ALTAIR INSIGHT 20 YEARS

Quarterly Market Review

Navigating a Transition

July 2022

Paris
Rosa Zapata, Marketing Associate

Second Quarter 2022 Key Topics

1. The economy is experiencing a slowdown but a worrisome contraction is unlikely.

2. Inflation is proving stickier than most (including us) foresaw. It still should decline in the second half.

3. The Fed could ease its tightening sooner than expected this fall, but only with proof its inflation crackdown is succeeding.

4. We anticipate further turbulence before this bear market ends, followed by a recovery that will almost certainly occur before the economy rebounds.

5. The strongest dollar in 20 years is weighing on international stocks, among other categories – but they still outperformed U.S. stocks in the first half, renewing our conviction.

Noah Kroese Illustration for Altair Advisers

Our midsummer message is not without optimism for what lies ahead but pulls no punches concerning what happened in the first six-plus months. Calling 2022 anything but terrible for investors so far would be an understatement. Rarely has the start of a year brought worse results.

Performance has been plagued by what one of our recommended fund managers calls the three i's – inflation, interest rates and invasion (Russia's war in Ukraine). Fears of an 'r' word, too – recession – have also weighed heavily on markets in this year of transition to an era of tight monetary policy and no more pandemic stimulus, although as we discuss below we see evidence of resilience that runs counter to the worst of those concerns.

The conditions that pressured stocks, bonds and other assets in the first half remain present: four-decade-high inflation, slowing growth, rising interest rates and broad global consequences of what has become a drawn-out war in Ukraine.

So why do we believe better conditions await investors?

We anticipate a decline in inflation by the end of the year, for starters. A number of core elements that have driven the painful rise in headline inflation already are starting to come down, and supply-chain congestion is finally alleviating. The Federal Reserve's late-starting campaign to bring inflation under control appears to be working its way through the system as the housing market and other overheated sectors cool down. The swiftness of the Fed's policy tightening in ramping up the federal funds rate from zero to an anticipated 3% by late September may enable it to ease up this fall, which could boost markets. And consumers and businesses, while showing some signs of strain from the three i's cited above, are in better position than in the past to ride out an economic slump.

Lastly, but importantly, the history of major pullbacks like this year's bear-market downturn in stocks shows that a snapback rally usually starts even with the economy still in the doldrums. While no one can call the bottom and more volatility likely lies ahead, we believe we are closer to the end of this downturn than the beginning. Once the bottom is reached, stocks generally have performed well over the following 12 months.

Taxable bonds, while on track for their worst year ever through six months, have done well in recent weeks and so have municipal bonds since a poor first quarter as yields have declined. After a rare period when they offered no protection to portfolios, bonds again are performing their role as portfolio buffers.

We are maintaining our recommended risk allocations while watching for opportunities to add to risk in a market environment we are confident will improve.

Please read on as we delve further into the main issues affecting the markets:

1. The economy is experiencing a slowdown but a worrisome contraction is unlikely.

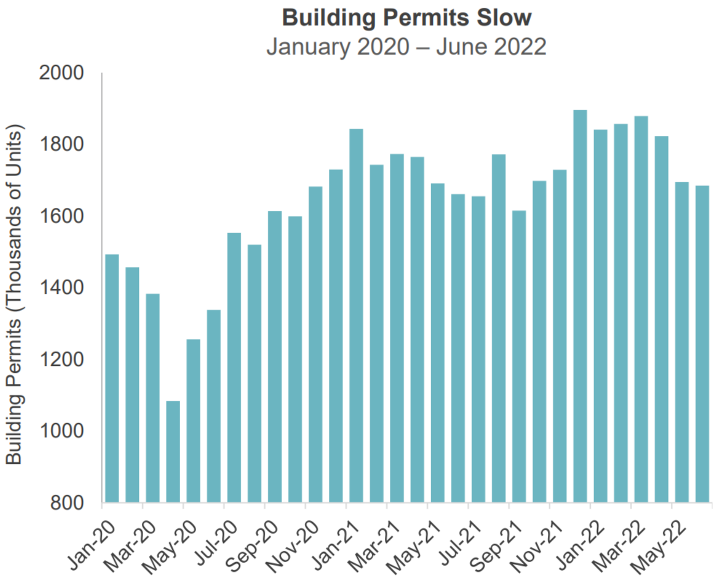
Few topics disrupt markets more than the possibility of a recession, bringing an upward business cycle to an end with uncertain consequences. Indeed, investors' fears rose and stocks plummeted as the second quarter wound to a close with a closely watched economic activity tracker pointing to a second straight quarterly decline in inflation-adjusted gross domestic product. A 0.9% contraction was confirmed in the government's GDP estimate in late July, signaling back-to-back drops, which fits the common definition of a recession. However, other data factor into the official characterization and many areas remain strong, casting doubt on whether this will ultimately be deemed a recession.

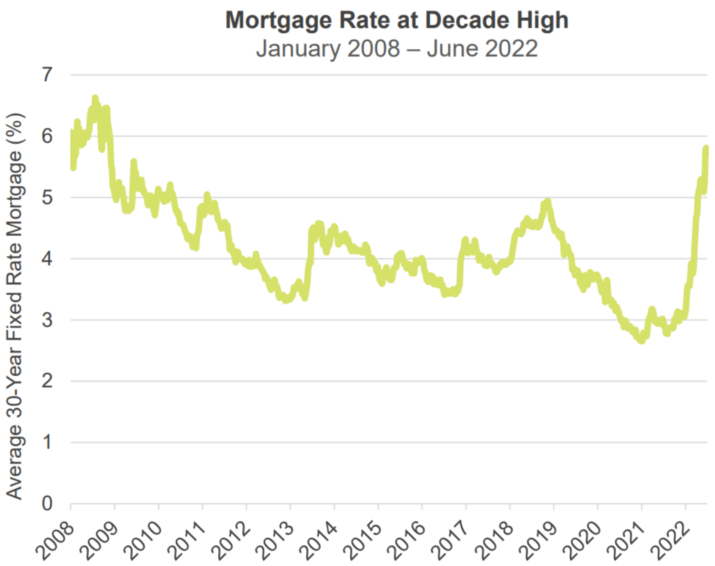
The "recession or no recession" question has preoccupied markets for much of 2022 as the economy slows and the Fed raises rates. We view the more important issue now as whether this slump, regardless of its label, will be worse than markets anticipate based on their steep drop since early January. Given the robust labor market and other signs of economic resilience, we see a deep, extended recession as unlikely.

It is far from certain that the current slowdown will be designated a recession. The National Bureau of Economic Research, the official arbiter of recessions, says it only makes such a call when there is a broad and significant decline in economic activity. The NBER also considers jobs, manufacturing and real incomes, not just real GDP, and those categories continue to thrive. Indeed, Fed Chair Jerome Powell said it is unlikely that current conditions constitute a recession, especially given the "very strong" labor market.

Our base case is that a U.S. recession remains unlikely in 2022. Even if the NBER does declare this period a recession when it makes its official determination in as long as a year or more from now, we do not believe it will be the beginning of a severe recession. While the trajectories of both inflation and the war in Ukraine remain highly variable, we anticipate that any recession would be relatively shallow and brief because the causes are fairly well known. Severe recessions tend to be caused by exogenous shocks and/or liquidity crises. Today, the challenges of inflation and central banks are well known by businesses and consumers and they are proactively managing through these issues.

Beyond the U.S., a slowdown is crimping the entire global economy, raising concerns about stagflation – weak growth and elevated inflation – similar to what occurred in the 1970s. The International Monetary Fund cut its global growth projections in July to 3.2% in 2022 and 2.9% in 2023, calling the world economic outlook "gloomy and more uncertain." Many economies are at risk of recession as central banks tighten aggressively and inflation squeezes growth. The dollar's rise to multi-decade highs against other major currencies is making the overseas fight against inflation even more difficult. In addition, another punishing Covid wave this winter would further complicate the challenge.



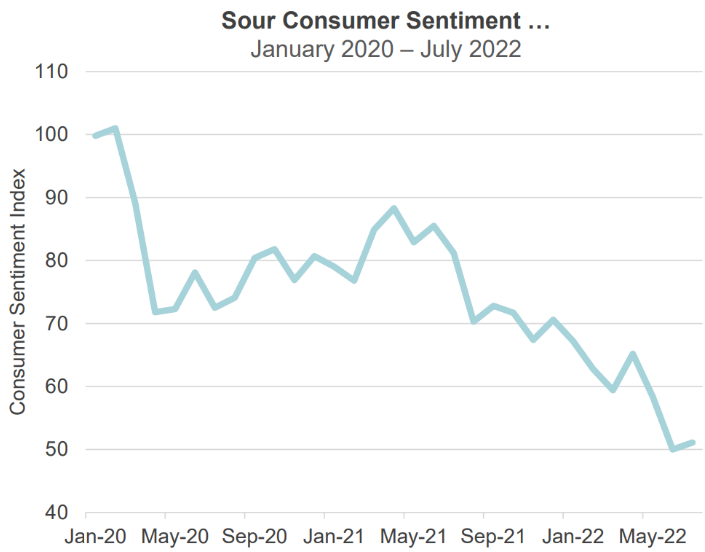


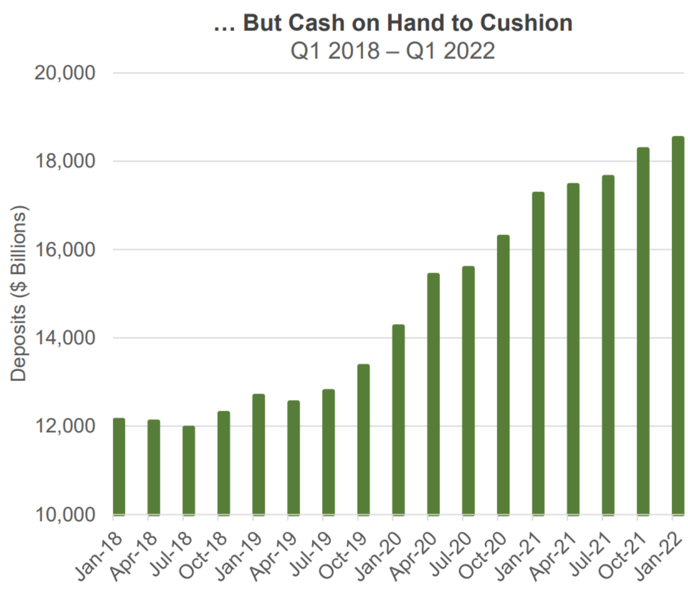
Recent data shows that the U.S. economy, while weakening, is still stable. Growth has gone temporarily negative as the economy downshifts amid higher prices and borrowing rates. Retail sales and consumer confidence have softened. The housing market is slowing in the face of 14-year-high mortgage rates.

Yet recessions typically are characterized by both a labor market meltdown and the struggles of consumers and businesses to meet their financial obligations. Neither condition is evident at present.

Amid the slowing, a snapshot of the economy also shows:

- **A solid labor market,** with more than 1.6 million jobs added in the first quarter despite negative GDP growth and another 1.1 million added in the second quarter.
- **Still-heavy consumer spending,** which comprises two-thirds of the economy. Retail sales overcame a slight drop in May to resume their monthly rise in June.
- **Households in much better position** to ride out a downturn than in recent recessions. As of the end of May, consumers were sitting on an extra $2.2 trillion in savings compared to before the pandemic.
- **A positive earnings outlook,** with estimated U.S. corporate profits growth of 5% for the second quarter and 10% for the year, according to FactSet.





A recession will occur at some point. There have been 34 such periods of negative economic growth in the U.S. since 1854, according to the NBER, and five since 1980 – one every eight or nine years on average. Terminology and official determinations aside, we do not see a debilitating economic contraction on the near horizon. We believe that the economy remains solid for now and is in good position to withstand higher interest rates and the impact of inflation over the next several months.

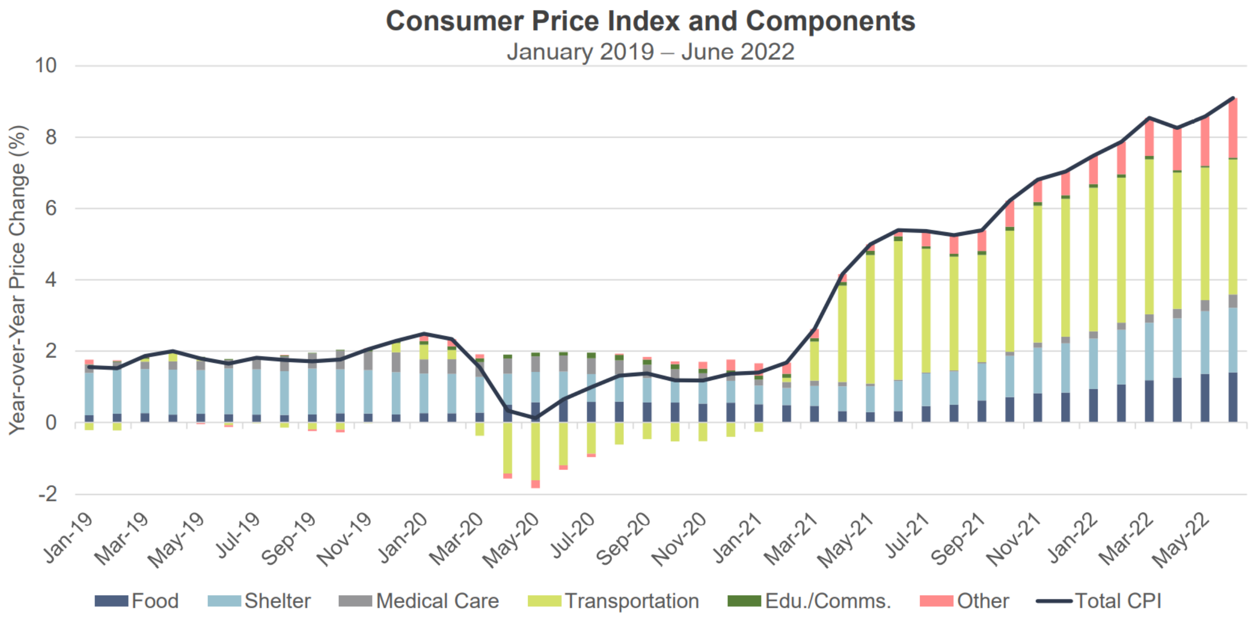
2. Inflation is proving stickier than most (including us) foresaw. It still should decline in the second half.

Declaring inflation's surge to be at or near a peak has proven premature time and time again since the Fed's misguided call a year ago that it was transitory. Economists and pundits have repeatedly been reminded of a tendency that the late German central bank chief Karl Otto Pohl once described memorably: "Inflation is like toothpaste. Once it's out, you can hardly get it back in again."

While we will not hazard a prediction on exact timing or other specifics, we see multiple signs that further our belief that inflation will begin decelerating. Energy and commodity prices have fallen recently, supply chain pressures have eased and other areas are cooling, as we explore further below.

Yet we remain wary of inflation's unpredictability, as well as its powerful impact on the economy and markets. We will be closely monitoring any monthly changes in the components behind inflation's rise as well as key economic indicators and the Fed's statements and actions.

The Fed has assessed inflation since the 1970s primarily by a "core" gauge that excludes food and energy because those categories can fluctuate wildly and, according to officials in the past, cannot be influenced by monetary policy. Their recent price surge, however, has proven impossible for Powell and his colleagues to ignore. So-called headline inflation rose to a 41-year high of 9.1% in June because of the soaring costs of gasoline as well as food, shelter and services. The longer inflation remains this elevated, the greater the public's expectations for cost increases becoming anchored – which risks creating a longer-term spiral of price and wage rises.

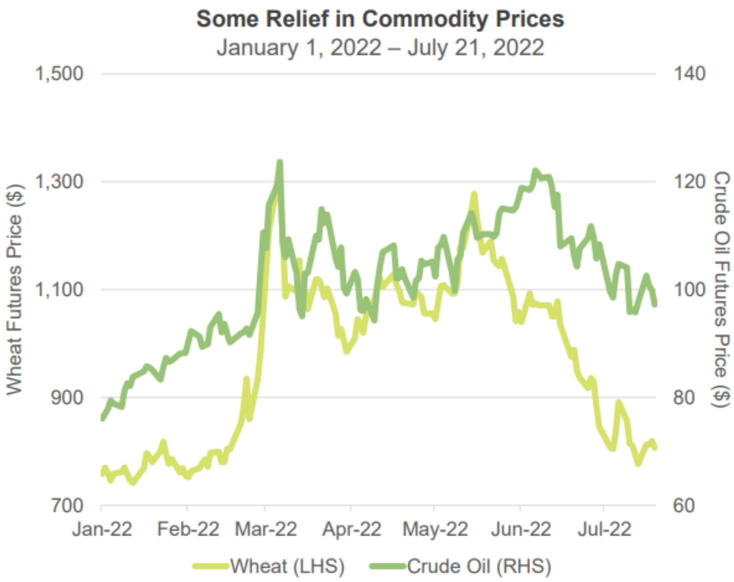


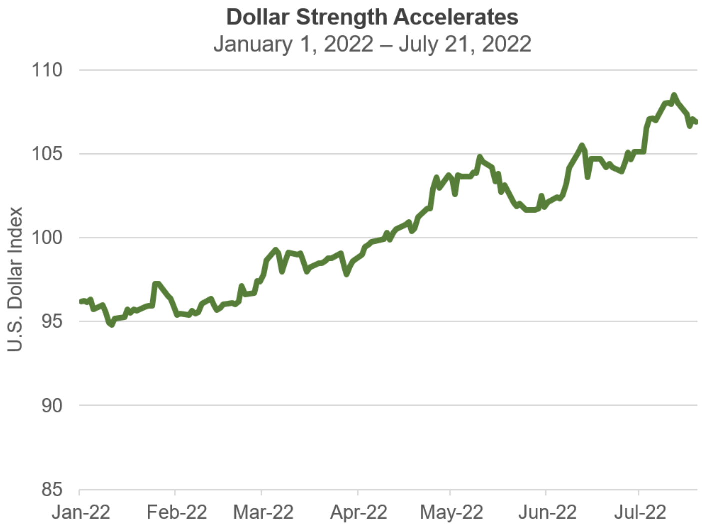
Accelerating wage gains complicate the outlook. At a time when the Great Resignation is still ongoing after more than a year with more than 11 million job openings, U.S. employers are having to pay more to both attract and retain their workers. That trend will be hard to stop in a healthy economy. Higher rents also will be relatively sticky as a result of booming demand as more people want to live on their own and soaring home prices have kept many would-be homeowners in the rental market.

A Russian cutoff of natural gas to all of Europe could exacerbate inflation in that region and beyond. Geopolitical flashpoints such as the war in Ukraine and Covid lockdowns in China also could worsen the risks to supply chains and inflation.

Those caveats notwithstanding, a price cooldown appears under way in several areas that should lead to modestly lower overall inflation in the months ahead.

Much of the early evidence is in commodity prices, which drove the big runup in prices and are rolling over in numerous categories. Lumber, which has been a leading indicator for other commodities, has tumbled. Copper and other industrial metals are substantially off their peaks. Cotton, wheat and corn have reversed course and fallen. Energy prices, while still volatile, saw a notable turnaround starting in early June: Benchmark oil prices have sunk from $122 to under $100 and gasoline futures also declined meaningfully.





Supply bottlenecks that helped ignite prices have eased and freight rates are falling. The formerly sizzling housing market is cooling as mortgage rates climb. Used car prices are increasing at the slowest pace in two years and new car prices are moderating as inventories rise. The core year-over-year PCE growth rate – that preferred Fed inflation gauge that excludes key categories – has fallen consistently since February.

All told, inflation, like the temperature, is staying hotter than desired this summer. While price growth in the areas we mentioned has slowed or paused, it still grew in June at the fastest pace since 1981. The latest trends, however, suggest an increasing probability that it will begin moderating in the second half. That would be an important step in the right direction.

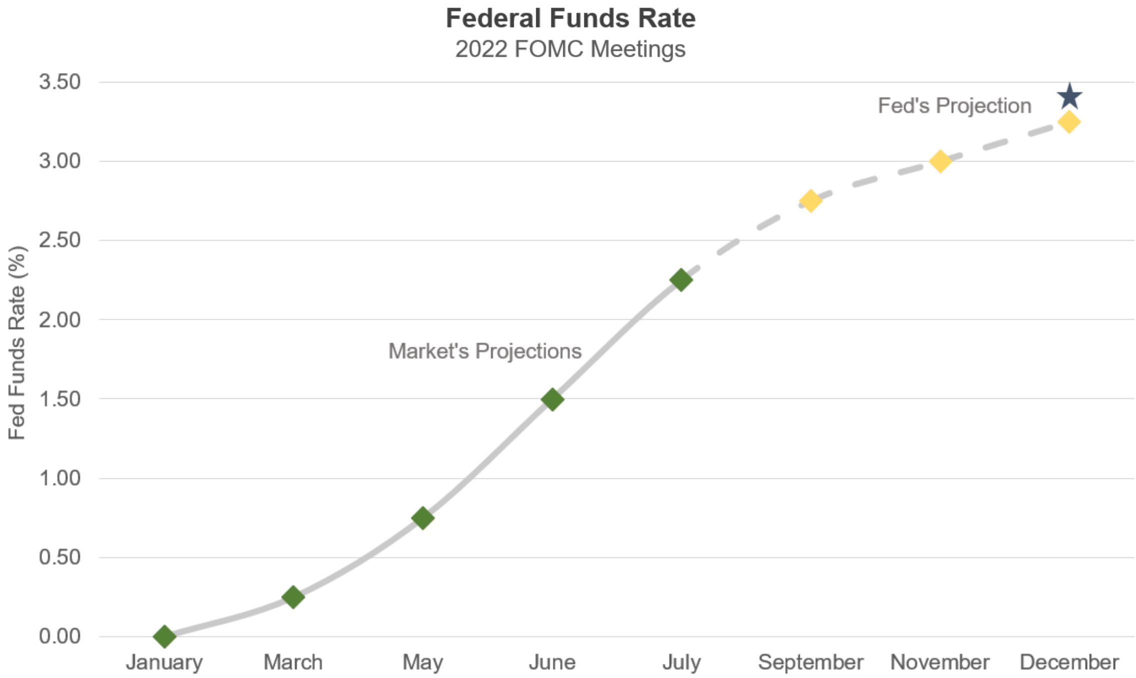
3. The Fed could ease its tightening sooner than expected this fall, but only with proof its inflation crackdown is succeeding.

After an egregiously late start, the Federal Reserve has done everything to fight inflation recently but hand out WIN buttons. Those promotional pins, as some of our clients will recall, were distributed by the Gerald Ford administration in 1974 as part of a short-lived and much-ridiculed public relations campaign to reduce double-digit inflation by encouraging personal savings and disciplined spending habits to "Whip Inflation Now."

The Fed's 2022 offensive against inflation is much more traditional, and harsher. The central bank has moved to atone for last year's policy error by capitalizing on a stable economy to front-load its interest-rate hikes – raising the federal funds rate unusually aggressively – in a bid to reverse rapid price growth. It followed the largest rate hike since 2000 in May (half a percentage point) with even bigger ones (75 basis points) in June and July. Simultaneously, it is reducing its balance sheet after it ballooned to $9 trillion as a result of emergency support for the economy during the pandemic.

We applaud the Fed's belated yet decisive crackdown, which has far exceeded the European Central Bank's slower-starting plan to address Europe's record inflation. The dollar's stunning 11% rise this year against other major currencies reflects both the strength of the U.S. recovery and investors' endorsement of the Fed's most aggressive tightening since 1980. But will the Fed stay with its plan to normalize rates after years of ultra-loose monetary policy to prop up the economy? The answer, as Powell has acknowledged, is not fully within its control.

Assuming price stability is meaningfully improved in the second half, as we anticipate, the central bank could ease its tightening pace later this year. The Fed recently projected a target rate of 3.25% by year-end, up from zero at the beginning of 2022. With its July increase boosting the target range to 2.25%-2.5%, the rate-hike cycle is well along the path toward completion. Slowing the pace would lessen pressure on the economy by year-end, and markets could reverse course and head back higher in response.



See disclosures at end of document. Sources: Federal Reserve, CME Group

However, such a turn of events is likely still months away. All signs point to the Fed making another significant rate increase at its late September meeting.

Bill Dudley, former vice chairman of the central bank's policy-setting Federal Open Market Committee, wrote recently that Fed officials will be hesitant to stop tightening "until they're highly confident (probability greater than 80%) that they've done enough — that the labor market has sufficient slack to keep inflation low and stable, and that easing financial conditions won't lead to an inflation rebound." Enough, that is, to be reasonably sure that inflation is headed back down toward its 2% target on a sustainable basis.

The monthly inflation readings will determine the Fed's course. We believe Fed officials need to see two to three months of moderating inflation before letting up. If that occurs, they could pull a surprise by pausing or even ending the tightening process ahead of expectations.

4. We anticipate further turbulence before this bear market ends, followed by a recovery that will almost certainly occur before the economy rebounds.

The perfect storm of circumstances that combined to produce the worst first half for markets in decades is not going to dissipate overnight. The economic growth outlook remains cloudy, and 9.1% inflation heightens uncertainty about when the Fed will be able to turn less hawkish in its monetary tightening cycle. More companies may reduce their earnings outlooks as growth slows. In the face of this ambiguity, we believe there will be more volatility before a sustainable turnaround occurs.

The good news is that the bottoming process is well under way. A mild recession already is built into today's prices. Unless the economy heads into a deep recession, which we believe is unlikely, we anticipate that a recovery will start taking shape by year-end. Longer-lasting pullbacks typically are caused by a credit or liquidity crisis, conditions that are not present today.

Market bottoms are difficult to predict – they tend to arrive like impulsive party guests, showing up either earlier or far later than expected. However, a review of how similar stock-market sell-offs played out in the past also suggests this slide is well along in the process.

Last 10 Bear Markets

Peak	Trough	Price Decline From Peak to Trough (%)	Months from Peak to Trough	Months from Peak to Breakeven	Total GDP Decline (%)	Peak to Trough Earnings Decline (%)
12/12/1961	6/26/1962	-28.0	6.5	20.7	-1.3	-13.6
2/9/1966	10/7/1966	-22.2	8.0	14.8	No Recession	
11/29/1968	5/26/1970	-36.1	18.1	39.2	-1.1	-20.6
11/28/1980	8/12/1982	-27.1	20.7	23.2	-2.2	-16.0
8/25/1987	12/4/1987	-33.5	3.4	23.0	No Recession	
1/3/2022	*6/16/2022*	*-23.6*	*5.5*	*?*	*?*	*?*
Median		-28.0	8.0	23.0		

Mild
Less than 3% GDP Decline and Less than 50% Earnings Decline

Peak	Trough	Price Decline From Peak to Trough (%)	Months from Peak to Trough	Months from Peak to Breakeven	Total GDP Decline (%)	Peak to Trough Earnings Decline (%)
7/15/1957	10/22/1957	-20.7	3.3	14.1	-3.6	-27.7
1/11/1973	10/3/1974	-48.2	21.0	90.2	-3.1	-21.1
3/24/2000	10/9/2002	-49.1	31.0	86.2	-0.4	-55.3
10/9/2007	3/9/2009	-56.8	17.2	65.6	-4.0	-92.1
2/19/2020	3/23/2020	-33.9	1.1	5.9	-10.1	-31.7
Median		-48.2	17.2	65.6		

Severe
More than 3% GDP Decline and/or More than 50% Earnings Decline

See disclosures at end of document. Sources: Altair Advisers, St. Louis Federal Reserve, Morningstar, Robert J. Shiller

Bear markets occurring outside of economic recessions since World War II have lasted an average of six months with a median decline in the S&P 500 of -28.9%. The current bear already has surpassed the median length and has had a maximum drawdown of -23.6%. The duration and outcomes of the earlier ones have varied widely, but stocks generally have performed well over the following 12 months.

Breaking big declines down by other measures leads to a similar conclusion: Snapbacks are typical and often strong. Following two-quarter periods of 20+% declines since 1945, the market delivered median gains of 26.7% over the subsequent two quarters and 31.5% over the next year. Separately, 15 of the other 20 worst quarters since 1926 (this year's second quarter was 16th worst) produced positive returns over the following year, with an average gain of 18.6%. The outliers were four quarters during the Great Depression and one encompassing the 9/11 attacks of 2001.

Beyond historical market data, lower stock valuations as a result of this year's sell-off should help foster conditions for a turnaround. Both the trailing (18.6) and forward (16.7) P/E ratios of the S&P 500 are well below the 10-year averages. And the markets are likely to turn around and head sustainably higher before the economy does. Markets typically move several months ahead of the economy because they are forward-looking.

The approach of midterm elections in November adds to uncertainty for markets in the near term. Voters will elect all members of the House and roughly a third of the Senate, with the potential to switch party control of Congress from Democrats to Republicans. After the outcome is known, however, market performance tends to improve heading into the third year of a four-year presidential cycle. The third year historically delivers the best returns, as CFRA Research noted in a recent report, because the president typically puts forward economic policies that stimulate the economy and can aid a re-election bid.

Bonds also have an improved outlook after the worst first half on record for taxable bonds and a somewhat better but still poor showing for munis. The yield on the benchmark 10-year Treasury note has fallen back to 2.7% after climbing to its highest level since 2011 in mid-June (3.5%) on fears that persistently high inflation would prompt the Fed to raise rates even more aggressively. We believe yields will stay range-bound for the remainder of the year.

All Two Quarter Periods of 20%+ Declines in S&P 500 Since 1945

			Annualized		
Second Quarter End	**2-Quarter Drop (%)**	**Next 1 Year (%)**	**Next 3 Years (%)**	**Next 5 Years (%)**	**Next 10 Years (%)**
Jun-62	-23.5	26.7	15.4	10.6	6.9
Jun-70	-21.0	37.1	12.8	5.5	4.6
Sep-74	-32.4	32.0	15.0	11.5	10.1
Dec-74	-20.3	31.5	11.5	9.5	9.3
Sep-02	-28.9	22.2	14.7	13.4	5.9
Dec-08	-29.4	23.5	11.7	15.4	10.7
Mar-09	-31.6	46.6	20.9	18.6	13.5
Jun-22	-21.1	?	?	?	?
Median	**-28.9**	**31.5**	**14.7**	**11.5**	**9.3**

See disclosures at end of document. Sources: Bespoke, Morningstar

If a further pullback occurs, we will look for opportunities to increase allocations to risky assets. A market recovery, whenever it takes place, may be bumpier than the dramatic rebound during the pandemic. However, the climb back to the breakeven (starting) point has the potential to produce strong returns – it is still a long way back, after all, even after a much better July.

5. The strongest dollar in 20 years is weighing on international stocks, among other categories – but they still outperformed U.S. stocks in the first half, renewing our conviction.

While somewhat overshadowed by inflation, interest rates and the Ukraine war, the U.S. dollar's relentless rise is nevertheless playing a key role in shaping markets and the economy this year. Up as much as 13% in 2022 against a basket of other currencies as recently as mid-July and 20% in just over a year, the greenback has created both winners and losers in rising to its highest level since 2002.

The most recent climb owes partly to a flight to safety, with investors seeking out the world's largest economy as a safe haven at a time of global growth concerns. Importantly, too, the sharp jump in U.S. interest rates compared to the rest of the world has drawn investors for the higher returns they can earn on Treasury bonds and other investments, an inflow that has boosted the dollar's value.

Beyond just being a boon for U.S. travelers in Europe, where the dollar reached parity with the euro this summer, it could help the Fed's inflation fight by making commodities – mostly priced in dollars – more expensive in local currency terms and damping down demand. That appears to be what happened when commodity prices began sinking as the dollar climbed sharply, although not in time to prevent the CPI from reaching a four-decade-high level for June.

An ascending dollar is generally not good for markets or U.S. businesses, however, particularly multinational corporations that can generate a third or more of their profits from sales abroad. A stronger buck makes their products more expensive and less competitive, then crimps profits when foreign sales are converted back into dollars. The dollar's rise will cut many billions off earnings this year for S&P 500 companies, which make more than a quarter of their revenues abroad.

The impact on dollar-denominated international stocks has been severe, with conversion back to the U.S. currency taking nearly an 8% chunk out of returns for the benchmark EAFE ETF in the first half. Even with that major handicap, both international developed and emerging-markets stocks recorded smaller losses than U.S. stocks.

Soon after the last time the dollar reached this level of strength and achieved parity with the euro, in 2002, it subsequently weakened and international stocks went on a nice run. With different conditions today, we are not ready to bet on that happening again imminently. The U.S. remains on the longest-ever outperformance run vs. international. But that trend will eventually reverse.

We have a healthy weight to non-U.S. stocks in our recommended allocations and plan to retain it, given recent performance as well as their lower valuations relative to the U.S. With the war far from settled and Europe facing greater recessionary risks, conditions are not yet such that we want to increase the weighting of that category. But once the overseas outlook improves, coupled with an eventually weakening dollar, returns could materially outperform those of the U.S. for the first time in a long while.

Our Outlook

- **U.S. economic growth** has paused amid an unusual confluence of factors: elevated inflation, tightened monetary policy and global consequences of Russia's war in Ukraine. Key pillars of the economy – the labor market and consumer spending – have held up well, however, and lessen the chance of an extended slump.

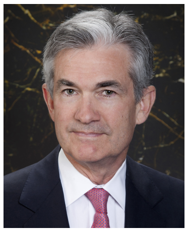
- **Markets** already have largely priced in a mild recession. Unless the economy is headed for a severe recession, which we do not see signs of, previous sell-offs suggest this market decline is closer to the end than the beginning.

- **High inflation** will act as a restraint on the global economy at least into next year before central banks' concerted efforts have a chance to bring it down to a more normal level. In the U.S., even though the Consumer Price Index topped 9% in June, a recent easing in commodities and other important categories furthers our belief that inflation will gradually moderate.

- **The Federal Reserve's strategy** of a rapid series of aggressive interest-rate hikes has helped cool down previously overheated areas of the economy, such as the housing market. Another substantial increase at its next meeting in September would lift the federal funds rate to roughly 3% from 0% in barely six months, putting additional strain on the economy but strengthening chances of success for its inflation fight.

- **The dollar's** double-digit-percentage surge against other leading currencies this year has hampered the performance of dollar-dominated international stocks. Yet even with that and the Ukraine war as detriments, non-U.S. stocks outperformed their U.S. counterparts in the first half. Their lower relative valuations are a plus, and whenever the dollar weakens it should serve as an additional tailwind.

Quotes of the Quarter



"I do not think the U.S. is currently in a recession, and the reason is there are too many areas of the economy that are performing too well."
– Jerome Powell, Federal Reserve chair

"It's really hard for me to get my head around that in quarter three or quarter four we're going to have a big slowdown. … I do not see [a recession]."
– Stephen Squeri, American Express CEO

"At current valuations, we think the market is overly pessimistic regarding the economic outlook."
– Morningstar

Market Data

U.S. Stocks

High inflation, rising interest rates and a slowing economy worsened the stock market's months-long decline in the second quarter, pushing it into a bear market (down 20+%). Virtually every area of the market suffered major losses in the worst first half for stocks since 1970.

The iShares S&P 500 ETF, Altair's investable proxy for large-cap stocks, fell 16.1% in its biggest quarterly decline since the first quarter of 2020, when Covid lockdowns sent stocks plummeting. That left it down an even 20% at midyear, the worst first half in 52 years. Among the largest U.S. stocks, Tesla fell almost 38% in the quarter, Amazon dropped by nearly 35%, Facebook parent Meta was down more than 27%, and Google parent Alphabet and Apple both shed nearly 22%. The three weakest sectors in both the quarter and the half were consumer discretionary (-32% through six months), communications services (-30%) and technology (-26%). Energy was the only positive sector, up nearly 32% through midyear even after a steep drop in June.

Small caps' big decline reflected those companies' continuing struggle with supply-chain tie-ups and higher prices. The iShares Russell 2000 ETF plunged a record-worst 23.5% in the first half after a second-quarter drop of 17.3%. Value stocks outperformed growth stocks at all capitalization levels for a second consecutive quarter, though overall registering double-digit-percentage losses just for April through June.

International Stocks

Non-U.S. stocks outperformed their American counterparts despite the economic damage caused to Europe by the Russia-Ukraine war but still fell substantially. The iShares MSCI EAFE ETF was down 13.1% in the quarter and 18.5% year-to-date – returns that were worsened by the U.S. dollar's surge. The greenback rose 9% in six months against a basket of other leading currencies, the bulk of that occurring from April through June. Before conversion to the dollar, the EAFE index's declines were a more modest 7.6% for the quarter and 10.9% through six months.

Emerging-markets stocks fared slightly better than developed markets thanks to a positive quarter in China, the only major world market with gains. The iShares MSCI Emerging Markets ETF, consisting of about one-third Chinese stocks, was down 10.4% in the second quarter and 17.1% for the half-year.

A handful of global markets fared even worse than the U.S. in the first half based on dollar-denominated performance, including Germany (-27.8%), Italy (-24.8), France (-20.8%) and Japan (-20.5%).

Real Estate

Publicly traded real estate investments slumped badly along with stocks in the quarter as rising interest and mortgage rates along with recession fears caused investors to pull back. The Vanguard REIT Index Fund fell 15.5% in the quarter and was down 20.5% in the first half. Among the biggest losers were regional malls, office and industrial REITs, among others whose performance is most closely tied to the economic cycle. Freestanding retail, healthcare, specialty and diversified REITs sustained smaller losses.

International real estate as measured by the Vanguard Global ex-US Real Estate ETF experienced a similar decline with the global economy under broad pressure, falling 15.1% from April through June to go down 18.1% at midyear.

Hedged/Opportunistic

Our benchmark for securitized credit, or distressed debt, a blend of 65% mortgage-backed bonds and 35% high-yield bonds, fell by 5.8% and was down 10.4% at midyear. As with stocks, there was no place for investors to hide in this category in the first half.

Senior bank loans were buffeted by the Fed's accelerated rate hikes. The Invesco Senior Bank Loan ETF fell 6.1% in the quarter for a year-to-date return of negative 6.7%. These loans generally have floating interest rates that fluctuate with shorter-term rates.

Hedge funds outperformed both stocks and bonds for a second straight quarter but again posted losses. The HFRX Global Index, a measure of the average hedge-fund performance, shed 3.7% in the second quarter and was down 5.0% at midyear.

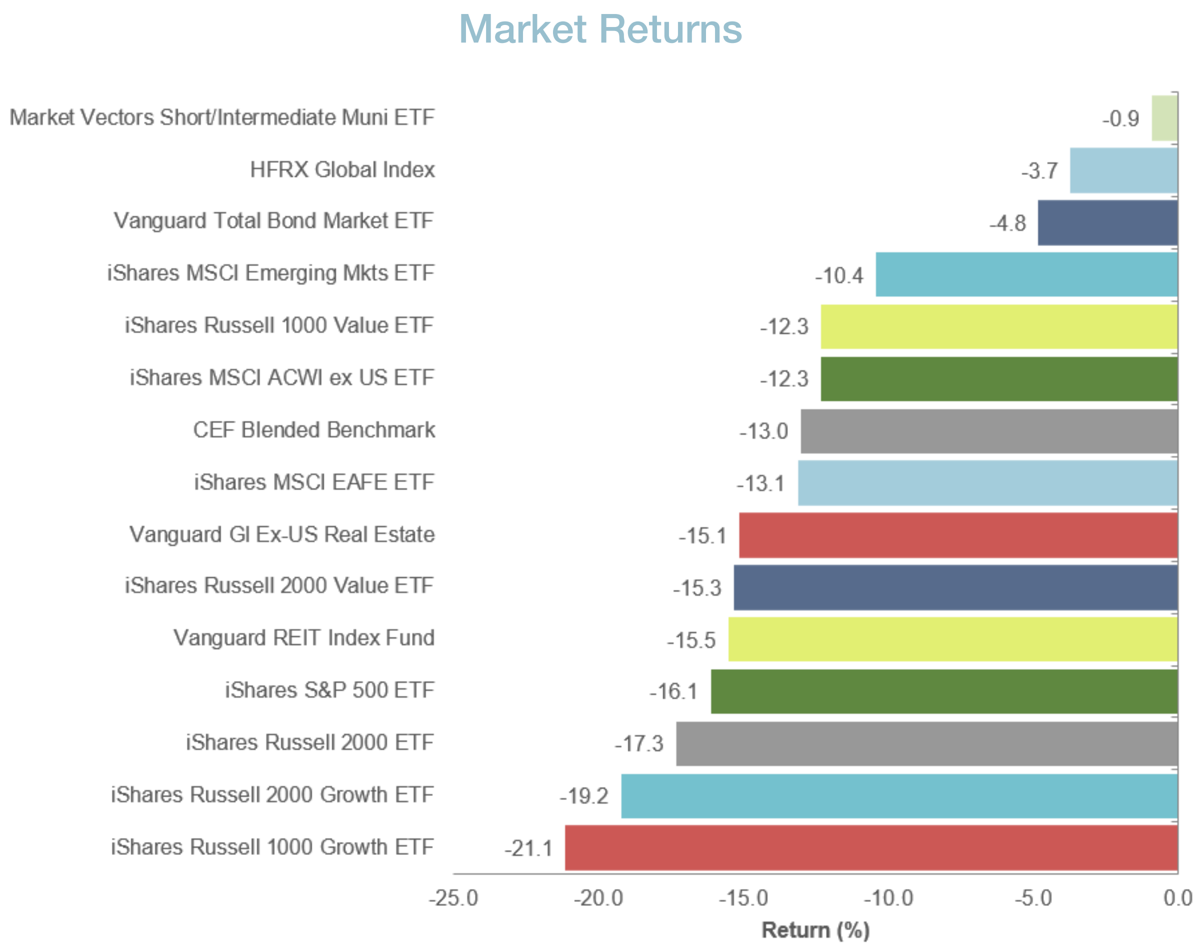
Fixed Income

The Federal Reserve's unusually aggressive pace of interest-rate hikes to fight inflation left taxable bonds on pace for their worst year ever through six months.

Rising borrowing costs, stubborn inflation and concerns about slowing growth all contributed to the biggest first-half decline on record. The Vanguard Total Bond Market ETF nearly matched its first-quarter decline with a 4.8% drop that left it at negative 10.3% for 2022. Yields continued to move sharply higher across the U.S. Treasury curve for much of the second quarter, sending prices lower. The 10-year Treasury note yield more than doubled from 1.5% at the start of the year to 3.5% in June before retrenching.

Municipal bonds also suffered from their interest-rate sensitivity, although slowing their decline from the first quarter. Altair's benchmark for tax-exempt municipal bonds, a blend of the Market Vectors short and intermediate ETFs, fell 0.9% and was down 6.3% year-to-date at midyear. It was positive for May and June as more income-hungry investors sought out their exemption from federal taxes.

Second Quarter 2022 Market Returns



Investable Benchmark Returns through June 30, 2022

	Quarter (%)	Year-to-Date (%)	Annualized 1 Year (%)	Annualized 3 Year (%)	Annualized 5 Year (%)	Annualized 10 Year (%)
Large Cap Equity						
iShares S&P 500 ETF	-16.1	-20.0	-10.6	10.6	11.3	12.9
iShares Russell 1000 Growth ETF	-21.1	-28.2	-18.9	12.4	14.0	14.6
iShares Russell 1000 Value ETF	-12.3	-12.9	-6.9	6.7	7.0	10.4
Small Cap Equity						
iShares Russell 2000 ETF	-17.3	-23.5	-25.3	4.1	5.1	9.4
iShares Russell 2000 Growth ETF	-19.2	-29.5	-33.5	1.4	4.8	9.4
iShares Russell 2000 Value ETF	-15.3	-17.4	-16.4	6.1	4.7	9.0
International Equity						
iShares MSCI ACWI ex US ETF	-12.3	-17.5	-19.0	1.5	2.5	4.7
iShares MSCI EAFE ETF	-13.1	-18.5	-17.3	1.4	2.3	5.4
MSCI EAFE Index - in local[1]	-7.6	-10.9	-6.1	4.9	4.8	8.8
Vanguard FTSE Europe ETF	-13.5	-20.9	-18.5	1.7	2.3	5.7
Vanguard FTSE Pacific ETF	-13.5	-17.9	-20.4	1.3	2.0	5.3
iShares MSCI Emerging Mkts ETF	-10.4	-17.1	-25.5	-0.1	1.6	2.3
Fixed Income						
Market Vectors Sh/Inter Muni ETF	-0.9	-6.3	-6.5	-0.1	1.1	1.4
Barclays 5 Yr Muni Index[1]	-0.4	-5.5	-5.3	0.2	1.2	1.6
SPDR Nuveen Barclays Muni Bond	-3.8	-10.7	-10.5	-1.1	0.8	1.9
Vanguard Total Bond Market ETF	-4.8	-10.3	-10.4	-0.9	0.8	1.4
Gl FixedInc Investable Benchmark	-8.4	-14.8	-16.5	-4.1	-1.1	-0.3
iShares BarclaysInt Govt/Credit	-2.4	-6.6	-7.4	-0.4	0.9	1.2
Alternative						
SPDR Barclays High Yield Bond	-10.4	-14.7	-13.7	-1.2	1.0	3.0
Vanguard REIT Index Fund	-15.5	-20.5	-8.0	4.8	5.7	7.5
Vanguard Gl Ex-US Real Estate	-15.1	-18.1	-19.3	-4.8	-0.3	3.7
HFRX Global Index	-3.7	-5.0	-5.1	3.1	1.9	1.9
HFRX Equity Hedge Index	-4.4	-4.7	-0.9	5.3	3.5	3.5
DRA Strategic Benchmark	-9.1	-2.5	2.9	6.6	5.9	3.5
CEF Blended Benchmark[1]	-13.0	-18.9	-17.0	1.7	3.3	5.0
Other Common Benchmarks						
SPDR Dow Jones Industrial Avg	-10.8	-14.4	-9.1	7.1	9.9	11.6
Fidelity Nasdaq Comp. ETF	-22.2	-28.9	-22.9	12.3	13.5	15.4
iShares MSCI ACWI ETF	-15.1	-19.8	-15.4	6.4	7.2	9.0
SPDR Barclays 1-3 Month T-Bill	0.1	0.1	0.1	0.4	0.9	0.5
Inflation - CPI[1]	3.1	6.3	9.1	5.0	3.9	2.6

[1]There is no investable equivalent for this index
Source: Financial Times Interactive Data (IDC) and Charles Schwab.

This table was prepared using investment performance and other information obtained from third-party sources, which we believe to be reliable; however, we have not audited the data from these sources and are not responsible for its accuracy. Past performance is no guarantee of future results.

Disclosures

The material shown is for informational purposes only. Past performance is not indicative of future performance, and all investments are subject to the risk of loss. Forward-looking statements are subject to numerous assumptions, risks, and uncertainties, and actual results may differ materially from those anticipated in forward-looking statements. As a practical matter, no entity is able to accurately and consistently predict future market activities. Information presented herein incorporate Altair Advisers' opinions as of the date of this publication, is subject to change without notice and should not be considered as a solicitation to buy or sell any security. While efforts are made to ensure information contained herein is accurate, Altair Advisers cannot guarantee the accuracy of all such information presented. Material contained in this publication should not be construed as accounting, legal, or tax advice. See Altair Advisers' Form ADV Part 2A and Form CRS at https://altairadvisers.com/disclosures/ for additional information about Altair Advisers' business practices and conflicts identified.

ETFs and mutual funds selected by Altair are intended to approximate the performance of the respective asset class in lieu of an established index. An ETF or mutual fund is generally managed by an adviser and, therefore, can be subject to human judgment while an index is typically comprised of an unmanaged basket of instruments designed to measure the performance attributes of a specific investment category. Unlike indices, the ETFs and mutual funds selected incorporate fees into their performance calculations. There can be no assurance that an ETF or mutual fund will yield the same result as an index. Altair has no relationship with the ETFs and mutual funds selected.

The Closed-End Fund Blended Benchmark consists of 60% First Trust Equity Closed-End Fund TR USD Index, 20% Invesco CEF Income Composite ETF, and 20% VanEck Vectors CEF Municipal Income ETF.

The Securitized Credit Benchmark consists of 65% iShares MBS ETF and 35% iShares iBoxx $ High Yield Corporate Bond ETF.

The U.S. Municipal Bonds Benchmark consists of 65% VanEck Short Muni ETF and 35% VanEck Intermediate Muni ETF.

Altair's Senior Team

Managing Directors

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Chief Executive Officer

Steven B. Weinstein, CFA, CFP®
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Jason M. Laurie, CFA, CFP®
Managing Director & Chief Investment Officer

Timothy G. French, CFP®, CPA
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Richard K. Black, JD, CFP®
Managing Director

David J. Lin, CFA
Managing Director & Head of Investment Research

Bryan R. Malis, CFA, CFP®
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Rachael Halstuk Mangoubi, CFP®, CPWA®
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Michael J. Murray, CFA, CFP®, CAIA
Managing Director

Donald J. Sorota, CFP®, CPA
Managing Director

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Director

Jenn R. Shepard, CFA, CFP®
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