

The first quarter of 2022 saw no abatement in soaring inflation whether one focused on the Producer Price Index (“PPI”) (see Figure 1) or the Consumer Price Index (“CPI”) (see Figure 2). This sent financial professionals delving into the 1970s and the 1940s looking for similar regimes and hints of potential outcomes. The global commodity chain, already under pressure from COVID disruptions and years of underinvestment, was thrown into near disarray when Russia invaded Ukraine. Both countries are critical exporters of agricultural products and Russia is one of the world’s top energy producers.

The Federal Reserve (“Fed”) raised the Federal Funds target by 25 basis point (“bps”), the first increase since 2018. Governors are now messaging a far more hawkish tone, promising a series of rate hikes and a potentially aggressive runoff of the balance sheet (Quantitative Tightening). This of course begs several questions. How far will the Fed actually go? Will they relent if the economy slows? Will they pause if there is a rapid depreciation of financial assets? Will they go too far, committing financial exsanguination

and a deep recession? With estimates for 1st quarter GDP hovering in the 2% or lower range, year-over-year (“YoY”) CPI estimates near 8%, and a sampling of price changes not indicating much relief either YoY or compared to pre-COVID levels (see Figure 3), something of a stagflationary cycle seems to be developing. In our view, this creates a treacherous environment to be tightening financial conditions and is somewhat of a death-defying tightrope act for the Fed.

Adding to the peril is the sheer magnitude of the Fed’s balance sheet, now over \$8.9 trillion and 38% of GDP. Sizeable reduction is likely to stoke already high volatility in the capital markets. The budget deficit, while shrinking as a percentage of GDP, is still at levels similar to the depths of the 2008 financial crisis aftermath (see Figure 4). There is little indication from either political party to substantively change course towards anything resembling fiscal responsibility or a balanced budget.

Figure 1 U.S. PPI Final Demand YoY NSA



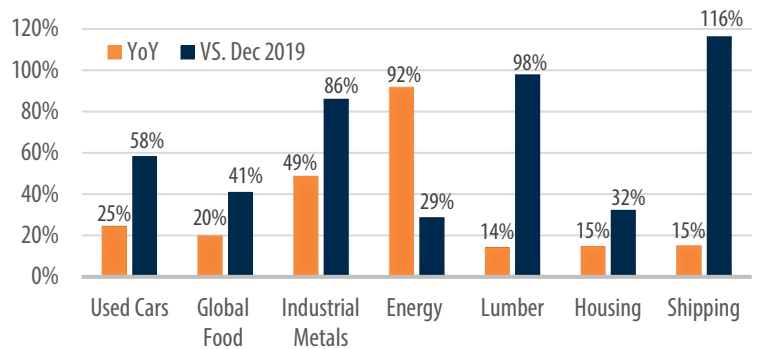
Source: Bloomberg, data from 12/31/10 - 2/28/22 (latest data available), not seasonally adjusted (NSA).

Figure 2 U.S. CPI Urban Consumers YoY NSA



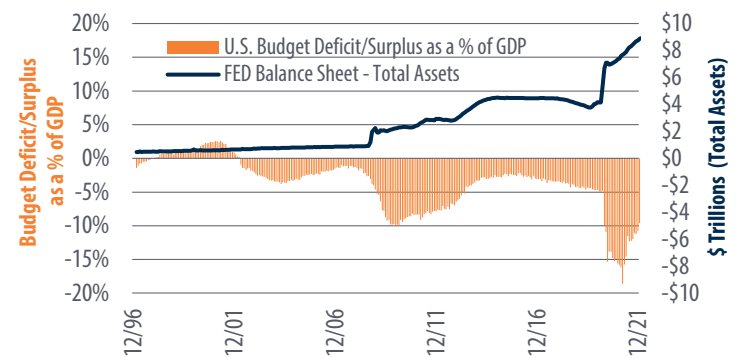
Source: Bloomberg, data from 12/31/90 - 2/28/22 (latest data available), (NSA).

Figure 3 Price Changes



Source: Bloomberg, data as of 3/31/22.

Figure 4 Federal Reserve Balance Sheet and U.S. Budget Deficit/Surplus



Source: Bloomberg, data from 12/31/96 - 2/28/22 (latest data available).

References to specific companies or securities should not be construed as a recommendation to buy or sell any such security, nor should they be assumed profitable.

All charts shown herein are for illustrative purposes only and not indicative of any investment. The performance illustrations exclude the effects of taxes and brokerage commissions or other expenses incurred when investing. **Past performance is not indicative of future results** and there can be no assurance past trends will continue in the future. An investor cannot invest directly in an index. See last page for definitions of asset class indexes and other terms discussed herein.

Alternative Investments (“alternatives”) had a strong quarter with positive returns in 6 of 10 categories. Nine of 10 categories outperformed the S&P 500 Index and 9 of 10 categories outperformed the Bloomberg US Aggregate Bond Index. While alternatives might not be considered “Risk Off” assets in the same vein as long US Treasuries or gold, given the unique mix of inflation, geopolitical instability and elevated volatility across most asset classes, they were for the most part, a haven for investors. Lower correlation/lower beta strategies on average fared substantially better which was expected, given the negative returns in stocks, the technology sector (another “Risk-On” proxy), bonds, and high-yield bonds. Commodities was the best performing category by far (+25.55%) and the only alternative category with double digit gains. Other notable gainers were managed futures (+9.51%) and macro (+7.71%). Real estate (-6.50%) and hedged equity (-3.86%) were the worst performing categories (Figure 5).

Traditionally, managed futures and macro strategies are viewed as having lower correlations to equities because they are generally diversified across a variety of markets and often employ shorting as part of their approach. Strategies that had lower 2-year correlations to U.S. equities (less than 0.60), on average, significantly outperformed those strategies that had a higher correlation with U.S. equities. The spread was 1044 basis points (Figure 6). Two of three real asset categories had positive returns, with commodities leading the way (+25.55%). Gold posted a solid gain (+5.92%) despite a stronger dollar while real estate decline sharply (-6.50%) possibly reflecting anticipation of higher rates and rapid quantitative tightening (Figure 7).

Figure 5 Alternative Category Performance

	Q1 2022	2021
Hedged Equity	-3.86%	11.67%
Event Driven	-1.23%	12.41%
Equity Market Neutral	0.37%	7.05%
Real Estate	-6.50%	38.99%
Commodities	25.55%	27.11%
Distressed/Restructuring	1.13%	15.61%
Volatility Arbitrage	2.59%	2.81%
Credit Arbitrage	-0.63%	8.54%
Macro	7.71%	7.72%
Managed Futures	9.51%	10.00%

Source: Bloomberg, 3/31/22.

Figure 6 Correlations (2yr) & Returns

	S&P 500 Index	Q1 2022
Hedged Equity	0.81	-3.86%
Event Driven	0.71	-1.23%
Equity Market Neutral	0.61	0.37%
Real Estate	0.86	-6.50%
Commodities	0.02	25.55%
Distressed/Restructuring	0.43	1.13%
Volatility Arbitrage	0.37	2.59%
Credit Arbitrage	0.41	-0.63%
Macro	0.33	7.71%
Managed Futures	0.31	9.51%
Lower Correlation Avg TR (<=0.60)		7.64%
Higher Correlation Avg TR (>.60)		-2.80%

Source: Bloomberg, 3/31/22. Correlation of monthly returns over 24 months.

Cryptocurrencies had a rough quarter and behaved more like a risk asset class than either a store of value or a flight to quality safe harbor as they are sometimes characterized. Both the broader Bloomberg Galaxy Crypto Index and the bellwether Bitcoin ended the quarter in negative territory (Figure 8). Regulatory run-ins and hacks of various elements in the crypto/blockchain ecosystem continue to plague the sector. In February, the Securities and Exchange Commission (SEC) fined BlockFi Lending LLC, a crypto lending platform, \$100MM for illegally offering high interest rate product on digital tokens lent out in high-yielding accounts in violation of the Investment Company Act of 1940. Also in February, there was a \$320 million hack of a decentralized finance project (Solana Wormhole) in which several cryptocurrencies were stolen. Those affected were made whole when investment firm Jump Crypto (an arm of high frequency trading firm Jump Trading Group) replaced all the stolen tokens. Why would Jump Crypto infuse \$320 million of its own money to rectify the hack? One would suspect that Jump Crypto is heavily invested in seeing the Solana ecosystem succeed and is protecting its own long-term interests. In March, President Biden issued an executive order calling for the government to examine the risks and benefits of cryptocurrencies. This would seem to portend greater regulation of the sector. Perhaps as a response, industry participants voiced a strong desire to be brought under the regulatory purview of the Commodity Futures Trading Commission as opposed to the Securities and Exchange commission.

Figure 7 Real Assets

	Q1 2022	2021
Real Estate	-6.50%	38.99%
Commodities	25.55%	27.11%
Gold	5.92%	-3.64%
Average	8.32%	20.82%

Source: Bloomberg, 3/31/22.

Figure 8 Cryptocurrency Returns

	Q1 2022	2021
BB Galaxy Crypto Index	-8.11%	153.39%
Bitcoin	-1.22%	59.79%
Ethereum	-10.52%	399.10%
XRP (Ripple Digital Asset)	-1.41%	268.34%
Litecoin	-14.54%	17.75%

Source: Bloomberg, 3/31/22.

Returns for major asset classes were very poor in the 1st quarter of 2022 except for Commodities. The MSCI Emerging Market Index fell (-6.97%), followed by the MSCI EAFE Index (-5.91%) and the S&P 500 Index (-4.60%). Commodities were a standout, soaring (+25.55%) as the invasion of Ukraine had a significant impact on the global supply chain. Long-dated U.S. Treasuries and high-yield bonds fell (-10.83% and -4.82%, respectively) in response to persistent inflation raising expectations of longer and higher rate raising cycle. The U.S. Dollar Index rose (+2.76%) (Figure 9). Although yields jumped across the curve quite significantly, real yields remained deeply negative (Figure 10) as inflation, as measured by the CPI, continued to jump. February's YoY CPI, hit 7.9% and consensus expectations are that March's reading will be even higher.

"Risk Off" assets (-2.89% average return) underperformed the returns for "Risk On" assets (-1.31% average return) though the poor returns of long Treasuries somewhat skewed risk

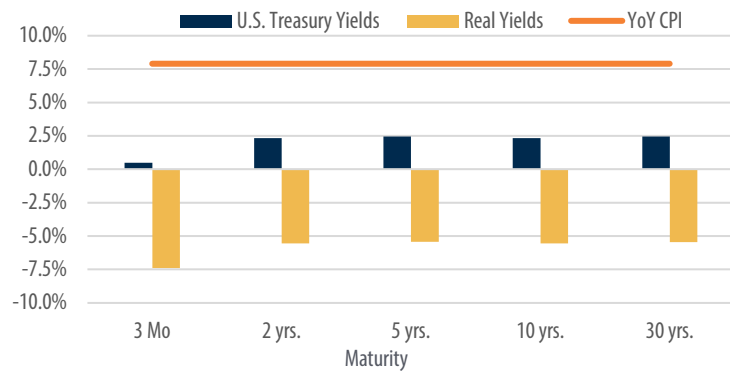
off asset returns lower and reflected more the impact of inflation than flight to or from safety. The Chinese Renminbi and the Australian Dollar both had a positive quarter (+1.12% and +3.06%, respectively). Focusing on non-currencies, gold, was a standout performer (+5.92%) as it appeared to serve as both a flight to quality in the face of the invasion of Ukraine, and a means to hedge inflation. Equities, high-yield bonds and U.S. Treasuries all ended lower for the quarter (Figure 11). Alternatives have historically provided significant diversification benefits when paired with a portfolio of traditional assets, in addition to both competitive absolute returns and attractive risk-adjusted returns. **Please Note: Alternative investments may employ complex strategies, have unique investment, and risk characteristics that may not be suitable for all investors. Diversification does not guarantee a profit or protect against loss.**

Figure 9 Asset Class Returns

	Q1 2022	2021
U.S. Equities	-4.60%	28.71%
International Developed	-5.91%	11.26%
Emerging Markets	-6.97%	-2.54%
U.S. Treasury	-10.83%	-4.34%
Real Estate	-6.50%	38.99%
Commodities	25.55%	27.11%
High Yield Bonds	-4.82%	4.51%
U.S. Aggregate Bonds	-5.93%	-1.54%
Bitcoin	-1.22%	59.79%
U.S. Dollar	2.76%	6.37%

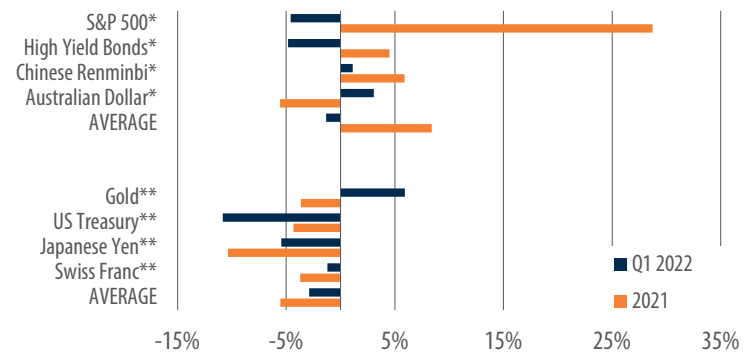
Source: Bloomberg, 3/31/22.

Figure 10 U.S. Treasury Yield Curve and CPI



Source: Bloomberg, 3/31/22. YoY CPI as of 2/28/22 (latest available data).

Figure 11 Risk On vs. Risk Off Assets



Source: Bloomberg, 3/31/22 \*Considered to be "Risk On" asset class. \*\*Considered to be "Risk Off" asset class.

## Definitions

**10-Yr Treasury:** Yield of U.S. Treasury securities maturing in approximately 10 years.

**Aggregate Bonds:** The Bloomberg US Aggregate Bond Index is a broad-based benchmark that measures the investment grade, US dollar-denominated, fixed-rate taxable bond market.

**Beta:** A measure of price variability relative to the market.

**Bitcoin:** A digital currency using encryption techniques created for use in peer-to-peer online transactions. Introduced in 2008 by a person or group using the name Satoshi Nakamoto.

**Bloomberg Galaxy Crypto Index (BGCI):** The BGCI is designed to measure the performance of the largest cryptocurrencies traded in USD.

**Commodities:** The Bloomberg Commodity Index is made up of exchange-traded futures on physical commodities and represents 20 commodities, which are weighted to account for economic significance and market liquidity.

**Consumer Price Index (CPI):** A measure that examines the weighted average of prices of a basket of consumer goods and services, such as transportation, food, and medical care. It is calculated by taking price changes for each item in the predetermined basket of goods and averaging them. Changes in the CPI are used to assess price changes associated with the cost of living.

**Correlation:** A statistical measure that quantifies the extent to which two or more data series fluctuate together. Values run from -1.0 to +1.0.

**Credit Arbitrage:** Hedge Fund Research HFRI Event-Driven Credit Arbitrage Index. Credit Arbitrage strategies employ an investment process designed to isolate attractive opportunities in corporate fixed-income securities; these include both senior and subordinated claims as well as bank debt and other outstanding obligations, structuring positions with little of no broad credit market exposure. These may also contain a limited exposure to government, sovereign, equity, convertible or other obligations but the focus of the strategy is primarily on fixed corporate obligations and other securities are held as component of positions within these structures.

**Cryptocurrency** is a digital or virtual currency that is secured by cryptography, which makes it nearly impossible to counterfeit or double-spend.

**Distressed/Restructuring:** Hedge Fund Research HFRI Event-Driven Distressed/Restructuring Total Index. Distressed/ Restructuring strategies employ an investment process focused on corporate fixed-income instruments, primarily on corporate credit instruments of companies trading at significant discounts to their value at issuance or obliged (par value) at maturity as a result of either formal bankruptcy proceeding or financial market perception of near term proceedings.

**Emerging Markets:** The MSCI Emerging Markets Index captures large and mid cap representation across Emerging Markets (EM) countries. The index covers 85% of the free float-adjusted market capitalization in each country.

**Energy:** The Bloomberg Energy Index is composed of futures contracts on crude oil, heating oil, unleaded gasoline and natural gas.

**Equity Market Neutral:** Hedge Fund Research HFRI Equity Hedge Equity Market Neutral Index. Equity Market Neutral strategies employ sophisticated quantitative techniques of analyzing price data to ascertain information about future price movement and relationships between securities, select securities for purchase and sale. Equity Market Neutral Strategies typically maintain characteristic net equity market exposure no greater than 10% long or short.

**Ethereum:** Ethereum is a platform that offers programming code of any decentralized application. It has been linked to payment style transactions. Ether is the cryptocurrency issued through open-source code executed on thousands of nodes.

**Event Driven:** Hedge Fund Research HFRI Event-Driven (Total) Index. Investment Managers who maintain positions in companies currently or prospectively involved in corporate transactions of a wide variety including but not limited to mergers, restructurings, financial distress, tender offers, shareholder buybacks, debt exchanges, security issuance or other capital structure adjustments.

**Global Food:** The IMF World Commodity Food Price Index is a measure of the change in food prices globally as determined by the International Monetary Fund.

**Gold:** The return of the gold spot price as quoted as U.S. dollars per Troy ounce.

**Gross Domestic Product (GDP):** The monetary value of all finished goods and services made within a country during a specific period.

**Hedged Equity:** Hedge Fund Research HFRI Equity Hedge (Total) Index. Investment Managers who maintain positions both long (positions that are owned) and short (positions that are owed) in primarily equity and equity derivative securities. Hedged Equity managers would typically maintain at least 50%, and may in some cases be substantially entirely invested in equities, both long and short.

**High-Yield Bonds:** The Bloomberg US High Yield Very Liquid Index (VLI) is a component of the US Corporate High Yield Index that is designed to track a more liquid component of the USD-denominated, high yield, fixed-rate corporate bond market. The US High Yield VLI uses the same eligibility criteria as the US Corporate High Yield Index, but includes only the three largest bonds from each issuer that have a min amount outstanding of USD500mn and less than five years from issue date.

**Housing:** The S&P CoreLogic Case-Shiller 20 City Composite Home Index tracks the value of single-family housing in 20 major U.S. metropolitan areas.

**Industrial Metals:** The Bloomberg Industrial Metals Index is composed of longer-dated futures contracts on aluminum, copper, nickel and zinc. It reflects the return on fully collateralized futures positions and is quoted in USD.

**Inflation** is the decline of purchasing power of a given currency over time.

**International Developed:** The MSCI EAFE Index is designed to represent the performance of large and mid-cap securities across 21 developed markets, including countries in Europe, Australasia and the Far East, excluding the U.S. and Canada. The index is a free-float weighted equity index.

**Litecoin:** A peer-to-peer cryptocurrency and open source software project similar to Bitcoin, Litecoin uses blockchain technology to process transactions. Litecoin, referred to as an alt-coin can process blocks faster than Bitcoin, uses a different mining algorithm and has larger supply.

**Long/Short:** "Long" and "short" are investment terms used to describe ownership of securities. To buy securities is to "go long." The opposite of going long is "selling short." Short selling is an advanced trading strategy that involves selling a borrowed security. Short sellers make a profit if the price of the security goes down and they are able to buy the security at a lower amount than the price at which they sold the security short. A put gives the holder the right to sell the underlying asset at a specified price on or before expiration.

**Lumber:** The US Producer Price Lumber Index a subindex of the US Producer Price Index that measures the change over time in selling prices received by domestic producers for their output of Lumber and plywood products.

**Macro:** Hedge Fund Research HFRI Macro (Total) Index. Investment Managers which trade a broad range of strategies in which the investment process is predicated on movements in underlying economic variables and the impact these have on equity, fixed-income, hard currency and commodity markets.

**Managed Futures:** BarclayHedge US Managed Futures Industry Top 50 (Btop 50) Index. The Index seeks to replicate the overall composition of the managed futures industry with regard to trading style and overall market exposure.

**Producer Price Index (PPI)** is a group of indexes that calculates and represents the average movement in selling prices from domestic production over time.

**Quantitative Tightening** is the opposite of quantitative easing, whereby the supply of bank reserves is reduced by draining money from the banking system.

**Real Estate:** The Dow Jones US Real Estate Index is designed to track the performance of real estate investment trusts (REITs) & other companies that invest directly or indirectly in real estate through development, management or ownership, including property agencies.

**Real Yield** or Real Interest Rate has been adjusted to remove the effects of inflation to reflect the real cost of funds to the borrower and the real yield to the lender or to an investor.

**Ripple:** Known as XRP, Ripple is a cryptocurrency that can be used on open source distributed ledger created by the company Ripple. It is built upon the principles of blockchain as an on-demand option for faster cross border payments.

**Risk-On and Risk-Off** is an investment setting in which price behavior responds to and is driven by changes in investor risk tolerance. Risk-on risk-off refers to changes in investment activity in response to global economic patterns.

**Shipping:** The Baltic Dry Index is a shipping and trade index created by the London-based Baltic Exchange. It measures changes in the cost of transporting various raw materials, such as coal and steel.

**Technology Sector:** The S&P 500 Information Technology Index comprises those companies included in the S&P 500 that are classified as members of the GICS® information technology sector.

**U.S. Equities:** The S&P 500 Index. An unmanaged index of 500 stocks (currently 505) used to measure large-cap U.S. stock market performance.

**U.S. 30-Yr Treasury Yield:** Yield of U.S. Treasury securities maturing in approximately 30 years.

**U.S. Dollar:** The U.S. Dollar Index (USDX) indicates the general international value of the U.S. dollar. The USDX does this by averaging the exchange rates between the USD and major world currencies. The ICE US computes this by using the rates supplied by some 500 banks.

**U.S. Treasury:** The ICE U.S. Treasury 20+ Years Bond Index is part of a series of indices intended to assess U.S. Treasury issued debt. Only U.S. dollar denominated, fixed-rate securities with minimum term to maturity greater than twenty years are included.

**Used Cars:** The Manheim US Used Vehicle Value Index is a measure that captures used vehicle pricing trends independent of underlying shifts in the characteristics of vehicles being sold.

**Volatility Arbitrage:** Hedge Fund Research HFRI Relative Value Volatility Index. Volatility strategies trade volatility as an asset class, employing arbitrage, directional, market neutral or a mix of types of strategies, and include exposures which can be long, short, neutral or variable to the direction of implied volatility, and can include both listed and unlisted instruments. Directional volatility strategies maintain exposure to the direction of implied volatility of a particular asset or, more generally, to the trend of implied volatility in broader asset classes. Arbitrage strategies employ an investment process designed to isolate opportunities between the price of multiple options or instruments. Volatility arbitrage positions typically maintain characteristic sensitivities to levels of implied and realized volatility, levels of interest rates and the valuation of the issuer's equity, among other more general market and idiosyncratic sensitivities.

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