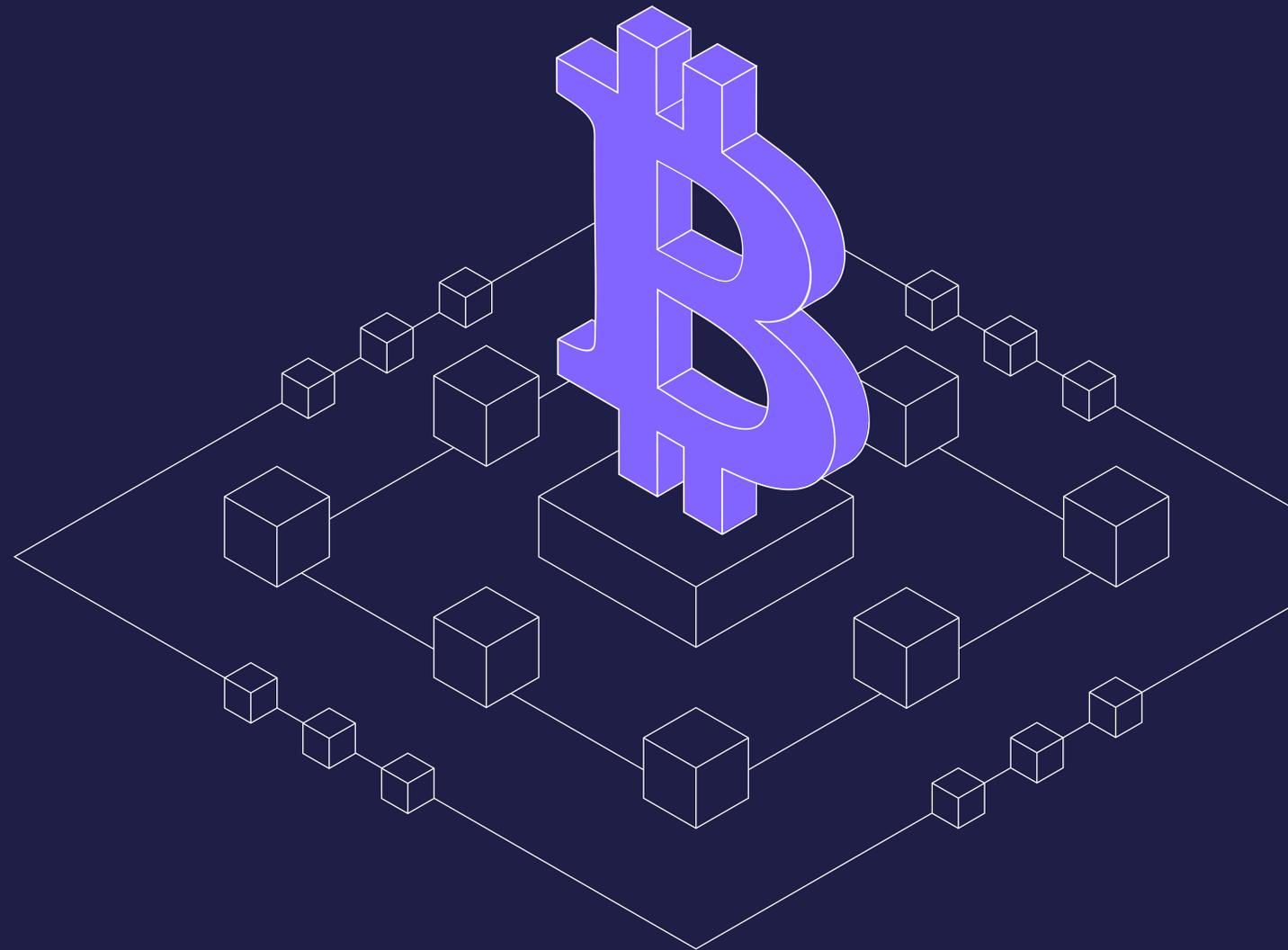


May 2025

THE BITCOIN MONTHLY

ALL-TIME HIGH



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PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE PERFORMANCE; FUTURE RETURNS ARE NOT GUARANTEED.



Important Information Regarding Bitcoin

Bitcoin is a relatively new asset class, and the market for bitcoin is subject to rapid changes and uncertainty. Bitcoin is largely unregulated and bitcoin investments may be more susceptible to fraud and manipulation than more regulated investments. Bitcoin is subject to unique and substantial risks, including significant price volatility and lack of liquidity, and theft.

Bitcoin is subject to rapid price swings, including as a result of actions and statements by influencers and the media, changes in the supply of and demand for bitcoin, and other factors. There is no assurance that bitcoin will maintain its value over the long term.

ARK strongly encourages any investor considering an investment in bitcoin or any other digital asset to consult with a financial professional before investing. All statements made regarding bitcoin are strictly beliefs and points of view held by ARK and are not recommendations by ARK to buy, sell or hold bitcoin. Historical results are not indications of future results.



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Appendix: Glossary Of Terms



Section 01

Market Summary





Bitcoin's Price Recovery Continued

Bitcoin Price Hits A New High

- During May, the price of bitcoin increased 11.1% and closed above its short-term-holder cost basis, its 200-day moving average, and its on-chain mean—or \$96,108, \$94,760, and \$69,079, respectively.
- Gold ETF net flows dropped from ~\$9.2 billion in April to ~\$1.5 billion in May, while spot bitcoin ETF net flows surged 121% from ~\$2.5 to ~\$5.5 billion.
- Bitcoin's aggregate unrealized profits have not hit manic levels.

Price Elasticity Hits Housing, Autos, And Services

- The number of sellers is outpacing the number of buyers in the US housing market.
- Housing, autos, and services are flashing warning signs, as costs rise and demand decline.

ARK'S KEY TAKEAWAYS

- During May, bitcoin's price increased 11.1%.
- Bitcoin hit an all-time high of \$112,000.
- Spot bitcoin ETF flows outpaced gold ETF flows in May, reversing the first-quarter trend.
- Bitcoin has not hit irrational exuberance.
- US housing, autos, and services are contracting.



News Of The Month

[New Hampshire First US State To Pass A Strategic Bitcoin Reserve Bill](#)

[Arizona Becomes Second US State To Enact Crypto Reserve Bill](#)

[In \\$2.9-Billion Deal, Coinbase Agrees To Buy Deribit To Expand In US Crypto Options Market](#)

[Former Celsius CEO Sentenced To 12 Years In Prison For Crypto-Related Fraud](#)

[David Bailey And Bitcoin-Native Holding Company Nakamoto Announce Merger With KindlyMD To Establish Bitcoin Treasury](#)

[Coinbase Joining S&P 500 Days After Bitcoin Soared Past \\$100,000 USD](#)

[FTX Recovery Trust To Distribute More Than \\$5 Billion To Creditors](#)

[Senate Votes To Move Forward On Landmark Stablecoin Legislation](#)

[Coinbase Reveals 69,461 Users Affected In Data Breach](#)

[Stablecoin Giant Circle Files For IPO On NYSE](#)

[SharpLink Gaming Announces \\$425-Million Private Placement To Initiate Ethereum Treasury Strategy](#)

[Pakistan Is Setting Up A Government-Lead Strategic Bitcoin Reserve](#)



Signals From The Bitcoin Network Remain Net Positive Despite A Drop In Transaction Volume

	Bitcoin Metrics ¹	Unit	May 2025	1M Change	1Y Change	ARK's View	Upgrade/Downgrade ³
Network Security	<u>Mining Difficulty</u>	Exahash/SEC ¹ (Thousands)	545.3	+3.04%	+39.8%	Bullish	No Change
	<u>Miner Revenue</u> (Rolling 7-Day Average)	USD (Millions)	52.5	+26.6%	+61.3%	Bullish	No Change
Network Usage	<u>Active Owners</u> ² (Active Entities, Rolling 7-Day Average)	Thousands	206.4	-0.8%	+20.4%	Neutral	↑
	<u>Transaction Volume</u> ² (Rolling 7-Day Moving Average)	BTC (Thousands)	81.6	-11.1%	+23.66%	Neutral	↓
Holder Behavior	<u>Long-Term-Holder Supply</u> ² (Coins Held For 155 Days+)	BTC (Millions)	14.4	+1.4%	+5.8%	Bullish	No Change
	<u>Locked Supply</u> ² (Illiquid Supply)	BTC (Millions)	14	+1.2%	+2.8%	Bullish	No Change
	<u>Time-Weighted Turnover</u> ² (Coindays Destroyed, Rolling 7-Day Median)	Coindays (Millions)	18.9	+63.7%	+150.5%	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, 2025. Data sourced from Glassnode. Some data may be subject to change over time since they are entity-adjusted in real time. Information as of May 31, 2025. For informational purposes only and should not be considered investment advice or a recommendation to buy, sell, or hold any particular security or cryptocurrency.

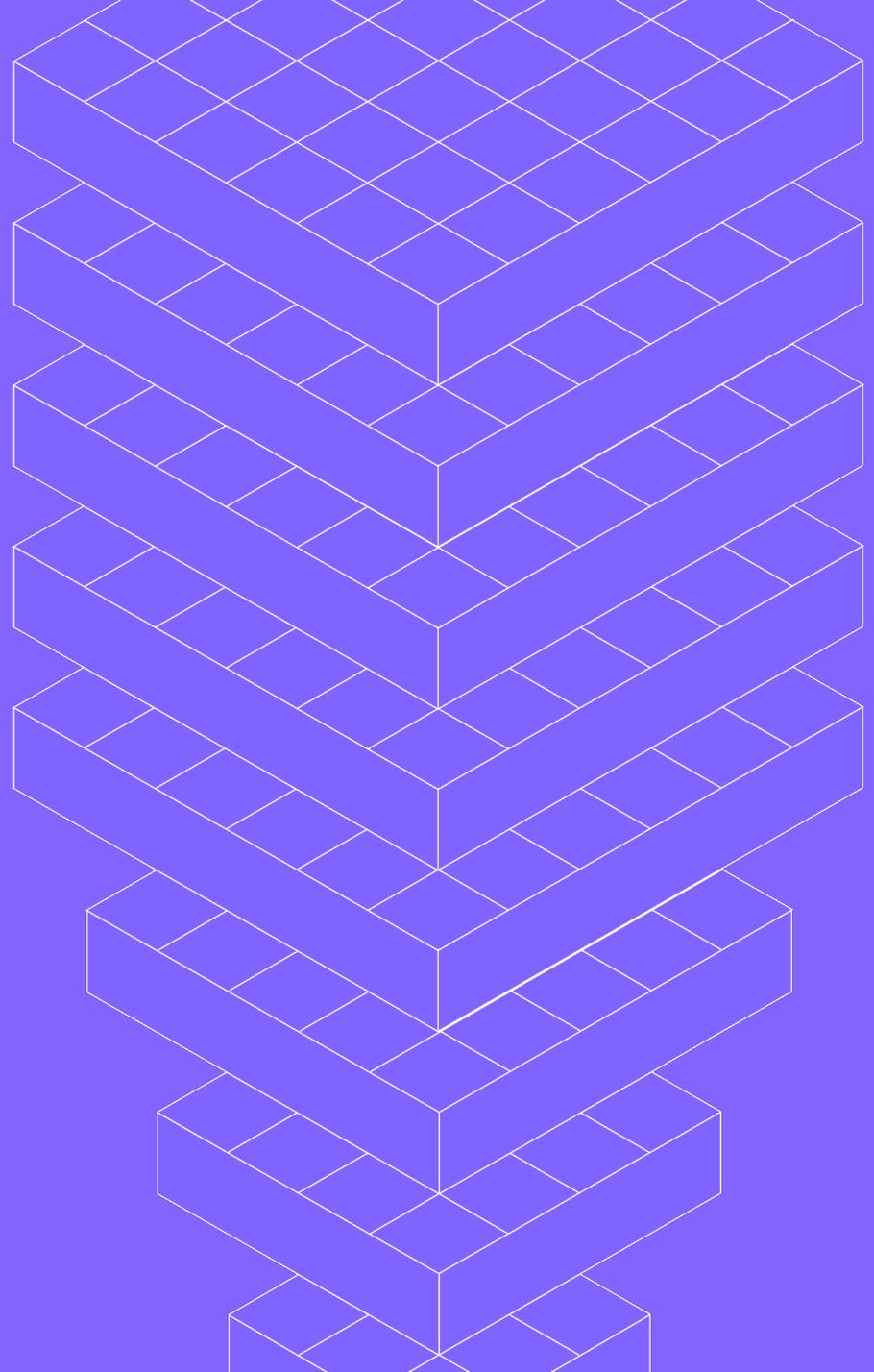


Cost Basis And The Derivates Market Bode Well For The Bitcoin Price

	Bitcoin Metrics ¹	Unit	May 2025	1M Change	1Y Change	ARK's View	Upgrade/ Downgrade ³
Long-Term Valuation	<u>Market Cost Basis</u> (Realized Price)	USD	\$46,665	+4.8%	+55.4%	Bullish	No Change
	<u>Percent Supply In Profit</u>	pp	94.5	+8.6	+4.3	Neutral	No Change
Short-Term Valuation	<u>Short-Term-Holder Cost Basis²</u> (STH Realized Price)	USD	\$96,108	+3.1%	+53.6%	Bullish	No Change
	<u>Realized Market Returns²</u> (SOPR-1, Rolling 7-Day Average)	pp	15.6	+6.8	+1.4	Neutral	No Change
Market Sentiment	<u>Perpetual Futures Basis</u> (Binance, Estimated)	pp	-0.04	+0.01	-0.1	Bullish	No Change
	<u>Expirational Futures Basis</u> (Quarterly, Binance, Annualized)	pp	7.6	+0.65	-5.3	Bullish	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, 2025. 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 May 31, 2025. For informational purposes only and should not be considered investment advice or a recommendation to buy, sell, or hold any particular security or cryptocurrency.

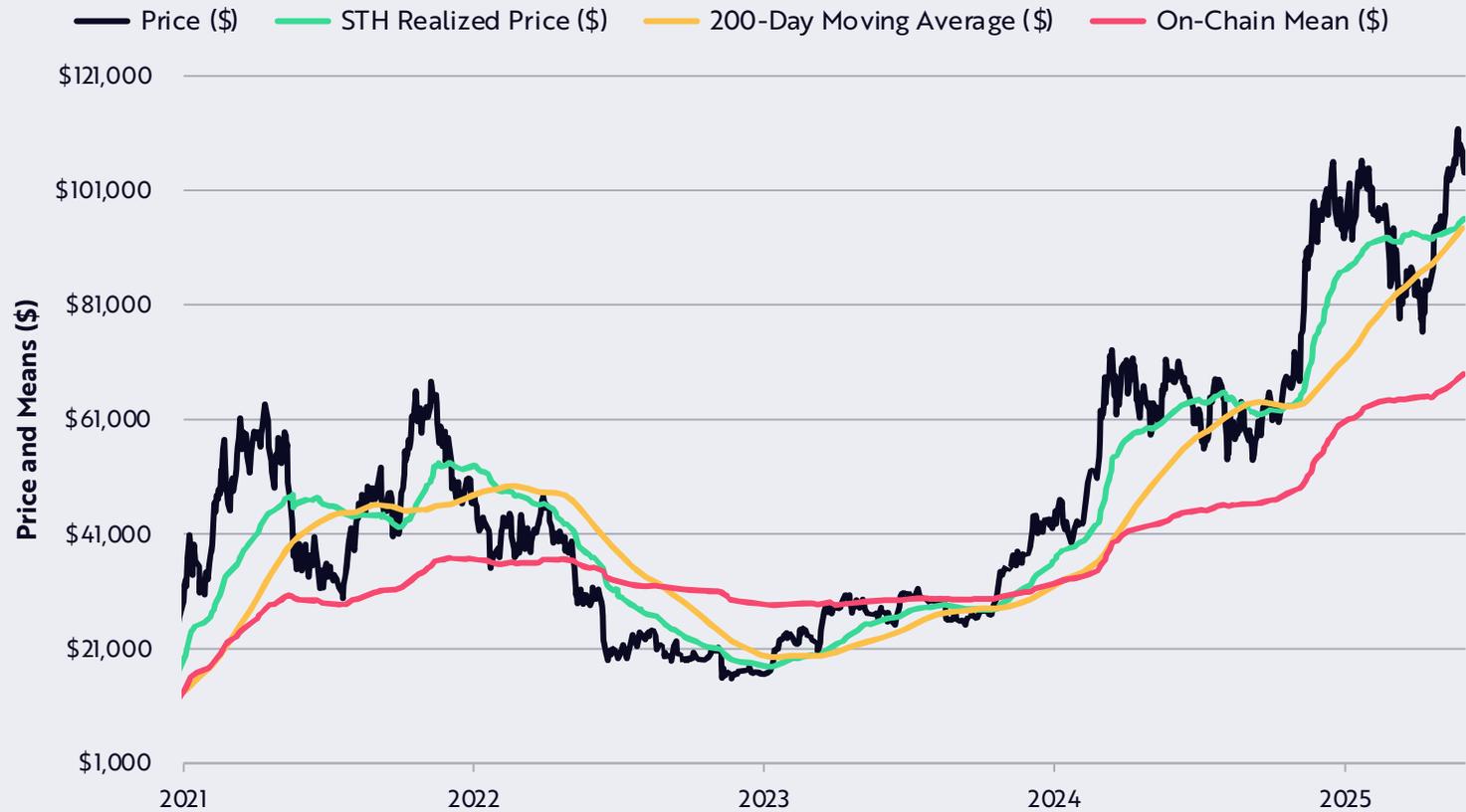
Bitcoin Price Hits A New High





Bitcoin's Support Levels Are Converging Between \$94,000-\$97,000

Bitcoin Mean Reversion



ARK'S VIEW: BULLISH

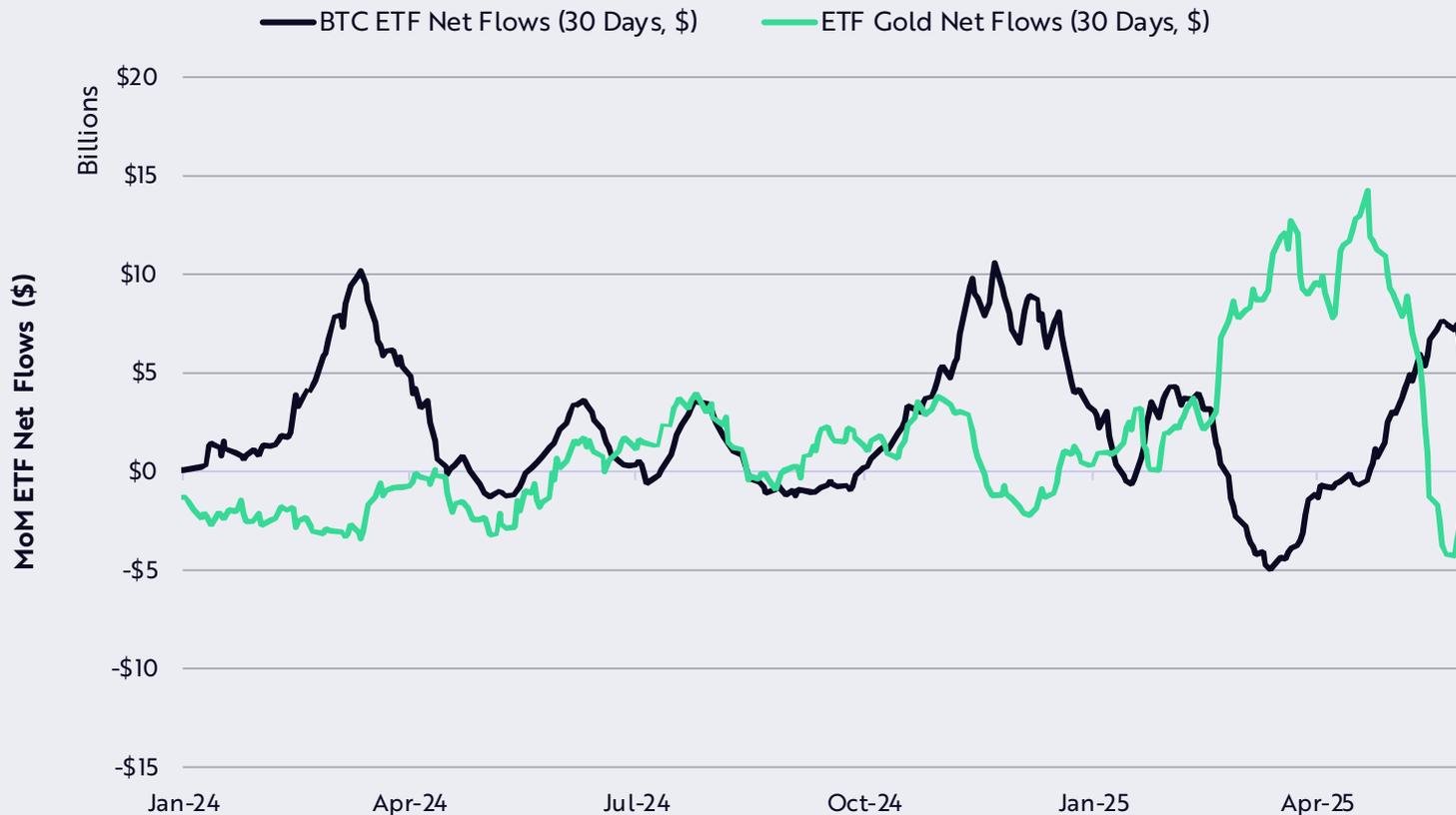
- During May, bitcoin's price increased 11.1%, reaching an all-time high of \$112,000.
- At the end of the month, its price was above its short-term-holder (STH) cost basis, its 200-day moving average, and its on-chain mean—\$96,108, \$94,760, and \$69,079, respectively.

Source: ARK Investment Management LLC, 2025. Chart data from Glassnode. Information as of May 31, 2025. STH realized price data may be subject to change over time since they are entity-adjusted in real time via a machine-learning algorithm. 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.



Global Bitcoin ETF Flows Surge As Gold ETF Flows Fall

Month-Over-Month ETF Net Flows BTC vs. Gold (Global)



ARK'S VIEW: BULLISH

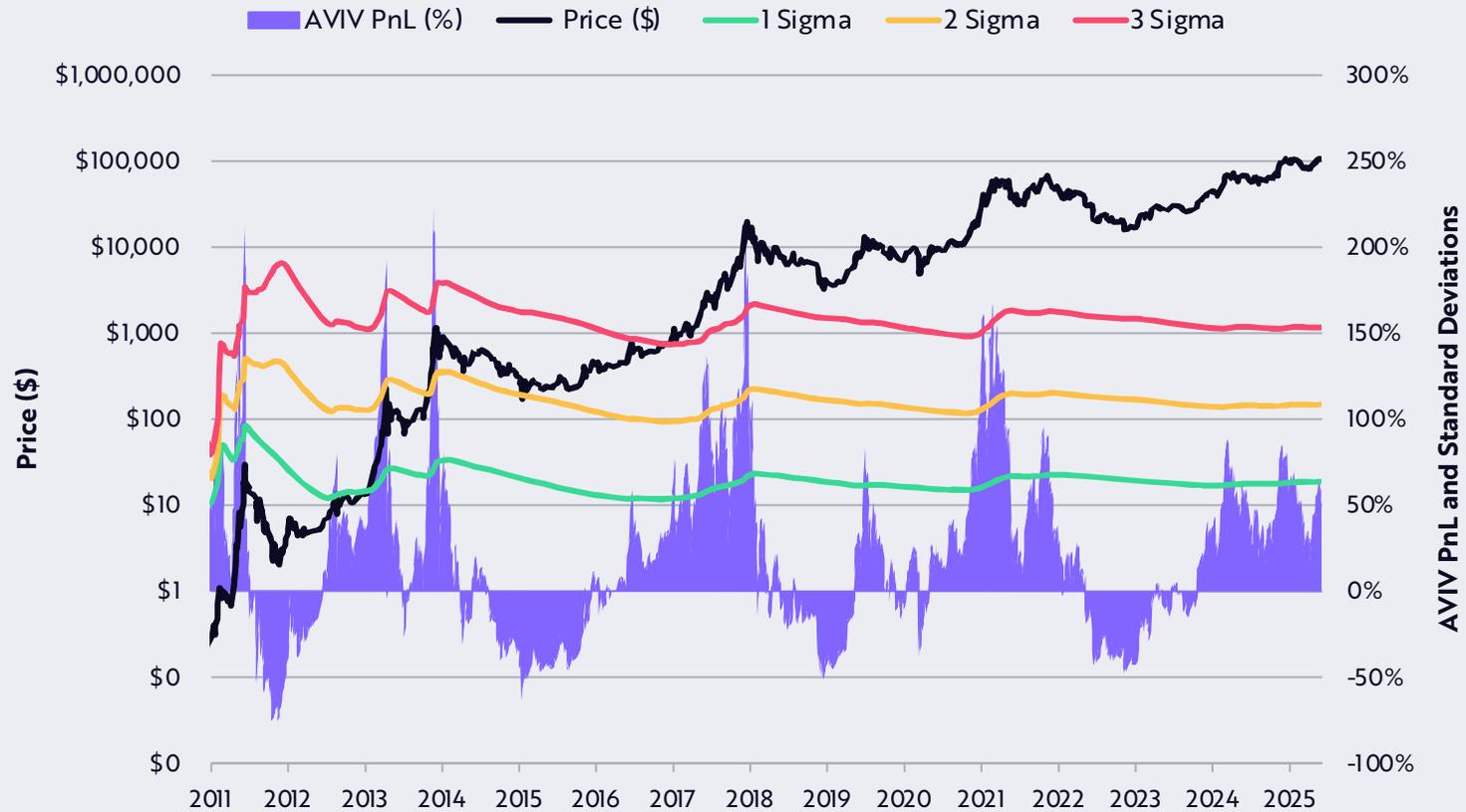
- Spot bitcoin ETF flows outpaced gold ETF flows in May, reversing the trend in the first quarter.
- Gold ETF net flows fell from ~\$9.2 billion in April to ~\$1.5 billion in May, while spot bitcoin ETF net flows surged 121%, from ~\$2.5 to ~\$5.5 billion.

Source: ARK Investment Management LLC, 2025. Chart data from BoldReport. Information as of May 31, 2025. 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.



Bitcoin's Unrealized Profits Have Not Hit Levels Associated With Mania

Bitcoin PnL Relative To On-Chain Cost Basis



ARK'S VIEW: BULLISH

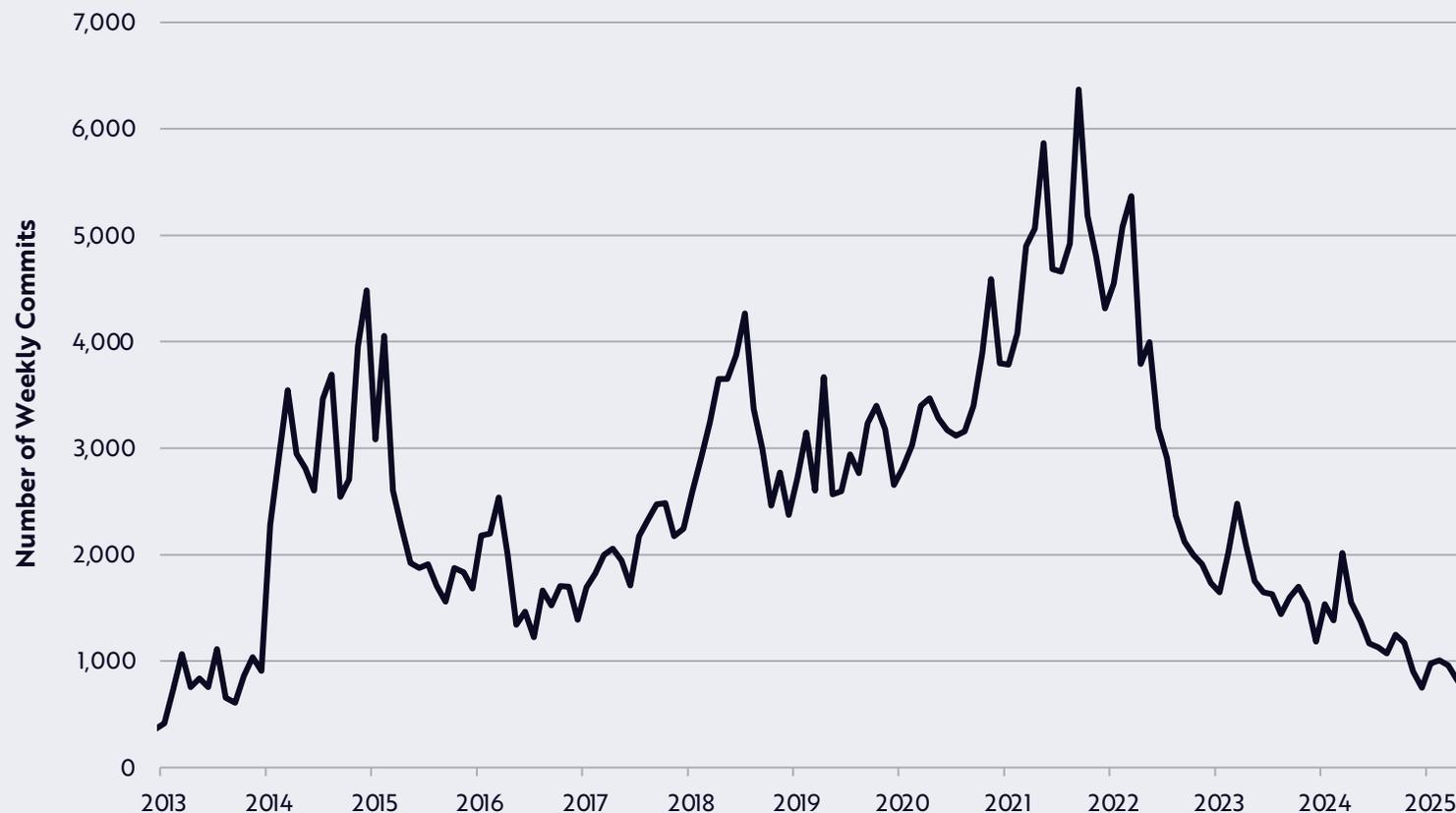
- Bitcoin's aggregate unrealized profits, measured as the profit/loss (PnL) related to a market price against its on-chain cost basis, are 1 standard deviation (or sigma) above the mean in this cycle.
- Historically, the PnL needs to hit 3 standard deviations to suggest irrational exuberance.

Source: ARK Investment Management LLC, 2025. Chart data from Glassnode. Information as of May 31, 2025. 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.



Bitcoin Core Commits¹ Fall To 10-Year Lows

Bitcoin Core Commits (Weekly)



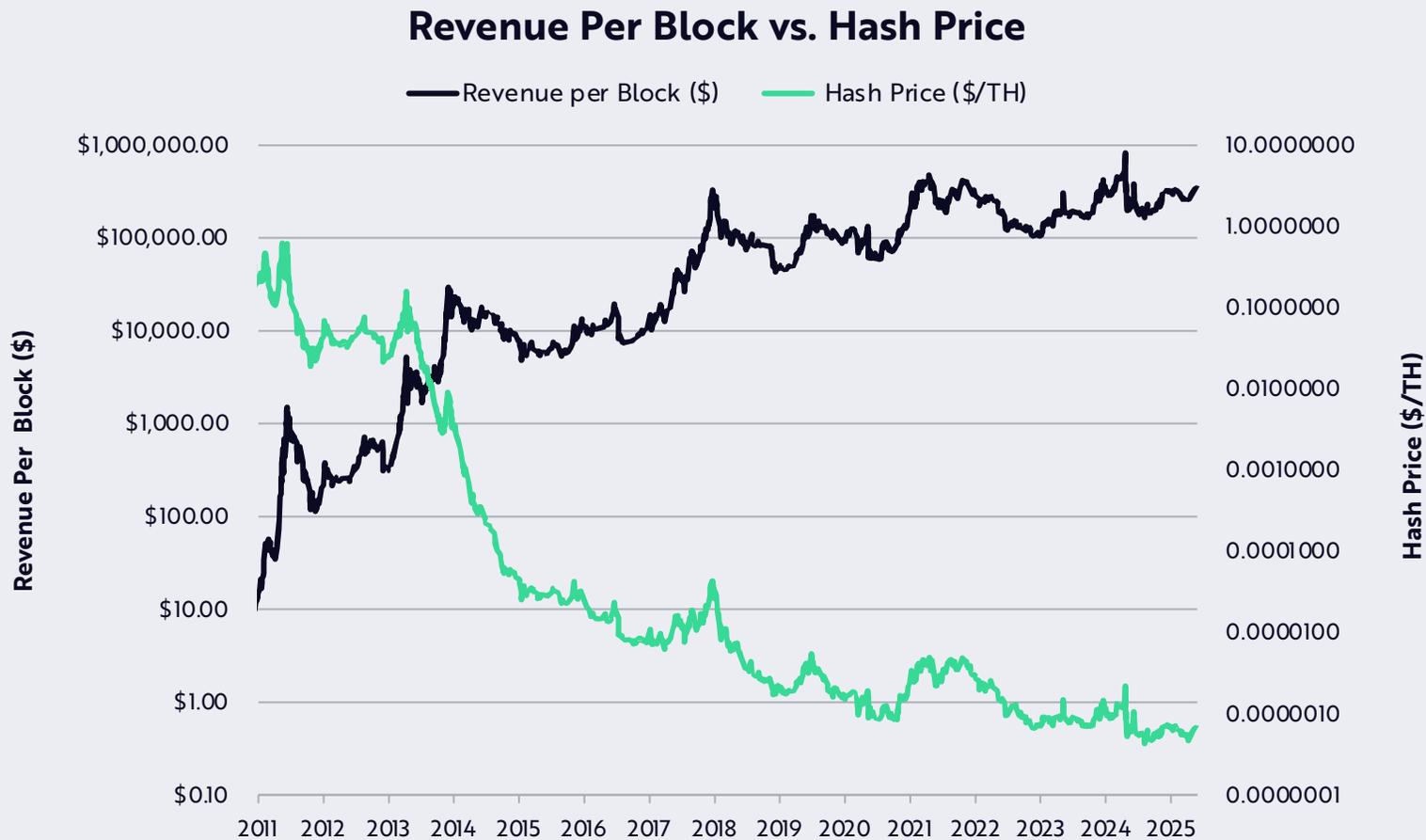
ARK'S VIEW: BEARISH

- At 704, Commits to Bitcoin Core Github repositories have dropped nearly 10-fold since 2021 and have hit their lowest level since 2013.
- Bitcoin Core is the main open-source software implementation of the Bitcoin protocol. It is the software used to connect and interact with the Bitcoin network.
- The decline underscores bitcoin's increasing role as a fixed monetary asset on a dynamic development platform.

[1] In version control systems, commits are operations which send the latest changes of a source code to a repository. In the case of Bitcoin, the repository is Github. Source: ARK Investment Management LLC, 2025. Chart data from Artemis. Information as of May 31, 2025. 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.



Miner Revenue Per Block Is Resilient As Hash Price Declines



ARK'S VIEW: NEUTRAL

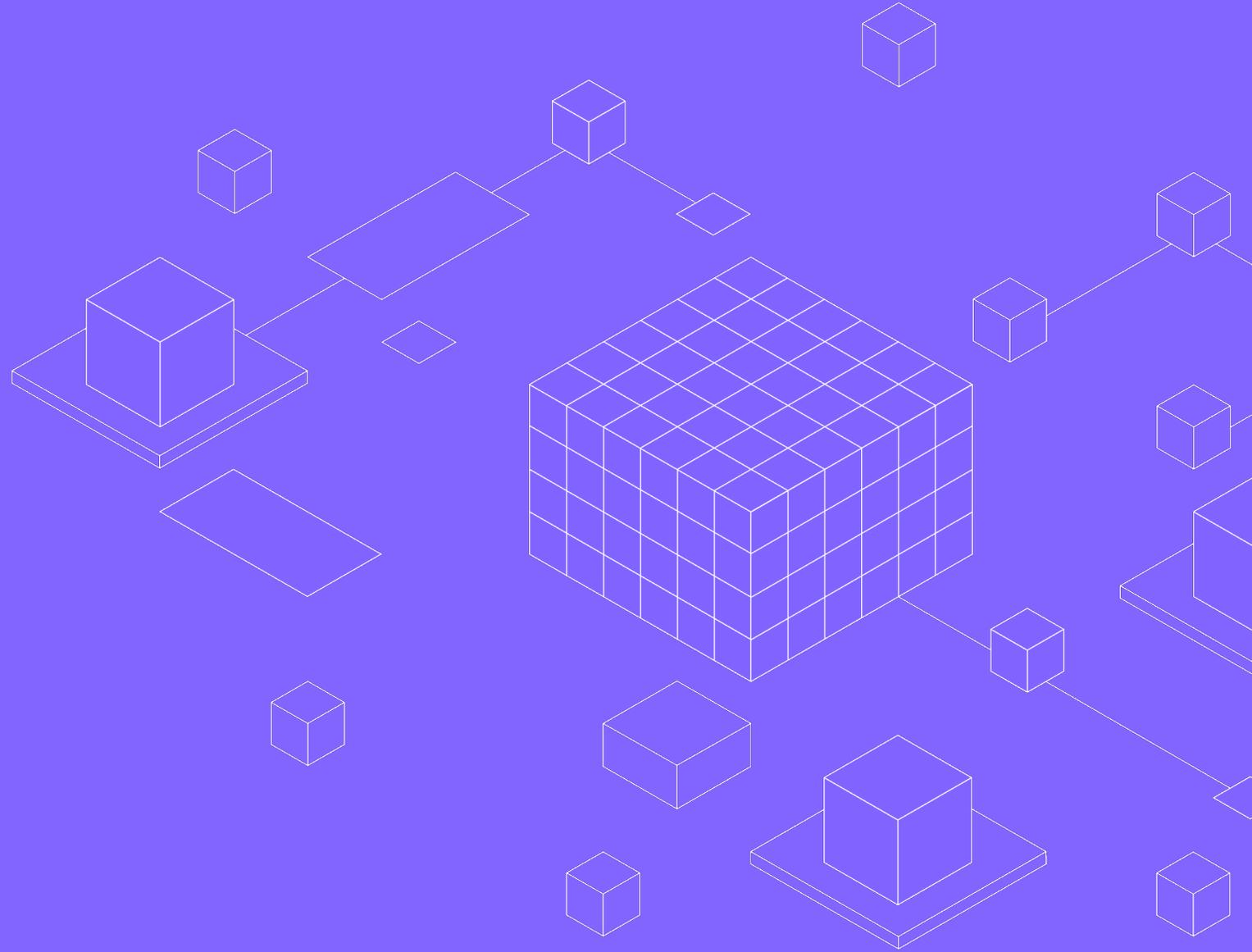
- As Bitcoin has matured, its miner hash price has declined.
- Since 2020, miner revenue per block has held steady, contradicting the view that both increased difficulty¹ and more halvings² are making mining unsustainable.
- Hash price is defined as the dollar amount earned per terahash (TH) of compute expended.

[1] The technical meaning of "difficulty" is given in the Glossary of Terms. [2] The Halving Day celebrates when bitcoin's issuance gets cut in half programmatically every 210,000 blocks (approximately every four years). Source: ARK Investment Management LLC, 2025. Chart data from Glassnode. Information as of May 31, 2025. 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.



Section 03

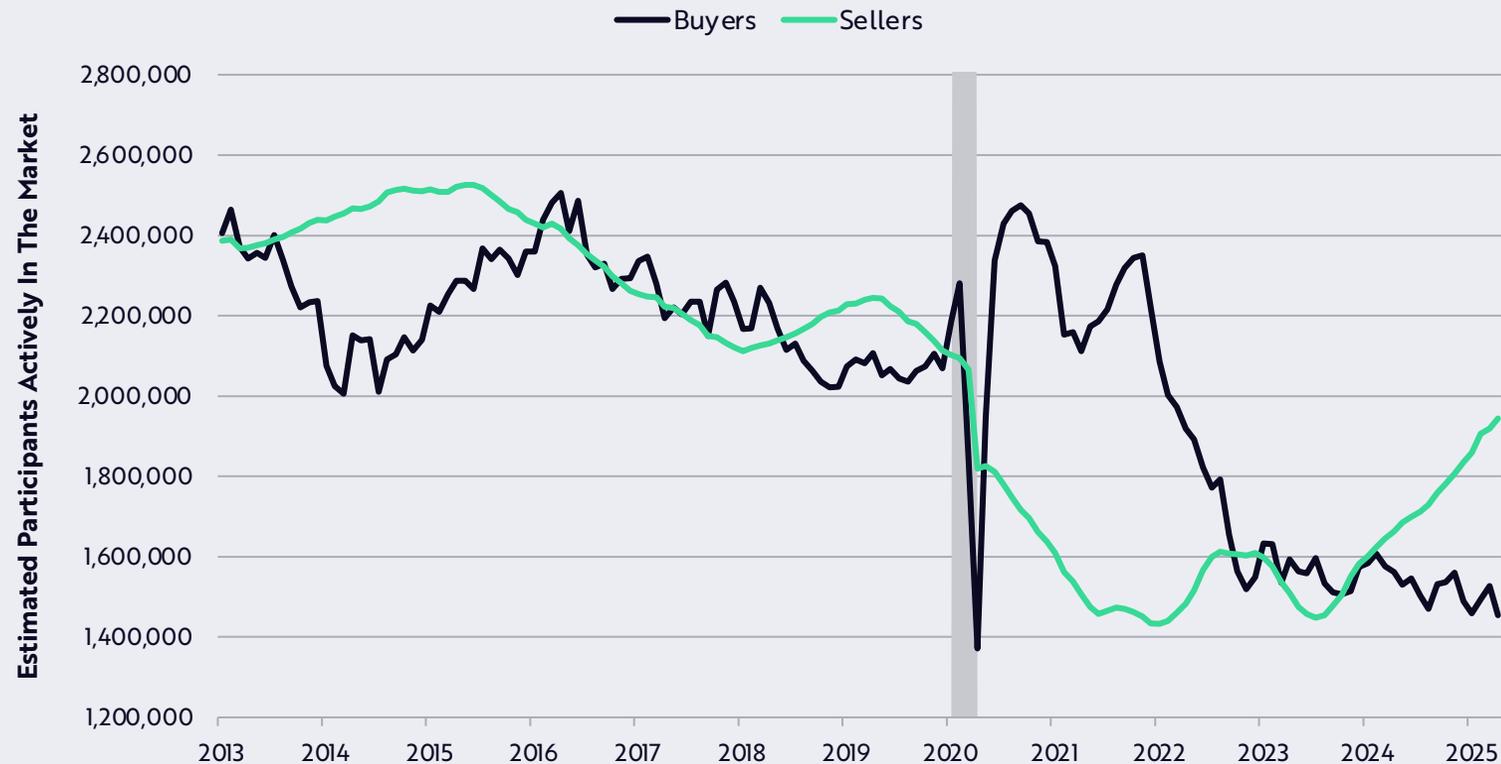
Price Elasticity Hits Housing, Autos, And Services





The Number Of Home Sellers Relative To Buyers Has Been Surging

The Number Of US Home Sellers Far Surpasses The Number Of Home Buyers



Source: ARK Investment Management LLC, 2025. Chart data from Redfin. Information as of May 31, 2025. 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.

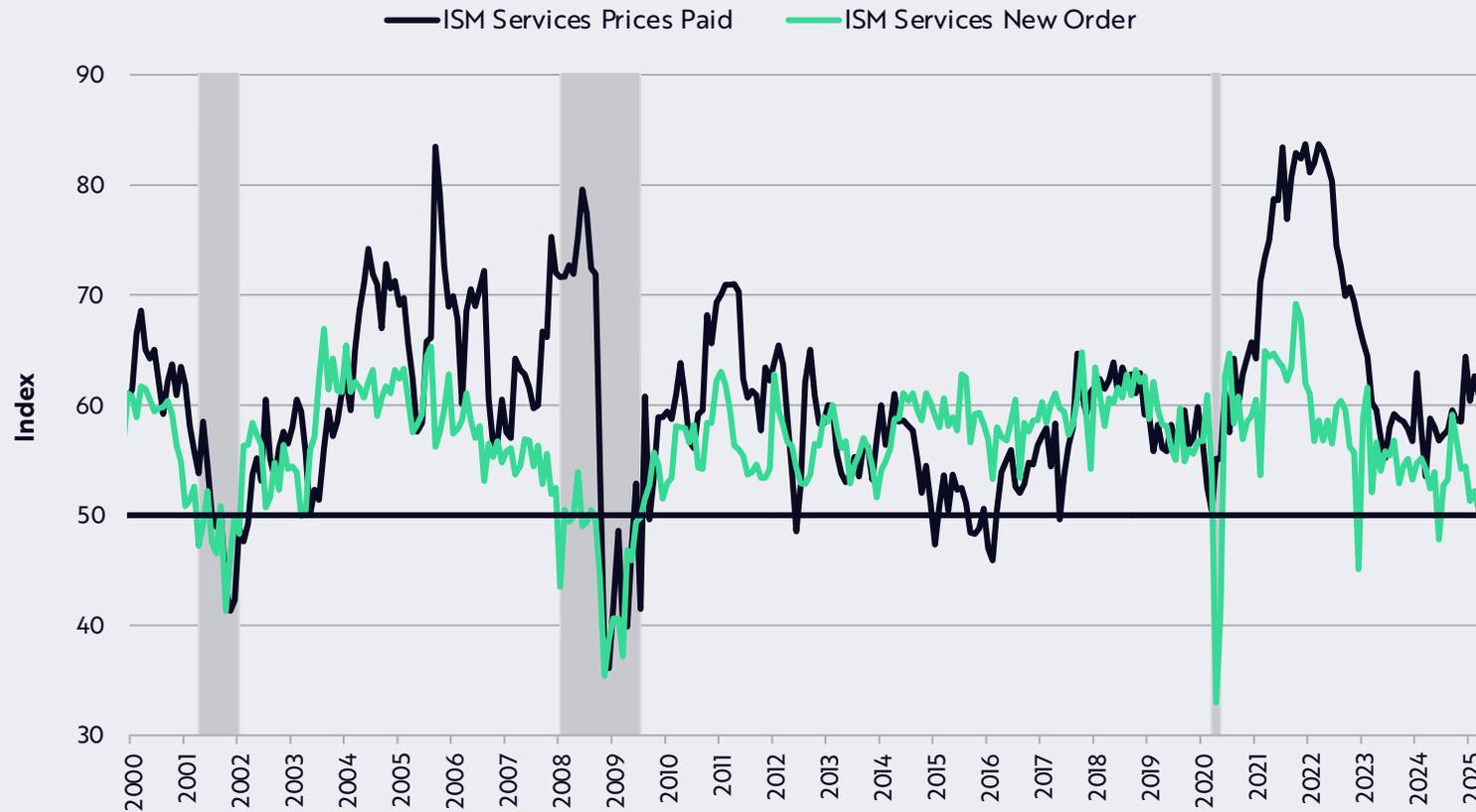
ARK'S VIEW: BEARISH

- Since the U.S. Federal Reserve (Fed) jacked interest rates up in 2022, housing affordability has depressed buyer demand materially. The difference between buyers and sellers is at a multi-year high, suggesting downward price pressure.
- A sharp rise in the number of active sellers relative to buyers could accelerate price discovery in historically illiquid or overvalued segments.
- Home equity accounts for the largest portion of household net worth.
- A broad-based price decline would have a negative impact on wealth.



Diverging Signals In ISM¹ Services Data Are Concerning

ISM Services Prices Paid And New Orders



ARK'S VIEW: NEUTRAL

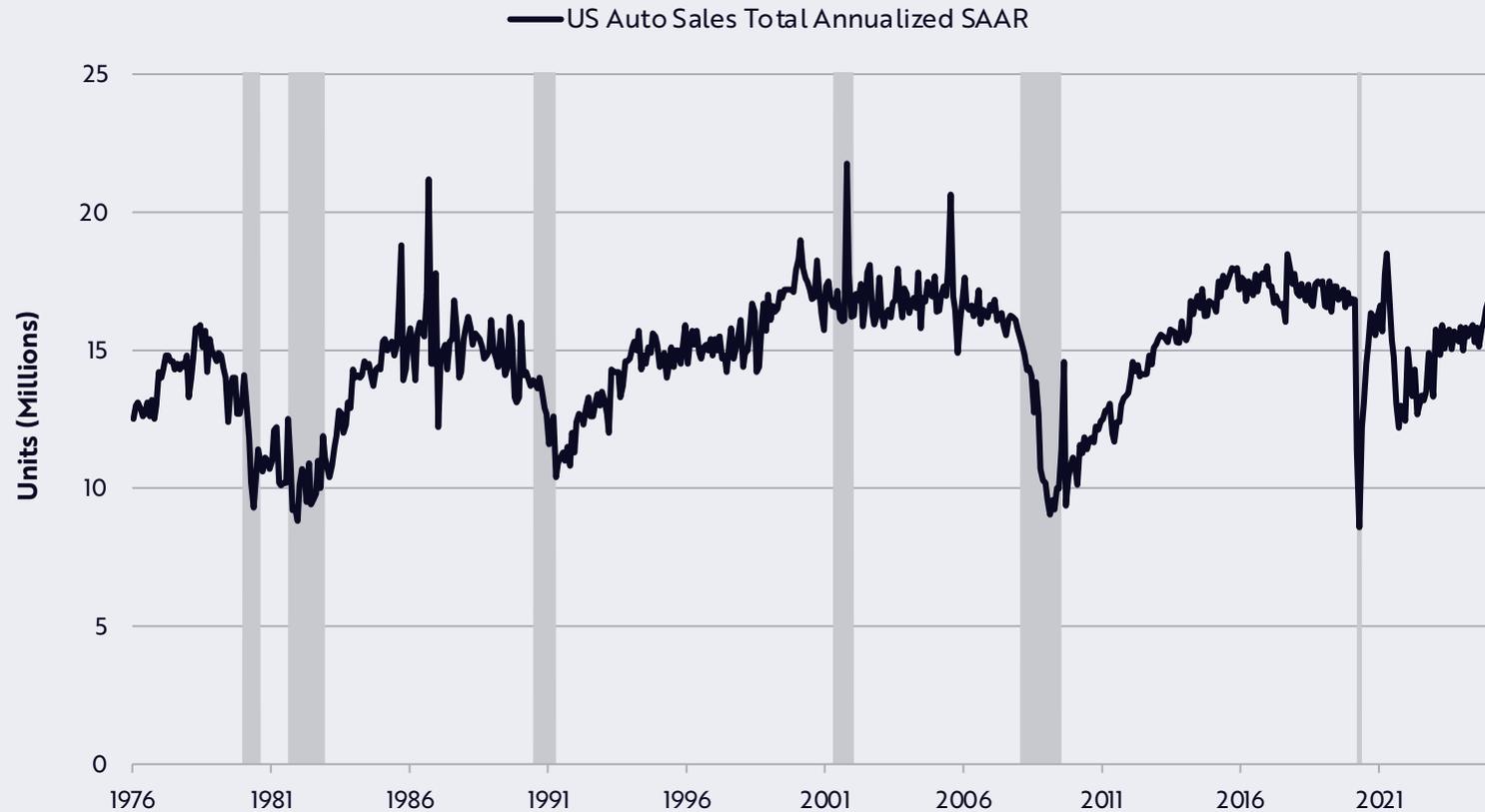
- May was the first month since 2007 that the ISM Services Prices Paid component hit a two-year high while the New Orders index hit a two-year low.
- This divergence suggests that firms are facing rising input costs as demand is weakening—a dynamic that could pressure profit margins.
- Historically, this type of divergence has preceded recessions and/or policy pivots.

[1] ISM: Institute for Supply Management. Source: ARK Investment Management LLC, 2025. Chart data from Macrobond. Information as of May 31, 2025. 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.



US Auto Sales Are Capitulating After The Pre-Buying Ahead Of Tariffs

US Auto Sales



ARK'S VIEW: BEARISH

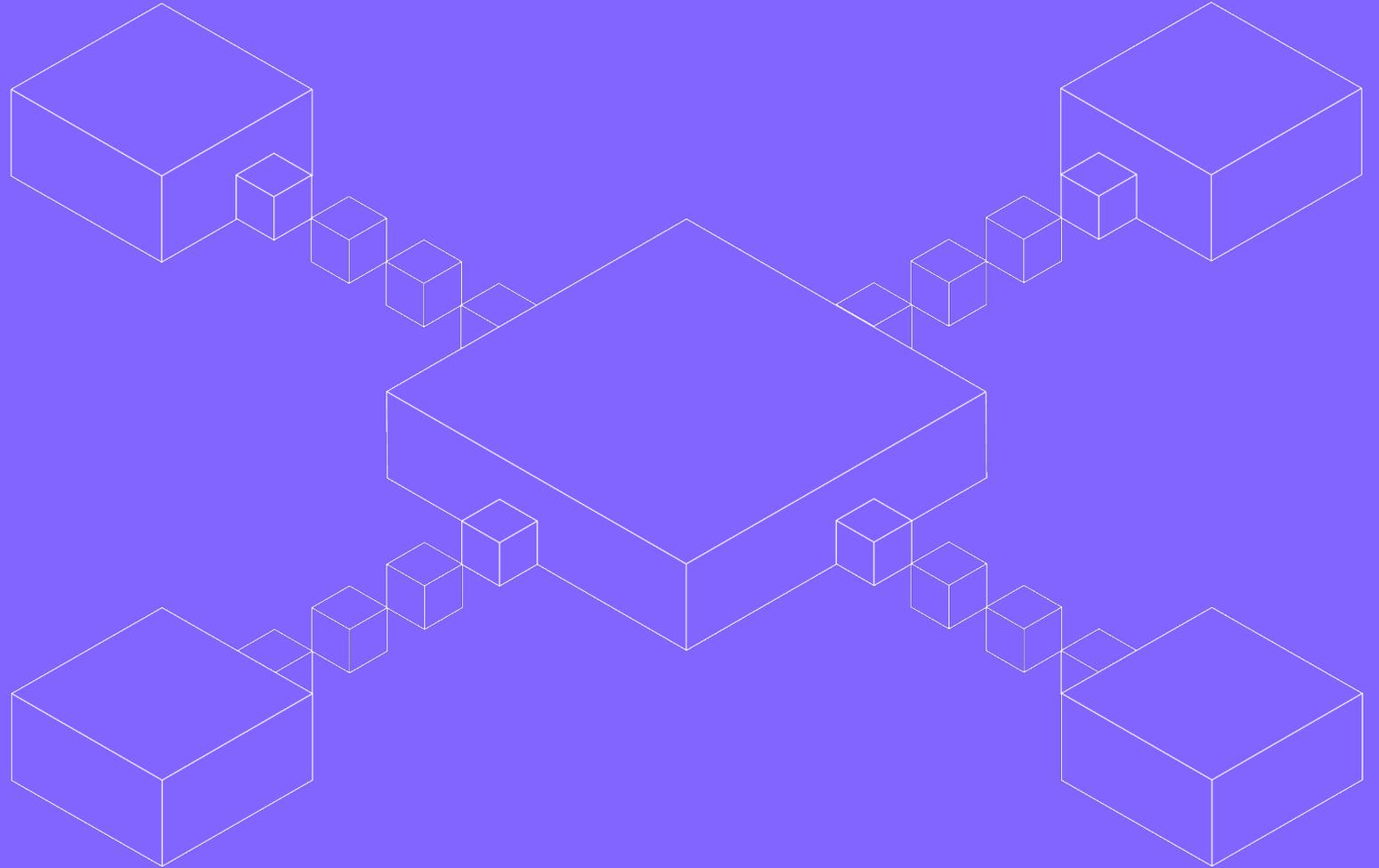
- Auto sales surged above 17 million units (Seasonally-Adjusted Annual Rate, SAAR) in March and April, probably because of preemptive purchases ahead of tariffs.
- In May, auto sales dropped to 15.6 million units, falling short of expectations.
- The surge in March and April may have pulled demand forward, dampening second-quarter demand.
- While used car prices remain elevated relative to historical levels, they have dropped 20% from pandemic-era peaks, signaling deflationary pressure in the sector.

Source: ARK Investment Management LLC, 2025. Chart data from Macrobond. Information as of May 31, 2025. 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.



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.

AVIV Ratio: The ratio of active capitalization (market cap adjusted for dormant coins) and investor capitalization (cost basis of the bitcoin secondary market, after a miner has sold their new coins to a counterparty).

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.

Fiat Currency: Government-issued money that is not backed by a commodity like gold or silver, but rather by the government that issues it.

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 *nominal* 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. The *real* GDI adjusts for price change by expressing values at base-year prices, not current market prices.

Gross Domestic Product (GDP): This is the *nominal* 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. The *real* GDP adjusts for price change by expressing values at base-year prices, not current market prices.

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.

M2: A measure of the US money stock that includes M1 (currency and coins held by the non-bank public, checkable deposits, and travelers' checks) plus savings deposits (including money market deposit accounts), small time deposits under \$100,000, and shares in retail money market mutual funds.

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.



Glossary Of Terms, Continued

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

MVRV Z-Score: Defined as the ratio of the difference of market cap and realized cap to the cumulative, inception-to-date standard deviation of market 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.

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.

SOPR: The Spent Output Profit Ratio is calculated by dividing the realized value of a spent output (in USD) divided by the dollar value at the point of its creation. In other words, it divides the aggregate price of coins sold by the aggregate price where those coins were initially bought.

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

S&P 500 Index: Short for “The Standard and Poor’s 500,” it is a stock market index tracking the performance of 500 of the largest public companies in the United States.

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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