



Virtual Currencies: Combating Criminal Use

International Digital Security Forum 2022

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Policing the Darknet

GLOBAL ACTION NETWORK
07 November 2014
Press Release

MASSIVE BLOW TO DARKNET ACTIVITIES AFTER OPERATION
20 July 2017
Press Release

DARKMARKET: V... WEB MARKETPL...
22 January 2017
Press Release

DOJ Seizes \$3.6 Billion in Bitcoin Stolen in Bitfinex Hack
■ Case represents largest financial seizure ever, Monaco says
■ Two people charged with seeking to launder 119,754 Bitcoin

DarkMarket in figures:

- almost 500 000 users,
- more than 2 400 sellers,
- over 320 000 transactions,
- more than 4 650 bitcoins and 10 M€

Germany takes the lead

Europol's involvement

Photographer: Gabby Jones/Bloomberg

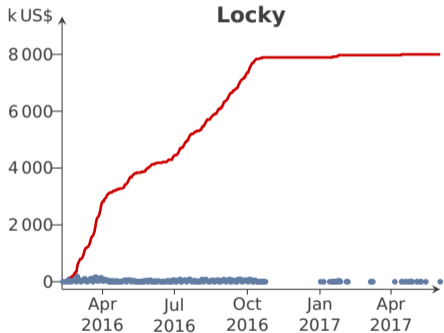
By Chris Strohm and Olga Kharif
8. Februar 2022, 17:41 MEZ Updated on 8. Februar 2022, 23:41 MEZ

Sources: Bloomberg, The Guardian, Europol

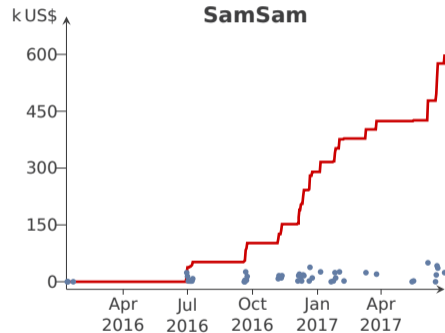
Ransom Payments Over Time

Locky automatic deployment causing epidemic infections and payments

SamSam targeted attacks with repeated manual deployment



— Cumulative ransom payments



..... Daily ransom payments

Paquet-Clouston, M. et al. Ransomware Payments in the Bitcoin Ecosystem. *Journal of Cybersecurity*, 5(1), 2019, 1–11.

Relevant Research Projects



BITCRIME, 2014–2017, DE+AT
Prosecution and prevention through regulation
<https://www.bitcrime.de>



TITANIUM, 2017–2020, EU
Prosecution EU-wide, mainly Bitcoin and data
<https://www.titanium-project.eu>



VIRTCRIME, 2018–2019, AT
Technologies for prosecution, second generation
<http://virtcrime-project.info>



KRYPTOMONITOR, 2020–2022, AT
Forensic methods for smart contracts and off-chain transactions
<https://kryptomonitor-project.info>



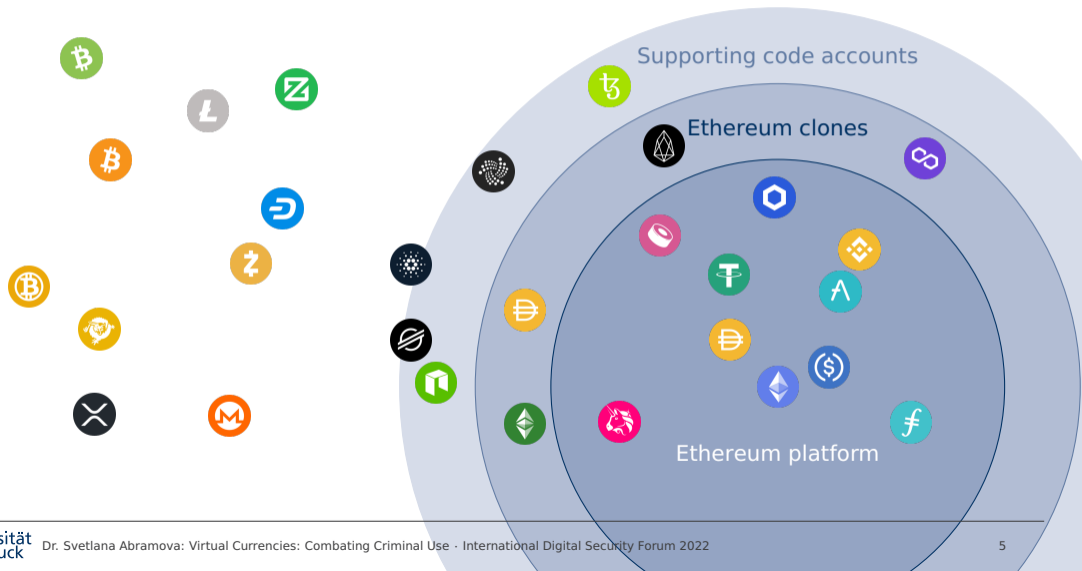
Problem Solved ?



“So you can’t own the precious physically, but you can pay to have your name listed as its owner in an online distributed database.”

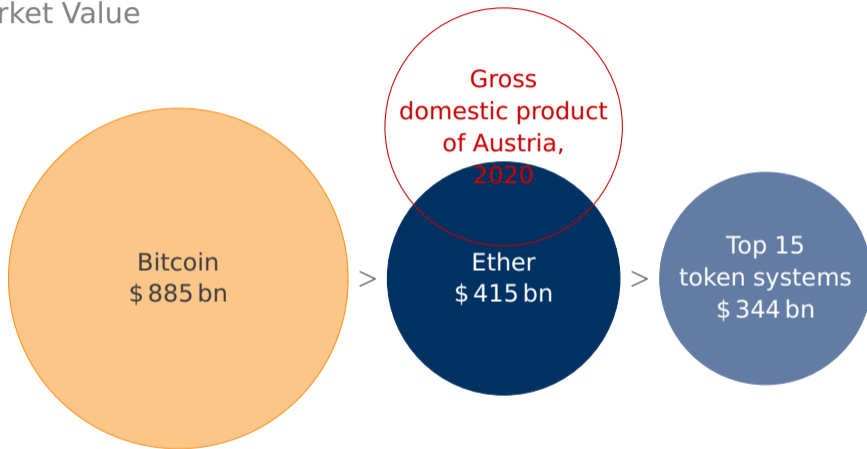
Source: Adam Sacks, <https://twitter.com/AdamSacks/status/1450162259733491715> (retrieved Dec 2021)

Cryptoasset Zoo



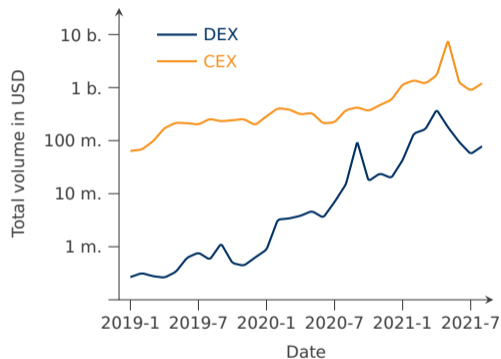
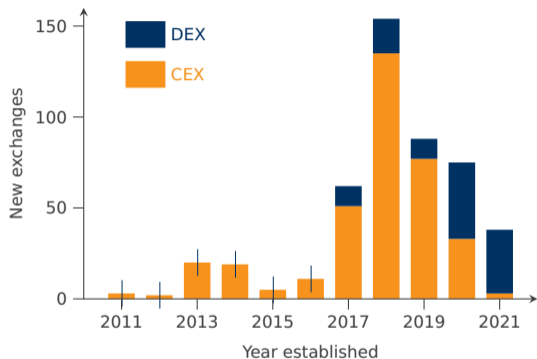
Relevance of Token Systems

by Market Value



Sources: Etherscan, coinmarketcap.com, September 2021

Decentralized Exchanges (DEX)

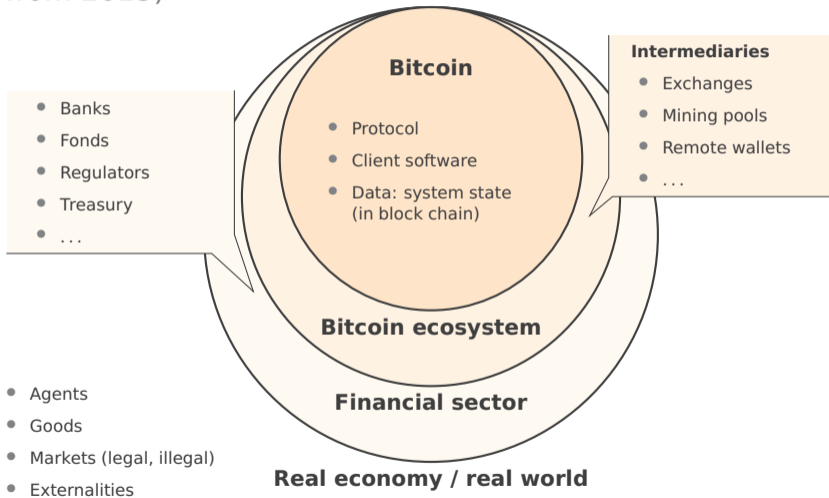


Examples CEX Coinbase, Binance, ...
DEX Uniswap, Aave, ...

Fröwis, M., Sridhar, K., Makridis, C. and Böhme, R. *The Rise of Decentralized Cryptocurrency Exchanges: Evaluating the Role of Airdrops and Governance Tokens*. Preprint on SSRN, 2021. Data up to July 2021.

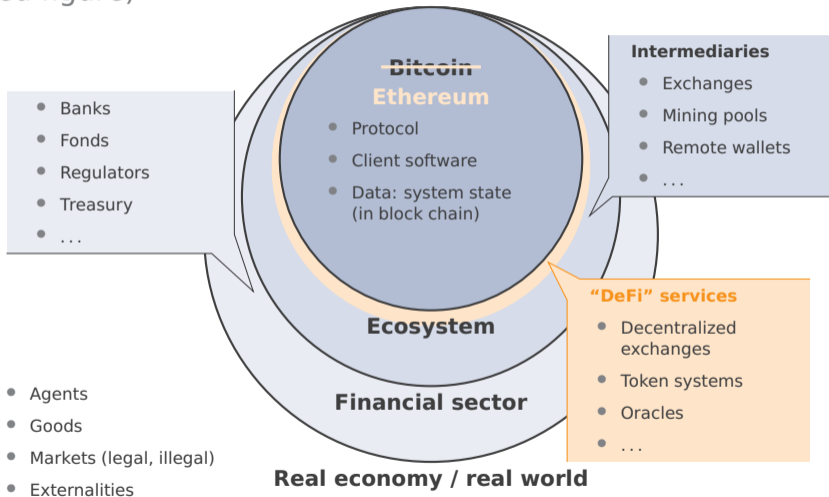
Bitcoin in Context

(figure from 2013)



What Is New in Decentralized Finance (DeFi)?

(updated figure)





Thank You For Your Attention.

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