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DIGITAL ASSETS

Bitcoin and Gold: Friends or Foes?

Jan van Eck, CEO

Joe Foster
Portfolio Manager, Gold Strategy

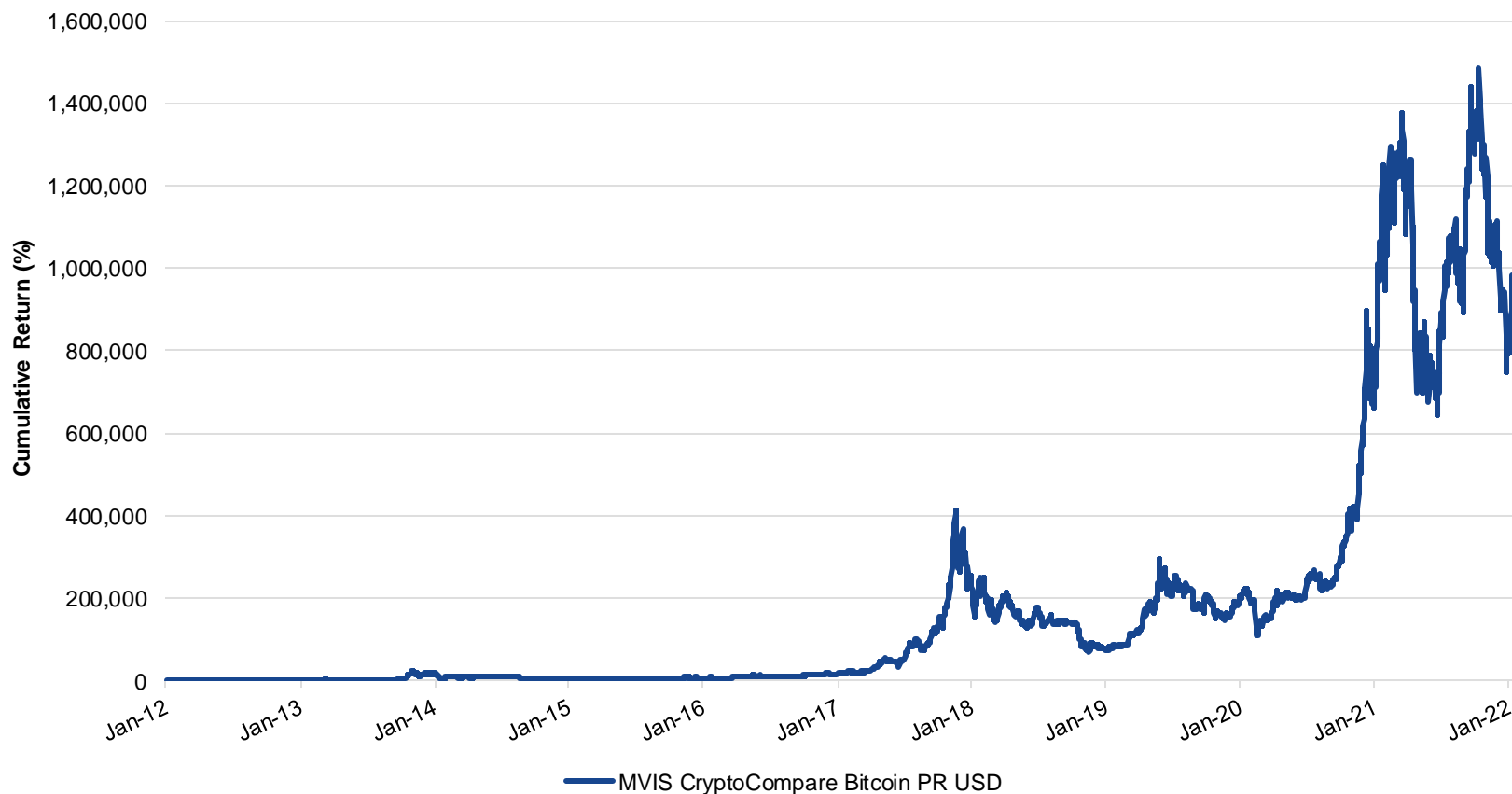
David Schassler
Portfolio Manager and Head of Quantitative Investment Solutions

Matthew Sigel
Portfolio Manager and Head of Digital Assets Research



Tremendous Returns in Bitcoin As It Matures

A young, but growing asset class



- Bitcoin 1.0 (2011 to 2017) proof of technology, huge volatility,
- Bitcoin 2.0 (2017 to 2021) adopted by millions, still volatile; proof of principle in 2021 wt
- Bitcoin 3.0 (2021 to ___) tests of China ban, ESG shutdowns, new all-time highs, beginning of institutional adoption. Smaller drawdown (50%)?
- Bitcoin 4.0 additional investment, continued political certainty
- Bitcoin 5.0 final phase, half the market cap of gold, less volatile, adopted by institutions

Source: Morningstar. Data as of 12/31/2021. Investors cannot invest directly in an index. Past performance is no guarantee of future results
. MVIS CryptoCompare Bitcoin Index measures the performance of a digital assets portfolio w hich invests in Bitcoin. Please see important definitions and disclosures at the end of this presentation.

Commodities Have Outperformed Over the Short Term

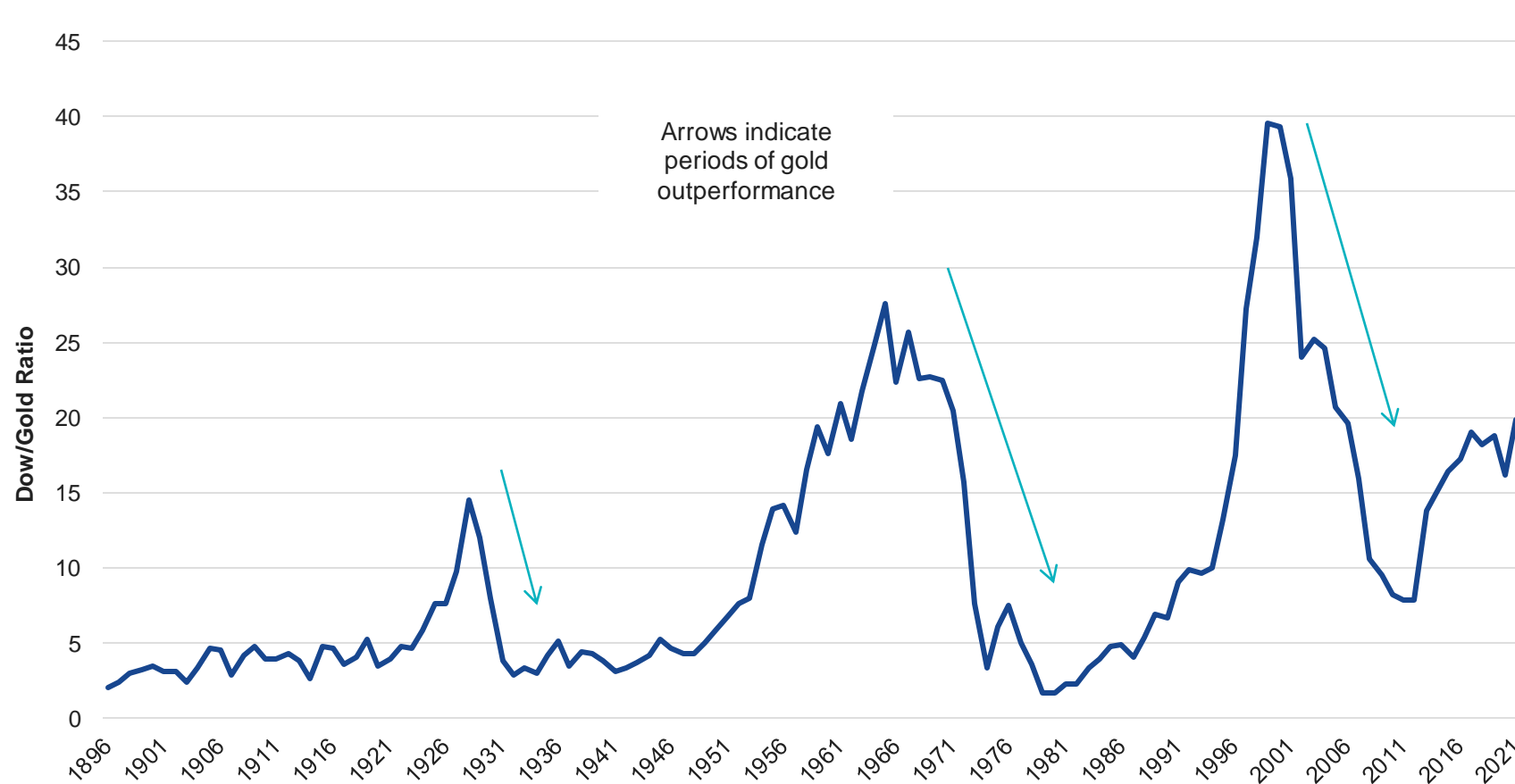
	YTD Return	1 Year Return	3 Year Return (Annualized)
Commodities	24.75	Commodities	Bitcoin
		47.44	125.6
Gold Miners	19.56	Gold Miners	Gold Miners
		18.84	21.44
Gold	4.93	S&P 500	S&P 500
		16.63	17.77
Bitcoin	0.08	Gold	Commodities
		12.1	15.86
S&P 500	-2.82	Bitcoin	Gold
		-17.53	14.08

Sources: Bloomberg. Data as of 3/29/2022. S&P 500 is represented by the S&P 500 Index. Commodities are represented by the Bloomberg Commodity Total Return Index. Bitcoin is represented by the MVIS CryptoCompare Bitcoin Index. Gold is represented by the Gold spot price in U.S. dollars per troy ounce. Gold Miners are represented by the NYSE Arca Gold Miners Index. Past performance is not a guarantee of future results. Please see important definitions and disclosures at the end of this presentation.

The Role Of Gold In A Portfolio: Hedge Against Systemic Risks



Dow/Gold Ratio, 1896 to 2021

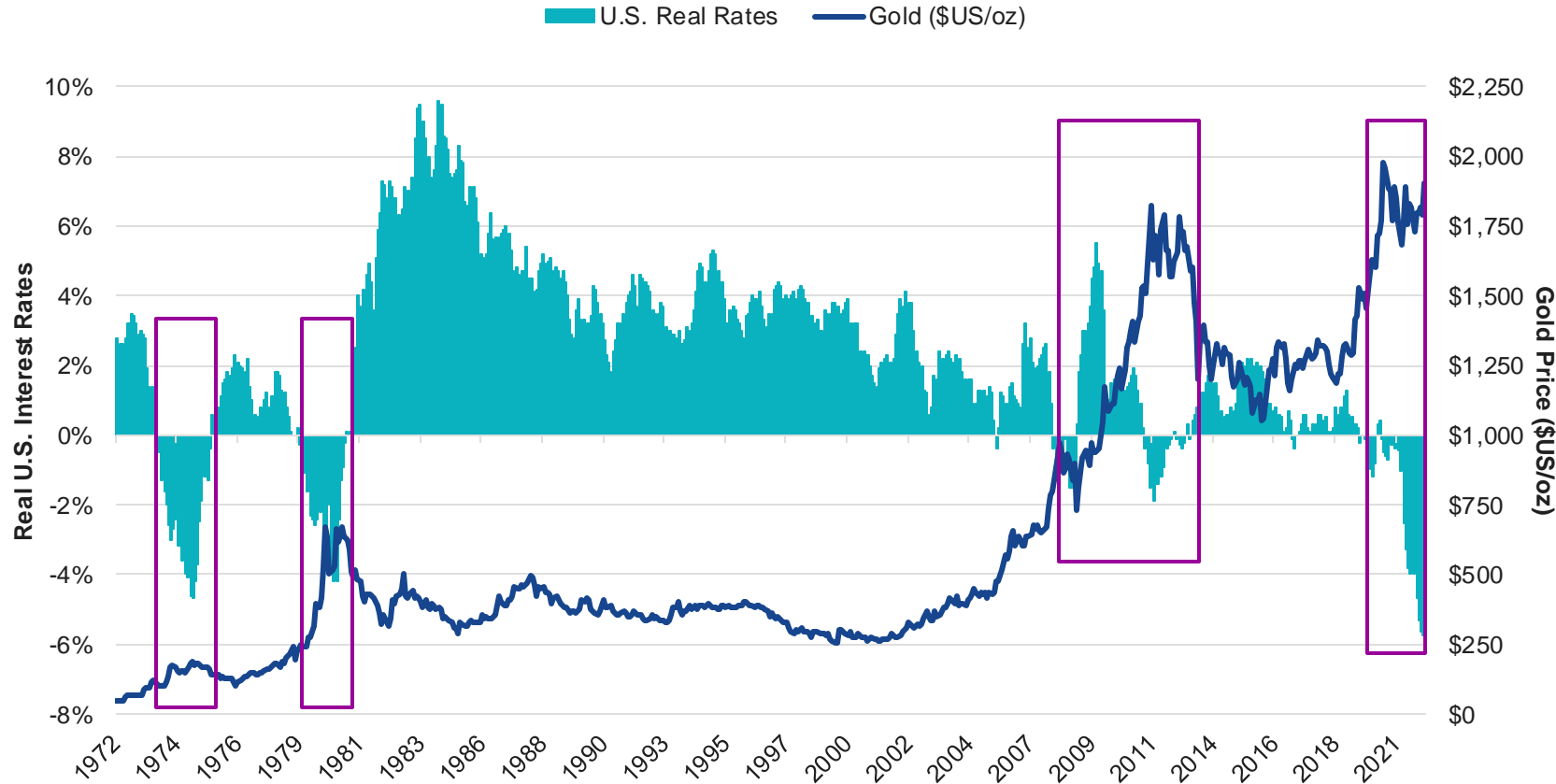


- Historically outperforms the broader market, e.g. DJIA, during
 - Deflationary periods ('30s, '09)
 - High inflation ('70s)
 - Market turmoil ('00s) caused by asset bubbles

Source: Bloomberg, VanEck. Data as of December 2021. Please see important definitions and disclosures at the end of this presentation.

Inflation Drives Real Rates to Historic Lows

Gold vs. Real Rates

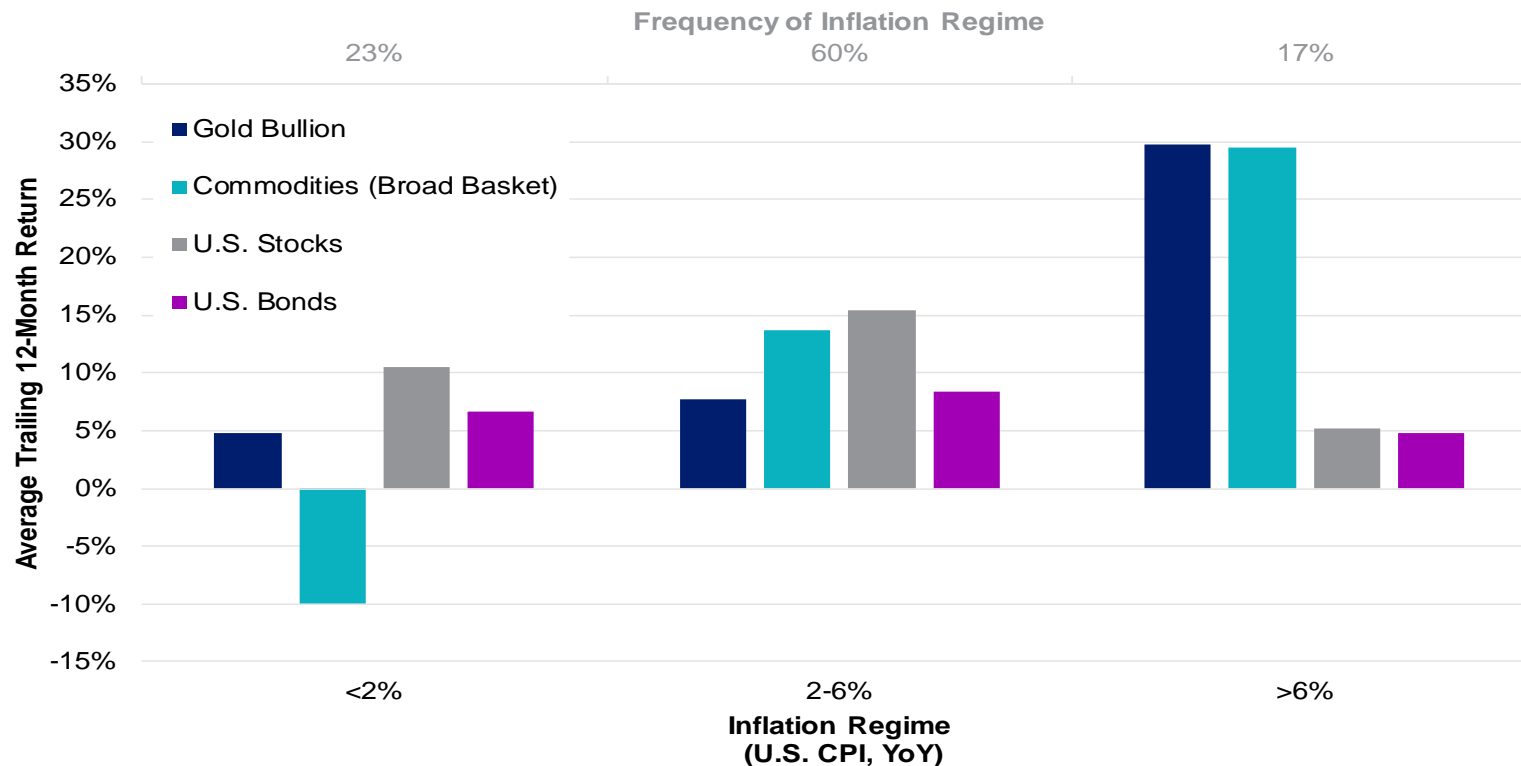


- Negative real rates have historically been a positive environment for gold
- Indicative of high financial risks
- Gold becomes an alternative to interest-bearing assets
- Historically, gold has outperformed in the second half of inflation cycles

Source: VanEck, FactSet, Bloomberg. Data as of February 2022. Please see important definitions and disclosures at the end of this presentation.

Gold May Thrive When Inflation Heats Up

Gold vs. Other Asset Classes In Various Inflation Regimes – 1970 to 2021

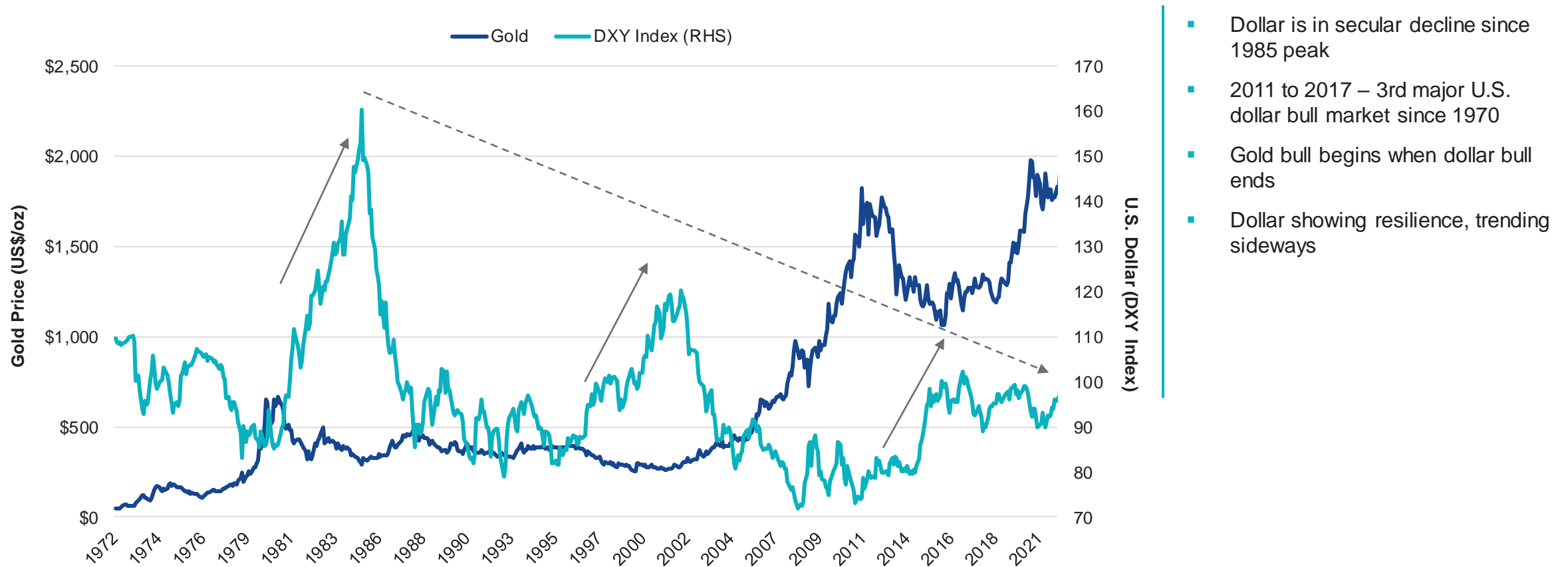


- Gold has generated some of its largest outperformance vs. U.S. stocks and bonds in periods of high inflation

Source: VanEck, Bloomberg, Morningstar. Data as of December 2021. Gold Bullion is represented by the Gold spot price in U.S. dollars per troy ounce. "Commodities (Broad Basket)" represented by the Bloomberg Commodity Index TR; "U.S. Equities" represented by the S&P 500 TR; "U.S. Bonds" represented by the Bloomberg Barclays US Aggregate Bond Index TR from 1976 to 2021, the Bloomberg Barclays US Government/Credit Index TR from 1973 to 1976, and a blend of Morningstar's U.S. Long-Term Government Bond, U.S. Intermediate Government Bond, and U.S. Long-Term Corporate Bond Indices from 1970 to 1973. Please see important definitions and disclosures at the end of this presentation.

U.S. Dollar Hanging In There

Gold vs. U.S. Dollar Index (DXY)



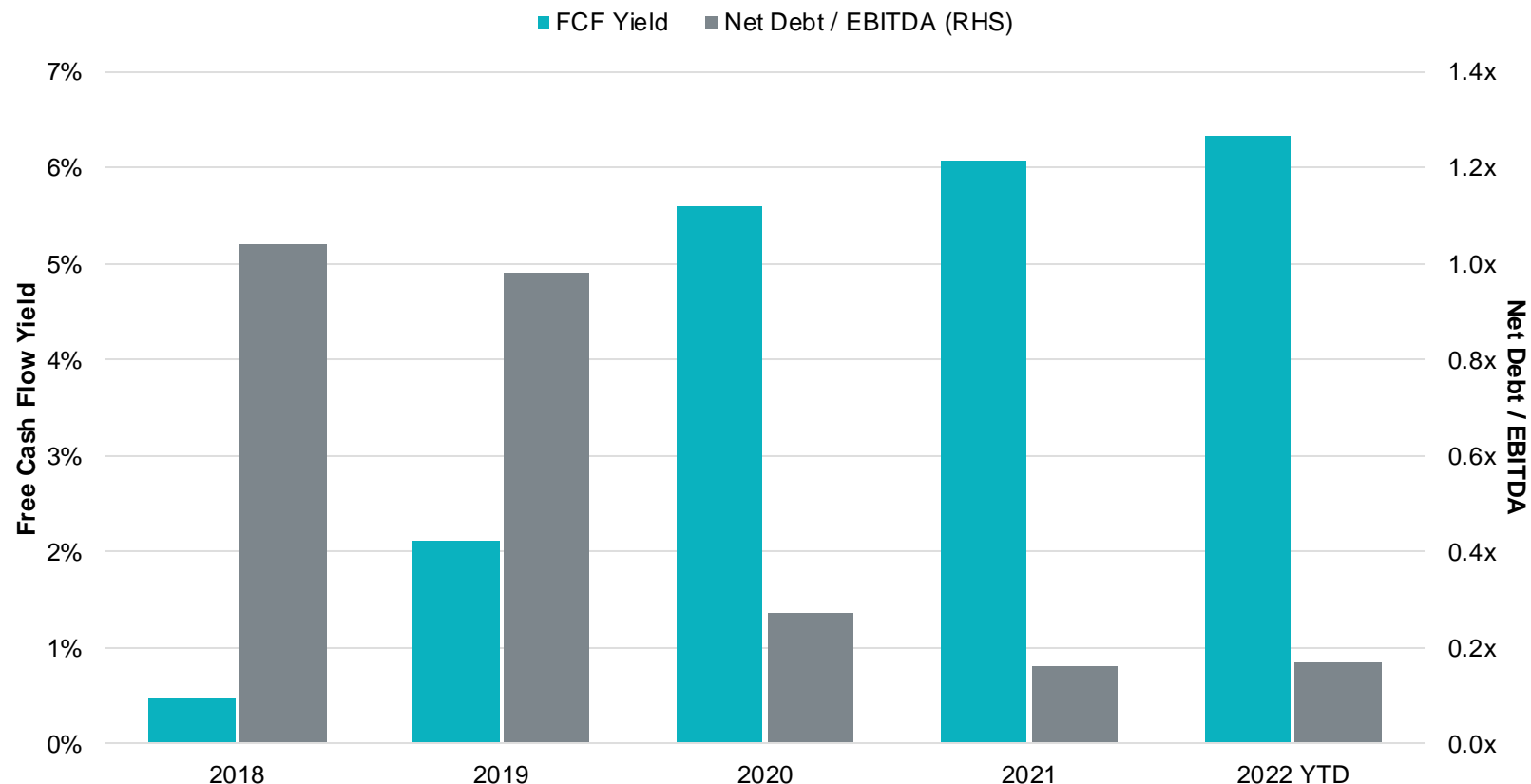
- Dollar is in secular decline since 1985 peak
- 2011 to 2017 – 3rd major U.S. dollar bull market since 1970
- Gold bull begins when dollar bull ends
- Dollar showing resilience, trending sideways

Source: Bloomberg. Data as of February 2022. Gold is represented by the Gold spot price in U.S. dollars per troy ounce. DXY Index (RHS) is represented by the U.S. Dollar Index. Please see important definitions and disclosures at the end of this presentation.

Miners Have Fundamentally Transformed Their Businesses



Gold Miner Free Cash Flow Yield and Net Debt/EBITDA



- Gold miners are making a strong case for value investors right now
- A persistent focus on debt reduction and free cash flow generation has fundamentally transformed how these companies look on both an absolute and relative valuation perspective

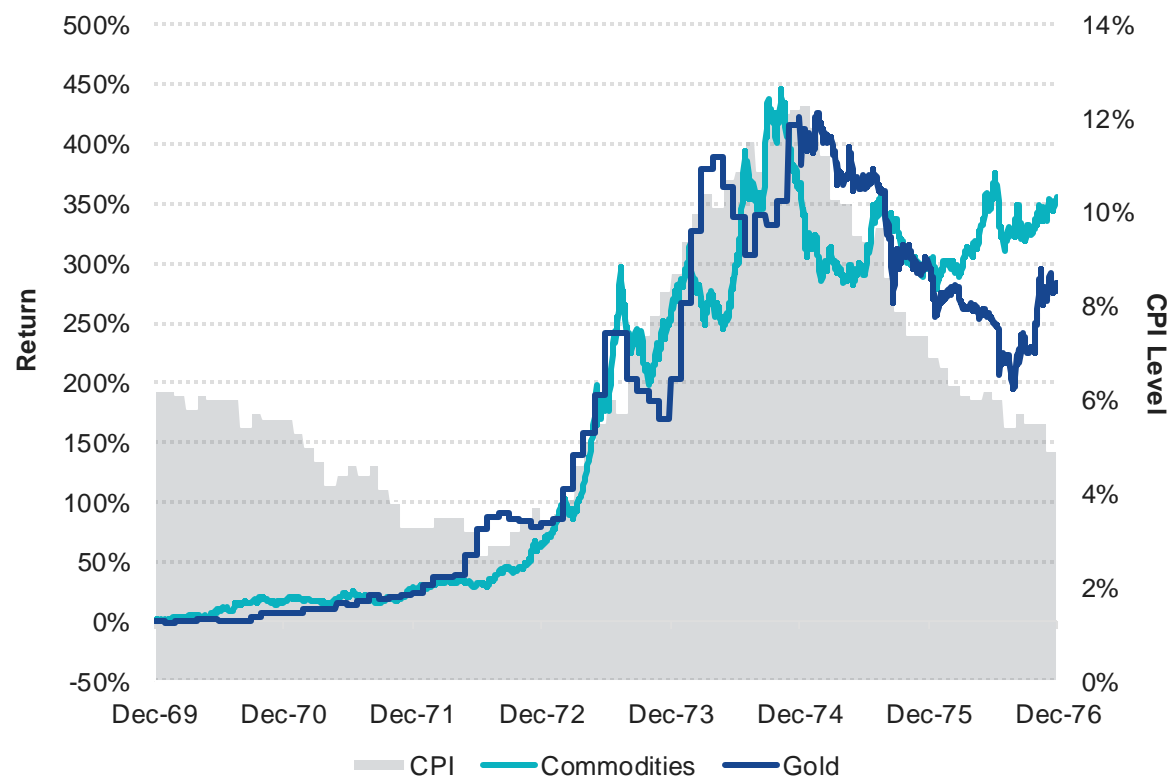
Source: FactSet. Data as of January 2022. Free cash flow yield is a financial solvency ratio that compares the free cash flow per share a company is expected to earn against its market value per share. The net debt-to-EBITDA (earnings before interest depreciation and amortization) ratio is a measurement of leverage, calculated as a company's interest-bearing liabilities minus cash or cash equivalents, divided by its EBITDA. Figures represent the average value of the underlying constituents of the MSCI ACWI Select Gold Miners IMI Index for each of the time periods shown. MSCI ACWI Select Gold Miners IMI Index includes companies primarily engaged in gold mining, or that derive a majority of their revenues from gold mining, and additionally that do not hedge their exposure to underlying gold prices. The index is derived from the ACWI IMI equity universe which includes large, mid and small cap securities across 23 Developed Markets (DM) and 25 Emerging Markets (EM) countries. Please see important definitions and disclosures at the end of this presentation.

Gold: The Second Half Team

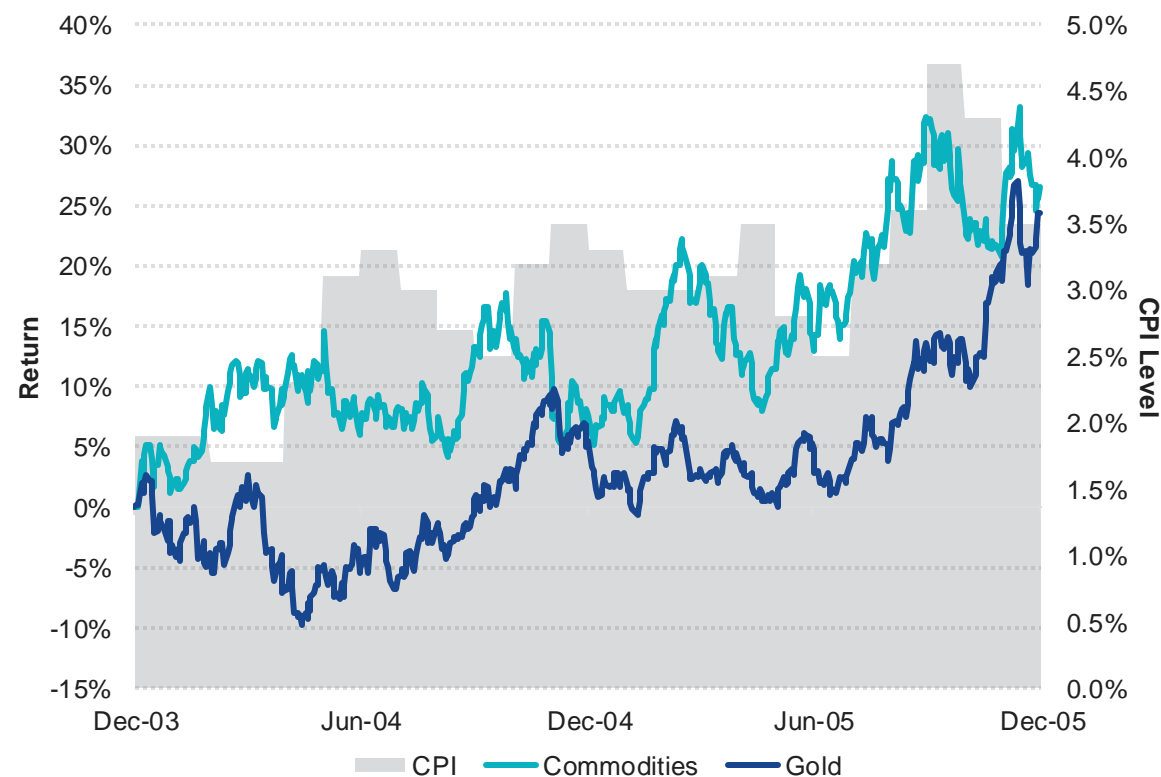


Gold either kept pace or lagged in the first half of the last two high inflation regimes

1st Half of the 1970s High Inflation Regime



1st Half of the Mid-2000s High Inflation Regime



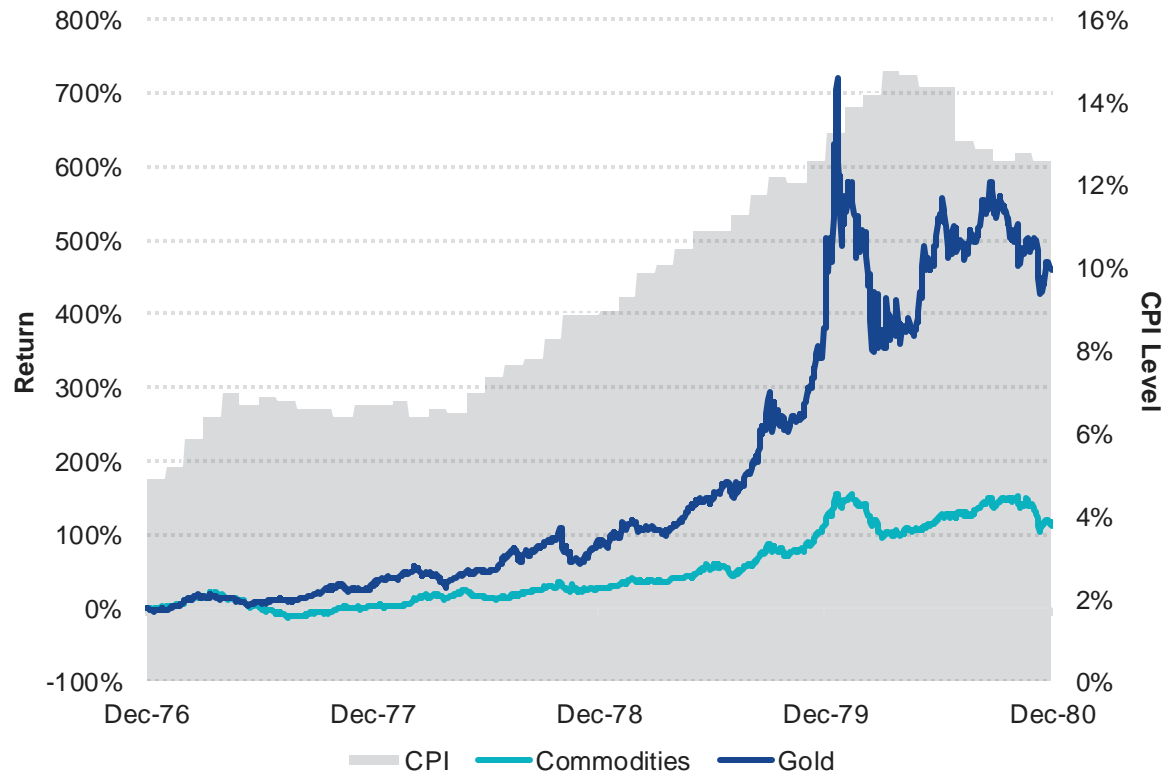
Source: Bloomberg. "CPI" = US Consumer Price Index Urban Consumers YoY NSA; "Commodities" = Bloomberg Commodity Index; "Gold" = Gold spot price in U.S. dollars per troy ounce. Inflation regime indicates a period when inflation, as measured by the CPI, is rising or has reached elevated levels. The last two periods of significant and pervasive inflation in the U.S. occurred in the 1970s and in the early 2000s which is reflected in the time period provided in preceding analysis. Please see important definitions and disclosures at the end of this presentation. Past performance is not indicative of future results.

Gold: The Second Half Team

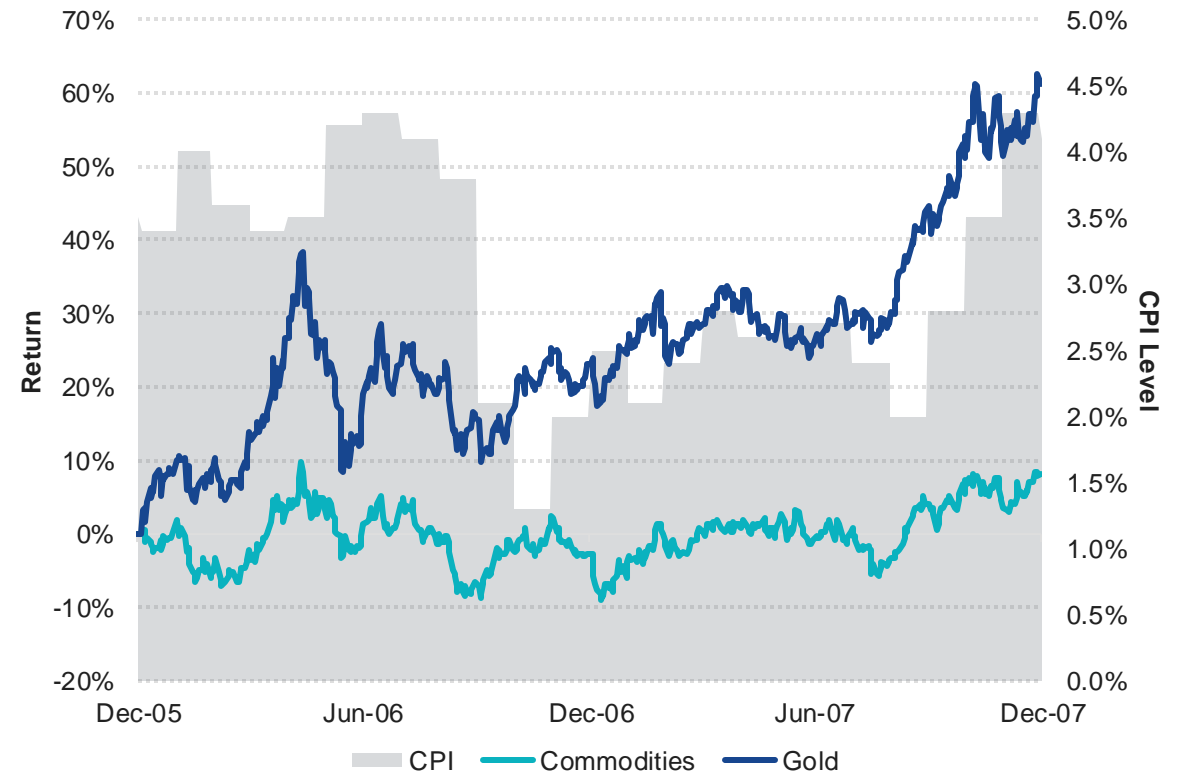


Gold significantly outperformed in the second half of the last two high inflation regimes

2nd Half of the 1970s High Inflation Regime



2nd Half of the Mid-2000s High Inflation Regime



Source: Bloomberg. "CPI" = US Consumer Price Index Urban Consumers YoY NSA; "Commodities" = Bloomberg Commodity Index; "Gold" = Gold spot price in U.S. dollars per troy ounce. Inflation regime indicates a period when inflation, as measured by the CPI, is rising or has reached elevated levels. The last two periods of significant and pervasive inflation in the U.S. occurred in the 1970s and in the early 2000s which is reflected in the time period provided in preceding analysis. Please see important definitions and disclosures at the end of this presentation. Past performance is not indicative of future results.

Bitcoin Correlation

The 3-year correlation of gold and the Nasdaq to bitcoin is 0.15 and 0.27, respectively.

Nasdaq and Gold Correlation to Bitcoin

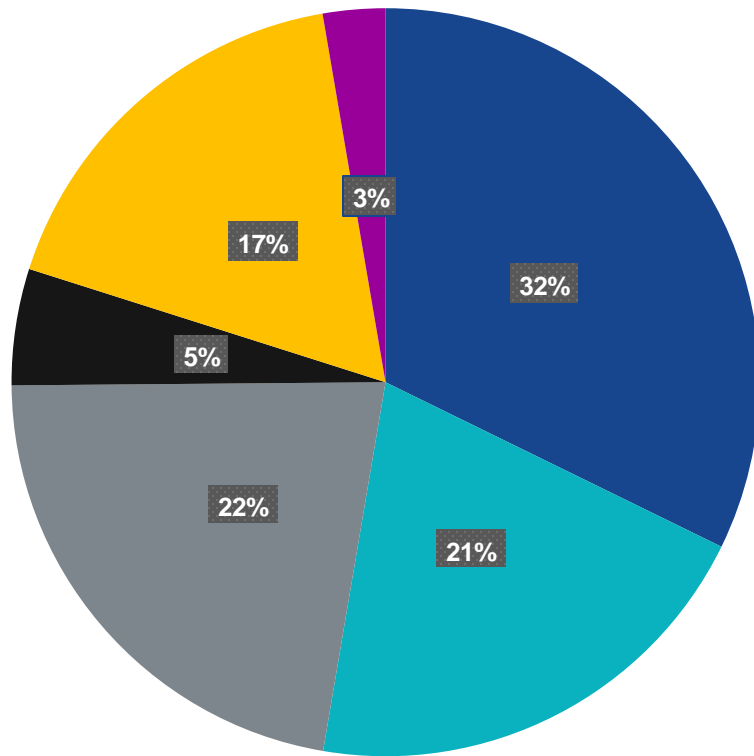


Source: Bloomberg, VanEck. Data as of February 2022. "Gold" = Gold spot price in U.S. dollars per troy ounce. Nasdaq is represented by the Nasdaq 100 Index. Please see important definitions and disclosures at the end of this presentation.

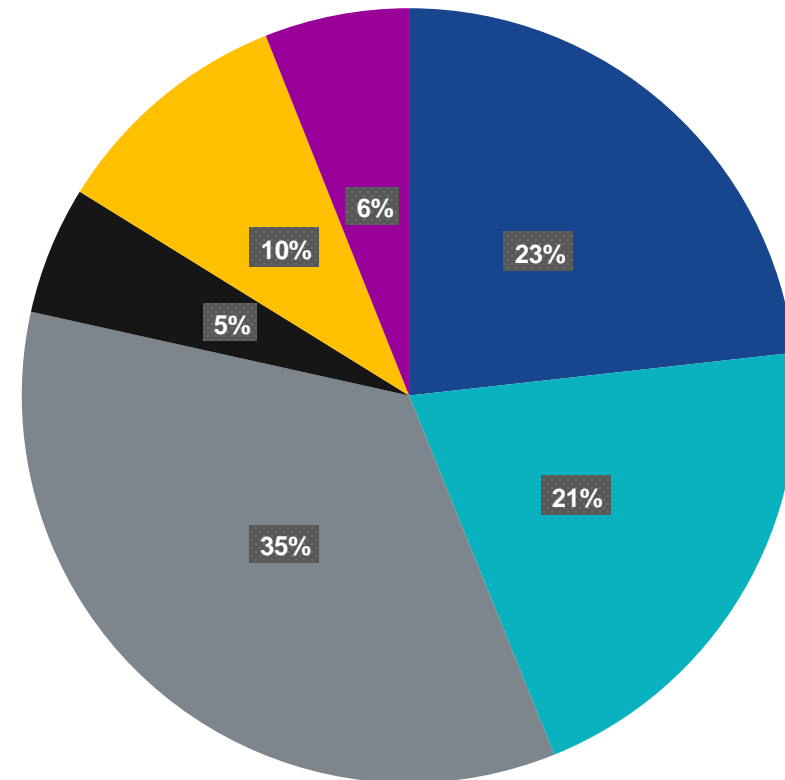
Allocating Based on Risk

Risk weighting methodology demonstrates the efficiency of bitcoin from a capital allocation perspective

12-Month Average Weights



12-Month Average Contribution to Volatility



- Income Assets
- Commodities
- Natural Resource Equities
- Clean Energy
- Gold
- Bitcoin

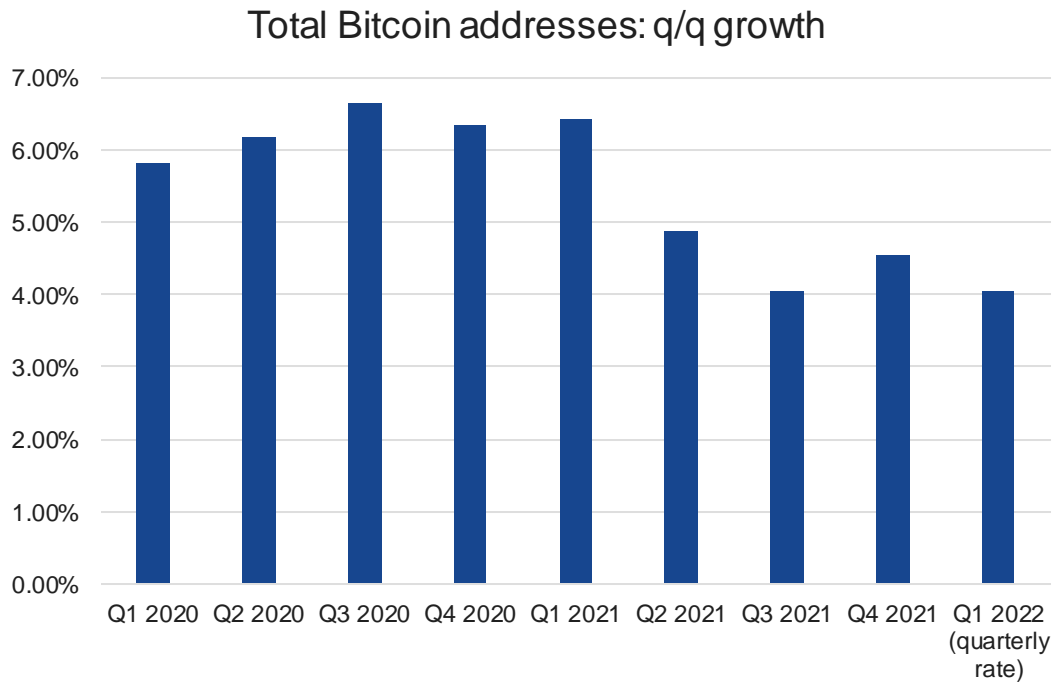
Source: Bloomberg, VanEck. Data as of February 2022. Volatility is defined as the standard deviation of returns. Income Assets include MLPs, Infrastructure and REITs; Commodities is represented by the Bloomberg Commodity Index; Natural Resources is represented by the S&P Global Natural Resources Index; Clean Energy is represented by the MVIS Global Low Carbon Energy Index; Gold is represented by the Gold spot price in U.S. dollars per troy ounce. Please see important definitions and disclosures at the end of this presentation.

The VanEck logo is positioned in the top left corner. It features the word "VanEck" in a dark blue, serif font, with a registered trademark symbol (®) to the upper right of the letter "k". The background of the slide is a blurred office interior with a diagonal light blue overlay.

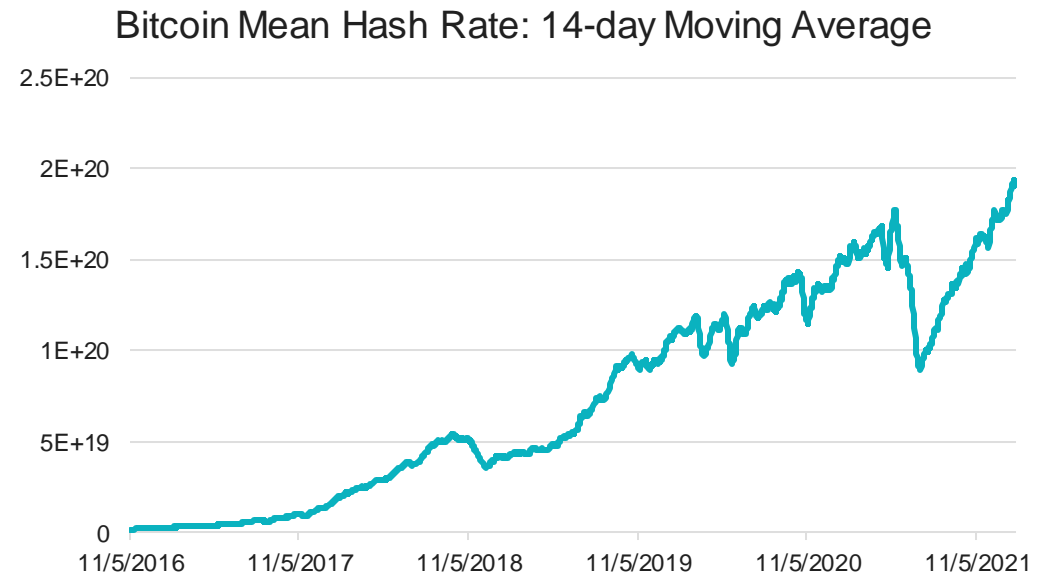
Appendix

Bitcoin: Total # of Addresses Continues to Grow

928M Bitcoin addresses, growing 1-2% m/m



Another all-time high for global hash rate



Source: Glassnode, VanEck, as of 1/30/21; hash rate represents the total computational power being used to process transactions and mine new coins. Please see important definitions and disclosures at the end of this presentation.

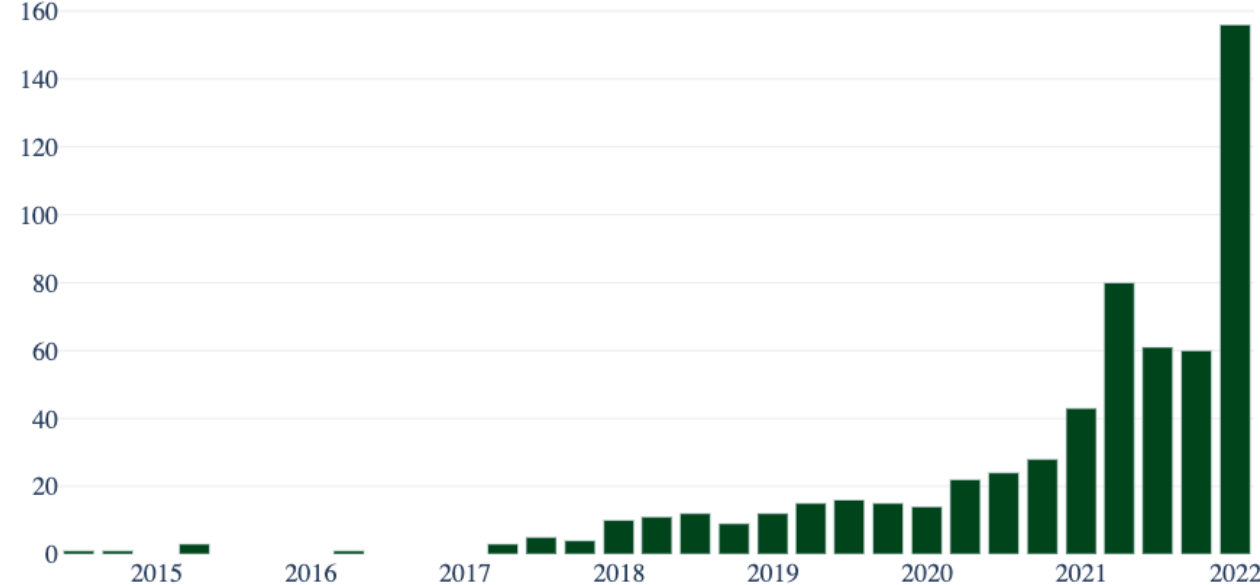
Bitcoin: Institutional Adoption May Limit Downside This Cycle



Corporate demand for bitcoin growing despite tricky accounting realities

Number of 13F SEC Files Mentioning "bitcoin", By Quarter

Source: Coin Metrics & SEC EDGAR



Post-Halving Bull:

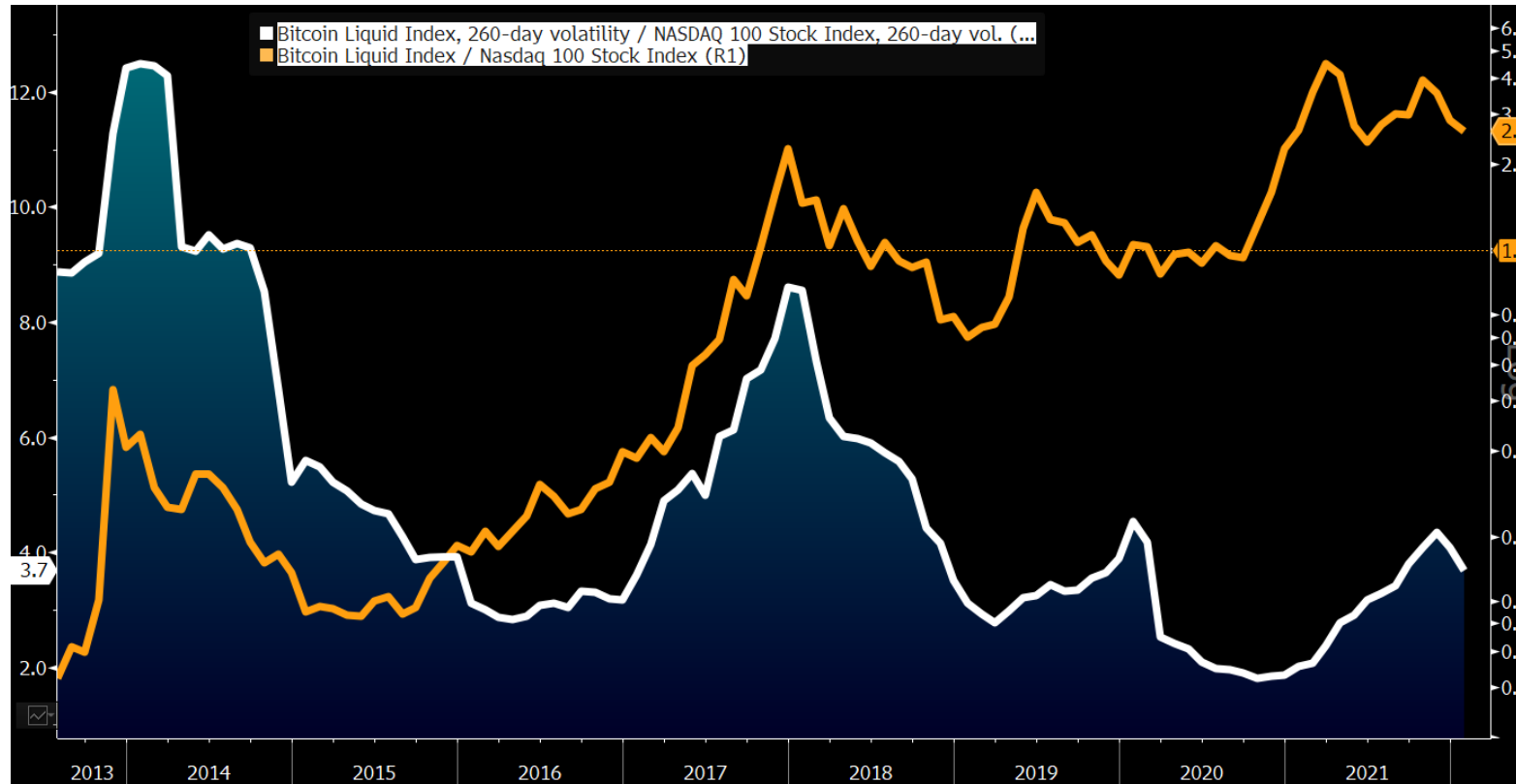
Period	Duration	Appreciation
2012-2013	365 days	8200%
2016-2017	500 days	3200%
2020-2021	550 days	600%

Peak-to-trough Bear:

Period	Duration	Appreciation
2014-2015	400 days	-84%
2018-2019	350 days	-82%
2022	101	-48%

Bitcoin Relative Volatility Continues to Fall vs. Nasdaq

White line = Bitcoin 260 day volatility / Nasdaq 260 day vol; orange line = Bitcoin price / Nasdaq price



Bitcoin thesis rests on falling volatility

- Early Bitcoin investors were mostly retail, tended to get “rekt” in corrections
- 27 publicly traded corporation now own 1.15% of Bitcoin outstanding
- GBTC owns additional 2.4%
- 69% of Bitcoin supply hasn't moved in 180 days
- Public pension funds are starting to accumulate Bitcoin
- El Salvador President predicts two more countries will declare Bitcoin legal tender in 2022
- Bitcoin is the only fungible asset in the world that doesn't respond to higher prices with more supply

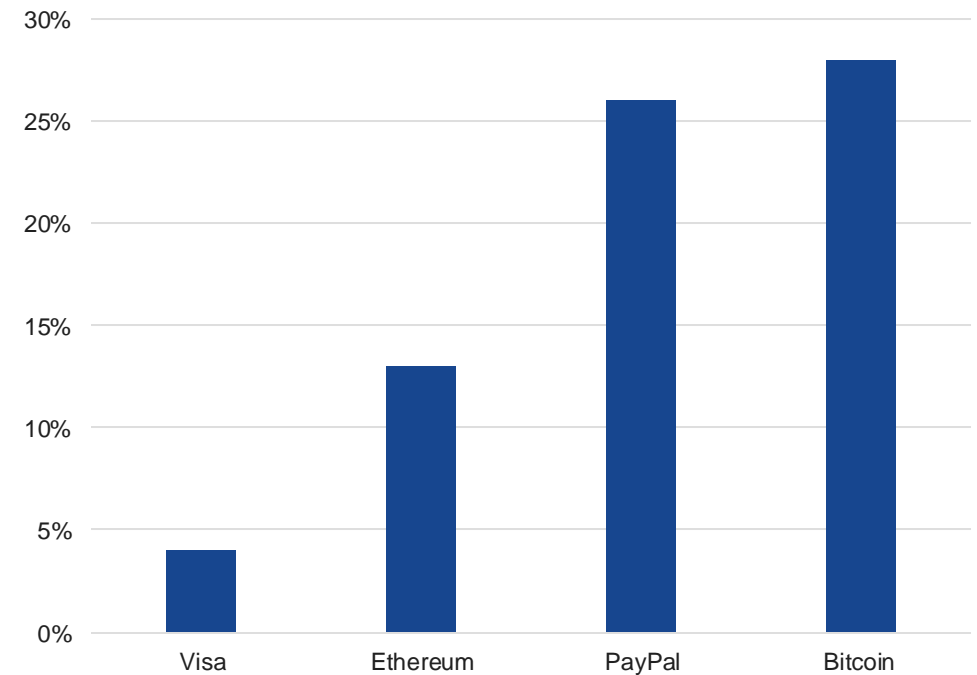
Bitcoin: Valuation Techniques

- "Stock-to-flow"
- Versus Gold
- As ratio of transaction value
- Market-based estimate of future "revenues" (staking)

Bitcoin: network value to transactions Ratio (NVT) (30d moving average)



Market cap as % of annual network tx value



Sources: Glassnode (left chart); Paypal, Visa, Nacha.org, NasdaqTrader.com, Coinmetrics, VanEck estimates as of 2021 (right chart). Tx represents transactions. Not intended as a recommendation to buy or to sell any of the securities mentioned herein. Past performance is not a guarantee of future results. Please see important definitions and disclosures at the end of this presentation.

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All indices are unmanaged and include the reinvestment of all dividends but do not reflect the payment of transactions costs, advisory fees or expenses that are typically associated with managed accounts or investment funds. Indices were selected for illustrative purposes only and are not securities in which investments can be made. The returns of actual accounts investing in natural resource equities, energy equities, diversified mining equities, gold equities, commodities, oil, industrial metals, gold, U.S. equities and U.S. bonds strategies are likely to differ from the performance of each corresponding index. In addition, the returns of accounts will vary from the performance of the indices for a variety of reasons, including timing and individual account objectives and restrictions. Accordingly, there can be no assurance that the benefits and risk/return profile of the indices shown would be similar to those of actual accounts managed. Performance is shown for the stated time period only.

The **S&P® 500 Index**: a float-adjusted, market-cap-weighted index of 500 leading U.S. companies from across all market sectors. **The Bloomberg Barclays U.S. Aggregate Bond TR Index**: is a broad-based benchmark that measures the investment grade, U.S. dollar-denominated, fixed-rate taxable bond market. The index includes Treasuries, government-related and corporate securities, MBS (agency fixed-rate and hybrid ARM pass-throughs), ABS and CMBS (agency and non-agency). **The Bloomberg Barclays EM Local Currency Government TR Index**: is a flagship index that measures the performance of local currency Emerging Markets (EM) debt. Classification as an EM is rules-based and reviewed annually using World Bank income group, International Monetary Fund (IMF) country classification and additional considerations such as market size and investability. **The MSCI US REIT Index**: is a free float-adjusted market capitalization index that is comprised of equity REITs and represents about 99% of the US REIT universe and securities are classified in the Equity REITs Industry (under the Real Estate sector) according to the Global Industry Classification Standard (GICS®). It however excludes Mortgage REIT and selected Specialized REITs. **The MVIS CryptoCompare Bitcoin Index** measures the performance of a digital assets portfolio which invests in Bitcoin. **The Bloomberg Commodity Index** is composed of futures contracts and reflects commodity futures price movements. **The NYSE Arca Gold Miners Index** is a modified market capitalization weighted index comprised of publicly traded companies involves primarily in the mining for gold and silver. **The Dow Jones Industrial Average** is a price-weighted average of 30 blue-chip stocks that are generally the leaders in their industry. **The NASDAQ 100 Index** is a modified capitalization-weighted index of the 100 largest and most active non-financial domestic and international issues listed on the NASDAQ. **The U.S. Dollar Index** is a measure of the value of the U.S. dollar relative to the value of a basket of currencies of the majority of the U.S.'s most significant trading partners. **The Bitcoin Liquid Index** is designed to provide a real-time spot or reference rate for the price of 1 Bitcoin, quoted in USD, and based on the most liquid ends of their markets. **The S&P Global Natural Resources Index** includes 90 of the largest publicly-traded companies in natural resources and commodities businesses that meet specific investability requirements, offering investors exposure across 3 primary commodity-related sectors including agribusiness, energy and metals & mining. **The MVIS Global Low Carbon Energy Index** comprises A globally diversified group of renewable energy companies, which may include, but is not limited to: wind, solar, hydro, hydrogen, bio-fuel or geothermal technology, lithium-ion batteries, electric vehicles and related equipment, waste-to-energy production, smart grid technologies, or building or industrial materials that reduce carbon emissions or energy consumption.

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- Investors must have the financial ability, sophistication and willingness to bear the risks of an investment and a potential total loss of their entire investment in cryptocurrency.
- An investment in cryptocurrency is not suitable or desirable for all investors.
- Cryptocurrency has limited operating history or performance.
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