of this morning, at least, Tuesday, the 6-month oil contract is $29.

I should also mention that the same dynamic exists in the gold market, with the notional value of gold derivatives traded every day vastly overwhelming the supply of physical gold. That could be a problem one day, but with a big difference vis-à-vis the oil situation. Unlike the oil market, there is a shortage of physical gold right now. We're aware of some investors who've been trying to buy physical gold, not even large quantities, but unable to get hold of any. Moreover, most gold mines around the world have been shut down during the COVID-19 pandemic: think of the close quarters working environment of underground mines. Also, copper and silver mines, lithium mines. Without lithium for batteries, it's tough for Apple and Samsung to make cell phones.

That is the way it is in the commodity markets. Supply is dropping a lot, primarily at the older, more expensive fields. Then it will take some number of months to work through the stored oil. There will be a temporary, interim, consonance of supply and demand, then prices will be higher. But then, some time after that, travel restrictions will begin to be lifted, and consumption will begin to rise toward its normal level. But, again, a lot of supply will have been shut down. Some is easy to restart, some won't restart at all, some will take time to restart. We could easily have an upward oil price shock as startling as the one on the way down. Recall that for several years through 2014, oil was generally between $100 and $120/barrel, yet the world operated quite normally.

The central point is that normalized oil prices are well above $50 or $55/barrel, because at that level, as discussed earlier, the world's oil companies were electing to not fully replace their reserves.

There is another certainty, which is that in the event of much higher oil prices, even if it doesn't rise to the level of an oil price shock, there is no benefit to be had within the S&P 500, since the energy weighting in the index is now only 2.76%, the lowest on record. That sector was 14% of the S&P 500 as recently as 2009, and it was 28% at the end of 1980.

Texas Pacific Land Trust and Other Royalty-Model Companies

Energy leads us, of course, back to **TPL.** Some clients look at the stock price, which fell much more than representative energy companies like Exxon, and have told us that they concluded that despite our talk about the long-term value of TPL and its special business model, yadda, yadda, it moves it lock-step with oil prices, so what's up with that?

What's up with that is that the observation is a tiny bit right but mostly wrong. Yes, TPL stock went down to a degree that it really shouldn't have in a rational world. So did the iShares Utility ETF go down lock-step with the S&P 500, down 30%-plus, even though it should have gone up, because its primary input costs – which are oil, natural gas, and the cost of debt – dropped dramatically. That was a financial windfall for the utilities. All that tells you is that prices – and the forces that make the prices – are in disarray. So, that's correct, TPL is not special in that short-term way.

Source: Factset

It is special, though, in a long-term way, as the evidence demonstrates. These prices are from last week.

- At year-end 2008, WTI oil was $44.6/bl and 11 years later, it's now $20, down 55%.
- ExxonMobil was $79.83 and is now $43.22, down 46%, though it paid out an awful lot of dividends.
- TPL shares started at $23.10/share and are now $513. That's 22x higher.

Yes, TPL is down 35% from the beginning of the year, but it certainly does not move in lock step in the way that people observe in the short term; the opposite, rather.

Why is that?

Because it's a royalty business model. It has no debt, no capital equipment, doesn't have to buy property, and doesn't require very many employees. TPL's after-tax free cash flow margin last year was about 66%. That beats Microsoft's 56% margin, which is the highest in the S&P 500, and it certainly beats the roughly 12.5% free cash flow margins of Google and Facebook.

Therefore, TPL always generates profits. Revenue can be lower, but the profit margin remains high, and it continues to accumulate profits. And that means that its value is always increasing. And those profits can be deployed.

They can be used to repurchase shares. And to do so now would be advantageous. Or the earnings could be used to buy additional acreage on favorable terms from drillers that are in a weak bargaining position. TPL hasn't done that before, because it is constrained by its governing Trust document from doing so, but the precious metals royalty companies do it all the time. That's how they grow. And by the end of this year, TPL will no longer be a trust; it will be a conventional C-Corp.

For us and for our accounts, TPL is a strategic investment for the new world – a world we were anticipating, but which has suddenly accelerated in the same direction. In an inflationary world, the price pressures can come from different sources; it's uneven. Oil isn't necessarily the vector, but it **is** the case that global reserves have been dropping for years, that demand increases with population growth, and that an oil price that will provide a return on invested capital sufficient to induce producers to replace their reserves is somewhere higher than $50 or $55/barrel.

Royalty Contract Calculation Example

Current Gold Price: $1,200

Discount Rate: 15%

Period	Present Value	% of Curr. Price	Mkt Val
1	$1,043	87%	$1,200
2	$907	76%	$1,200
3	$789	66%	$1,200
4	$686	57%	$1,200
5	$597	50%	$1,200
6	$519	43%	$1,200
7	$451	38%	$1,200
8	$392	33%	$1,200
9	$341	28%	$1,200
10	$297	25%	$1,200
11	$258	21%	$1,200
12	$224	19%	$1,200
13	$195	16%	$1,200
14	$170	14%	$1,200
15	$147	12%	$1,200
16	$128	11%	$1,200
17	$112	9%	$1,200
18	$97	8%	$1,200
19	$84	7%	$1,200
20	$73	6%	$1,200
Total:	$7,511		$24,000

Cumulative Present Value as % of cumulative market value ($7,511/$24,000):	**31%**
Cumulative Present Value discount %, applied to current gold price:	**$375**

Precious Metals Royalty Companies are another strategic holding. Gold mining stocks are broadly believed to do well during inflationary periods. In practice, that's true in the early stages. When the gold

price rises, all else equal, a miner's profits increase immediately, with no additional cost. Plus, miners will increase production from existing mines, which is another boost to earnings.

But beyond that initial period, all the mining companies will want to expand existing mines or acquire new properties. That requires new acreage, additional earthmoving equipment, replacement parts and labor. The competition for these resources bids up all the input costs. The costs rise a lot, and the higher cost structure often coincides with the surge in supply the miners created. The gold price sinks just as costs peak. It's a classic boom/bust cycle. There's also the factor of valuation. During inflationary periods, P/E ratios often contract sharply, which strongly impacts gold companies, being asset heavy and cyclical, so that depresses gold miner valuations during a period of protracted higher gold prices.

However, the precious metals royalty companies are a different business model entirely. Their assets are contracts. In exchange for an upfront payment to a miner, which finances mine development without the need to take on debt or sell undervalued equity, the royalty company gets some portion of a given mine's future production, typically for decades. This can be in the form of a percentage of revenues or the right to buy a portion of the output at a discounted price. That discount can easily be on the order of 70% below the current gold or silver price. If that seems remarkable, it is simply the present value of, say, a 10% discount rate applied each future year's output over 30 years, or a 15% rate over 20 years.

Like TPL, the gold or silver royalty company is always profitable even if the miner isn't. Here are some fun facts. Franco-Nevada has a $24 billion market cap, and $844 million of revenues. I'll ask the rhetorical question, 'How many employees do you think this company has?' If it helps, the country's largest gold miner, Newmont, has a $48 billion market cap and about 16,000 employees. Franco Nevada has 38 full-time employees and 4 part-time contractors. Its cash exceeds its debt. Its free cash flow margin is over 70%.

	Franco Nevada (Royalty Model)	Newmont (Operator Model)
Market Cap	$24 billion	$48 billion
Revenues (FY 2019)	$844 million	$9.7 billion
Employees	38 full-time, plus 4 contractors	16,600, plus 15,000 contractors
Cash	$132 million	$2.2 billion
Debt	$80 million	$6.1 billion
Free Cash Flow Margin	>70%	11%

One can see the power of a business model like this. Even when the gold price is not rising, even when gold miners are not particularly profitable, a royalty company is earning its discount, receiving its cash flow. There's a countercyclicality to this too, because that cash flow has greater buying power when redeployed into additional royalty contracts, precisely during periods when the miners are suffering under a low-gold-price environment. This is the way that the royalty companies build their portfolios in advance of the next gold cycle.

Have We Bought Anything, Yet? First, Where NOT to Be

I spent the extra time on the royalty model companies because you should understand why they are so prominent in our portfolios. Now we get to the topic everyone really wants to hear about: Have you bought anything yet? If not, why not?

I'll get to that. But, as we can see, the whole world – economically, fiscally, politically – is in great flux right now – there have been only a couple of times in the last century when national life and the world order have been in such disequilibrium. Unless you think the observation is invalid, everyone must ask themselves, am I **really** so clear as to what the current stock market valuation is relative just to regular historical norms, what that valuation will be a year from now, or five? Because we think profound changes are coming.

I can't say that we have that clarity in full specificity, but we're pretty clear about the broad brushstrokes. That must be the first step from which to proceed, in our opinion, looking before leaping. And that's what we're doing right now in this call, this discussion. We have a pretty good idea about where to focus our attention, but that's still a step or two away from knowing which specific industry sub-sector or individual stocks to buy, at what valuation, in what position size, or when. Important information is still unfolding.

Our goal is to position portfolios for the next 10 or 20 years, not the next one or two.

That, right there, is a critical difference in how to approach the coming market environment. In the beginning of 1999, we were prepositioned to avoid the measurable risk that the internet and technology stocks posed. We were very early, but as confident as we might have been about the ultimate outcome, we couldn't prove it to anybody. Believe, me, we tried. It took about 2 or three years for that to happen. After that, because of the flight to quality, after our core stocks ultimately became insupportably expensive, we were able to collar them with options so as to avoid the inevitable valuation contraction.

None of that preparation required a great rush to transact. There was time to gather information, evaluate and try to determine how to implement.

Today, a challenge is that governments have so distorted the capital markets that it's extraordinarily difficult to construct a portfolio. Although our portfolios were already positioned the right way coming into 2020, we want to improve upon that, take the opportunity to upgrade the quality of the business models we hold to make use of the shift in global economics. But we need more information and clarity.

Let's start broad and work our way in.

First, we don't doubt that the stock market, at least for the time being, might stabilize, might even go up, maybe a lot. The government is focused on supporting securities prices. Larry Kudlow, Director of the National Economic Council, which advises the President on domestic economic policy, has publicly proposed that the government take an equity position in U.S. manufacturers to which it might provide assistance. He recently said that the 2008 bailout of General Motors had turned out to be a good deal for the federal government. This is the same person who, in 2009, described the government's rescue of GM as "an attack on free-market capitalism." This is not to criticize Mr. Kudlow; it is to highlight the government's frame of mind.

So, the stock market might remain elevated, people will be heartened and might feel that the danger is over. But, as my colleague Peter Doyle reminded us recently, through the words of Winston Churchill, that you don't want to fall victim to this thinking: *The danger has not arrived, so the danger has passed*.

And what, exactly, is the stock market today? Is that where you want to be? Because it's not what it used to be. I'm not talking stocks in general, I'm talking about the benchmark, the S&P 500 and its equivalents. The recent market decline did not diminish the index concentration or valuation problem, it actually made it more extreme. I won't belabor it – we've gone through it many times before and we have enough to cover – I'm just going to give you a few pertinent touchstones.

In the past month or so, the entire S&P 500 dropped by 5% or 10% in one day, but then in its infinite efficient-market-discounting-mechanism-wisdom determined the next day that the proper valuation is back up by 5% or 10%. At least until the following day. You have to ask, what kind of benchmark is that? That is part of the fallout of indexation having gone to extremes, to becoming, in 2019, over 50% of total invested assets in the U.S. Passive investing no longer had a sufficient pool of actively managed assets into which to sell, if people wished to sell. It just hadn't been tested before. And it's not finished being tested, because people are still defaulting to it.

Indexation has gotten so large that it has *become* the market, *become* the marginal trade. And being price-indifferent, it has been establishing its own ever-higher clearing prices in an ever-narrower list of the largest companies. This is not my opinion. Here are the figures:

- As of last Friday, April 17th, the big 5 – Facebook, Amazon, Apple, Microsoft and Google – were 20.3% of the value of the S&P 500. Think about it, 5 companies, 1% of the names, 20% of the value. But the concentration risk is greater than that. There are the various companies in their economic ecosystem, interdependent with them in various ways: Netflix, Intel, Cisco, Adobe, Nvidia, Salesforce.com and Paypal. Add these 7 names, and 25.1% of the S&P 500 is in technology.
- To flesh this out, just three companies, Microsoft and Apple and Amazon, 0.6% of the names, are 16.8% of the S&P 500. The S&P 500 has never had this level of concentration.
- To show you what the rising stock market has **really** been about, in October 2016 – I just happen to have saved the data from that date – the big five were 11.7% of the S&P 500; again, today they're 20.3%. In rough terms, in only 3 ½ years they almost doubled their share of the index, at the expense of the other 99% of the companies. Just Apple, Amazon and Microsoft more than doubled their weight, from 7.5% to 16.8%.
- And, during this market crisis of the past couple of months, the concentration risk accelerated. Just two more figures: I said that the Big 5 were 20.3% of the S&P 500 last Friday? On December 9th – again, just a particular day's data I happened to have saved – it was only 16.5%. Their market share rose by almost 25% just between the pre-COVID-19 awareness and last week.

In the past decade, indexation has not been providing safety via diversification – which is its reason for being – just ever-increasing concentration and valuation risk.

Top 5 Technology Giants	April 16, 2020	December 9, 2019	October 20, 2016
Microsoft Corporation	5.8%	4.4%	2.4%
Apple Inc.	5.1	4.3	3.4
Amazon.com Inc.	4.3	2.8	1.7
Facebook Inc.	1.8	1.9	1.6
Alphabet Inc.	3.2	3.1	2.6
Total	**20.3**	**16.5**	**11.7**

Top 3 Technology Giants	April 16, 2020	December 9, 2019	October 20, 2016
Microsoft Corporation	5.8%	4.4%	2.4%
Apple Inc.	5.1	4.3	2.4
Amazon.com Inc.	4.3	2.8	1.7
Total	**15.2**	**14.8**	**7.5**

Source: SPDR® S&P 500® ETF Trust, iShares Core S&P 500 ETF

Why is this part of the discussion even important? Because you need to know where not to be. Let's just look at the past and the future.

In the **past**, you can see how a portfolio manager who wanted to beat the S&P during the last 10 years would have had to not only own that small, 1% group of concentrated stocks, but would have had to **overweight** all of them. No way around it. That was the major problem for active managers: how could they possibly have kept pace with that? The answer is that they couldn't. That would have been a very big bet on an extremely high-P/E portfolio, like the Nifty Fifty of the 1960s. The results of that era have been widely studied and the lessons were pretty clear. No less clear than the very same lessons of the Internet Bubble in 1999. Now we have the Indexation Bubble.

As to the **future** of the SP 500, as the numbers showed, it is rapidly undiversifying. That leaves two general possibilities.

1) The index organizer can place a ceiling on company weightings or arbitrarily reduce the weights. But this is the same rock-and-a-hard-place problem that faced the Federal Reserve in the years after the Credit Crisis. Because reducing the company weightings would be disastrous for the index. What massive quantities of Microsoft stock would have to be sold? And of Apple, and all the rest.

Or, 2) The index continues to undiversify, in which case it is no longer really a benchmark for the stock market. Here's just how quickly this can become unworkable.

- The Fab 5, Facebook, Apple, Amazon, Microsoft and Google had combined trailing 12-month revenue of $915 billion. The consensus of analysts who follow them – and I'm just using the simple average, here – is for 17% more revenue next year and, believe it or not, 18% per year for the next five years. This is the problem with using percentages without reference to units or dollars. 17% revenue growth means $155 billion additional sales next year. That growth rate is **required** if they are to maintain their high valuations and prices.

- In dollar terms, $155 billion in new sales is equal to the entire annual sales revenue for the 5th and 8th largest S&P 500 companies, Johnson & Johnson and Procter & Gamble.
- Three years from now, the required sales will be $1.490 trillion, which is $420 billion more than the expected 2021 revenues. So in years 2 and 3, the Fab 5 will have to recreate the revenues of the 10th, 11th, 16th, 18th and 19th largest companies in the S&P 500, which are United Health Care, Visa, Master Card, Merck and Pepsico.

Top 5 Technology Giants

	Current	Y1E	Y2E	Y3E	Y4E	Y5E
Revenue	$915 bill	$1,071 bill	$1,263 bill	$1,491 bill	$1,759 bill	$2,076 bill
Consensus Est. Growth		17%	18%	18%	18%	18%
Annual Est. Revenue Increase		156 bill	193 bill	227 bill	268 bill	317 bill
Equal to Total Revenues of*		P&G, J&J		UNH, V, MA, MRK, PEP		

** Procter & Gamble, Johnson & Johnson, United Health Care, Visa, MasterCard, Merck, PepsiCo*

- Can they do it? Just remember that even if they do, but people perceive that they can't keep it up in year 4, the whole sentiment changes, and valuations collapse. Maybe they can keep it up. But each of the Fab 5 have observable and predictable growth limitations or profitability pressures that simply haven't manifested themselves yet in their financial statements.

On a more company- or sector-specific level, here are just three of the serious risks facing the top of the S&P, then I'll leave it alone. Remember, 20% is in just 5 names, and 25% is in a dozen. They each have their own challenges; I'm only using a couple of them as examples.

- The global economy is temporarily shrinking. Thereafter, the recovery might be slow. Facebook and Google are essentially advertising companies. They make money when people click on links to book flights and hotel rooms and vacation packages, make restaurant reservations. That's certainly not growth. And once the recovery does happen, these two companies, at their projected growth rates, will have something on the order of 90% market share of global digital advertising within 2 years. The global advertising industry only expands by about 3% or so per year. It is a mature, somewhat cyclical business. That is what Google and Facebook will inherit in the foreseeable, predictable future. Investors will eventually learn that the leading IT companies are becoming slow-growth cyclicals.
- Another issue is that a significant part of tech company employee compensation is paid in stock options. This mostly bypasses the income statement, because only a small portion of the expense of an options package, a highly discounted amount calculated according to the Black Scholes option pricing formula, appears as an expense. The bulk of it comes a few years later when the employee exercises the options. That transaction is recorded directly in the shareholders' equity account, bypassing the income statement. This understates operating expense and it overstates earnings.

  You can't see it, though, if you look at the Google income statement. Look at the Shareholders' Equity Statement, and you'll see a curiosity: the company repurchased $18.4 billion worth of shares last year,

yet the share count didn't change. How is that? Because it repurchased the shares that were issued to employees during the year. Compare that $18 billion of cash expended to Google's net income of $34.3 billion.

Facebook had net income last year of $18.5 billion. It also recorded – in shareholders' equity, not on the income statement -- $4.8 billion of share-based employee compensation, and spent $4.1 billion on share repurchases. Compare $4 billion to $18 billion. It's like the Fed monetizing the debt.

This tactic has been successful for a long time, and it will continue to work so long as the share prices continue to appreciate at a sufficient rate. But if the shares only appreciate modestly, say at a 5% rate, then the stock can't serve the compensation role for employees, the options won't pay off. In that case the company will either have to provide a lot more stock options, which would be even more dilutive than the numbers we just saw, or revert to paying more cash compensation. And that **would** be right there in the income statement.

Without continued above-normal appreciation, this self-reinforcing process stops.

- A 3rd risk is political. It's an old pattern, when the leading companies become so large that their business decisions start having national policy implications. Seemingly unassailable companies like Bell Telephone and Microsoft were damagingly sanctioned under anti-trust law. And we're seeing the largest IT/Social Media companies start to move into the government's cross-hairs, and perhaps specifically the Administration's. Some of these companies might present rich political targets during a trying political and social policy period.

  Anti-trust is a big hammer that requires a large, public political effort, but the government has different levers of power. Perhaps just a few accounting rule changes are required. Rules that force companies to change the way they account for options grants. This is where the political realm intersects with the economic realm.

Basically, these kinds of stresses among the information technology companies are going to re-form the character of the S&P 500. We really, really don't want to hang around at that party.

Have We Bought Anything Yet? The Conditions Dictating Where We Want to Be

So let's get down to whether we've been making new purchases here, or how much. We've done some, but in very modest increments. And I'll describe their character. Why haven't we done more?

We believe there are a couple of shoes that haven't dropped yet. We just covered one of them: the market leaders, Microsoft, et al, outperformed on the way up and, so far, have outperformed on the way down, too. It will dawn on investors that they're transitioning from being growth companies to growth-constrained cyclical businesses.

The second shoe is that something bad is likely to happen in the bond market. It hasn't yet, because the government support is just getting under way. We don't know how all of this will shake out. In about three months, though, governments will start reporting their budgets. Japan, the U.K. and Canada, for instance, have March 31st fiscal years. The credit rating agencies, which follow strict parameters, such as

debt/GDP ratios, will have to start downgrading sovereign debt. That's the kind of development that can alarm investors.

So profound changes are coming. The most profound would be persistent inflation. There has never been a society in history of the world that has been able to avoid serious inflation and debasement of their currency after a surge in money creation. Even if the money was in the form of gold. The influx of gold from the New World to Spain and Portugal in the 1500's was responsible for massive inflation and economic and social disruption over the course of generations. There is a school of thought that those nations never recovered from the ripple effects of that inflation, and that it contributed to the shift in manufacturing and economic dominance from Spain to other European nations like England and France.

Now, we have the COVID-19 pandemic. Virtually every large company on the planet outsources and became dependent upon the globally extended just-in-time supply chain approach to manufacturing. The U.S. became so dependent, that we could neither produce nor manage to import adequate quantities of the most basic, yet critical health care necessities like protective gowns and masks, or low-tech pharmaceuticals like antibiotics, or the reagents that laboratories require to test for the virus. These have been shown publicly to be a national security issue.

Globalization, in the sense of outsourcing, in the sense of labor arbitrage across borders, would seem to be over. Political backlash or scapegoating against China is emanating from every almost every corner of the globe. In the U.K., there is now political opposition to China's Huawei telecom company participating in the multi-billion-dollar rollout of the UK's 5G network, a contract that was awarded just 3 months ago.

This means that global supply chains will be pared back. It is almost certain that the U.S. manufacturing base is returning to the mainland, perhaps with government incentives. The cost structure will be a lot higher. In a great reversal, we will, in effect, begin to import inflation.

An observation about inflation. This informs the kinds of companies we **don't** wish to own as well as what we **are** looking for. It is typically said that low interest rates support high stock and other financial asset valuations. But it is high **inflation** that is associated with serious valuation contraction. Investors today have little personal or institutional memory of the last inflationary period. Once inflation mentality takes hold, it ripples throughout the economy and daily life. People go shopping more frequently and buy greater quantities, because they know that the price of cereal will be higher the following month or even week. In 1971, President Nixon imposed wage and price freezes. Sounds like Russia or China, right? In the 1970s, during lunch hour, workers would visit a couple of banks, move their $1,000 or $5,000 6-month CDs from their old bank to a new one in order to get the free toaster ovens being offered for the switch.

Between April 1971 and March 1980, the inflation rate rose from 4.2% to 14.6%. The trailing P/E ratio on the S&P 500 contracted by two-thirds, from 19.5x to 6.7x. Interest rates rose, too, but if you look at the magnitudes of these three number series and continue to follow the progress through the recovery, the earnings multiples really were associated with the inflation rate.

	S&P 500 P/E Ratio Trailing 12-mo	CPI Trailing 12-mo	10 Yr. Treasury Rate
April 1971	**19.5 x**	**4.2 %**	**6.08 %**
September 1974	7.0	9.2	7.94
June 1975	12.0	9.2	7.86
March 1980	**6.7**	**14.6**	**12.64**
June 1983	13.3	2.5	10.96
June 1987	**21.0**	**3.7**	**8.38**

Source: St. Louis Fed, Macrotrends.com

The Kinds of Companies We're Thinking About and the Kinds We're Not

The thing about inflation is that its sources and its effects can be very uneven. There can be more than one source and they will impact companies differently.

So we want companies that have certain qualitative characteristics that will enable them to come out of this period well, irrespective of the alterations in the economy.

It helps if the business has minimal fixed costs that inflation could magnify. Similarly, it would be good if its operating expenses are not much subject to cost inflation either. Obviously, a royalty business model is the most emblematic example.

But beyond the royalty model, there are other businesses that can increase their revenues with very low incremental operating cost. Securities exchanges have that characteristic, since their primary cost is the computer trade matching and processing platforms; that's a fixed, not a variable cost.

There are certain types of businesses that might have the ordinary level of operating expense but whose services are priced on an ad valorem basis, so that they benefit from that vector of inflation. Shipping brokers are like that – their fees are based on the lease rates. Lately, oil tanker lease rates are skyrocketing. There are other types of brokers that work that way as well.

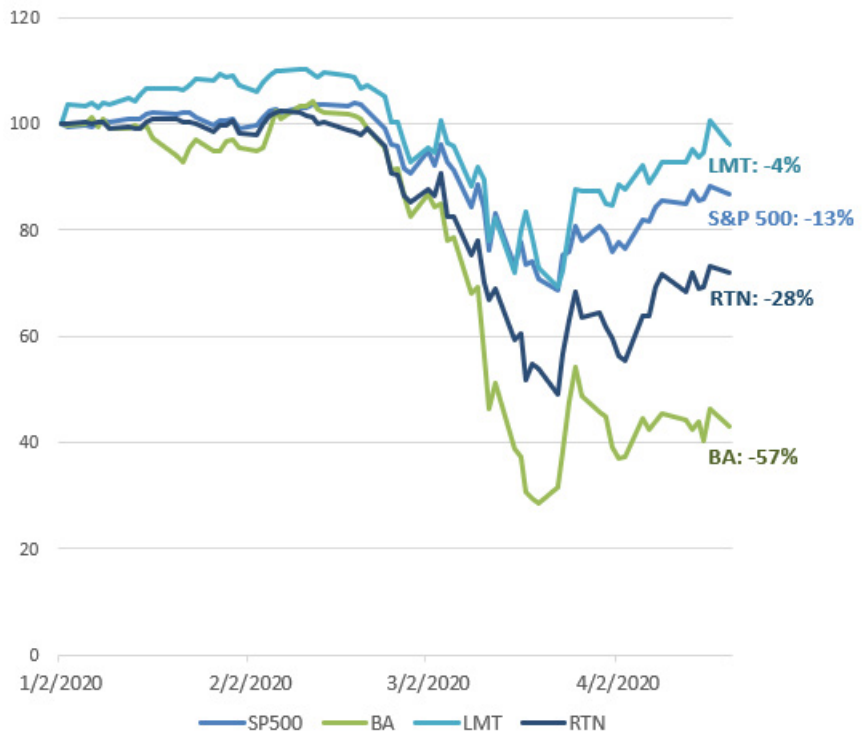
Among more ordinary business types, we'd want to find those that provide a service or asset that is in limited supply or is difficult to replicate, such that there is steady demand for it and over which they can have some pricing power. It's one of the reasons we like hard-asset related companies: if you can't get McDonald's for a week, no problem; if you can't get natural gas for a week, disastrous. I'll mention some of these companies, but there are others we might be contemplating buying or might be in the process of buying, so it wouldn't do well for me to discuss those yet.

But first, here's what we're not looking for. Why bother talking about this? Because one of the most efficient ways to hone in on whatever you're looking **for** is to figure out what you're **not** looking for. And

maybe I wouldn't even go through this, but lately we've been asked whether we think certain companies are attractive to buy, and the stocks they propose tell me that we should have this discussion.

For instance, we've been asked, 'Hey, what about Delta Airlines?" Looking at it as a business, though, not just a stock, one has to ask, why does the country need Delta? The airlines only still exist because the government supported them during the Credit Crisis. Remember some of these names, from prior eras: Eastern Air Lines, Midway, Braniff, Continental, Pan Am? The country might need the planes, but that doesn't mean it needs Delta. So we wouldn't call that a good opportunity.

A better opportunity would be **Boeing**. Boeing stock dropped over 50%, mostly on well-publicized safety problems with its 737 Max jet, not because of the generalized market decline. You can see that on the accompanying chart, since the other two major defense contractors did a bit better and a bit worse than the S&P 500 – whatever that says. Since Boeing's commercial airline business is roughly 50% of its revenues and earnings, that $90 or $100 billion loss of market value pretty much effaced the value of the airline business. As if it's worth zero.



Maybe it **is** worth zero, in which case Boeing is trading more or less at the value of its defense business. But if the commercial aircraft business recovers – which it almost undoubtedly will – then you have that optionality. Which brings us back to the planes: if the country needs the planes, although not any particular airline, then you own the company that makes the planes for whichever airlines are operating. Somehow, I don't think we're going to be buying all our planes from Airbus. We bought a very small amount of Boeing in Core Value and Strategic Value. Not a lot, because it's not the kind of business we want to fill our portfolios with. But as an opportunistic purchase, that's more our flavor.

Here's another compare and contrast. We were asked about the attractiveness of some well-established, low-price-point restaurant chain, like McDonald's. It would seem to be a high-quality name for maybe a consumer-income-constrained world. The share price had dropped in lock step with the S&P 500. The

problem is that inflation isn't evenly applied. If it were, if all prices and salaries and rents rose by the same percentage, it's not a problem. But what if McDonald's input costs, like wages and rents, as well as the prices it charges its customers, are all rising at a 6% annual rate, but suddenly the cost of beef rises by 12%; and the cost of corn syrup for soda? Food and packaging are roughly 30% of a fast food restaurant's costs. That could seriously diminish profit margins.

A better business model for such an environment might be a food processor like **Archer Daniels Midland.** The country can't exist without an ADM. It would be difficult to have a balanced dinner without some ADM product on your plate, whether it's the vegetable oil in the salad dressing, the protein meal that fed the chicken, the wheat flour and yeast in your bread, the citric acid in the spice rub, or the probiotics in your health drink. The company has its own trucks, railroad cars, river barges and ocean-going vessels.

A negative of the business is that, as an intermediary, ADM has very low margins: a 6% gross margin and 2% net margin. A positive, though, is that it is a very high-quality business that has staying power: it has a credit quality rating of A and it hasn't missed a dividend payment in over 80 years. The other positive is that it can benefit mightily from just a bit of inflation, because even if it can expand its net margin by only, say 2% points, that's a 100% increase in earnings. The stock can do exceedingly well under those circumstances, particularly if it can put 2 good consecutive years together. In 1992, its gross margin was about twice as high as today and the net margin 2 ½ x higher. So, in principle, ADM could be a candidate for us. The challenge, though, is that it is such a diverse business that there is hardly a year when it doesn't have some sort of problem that offsets the success of the other parts of its business, say root rot in the soybean crop. So that requires some thought. Maybe it's the right company but not the right time. Maybe it is the right time.

But it gives you an idea of how we're thinking about business models vis-à-vis an inflationary environment.

We lately added a small position in **Charles River Laboratories**. It is not a particularly cheap company; it trades at about 19x estimated earnings for this year. But it is a high-quality business. It provides a service that is much in demand by a very large population of well-funded entities, a service that is not easily replicable and is very value added. Its revenue growth, exclusive of acquisitions, is about 8% per year. The per-share earnings growth rate in the past 4 years has been over 12%.

Charles River Labs is a so-called contract research organization. It is the world's largest provider of outsourced early-stage drug discovery, non-clinical development and safety assessment studies, including FDA-mandated testing for sterile biopharmaceutical products. This is not just for the pharmaceutical companies, but also for academic institutions and government agencies. The company serves customers that either have their own research capabilities but are operating at capacity and don't wish to expand their fixed costs, or that can use the company's specialized capabilities. No customer accounts for as much as 3% of revenues.

And behind all of this is that it takes up to $2 billion and a decade or longer – excluding the time and cost of exploring thousands of different molecules – to produce a single FDA approved drug. The COVID-19 pandemic cannot but help but engender continued efforts at microbial disease identification and treatment. The company's manufacturing segment, which accounts for 18% of revenue, includes diagnostic products used to manufacture vaccines.

We also lately added another securities exchange, **Intercontinental Exchange**. As you would expect, it has remarkably high profit margins compared with an ordinary service or manufacturing business. Its after-tax free cash flow margin last year was 66%. One might ask why the need for another securities exchange if the portfolio already has two, the CME Group and the CBOE.

Different exchanges have different specialties and exposures. CME's largest product line, for instance, is interest rate products, which account for about a third of its transaction and clearing revenues, followed by equities. Intercontinental Exchange, on the other hand, gets almost 40% of its revenues from energy futures and options. About 10% of revenue is from agricultural and metals commodities. Those include sugar, coffee, cocoa, and cotton. Metals includes not just gold and silver, but iron ore. The CME got about 7% of its revenues from agricultural commodities products last year, but its key commodities were different: corn, soybeans and wheat.

You can see how much simpler this is. Goodness knows how to figure out which companies and business might be impacted by one sort of input cost pressure or another, whether it will be steel or coffee or energy or interest rates. The futures exchanges benefit from all of that, if volumes and prices are rising. A little bit like choosing between one airline company or the company that provides planes for all airlines.

There's another aspect of Intercontinental that has optionality if you're concerned about a global bout of central bank money creation. At the end of 2018, Intercontinental founded a new entity called Bakkt, which includes, as partners, BNY Mellon, Microsoft, and Starbucks. What complementary faculties would the country's largest securities exchange, largest custodian bank, largest software company and largest coffee shop chain have that would induce them to work together? Bakkt's goal is to provide a comprehensive digital asset and cryptocurrency financial service platform. In 2019, with approval from the CFTC, Bakkt launched physically delivered Bitcoin Futures, Bitcoin Monthly Options, and Bitcoin Cash-Settled Futures. It also established a NY State Dept. of Financial Services regulated custodian to provide Bitcoin custody services to Institutional clients.

The Bakkt consortium has also been developing a mobile phone app, essentially a digital wallet, using "Bakkt Cash", which can include bitcoin. That app has been in beta testing and is expected to launch a consumer app and merchant portal in the 1st half of 2020.

The Last Pitch – Changes are Happening – Banks, Brokers and Central Banks

Which, conveniently brings me to my last topic, bitcoin, the most misunderstood of all of asset classes, and perhaps the most important. And if you think this topic is a waste of time, because it's just not a viable institutional asset or product, just give me a minute. And please give this a moment's thought: the global money creation juggernaut that's just taken off, the debasement that's coming – this is **precisely** why bitcoin was invented. In a way, it will be the perfect environment – on a global scale – for people to realize that this is the only stable currency in the world, the only one with a fixed reference point (save for a few related ones like Bitcoin Cash and Litecoin).

But in order for bitcoin to graduate beyond 'early adopter' status and become a mainstream, daily use money or store of value, its legitimacy must be accepted by mainstream institutions: banks, investment

firms, and regulators. They require a reliable custody solution for safety. And it has to be easy to transact in, both for the institutional user and the retail user. Those are the remaining limiting factors.

The thing is, those requirements are actually being addressed and solved. And so rapidly and on so many fronts, that someone who last paid some attention to the topic only six months ago would be woefully out of date. The institutional legitimacy and quality of the various parties now solving those issues and competing to present commercial platforms to buy, hedge, custody and transact in bitcoin are, without exaggeration, the highest there are, in the U.S. and globally. And that includes Central Banks. Aside from the Intercontinental/Bakkt effort, the following is a highly abridged set of examples; a more complete list is on our website as a separate piece.

Just to hear this is to understand it.

- In January 2020, CME Group launched Bitcoin Options in addition to its bitcoin futures trading. The average daily bitcoin futures volume in 2019, at the recent trading price[1], would be $238 million.
- In December 2019, State Street, the 3rd largest U.S. custodian bank, partnered with a regulated crypto exchange and custody provider, to launch a pilot cryptocurrency program. This is intended to enable financial institutions to store their digital assets and receive reporting and holdings information for these assets through State Street.
- In November 2019, Fidelity was granted a charter under New York Banking Law to operate as a limited liability trust to provide virtual currency custody and an execution platform, on which institutional investors and individuals can securely store, purchase, sell and transfer Bitcoin."[3]
- In February 2020, Visa approved Coinbase, the largest U.S. cryptocurrency exchange and custodian, to act as an "issuing bank". It now offers cardholders a cryptocurrency payment option through a Visa-based Coinbase debit card in 29 markets in Europe. A different Visa co-branded debit card earns rewards in Bitcoin.

And believe it or not, central banks are working on rolling out their own Central Bank Digital Currency (CBDC), a digital form of fiat money designed to replace their paper money. There is perhaps no greater imprimatur of legitimacy and catalyst for cryptocurrency's acceptance. If central banks introduce their own digital currencies, that means they will have solved the custody (cybersecurity) and transactability issues, such that people will be able to use it via phone apps or wallets. The mere existence of a national digital currency means that non-fiat cryptocurrencies such as bitcoin will no longer be novel or esoteric; they would just be another choice on your smart phone.

- In January 2020, the Bank for International Settlements announced that it had formed a group to assess the potential cases for CBDC in their home jurisdictions[9]. The participants included the Bank of Canada, the Bank of England, the Bank of Japan, the European Central Bank, Sveriges Riksbank (Sweden's central bank), and the Swiss National Bank.

[1] $7,340 intra-day on 4/7/20, on worldcoinindex.com

Why, might you ask, would governments and central banks want their own versions of digital fiat currency? Money supply is now being created on a scale that has no historical parallel. Governments, for the reasons described earlier, will have to maintain near zero or even negative interest rates for a long time. But that risks demonetizing the banking system. Why would the populace keep their money in the bank and get **negative** rates – **pay** to have their money kept in a bank account? People will withdraw their money from the system and keep it at home. And governments know that.

But, if all the money is digital, you can't withdraw it from the system. You can buy something with it, something you think might retain its value, like a rental property, but that money stays in the system, because you used it. This looks very much like government cryptocurrency is happening.

As I said, bitcoin was invented for this very eventuality. The day of broad acceptance might not be too distant. If that happens, once it happens, it will be too late to buy. Think about what happens when a JPMorgan Chase decides there should be an allocation to bitcoin? Bitcoin has only a $130 billion market cap, and the overwhelming bulk of it is held by people who've owned it for years and won't sell it. In equity investing parlance, there's hardly any float.

In a portfolio, this one holding alone, whether one wants to think about it as the ultimate insurance policy or as a moon-shot option, easily has the potential to be worth 100x or 500x or more than its current price. That means that $1,000 in a $200,000 account could possibly become worth $100,000 or $500,000. Of course, as must be said, it could also be worth nothing. It might not gain acceptance. That has always been the deal. But the odds have recently shifted, by a lot.

For every account of ours where the custodian and client will permit, we bought a small amount of Grayscale Bitcoin Trust, which is a publicly traded security. For those that can't, we've owned GMO Internet, the leading Japanese internet infrastructure company which also is engaged in cryptocurrency mining and operates a cryptocurrency exchange. It's a very, very modest portion of their business, but it's better than nothing. And Intercontinental Exchange also holds that nominal bit of optionality.

I should give some support to those provocative figures as to what bitcoin – or, really, the sum of the few fixed-issuance cryptocurrencies – could be worth. Like everything we've been discussing this afternoon, it's a function of supply and demand. The supply is fixed – there will only ever be 21 million coins – so if demand presents itself, the only equilibrating mechanism is price.

Just to go through a version of the demand/value exercise for bitcoin that Murray Stahl likes to use, one could ask, what if the only demand for bitcoin in the entire world came from Russia? People there might want a stable trans-border currency. One that gets more valuable, in currency exchange terms, for every month that the Russian money supply expands by more than Russian GDP.

- The Russian ruble M2 money supply, in dollars, is $690 billion. If Russian citizens decide to own some bitcoin as a store of value alongside their rubles, that potential demand must be set against

the available bitcoin market cap, which is $126 billion. That would be 5.5x greater demand than the supply.

- If owners of Brazilian reals were to have the same desire, with their $600 billion of M2, that would be 4.7x greater demand than the bitcoin market cap.
- Adding a 3rd Letter R currency, the South African Rand M2 is $160 billion, another 1.3x.
- Just those three Letter R currencies are 11.5x the bitcoin market cap.
- Or what if bitcoin were only used in the U.S., starting with Starbucks usage, then working its way to Amazon users and then as an antidote to negative yield bank deposits? U.S. money supply is $16.3 trillion, which is 129x the bitcoin market cap.

Questions:

As if this hasn't been long enough, a couple questions were forwarded to us today and managed to slip through to me. They're about TPL, and they are certainly relevant questions, and I had one of our analysts, James Davolos, field them.

Q: Are the TPL oil royalties based upon the number of barrels pumped or upon the price of oil?

A: Both; it's based upon the proportionate amount of the revenue, which is a function of price x volume.

Q: Any insight into why the TPL management has not been buying back shares at these depressed prices?

A: It has been publicly reported that TPL's counsel has advised against repurchasing shares until the settlement agreement is finalized (i.e., a corporate conversion is consummated). We have not been advised on any changes to this, but understand that the company now has a dedicated Investor Relations contact who may be able to elaborate.

Q: If oil stays depressed for longer than you expect, i.e. 2-3 years, and the price of oil stays in the $15-$20 range, what impact would that have on TPL and the share price?

A: This a far more complicated question than would appear at face value. Primarily, oil prices in the $15-$20 range would effectively remove perhaps 50% or more of global supply, based on economic breakeven levels. This notwithstanding, the amount of high cost oil that has already been shut-in this year, coupled with capital expenditure cuts across all energy companies and all geographies, is likely to result in a future structural undersupply of oil, if demand simply reverts to 2019 levels. The incremental capacity required to then "balance" the market will simply not exist, given the dearth of exploration, development and infrastructure spending (which dates back to 2014). While I cannot speculate as to the share price impact on TPL, I expect that future activity will be focused in the lower cost acreage with the largest untapped reserves. This will accrue to the benefit of TPL in the form of royalties and surface acreage and water revenues.

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