Cryptocurrencies as a tool in criminal activities

Aleksi Sintonen

Inspector in IT & Analysis Team

Financial Intelligence Unit

National Bureau of Investigation

FIU - Financial Intelligence Unit

- The mission is to prevent, detect and investigate money laundering and terrorism financing

- Cooperation nationally and internationally with authorities and reporting entities

- Virtual Asset Team located in FIU
  - Case investigations
  - Supporting other units
  - Expertise services and development

1. Basics of cryptocurrency

2. Utilizing cryptocurrencies in criminal activities

3. Crime prevention and cooperation

4. What the future looks like?

1.1.What are cryptocurrencies?

- Virtual currency is value in a digital form which
  - Central bank or other authority has not issued and which is not legal tender
  - A person can use as a payment method
  - Can be transferred, deposited and exchanged digitally

- Cryptocurrency is a type of virtual currency that implements cryptography technology
  - → added security and immutability

1.2. What are cryptocurrencies?

- Bitcoin was first common block chain innovation
  - Most used, well-known and the most valuable
  - Now acting mainly as a speculative investing instrument

- Characteristics of Bitcoin
  - Private
  - Decentralized
  - Digital
  - Cryptocurrency

- Most cryptocurrencies use blockchain technology
  - Publicly reviewable ledger
  - Peer-to-peer network
  - Stores the history and state of the transactions

https://blockchair.com/

BLOCKCHAIR

Type
pubkeyhash

First balance change
Received 13 years ago

Last balance change
Received 1 month ago

Transaction count
59

Output count
59

Unspent output count
54

Address
12cbQLTFMXRnSzktFkuoG3eHoMeFtpTu3S

Balance   18.43892561 BTC · 390,739.27 USD

Total received   195.43892561 BTC · 1,210.94 USD

Total spent   177.00 BTC · 1.77 USD

PDF Wallet statement

Transaction history   Show inputs and outputs

#	Name	Price	1h %	24h %	7d %	Market Cap	Volume(24h)	Circulating Supply	Last 7 Days
1	Bitcoin BTC	$18,997.36	▼ 0.03%	▼ 1.15%	▼ 3.52%	$364,183,853,705	$26,886,920,005 1,416,409 BTC	19,185,287 BTC	
2	Ethereum ETH	$1,280.65	▼ 0.02%	▼ 1.44%	▼ 3.63%	$156,571,829,311	$10,068,492,737 7,869,362 ETH	122,373,863 ETH	
3	Tether USDT	$1	▲ 0.00%	▼ 0.00%	▼ 0.01%	$68,452,043,973	$36,125,188,803 36,125,513,739 USDT	68,452,659,679 USDT	
4	USD Coin USDC	$1.00	▼ 0.01%	▲ 0.00%	▲ 0.00%	$43,975,368,476	$2,677,148,620 2,676,901,126 USDC	43,971,303,104 USDC	
5	BNB BNB	$267.05	▼ 0.17%	▼ 2.09%	▼ 2.72%	$42,665,149,176	$554,422,469 2,078,912 BNB	159,981,056 BNB	
6	XRP XRP	$0.4423	▼ 0.06%	▼ 4.43%	▼ 11.66%	$22,023,526,472	$1,803,232,607 4,084,627,115 XRP	49,887,015,710 XRP	
7	Binance USD BUSD	$1.00	▼ 0.05%	▲ 0.01%	▲ 0.01%	$21,628,356,717	$5,299,193,080 5,299,130,331 BUSD	21,628,100,611 BUSD	
8	Cardano ADA	$0.3357	▼ 0.11%	▼ 5.12%	▼ 12.08%	$11,516,347,634	$536,295,533 1,597,283,207 ADA	34,299,873,039 ADA	
9	Solana SOL	$27.59	▲ 0.09%	▼ 6.12%	▼ 12.34%	$9,871,405,260	$840,571,381 30,505,263 SOL	358,244,184 SOL	
10	Dogecoin DOGE	$0.05826	▲ 0.18%	▼ 2.97%	▼ 3.35%	$7,723,021,101	$240,688,984 4,134,702,080 DOGE	132,670,764,300 DOGE	

1.3. Decentralization is both an advantage and a challenge

- Added security and privacy

- Way out from challenges caused by centralization
  - Authoritarian countries?

- At the same time cryptocurrencies are providing these advantages also for criminals

2.1. How much of cryptocurrencies are involved in criminal activities?

- Very challenging to estimate
  - The number of different currencies
  - Trade volumes
  - Fragmented picture

- Some estimates under 1 % of all used cryptocurrencies, some more
  - Chainalysis: In 2021 illicit addresses received 14 billion USD

- All in all, cryptocurrencies are used mainly in legal purposes

2.2. As a payment method in illegal trade

- Large part of online illegal trade in darknet markets
  - *Silk road, Alphabay*
  - *Silkkitie* in Finland

- Drugs, firearms, CAM-material, crime-as-a-service (CaaS)
  - CAM-sites *Dark Scandals* and *Welcome to Video* were funded by cryptocurrency

- Publicly reviewable ledger → In many investigations cryptocurrency transactions have been important leads to the perpetrators
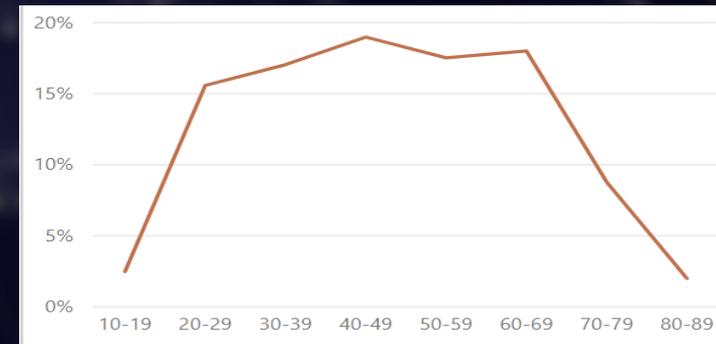
2.3. As a tool in money laundering

- Money laundering requires an initial crime
  - Can be whatever which has yielded financial benefits

- Assets → cryptocurrencies → other assets

- Cryptocurrencies provide great way to add complex layers in ML schemes

Crowdfunding in money laundering

Mixers

Chain-hopping   *Online gambling in crypto casinos*

Other asset conversions

Exchanging private keys

2.4. As a tool in fraudulent actions

- Investment scams are a growing problem
  - Exit-scams, market manipulation, pyramid schemes
  - New exciting innovations and huge expectations → Psychological biases utilized

- One of the largest frauds: OneCoin in 2016 – $4 billion invested

- In Finland ~530 investment scams in 2021
  - ~ 21M € criminal benefit
  - Most of these are related to virtual currencies

Age distribution of investment fraud victims in Finland on 2022

- 80 % of ICOs in 2017 identified as scams
  - Machine learning can help in prevention (Karimov, Wojcik 2021)

2.5. Financing terrorism with cryptocurrencies

- In 2020 The Justice Department (USA) announced the largest ever seizure of terrorist organizations' cryptocurrency accounts
  - Campaigns which collect funds via cryptocurrency

- Hamas al-Qassam Brigades
  - Bitcoin fundraising campaigns in 2019

al-Qaeda

al-Qassam Brigades

3. Law enforcement has competence and tools to investigate crypto-related crimes

- Because of publicly reviewable blockchain, to certain extents tracing of cryptocurrencies can be even easier than with regular fiat currencies

- Complex schemes still hard to investigate

- Requires efficient international cooperation

- Fast evolving → constant learning required
  - FIU Virtual Asset Team's competence on a high level and the development is constant

Luulitko, että virtuaalivaluutan liikkeet pysyvät piilossa? KRP murtaa pitkäkyntisten haaveet: "Isoja harppauksia tehty lyhyessä ajassa"

Poliisi jäljitti Vastaamo-tutkinnassa uhrien virtuaalivaluutalla maksamia lunnaita

Toisin kuin usein luullaan, eivät virtuaalivaluutat ole anonyymeja vaihdon välineitä. Viranomaisilla on kyky jäljittää niitä.

Silkkitien kautta myytiin huumeita Suomeen jopa 900 kiloa: tulli on takavarikoinut 20 miljoonalla bitcoineja

4. What the future looks like?

- Many actors among cryptocurrencies
  - How KYC and AML are implemented within new businesses?

- RegTech is the key
  - **Using the same tech to mitigate the risks**
  - Blockchain forensics, cryptocurrency intelligence, crypto compliance
  - *Chainalysis, CipherTrace, Elliptic*

- Blockchain as a problem-solving solution to prevent crimes in itself
  - For example in authenticating supply chains

- It is not possible to entirely prevent criminals to utilize new innovations
 - A key is to organize risk management at an adequate level

4. What the future looks like – raising awareness among consumers and investors

- Informing consumers about the risks criminals bring among Fintech
  - → Consumer and investor protection

- Getting to know with common red flags
  - Unrealistic claims
  - Lack of background information

- Decentralized systems → pronounced responsibility of the users

- Improving the regulation to protect the consumers
  - EU's MiCA regulation

In conclusion

- Cryptocurrencies are utilized in criminal activities like any new innovations
  - Only small percent of used cryptocurrencies involved in criminal activities

- ML schemes increasing in complexity partly because of cryptocurrency
  - Still, every transaction can be seen from the public ledger

- Frauds with cryptocurrency are increasing constantly → raising awareness among consumers, investors and service providers

- Utilization of the same innovations to prevent crimes is the key
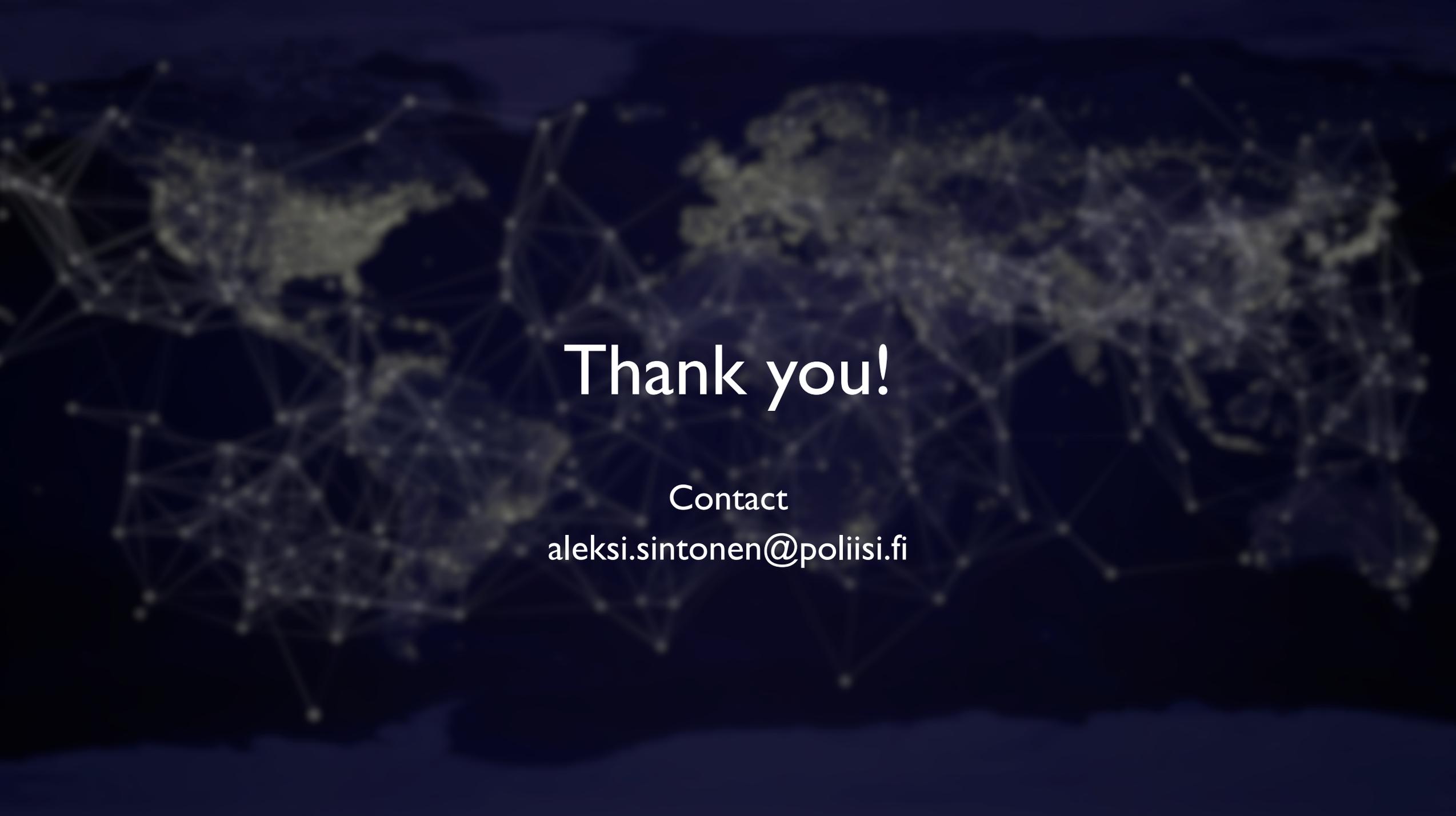
Thank you!

Contact

aleksi.sintonen@poliisi.fi