August 2021

While our benchmark, MSCI's "flagship global equity index", was up 2.3% last month, it was only up 1.7% if you exclude American stocks. Once again, the S&P 500 (+2.9%), Nasdaq (+4.0%), and Dow (+1.2%) set all time highs during the month, but the Small Cap Russell 2000 (+2.1%) finished the month 3.7% below its March 15th record close. From today's WSJ:

STREETWISE | By James Mackintosh

Speak No Evil Of the S&P 500’s Record Streak

The S& P 500 is like the three wise monkeys: See no evil, hear no evil, speak no evil. Whatever happens, it just goes up. The market has gone up almost in a straight line since November despite a troubling list of events that could each have justified at least a 5% correction. Investors are incredibly resilient.

Some things that didn’t matter: a burst bubble in clean-energy stocks; a sharp rise in Treasury yields (to March); a big fall in Treasury yields (since March); China’s crackdown on moneymaking; the Federal Reserve’s shift toward tapering bond purchases; and the rise of the Delta variant.

On the optimistic side, it is great that the market has been pushed up by a variety of forces, not by wild excess in a single area. We need not worry that the bubble in clean energy will burst and bring down the market, because it has burst without bringing down the market.

Throughout all this, the stock market rose steadily, without a 5% fall since shortly before the election last year. Every time part of the market—technology stocks, cheap stocks, smaller stocks, oil stocks, strong-balance-sheet stocks—stops performing, something else steps in to rescue the broader index. The market seems invulnerable to bad news and that is unusual. On the face of it, it is also scary, suggesting investors are complacent about danger.

It is far from unprecedented to go a long time without a correction, with 10 episodes since 1963 when the market lasted more than 200 trading days without a 5% drop. But they were different from the recent run. In every other case, the market was far calmer below the surface. This time, major events led to big swings between sectors, size and types of stock, but none disturbed its steady rise.

Similarly, the stimulus-and vaccine-driven willingness to take risk across every asset class faded from March onward, so we shouldn’t be too concerned about a switch in investor sentiment. Again, it has already happened.

Yet, I find it disconcerting that the market seems to go up no matter what. Good news on the economy pushes up stocks sensitive to growth, such as manufacturers and banks. Troubling news on the economy means lower bond yields and so pushes up stocks with profits far in the future (see: big tech companies) whose expansion depends on innovation rather than economic growth, which I understand.

That both should push up the wider S&P 500 is what puzzles me.

The only explanation I have is the old one: “TINA”— There Is No Alternative to Stocks—because yields on alternatives such as bonds are so low. With more savings going into stocks than is cashed out or soaked up by IPOs, the price has to rise. It isn’t a satisfactory story, but it kind of works.

In both good and bad times investors want to buy stocks, so the S&P goes up. But *which* stocks they choose to buy differs between good and bad times. In good times they want risk-on stocks (cheap value, cyclicals, smaller companies, emerging markets). In bad times they want risk-off stocks (growth, defensive firms, larger companies, developed markets and especially the U.S.).

The problem with TINA is that the justification for stocks isn't that they offer good returns in the future, but that they offer better returns than bonds. Bonds offer miserable returns—a guaranteed loss after inflation for 30 years on Treasury inflation-protected securities— so doing better than that isn't saying much. If lower rewards came with lower risks, that would be fine, but at best the risks are as high as ever, perhaps much higher.

A simplistic way to quantify how much lower the rewards of stocks are likely to be is to use the earnings yield, the inverse of the forward price/earnings ratio. If companies match analyst profit forecasts, future returns should be about 4%— only slightly higher than was suggested by the measure at the height of the dot-com bubble in 2000. If corporate earnings miss forecasts, future returns could be substantially lower. If valuations fall too, returns are doubly hit, as they were after the dot-com bubble burst, when returns ended up negative for years.

Quantifying risks is much harder. Inflation risk is higher than before, and so are political (tax and regulation) and geopolitical (trade and supply chain) threats to stocks. The risk that analysts have horribly overestimated earnings or companies are massively overstating earnings is at least as high as usual. Central banks are sure to try to help if stocks plunge, but can't use the traditional support of rate cuts. Alternative tools such as negative rates and buying a wider range of assets are available, but their risks are less well understood.

Getting a lower reward for the same or higher risk may still be acceptable, given how expensive the safer alternatives are. But investors buying stocks no matter what shouldn't fool themselves that the future will deliver the 6.5% or so above inflation of the past century, let alone the 12% above inflation of the past decade.

The awful choice investors have is to join the monkeys in pretending all is well, or accept the terrible returns of safe assets.

From today's Global Investment Strategy:

... US government spending on goods and services rose substantially during the Great Recession. However, spending then proceeded to fall to multi-decade lows as a share of GDP by 2019. Transfer payments were also broadly stable as a share of GDP in the decade leading up to the pandemic. The Trump tax cuts reduced government revenue by around 1.7% of GDP. However, as we have noted in the past, the impact of the tax cuts on aggregate demand was fairly small.

After surging during the pandemic, both direct government expenditure and transfer payments have come off their highs. Tax rates are also likely to rise for upper income earners and corporations. Nevertheless, with Congress set to pass a $550 billion infrastructure bill and a $3.5 trillion (we doubt it will be this high) budget reconciliation bill, US fiscal policy will remain more stimulative over the next few years than it was in the pre-pandemic period. The same is likely to be true outside the US.

Central Banks To The Rescue

This brings us to monetary policy. In the post-GFC period, lower interest rates helped keep capital investment from falling more than it would have otherwise. In addition, lower rates discouraged savings, thus supporting consumption. And, with other central banks also cutting rates, the decision by the Fed to maintain low rates prevented the dollar from strengthening excessively.

Beyond the direct benefits to the economy, lower rates increased the prices of long-duration assets such as equities and homes. ... The resulting “wealth effect” stoked consumer spending, while also encouraging new investment (particularly in real estate).

Excess Savings Should Diminish

Looking out, there are a few reasons ... leading to more spending and less need for ultra-accommodative monetary policies:

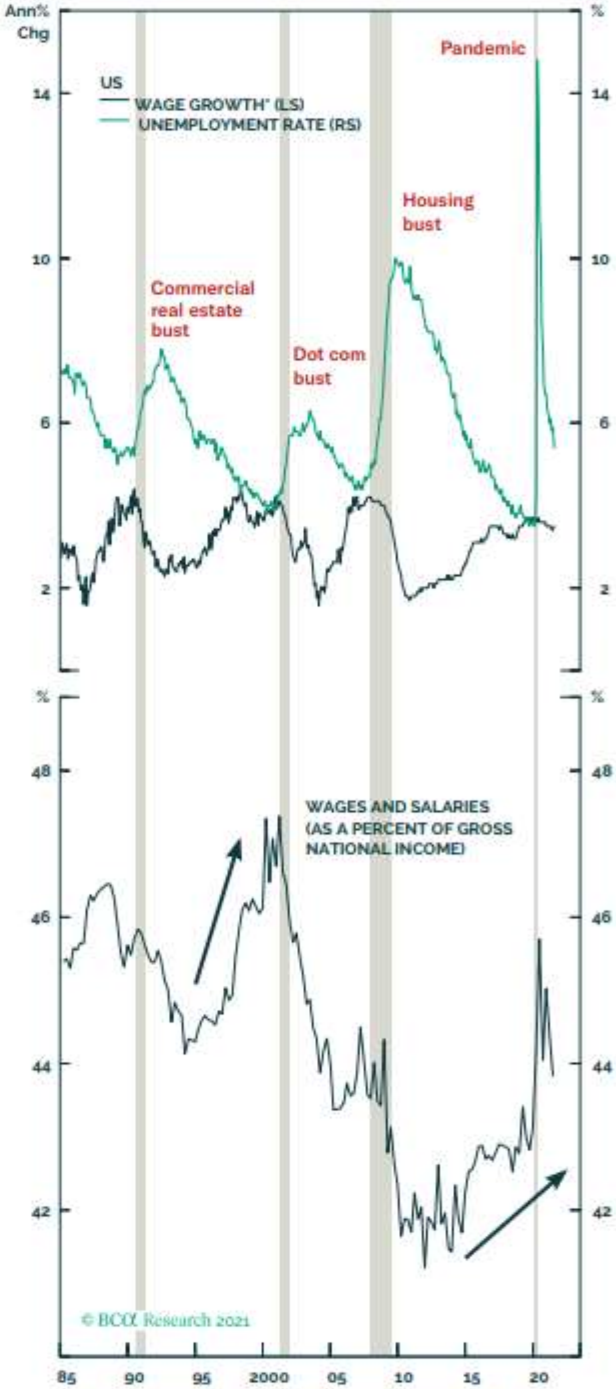
- Deleveraging pressures have abated. In the US, the ratio of household debt-to-disposable income has returned to pre-housing bubble levels. Debt servicing costs are at a multi-decade low.
- Baby boomers are leaving the labor force. They hold over half of US household wealth, considerably more than younger generations. As baby boomers transition from being net savers to net dissavers, national savings will fall.
- Governments are working to mitigate income inequality. Not only are redistributionist policies increasingly in vogue, but policymakers are trying to run economies hot. Historically, a tight labor market has curbed income inequality, while driving up workers’ share of overall income (**Chart 10**).

Upside For Bond Yields, Both Near And Far

Bond yields in the major economies likely hit a generational low last summer. Yields should rise over the coming years, first as slack diminishes, and later as structural forces reduce the amount of excess savings sloshing around the global economy.

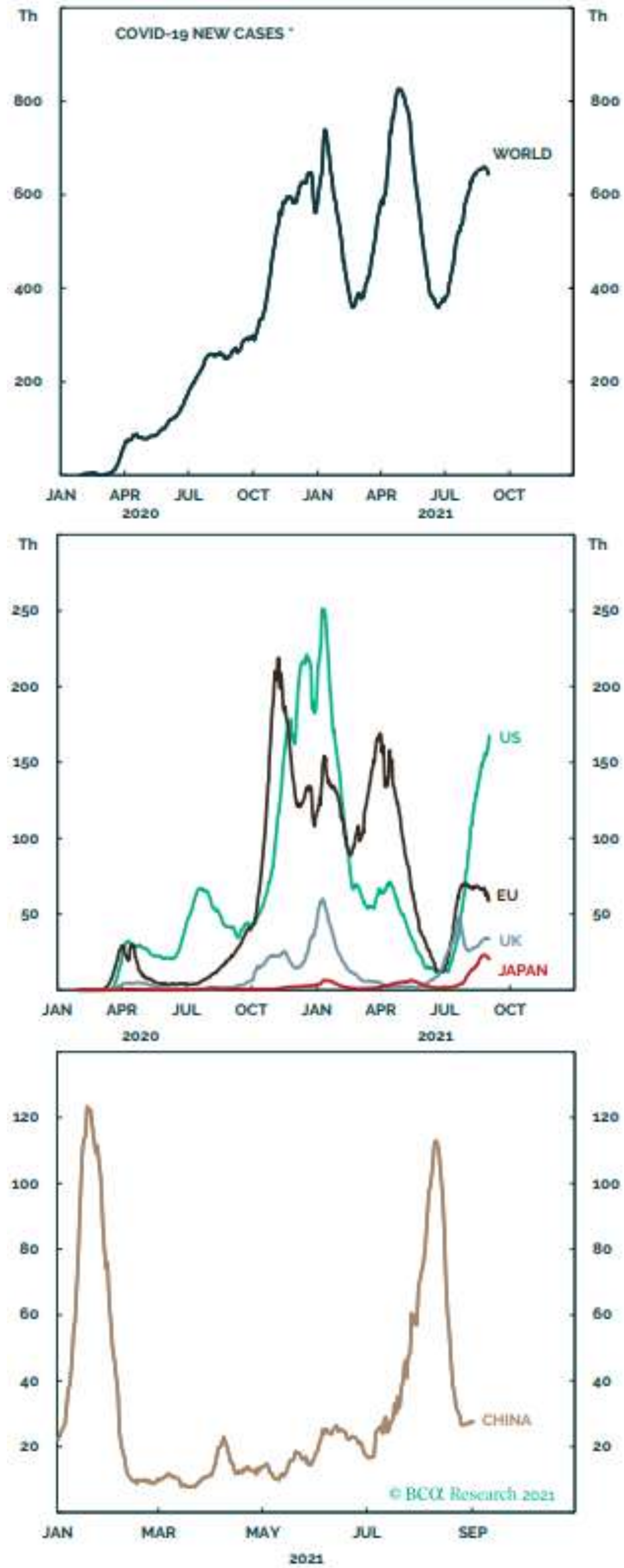
In the near term, a cresting of the Delta variant wave will prop up Treasury yields. While the number of new cases in the US continues to rise, the second derivative has turned for the better. A heat map shows that the weekly growth in new cases has slowed substantially in most US states.

CHART 10
A Tight Labor Market Eventually Bolsters Wages



* US ATLANTA FED WAGE TRACKER (FROM 2007); AVERAGE HOURLY EARNINGS: TOTAL PRIVATE NONFARM, PRODUCTION AND NONSUPERVISORY EMPLOYEES (BEFORE 2007).
NOTE: SHADING DENOTES NBER-DESIGNATED RECESSIONS.

CHART 12
The Delta Wave Is Cresting

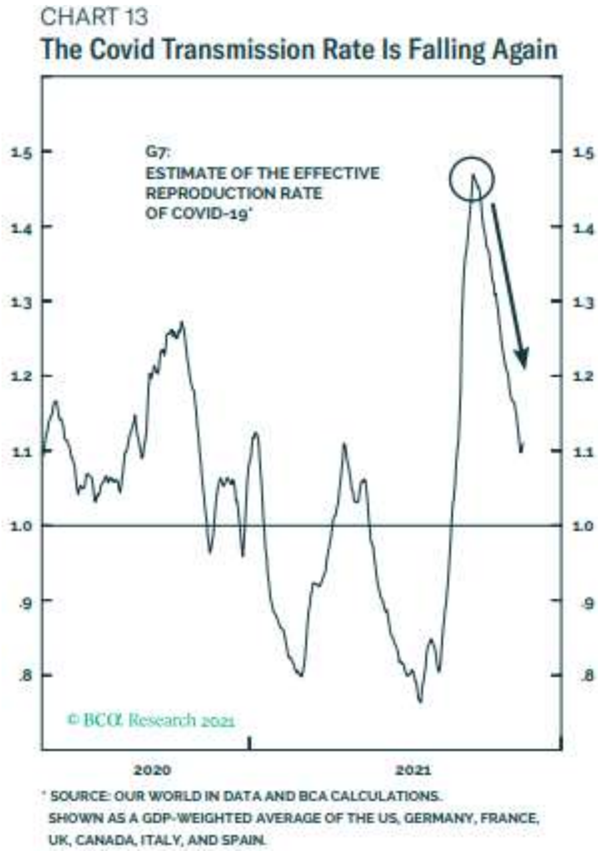


* SHOWN AS A 7-DAY MOVING AVERAGE.
SOURCE: THE CENTER FOR SYSTEMS SCIENCE AND ENGINEERING (CSSE) AT JOHNS HOPKINS UNIVERSITY.

Globally, the Delta variant wave is abating (**Chart 12**). The transmission rate has clearly peaked within the G7 (**Chart 13**). The number of cases has begun to fall in recent hot spots such as Indonesia and Thailand. And, after rising above 100, the 7-day average of new cases in China has fallen back to 30.

The tapering of bond purchases by the major central banks should also lift yields. Canada began tapering this past April. BCA's fixed-income experts expect the Fed to start paring back purchases by the end of this year, with the ECB and BoE following suit in early 2022.

We do not expect bond markets to become unhinged. Central banks would strongly push back against an excessive rise in yields. Nevertheless, a move in the US 10-year Treasury yield to 1.8% by early next year seems reasonable.



Stocks Can Withstand Rising Bond Yields… For Now

Equity valuations have broadly tracked real bond yields over the past few years. While higher yields will weigh on equity prices, there are a number of remaining tailwinds for stocks:

- **Growth will remain above trend in the foreseeable future:** Bloomberg consensus estimates foresee the global economy growing at an above-trend pace well into next year. We agree with this assessment, and in fact, see upside risks to consensus growth forecasts. In particular, Chinese growth is likely to accelerate later this year as credit growth rebounds and fiscal spending increases. Local governments used less than 40% of their annual debt issuance quotas as of the end of July. Typically by that time of the year, they have used 70% of their quotas.
- **Forward earnings estimates will continue to drift higher:** Analysts are usually too optimistic. As a result, they normally have to cut estimates over the course of the calendar year. This year has been different. In early July, analysts expected S&P 500 companies to generate about $45 in EPS in Q2. In the end, they generated about $53. Earnings are projected to decline in absolute terms in Q3 and remain below Q2 levels until the second quarter of next year, when they are anticipated to grow by a meagre 3.5% year-over-year. As earnings estimates move up, stock prices will rise, even if P/E multiples move sideways.
- **Rising inflation expectations will lift nominal bond yields more than real yields:** Investors (Bond) expect inflation to come down rapidly over the coming months. The 5-year/5-year forward TIPS breakeven inflation rate is below the Fed's comfort zone of 2.3%-to-2.5%. We think that US inflation will fall fast enough over the next few quarters to allow the Federal Reserve to maintain a fairly accommodative monetary stance, but not as fast as markets are discounting.
- **The global equity risk premium remains elevated:** We measure the equity risk premium (ERP) by subtracting the real 10-year bond yield from the forward earnings yield. Based on this measure, the global ERP stands at 634 bps. At the peak of the stock market boom in 2000, the global ERP was barely positive. Even in the US, where valuations are more stretched than abroad, the ERP stands at 574 bps. Remarkably, this is almost exactly where the ERP was in May 2008. An increase in the US 10-year Treasury yield to 1.8% by early next year – representing roughly a 50 basis-point increase from current levels in nominal terms and even less in real terms – would still leave US stocks attractively priced relative to bonds.

In summary, investors should remain overweight global equities on a 12-month horizon. A more cautious stance towards stocks will be appropriate in two years' time once stagflationary forces begin to assert themselves.

Three from Morningstar:

Why Fund Returns Are Lower Than You Might Think

Our most recent study of investor returns reveals a persistent gap between reported total returns and what investors actually earn.

Amy C. Arnott, CFA
Aug 30, 2021

Why would investors earn less than the funds they invest in? It all comes down to timing.

Our annual "Mind the Gap" study of dollar-weighted returns (also known as investor returns) finds investors earned about 7.7% per year on the average dollar they invested in mutual funds and exchange-traded funds over the 10 years ended Dec. 31, 2020. This was about 1.7 percentage points less than the total returns their fund investments generated over that span. This shortfall, or "gap," stems from inopportunely timed purchases and sales of fund shares, which cost investors nearly one sixth the return they would have earned if they had simply bought and held.

The persistent gap between the returns investors actually experience and reported total returns makes cash flow timing one of the most significant factors--along with investment costs and tax efficiency--that can influence an investor's end results.

What Is the Gap Between Investor Returns and Total Returns?

Investor returns (also known as dollar-weighted returns or internal rates of return) often differ from reported total returns because of the timing of cash inflows and outflows.

To use a simple example, let's say an investor puts $1,000 into a fund at the beginning of each year. That fund earns a 10% return the first year, a 10% return the second year, and then suffers a 10% loss in the third year, for a 2.9% annual return over the full three-year period. But the investor's dollar-weighted return is negative 0.4%, because there was less money in the fund during the first two years of positive returns and more money exposed to the loss during the third year. In this case, there was a 3.3-percentage-point per year gap between the investor's return (negative 0.4%) and the fund's (2.9%).

In our study, we estimate the gap between investors' dollar-weighted returns and funds' total returns in the aggregate. This allows us to assess how large the gap is and how it's changed over time. ...

The Results: Investor Returns Lag

As mentioned above, we find that investors suffered a 1.7-percentage-point annual return gap over the 10 years ended Dec. 31, 2020, owing to mistimed purchases and sales.

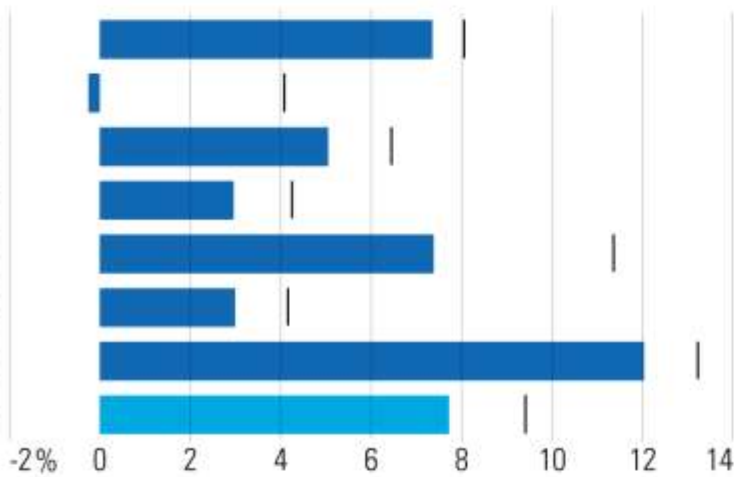
This annual return gap was in line with the gaps we measured over the four previous rolling 10-year periods (ended Dec. 31, 2016, 2017, 2018, and 2019), which ranged from 1.6 to 1.8 percentage points per year. ...

Under the surface, though, there's a more nuanced story. More specialized areas with the most volatile cash flows--namely, alternative funds and sector equity funds--fared much worse than average and pulled down the aggregate results. The more mainstream areas that are home to the majority of investor assets ... fared much better, with return gaps of about 1 percentage point per year.

The two largest fund types by net assets, U.S. equity funds and taxable-bond funds, had smaller return gaps than the fund universe as a whole. U.S. stock fund investors saw a 1.2-percentage-point annual gap, while taxable-bond-fund investors experienced a 1.1-percentage-point gap per year.

The Gap by U.S. Category Group (10-Year Returns)

U.S. Category Group	Investor Return %	Total Return %	Gap
Allocation	7.35	8.04	-0.69
Alternative	-0.25	4.08	-4.33
International Equity	5.05	6.44	-1.39
Municipal Bond	2.96	4.21	-1.25
Sector Equity	7.38	11.33	-3.95
Taxable Bond	2.99	4.11	-1.12
U.S. Equity	12.03	13.20	-1.17
Overall	**7.72**	**9.40**	**-1.68**



Source: Morningstar. Data as of Dec. 31, 2020. Excludes commodities category group. Gap numbers may not match differences in returns because of rounding.

A few other areas worth noting:

- *Allocation funds* continued to excel, suggesting that their built-in asset-class diversification makes them easier for investors to buy and hold over time. Investors in these funds, which combine stocks, bonds, and other asset classes, saw the smallest gap, as their dollar-weighted returns lagged the funds' total returns by only 69 basis points per year over the 10 years ended Dec. 31, 2020. This continued a trend: Allocation funds had much narrower gaps than the other major asset classes in all five of the rolling 10-year periods we analyzed.

- *Alternative funds* have proved difficult for investors to use successfully: The average dollar invested in these funds lost about 0.3% annually over the 10 years ended Dec. 31, 2020, which was more than 4 percentage points lower per year than the funds' total returns and a remarkable 12 percentage points per year less than the dollar-weighted returns that investors in U.S. stock funds earned over that span.

- *Sector-equity funds* also saw negative gaps for investors, as their dollar-weighted returns lagged the funds' reported total returns by about 4 percentage points per year over the 10 years ended Dec. 31, 2020. Specialized funds were doubly disappointing. Not only did their total returns lag those of diversified U.S. equity funds by a wide margin to begin with, but investors failed to capture the full benefit of those lower returns. As a result, dollar-weighted returns for sector-equity funds were basically identical to investor returns for allocation funds (7.4%), which are easier to live with thanks to their built-in diversification and lower volatility.

We also found that the more volatile a fund, the more trouble investors tended to have capturing its full return. For instance:

- The most volatile quintile of U.S. stock funds had an annual return gap of 1.7 percentage points over the 10 years ended Dec. 31, 2020, while the least volatile quintile had a far smaller gap of 0.9 percentage points per year. ...

How Much Has the Market Benefited from Multiple Expansion?

Measuring the tailwind's effects.

John Rekenthaler
Aug 9, 2021

Reader Response

Last week's column, "Why the Rich Have Become Richer," argued that over recent decades, two developments have favored higher-income Americans. First, their salaries have outgrown the national average. Second, their stocks have boomed. The former claim went unchallenged, but several readers wondered about the latter. There's no question U.S. equities have thrived, but isn't that largely because they have become more expensive? How would they have fared without that boost?

Your wish is my command. Per Nobel Laureate Robert Shiller's data, the companies in the S&P 500 traded at 11.8 times their earnings in January 1976, as opposed to 31.5 times in March 2021. Thus, 63% of the index's current value owes to multiple expansion. The S&P 500 has appreciated, for the most part, because today's investors pay more for the same dollar of earnings.

That was the readers' objection. Stock gains have been exaggerated by investor optimism. One should discount that one-time effect when evaluating the future.

Giving 219%

Fair enough. Let's continue the analysis. Price/earnings ratios are not the only factor that affect stock prices. Another is inflation. Absent other changes, the value of the S&P 500 would nonetheless increase, because inflation would boost nominal earnings (in the same fashion that it does a loaf of bread). We can therefore measure what the cumulative effect of inflation has been on the price of the S&P 500, just as we did with the shift in price/earnings ratios.

Curious. Not only did higher price/earnings ratios produce 63% of the index's appreciation, but inflation apparently contributed another 77%. And we haven't yet discussed corporate earnings. Real earnings did not in fact remain static; today's businesses are more profitable than those of 1976. Specifically, American companies have hiked their after-tax earnings by an inflation-adjusted 276%, meaning that profit growth caused 77% of the S&P 500's increase.

We have now accounted for 219% of the growth of the index's value. How could that be? No doubt there is a name for this mathematic fallacy, but I don't know it. However, I can provide an analogy. In 1790, the population of the founding 13 states was 3% of its current level. Today, those 13 states possess 28% of U.S. population. Thus, we can simultaneously argue, with equal accuracy, that 1) 97% of the country's population growth has come from within its original borders, and 2) 72% of the country's population growth owes to adding another 37 states.

The 100% Solution

This will not do. Let's eliminate this problem of ever-escalating percentages by forcing the answer to sum to 100%. We have already discussed the three items that determine the S&P 500's price movement: 1) inflation, 2) corporate profits, and 3) change in the price/earnings multiple. For evaluating the index's total returns, we must add a fourth factor: dividend payments. The table below depicts the S&P 500's annualized total return from January 1976 through March 2021 (the final date for which corporate profits are available), along with the influence of each of the four factors.

Exhibit 4 Four Factors: Summing to 100% (S&P 500, January 1976 - March 2021)

Component	Annualized Return	Factor Weighting
Inflation	3.51%	30%
Corporate Profits	3.07%	27%
Dividends	2.75%	24%
Multiple Expansion	2.19%	19%
Total Return	11.51%	100%

Source: Morningstar Direct, Federal Reserve Bank of St. Louis, Robert Shiller.

Inflation was the largest cause. Its power, regrettably, is entirely illusory. If the S&P 500 had gained 50% annually, with inflation averaging 51%, then stock-market investors would have gained 9,292,433,624% over those 45-plus years, while shedding 26 cents on every dollar of their purchasing power. Talk about a Pyrrhic victory! Fortunately, although inflation led, it did not dominate, as the index's real annualized return was an outstanding 8.01%.

Of that amount, corporate-profit growth chipped in just over 3%, dividends slightly less, and multiple expansion 2.19%. In other words, although from one perspective higher price/earnings ratios caused 63% of the index's increase in value, from another, more useful angle they contributed only 19% of total returns. Of course, when I wrote "only" I did not mean to dismiss the objections. Removing one part in five from the S&P 500's total returns would have slowed the stock market's party. However, it would not have negated my argument: Equities, not salary growth, were the most powerful force for wealth creation.

What If?

The final table supports that statement. It shows: 1) the S&P 500's actual real total returns; 2) what its performance would have been would the index's price/earnings multiple remained at 11.5*, 3) the growth in real per-capita income for top 5% households, and 4) the equivalent figure for median households. Even without the benefit of increased popularity, equity returns easily outstripped all varieties of wage growth.

Exhibit 5 What If P/E Multiples Had Not Expanded? (S&P 500, January 1976 - March 2021)

Scenario	Real Annualized Return
Actual Results	8.01%
No Expansion	5.82%
Per Capita Wage Growth, Top 5% Households	2.10%
Per Capita Wage Growth, Median Household	0.88%

Source: Morningstar Direct, Federal Reserve Bank of St. Louis, Robert Shiller.

(*This claim is not strictly correct. If stock prices had been lower, then equity investors would have received additional shares when reinvesting their dividends. Consequently, their future dividend receipts would have increased, which in turn would have permitted them to buy more shares, and so forth. However, as this detail strengthens rather than weakens my argument, I will set it aside.)

The analysis is incomplete. We have learned that equities would have fared well without their tailwind, but we cannot say how they would have performed had they faced an outright headwind. However, although those results can not be forecast precisely--even if we knew future price/earnings ratios, we could not predict either corporate-earnings growth or dividend schedules--they can be estimated to reasonable accuracy. An upcoming column will do just that.

How the Robinhood Era Is Changing Stock-Market Investing

When investor communities, not institutions, drive security pricing.

John Rekenthaler
Aug 5, 2021

Not Fully Convincing

Last summer, when I puzzled over the reasons behind the U.S. stock market's spectacular recovery--which struck me as premature, given that the economy was in a deep recession, with no signs that the COVID-19 virus would be eradicated anytime soon--several readers proposed the following:

1. The U.S. government had flooded the system with cash.
2. This cash had not only supported asset prices, but had also fueled investment speculation.

3. This speculation came from retail investors, who were feeling flush because they had cut their spending while maintaining their income. In addition, some had received $1,200 checks courtesy of the Cares Act.

I was dubious. For the most part, I adhere to conventional finance theory, which emphasizes rationality. It was not that investors had behaved rashly. Rather, I had failed (He is still kicking himself for attempting to time the Market, as we pointed out at the time.) by being too slow to recognize the impending economic recovery. Also, the rally was global, meaning that U.S.-centric explanations were not sufficient.

To that point: In the second quarter of 2020, U.S. stocks rebounded 45% from their lows, German stocks 57%, Japanese equities 46%, and U.K. stocks 32%. To be sure, when U.S. stocks sneeze other bourses reach for their handkerchiefs, thereby spreading the effect of American policies, but one cannot explain the S&P 500's rise by pointing solely, or even predominantly, to domestic actions.

A Kernel of Truth

That said, the readers had a point; the significance of today's retail investors should not be dismissed. As demonstrated by the GameStop (GME) saga, they don't necessarily operate according to academic rules, and their clout is increasing. This makes for a different stock market environment, with corresponding lessons.

Recently, two researchers for the Swiss Finance Institute, Philippe van der Beck and Coralie Jaunin, supported this contention. In "The Equity Market Implications of the Retail Investment Boom," the duo found that Robinhood's clients contributed handsomely to the second-quarter 2020 U.S. rally, especially for smaller-company shares. ...

A Skeptic's Reaction

It is an imprecise process, in many ways, which leads me to discount the authors' estimates. They calculated that demand from Robinhood clients boosted the value of the overall U.S. stock market by 1.0% during the second quarter. This came after their actions had added 0.6% to U.S. stocks' first-quarter results. Those figures are high. If annualized, they imply that Robinhood's trades contributed 3 percentage points to the Wilshire 5000 Index's total return in 2020. That seems … optimistic.

So, too, does the authors' claim that "Robinhood demand accounted for 20% of the aggregate market capitalization of the [smallest 20% of stocks in the U.S. market]." No doubt Robinhood's customers punch above their weight, but given that they control only roughly 0.2% of U.S. equity assets, it's hard to believe they exert that much influence over one fifth of the nation's publicly listed stocks. ...

But such quibbles belong elsewhere. The point is that however cautiously one treats the authors' estimates, *something* remains. Both their research and the anecdotal evidence, such as the surprising performances of Robinhood favorites GameStop, Hertz Global Holdings (HTZZ), Eastman Kodak (KODK), and AMC Entertainment (AMC), indicate that, at least with smaller companies, there's a new game afoot.

Looking Ahead

This trend figures to extend. Small-company index funds continue to gain market share from their actively run rivals, meaning that fewer small-company shares are held by active investment professionals. It therefore seems that individual buyers and not portfolio managers will increasingly be tasked with pricing small-company stocks. The "Robinhoodization" of secondary stocks looks to be in its early stage.

One should not exaggerate the current effect, but the phenomenon must be taken into consideration. The expanding influence of retail stock investors induces behavior that confounds traditional expectations, and it doesn't appear to be going away anytime soon.

Implications

1. **Small-company stocks will act ever more erratically.**
   Perhaps "erratically" is pejorative, but the adverb strikes me as accurate. I don't know how else to describe the performance of Robinhood favorites, which frequently experience dramatic price changes without corresponding corporate news. Small stocks will march ever more loudly to their own drummer.

2. **Small-company stocks will be better portfolio diversifiers.**
   Different behavior means lower correlations. From 2015 through 2019, the performance of Vanguard Total Stock Market Index (VTSAX), which represents the overall U.S. stock market, never diverged by as much as 5 percentage points in a calendar quarter from that of Vanguard Small Cap Index (VSMAX). Last year, the two funds deviated by 9 percentage points in the second quarter and 13 percentage points during the fourth.

3. **Regulatory scrutiny will increase.**
   Over the past three decades, regulators have targeted institutions and not retail shareholders. For example, the SEC's 2000 rule, Selective Disclosure and Insider Trading, sought to protect the interests of everyday investors by restricting the ability of companies to "whisper" advance news to their institutional followers. The commission's focus has long been on Wall Street, not Main Street.

But what if retail investors are colluding on message boards, pooling their resources with the express purpose of altering security prices? The SEC will not and should not ignore those activities. What is good for the goose will be good for the gander. Along with greater investor power will come the call for greater investor responsibility.

Closing Note: After initially stagnating, Robinhood's stock price doubled during this week's first three days, before retreating on Thursday. How much of that gain owes to individual investor enthusiasm, as opposed to to institutional activities, remains to be seen. However, if institutions have been the primary buyers, it surely is because they hope to make a quick buck by reselling the security. Appropriately, Robinhood's own stock is very much a Robinhood-era security.

Virtual investment communities are here to stay. Younger investors prefer technology to handshakes, and while many eventually will hire financial advisors, their preferences will not change. (Most of us still believe that popular music was never better than when we entered college.) And because wealth accumulates with age, their firepower will continue to grow. Consequently, social-media discussions will increasingly determine stock performances.

In other words, the SEC's task of maintaining "fair, orderly, and efficient markets" might require it to regulate Main Street's behavior, as well as that of Wall Street. To date, regulators have not shared that view, as they have expressed concerns about Robinhood's actions--in particularly, the company's payments for order flows and "gamification" of investment services--but not those of its customers. However, these are early days yet.

John Rekenthaler (john.rekenthaler@morningstar.com) has been researching the fund industry since 1988. He is now a columnist for Morningstar.com and a member of Morningstar's investment research department. John is quick to point out that while Morningstar typically agrees with the views of the Rekenthaler Report, his views are his own.

From Global Investment Stategy:

August 6, 2021

These Three High-Flying Equity Sectors Could Come Crashing Back Down To Earth

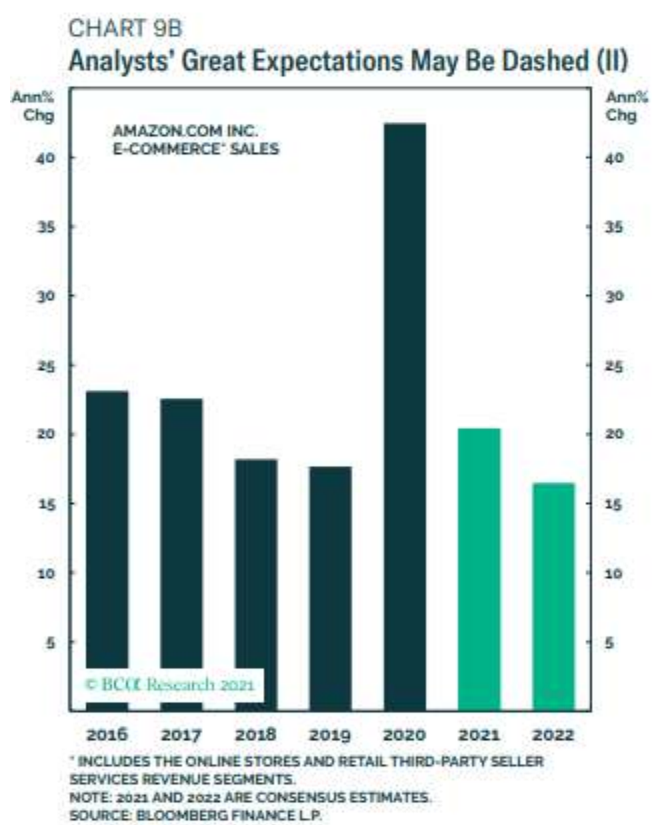
From Goods To Services

While global growth should remain well above trend for the next 12 months, the composition of that growth will shift in ways that could meaningfully affect equities.

... aggregate US consumption has returned to its pre-pandemic trend. However, spending on goods is 11% above trend while spending on services is still 6% below trend.

Households typically cut spending on durable goods during recessions, while services serve as the ballast for the economy. The opposite happened during the pandemic. As the global economy recovers, goods spending will slow while services spending will stay robust.

This is critical for online retailers such as Amazon, which derive the bulk of their e-commerce revenue from selling goods. Even after its disappointing Q2 earnings report, analysts still expect Amazon to grow e-commerce sales by 17% in 2022 (**Chart 9B**). Such a goal may be difficult to achieve, given that core US retail sales currently stand 13% above their trendline.



If e-commerce spending slows, shares of payment processing companies could disappoint. Likewise, social media companies could suffer as people start going out more often. After spiking during the height of the pandemic, growth in data usage has returned to normal (**Chart 11**).

Long-Term Risks

Looking beyond the post-pandemic recovery, all three equity sectors face structural challenges that are not being fully discounted by investors.

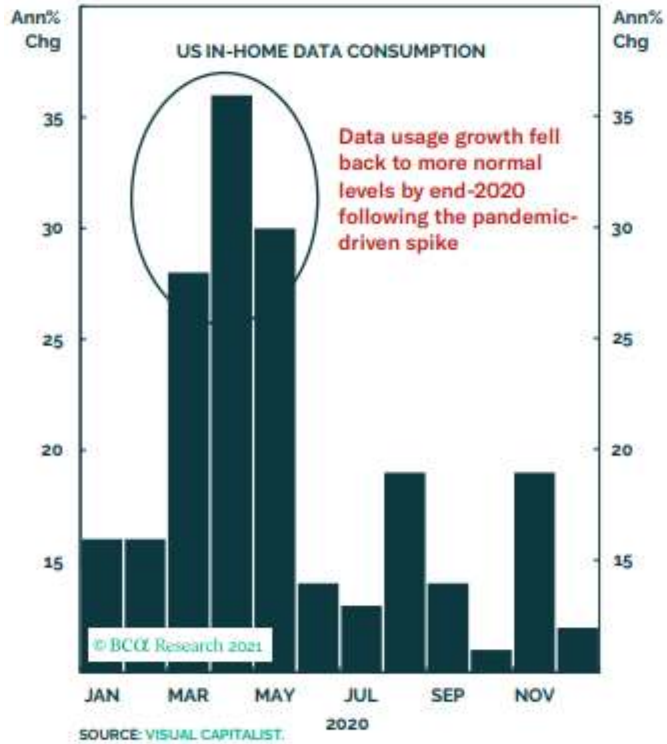
The first is market saturation. Close to three-quarters of US households have Amazon Prime accounts. Slightly over half have a Netflix account. Nearly 70% have a

Facebook account. Google commands 92% of the internet search market. Together, Google and Facebook generate about 60% of all online advertising revenue.

Competition is another challenge. Companies such as Amazon, Facebook, and Google dominate their respective markets. As they look for further growth, they will invariably invade each other's turf. The result might benefit consumers, but it is unlikely to help the bottom line if it means more competitive pressures.

Moreover, it is not just competition from within the tech industry that may disrupt incumbent firms. Consider payment processors. Like most other central banks, the Fed is planning to launch its own digital currency. Widely available, free-to-use Central Bank Digital Currencies (CBDCs) could thwart the ability of Visa and MasterCard to skim 2%-to-3% off of every transaction.

CHART 11
Screen Time Is Moderating



SOURCE: VISUAL CAPITALIST.

Regulatory Pressures

In recent years, tech companies have faced increased scrutiny over their alleged monopolistic practices. In contrast to Chinese tech firms, which have fallen under the thumb of the authorities, US companies have been able to evade harsh measures. Just last month, a US federal court judge dismissed a case filed by more than 40 state attorneys general arguing that Facebook's acquisitions of Instagram and WhatsApp had harmed competition.

In the past, evidence that companies were setting prices well above marginal costs could be used to build a case for anti-trust enforcement. Such cases are more difficult to argue today because so many online services are given away for free.

Nevertheless, governments are likely to become more adept in pursuing regulatory actions. Rather than focusing simply on pricing policies, regulators are increasingly looking at the ways big tech companies use vendor data in the case of Amazon and user data in the case of Facebook and Google to maintain market dominance.

Public contempt for tech companies is fueling a political backlash. According to a Gallup poll conducted earlier this year, only 34% of Americans held a favorable view of tech companies such as Amazon, Facebook, and Google, down from 46% in 2019; 45% had an unfavorable opinion, up from 33% in 2019.

The shift in public sentiment over the past two years has been entirely driven by Independent and Republican voters, many of whom feel that tech companies are unfairly censoring their opinions (**Table 1**). The same poll revealed that the majority of Americans – including the majority of Republicans – now favor increased regulation of tech companies.

A Drug Worse Than Nicotine?

TABLE 1

American Views On Big Tech

Please say whether your overall view of technology companies, such as Amazon, Facebook and Google, is very positive, somewhat positive, neutral, somewhat negative or very negative.

	POSITIVE %	NEUTRAL %	NEGATIVE %	NET POSITIVE MINUS NEGATIVE pct. pts.
2021 JAN 21-FEB 2				
Republican	20	15	65	-45
Independent	33	23	44	-11
Democrat	49	21	30	+19
2019 AUG 1-14				
Republican	43	19	37	+6
Independent	43	23	33	+10
Democrat	49	21	29	+20

Do you think the government should increase, decrease or not change its regulation of technology companies such as Amazon, Facebook and Google?

	INCREASE %	DECREASE %	NOT CHANGE %
2021 JAN 21-FEB 2			
Republican	53	20	23
Independent	58	11	28
Democrat	60	8	30
2019 AUG 1-14			
Republican	48	12	39
Independent	43	12	43
Democrat	56	5	38

SOURCE: GALLUP, FEBRUARY 18, 2021.

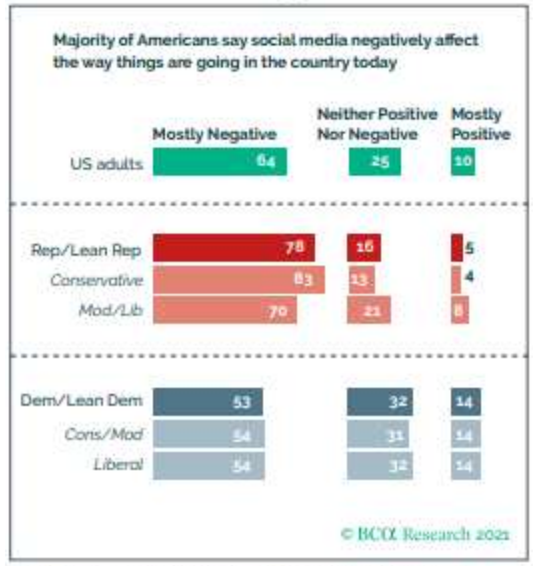
Social media companies are among the most loathed within the tech sector. A Pew Research Center study conducted last year revealed that more than six times as many Americans had a negative opinion of social media as a positive one (**Chart 12**).

The public's disdain for social media is increasingly going beyond traditional concerns over privacy. As psychologists Jonathan Haidt and Jean Twenge recently argued in the New York Times, there is growing evidence that the pervasive use of social media is harming the mental health of the nation's youth. The share of students reporting high levels of loneliness has more than doubled in both the US and abroad over the past decade.

In 2019, the last year for which comprehensive data is available, nearly a quarter of girls between the ages of 12 and 17 reported experiencing a major depressive episode over the prior year, up from 12% in 2011. Academic studies have shown that adolescents who use Facebook and Instagram frequently feel greater anxiety and unease than those who do not.

Just like cigarettes are heavily regulated due to their addictive qualities, the same could happen to social media. Facebook and most other social media companies already restrict access to those under the age of 13, although enforcement is generally spotty. We assign a 50/50 chance that governments start restricting social media usage only to adults over the age of 18 by the end of the decade, a move that could decimate the sector.

CHART 12
Social Media Increasingly Vilified



NOTE: THOSE WHO DID NOT GIVE AN ANSWER ARE NOT SHOWN. SURVEY OF US ADULTS CONDUCTED JULY 13-19, 2020.
SOURCE: PEW RESEARCH CENTER.

Priced For Perfection

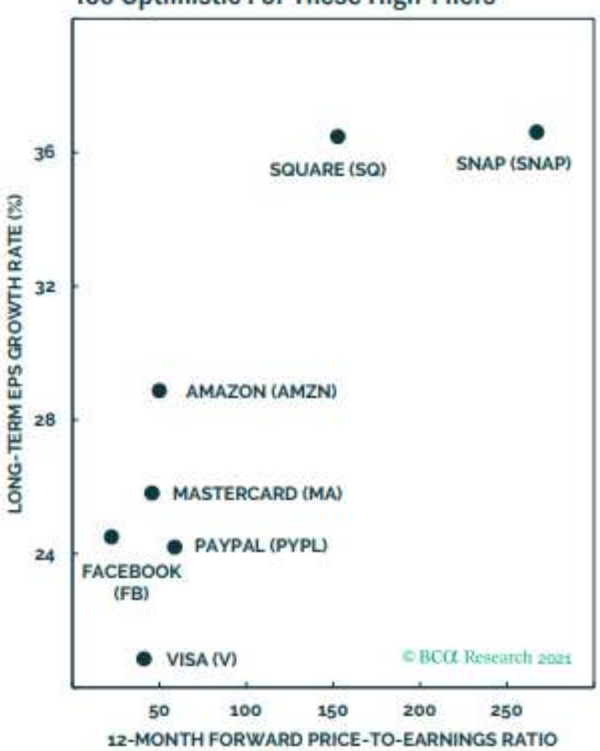
The seven companies in the three highflying sectors mentioned in this report trade at 91-times forward earnings compared to the S&P 500's aggregate multiple of 22.

They also trade at an average price-to-sales ratio of 16 compared to 3.2 for the broader market.

Such valuations can be justified only if these companies grow earnings-per-share by nearly 30% per year over the next five years, as analysts currently expect (**Chart 16**). However, as noted above, that may be too high a hurdle to clear.

Higher bond yields represent another threat to valuations. Growth stocks are much more sensitive to changes in discount rates than value stocks. **Chart 17** show that tech stocks have generally outperformed the S&P 500 over the past four years whenever bond yields were falling. We expect bond yields to rebound over the coming months, with the 10-year yield rising to 1.8% by early next year. Tech is likely to lag ....

CHART 16
Long-Term Growth Estimates May Be Too Optimistic For These High-Fliers



SOURCE: BLOOMBERG FINANCE L.P.
NOTE: LONG-TERM EPS GROWTH RATE IS ESTIMATED FOR THE NEXT 3-5 YEARS.

CHART 17
Higher Bond Yields Could Hurt Tech Stocks

Follow-ups

We have repeatedly warned against investing in SPACs. From the front page of today's WSJ:

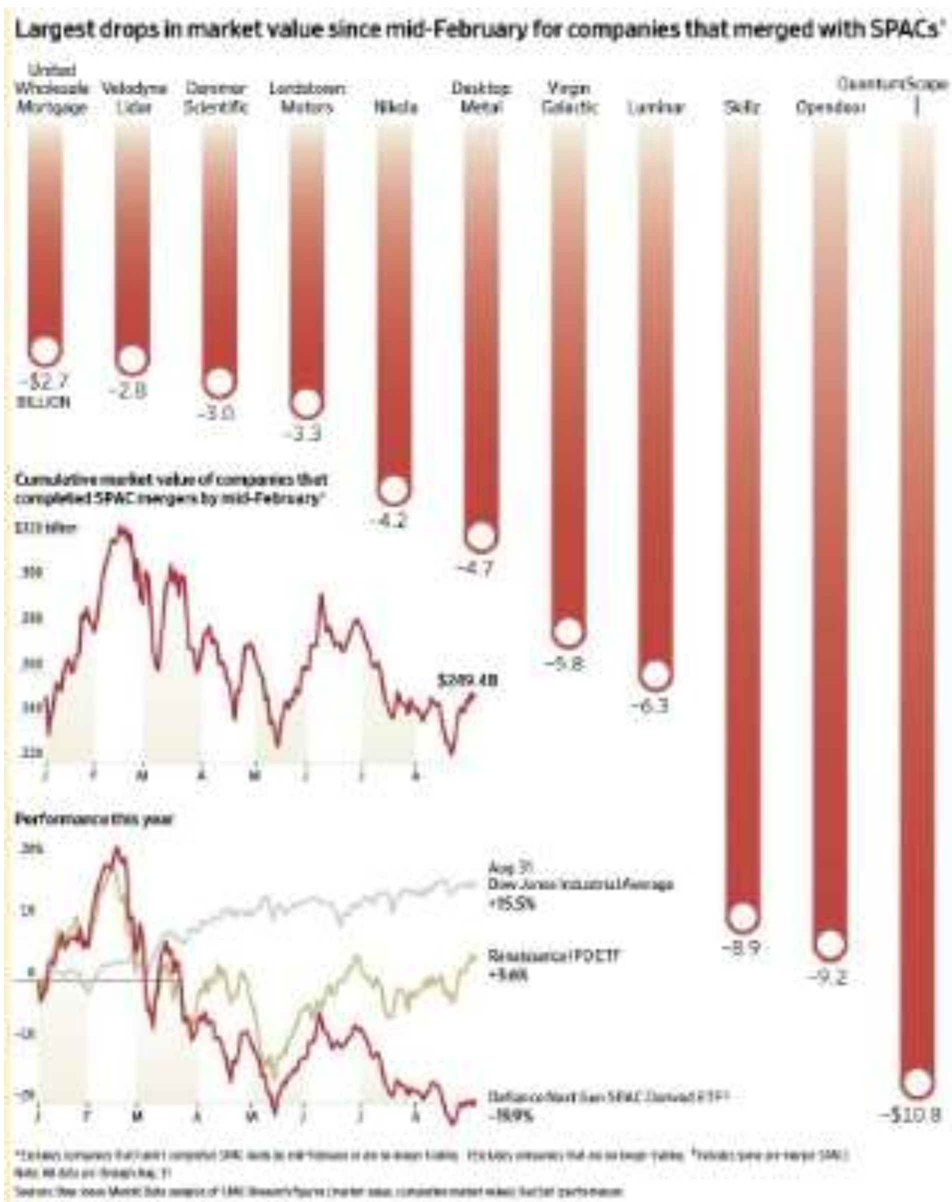
SPAC Rout Erases $75 Billion From Value of Startups

BY AMRITH RAMKUMAR

The blank-check boom has turned into a rout.

More than six months after the SPAC craze crested, a broad selloff has wiped about $75 billion off the value of companies that came public through special-purpose acquisition companies, according to a Dow Jones Market Data analysis of figures from SPAC Research.

A group of 137 SPACs that closed mergers by mid-February have lost 25% of their combined value. At one point last month, the pullback topped $100 billion. The analysis doesn't include companies that hadn't closed mergers as of mid-February or those that are no longer trading.



Over the same span, an exchange-traded fund that tracks companies that recently went public through initial public offerings slid 12%. The Dow Jones Industrial Average gained 13%.

SPAC declines are concentrated in companies tied to green energy and sustainability, though the damage is widespread. About 75% of the SPACs that have announced deals but haven't completed them are trading below their listing price. Earlier this year, when the sector was perhaps the hottest area of finance, SPACs nearly always rose after announcing deals. Now, it is common for SPACs—such as the one that said in June it is taking electric flying-taxi firm Vertical Aerospace Group Ltd. public—to unveil mergers and see their shares fall.

The retreat is hitting funds managed by firms such as BlackRock and Fidelity, as well as many hedge funds, pension managers and other investors that raced to put money into SPACs during the boom that began late last year. Many of these funds were early enough to invest at low prices, meaning they are still sitting on substantial gains. Indeed, the value of the sector remains about $250 billion, up from about $100 billion a year ago, reflecting share-price increases and new entrants.

Even so, the eye-popping returns of early this year have boomeranged on many late arrivers, highlighting the ever-present risks of piling into the latest sure thing. ...

A SPAC is a shell company that raises money and trades on a stock exchange with the sole intent of merging with a private company and taking it public. Combining with a SPAC has become a popular alternative to a traditional initial public offering because it is often faster and lets the company going public make business projections, which aren’t allowed in a traditional IPO.

SPAC deals that value hot companies like Lucid and personal-finance app operator SoFi Technologies at a record of about $525 billion have been announced this year, Dealogic data show.

Some investors call the summer 2021 reversal an inevitable return to earth. Many companies merging with SPACs have little revenue yet carry valuations in the billions of dollars and above. ...

Share-price declines can create a negative feedback loop for SPACs, because investors have the right to pull money out of blank-check companies before mergers go through. They are much more likely to do that when SPACs trade below their listing price, which many currently are. More than 95% of the blank-check companies yet to announce deals trade below that level. Large investor withdrawals can leave the company going public with much less cash, making it harder to meet its business targets and potentially fueling a deeper drop in the stock.

Several companies, such as home-insurance technology company Hippo Holdings, have lost 80% or more of their SPAC funds in recent weeks. Shares of Hippo—which went public in a roughly $5 billion deal with a SPAC backed by LinkedIn co-founder Reid Hoffman and Mark Pincus, who founded the mobile gaming firm Zynga—are down about 60% in the past six months. ...

From August 9th's WSJ:

Gold and Inflation: What 50 Years Tells Us

By Mark Hulbert

On a Sunday evening 50 years ago—on Aug. 15, 1971, to be exact—then-President Nixon interrupted “Bonanza,” one of the most popular TV shows of that era, to announce that he was ending the convertibility of the U.S. dollar into gold. Many consider it to be one of the most consequential decisions he made.

Up until this “closing of the gold window,” foreign central banks had been able to convert U.S. dollars into gold bullion at the fixed price of $35 an ounce. In theory, this had imposed a strict monetary discipline on the Federal Reserve, since inflating the money supply could have caused a run on Fort Knox, where the U.S. stored its supply of gold. And inflation did indeed jump in the years following Nixon’s decision to remove that restraint. So did the price of gold, which today is 50 times as high as it was that day.

This apparent correlation between gold and inflation has led many to believe that gold is a good inflation hedge. This belief isn't supported by the data, however. If gold were a good and consistent hedge, the ratio of its price to the consumer-price index would have been relatively steady over the years. But that hasn't been the case, as you can see from the accompanying chart: Over the past 50 years, the ratio has fluctuated from a low of 1.0 to a high of 8.4.

Gold is only a good inflation hedge over time frames far longer than any of our investment horizons, according to research conducted by Duke University professor Campbell Harvey and Claude Erb, a former commodities portfolio manager at TCW Group. They found that it's only when measured over very long periods—a century or more—that gold has done a relatively good job maintaining its purchasing power. Over shorter periods its real, or inflation-adjusted, price fluctuates no less than that of any other asset.

Gold's weakness as an inflation hedge may be even more pronounced today, Prof. Harvey says, because "gold is currently very expensive compared to its history." The current gold-to-CPI ratio stands at 6.5, for example, nearly double its 50-year average of 3.6.

Light metal

Even though the price of gold is 50 times as high as in 1971, stocks have performed even better. The S&P 500 has produced an annualized return of 11.2% since August 1971, assuming dividends were reinvested along the way. That compares with 8.2% annualized for gold.

Furthermore, the only reason gold came even this close to matching stocks over the past 50 years was its huge return during the first decade following Nixon's announcement. Take away that decade, and gold has lagged behind even intermediate-term Treasury notes. Over the past 40 years, gold has risen at a 3.6% annualized rate, compared with 12.2% for the S&P 500 and 8.2% for the Treasurys.

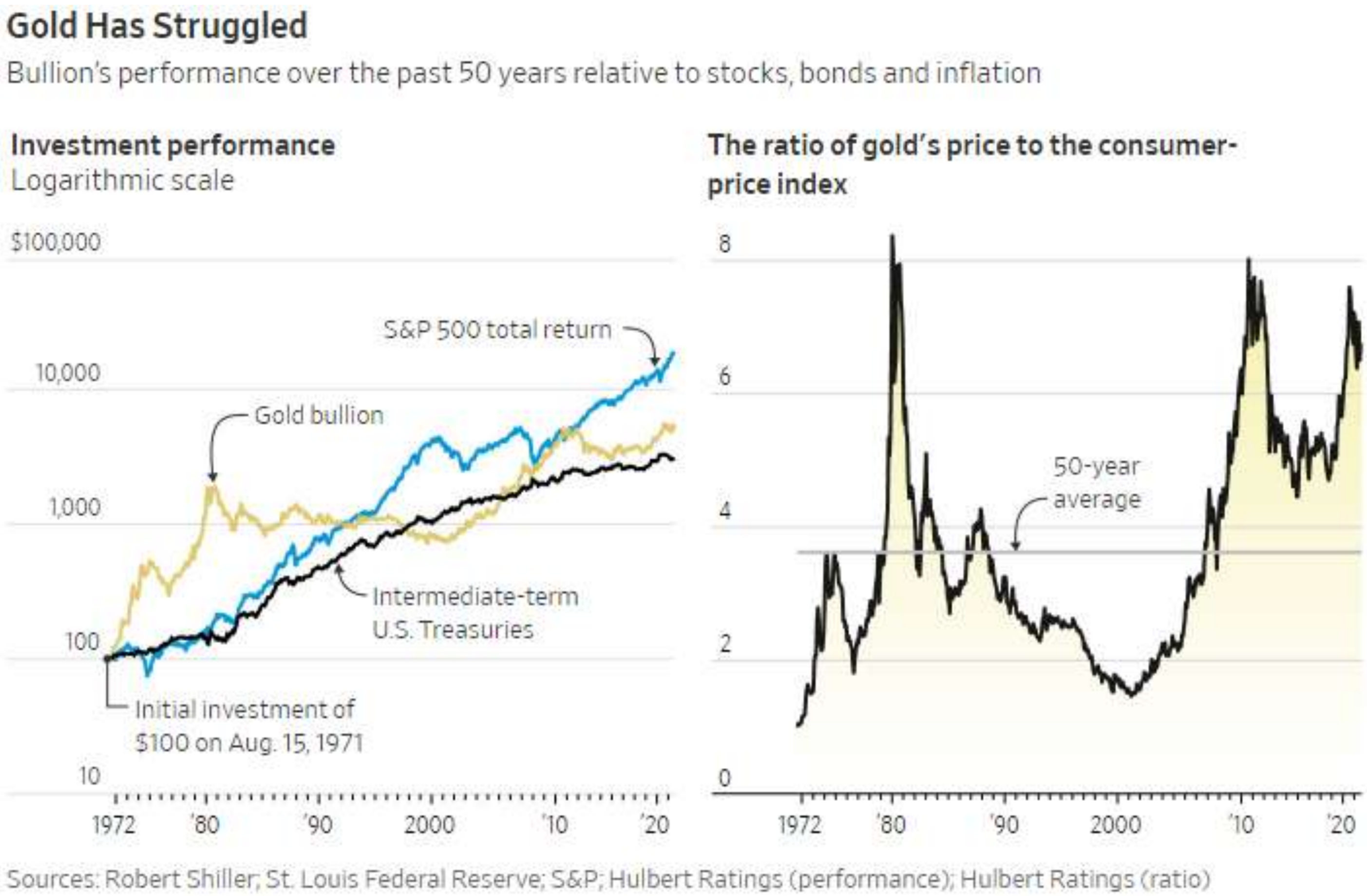
This doesn't mean gold has no role to play in a diversified portfolio, however, even assuming the future will be like the past. Because the correlation of its returns with those of either equities or bonds has often been low or even negative, its presence in a portfolio can reduce volatility. Over the past 50 years, a stock-and-bond portfolio could have improved its risk-adjusted performance by adding a small allocation to gold—around 5% or so.

Still, even gold's volatility-reducing potential isn't guaranteed, since gold's correlation with stocks has varied widely over the years. In fact, there have been occasions in which gold's correlation to the stock market has been positive, which is just the opposite of what it should be to reduce a portfolio's risk. One such recent occasion came during the stock market's waterfall decline in February and March last year: Stocks of gold-mining shares dropped 39%, as measured by VanEck Vectors Gold Miners ETF (GDX)—even more than the 34% drop in the S&P 500. "What kind of safe haven is that?" Prof. Harvey asks.

The next 50 years

Gold's inconsistent correlation with both stocks and inflation makes it difficult to project how it will perform over the next 50 years. An additional wild card, according to Prof. Harvey, is that gold now faces "competition it's never had before" because of the advent of cryptocurrencies.

It is always possible that gold will be a more consistent inflation hedge in coming years. It's just that you will have to look elsewhere than history to find support for such a possibility. Mr. Erb is cynical whether this will



pose much of an obstacle to gold's true believers, however: "The past can always be brushed aside when dreaming about how gold and inflation might move in tandem in the future."

Mr. Hulbert is a columnist whose Hulbert Ratings tracks investment newsletters that pay a flat fee to be audited.

From the front page of August 6th's WSJ:

Spending Program Widens Deficit, CBO Says

Analysis of proposed infrastructure plan differs from arithmetic of bipartisan framers

BY ANDREW DUEHREN

WASHINGTON—Congress's nonpartisan scorekeeper found that the roughly $1 trillion infrastructure bill would widen the budget deficit by $256 billion over 10 years, countering negotiators' claims that the cost of the legislation was covered by new revenue and savings measures.

The score was released as the Senate advanced amendments for the bill this week and didn't create any immediate obstacles to final passage of President Biden's economic agenda. ...

Figuring out how to pay for the bill was central to the weeks of difficult negotiations between the bipartisan group of senators and the White House. Because the White House opposed raising the gas tax and Republicans ruled out raising taxes on corporations, lawmakers searched long and hard for acceptable measures to raise revenue and find savings for the bill.

They ultimately settled on repurposed Covid aid, along with delaying a Trump-era Medicare rebate rule and a series of accounting maneuvers to argue that the bill wouldn't add to the deficit.

One of the biggest discrepancies between the CBO score and lawmakers' estimates of the cost lies in the Covid-19 aid. Lawmakers had said they would save roughly $210 billion by repurposing those funds, while the CBO score gives lawmakers credit for reducing outlays by roughly $13 billion with the cuts.

Another shortfall stems from the estimated economic growth the package could spur. Lawmakers said the bill could generate $56 billion in revenue based on new economic growth it causes. CBO didn't estimate the macroeconomic impact of the bill in the cost estimate it released Thursday.

On the spending side, the bill provides a wide variety of infrastructure goals with generous supplements to their typical federal support, including $110 billion to roads and bridges, nearly $40 billion for transit, and $55 billion for water infrastructure. It also authorizes hundreds of billions of spending on a variety of existing infrastructure programs, bringing the total cost to roughly $1 trillion.

Marc Goldwein, the senior vice president and senior policy director for the Committee for a Responsible Federal Budget, said that the CBO score doesn't account for the impact that authorized future spending could have on the deficit, too. He estimated the bill would ultimately increase the deficit by $350 billion over 10 years. ...

Last month, the CBO projected that the federal budget deficit for this fiscal year will reach about $3 trillion. That would be nearly $130 billion less than the 2020 deficit but triple the 2019 shortfall.

From the front page of August 4th's WSJ:

SEC Calls For Tools To Rein In Crypto Markets

Investor protections are needed in a growing sector rife with fraud, scams, Gensler says

BY PAUL KIERNAN

WASHINGTON—The Securities and Exchange Commission will regulate cryptocurrency markets to the maximum extent possible using its existing authority, Chairman Gary Gensler said Tuesday, while also calling on Congress to grant the agency more scope and resources to oversee the sector.

Calling the asset class rife with "fraud, scams and abuse," Mr. Gensler signaled the SEC is likely to become more active in policing crypto trading and lending platforms, as well as so-called stablecoins.

"We just don't have enough investor protection in crypto. Frankly, at this time, it's more like the Wild West," Mr. Gensler said in prepared remarks to the Aspen Security Forum. "We have taken and will continue to take our authorities as far as they go."

U.S. financial regulators have struggled to get their arms around the fast-growing world of cryptocurrency and related financial technologies. Unlike in the securities and derivatives markets, no single regulator oversees crypto exchanges or brokers. As the market value of the asset class has exploded to more than a trillion dollars, so have scams.

Mr. Gensler said large parts of the sector operate outside of regulatory frameworks that seek to protect investors and consumers, reduce crime, and promote financial stability.

"If this innovation has any chance of surviving into the, you know, late 2020s and 2030s, it can't stay astride of the public policy," said Mr. Gensler, a veteran Democratic regulator who taught a course on cryptocurrency at the Massachusetts Institute of Technology.

Mr. Gensler's speech comes amid a growing view from some lawmakers and Biden administration appointees that the crypto market has become large enough and important enough to require more oversight. ...

Mr. Gensler has told House lawmakers that investor protection rules should apply to crypto exchanges, similar to those that cover equities.

"The world of crypto finance now has platforms where people can trade tokens and other venues where people can lend tokens," Mr. Gensler said. He said he believes these platforms can be subject to securities laws and may also be subject to commodities and banking laws.

Mr. Gensler said stablecoins— digital assets pegged to the value of national currencies— also might meet the definition of securities or investment companies, which would also put them within the SEC's jurisdiction. ...

Traders typically use stable-coins to exchange one crypto asset for another, Mr. Gensler said, noting that, in July, almost three-fourths of trading on cryptocurrency platforms occurred between a stablecoin and some other token.

"The use of stablecoins on these platforms may facilitate those seeking to sidestep a host of public policy goals connected to our traditional banking and financial system: anti-money-laundering, tax compliance, sanctions and the like," Mr. Gensler said. ...

Positions

HFC - We purchased 1% positions in this Refiner, an IVA System pick, on 8/16 for 6 clients @ 29.909.

Insider Buying:

Trade Date	No. Part	Participants	Net Sell (Shares)	Net Buy (Shares)
08/10/2021	3	Rose Michael, Jennings Mic...		26,000

From Morningstar as of Aug. 20, 2021:

HollyFrontier Bulks Up With Acquisition Spree

Allen Good
Sector Strategist

Business Strategy and Outlook

HollyFrontier is a relatively small player, with four refineries totaling 405,000 barrels per day of crude oil throughput capacity. However, all its facilities are in the midcontinent, Rockies, or Southwest region. As a result, each refinery benefits from the difference in price between inland light crudes and other high-quality waterborne crude such as Brent.

Holly has been growing, however, as it has been on an acquisition spree the last few years to increase its size and diversify away from its core refining business.

HollyFrontier first acquired the Petro-Canada lubricants business, Red Giant Oil, and Sonneborn to diversify its earnings stream. It expects the newly formed segment to generate $250 million-300 million EBITDA a year, potentially bringing total lubricants contribution to about 20% of total EBITDA. It also offers synergy opportunities with the refining assets such as its Tulsa refinery and serves as a platform for future growth.

More recently, it announced the purchase of the 149 mb/d Puget Sound, Washington refinery and the acquisition of Sinclair Oil, which adds two refineries with total capacity of 124 mb/d, a 10 mb/d renewable diesel unit and an integrated distribution network with over 1,500 branded sites. At the same time, Holly Energy Partners will acquire Sinclair Transportation.

Both deals were done at fair valuations in our view. Also, the Sinclair deal makes strategic sense given the geographical fit and advantages of integration. We see less of a fit for the refinery, which is far outside Holly's current footprint and adds exposure to the difficult West Coast market.

Holly is also investing $800million-900 million into renewable diesel with projects at its Artesia and Cheyenne (converted from petroleum refining) refineries. Together the two projects, along with a pretreatment unit at Artesia, should produce 210 million gallons annually when complete in early 2022. Management expects the projects to deliver returns of 20%-30% and $165 million in free cash flow annually. Renewable diesel also generates 50% lower emissions than conventional diesel while generating more renewable identification numbers for every gallon, compared with ethanol.

Economic Moat

Perhaps more than any other refiner, HollyFrontier has benefited from wide inland light crude differentials, thanks to the position of its refining assets. All of HollyFrontier's refineries are in the midcontinent, ensuring it 405 mb/d of capacity to process either discount light or heavy crude, while it enjoys a discount, given their proximity to the source of production. Given the feedstock cost advantage, we think HollyFrontier earns a narrow moat.

While we do not expect a return to the differentials that widened to nearly $30/bbl due to transportation constraints, HollyFrontier should continue to benefit, as we project the differentials to remain well above historical levels prior to 2010 even as new pipeline capacity comes on stream.

These projections include projects HollyFrontier has underway to extend its advantage. The company has expanded its Woods Cross refinery by 14 mb/d and has plans to integrate its recent petrochemicals acquisition into its refining system. HollyFrontier does not export products to foreign markets, but should benefit from continued Gulf Coast exports, which will prevent supply from moving inland.

HollyFrontier also has a crude advantage, thanks to the complexity of its refineries and their proximity to cost-advantaged feedstock from Canada, of which it refines 60-70 mb/d. HollyFrontier has a systemwide complexity rating of 12.1, which allows it to process heavy crude and produce comparable yields of refined product more cheaply than refineries that use only the easier-to-refine, but more expensive, light crude.

HollyFrontier lacks the downstream infrastructure and the retail segment that many peers have. As a result, it is unable to create renewable identification numbers, or RINs, to meet the renewable fuel standard and must purchase about half of its obligation on the open market. Recently, higher RIN prices have substantially increased this cost relative to a few years ago, which weighed on earnings. In this environment, this lack of downstream assets leaves HollyFrontier in a weaker competitive position, and if this were to continue indefinitely, the firm's narrow moat might be at risk.

We have incorporated ESG risk into our moat evaluation, but no risk is material or probable enough within the next 10 years to influence our narrow moat rating. A carbon tax is likely to be implemented and will likely impact demand, but not in the near-term. Although HollyFrontier does disclose its GHG emissions and carbon intensity, it does not have any explicit reduction targets.

However, HollyFrontier’s investment in renewable diesel addresses potential petroleum product demand destruction while reducing its carbon intensity. It also diversifies its output and protects against RIN purchase obligation costs. The company recently began construction on a new renewable diesel unit at the Artesia facility with a production capacity of 120 million gallons a year. The unit will convert renewable feedstocks into renewable diesel to meet demand for low-carbon fuels while covering the cost of its annual RINs purchase obligation. It is also converting its Cheyenne petroleum refinery to produce 90 million gallons annually of renewable diesel. Commissioning for both is expected in early 2022. With 50% lower GHG emissions, renewable diesel should reduce HollyFrontier’s carbon intensity while delivering IRRs of 20%-30%, suggesting it's moat enhancing as well.

Fair Value and Profit Drivers

Our fair value estimate is $40 per share after incorporating the latest financial results and refining market conditions into our forecast. Our fair value estimate corresponds to a forward enterprise value/EBITDA multiple of 9.3 times our 2021 EBITDA forecast of $909 million. Our fair value estimate is derived from a discounted cash flow analysis, which values refiner and MLP cash flow separately. This method better values HollyFrontier's limited partner ownership stakes in its MLP.

Our fair value estimate reflects our updated refining margin deck, in which we incorporate our long-term outlook for crude differentials. Our long-term outlook for the WTI-Brent differential is $5, and that for the Louisiana Light Sweet-Brent differential is $2. We assume long-term Gulf Coast refining margins of $14 and adjust capture rates to reflect asset quality and investment.

We expect an earnings improvement in 2021 thanks to a recovery in refining margins that will be partially offset by high RIN costs. However, longer term, we anticipate overall margin improvement for HollyFrontier, thanks to recent investments to improve yields and reliability. Midcycle margins should also benefit from increased usage of cost-advantaged feedstock with the opening of new pipeline access, a recent refinery expansion, and growing domestic production. Integration between the company's facilities could provide additional margin improvement. RIN prices remain an unknown that could create material costs for HollyFrontier but should be mitigated in part over time as renewable diesel begins.

We have not explicitly added the Puget Sound refinery or Sinclair Oil to our forecast, but our analysis suggests both are value-neutral and should not impact our fair value estimate.

Risk and Uncertainty

Based on the outcome of our scenario analysis, we assign HollyFrontier a very high uncertainty rating.

HollyFrontier holds the same industrywide risks as its competition. Primary among these are a potential economic slowdown or quickly rising oil prices that would destroy demand and in turn crush margins. Additionally, its historical strong performance is attributable to wide crude differentials. Significant narrowing or elimination of these differentials would negatively affect performance. If inland markets disconnect from global product pricing, then prices might be based on regional crude prices, negating the advantage of light crude differentials.

Its relatively small refineries represent a concentrated revenue base that puts HollyFrontier at risk in the case that, for whatever reason, one facility experiences an extended shutdown.

In the long term, adoption of electric vehicles, autonomous vehicles, and ride-sharing could reduce demand for HollyFrontier's primary products.

We have also incorporated ESG risks into our uncertainty rating, but they are not material or probable enough to alter the scenario analysis derived very high rating. HollyFrontier's primary ESG risk is the implantation of a carbon tax on the emissions associated with its operations and products. A carbon tax would likely increase the final price of refined products as emission costs would likely be borne by consumers. While we expect a carbon tax to eventually be implemented, the negative impact on product demand would likely take time.

HollyFrontier also holds the risk of an oil or product spills or emissions from its refineries. While this is likely to occur, we expect the amounts to be small and any financial penalties to be manageable.

Capital Allocation

Based on our capital allocation framework which evaluates soundness of the balance sheet, investment strategy and appropriateness of shareholder distributions, HollyFrontier earns an Exemplary rating.

Although HollyFrontier's business has a high amount of operating leverage as well as revenue cyclicality, management operates with relatively low levels of debt that retains flexibility in times of market weakness. This is evident in its ability to raise debt during the last year and still keep net debt to capital at around 10%, lowest among its peers while net debt/EBITDA should fall below 2.0 during the next three years. Near-term maturities are also relatively low. All of which amounts to a sound balance sheet in our framework.

Holly Frontier also scores a Exemplary rating for its investment strategy as its sufficient to maintain its competitive position while exploiting growth opportunities. Near-term investment will go largely toward building out its renewable diesel business including the conversion of its Cheyne refinery. Given global blending mandates, this sector has an attractive long-term demand outlook helping to offset any potential weakness in refined product demand. Like peers, it will also likely direct refining investment toward improving its already strong competitive advantage by focusing on increasing discount crude processing, improving yields and lowering costs.

Its acquisitions to build its lubricants business separate it from peers who do not have similar assets. To date the acquisitions have not met expectations, but that is largely due to global oversupply, not execution. We expect management will continue to acquire assets in the segment to further grow the business. Assuming these deals are done at attractive valuations and increase scale, they could strengthen its competitive advantage in the sector. The two most recent transactions are being done at fair valuations in our view. While adding Sinclair makes sense given the overlapping geographies and addition of a distribution network, we see less reason to add the Puget Sound refinery.

Unlike many peers, HollyFrontier has lacked an explicit payout target, but plans to follow a 50% payout ratio once the acquisitions are complete in mid-2023. In the past it would pay a special dividend with excess cash but in recent years has switched to repurchasing shares, which affords it more flexibility. Historically, repurchases have created value in our view as about 80% of total share repurchases over the last 10 years occurred at a price/fair value of 1.0 or less.