



BITCOIN: DON'T LOOK DOWN!

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BITCOIN: DON'T LOOK DOWN!

- The Recent Bitcoin Boom**
- What is Bitcoin?**
- Can Bitcoin Ever Become a Currency?**
- Bitcoin As a Means of Exchange**
- The Criminal Element**
- What About the Next Generation?**
- So What Explains the Bitcoin Boom?**

THE RECENT BITCOIN BOOM

❑ Price Milestones

- ❑ **\$1,000/coin: JAN 2017**
- ❑ **\$2,000/coin: MAY 2017**
- ❑ **\$10,000/coin: DEC 2017**

❑ Exchange Operators Coming Around

- ❑ **LedgerX rolled out Bitcoin derivatives trading in October**
 - ❑ *The company oversaw \$1 million in Bitcoin trades in week 1 alone.*
- ❑ **CME Group and Cboe plan to do the same**
 - ❑ *Both exchange operators have been greenlighted by the CFTC.*

❑ Money Managers Jumping Onboard

- ❑ **Goldman Sachs and JPMorgan both experimenting with Bitcoin services**

BITCOIN'S METEORIC RISE

Bitcoin Price (January 1, 2017 to Present)



Source: CoinDesk (2017)

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BITCOIN IN RARE COMPANY

Security	Market Cap	S&P 500 Ranking
AAPL	\$898.35B	#1
GOOGL	\$728.14B	#2
MSFT	\$642.32B	#3
//	//	//
VZ	\$191.77B	#23
BITCOIN	\$190.80B	#24
PM	\$190.42B	#25
//	//	//
UPS	\$97.50B	#50
KHC	\$97.18B	#51
NKE	\$96.78B	#52

Source: Bloomberg Terminal (2017), CoinMarketCap.com (2017)

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BITCOIN TRANSACTIONS SOARING

Number of Daily Bitcoin Transactions: 7-Day Moving Average (January 2009 to Present)



Source: Blockchain Luxembourg S.A. (2017)

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WHAT IS BITCOIN?

❑ The Faceless Creator: “Satoshi Nakamoto”

- ❑ Vision laid out in 2008 paper, *A Peer-to-Peer Electronic Cash System*

❑ Key Features

❑ Distributed ledger (no centralized control)

- ❑ *Ledger keeps real-time record of everyone’s transactions on everyone’s computer; miners incentivized to gather and verify transactions into a single “block chain”*

❑ Secrecy of transactions

- ❑ *Though everyone’s transaction is visible on the ledger, it’s near-impossible to link that information to any one user. Not private, but anonymous.*

❑ New Competitors

- ❑ **Ethereum: for complex, B2B transactions**
- ❑ **Ripple: good for high-speed transactions**
- ❑ **Roughly two thousand other “crypto-currencies”**

THE WILD WEST OF DIGITAL CURRENCIES

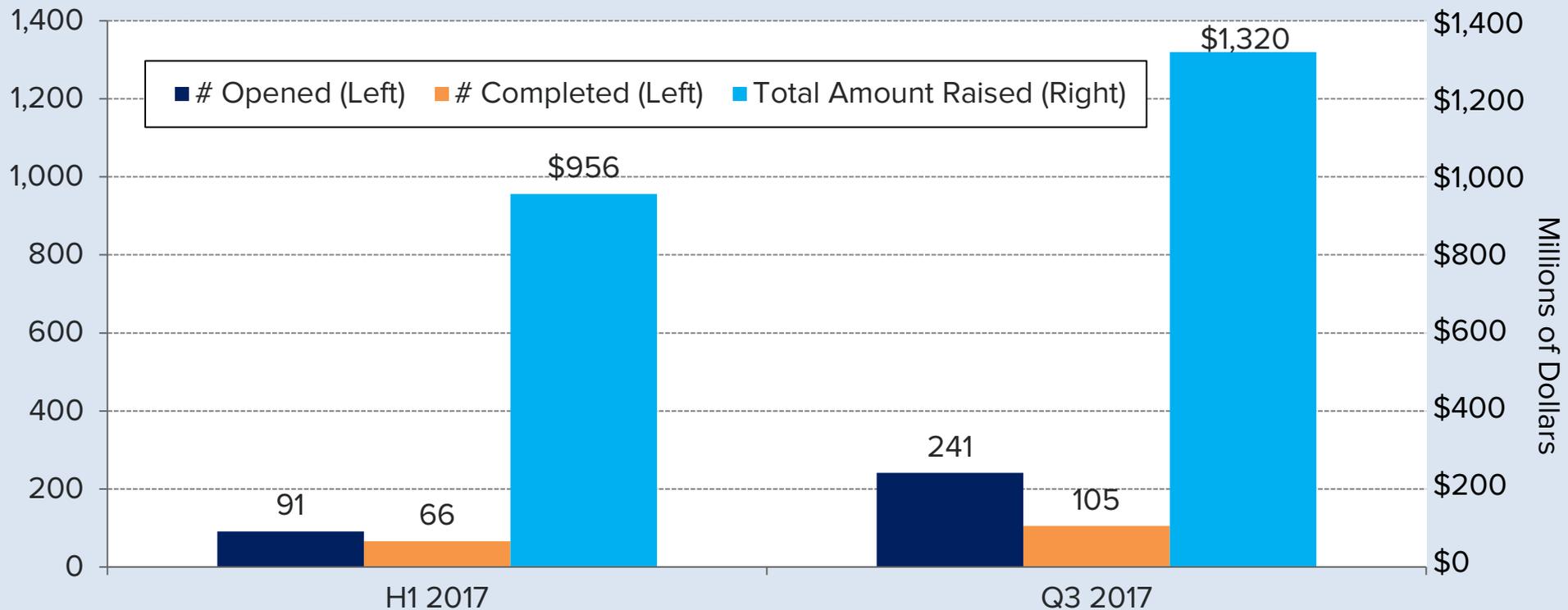
#	Name	Market Cap	Price	Volume (24h)	Circulating Supply	Change (24h)	Price Graph (7d)
1	 Bitcoin	\$190,804,400,322	\$11,411.90	\$6,874,010,000	16,719,775 BTC	-3.04%	
2	 Ethereum	\$44,596,602,005	\$463.91	\$1,076,550,000	96,132,013 ETH	-3.39%	
3	 Bitcoin Cash	\$25,920,446,076	\$1,539.42	\$876,293,000	16,837,800 BCH	-5.06%	
4	 Ripple	\$9,653,631,968	\$0.249946	\$119,460,000	38,622,870,411 XRP *	-3.67%	
5	 IOTA	\$7,811,897,656	\$2.81	\$806,913,000	2,779,530,283 MIOTA *	44.44%	
6	 Dash	\$5,902,590,974	\$763.28	\$163,734,000	7,733,202 DASH	-2.96%	
7	 Bitcoin Gold	\$5,361,193,208	\$321.26	\$147,155,000	16,688,124 BTG	-3.75%	
8	 Litecoin	\$5,345,698,684	\$98.77	\$350,822,000	54,124,833 LTC	-4.82%	
9	 Cardano	\$3,457,478,565	\$0.133354	\$71,259,200	25,927,070,538 ADA *	-0.73%	
10	 Monero	\$3,132,846,119	\$203.00	\$74,249,700	15,433,120 XMR	-0.99%	

Source: CoinMarketCap.com (2017)

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INITIAL COIN OFFERINGS SURGING

Initial Coin Offering Statistics (H1 2017 vs. Q3 2017)



Source: Token Report (2017)

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CAN BITCOIN EVER BECOME A CURRENCY?

PROBABLY NOT. HERE'S WHY:

❑ Doesn't Fit Anywhere in the Currency Spectrum

- ❑ *Historically, all currencies have been backed either by some tangible asset (e.g., barter system evolving into gold standard) or by sovereign decree (e.g., public debt evolving into "fiat currency"). **Bitcoin checks neither box.** It's not like gold, whose scarcity and inherent value are known. And it's not like cash, backed by the full faith and credit of the state.*

❑ Unlinked to Thing or Law, Bitcoin Shows Extreme Volatility

- ❑ *Volatility undermines Bitcoin's viability as a unit of account or a store of value.*

❑ Fundamental Problem?

- ❑ *Real-world currencies are built on tradition, transparency, and trust.*
- ❑ *Bitcoin, by contrast, is predicated on novelty, secrecy, and distrust.*

BITCOIN AS A MEANS OF EXCHANGE

❑ Problems With Large Transactions

❑ Bitcoin is easily stolen

- ❑ *If the “key” that links you to your digital wallet is stolen, your Bitcoin ownership disappears—and is virtually impossible to reclaim.*
- ❑ *Hacks are alarmingly common: Since 2011, more than 980,000 Bitcoins have been stolen in hacks of Bitcoin exchanges (6% of all Bitcoins exist today!).*

❑ Problems With Small Transactions

❑ High fees

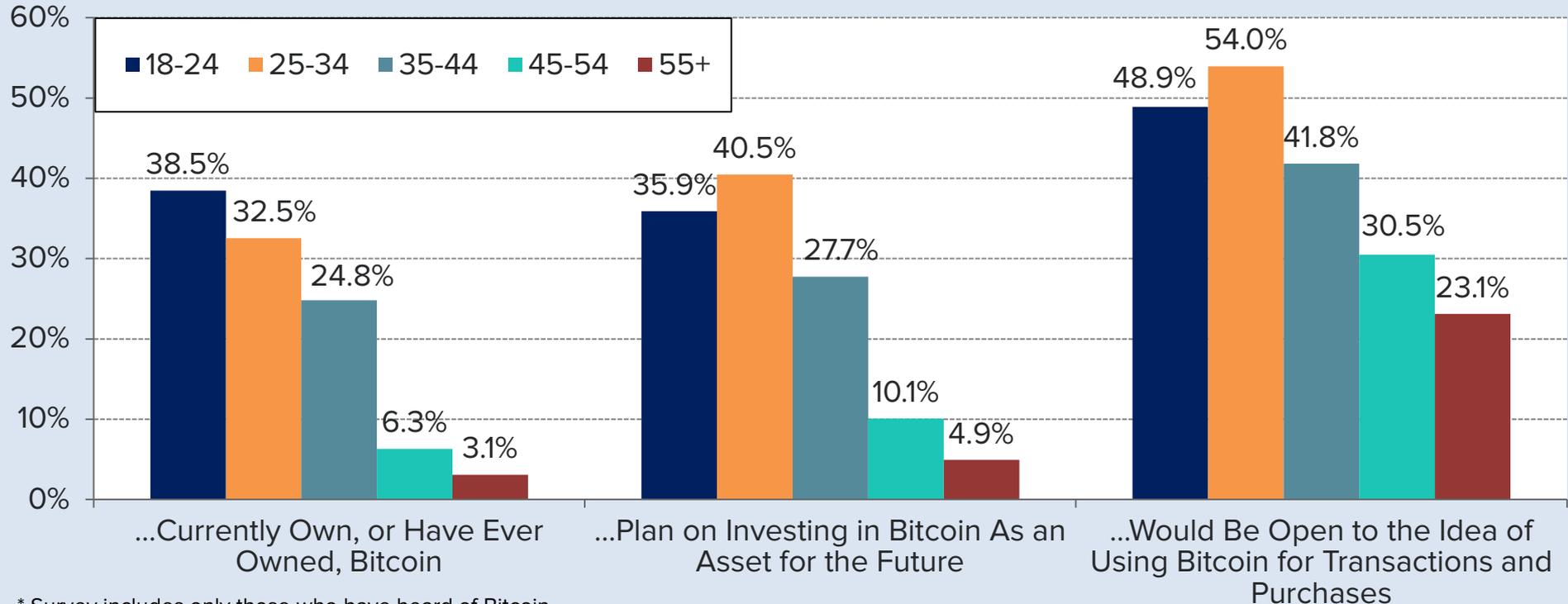
- ❑ *Thanks to increased adoption, the average Bitcoin merchant transaction fee has jumped from 35 cents to more than \$5 in the past year alone.*

❑ Fees driven by miner “rent,” but also by negative real economies of scale

- ❑ *Bitcoin’s global mining network currently consumes more electricity annually than the entire country of Ireland; 1/20,000 less energy efficient than VISA.*

MILLENNIALS *APPEAR* OPEN TO BITCOIN

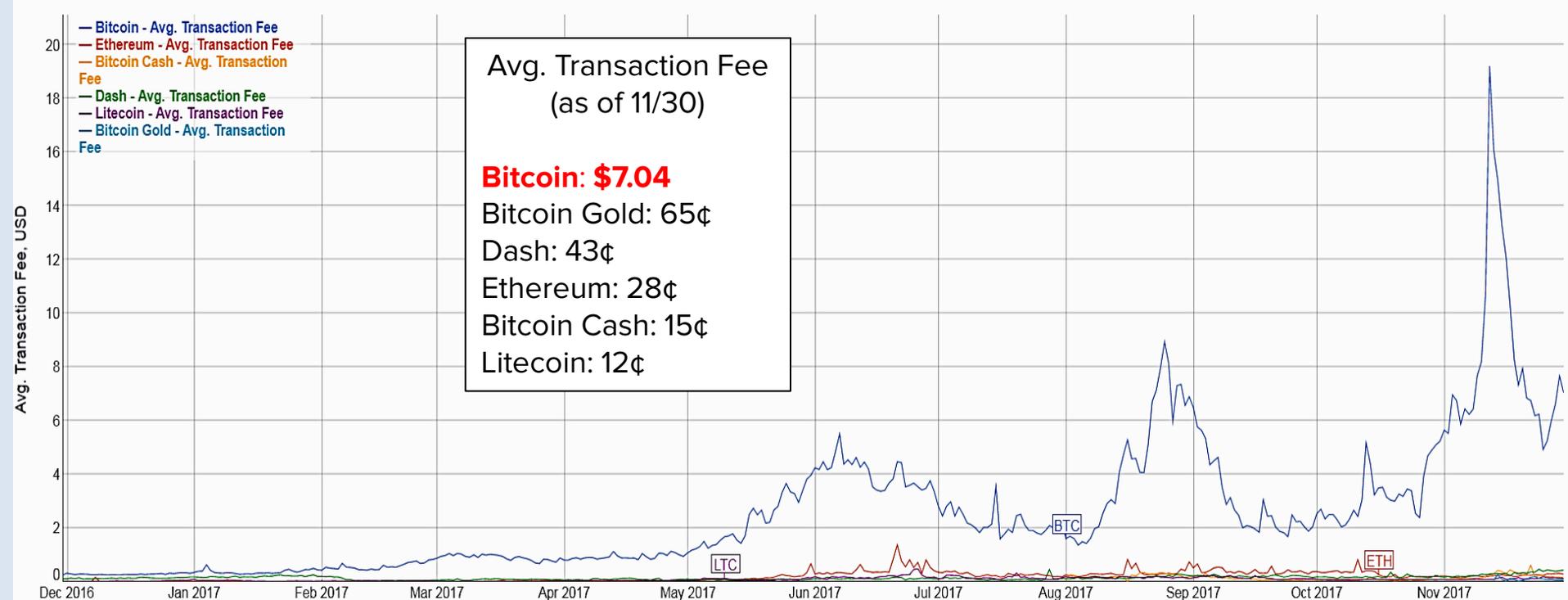
Share of Respondents* Who Say They...



* Survey includes only those who have heard of Bitcoin.
Source: LendEDU (2017)

BITCOIN FEES: PROHIBITIVE FOR MERCHANTS

Average Transaction Fee of Various Digital Currencies



Avg. Transaction Fee
(as of 11/30)

Bitcoin: \$7.04
Bitcoin Gold: 65¢
Dash: 43¢
Ethereum: 28¢
Bitcoin Cash: 15¢
Litecoin: 12¢

THE CRIMINAL ELEMENT

WHERE BITCOIN TRULY DOES EXCEL: ILLICIT ACTIVITY

❑ A Staple of the Darkweb

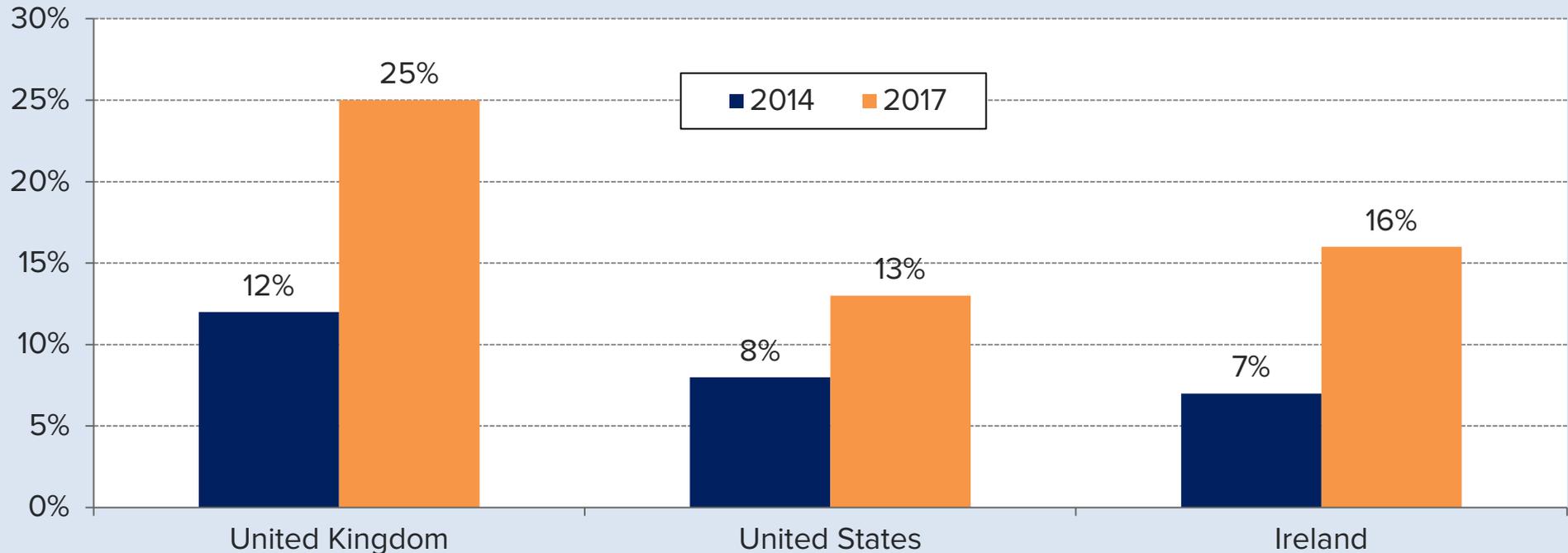
- ❑ *Crime has been thriving on Bitcoin ever since its inception—everything from drugs, human trafficking, and weapons, child porn, extortion, espionage. Add illegal capital transfers. Add violations of state sanctions (North Korea, Iran). Add in global tax evaders.*
- ❑ *Why? Identities and IP addresses can't be tracked so transactions remain anonymous. Perfect for other-than-legal users.*

❑ As a means of exchange, crime comprises well over half of Bitcoin use

- ❑ **Bitcoin average daily transaction volume: \$58 billion in 2016. Equates to...**
 - ❑ *14% of estimated global drug revenue,*
 - ❑ *7% of estimated gross global illicit drug trade, and*
 - ❑ *.03% of estimated global tax-evading assets.*

THE GLOBAL DARKWEB DRUG EPIDEMIC

Share of Drug Users Who Report Obtaining Drugs From Web in Past Year, Selected Countries (2014 vs. 2017)

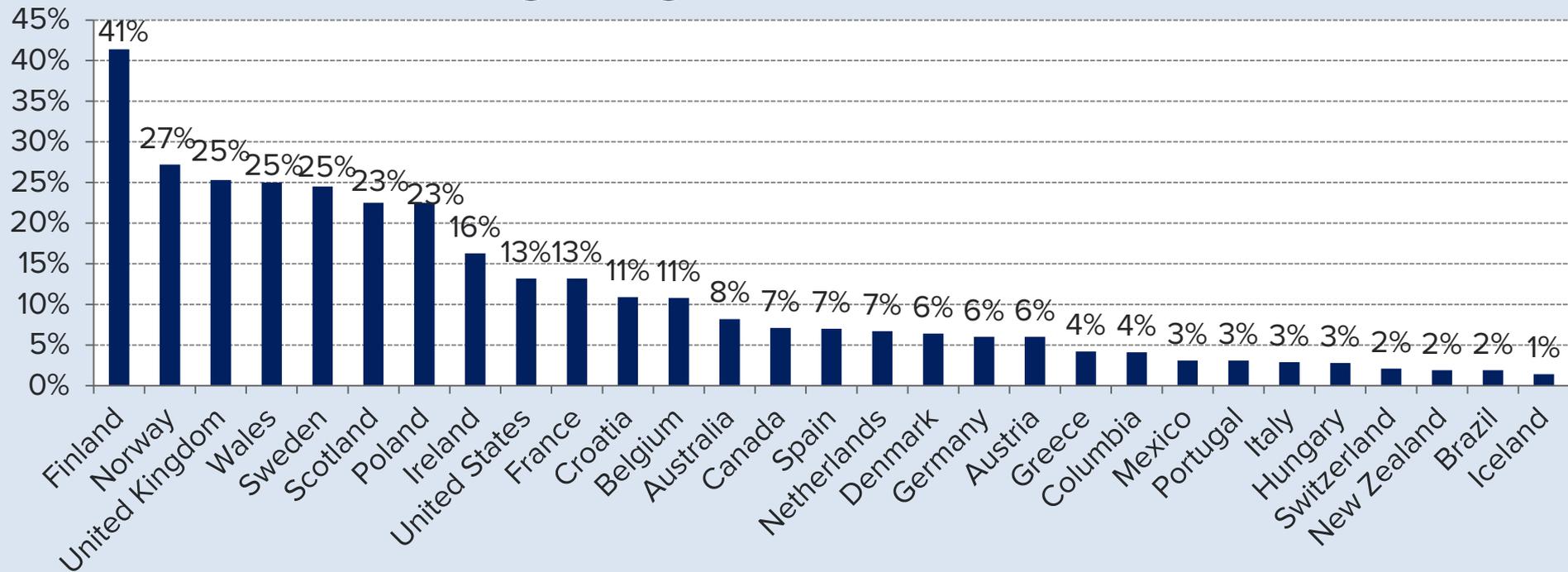


Source: *Global Drug Survey 2017*

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THE GLOBAL DARKWEB DRUG EPIDEMIC

Share of Drug Users Who Report Obtaining Drugs From Web in Past Year

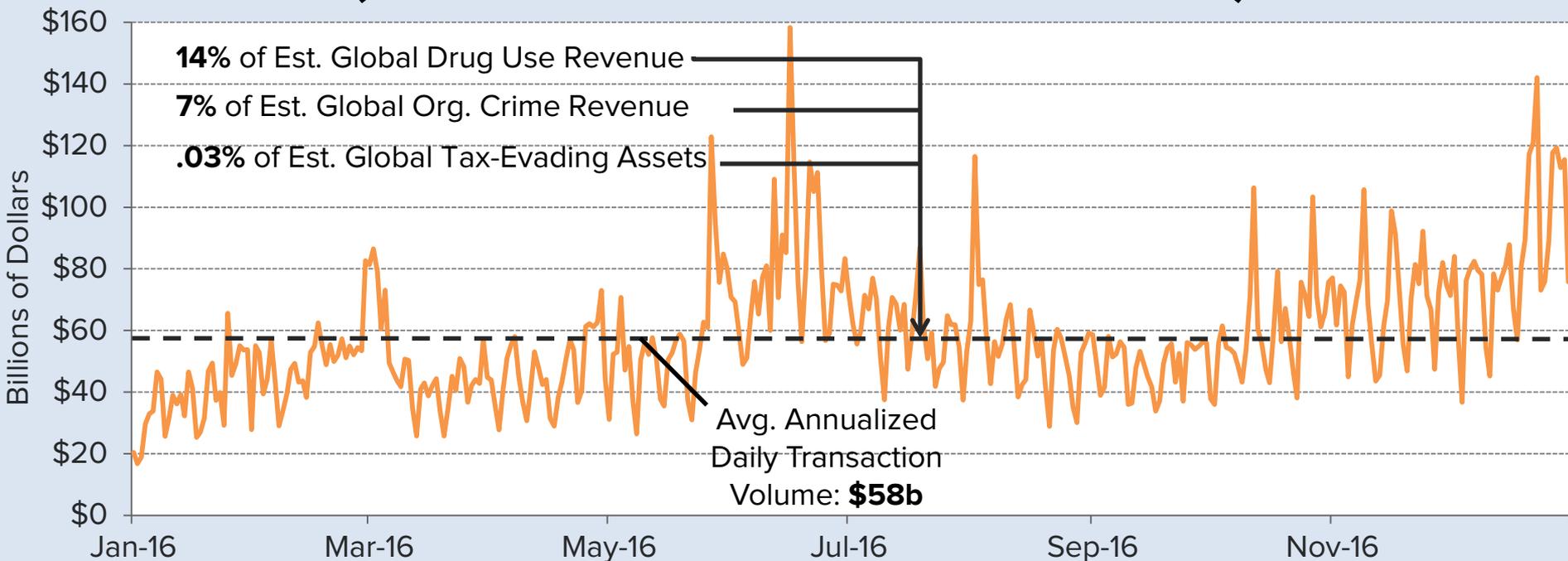


Source: Global Drug Survey 2017

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THE DARK SIDE OF BITCOIN

Annualized Dollar Value of Bitcoin Transactions (December 2015 to December 2016)



Source: Blockchain.info.com (2017); UNODC (2016) on drugs and organized crime; *The Economist* (2017) on tax evasion.

BITCOIN EXPLICITLY LINKED TO CRIME



AUSTRALIAN
**CRIMINAL
INTELLIGENCE
COMMISSION**

“The two key enabling technologies currently used to facilitate serious and organised crime are virtual currencies and encryption. Virtual currencies, such as bitcoin, are increasingly being used by serious and organised crime groups as they are a form of currency that can be sold anonymously online, without reliance on a central bank or financial institution to facilitate transactions.”

WHAT ABOUT THE NEXT GENERATION?

❑ Today, Millennials Are Bitcoin's Biggest Users

- ❑ *Fully 39% of Bitcoin users are 25-34.*
- ❑ *Millennials are more likely than older gens to say they have owned Bitcoin, plan on investing in Bitcoin, and (yes) use Bitcoin to buy drugs.*

❑ But These Bitcoin Lovers Are In the Minority

- ❑ **Risk aversion:** *Millennials don't want to use credit cards, let alone a currency that could be hijacked with little recourse.*
- ❑ **Social trust:** *Community-oriented Millennials will not underwrite a system that epitomizes social distrust. **Instead, they want a system that is regulated, transparent, and safe.***

❑ Regulatory Tide Turning Against Bitcoin Worldwide

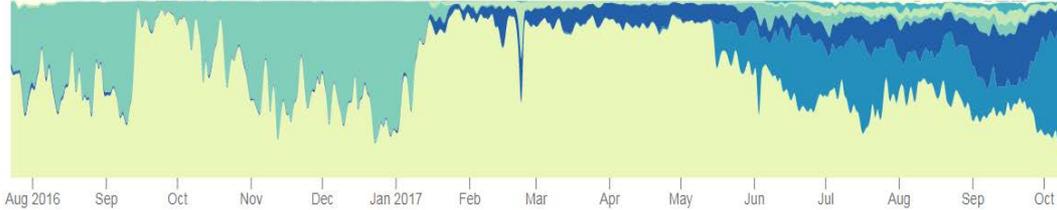
- ❑ *The global mood is shifting toward public accountability: China, Russia, and now India are cracking down on Bitcoin; Europe and U.S. will soon stiffen AML and KYC compliance on BitCoin exchanges; states are looking seriously at public e-cash alternatives.*

CHINA HAS DOMINATED BITCOIN TRANSACTIONS

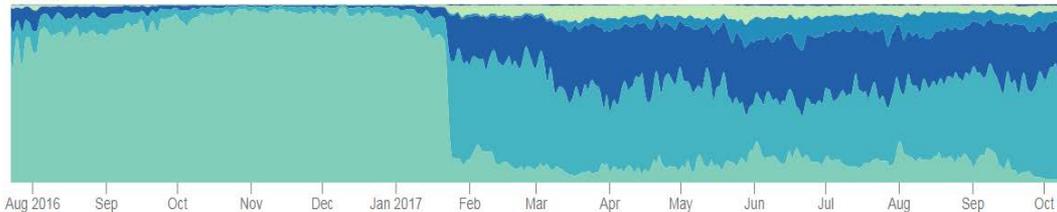
Share of trading by currency

Legend: Ethereum (light green), Bitcoin (yellow-green), Euro (green), Chinese Yuan (teal), Japanese Yen (light blue), Korean Won (medium blue), U.S. Dollar (dark blue), Other (dark blue)

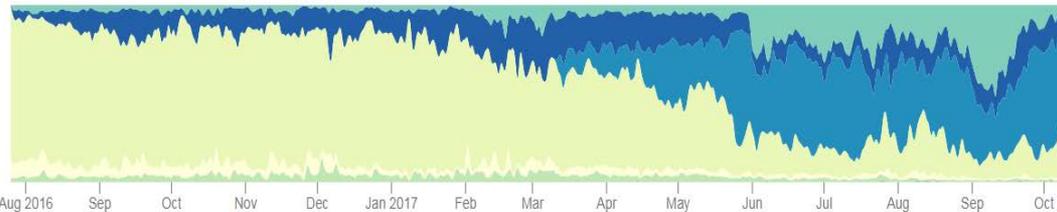
12 Coins with Market Cap Over \$1B



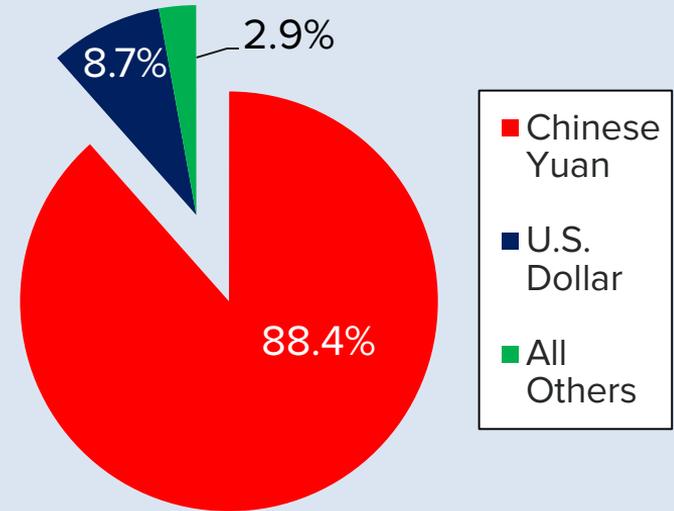
Bitcoin



Ethereum



Share of Total Bitcoin Transaction Volume* to Date, by Currency



Source: Bloomberg Business (2017), Data.bitcoinity.org (2017)

BEING FIRST VS. CHANGING THE GAME



???

SO WHAT EXPLAINS THE BITCOIN BOOM?

❑ Speculation and Irrationality

❑ Surging bull market + high valuations have bid up Bitcoin's price

- ❑ *As in the late '90s during the dot-com boom, the late '20s during the electronics boom, and the late 1850s during the railroads boom, Bitcoin is a good idea taken to excess.*

❑ How Will It End?

- ❑ *These previous booms all ended in devastating crashes, even though the underlying idea was sound in each case.*
- ❑ *The same will likely happen once the next downturn hits and markets force investors to flush pure speculation out of their portfolios. Bitcoin's value—or lack thereof—will then be revealed.*