June 2022

Inflation, Rate Hikes, and Recessions, Oh My!
Be Prepared For Depressed Returns Over The Near Term

With all the negative press out there about the economy and stock market I am reminded of a scene from *The Wizard of Oz* where Dorothy, the Tin Man and Scarecrow lament the hazardous world they are navigating. Just like Dorothy navigates through challenges in the movie, my goal in this note is to lay out the issues before us and provide some perspective on the path forward.

What causes big market down drafts? The answers are numerous, but explanations often revolve around commodity price spikes, excess stock market valuation, political turmoil and/or recessions. According to JP Morgan Asset Management, since 1929 bear markets have been associated with:

- Commodity price spikes - 31% of the time
- Aggressive fed actions - 46% of the time
- Recessions - 77% of the time
- Extreme valuation - 54% of the time

Let's briefly go through each of these factors.

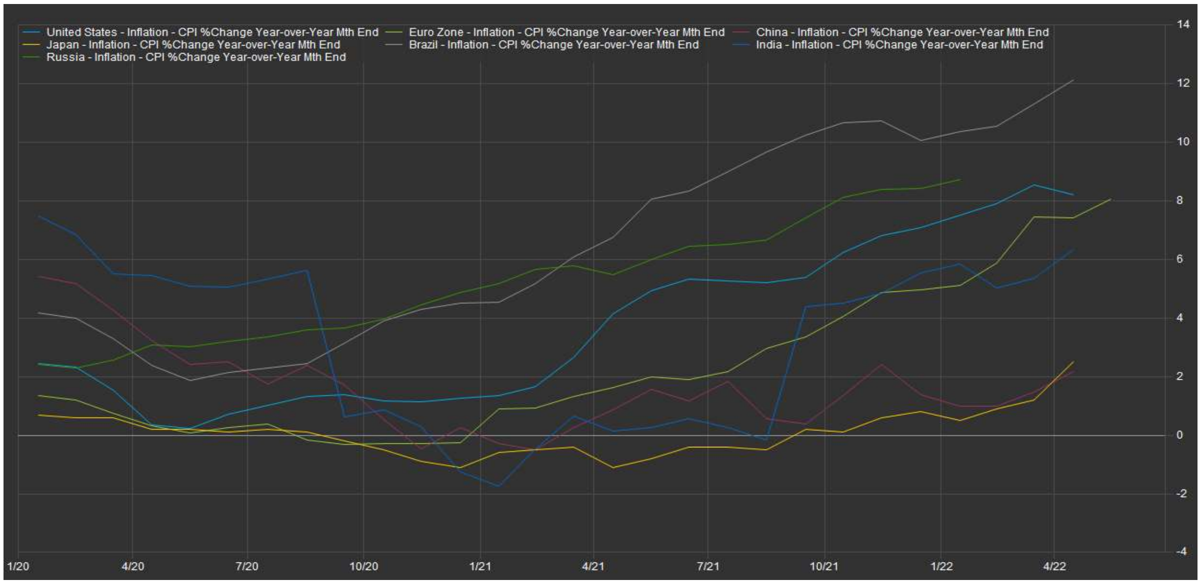
Inflation

Global inflation has escalated due to COVID-19 related supply chain issues and the Russia/Ukraine conflict. We sense these inflation pressures will continue for some time. COVID-19 related lockdowns appear likely to persist due to COVID variants popping up and government health policies (notably China).

The Russia/Ukraine war increasingly looks like a prolonged conflict due to Russia President Putin's strong desire to expand his empire, Ukraine's resolve to protect national sovereignty and the West's support of Ukraine. The conflict should continue to add to inflation pressures due to the region's important role in supplying commodities, economic sanctions, and production curtailments. Per *The Economist*, Russia's share of global production at the beginning of the conflict was:

- 43% palladium (used in auto catalytic converters)
- 17% natural gas
- 12% oil
- 11% nickel
- 11% wheat (Ukraine's global share is 9%)
- 6% aluminum

US inflation registered 8.2% growth year-over-year in April 2022 representing the fastest growth rate since January 1982. Inflation throughout the rest of the world has also escalated.



Source: FactSet

The chart below highlights how various asset classes have performed in different inflation environments. Annual total returns since 1926 are cited.

	US Large Cap Stocks	US Small Cap Stocks	20 year Corporate Fixed Income	20 year Govt. Fixed Income	5 year Govt. Fixed Income	30 Day T-Bills	Inflation
Average	12.3%	16.3%	6.4%	6.0%	5.2%	3.3%	3.0%
Median	14.7%	17.9%	4.8%	3.7%	3.7%	2.8%	2.7%
Average Since 1950	13.1%	16.0%	6.9%	6.5%	5.8%	4.1%	3.5%
Median Since 1950	15.4%	17.9%	5.6%	3.7%	4.3%	3.8%	2.9%
When Inflation							
Is Negative	13.2%	9.1%	5.5%	5.8%	3.9%	1.8%	-4.0%
0-5%	13.4%	18.5%	7.7%	7.3%	5.6%	3.0%	2.3%
5-10%	7.7%	9.8%	2.4%	1.0%	3.8%	4.6%	7.5%
10%+	4.1%	12.9%	-2.1%	-0.2%	3.7%	7.5%	14.1%

Source: CFA Institute, Ibbotson, and Candor Asset Advisors

Notice how all assets tend to struggle when annual inflation is over 10%. At 5-10% annual inflation, stock real returns are positive and fixed income returns are negative. Stock and fixed income returns are often stronger when inflation is below 5%. Strong stock returns when inflation is below 5% can at least partially be explained by companies' ability to pass along cost inflation in the form of higher prices.

Aggressive Fed Actions

Central banks implemented significant fiscal and monetary stimulus around the global financial crisis and COVID-19 pandemic. Inflation has significantly picked up because of this stimulus, the Russia/Ukraine war and COVID-19 related supply chain issues. Now central banks are in the process of raising rates significantly to tame inflation.

We went back in history and found instances where the US Federal Reserve raised fed funds by 2% or more over a short period of time. Our analysis revealed the following.

	US Large Cap Stocks	US Small Cap Stocks	US 20 Year Corporate Bonds	US 20 Year Govt. Bonds	US 5 Year Govt. Bonds	US 30 Day T-Bills	US Inflation
Since 1954							
Average Monthly Returns	0.98%	1.24%	0.56%	0.54%	0.48%	0.34%	0.29%
Median Monthly Returns	1.28%	1.50%	0.45%	0.32%	0.34%	0.32%	0.28%
Fed Tightening Periods Average Monthly Returns	0.76%	1.03%	0.17%	0.15%	0.23%	0.47%	0.42%
Fed Tightening Periods Median Monthly Returns	0.78%	0.84%	0.15%	0.07%	0.14%	0.42%	0.40%

- During months when the Fed was in the process of raising fed funds rates significantly, monthly returns moderated for all but US 30-day treasury bills. Stocks outperformed. Longer term fixed income suffered the largest declines in monthly returns.
- There were 13 instances where the Fed significantly raised rates since 1954. Of these:
    - In 10 instances a bear market and/or recession was not already occurring
        - In 5 instances there was a recession within 12 months (1956, 1958-59, 1969, 1977-1979, 1980-1981)
        - In 1 instance there was only a bear market within 12 months (1961)
        - In 1 instance there was a recession and bear market within 12 months (1972-1973)
        - In 3 instances a recession or bear market did not occur within 12 months (1983-1984, 1988-1989, 2004-2006)
    - In 3 instances the Fed raised rates during a recession and/or bear market
        - In 1 instance there was a bear market and recession (1974)
        - In 2 instances the Fed raised rates while a recession was already occurring (1980, 1981-1982)
    - Note we could not find fed fund data before 1954 so our study started then.
- Source: CFA Institute, Ibbotson, Candor Asset Advisors

What can we conclude from the data above?

- The Federal Reserve raising rates generally depresses stock and fixed income returns.
- It is important to determine if the Fed actions are related to or cause a recession and/or bear market.
    - In 10 of 13 instances a recession occurred within 12 months of fed actions.
    - In 3 of 13 instances a bear market occurred within 12 months of fed actions.
- Given the data points above, it is probable the US will enter a recession soon due in part to the Fed raising rates. The risk of a bear market is also elevated but not as probable as a recession.

Recessions

To begin with, let's ensure we are using the same framework. A recession, according to the official arbiter on the topic, The National Bureau of Economic Research (NBER), "involves a significant decline in economic activity that is spread across the economy and lasts more than a few months." Worth noting, a significant decline could represent a material growth slowdown and/or negative economic growth. NBER looks at depth, diffusion, and duration of the decline in activity. They closely monitor personal income, nonfarm payroll employment, real personal consumption expenditures, wholesale-retail sales, and industrial production.

According to the most recent *Wall Street Journal* April 2022 survey, economists put the probability of a recession at 28% in the next twelve months. The Federal Reserve Bank of New York also has a prominent recession predicting model based on the spread between 10-year treasury bonds and three-month treasury bills. The model now assigns a 6% probability of a recession in twelve months.

Investors are naturally skeptical that corporate sales and earnings will hold up if a recession occurs sometime later this year or next year. The chart below provides some context and highlights that consensus forecasts are not implying a recession in 2022 or 2023.

	2022E	2023E	Past Recessions Since 1990 Average	Implied 2023E
Sales	$ 1,740.52	$ 1,825.33		$ 1,745.37
Sales Growth	13.57%	4.87%	0.3%	
EPS	$ 227.19	$ 249.84		$ 186.13
EPS Growth	21.73%	9.97%	-18.1%	
Dividend Per Share	64.06	68.15		$ 64.12
DPS Growth	11.46%	6.40%	0.1%	
Current S&P Price	$ 4,158			
Implied P/Sales	2.39	2.28		2.38
Implied P/E	18.30	16.64		22.34
Dividend Yield	1.54%	1.64%		1.54%

Source: FactSet

Since 1926 we discovered the following:

Since 1926	US Large Cap Stocks	US Small Cap Stocks	US 20 Year Corporate Bonds	US 20 Year Govt. Bonds	US 5 Year Govt. Bonds	US 30 Day T-Bills	US Inflation
Average Monthly Returns	0.97%	1.26%	0.51%	0.47%	0.41%	0.27%	0.24%
Median Monthly Returns	1.31%	1.48%	0.40%	0.31%	0.27%	0.22%	0.24%
Average Monthly Return 6 Months Prior to Recession	0.47%	0.62%	0.13%	0.23%	0.33%	0.38%	0.33%
Average Monthly Return 12 Months Prior to Recession	0.94%	0.96%	0.16%	0.14%	0.28%	0.35%	0.35%
Average Recession Monthly Returns	-0.25%	-0.59%	0.71%	0.79%	0.68%	0.29%	0.03%
Median Recession Monthly Returns	0.17%	-0.79%	0.53%	0.55%	0.49%	0.18%	0.00%

- 12 months prior to the start of a recession all but US treasury bills saw average monthly returns moderate. Stocks continued to outperform fixed income.
- 6 months prior to the start of a recession stock returns moderated further while fixed income returns were relatively flat. Stocks continued to outperform fixed income.
- During recessions stocks underperformed fixed income. Small cap stocks underperformed large cap stocks.
- There were 15 recessions and 11 bear markets using monthly data since 1926.

- Stock bear market breakdown
    - 8 of 11 bear markets occurred during or after recessions
        - 5 of 11 bear markets occurred during recessions (1929-1932, 1937-38, 1974, 2008, 2020)
        - 3 of 11 bear markets occurred soon after a recession (1933, 1945, 2002)
    - 1 of 11 bear markets occurred after only a significant rise in Fed Funds rates (1961)
    - 2 of 11 bear markets occurred without recession or significant rise in fed funds (1940, 1987)
- 5 recessions occurred during bear markets (1929-33, 1937-38, 1974, 2008, 2020)
- Source: NBER, CFA Institute, Ibbotson, and Candor Asset Advisors

Since 1950 we discovered the following:

Since 1950	US Large Cap Stocks	US Small Cap Stocks	US 20 Year Corporate Bonds	US 20 Year Govt. Bonds	US 5 Year Govt. Bonds	US 30 Day T-Bills	US Inflation
Average Monthly Returns	1.01%	1.22%	0.54%	0.51%	0.46%	0.33%	0.29%
Median Monthly Returns	1.28%	1.49%	0.41%	0.27%	0.30%	0.30%	0.29%
Average Monthly Return 6 Months Prior to Recession	-0.12%	0.12%	0.09%	0.29%	0.42%	0.49%	0.41%
Average Monthly Return 12 Months Prior to Recession	0.48%	0.48%	0.08%	0.15%	0.33%	0.46%	0.43%
Average Recession Monthly Returns	-0.01%	0.26%	1.04%	1.08%	1.06%	0.79%	0.74%
Median Recession Monthly Returns	0.20%	0.65%	0.81%	0.83%	0.75%	0.46%	0.38%

- 12 months prior to the start of a recession US stocks and long-term fixed income saw average monthly returns noticeably moderate. Stocks and treasury bills outperformed long term fixed income.
- 6 months prior to the start of a recession stock returns moderated further while fixed income returns were relatively flat. Most fixed income outperformed stocks.
- During recessions fixed income outperformed stocks. Small cap stocks outperformed large cap stocks.
- There were 11 recessions and 6 bear markets using monthly data.
- Stock bear market breakdown
    - 4 of 6 bear markets occurred during or after a recession
        - 3 of 6 bear markets occurred during recessions (1974, 2008, 2020)
        - 1 of 6 bear markets occurred soon after a recession (2002)
    - 1 of 6 bear markets occurred after only a significant rise in fed funds rates (1961)
    - 1 of 6 bear markets occurred without a recession or significant rise in fed funds (1987)
- 3 recessions occurred during bear markets (1974, 2008, 2020)
- Source: NBER, CFA Institute, Ibbotson, and Candor Asset Advisors

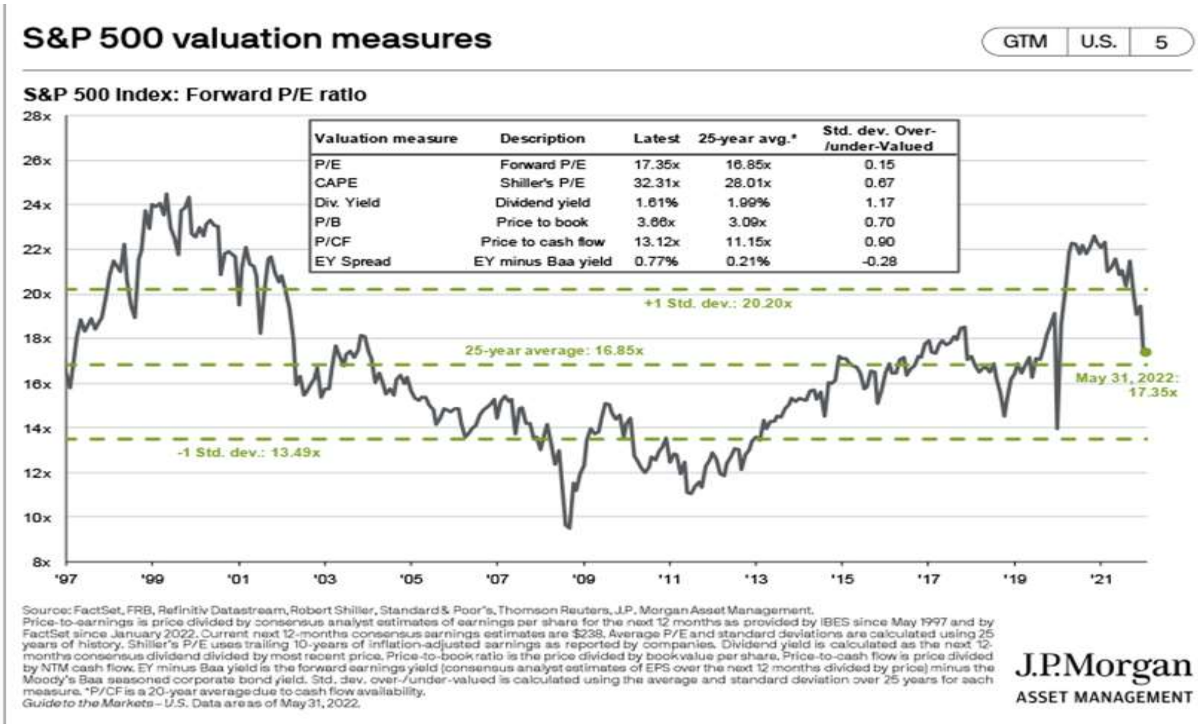
What can we conclude from the above?

- Consensus sales and earnings estimates are not factoring in a recession in 2022 and 2023.
- Stock and fixed income returns generally moderate 6 to 12 months before a recession.
- Fixed income returns are relatively flat 0 to 6 months prior to a recession.
- During recessions fixed income and particularly long-term debt outperforms stocks.
- About 54% of the time there has been a recession there has also been a bear market at the same time or soon thereafter.
- About 70% of bear markets occur around the same time or soon after a recession.

- There is elevated risk of a recession given the magnitude of anticipated near term Fed rate hikes. A recession raises the odds of a near term stock bear market.

Stock Market Valuation

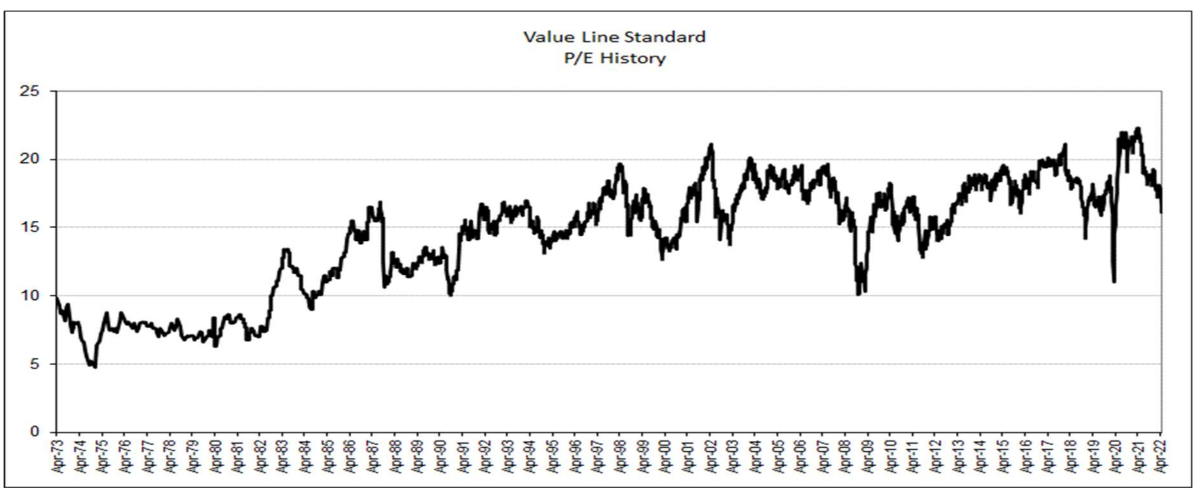
The data we see suggests the S&P is valued near historical averages.



Valuation measure	Description	Latest	25-year avg.*	Std. dev. Over-/under-Valued
P/E	Forward P/E	17.35x	16.85x	0.15
CAPE	Shiller's P/E	32.31x	28.01x	0.67
Div. Yield	Dividend yield	1.61%	1.99%	1.17
P/B	Price to book	3.66x	3.09x	0.70
P/CF	Price to cash flow	13.12x	11.15x	0.90
EY Spread	EY minus Baa yield	0.77%	0.21%	-0.28

Source: FactSet, FRB, Refinitiv Datastream, Robert Shiller, Standard & Poor's, Thomson Reuters, J.P. Morgan Asset Management.
Price-to-earnings is price divided by consensus analyst estimates of earnings per share for the next 12 months as provided by IBES since May 1997 and by FactSet since January 2022. Current next 12-months consensus earnings estimates are $238. Average P/E and standard deviations are calculated using 25 years of history. Shiller's P/E uses trailing 10-years of inflation-adjusted earnings as reported by companies. Dividend yield is calculated as the next 12-months consensus dividend divided by most recent price. Price-to-book ratio is the price divided by book value per share. Price-to-cash flow is price divided by NTM cash flow. EY minus Baa yield is the forward earnings yield (consensus analyst estimates of EPS over the next 12 months divided by price) minus the Moody's Baa seasoned corporate bond yield. Std. dev. over-/under-valued is calculated using the average and standard deviation over 25 years for each measure. *P/CF is a 20-year average due to cash flow availability.
Guide to the Markets – U.S. Data are as of May 31, 2022.

Source: JP Morgan Guide to The Markets, 5/31/22



Source: Value Line Investment Survey

In sum, our work suggests some of the current bear market risk is priced in but not all. Also, the stock market's recent weakness is a double-sided coin, near-term pain will likely be at least partially offset by long-term return expectations that are a few percent above of what we anticipated before stock market weakness year-to-date.

Concluding Thoughts

The ongoing Russia/Ukraine conflict, elevated inflation, and the US Federal Reserve hiking rates continue to depress near term investment returns. These factors also materially raise the odds of recession and/or stock bear market.

With the stock market is off 13% year to date and stock market valuation measures are near historic averages, at least some of the bear market risk is priced in. Worth noting the average bear market decline since 1950 is 30%, and it lasted 1.7 years. Consensus sales and earnings forecasts will need to come down if a recession occurs, and these pressures will likely be associated with a further near-term downdraft in stocks.

If the economy cools to a sustainable growth rate and inflation moderates to manageable levels as we expect, stock market returns will likely revert upward thereafter and be closer to long-term historical averages. Thus, the age-old axiom “Keep Calm and Carry On” likely applies for long-term stock market investors. In this environment, the prospects for fixed income should prove more attractive as well.

A separate research note appropriately entitled “Long-Term Stock Investors: Please Keep Calm and Carry On” may be a good read. The piece covers the futility of stock market timing and reviews stock market returns over the long run, through bear markets, and through the worst market bears since 1929.

So, what do you do with this information? It makes sense to check your risk tolerance and capacity, investment goals, time horizon and revisit your asset allocation as necessary.

As always please reach out to us if you have questions or comments.

Sincerely,

William E. Hawes, CFA, CFP®
President and Chief Investment Officer
Candor Asset Advisors

June 4, 2022

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