



As of July 31, 2022

THE BITCOIN MONTHLY

THE DUST IS SETTLING



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Please read risk disclosure carefully.



→ Aim for a cross-sector understanding of technology and combine top-down and bottom-up research.

→ Aim to understand the regulatory, market, sector, and company risks. (See Risk and Disclosure Page)



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Section 1

Bitcoin Market Summary





Bitcoin Market Summary | July 2022

ARK'S KEY TAKEAWAYS

1. Bitcoin closed the month of July up 16.6%, rising from \$19,965 to \$23,325, its most significant gain since October 2021.
2. After breaching its 200-week moving average, falling to the \$17,000-\$19,000 range, and bouncing off its 2017 all-time-high, bitcoin reclaimed its 4-year trend.
3. Market contagion appears to be contained, as deleveraging subsides.
4. Uncertainty over Fed policy continues to weigh on bitcoin's recovery and outlook.

Market Sentiment

ARK's View: Bullish

- ↕ Contagion in the crypto markets appears to be contained, as Celsius and Three Arrows Capital officially file for bankruptcy.
- ↑ Leverage appears to be unwinding across the crypto ecosystem, paving a path to recovery.

On-Chain Activity

ARK's View: Bullish

- ↑ After trading below its investor cost basis for the first time since March 2020, bitcoin has reclaimed major support levels and is trading above its market cost basis.
- ↕ Despite continued miner pressure, bitcoin's economics are at equilibrium.
- ↑ Bitcoin's scaling solutions appear to be gaining momentum, as capacity on the Lightning Network reaches an all-time high.

Macro

ARK's View: Neutral

- ↓ The US economy reported negative growth for a second consecutive quarter, technically entering a recession. The Fed seems willing to make a policy mistake to control inflation.
- ↑ Given continued declines in economic activity, including employment, the Federal Reserve could pivot during the second half of the year.
- ↑ The 10-year Treasury bond yield has been unable to sustain a move above 3% and is now falling, posing less competition to cryptoassets.



News Of The Month

- [Three Arrows Capital Files For Chapter 15 Bankruptcy In New York](#)
- [BlockFi Strikes Credit Deal With FTX US, Outlines Acquisition Path](#)
- [Crypto Lender Voyager Files For Bankruptcy](#)
- [Celsius Pays Off Over \\$800 Million In DeFi Debt](#)
- [Celsius Declares Chapter 11 Bankruptcy In New York](#)
- [3AC Affidavits Show Creditors, Including Genesis, Lent The Now-Bankrupt Fund \\$3.5 Billion](#)
- [Three Arrows Founders Break Silence Over Collapse Of Crypto Hedge Fund](#)
- [Tesla Sells 75% Of BTC Holdings](#)
- [DOJ And SEC Announce Insider Trading Charges Against Former Coinbase Employee, SEC Declares 9 Tokens Securities In The Process](#)
- [Coinbase Faces SEC Probe On Digital Asset Securities Listings](#)
- [Ethereum Developers Announce Date For Goerli Testnet Merger](#)
- [Babel Finance Lost Over \\$280 Million In Proprietary Trading With Customer Funds](#)
- [Minecraft Developer Mojang To Restrict Use Of NFTs, Blockchain Tech With Guideline Update](#)
- [Coinbase And Crypto.com Get Approval To Operate In Italy](#)
- [Many Crypto Firms, Including OpenSea, Coinbase, Gemini, Blockchain.com, And BlockFi, Announce Layoffs](#)



Section 2

Bitcoin Stabilizes After The Storm



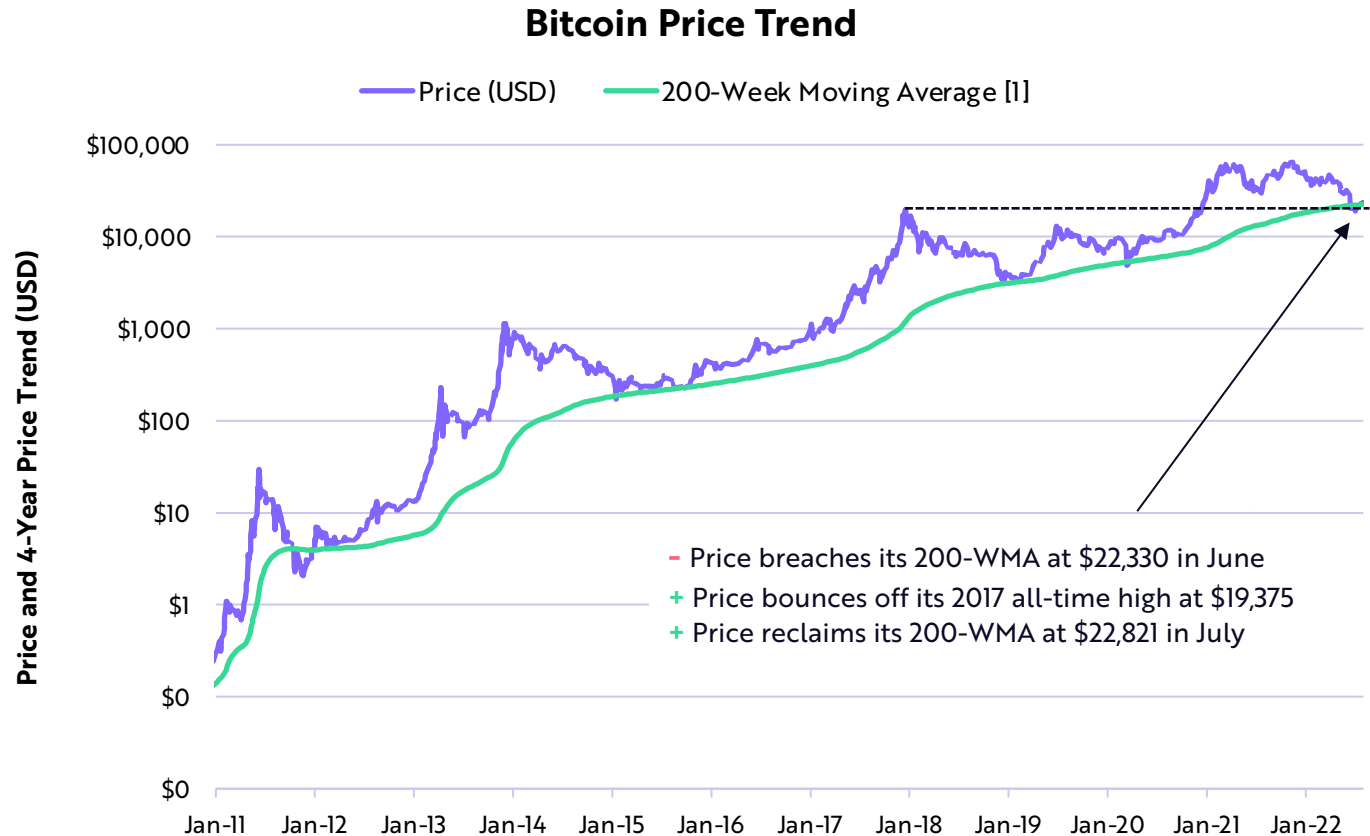


Bitcoin Reclaims Its 200-Week Moving Average

ARK's View: Bullish

After breaching its 200-week moving average, falling to the \$17,000-19,000 range, and bouncing off its 2017 all-time-high support, bitcoin reclaimed its 4-year trend in late July.

Those dynamics suggest that the drop below the 200-week moving average was a brief deviation, which increases our bullish conviction.



[1] The 200-week moving average here is calculated by taking the 1440-day moving average of values larger than 0, so that if the data are not available for a 1440 average, the calculation assumes a life-to-date average in the early years of bitcoin's history.

Source: ARK Investment Management LLC, 2022. Data from [Glassnode](#). Information as of July 31, 2022. 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.



Despite Continued Miner Pressure, Bitcoin's Economics Are At Equilibrium

	Bitcoin Metrics ¹	Unit	July 2022	1M Change	1Y Change	ARK's View
Network Security	<u>Mining Difficulty</u>	Exahash/sec ¹ (thousands)	118.9	-6.34%	+91.03%	Neutral
	<u>Miner Revenue</u> (7-Day Moving Average)	USD (millions)	\$21.32	+11.31%	-45.5%	Neutral
Network Usage	<u>Active Owners</u> ² (Active Entities, 7-Day Moving Average)	thousands	252.9	+3.57%	+1.86%	Bullish
	<u>Transaction Volume</u> ² (7-Day Moving Average)	BTC (thousands)	232.5	+9.14%	+13.92%	Bullish
Holder Behavior	<u>Long-Term-Holder Supply</u> ² (Coins Held for 155 Days+)	BTC (millions)	13.32	+0.01%	+6.6%	Neutral
	<u>Locked Supply</u> ² (Illiquid Supply)	BTC (millions)	14.75	+1.04%	+5.34%	Bullish
	<u>Time-Weighted Turnover</u> ² (Coindays Destroyed, 7-Day Median)	Coindays (millions)	6.65	-42.78%	-37.54%	Bullish

[1] For more information on these metrics and their units of account, please read the Appendix: Glossary Of Terms on page 23 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.

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Bitcoin Reclaims Its Valuation Support, With Market Price Now Trading Above Market Cost Basis

	Bitcoin Metrics ¹	Unit	July 2022	1M Change	1Y Change	ARK's View
Long-Term Valuation	<u>Market Cost Basis</u> (Realized Price)	USD	\$21,817	-2.29%	+9.73%	Bullish
	<u>Percent Supply In Profit</u>	pp	61.18%	+8.06 pp	-23.13 pp	Neutral
Short-Term Valuation	<u>Short-Term-Holder Cost Basis</u> ² (STH Realized Price)	USD	\$28,072	-10.93%	-36.18%	Neutral
	<u>Realized Market Returns</u> ² (SOPR-1, 7-day moving average)	pp	-4.54%	+6.33 pp	-8.44 pp	Neutral
Market Sentiment	<u>Perpetual Futures Basis</u> (Binance, Estimated, 7-Day Exponential Moving Average)	pp	-0.06%	0 pp	-0.03 pp	Bullish
	<u>Expiration Futures Basis</u> (Quarterly, All Exchanges, Annualized)	pp	3.06%	+2.3 pp	-5.19 pp	Bullish

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Source: ARK Investment Management LLC, 2022. Data sourced from [Glassnode](#). Some data may be subject to change over time since they are entity-adjusted in real time. Information as of July 31, 2022. The perpetual futures basis was estimated internally on the basis of data from TradingView, and it is subject to change. 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.



Bitcoin Bounces Off Its Investor Cost Basis, Now Trading Above Its Market Cost Basis

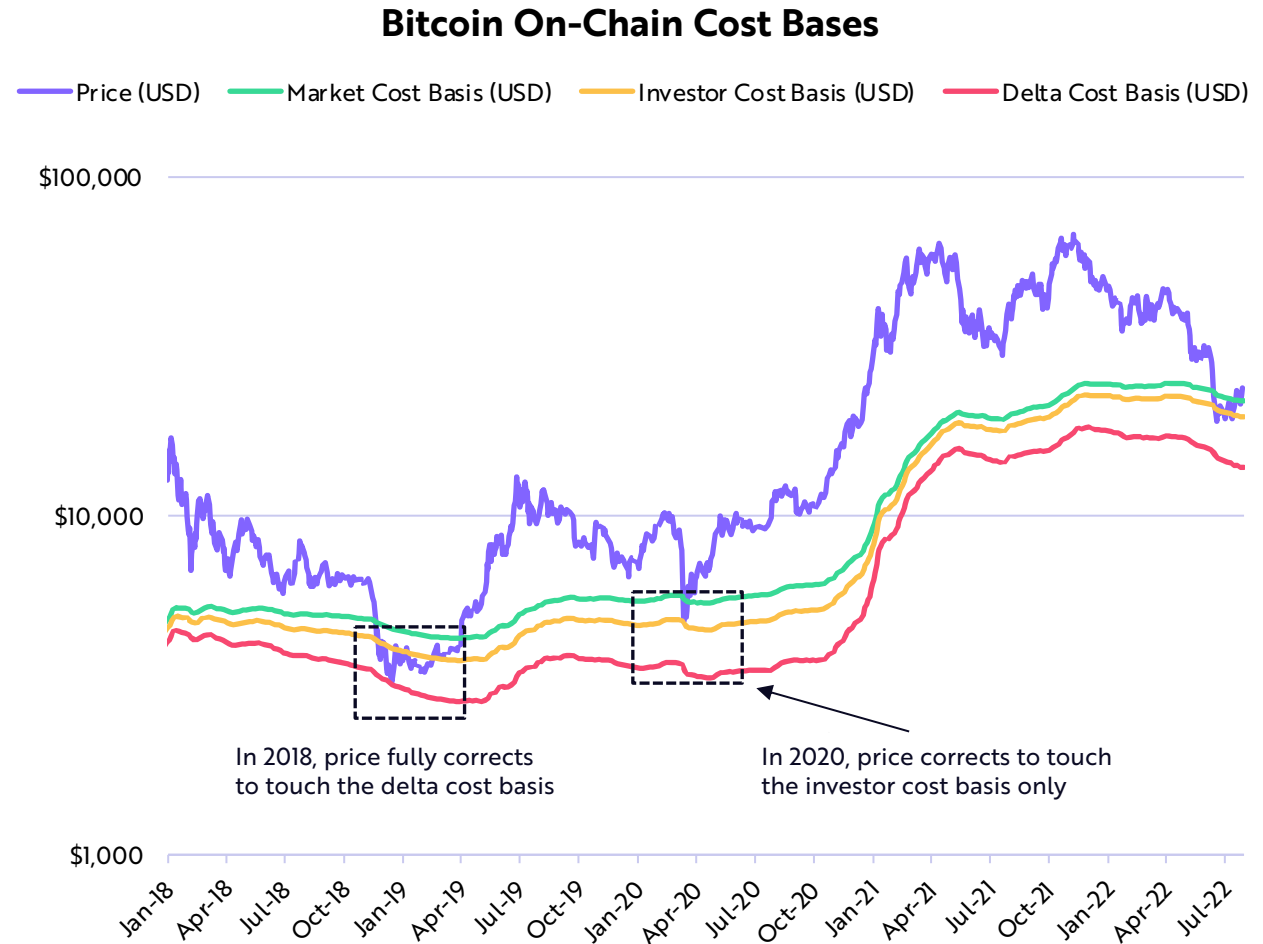
ARK's View: Neutral

After bouncing off its investor cost basis, bitcoin is trading above its market cost basis.

Comparable to the sell-off at the peak of the COVID crisis, bitcoin's price did not reach its delta cost basis, a price-adjusted cost basis that subtracts the life-to-date moving average of market price from its market cost basis and serves as bitcoin's strongest support level.

While the likelihood of touching its delta cost basis has diminished, bitcoin's downside risk in a bear market technically stands at its delta cost basis, currently \$13,890.

Price, Realized Price, Investor Price, and Delta Price (USD)



Source: ARK Investment Management LLC, 2022. Data from [Glassnode](#). Information as of July 30, 2022. 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.

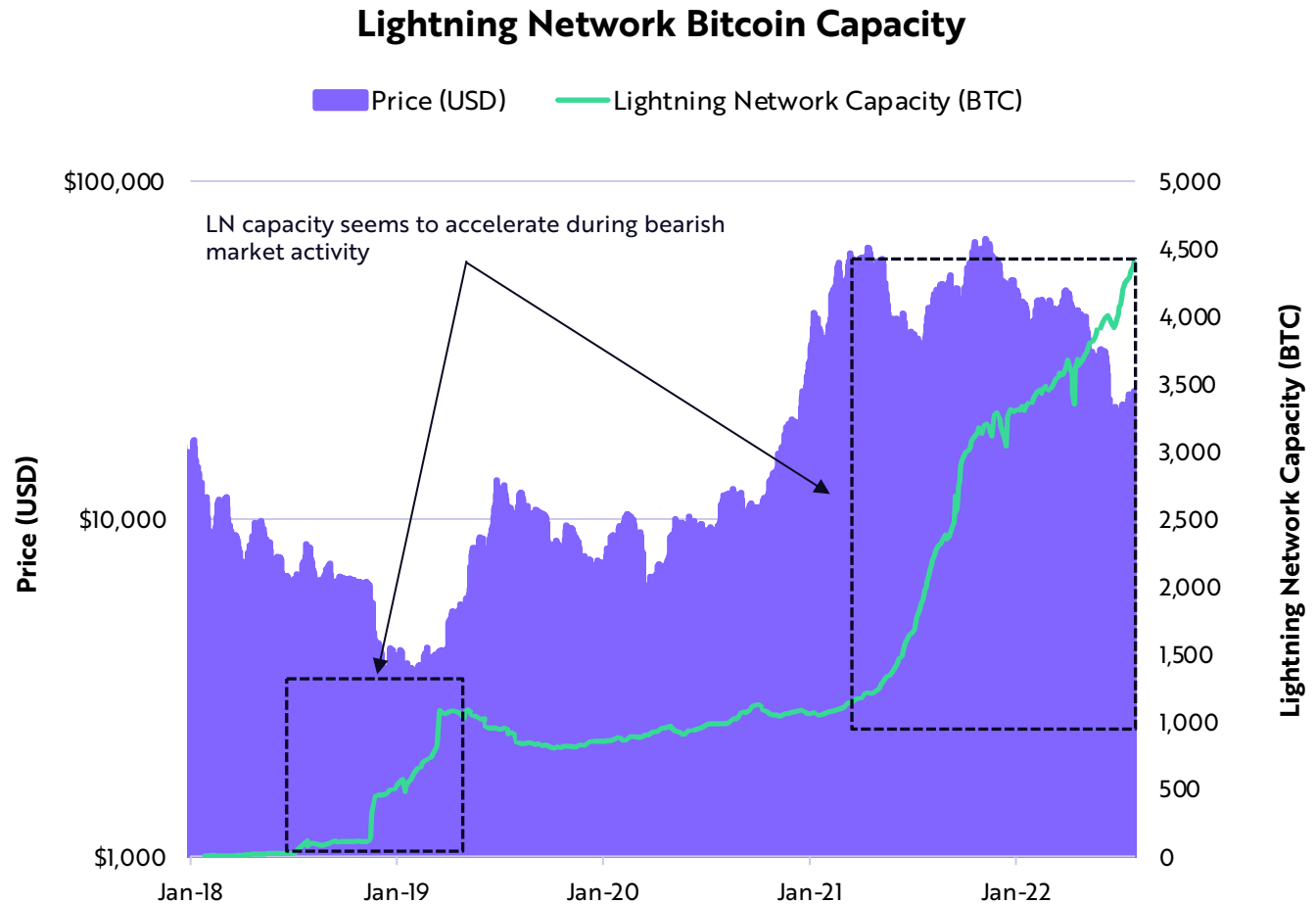


Despite The Bear Market, Lightning Network Capacity Has Reached An All-Time High

ARK's View: Bullish

Lightning Network (LN)¹ capacity—the amount of bitcoin liquidity committed to this layer-2 scaling solution—has been on a steady rise and hit an all-time high in July.

LN capacity growth seems to accelerate during bear markets, marking a shift in sentiment from exuberance and speculation to testing and building long-term solutions for bitcoin.



[1] The Lightning Network is a layer-2 scaling solution for Bitcoin. Its purpose is to solve for slow transaction speed on the blockchain by introducing off-chain transactions. Source: ARK Investment Management LLC, 2022. Data from [Classnode](#). Information as of July 30, 2022. 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.



Section 3

Ethereum Strengthens As Leverage Unwinds



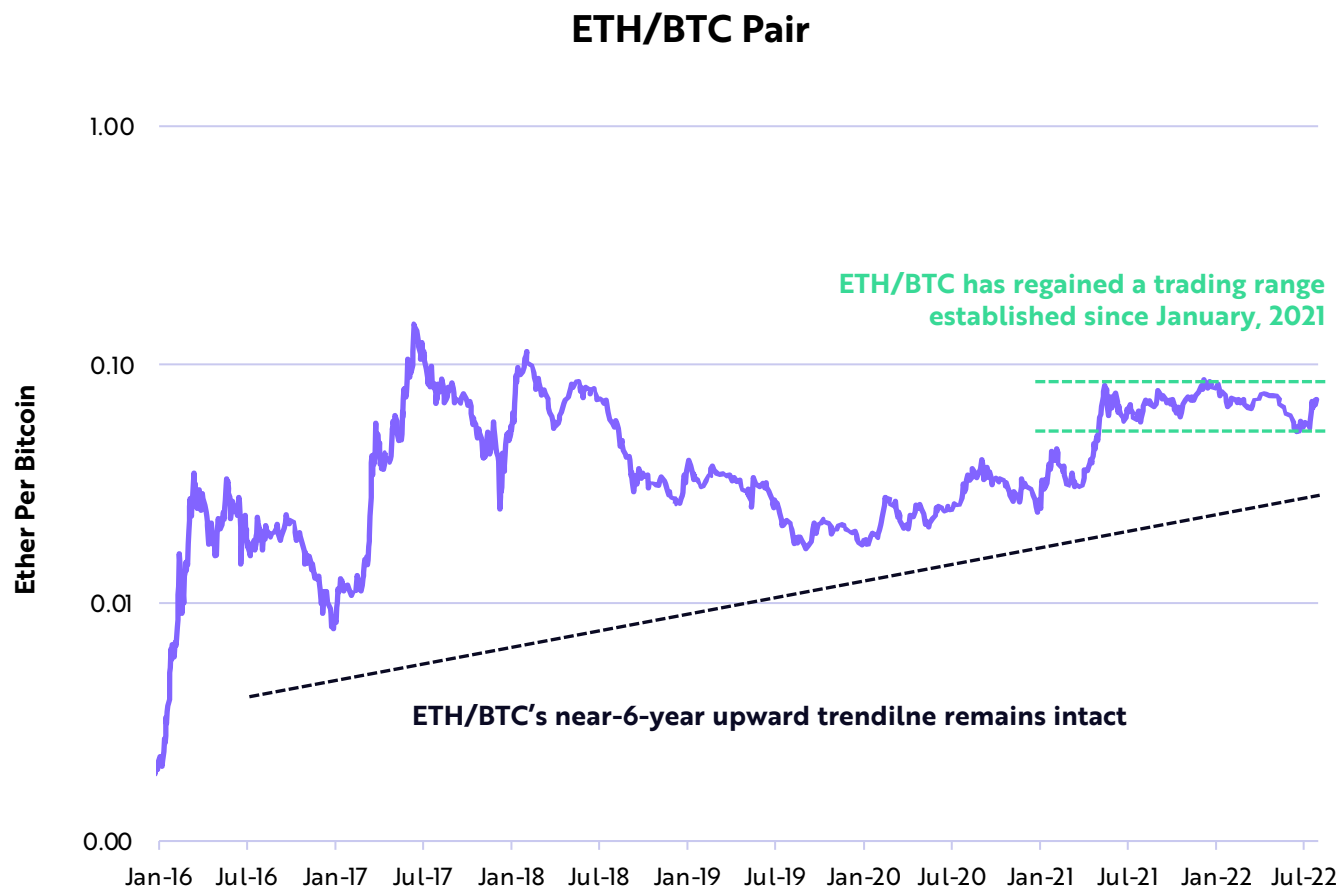
The Upward Trendline In ETH/BTC Is Still Intact

ARK's View: Bullish

As Ethereum transitions to proof-of-stake in September, investors appear to be accumulating ether with the expectation that it will be successful.

In July, ether's price outperformed bitcoin's price by 34%, which suggests that crypto market sentiment is strengthening.

Historically, ether tends to outperform bitcoin during "risk-on" bull markets and underperform during "risk-off" bear markets.





DeFi's Infrastructure Continues To Work As Designed

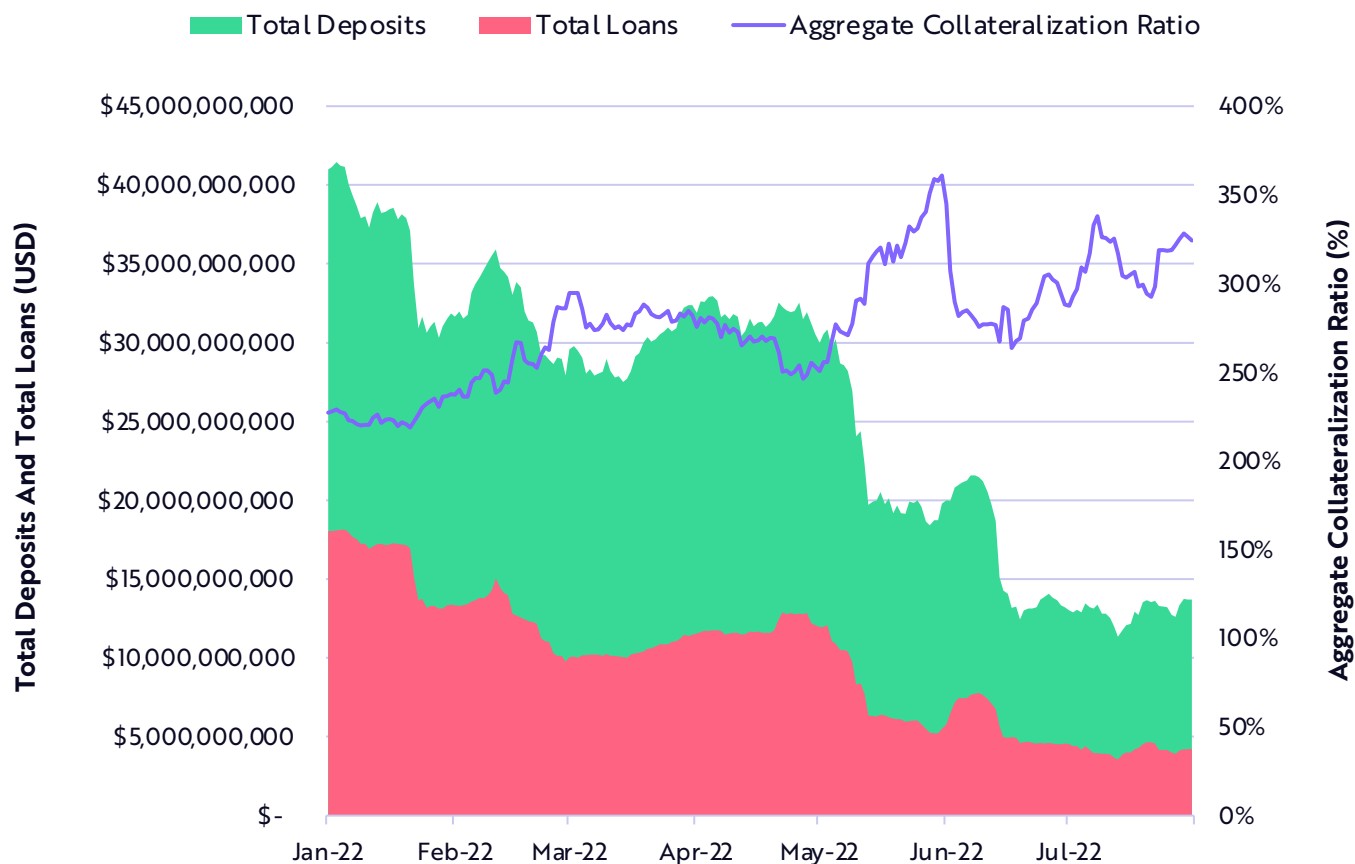
ARK's View: Bullish

Ethereum's largest decentralized lending protocols did not suffer from major outages—or the insolvencies seen in their centralized counterparts—during recent market turmoil.

Ethereum protocols Aave and Compound weathered a 67% decline in total deposits. Liquidations functioned as designed, and borrowers, including now-bankrupt Celsius, paid down debt.

Since the start of the year, total debt has declined by 77%, and the market's collateralization ratio now sits at 324%, suggesting lower total leverage and healthier positions.

Aggregate DeFi Balance Sheet (Aave and Compound)





Section 4

All Eyes Are On Macro





The United States Was The Most Active Buyer In July

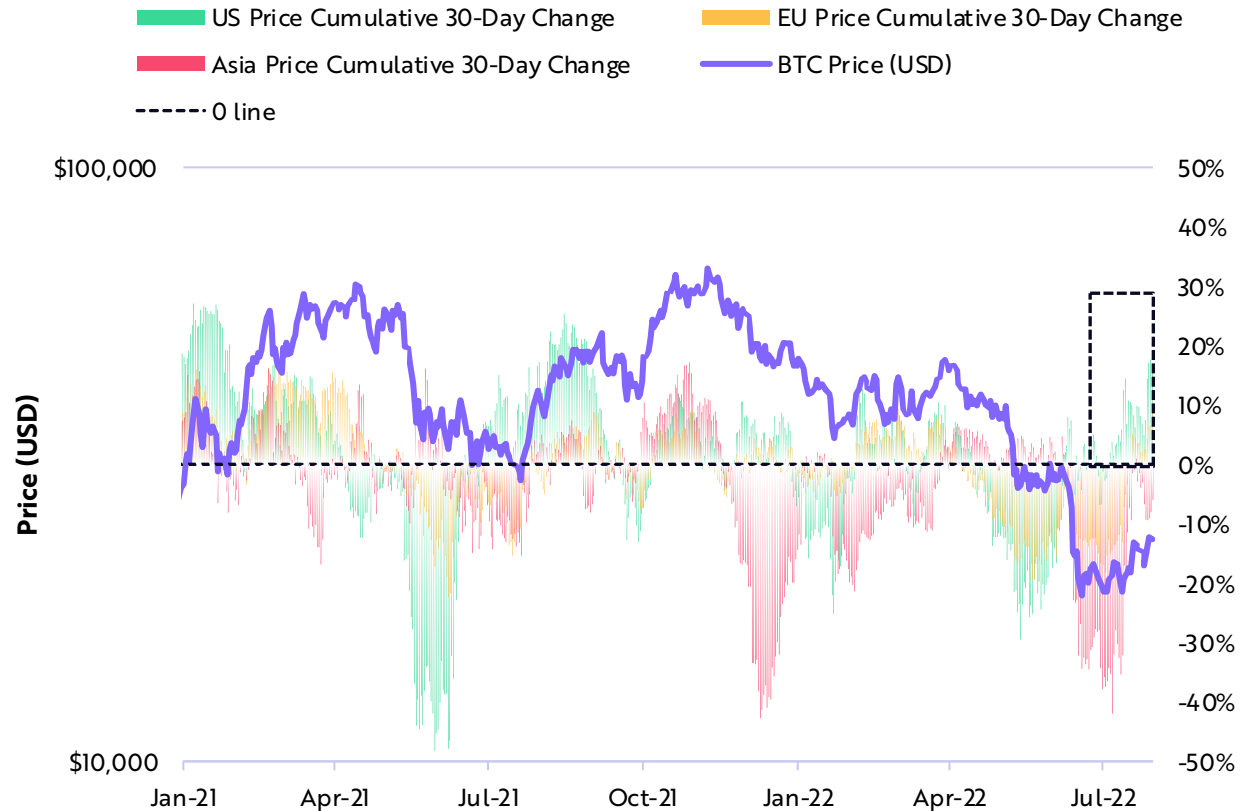
ARK's View: Bullish

The US appeared to be the leading buyer of bitcoin in July.

By tracking the cumulative month-to-month (30-day) price action based on respective business hours in NYC, London, and Hong Kong, we can gauge the general sentiment in various geographic regions and its impact on price.

Given the positive correlation between bitcoin and US equities since COVID, the US being the leading price mover of bitcoin suggests an emerging risk-on market environment.

Bitcoin Regional Cumulative 30-Day Change



Bitcoin Price Cumulative 30-Day Change (US, EU, and Asia, %)



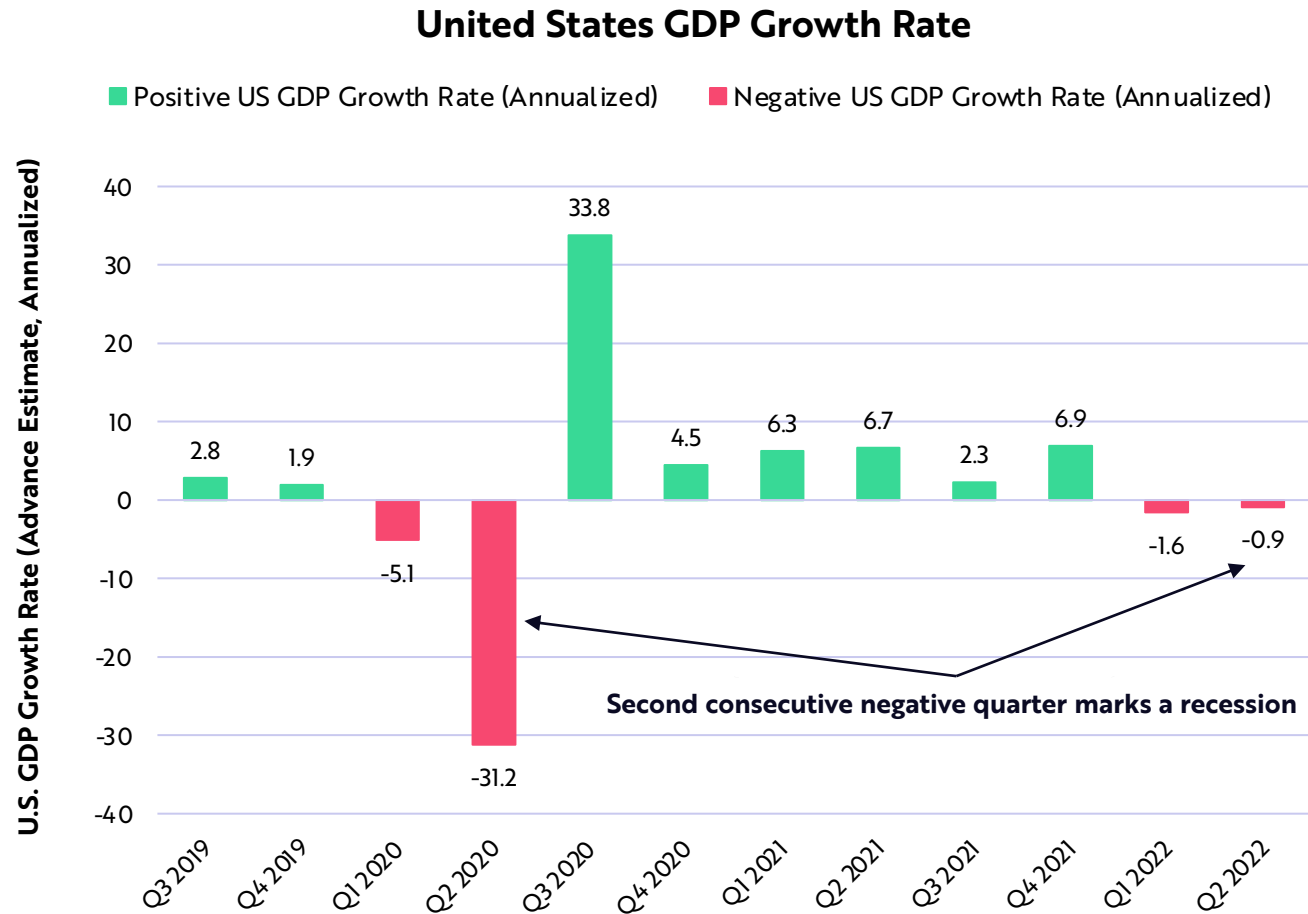
The US Economy Reported Negative Growth For A Second Consecutive Quarter

ARK's View: Neutral

The US has entered a recession, at least technically, following a 1.6% GDP decline in Q1 and a 0.9% decline in Q2.

The drop was attributable largely to a decrease in inventories, residential and non-residential investments, and government spending.

Strong recession signals could compel the Fed to change its hawkish stance.



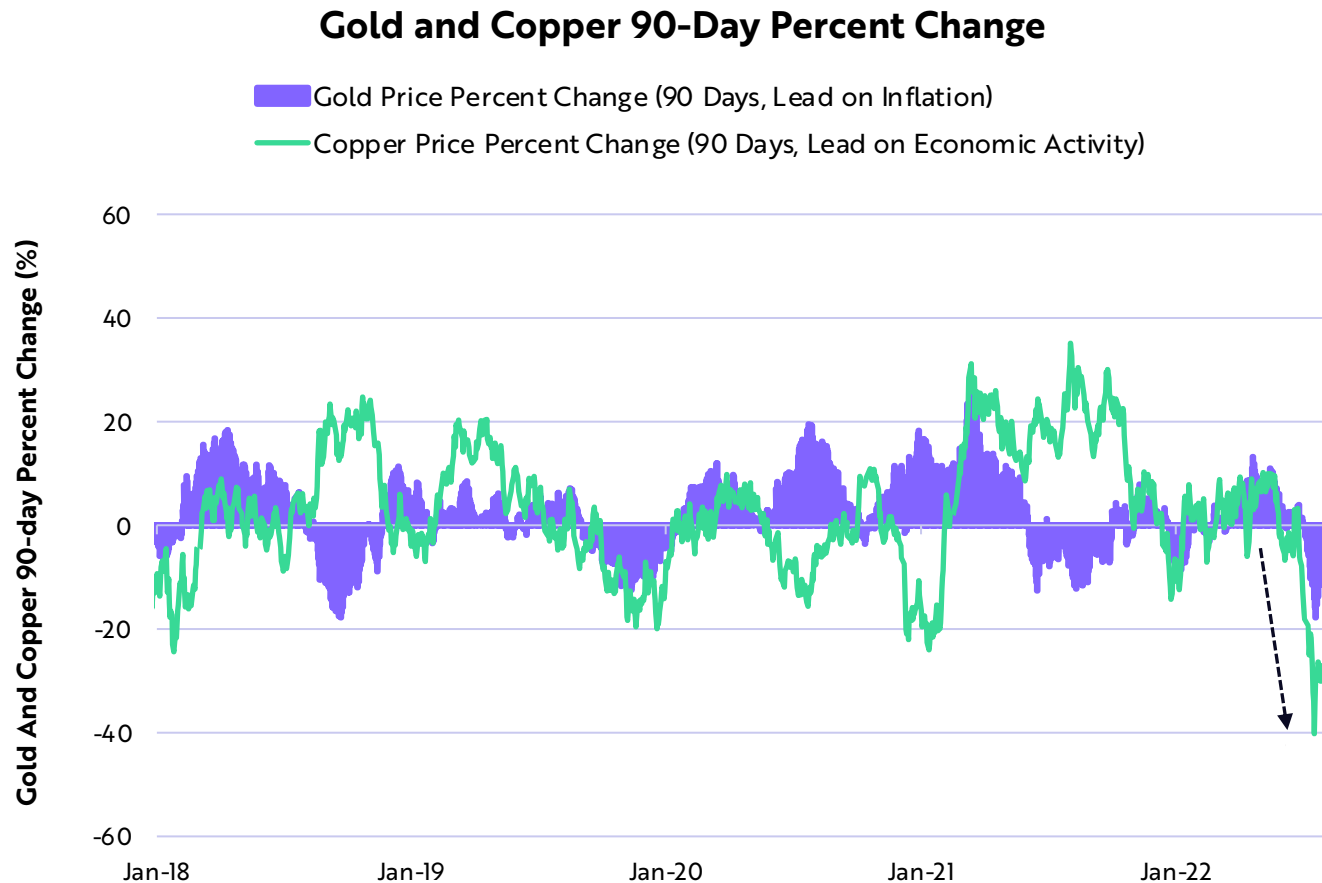


Gold And Copper Price Action Suggests Inflation Expectations Are Too High And Economic Activity Is Slowing Down

ARK's View: Bullish

Gold and copper continue to behave as though inflation is not a long-term threat in the face of slowed economic activity. Historically, a rising gold price has been a leading indicator of sustained inflation, while a rising copper price has been a leading indicator of sustained economic activity.

Both gold and copper continue to sell off; copper has broken below its trading range, while gold remains at the low end of its trading range.



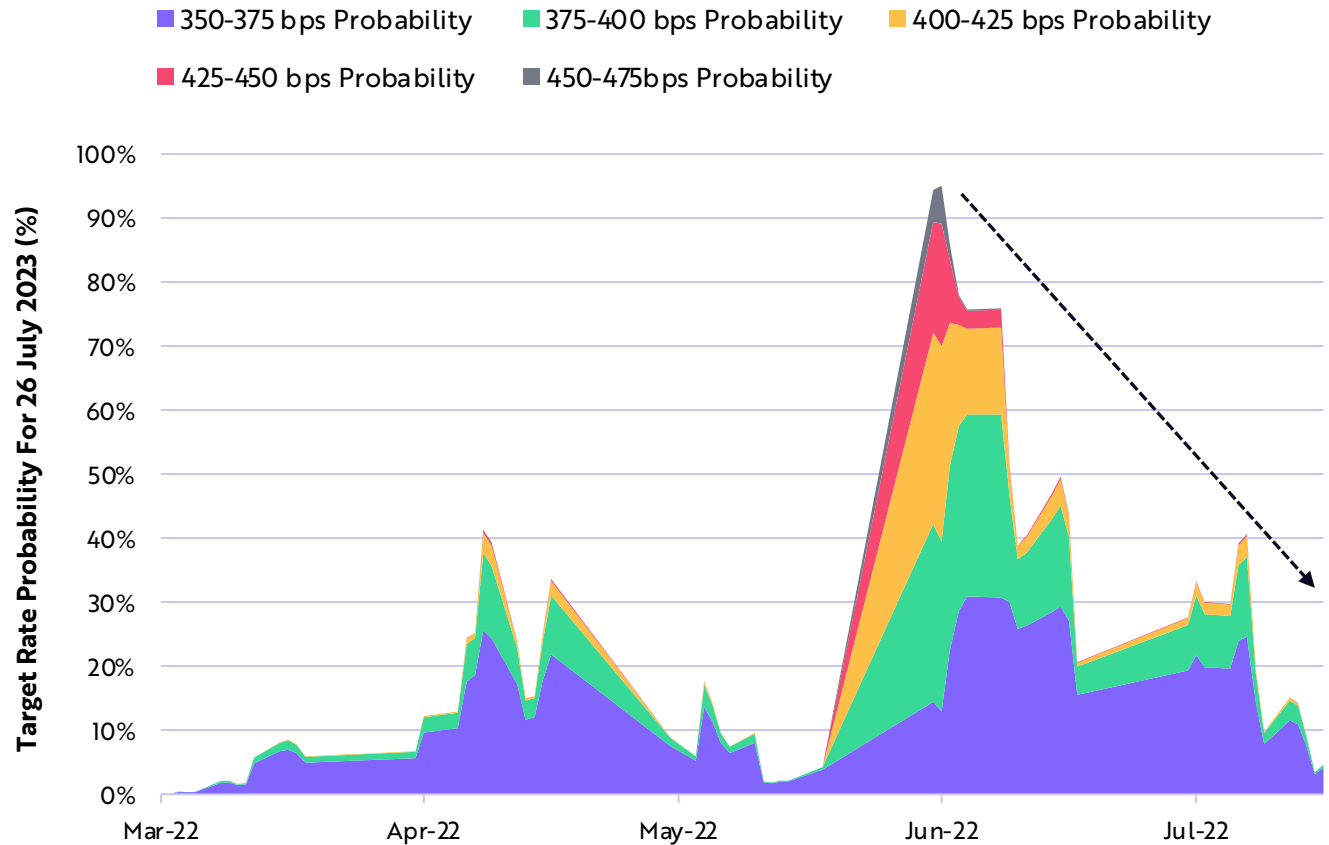


Fed Target Rate Probabilities Suggest A Pivot

ARK's View: Bullish

Current data suggest that the market is beginning to believe the Fed could end its tightening cycle within the next year.

Target Rate Probability History for Fed Meeting on 26 July 2023





Section 5

Appendix: Glossary Of Terms





Glossary Of Terms

- **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.
- **Contango:** Describes when expirational futures contracts are trading at a price higher than spot, suggesting a bearish market environment.
- **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.
- **Futures Basis:** The difference between the price of spot and the price of a perpetual or expirational contract.
- **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.
- **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 cutoff point at which the possibility of a bitcoin to remain 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.
- **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.
- **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:** 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 between price sold and 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.
- **Short-term Holding and Holders (STH):** Related to supply that moved in the last 155 days, the cutoff point at which the possibility for a bitcoin to move again increases drastically.
- **Supply in Profit:** 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.

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