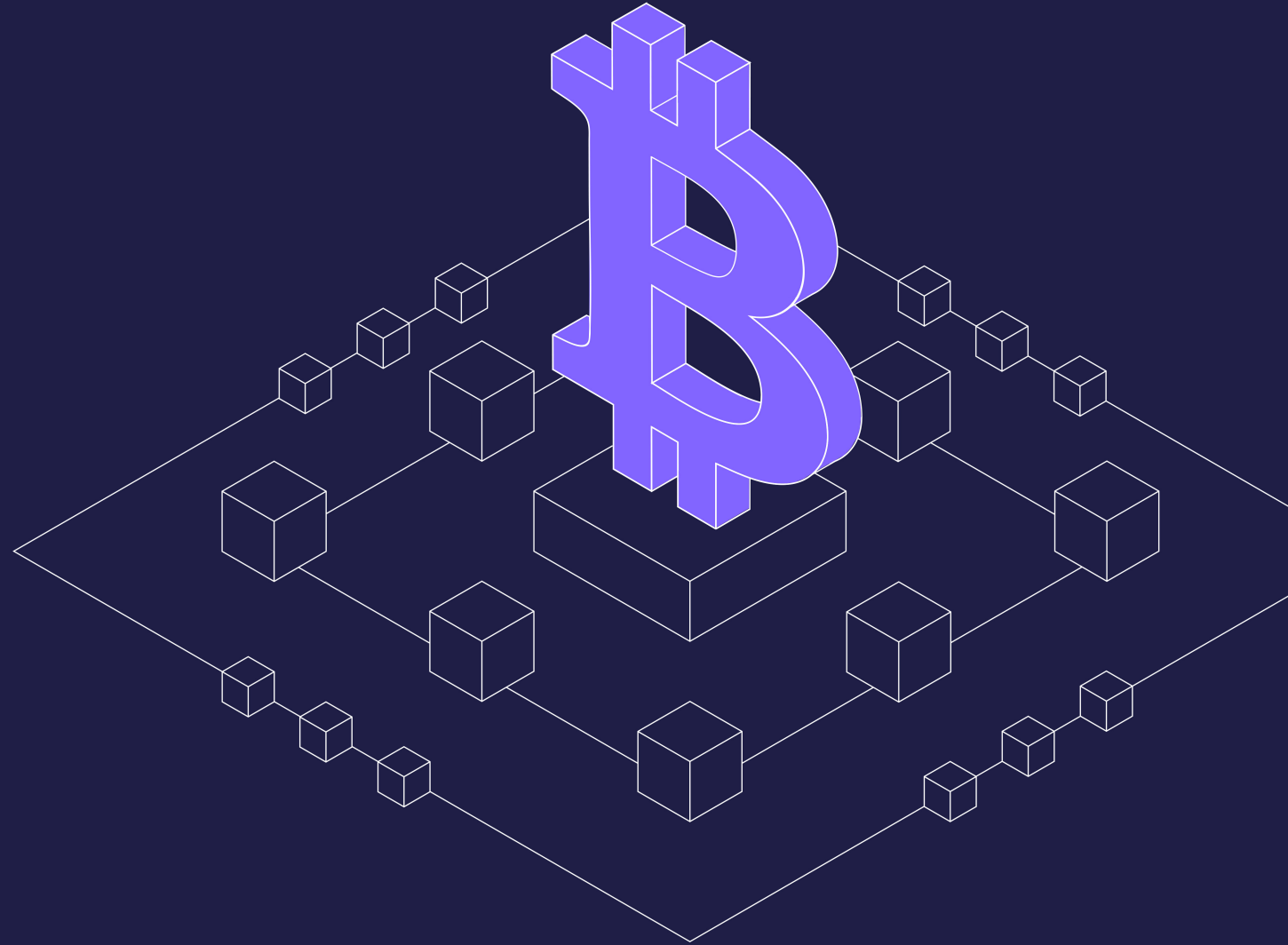




As of February 29, 2024

THE BITCOIN MONTHLY

ON THE BRINK OF ALL-TIME HIGH



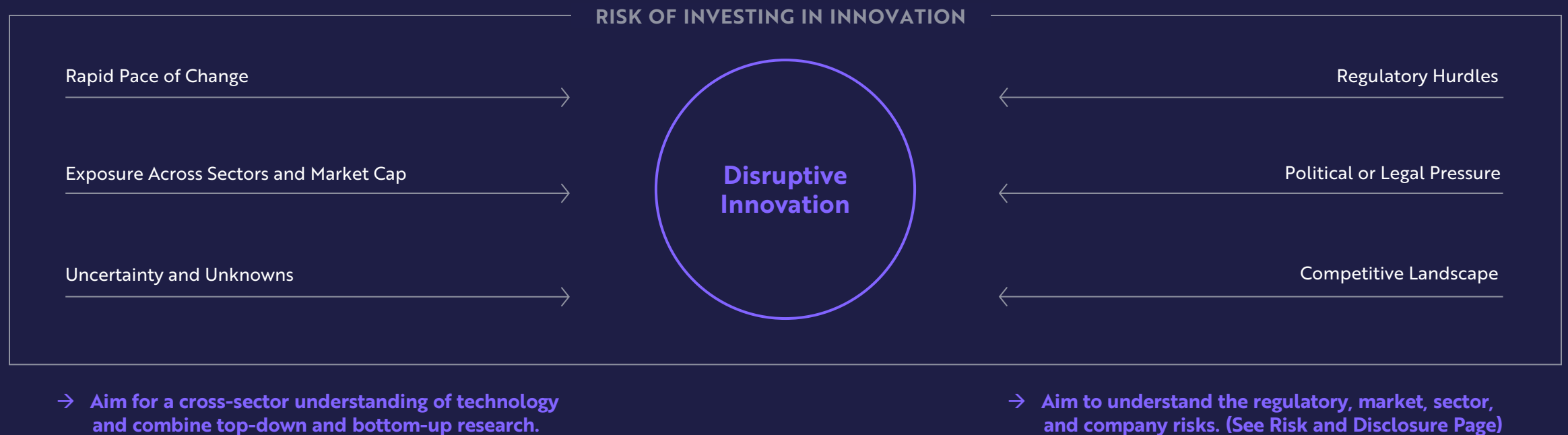
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RISKS OF INVESTING IN INNOVATION

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Please read risk disclosure carefully.





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Section 01

Market Summary





The Price Of Bitcoin Reaches Toward New Highs

Spot Bitcoin ETF Balances Increase, As Does Bitcoin Volatility

- In February, bitcoin's price rose 43.8% to \$61,180, its best monthly performance since December 2020.
- At the end of February, bitcoin's 200-day moving average was \$36,939, its on-chain mean \$35,766, and its short-term-holder cost basis \$45,108.
- Collectively, spot bitcoin ETF assets under management (AUM) increased their share of total bitcoin supply, closing the month at 3.9% of all bitcoin available.
- As the bitcoin price and its cost bases approach all-time highs, its volatility has increased.

Is Bitcoin's Safe-Haven Appeal Increasing?

- Is bitcoin gaining recognition as a safe-haven asset amid monetary instability?
- Traditional economic indicators do not seem to be measuring the potential deflationary impact of technology correctly.

ARK'S KEY TAKEAWAYS

- In February, the price of bitcoin rose 43.8% to \$61,180, its best monthly performance since December 2020.
- As its price hit at an all-time high, bitcoin's volatility has increased.
- Within two months of launch, the spot bitcoin ETFs account for 3.9% of all bitcoin outstanding.
- Bitcoin appears to be evolving into a hedge against the vagaries of monetary policy.

Source: ARK Investment Management LLC, 2024. Data from [Glassnode](#) unless otherwise specified. Data valid as of February 29, 2024, and subject to change. For more information on certain terms, please read our Glossary Of Terms in the Appendix of this report. For informational purposes only and should not be considered investment advice or a recommendation to buy, sell, or hold any particular security or cryptocurrency. Forecasts are inherently limited and cannot be relied upon. Past performance is not indicative of future results.



News Of The Month

[Crypto Exchange Gemini Says Bankrupt Genesis Moves To Authorize Sale Of Trust Assets](#)

[New York Attorney General Expands Crypto Lawsuit, Sees \\$3-Billion Fraud](#)

[Criminal Sentencing Of Binance Founder CZ Postponed To Late April](#)

[Court Clears Genesis To Liquidate \\$1.3-billion-worth Of Grayscale GBTC Shares](#)

[Kraken Moves To Dismiss SEC Lawsuit, Citing Retaliation From "A Politically Compromised Agency"](#)

[MicroStrategy Acquires Additional 3,000 Bitcoins And Now Holds 193,000 BTC](#)

[Morgan Stanley Fund's Filing Adds Language On Investment In Spot Bitcoin ETFs](#)

[Bank of America, Wells Fargo To Offer Spot Bitcoin ETFs To Clients](#)



Network Activity Increased While Bitcoin's Holder Base Remained Net Neutral

	Bitcoin Metrics ¹	Unit	February 2024	1M Change	1Y Change	ARK's View	Upgrade/Downgrade ³
Network Security	<u>Mining Difficulty</u>	Exahash/sec ¹ (Thousands)	351	+16.1%	+89.8%	Bullish	No Change
	<u>Miner Revenue</u> (7-Day Moving Average)	USD (Millions)	51.4	+18.8%	+131.9%	Bullish	↑
Network Usage	<u>Active Owners</u> ² (Active Entities, 7-Day Moving Average)	Thousands	281.3	+21.7%	+0.4%	Bullish	↑
	<u>Transaction Volume</u> ² (7-Day Moving Average)	BTC (Thousands)	183.7	+15.4%	+44.9%	Bullish	No Change
Holder Behavior	<u>Long-Term-Holder Supply</u> ² (Coins Held for 155 Days+)	BTC (Millions)	14.5	-1.3%	+2.7%	Neutral	No Change
	<u>Locked Supply</u> ² (Illiquid Supply)	BTC (Millions)	15.04	-1.1%	+1.6%	Neutral	No Change
	<u>Time-Weighted Turnover</u> ² (Coindays Destroyed, 7-Day Median)	Coindays (Millions)	21.7	+7.5%	+129.3%	Bearish	No Change

[1] For more information on these metrics and their units of account, please read the Appendix: Glossary of Terms in the Appendix of this report. [2] Data may be subject to change over time since they are entity-adjusted in real time via a machine-learning algorithm. [3] Arrows displayed in the "Upgrade/Downgrade" column convey the change in our view of that metric compared to last month. For instance, if our view changes from bearish to neutral, the arrow will be green, and so forth. One arrow denotes a 1-tier change, and two arrows denote a 2-tier change. Source: ARK Investment Management LLC, 2024. Data sourced from [Glassnode](#). Some data may be subject to change over time since they are entity-adjusted in real time. Information as of February 29, 2024. For informational purposes only and should not be considered investment advice or a recommendation to buy, sell, or hold any particular security or cryptocurrency.

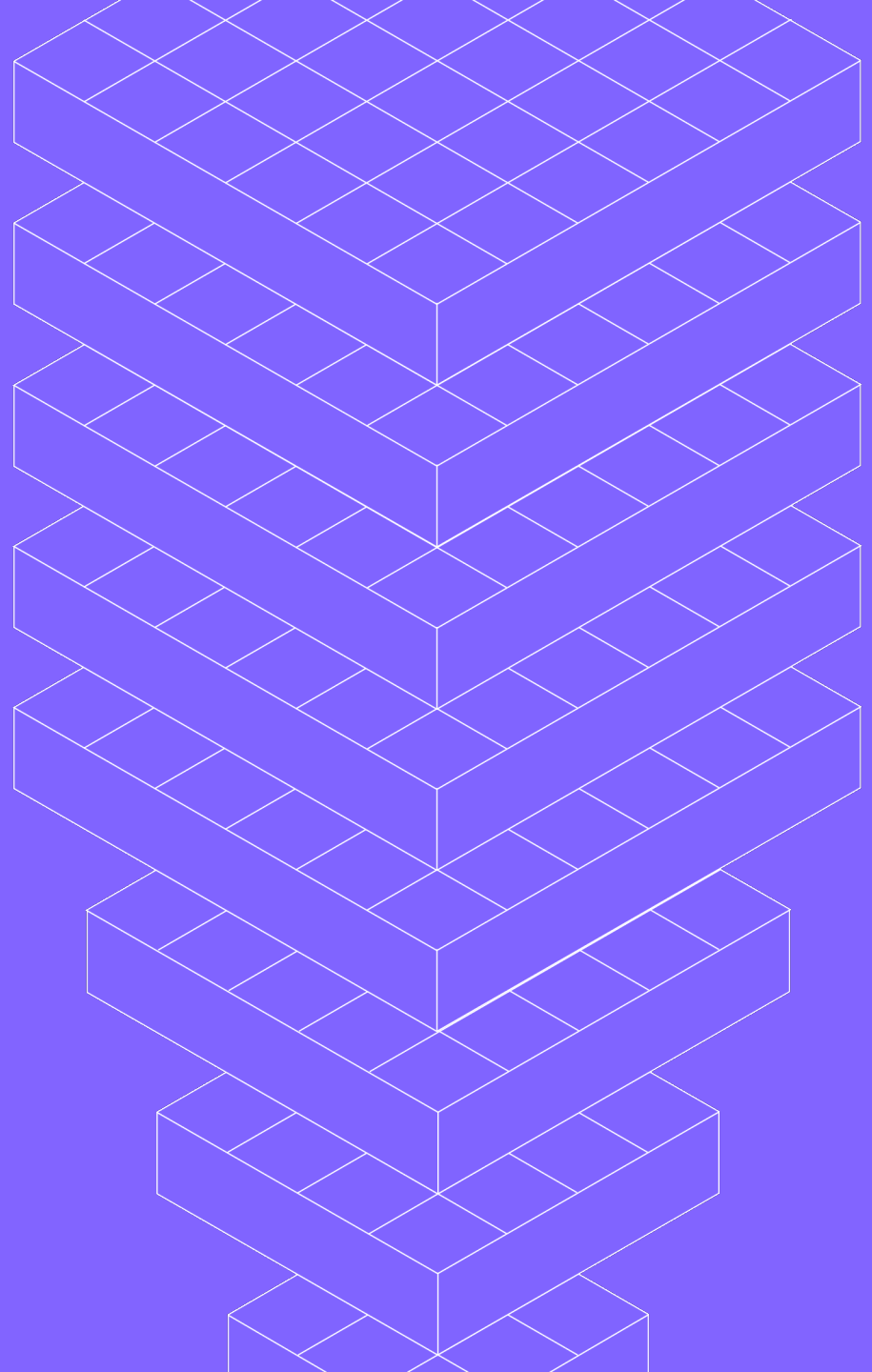


As Bitcoin's Cost Bases Increased, Its Derivatives Market Overheated

	Bitcoin Metrics ¹	Unit	February 2024	1M Change	1Y Change	ARK's View	Upgrade/Downgrade ³
Long-Term Valuation	<u>Market Cost Basis</u> (Realized Price)	USD	\$24,125	+6.3%	+22.2%	Bullish	No Change
	<u>Percent Supply In Profit</u>	pp	99.4%	+16.1	+68.2	Neutral	↓
Short-Term Valuation	<u>Short-Term-Holder Cost Basis²</u> (STH Realized Price)	USD	\$45,107	+15.7%	+126.7%	Bullish	No Change
	<u>Realized Market Returns²</u> (SOPR-1, 7-day moving average)	pp	19.1%	+23.4	+18.9	Neutral	No Change
Market Sentiment	<u>Perpetual Futures Basis</u> (Binance, Estimated, 7-Day Exponential Moving Average)	pp	0.1%	+0.14	+0.15	Bearish	↓↓
	<u>Expirational Futures Basis</u> (Quarterly, All Exchanges, Annualized)	pp	17.05%	+7.35	+12.08	Bearish	↓↓

[1] For more information on these metrics and their units of account, please read the Appendix: Glossary of Terms in the Appendix of this report. [2] Data may be subject to change over time since they are entity-adjusted in real time via a machine-learning algorithm. [3] Arrows displayed in the "Upgrade/Downgrade" column convey the change in our view of that metric compared to last month. For instance, if our view changes from bearish to neutral, the arrow will be green, and so forth. One arrow denotes a 1-tier change, and two arrows denote a 2-tier change. Source: ARK Investment Management LLC, 2024. Data sourced from [Glassnode](#). Some data may be subject to change over time since they are entity-adjusted in real time. The perpetual futures basis was estimated internally on the basis of data from TradingView, and it is subject to change. Information as of February 29, 2024. For informational purposes only and should not be considered investment advice or a recommendation to buy, sell, or hold any particular security or cryptocurrency.

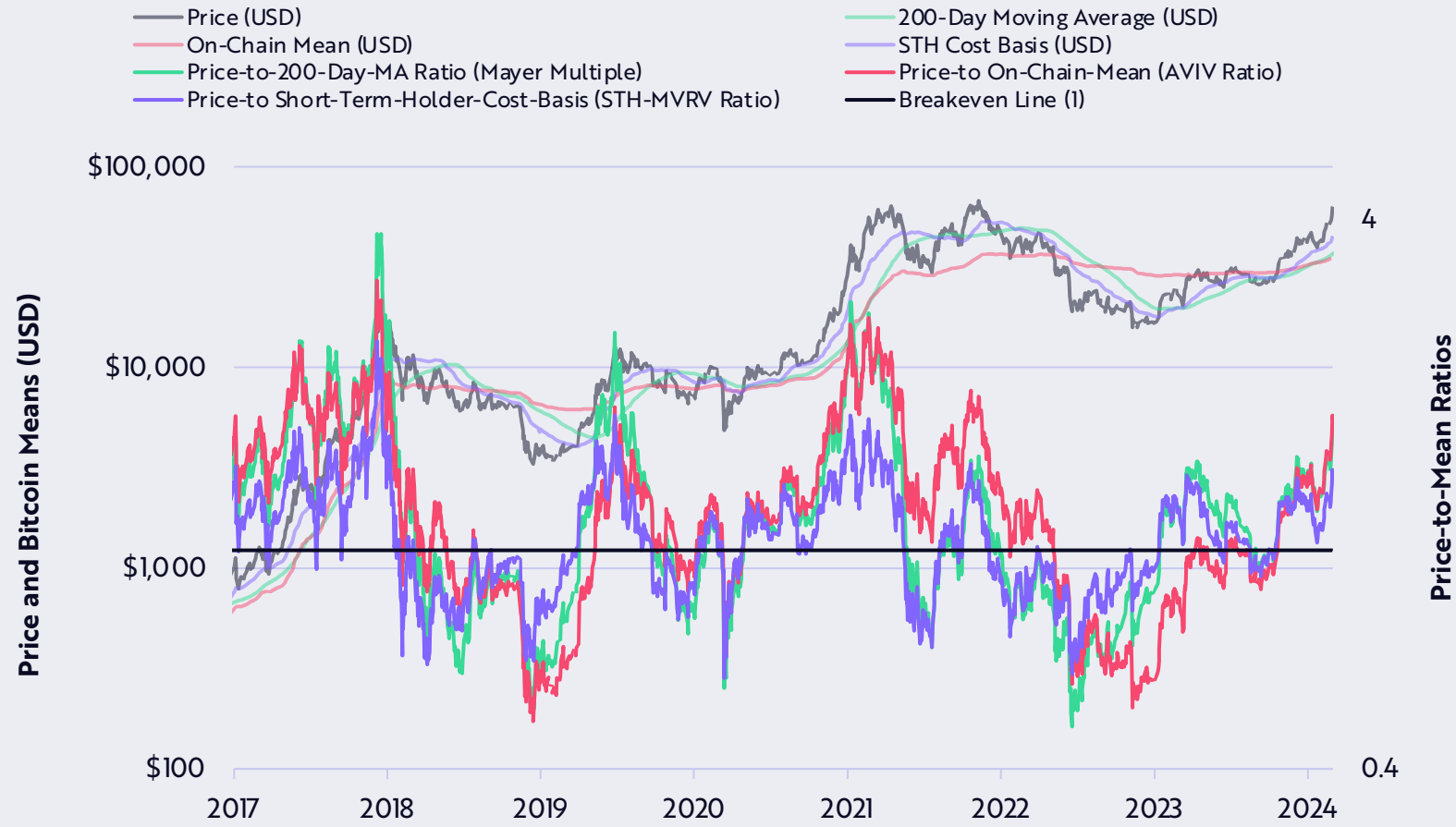
Spot Bitcoin ETF Balances Increase, As Does Bitcoin Volatility





On A Cyclical Basis, Bitcoin's Mean Reversion Ended February In Neutral Territory

Bitcoin Mean Reversion



ARK'S VIEW: BULLISH

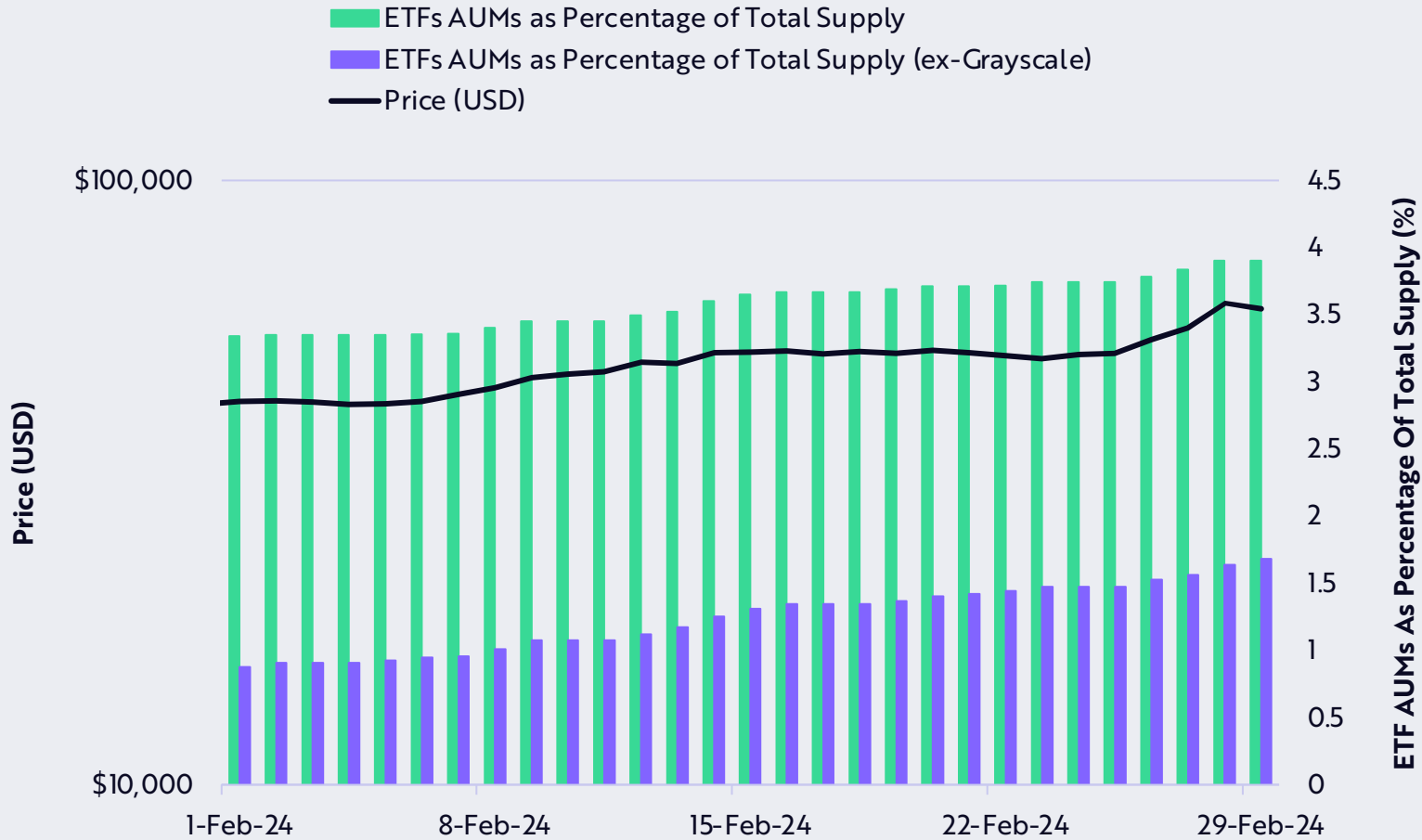
- In February, bitcoin's price rose 43.8% to \$61,180, its best month since December 2020.
- By February's end, bitcoin's 200-day moving average was \$36,939, its on-chain mean \$35,766, and its short-term-holder cost basis \$45,108—39.7%, 41.6%, and 26.4% below its price, respectively.
- Although it has continued to increase relative to these means, bitcoin's price has yet to reach the levels of exuberance that characterized prior cycle tops.

Source: ARK Investment Management LLC, 2024. Chart data from [Glassnode](#). Information as of February 29, 2024. Data may be subject to change over time since they are entity-adjusted in real time via a machine-learning algorithm. For informational purposes only and should not be considered investment advice or a recommendation to buy, sell, or hold any particular security or cryptocurrency. Forecasts are inherently limited and cannot be relied upon. Past performance is not indicative of future results.



Spot ETFs Hold A Significant Share Of Bitcoin's Supply

ETFs AUMs As Percentage Of Total Supply



ARK'S VIEW: BULLISH

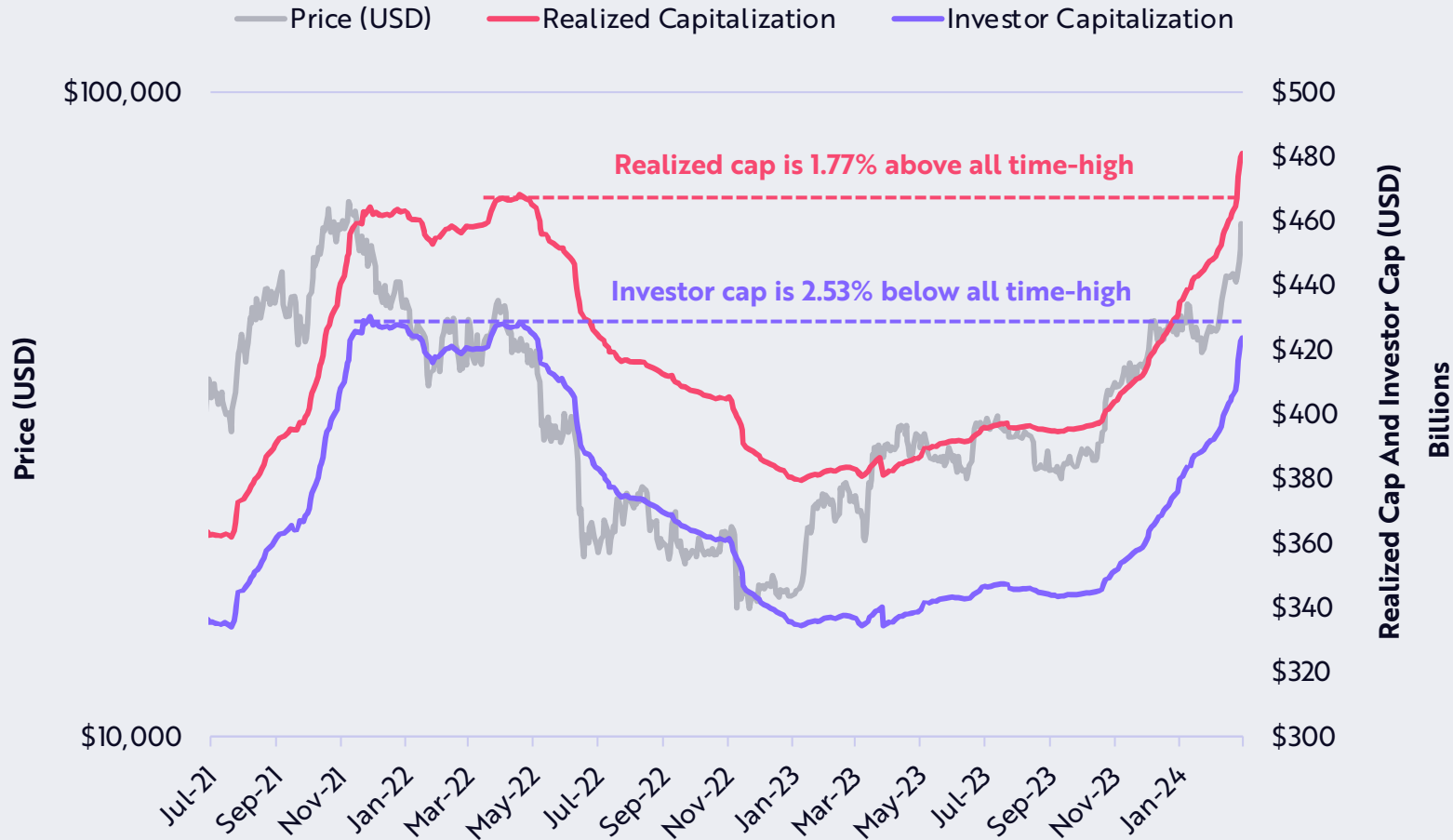
- Within two months of their launch on January 11, 2024, the spot bitcoin ETFs captured a significant share of bitcoin's outstanding supply.
- As of February 29, collectively, the spot bitcoin ETFs' AUM hit 3.9% of bitcoin's supply (~766,000 BTC).

Source: ARK Investment Management LLC, 2024. Chart data from [Glassnode](#). Information as of February 29, 2024. For informational purposes only and should not be considered investment advice or a recommendation to buy, sell, or hold any particular security or cryptocurrency. Forecasts are inherently limited and cannot be relied upon. Past performance is not indicative of future results.



Bitcoin's Cost Bases Are Near Or Beyond Their All-Time Highs

Bitcoin Realized Cap And Investor Cap



ARK'S VIEW: BULLISH

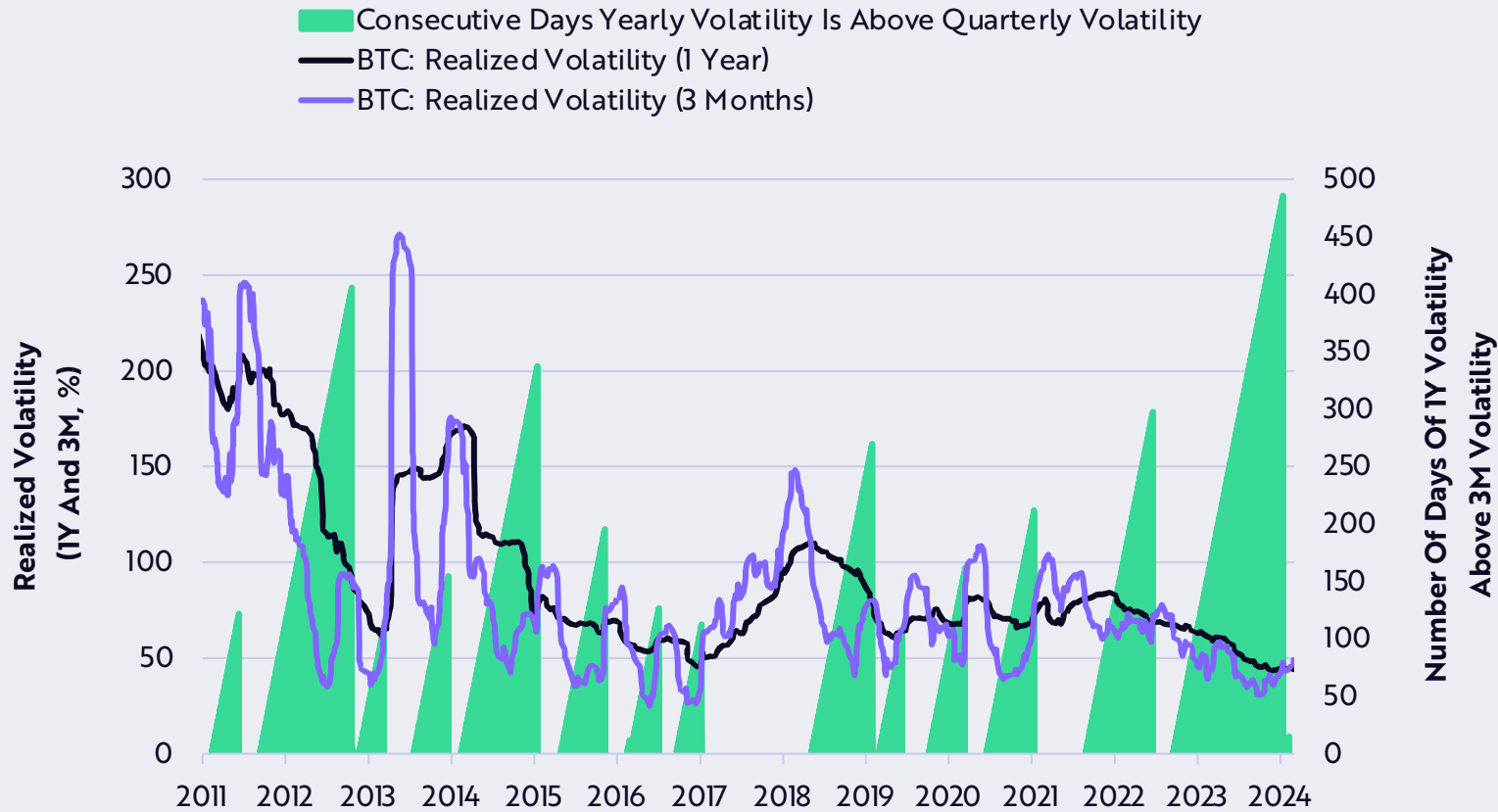
- Realized cap, generally regarded as the cost basis of the bitcoin market (including primary and secondary markets—miners and investors, respectively) reached an all-time high at ~\$481 billion in February.
- Investor cap—the cost basis of the secondary markets only (investors and exchanges, ex miners)—has yet to surpass ~\$424 billion, the level at which it last peaked.
- If it were to make a new high, investor cap would validate the conviction of bitcoin's holder base.

Source: ARK Investment Management LLC, 2024. Chart data from [Glassnode](#). Information as of February 29, 2024. For informational purposes only and should not be considered investment advice or a recommendation to buy, sell, or hold any particular security or cryptocurrency. Forecasts are inherently limited and cannot be relied upon. Past performance is not indicative of future results.



Bitcoin Recently Broke Its Longest Streak Of Falling Volatility In History

Bitcoin: Consecutive Days Of Yearly Volatility Above Quarterly Volatility



ARK'S VIEW: BULLISH

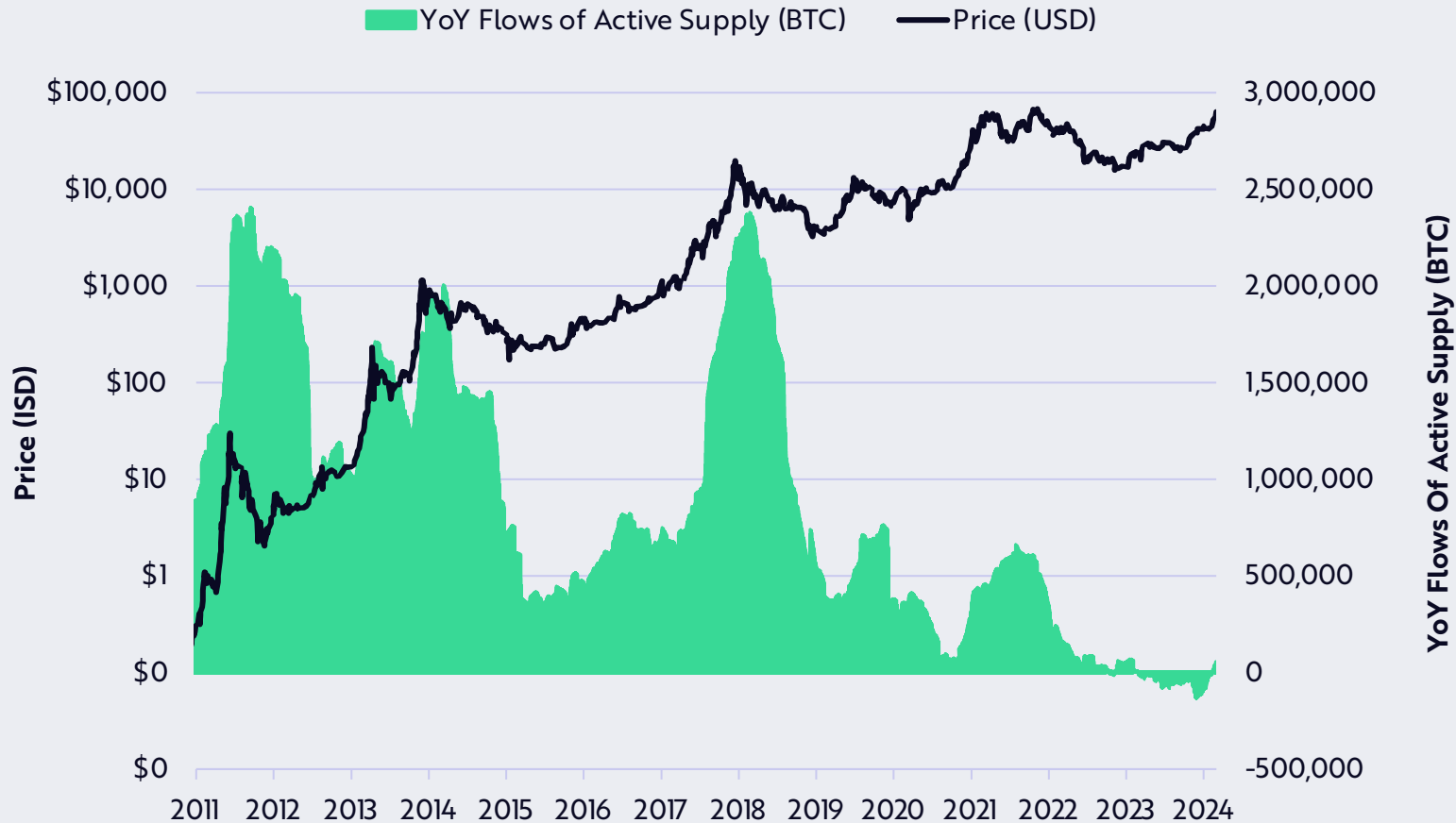
- On January 11, the date on which all 11 ETFs launched, bitcoin's relative volatility began to increase for the first time in more than 16 months.
- Prior to the first quarter of 2024, bitcoin's quarterly volatility had been falling relative to its annual volatility for more than a year, suggesting: 1) that cycle-to-cycle, bitcoin's volatility is declining, and 2) that, on the other hand, incremental demand and momentum are expanding the market today.

Source: ARK Investment Management LLC, 2024. Chart data from [Glassnode](#). Information as of February 29, 2024. For informational purposes only and should not be considered investment advice or a recommendation to buy, sell, or hold any particular security or cryptocurrency. Forecasts are inherently limited and cannot be relied upon. Past performance is not indicative of future results.



Active Supply Flows Have Stabilized Year-Over-Year

Bitcoin Active Supply Flows



ARK'S VIEW: BULLISH

- "Active supply" is the number of coins that have moved in the bitcoin network since its inception. It is calculated by multiplying total supply by the ratio of total coinblocks destroyed and total coinblocks created.¹
- Active supply typically grows with more bitcoin in economic circulation. A drop in active supply implies that more coins are held and, therefore, dormant.
- Since April 2022, fewer than ~80,000 coins have flowed into active supply year-over-year. Between February 2023 and February 2024, net outflows have occurred.
- Those flows have been low relative to the peaks in active supply during 2011 and early 2018, during which flows reached ~2.3 million coins year-over-year.

[1] Technical definitions of "coinblocks destroyed" and "coinblocks created" appear in the Appendix: Glossary of Terms at the end of this report. Source: ARK Investment Management LLC, 2024. Chart data from [Glassnode](#). Information as of February 29, 2024. For informational purposes only and should not be considered investment advice or a recommendation to buy, sell, or hold any particular security or cryptocurrency. Forecasts are inherently limited and cannot be relied upon. Past performance is not indicative of future results.



Section 03

Is Bitcoin's Safe-Haven Appeal Increasing?





The Current Monetary Regime Is Characterized By Significant Volatility

Total US Monetary Base



ARK'S VIEW: NEUTRAL

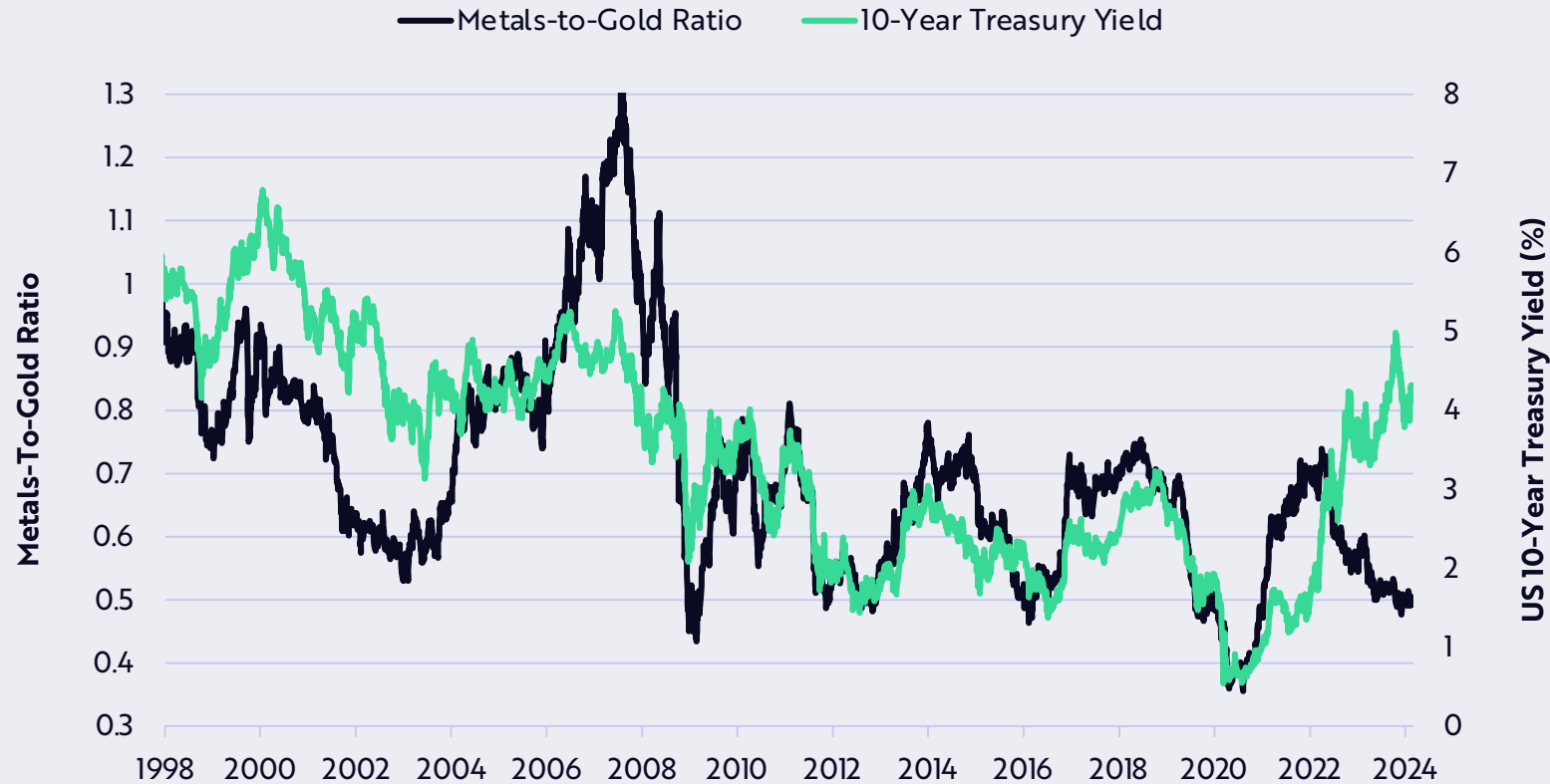
- One of bitcoin's core value propositions is the clear distinction between human decision makers, such as Central Banks, and money.
- Not a coincidence, bitcoin evolved in the midst of extreme volatility in the Monetary Base during the Global Financial Crisis in 2008-2009.
- Driven by human decision-making, monetary policies play a significant role in the value of fiat currencies but can be arbitrary and inconsistent. Antithetically, bitcoin is "rules based"—in a technical substrate—and is mathematically metered to top out at 21 million coins.

Source: ARK Investment Management LLC, 2024. Chart data from Macrobond. Information as of February 29, 2024. Data may be subject to change over time since they are entity-adjusted in real time via a machine-learning algorithm. For informational purposes only and should not be considered investment advice or a recommendation to buy, sell, or hold any particular security or cryptocurrency. Forecasts are inherently limited and cannot be relied upon. Past performance is not indicative of future results.



The Metals-To-Gold Ratio Suggests That Treasury Yields Could Decline Significantly

Metals-to-Gold Ratio vs. US 10-Year Treasury



ARK'S VIEW: BULLISH

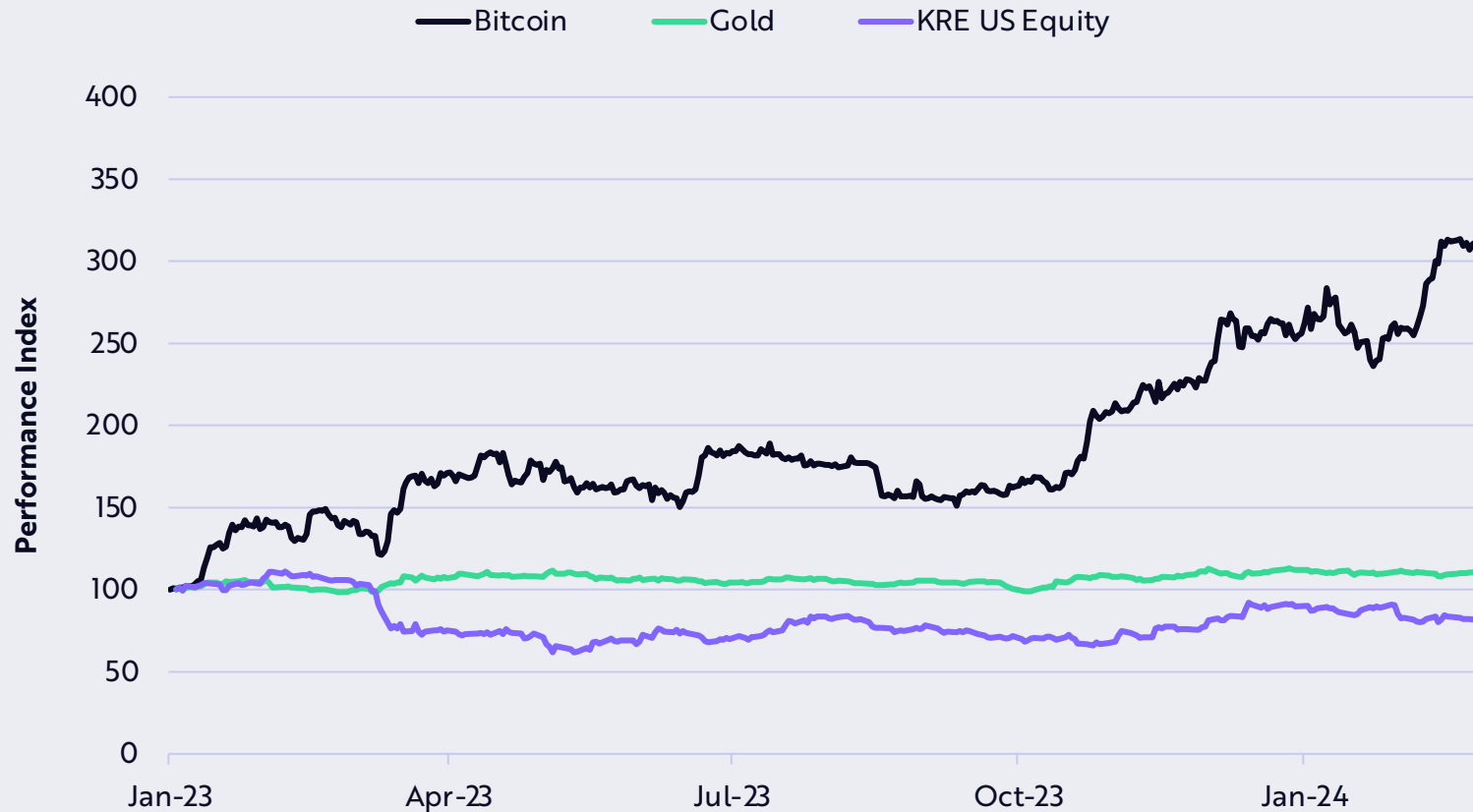
- The metals/gold ratio continues to signal that the 10-year Treasury yield is out of line.
- Since October 2023, when ARK first noted this metric in The Bitcoin Monthly, a brief decline in Treasury yields closed the gap between the two series marginally.
- A potential reason for this dislocation could be the increasing importance of technology, which is deflationary and not captured effectively in traditional economic statistics.
- To our readers: Why do you think this gap between the Metals-To-Gold Ratio and Treasury yields exists today? Please submit your best ideas to <https://ark-invest.com/contact/>

Source: ARK Investment Management LLC, 2024. Chart data from Bloomberg. Information as of February 29, 2024. Data may be subject to change over time since they are entity-adjusted in real time via a machine-learning algorithm. For informational purposes only and should not be considered investment advice or a recommendation to buy, sell, or hold any particular security or cryptocurrency. Forecasts are inherently limited and cannot be relied upon. Past performance is not indicative of future results.



Is Bitcoin A Safe-Haven Asset?

**Bitcoin, Gold, Regional Bank ETF Performance
(1/1/2023=100)**



Source: ARK Investment Management LLC, 2024. Chart data from Bloomberg. Information as of February 29, 2024. Data may be subject to change over time since they are entity-adjusted in real time via a machine-learning algorithm. For informational purposes only and should not be considered investment advice or a recommendation to buy, sell, or hold any particular security or cryptocurrency. Forecasts are inherently limited and cannot be relied upon. Past performance is not indicative of future results.

ARK'S VIEW: BULLISH

- Since the onset of the regional bank crisis in 2023, bitcoin seems to have come into its own as a "safe-haven" asset. Its price has more than tripled, while that of the regional banking ETF has declined and that of gold has increased marginally.
- Before the regional bank crisis in 2023, rapidly rising interest rates caused significant losses on securities holdings that damaged investor and depositor confidence, leading to bankruptcies and consolidation.
- Regional bank stock prices remain under pressure as interest rates hover at multi-decade highs.



Section 04

Appendix: Glossary Of Terms





Glossary Of Terms

Accumulation Addresses: Defined as those addresses that have received two or more economically meaningful transactions (non-dust transactions) and have never spent funds. Exchange and miner addresses are discarded. "Accumulation balance" refers to coins held in these addresses.

Active Owners: An individual or organization managing the same set of addresses sending and receiving funds. Also known as active entities.

Backwardation: Describes when futures trade at a price lower than spot, denoting bullish market sentiment.

BRC-20: A token standard that enables the minting and transaction of fungible tokens via the Ordinals protocol on the Bitcoin network.

Coinblocks Created: The number of coins in the Bitcoin network times the number of blocks at any given day.

Coinblocks Destroyed: The number of coins transacted at any given day times the number of blocks each coin remained dormant.

Contango: Describes when expirational futures contracts are trading at a price higher than spot, suggesting a bearish market environment.

Consumer Price Index (CPI): Measurement that tracks how the average price of a basket of consumer goods and services changes over time. It's often used to calculate inflation.

Delta Cost Basis: An adjusted version of the market cost basis. It is calculated by subtracting the life-to-date moving average of bitcoin's price from its realized price. The measure is used to gauge the downside risk of a bear market. Also known as delta price or delta cap.

Difficulty: Computational power required to validate transactions in the network. "Exa-" and "tera-" hashes per second refer to units of account to a factor of 10^{18} and 10^{12} , respectively. Higher difficulty implies higher network security.

Exchange Supply: The number of bitcoins held in addresses controlled by exchanges.

Expirational Futures Basis: The difference between the price of spot and the price of expirational futures contracts.

Federal Funds Policy Rate: This is the interest rate at which banks lend money to each other overnight. It's set by a country's central bank (like the Federal Reserve in the U.S.) and influences other interest rates throughout the economy.

Futures Basis: The difference between the price of spot and the price of a perpetual or expirational contract.

Gross Domestic Income (GDI): This is the total income earned by a country's residents and businesses, including wages, profits, and taxes minus subsidies. It's a way to measure the economic health of a country, much like GDP.

Gross Domestic Product (GDP): This is the total value of all goods and services produced in a country over a certain period of time, usually a year. It's another way to measure a country's economic performance.

Hash Rate: The estimated computational power mining within and providing security to the Bitcoin network.

Investor Cost Basis: An adjusted version of the market cost basis. It is calculated by subtracting the life-to-date cumulative miner revenue in USD (thermo cap) from realized price. Also known as investor price or investor cap.

Liveliness: The ratio of the sum of coindays created to the sum of coindays destroyed. Liveliness rises when old coins move and decreases when participants hold on to their bitcoin. In essence, it's the ratio of coin movement to coin dormancy in the network.

Locked Supply: The supply held by entities that have <25% probability of spending, as per their historical behavior. Also known as illiquid supply.

Long-term Holding and Holders (LTH): Related to supply last moved 155 days ago or more, the threshold at which the possibility of a bitcoin remaining unmoved increases drastically.

Market Cost Basis: The on-chain volume-weighted average price of the market, calculated by aggregating the value of all bitcoins in circulation at the time when they last moved. Also known as realized price or realized cap.

Miner Revenue: The number of bitcoins (in USD value) block miners obtain for securing the network.

MVRV Ratios: Market cap divided by different on-chain cost bases of the market, such as realized cap or short-term-holder realized cap.

Natural Rate of Interest: Theoretical interest rate that at which the economy is neither expanding nor contracting.

Net Realized Profit/Loss (NRPL): The difference between realized profit and realized loss, normalized by market cap.

Net Unrealized Profit/Loss (NUPL): The difference between unrealized profit and unrealized loss, normalized by market cap. It measures current value relative to the aggregate cost basis (realized cap) of the market to determine how much the network is in profit or loss.

On-Chain: Refers to metrics or economic activity occurring on the blockchain ledger of most cryptocurrencies.



Glossary Of Terms, Continued

On-Chain Mean: Developed collaboratively by ARK Invest and Glassnode, on-chain mean is calculated by dividing the cost basis capitalization of investors—the secondary market of the Bitcoin network—by the number of active coins in the network based on their aggregate time of dormancy proportional to total supply. Also known as “active-investor price” or “true market mean.”

Ordinals: Refers to the creation of non-fungible tokens (NFTs) in the Bitcoin network by making Inscriptions, where metadata such as images or videos are attached to individual satoshis (the smallest unit of account).

Patoshi: Entity estimated to be Satoshi Nakamoto, the creator and first miner of bitcoin.

Perpetual Futures Basis: The difference between the price of spot and the price of non-expirational futures contracts.

Puell Multiple: Miner revenue (USD) divided by the 365-day moving average of miner revenue (USD). It measures miner earnings relative to their yearly average.

Realized Returns (SOPR): The ratio reached by dividing the average price of bitcoins spent that day by the average price when they last moved. In essence, it is the ratio of price sold to price bought for the coins that moved that day. Also known as spent output ratio, or SOPR.

Regional Cumulative Price Change: The sum of month-over-month (30-day) price action during the business hours of the major financial hubs worldwide: New York for the US, London for Europe, and Hong Kong for Asia.

Seller Exhaustion Constant: A metric created by ARK to measure the convergence of two market factors: high losses denoting capitulation and low volatility denoting market exhaustion.

Short-term Holding and Holders (STH): Related to supply that moved in the last 155 days, the threshold at which the potential for a bitcoin to move again increases drastically.

Supply in Profit (Percentage): The percentage of bitcoins currently at a higher price compared to the price at which they last moved.

Time-weighted Turnover: The number of bitcoins traded that day, multiplied by the amount of time each coin had remained dormant. Also known as coindays destroyed.

Transaction Volume: The number of bitcoins that changed hands on any given day.

Velocity-Adjusted Cost Basis: It subtracts the cumulative dollar value of coins spent over time from the general cost basis of the market (realized price). Also known as balanced price is (the smallest unit of account).



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ARK aims to educate investors and to size the potential opportunity of Disruptive Innovation, noting that risks and uncertainties may impact our projections and research models. Investors should use the content presented for informational purposes only, and be aware of market risk, disruptive innovation risk, regulatory risk, and risks related to Deep Learning, Digital Wallets, Battery Technology, Autonomous Technologies, Drones, DNA Sequencing, CRISPR, Robotics, 3D Printing, Bitcoin, Blockchain Technology, etc. **Cryptocurrency Risk.** Cryptocurrencies (also referred to as "virtual currencies" and "digital currencies") are digital assets designed to act as a medium of exchange. Cryptocurrency is an emerging asset class. There are thousands of cryptocurrencies, the most well-known of which is bitcoin. Cryptocurrency generally operates without central authority (such as a bank) and is not backed by any government. Cryptocurrency is not legal tender. Federal, state and/or foreign governments may restrict the use and exchange of cryptocurrency, and regulation in the U.S. is still developing. The market price of bitcoin and other cryptocurrencies have been subject to extreme fluctuations. Similar to fiat currencies (i.e., a currency that is backed by a central bank or a national, supra-national or quasi-national organization), cryptocurrencies are susceptible to theft, loss and destruction. Cryptocurrency exchanges and other trading venues on which cryptocurrencies trade are relatively new and, in most cases, largely unregulated and may therefore be more exposed to fraud and failure than established, regulated exchanges for securities, derivatives and other currencies. Cryptocurrency exchanges may stop operating or permanently shut down due to fraud, technical glitches, hackers or malware, which may also affect the price of cryptocurrencies. **Cryptocurrency Tax Risk.** Many significant aspects of the U.S. federal income tax treatment of investments in bitcoin and other cryptocurrencies are uncertain and still evolving.

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