

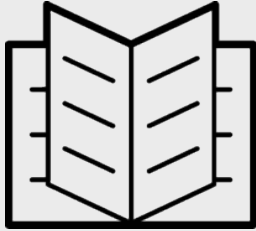
STATE OF
BLOCKCHAIN
2018

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4. INVESTMENT

5. GOVERNMENT & REGULATION

6. SENTIMENT SURVEY

7. COINDESK

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1

EXECUTIVE SUMMARY



Bitcoin & cryptocurrencies make historic moves:

- After uncertainty around fork ends, bitcoin's price breaks free and topples multiple milestones. Meanwhile, BTC dominance shrinks to all-time lows.

Demand for bitcoin tests market infrastructure:

- Bitcoin fees increase dramatically. While Coinbase hits #1 app on iTunes, it and all exchanges struggle to cope with demand.

Key metrics up across public blockchains:

- Hashrate, >1MB Bitcoin blocks, ethereum blockchain transaction records, all time valuations

ICOs and VC hit new highs:

- \$3.23bn for ICOs and \$200mn for VC. However, forks were the largest token generating event of the year with \$44bn created.

Futures launch successfully:

- CME & Cboe launch with high interest but low volume. Large traders shorted and small traders longed.

Sentiment Survey:

- 81% did not go into debt to buy crypto. Of those that did, 52% already paid it back. 94% check prices at least every day.



Q4 2017 Trends: Public Blockchains



- Total cryptocurrency market cap breaks \$600bn, nearly as much as the GDP of Argentina.
- Fees moderately increase in general, but soar for BTC.
- Bitcoin dominance falls below 40% after a rebound above 50% early in the quarter.
- Many cryptocurrencies reached all time highs, notably BTC at almost \$20k and ETH at almost \$1k.
- CryptoKitties' popularity slowed down the ethereum network but showed promise for future developments.
- Bitcoin Cash solidifies within the top 10 market cap with a hashrate that surpassed BTC's for one day in November.

Data Sources: [CoinDesk](#), [Image](#)
Notes: Expanded upon in [Section 2: Public Blockchains](#)



Q4 2017 Trends: Enterprise Blockchains



- R3 adds members, launches, Corda version 2.0. Corda becomes the first DLT to be accessible on Amazon Web Services (AWS).

- Enterprise Ethereum Alliance adds members & 3 new working groups.

- We.Trade, founded by 9 banks, aims to ease European domestic and cross-border trade with DLT made by IBM.

- Hyperledger members CME Group, Deutsche Borse Group, R3, downgrade their membership to general. 15 other organizations cancel their membership.



Q4 2017 Trends: Trading & Investment



- Total raised by ICOs hits \$3.23bn in Q4, with VC amounting to \$200mn. Q3 to Q4 growth less spectacular when shown in ETH (+56%) vs. USD (+146%).

- Forks have raised 8x more than ICOs. Token generating events (TGE) are split between \$44bn in forks vs. \$5bn in ICOs cumulatively.

- Bitcoin futures see high interest but low volume, with small traders going long and large traders going short.



Q4 2017 Trends: Regulation & Government



- The CFTC approved CME & Cboe's launch of bitcoin futures contracts.
- South Korea sees higher levels of regulation on trading.
- Bitfinex & Tether become targets of US regulators after suspicious activity results in subpoena.
- Russia moves to define regulatory environment with submission of new bill.



2

PUBLIC BLOCKCHAINS



Q4 2017 Public Blockchain Summary

Aggregate market cap breaks \$600bn:

- Public blockchain assets rallied 3x, over \$75bn in value over the quarter.

Bitcoin dominance falls below 40%:

- Bitcoin ceded its +50% Q2 to Q3 comeback.

Some fees rise, but BTC's fees soar:

- Fees generally increased but BTC saw record-breaking fees and congestion in Q4.

Ripple grew ~300x YTD:

- All major cryptocurrencies are up approximately 1,000%.

Sector sees all-time high interest:

- Google searches for blockchain terms see new highs, especially in December.

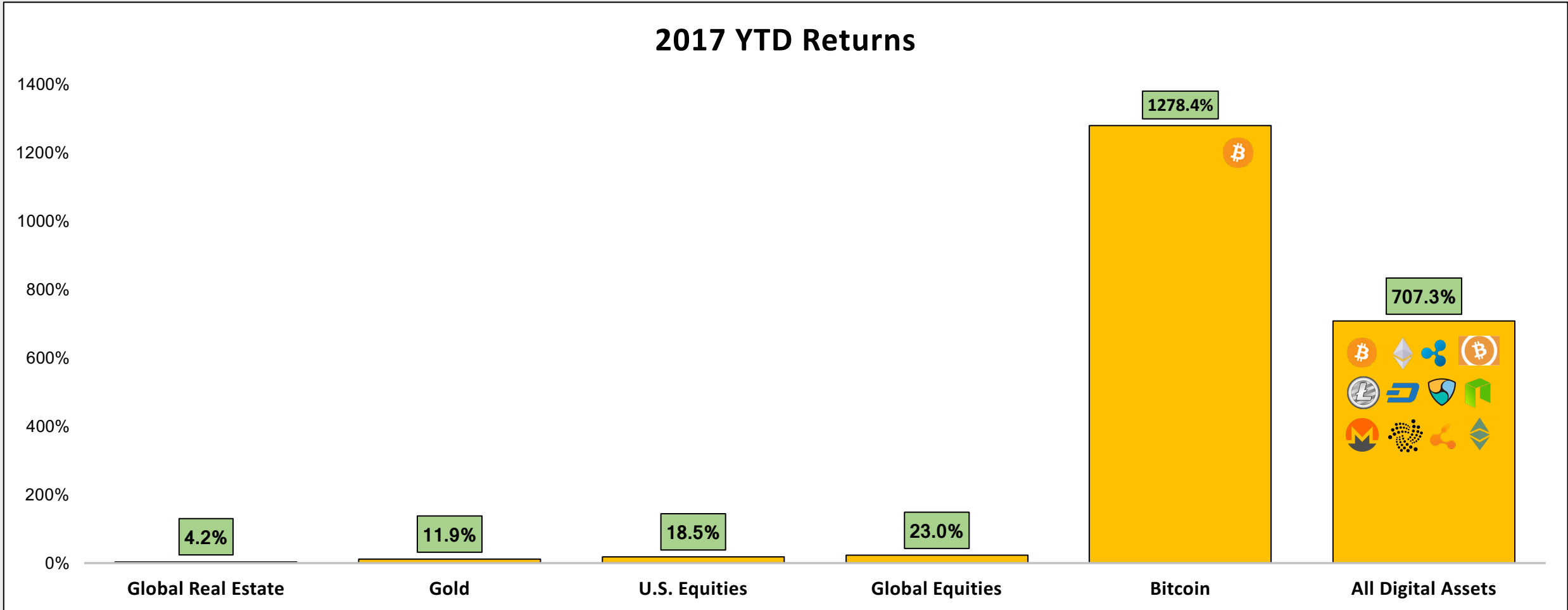
Transactions hit new highs:

- Transactions on major blockchains increased, ethereum broke all-time transaction records.



Digital Assets Outperformed Traditional Assets

Nearly 13x Return YTD

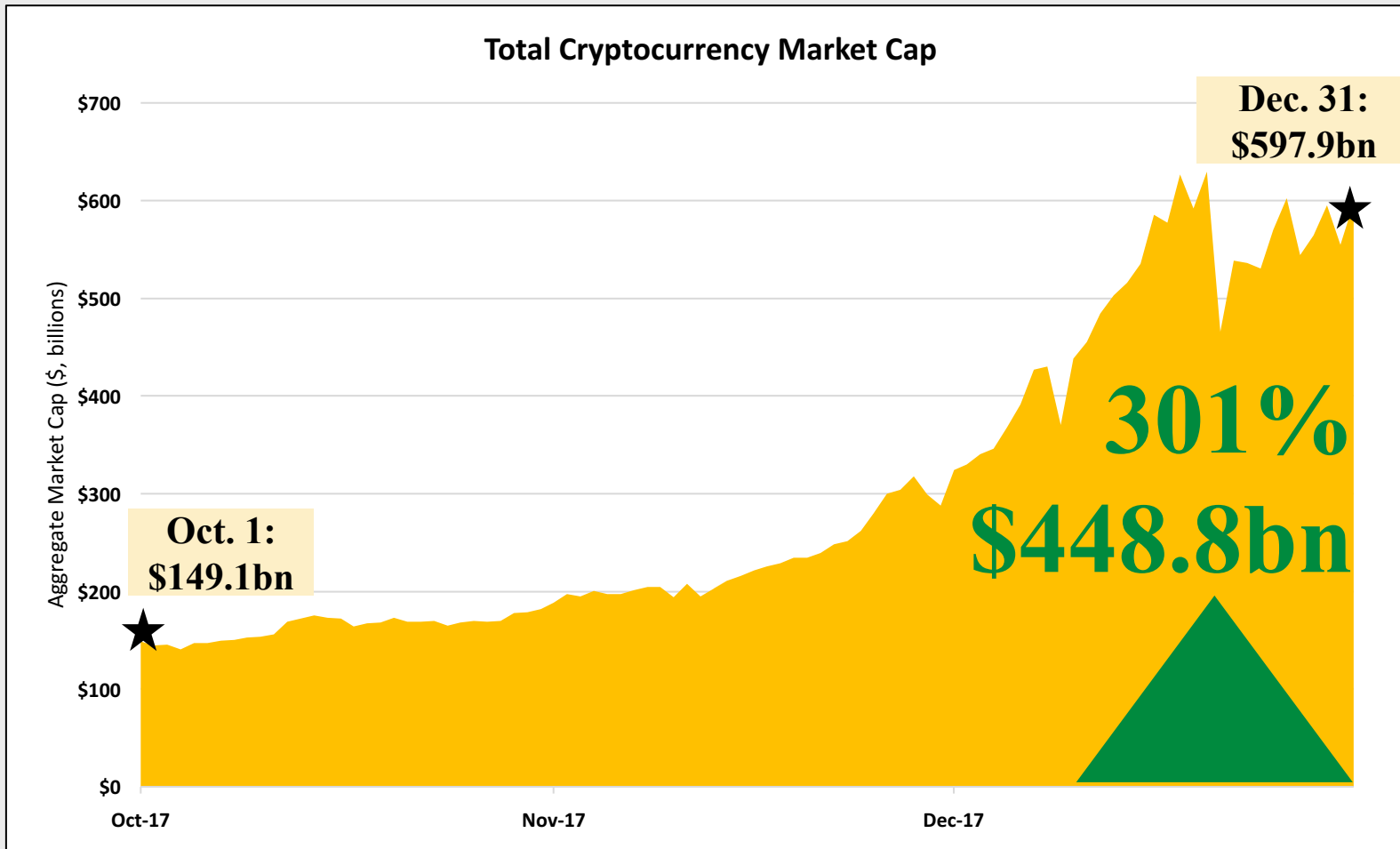


Data Source: [Yahoo! Finance](#), [Coincap](#), [Coin.Dance](#)

Notes: Daily data, RWO, GLD, SPY, CWI, & BTC prices, all cryptocurrency market cap, data through 12/31/2017



Total Cryptocurrency Market Cap Increased Over 50% Reached All-Time High Above \$600bn in Q4



For some context, the market cap of:

Western Union ≈ \$10 billion

Ether ≈ \$70 billion

Bitcoin ≈ \$250 billion

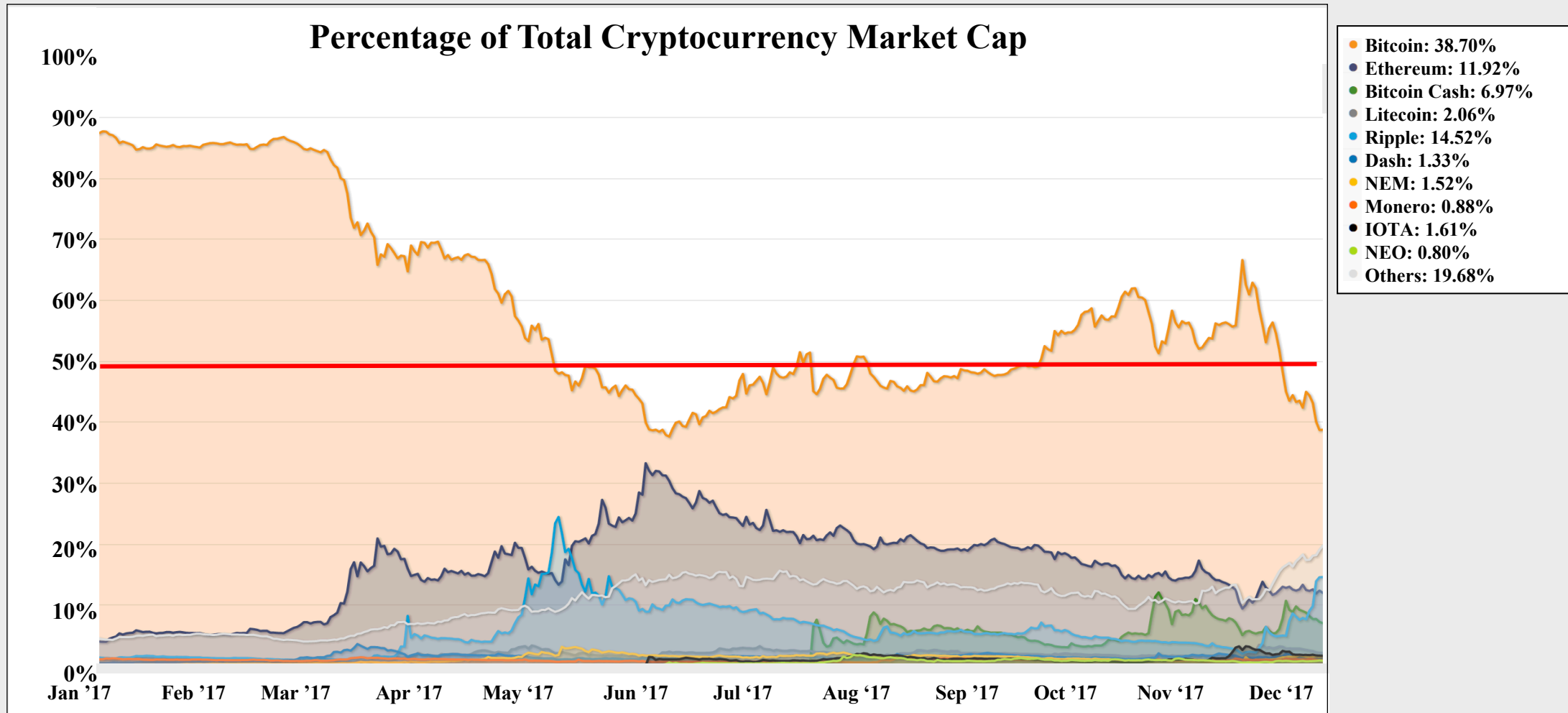
All Cryptocurrencies ≈ \$600 billion

Visa ≈ \$250 billion

Gold ≈ \$8 trillion



The Fall of Bitcoin Maximalism? BTC Dominance Fell below 40%

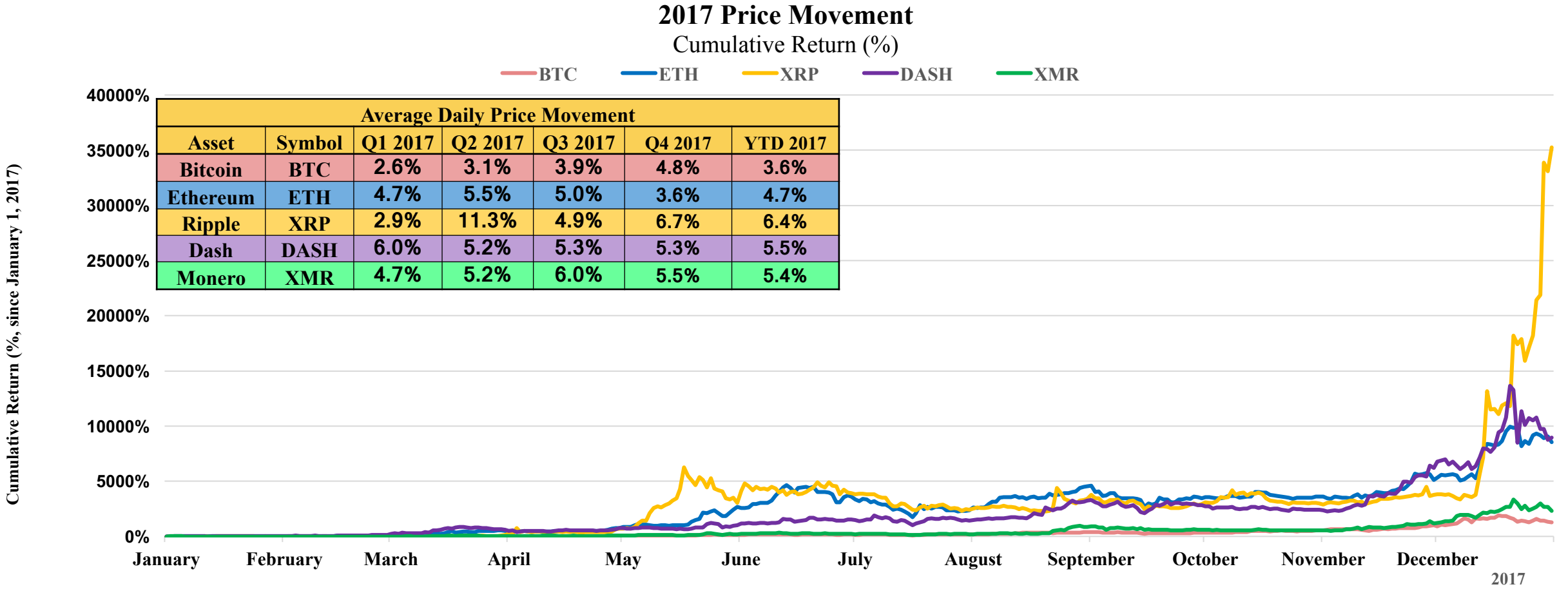


Data Source: [CoinMarketCap](#)



Ripple Rallied ~35000% Year to Date

Exceeded 6% Average Daily Volatility



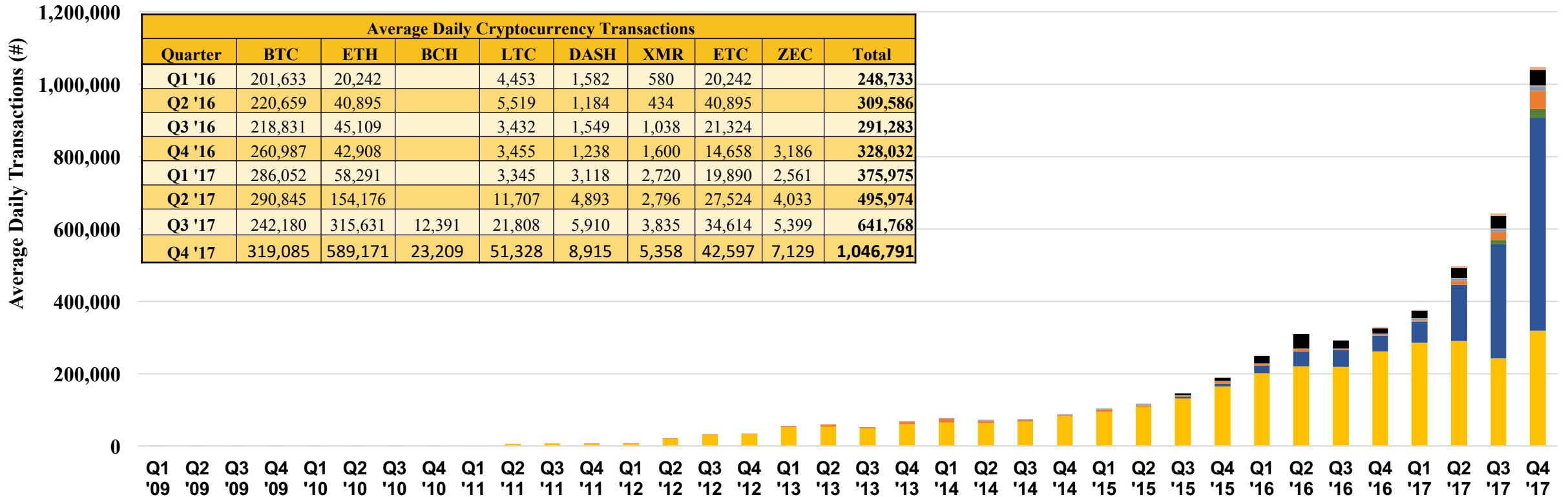
Data Source: [Coincap](#), [Coinmetrics](#), [CoinMarketCap](#)
 Notes: Average day over day price movement (absolute value)



Transactions on Major Blockchains Increased, Especially ETH

Daily Cryptocurrency Transactions

■ BTC ■ ETH ■ BCH ■ LTC ■ DASH ■ XMR ■ ETC ■ ZEC



Data Source: [Bitinfocharts](#), [Coinmetrics](#)

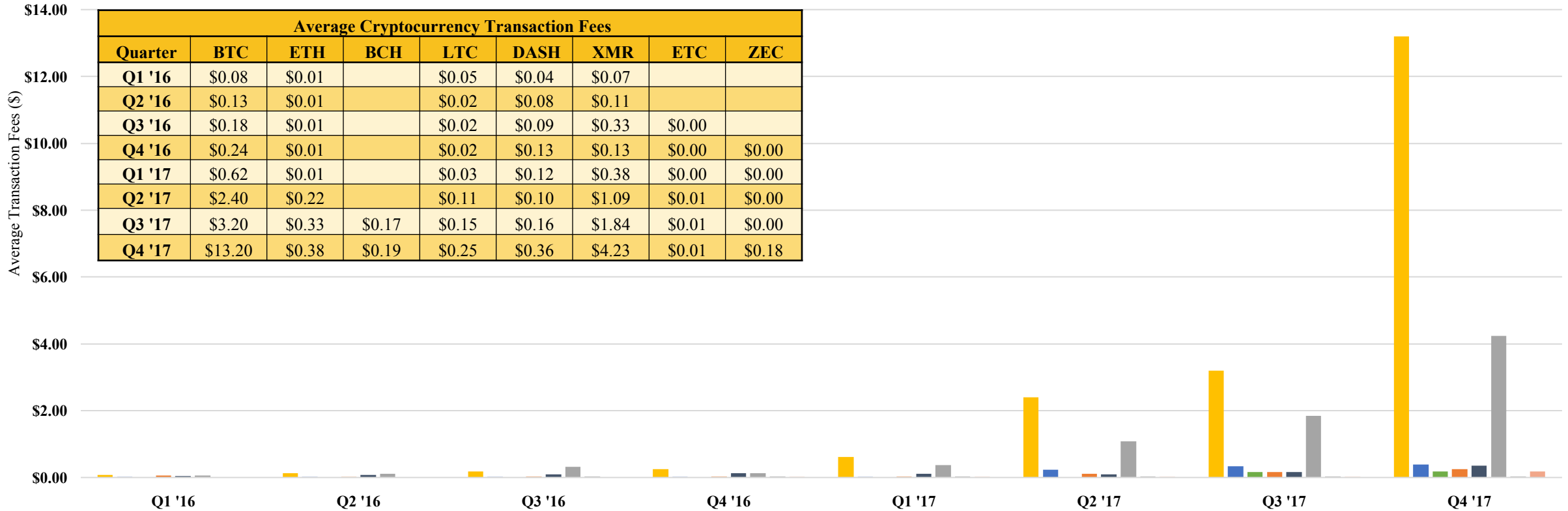


Average Transaction Fees Rose for All Major Cryptocurrencies

BTC Fees More Than 4x Since Q3

Cryptocurrency Transaction Fees

■ BTC ■ ETH ■ BCH ■ LTC ■ DASH ■ XMR ■ ETC ■ ZEC

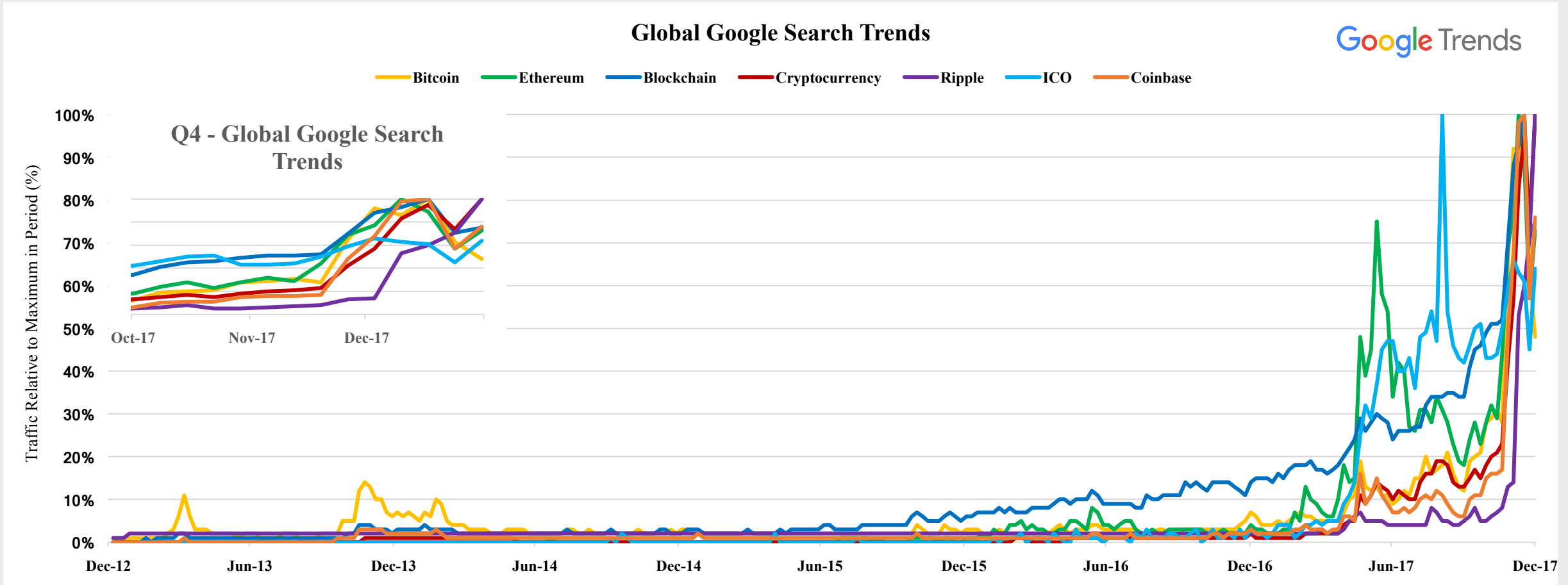


Data Source: [Bitinfocharts](#), [Coinmetrics](#)



Many Blockchain Terms Hit an All-Time Google Search High

Ethereum Searches Fell from a Peak in Q2 2017

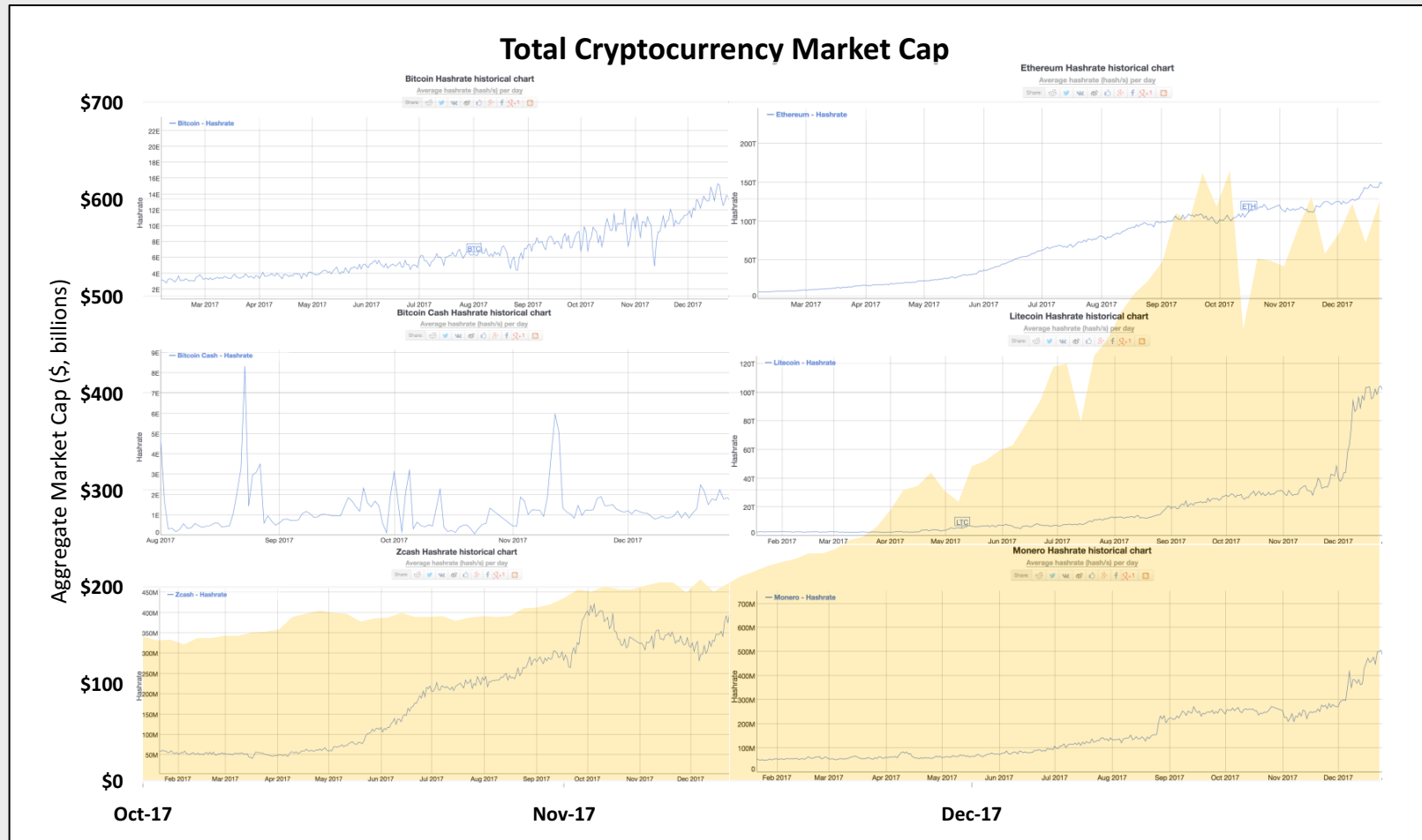


Data Source: [Google Trends](#)

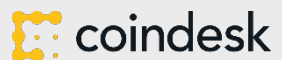


More Money, More Miners

Increased Market Cap → Increased Hashrate Across Coins



Data Source:





2A

BITCOIN



Bitcoin almost breaks \$20,000:

- This quarter saw multiple all time highs that ranged from \$5k to \$19k.

Transaction fees soared:

- Average transaction fees rose about 300% from Q3.

Fork postponed:

- The 2 MB block size increase was called off due to lack of support.

Global trading volume continued growth:

- JPY, USD solidify large shares.

Transactions rebound:

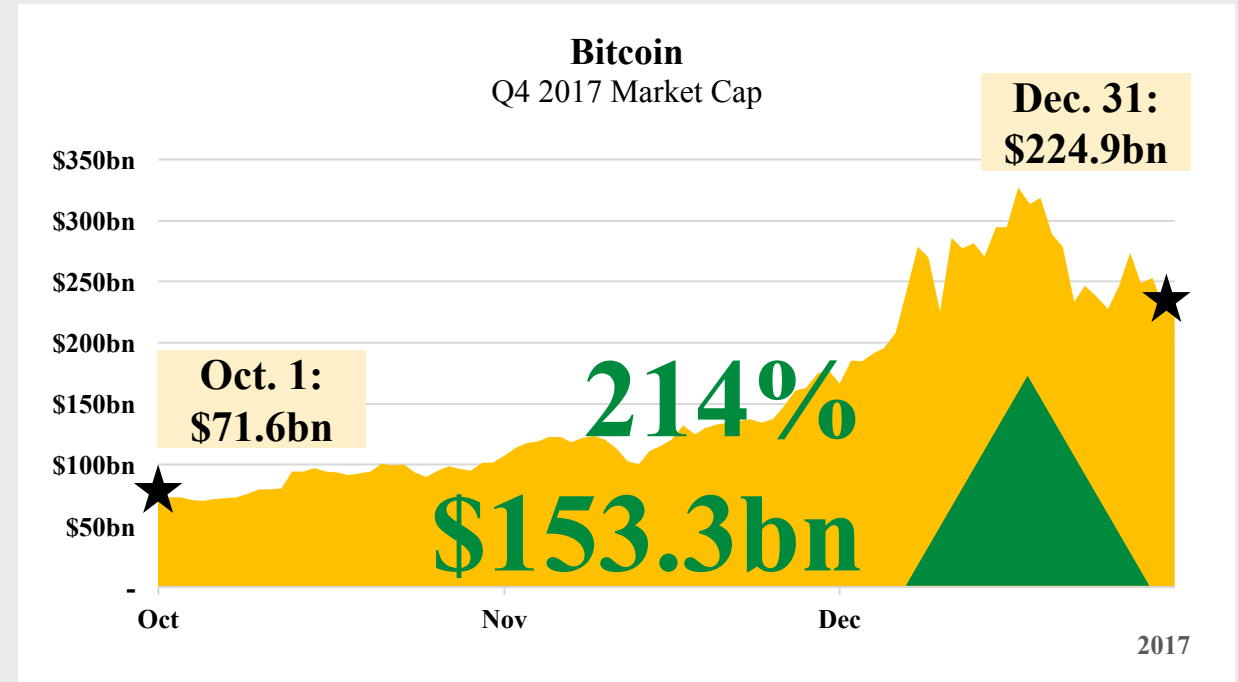
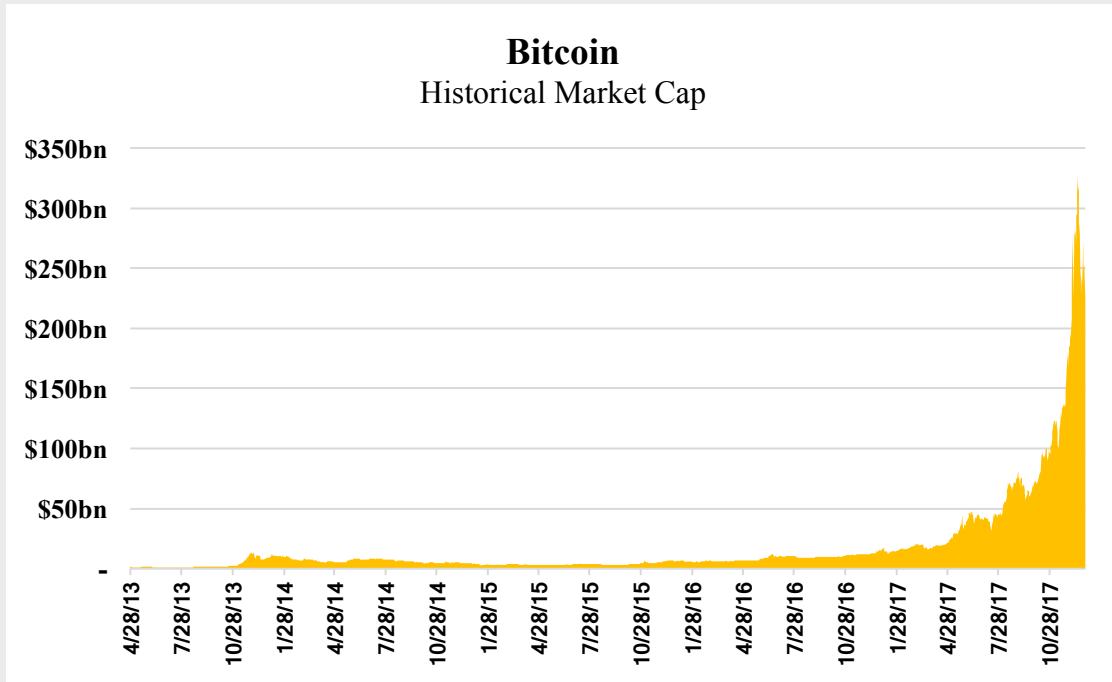
- The number of transactions rebounded about 30% from Q3 dip.

Hashrate up 60% to new all time high:

- Network security continued to grow but BCH had more at one day in November.



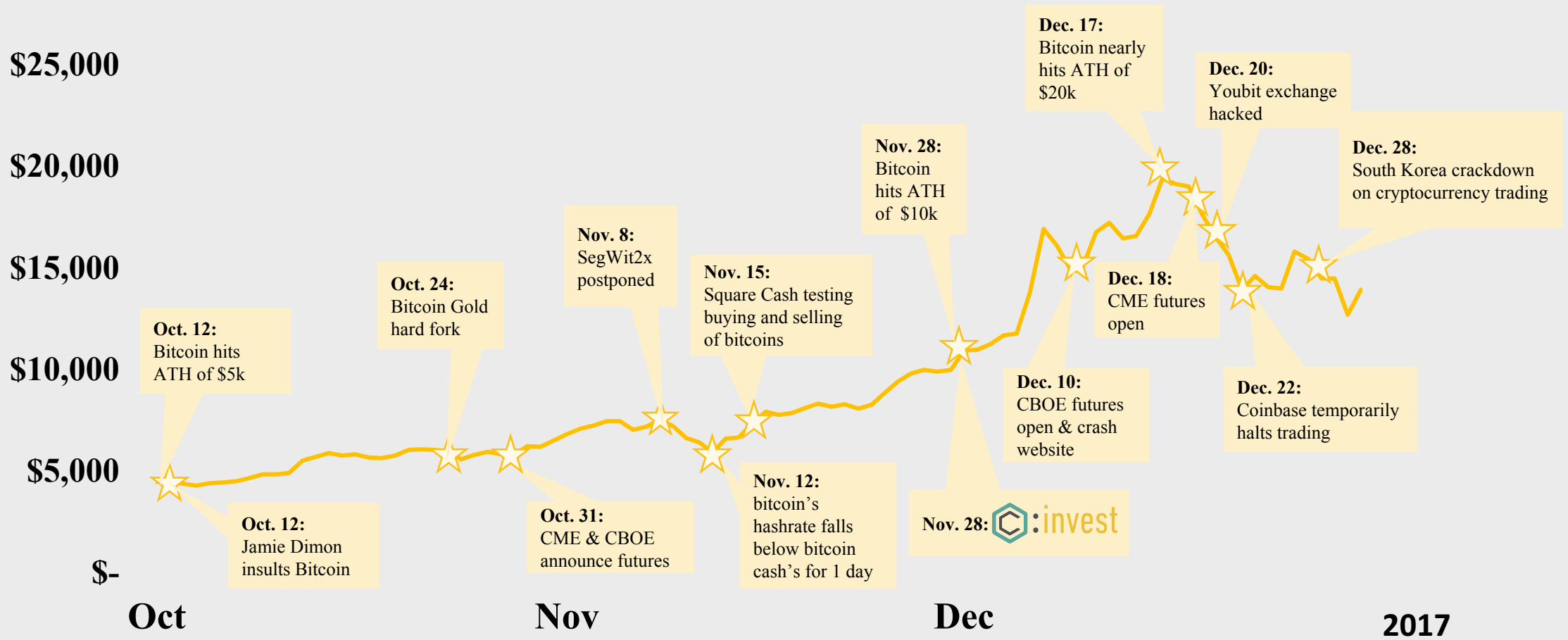
Bitcoin Ended Ambitious Quarter Up 214% Set a New All-Time High Above \$300bn



Data Source: [Coincap](#), [Coinmetrics](#)



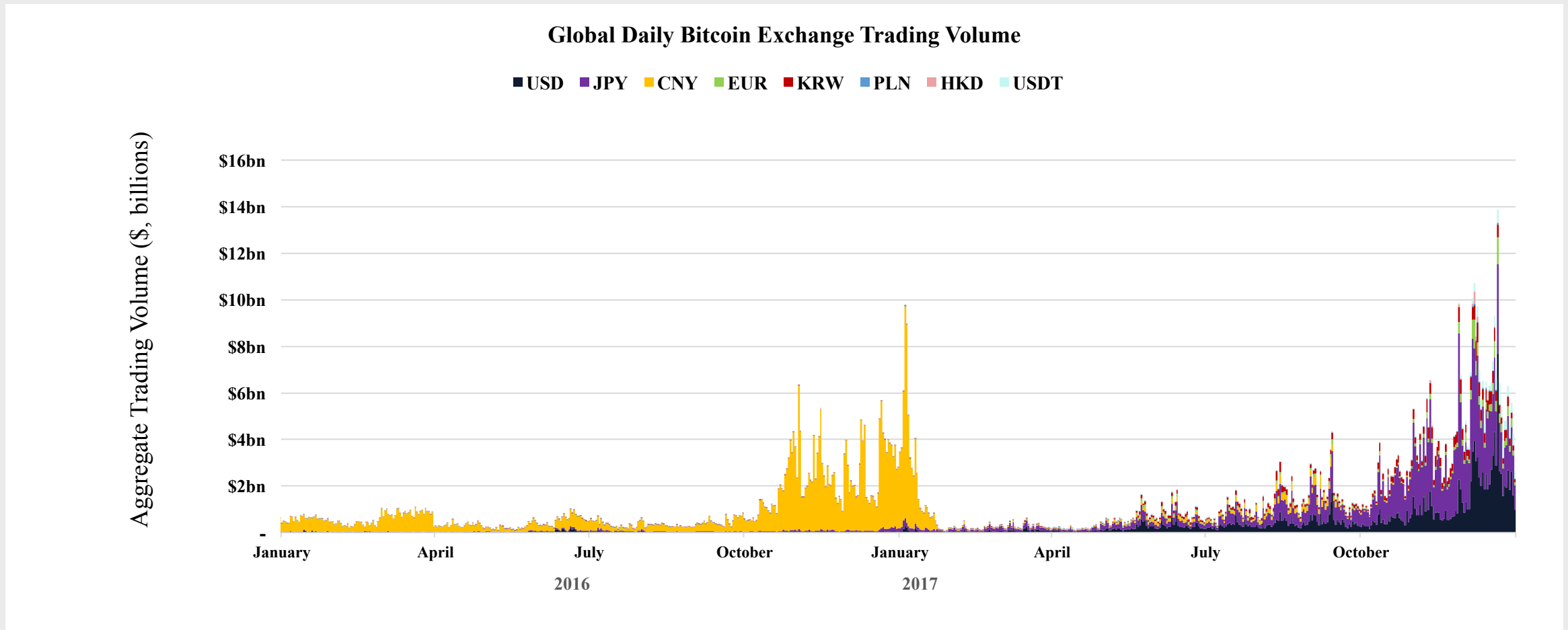
Bitcoin Price & Key Market Events



Data Sources: [CoinDesk](#), [bitcoin price page](#)



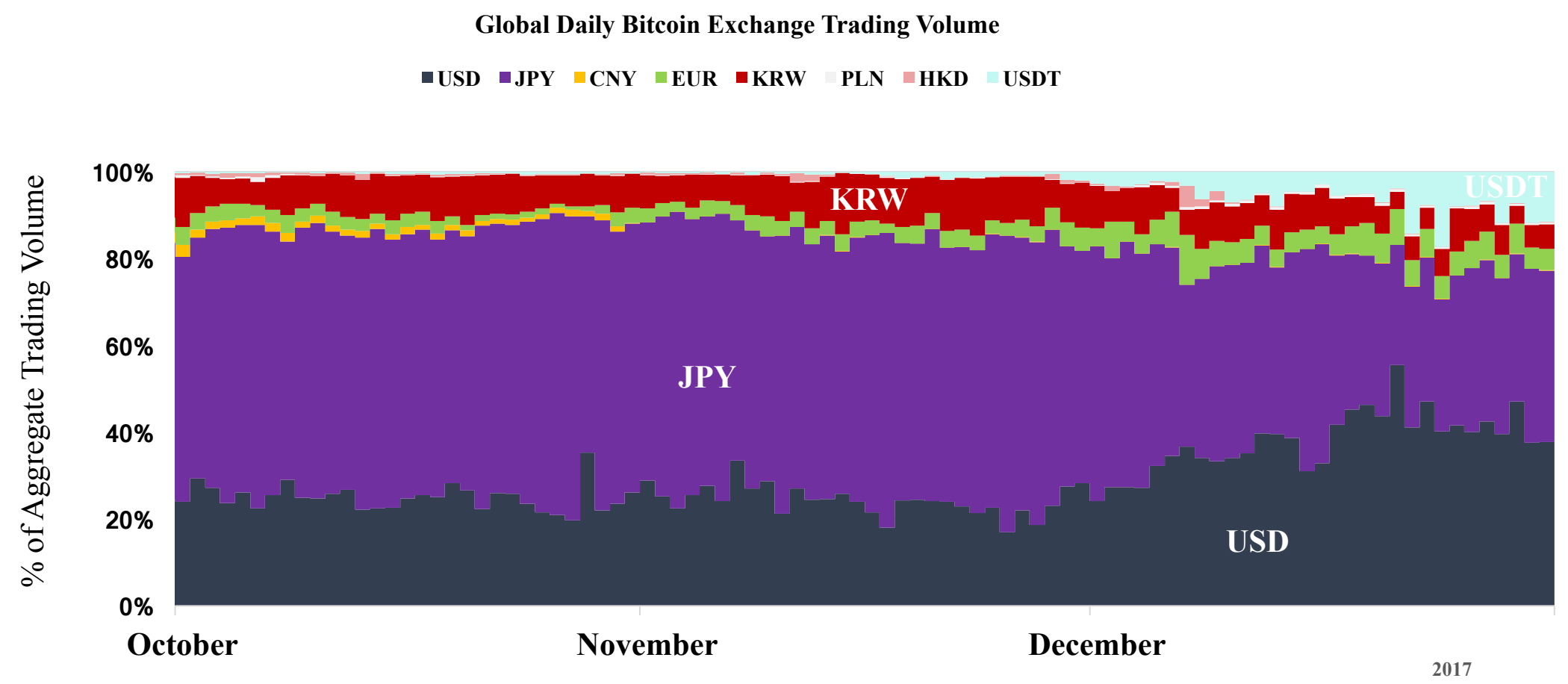
Global Trading Volumes Take Off USD & JPY Solidify Large Shares



Data Source: [CryptoCompare](#)



Q4 2017 - Global Daily Bitcoin Exchange Trading Volume

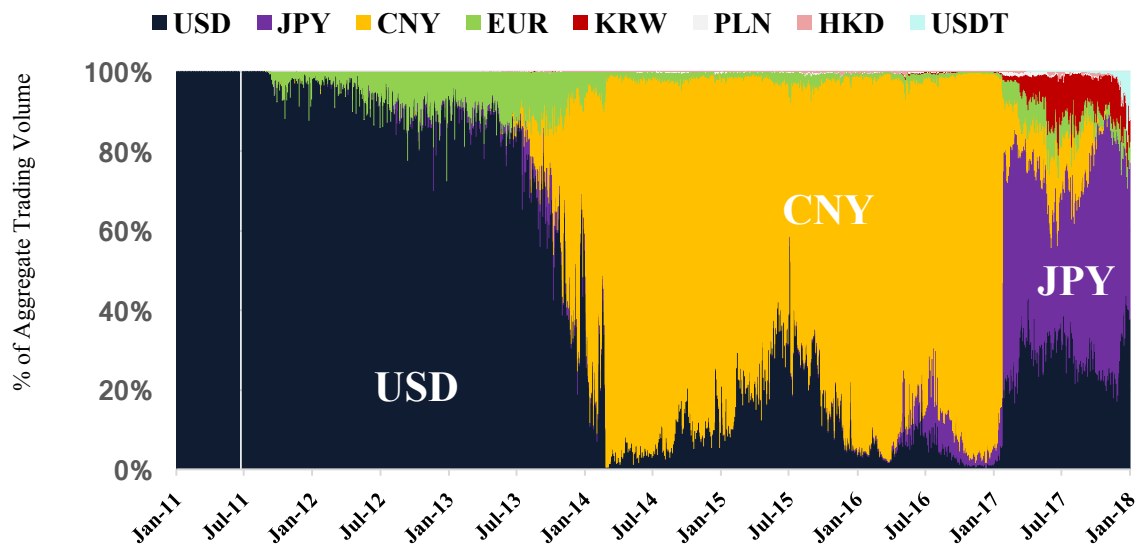


Data Source: [CryptoCompare](#)

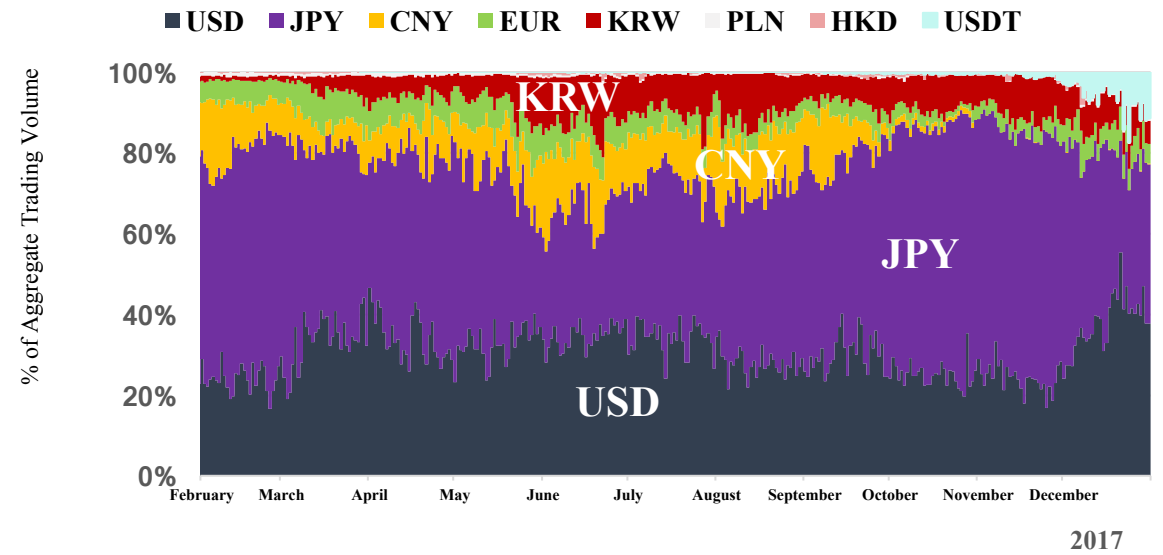


Global Trading Volume Dominated by USD and JPY

Global Daily Bitcoin Exchange Trading Volume



Global Daily Bitcoin Exchange Trading Volume



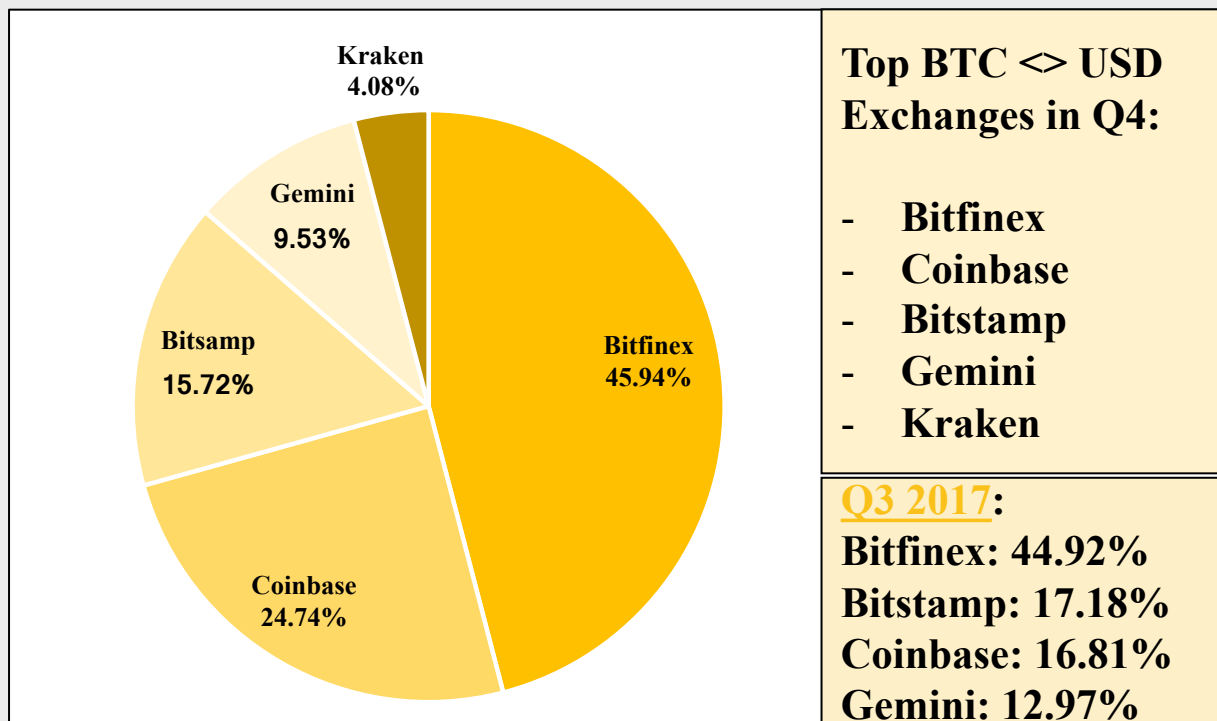
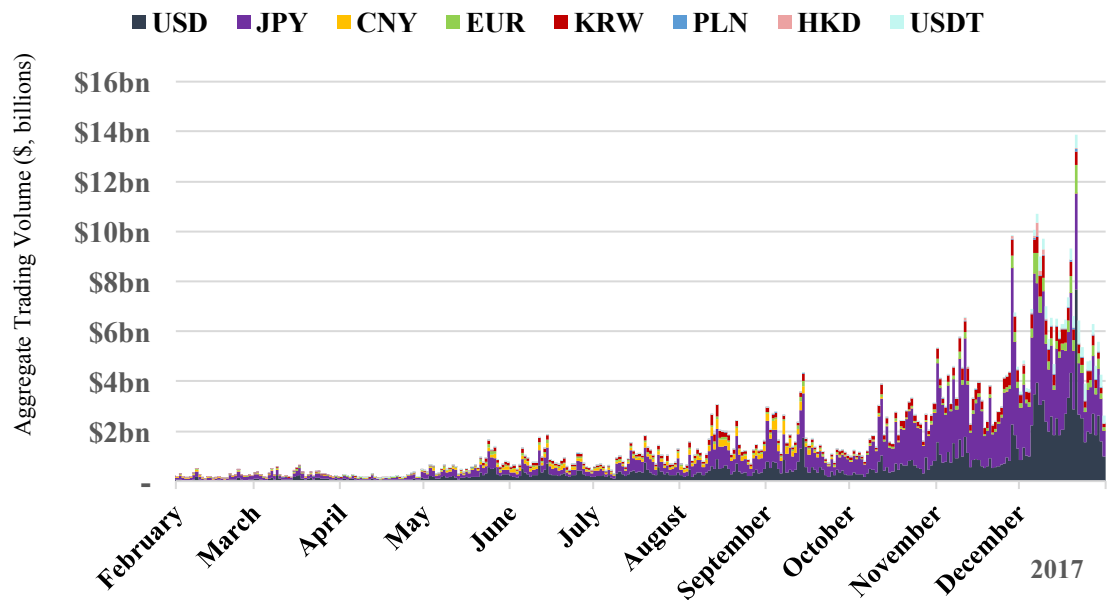
Data Source: [CryptoCompare](#)



Exchange Trading Volume Increased

Bitfinex, With Margin Trading, is the Largest USD Exchange

Global Daily Bitcoin Exchange Trading Volume

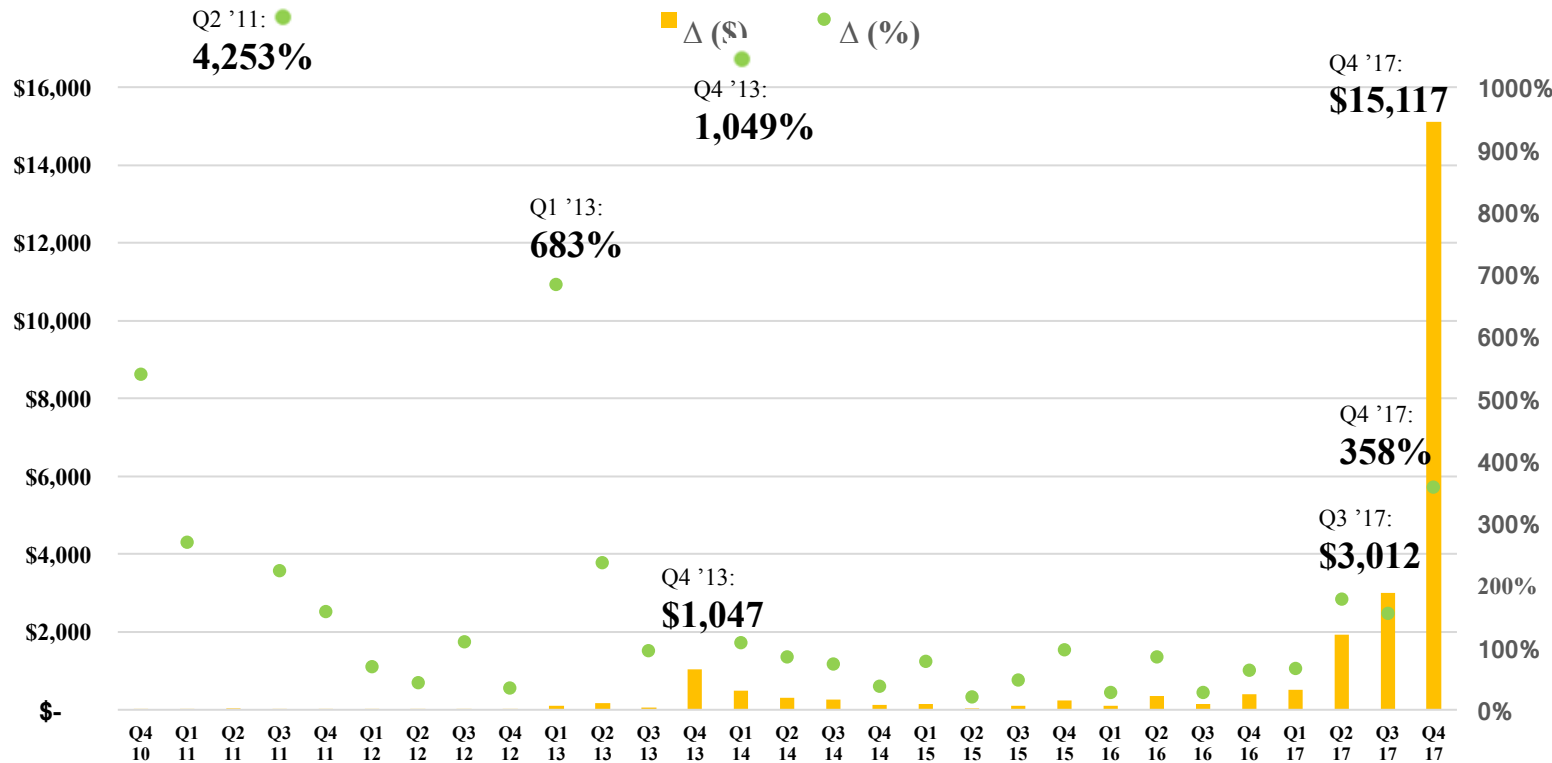


Data Source: [CryptoCompare](https://cryptocompare.com)



Bitcoin Price Varied From \$2,000 to \$5,000 Second Straight Largest Quarterly \$ Variation

Quarterly Price Range



Quarter	High	Low	Δ (\$)	Δ (%)
Q4 10	\$0.39	\$0.06	\$0.33	538.3%
Q1 11	\$1.09	\$0.30	\$0.80	269.5%
Q2 11	\$29.60	\$0.68	\$28.92	4252.9%
Q3 11	\$15.44	\$4.77	\$10.67	223.7%
Q4 11	\$5.27	\$2.05	\$3.22	157.0%
Q1 12	\$7.11	\$4.22	\$2.89	68.5%
Q2 12	\$6.69	\$4.69	\$2.00	42.7%
Q3 12	\$13.50	\$6.45	\$7.05	109.3%
Q4 12	\$13.70	\$10.17	\$3.53	34.7%
Q1 13	\$104.00	\$13.28	\$90.72	683.1%
Q2 13	\$230.00	\$68.36	\$161.64	236.5%
Q3 13	\$129.46	\$66.34	\$63.12	95.1%
Q4 13	\$1,147.25	\$99.81	\$1,047.43	1049.4%
Q1 14	\$951.39	\$458.50	\$492.89	107.5%
Q2 14	\$665.73	\$360.84	\$304.89	84.5%
Q3 14	\$647.34	\$374.73	\$272.61	72.7%
Q4 14	\$427.24	\$309.87	\$117.37	37.9%
Q1 15	\$314.59	\$177.28	\$137.31	77.5%
Q2 15	\$262.48	\$218.27	\$44.21	20.3%
Q3 15	\$309.98	\$209.13	\$100.85	48.2%
Q4 15	\$465.50	\$237.40	\$228.10	96.1%
Q1 16	\$458.28	\$358.77	\$99.51	27.7%
Q2 16	\$768.24	\$417.01	\$351.23	84.2%
Q3 16	\$703.69	\$552.82	\$150.87	27.3%
Q4 16	\$997.69	\$609.38	\$388.31	63.7%
Q1 17	\$1,290.79	\$775.98	\$514.80	66.3%
Q2 17	\$3,018.55	\$1,089.51	\$1,929.03	177.1%
Q3 17	\$4,950.72	\$1,938.94	\$3,011.78	155.3%
Q4 17	\$19,343.04	\$4,225.92	\$15,117.12	357.7%

Data Source: [CoinDesk bitcoin price page](#)

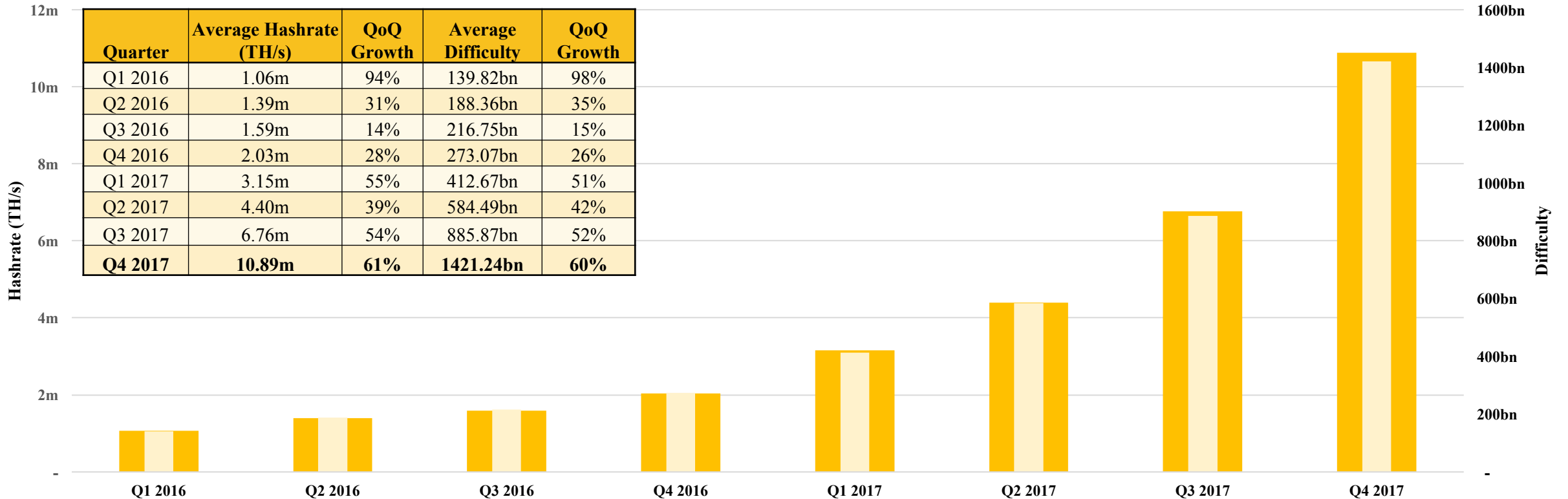


Hashrate

Hashrate and Mining Difficulty Up 50% to Another All-Time High

Bitcoin Network Security

■ Average Hashrate (TH/s) ■ Average Difficulty



Data Source: [Blockchain](#)

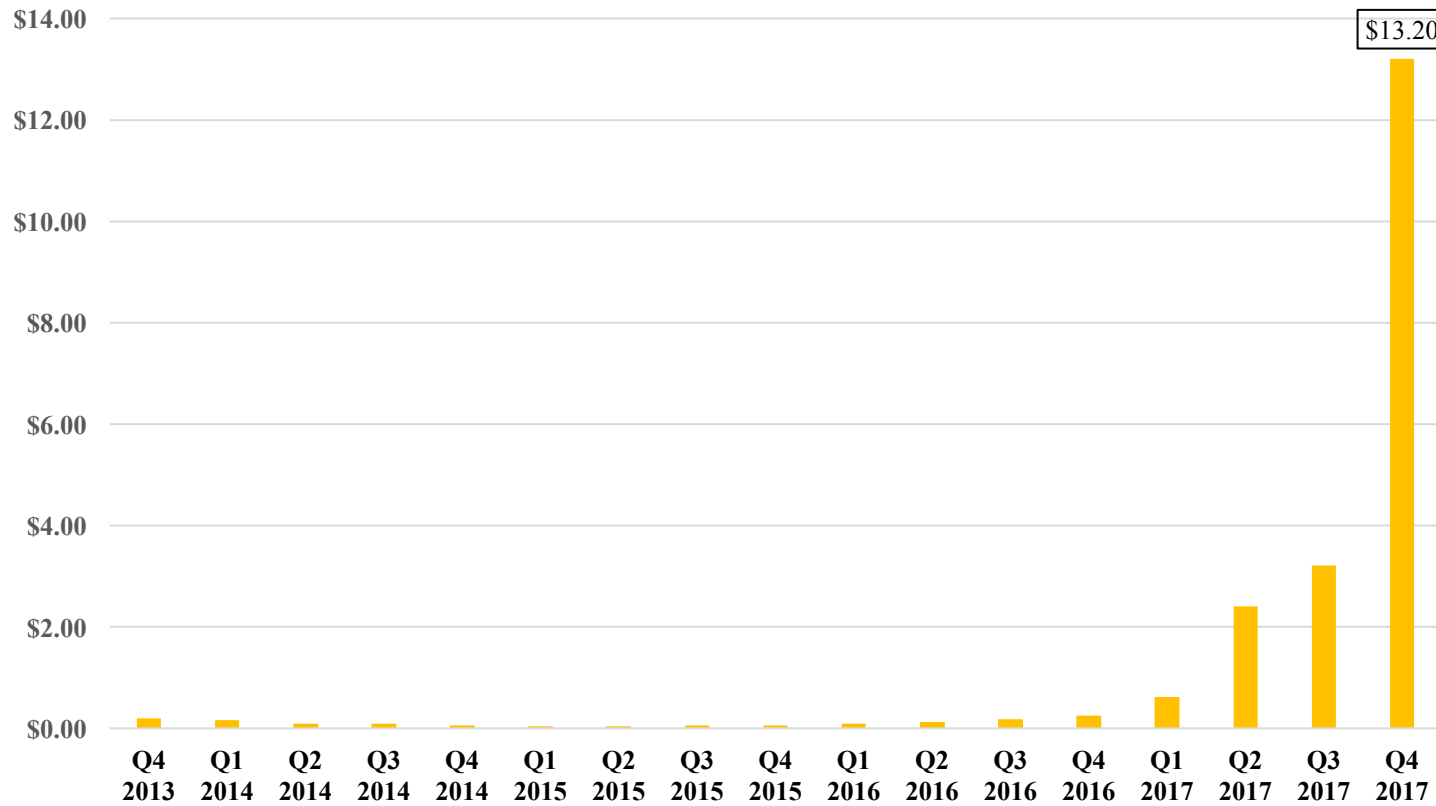
Notes: Daily data. 'TH/s' is the estimated number of tera hashes (trillions of hashes) per second, 'difficulty' is a relative measure of how difficult it is to find a new block, which is adjusted periodically as a function of how much hashing power has been deployed.



Fees

The Transaction Fee Surge Slowed Fees Rose 33% After Nearly Tripling in Q2

Bitcoin Transaction Fee Growth
(Average \$ per transaction)



Quarter	Average Daily Bitcoin Transaction Fees	QoQ Change
Q4 2013	\$0.19	125.8%
Q1 2014	\$0.15	-19.6%
Q2 2014	\$0.10	-35.3%
Q3 2014	\$0.09	-4.9%
Q4 2014	\$0.06	-40.8%
Q1 2015	\$0.04	-32.8%
Q2 2015	\$0.04	2.9%
Q3 2015	\$0.06	42.8%
Q4 2015	\$0.06	12.4%
Q1 2016	\$0.08	36.4%
Q2 2016	\$0.13	51.9%
Q3 2016	\$0.18	36.5%
Q4 2016	\$0.24	37.9%
Q1 2017	\$0.62	156.4%
Q2 2017	\$2.41	288.5%
Q3 2017	\$3.21	32.9%
Q4 2017	\$13.20	311.7%

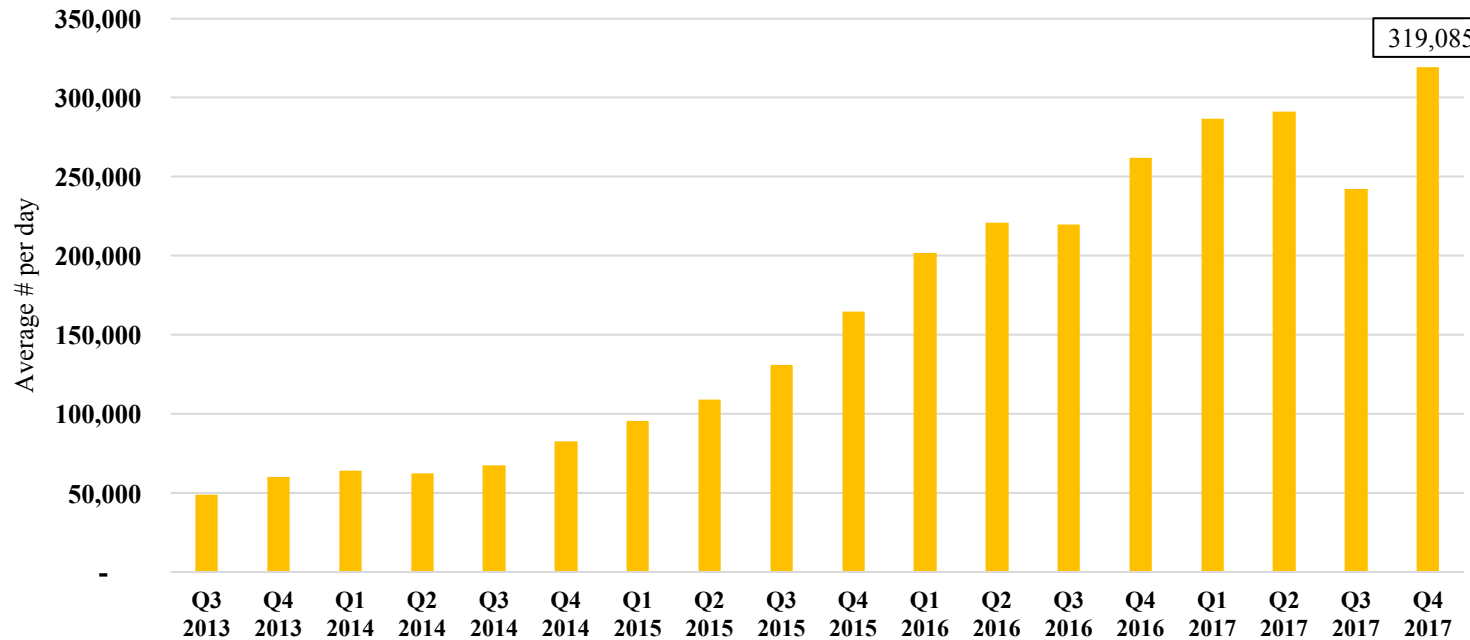
Data Source: [Blockchain](#)



Transactions

Transaction Volumes Rebound, Up 32%

Bitcoin Transactions



Quarter	Average Daily Bitcoin Transactions	QoQ Change
Q4 2013	60,280	22.9%
Q1 2014	63,991	6.2%
Q2 2014	62,639	-2.1%
Q3 2014	67,260	7.4%
Q4 2014	82,724	23.0%
Q1 2015	95,344	15.3%
Q2 2015	108,910	14.2%
Q3 2015	130,834	20.1%
Q4 2015	164,488	25.7%
Q1 2016	201,595	22.6%
Q2 2016	221,018	9.6%
Q3 2016	219,624	-0.6%
Q4 2016	261,710	19.2%
Q1 2017	287,098	9.7%
Q2 2017	291,091	1.4%
Q3 2017	242,334	-16.7%
Q4 2017	319,085	31.7%

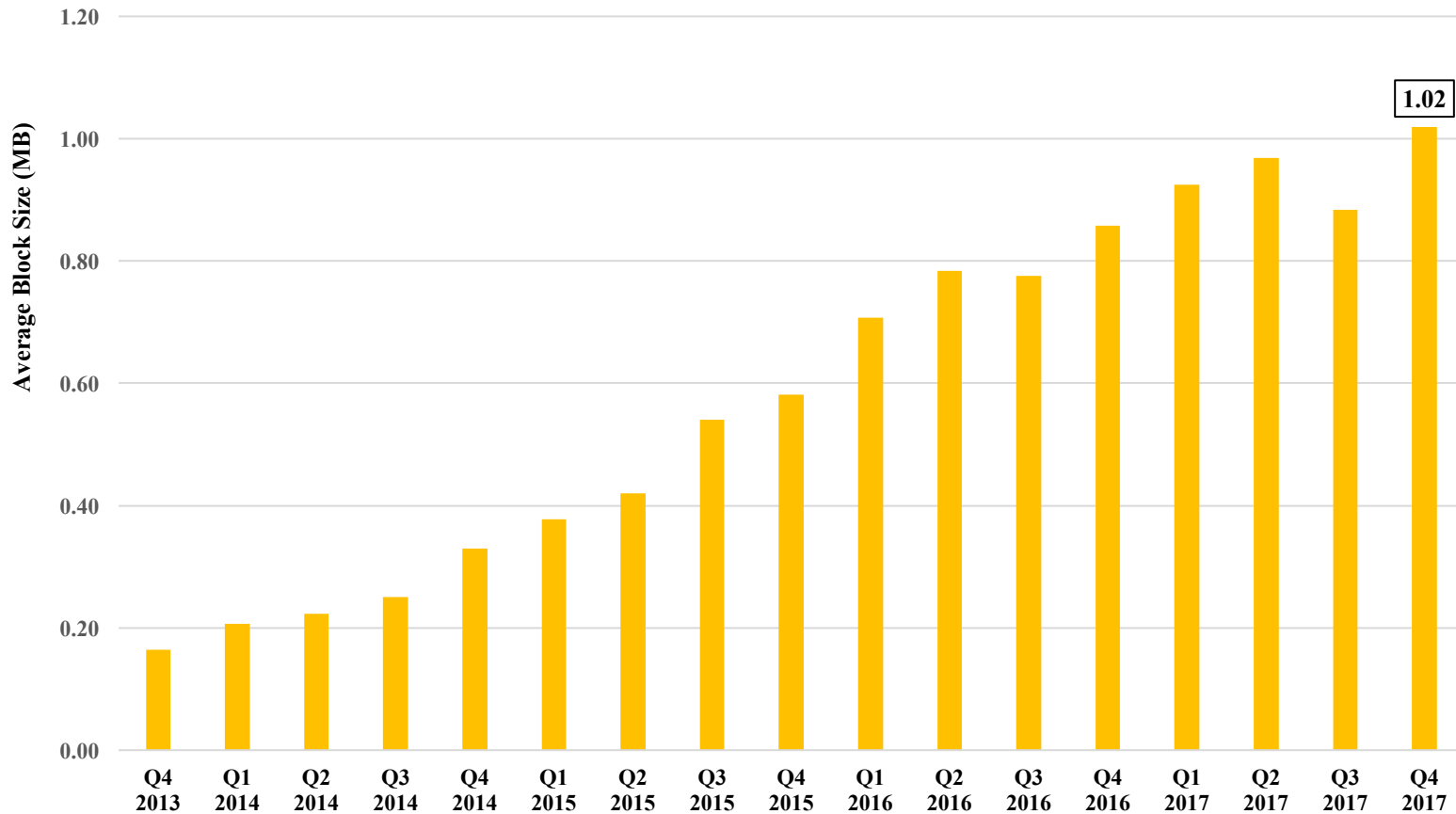
Data Source: [Blockchain](#)



Blocks

Average Block Size Above 1 MB

Bitcoin Block Size



Quarter	Average Daily Bitcoin Block Sizes (MB)	QoQ Change
Q4 2013	0.16	32.9%
Q1 2014	0.21	25.3%
Q2 2014	0.22	7.8%
Q3 2014	0.25	12.5%
Q4 2014	0.33	31.6%
Q1 2015	0.38	14.4%
Q2 2015	0.42	11.5%
Q3 2015	0.54	28.4%
Q4 2015	0.58	7.7%
Q1 2016	0.71	21.6%
Q2 2016	0.78	10.8%
Q3 2016	0.78	-0.9%
Q4 2016	0.86	10.6%
Q1 2017	0.93	7.8%
Q2 2017	0.97	4.6%
Q3 2017	0.88	-8.7%
Q4 2017	1.02	15.4%

Data Source: [Blockchain](#)



2B

ETHEREUM



Q4 2017 Ethereum Summary

Hit all time high of almost \$1k:

- Ethereum skyrocketed, along with other cryptos, especially in December.

Network Hashrate continues rise:

- Hashrate grew by about 40% continuing the growth trend.

Successful Byzantium hard fork:

- Ethereum successfully completed the Byzantium hard fork, verified zk-snark proof among other developments.

Transaction Volume bursts in Q4:

- Ethereum transaction volumes continue to outpace BTC by almost 200%.

Exchange Volumes Nearly Double:

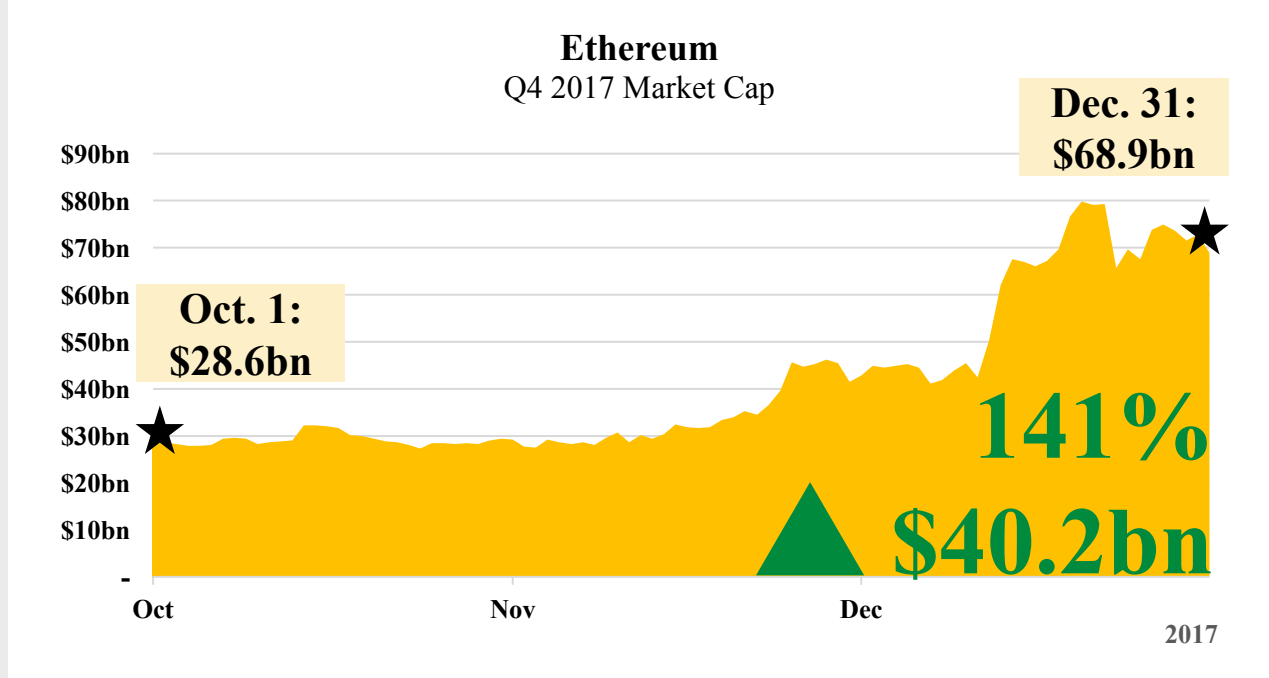
- Ethereum's USD exchange volume grew by almost 2x on average for Q4, but suffered some drop-off at the end of the year.

CryptoKitties win hearts and minds:

- CryptoKitties application launched on ethereum saw huge interest but resulted in a platform wide slowdown.



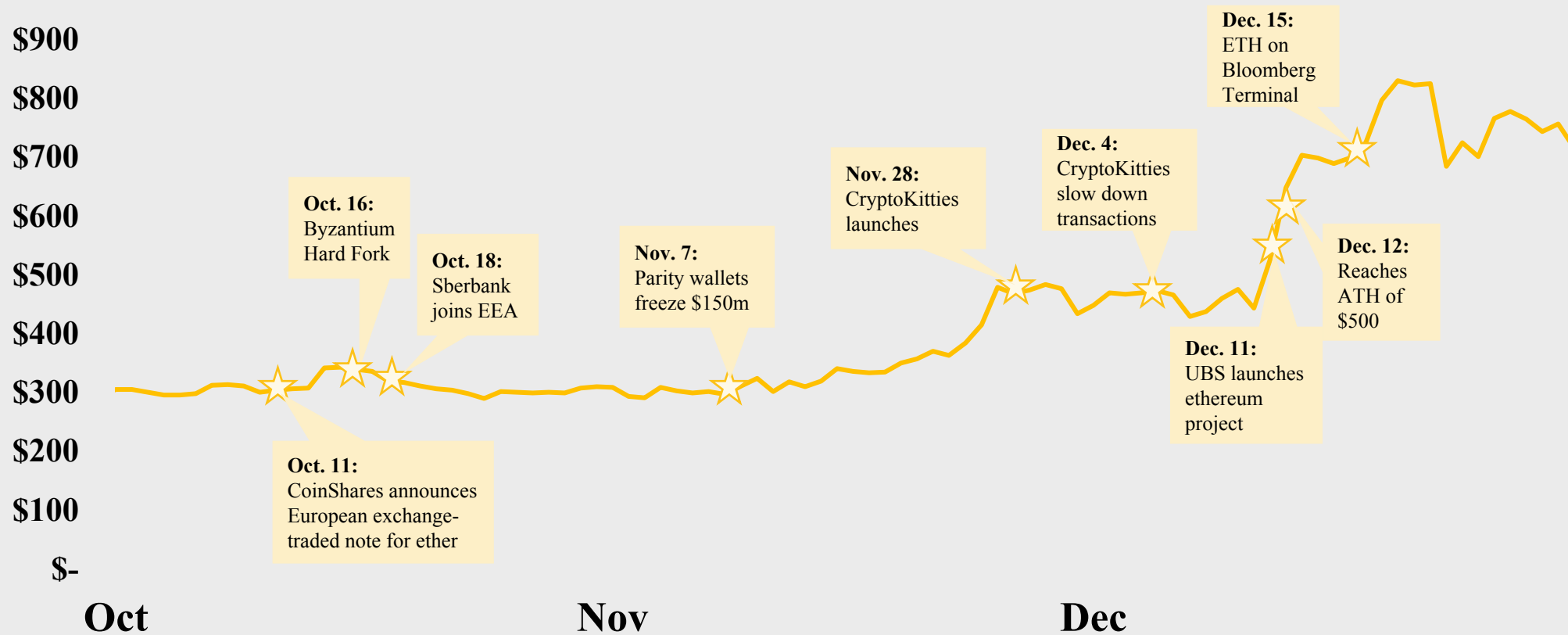
Ethereum Increased 141% Over Q4 Reached All-Time High of \$68.9bn in Market Cap



Data Source: [Coincap](#), [Coinmetrics](#)



Ethereum Price & Key Market Events

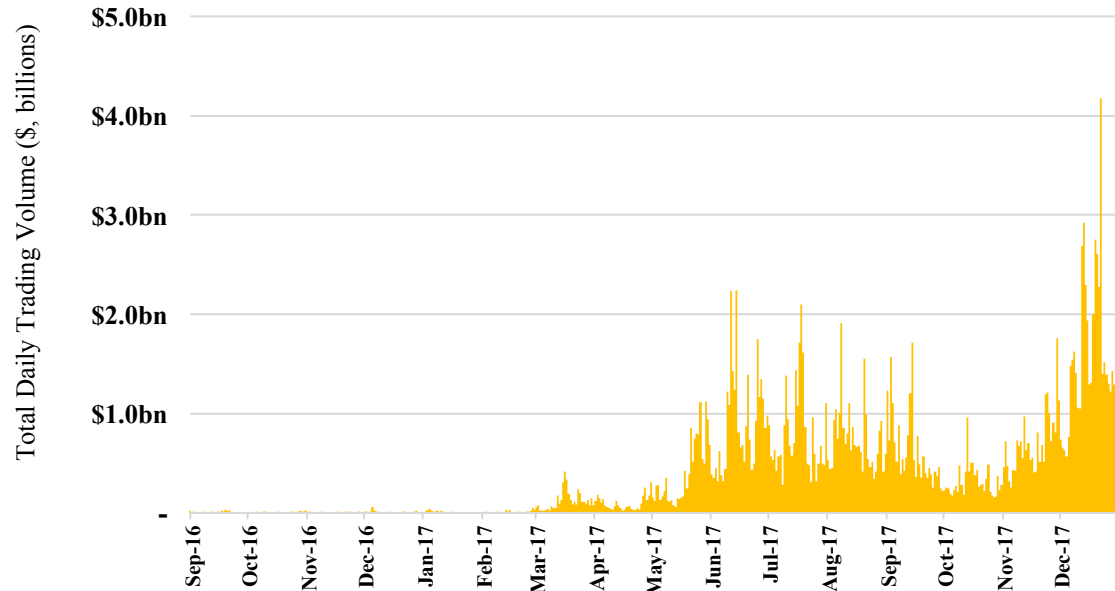


Data Sources: [CoinDesk](#), [CoinDesk ether price page](#)

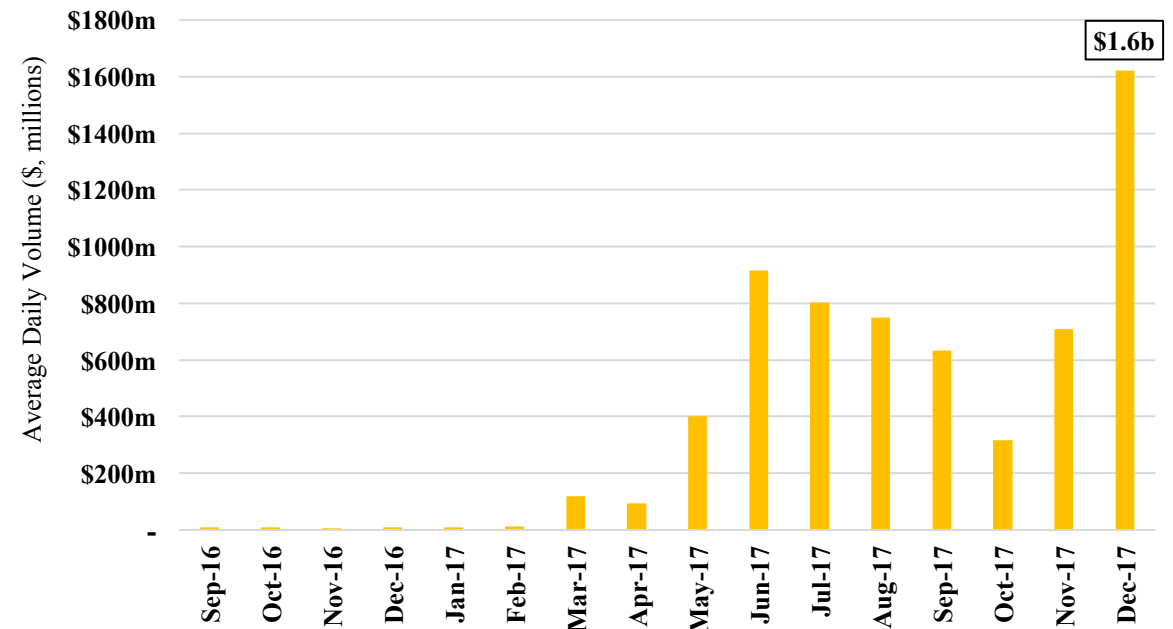


Ether Exchange Trading Volume Nearly Doubled

Global Daily Ether Exchange Trading Volume



Average Daily Ether Exchange Trading Volume

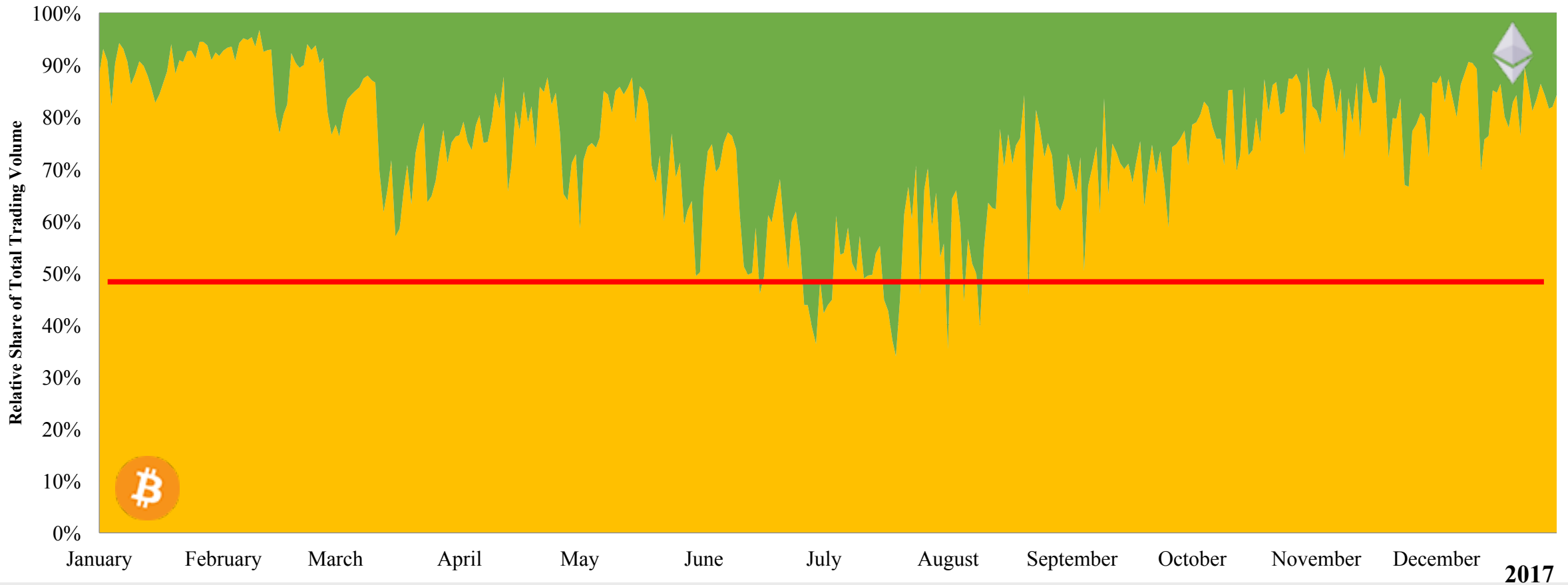


Data Sources: [CryptoCompare](#), [CoinDesk ether price page](#)
Notes: \$ value at the time across all listed currencies and exchanges



Ether Exchange Trading \$ Volume Fell to Earlier Levels After Surpassing Bitcoin

Trading Volume Dominance



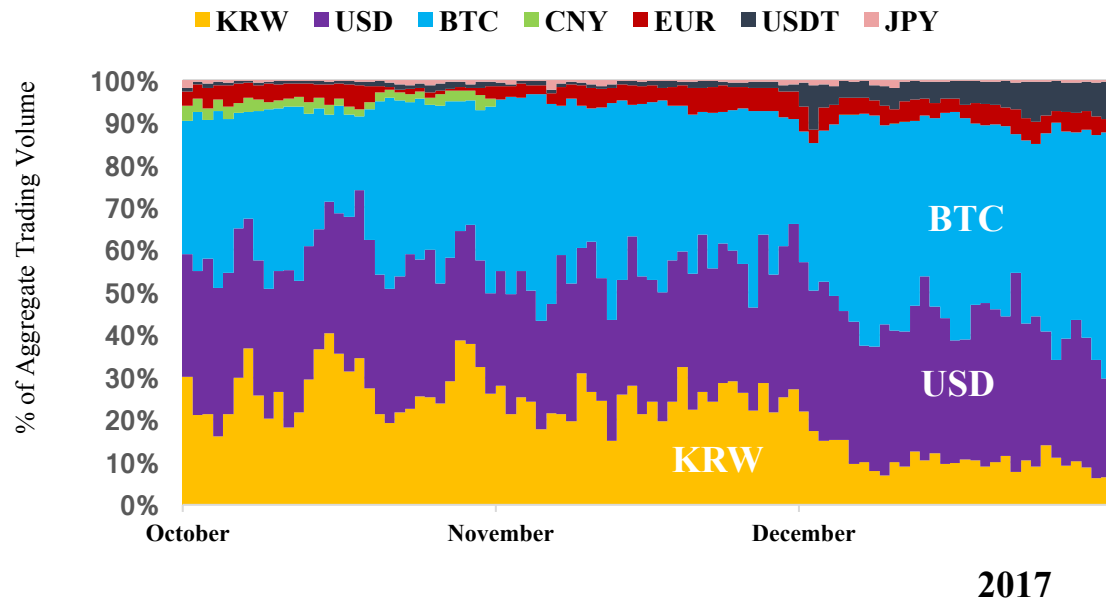
Data Source: [Coincap](#), [Coinmetrics](#)



ETH Most Heavily Traded with BTC

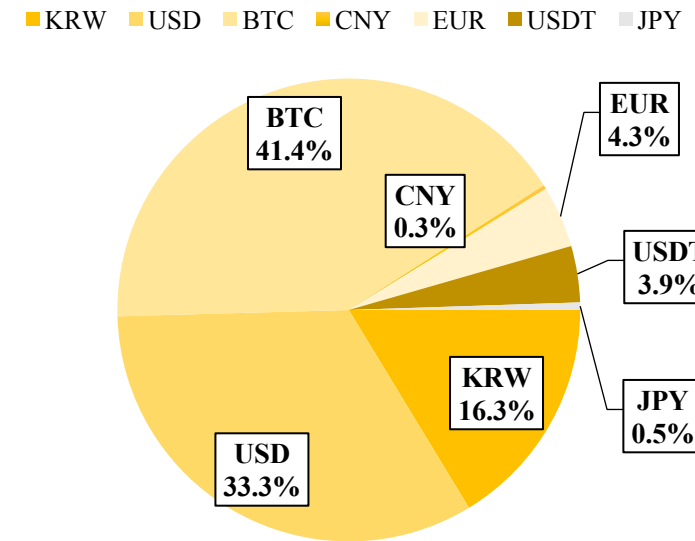
BTC Gained Market Share to USD and KRW

Global Daily Ether Exchange Trading Volume



Q4 2017 Ether Exchange Trading Volume

Share of Volume Across Currencies



Q2 2017:
BTC: 31.6%
USD: 25.5%
KRW: 29.5%

Q3 2017:
BTC: 19.6%
USD: 28.9%
KRW: 36.9%

Data Source: [CryptoCompare](https://cryptocompare.com)

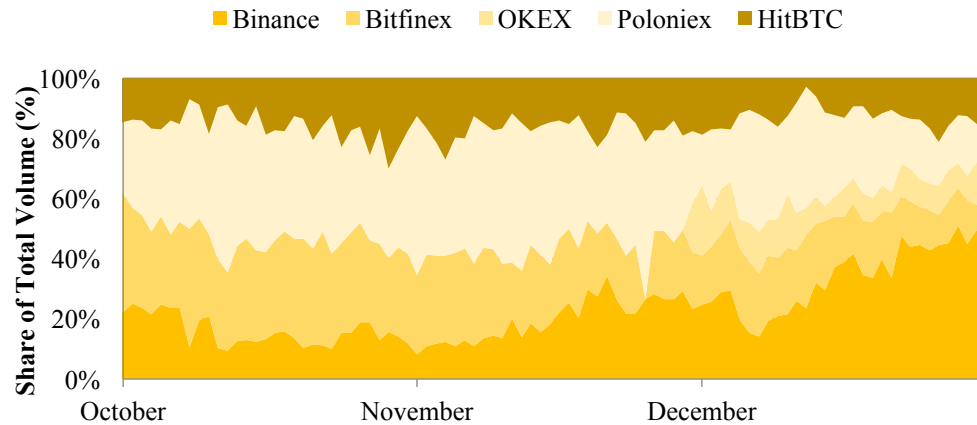


Poloniex Led Volume in BTC Markets

Bitfinex Displaced Coinbase in USD

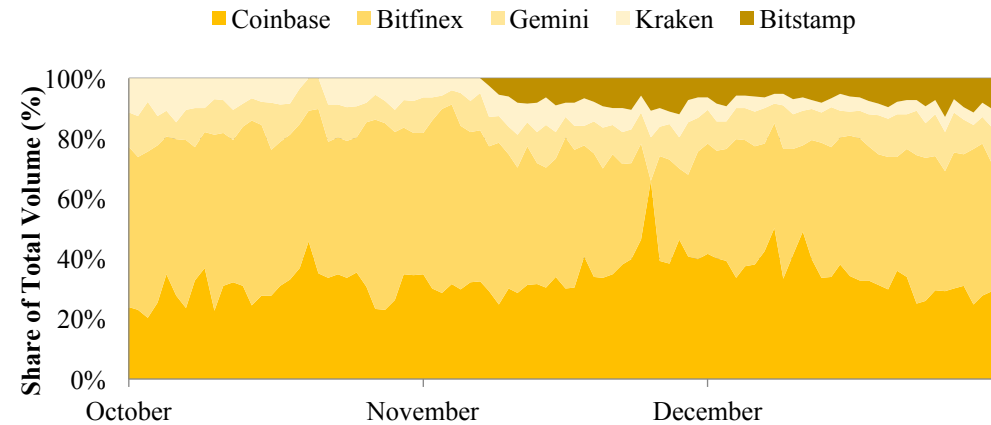
Ether Exchange Trading Volume (BTC)

Share of Total Volume Across Exchanges



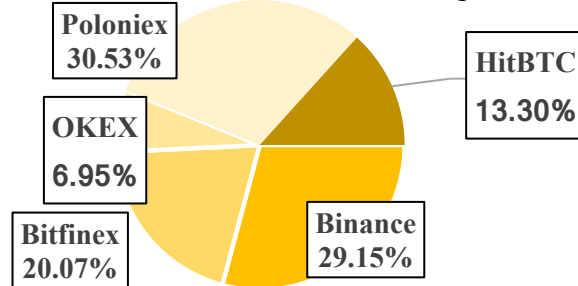
Ether Exchange Trading Volume (USD)

Share of Total Volume Across Exchanges



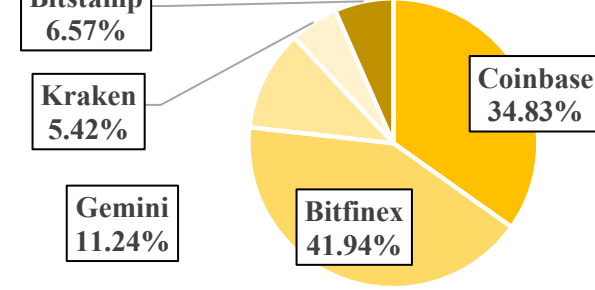
Ether Exchange Trading Volume (BTC)

Share of Total Across Exchanges



Ether Exchange Trading Volume (USD)

Share of Total Across Exchanges

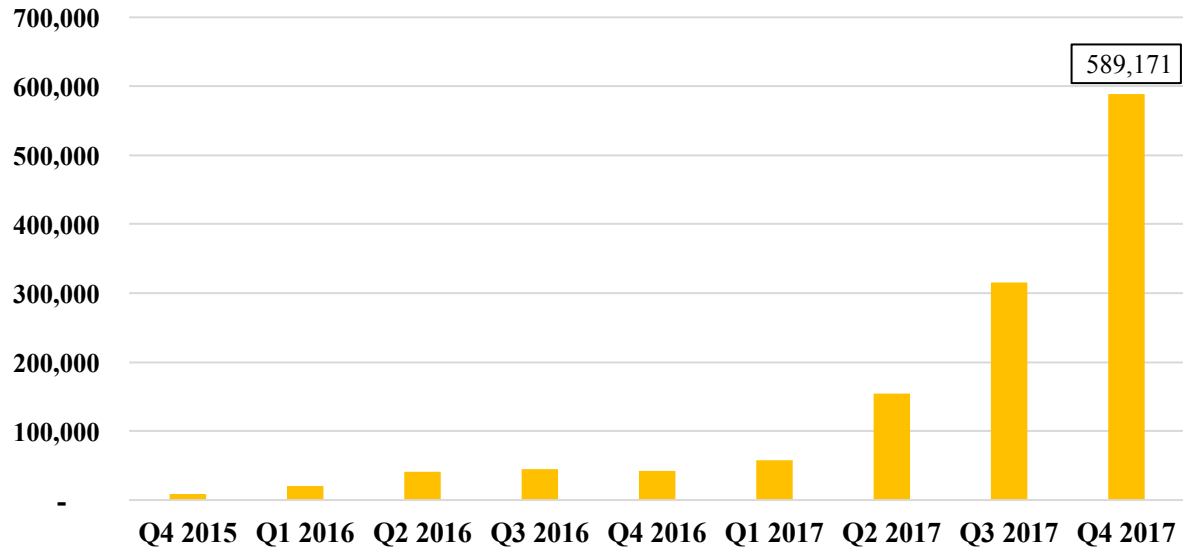




Transactions

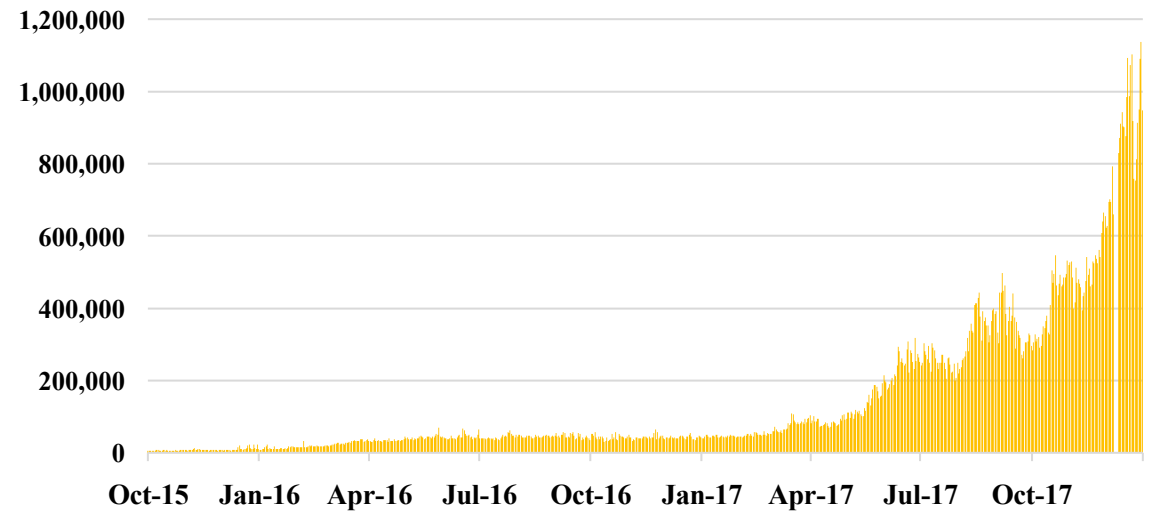
ETH Transaction Numbers Rise Again Surpassed BTC in Quarterly Average

Ethereum Transaction Growth (Average # per day)



Q4 2017:
BTC: 319,085

Ethereum Transaction Growth (Average # per day)

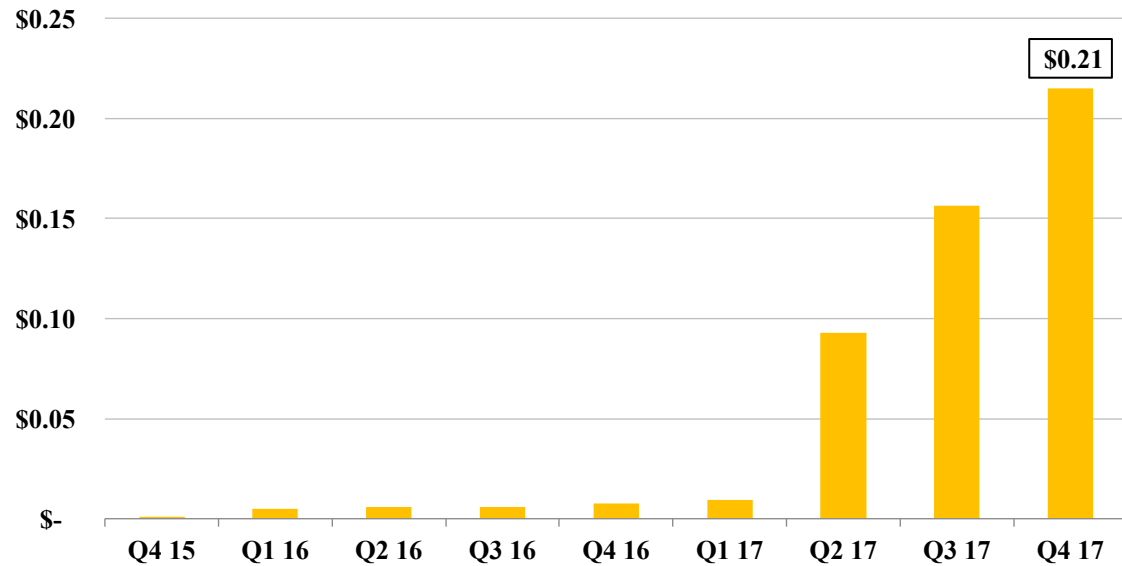




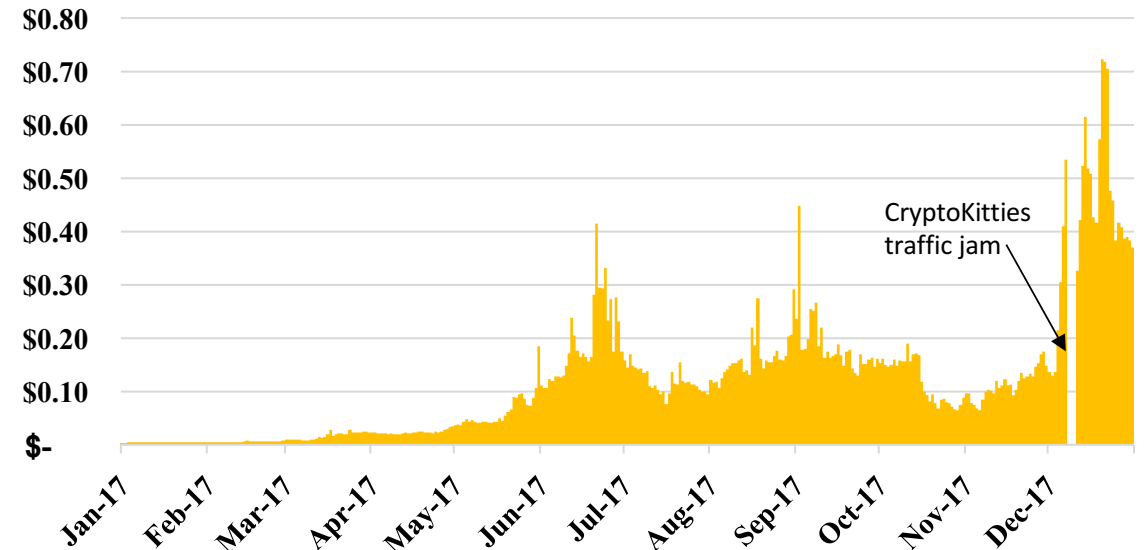
Fees

Transaction Fees Continued to Increase Rose from 16¢ in Q3 to 21¢ in Q4 2017

Ethereum Transaction Fee Growth
(Average \$ per transaction)

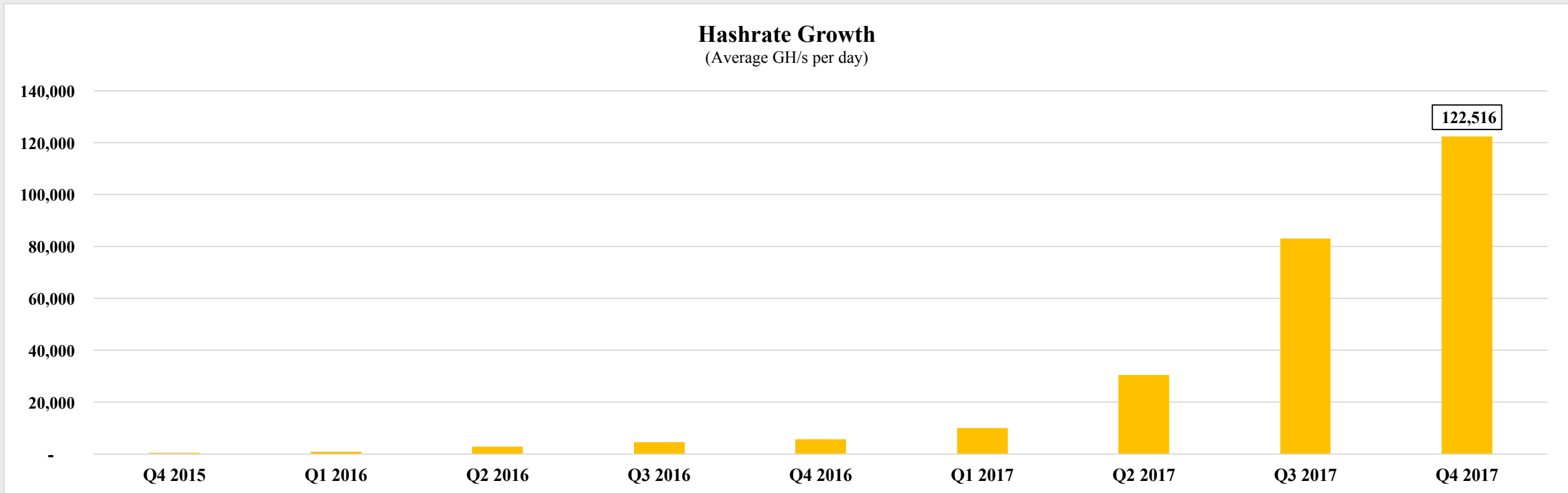


Ethereum Transaction Fee Growth
(Average \$ per transaction)



Upward demand on price as well as ICO demand caused a few spikes in transaction fees

Data Sources: [Etherscan](#), [CoinDesk ether price](#)



Hashing power on the ethereum network grew 47.3% from Q3 to Q4 2017

Data Source: [Etherscan](#)

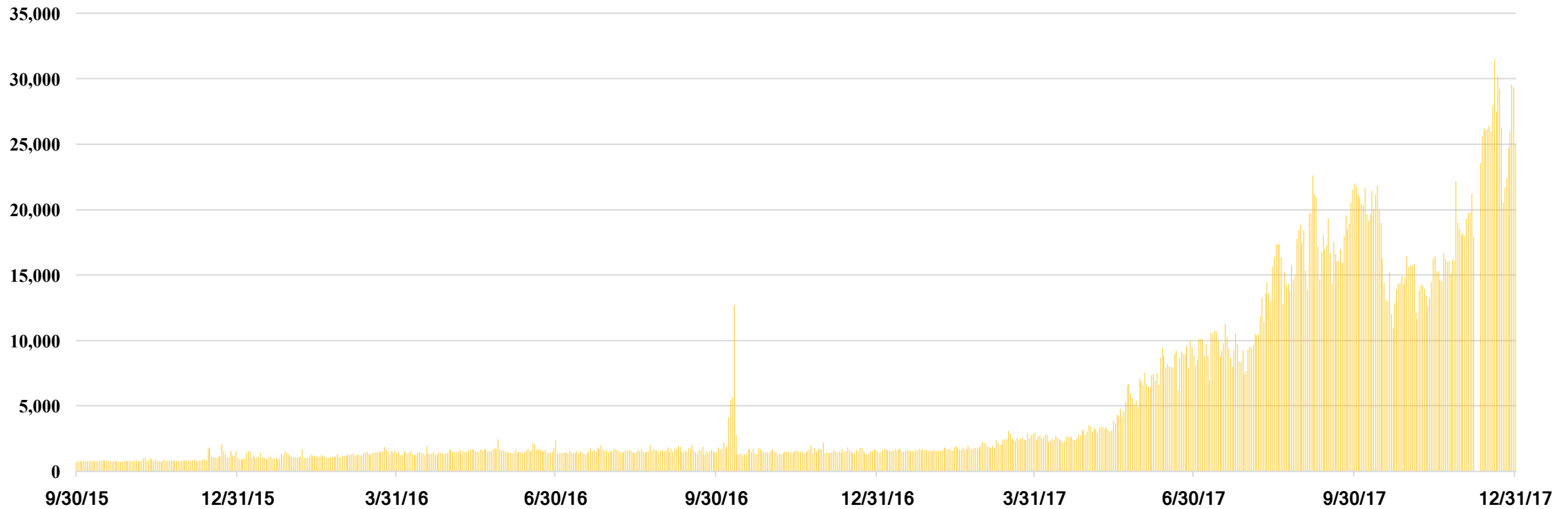
Notes: 'GH/s' is the estimated number of gigahashes (billions of hashes) per second



Blocks

Block Size Increased to New All-Time Highs As Transactions Increased

Ethereum Block Size Growth
(Average bytes per block)

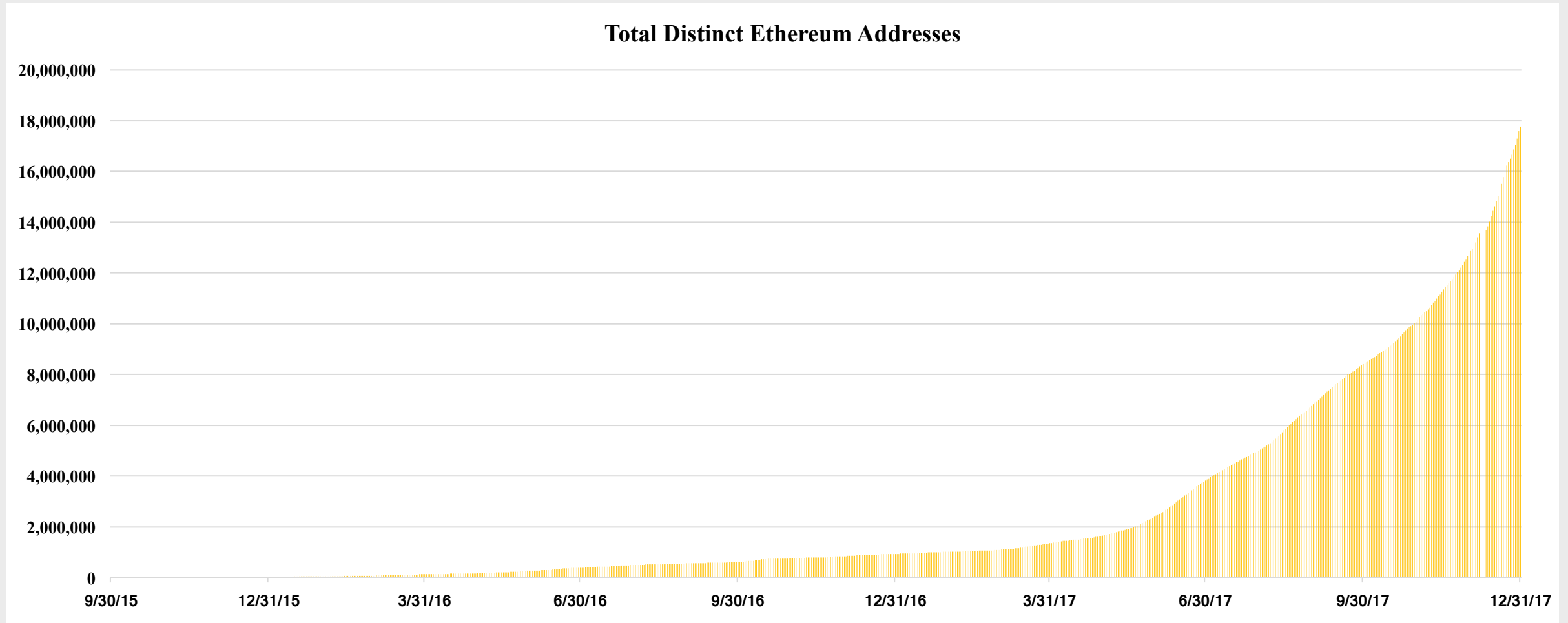


Data Source: [Etherscan](#)



Addresses

Over 8 Million Ethereum Blockchain Addresses, Doubled Quarter-Over-Quarter



Data Source: [Etherscan](#)

Notes: Distinct addresses do not directly correlate to unique users, individuals frequently control the private keys to multiple addresses and exchanges frequently control the private keys to addresses that store multiple users' funds



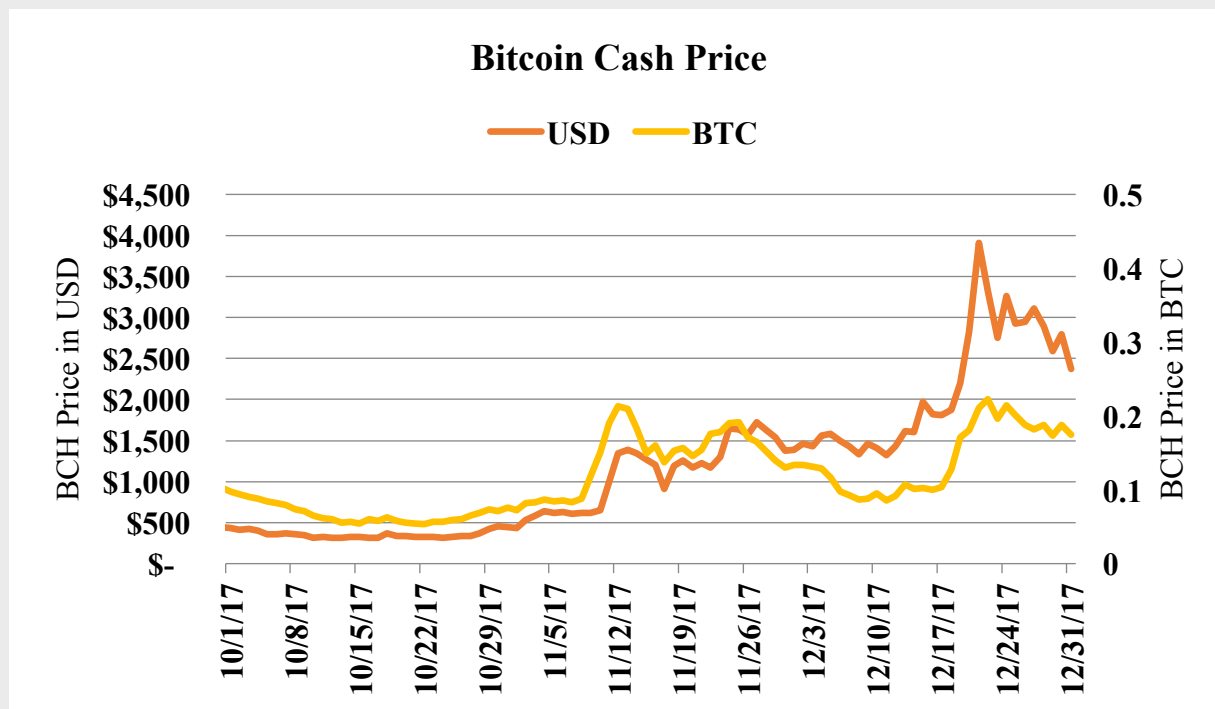
2C

Bitcoin Cash



Bitcoin Cash Forked Off of Bitcoin on August 1st

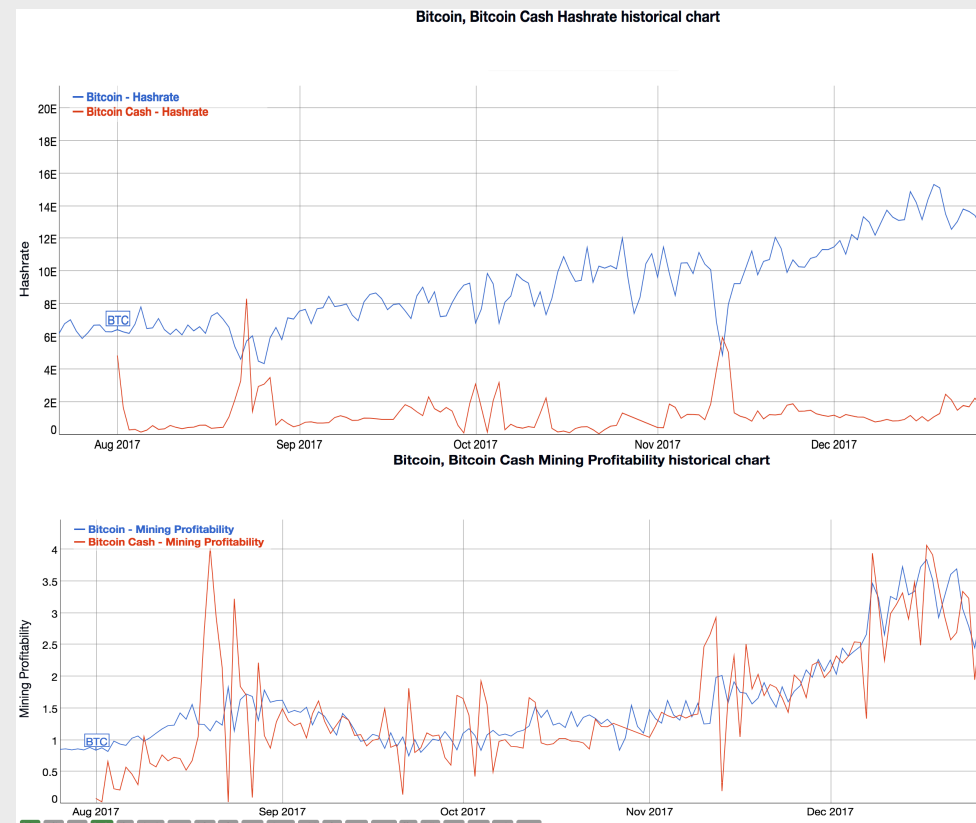
Bitcoin Cash Difficulty Adjustment Led to Hash Power > Bitcoin for 2 Days



Herfindahl-Hirschman index (HHI)

Bitcoin: 2080

Bitcoin Cash: 2640

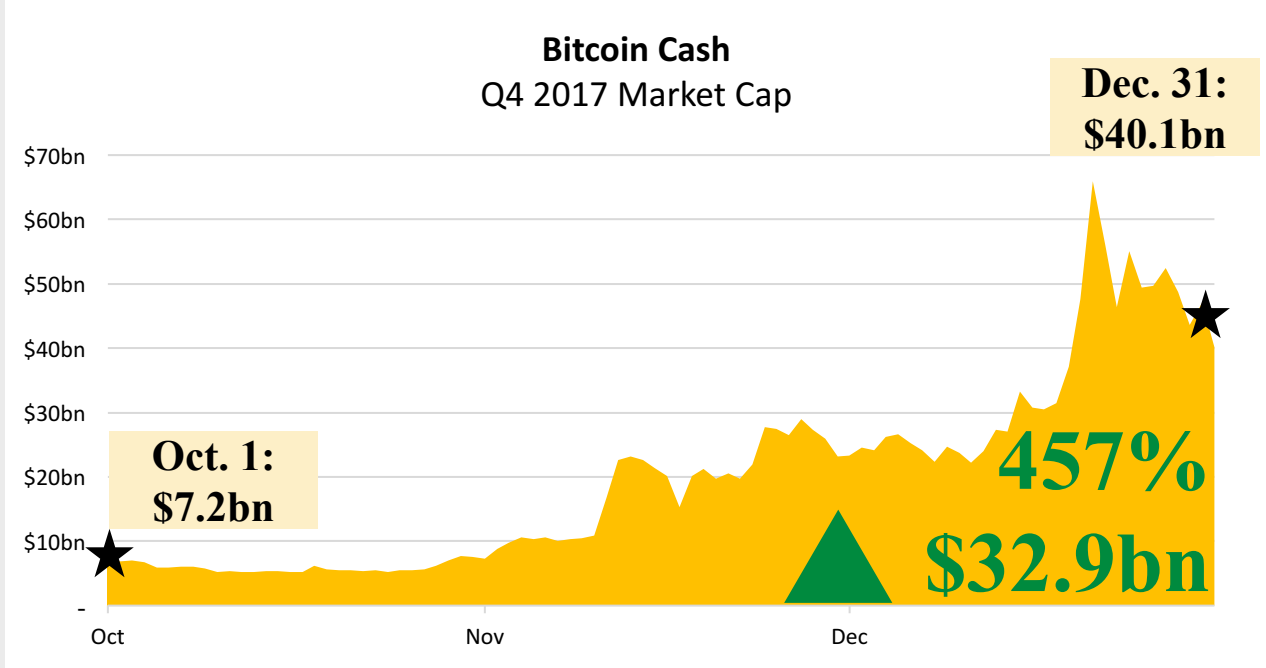


While the BCH hashrate started off near BTC, it generally stayed below except in November during Postponement of Segwit2x.

Data Sources: [Bitinfocharts](#), [Blockchain](#), [Fundstrat](#)



Bitcoin Cash Increased 457% Over Q4 Reached All-Time High of \$65.9bn in Market Cap

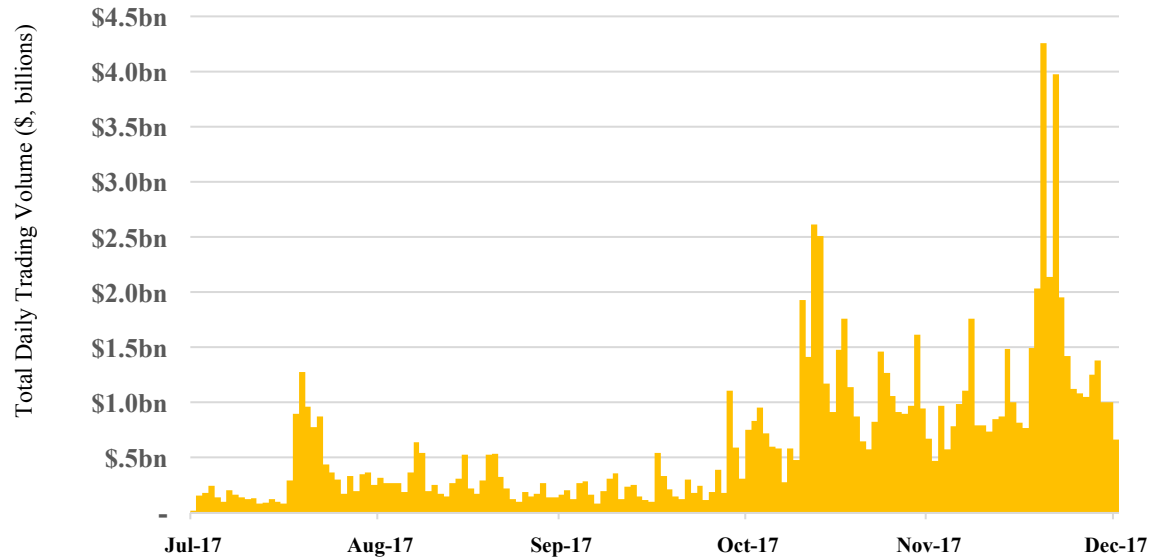


Data Source: [Coincap](#), [Coinmetrics](#)

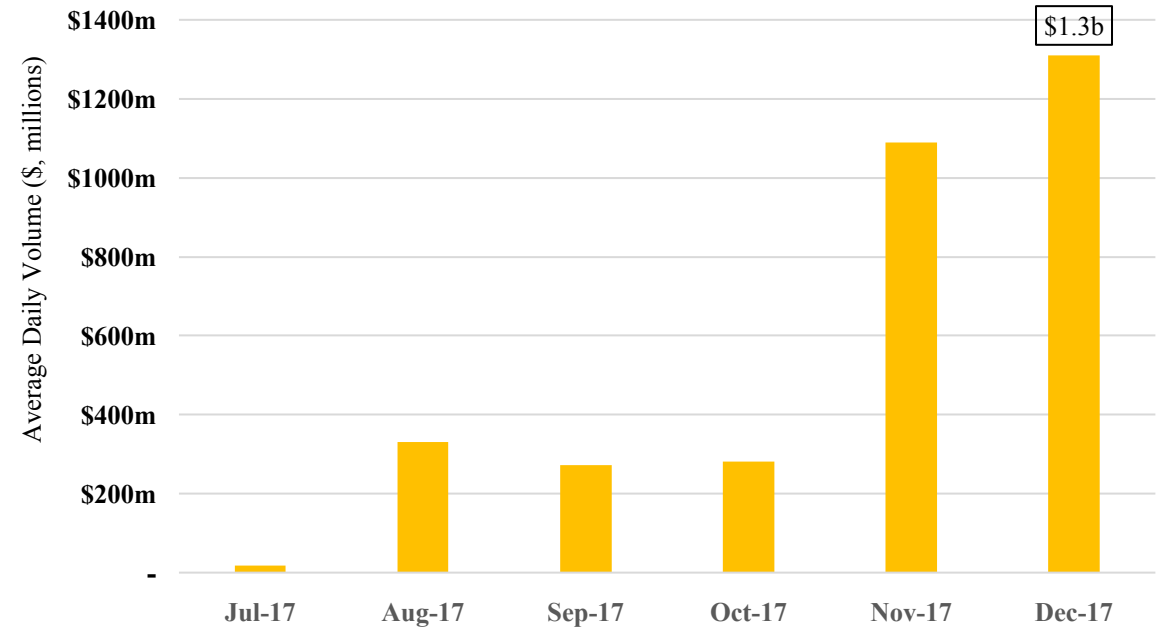


Bitcoin Cash Exchange Trading Volume Increased Over Final Two Months of 2017

Global Daily Bitcoin Cash Exchange Trading Volume



Average Daily Bitcoin Cash Exchange Trading Volume



Data Sources: [Cryptocompare](#), [Coinmetrics](#)

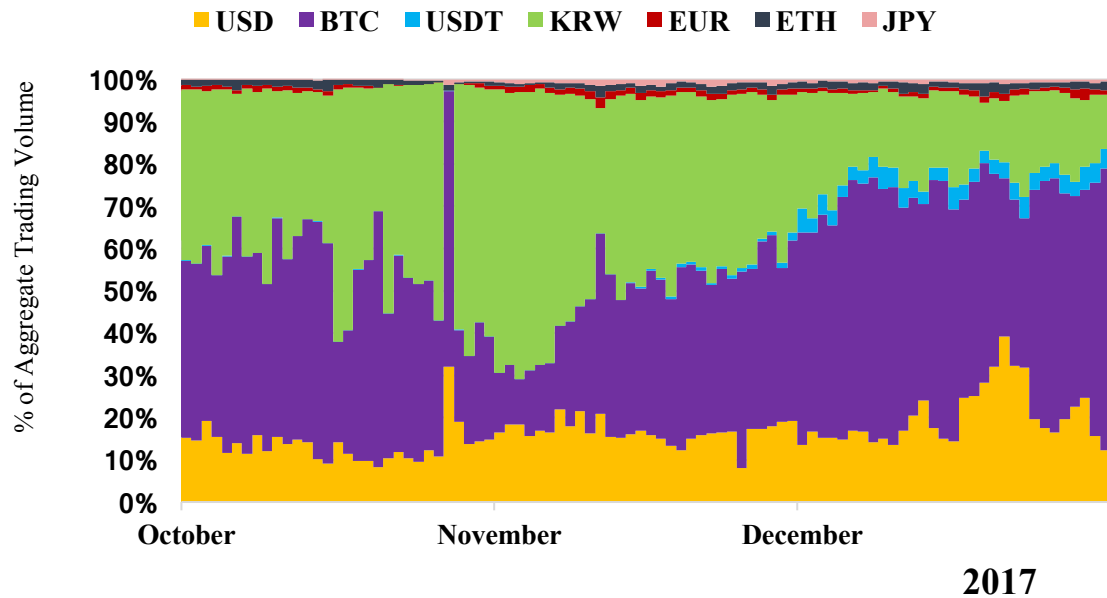
Notes: \$ value at the time across all listed currencies and exchanges



BCH Most Heavily Traded with BTC

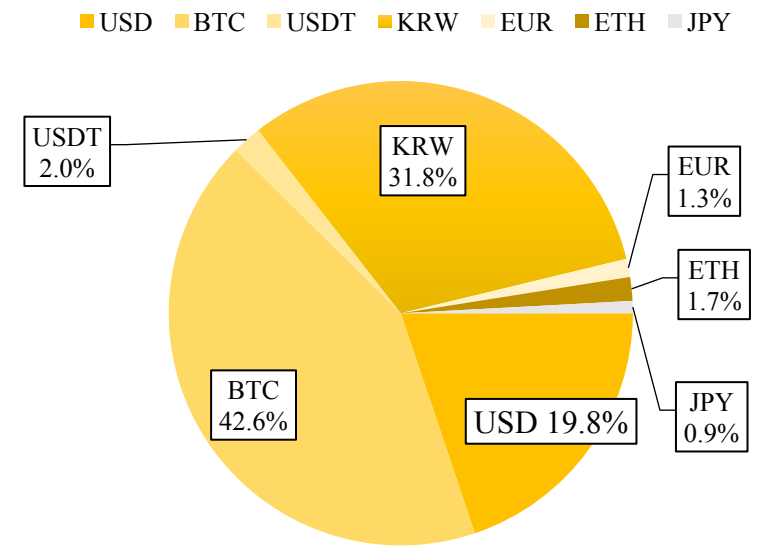
BCH Gained Market Share from KRW

Global Daily Ether Exchange Trading Volume



Q4 2017 Bitcoin Cash Exchange Trading Volume

Share of Volume Across Currencies



Q3 2017:
KRW 44.3%
BTC 36.4%
USD 15.6%

Data Source: [CryptoCompare](#)

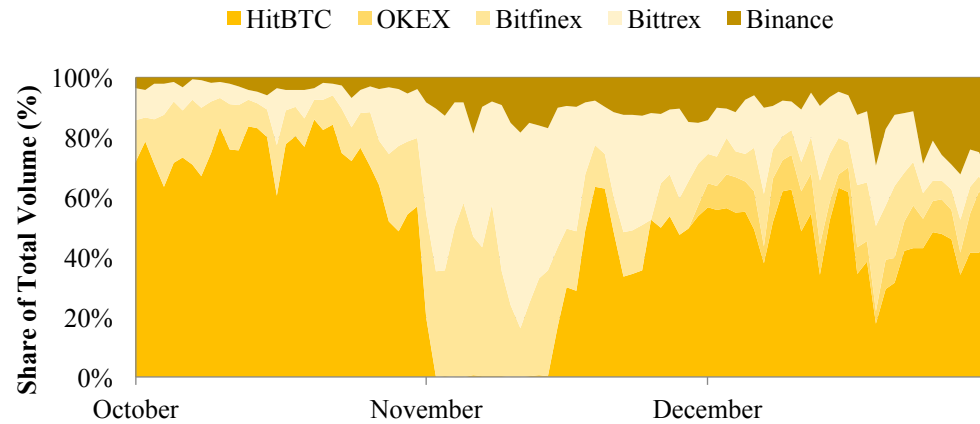


HitBTC Led Volume in BTC Markets

Bitfinex Dominates in USD

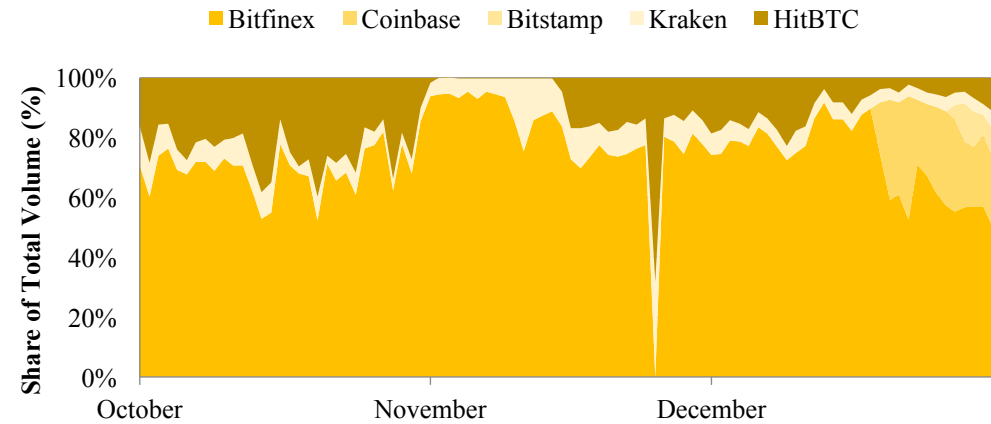
Bitcoin Cash Exchange Trading Volume (BTC)

Share of Total Volume Across Exchanges



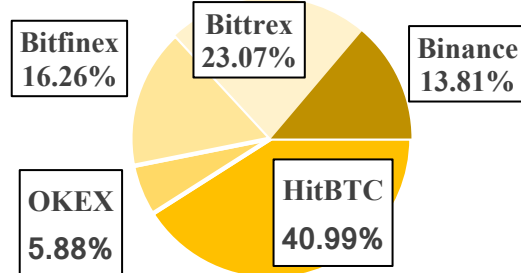
Bitcoin Cash Exchange Trading Volume (USD)

Share of Total Volume Across Exchanges



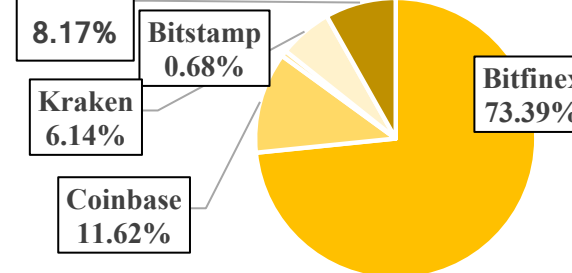
Bitcoin Cash Exchange Trading Volume (BTC)

Share of Total Across Exchanges



Bitcoin Cash Exchange Trading Volume (USD)

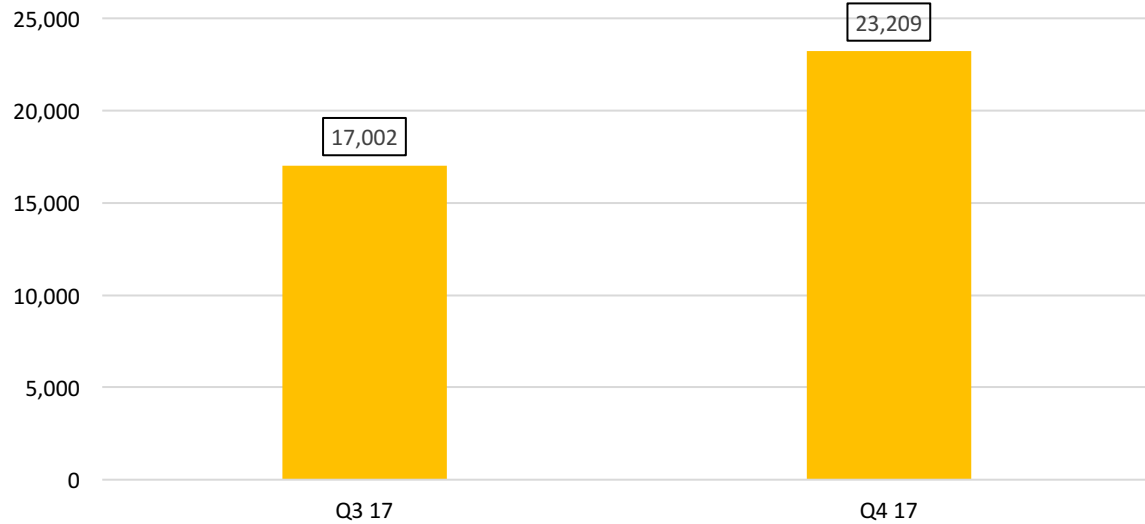
Share of Total Across Exchanges



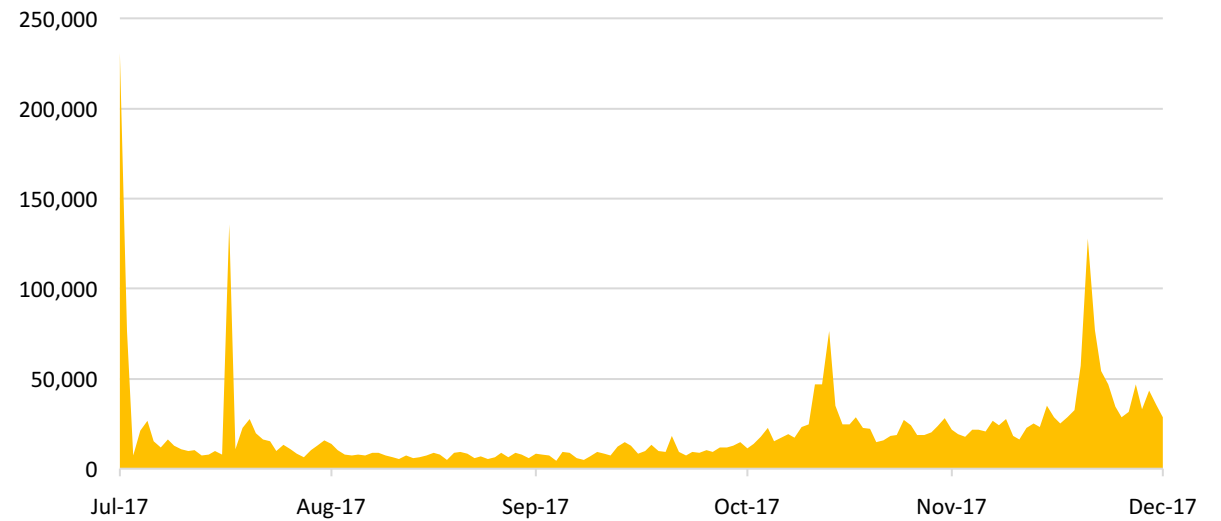
≡ Transactions

BCH Transaction Numbers Rise Again

Bitcoin Cash Transaction Growth
(Average # per day)



Bitcoin Cash Transaction Growth
(Average # per day)



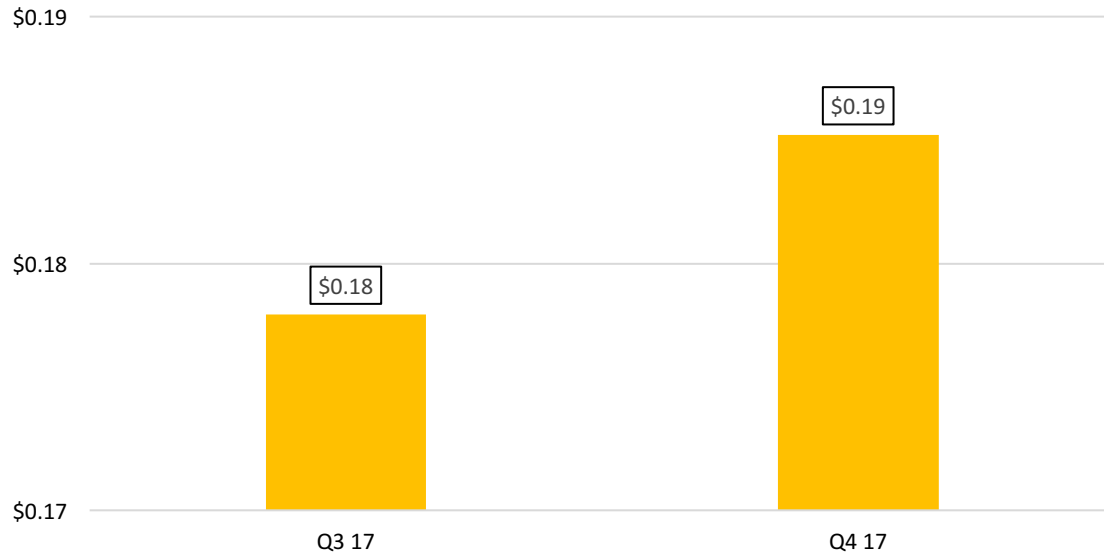
Q4 2017:
BTC: 319,085



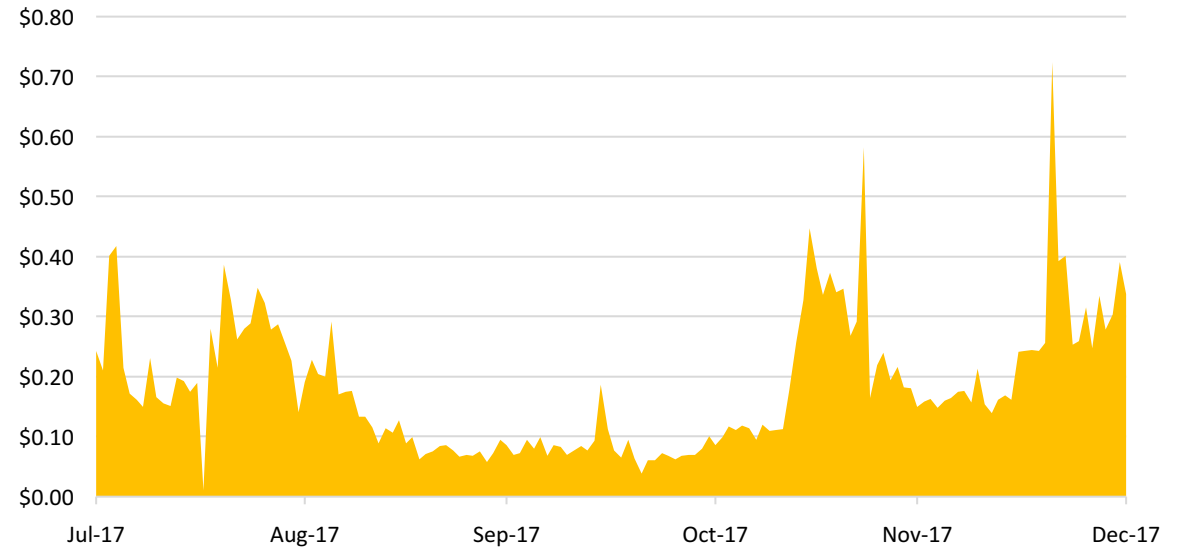
Fees

Transaction Fees Increase Barely Rose from 1¢ in Q3 to 19¢ in Q4 2017

Bitcoin Cash Transaction Fee Growth
(Average \$ per transaction)



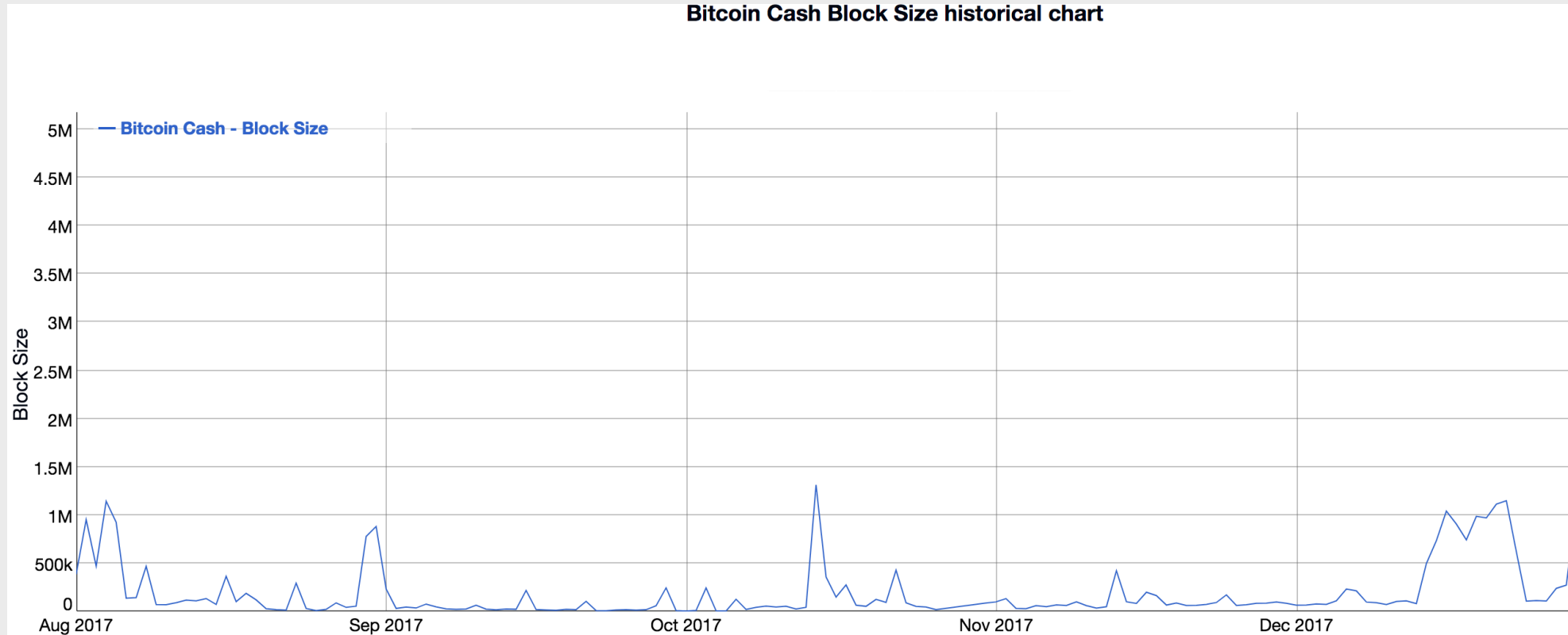
Bitcoin Cash Transaction Fee Growth
(Average \$ per transaction)





Blocks

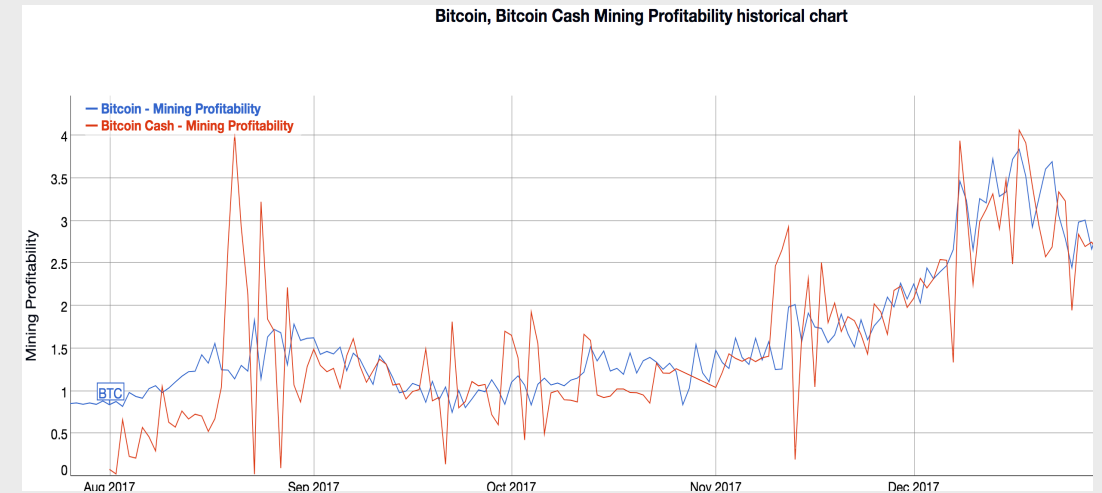
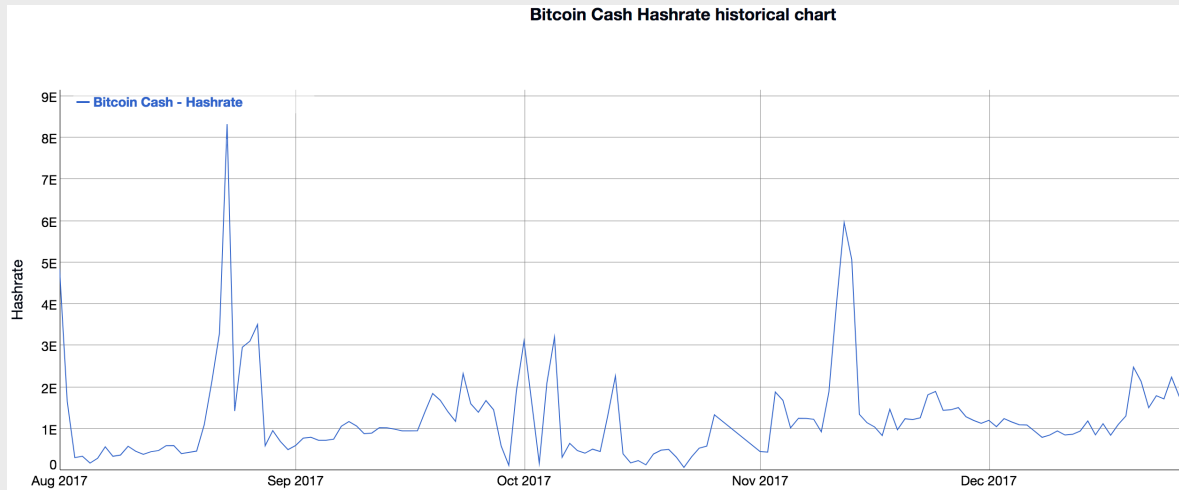
Despite Large Blocks Most Blocks Remained Unfilled





Hashrate

Hashrate Securing Network Grows Steadily Blips Related to Bitcoin Fork Uncertainty





2D

LTC

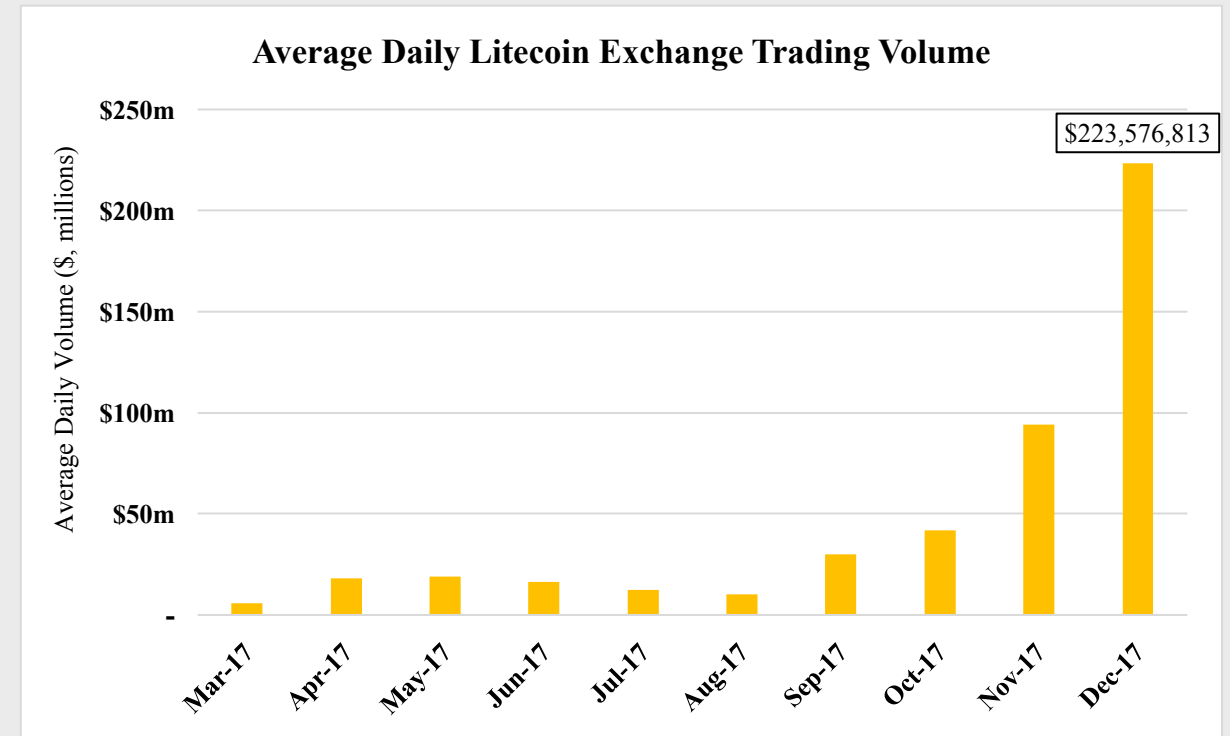
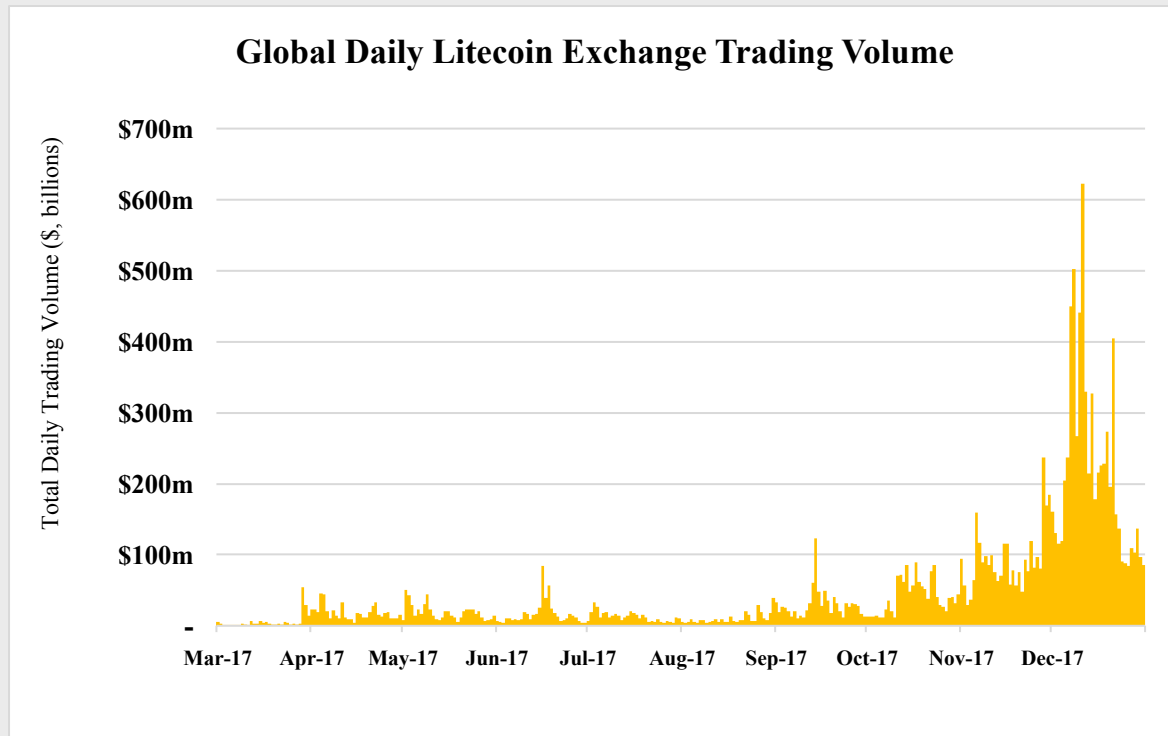


Litecoin Increased 304% Over Q4 Reached All-Time High of \$8.9bn in Market Cap





Litecoin Exchange Trading Volume Rose and Crashed



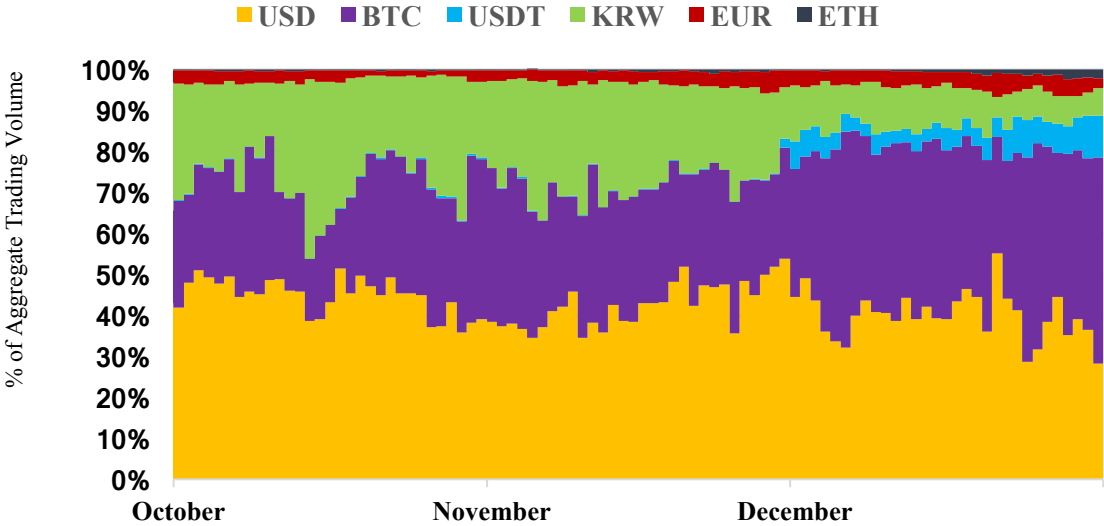
Data Sources: [CryptoCompare](#), [CoinDesk](#), [Coinmetrics](#)
Notes: \$ value at the time across all listed currencies and exchanges



LTC Most Heavily Traded with USD

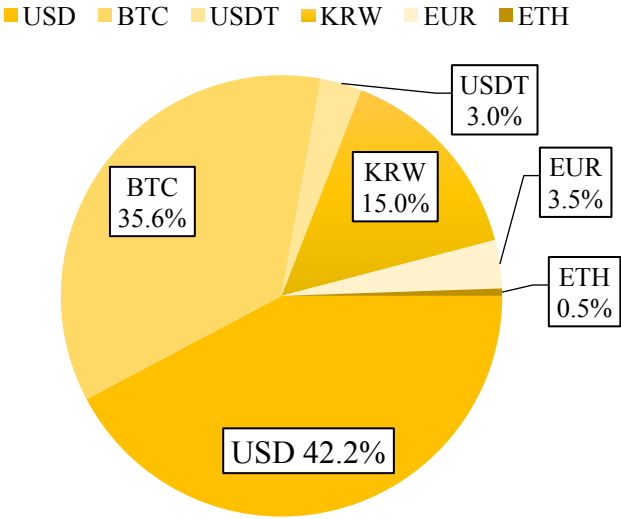
KRW Lost Market Share to BTC & USDT

Global Daily Litecoin Exchange Trading Volume



Q4 2017 Litecoin Exchange Trading Volume

Share of Volume Across Currencies



Q3 2017:
USD 39%
KRW 34%
BTC 23%

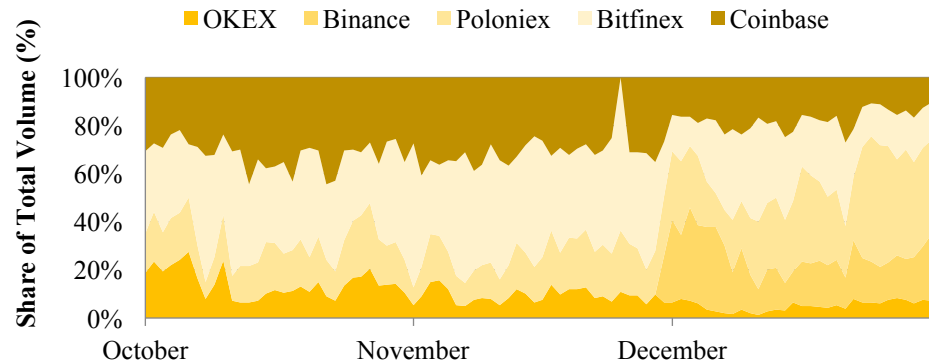
Data Source: [CryptoCompare](#)



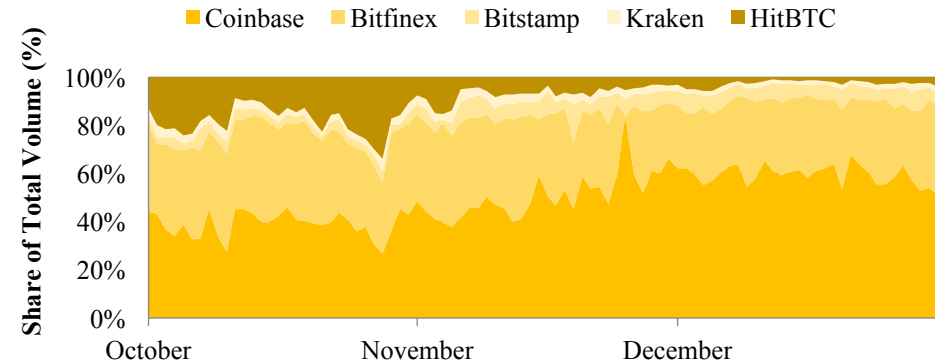
Bitfinex, Coinbase, and Poloniex Split BTC Markets

Coinbase Dominates in USD

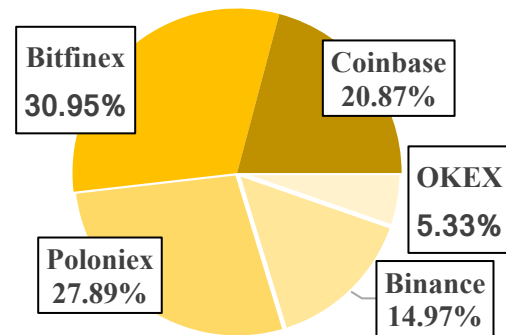
Litecoin Exchange Trading Volume (BTC) Share of Total Volume Across Exchanges



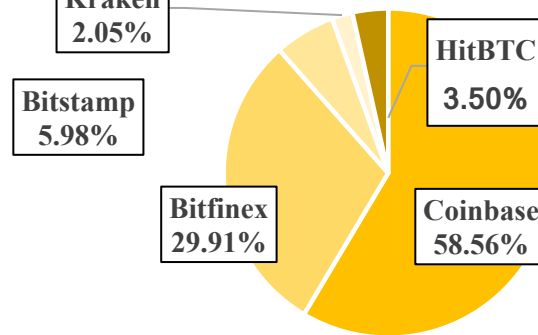
Litecoin Exchange Trading Volume (USD) Share of Total Volume Across Exchanges



Litecoin Exchange Trading Volume (BTC) Share of Total Across Exchanges



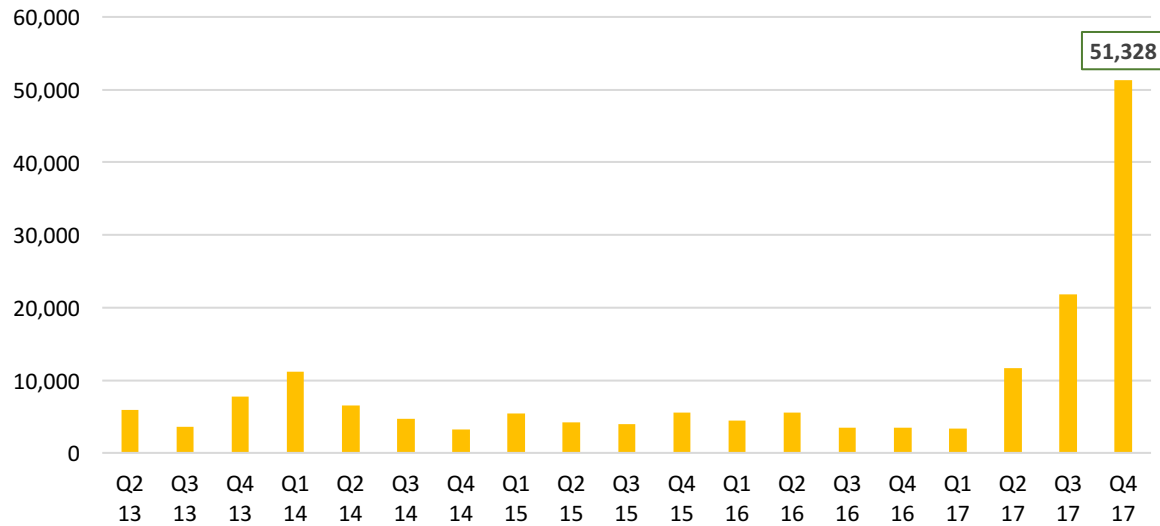
Litecoin Exchange Trading Volume (USD) Share of Total Across Exchanges



≡ Transactions

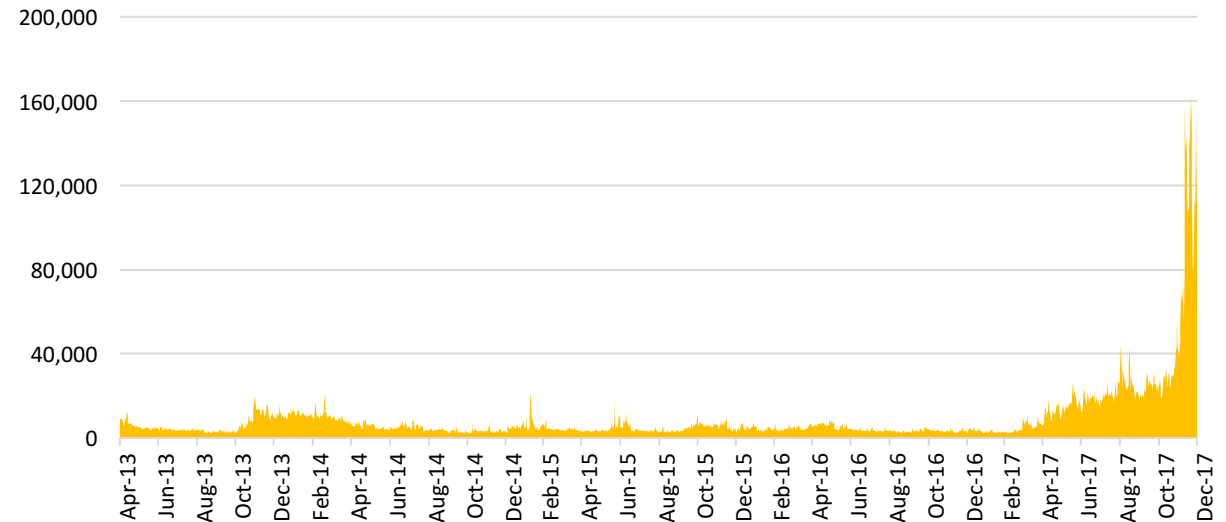
LTC Transaction Numbers Rise Drastically

Litecoin Transaction Growth
(Average # per day)



Q4 2017:
BTC: 319,085

Litecoin Transaction Growth
(Average # per day)

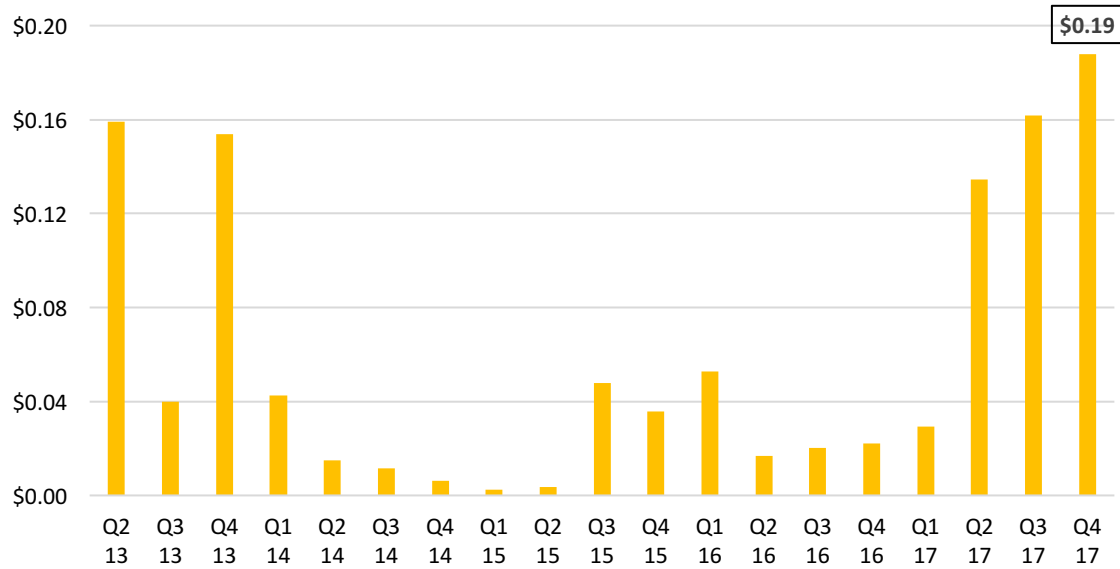




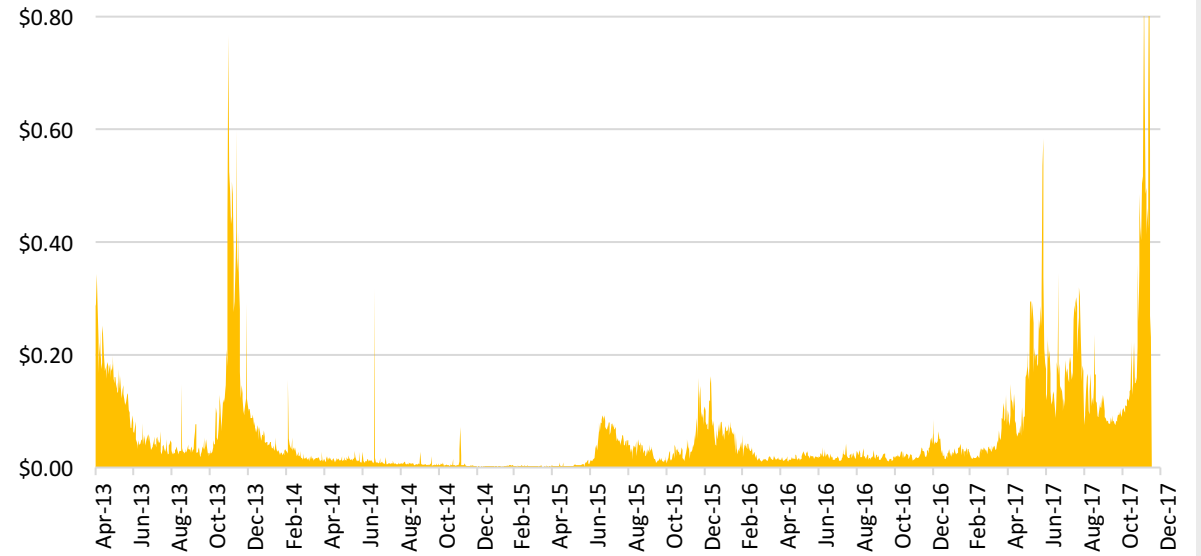
Fees

Transaction Fees Return to Past Levels Rose from 16¢ in Q3 to 19¢ in Q4 2017

Litecoin Transaction Fee Growth (Average \$ per transaction)



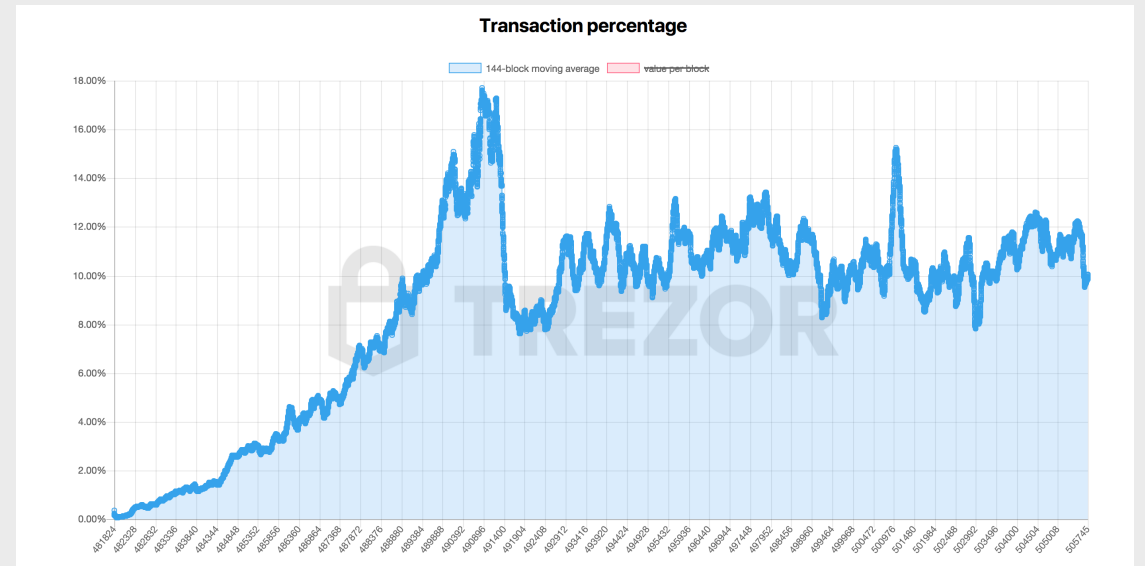
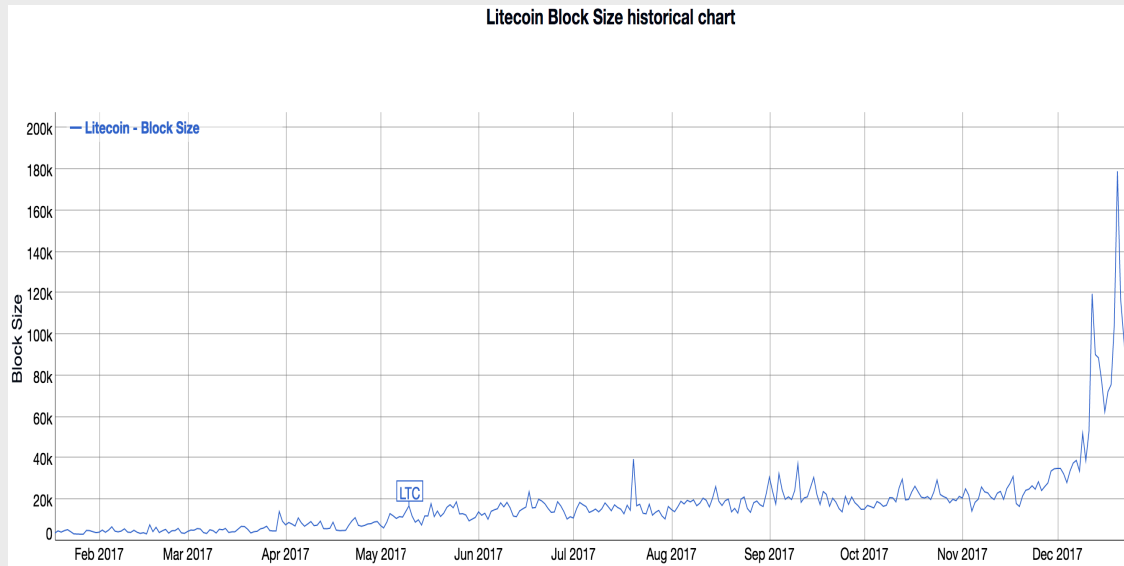
Litecoin Transaction Fee Growth (Average \$ per transaction)





Blocks

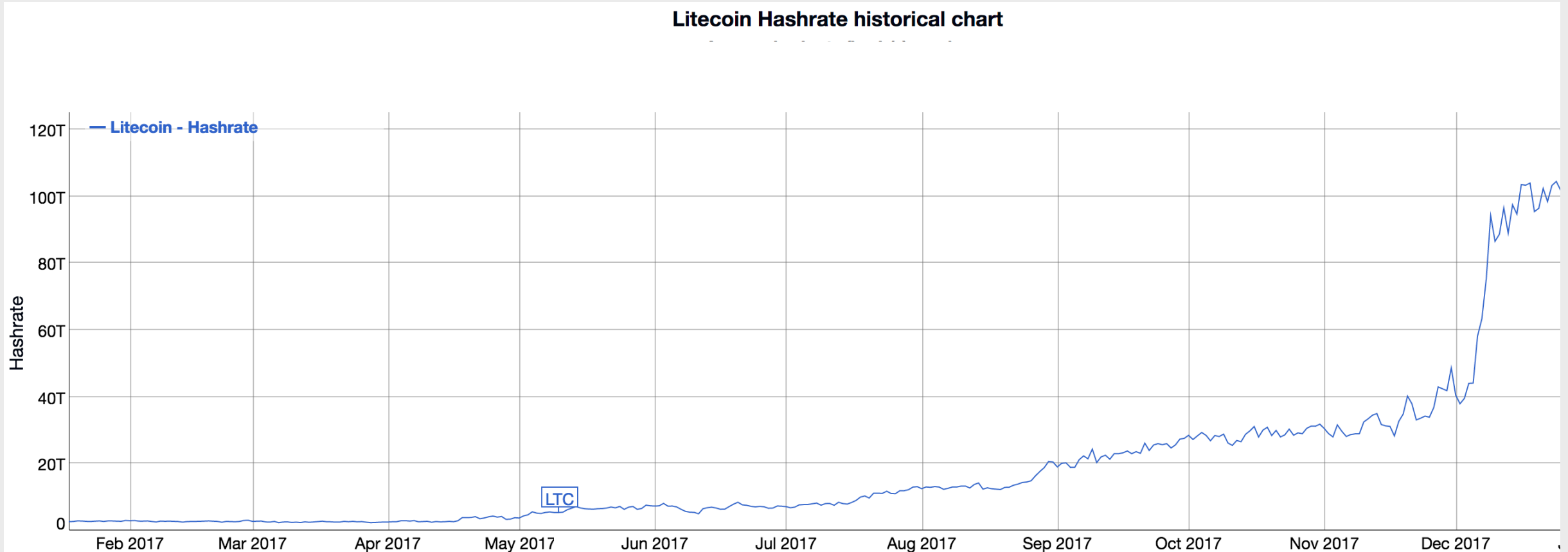
Small Block Size Hit All Time High of 200k





Hashrate

Hashrate Spiked with Value



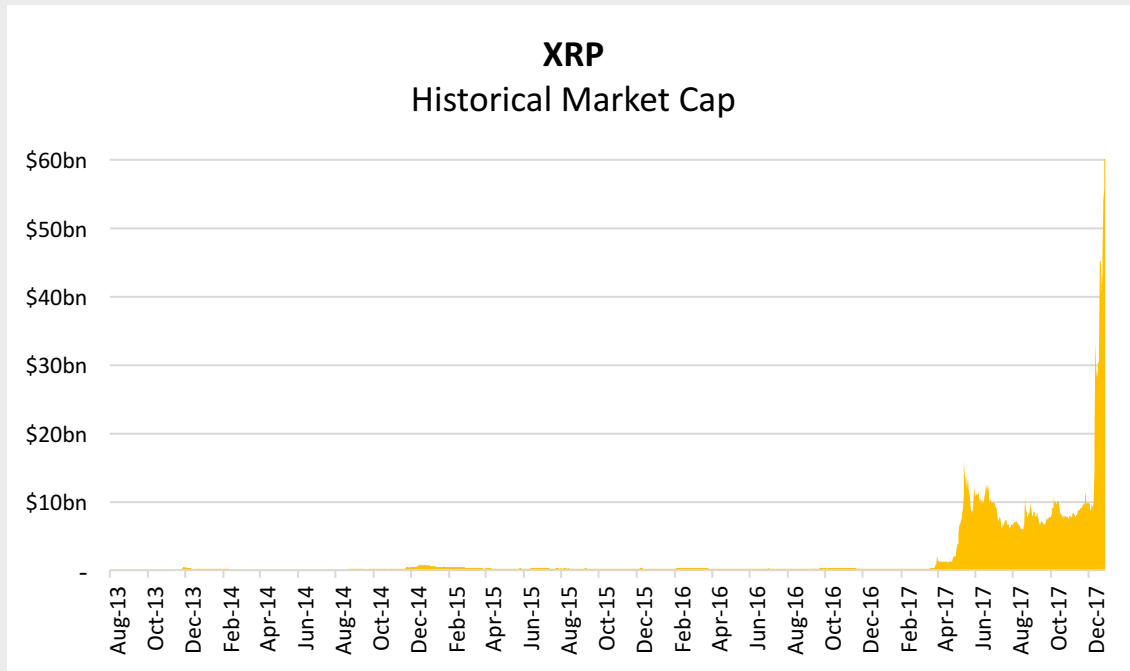


2E

XRP



XRP Increased 971% Over Q4 Reached All-Time High of \$85.2bn in Market Cap

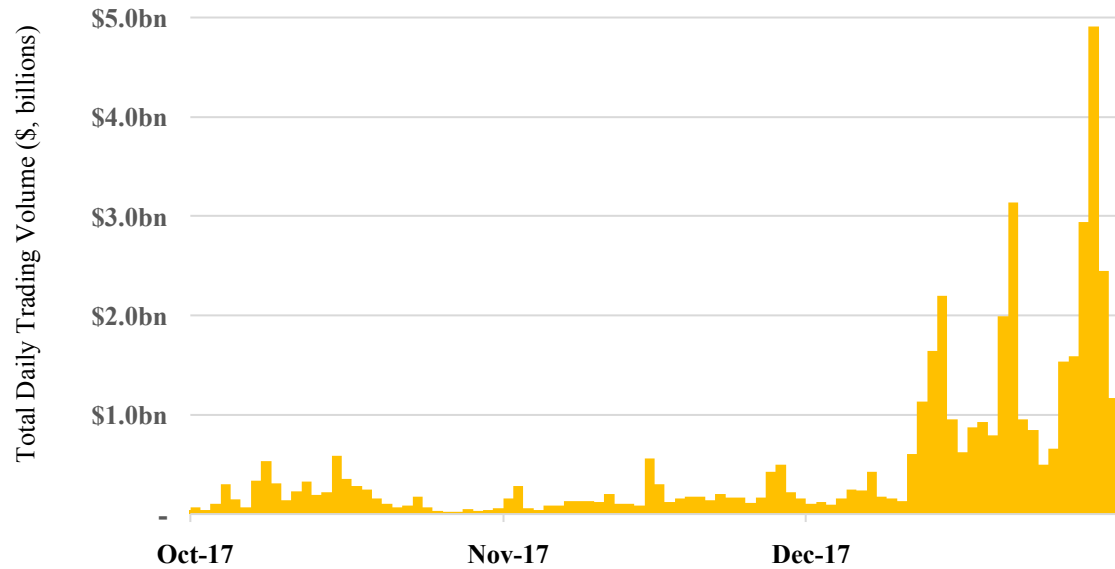


Data Source: [Coincap](#), [Coinmetrics](#)

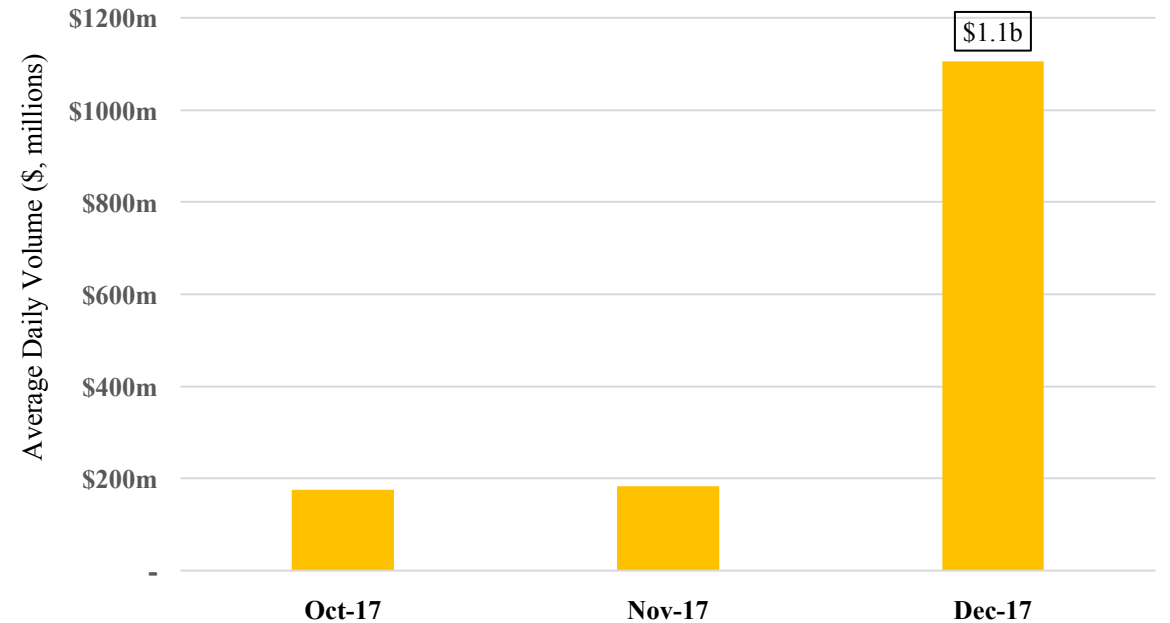


XRP Exchange Trading Volume Increased

Global Daily XRP Exchange Trading Volume



Average Daily XRP Exchange Trading Volume



Data Sources: [Cryptocompare](#), [Coinmetrics](#)

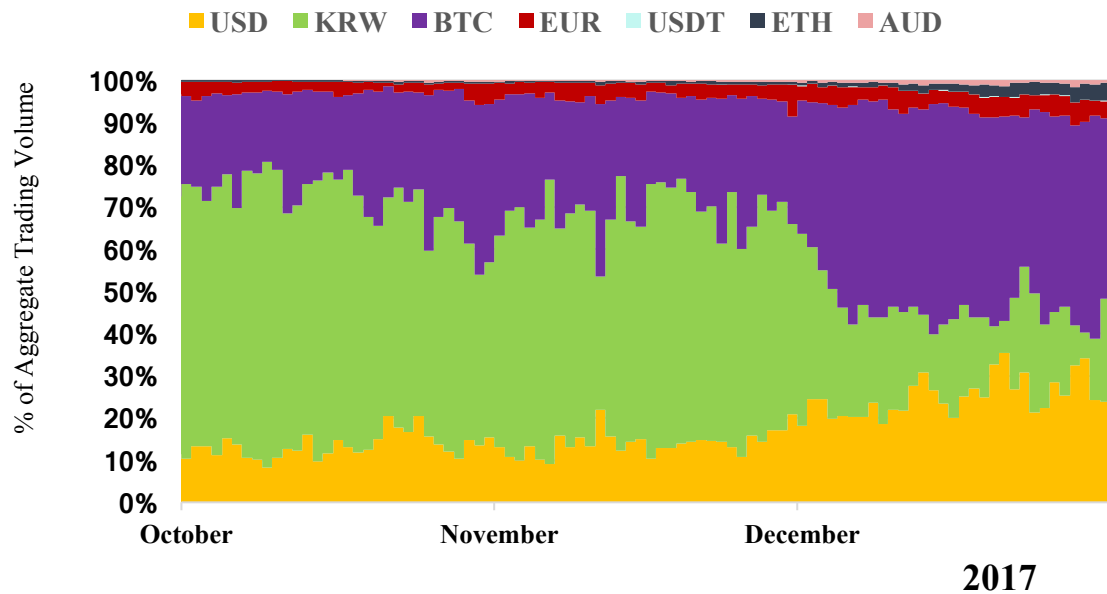
Notes: \$ value at the time across all listed currencies and exchanges



XRP Most Heavily Traded with BTC

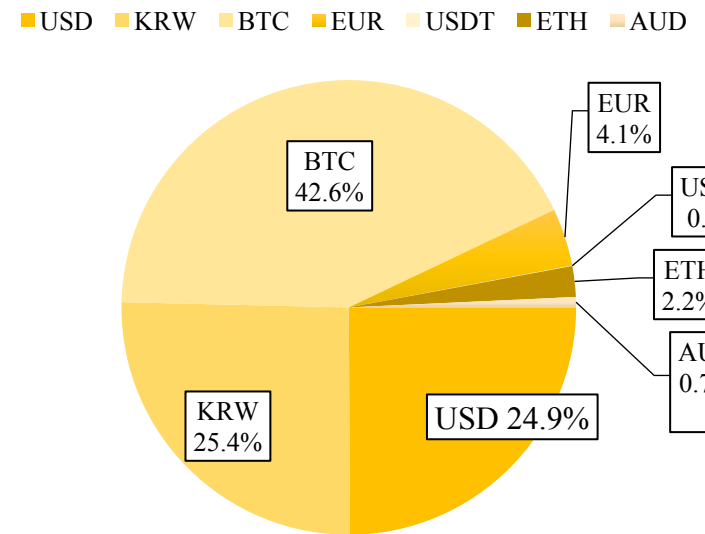
USD & BTC Gained Market Share from KRW

Global Daily XRP Exchange Trading Volume



Q4 2017 XRP Exchange Trading Volume

Share of Volume Across Currencies



Q3 2017:
BTC: 41.7%
KRW 36.8%
USD 15.9%

Data Source: [CryptoCompare](#)

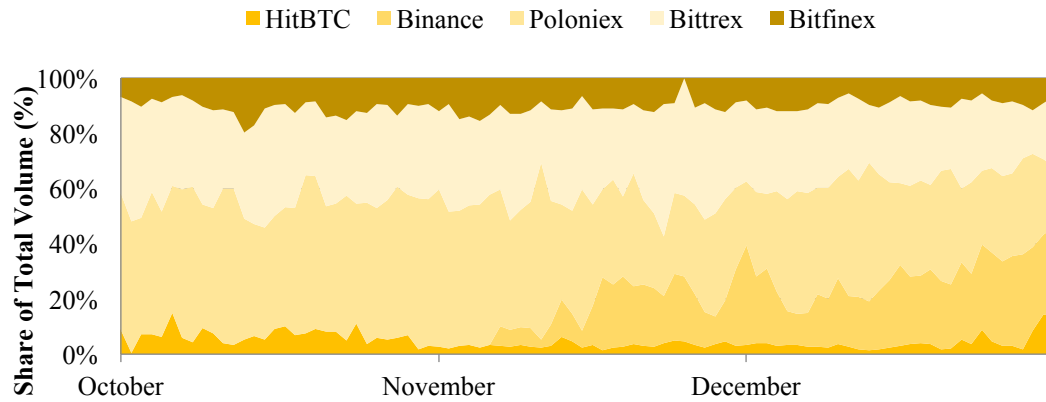


Poloniex Led Volume in BTC Markets

Bitfinex Led in USD

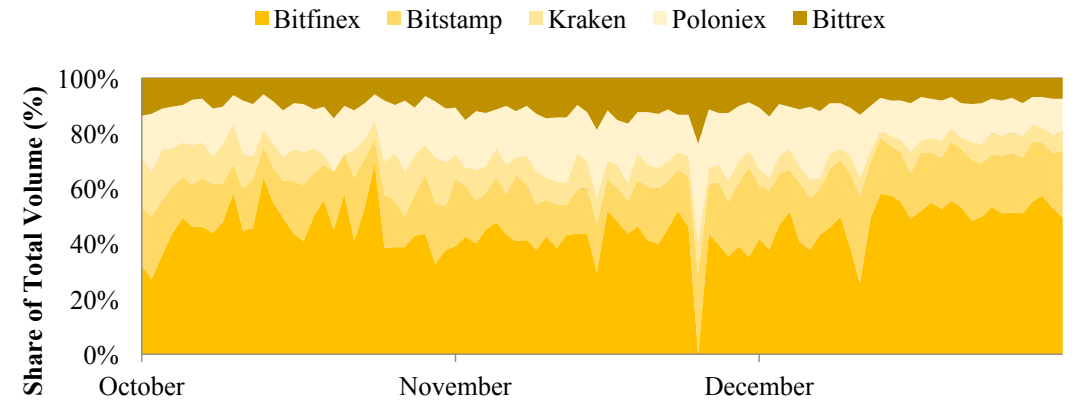
XRP Exchange Trading Volume (BTC)

Share of Total Volume Across Exchanges



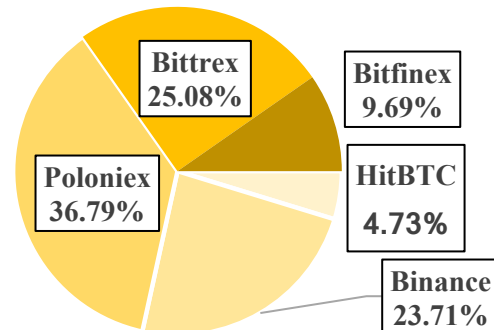
XRP Exchange Trading Volume (USD)

Share of Total Volume Across Exchanges



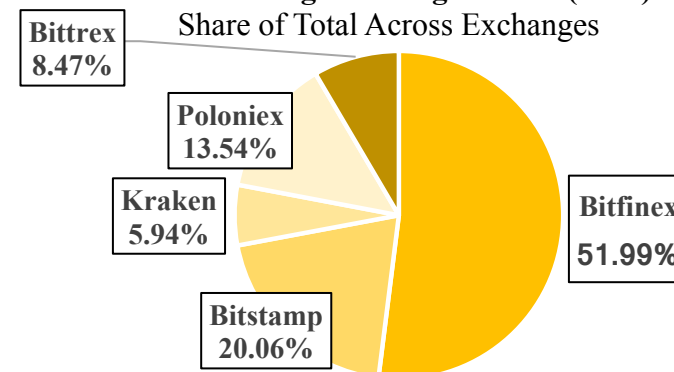
XRP Exchange Trading Volume (BTC)

Share of Total Across Exchanges



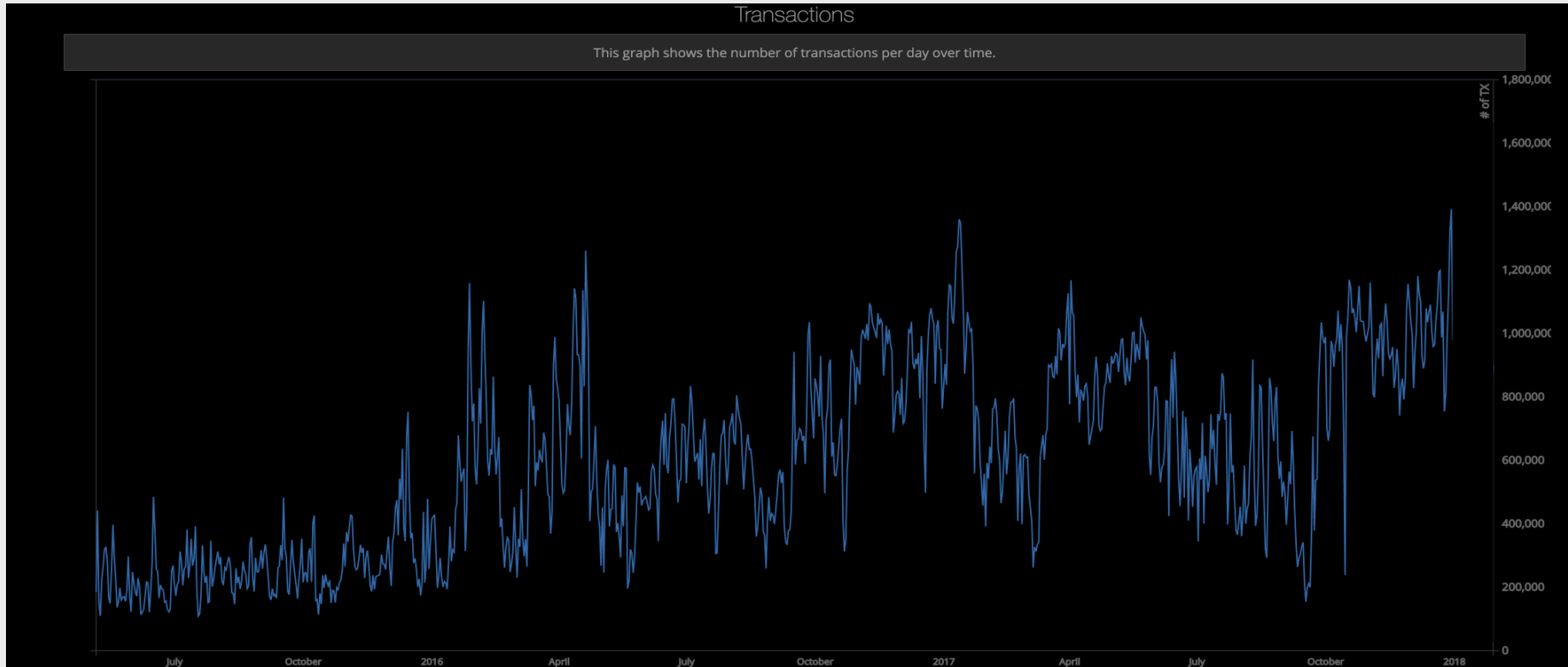
XRP Exchange Trading Volume (USD)

Share of Total Across Exchanges



≡ Transactions

XRP Transaction Numbers Rise Again



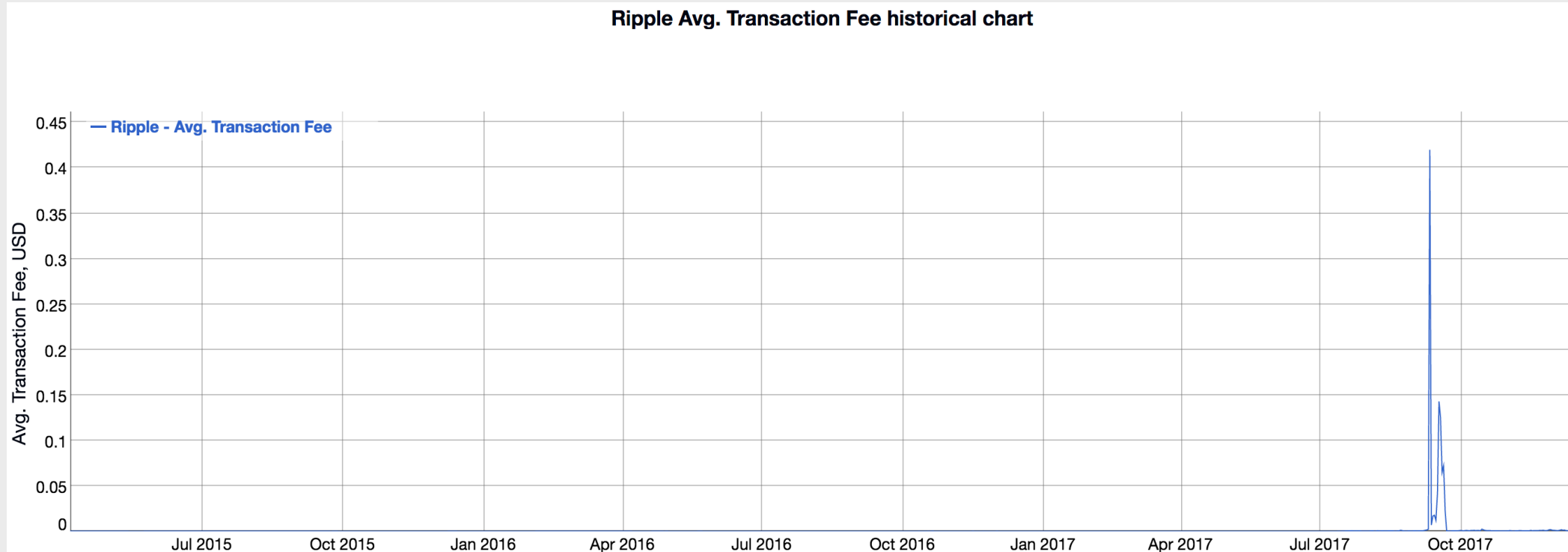
Q4 2017:
BTC: 319,085



Fees

Transaction Fees Barely Increase Rose from 1¢ in Q3 to 19¢ in Q4 2017

Ripple Avg. Transaction Fee historical chart

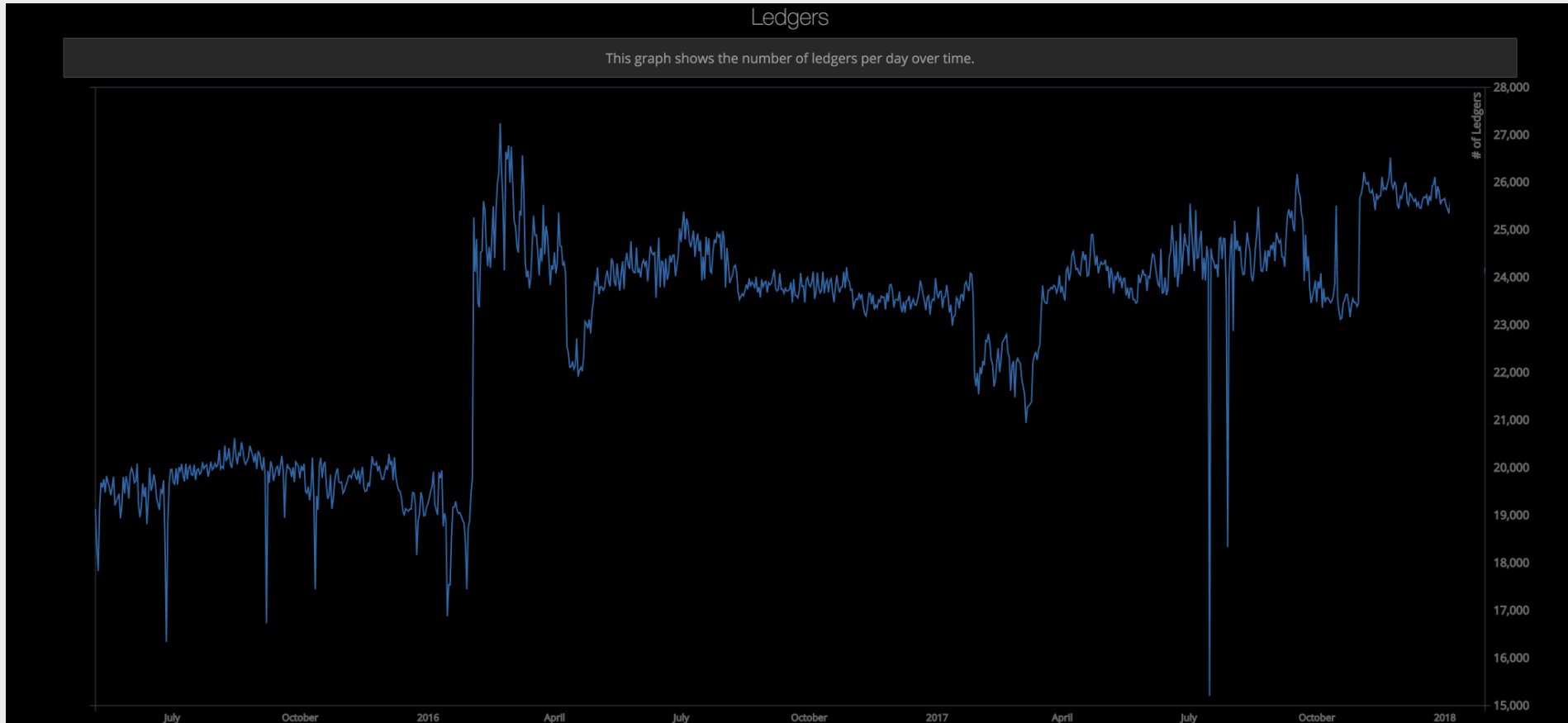


Data Sources: [Ripple](#), [Bitinfocharts](#)



Ledgers

XRP Ledgers Increase



Data Source: [Ripple](#)



2F

ZEC



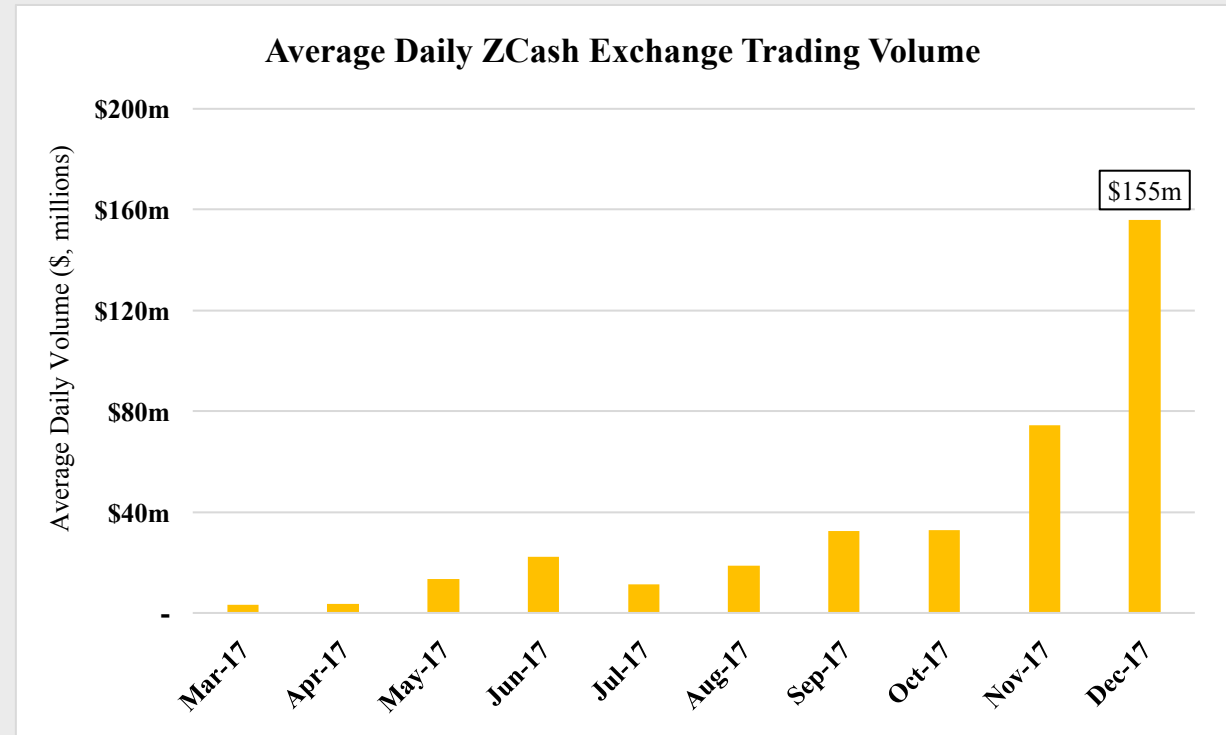
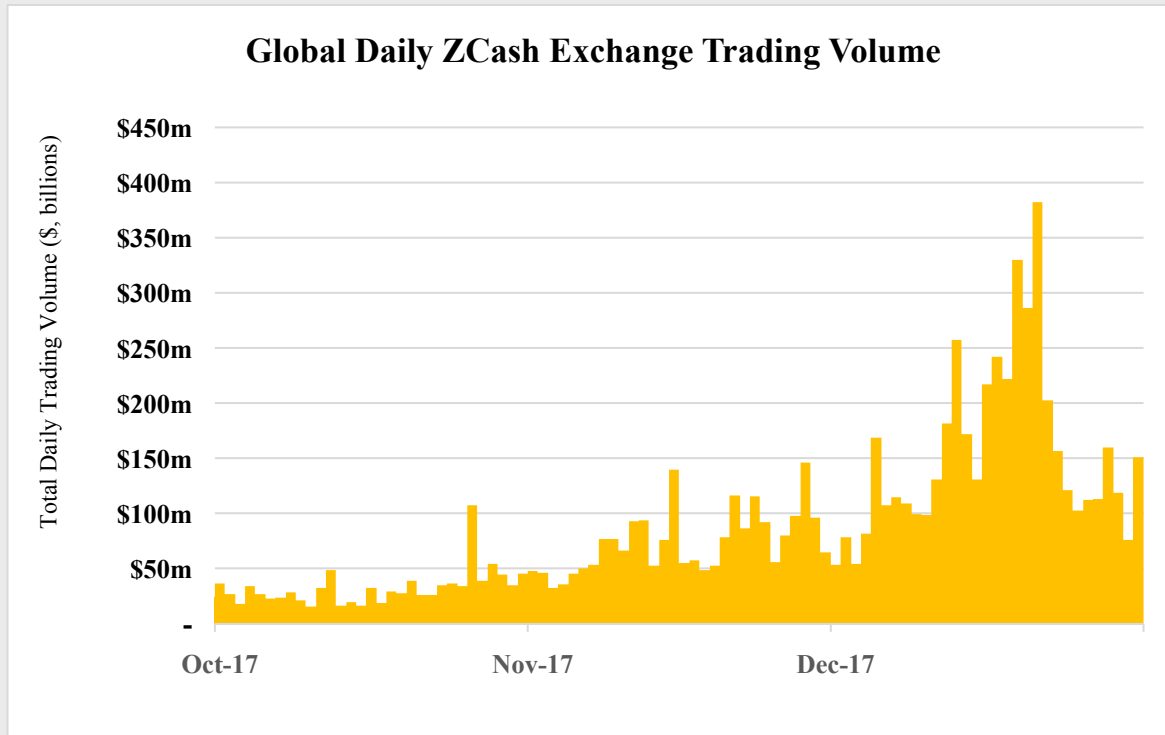
ZCash Increased 123% Over Q4 Reached All-Time High of \$1.9bn in Market Cap



Data Source: [Coincap](#), [Coinmetrics](#)



ZCash Exchange Trading Volume Increased



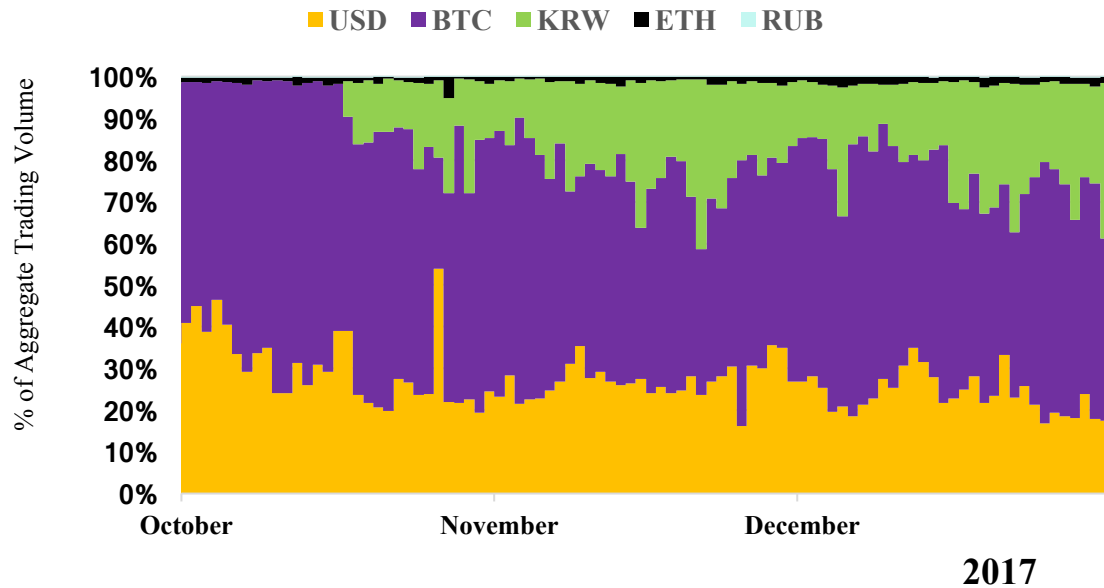
Data Sources: [Cryptocompare](#), [Coinmetrics](#)
Notes: \$ value at the time across all listed currencies and exchanges



ZEC Most Heavily Traded with BTC

KRW Started Its Markets in Late October

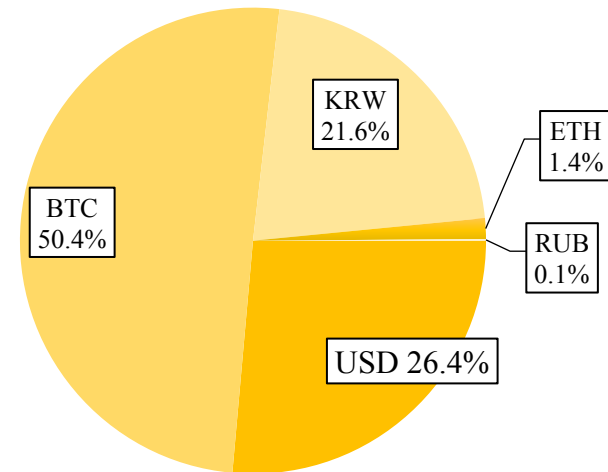
Global Daily ZCash Exchange Trading Volume



Q4 2017 ZCash Exchange Trading Volume

Share of Volume Across Currencies

Legend: USD (yellow), BTC (orange), KRW (light orange), ETH (dark orange), RUB (pale yellow)



Q3 2017:
BTC 55.7%
USD 40.8%
ETH 3.3%

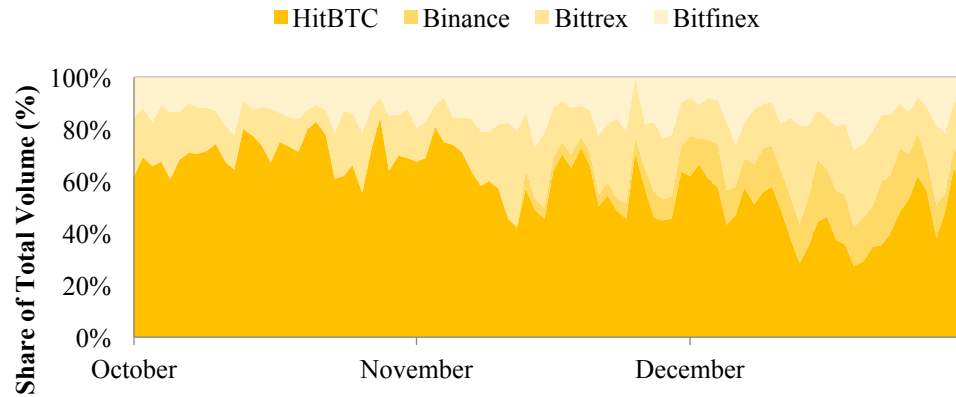


HitBTC Lost Share In BTC Markets

Bitfinex with Most Volume In USD

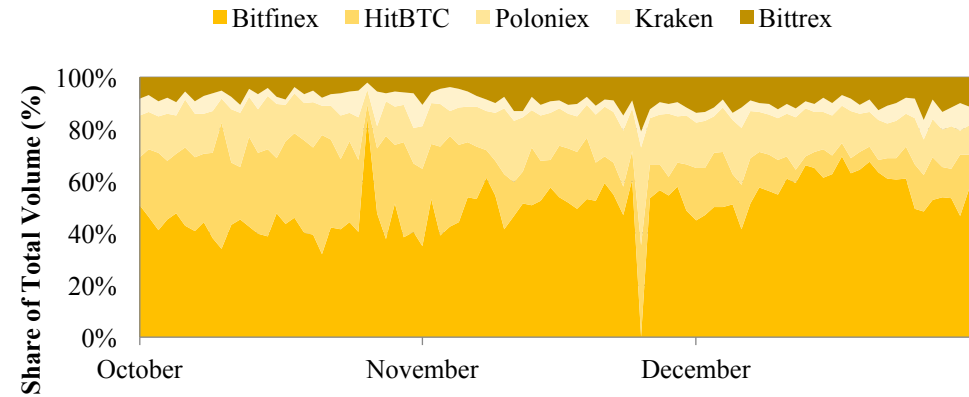
ZCash Exchange Trading Volume (BTC)

Share of Total Volume Across Exchanges



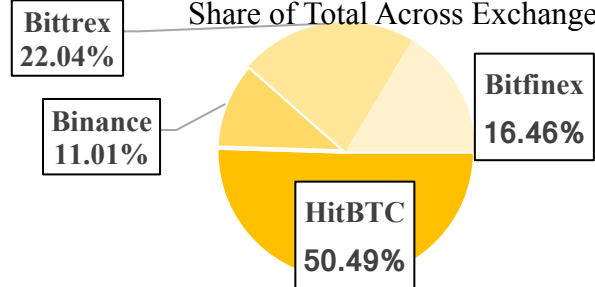
ZCash Exchange Trading Volume (USD)

Share of Total Volume Across Exchanges



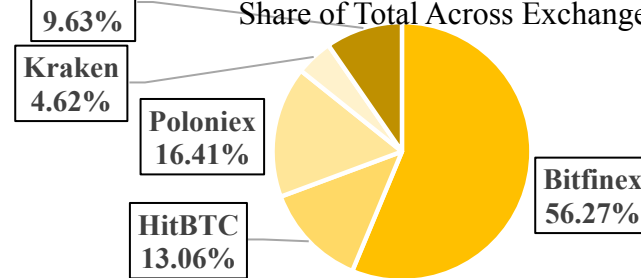
ZCash Exchange Trading Volume (BTC)

Share of Total Across Exchanges



ZCash Exchange Trading Volume (USD)

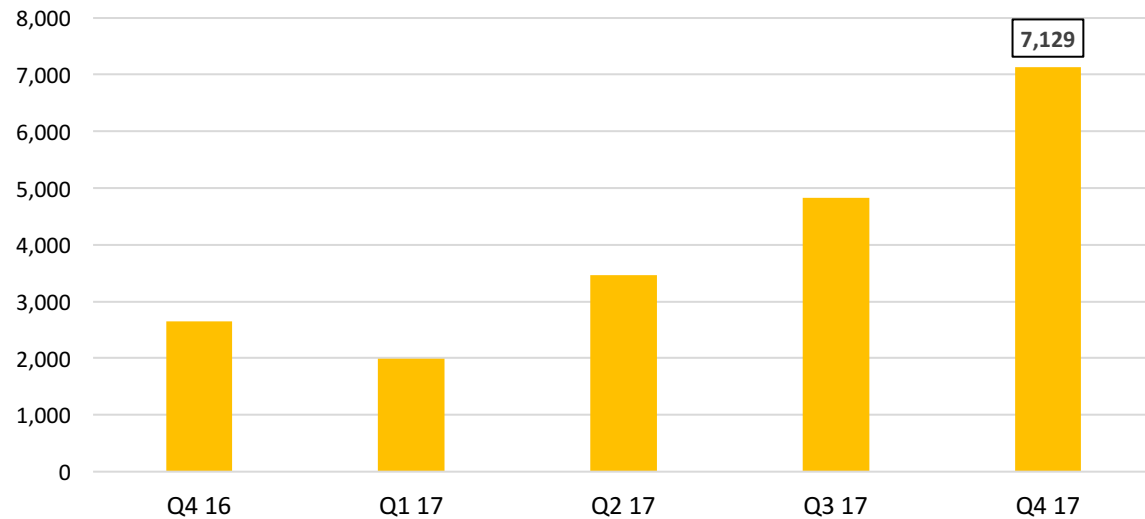
Share of Total Across Exchanges



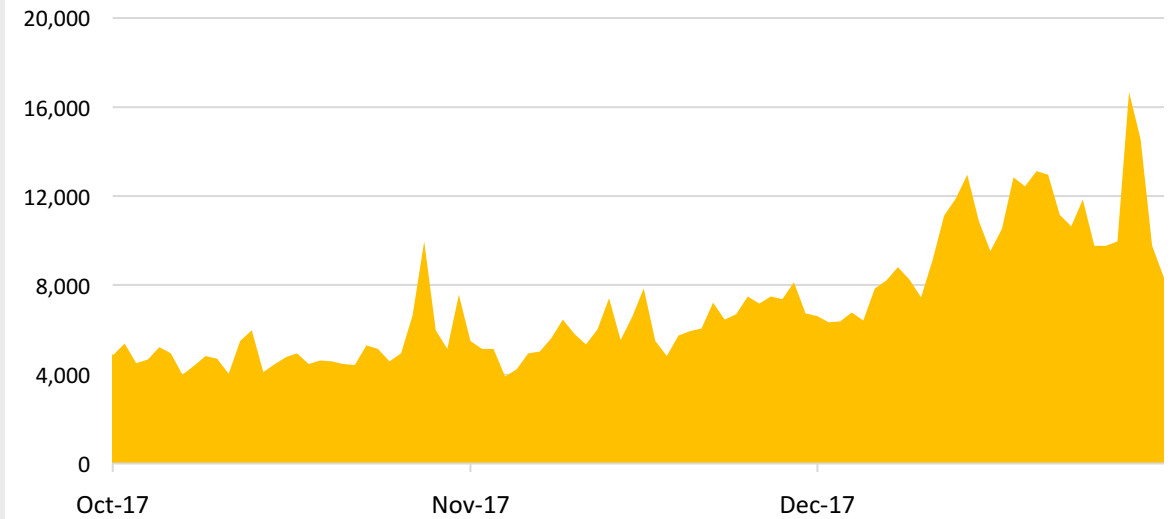
≡ Transactions

ZEC Transaction Numbers Rise Again

ZCash Transaction Growth
(Average # per day)



ZCash Transaction Growth
(Average # per day)



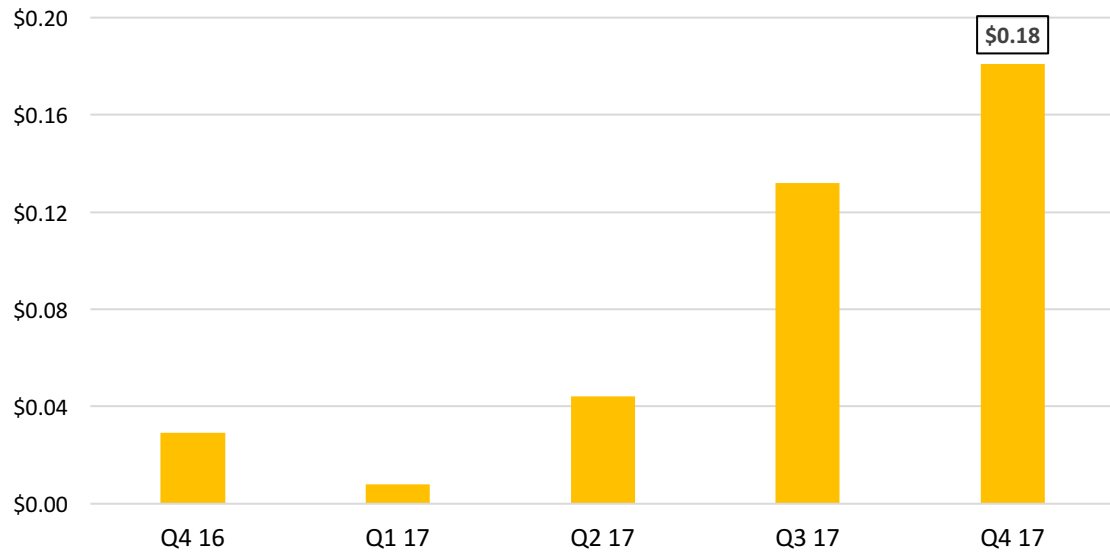
Q4 2017:
BTC: 319,085



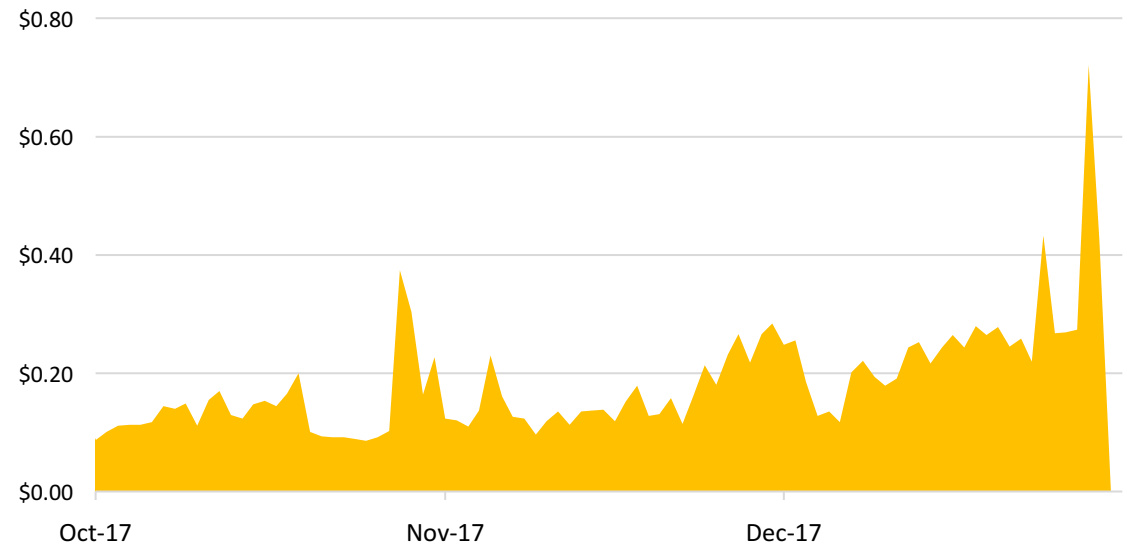
Fees

ZCash Transaction Fees Remain Inexpensive Despite Price Increase

ZCash Transaction Fee Growth
(Average \$ per transaction)



ZCash Transaction Fee Growth
(Average \$ per transaction)





Hashrate

Hashrate Continues to Grow



Data Sources: [Bitinfocharts](#)



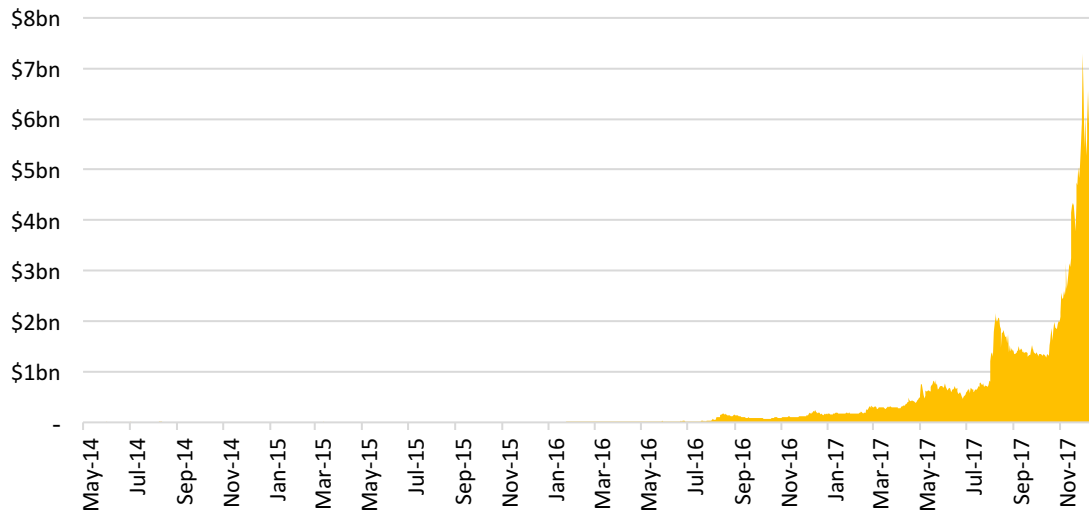
2G

XMR



Monero Increased 253% Over Q4 Reached All-Time High of \$7.3bn in Market Cap

Monero Historical Market Cap

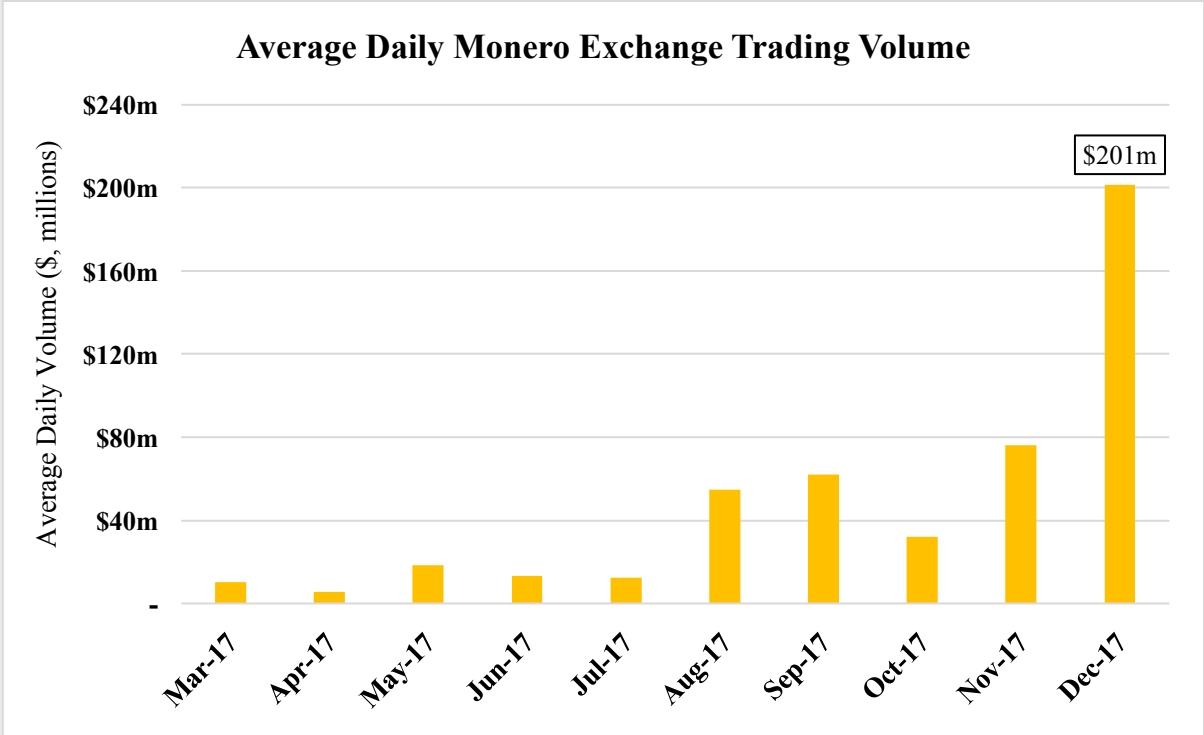
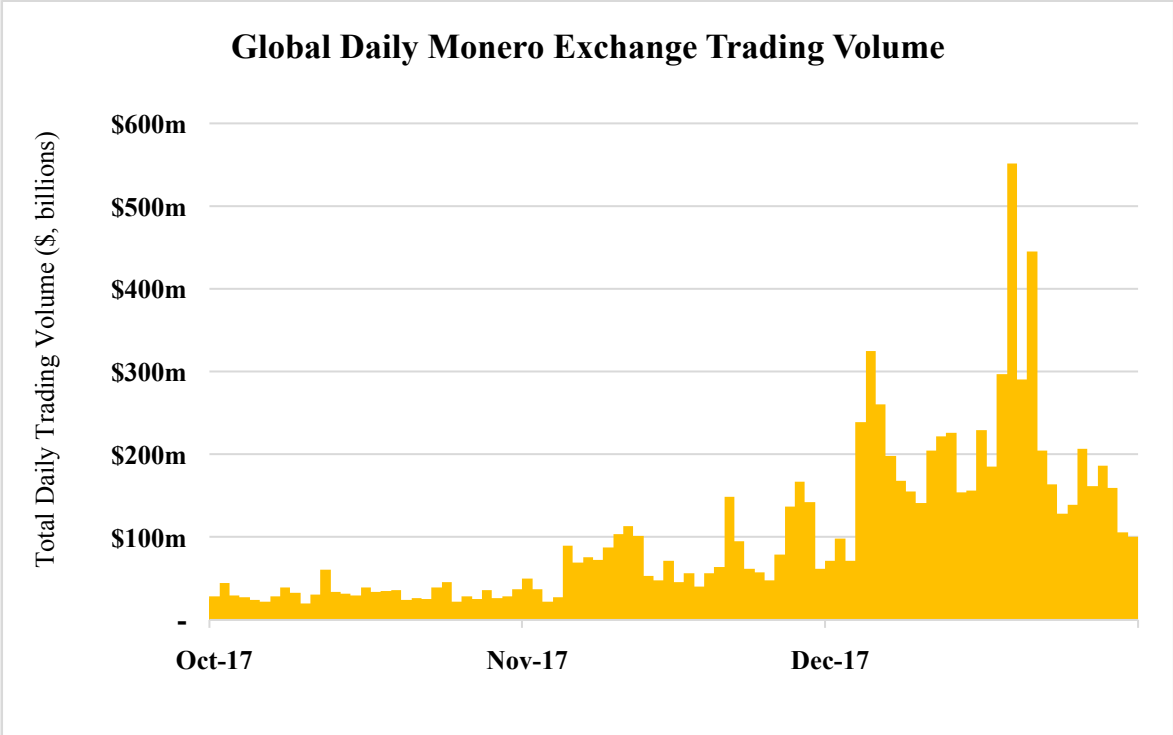


Monero Q4 2017 Market Cap





Monero Exchange Trading Volume Increased



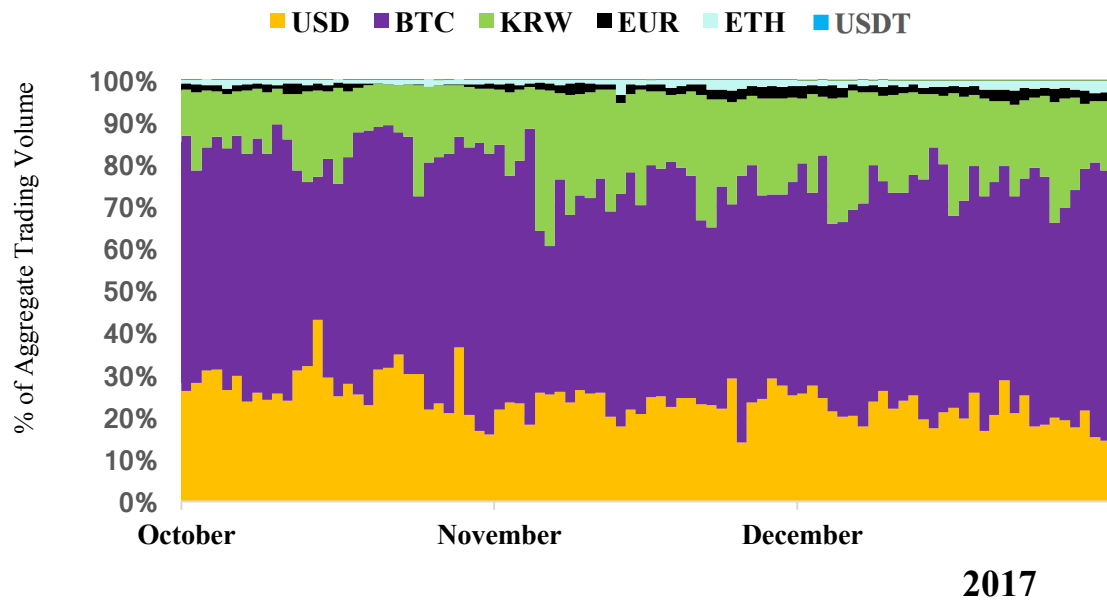
Data Sources: [Cryptocompare](#), [Coinmetrics](#)
Notes: \$ value at the time across all listed currencies and exchanges



XMR Most Heavily Traded with BTC

Trading Remained Stable

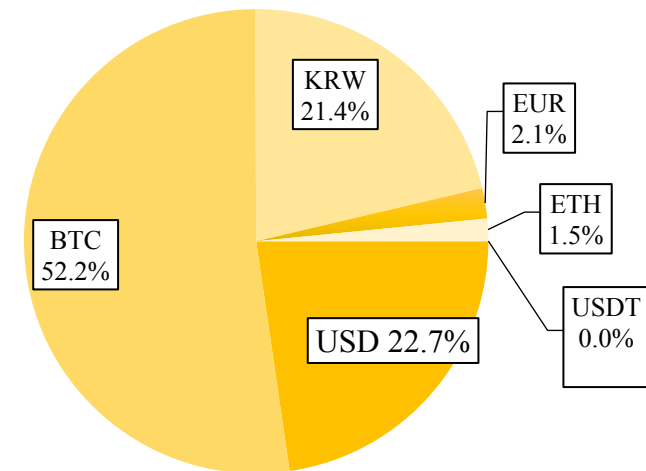
Global Daily Monero Exchange Trading Volume



Q4 2017 Monero Exchange Trading Volume

Share of Volume Across Currencies

Legend: USD (Yellow), BTC (Orange), KRW (Light Orange), EUR (Light Yellow), ETH (Light Green), USDT (Light Blue)



Q3 2017:
BTC 49.1%
KRW 25.7%
USD 21.8%

Data Source: [CryptoCompare](#)

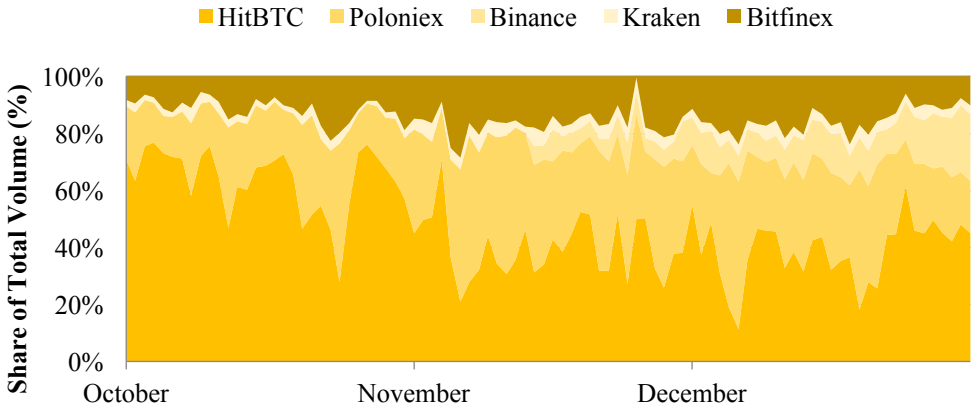


HitBTC Led in BTC Markets

Bitfinex Gained Big in USD

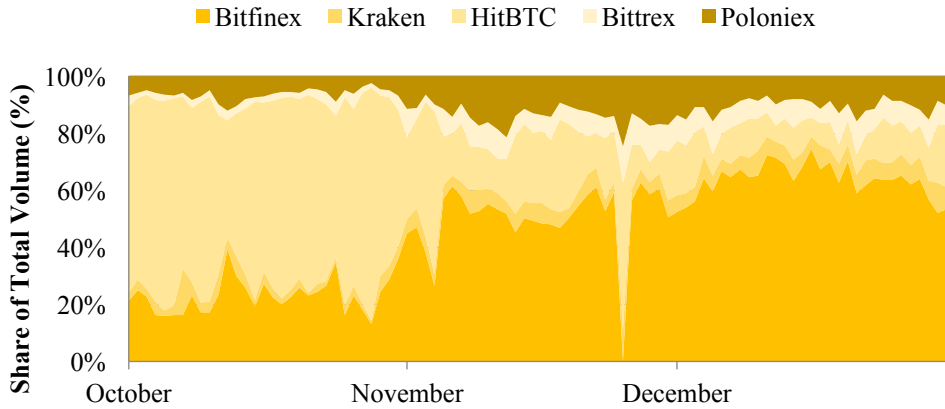
Monero Exchange Trading Volume (BTC)

Share of Total Volume Across Exchanges



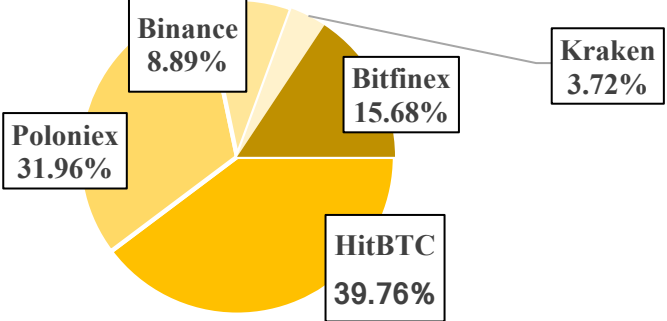
Monero Exchange Trading Volume (USD)

Share of Total Volume Across Exchanges



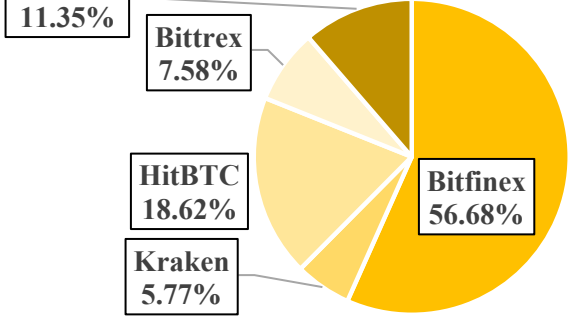
Monero Exchange Trading Volume (BTC)

Share of Total Across Exchanges



Monero Exchange Trading Volume (USD)

Share of Total Across Exchanges



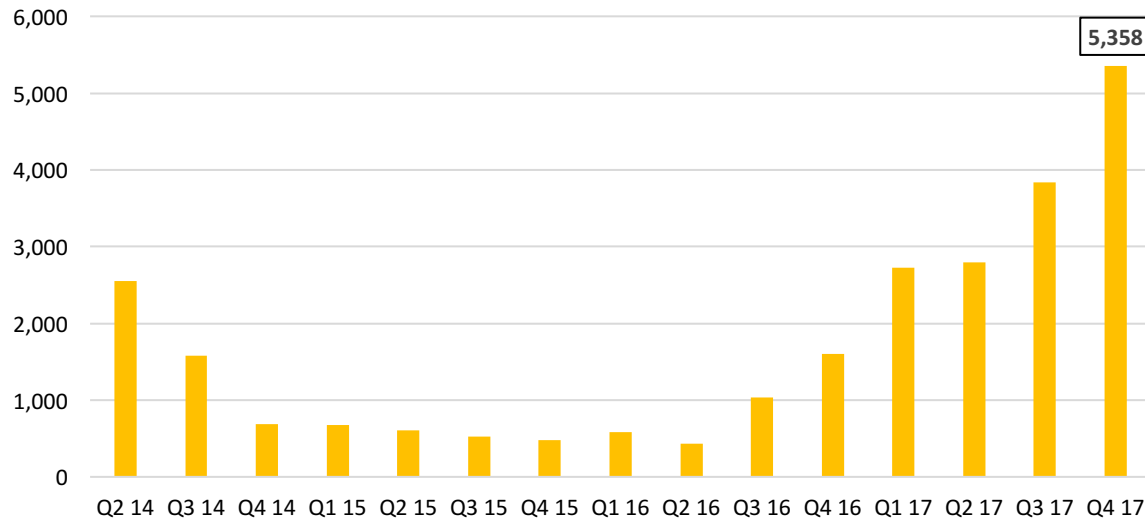
Data Source: [CryptoCompare](#)



Transactions

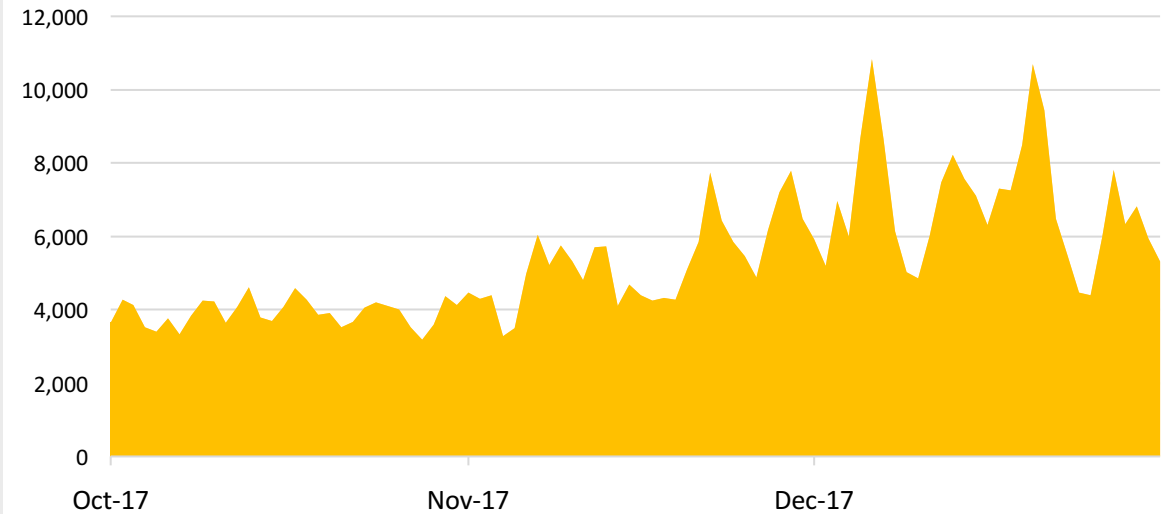
XMR Transaction Numbers Rise

Monero Transaction Growth
(Average # per day)



Q4 2017:
BTC: 319,085

Monero Transaction Growth
(Average # per day)

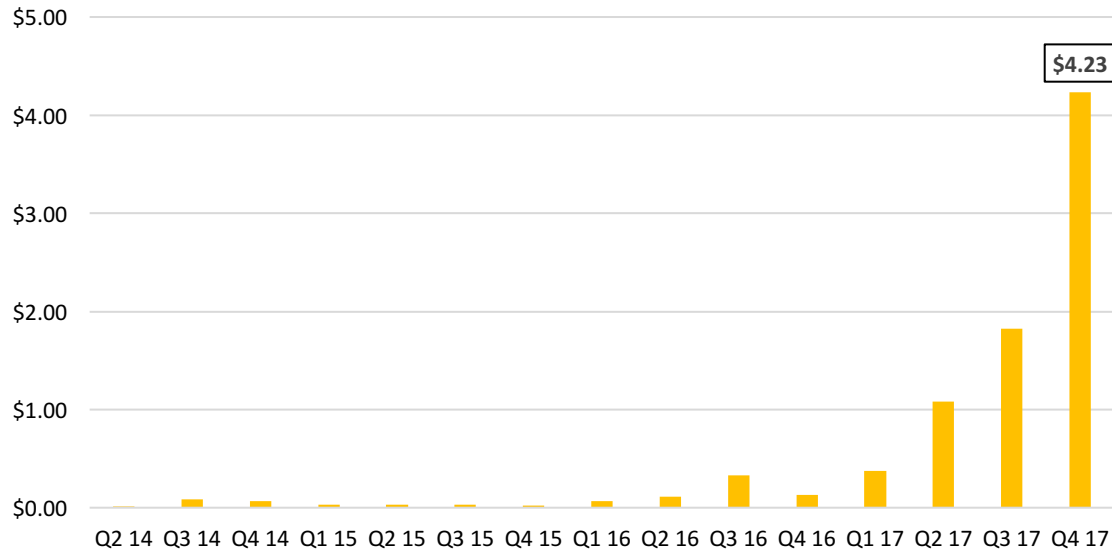




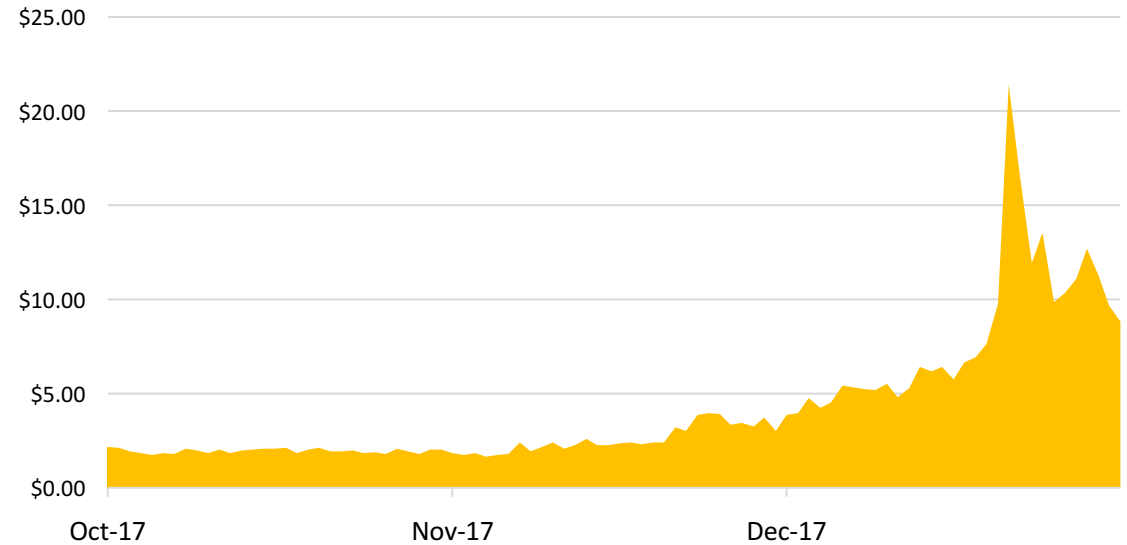
Fees

Transaction Fees More Than Double Rose from \$1.82 in Q3 to \$4.23 in Q4 2017

Monero Transaction Fee Growth
(Average \$ per transaction)



Monero Transaction Fee Growth
(Average \$ per transaction)

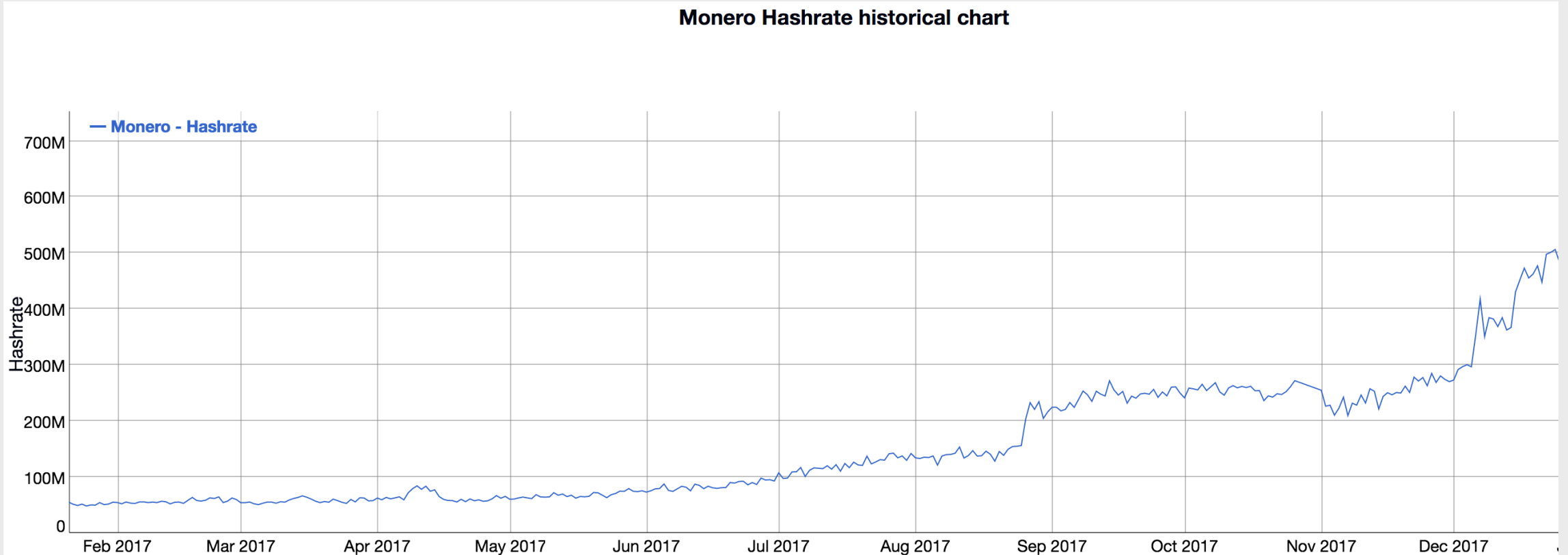




Hashrate

Transaction Fees More Than Double
Rose from \$1.82 in Q3 to \$4.23 in Q4 2017

Monero Hashrate historical chart





3

ENTERPRISE BLOCKCHAINS



Q4 2017 Enterprise Blockchain Summary

Blockchain for Enterprise Market Expected to Grow:

- Annual revenue for the enterprise blockchain will increase from approximately \$2.5bn worldwide in 2016 to \$19.9bn by 2025, with a CAGR of 26.2%.

Enterprise Ethereum Alliance sees more interest:

- Enterprise Ethereum Alliance adds members and 3 new organizational structures.

R3 takes its next step:

- R3 adds members, launches Corda version 2.0. Corda becomes the first DLT to be accessible on Amazon Web Services (AWS).

We.Trade joins the ecosystem:

- 9 banks set up joint venture aiming to ease European domestic and cross-border trade with DLT built by IBM.

Microsoft's enterprise blockchain solutions:

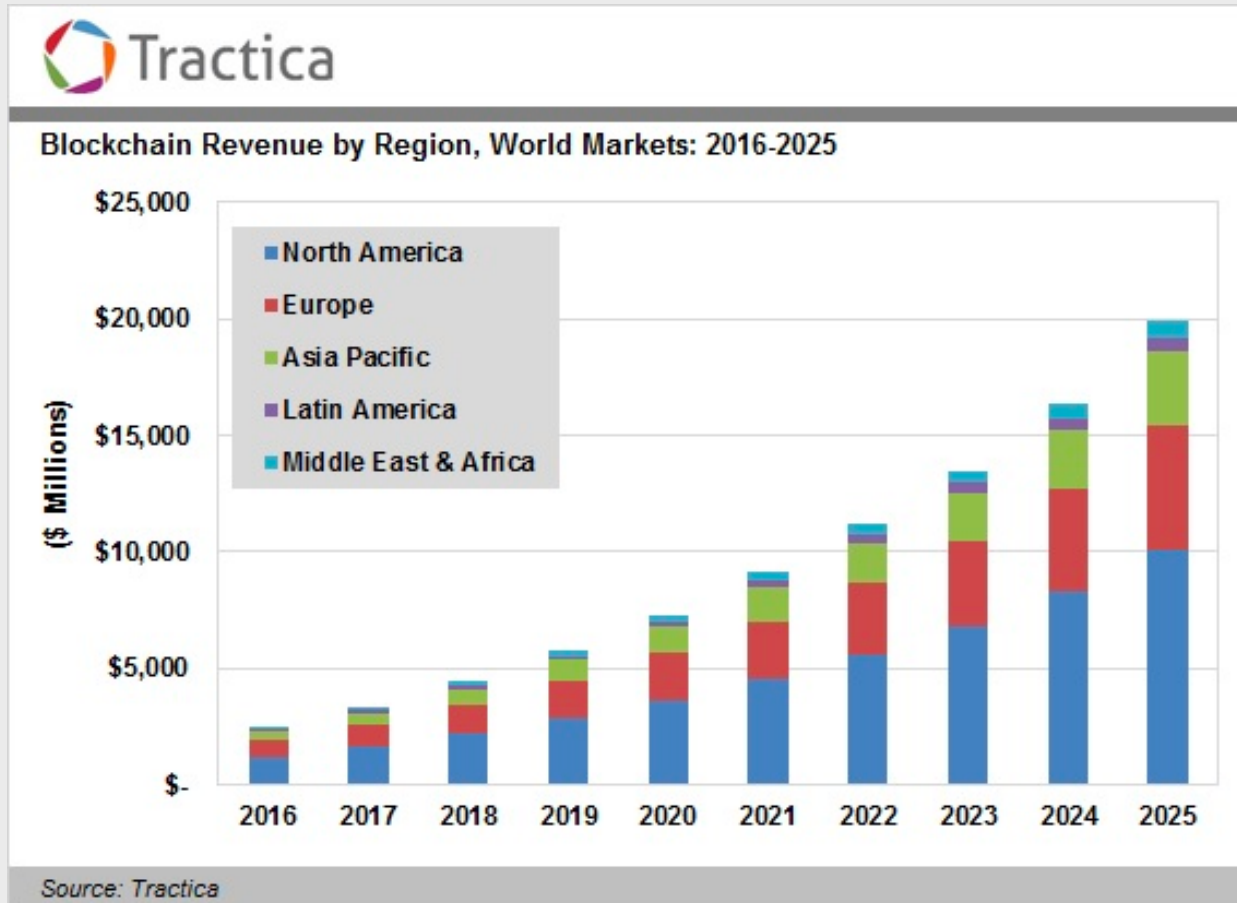
- Microsoft launches of blockchain for Azure Government.

Hyperledger loses members:

- Hyperledger members CME Group, Deutsche Borse Group, R3, downgrade their membership to general. 15 other organizations cancel their membership.



Blockchain for Enterprise Market Growth



Annual revenue for enterprise applications of blockchain will increase from approximately \$2.5 billion worldwide in 2016 to \$19.9 billion by 2025, representing a compound annual growth rate (CAGR) of 26.2%.

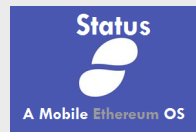
Permissioned Blockchains: Enterprise Ethereum Alliance Update

Membership

Now 250+ members, recent additions include:



**Hewlett Pack
Enterprise**



**Member
Fees: \$25k**

New Organizational Structures

Digital Identity Working Group:

The goal of the Digital Identity Working Group is to establish a general understanding about the role of ethereum in the digital identity space and to develop a taxonomy that is widely accepted and practiced in the technology industry.

Energy Working Group:

The Energy Working Group is defining standards around ethereum blockchain implementations for oil and gas, mining, refining, trading, utilities, grids and other verticals within the energy industry. The group will work toward building the industry infrastructure needed for widespread adoption within these energy-related areas.

Multiplatform Working Group:

The MultiPlatform Working Group will work to make the ethereum platform available on multiple operating systems and physical hardware. The current version works well on certain operating systems, but the group will work toward advances which will make the platform universally adoptable.

Membership Gains

Now 100+ members, recent additions include:



Member Fees:
Premier: \$250k a year.
General memberships: \$5,000 to \$50,000

Membership Losses

About 15 members left, will leave, or downgrade their membership. They include:



Projects

- The National Settlement Depository (NSD), the central depository for Russia's largest securities exchange group, has announced it is testing a new commercial bond trading platform built on top of the Hyperledger blockchain consortium's Fabric software.
- Oracle Corporation opened its annual conference announcing building their Blockchain cloud service on top of the Hyperledger Fabric project.
- Quilt, Interledger protocol, joins Hyperledger



Permissioned Blockchains: R3 Update

Membership

Now 100+ members, recent additions include:



Data Sources: [R3](#), [CoinDesk](#)



Corda v2.0

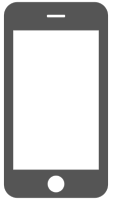
- Corda v2.0 released
- Corda 2.0 delivers the addition of Observer Node functionality. This feature allows transactions to be forwarded to third parties such as relevant regulators for addition to their vaults
- Corda is a platform for smart contracts focused on privacy and security
- Codebase developed with 50 financial services and tech firms
- Open-source release of platform occurred in 2016



R3 Loses
Ripple
Lawsuit

Projects

- Finastra , R3, and 7 leading banks are creating an online marketplace to drive transparency and efficiency in the syndicated loan market
- R3 and 22 of its member banks have developed a solution that leverages distributed ledger technology (DLT) to enable fast, efficient and cost-effective cross-border payments
- Emali launches training course for R3's Corda DLT Platform in Hong Kong and Southern China
- R3's Corda has become one of the first DLT solutions available to users of Amazon Web Services (AWS)



Major Cellular Carriers Around the World Launch Study Group, CBSG

Members



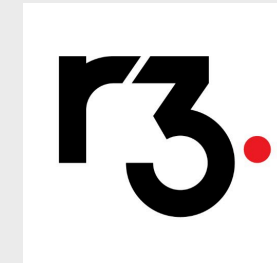
Projects

- SoftBank Group, in partnership with blockchain startup Sivira, has created a blockchain-based system for managing personal financial information
- The company aims to launch the system in the market in 2019

Projects

- Microsoft's Coco platform aims to speed up transactions and simplify governance decisions for enterprise DLT
- It will work with popular open-source blockchains and distributed ledgers, including ethereum, R3, Corda, Hyperledger Sawtooth, and JP Morgan's Quorum
- Aims for compatibility with Intel's SGX chip, other hardware that protects private cryptographic keys.
- Intel SGX is CPU-related thus Microsoft's Coco Framework will not depend on GPU accelerators from Nvidia (NVDA) or AMD
- Launch of blockchain for Azure Government

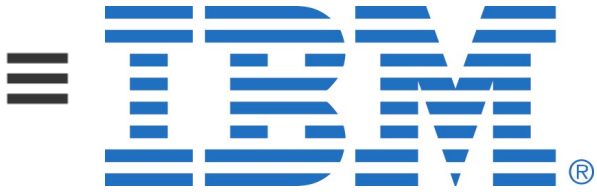
Interoperability



HYPERLEDGER

J.P.Morgan





Permissioned Blockchains: IBM Update

Accelerator Partnership



- MState (formerly HyperFab) is a growth lab for enterprise blockchain focused on Hyperledger Fabric
- In partnership with IBM, Comcast Ventures, Galvanize and Boldstart Ventures
- IBM will provide training and support to participants

Education

- The IBM Academic Initiative provides open resources to over 1,000 universities worldwide
- Recently added blockchain resources to the initiative, including access to the IBM Blockchain Platform, six months of access to IBM Cloud, and use of the IBM Blockchain cloud sandbox
- In addition, there are resources and guides for educators

Projects

- ZF Friedrichshafen and UBS on mobile payments system: Car eWallet
- PSA International working on a blockchain trial for supply chain document flow
- Food safety consortium based on initial Walmart pilot now includes Dole, Unilever, Kroger, Nestle, and others
- BM is using the blockchain to speed up and simplify cross-border payments
- IBM to track pot supplies as they move up the supply chain from farm to distributor to retailer to consumers in conjunction with British Columbia government

Members

Now 10+ members, including:



Joint venture rather than consortium. Founding members get equity.

Projects

- Aiming to ease European domestic and cross-border trade we.trade is building a distributed ledger framework that connects a buyer, sellers, banks and intermediaries to simplify transaction management and tracking
- The consortium will create a new business entity in the Republic of Ireland, jointly owned by the eight founding banks, that will manage and distribute the offering
- Banco Santander, Deutsche Bank, HSBC, KBC, Natixis, Rabobank, Societe Generale and UniCredit are the 8 founding members banks
- The commercialization of the platform is expected in Q2 2018. From February 2018, test clients of the founding banks will be able to use the platform. Onboarding team has been formed to welcome new banks to the platform
- IBM provides the cloud-based system powered by Hyperledger Fabric 1.0
- Nordea becomes the ninth banking member in December



4

TRADING & INVESTMENT



Q4 2017 Trading & Investment Summary

Token sales raise 16x over VC:

- Total raised by ICOs hits \$3.23bn in Q4, with VC amounting to \$200mn.

ICO deal breaks records:

- Sirin Labs raised its way into 3rd all-time highest ICO (\$158mn).

Two important VC deals :

- BitGo raised \$43mn and Bitpay raised \$30mn.

ICOs less spectacular in ETH:

- Less spectacular when denominating in ETH with +56% vs. +146% for USD (Q3 to Q4).

Futures show promise:

- CME & Cboe futures launched with regulatory approval and market interest.

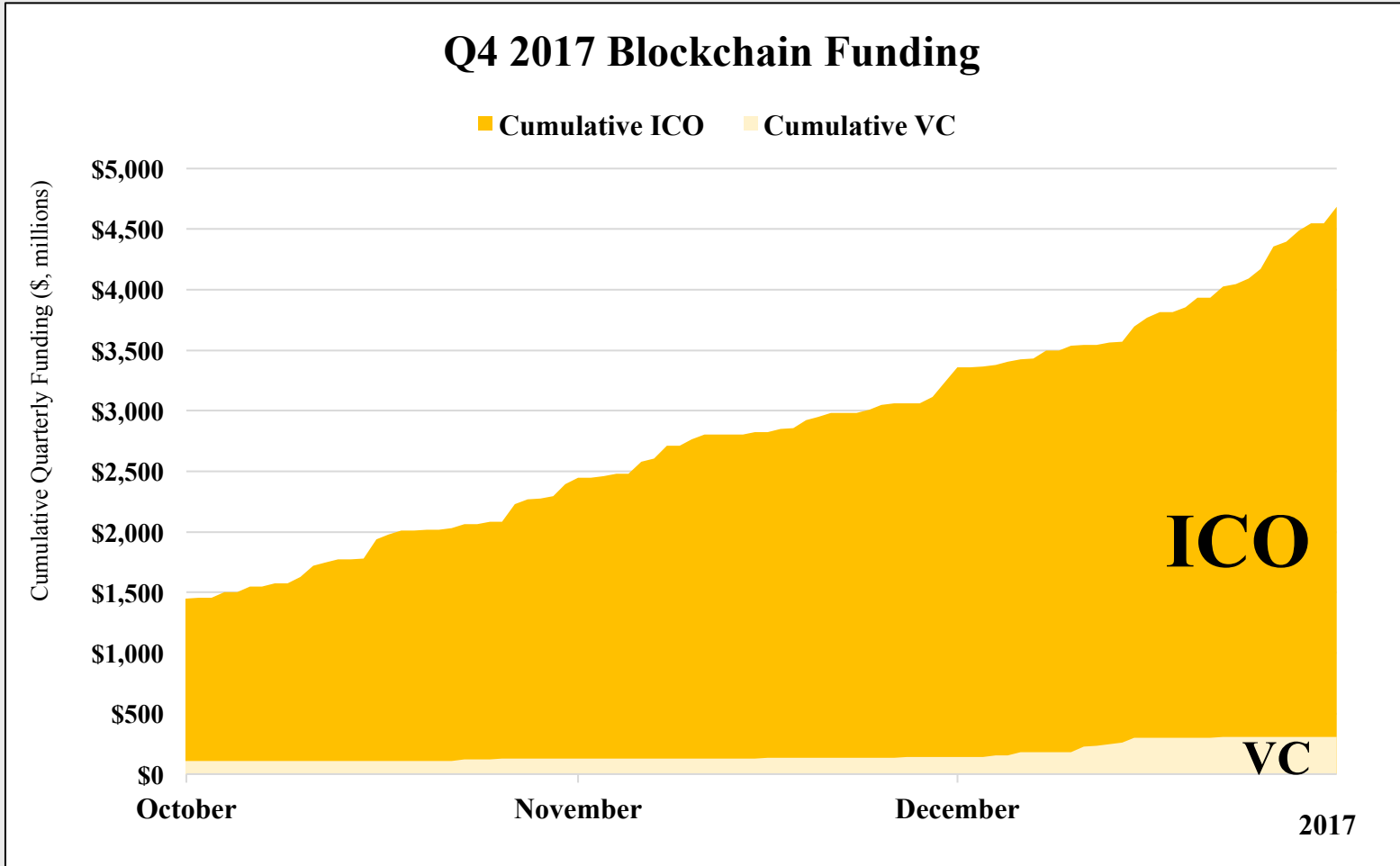
Forks have raised 8x more than ICOs:

- Token generating events (TGE) are split between \$44bn in forks vs. \$5bn in ICOs cumulatively.



ICO Funding Raised \$3.2bn in Q4

ICOs Exceeded VC by Over 16x



ICO
\$3,231mn

VC
\$200mn

Top ICO Deals:

- Sirin Labs - \$157.9mn
- Polkadot - \$144.6mn
- Qash - \$107.3mn
- COMSA - \$95.4mn

Top VC Deals:

- BitGo - \$42.5mn
- BitPay - \$30mn
- OKCoin - \$27.2mn
- Abra - \$16mn

Q2

ICO \$797mn	VC \$235mn
-----------------------	----------------------

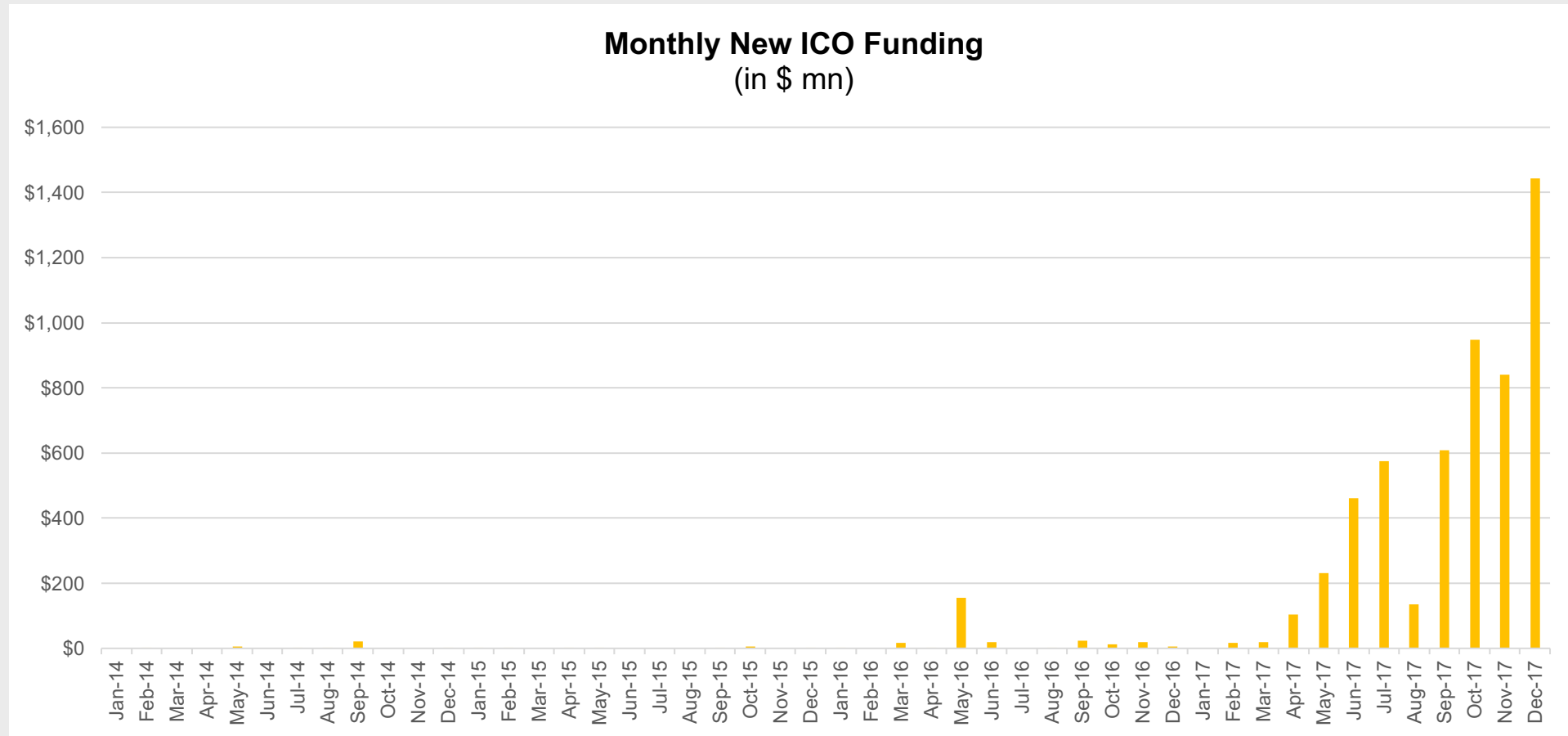
Q3

ICO \$1,316mn	VC \$156mn
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Data Sources: [CoinDesk venture capital database](#), [CoinDesk ICO Tracker](#)
Notes: Deals under \$100,000 excluded, \$ amount at time raised, including only fundraisers ending in 'Q4 2017' (10/1/17 – 12/31/17)



December Saw the Most ICO Funding Ever



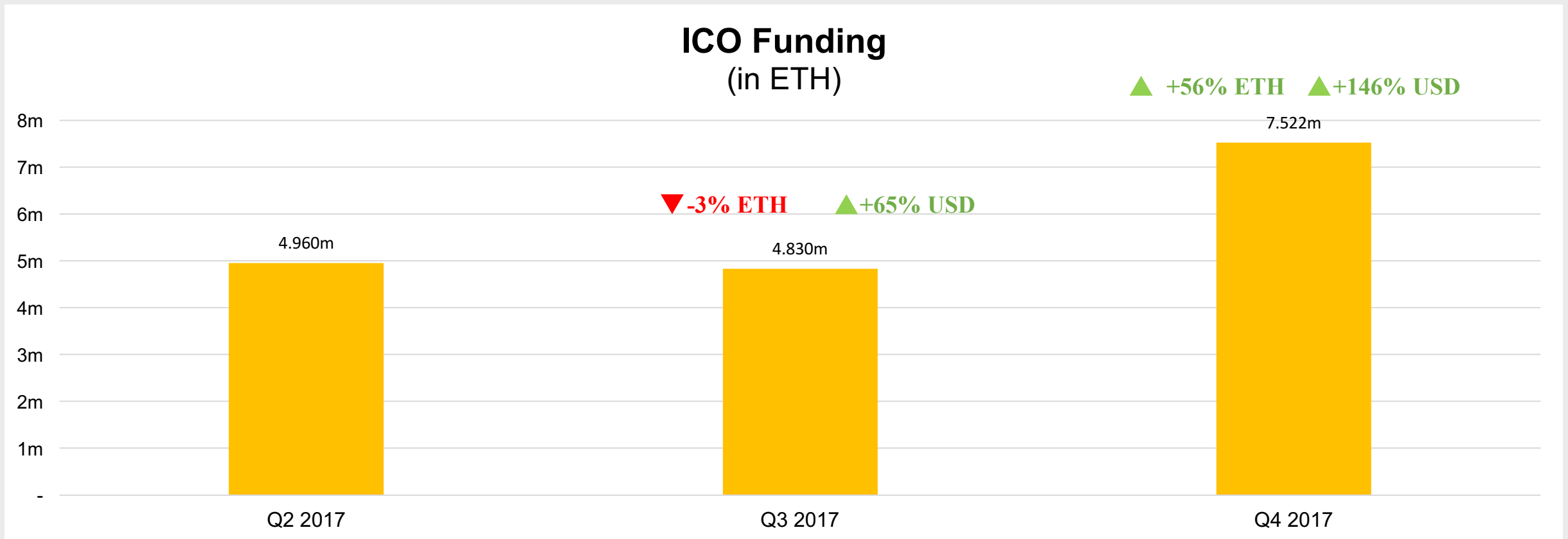
Data Sources: [CoinDesk venture capital database](#), [CoinDesk ICO Tracker](#)

Notes: Deals under \$100,000 excluded, \$ amount at time raised, \$ amount at time raised, including only fundraisers ending in 'Q4 2017' (10/1/17 – 12/31/17)



When Priced in ETH, ICO Funding Less Spectacular

Rise in Price of ETH Led to Rise in ICO Raises



Data Sources: [CoinDesk venture capital database](#), [CoinDesk ICO Tracker](#)
Notes: including only fundraisers ending in 'Q4 2017' (10/1/17 – 12/31/17)



ICO

ICO Deal Count Exploded in Q4 Dwarfs VC Investments in Blockchain

Q4 2017 ICOs		
Date	Project	ICO Round (\$m)
9/25/17	Centra (CTR)	30.00
9/26/17	Kin Kik	97.04
9/28/17	Cindicator (CND)	15.00
9/29/17	GameCoin	8.86
9/29/17	KICKICO (KCX)	24.97
9/30/17	Monetha (MTH)	29.95
9/30/17	Musiconomi (MCI)	6.77
9/30/17	REAL (REAL)	10.79
9/30/17	uooMAG (UMC)	20.00
10/1/17	Oxycoin (OXY)	6.25
10/2/17	HelloGold (HGT)	5.14
10/4/17	Viberate (VIB)	12.00
10/4/17	Wanchain	35.99
10/6/17	FinShi Capital (FINS)	21.41
10/6/17	Power Ledger (POWR)	23.23
10/8/17	PayPie	26.00
10/10/17	Aion Pre-sale	8.08
10/10/17	Airtoken (AIR)	15.00
10/10/17	Maecenas (ART)	15.40
10/10/17	Wolk Pre Sale	11.77
10/11/17	Airswap (AIG)	24.55
10/11/17	DomRaider	49.09
10/11/17	LAToken (LAT)	19.36
10/12/17	doc.ai (NRN)	13.75
10/12/17	Ties.Network (TIE)	8.29
10/13/17	Streamr	27.00
10/16/17	Change Bank (CAG)	15.83
10/16/17	Credit Protocol	15.30
10/16/17	Eidoo	27.22
10/16/17	HEROcoin	8.17
10/16/17	Paragon	94.58
10/17/17	Dovu	9.09
10/17/17	Request Network (REQ)	33.17
10/18/17	Ambrosus (AMB)	32.51
10/22/17	COBINHOOD (COB)	13.38
10/23/17	UnikoinGold (UKG)	31.59
10/25/17	BLOCKv (VEE)	21.07
10/27/17	Polkadot (DOT)	144.59
10/28/17	Etherparty (FUEL)	31.87
10/28/17	Swarm Fund	5.37
10/30/17	Aeron	5.35
10/30/17	Cryptopay (CPAY)	18.03
10/31/17	ATLANT (ATL)	6.63
...

Q4 2017 ICOs		
Date	Project	ICO Round (\$m)
10/31/17	CarTaxi (CTX)	8.71
10/31/17	Electroneum (ETN)	40.95
10/31/17	REALT (RLT)	11.15
10/31/17	Red Pulse (RPX)	13.32
10/31/17	Seratio Project (SER)	8.16
11/1/17	Enjin	22.93
11/1/17	Raiden Network (RDN)	33.13
11/3/17	Dragonchain	13.19
11/4/17	Ignis (IGNIS)	18.30
11/6/17	COMSA	95.37
11/7/17	Tokenbox (TBX)	8.32
11/7/17	UQUID Eco System (UQC)	17.80
11/8/17	Qash (QASH)	107.29
11/10/17	Ripio Credit Network (RCN)	37.43
11/10/17	Uptoken (UP)	18.93
11/11/17	Grid+ (GRID)	38.95
11/15/17	Crederoom (CDRT)	5.13
11/15/17	Soma	6.05
11/17/17	B2BX	8.81
11/17/17	Oracles Network (POA)	13.37
11/18/17	MicroMoney	10.54
11/19/17	Qbao (QTUM)	9.80
11/19/17	Quantstamp	53.64
11/20/17	UTRUST	21.00
11/21/17	Science Blockchain (SCI)	12.27
11/21/17	Time New Bank	14.38
11/24/17	Flixo (FLIX)	5.10
11/24/17	Mercury Protocol (GMT)	7.62
11/24/17	Starbase (STAR)	8.92
11/25/17	CyberMiles (CMT)	34.37
11/26/17	trade.io Pre-sale	11.29
11/29/17	Datum (DAT)	7.42
11/29/17	WAX (WAX)	45.36
11/30/17	Crypto 20 (C20)	34.93
11/30/17	Esports	5.84
11/30/17	EthLend (LEND)	16.74
11/30/17	Genaro Network (GNX)	11.61
11/30/17	Paycent	15.53
11/30/17	Presearch	20.50
11/30/17	WaBi	11.50
12/1/17	Betmaster (BETM)	5.24
12/1/17	Blockstack (STX)	50.00
12/1/17	DMarket (DMT)	16.18
...

Q4 2017 ICOs		
Date	Project	ICO Round (\$m)
12/1/17	Playkey (PKT)	10.45
12/1/17	Sense	15.00
12/1/17	Simple Token (ST)	21.40
12/4/17	SmartMesh	15.69
12/5/17	Cashaa (CAS)	11.15
12/5/17	Leverj (LEV)	13.84
12/6/17	Tokens.net (DTR)	15.00
12/8/17	SportyFi (SPF)	5.09
12/8/17	Storm	30.72
12/8/17	Universa (UTN)	28.68
12/10/17	aelf	24.75
12/10/17	Spectre (SPEC)	15.39
12/11/17	CrowdWiz (WIZ) Pre-Sale	5.39
12/13/17	GUTS Tickets	7.52
12/14/17	GIFTO	10.00
12/15/17	DeepBrain Chain	11.76
12/15/17	DreamTeam	5.52
12/15/17	Gatecoin (presale) (GAT)	9.00
12/15/17	MediBloc (MED)	25.64
12/15/17	Naga (NGC)	62.66
12/15/17	Protos (PRTS)	5.72
12/16/17	Coinlancer	11.86
12/16/17	Nebulas (NAS)	60.00
12/17/17	Neufund (NEU)	14.90
12/17/17	SophiaTX	23.47
12/19/17	Bread	20.02
12/19/17	CommerceBlock	8.82
12/19/17	MiniApps	5.30
12/20/17	Aditus	7.10
12/20/17	AppCoins	17.10
12/20/17	indaHash	42.72
12/20/17	Selfkey Pre-sale	15.84
12/22/17	PROPS	25.00
12/22/17	Qlink	32.17
12/22/17	SingularityNET	32.85
12/23/17	Hdac	20.00
12/24/17	Zen Protocol	46.37
12/25/17	INS Ecosystem	45.76
12/25/17	Uttoken	30.85
12/26/17	Sirin Labs	157.89
12/26/17	TokenPay	28.68
12/27/17	CanYa	8.34
12/27/17	Jibrel Network	30.00
...

Q4 2017 ICOs		
Date	Project	ICO Round (\$m)
12/28/17	Bankex (BKX)	70.30
12/28/17	BitDegree	22.13
12/29/17	BitClave (CAT)	25.55
12/29/17	Gladius	14.68
12/29/17	STK Token	17.00
12/31/17	ChainTrade (CTC)	30.00
12/31/17	Covesting	18.75
12/31/17	SportyFi (SPF)	41.29
12/31/17	LinkerCoin	10.13
12/31/17	Loci	7.38
12/31/17	Telcoin	25.00
Total	...	\$3,231m

VC

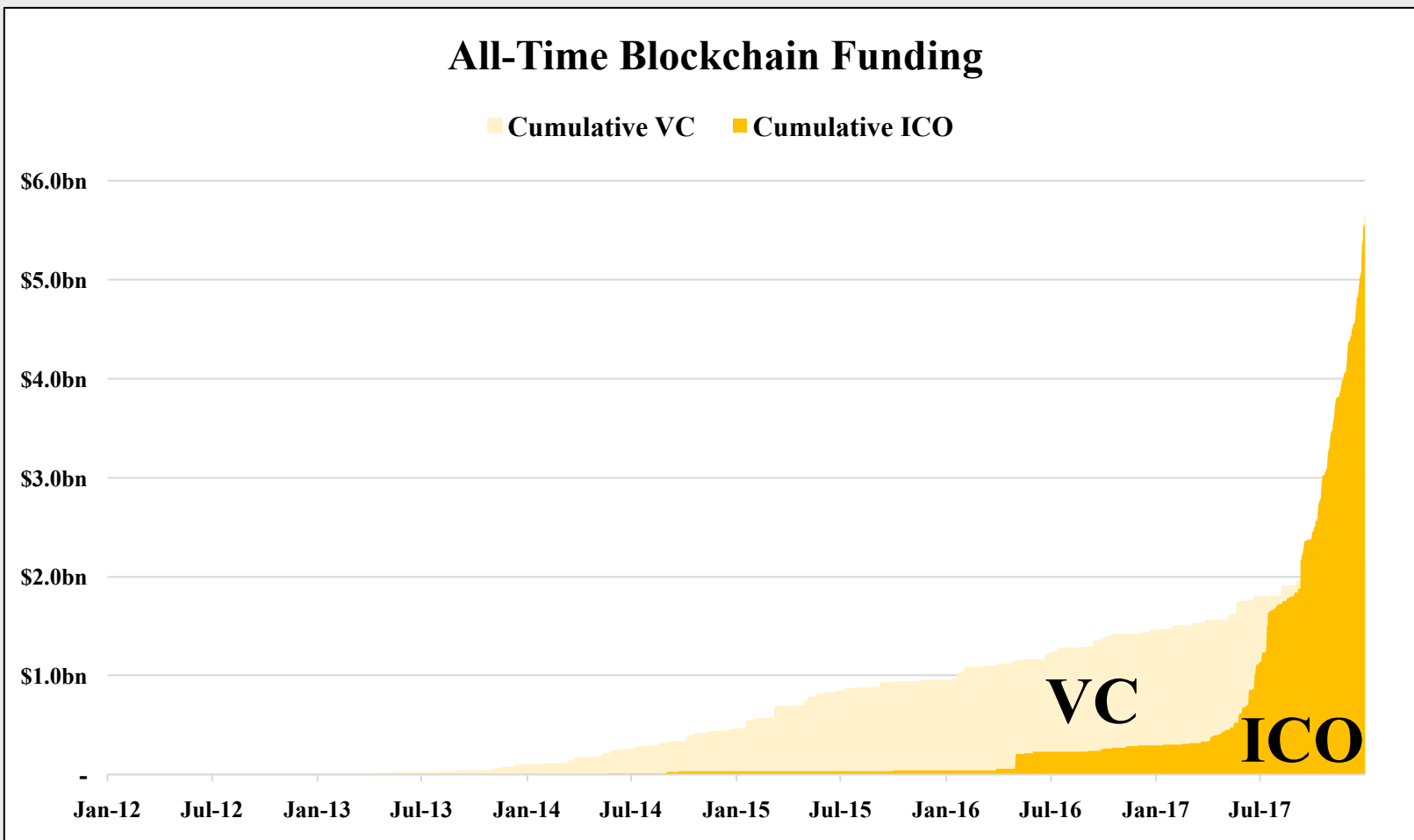
Q4 2017 VC		
Date	Project	VC Round (\$m)
10/19/17	The Sun Exchange	\$1.60
10/23/17	Abra	\$16.00
10/26/17	Orchid Labs	\$4.70
11/16/17	PayStand	\$6.00
11/27/17	LibraTax	\$7.80
11/29/17	Digix Global	\$1.25
12/4/17	CoinSquare	\$10.50
12/6/17	BitPay	\$30.00
12/11/17	Origin	\$3.00
12/11/17	Brontech	\$0.93
12/11/17	BitGo	\$42.50
12/12/17	Bitwise	\$4.00
12/13/17	Colu	\$14.50
12/14/17	Coldlar	\$10.00
12/15/17	OKCoin	\$27.20
12/15/17	MakerDAO	\$12.00
12/19/17	Radar Relay	\$3.00
12/19/17	dYdX	\$1.00
12/22/17	Comifv ApS	\$4.80
Total		\$200.78

Data Sources: [CoinDesk venture capital database](#), [CoinDesk ICO Tracker](#)

Notes: Deals under \$5m excluded, \$ amount at time raised, including only fundraisers ending in 'Q4 2017' (10/1/17 – 12/31/17)



Q4 2017 ICO Total Funding Sky Rockets Further Above Total Venture Capital Blockchain Investment



ICO
\$5.68bn

VC
\$2.15bn

Top ICO Deals:
Filecoin - \$262m
Tezos - \$232m
Sirin Labs - \$157.9m
Bancor - \$153m

Top VC Deals:
21 - \$116m*
R3 - \$107m
Coinbase - \$100m
Digital Asset - \$60m

Data Sources: [CoinDesk venture capital database](#), [CoinDesk ICO Tracker](#)

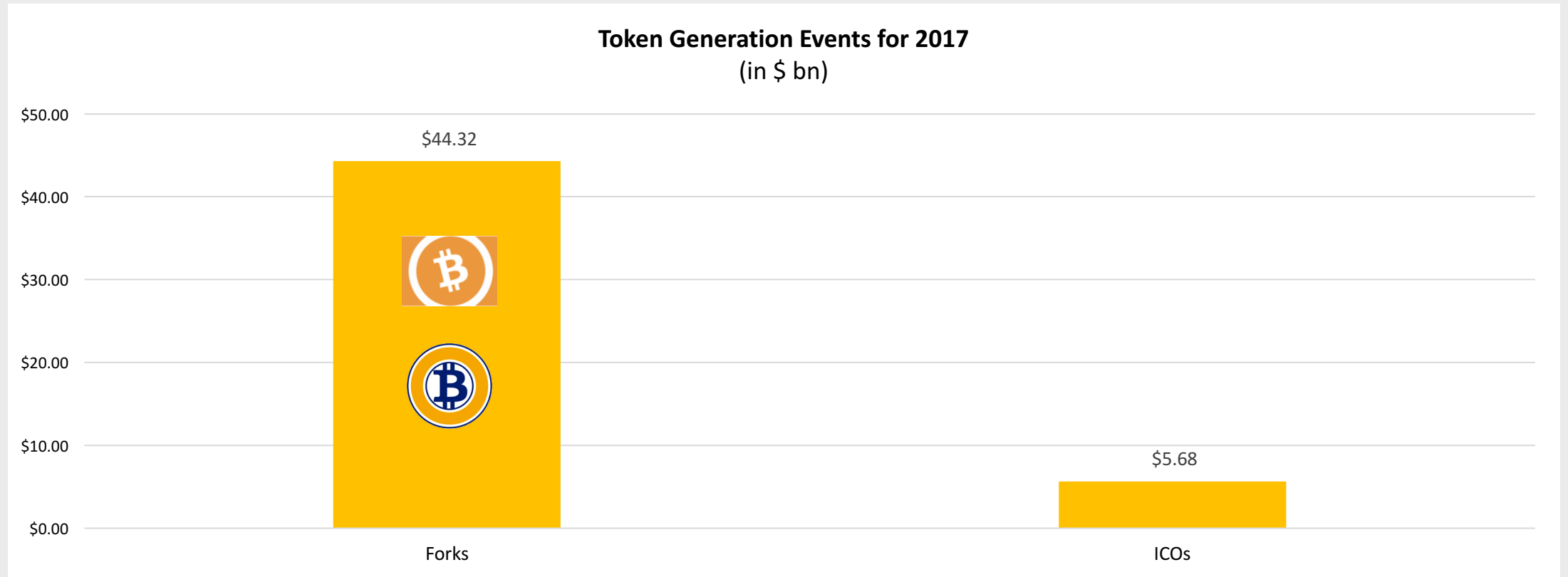
Notes: Deals under \$100,000 excluded, \$ amount at time raised

*Amount contested and frequently reported between \$75m - \$116m



TGE Compared

Token Generating Events Dominated by Forks



Market Cap (12/31/2017):
Bitcoin Cash: \$40.13bn
Bitcoin Gold: \$4.19bn

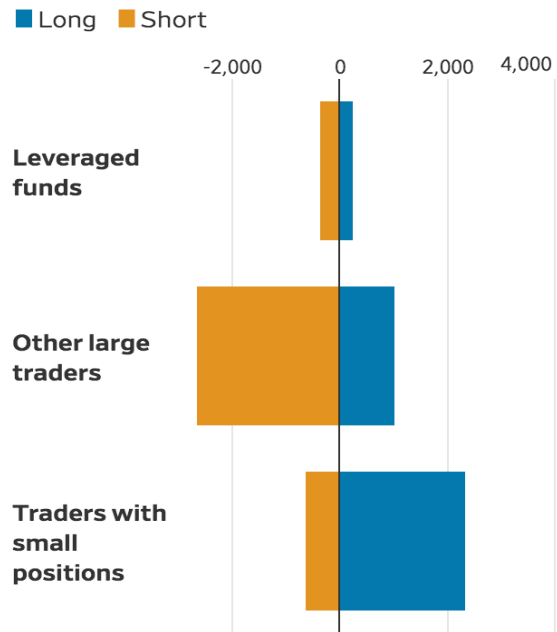
Data sources: [CoinmarketCap](#), [CoinDesk venture capital database](#), [CoinDesk ICO Tracker](#)



The Future of Bitcoin

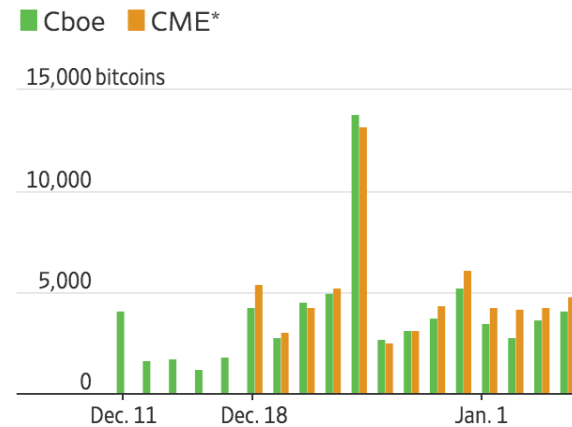
CME & Cboe Launch Futures Successfully

Cboe bitcoin futures (outstanding contracts)



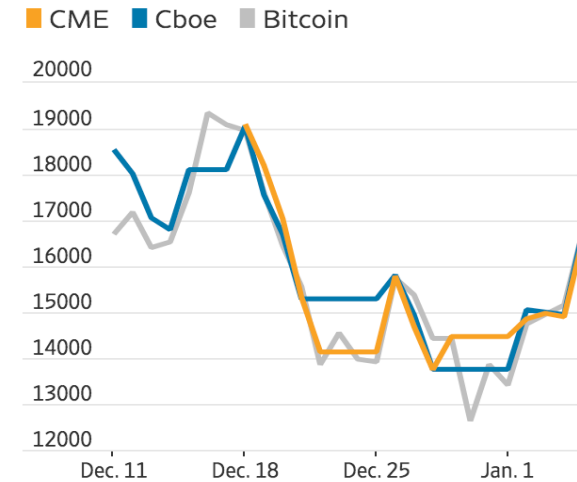
Note: Data as of Jan. 2
Source: CFTC

Trading volumes at both Cboe and CME have yet to take off. Both exchanges had record activity in bitcoin futures on Dec. 22, the day of a sharp sell-off in bitcoin.



*CME volumes are adjusted by a factor of five to reflect the larger size of CME's contract.
Source: the companies

Both Cboe and CME's futures now track the price of bitcoin closely, though Cboe's contract initially traded at a hefty premium.



Note: Futures prices are for January contract. Cboe and CME do not trade on weekends and holidays.
Sources: the companies (futures prices); CoinDesk (bitcoin price)

Summary:

- Low Volume
- Institutional shorts
- Retail longs
- First contracts settle without problems



5

GOVERNMENT & REGULATION



Q4 2017 Government & Regulation Summary

CFTC approved bitcoin futures:

- The US Commodities & Futures Trade Commission gave approval for CME & Cboe to launch bitcoin futures contracts.

Bitfinex & Tether became targets of US regulators:

- US regulators subpoena crypto exchange Bitfinex and Tether.

South Korea saw higher levels of regulation:

- Q4 was filled with consternation that eventually ended in an increase in regulatory measures on trading.

Russia moved to define regulatory environment:

- Russian bill submitted which will determine the procedure for issuing, taxing, buying and circulation of cryptocurrency.



Americas: CFTC Allows Futures Venezuela Backs Blockchain

Nov. 28 – New York Department of Financial Services awards 4th ever BitLicense to bitFlyer.

Dec. 1 – CFTC gave green light to CME and Cboe to list bitcoin futures.

Dec. 4 – Rumors that Venezuela will issue oil-backed cryptocurrency.

Dec. 6 – CFTC subpoenas crypto exchange Bitfinex and Tether.

Dec. 12 – SEC warns 'extreme caution' over cryptocurrency investments.





Europe: West Recoils Back East Leans Forward



Dec. 4 – EU treasury requires more due diligence on cryptocurrency customers and reporting of suspicious transactions.

Dec. 4 – UK treasury plans to regulate cryptocurrency exchanges.

Dec. 19 – Estonian tech official promotes national cryptocurrency, called ‘estcoin’, in bid to become global ICO hub. The government remains hesitant and the EU central bank warns on national prohibition of currency creation.

Dec. 22 – Belarus legalizes cryptocurrencies and ICOs – tax-free for five years.

Dec. 28 – Russian bill submitted which will determine the procedure for issuing, taxing, buying and circulation of cryptocurrency.



Asia: More Regulation Very Likely Japan Allows More Exchanges



Nov. 15 – Supreme Court of India issues notice to Reserve Bank seeking regulation of bitcoin.

Nov. 24 – Malaysian central bank to issue cryptocurrency regulation in early 2018.

Dec. 3 – Japan approves another four new cryptocurrency exchanges.

Dec. 5 – South Korea launches cryptocurrency task force to spearhead regulations.

Dec. 7 – Bank Indonesia declares bitcoin payment illegal.

Dec. 28 – South Korea is imposing new restrictions on cryptocurrency trading to limit speculation.



Middle East and Australia: Regulations on Horizon Although Ineffective



Oct. 30 – Australian central bank regulating blockchain protocols 'unlikely to be effective'.

Nov. 1 – New Zealand regulator: “cryptocurrencies are securities”.

Dec. 9 – Australian exchanges now required to register with AML regulatory body.

Dec. 13 – Saudi, UAE central banks team up to test cryptocurrency.

Dec. 25 – Israel regulator seeks to ban bitcoin firms from stock exchange.



6

Blockchain Sentiment Survey

SPOTLIGHT STUDY



Q4 2017 Blockchain Sentiment Survey: Demographics – ~3000 Respondents



16% Developers, 16% Executives, 8% Investors
4% Full-Time Blockchain, 16% Part-Time

2% work at Blockchain Technology Companies,
5% at Investment Services

11% Accredited, **89% Unaccredited investors**

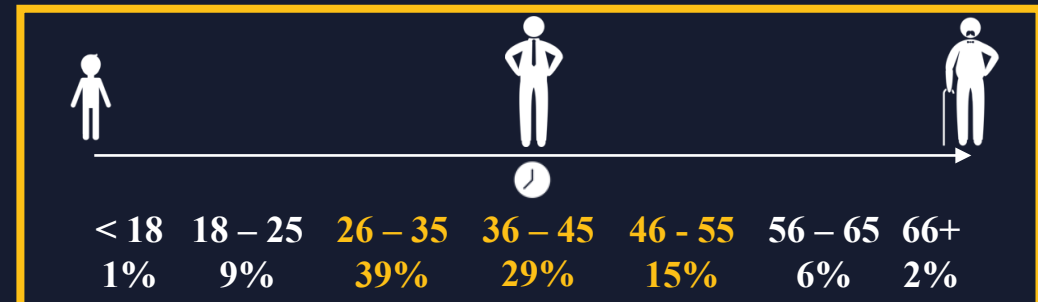


92% bought cryptocurrency in 2017,
68% in Q4, 51% in Q3, 34% in Q2, 24% in Q1

86% owned over 3 unique digital assets,
2% never owned

27% own \$10k - \$50k worth of cryptocurrency,
16% own \$1k - \$5k, 12% own \$100k - \$500k

94% check prices at least daily, 56% every day, 37% every hour, 5% a couple times a week





Q4 2017 Blockchain Sentiment Survey: Key Takeaways

69%

feel positive about the current state of bitcoin, down 18% from last quarter



82%

didn't go into debt to purchase cryptocurrency, and of those that did 52% have already paid it back

94%

checked prices everyday (56%) or compulsively, every hour (37%)

75%

agreed with the postponement of SegWit2x, with 33% citing BCH as an existing market alternative.

70%

believe cryptocurrencies have moved away from cypherpunk roots. About 40% accept that something digitally native can be private property.

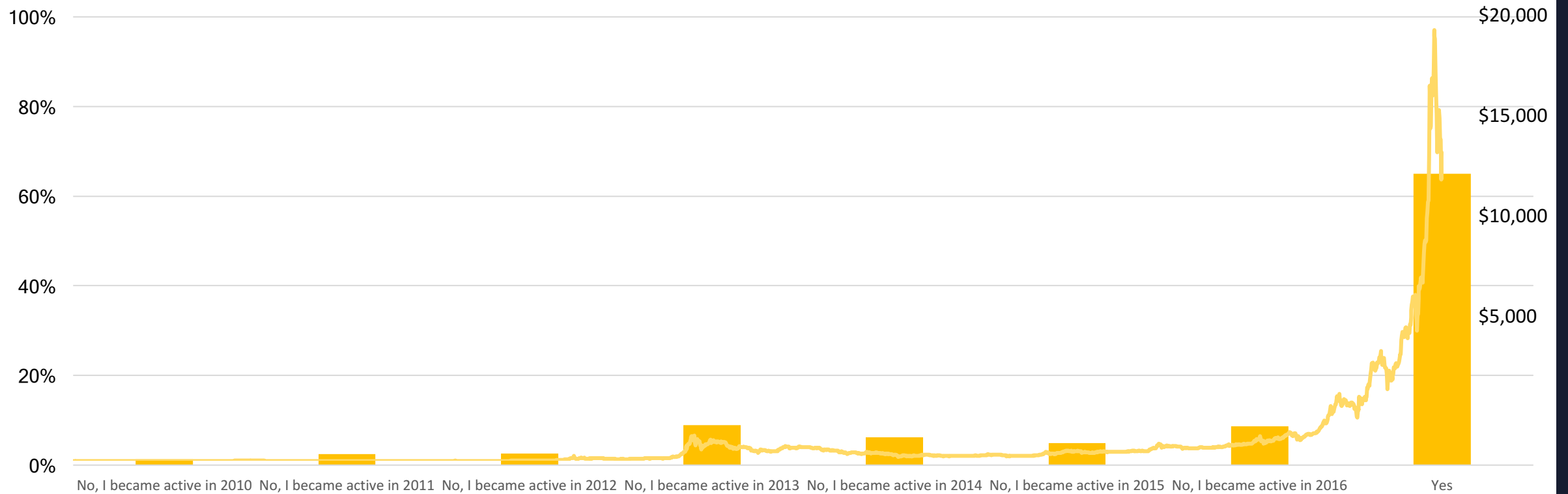
60%

just started following cryptocurrencies in 2017, with less than 2% getting involved in 2010.



60% Started to Follow Crypto in 2017 Increase Tracks Price

Was 2017 the first year you actively followed cryptocurrencies?



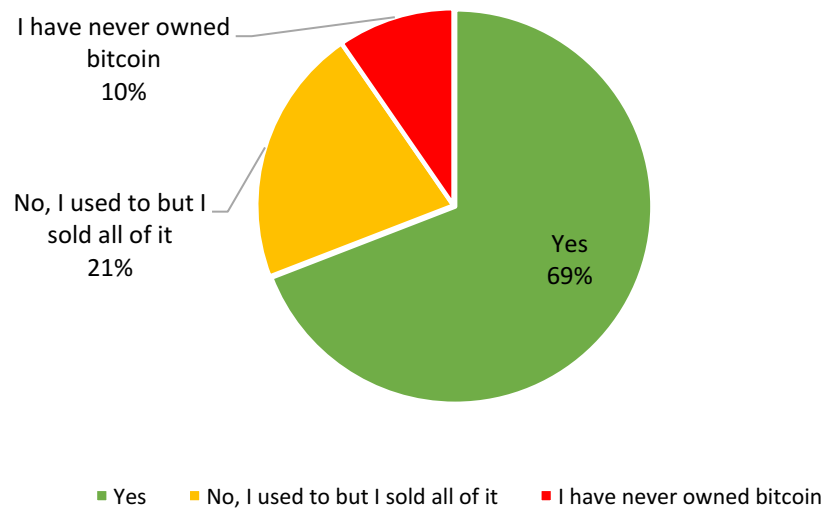
Data Source: CoinDesk's Q4 2017 Blockchain Sentiment Survey



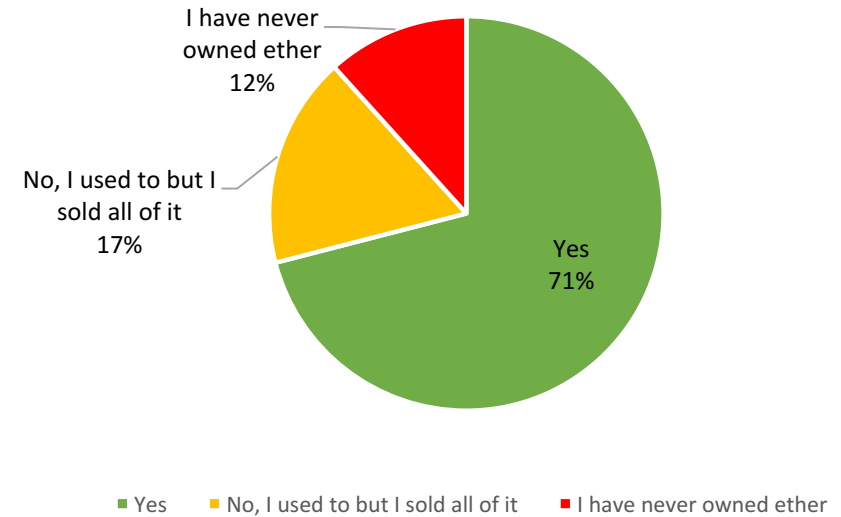
Most Respondents Own Bitcoin and Ether

Slightly More Own ETH Than BTC

Do you own bitcoin?



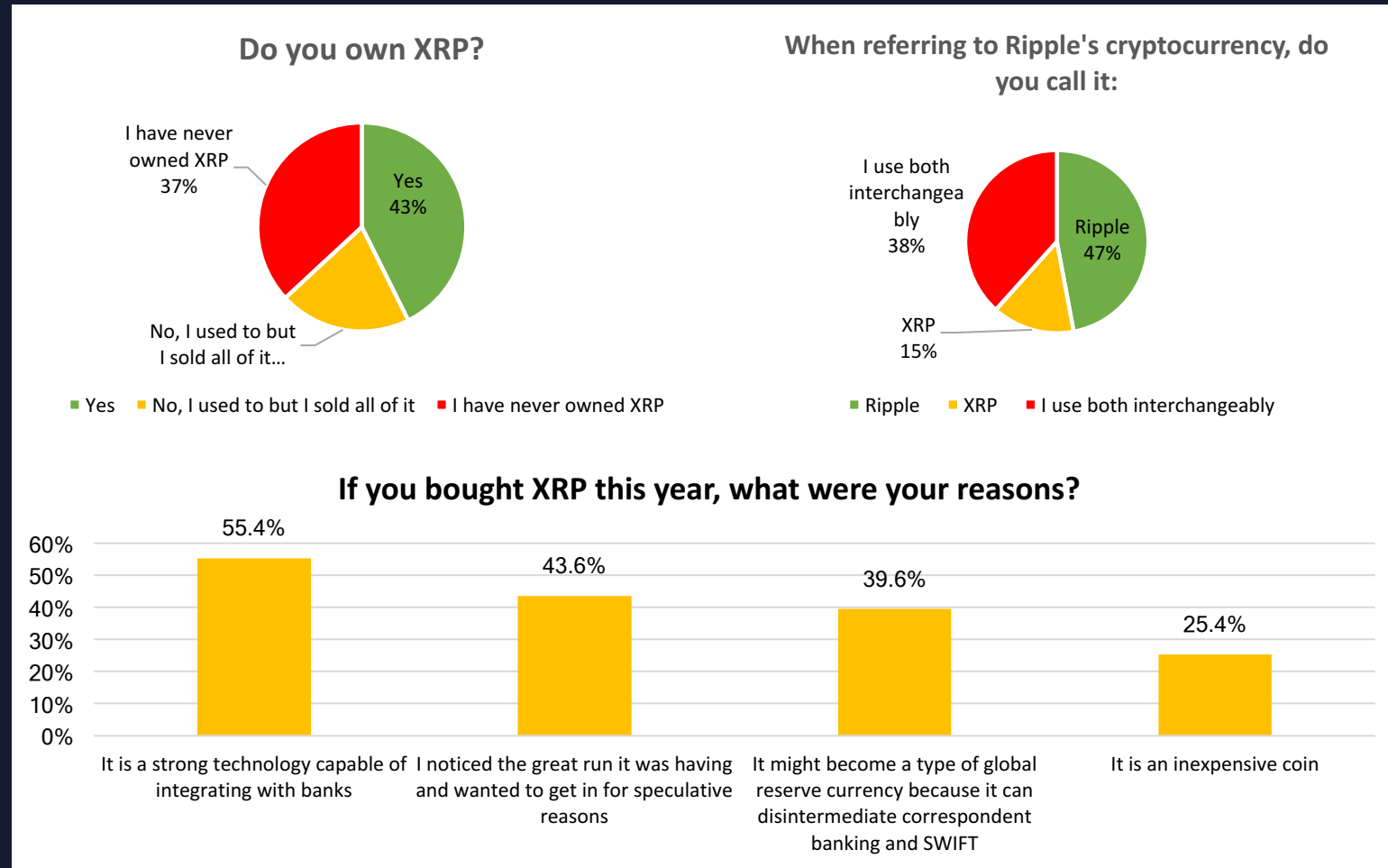
Do you own ether?





63% of Respondents Owned XRP

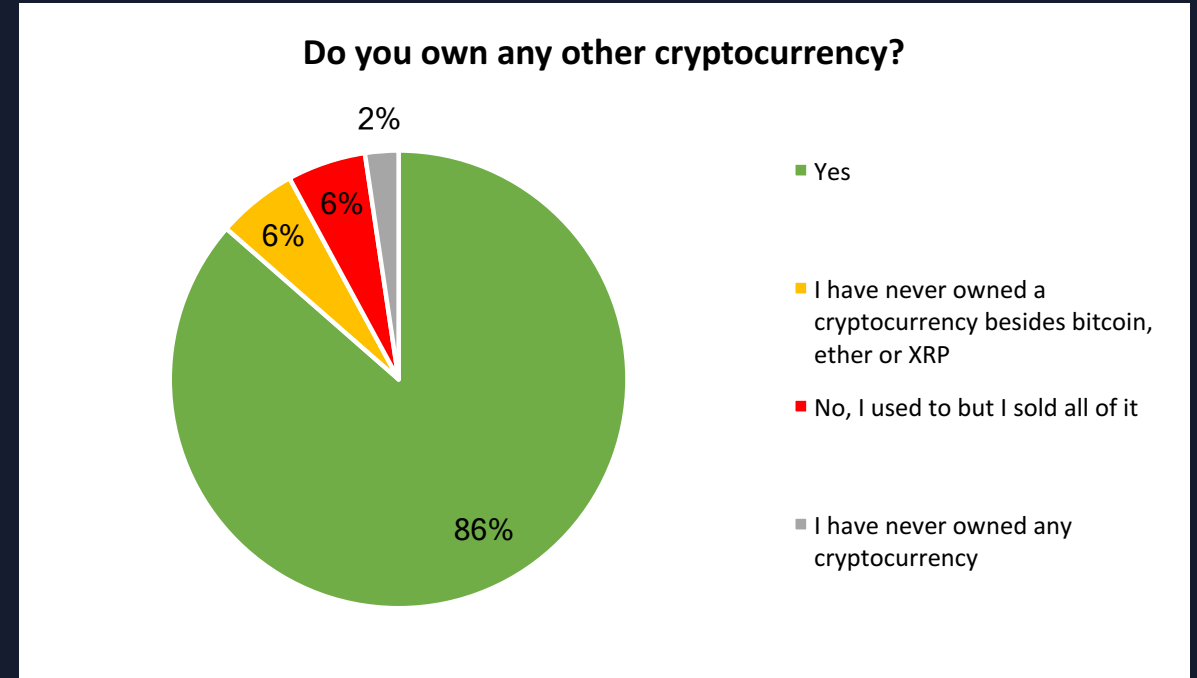
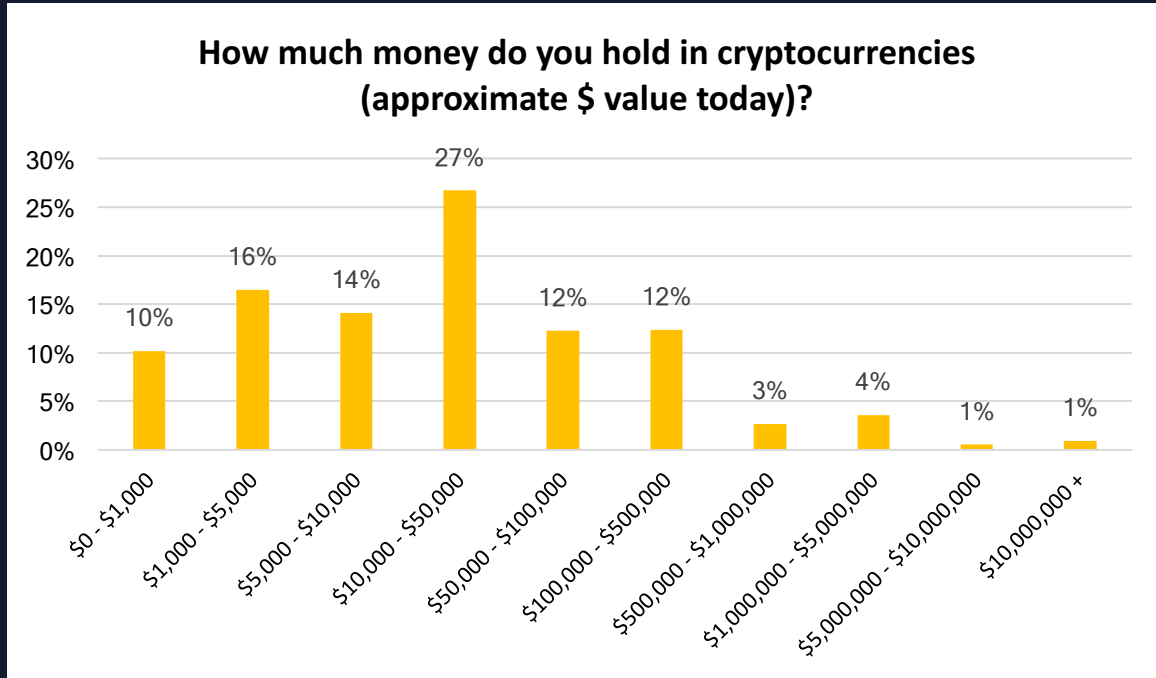
38% Refer to it as Ripple or XRP Interchangeably





27% of Respondents Have \$10k - \$50k in Cryptocurrency Holdings

86% of Respondents Owned a Cryptocurrency Other than ETH, BTC, or XRP

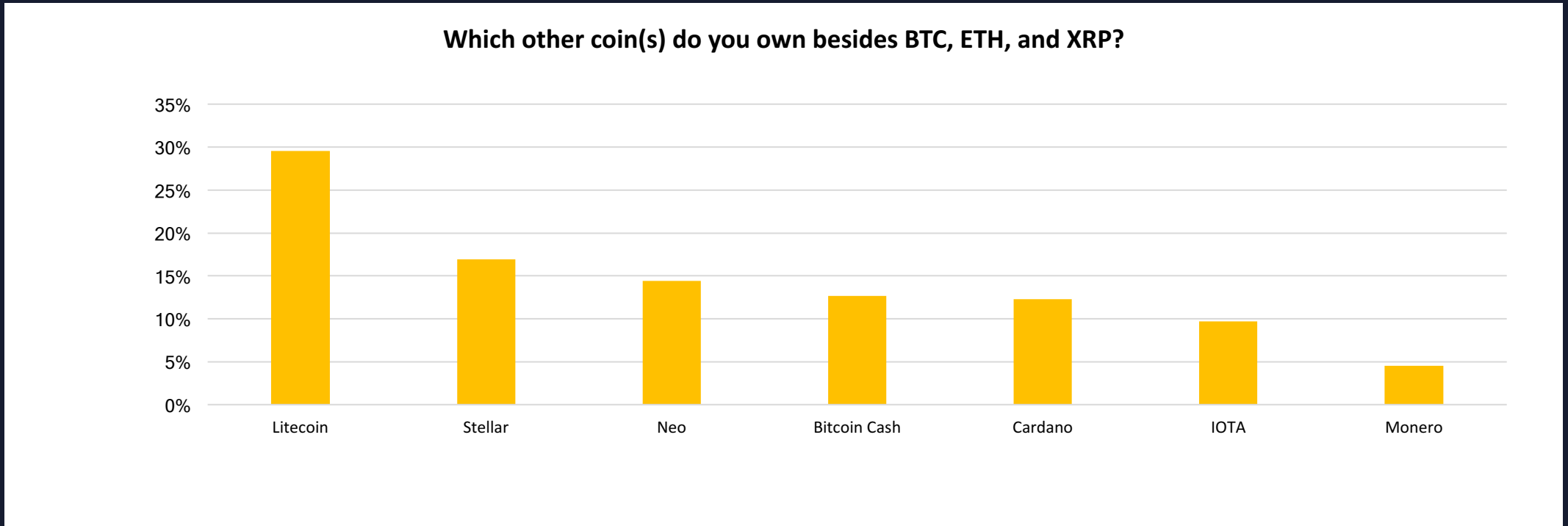


Top 5 other currencies: Litecoin, Stellar, NEO, Bitcoin Cash, Cardano



The Next Best Coins

Litecoin & Stellar take #4 & #5 Slot

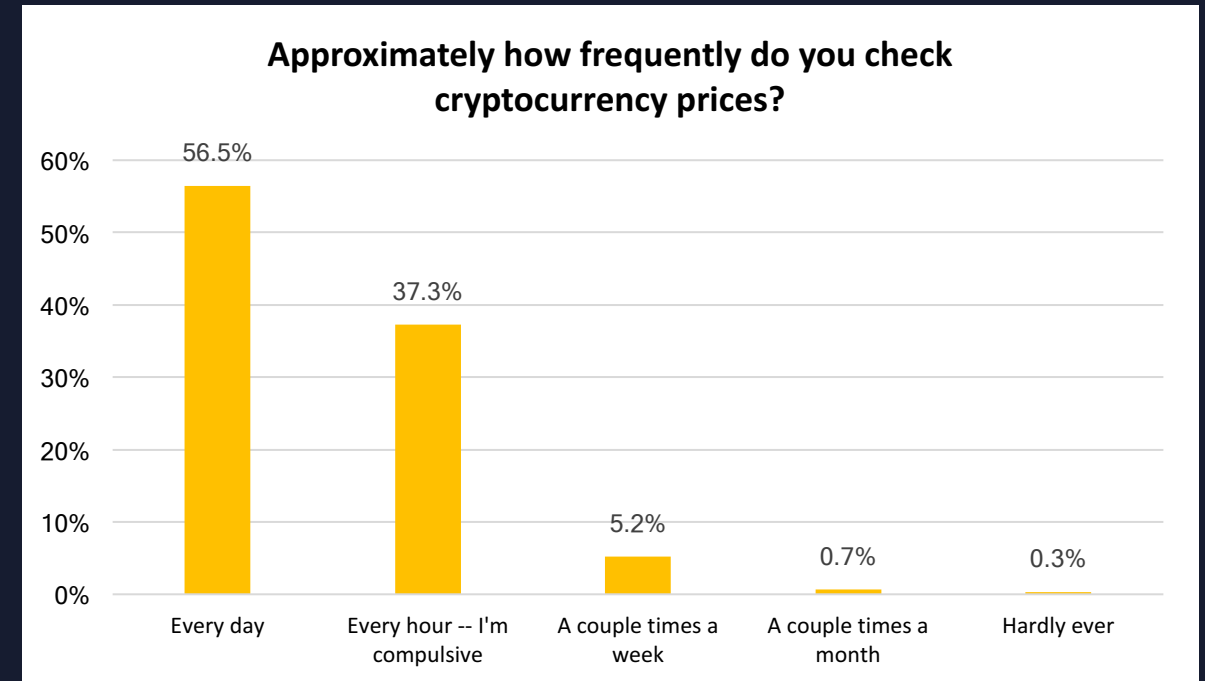
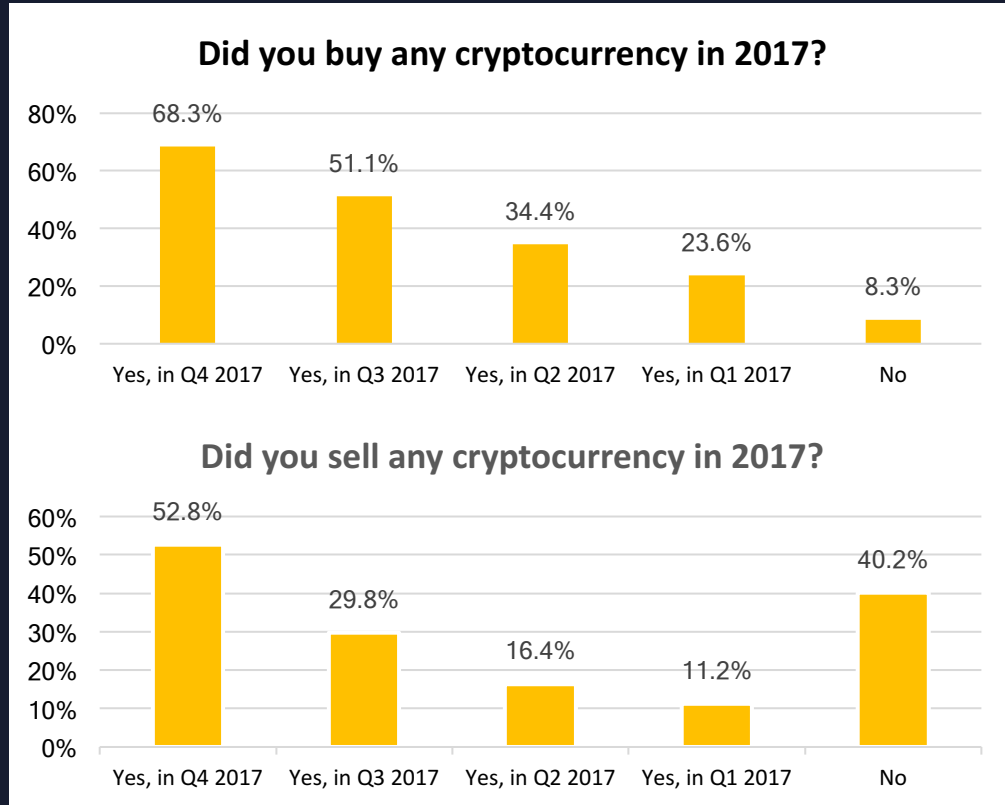


*percentages are based on these 7 coins, not all coins submitted



92% of Respondents Purchased & 60% Sold Cryptocurrency in 2017

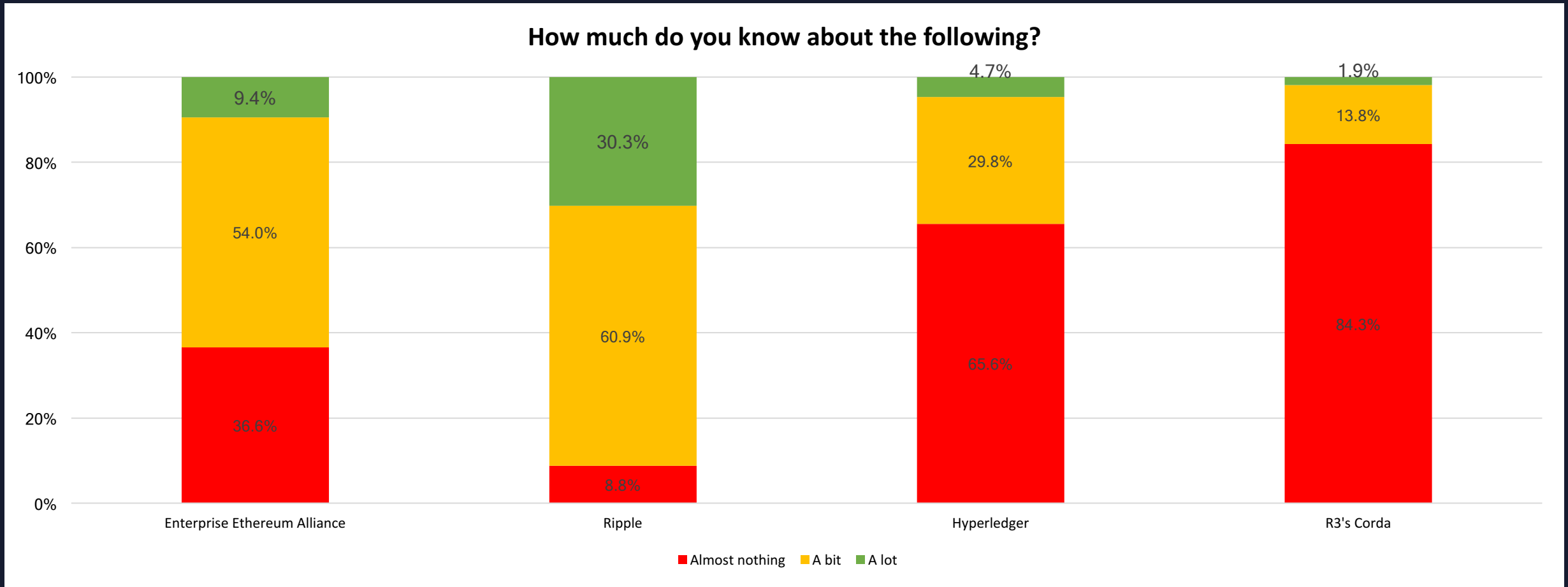
94% Checked Prices At Least Daily





Knowledge of Enterprise Projects Increased for EEA & Ripple

Hyperledger & R3's Corda Least Well Known

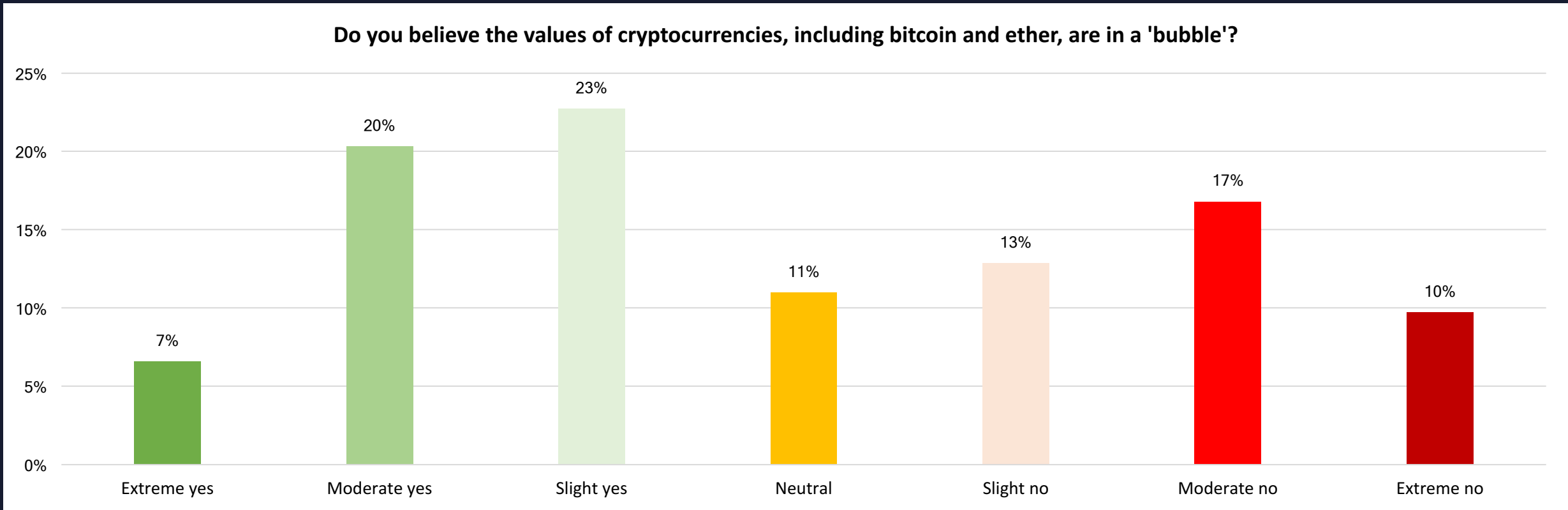


Data Source: CoinDesk's Q4 2017 Blockchain Sentiment Survey



10.9% More Respondents Thought Cryptocurrencies Are in a Bubble in Q4

Most Common Response Was 'Slight Yes'



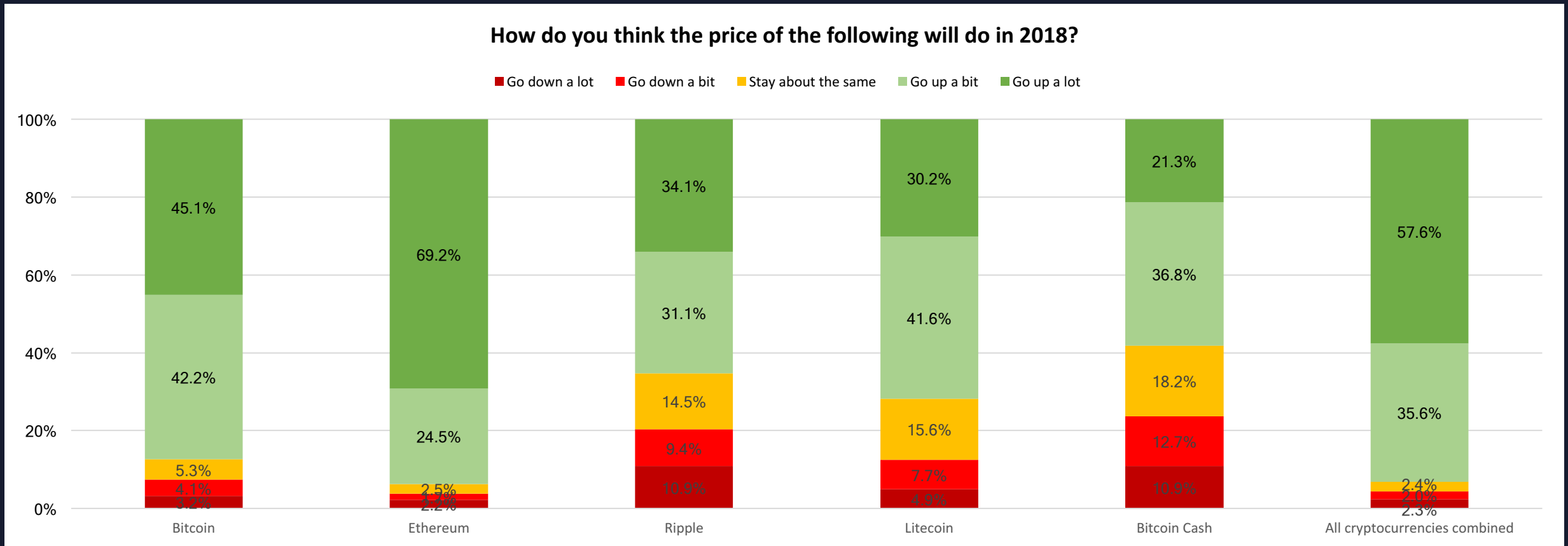
▲	Q3:		▲	Q4:	
	38.7%	yes		49.6%	yes
▼	49.7%	no	▼	39.4%	no

Data Source: CoinDesk's Q4 2017 Blockchain Sentiment Survey



Community Was More Bullish on ETH Than BTC in Q4

Alts Shown Positivity with +23.8% Saying They Will “Go Up A lot”



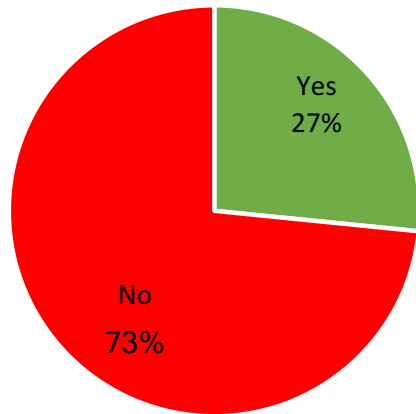
Q3 “Go Up A lot”	44.5%	41.5%	14.6%	21.2%	N/A	33.8%
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Data Source: CoinDesk’s Q4 2017 Blockchain Sentiment Survey

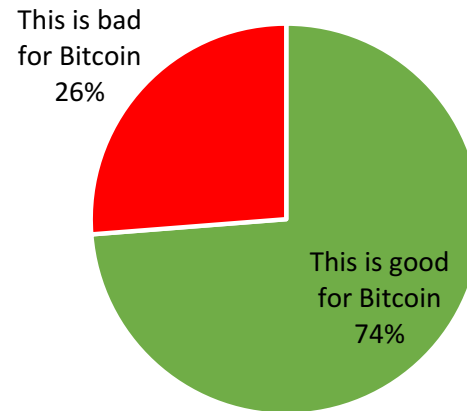


Most Respondents Believe the CME & Cboe Futures Are Positive Signs

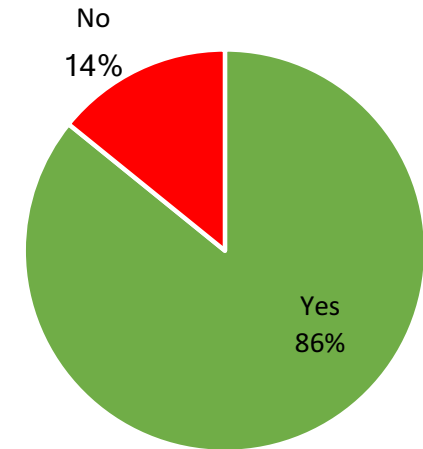
The CME and Cboe derivatives contracts were announced and went live in Q4. Were you surprised by this development?



Institutional capital began to flow into Bitcoin in 2017, and more importantly with the derivatives contracts from CME and Cboe in Q4. Do you believe this is a good thing or a bad thing for Bitcoin?



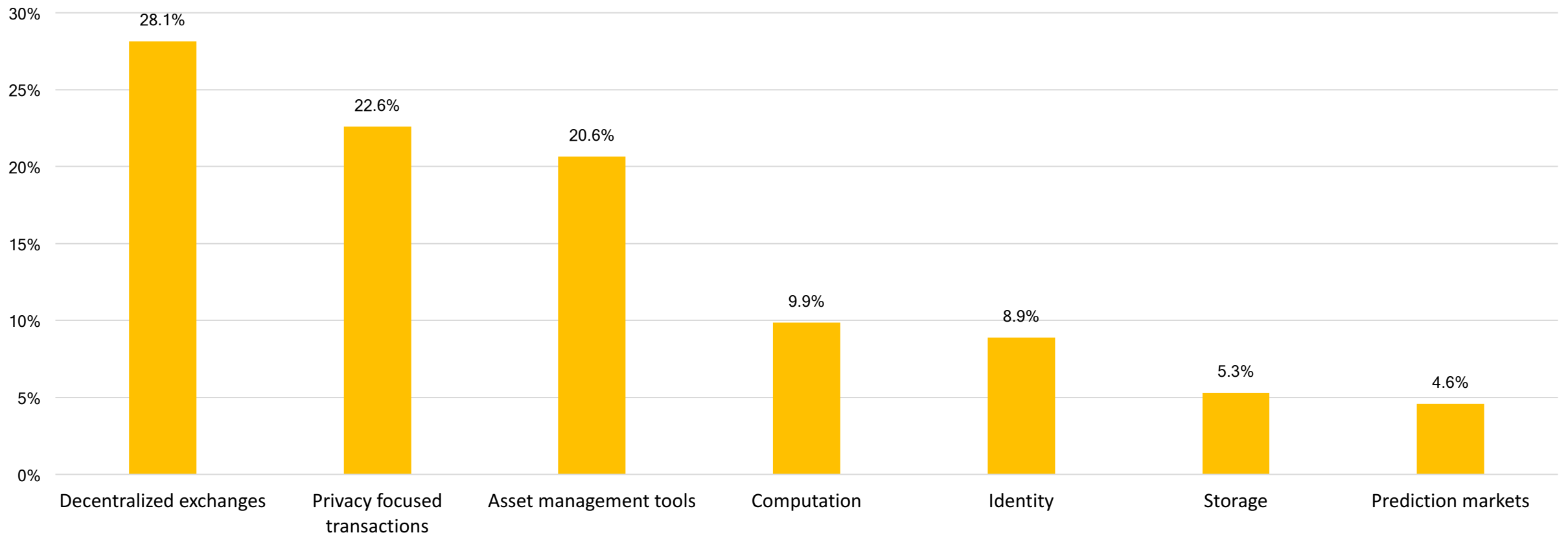
Do you think the regulated derivatives trading of BTC on the CME and Cboe paved the way for first digital asset-based ETF in 2018?





Community Was Most Confident in Decentralized Exchanges

What sector of blockchain applications are you most bullish on?

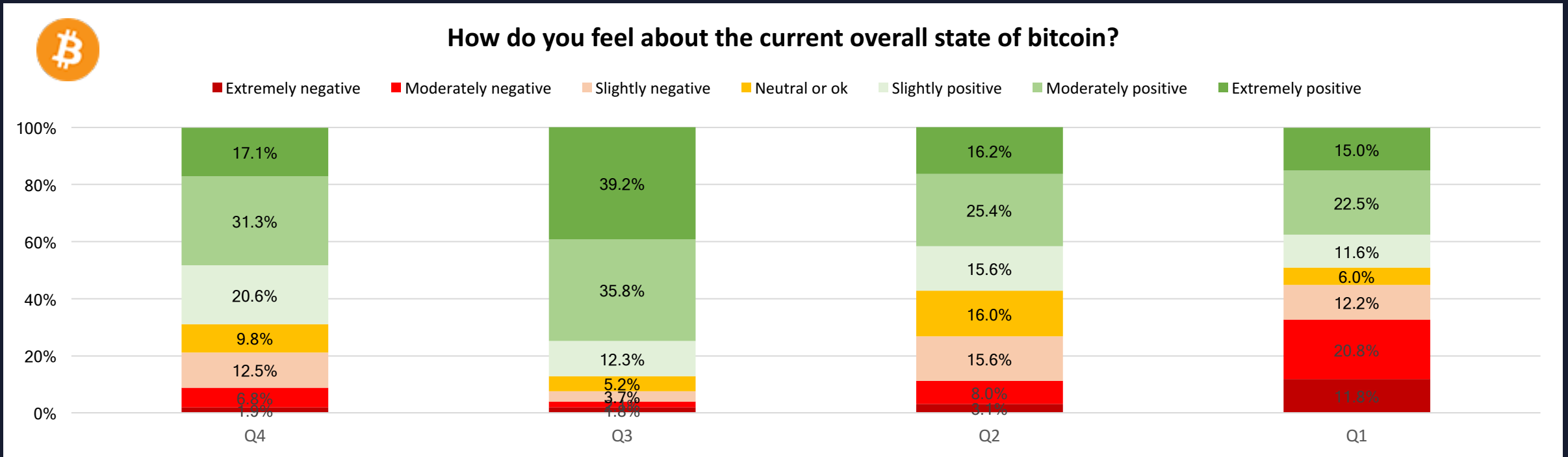


Data Source: CoinDesk's Q4 2017 Blockchain Sentiment Survey



Positive Sentiment Dropped -18.2% For Bitcoin in Q4

Ethereum Saw Uptick in Positive Sentiment



Overall state of ethereum response:

▲ 82.1% **positive**

▼ 7.1% **negative**

▲ 69.0% **positive**

▼ 21.2% **negative**

Q3 2017 State of Blockchain response:

▲ 87.2% **positive**

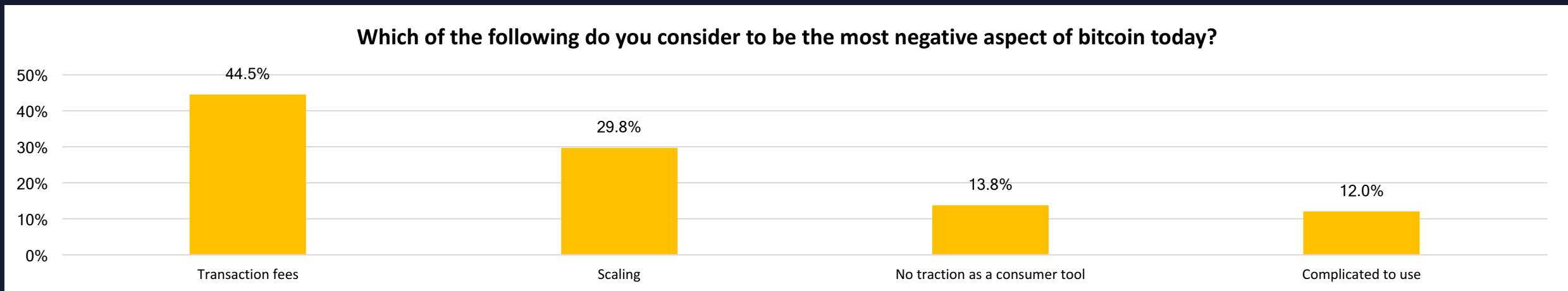
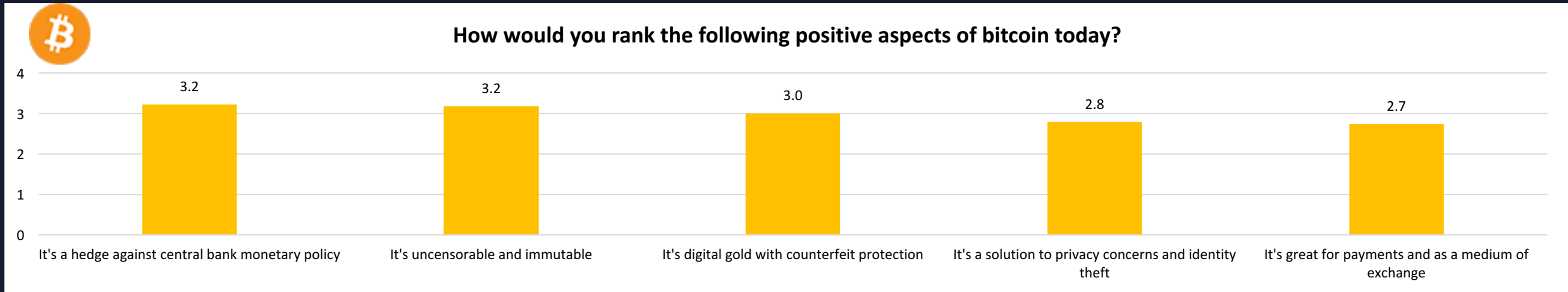
▼ 7.6% **negative**

Data Source: CoinDesk's Q4 2017 Blockchain Sentiment Survey



Most Positive Aspect of Bitcoin Was Hedging Against Central Bank Policy

Most Negative Aspect Was 'Transaction Fees'

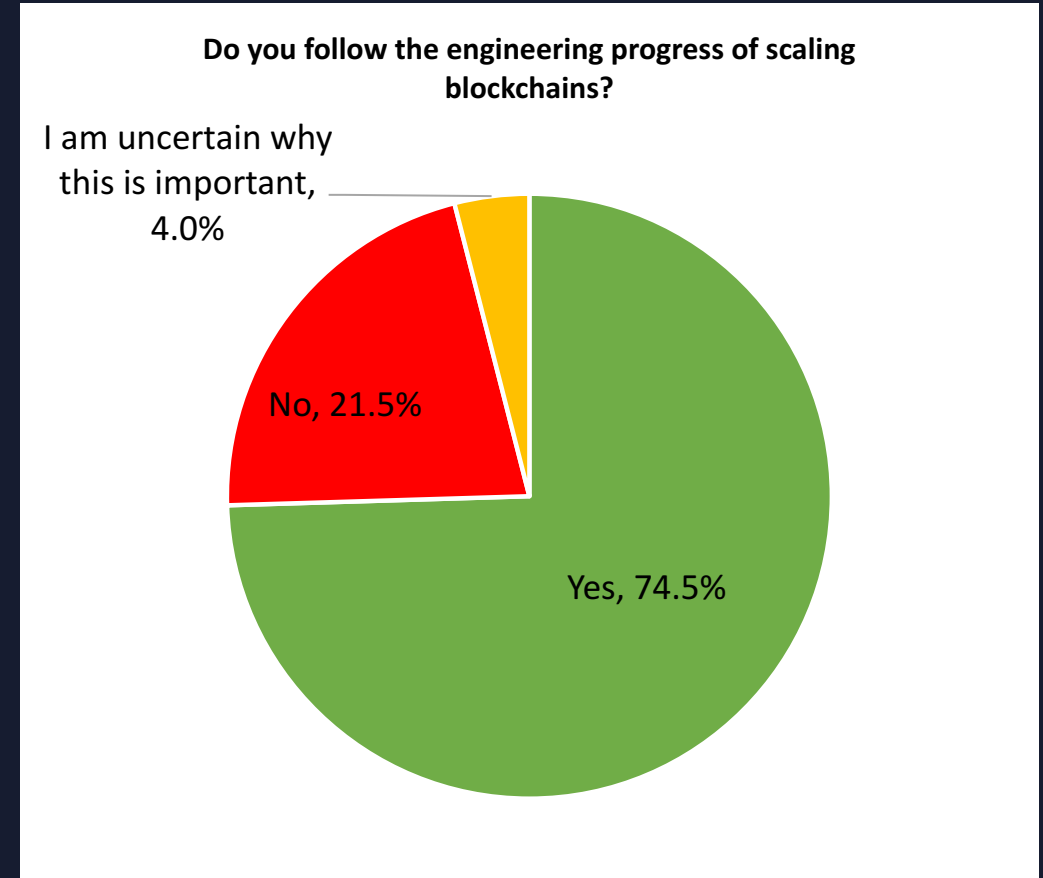
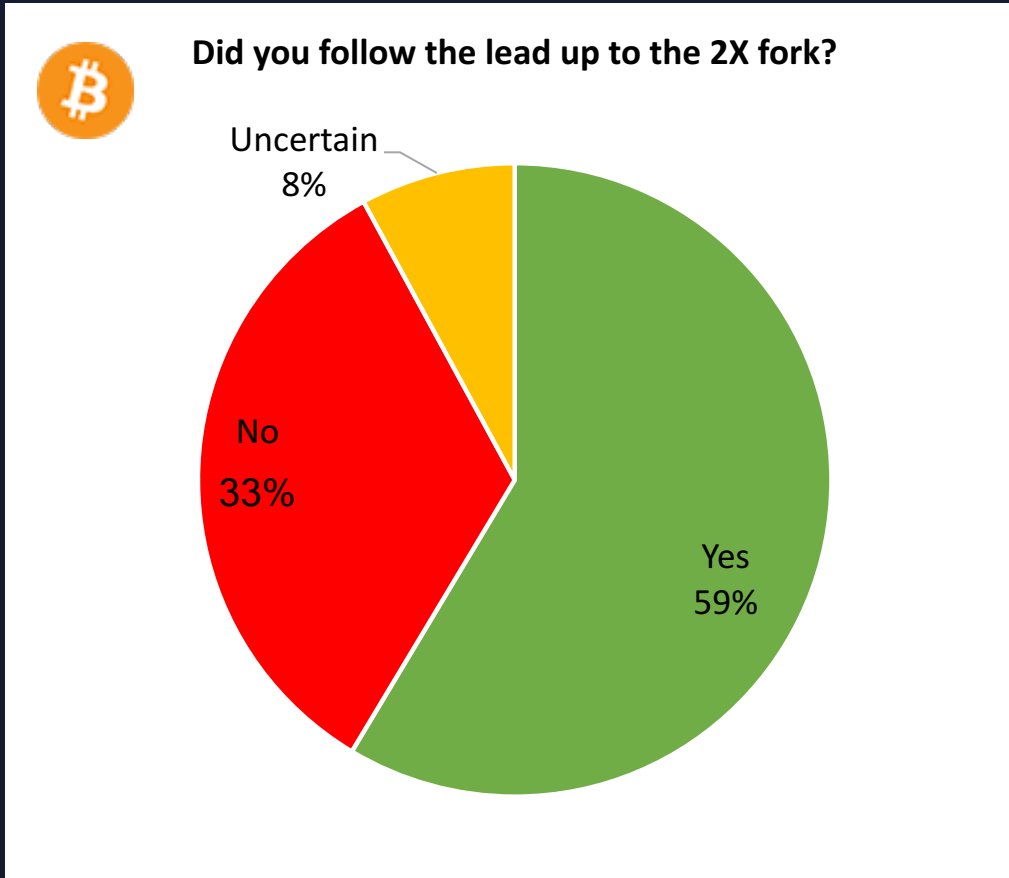


Data Source: CoinDesk's Q4 2017 Blockchain Sentiment Survey



More Than Half Followed The Scaling Debate

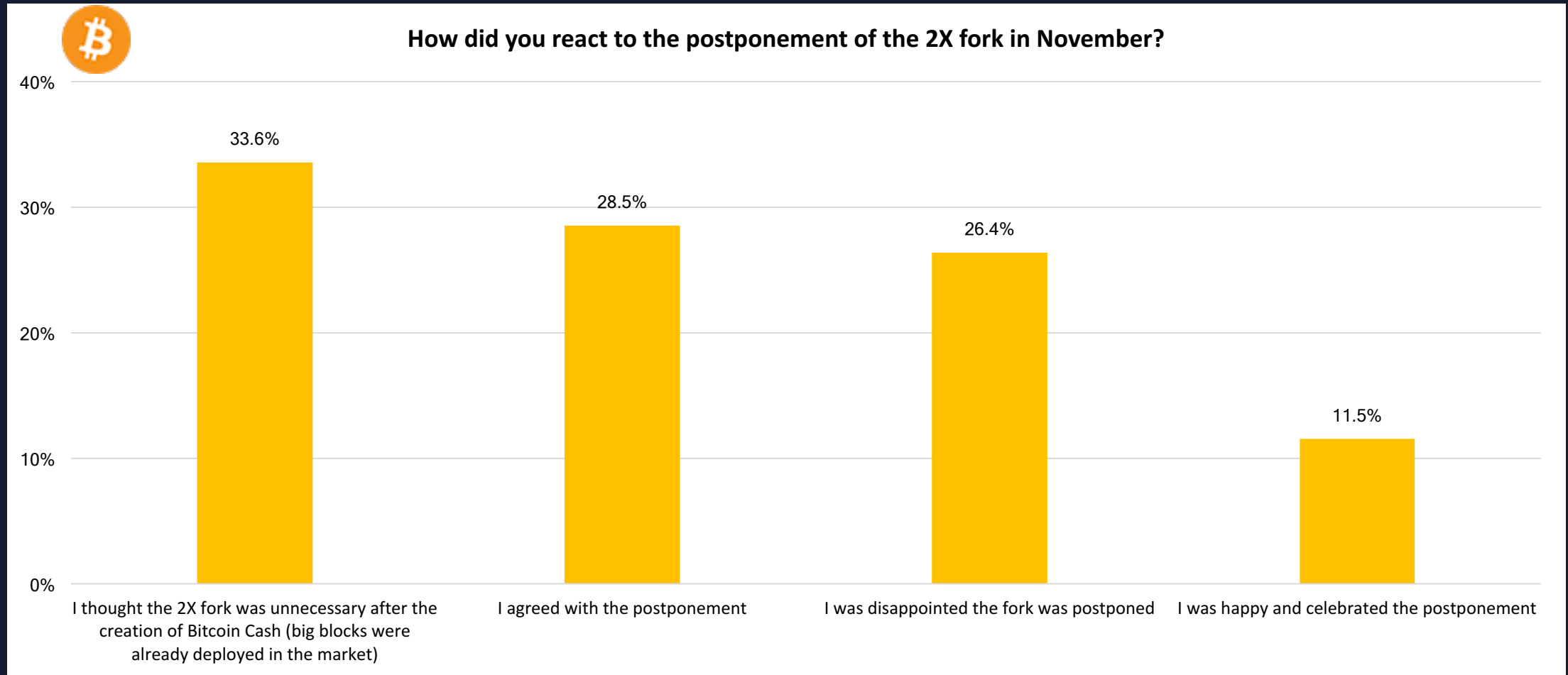
75% Follow Scaling Progress of Blockchains in General





34% Thought Bitcoin Cash Made 2X Irrelevant

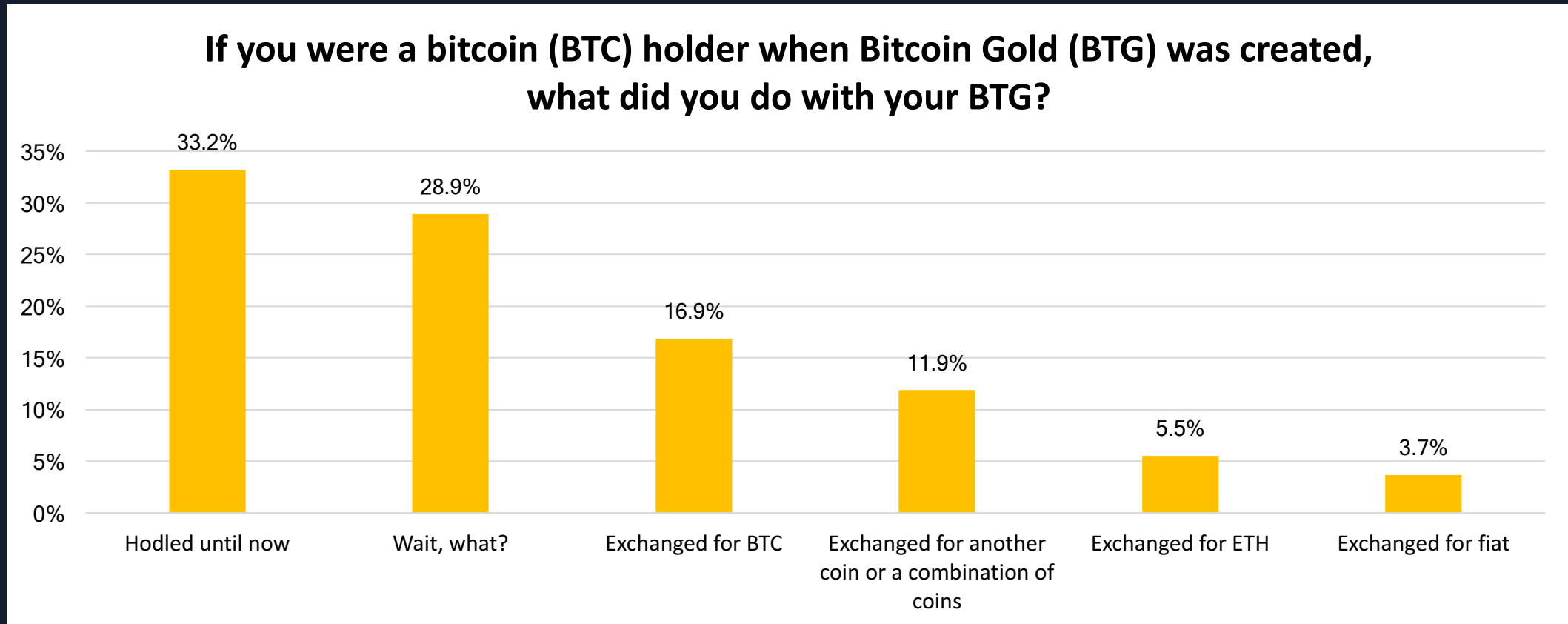
Only 26% Were Disappointed



Data Source: CoinDesk's Q4 2017 Blockchain Sentiment Survey



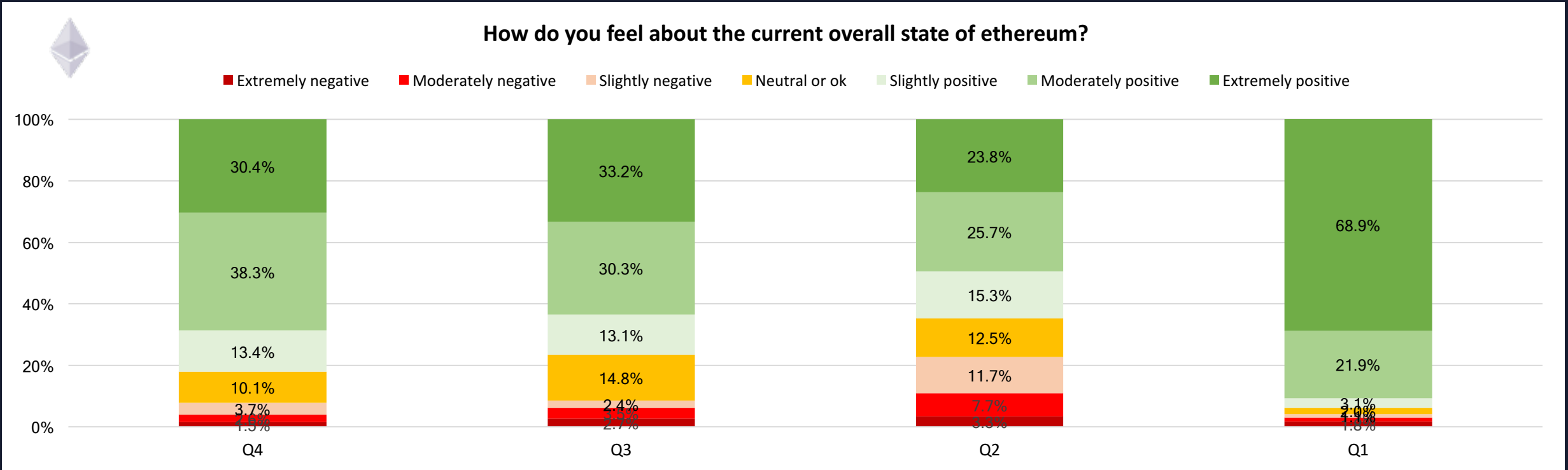
After the BTG Hard Fork, 33% ‘Hodled Until Now’ 29% Were Unaware of BTG





The Overall Sentiment Towards Ethereum Improved in Q4 Relative to Q3

Ethereum Sentiment Much Higher than Bitcoin



Overall state of bitcoin response:

69.0% **positive**

21.2% **negative**

82.1% **positive**

7.7% **negative**

Q3 2017 State of Blockchain response:

76.7% **positive**

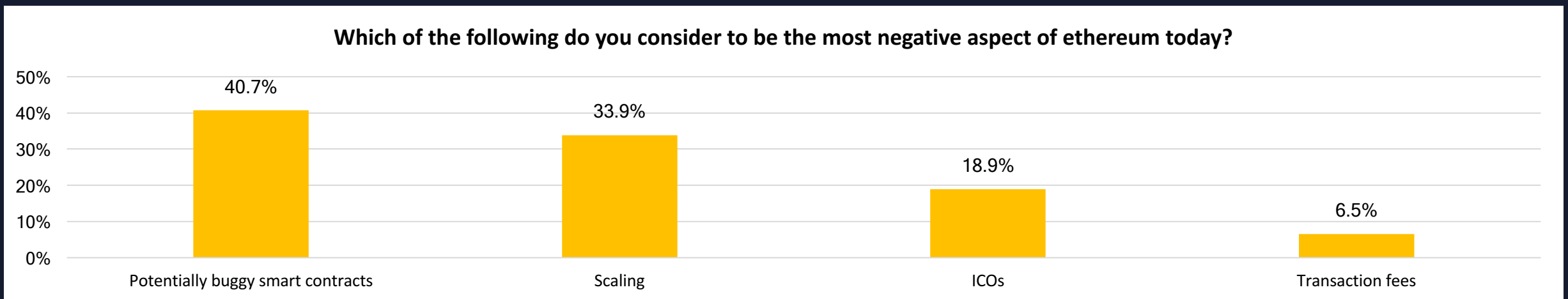
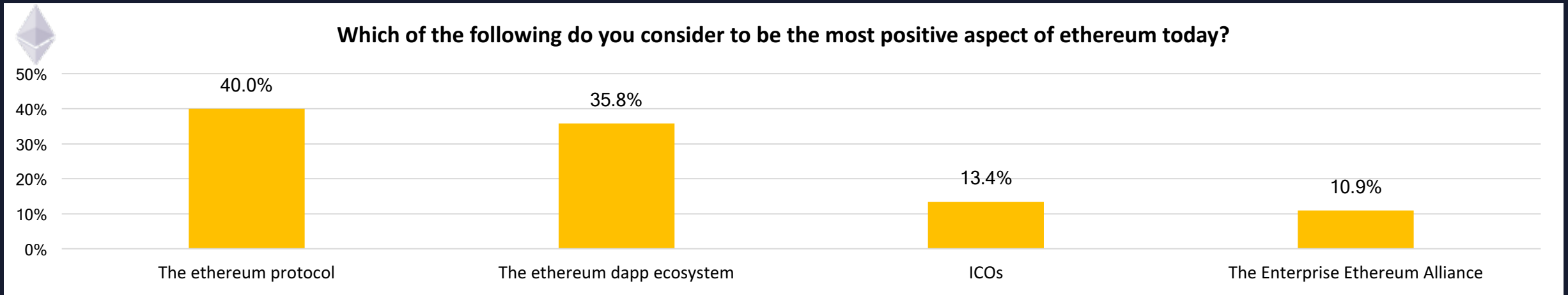
8.6% **negative**

Data Source: CoinDesk's Q4 2017 Blockchain Sentiment Survey



Most Positive Aspect of Ethereum Was the Protocol

40.7% Say Problematic Smart Contracts Are the Most Negative



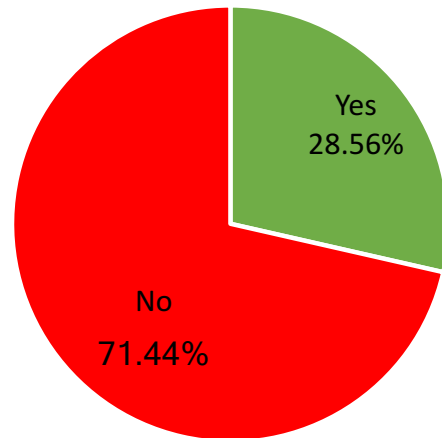
Data Source: CoinDesk's Q4 2017 Blockchain Sentiment Survey



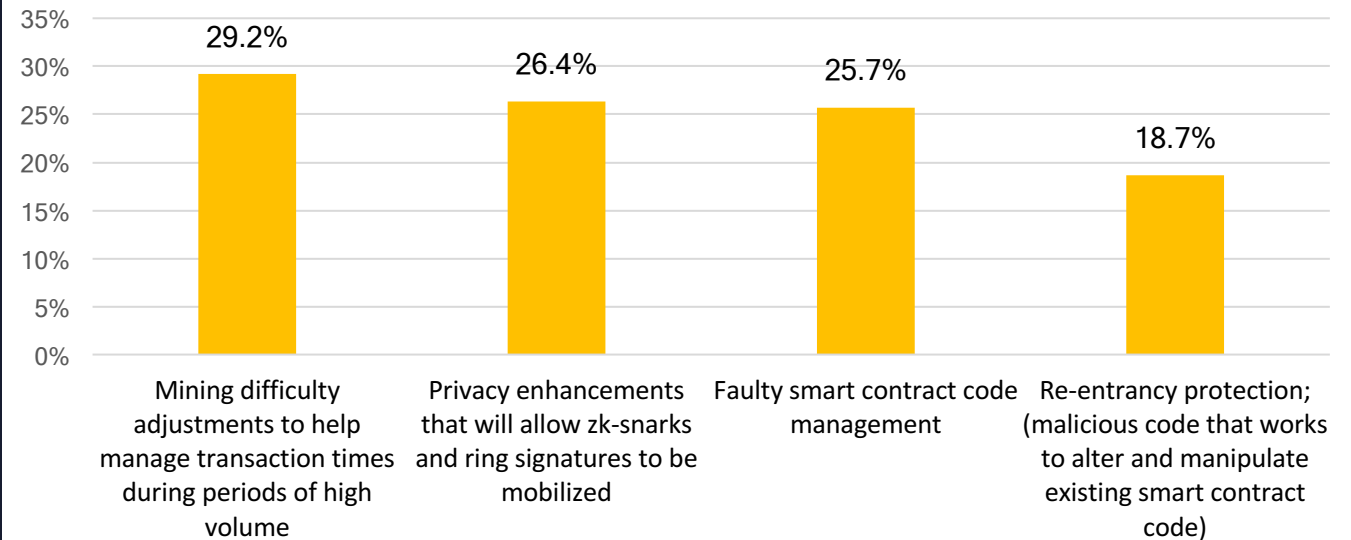
71% Didn't Follow the Byzantium Hard Fork

29.2% Cite "Mining Difficulty Adjustments" as Most Important

Did you follow the ethereum Byzantium hard fork in October?

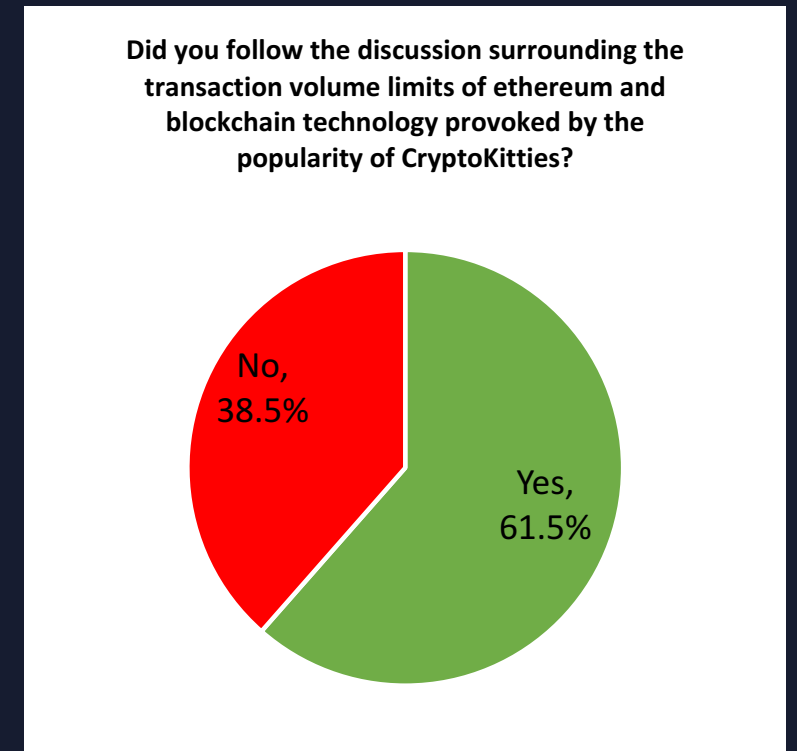
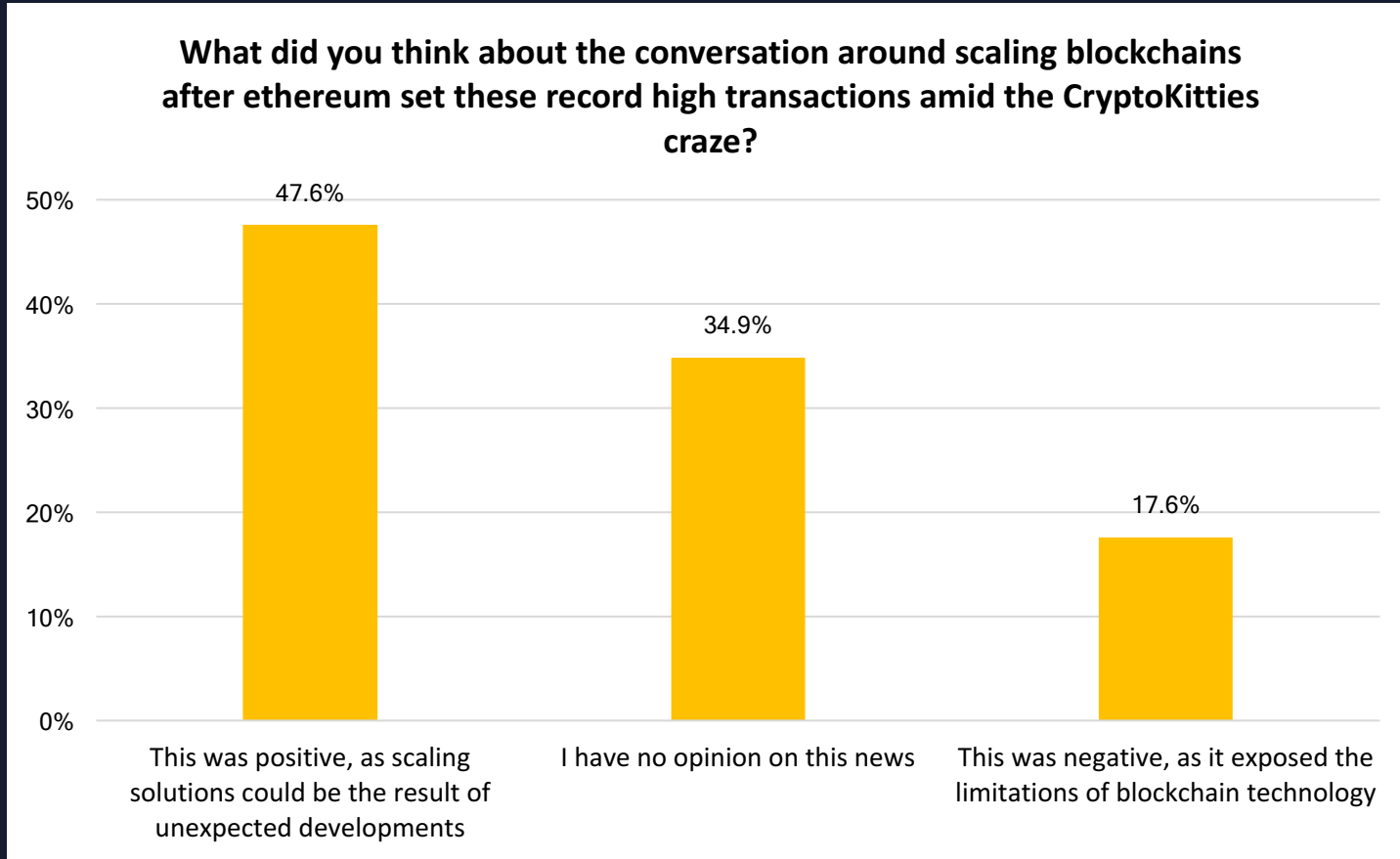


What feature of ethereum's Byzantium hard fork do you think is most important?





48% Think The CryptoKitties Phenomena Was Positive For Scaling 61% Followed The Discussion & 54% Foresee More Developments

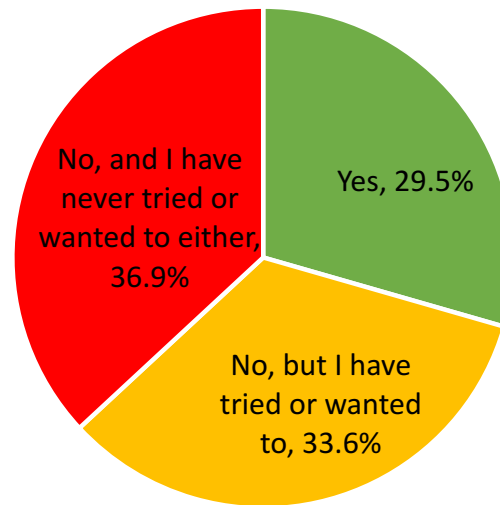




30% Participated in an ICO, Down -14% in Q4

More Than Half Who Haven't Participated Tried or Wanted To

Have you ever participated in an ICO?

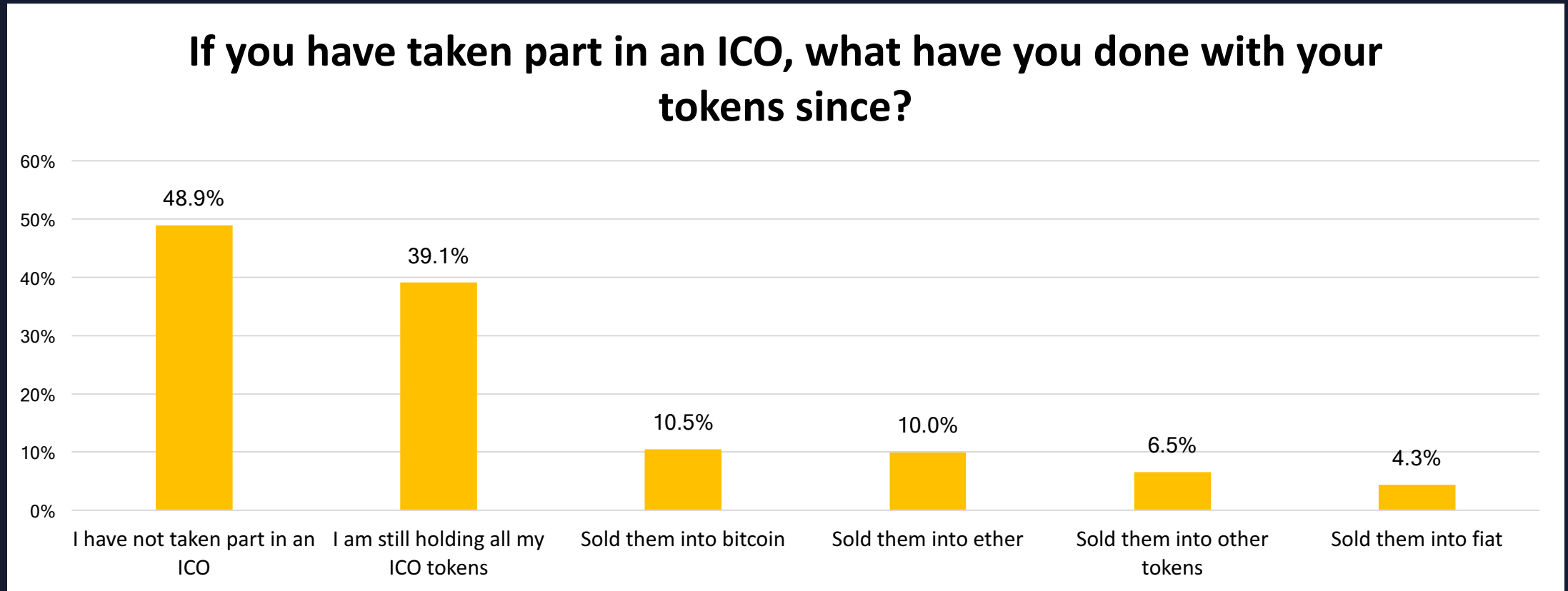


Q3: 43.8% had participated



51% Took Part in an ICO

Most Who Participated Still Hold Their ICO Tokens

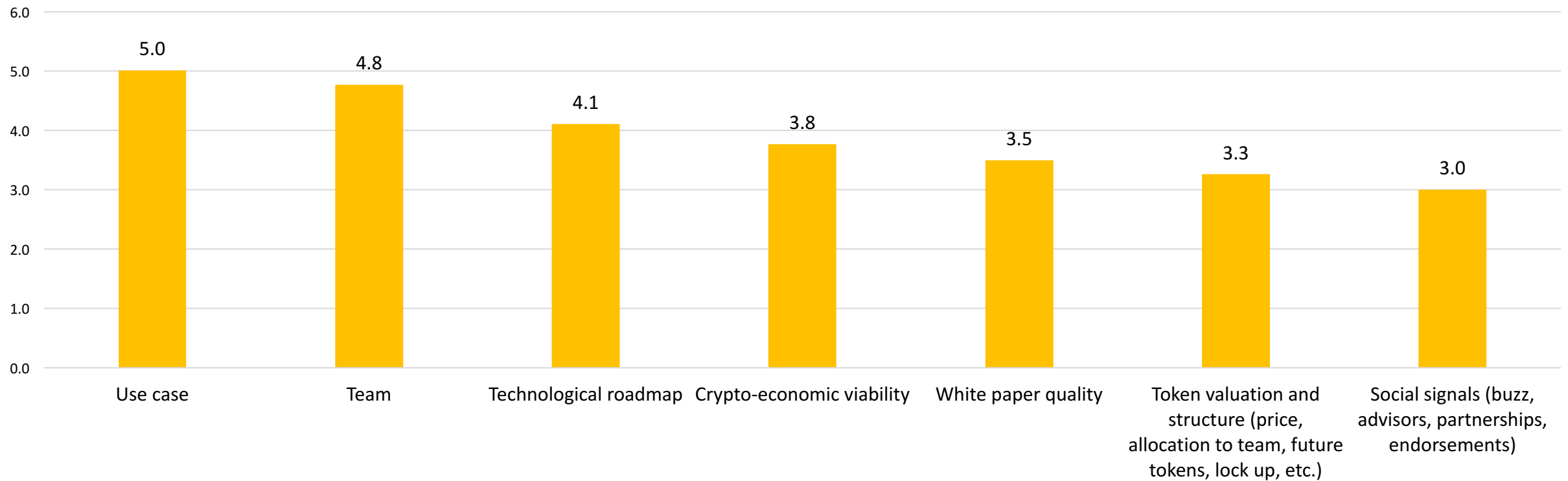




ICO Participants Considered Use Case Their Primary Driver of Analysis

Social Signals Remain the Lowest Ranked Factor

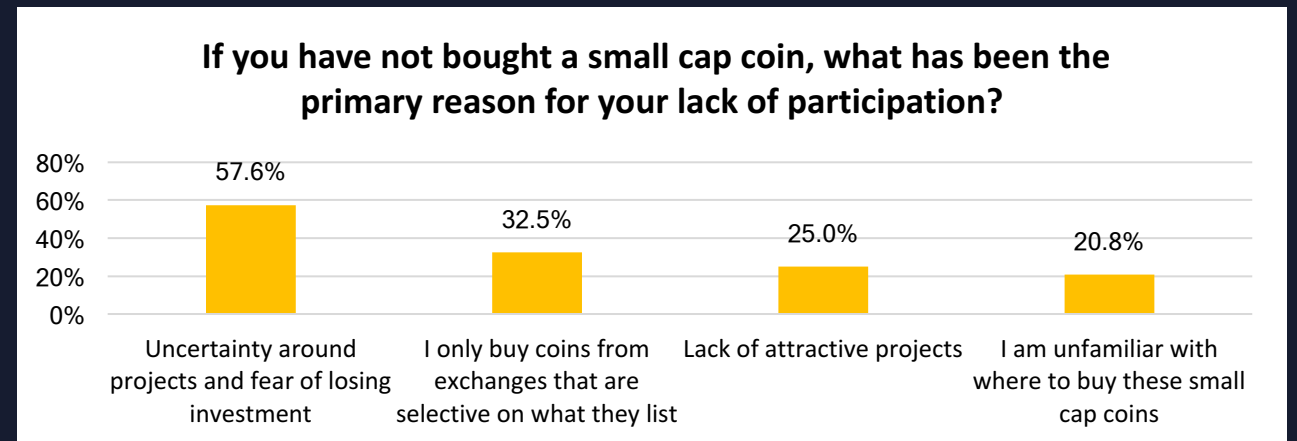
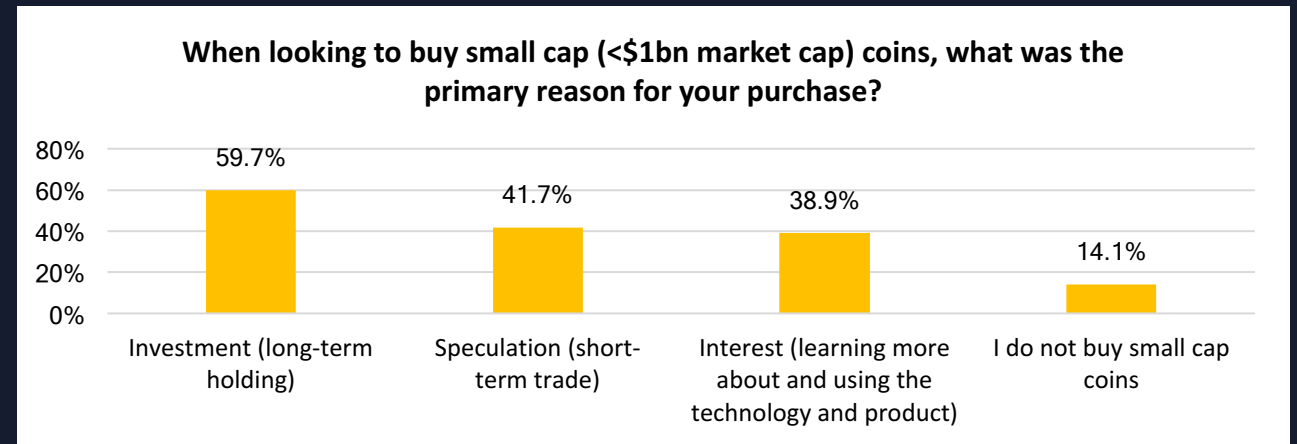
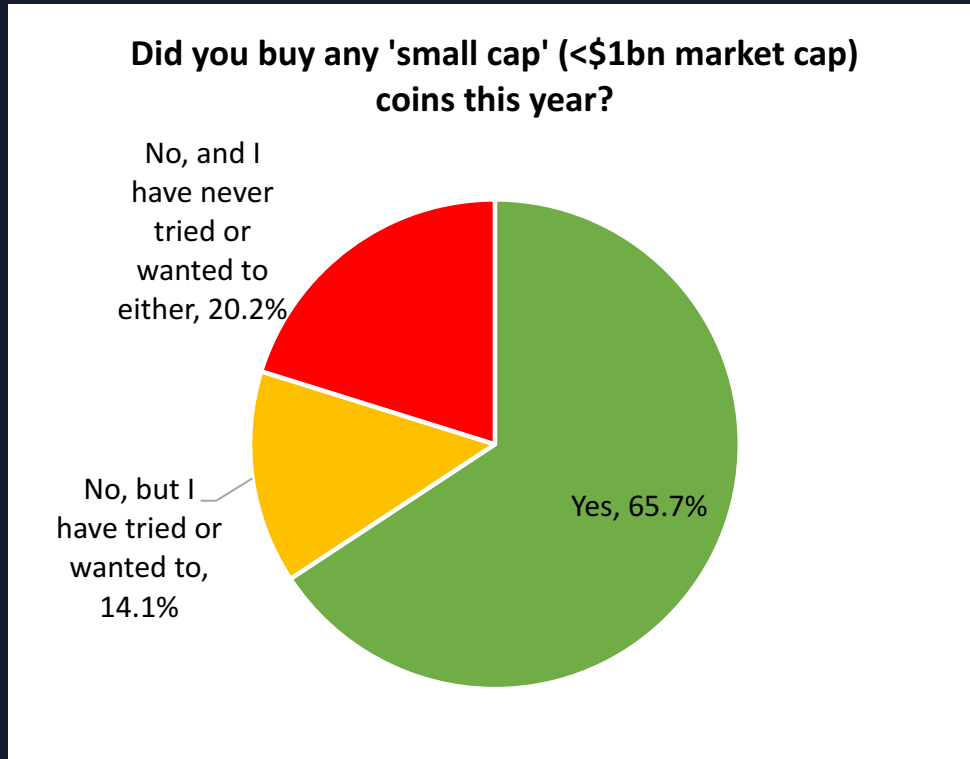
How would you rank the importance of the following factors behind buying an ICO?





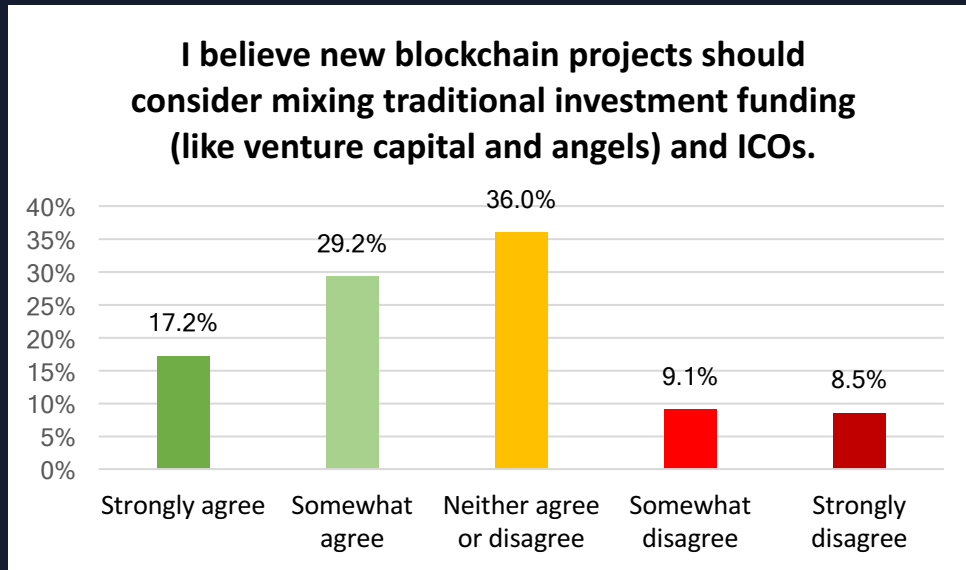
80% of Respondents Bought or Want to Buy “Small Cap” Coins

Long-Term Holding Cited as Main Factor

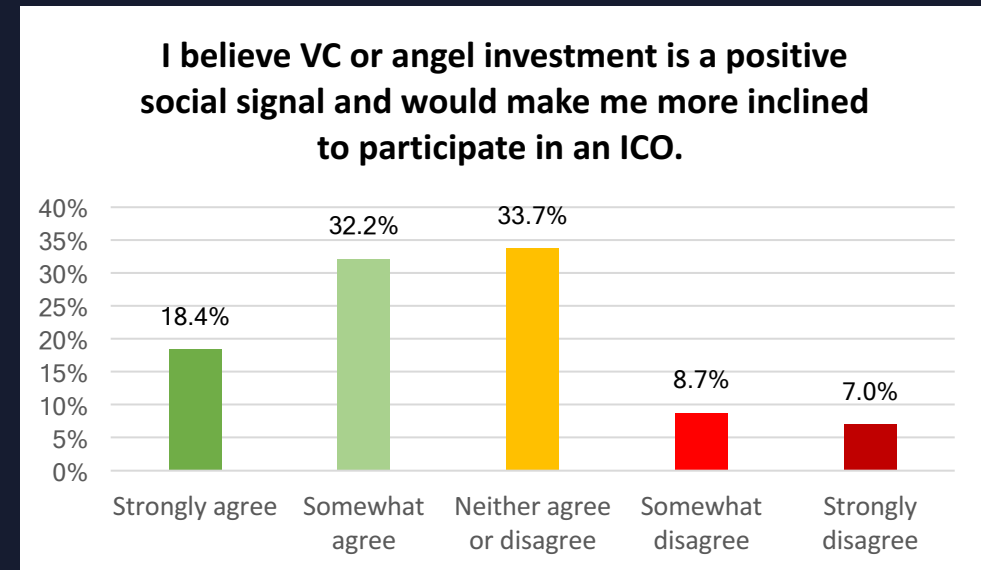




Most Agree That ICO & VC Investment Are Complements



▲ 46.4% agree
▼ 17.6% disagree



▲ 50.5% agree
▼ 15.7% disagree

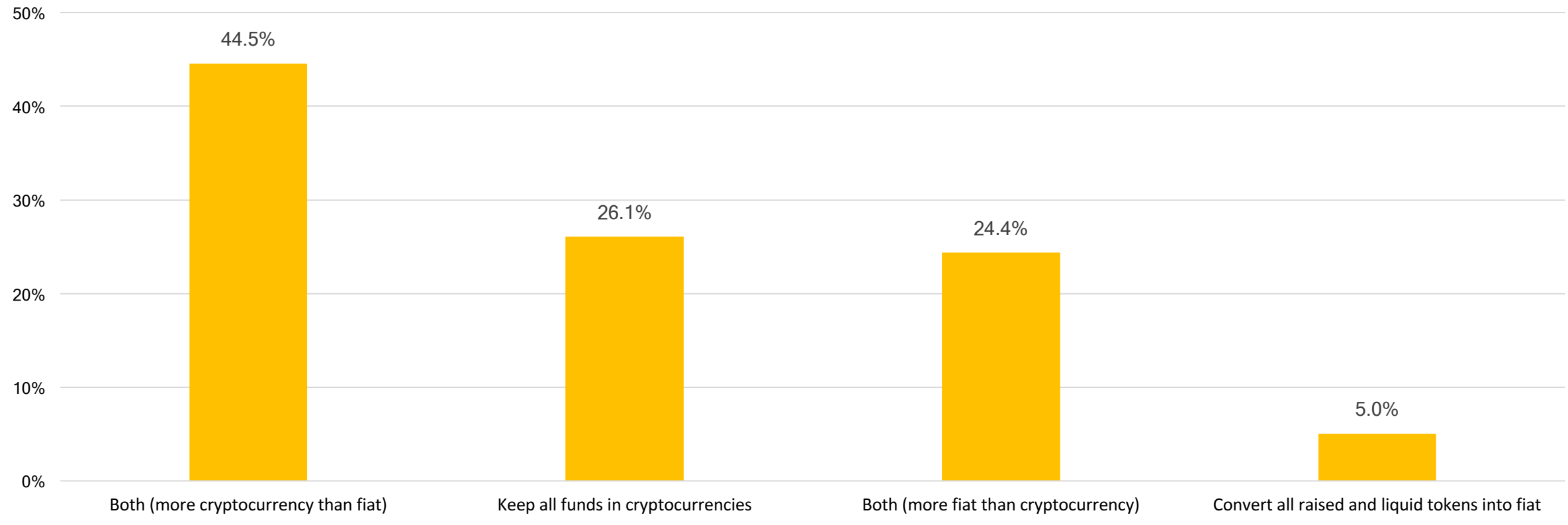
Data Source: CoinDesk's Q4 2017 Blockchain Sentiment Survey



Respondents Think More ICO Funds Should be Held in Fiat

About 13% for More Fiat in Q4 Than Q3

How do you think ICO issuers should hold the funds raised in a token sale?

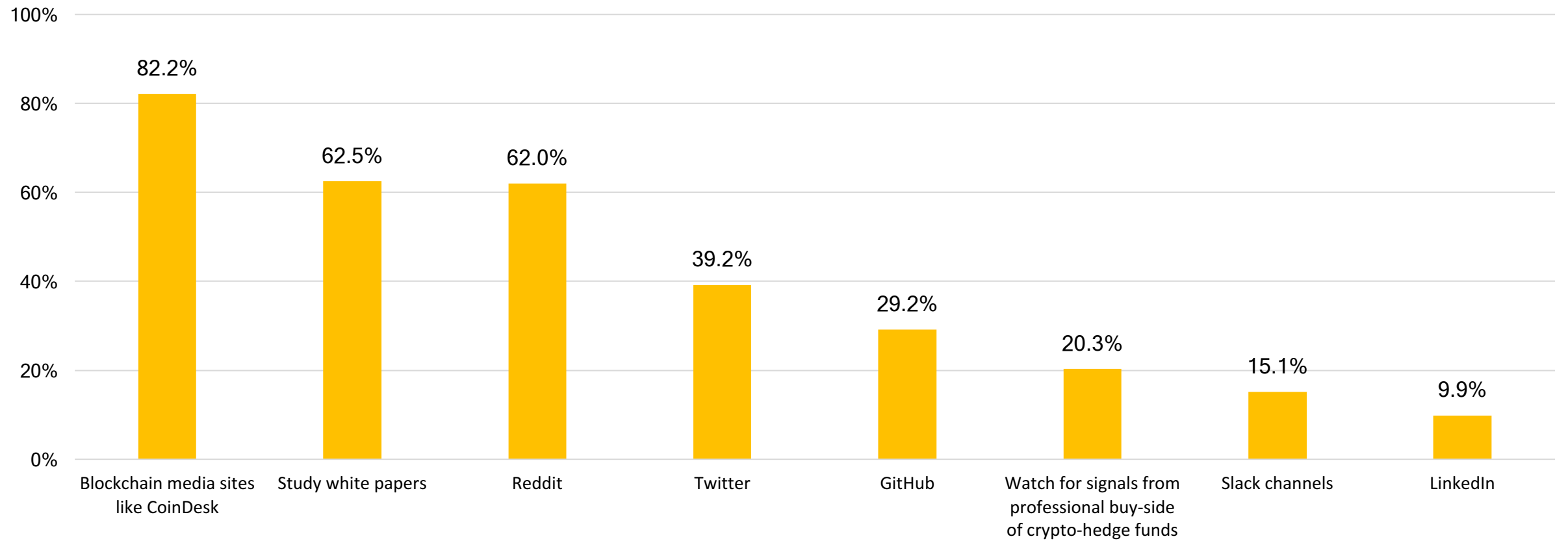


Data Source: CoinDesk's Q4 2017 Blockchain Sentiment Survey



Blockchain Media Sites and White Papers Were Most Commonly Used to Learn More About Tokens or ICO Projects

What resources do you use to learn more about tokens or ICO projects?



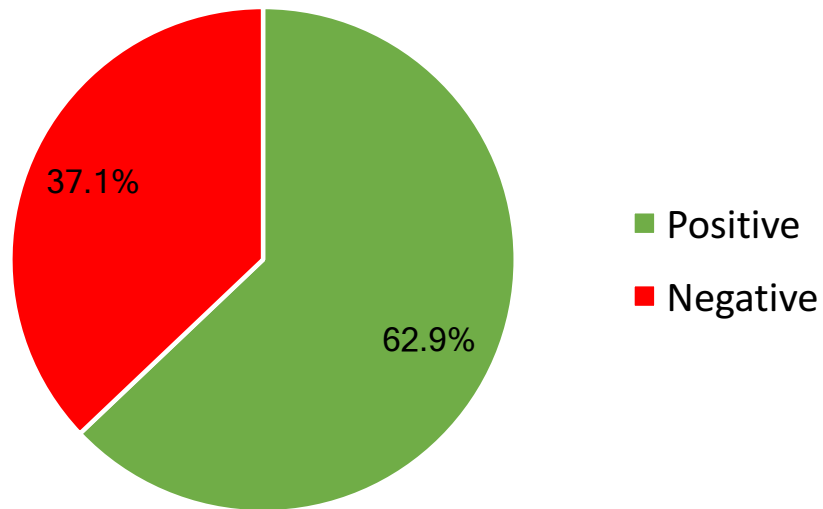
Data Source: CoinDesk's Q4 2017 Blockchain Sentiment Survey



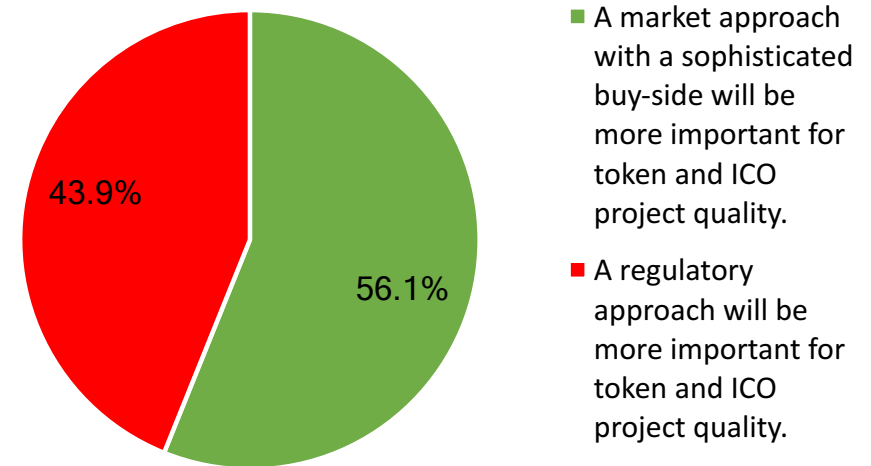
63% Think Positively of Cryptocurrency Diversification

56% Prefer Market Approach Rather Than Government Regulation

The number of cryptocurrencies exploded in 2017. Do you think token diversification is positive or negative for the industry?



Which will have a greater effect on the quality of tokens or ICO projects, a sophisticated buy-side of professional crypto-hedge-funds, or the regulatory approach?

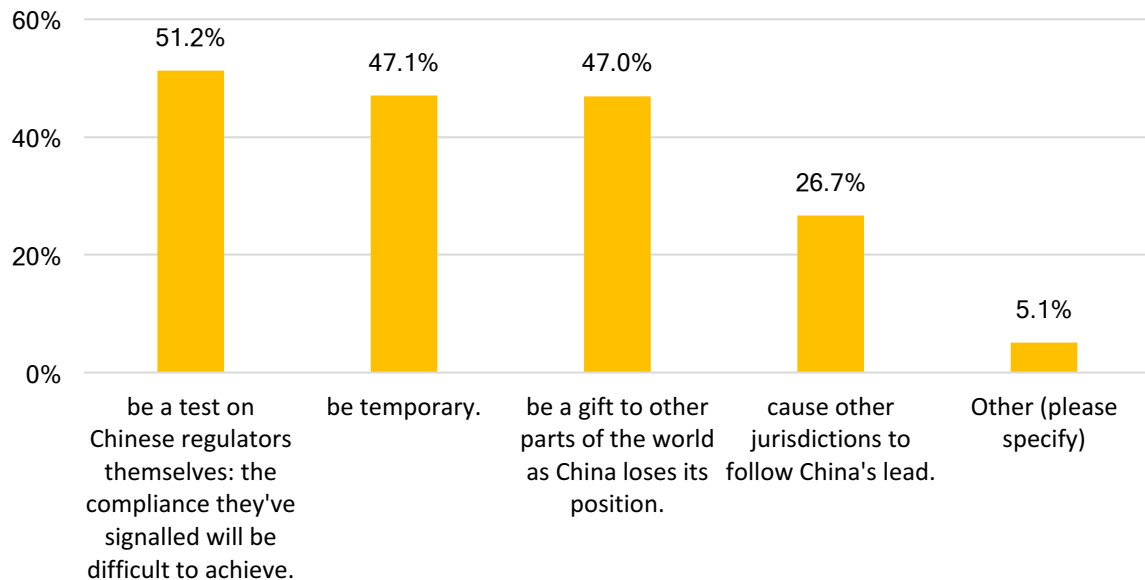


Data Source: CoinDesk's Q4 2017 Blockchain Sentiment Survey

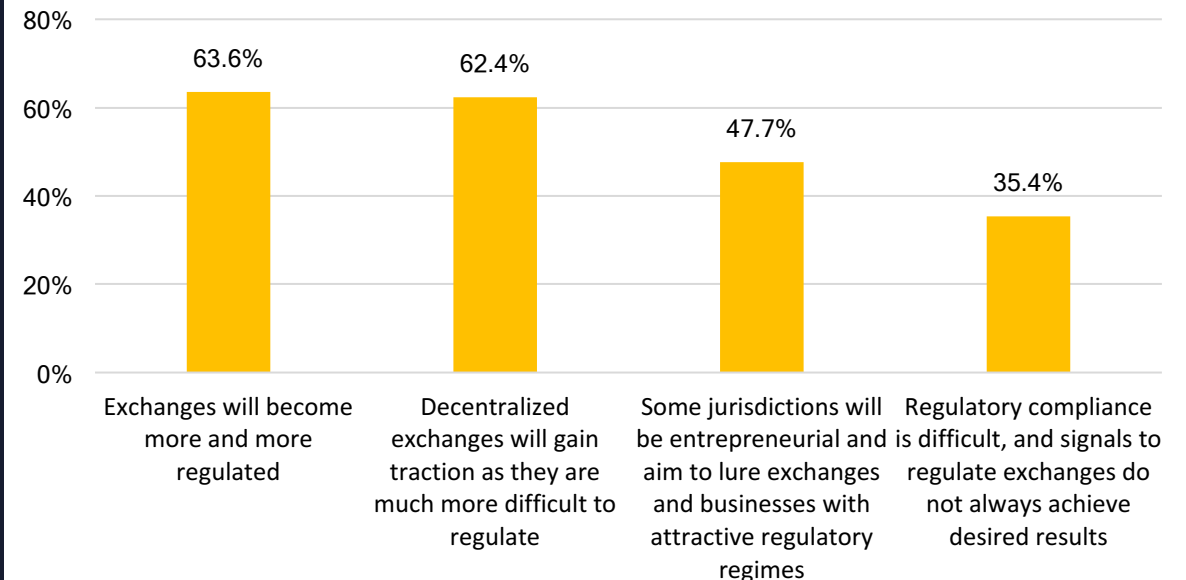


Respondents Believed More Regulation in Future But Will Prove to Be Irrelevant or Temporary (More Than in Q3)

China took the strongest regulatory tone on cryptocurrencies in 2017. This action will...



With several jurisdictions tackling exchanges with new regulations, how do you think the market will respond?

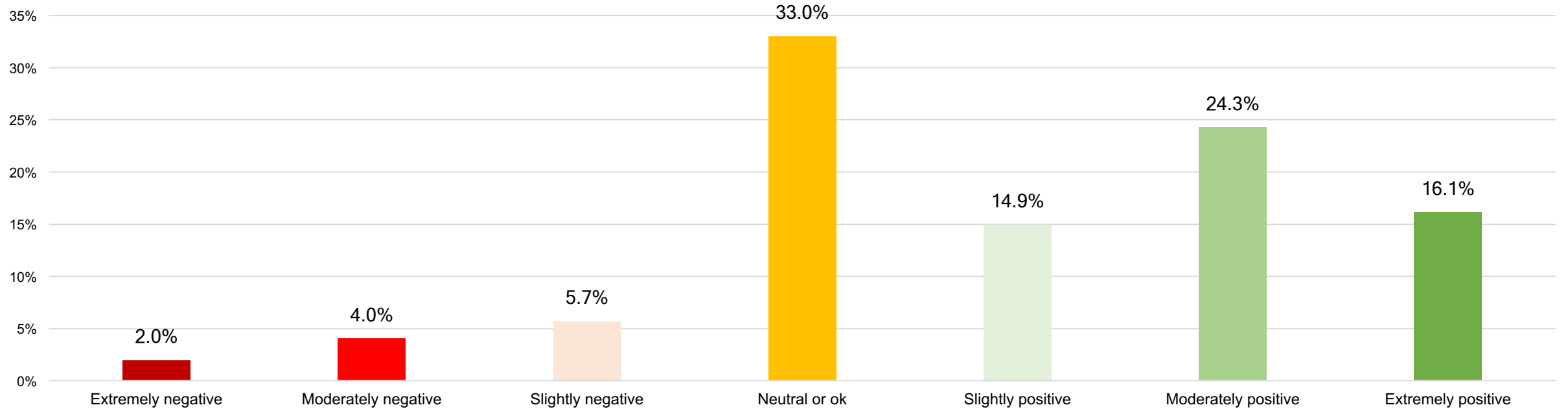




Most Respondents Felt Positive About the Overall State of DLT

The Largest Group Felt 'Neutral' or 'OK' About DLT

How do you feel about the current overall state of Distributed Ledger Technology (sometimes called 'permissioned' or 'enterprise' blockchains)?



Q3 2017 State of Blockchain response:
▲ 52.7% positive
▼ 18.6% negative

▲ 55.3% positive
▼ 11.7% negative

Often called 'DLT', 'permissioned' or 'enterprise' blockchains

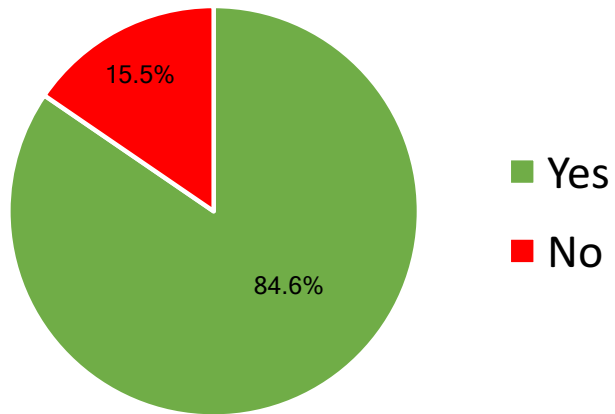
Data Source: CoinDesk's Q4 2017 Blockchain Sentiment Survey



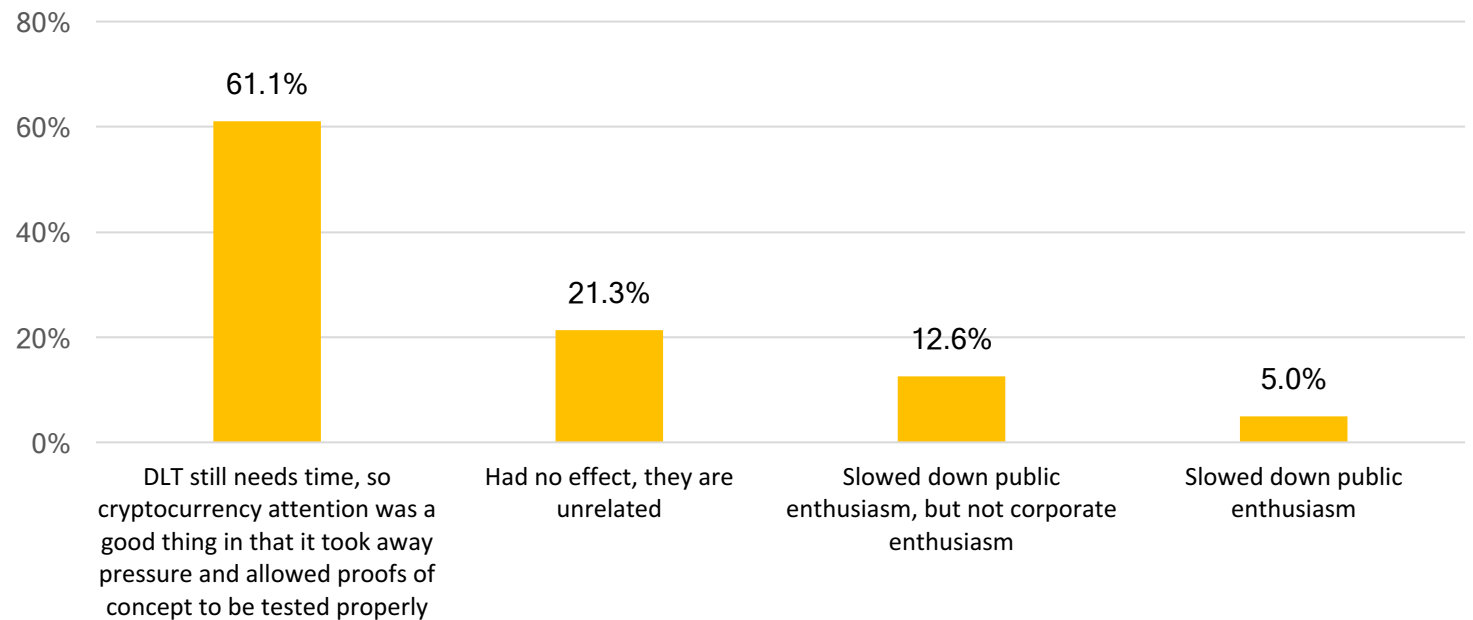
Most Respondents Believed DLT Will Gain Traction in 2018

Most Thought Lack of Attention Was Positive

Do you think DLT will gain traction in 2018 with projects going live?



With all of the attention cryptocurrencies got because of value increases, how do you think it affected the momentum behind DLT?

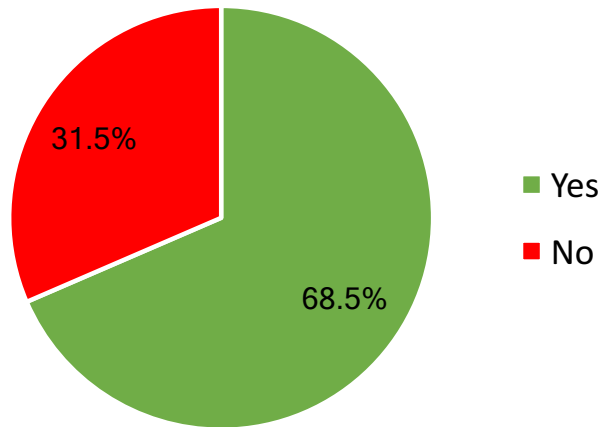




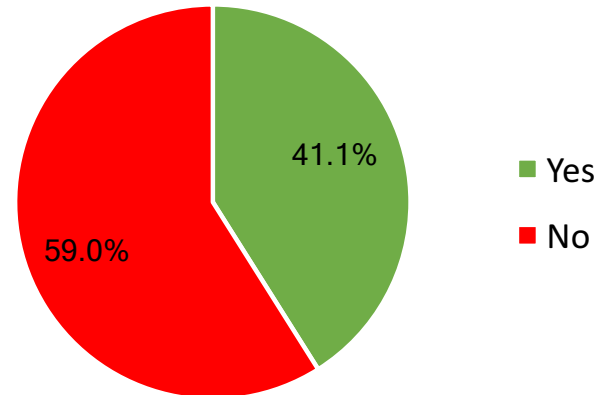
Industry Moved Away From Cypherpunk Roots

Most Think Central Banks Will Hold Bitcoin Eventually

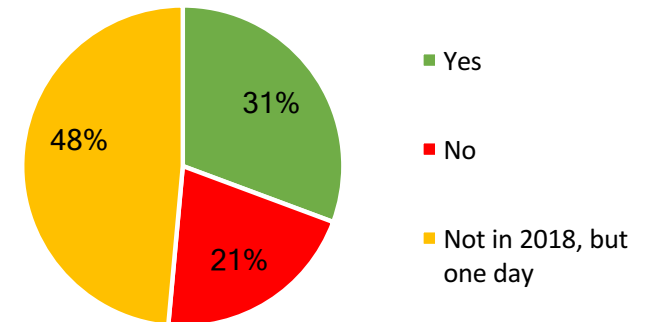
With the rise in popularity of cryptocurrencies in 2017, do you think the industry moved away from its cypherpunk roots?



With all the developments in the industry this year, do you think that mainstream public perception has finally made it over psychological hump of accepting that something natively digital can be private property?

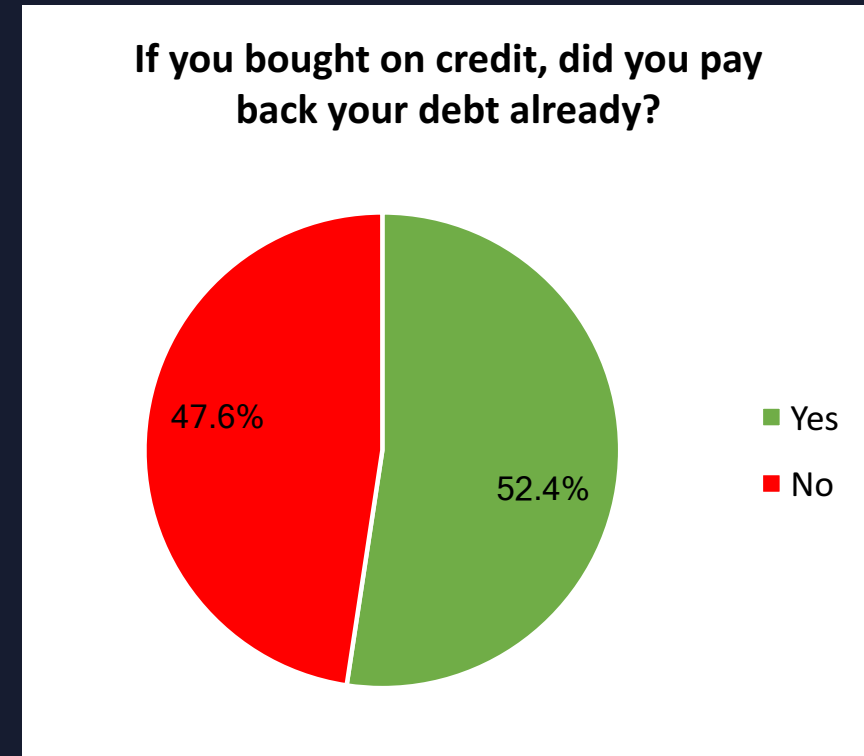
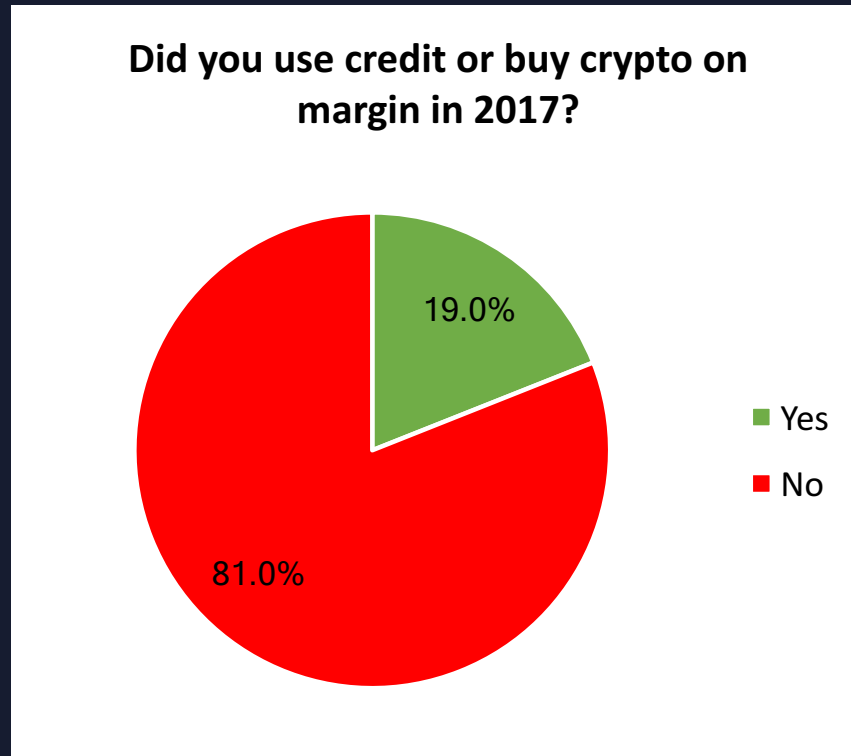


Do you believe a central bank will hold Bitcoin on their balance sheet in 2018?





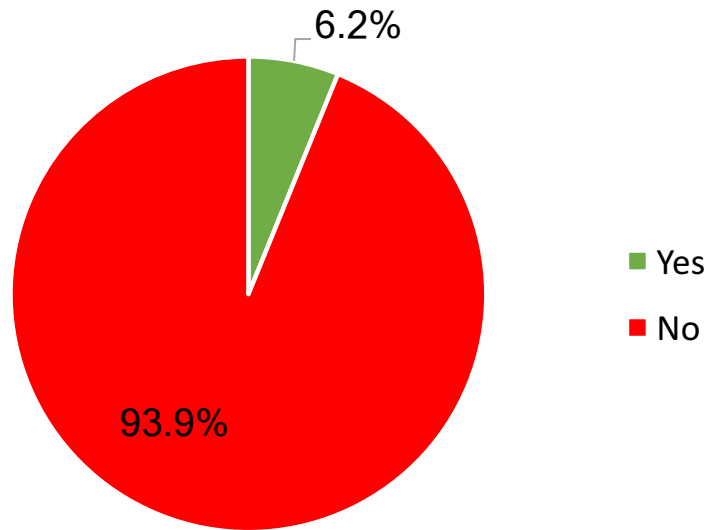
81% Did NOT Go Into Debt to Buy Crypto Of Those That Did, 52.4% Already Paid Back



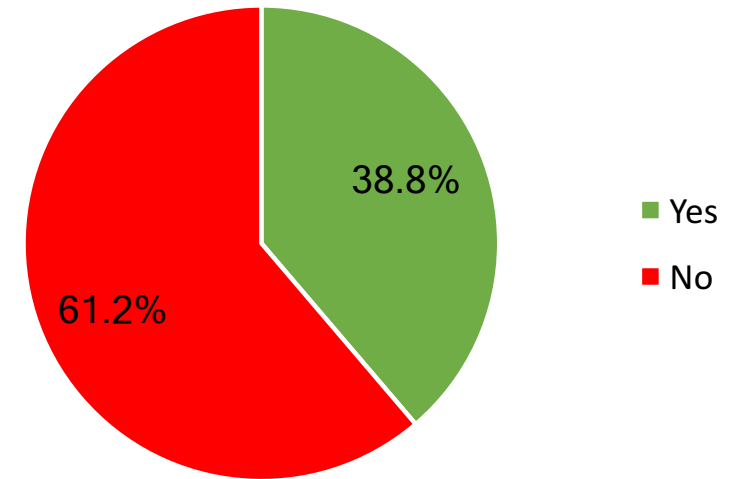


6.2% of Respondents Became Crypto-Millionaires in 2017 But 39% Think They Will in 2018

Did you become a 'crypto-millionaire' in 2017?

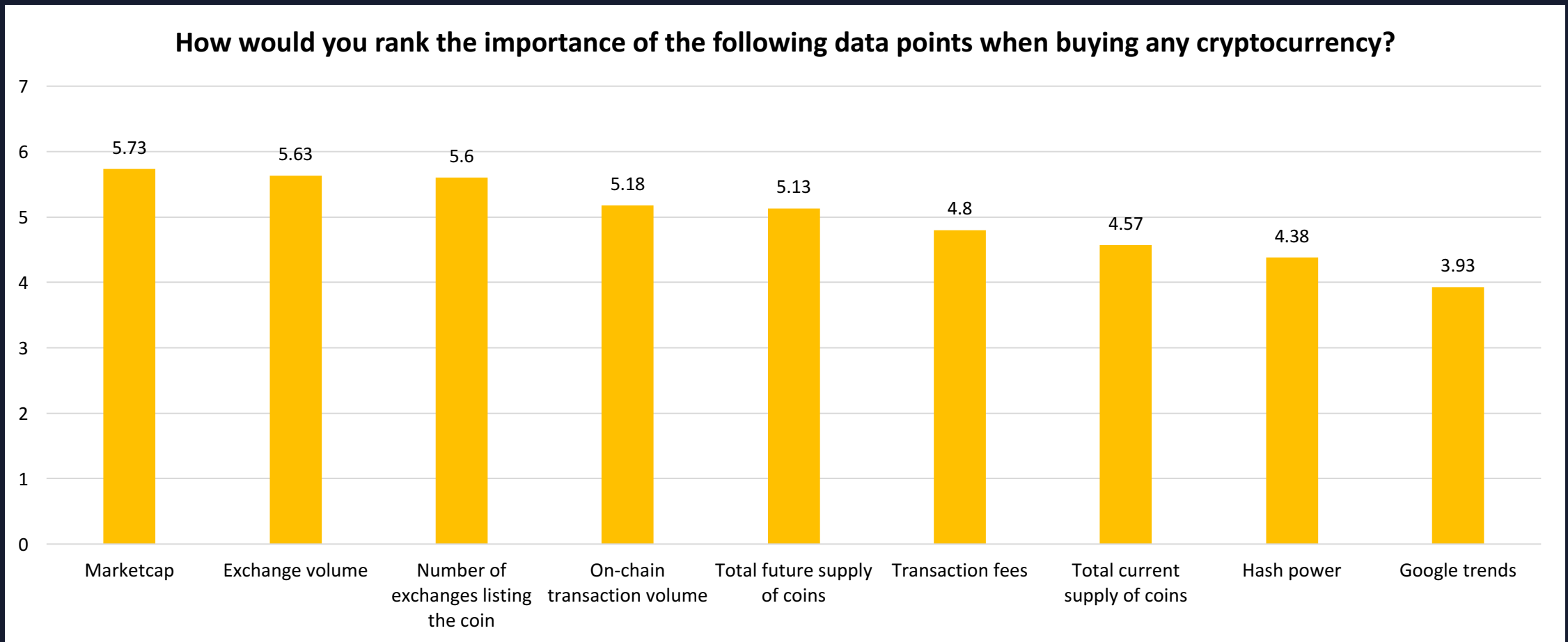


Do you think you can become a 'crypto-millionaire' in 2018?





Market Cap is the Most Valued Data Point When Buying Crypto

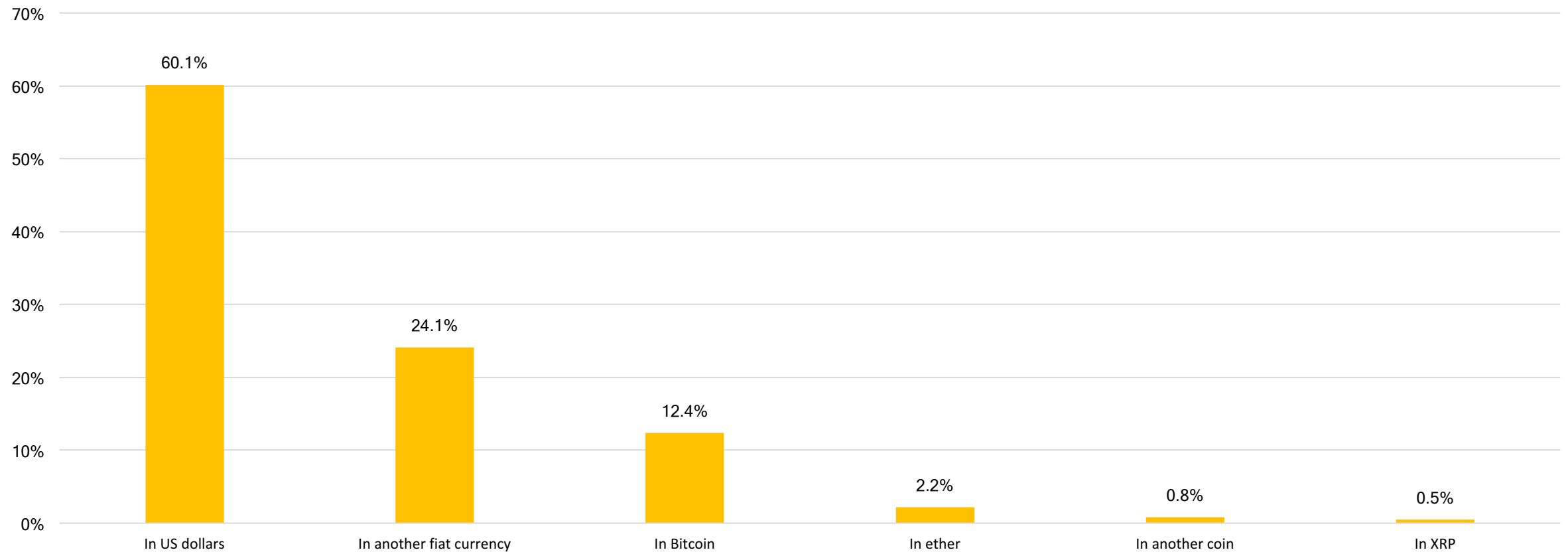


Data Source: CoinDesk's Q4 2017 Blockchain Sentiment Survey



Almost 13% Measure Portfolio in BTC

How do you measure the total value of your digital asset portfolio?

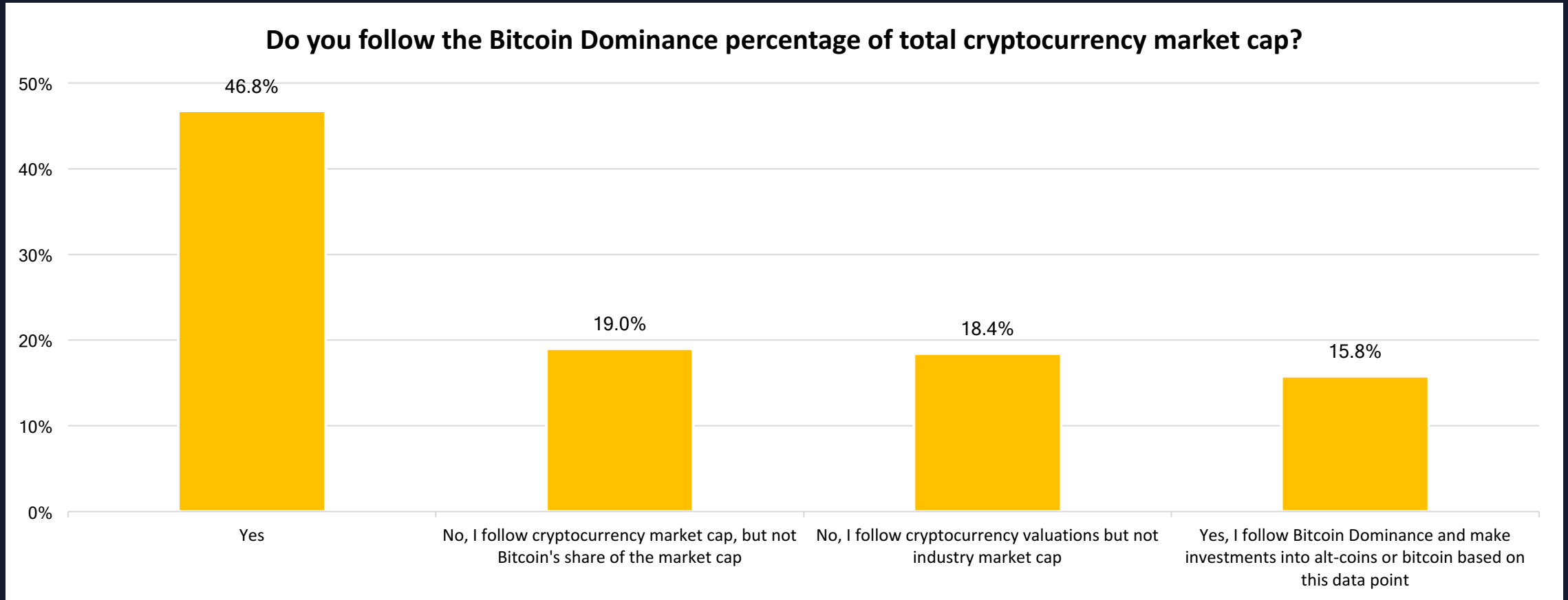


Data Source: CoinDesk's Q4 2017 Blockchain Sentiment Survey



47% Follow the Bitcoin Dominance Percentage

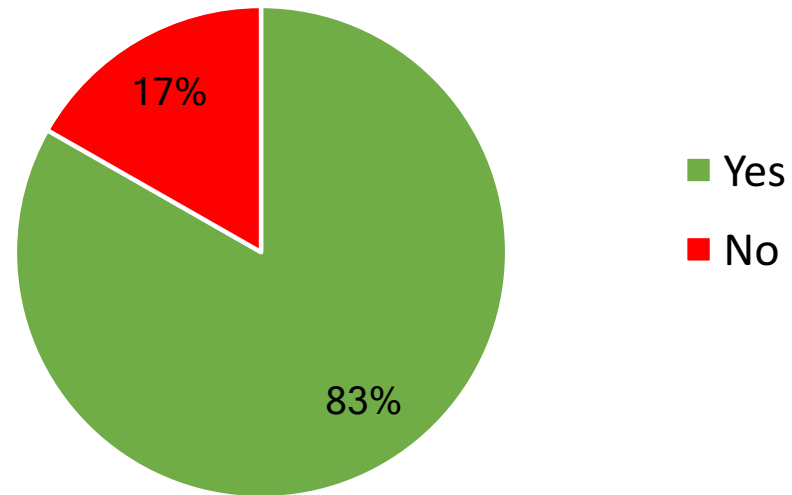
16% Use as Investment Criteria





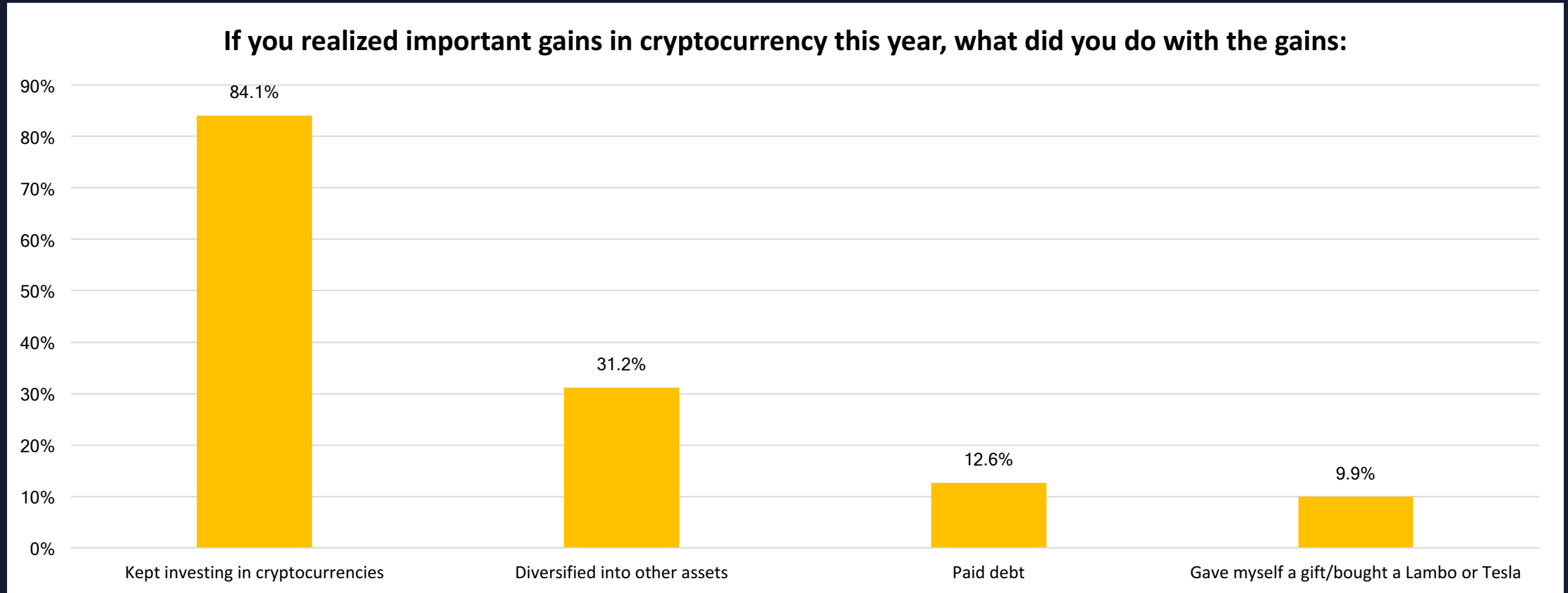
83% See Promise in Square Cash's Bitcoin Integration

With the Square Cash integration of a 'Buy Bitcoin' function, do you believe new entrants into Bitcoin infrastructure will put pressure on the existing exchanges to offer faster and more reliable services?





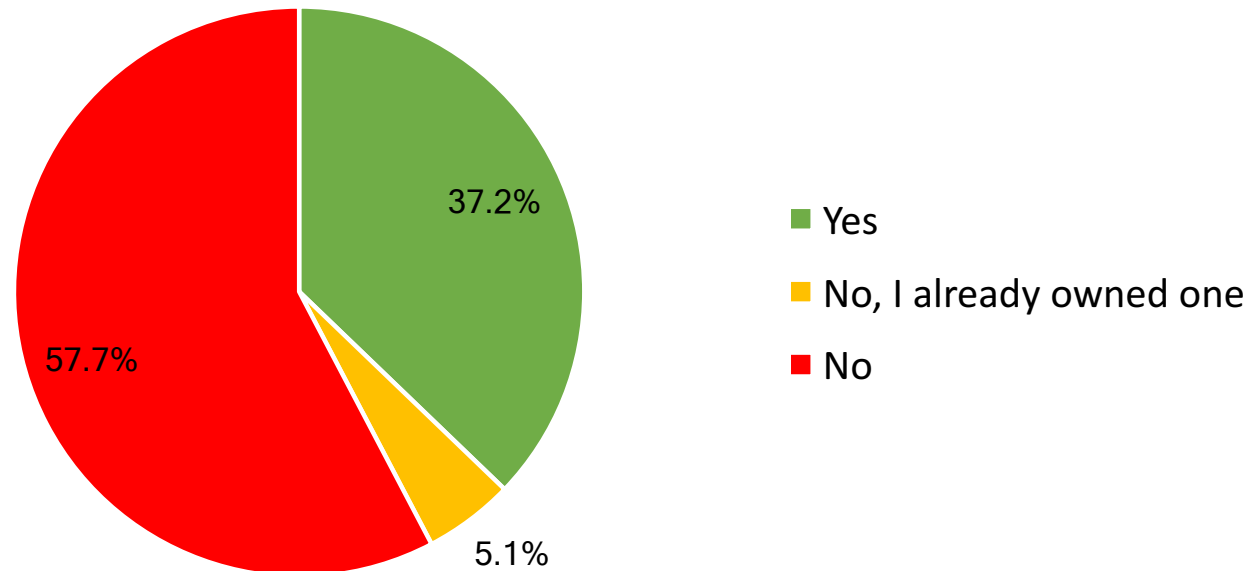
84% Re-Invested Gains into Crypto





63% Don't Store Crypto on Hardware Wallets

Did you buy a hardware storage device for your cryptocurrencies in 2017?



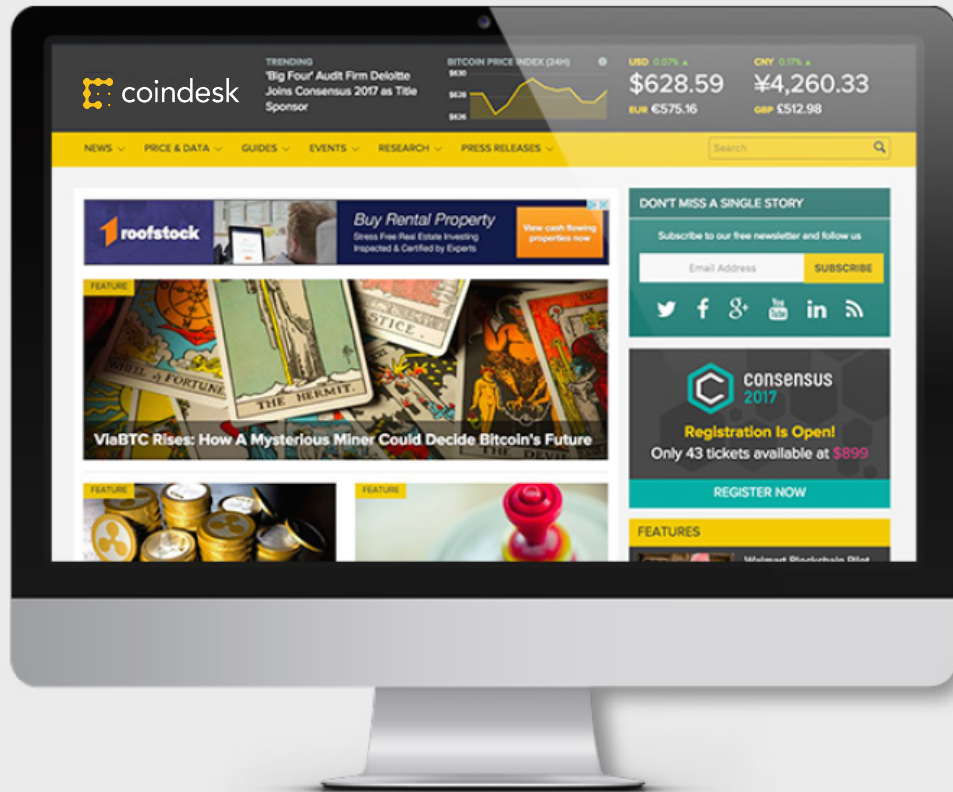


6

COINDESK



CoinDesk – News, Events, Research and Data for Blockchain Technology



Headquarters: Midtown Manhattan, New York City

News: 10m monthly unique visitors

Events: 4,000+ attended our 2017 [Consensus](#) and [Invest](#) conferences in New York City and San Francisco

Data: Industry reference points including [Bitcoin](#) and [Ether](#) prices and [Venture Capital](#) and [ICO](#) databases

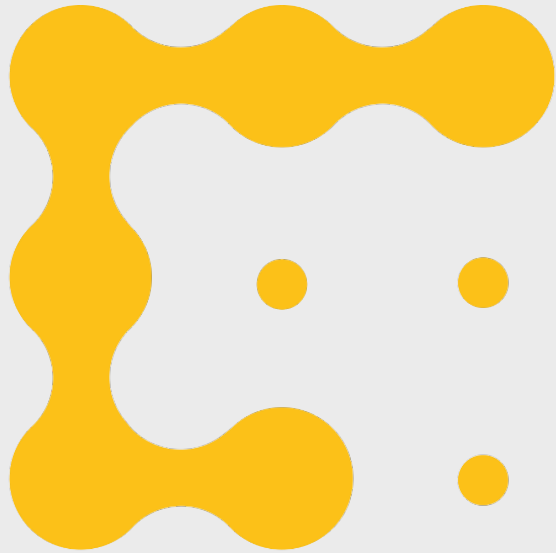


For four years, CoinDesk has analyzed the 'State of Blockchain' in our quarterly industry overview reports

We cover:

- **Technical trends** within the top open-source developer communities
- **Major product updates** from well-funded startups
- **Digital currency market data**, utilization rates, public sentiment and network performance metrics
- **Enterprise adoption** rates and new proofs-of-concept
- **Venture capital**, corporate, and public investment trends
- **Public policy** updates from around the globe





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- If you have data you think should be included in future 'State of Blockchain' reports, email stateofblockchain@coindesk.com
- We also welcome any general feedback you have on the report



- **We are the leading events firm in blockchain**
- Our annual [Consensus](#) events have attracted thousands of entrepreneurs, investors, executives, regulators, journalists and more to San Francisco and New York City
- Join us in May for our next event, [Consensus](#)!



6A

RESEARCH FRAMEWORK



Defining The Blockchain Technology Market

A **public blockchain** is an internet protocol that manages the distribution of provably unique data that:

- Acts as a unit of account for transactions on that ledger
- Incentivizes early adopters and developers to use, support and verify the ledger without the need for a trusted intermediary

An **enterprise blockchain** is a distributed ledger that provides:

- Consensus via trusted intermediaries, making digital currencies unnecessary
- Solutions to clients who wish to use cryptographic databases managed and shared by trusted parties

Many companies employ **hybrid** models where they:

- Build on public blockchain infrastructure
- Provide technology for permissioned networks



The Internet-Intranet Comparison

We believe both public and enterprise blockchains have useful applications,
much like the Internet and corporate intranets

PUBLIC BLOCKCHAINS



public (inter-)
The internet



ENTERPRISE BLOCKCHAINS



private (intra-)
Intranets & IT







The State of Blockchain Focuses Primarily on Public Blockchains; Enterprise Data is More Opaque

The majority of development work to date has been done using open-source tools and public blockchains like bitcoin and ethereum


PUBLIC BLOCKCHAINS




public (inter-)
The Internet



ENTERPRISE BLOCKCHAINS



private (intra-)
Intranets & IT





'Public' (Open) vs 'Enterprise' (Permissioned) Blockchains: Generalized Features Comparison

	PUBLIC	ENTERPRISE
ACCESS	Open read and write	Permissioned write and/or read
SPEED	Slower	Faster
SECURITY	Open network	Approved participants
IDENTITY	Anonymous or pseudonymous	Known identities
ASSET	Native assets	Any asset



Strengths and Weaknesses of Public Blockchains

We believe public blockchains will have the greatest impact on developing economies (reduced need for trust) and the connected device, IoT economy (immutability, auditability)

STRENGTHS

Immutable ledger

Relatively fast settlement time
(e.g., 10 minutes or less)

Reduced security risks associated with centralization-trusted third party

Easy to audit

Reduced need for trust

WEAKNESSES

Irreversible transactions

Slow transaction clearing
(e.g., 3 – 7 transactions / second)

More vulnerable to attacks
(e.g., 51%, spam, DDoS)

Reduced privacy

Energy consumption



Blockchain Ecosystem Breakdown

When producing market maps and following investment trends, we look for business shifts between these models:

	PUBLIC	ENTERPRISE
PROTOCOL	   	  
COMPANY	  	  
APPLICATION	  	


The company layer crosses protocols and is heavily comprised of bitcoin related businesses, while the application layer is dominated by ethereum applications

Notes: Numerous protocols are also maintained by open source communities, non-profits like the Ethereum Foundation and consortiums like R3 and Hyperledger



Blockchain Project Funding Models

Entrepreneurs have begun considering blockchain token sales ('ICOs') as fundraising alternatives to traditional venture capital and angel investment

	ICO				HYBRID		VC		
PROTOCOL									
COMPANY									
APPLICATION									

ICOs rather than VC has driven the development of most public blockchain applications, as well as numerous protocols and companies, a line which is becoming increasingly blurred

Notes: Numerous protocols are also maintained by companies like the Zerocoin Electric Coin Company, open source communities, non-profits like the Ethereum Foundation and consortiums like Hyperledger



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