

Bitcoin and Digital Gold

- Bitcoin is gaining traction as a store-of-value and digital gold
- Bitcoin is becoming a digital diversifier vs. rest of crypto gaggle
- Bitcoin is simply retracing the 2018 bear market, for now
- The macroeconomic landscape favors Bitcoin, cryptos
- Gold or Bitcoin? Store-of-value debate heats up as price climbs

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Note - Click on graphics to get to the Bloomberg terminal

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[BI COMD](#) (the commodity dashboard)

Most data as of July 2

Performance: Bloomberg Galaxy Crypto Index (BGCI)
June +17.2%, 2019 +109.0 thru July 2
Bitcoin: June +43.6%, 2019 +191.6%, thru July 2

Bitcoin and Gold Bull Markets Set to Leave Others Behind in 2H

(Bloomberg Intelligence) -- Like gold, some back-and-fill of 1H gains should be expected in Bitcoin's price before it resumes retracing last year's bear market, in our view. One key distinction vs. past bull markets: Both the cryptocurrency and precious metal are far from new highs. Each experienced their worst one-day declines in over a year on July 1, indicating their increasingly shared purpose as stores-of-value vs. favorable macroeconomic trends. Uniquely quasi-currencies and commodities, and standouts among peers, the dollar value of Bitcoin and gold should keep appreciating in 2H.

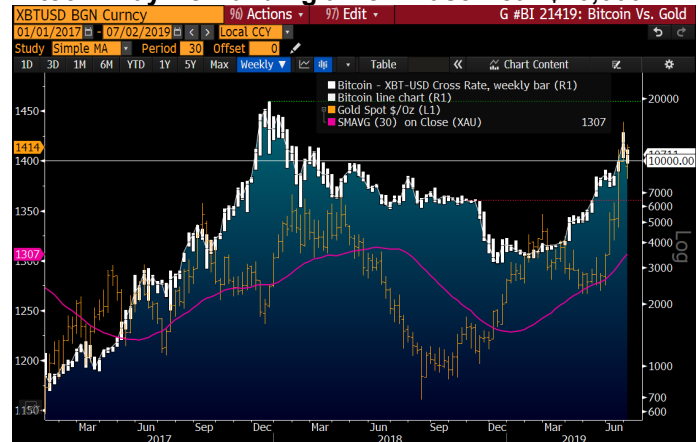
This year's \$10,000 on the way up appears as \$6,500 did on the way down in 2018. Our wide range for Bitcoin is \$6,500-\$20,000 because the levels are significant. Above \$20,000 would be a new bull market. The rest of the cryptos are increasingly vulnerable vs. Bitcoin.

Bitcoin Vs. All Others

Bitcoin Gaining Traction as Store-of-Value and Digital Gold. Our indicators, which are clearly pointing upward, show \$10,000 Bitcoin about fair value at the beginning of July. Macroeconomic trends are also demonstrably favorable for gold and its digital cousin. Increasing transactions and addresses support higher Bitcoin prices on the back of more countries with negative sovereign yields.

Passing the Digital Divide Toward Gold. Following some back-and-fill of 1H gains, we expect Bitcoin in 2H will resume retracing last year's bear market. Our graphic depicts the resumed uptrend in Bitcoin and gold. Both reached key thresholds in June -- \$10,000 Bitcoin and \$1,400-an-ounce in gold -- that are likely to act as consolidation magnets for awhile. With a strong dollar, Bitcoin up near 60% and gold 13% on a year-over-year basis to July 2 indicate the path of least resistance. A key test should come with expectations of Federal Reserve easing in 2H and the potential for a peak greenback.

Bitcoin May Be Building a New Base Near \$10,000



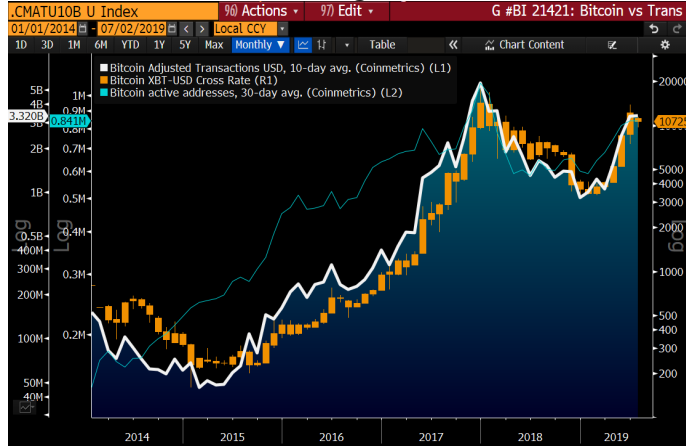
The trade-weighted broad dollar is up about 2% vs. year-ago levels and, after rallying 20%-plus in the two-year run-up to the first rate hike in December 2015, is prime for a peak with easing. This year should mark the continued maturation of Bitcoin to be more like gold.

Favorable Bitcoin Price Indicators. Primary Bitcoin price indicators show a healthy upward trajectory and prices near fair value at the beginning of 2H. Active addresses and transactions -- primary bear-market indicators last year -- have shifted quite favorably. Our most robust price companion -- the 10-day average of

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adjusted transactions in dollars based on data from Coinmetrics -- has caught up to prices and shows Bitcoin near \$10,000 may be a bit low.

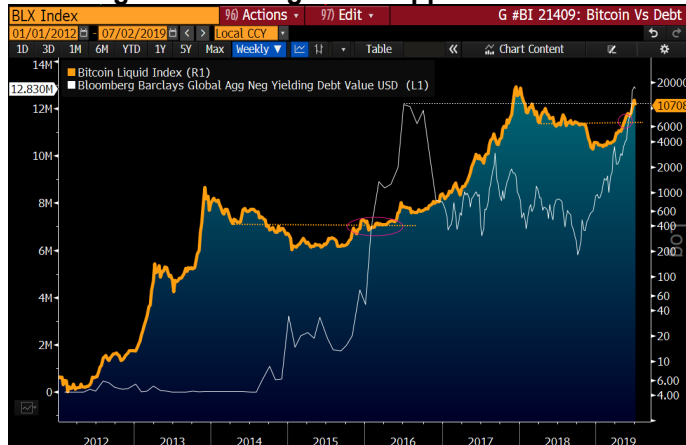
Bitcoin is On Sound Footings with Indicators



Although averages, these measures can often be leading indicators and have among the firmest correlations to prices. On a quarterly basis since the beginning of 2014, Bitcoin is about 0.95 correlated to the 10-day average of transactions. To addresses, the correlation is near 0.65. For comparison, the same correlation measure to the MVIS Cryptocompare Digital Assets 10 Index is 0.73.

Bitcoin Gaining Traction vs. Negative Yields. The ease with which Bitcoin's price broke through significant bear-market resistance portends new highs. Our graphic depicts a similar resistance level in 2015 that held the market advance in check for about six months. Macroeconomic forces, including rapidly increasing levels of negative-yielding debt, are price supportive. What was resistance near \$6,500 -- last year's most widely traded price -- should now be support. Maturing toward a sounder store-of-value like a digital version of gold, Bitcoin got a bit ahead of itself in 2H but should continue to move upward in 2H.

More Negative-Yielding Debt Supports Bitcoin



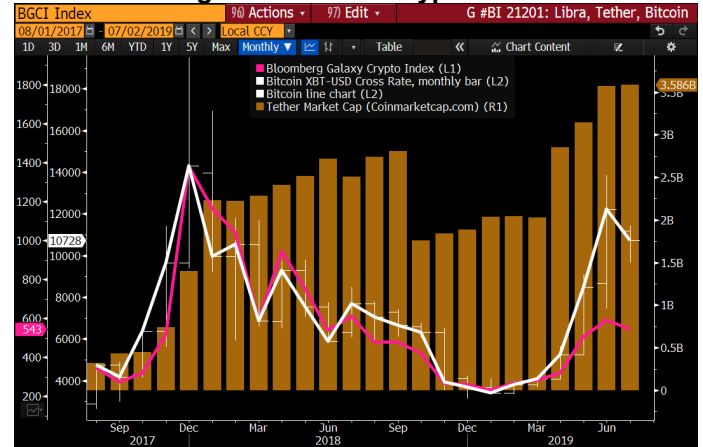
Limited supply, anticipated Fed easing, increasing institutional interest, Facebook's Libra coin and its unique status as the first-born crypto asset with the vast majority of computing power favors Bitcoin-price appreciation.

Less Favorable Broader Market

Bitcoin Becoming Digital Diversifier vs. Rest of Crypto Gaggles. The broad cryptocurrency market will continue to lose its luster vs. Bitcoin, in our view. The one-year-change of 60% to July 2 for the first-born crypto, vs. a 14% decline in the Bloomberg Galaxy Crypto Index, indicates the increasing evolution of Bitcoin to becoming a digital version of gold.

Widening Divide: Bitcoin vs. Crypto Assets. The trend favoring stable coins is widening the disparity between Bitcoin and most highly speculative digital assets known as alt-coins, in our view. Following the path laid by Tether, the dominant stable coin, the potential for wide global-payment adoption of Facebook's proposed stability-focused Libra cryptocurrency should expose the fallacy of many crypto assets masquerading as currencies. Tether and Libra enhance the value of Bitcoin toward becoming a digital version of gold.

Bitcoin Leaving Behind Most Crypto Assets



Similar to gold, Bitcoin towers above peers. Its computing power (hash rate) surpasses all others and is still increasing rapidly. Our graphic depicts Bitcoin gaining favor in the midst of supportive macroeconomic conditions vs. the Bloomberg Galaxy Crypto Index.

Bitcoin's Beta to the Market Is Increasing. The broad crypto market is increasingly vulnerable and subject to the performance of Bitcoin. Our graphic depicts the highest 100-day beta of the MVIS CryptoCompare Digital Assets 10 Index vs. Bitcoin in the index history since

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2014. This atypical way to measure beta -- the index vs. a primary constituent -- captures the unique relationship of the first-born crypto vs. the gaggle of copycat coins. Like gold, Bitcoin isn't practical to purchase a cup of coffee but is increasingly gaining favor as the default digital-portfolio diversifier.

Bitcoin's Beta to the Market at Record Highs



Litecoin is among the top five cryptos by market cap. It's a Bitcoin copy intended to be a better form of payment, but it clearly isn't. With 90-day volatility over 100%, Litecoin is primarily a speculative digital asset. For comparison, Bloomberg Dollar Index volatility is about 4%.

Crypto Supply Is Slowing, But Still a Headwind. The broad crypto market has an excessive supply overhang that Bitcoin doesn't. The first-born crypto is gaining status as a digital version of gold with limited supply. Bitcoin forks and the potential for more are part of the broader-market pricing headwind. Bitcoin may not fulfill its initial intent as a peer-to-peer electronic cash system, but is rapidly becoming a go-to digital-age store of value. Our graphic depicts the Bloomberg Galaxy Crypto Index falling behind the performance of Bitcoin.

Increasing Crypto Supply Favors Bitcoin



We expect this trend to continue on the back of the increasing number of tradable cryptos and institutional interest, which defaults notably to Bitcoin. Near 2,200 in June, the amount of cryptos listed on Coinmarketcap.com is up about 600, or 40%, from a year ago.

Macroeconomic Landscape Favors Bitcoin, Cryptos.

The macroeconomic foundation is firming for Bitcoin and the crypto market. Our graphic depicts the recovering Bitcoin price and Bloomberg Galaxy Crypto Index along with gold's price, stock-market volatility and futures shifting to expectations of Fed easing. The one-year fed funds futures spread began pricing for a rate cut in January as Bitcoin bottomed.

Bitcoin, Gold Bottoming With Shift to Rate Cuts



Getting past the stage of deflating the 2017 frenzy, Bitcoin is maturing into a digital version of gold. Rapidly advancing technology, increasing adoption and limited supply support its price. Dominated by speculators and extended in the shorter term based on most of our indicators, the Bitcoin alternative asset store-of-value macro foundation is firming.

Bitcoin 2H; \$6,500 - \$20,000

Bitcoin Support of \$6,500 and Resistance of \$20,000 in 2H. What's different about the increasing Bitcoin price this time is it's retracing familiar territory with supportive institutional and macroeconomic drivers. A bit extended near the end of 1H, the cryptocurrency should be about revisiting resistance near \$20,000 and holding support above \$6,500 in 2H.

Bitcoin to Continue Evolution to Digital Gold. Some back-and-fill in the Bitcoin price supports its migration to becoming a digital version of gold, but the bias should remain higher in 2H. The process of retracing last year's bear market comes on the back of increasing institutional interest and favorable macroeconomic conditions.

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Federal Reserve easing and a growing number of countries with negative yields are tailwinds for Bitcoin and gold. The ease with which Bitcoin broke above the bear market's most-traded price near \$6,500 and ending 1H near the halfway mark indicate full recovery. That puts the next big resistance near \$20,000. Sustaining below \$6,500 is a good definition of risk as it would indicate failure.

Bitcoin Initial Mission - Bear Market Retracement

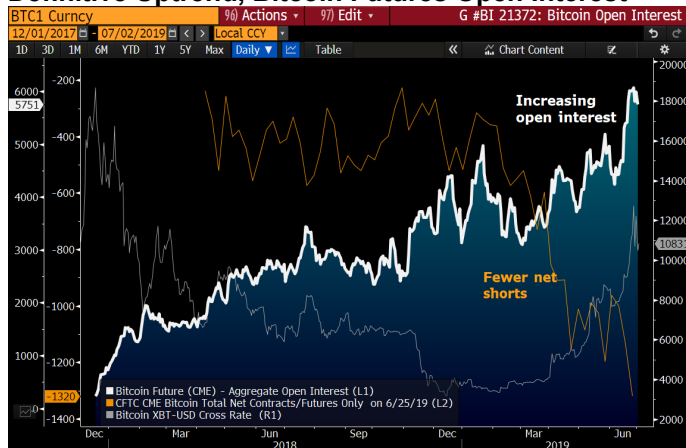


Elevated shorts, getting past the Tether troubles, Facebook's proposed Libra coin and political unrest in Hong Kong were primary 1H Bitcoin support factors.

Bitcoin Institutional Interest Is in a Bull Market.

Steadily increasing futures open interest indicates Bitcoin migrating to a more mature marketplace, supporting prices. Our graphic depicts CME traded open interest reaching a new high at the end of 1H. On a year-over-year basis, the number of open positions has increased more than 2x. Perhaps more significant from a price indication standpoint, net positions have declined from the elevated shorts during the bear market. Institutions are using futures increasingly for long-only exposure.

Definitive Uptrend, Bitcoin Futures Open Interest



Measured on a dollar basis, open interest peaked in 1H near \$2 billion, representing about 1% of the Bitcoin market cap listed on Coinmarketcap.com (CMC). Futures volume is more robust. The average daily dollar value of Bitcoin futures volume in June was about 10% of that listed on CMC.

Bitcoin Simply Retracing 2018 Bear Market, for Now.

Gaining status as a digital version of gold, Bitcoin appears to be in the early days of retracing last year's bear market. In June, Bitcoin bumped into \$10,000 resistance, but simply regaining half of the decline would get it toward \$11,300. For a unique asset that's designed to appreciate via limited supply and that isn't linked to a central authority like most copycat cryptos, we think there's little to stop a rally.

50% Retracement in Bitcoin: \$11,300



The increasing number of countries with negative interest rates, Fed easing and stock-market volatility with the potential to revert higher are key Bitcoin and gold supports. To suppress the dollar price of Bitcoin, it'll likely take the digitization trend to subside and for macroeconomic forces to reverse.

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Bitcoin Vs. Gold

Gold or Bitcoin? Store-of-Value Debate Heats Up as Price Climbs. The debate between gold bugs and Bitcoin believers over which is the better store of value is heating up as Bitcoin's price rises. The gold camp cites the metal's long history and Bitcoin's instability and lack of regulatory support. Bitcoin backers see the cryptocurrency as "digital gold," with superior efficiency and untapped potential.

Complementary Assets in a Portfolio. Rather than positioning Bitcoin and gold as polar alternative assets, we think they can complement each other in a portfolio. Gold has better applications in some cases, and Bitcoin in others. Bitcoin is more transportable and divisible, and more applicable as a currency. But gold is more stable, with a proven track record. Both offer almost zero correlation to traditional asset classes. Bitcoin currently is most aptly characterized as a speculative asset.

Comparison: Bitcoin vs. Gold

Properties	Bitcoin	Gold
Age & Durability	✗ 10.5 Years	✓ ~5,000 Years (Proven)
Scarcity (Supply & Inflation)	✓ Fixed & Limited	✓ Estimated & Limited
Divisibility	✓ Easy & Fast	✗ Difficult
Price Stability (Volatility)	✗ 59%	✓ 12%
Storage/Security Costs	- Dependent on Security Level	- Dependent on Security Level
Useful as Payment/Currency	✓ Yes	✗ Not Suitable
Portability	✓ Easy & Fast with Internet	✗ Difficult, Especially in Bulk
Taxation	✓ Property	✗ Collectible
ETF	✗ No	✓ Yes
Correlation to S&P 500	✓ Zero	✓ Zero

U.S. Tax Rates More Favorable for Bitcoin. Gold and Bitcoin have different long-term U.S. tax rates (on investments bought and sold over more than one year). For short-term capital gains (on investments bought and sold within a year), both are taxed at the individual's income-tax rate. Bitcoin is taxed in the same way as stock ownership, with a long-term capital-gains rate of 0-20% depending on income level. Gold is taxed as a collectible, so it carries a long-term rate of 28%, irrespective of an investor's income.

Bitcoin vs. Gold Long-Term Tax Rates

Bitcoin	
Long Term Rate (Capital Gains)	Single Filer Income
0%	\$0 - \$39,375
15%	\$39,376 - \$434,550
20%	\$434,551+
Gold	
Long Term Rate (Collectibles)	Single Filer Income
28%	\$0 - \$434,551+

Source: Taxfoundation.org Bloomberg

Limited Supply and Fixed Inflation. Gold has been accepted as a store of value globally for centuries. While Bitcoin is a store of value within the world of cryptocurrencies, it now has prospects of being embraced on a larger scale. The amount of gold available on Earth is finite and the mining rate has been relatively stable, with World Gold Council estimates of "above ground" gold supply increasing about 1-2% a year. Bitcoin's limited supply and controlled inflation are its monetary backbone. The last Bitcoin is expected to be mined in 2140 (coded to a maximum of 21 million coins), according to a fixed, disinflationary schedule.

Bitcoin Gold Strong Supply & Inflation Qualities

Category	Bitcoin	Gold
Current Supply (above ground gold)	17,099,587	*190,040 Tonnes
Supply Inflation	1.69% - 1.79%	*1% - 2%
Remaining Supply (to be mined)	3,900,413	*54,000
Total Supply	21,000,000	144,040 Tonnes

Note: * = Estimate Bloomberg

Gold supply theoretically could jump from the discovery of a massive deposit or the advent of space mining, though either is unlikely. Bitcoin's doubling of "supply" from each fork is a potential concern.

Medium-of-Exchange Edge Goes to Bitcoin. Bitcoin is superior to gold as a medium of exchange or form of payment. Unlike gold, Bitcoin is a fixed unit of account and easily divisible and transportable. Gold isn't easily divisible on the spot, and there are potential issues with purity and verification. The ability to trace Bitcoin on blockchain ledger technology will likely prove to be a substantial advantage, especially in cross-border transactions. Digital currencies are starting to be accepted as a form of payment with vendors and

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retailers.

Market-Cap Leaders: SV, Binance Coin and Tether

Category	Bitcoin	Gold
Useful as Payment/Currency	Yes	Not Suitable
Portability/Transport	Easy & Fast to Anywhere (with Internet Connectivity)	Difficult Especially in Large Quantities
Divisibility	Highly divisible (1 Bitcoin = 100 million Satoshis)	Difficult
Verifiability	Authenticated via Blockchain by Anyone	Easily but via Experts
Trackable/Traceable	Yes (w/ caveats)	No
Decentralized	Yes	Yes

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Superior Stability, Smaller Drawdowns. Bitcoin's price volatility and history of drawdowns limits its use as a store of value, and even as a form of payment. Gold supporters rightly assert that an asset can't be a store of value when it has seen drawdowns of more than 80% in just 12 months. Yet gold isn't entirely immune -- most recently, from September of 2011 to December of 2015, the metal realized about a 45% drawdown in U.S. dollar terms.

Bitcoin vs. Gold Price Volatility & Drawdowns

Category	Bitcoin	Gold
Volatility	59%	12%
Drawdown	-84%	-45%
Drawdown Length	1 Year	4.25 Years
Avg. Intraday Price Change	6.4%	0.9%
Max Intraday Price Change	31.8%	2.9%

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Bitcoin's volatility is another concern. Since launching, price swings have been 5x as volatile as gold's, making it difficult for merchants to accept the cryptocurrency as a payment. Bitcoin's average intraday price change in the past two years exceeded 6%, though volatility has been decreasing.

Gold a Better Store of Value...for Now. Bitcoin is still best characterized as a speculative asset at this point. As Tyrone Ross Jr. of NobleBridge Wealth Management told Bloomberg Television, "Bitcoin is a call option on a store of value." Some of Bitcoin's characteristics give it store-of-value potential, but others currently make that non-viable. For example, since 2013, Bitcoin's value has swung by thousands of percent, while gold has been comparatively steady.

Bitcoin vs. Gold-Price Percentage Changes



ETFs and ETHE Mispricing

Grayscale Ethereum Premium Hits 2,000% Without ETF Safeguards. Retail investors were the likely victims of early trading in the Grayscale Ethereum Trust (ETHE), which closed at a 20-fold premium to its underlying net asset value on its second day of over-the-counter trading. ETHE is a private trust that acts like a closed-end fund, and it lacks an exchange-traded fund's ability to prevent such a large premium.

Even Worse Than It Looked for Some. ETHE's June 21 closing price of \$580 for a security with an underlying net asset value (NAV) of \$27.33 is bad for investors, and it was even worse for some. One share traded at 4:23 p.m. New York time for \$699.99, a 2,561% premium to closing NAV. While ETFs sometimes misprice, they do so far less frequently and less severely. With ETFs, market makers have incentives to use the creation-redemption process to arbitrage away bad pricing, keeping share supply close to demand and the trading price aligned with underlying NAV. ETHE acts more like a closed-end fund and lacks this functionality.

One ETHE Share Changed Hands for Almost \$700

Time	Size (x100)	Price	E	Cond
20:10:00	<min size>	580.00	V	CC
17:20:00		580.00	V	CC
16:25:46	0.2	666.9999	V	SD,OL
16:25:33	0.01	660.9999	V	SD,OL
16:23:33	0.01	667.00	V	SD,OL
16:23:24	0.2	666.99	V	SD,OL
16:23:21	0.01	699.9999	V	SD,OL
16:22:10	0.1	666.99	V	SD,OL
16:22:06	0.01	666.9999	V	SD,OL
16:20:59	0.02	666.99	V	SD,OL
16:02:52	6	526.00	V	FT
15:59:47	0.13	550.00	V	OL
15:59:23	0.01	525.00	V	OL
15:59:07	0.01	540.00	V	OL
15:59:01	0.27	543.00	V	OL

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Paying \$700 for a share of ETHE is the equivalent of \$7,271 for one Ether, more than 5x its all-time high during the 2017 crypto bubble.

Premium's Cause Likely Retail Investors. Retail investors excited at the prospect of trading ETHE likely drove its inaccurate pricing -- making them both the cause and the victims of the wide divergence with its net asset value. The retail crowd's role is evidenced by the fact that almost all of the trades on June 21, the second day of OTC trading, were well-below the lot size of 100 shares, with many involving just one share. A total of 3,566 shares traded that day, out of about 838,600 outstanding. The price plunged on June 24 as volume surged.

Small Sizes of ETHE Trades (QR<GO>)

Time	Size (x100) (min size)	Price	E	Cond	Time	Size (x100)	Price	E	Cond
15:24:29	0.01	667.00	V	SD,OL	15:20:01	0.01	566.00	V	OL
15:24:24	0.01	667.00	V	SD,OL	15:19:44	0.05	566.00	V	OL
15:24:17	0.03	667.00	V	SD,OL	15:19:35	0.01	566.00	V	OL
15:24:11	0.01	667.00	V	SD,OL	15:19:31	0.01	566.00	V	OL
15:22:55	0.01	661.00	V	SD,OL	15:19:22	0.01	565.00	V	OL
15:22:50	0.01	655.00	V	SD,OL	15:19:12	0.01	565.00	V	OL
15:22:22	0.05	655.00	V	OL	15:19:06	0.01	565.00	V	OL
15:22:01	0.05	640.00	V	OL	15:19:05	0.01	561.03	V	OL
15:21:51	0.01	640.00	V	OL	15:18:56	0.01	561.00	V	OL
15:21:37	0.01	625.00	V	OL	15:18:52	0.01	560.00	V	OL
15:21:23	0.05	610.00	V	OL	15:18:32	0.01	559.01	V	OL
15:21:15	0.01	610.00	V	OL	15:18:30	0.01	559.01	V	OL
15:21:01	0.01	610.00	V	OL	15:18:18	0.01	559.00	V	OL
15:20:50	0.01	600.00	V	OL	15:18:07	0.01	555.00	V	OL
15:20:44	0.01	600.00	V	OL	15:18:06	0.01	555.00	V	OL
15:20:30	0.01	570.01	V	OL	15:18:03	0.01	555.00	V	OL
15:20:28	0.01	570.01	V	OL	15:17:34	0.24	543.50	V	OL
15:20:17	0.01	569.99	V	OL	15:17:29	0.01	543.00	V	OL
15:20:13	0.05	575.00	V	OL	15:16:03	0.03	541.9999	V	OL

SEC Should Weigh Risks of Crypto Products. The Securities and Exchange Commission should take into account the risks and deficiencies of products already on the market when considering whether to approve a cryptocurrency ETF. ETHE, an open-ended grantor trust that isn't registered with the SEC, trades over-the-counter and isn't subject to the regulatory requirements of typical funds. While available to any investor with access to an OTC broker, ETHE can be subject to massive mispricings. SEC Commissioner Hester Peirce said allowing a crypto exchange-traded product would reduce risks for retail investors in her dissent of the denial of a Bitcoin ETP.

Government Filing

"An ETP based on bitcoin would offer investors indirect exposure to bitcoin through a product that trades on a regulated securities market and in a manner that eliminates some of the frictions and worries of buying and holding bitcoin directly. If we were to approve the ETP at issue here, investors could choose whether to buy it or avoid it."

Hester M. Peirce - Commissioner, Securities Exchange Commission
Sec.gov, July 26, 2018

{CRYP} Page on the Bloomberg Terminal

Index	Last	Net Chg	% Chg	Open	Yest Close	2D Chart	30D Rng	Time
1 BGC Bloomberg Galaxy	544.91	+14.41	2.72%	543.70	544.91		Base USD	07/02

Coins	Last	Net Chg	% Chg	Bid	Ask	2D Chart	30D Rng	Time
10 Bitcoin	10676.22	-38.66	-0.36%	10673.14	10679.30		18:05	
12 Bitcoin Cash	405.38	+4.63	1.16%	404.80	405.97		18:05	
13 Dash	151.957	-0.589	-0.39%	151.170	152.744		18:05	
14 EOS	5.8263	-0.0182	-0.31%	5.8204	5.8322		18:05	
15 Ethereum	287.600	-0.690	-0.24%	287.460	287.740		18:05	
16 Ethereum Classic	7.708	-0.016	-0.21%	7.702	7.714		18:05	
17 Litecoin	117.305	+0.204	0.17%	117.180	117.430		18:05	
18 Monero	86.349	-0.091	-0.11%	86.160	86.537		18:05	
19 Ripple	0.3959	-0.0001	-0.03%	0.3957	0.3962		18:05	
20 Zcash	100.740	-0.418	-0.41%	100.580	100.950		18:05	

Futures	Last	Net Chg	Volume	Open	Settle	2D Chart	30D Rng	Time
20 CME Bitcoin	10885	-105	26	10890	10990		18:05	

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- 41) Bitcoin Sees Support at \$10,000 After Giving Back Much of Rally BN 11:50
- 42) Facebook's Cryptocurrency Plan Facing New Calls for Moratorium BN 13:07
- 43) Bitcoin's Wild June Is a 'Slam Dunk' Against Crypto ETF Approval BN 09:57
- 750) Daily Bitcoin: First Successful Blockchain-tracked Shipment from South Korea to the Netherlands WE9 18:05
- 749) Daily Bitcoin: How Does Binance Compare to the Crypto Competition? WE9 18:05
- 44) NSRGY: Nestle to collaborate with OpenSC over open blockchain pi FLY 18:01
- 45) NewsBTC: Bitcoin Futures at 20x Leverage: How Does Binance Compare to the Crypto Competition? BLG 18:01
- 46) Coingeography: Advocacy Groups Call on Congress to Stop Libra Development Until July Hearings Ta.. NS1 17:57
- 47) Waters Sends Facebook Letter to Formally Urge Libra Moratorium BFW 17:56

As of July 2, 2019

{BI COMD} Cryptos, Under Data Library

Name	MTD % Change	1 Mth % Change	3 Mth % Change	YTD % Change	1 Yr % Change	2 Yr % Change
Bloomberg Galaxy Crypto Index						
Bloomberg Galaxy Crypto Index (BGCI)	-7.8	8.0	68.1	109.1	-12.1	
USD Cross						
Litecoin (LTC)	-1.7	5.4	22.0	298.1	34.0	
Bitcoin (BTC)	-12.1	25.5	102.7	192.1	62.3	319.7
Bitcoin Cash (BCH)	-5.5	-5.1	18.6	166.3	-47.5	
EOS (EOS)	-4.4	-18.0	0.2	129.1	-35.1	
Ethereum (ETH)	-5.8	10.7	61.8	121.9	-38.6	
Dash (DASH)	-10.3	-6.0	10.6	90.2	-39.6	
Monero (XMR)	-12.9	-7.6	19.4	89.9	-38.4	
Zcash (ZEC)	-9.0	16.0	32.6	75.3	-44.6	
Ethereum Classic (ETC)	-3.0	-18.2	26.7	51.7	-53.1	
Ripple (XRP)	-4.9	-10.0	6.6	14.6	-20.1	
MVIS CryptoCompare Indices						
Single Asset Indices						
Bitcoin (BTC)	-12.6	27.6	126.3	192.9		
Iota (MIOTA)	-5.0	-18.7	16.7	6.2	-64.9	
NEO (NEO)	-78.5	-69.2	-64.8	-48.4	-88.3	-51.7
Ethereum Classic (ETC)	-78.0	-79.0	-68.3	-66.6	-89.1	-90.1
Bitcoin Cash (BCH)	-90.5	-90.5	-81.4	-73.9	-92.3	
ZCash (ZEC)	-94.2	-92.5	-90.5	-88.9	-96.3	-97.9
Ethereum (ETH)	-96.3	-95.6	-92.8	-91.5	-97.4	-95.8
Litecoin (LTC)	-98.0	-97.8	-96.7	-92.2	-97.0	-93.9
Dash (DASH)	-96.9	-96.7	-95.6	-93.2	-97.7	-96.9
NEM (NEM)	-96.0	-95.9	-94.3	-94.2	-97.9	-97.7
Monero (XMR)	-97.3	-97.1	-95.9	-94.4	-98.0	-94.0
Ripple (XRP)	-96.7	-96.8	-96.1	-96.3	-97.1	-94.6
Bitcoin (BTC)	-99.6	-99.5	-99.1	-98.9	-99.3	-97.9
Multi-Asset Indices						
Digital Assets 100 Large Cap	-97.2	-96.4	-94.1	-92.6	-96.3	-92.0
Digital Assets 100 Mid Cap	-95.3	-95.1	-94.8	-92.7	-98.0	-97.3
Digital Assets 100	-97.1	-96.4	-94.2	-92.7	-96.6	-92.5
Digital Assets 25	-97.9	-97.6	-96.5	-95.1	-98.1	-95.4
Digital Assets 10	-98.0	-97.7	-96.4	-95.5	-97.9	-95.4
Digital Assets 5	-98.3	-97.9	-96.6	-96.0	-98.1	-95.8
Digital Assets 100 Small Cap	-99.1	-99.0	-98.9	-98.4	-99.7	-99.1
MVIS IP owned by Van Eck, distributed by ...						
Bitwise Crypto Indices						
Multi-Asset Indices						
Bitwise 100 Total Market Crypto Index	-10.6	16.8	90.6	130.9	13.8	126.8
Bitwise 20 Mid Cap Crypto Index	-2.2	6.6	29.7	53.2	-54.1	-43.0
Bitwise 70 Small Cap Crypto Index	-2.9	-7.6	-0.7	50.7	-56.4	-26.5
Bitwise Hold 10 Large Cap Crypto In...	-98.3	-97.9	-96.6	-96.0	-98.1	-95.8
Bitwise IP Owned by Bitwise Asset Manage...						
BTC Cross						
Litecoin (LTC)	2.7	-17.8	-28.1	36.4	-15.4	
Bitcoin Cash (BCH)	11.1	-26.7	-16.9	-7.1	-68.0	
EOS (EOS)	9.8	-42.4	-45.5	-20.8	-59.7	
Ethereum (ETH)	8.3	-14.5	-19.2	-24.1	-62.5	
Dash (DASH)	2.6	-25.2	-44.5	-34.6	-62.5	
Monero (XMR)	-0.6	-26.0	-41.9	-34.9	-62.2	
Zcash (ZEC)	3.8	-9.4	-33.9	-39.9	-66.3	
Ethereum Classic (ETC)	10.5	-27.4	-35.2	-48.0	-71.5	
Ripple (XRP)	20.9	-22.4	-44.8	-57.5	-46.0	

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