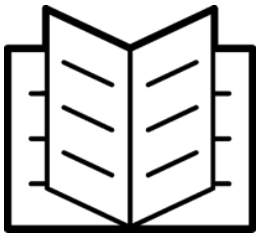


STATE OF
BLOCKCHAIN

Q1 2017



Q1 2017 State of Blockchain: Table of Contents

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B. ‘State of Blockchain’ at
Consensus 2017

Q1 2017 was a major quarter for blockchain.

As the overall market cap set a new all-time high of over \$25bn, we saw cryptocurrency prices surging across the board, with major interest in bitcoin, ether, ethereum based dapps and privacy focused protocols.

Transaction volumes on the bitcoin network hit an all-time high as did block sizes and transaction fees, fueling the continuation and urgency of the long-time 'scaling debate'. The community is also beginning to consider bitcoin more like a 'digital gold' and value store than a transactional currency.

Investment and speculation still dominate the markets as new tokens and ICOs flood the ecosystem in increasingly unique and complex structures.

Enterprise blockchains continue to attract the interest of major worldwide financial and technology giants, leading to consortiums like Hyperledger and the newly launched Enterprise Ethereum Alliance growing in size and membership quality.

As more and more blockchains, cryptocurrencies, tokens and distributed ledger systems launch and prosper, it's becoming increasingly obvious that we have created a whole new web of decentralized technologies, forming the backbone of an entirely new economy, information network and source of truth. We have seen a push and trends towards 'interoperability' to take full advantage of the diverse innovations across the ecosystem, and projects like the EEA, cosmos and polkadot are now aligned with a commitment to building the technologies to bring together these systems to form the infrastructure of tomorrow.



1

EXECUTIVE SUMMARY



Cryptocurrencies shatter all-time highs:

- Aggregate market cap breaks \$25bn, increasing in pace at end of quarter

Usage increases on major networks:

- Transaction volumes grow across leading blockchain protocols

All eyes remain on scaling solutions:

- The quest to higher transaction throughput on-chain and off-chain continues with SegWit, Lightning, Raiden and enterprise innovation

Permissioned blockchains attract giants:

- Hyperledger membership grows over 130, Enterprise Ethereum Alliance launches with banks, tech firms and ethereum startups

Interoperability emerges as major trend:

- Public and private groups set target for efficient communication between diverse and growing future of co-existing blockchains

Regulation worldwide inches forward:

- U.S. SEC rejects 2 ETFs, PBoC warnings lead to Chinese 'Big 3' instituting fees, Japan sees bitcoin as legal payment method



Q1 2017 Trends: Public Blockchains



- Bitcoin used more than ever with 287,000 transactions per day, fees hit all-time highs at \$.62 each, periods over \$1

- Ethereum transactions rise, ICOs continue, EEA launches, market cap grows over \$3.6bn

- Major privacy focused cryptocurrencies grow to combined \$1bn market cap as transaction numbers increase

- Initial ethereum dapp use cases emerge, with prediction markets and asset management drawing attention

- Asset class rallies overall as top 10 assets each increase in value, top 40 assets exceed \$10m in market cap

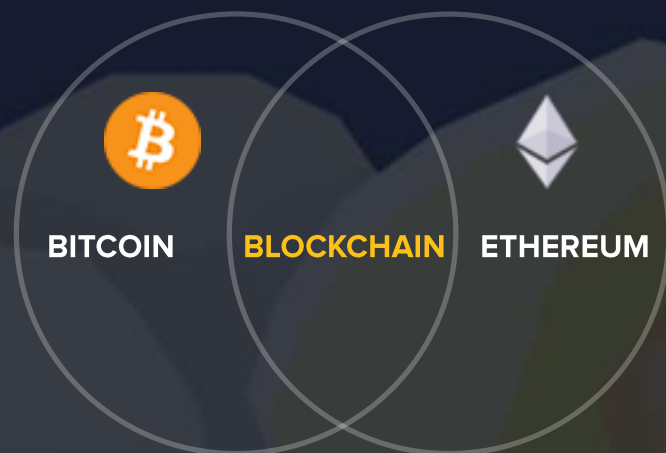


Q1 2017 Spotlight Study: Bitcoin and Ethereum Sentiment

Bitcoin and ethereum continued their dominance
as the top two public blockchain protocols in Q1 2017

OUR STUDY

We surveyed 1,100+ blockchain enthusiasts to illustrate [the state of bitcoin and ethereum](#)



OUR GOALS

- Identify perception around the state of bitcoin:
- scaling proposals and potential hard fork
 - transaction fees and confirmation times
- Identify perception around the state of ethereum:
- protocol and dapp developments
 - enterprise projects and interoperability
- Compare perception around bitcoin and ethereum and gauge [the overall 'state of blockchain'](#)



Q1 2017 Bitcoin and Ethereum Sentiment Survey: Key Takeaways

94%

Feel positive about the current **state of ethereum**, almost double the amount who feel positive about the **state of bitcoin**

86%

Believe **ethereum can be used as a currency** at least just as well as bitcoin, which is now most related to as a **digital gold**

67%

Feel **negative about the current state of fees on the bitcoin network**, despite transaction numbers hitting all-time highs

57%

Believe **Raiden will be live on ethereum by year end, faster than bitcoin's Lightning Network** off-chain scaling proposal

85%

Believe bitcoin mining is too centralized, ethereum split during move towards expected proof of stake launch in 2017

46%

Believe the **EEA launching was the primary driver of ether's price**, more than any development with the protocol or dapps

+ insights into Hyperledger, hard forks, dapps, price predictions and more

Data Source: CoinDesk's Q1 2017 Bitcoin and Ethereum Sentiment Survey
Notes: Expanded upon in [Section 2C: Bitcoin & Ethereum Sentiment \(Spotlight Study\)](#)



Q1 2017 Trends: Enterprise Blockchains



- Hyperledger amasses 130 financial and technology giants, multiple frameworks, numerous finance proofs of concept and a healthcare working group

- Enterprise Ethereum Alliance launches with impressive membership list and commitment to public private interoperability

- Enterprises, consortia and working groups continue to launch pilots, R&D labs, proof of concepts, tests and dedicate staff



Q1 2017 Trends: Investment



- Venture capital sees north of \$100 million invested, primarily in early stage deals, diverse companies and sectors

- ICOs and token sales capture a third of VC funding with major raises on the horizon

- 'Simple Agreement for Future Tokens', 'Pre-ICO' and new structures continue to emerge as early stage fundraising mechanisms spawned by blockchain technology



Q1 2017 Trends: Regulation & Government



- People's Bank of China meets with 'Big 3' and other domestic exchanges to examine trading and withdrawal fees as well as AML/KYC and other regulatory polices, sending global trading volumes and Chinese exchange dominance plummeting

- US SEC rejects 2 ETFs citing significant unregulated markets

- UAE Central Bank publishes 'Regulatory Framework For Stored Values and Electronic Payment Systems', prohibiting virtual currencies, later clarifies regulation does not apply to bitcoin

- Japan set to declare bitcoin a legal payment method

- ICOs and new token sale structures continue to evolve with limited guidance from industry groups, specialized legal and advisory groups



Q1 2017 Spotlight Study: Iranian Blockchain Sentiment

OUR STUDY

Gauge the viewpoints around bitcoin and blockchain in **Iranian and Persian culture**



Use **local language and communication channels**

KEY TAKEAWAYS

35%	Used bitcoin and other cryptocurrencies primarily for cross-border payments
77%	Believe bitcoin usage will grow over the next 5 years
66%	Think the government will be effective in advancing bitcoin and its community
63%	Believe bitcoin will make global finance more equitable

Data Source: CoinDesk's Q1 2017 Iranian Blockchain Sentiment Survey
Notes: Expanded upon in [Section 5A: Iranian Blockchain Sentiment](#)



2

PUBLIC BLOCKCHAINS



Q1 2017 Public Blockchain Summary

Public blockchain assets rally:

- Aggregate market cap breaks \$25bn, gains \$7.2bn as every top 10 asset rises in value

Bitcoin dominance falls:

- Comprises less than 70% of total market cap as ether, smaller assets gain steam

The quest to scale continues:

- 'SegWit' traction rises, hybrid proposals gain support, work on off-chain solutions continues

ICOs continue to take market share from VC:

- Total VC deal volume exceeds \$100m, ICOs a third with major deals on horizon

Global bitcoin trading volume plummets:

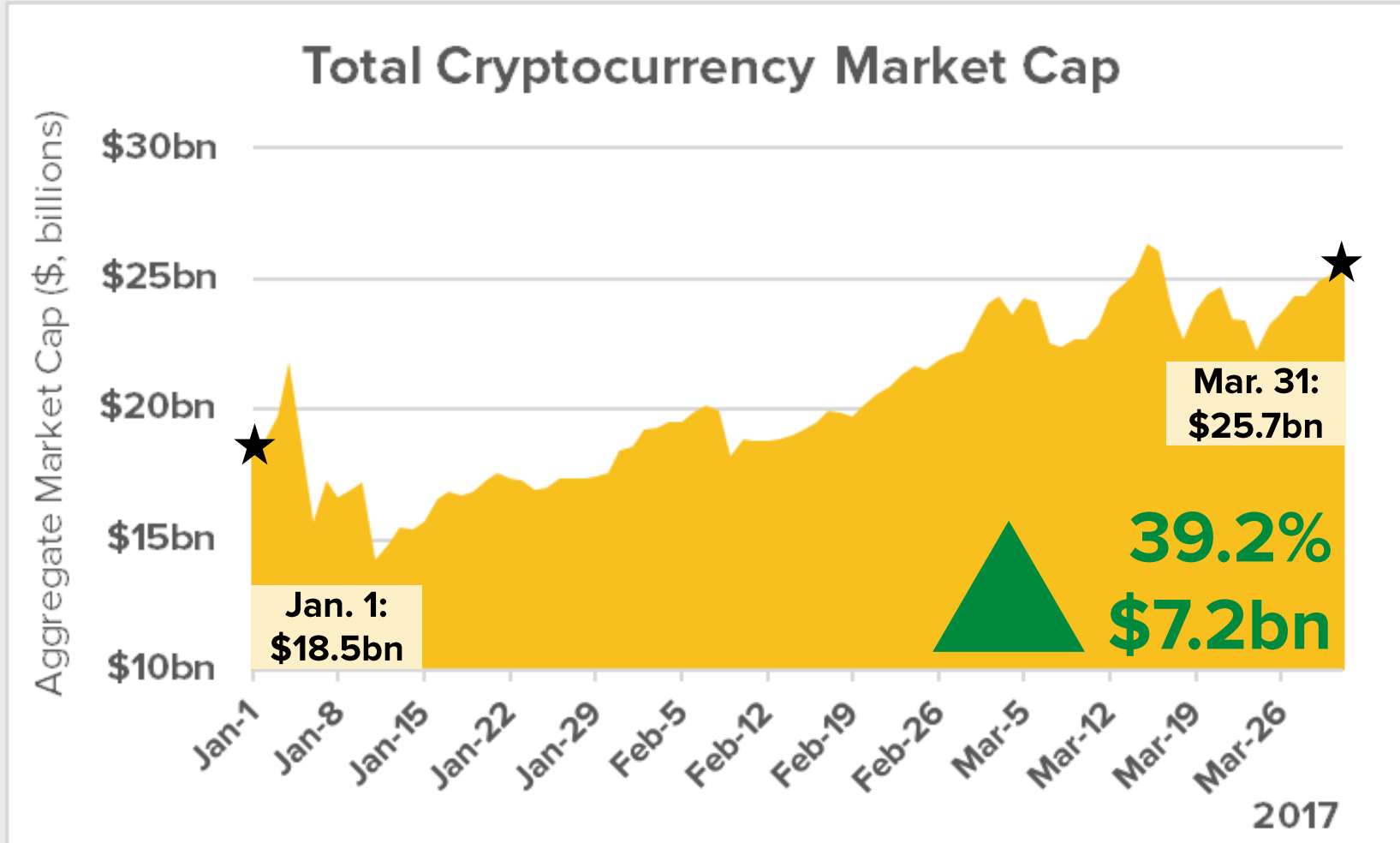
- Chinese trading volume sharply declines in wake of PBoC investigations

Asset class grows in diversity:

- Privacy based protocols, asset management and prediction market based ETH dapps grow



Aggregate Cryptocurrency Market Cap Grows Nearly 40%



Data Source: Coin.dance



Top 10 Cryptocurrencies Gain \$6.8bn in Market Cap, Lead by Ethereum's \$3.6bn Increase

Asset	Symbol	Q1 2017 Market Cap	Q4 2016 Market Cap	\$ Increase	% Increase
Bitcoin	BTC	\$17,250,083,356	\$15,482,057,104	\$1,768,026,252	11.4%
Ethereum	ETH	\$4,334,905,654	\$722,829,967	\$3,612,075,687	499.7%
Ripple	XRP	\$678,860,144	\$237,638,345	\$441,221,799	185.7%
Dash	DASH	\$500,978,259	\$78,695,538	\$422,282,721	536.6%
Monero	XMR	\$298,249,563	\$185,582,499	\$112,667,064	60.7%
Litecoin	LTC	\$297,013,302	\$214,726,272	\$82,287,030	38.3%
Ethereum Classic	ETC	\$235,782,788	\$127,129,044	\$108,653,744	85.5%
NEM	XEM	\$136,275,300	\$32,994,492	\$103,280,808	313.0%
Augur	REP	\$122,024,100	\$41,714,289	\$80,309,811	192.5%
MaidSafeCoin	MAID	\$75,015,540	\$44,886,080	\$30,129,460	67.1%
Total		\$23,929,188,006	\$17,168,253,630	\$6,760,934,376	39.4%

Data Source: [Coinmarketcap](#)

Notes: Top 10 cryptocurrencies shown, ranked by total market cap as of 'Q1 2017' (3/31/2017) and 'Q4 2016' (1/1/17)



Top 10 Cryptocurrencies Each Increase in Price, 5 with Double Digit, 5 with Triple Digit Returns

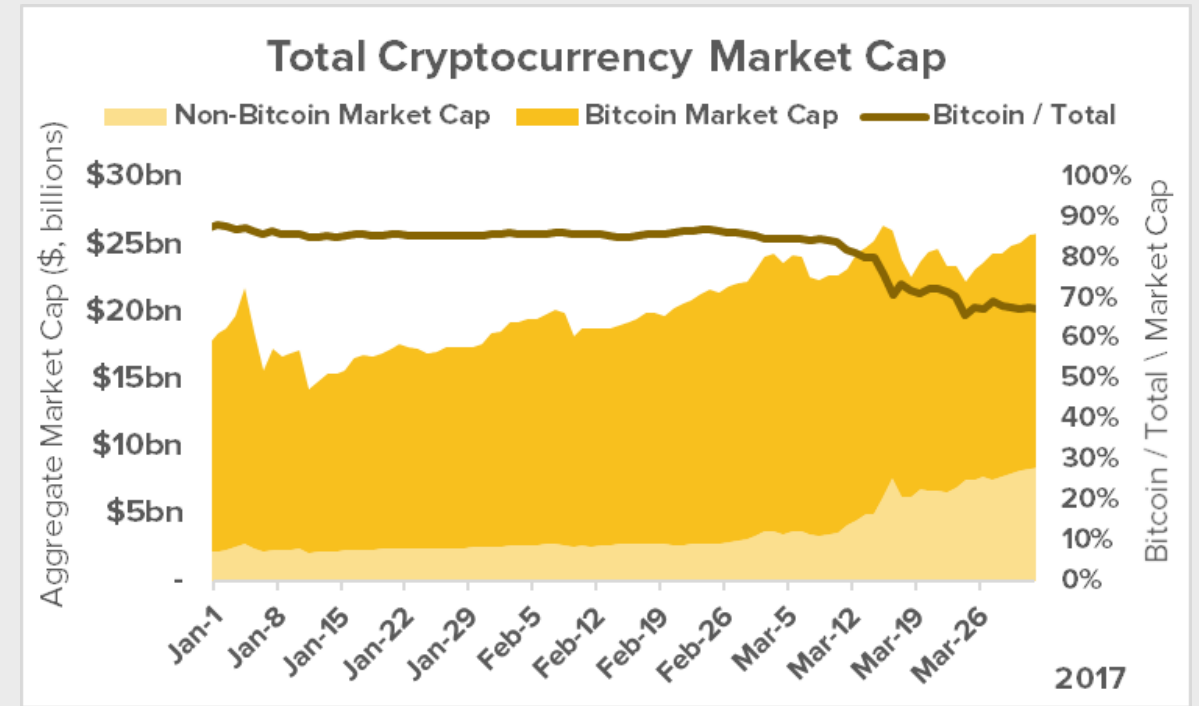
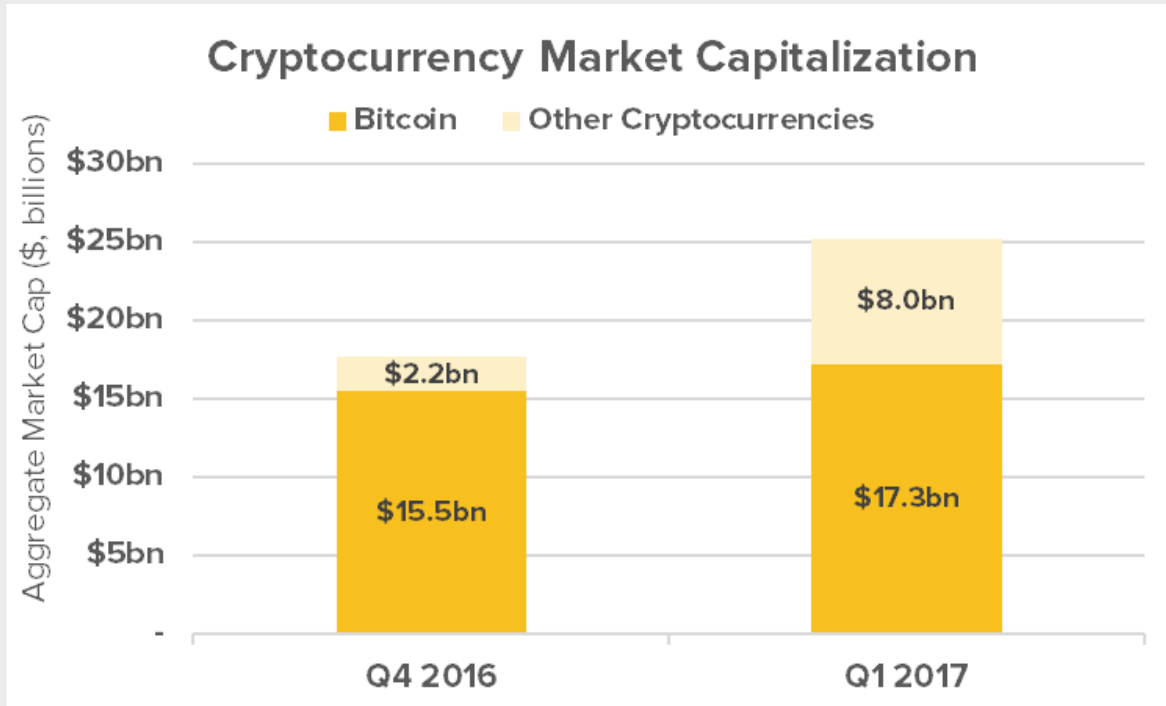
Asset	Symbol	Q1 2017 Price	Q4 2016 Price	\$ Increase	% Increase
Bitcoin	BTC	\$1,061.72	\$963.06	\$98.66	10.2%
Ethereum	ETH	\$48.02	\$8.26	\$39.76	481.4%
Ripple	XRP	\$0.018	\$0.007	\$0.012	177.6%
Dash	DASH	\$69.60	\$11.26	\$58.34	518.1%
Monero	XMR	\$20.99	\$13.58	\$7.41	54.6%
Litecoin	LTC	\$5.89	\$4.37	\$1.52	34.8%
Ethereum Classic	ETC	\$2.61	\$1.45	\$1.16	80.0%
NEM	XEM	\$0.015	\$0.004	\$0.011	313.0%
Augur	REP	\$11.09	\$3.79	\$7.30	192.6%
MaidSafeCoin	MAID	\$0.17	\$0.10	\$0.07	67.1%

Data Source: [Coinmarketcap](#)

Notes: Top 10 cryptocurrencies shown, ranked by total market cap as of 'Q1 2017' (3/31/2017) and 'Q4 2016' (1/1/17)



Bitcoin's Dominance Over Cryptocurrency Market Cap Falls Under 70% as Price Rise Outpaced by Smaller Assets

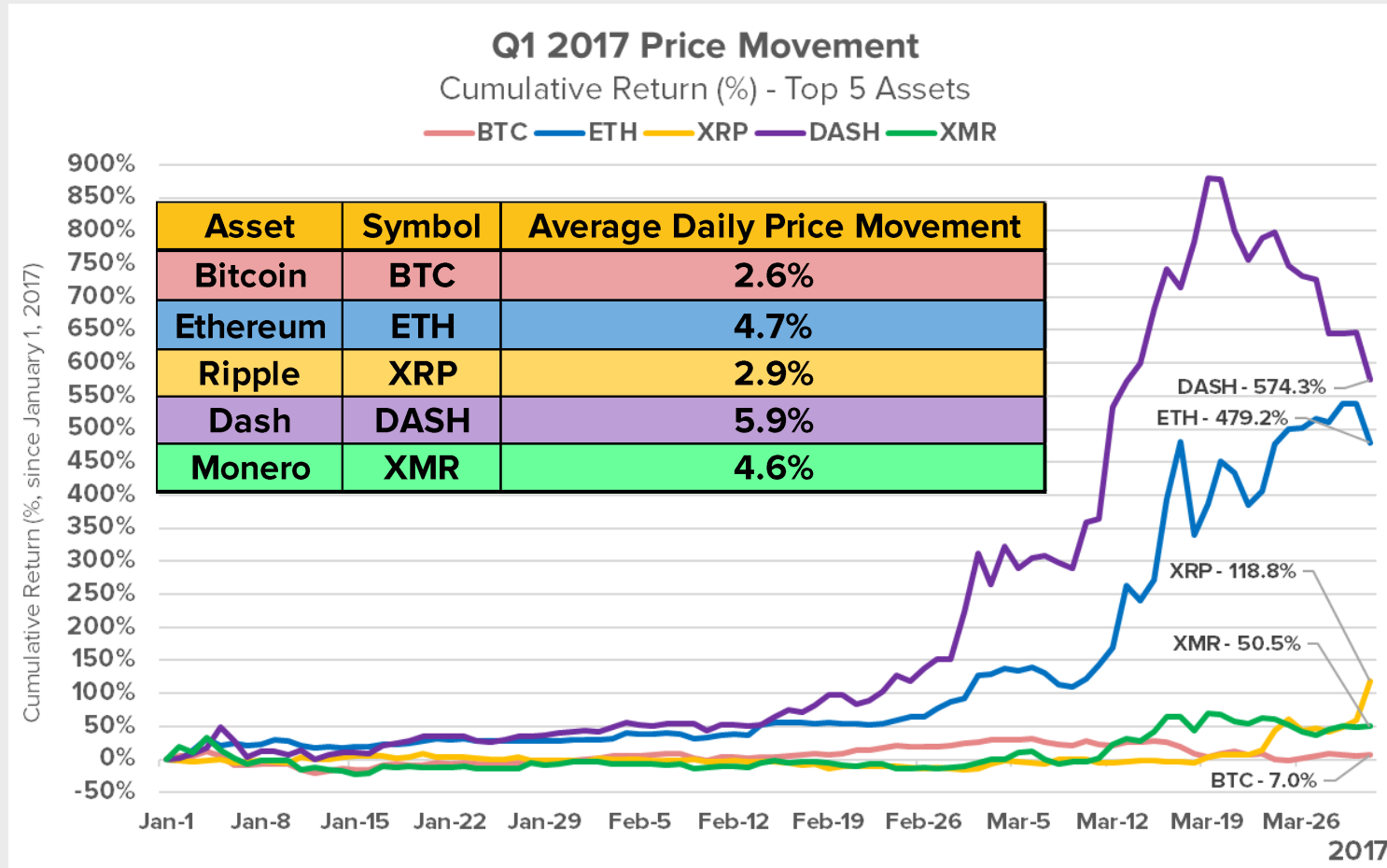


Data Source: [Coinmarketcap](https://coinmarketcap.com)

Notes: Top 10 cryptocurrencies shown, ranked by total market cap as of 'Q1 2017' (3/31/2017) and 'Q4 2016' (1/1/17)



Major Assets Move Over 5% Daily With Majority of Price Movement in March

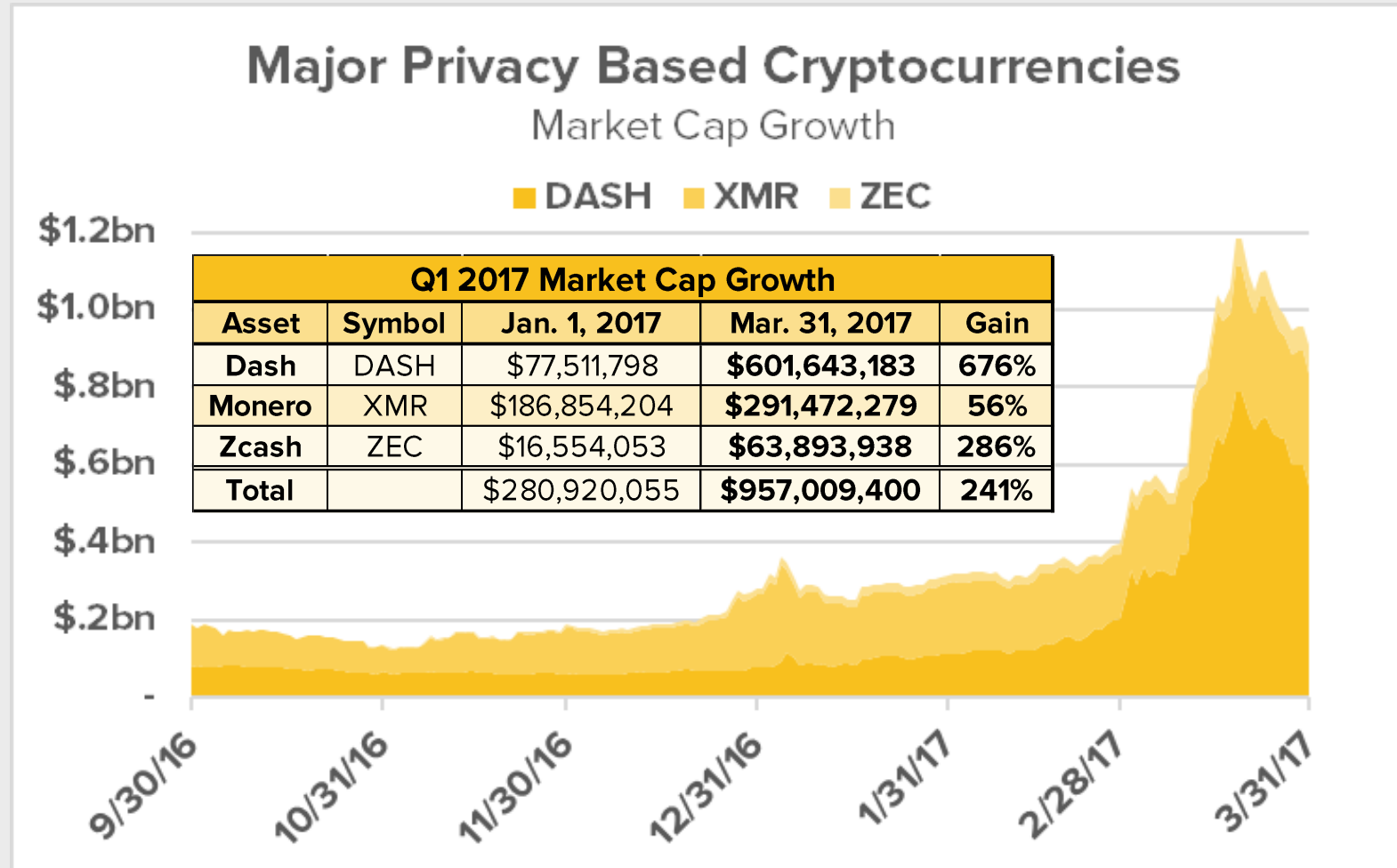


Data Source: [Coincap](#)

Notes: Average day over day price movement (absolute value), only top 5 assets by market cap on Q1 2017 (3/31/17) included



Privacy Based Assets Gain Traction, Cross \$1bn in Combined Market Cap






Data Source: [Coincap](#)

Notes: Only top 3 privacy based cryptocurrencies by market cap as of Q1 2017 (3/31/17) included



Privacy Based Assets Increase in Interest, Development and Usage

Asset:	Dash (DASH)	Monero (XMR)	Zcash (ZEC)
Website:			
Launch:	January 2014	April 2014	October 2016
Privacy Tech:	'InstantSend', 'PrivateSend'	'Ring Signatures'	'ZKSnarks'

Transaction numbers on each blockchain ([DASH](#), [XMR](#), [ZEC](#)) has increased

'Project Alchemy' is an effort by ethereum and zcash developers to bring ZKSnarks and private transactions to ethereum.

Work is also being done on bringing smart contracts to zcash.

Will multiple cryptocurrencies and blockchains co-exist in the future with similar value propositions, or will one win out?

CoinDesk Research

Deep dive into privacy tech:
['Advances in Blockchain Privacy & Confidentiality'](#)

Privacy asset intro:
[Q4 2016 State of Blockchain](#)



Prediction Market Interest Grows With Large Ethereum Dapps

Augur (REP) 
Market Cap Growth (Q1 2017)



"Combining the magic of prediction markets with the power of a decentralized network to create a stunningly accurate forecasting tool"

Data Sources: [Coincap](#), [Augur](#), [Gnosis](#)

Q1 2017 Market Cap Growth

Asset	Symbol	Jan. 1, 2017	Mar. 31, 2017	Gain
Augur	REP	\$42,194,900	\$149,912,400	676%

A glimpse into Q2 2017:

On April 24, Gnosis, a prediction market built on ethereum, held a token sale for GNO.

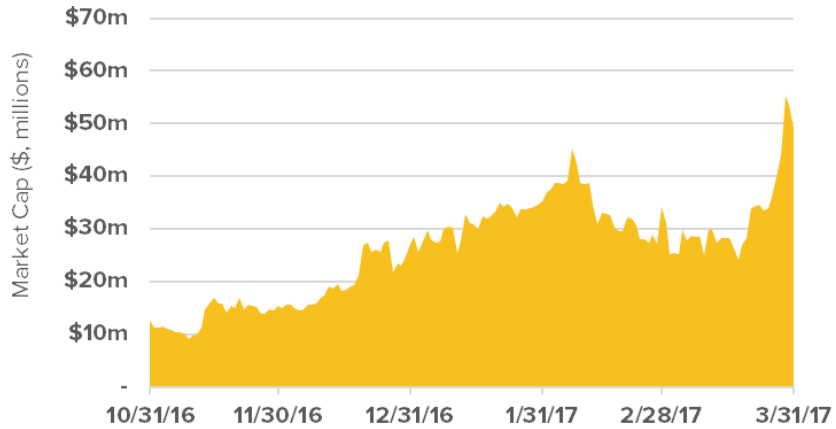
Just over 418,000 (4.18%) of the 10M GNO tokens created were sold to the public for \$12.5M worth of ETH (\approx \$30 each), immediately valuing all of the tokens at nearly \$300M.

In May, GNO crossed \$100, valuing all 10M tokens at over \$1B.



Asset Management Interest Grows With Ethereum Dapps, Funds and New Tools

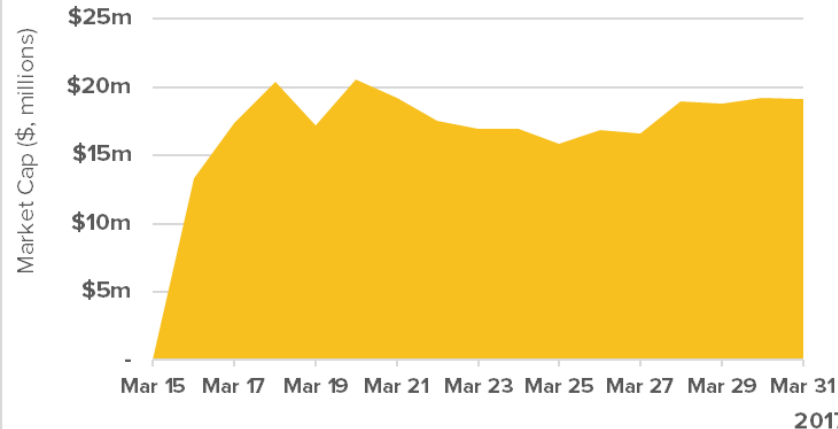
ICN Historical Market Cap



Iconomi (ICN)

- Portfolio investment product and management tool
- Raised \$10m uncapped ICO in September 2016

MLN Historical Market Cap



Melonport (MLN)

- Protocol for asset managers
- Raised \$2.9m capped ICO in February 2015
- Planning on second ICO in 2018

A glimpse into Q2 2017:

- ShapeShift launches Prism portfolio management tool
- Token As A Service raises \$7.9m ICO for closed end tokenized investment fund

All are ethereum based smart contract systems

Data Sources: [Coincap](#), [Smith and Crown](#), [TaaS](#), [Shapeshift](#)



'Interoperability' Emerges as Theme Across Public Blockchains, as Well as With Permissioned Versions, All Still in Early Stages

Polkadot



'Vision for a heterogeneous multi-chain framework'

"We see conservative, high-value chains similar to bitcoin or zcash co-existing alongside lower-value theme-chains and test-nets with zero or near-zero fees. We see fully-encrypted, consortium chains operating alongside and providing services to highly functional and open chains such like ethereum. We see experimental new VM-based chains being used as a means of outsourcing difficult compute problems from a more mature ethereum-like chain or a more restricted bitcoin-like chain."

EEA



"In partnership with the dedicated and robust Ethereum community, Enterprises are coming together to produce the industry standard, open source, free to use blockchain solutions that will be the foundation for businesses going forward."

Cosmos



'Internet of blockchains'

A glimpse into Q2 2017:

Cosmos raises \$16.8m ICO in less than 1 hour



Bringing together diverse protocols and blockchains so systems and assets can interact efficiently



2A

BITCOIN



Bitcoin's value shatters record highs:

- Bitcoin's price breaks all-time high, surpassing \$20bn market cap

Blockchain search volume exceeds bitcoin:

- 'Blockchain' googled more than ever, 'bitcoin' still below 2013 around price spike

2 ETF proposals denied by the SEC:

- The Winklevoss' COIN ETF as well SolidX's proposed ETF shot down in March

Transactions rise despite fees skyrocketing:

- An average of 287,000 transactions per day at \$0.62 each, filling 92% of block capacity

Scaling debates rage on:

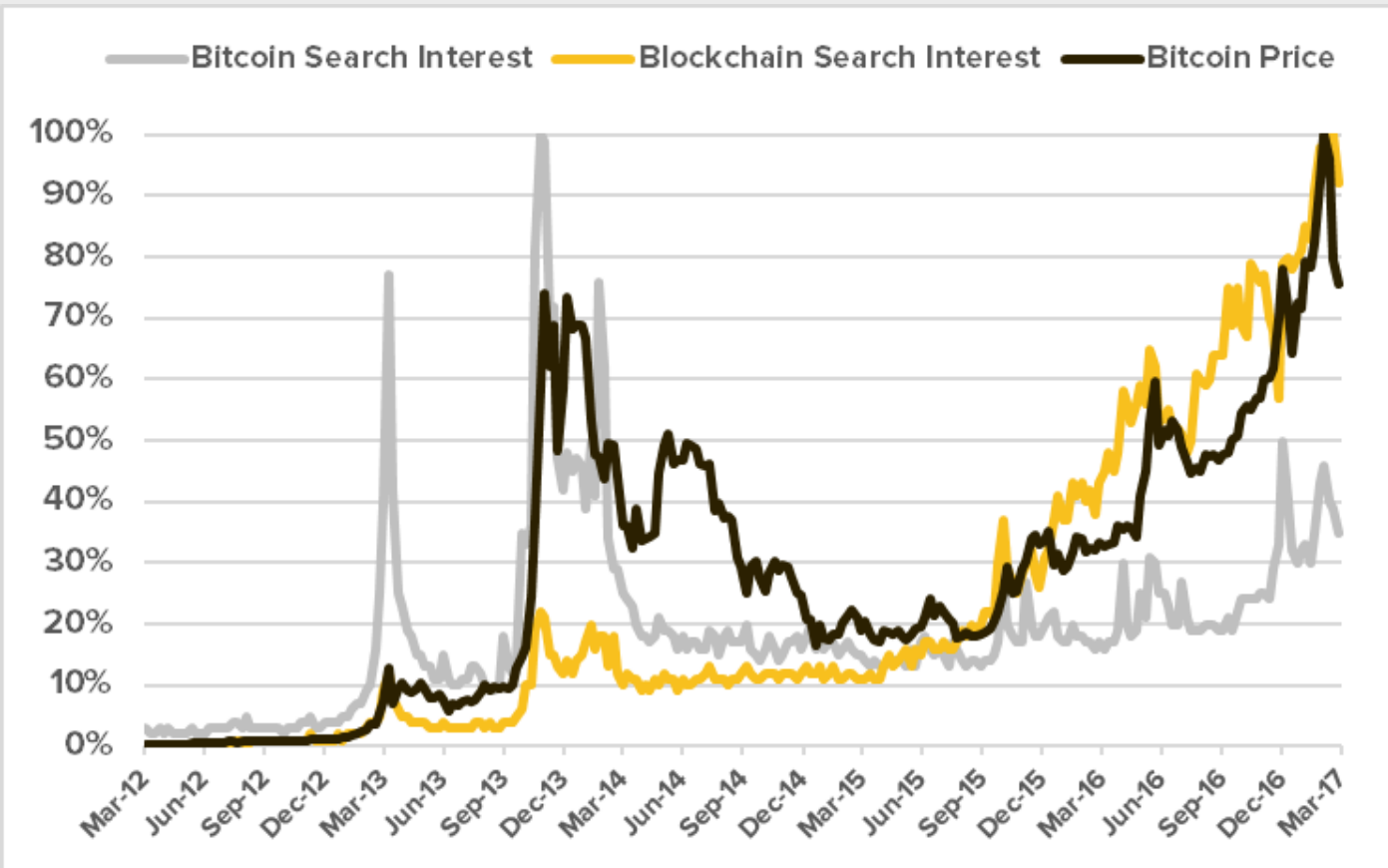
- SegWit reaches record support, hybrid proposals with block size increases do as well

Global trading volume plummets:

- Chinese trading volume sharply declines in wake of PBoC investigations



Bitcoin's Price Has Tracked 'Bitcoin' and Now 'Blockchain' Search Interest, Nigeria and Ghana Lead in Queries

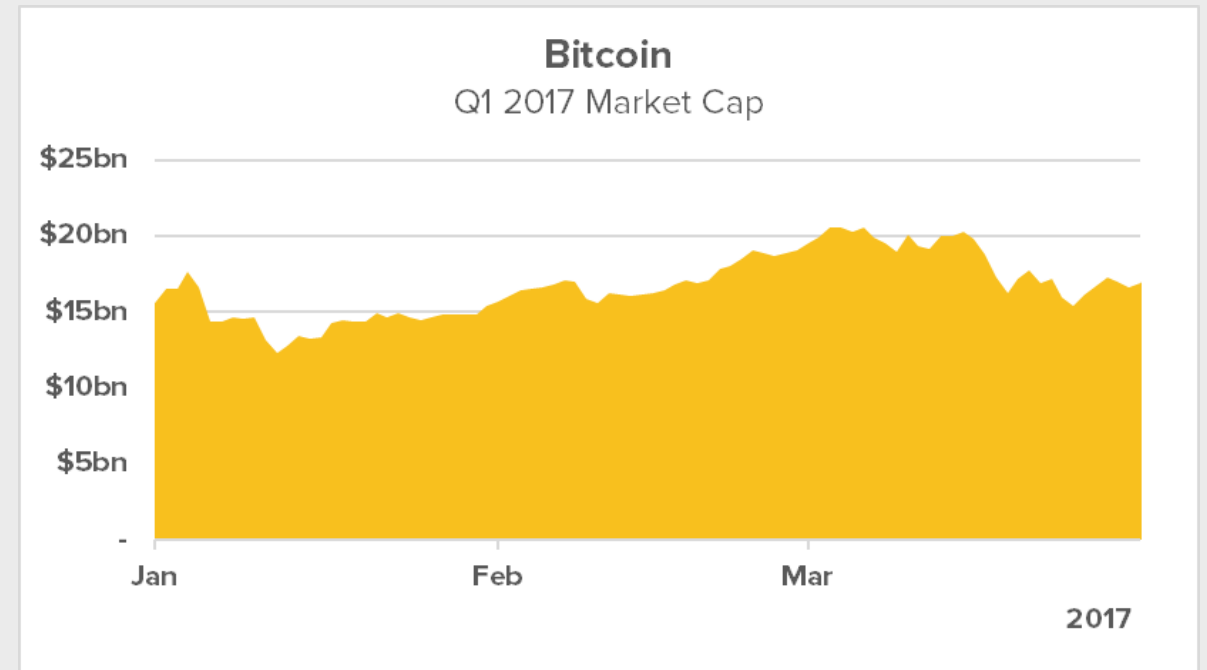


Google Trends Search Interest Relative Proportion of Queries by Country		
Rank	'Bitcoin'	'Blockchain'
1	Nigeria	Ghana
2	Ghana	Nigeria
3	Estonia	Singapore
4	Slovenia	Hong Kong
5	South Africa	South Africa
6	Czechia	Switzerland
7	Netherlands	Netherlands
8	Canada	Ukraine
9	Singapore	Ireland
10	United States	UAE
11	Finland	Austria
12	Sweden	United Kingdom
13	Latvia	Australia
14	Austria	Norway
15	Hong Kong	Canada

Data Sources: [Google Trends](#), [CoinDesk bitcoin price](#)
 Notes: Search interest relative to maximum during time period



Bitcoin Breaks \$20bn Market Cap, Soars to All-Time High



Data Source: [Coincap](#)



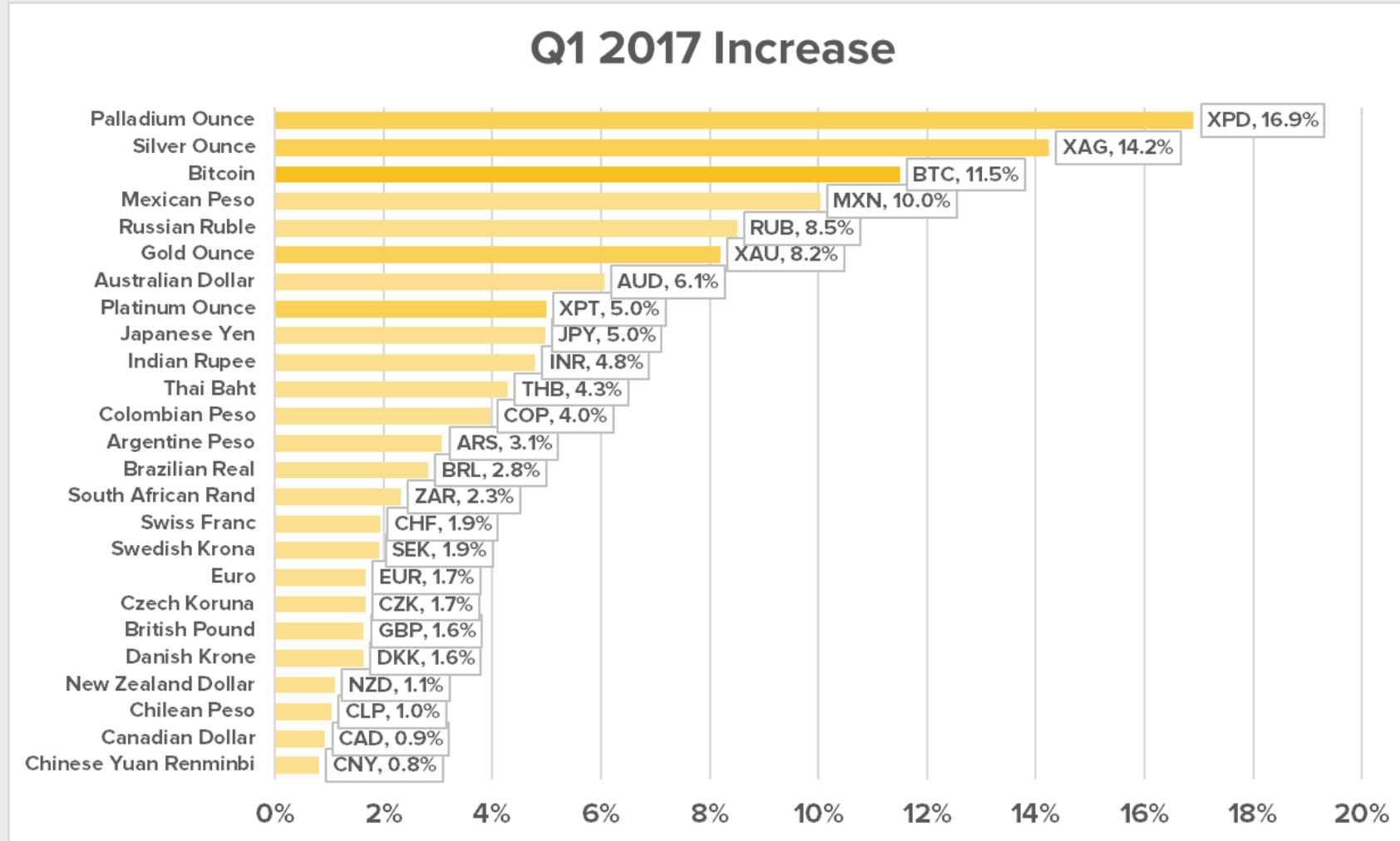
Bitcoin: Key Market Events



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



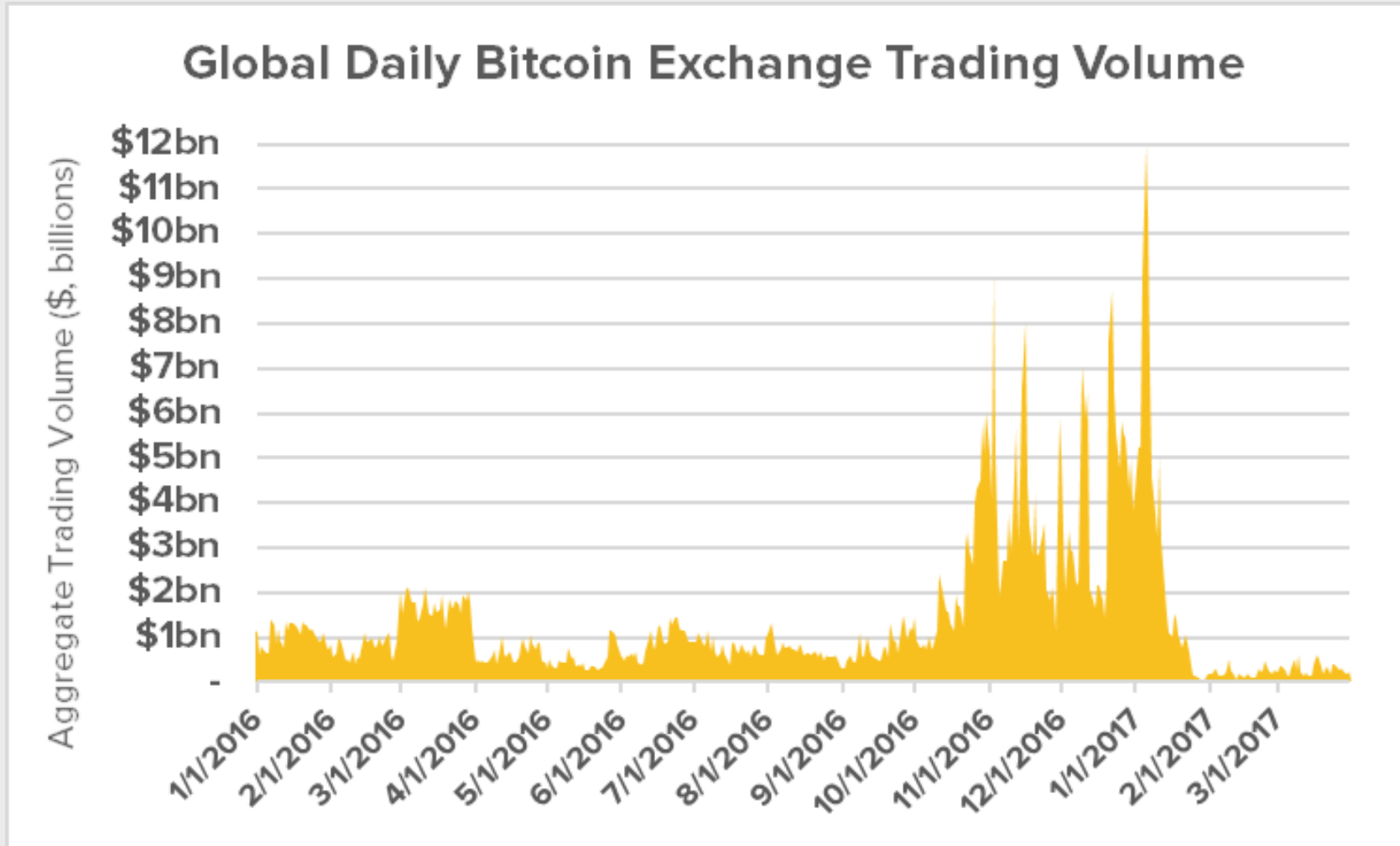
Bitcoin Outperforms Sovereign Currencies, Alongside Precious Metals



Data Source: [XE Currency](#)



Global Exchange Trading Volumes Plummet After January PBoC Investigations

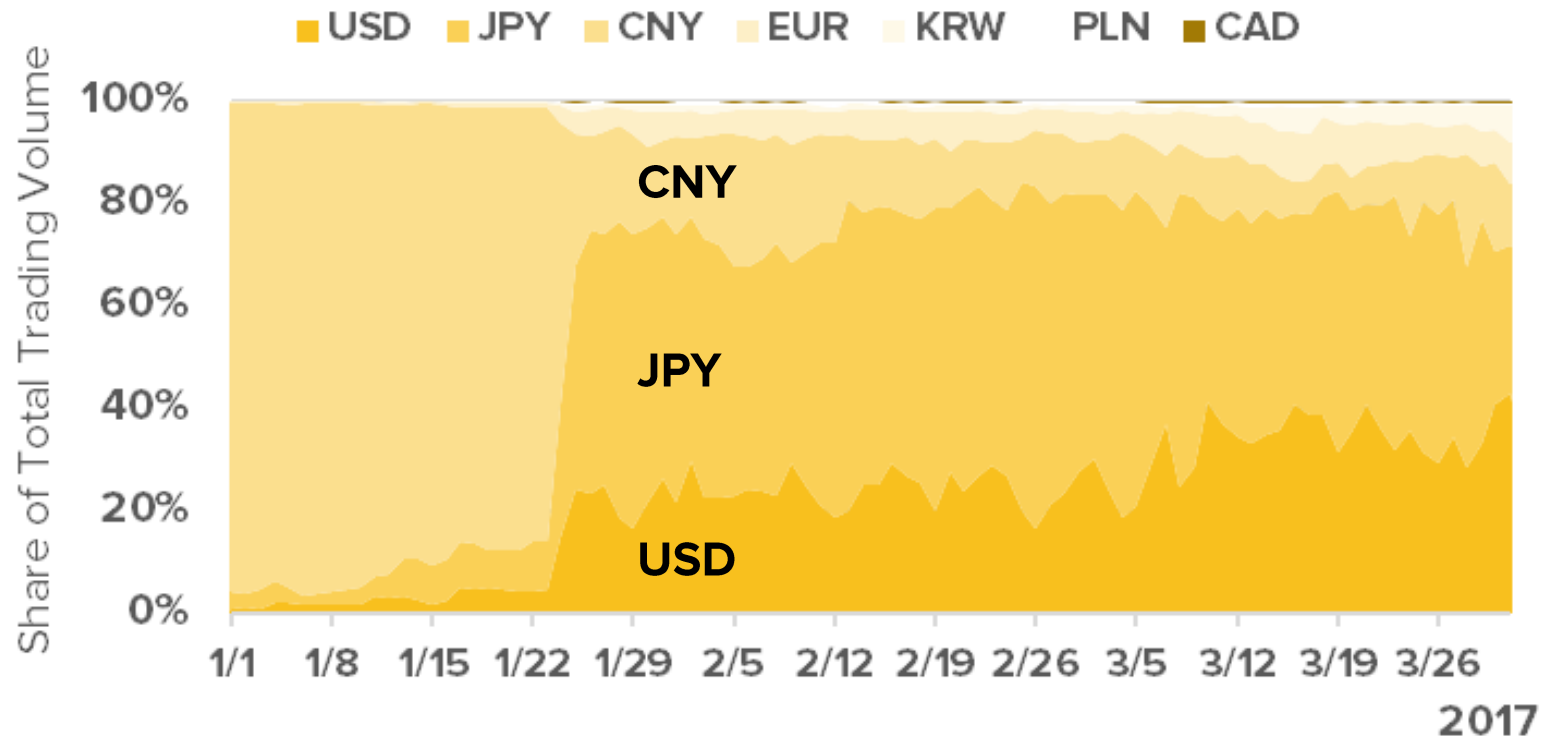


Data Source: [Cryptocompare](https://cryptocompare.com)



USD, JPY Increase Market Share, as Big 3 and CNY Dominance Falls

Bitcoin Exchange Trading Volume (Allocation Across Currencies Traded)

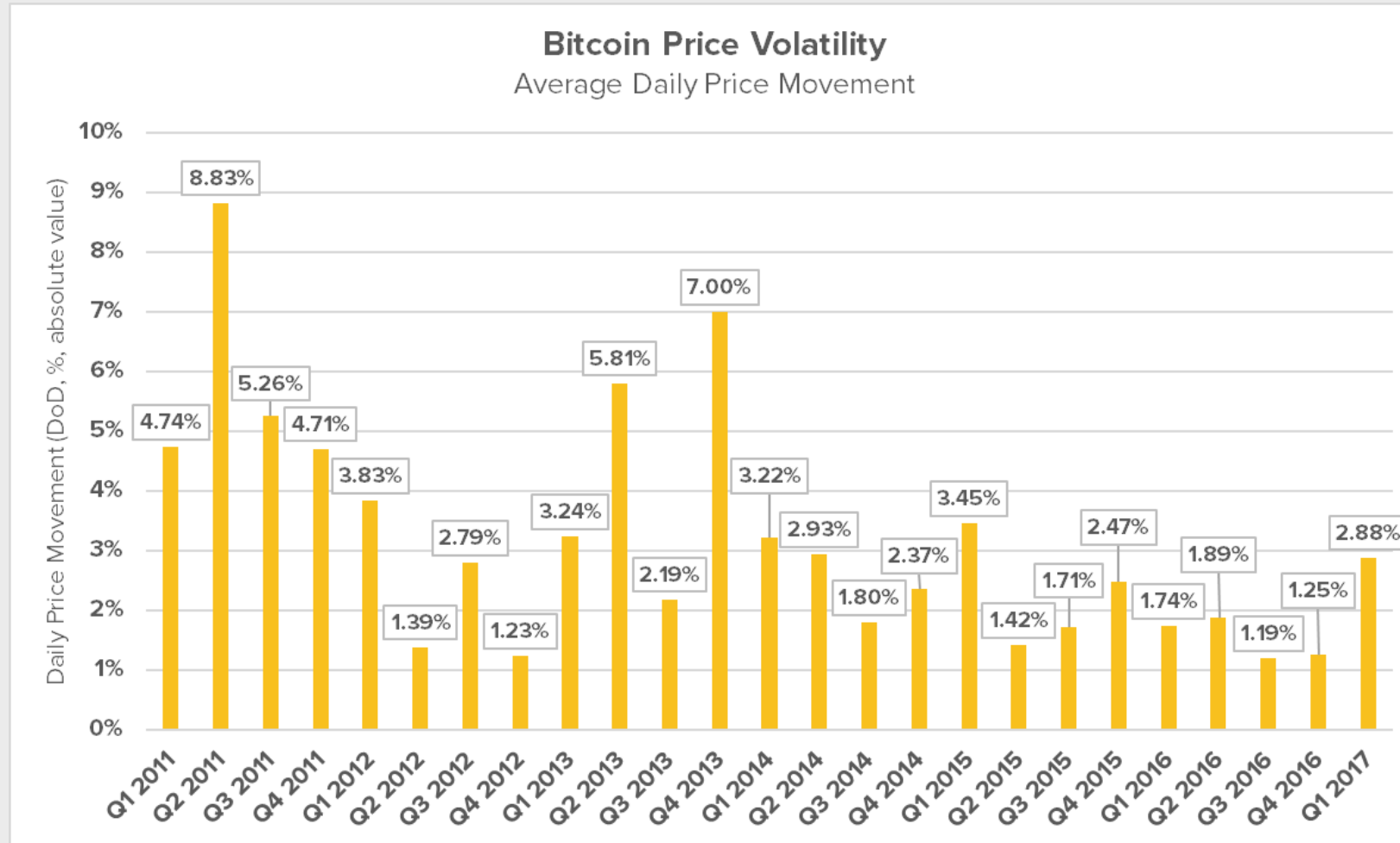


CoinDesk Research
Intro to 'Big 3' Chinese exchanges and dominance:
[Q4 2016 State of Blockchain](#)

Data Source: [Cryptocompare](#)



Bitcoin Price Volatility Increases, as Price Rises to All-Time High



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



Bitcoin Sees Price Range North of \$500, Gaining 66% Within the Quarter

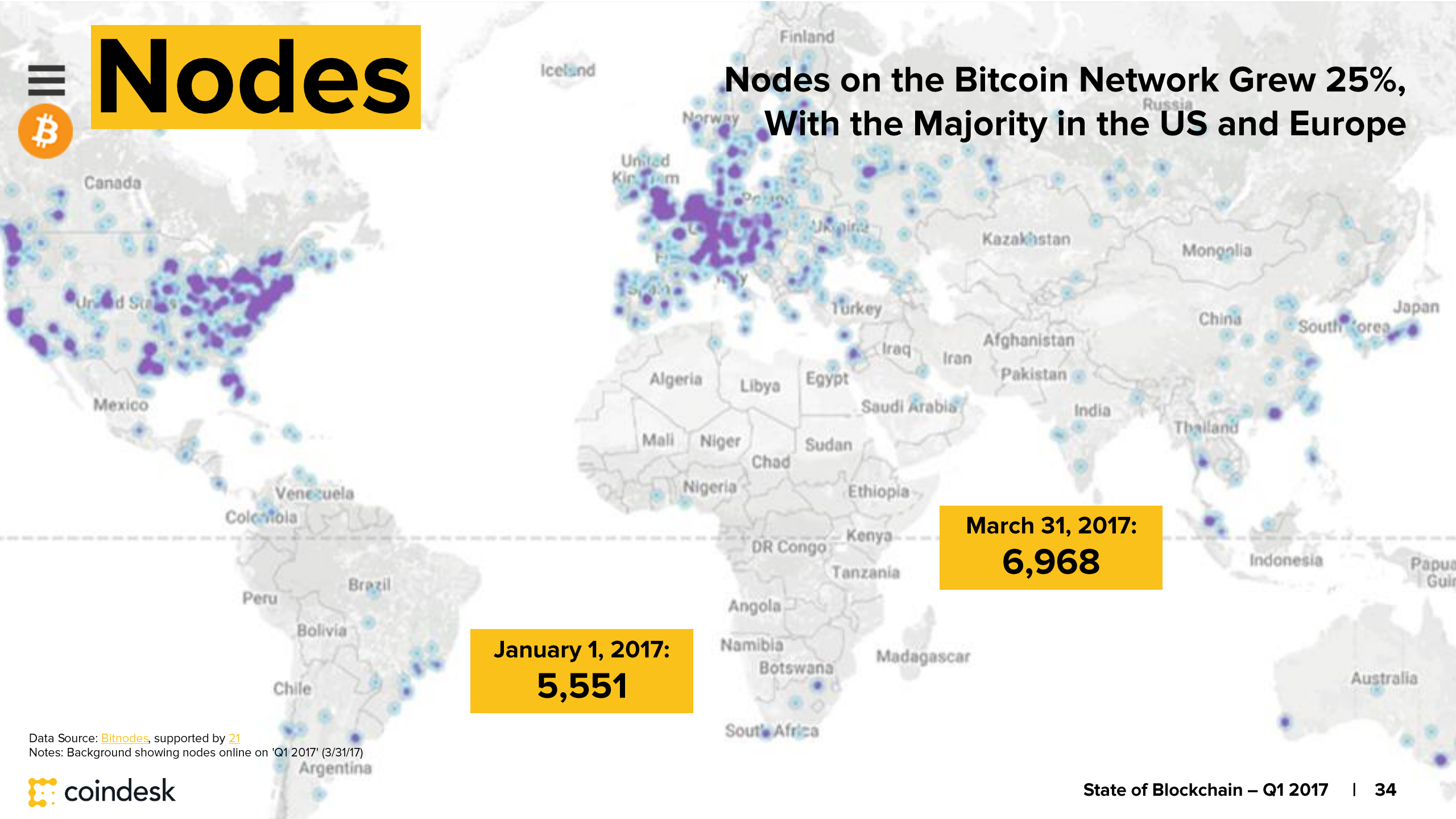
Quarter	High Price	Low Price	Δ (\$)	Δ (%)
Q1 2015	\$314.59	\$177.28	\$137.31	77.46%
Q2 2015	\$262.48	\$218.27	\$44.21	20.25%
Q3 2015	\$309.98	\$209.13	\$100.85	48.22%
Q4 2015	\$465.50	\$237.40	\$228.10	96.08%
Q1 2016	\$458.28	\$358.77	\$99.51	27.74%
Q2 2016	\$768.24	\$417.01	\$351.23	84.23%
Q3 2016	\$703.69	\$552.82	\$150.87	27.29%
Q4 2016	\$997.69	\$609.38	\$388.31	63.72%
Q1 2017	\$1,290.79	\$775.98	\$514.80	66.34%

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



Nodes

Nodes on the Bitcoin Network Grew 25%, With the Majority in the US and Europe

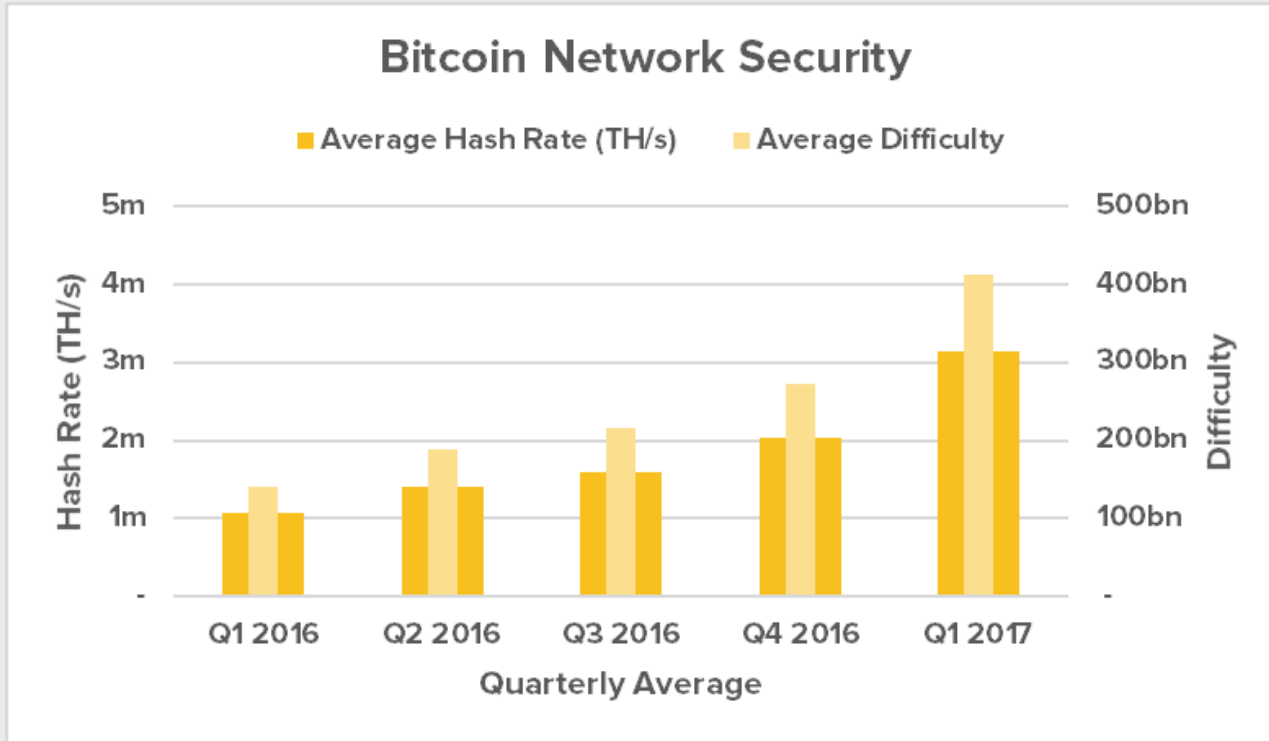


Data Source: [Bitnodes](#), supported by [21](#)
Notes: Background showing nodes online on 'Q1 2017' (3/31/17)



Hash Rate

Hash Rate and Mining Difficulty Follow Price to All-Time High



Quarter	Average Hash Rate (TH/s)	QoQ Growth	Average Difficulty	QoQ Growth
Q1 2016	1.06m	94%	139.82bn	98%
Q2 2016	1.39m	31%	188.36bn	35%
Q3 2016	1.59m	14%	216.75bn	15%
Q4 2016	2.03m	28%	273.07bn	26%
Q1 2017	3.15m	55%	412.67bn	51%

The hash rate on the bitcoin network **grew 55% QoQ and 197% YoY**

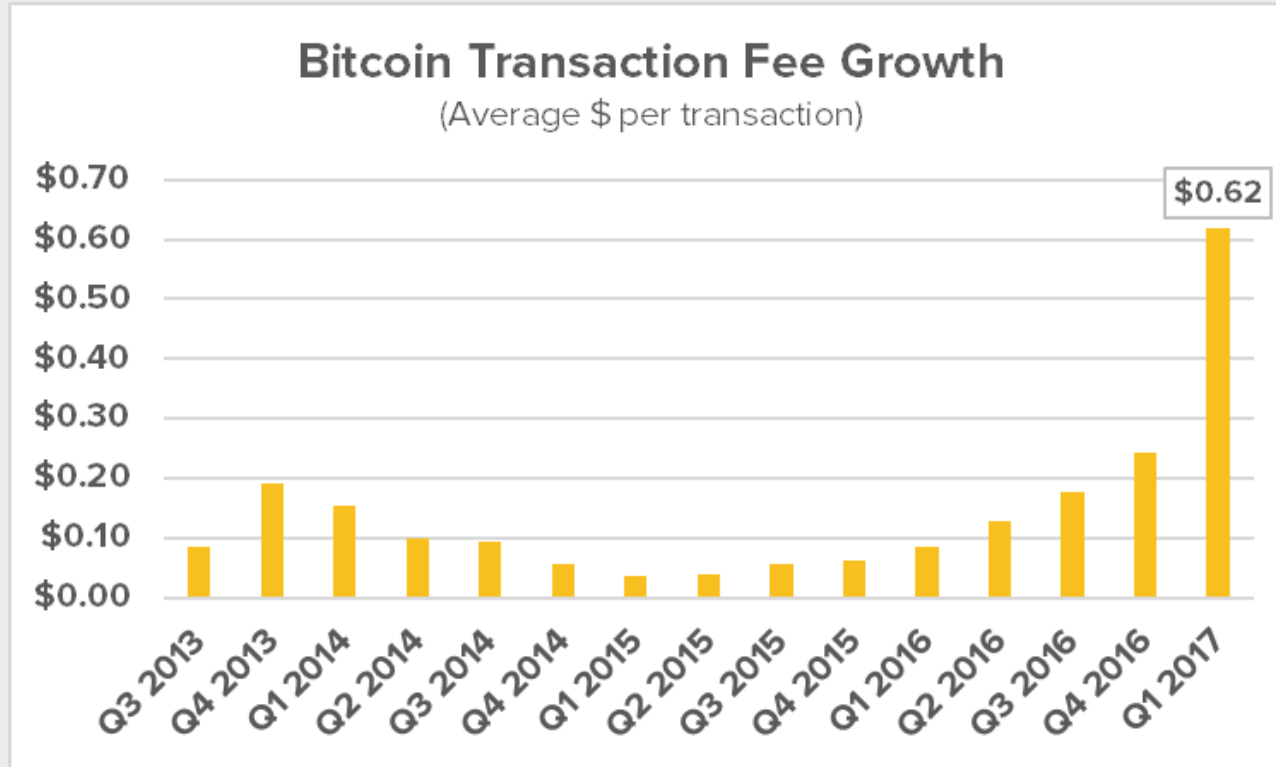
Data Source: [Blockchain](#)

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. 'QoQ' means 'quarter over quarter' (Q1 2017 vs Q4 2016), 'YoY' means 'year over year' (Q1 2017 vs Q1 2016)



Fees

Transaction Fees Skyrocket, Crossing \$1 and Averaging North of \$.60 Each



Quarter	Average Daily Bitcoin Transaction Fees	QoQ Change
Q3 2013	\$0.08	
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	155.1%

Transaction fees on the bitcoin network grew **155.1% QoQ** and **629.4% YoY**

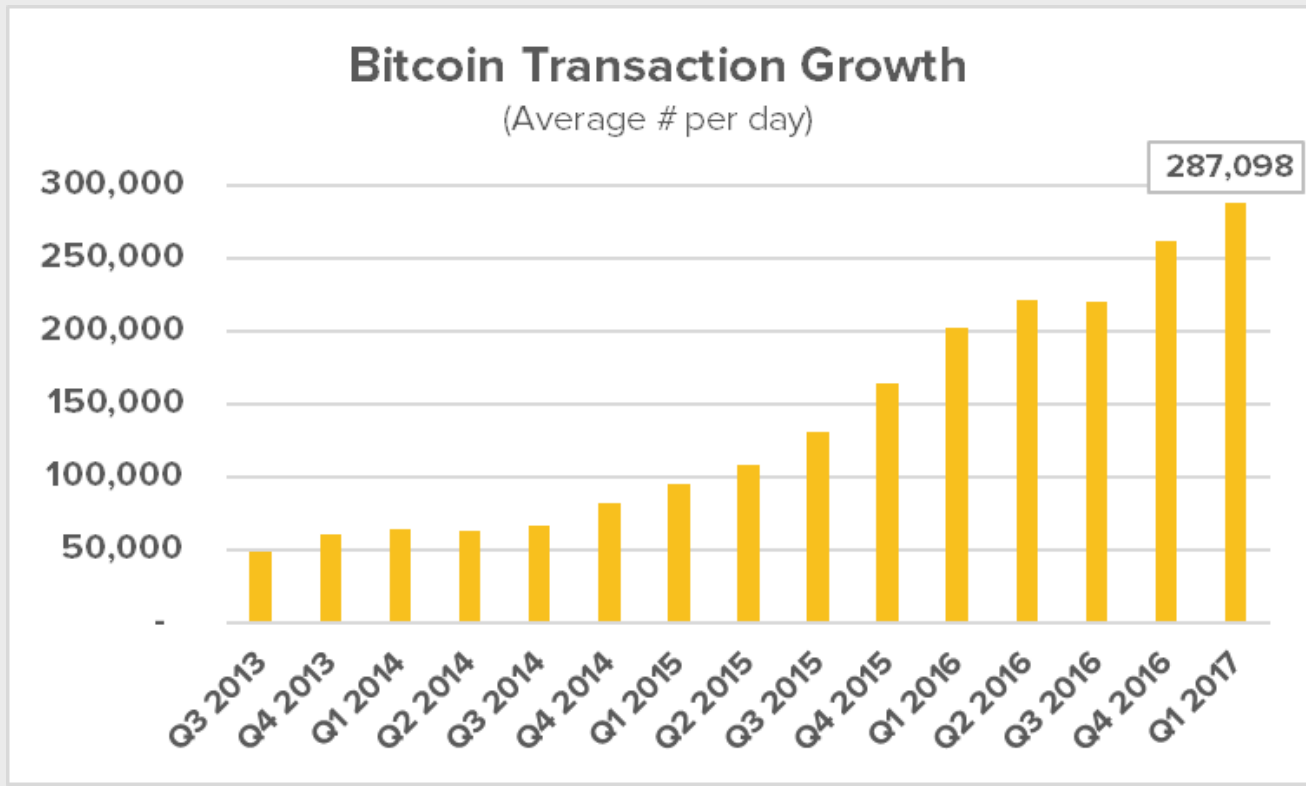
Data Source: [Blockchain](#)

Notes: 'QoQ' means 'quarter over quarter' (Q1 2017 vs Q4 2016), 'YoY' means 'year over year' (Q1 2017 vs Q1 2016)



Transactions

Transactions Grow 10%, to Over 287,000 Per Day



Quarter	Average Daily Bitcoin Transactions	QoQ Change
Q3 2013	49,042	
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%

Despite record high fees,
more transactions were made than ever

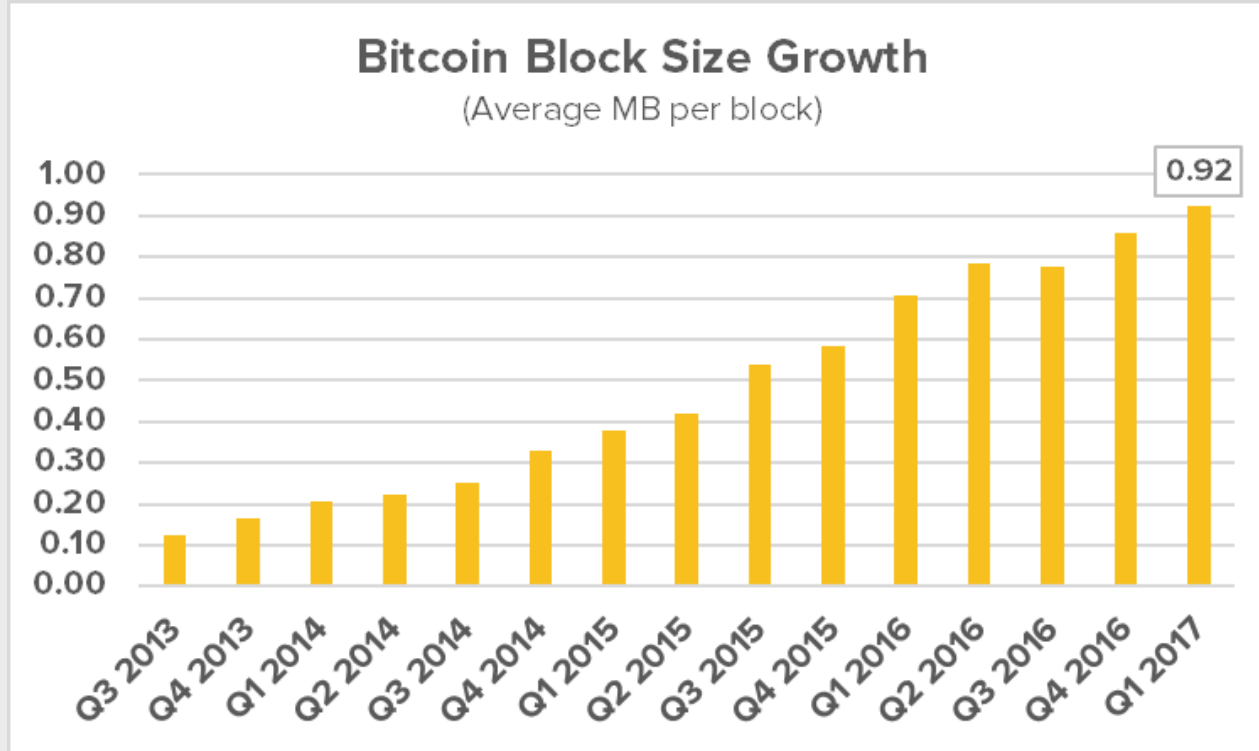
Transactions on the bitcoin network
grew 9.7% QoQ and 42.4% YoY

Data Source: [Blockchain](#)
Notes: 'QoQ' means 'quarter over quarter' (Q1 2017 vs Q4 2016), 'YoY' means 'year over year' (Q1 2017 vs Q1 2016)



Blocks

Blocks Continue to Grow as Transactions Increase, 92% Capacity Accentuates Ongoing Scaling Debate



Quarter	Average Daily Bitcoin Block Sizes (MB)	QoQ Change
Q3 2013	0.12	
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	0.92	7.7%

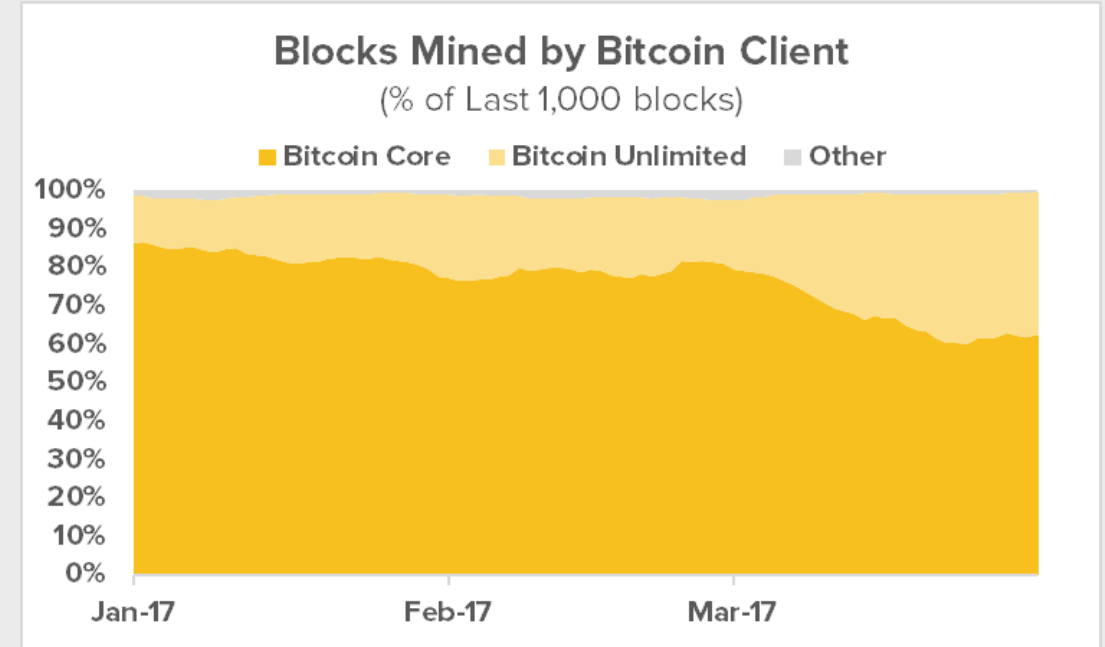
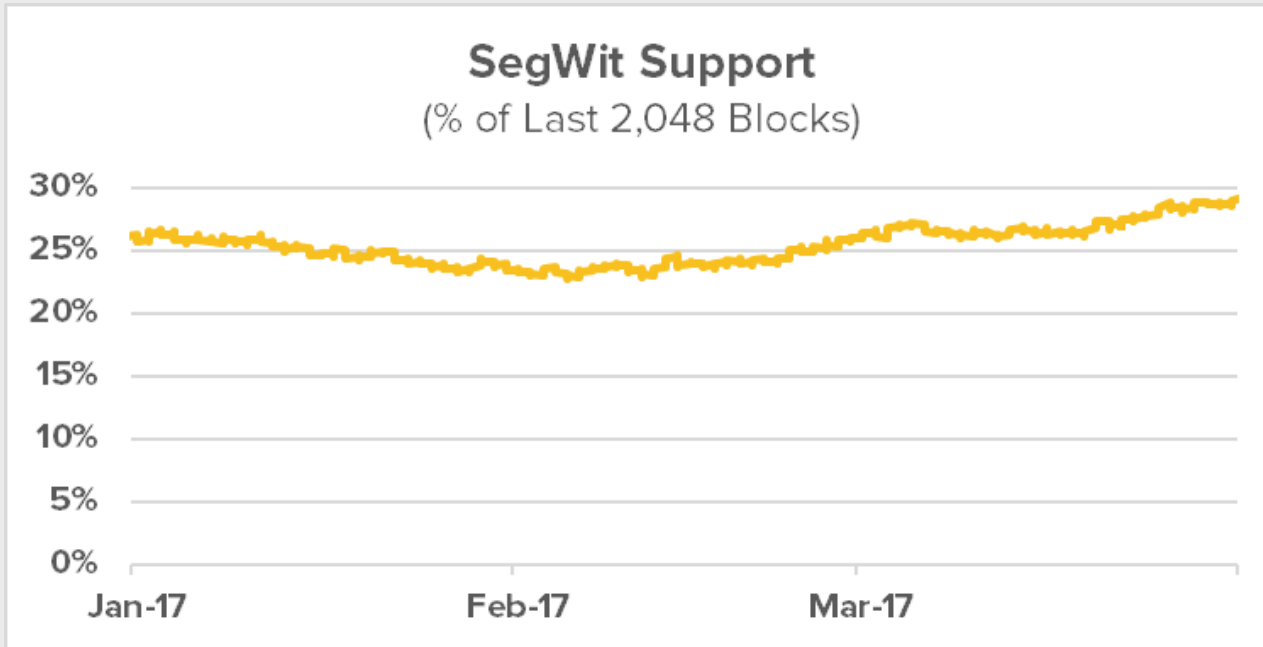
Blocks on the bitcoin network grew **7.7% QoQ** and **30.8% YoY**

Data Source: [Blockchain](#)

Notes: 'QoQ' means 'quarter over quarter' (Q1 2017 vs Q4 2016), 'YoY' means 'year over year' (Q1 2017 vs Q1 2016)



SegWit Support Reaches All-Time High, Approaches 30% BU Support Rises Through Quarter



CoinDesk Research

**Intro to SegWit and Bitcoin Unlimited:
[Q4 2016 State of Blockchain](#)**

**Hybrid proposals emerge
and gain support:**

[Segwit2Mb](#)

A glimpse into Q2 2017:

SegWit at 80% threshold + 2 MB
hard fork within 6 months
supported by large group of
companies and hashing power

Data Source: <http://coin.dance>, [DCG blog post](#)



2B

ETHEREUM



Q1 2017 Ethereum Summary

Ether's price skyrockets at quarter end:

- Ether rallies 500% to north of \$4bn market cap, trading volume soars

Protocol technology marches on:

- Research and work on Casper, proof of stake, Metropolis and broader scaling continues with few major updates

Public and permissioned interoperability:

- EEA launches with traditional finance firms and ethereum startups to work on open-source business-oriented frameworks

Ethereum network grows:

- Transaction numbers, addresses, hash rates, global searches rise

Investment increases across ecosystem:

- Ethereum based dapps, tokens and ICOs see interest from retail and institutional investors in variety of formats

Ecosystem support grows:

- Wallets, exchanges, investment products and services increase multi-blockchain and token offerings



New CoinDesk Ethereum Website Features

Ethereum Price Charts



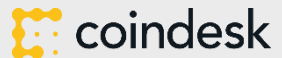
Ethereum Guides

Blockchain 101	Technology	Markets	Business	Data & Research	Consensus
Bitcoin		Blockchain			Ethereum
What is Bitcoin?		What is Blockchain Technology?			What is Ethereum?
How Can I Buy Bitcoin?		How Does Blockchain Technology Work?			How Do I Use Ethereum?
How Does Bitcoin Mining Work?		What Can a Blockchain Do?			How Does Ethereum Work?
How Do Bitcoin Transactions Work?		What is a Distributed Ledger?			What is a Decentralized Application?
How Can I Sell Bitcoin?		Why Use a Blockchain?			How Do Smart Contracts Work?

Pushed live along with our website redesign



Data Sources: [CoinDesk ethereum price chart](#), [guides](#)





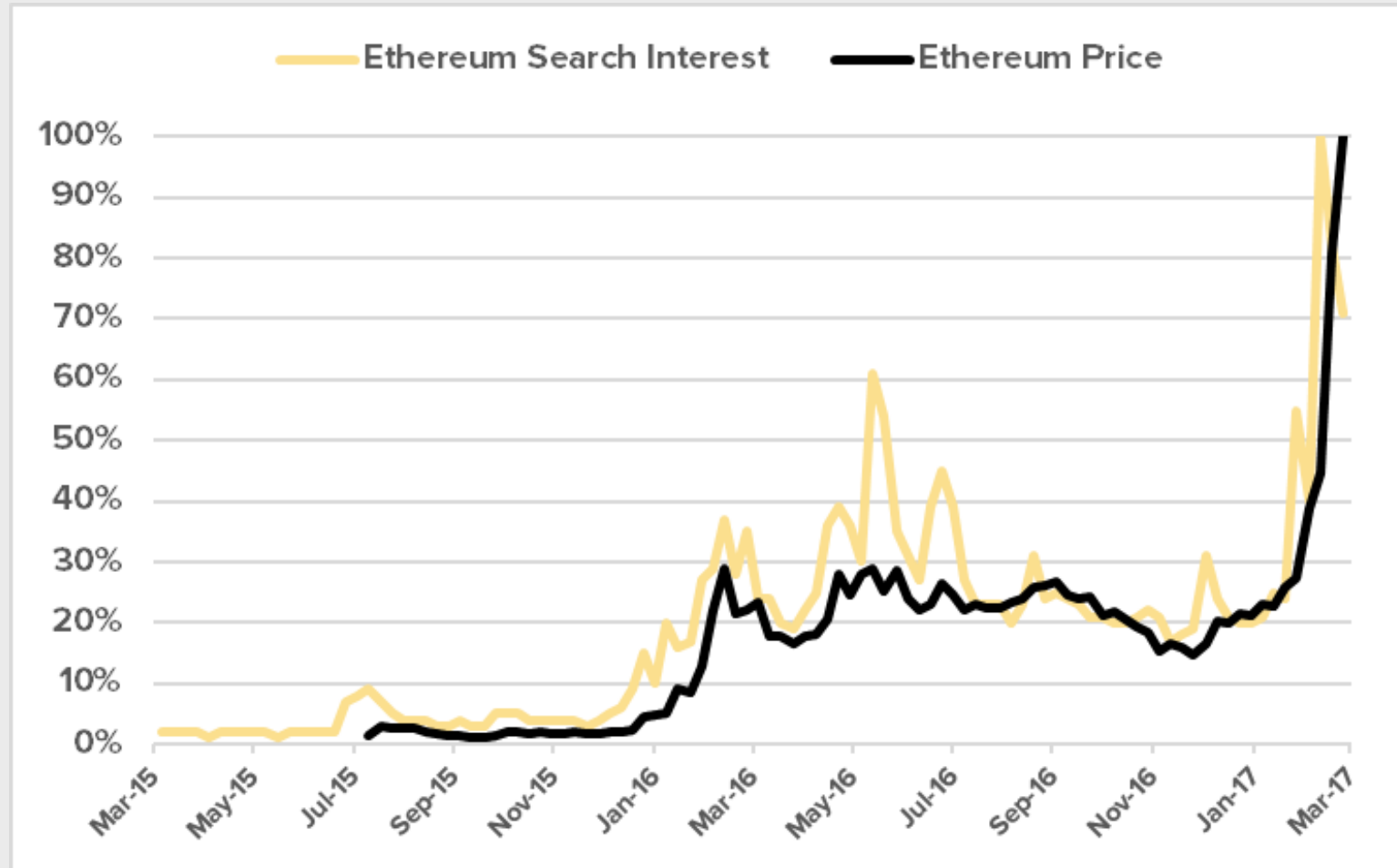
Ethereum Breaks \$4bn Market Cap, Soars to All-Time High



Data Source: [Coincap](#)



'Ethereum' Search Interest Spikes as Price Soars

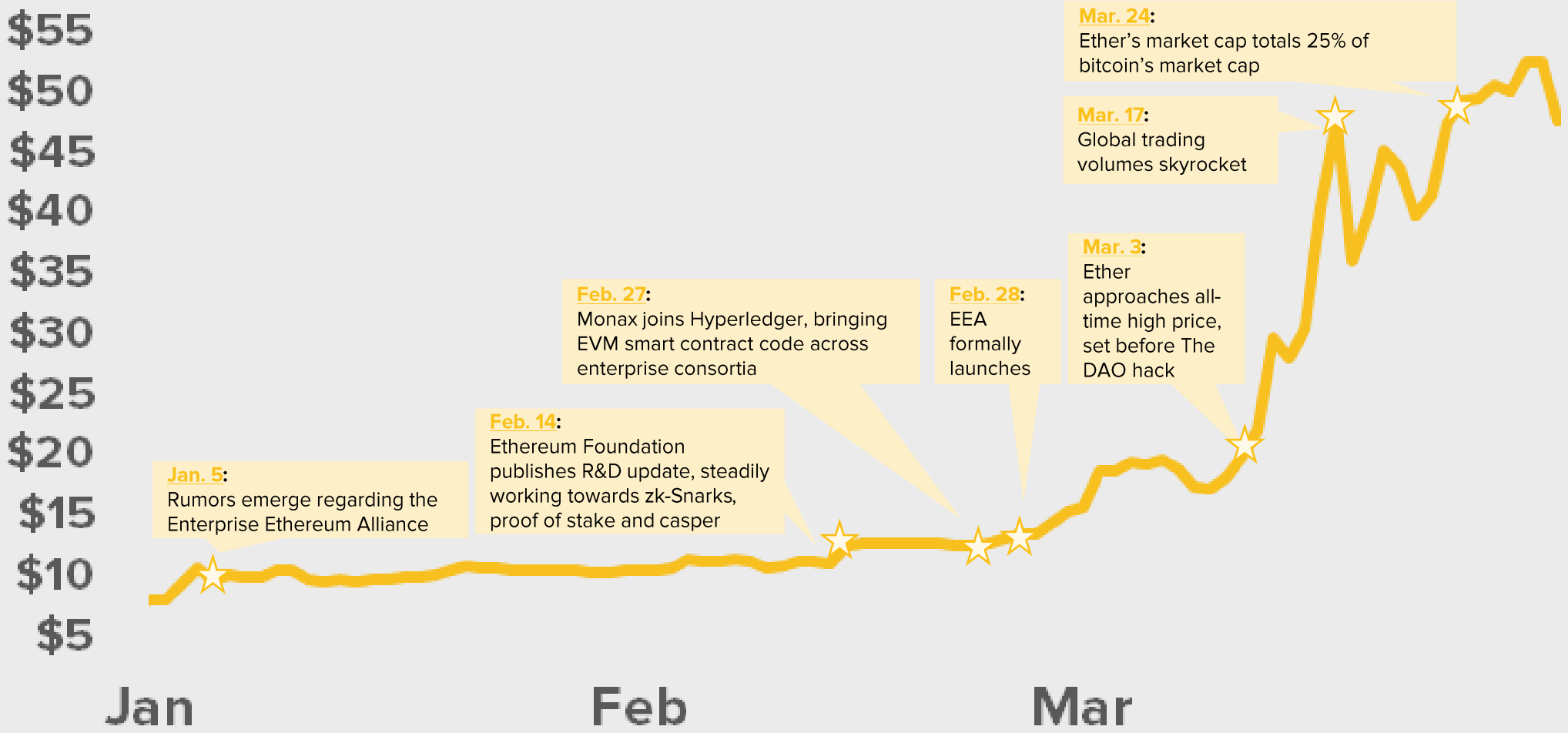


Data Source: [Google Trends](#)

Notes: 100% means 100% of the highest search volume on the time scale, all other %s relative to that



Ethereum: Key Market Events

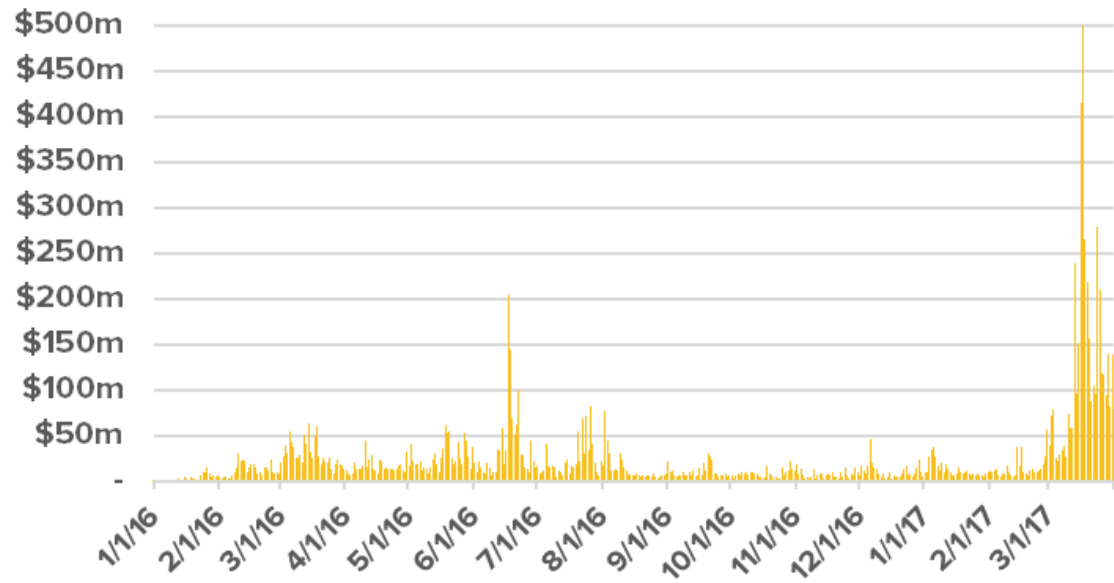


Data Sources: [CoinDesk](#), [CoinDesk ether price page](#)

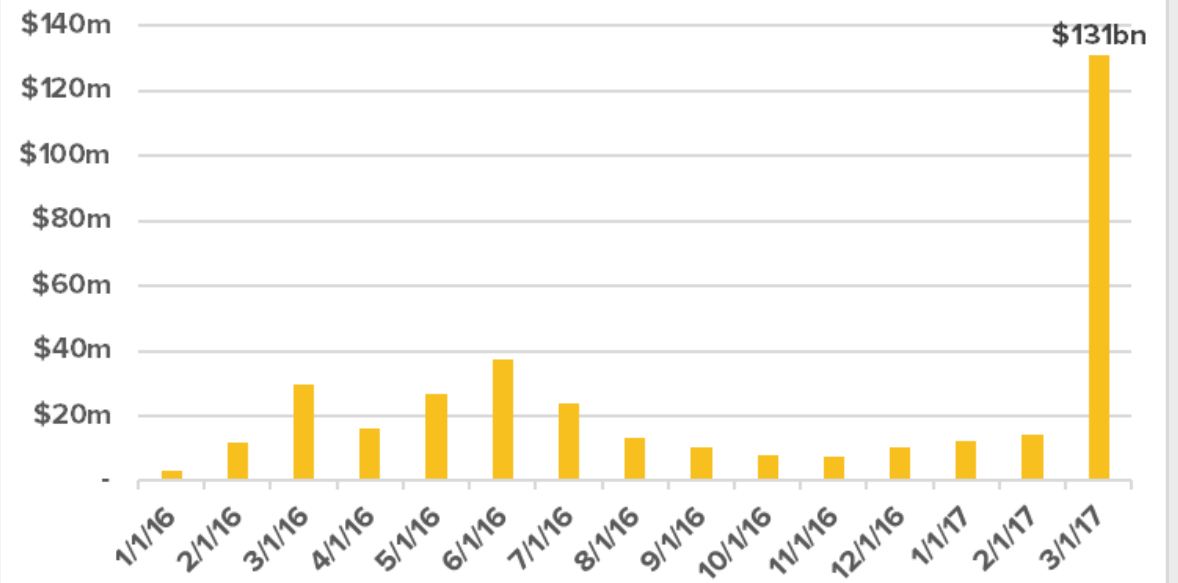


Ether Exchange Traded Volumes Spike in March as Price Skyrockets

Daily Global Ether Trading Volume



Average Daily Trading Volume



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

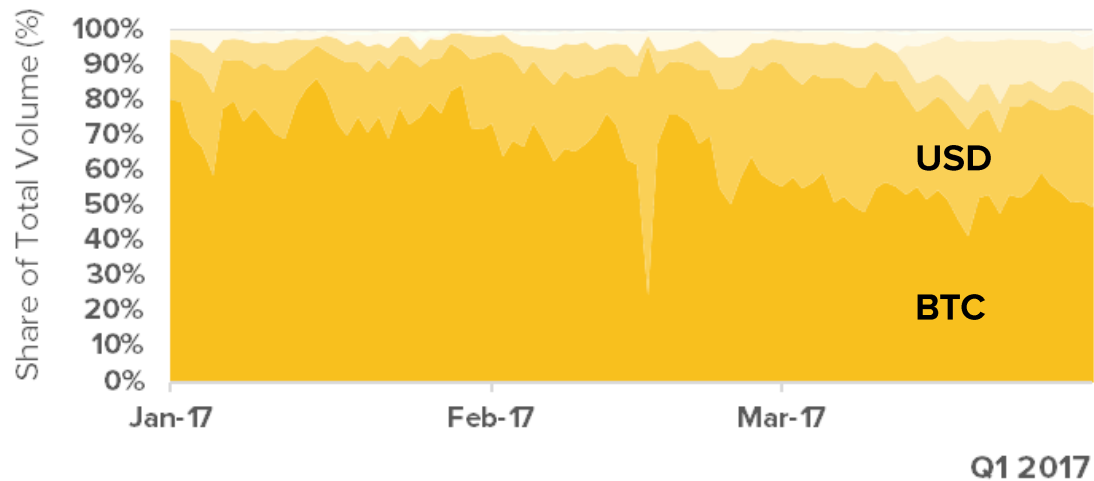


Ether Most Heavily Traded With Bitcoin, USD Continues to Rise

Ether Exchange Trading Volume

Share of Total Volume Across Currencies

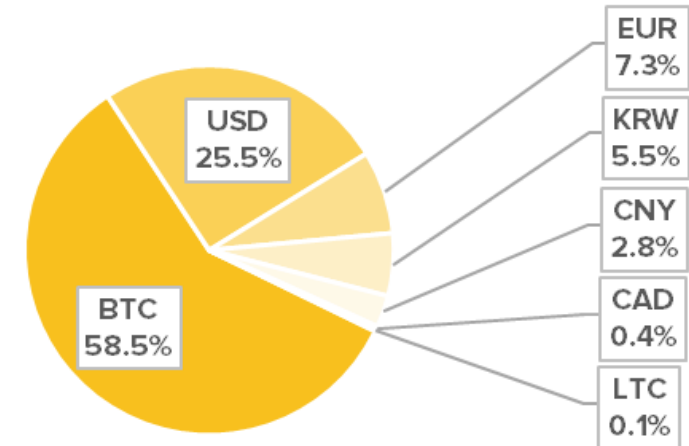
■ BTC ■ USD ■ EUR ■ KRW ■ CNY ■ CAD ■ LTC



Q1 2017 Ether Exchange Trading Volume

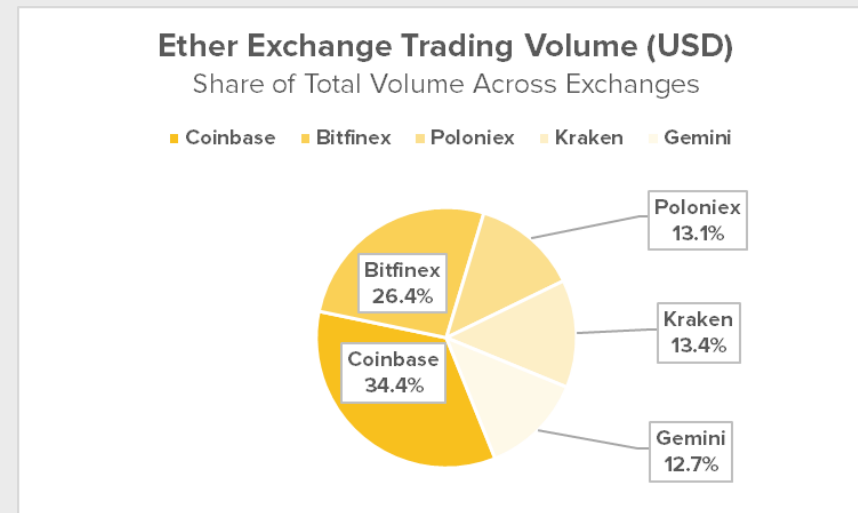
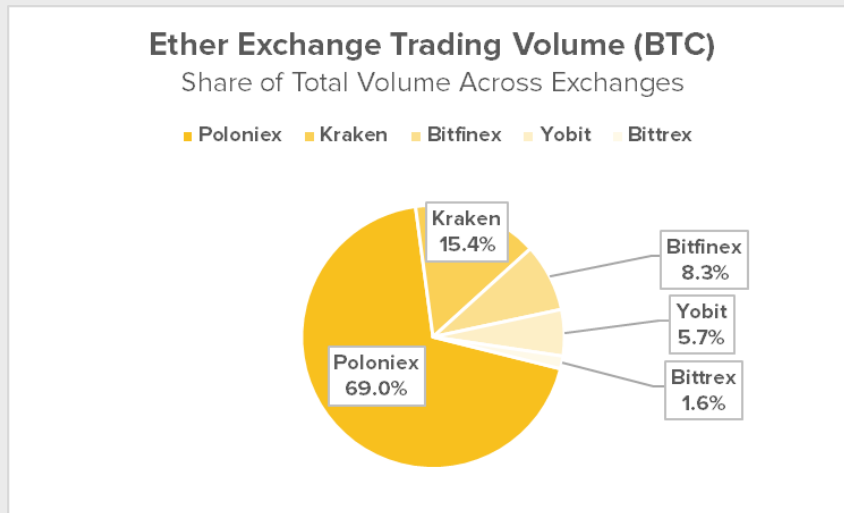
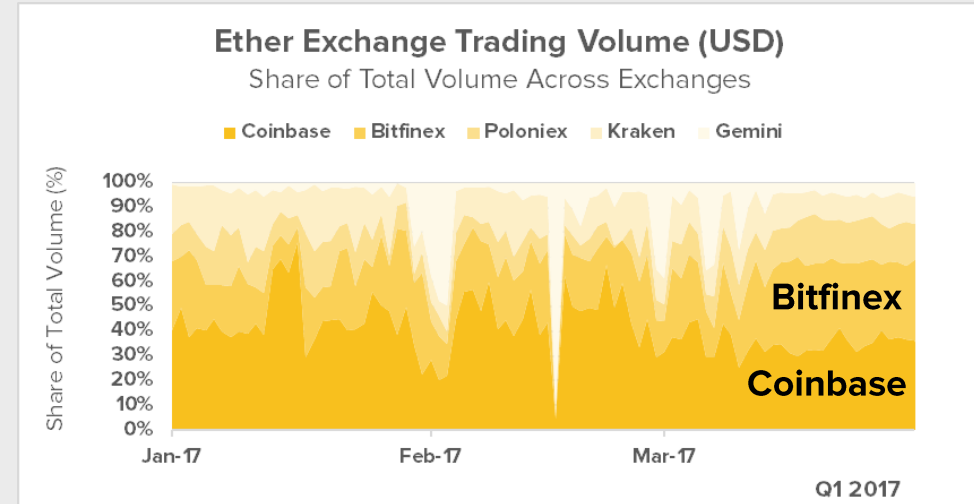
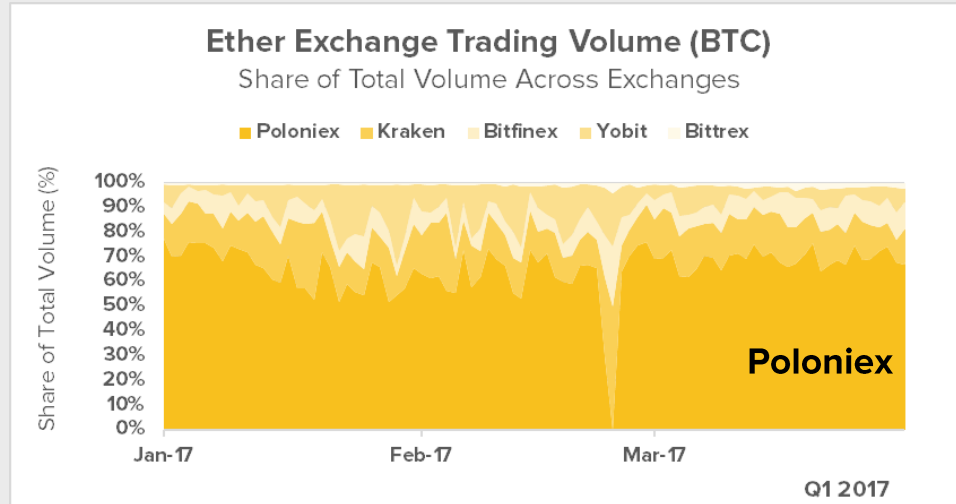
Share of Total Volume Across Currencies

■ BTC ■ USD ■ EUR ■ KRW ■ CNY ■ CAD ■ LTC





Poloniex Leads Volume by Large Margin with BTC, Coinbase Leads Narrowly with USD



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

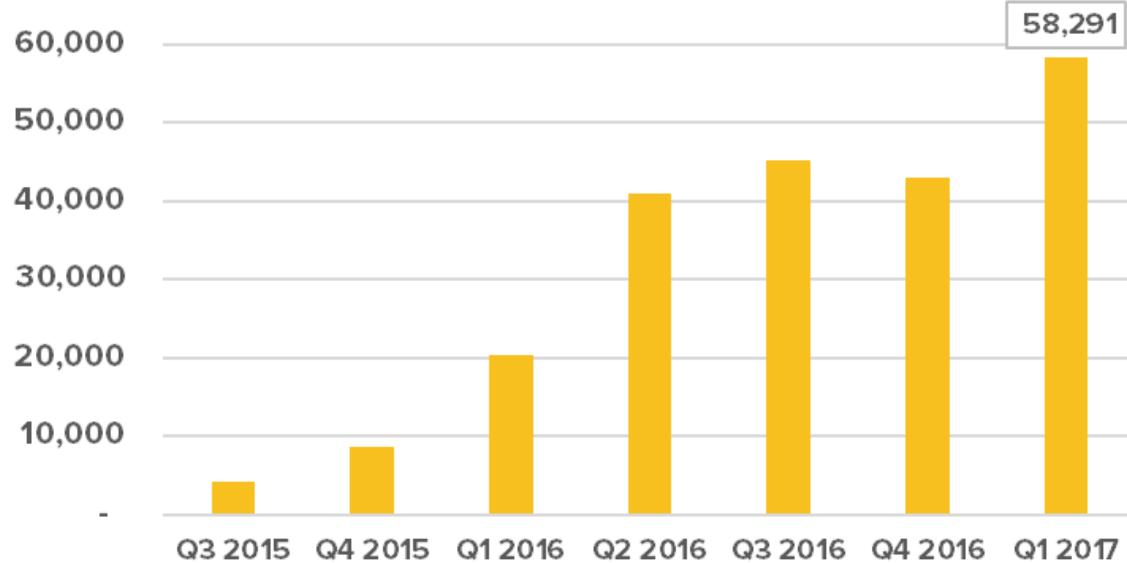


Transactions

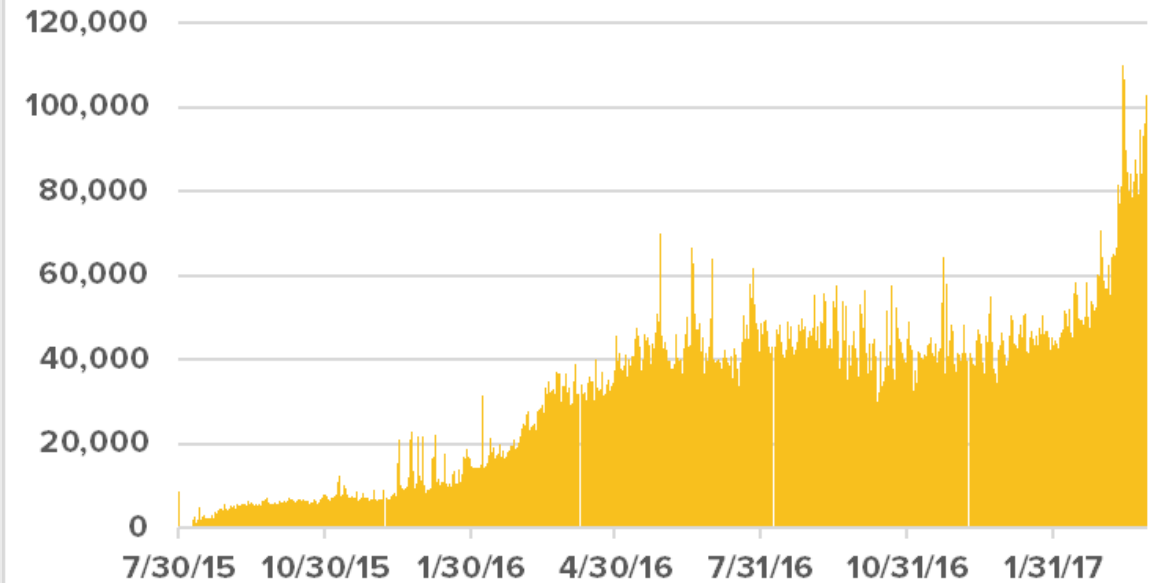
Transactions Grow to All-Time High as Price Soars

Ethereum Transaction Growth

(Average # per day)



Total Transactions Per Day



Transactions on the ethereum network grew **35.8% QoQ** and **188.0% YoY**

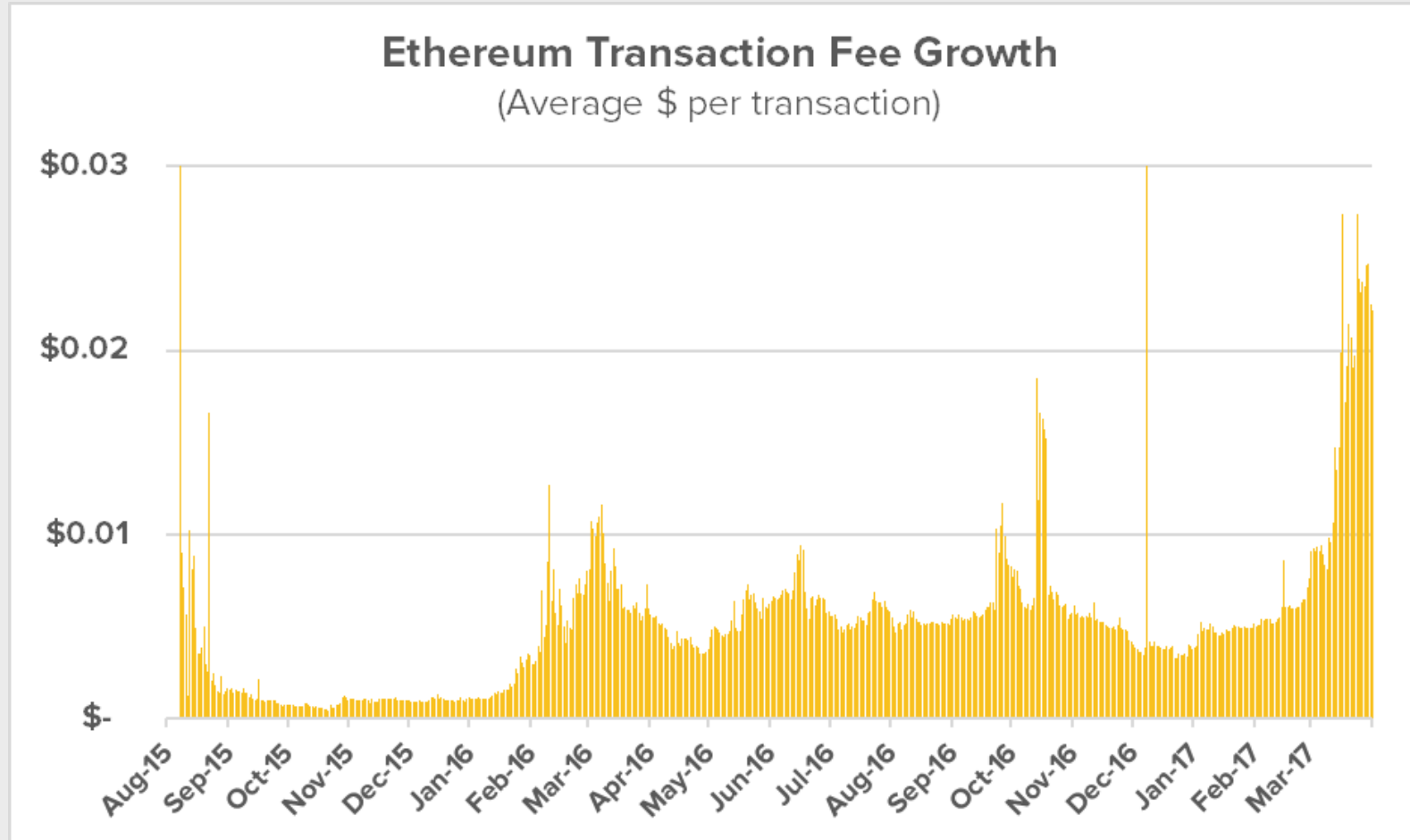
Data Source: [Etherscan](#)

Notes: 'QoQ' means 'quarter over quarter' (Q1 2017 vs Q4 2016), 'YoY' means 'year over year' (Q1 2017 vs Q1 2016)



Fees

Transaction Fees Increase With Quarter End Price and Transaction Spike



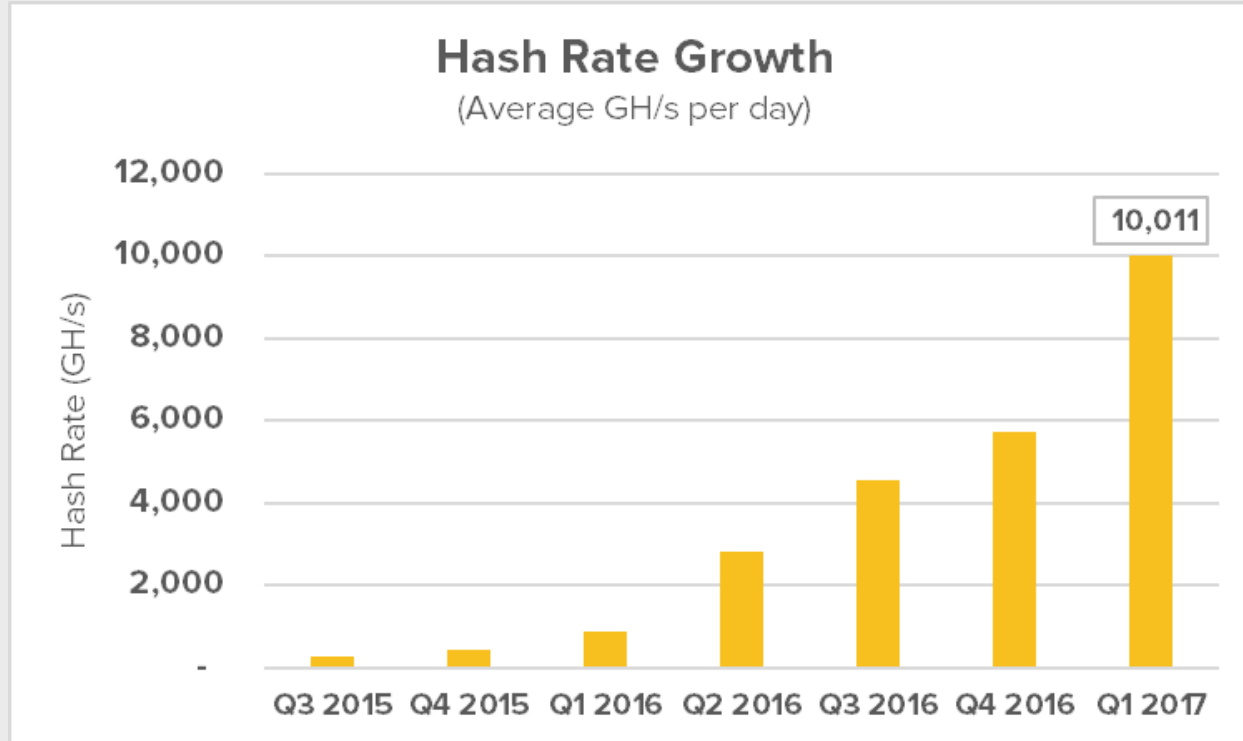
Data Sources: [Etherscan](#), [Coincap](#)

Notes: 'QoQ' means 'quarter over quarter' (Q1 2017 vs Q4 2016), 'YoY' means 'year over year' (Q1 2017 vs Q1 2016), assuming 21,000 gas per ethereum transaction, based on \$ value at time



Hash Rate

Hash Rate Nearly Doubles, Follows Price to All-Time Highs



Quarter	Average Daily Ether Hash Rate (GH/s)	QoQ Change
Q3 2015	280	
Q4 2015	445	59.0%
Q1 2016	867	94.7%
Q2 2016	2,807	223.8%
Q3 2016	4,547	62.0%
Q4 2016	5,736	26.2%
Q1 2017	10,011	74.5%

The hash rate on the ethereum network **grew 74.5% QoQ and 1,055.1% YoY**

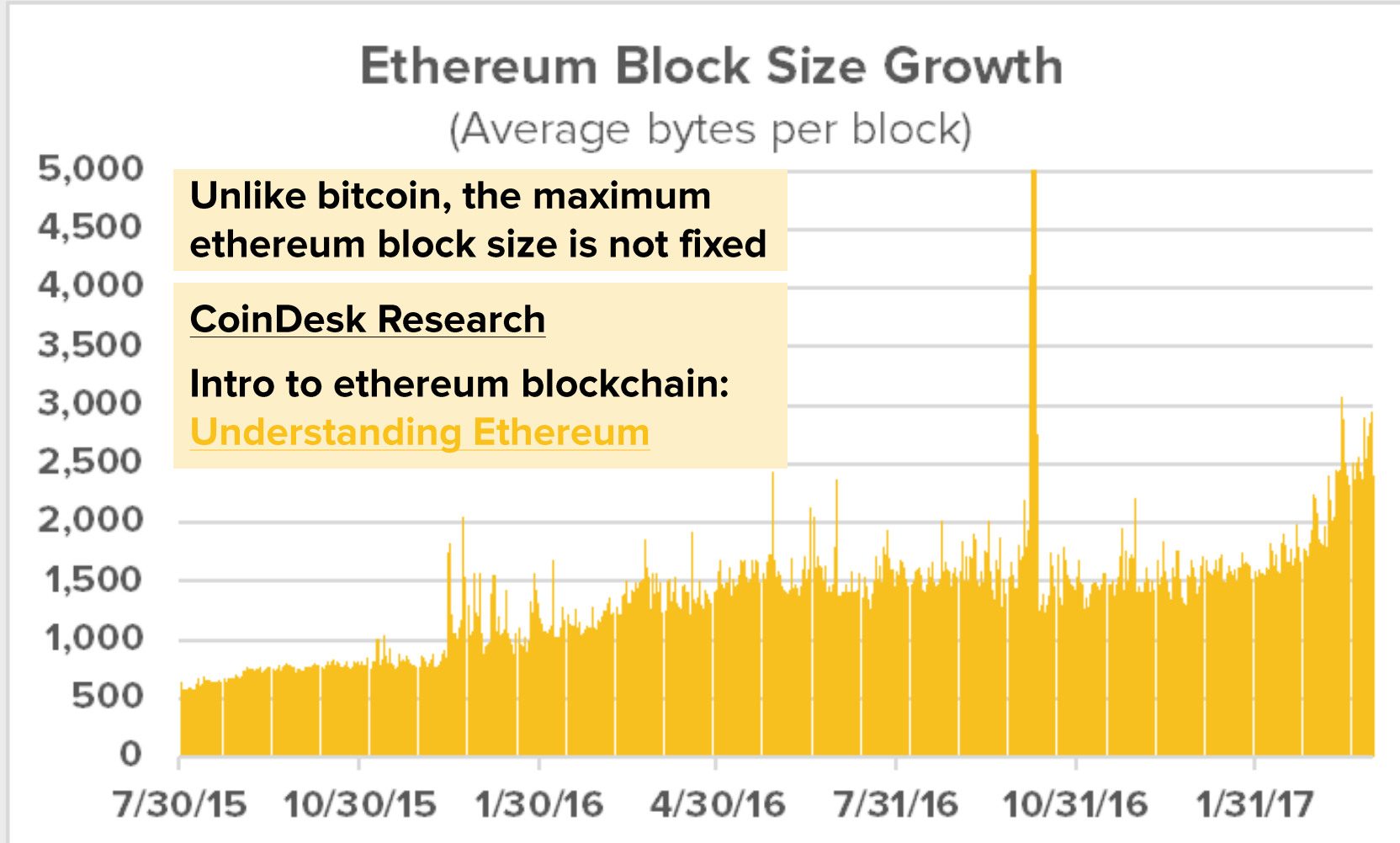
Data Source: [Etherscan](https://etherscan.io)

Notes: Daily data. 'GH/s' is the estimated number of gigahashes (billions 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. 'QoQ' means 'quarter over quarter' (Q1 2017 vs Q4 2016), 'YoY' means 'year over year' (Q1 2017 vs Q1 2016)



Blocks

Block Sizes Steadily Rise to All-Time Highs

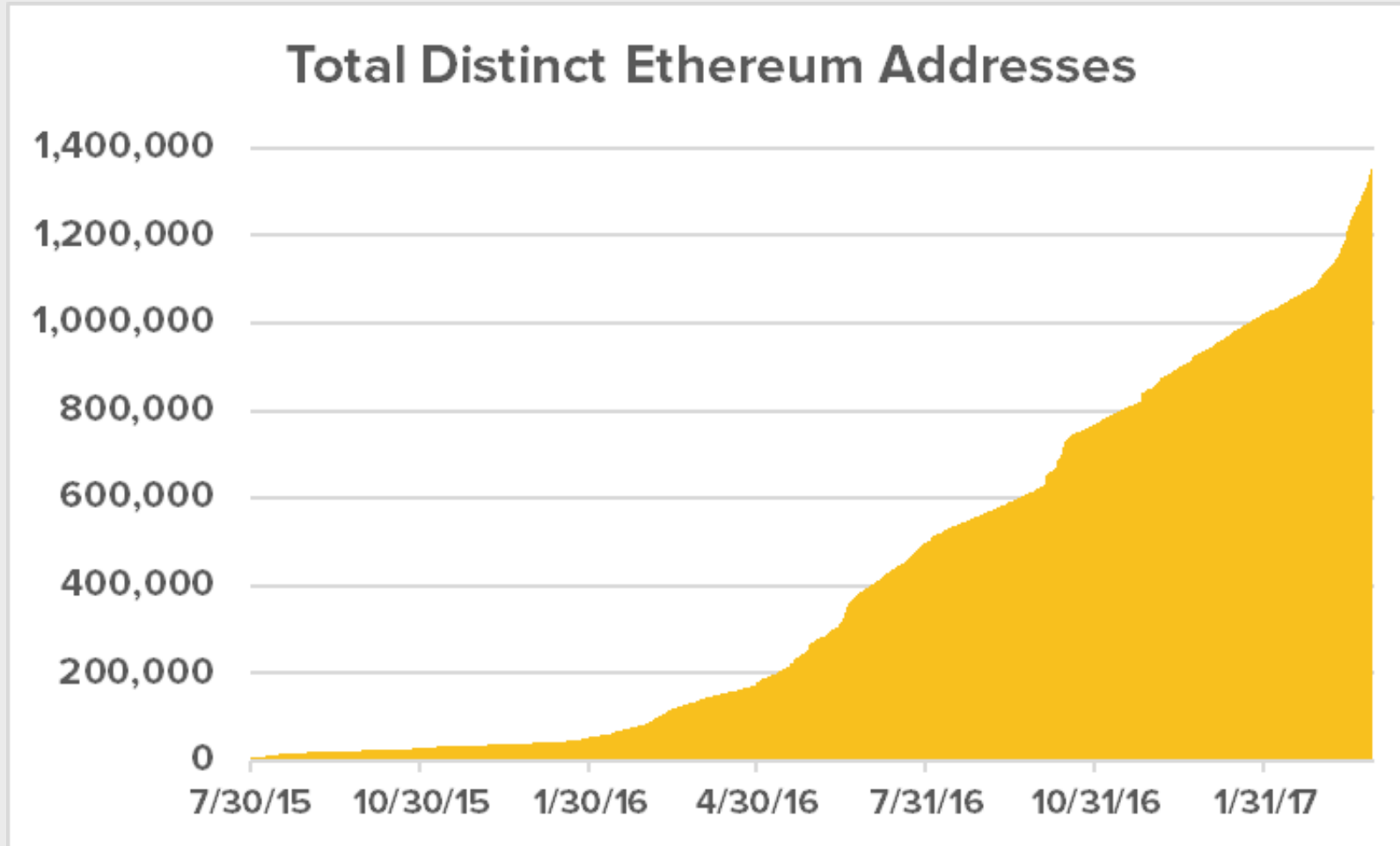


Data Source: [Etherscan](#)



Addresses

Over 1 Million Distinct Addresses on the Ethereum Blockchain



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



Ethereum Dapps Continue to ICO and Grow, Gaining Collective Market Cap Versus Underlying Protocol and Asset

Asset:	Ethereum	Augur	Golem	Iconomi	Melonport	First Blood	Digix	SingularDTV
Website:								
Token:	ETH	REP	GNT	ICN	MLN	1ST	DGD	SNGLS
Market Cap:	\$4.33bn	\$122m	\$66m	\$48m	\$19m	\$29m	\$37m	\$29m
Price:	\$48.02	\$11.09	\$.08	\$.55	\$32.08	\$.34	\$18.53	\$.05
ICO Price:	\$.31	\$.60	\$.01	\$.13	\$5.80	\$.06	\$3.24	\$.015
ICO Date:	9/2/2014	8/1/2015	11/11/16	8/25/2016	2/15/17	9/25/2016	3/1/2016	10/5/2016
Return:	15,552%	1,741%	672%	335%	453%	432%	473%	219%

ETH
\$4.33bn

ETH
dapps
\$350m

A glimpse into Q2 2017:

In April, Gnosis held a token sale for GNO.

Just over 418,000 of 10M GNO tokens were sold to the public for \$12.5M, immediately valuing all of the tokens at nearly \$300M, catapulting Gnosis into a top ETH dapp position.









In May, GNO crossed \$100, valuing all 10M tokens at over \$1B.

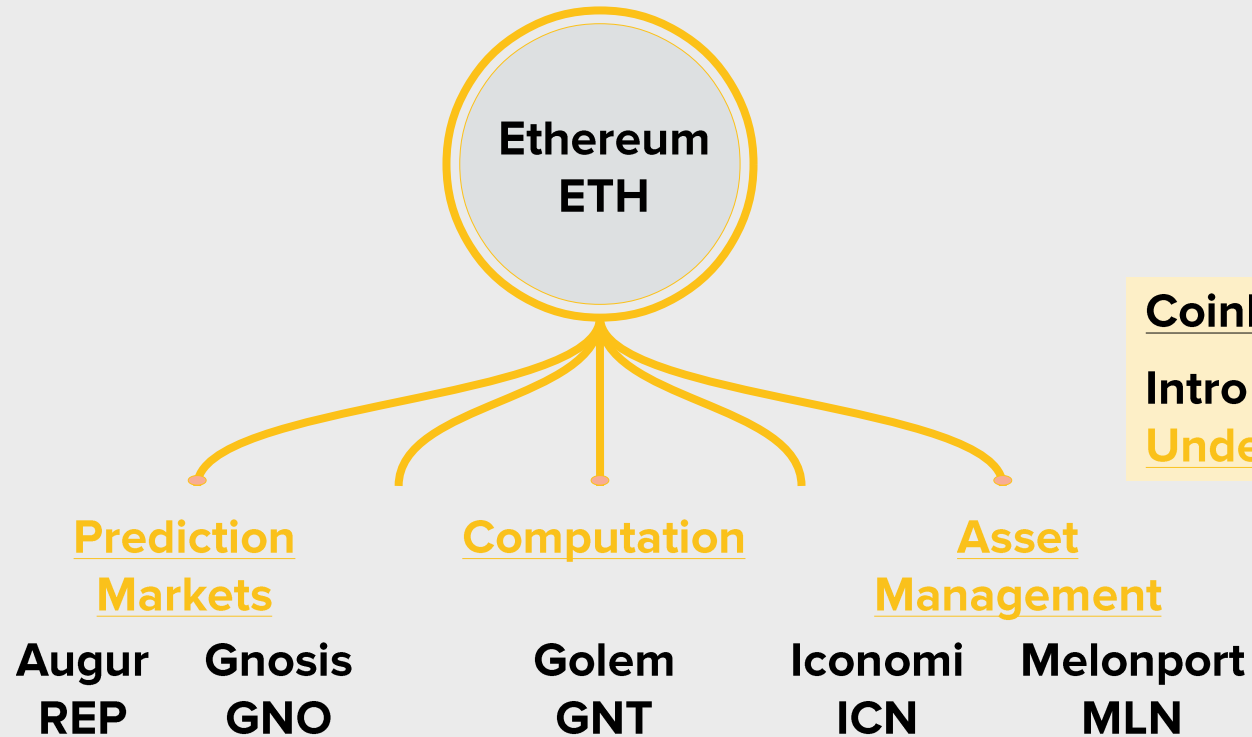
Data Source: [Coinmarketcap](#), [ICOSTats](#)

Notes: Market cap and price as of Q1 2017 (3/31/17), ICO stats calculated per \$ prices during ICO dates, not all ETH dapps shown



Early Ethereum Dapp Ecosystem Begins Taking Shape as Developers and Investors Support Initial Sectors

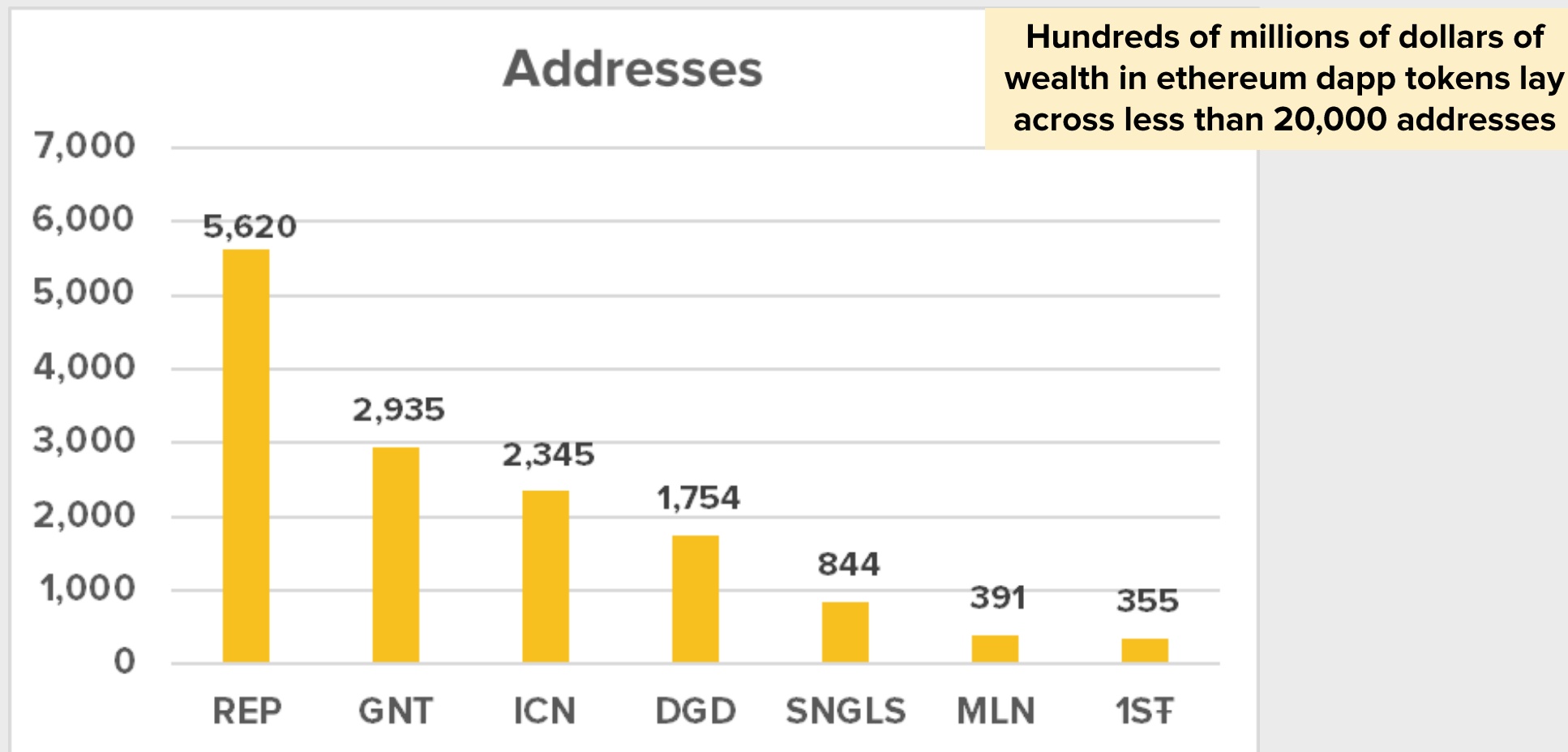
Dapp:	Augur	Gnosis	Golem	Iconomi	Melonport	First Blood	Digix	SingularDTV
Website:								
Token:	REP	GNO	GNT	ICN	MLN	1ST	DGD	SNGLS
Use Case:	Prediction Markets	Prediction Markets	Computation	Asset Management	Asset Management	Gaming	Commodity Backed	Entertainment



CoinDesk Research
Intro to ethereum dapps:
[Understanding Ethereum](#)



REP Most Widely Distributed Ethereum Token Followed by GNT, ICN

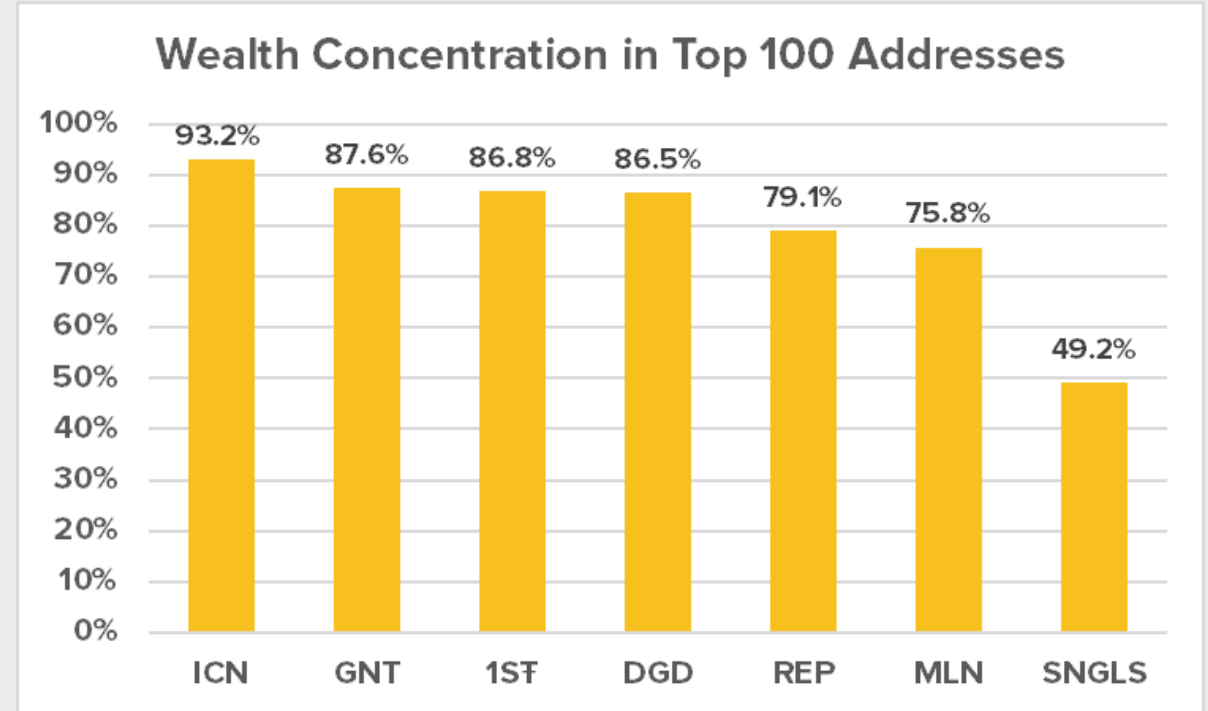
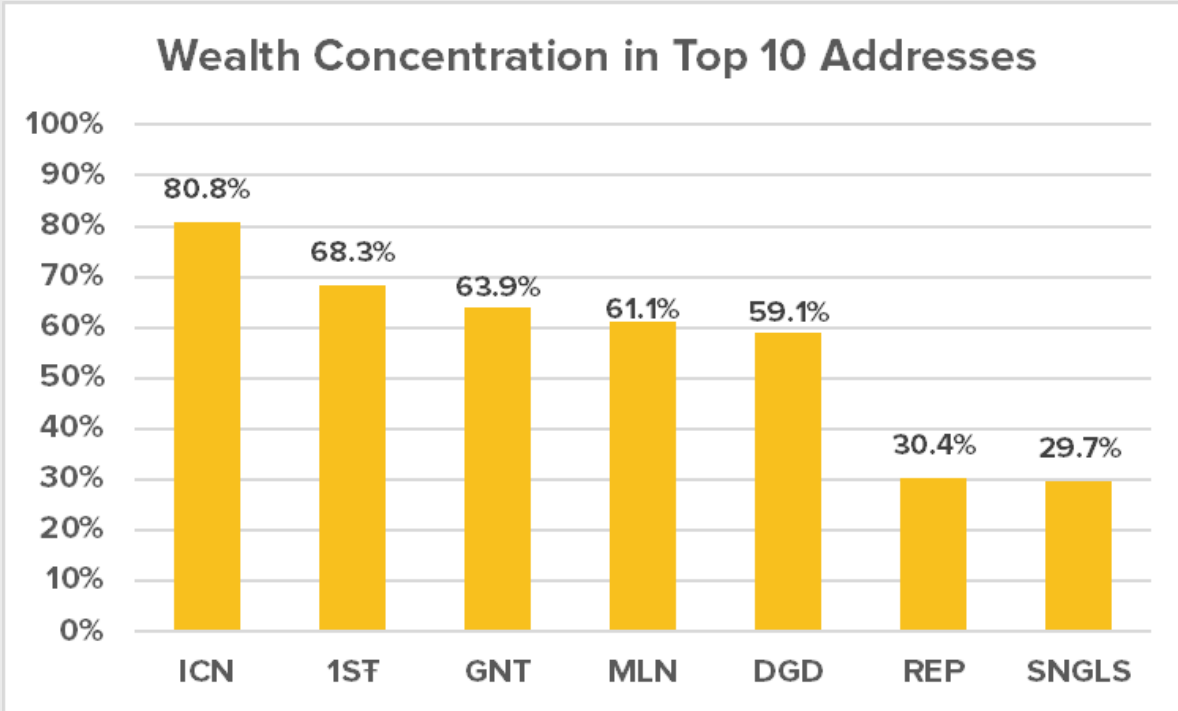


Data Source: [Etherscan](#)

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



ICN Wealth Concentrated with Few Holders, REP More Distributed



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 AND ETHEREUM SENTIMENT

SPOTLIGHT STUDY



Our Q1 2017 Bitcoin and Ethereum Sentiment Survey Highlights the Viewpoints of 1,100+ Blockchain Enthusiasts

 25 questions on **bitcoin sentiment**, covering:

- Bitcoin Core and Segregated Witness
- Bitcoin Unlimited and a bitcoin hard fork
- Transaction fees and the Lightning Network
- ETFs and price predictions

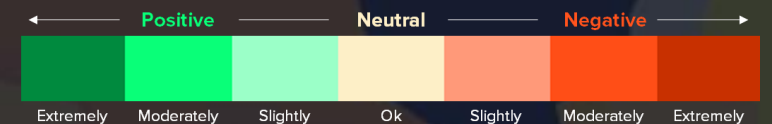
 15 questions on **ethereum sentiment**, covering:

- The Enterprise Ethereum Alliance launch
- Co-existing public and permissioned networks
- Dapp and token growth
- Proof of stake and Raiden timing predictions

10 questions on **broader demographics**, covering:

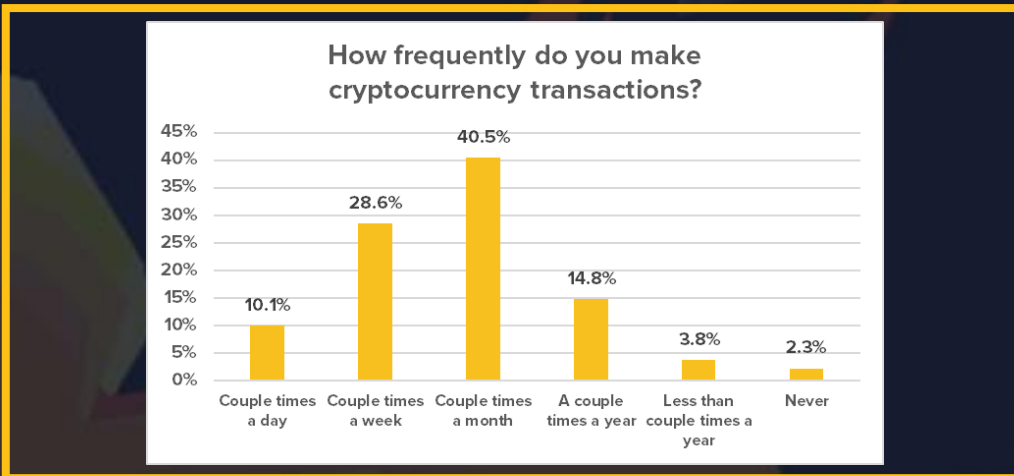
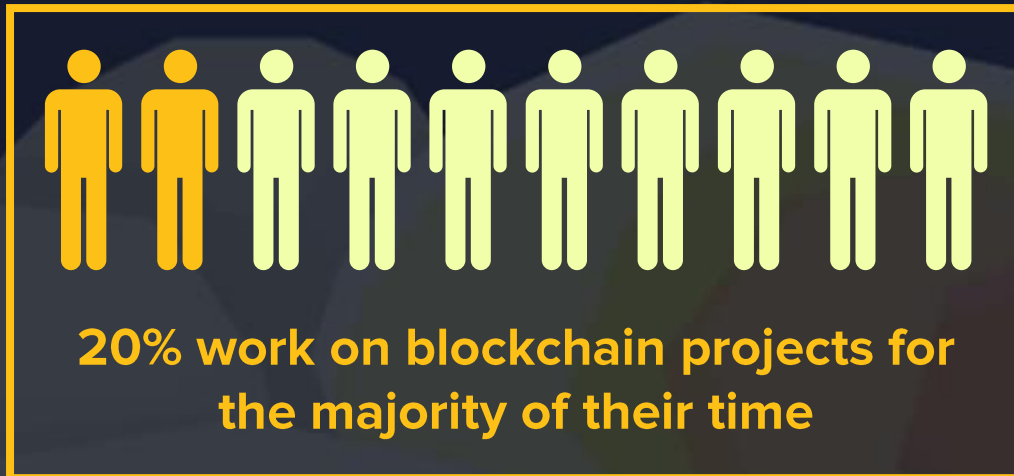
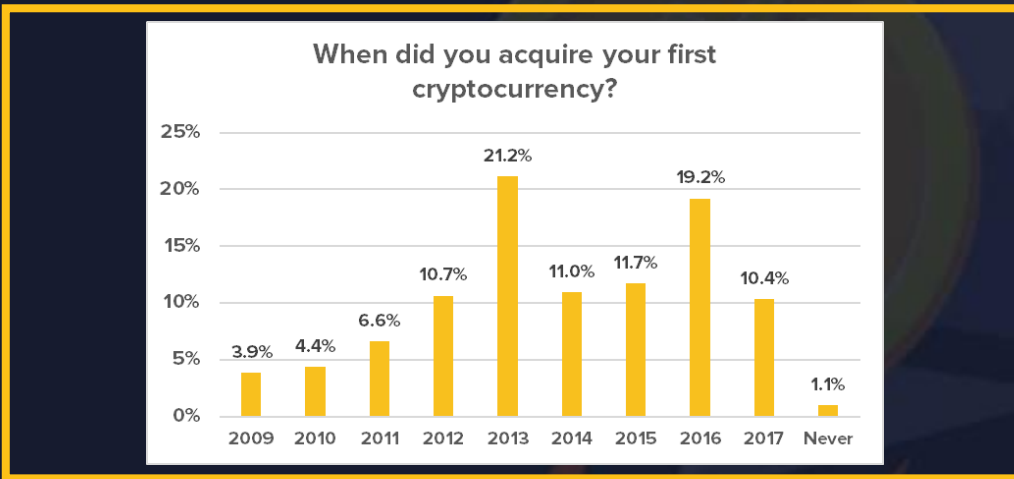
- Digital asset portfolio insights
- Transaction frequency and usage habits
- Mining centralization viewpoints
- Industry familiarity

The following scale and color system is used extensively throughout:





Our Bitcoin and Ethereum Sentiment Study Respondents Were Diverse in Terms of Geography, Work and Cryptocurrency Experience





Q1 2017 Bitcoin and Ethereum Sentiment Survey: Key Takeaways

94%

Feel positive about the current **state of ethereum**, almost double the amount who feel positive about the **state of bitcoin**

86%

Believe **ethereum can be used as a currency** at least just as well as bitcoin, which is now most related to as a **digital gold**

67%

Feel **negative about the current state of fees on the bitcoin network**, despite transaction numbers hitting all-time highs

57%

Believe **Raiden will be live on ethereum by year end, faster than bitcoin's Lightning Network** off-chain scaling proposal

85%

Believe bitcoin mining is too centralized, ethereum split during move towards expected 2017 proof of stake launch

46%

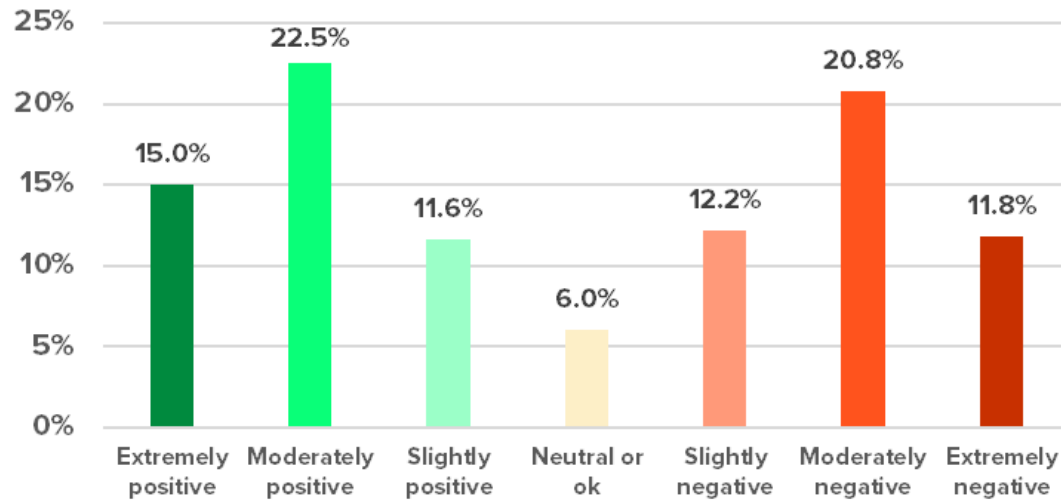
Believe the **EEA launching was the primary driver of ether's price**, more than any development with the protocol or dapps



Sentiment Towards Bitcoin Split, Ethereum Extremely Positive



How do you currently feel about the overall 'state of bitcoin'?

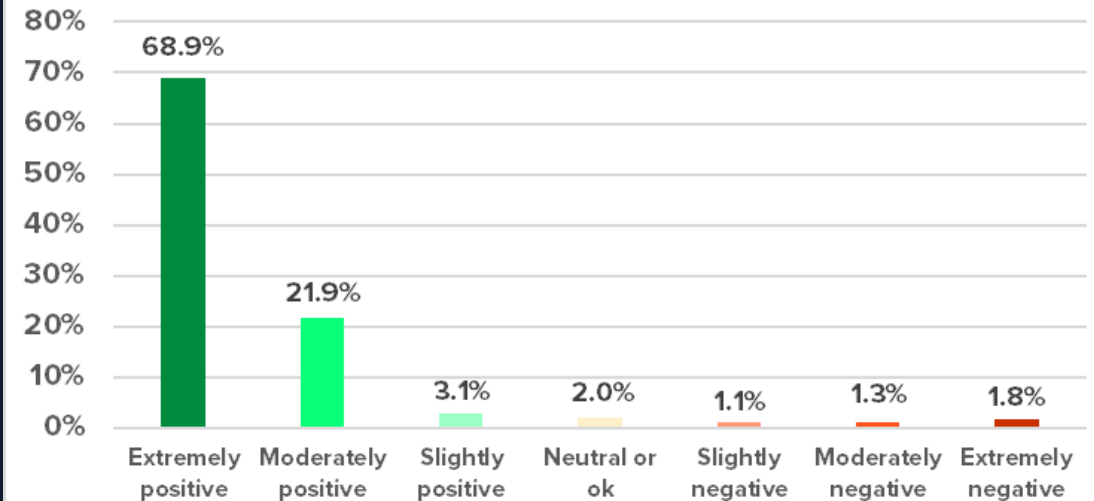


49.2%
positive

44.8%
negative



How do you currently feel about the overall 'state of ethereum'?



93.8%
positive

4.2%
negative

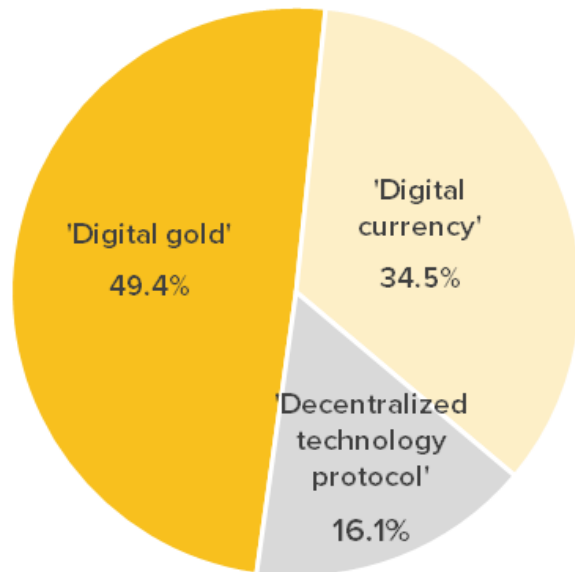




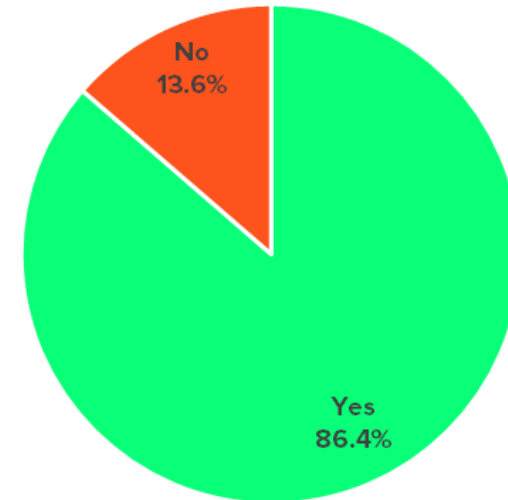
Bitcoin Most Frequently Related to 'Digital Gold', Large Majority Believes Ether Can Function Just as Well as a 'Currency'



What do you relate bitcoin most closely to?

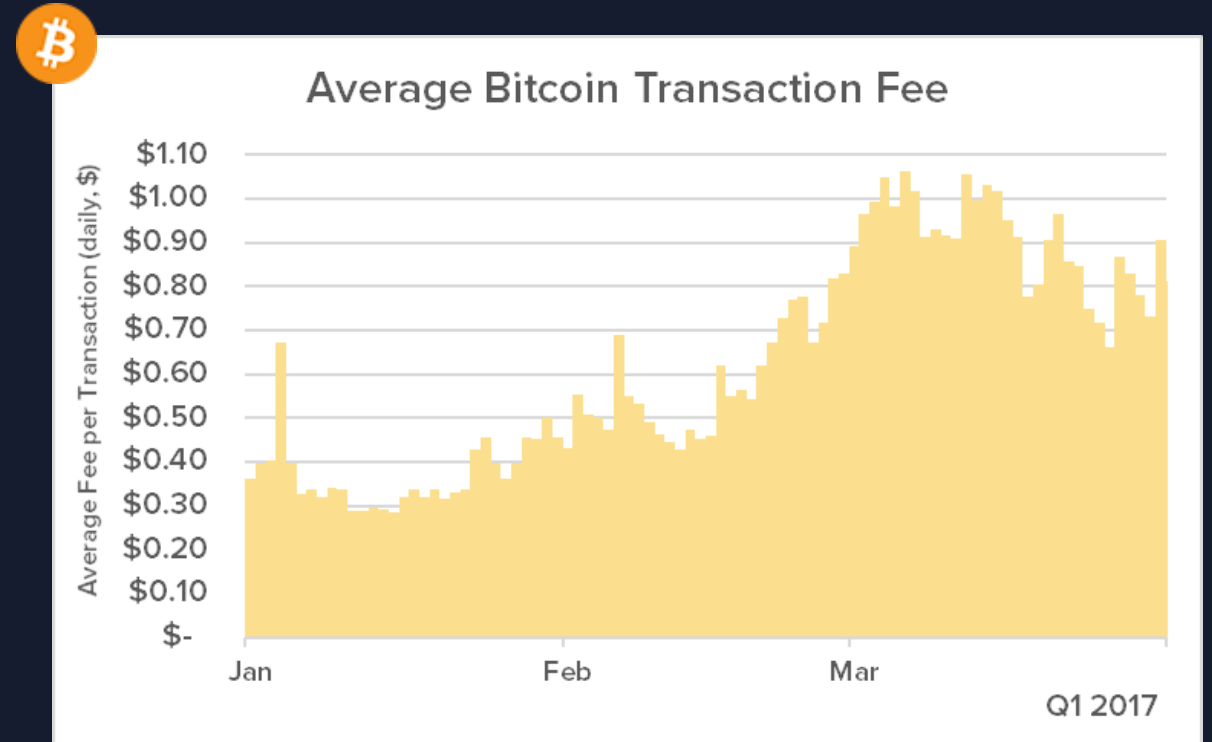
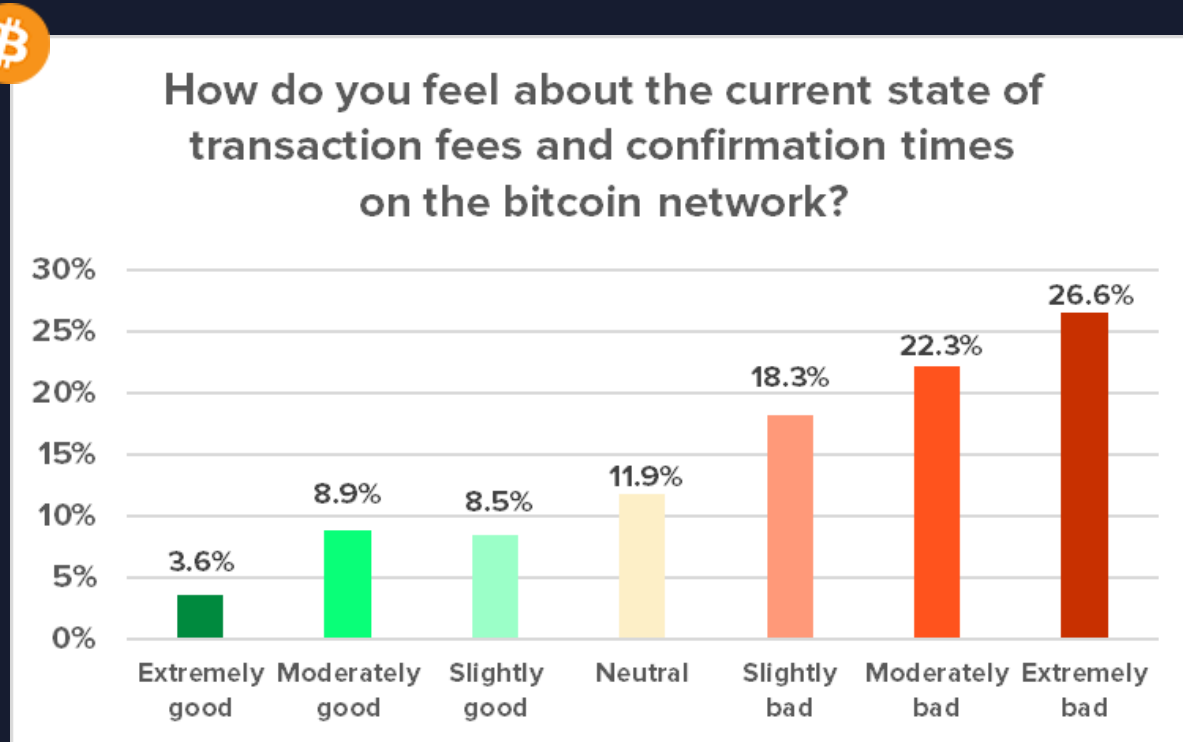


Do you believe ethereum can be used as a currency, medium of exchange, payment method and value store just as well or better than bitcoin?





Sentiment Towards Bitcoin Network Fees and Speed Increasingly Negative as Users Begin Paying North of \$1 per Transaction



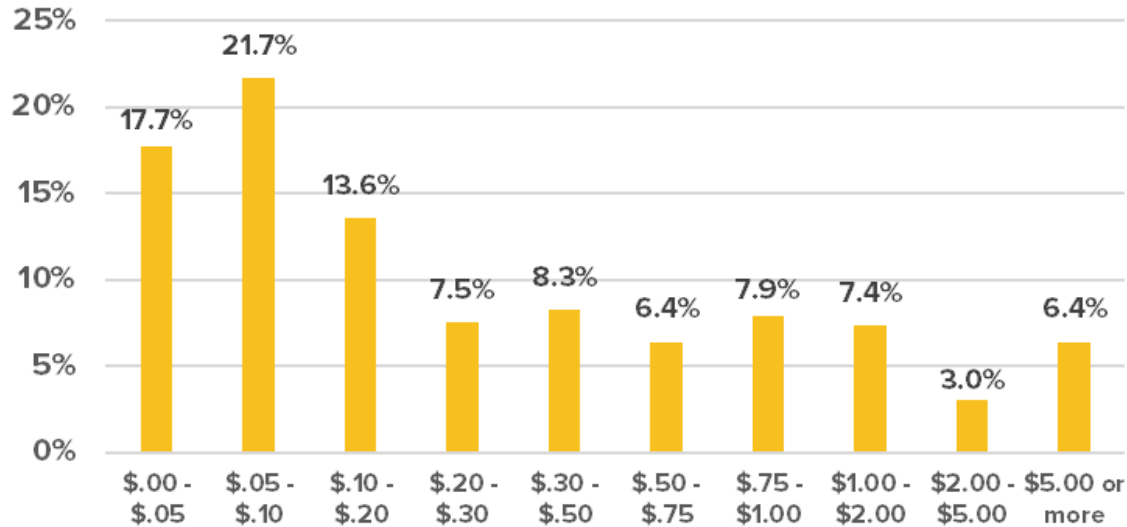
67.2% responded **negatively**,
as average transaction fees exceeded \$1 in Q1



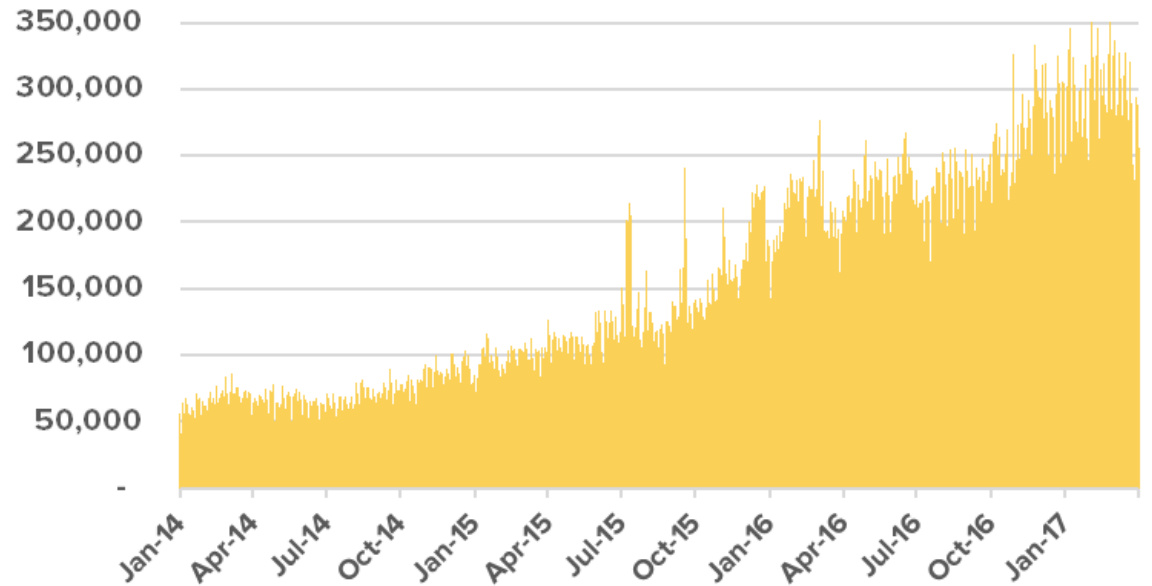
Majority Cites 20¢ as Max Bitcoin Fee They Would Pay, Transaction Data Suggests Otherwise



What is the maximum you would be willing to pay for a bitcoin transaction fee?



Total Daily Bitcoin Transactions



Over 50% responded they **would not pay over 20 cents**, however the number of transactions hit an all-time high despite fees averaging over 60 cents

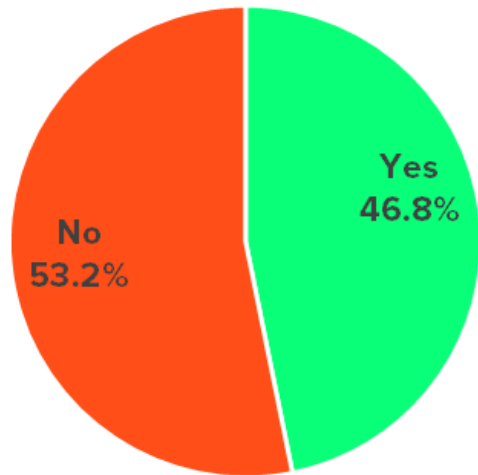
Data Sources: CoinDesk's Q1 2017 Bitcoin and Ethereum Sentiment Survey, [Blockchain](#)



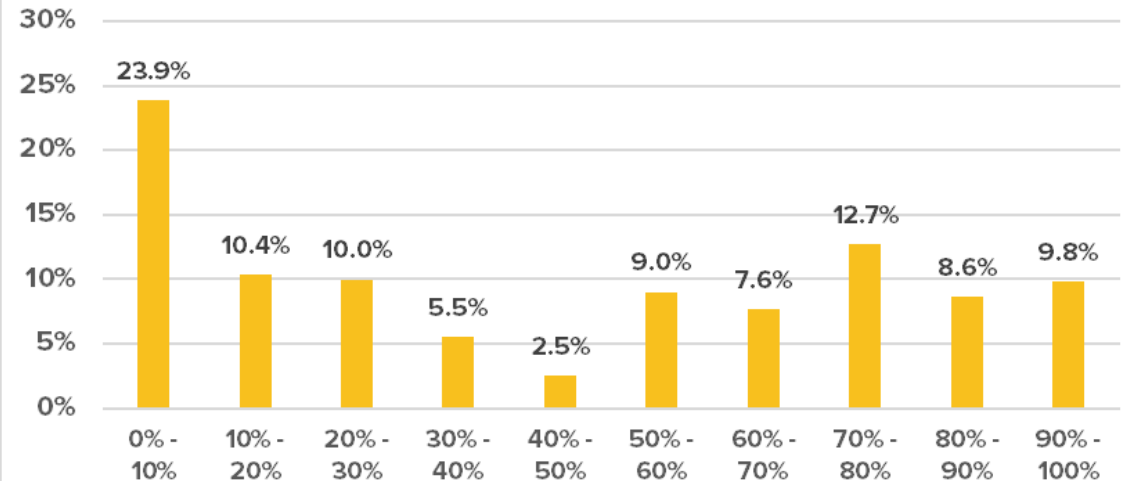
The Community Remains Split on SegWit Activation and Bitcoin Hard Fork Likelihood



Do you believe we will see a contentious hard fork of bitcoin into Bitcoin Unlimited ('BTU') and Bitcoin Core ('BTC')?



What do you think is the probability SegWit activates after signaling by 95% of bitcoin blocks in a 2,046 block period by Nov. 15, 2017?

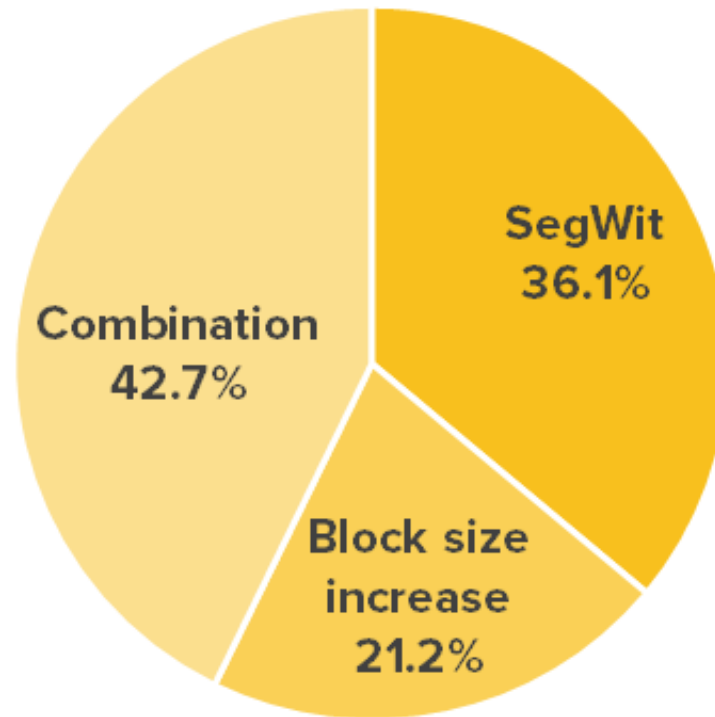




The Community Favors a Combination of SegWit and a Block Size Increase as Opposed to Either Side Alone



What do you believe to be the best short-term scaling strategy?

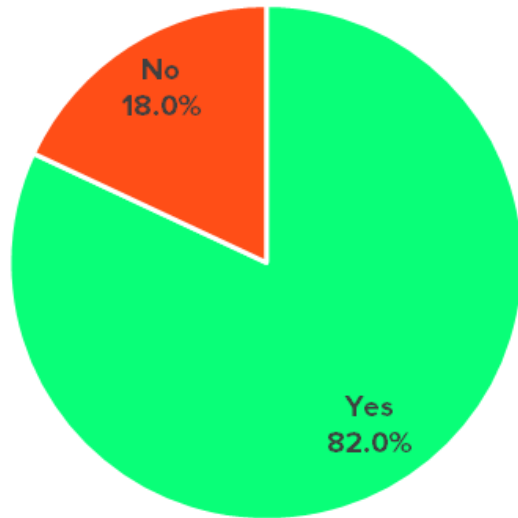




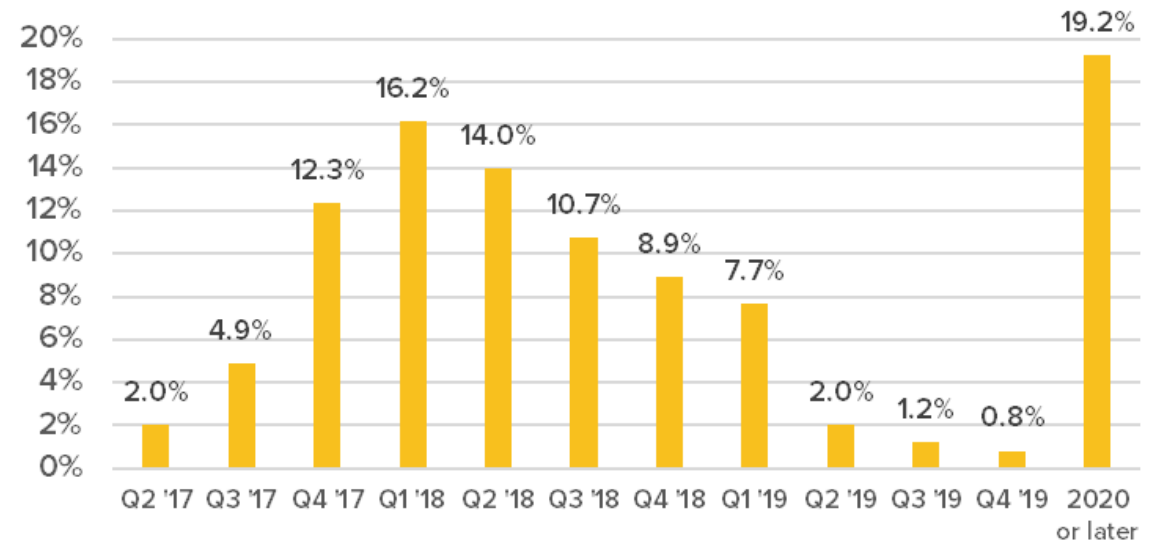
The Majority of the Community Supports Lightning Network and About Half Expect it Live in 2018



Do you support 'off-chain' scaling solutions like the Lightning Network?



When do you think the Lightning Network will be live on bitcoin?



2017
19.2%

2018
49.8%

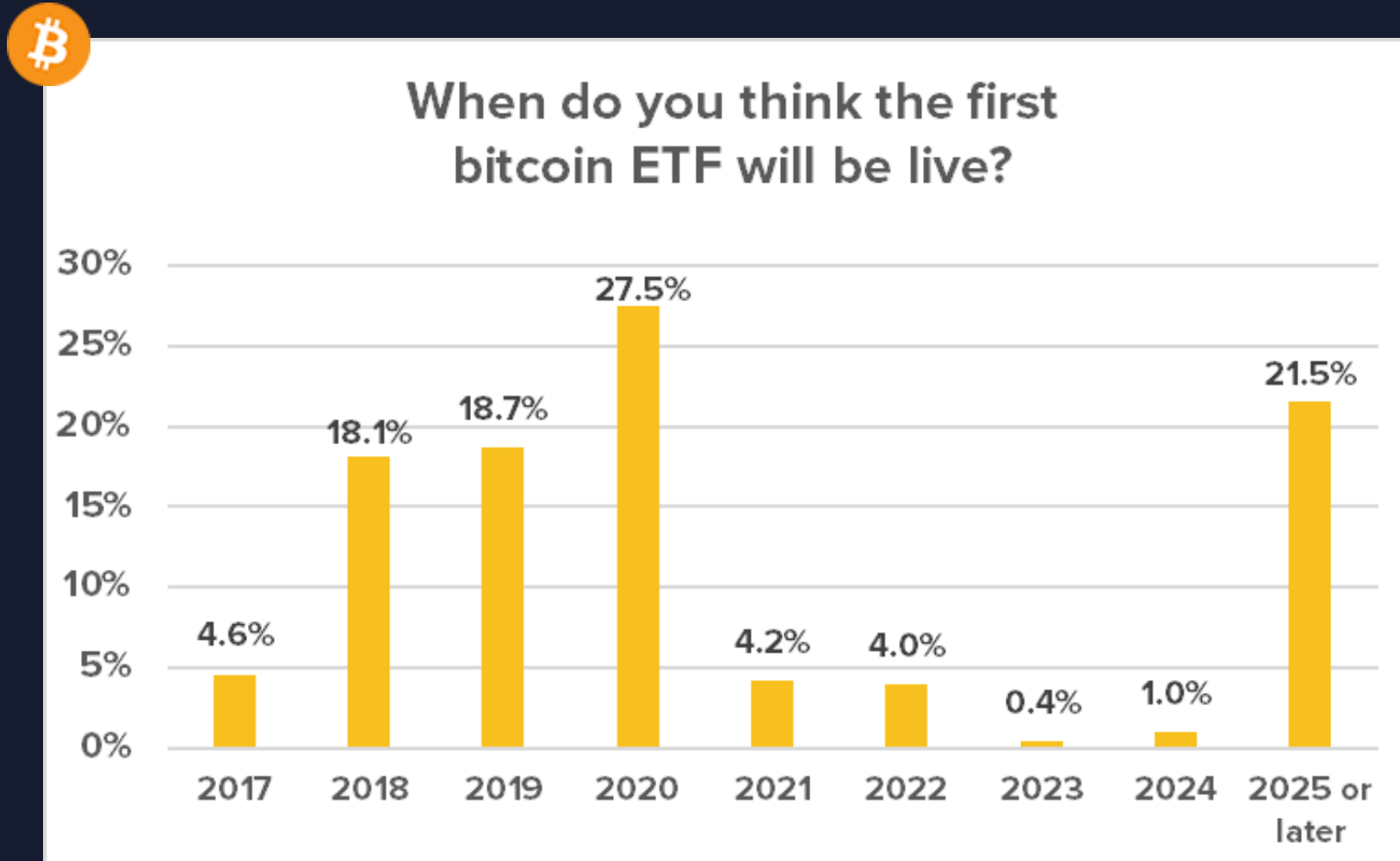
2019
11.7%

2020
19.2%

Data Source: CoinDesk's Q1 2017 Bitcoin and Ethereum Sentiment Survey



The Majority Believes That a Bitcoin ETF Will Be Live By 2020



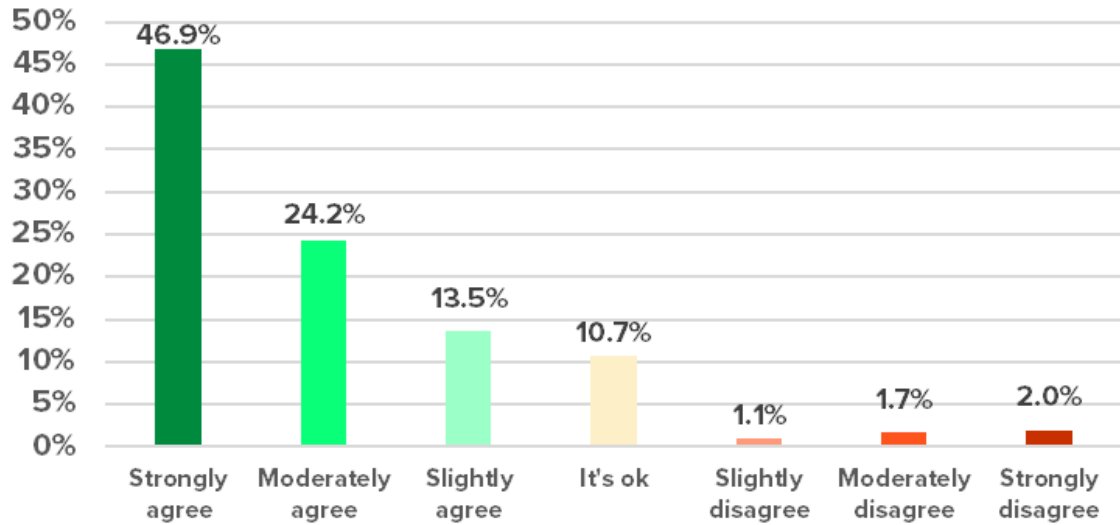
Data Source: CoinDesk's Q1 2017 Bitcoin and Ethereum Sentiment Survey



While Bitcoin and Ethereum Both Employ Proof of Work, Concern Over Bitcoin Mining Centralization Far Outweighs Ethereum



Do you believe mining is currently too centralized?

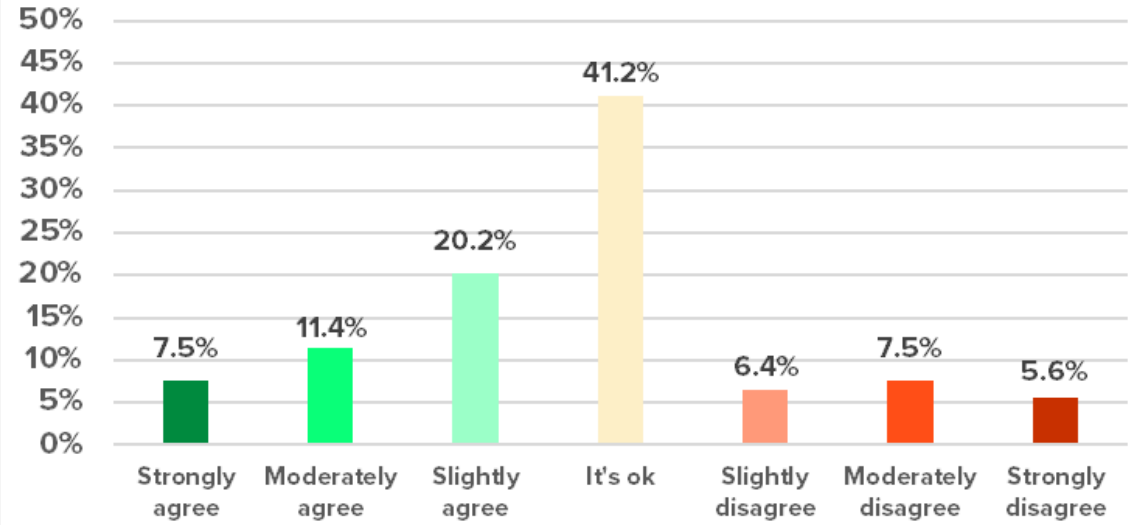


84.6%
agree

4.8%
negative



Do you believe mining is currently too centralized?



39.2%
agree

19.6%
negative

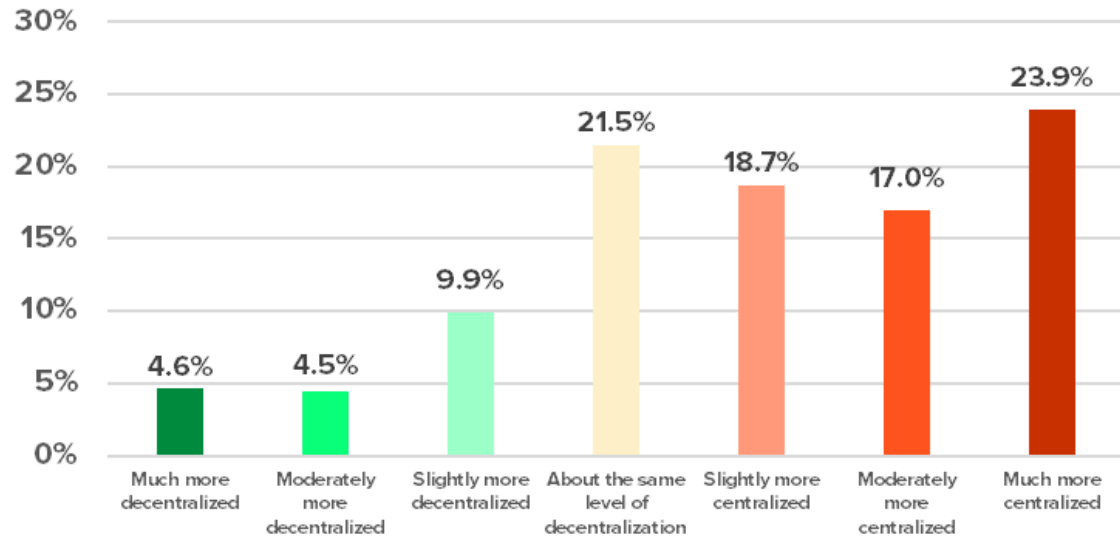




The Future Appears More Centralized for Bitcoin Mining, While Ethereum Leans Towards Decentralization



How do you believe mining will evolve in the future?

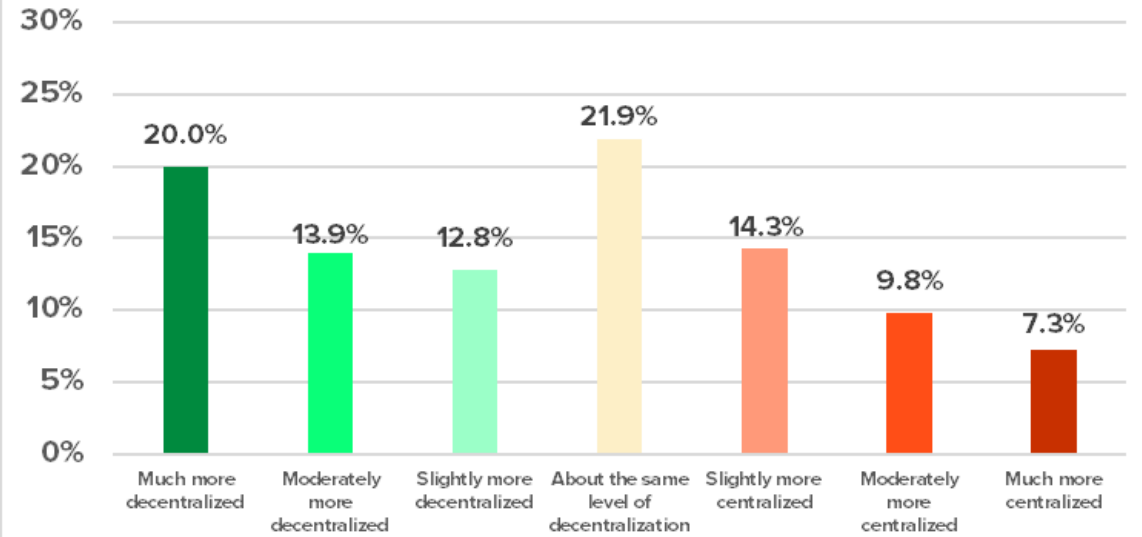


19.0%
decentralized

59.6%
centralized



How do you believe mining will evolve in the future?



46.8%
decentralized

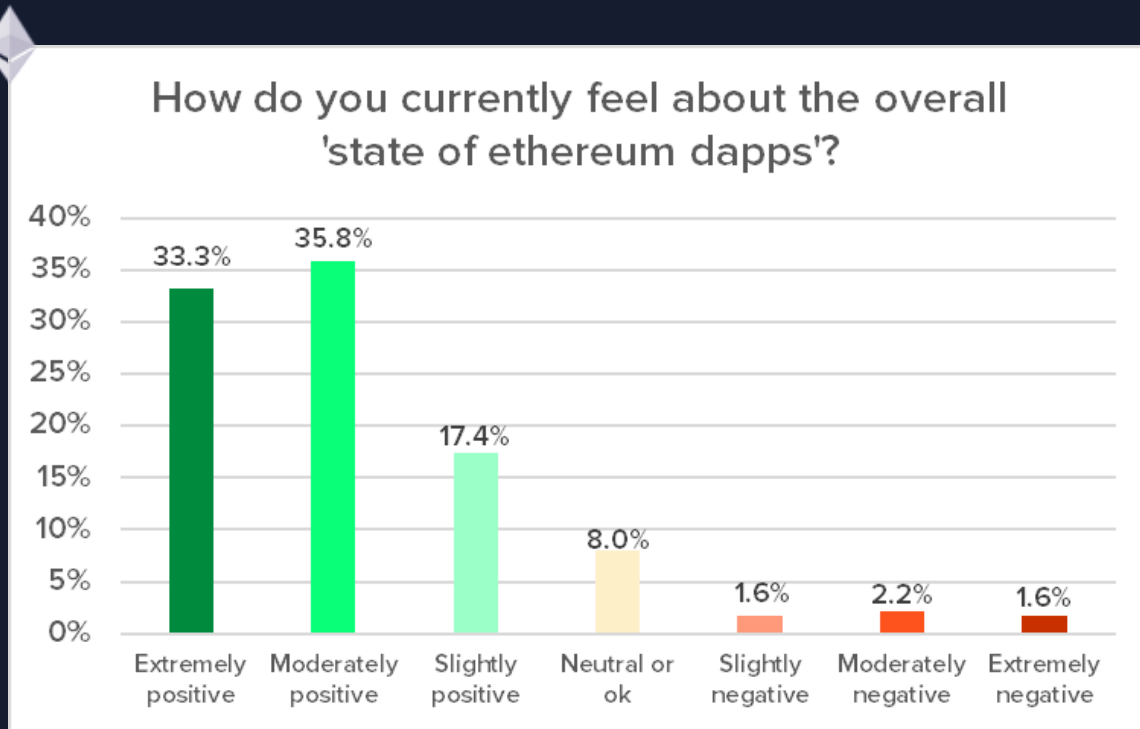
31.4%
centralized



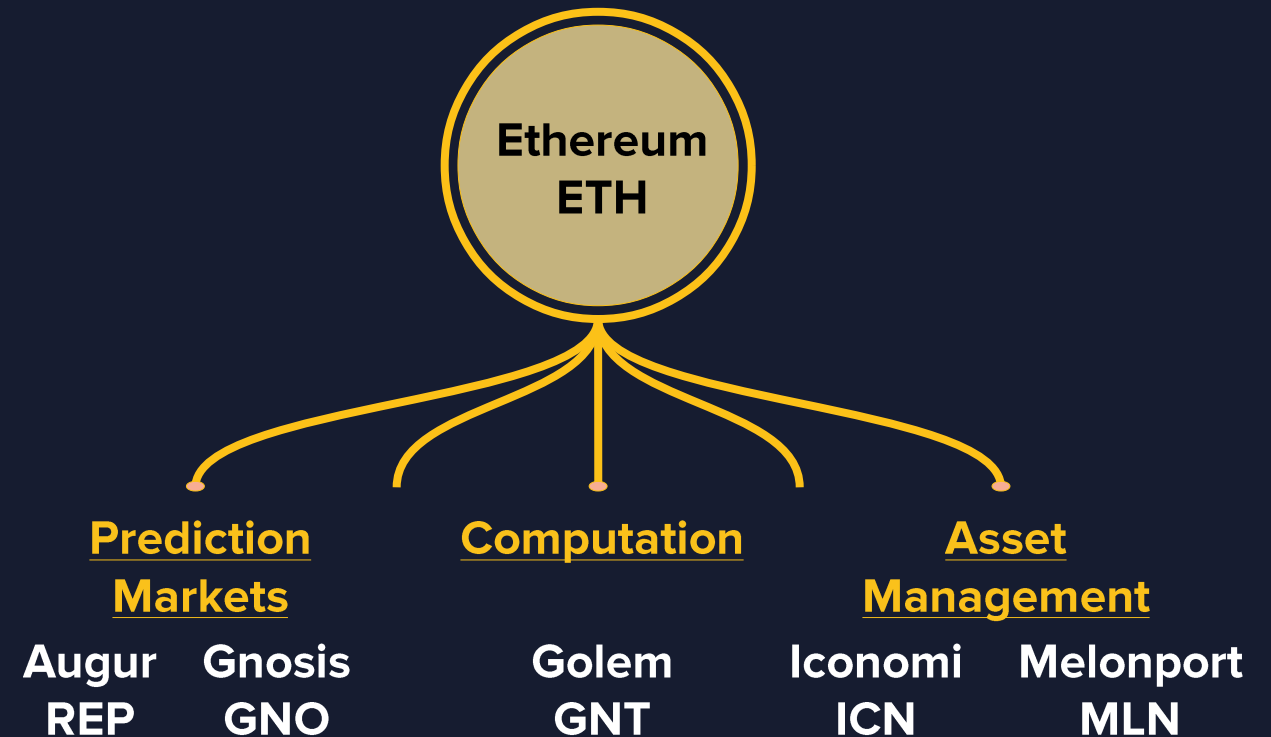
Data Source: CoinDesk's Q1 2017 Bitcoin and Ethereum Sentiment Survey



The Community is Extremely Positive About the Early Stages of Ethereum Dapps



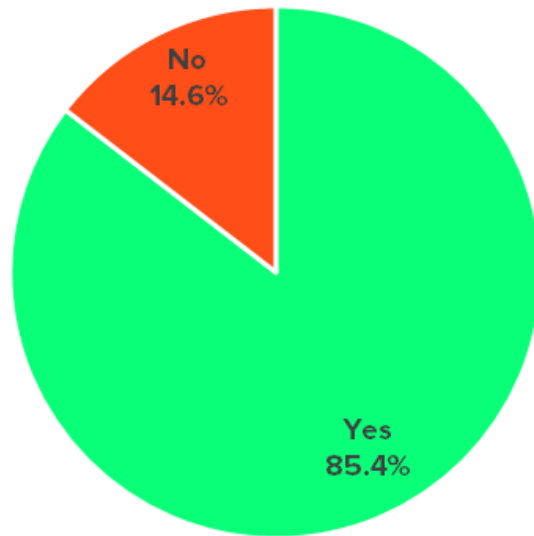
86.5% feel **positive** about the current state of ethereum dapps



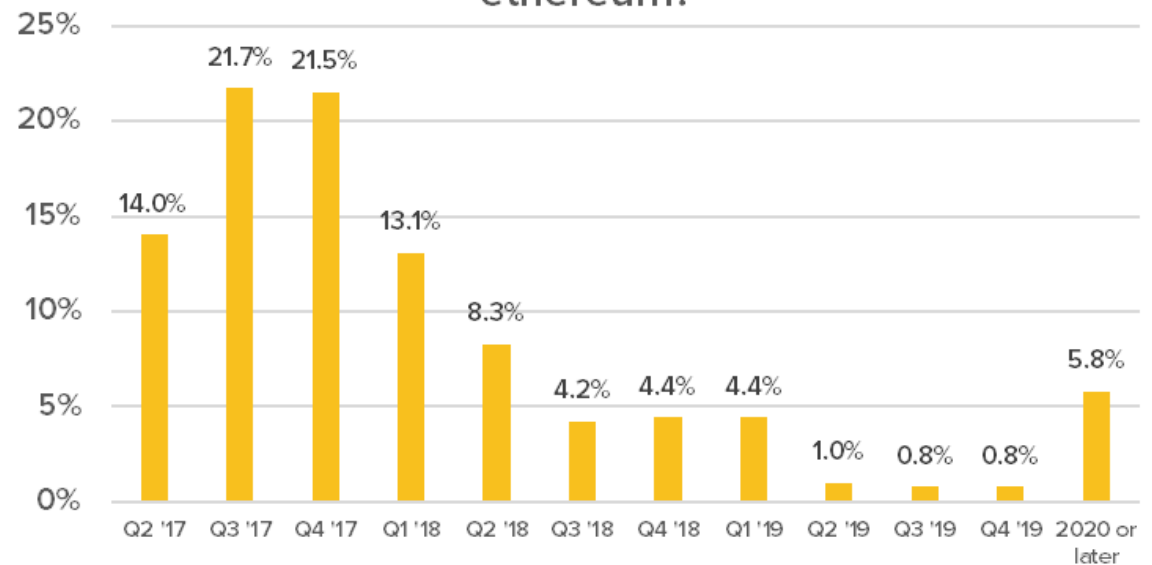


The Majority of the Community Supports Raiden and Expect it Live this Year

Do you support 'off-chain' scaling solutions like Raiden?



When do you think Raiden will be live on ethereum?



2017
57.3%

2018
30.0%

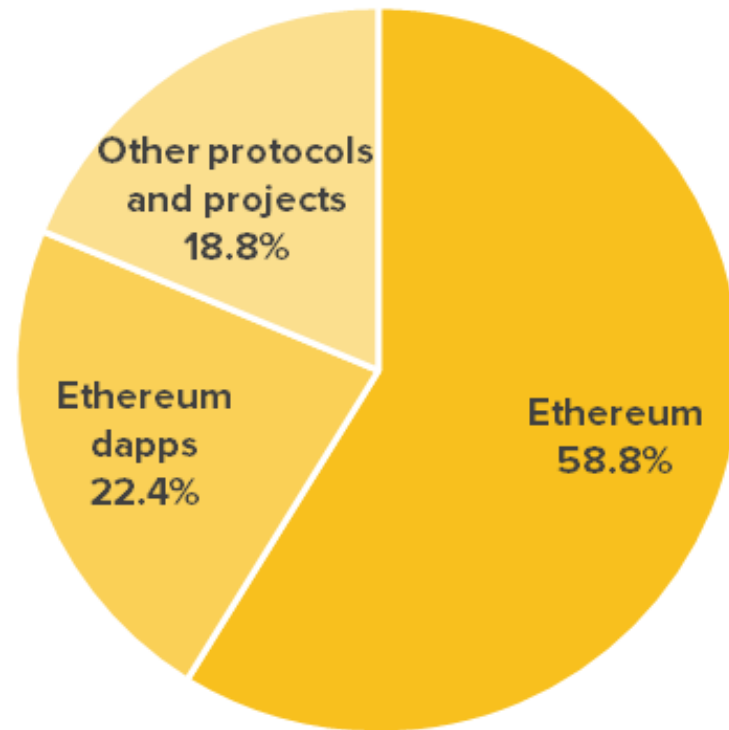
2019 **2020**
6.9% 5.8%

Data Source: CoinDesk's Q1 2017 Bitcoin and Ethereum Sentiment Survey



The Community Spends More Time Thinking About the Ethereum Protocol than Ethereum Applications or Other Projects

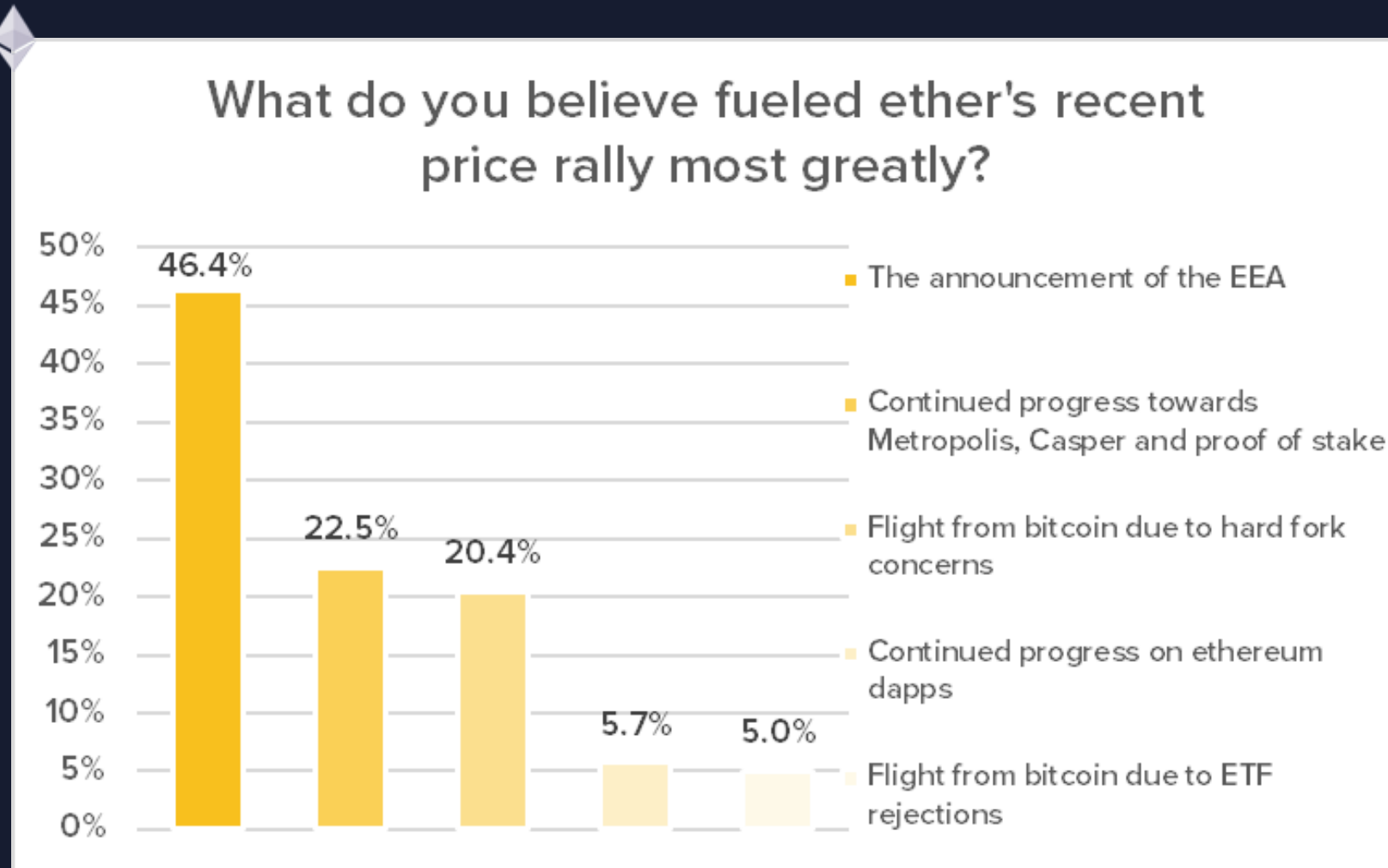
What do you spend more of your time reading and thinking about?



- Ethereum - for example, Casper, moving from proof of stake to proof of work and the decentralization of miners
- Ethereum dapps - for example, what's going on at augur, golem and first blood
- Other protocols and projects - for example, bitcoin, ripple, zcash, monero, dash and hyperledger



The Community Believes the Launch of the EEA Drove Ether's Price Moreso Than Developments with the Protocol, Dapps or Other Cryptocurrencies



Data Source: CoinDesk's Q1 2017 Bitcoin and Ethereum Sentiment Survey

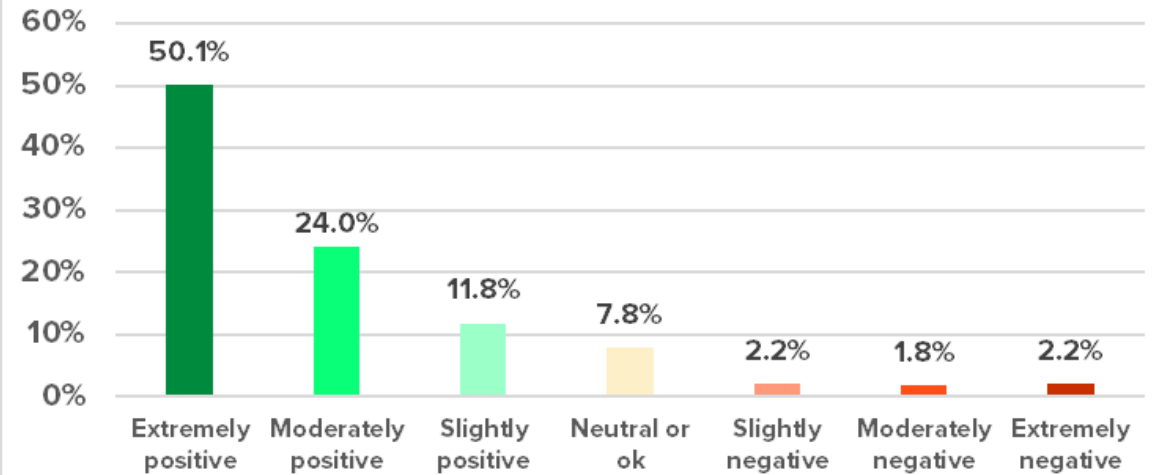


The Future of Co-Existing Public and Permissioned Blockchains, With Traditional Tech and Finance Involvement Feels Imminent and Welcomed

Do you see a future of co-existing and interconnected public and 'private' or 'permissioned' blockchains?



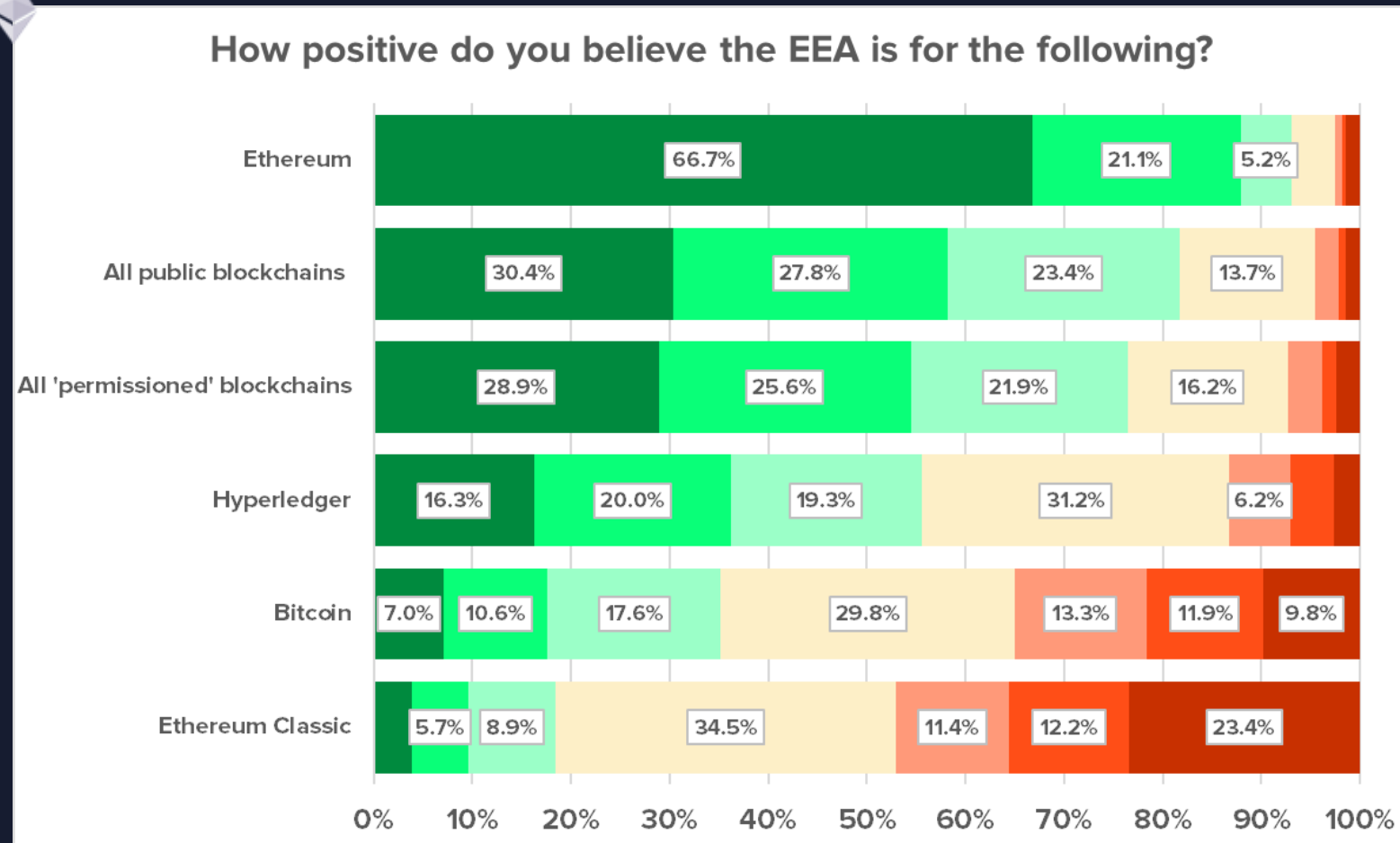
How do you feel about large traditional financial and tech firms becoming involved with 'permissioned' versions of ethereum?



86.0% of respondents felt **positive** about traditional company involvement with ethereum



The Launch of the EEA Seen As Positive For Both Permissioned and Public Ethereum, As Well as Rest of Industry

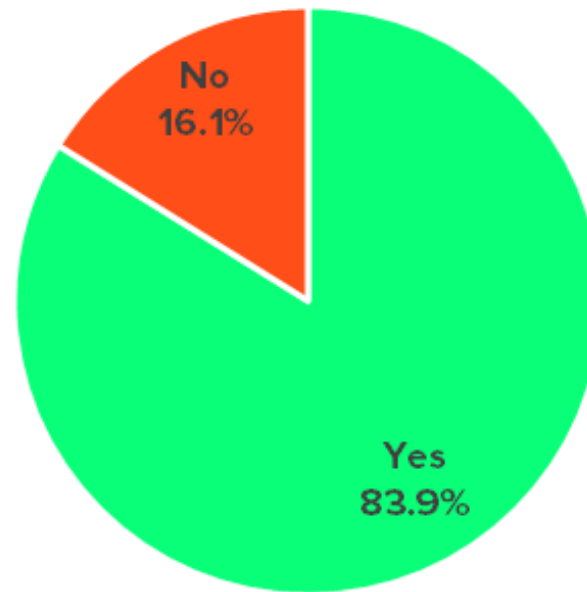


Data Source: CoinDesk's Q1 2017 Bitcoin and Ethereum Sentiment Survey
Notes: Labels with less than 5% excluded



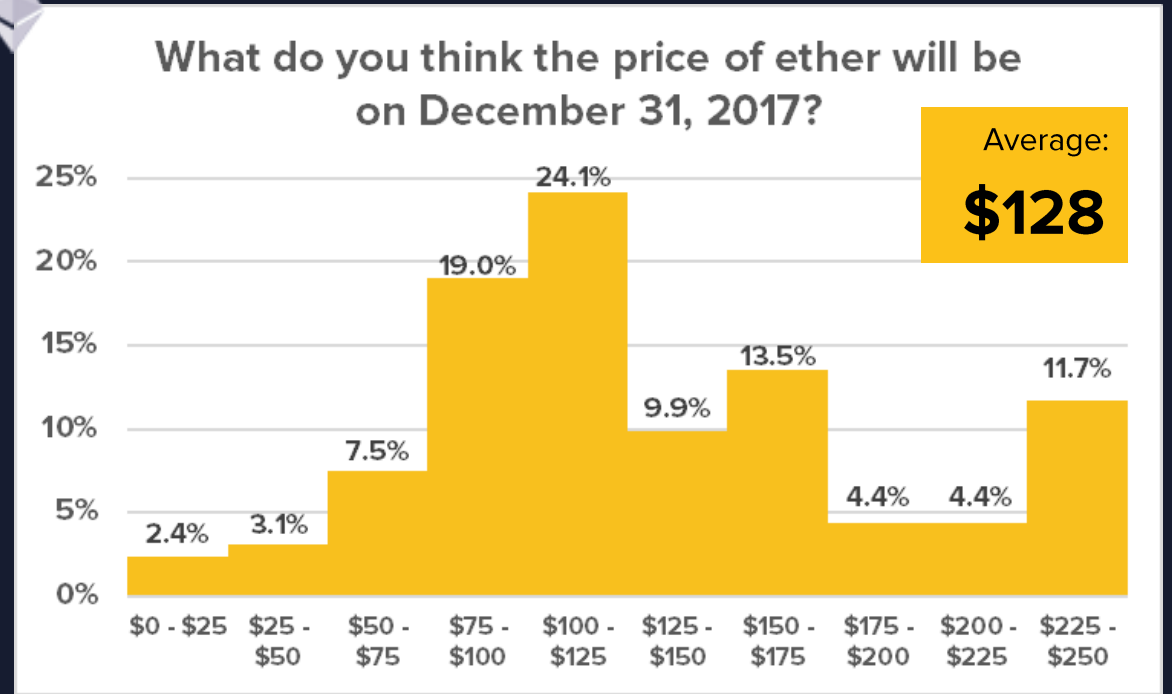
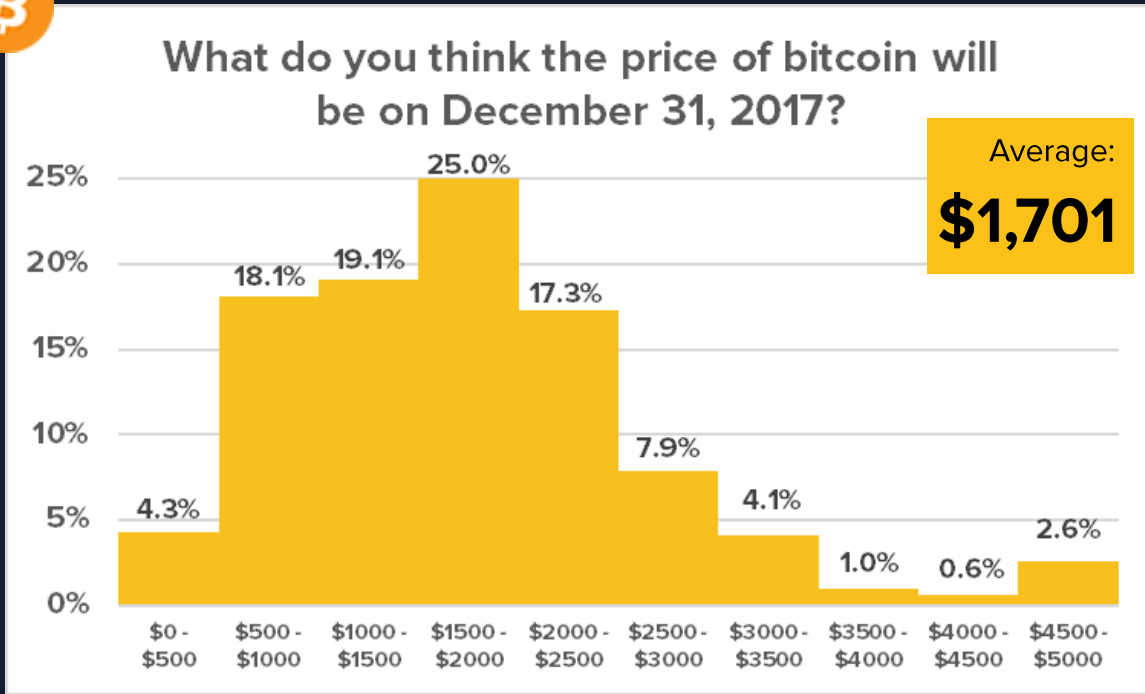
Community is Extremely Impressed with the Quality and Depth of the EEA Membership List

Do you believe the EEA has a more impressive membership list than any other group in blockchain?





Early Q2 Price Performance Exceeds Community Expectations



A glimpse into Q2 2017:
 Bitcoin breaks \$2,500 and ether breaks \$230 in May

Data Source: CoinDesk's Q1 2017 Bitcoin and Ethereum Sentiment Survey
 CoinDesk's [bitcoin](#) and [ether](#) price pages
 Notes: Majority of responses received in mid-April 2017 (BTC at ≈\$1,200, ETH at ≈\$50,
 x-axis represents range of allowed responses



3

ENTERPRISE BLOCKCHAINS



Q1 2017 Enterprise Blockchain Summary

Hyperledger expands projects and members:

- 4 top level frameworks including EVM code, 130 members, proof of concepts in finance and working groups in healthcare

Enterprise Ethereum Alliance is born:

- EEA launches with major membership list, focused on permissioned ethereum with interoperability with public blockchain

Corporates expand staffing, R&D labs:

- Enterprises, consortia and working groups continue launching pilots, PoCs and tests

Ripple expands to Japan, completes pilot:

- Mitsubishi joins board, 47 bank consortia implements cloud-based payments pilot

R3 continues diverse tests:

- Demos ethereum applications, commercial paper programs, gears up for large raise

DTCC expands DLT settlement trials:

- Eying REPO market, working with startups including Digital Asset and R3

CoinDesk Research

Enterprise Ecosystem Overview:
[Q4 2016 State of Blockchain](#)



Permissioned Blockchains: Hyperledger

Hyperledger Frameworks

Hyperledger Sawtooth

Hyperledger Sawtooth is a modular platform for building, deploying, and running distributed ledgers. Hyperledger Sawtooth includes a novel consensus algorithm, Proof of Elapsed Time (PoET), which targets large distributed validator populations with minimal resource consumption.

» LEARN MORE

Hyperledger Iroha

Hyperledger Iroha is a business blockchain framework designed to be simple and easy to incorporate into infrastructural projects requiring distributed ledger technology.

» LEARN MORE

Hyperledger Fabric

Intended as a foundation for developing applications or solutions with a modular architecture, Hyperledger Fabric allows components, such as consensus and membership services, to be plug-and-play.

» LEARN MORE

Hyperledger Burrow

Hyperledger Burrow is a permissionable smart contract machine. The first of its kind when released in December, 2014, Burrow provides a modular blockchain client with a permissioned smart contract interpreter built in part to the specification of the Ethereum Virtual Machine (EVM).

» COMING SOON

PREMIER MEMBERS



- 'Umbrella' organization with multiple open-source frameworks and tool sets

- Hosted by the Linux Foundation

- Several financial PoCs
- Healthcare working group
- Over 130 members



Data Source: [Hyperledger](#)





Permissioned Blockchains: Enterprise Ethereum Alliance

- Launched in February
- Consortia of traditional financial and tech giants as well as blockchain startups
- Open-source standard for industry
- Targeting interoperability with public ethereum



A glimpse into Q2 2017:

- EEA adds 80+ new members

Data Source: [Enterprise Ethereum Alliance](#)



4

INVESTMENT



Diverse companies receive funding:

- Mining, cross-border payment, exchange and storage sectors receive funding

Chinese investment dominates:

- Largest VC deal, Bitfury, and ICO, Qtum, were China based projects

Seed and Series A VC deals lead:

- Early stage fundraisings comprised much of deal flow, only Veem and Bitfury were later

Large ICOs on the horizon:

- Year begins relatively slowly as numerous deals eye Q2 launch

ICO structures evolve:

- Pre-ICOs, dutch auctions, accreditation, 'SAFTs' and new mechanisms spread

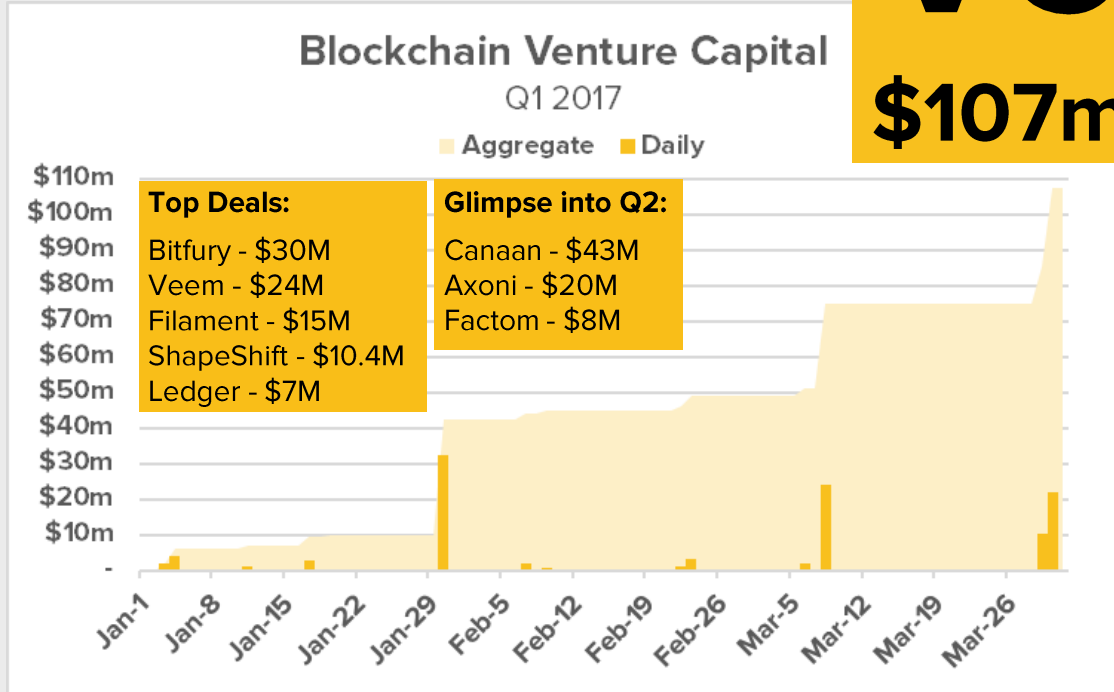
ICOs receive additional guidance:

- Advisory firms, legal groups and other services being advising projects on token sales

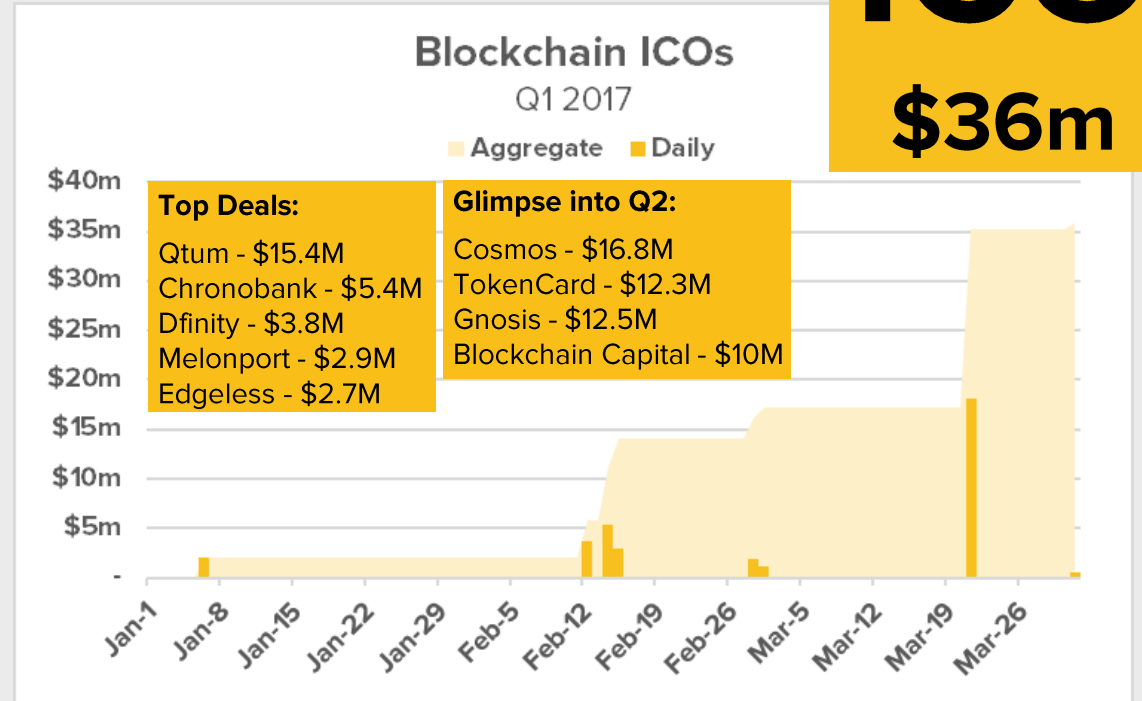


Venture Capital Tops \$107m, ICOs Follow with a Third of Volume, Large Deals on Horizon

VC
\$107m



ICO
\$36m



CoinDesk Research
ICO perspectives and community viewpoints:
Q4 2016 State of Blockchain, ICO Spotlight Study

Data Sources: [CoinDesk venture capital database](#), [Smith and Crown](#)
 Notes: Deals under \$100,000 excluded, \$ amount at time raised, including only fundraisers ending in 'Q1 2017' (1/1/17 – 3/31/17)



Venture Capital and ICO Deals

Q1 2017 Venture Capital		
Date	Project	VC Round (\$m)
1/3/2017	Bitpagos	\$1.90
1/4/2017	Blockstack	\$4.00
1/11/2017	Qtum	\$1.00
1/17/2017	SatoshiPay	\$0.68
1/17/2017	NeuFund	\$2.00
1/19/2017	CoolBitX	\$0.20
1/30/2017	Bitfury	\$30.00
1/30/2017	Bitpesa	\$2.50
2/7/2017	Hashed Health	\$1.85
2/9/2017	Coinfirm	\$0.70
2/22/2017	Bitbond	\$1.20
2/23/2017	Storj	\$3.00
3/6/2017	Cambridge Blockchain	\$2.00
3/8/2017	Veem	\$24.00
3/29/2017	ShapeShift	\$10.40
3/30/2017	Ledger	\$7.00
3/30/2017	Filament	\$15.00
Total		\$107.43

Q1 2017 ICOs		
Date	Project	ICO Round (\$m)
1/6/2017	Wings (WINGS)	\$2.07
2/12/2017	Dfinity (DFN)	\$3.75
2/14/2017	Chronobank (LH)	\$5.40
2/15/2017	Melon (MLN)	\$2.90
2/28/2017	Lykke (Lykke)	\$1.97
3/1/2017	Augmentors (DBT)	\$1.09
3/21/2017	Edgeless (EDG)	\$2.65
3/21/2017	Qtum (QTUM)	\$15.43
3/31/2017	Equibit (EQB)	\$0.55
Total		\$35.82

Data Sources: [CoinDesk venture capital database](#), [Smith and Crown](#)

Notes: Deals under \$100,000 excluded, \$ amount at time raised, including only fundraisers ending in 'Q1 2017' (1/1/17 – 3/31/17)



ICO Structures Continue to Evolve With Guidance and Influence from Specialized Firms

'Pre-ICO' Funding Rounds

'Simple Agreement for Future Tokens (SAFT)'

- Inspired by the [YC SAFE](#)
- Used by [Colony](#), [Filecoin](#)

Institutional Investment Prior to ICO

- [Ox](#)

BACKED BY



Advisory Groups and ICO Services

Investment Banking and Advisory

- [Argon Group](#)
 - Supported [Blockchain Capital's](#) ICO

Fundraising Platforms

- [CoinList](#)
 - Created by [Protocol Labs](#) and [AngelList](#)
 - [Filecoin](#) token sale coming soon

Accelerators

- [Boost VC](#)

Investment Funds

Venture Capital Backed

- [Polychain Capital](#)



Non-VC Backed

- [CoinFund](#)

Legal Requirements

Accreditation Requirements

- [Blockchain Capital](#), [Filecoin](#)

Geographic Restrictions

- [Melonport](#)
 - US investors could not participate in ICO

Note: Some of the above announced in Q2 2017



5

GOVERNMENT & REGULATION



Q1 2017 Government & Regulation Summary

People's Bank of China cracks down on Big 3:

- The PBoC investigated the operational policies behind numerous domestic bitcoin exchanges, causing freezes, fee increases and drastically cut volume

SEC rejects 2 bitcoin ETF proposals:

- The Winklevoss' COIN ETF was formally rejected by the SEC after nearly 4 years of observation, SolidX rejection shortly followed

New fundraising mechanisms flourish:

- With limited guidance and examples of enforcement, entrepreneurs look to ICO variants

Japan says bitcoin is a legal payment method:

- The Japanese FSA declared bitcoin a payment instrument, leading to increased JPY trading volume

IRS subpoena to Coinbase remains in stalemate:

- The IRS yet to receive user trading information from Coinbase, who believes too far reaching

Token issuers receive traditional guidance:

- Advisory groups, venture capitalists, legal firms and accelerators target new client and activity type



Americas: Governments Engage with Community Through Research, Market Analysis After 2 ETF Rejections



Jan. 18 – FINRA engages with community, publishes DLT report

Feb. 17 – Bank of Canada publishes research on potential learnings from prior public and private currencies

Mar. 10 – Winklevoss' COIN ETF proposal rejected by SEC

Mar. 28 – SolidX's ETF proposal rejected by the SEC



Europe: Governments Address Their Elementary Knowledge, Reach Out to Startups, Regulators for Guidance and Partnerships



Jan. 7 – ESMA takes largely hands-off approach to DLT regulation, says premature to fully appreciate changes technology could bring and appropriate regulatory response

Jan. 25 – France Central Bank opens blockchain lab to engage and work with more startups

Feb. 22 – Poland files with Ministry of Finance to regulate local cryptocurrency industry

Mar. 9 – EU publishes language on digital currency regulation, addressing major concerns with pseudoanonymity in AML context



Asia: Major Regions Pressure Domestic Exchanges to Institute Regulatory and Operational Policies



Jan. 6 – PBoC issues public warnings after meeting with major domestic exchanges around operational and regulatory policies

Jan. 23 – Chinese ‘Big 3’ initiate fees after years of free trading

Feb. 7 – The Central Bank of the Philippines steps up regulation for domestic bitcoin exchanges with additional registration, AML and reporting requirements

Mar. 1 – Reserve Bank of India official calls potential of virtual currency and blockchain ‘overstated’

Mar. 31 – Japan prepares to recognize bitcoin as a legal payment method



Middle East and Africa: Concern, Caution and Uncertainty Plague Officials



Jan. 1 – UAE Central Bank publishes ‘Regulatory Framework for Stored Values and Electronic Payment Systems’ prohibiting all virtual currencies

Jan. 9 – Indonesian AML agency claims Islamic State militants are using online money services like PayPal and bitcoin to send funds to operatives

Jan. 12 – Nigerian SEC encourages public to exercise extreme caution with regards to cryptocurrencies as investment vehicles in light of Onecoin scams

Feb. 1 – UAE clarifies that virtual currency prohibition does not apply to bitcoin, cryptocurrencies and blockchain technology



5A

IRANIAN BLOCKCHAIN SENTIMENT

SPOTLIGHT STUDY



Q1 2017 Spotlight Study: Iranian Blockchain Sentiment

OUR STUDY

We surveyed 200 people using a survey translated to Farsi and distributed on telegram to illustrate [the state of blockchain in Iran](#)



OUR GOALS

Identify perception around the state of bitcoin:

- current usage motivations
- growth expectations

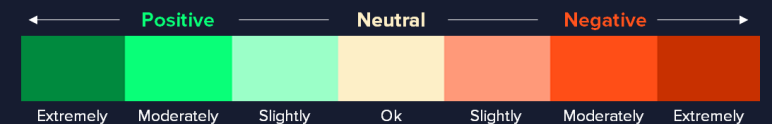
Identify perception around government regulation:

- on digital currency in Iran
- enterprise projects and interoperability

Identify perception around Sharia law compliance:

- bitcoin as a payments system
- banking with blockchain

The following scale and color system is used extensively throughout:





Q1 2017 Iranian Blockchain Sentiment Survey: Key Takeaways

35%

Used bitcoin and other cryptocurrencies primarily for **cross-border payments**

66%

Think the government will be effective in **advancing bitcoin and its community**

77%

Believe bitcoin usage will **grow over the next 5 years**

63%

Believe bitcoin will make **global finance more equitable**

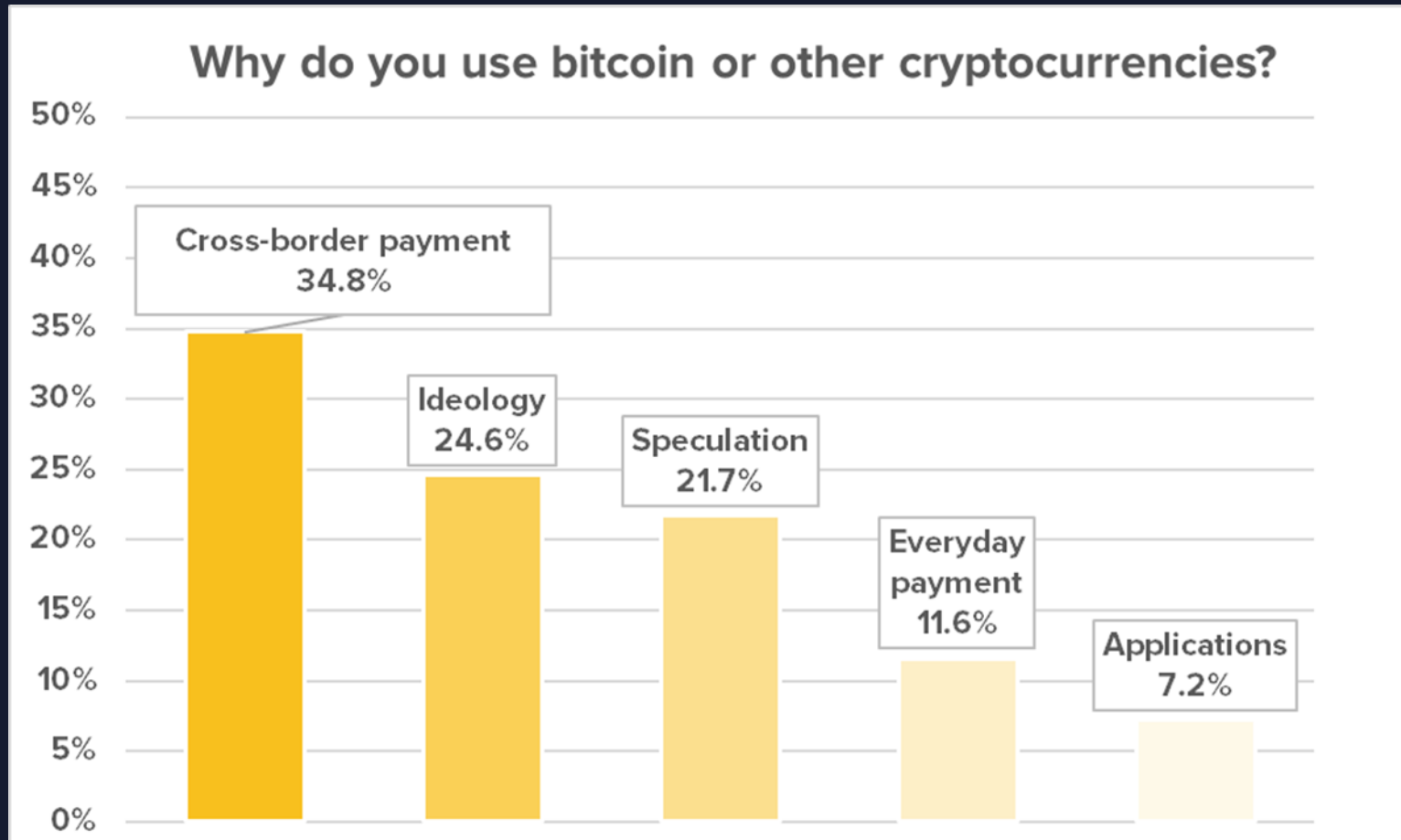
Our audience was primarily young Iranian males responding pseudonymously online.

The largest group of respondents used bitcoin and cryptocurrencies primarily for cross-border payments, followed by ideology and speculation.

The pool was largely positive on bitcoin and blockchains values and usage, and torn yet more positive than negative on the technology's relationship with government regulation and Sharia compliance.



Survey Demographic: Young Males Using Cryptocurrency Primarily for Cross-Border Payments



80% male

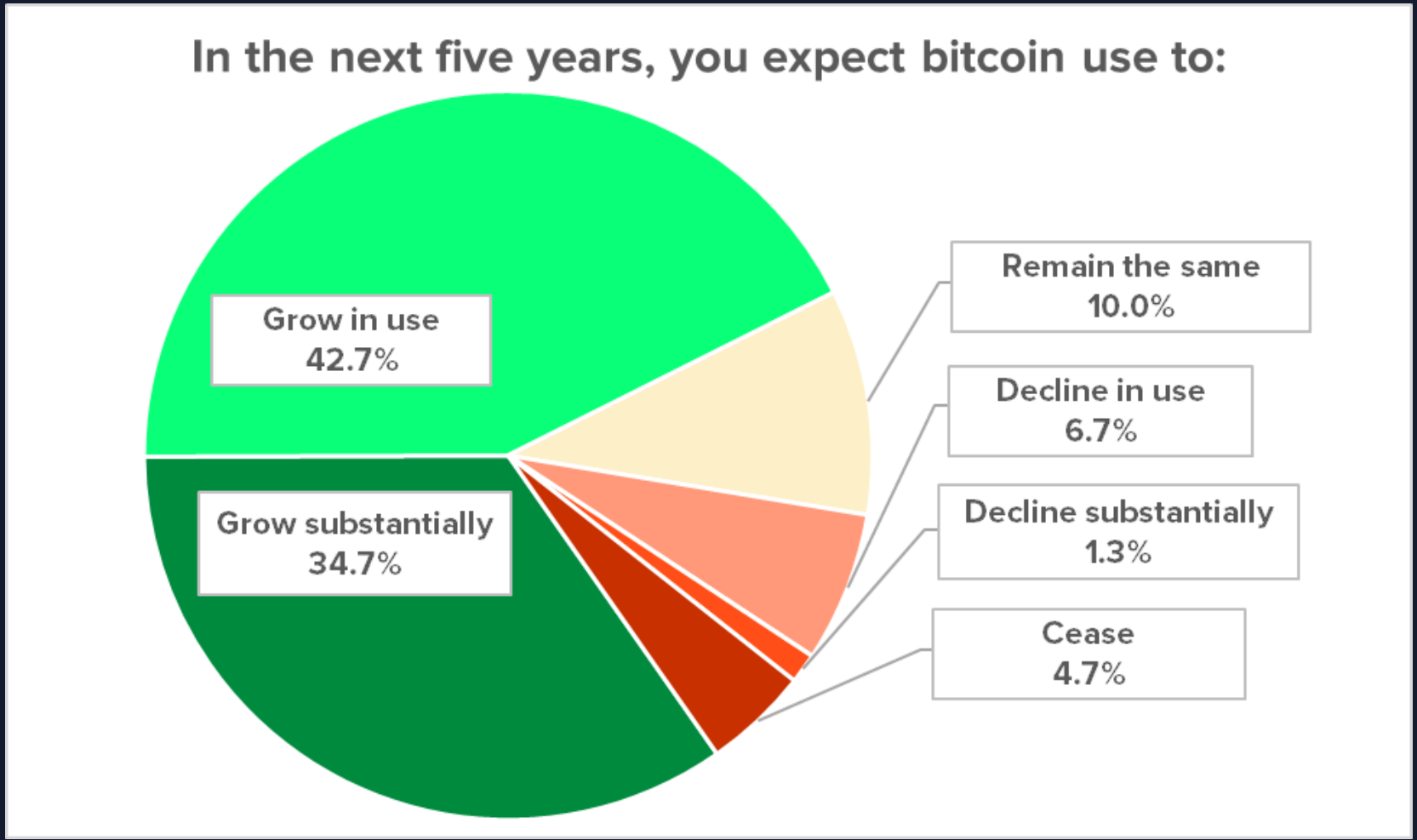
98% under 44

- Cross-border payment (to avoid remittance services)
- Ideology (I do not think government or banks should control money)
- Speculation (I want to profit)
- Everyday payment (to send others value)
- Applications (I use ethereum dapps)

Data Source: CoinDesk's Q1 2017 Iranian Blockchain Sentiment Survey
Notes: Of those who did not answer 'I do not use bitcoin'



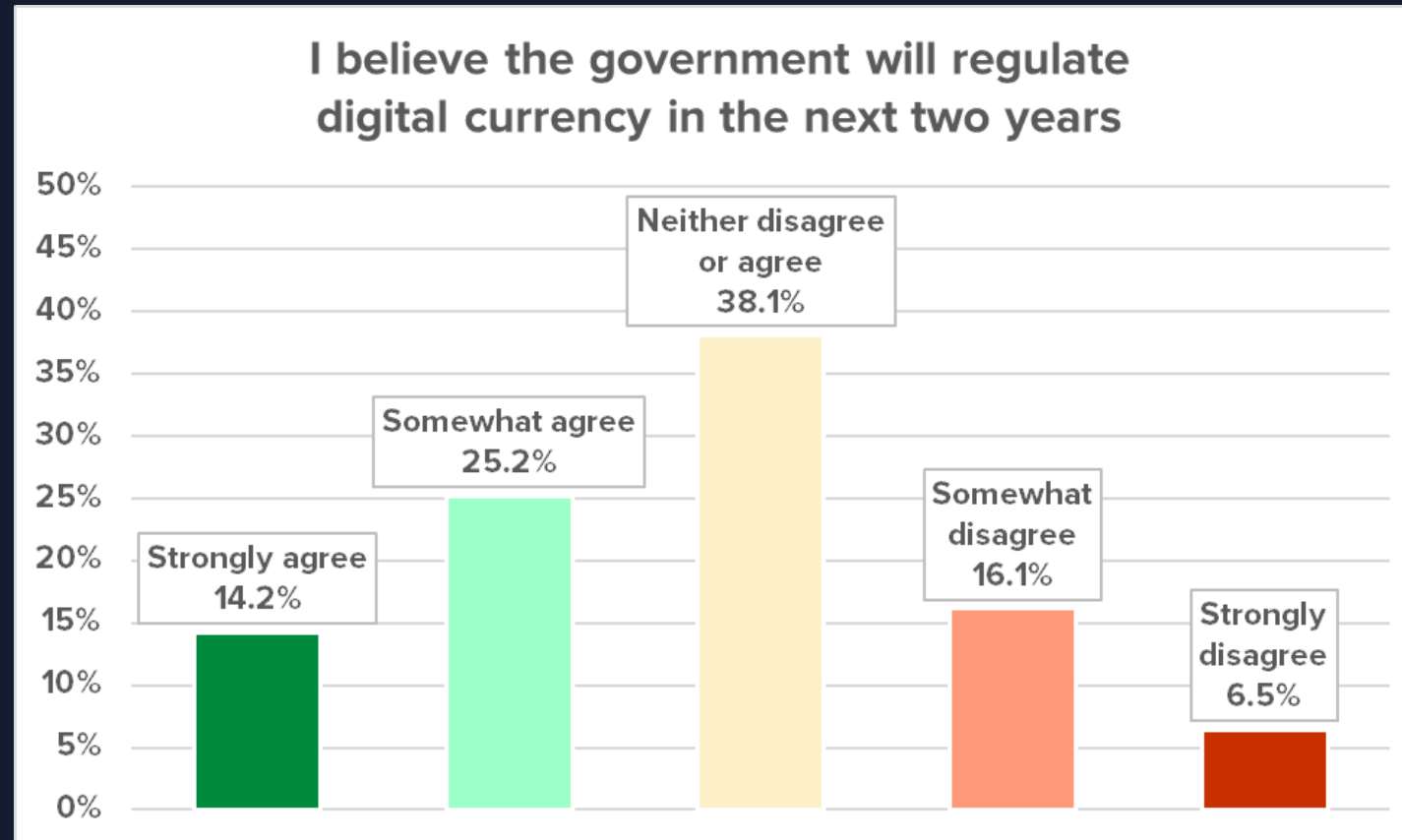
Bitcoin Usage Expected to Grow Within Next 5 Years



Data Source: CoinDesk's Q1 2017 Iranian Blockchain Sentiment Survey



More Agree than Disagree the Government Will Regulate Digital Currency Within 2 Years, Will Stimulate Usage



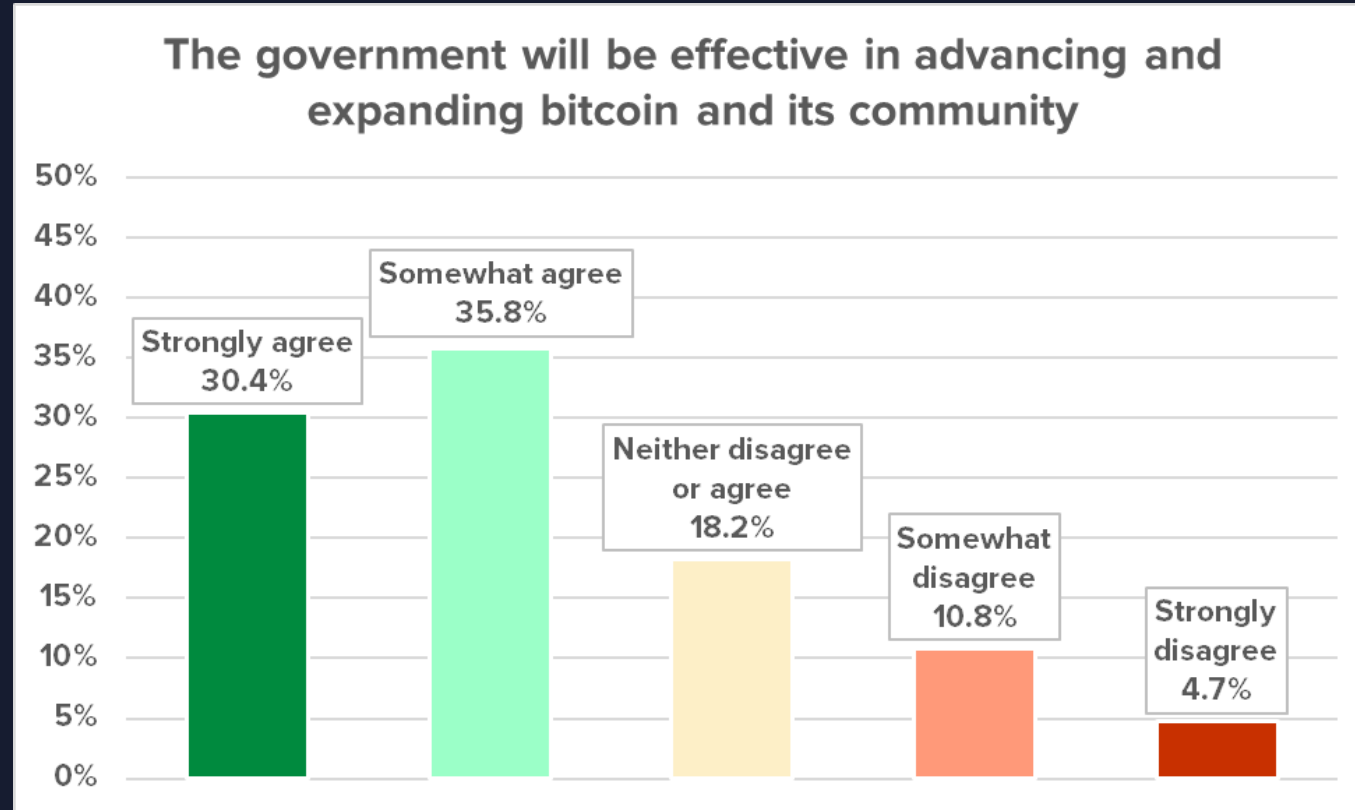
39.4%
agree

21.6%
disagree

62% believe that government regulation will increase the usage of digital currency



Community Positive About Government's Involvement with Expanding Bitcoin

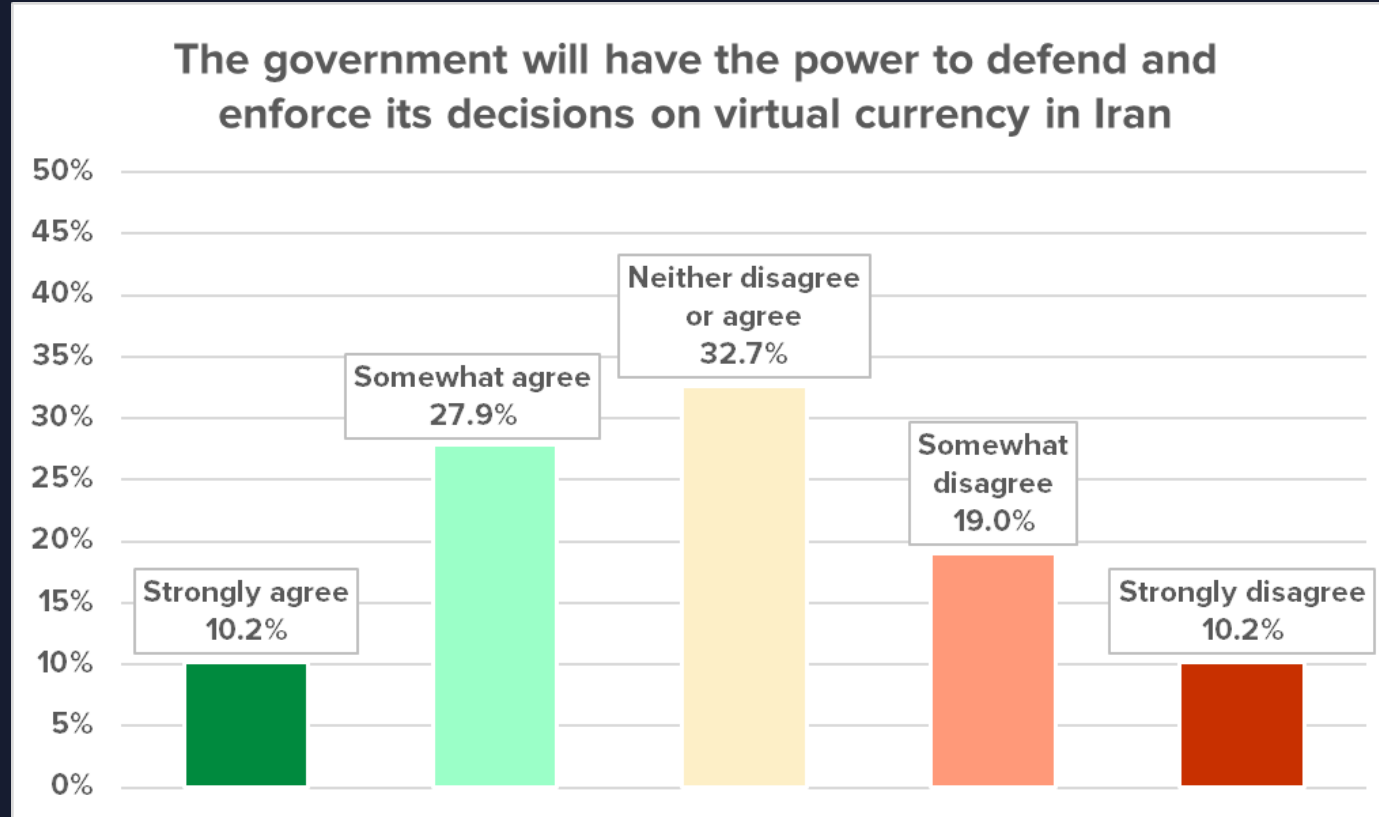


66.2%
agree

15.5%
disagree



More Agree than Disagree Government Can Defend and Enforce Decisions Across Iran



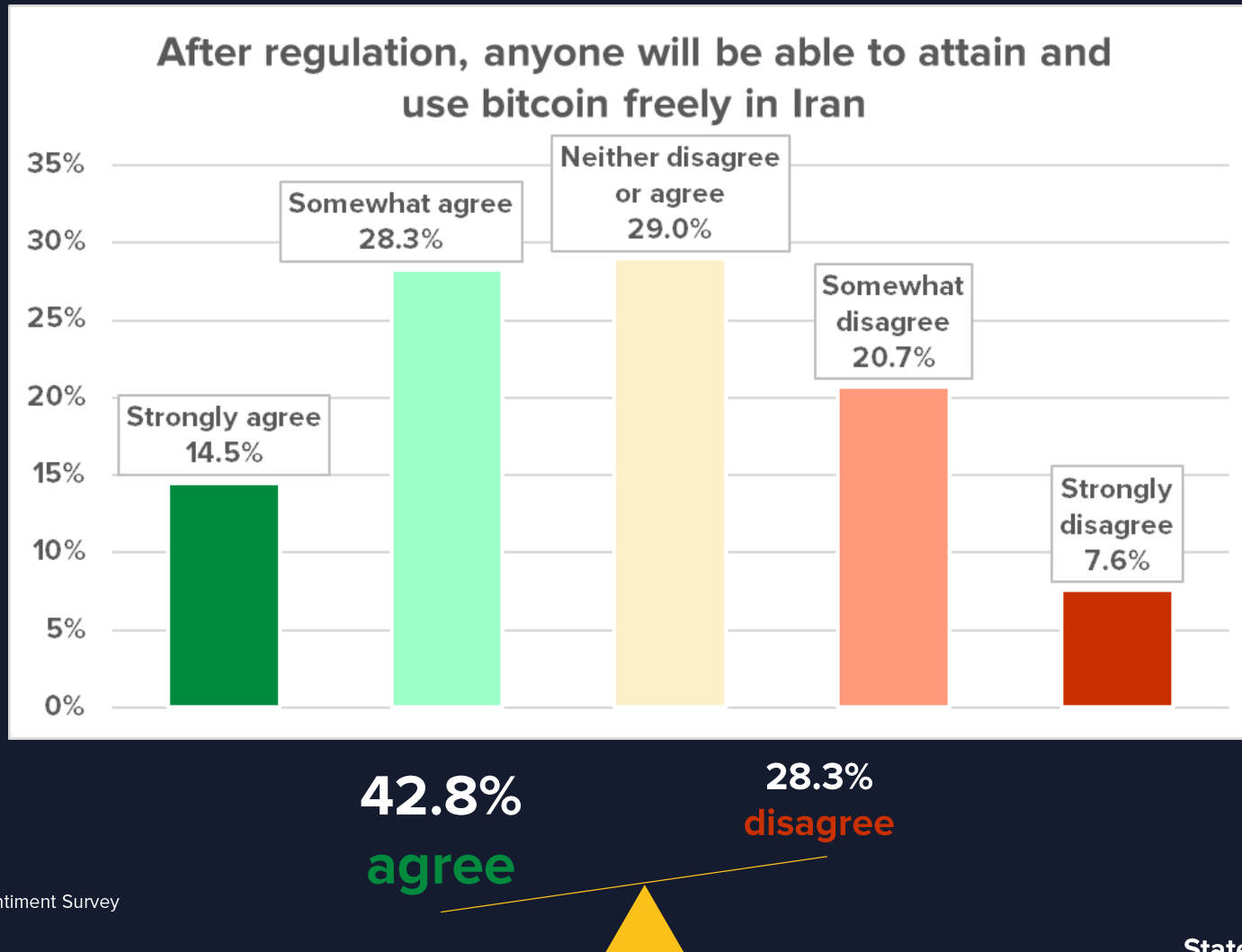
38.1%
agree

29.2%
disagree

Data Source: CoinDesk's Q1 2017 Iranian Blockchain Sentiment Survey
Notes: Full question: "Considering the complexities of regulation in Iran, the government (as the representative of the people) will have the power to defend and enforce its decisions on virtual currency in Iran."



More Agree than Disagree Anyone Will Be Able to Attain and Use Bitcoin Freely in Iran After Regulation

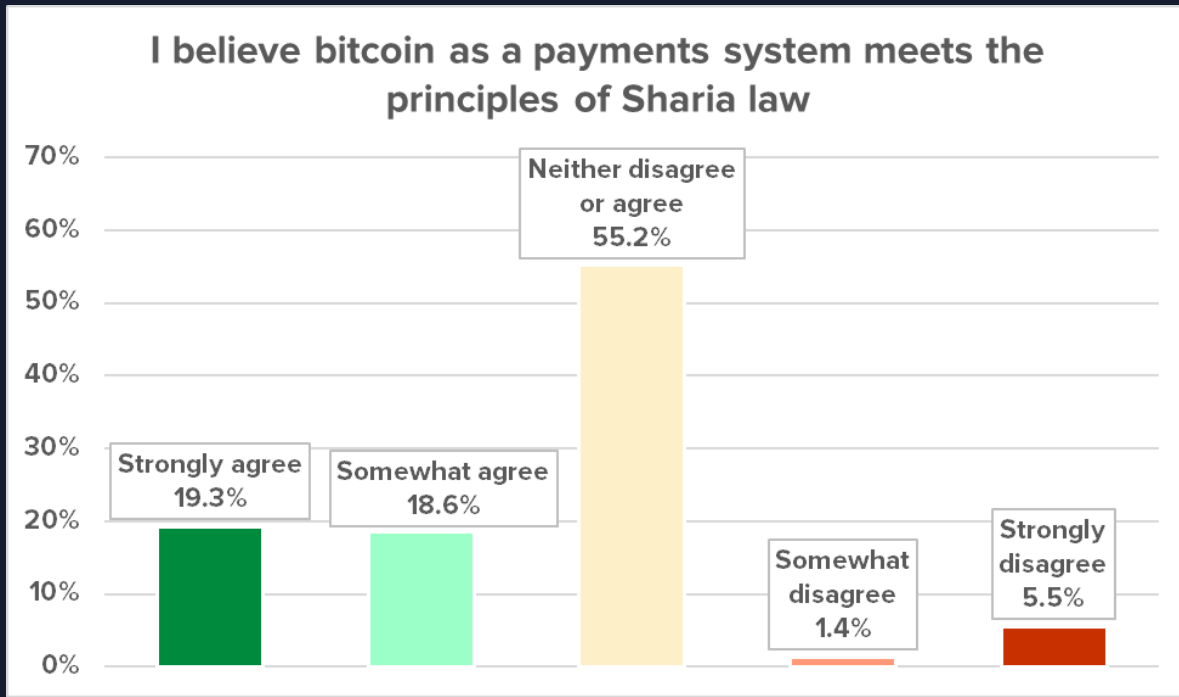


Data Source: CoinDesk's Q1 2017 Iranian Blockchain Sentiment Survey



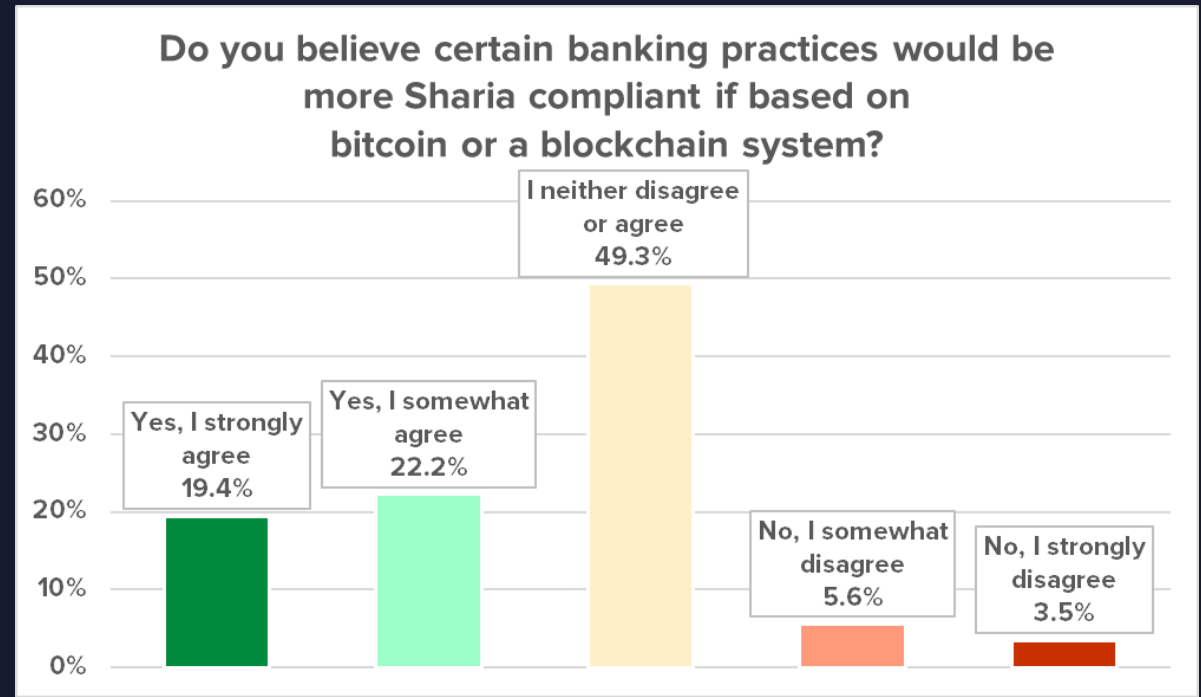
Majority Unsure But Very Few Disagree

Bitcoin and Blockchain Technology Can Fit Within Sharia Compliance



37.9%
agree

6.9%
disagree

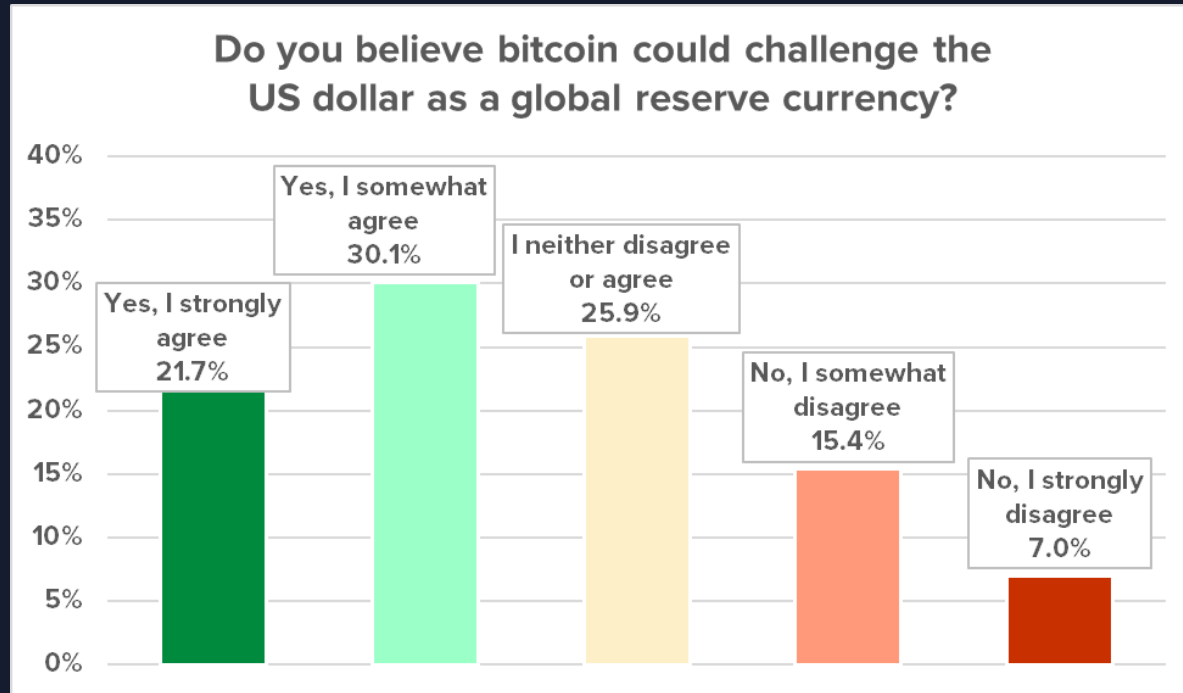


41.6%
agree

9.1%
disagree

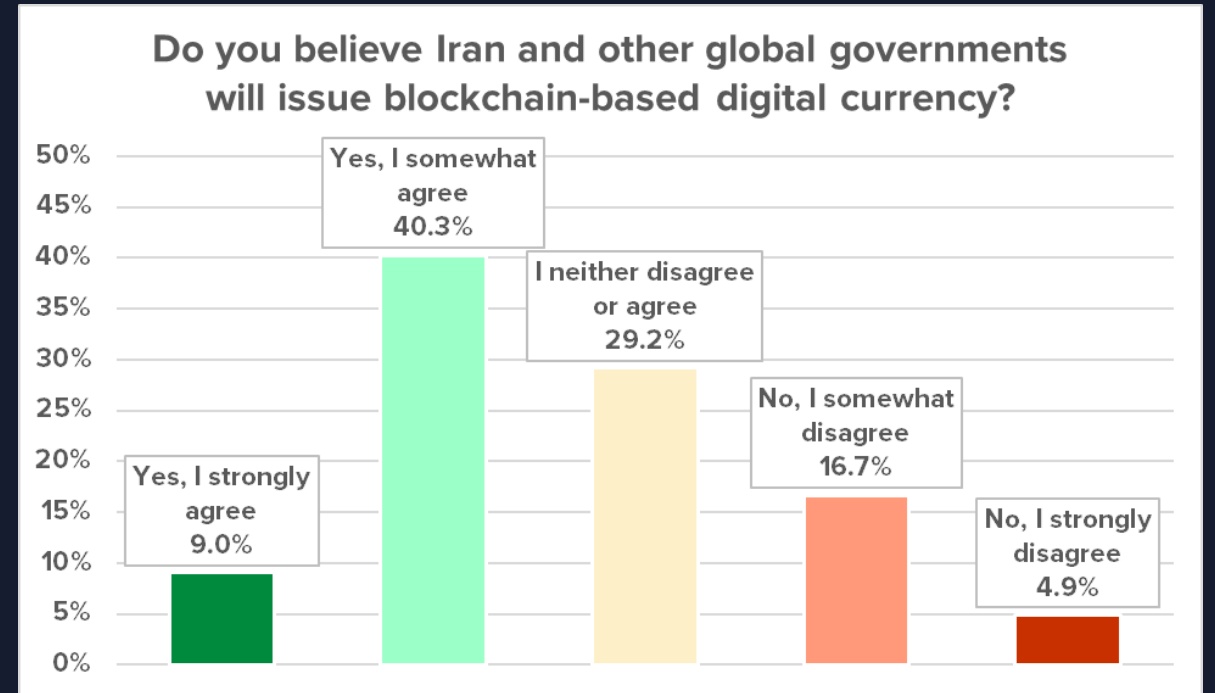


More Agree than Disagree Bitcoin Can Challenge Global Reserve Currencies, Governments May Issue Own Virtual Currencies



51.8%
agree

22.4%
disagree

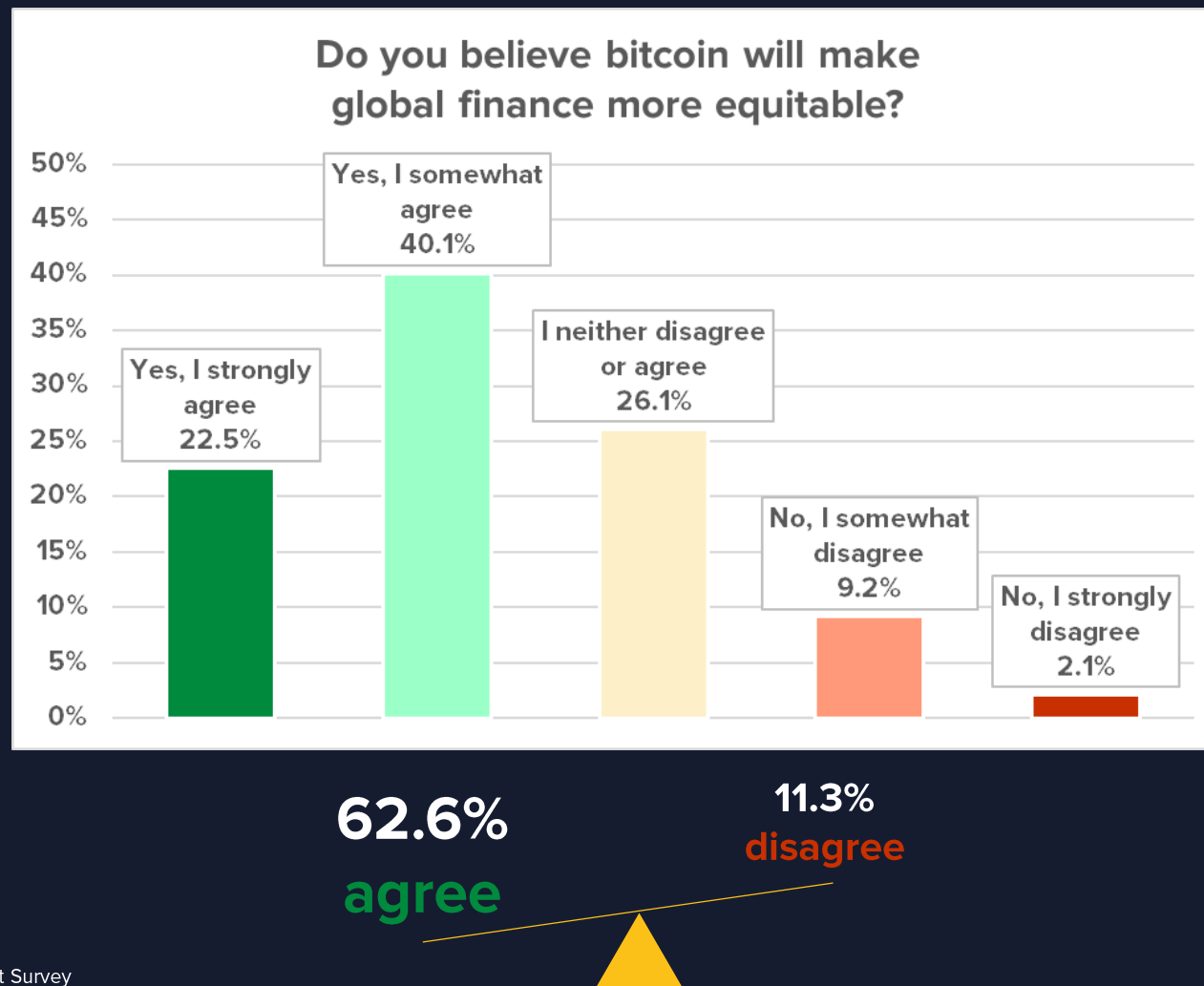


49.3%
agree

21.6%
disagree



Bitcoin Seen as Positive For Global Finance, Bringing New Opportunities and Inclusion to Masses



Data Source: CoinDesk's Q1 2017 Iranian Blockchain Sentiment Survey

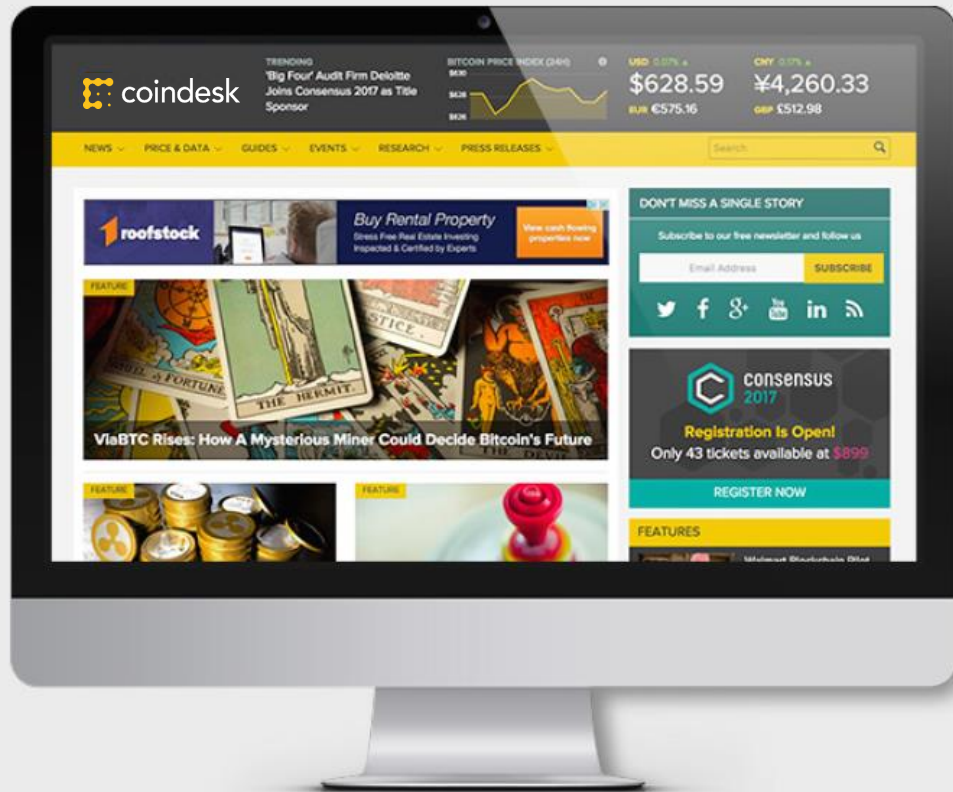


6

COINDESK



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



Headquarters: Times Square, New York City

News: 25 million online readers since 2013

Events: 3,000+ attended our 2017 [Consensus](#) and [Construct](#) conferences in New York City and San Francisco

Data: Industry reference points including [Bitcoin Price Index](#), [Ethereum Price](#), [Venture Capital database](#) and [API](#)

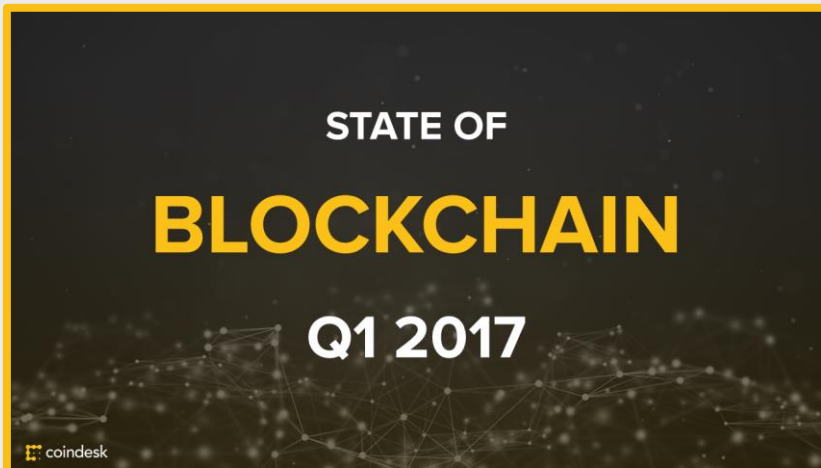
Paid Research: ['Blockchains for Insurance'](#) and ['Advances in Blockchain Privacy and Confidentiality'](#) launched YTD



For three 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



construct



consensus

- **We are the leading events firm in blockchain**
- Our annual [Construct](#) and [Consensus](#) events have attracted thousands of entrepreneurs, investors, executives, regulators, journalists and more to [San Francisco](#) and [New York City](#)
- An abbreviated version of the 'State of Blockchain' was presented [live](#) at Consensus 2017!



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

Data Sources: [Ethereum](#), [MultiChain](#)
Notes: Ledgers and protocol rules may be changed via forks, although these changes can introduce risks



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



6B

STATE OF BLOCKCHAIN

AT CONSENSUS 2017



Consensus 2017 Opening Remarks: The State of Blockchain



[Full Video](#)

[Slides](#)



Acknowledgements and More Information

Acknowledgements and Additional Information

Significant Data Sources

[Coincap](#)

[Coinmarketcap](#)

[Blockchain](#)

[Etherscan](#)

[Smith and Crown](#)

References

Hudson Jameson

Zooko Wilcox

Bitcoin and Ethereum Sentiment Survey

Based on a survey designed by CoinDesk's research team and distributed in mid-April 2017 using [CoinDesk's newsletter](#), [dedicated articles](#), [social media](#) and [other forums](#). ≈1,100 people responded, ≈200 to only questions on bitcoin, ≈300 to only questions on ethereum and ≈600 to questions on both. At least ≈50% of people responded to each question. Some demographic information is displayed [here](#).

Iranian Blockchain Sentiment Survey

Based on a survey designed by CoinDesk's research team in collaboration with [Farzad Hashemi](#). Telegram bot developed, executed, and translated to farsi by Farzad Hashemi and his team: Soheil Nikzad, Scott McDevitt, Petr Ryabinin, and Andrew Pavlov. Distributed in early-mid April 2017 using a [Telegram](#) bot and translated question and answer choices. 200 people responded. At least ≈70% of people responded to each question. Some demographic information is displayed [here](#).



CoinDesk makes every effort to ensure the information used these slides is accurate and up to date. We cannot, however, accept responsibility for any loss or inconvenience caused by reliance on the material contained here.

This presentation does not constitute financial advice or an investment recommendation in any way whatsoever. It is recommended you perform your own independent research and/or speak with a qualified investment professional before making any financial decisions.

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