



The Hague Academy of
International Law's Advanced Course in
Hong Kong – 2nd Edition

Judgments Convention

Crypto Economy and International Law (I)

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Introduction to Technological and Economic Foundations

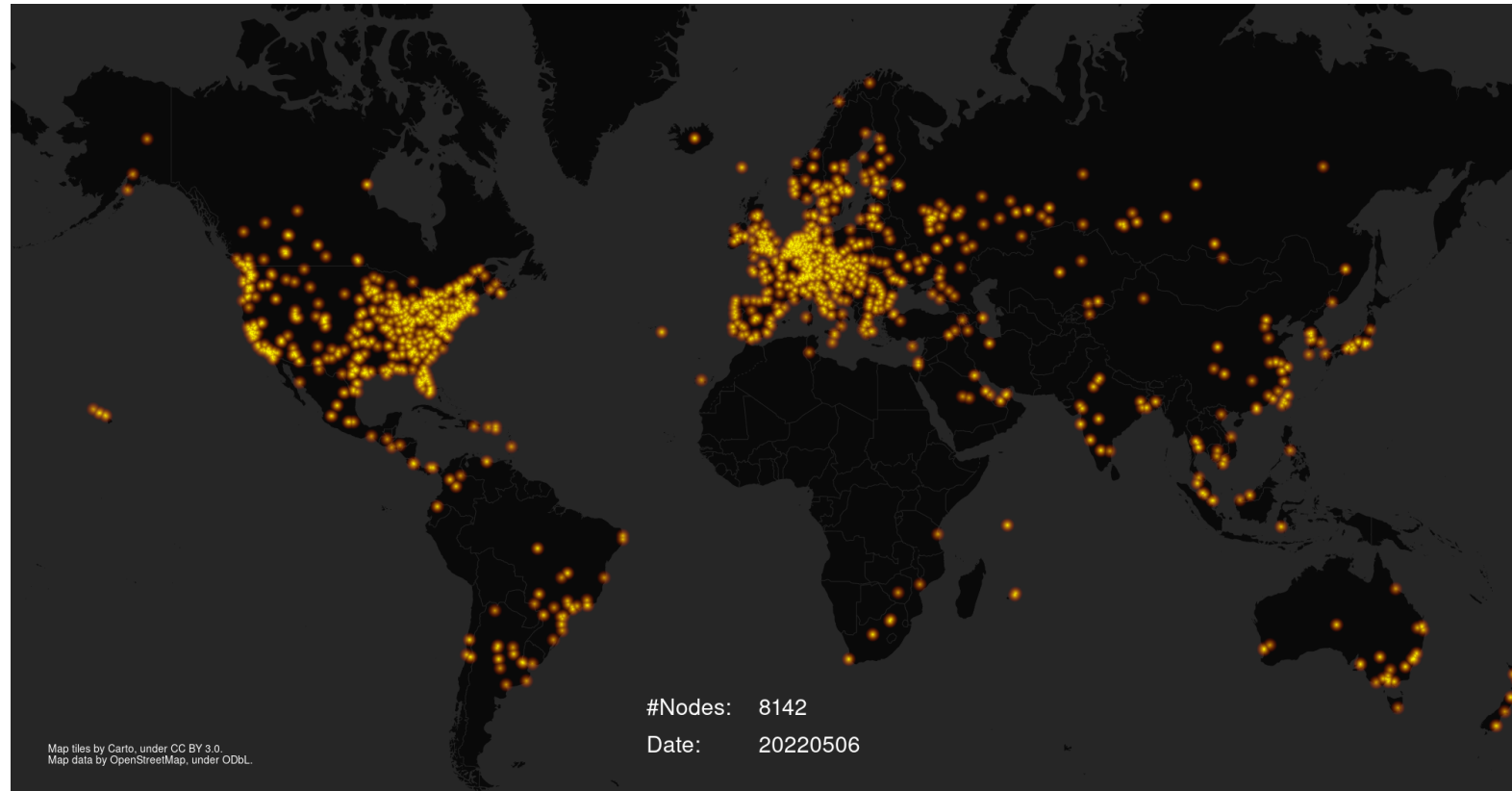


What Is the Blockchain?

1. a database
2. that is decentralised
3. allowing peer-to-peer transfers
 - original: Bitcoin (2009)
 - combination of different innovations

1. Decentralised Storage

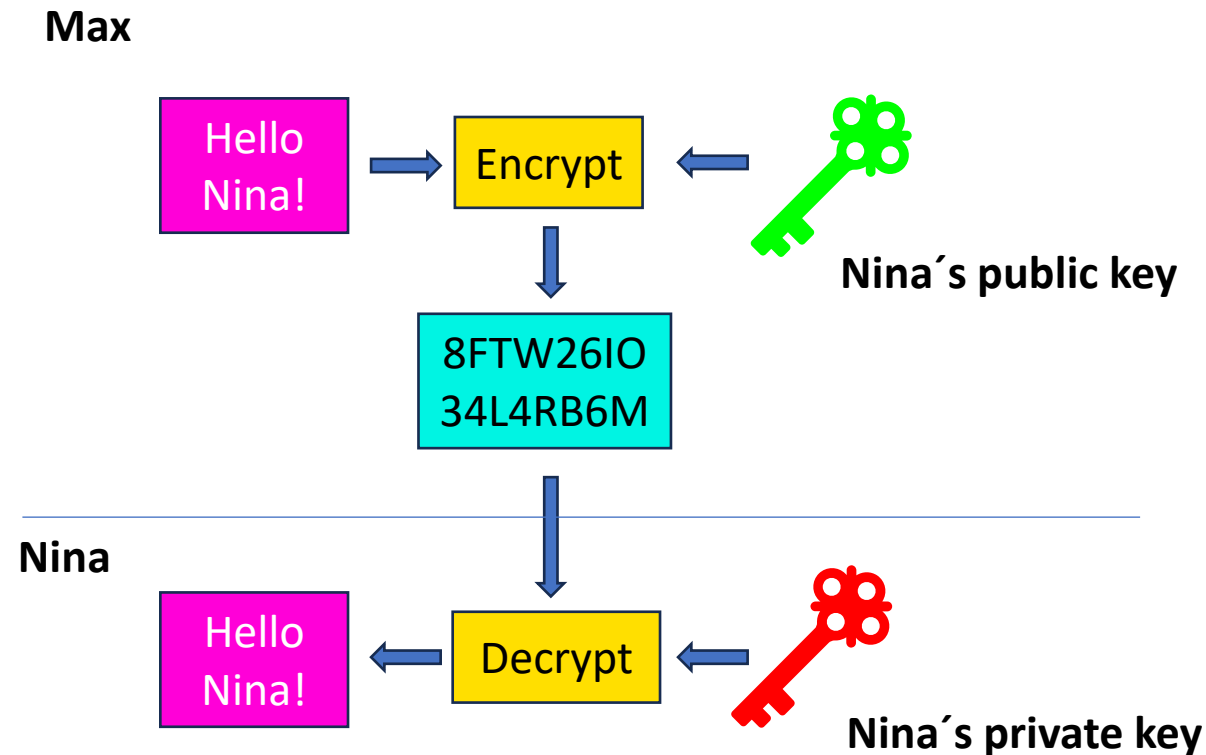
- distribution of Bitcoin nodes



source: DSN Bitcoin Monitoring, <https://www.dsn.kastel.kit.edu/bitcoin/>

2. Cryptographic Information

- cryptography using public and private keys



3. Distributed Consensus



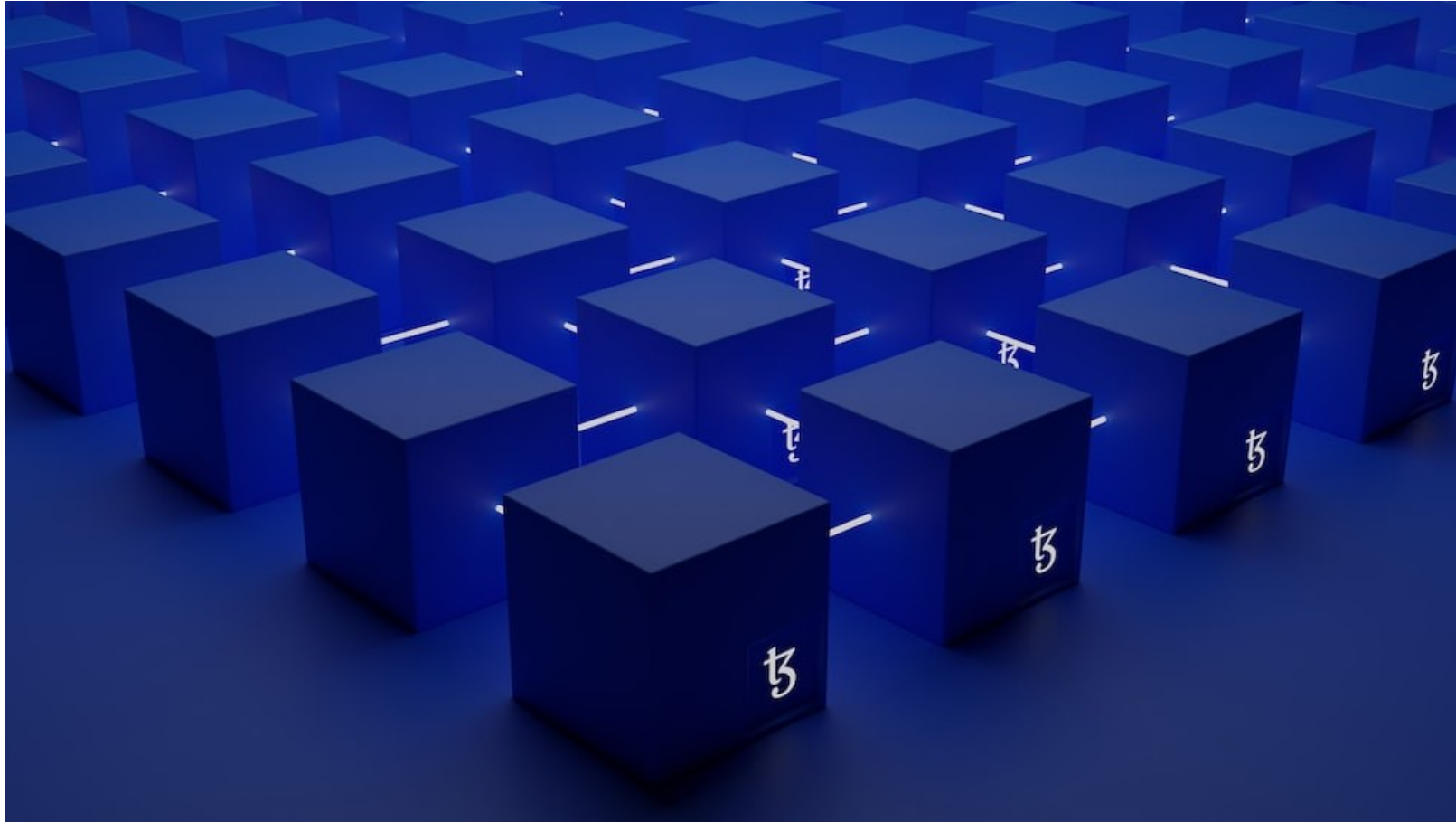
source: <https://www.coindesk.com/markets/2014/11/29/zennet-to-pay-for-distributed-computing-with-blockchain-tech>

4. Proof of Work



source: <https://de.bitcoinwiki.org/wiki/Proof-of-Work>

5. Immutability



source: <https://tanvirtalks.substack.com/p/web-3-challenges-part-2-blockchain>

The Actors



coinbase



BINANCE



SushiSwap



METAMASK

the intermediaires

1. crypto exchanges
2. decentralised exchanges
3. wallet providers



Conclusion

- blockchain = first global mechanism for the storage and transfer of value
- not limited by national frontiers
- alternating waves of centralisation and decentralisation



Rule of Code or Rule of Law?

The Secret Origin of Bitcoin

- Who is Satoshi Nakamoto?



Statue constructed in 2021
in Budapest

Cypherpunks

- Eric Hughes and the “Cypherpunk Manifesto”
- fretting about the danger of the surveillance state
- goal: protection of privacy
- distrust in governments and capitalist institutions
- use of cryptography
- electronic money



- First Bitcoin block, 3 January 2009

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Bitcoin Genesis Block
Raw Hex Version

00000000 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
00000010 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
00000020 00 00 00 00 3B A3 ED FD 7A 7B 12 B2 7A C7 2C 3E ....;fíýz{.²zÇ,>
00000030 67 76 8F 61 7F C8 1B C3 88 8A 51 32 3A 9F B8 AA gv.a.È.Ā^ŠQ2:Ÿ,â
00000040 4B 1E 5E 4A 29 AB 5F 49 FF FF 00 1D 1D AC 2B 7C K.^J)«_Iÿÿ...¬+|
00000050 01 01 00 00 00 01 00 00 00 00 00 00 00 00 00 .....
00000060 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
00000070 00 00 00 00 00 00 FF FF FF FF 4D 04 FF FF 00 1D .....ÿÿÿÿM.ÿÿ..
00000080 01 04 45 54 68 65 20 54 69 6D 65 73 20 30 33 2F ..EThe Times 03/
00000090 4A 61 6E 2F 32 30 30 39 20 43 68 61 6E 63 65 6C Jan/2009 Chancel
000000A0 6C 6F 72 20 6F 6E 20 62 72 69 6E 6B 20 6F 66 20 lor on brink of
000000B0 73 65 63 6F 6E 64 20 62 61 69 6C 6F 75 74 20 66 second bailout f
000000C0 6F 72 20 62 61 6E 6B 73 FF FF FF FF 01 00 F2 05 or banksÿÿÿÿ..ð.
000000D0 2A 01 00 00 00 43 41 04 67 8A FD B0 FE 55 48 27 *....CA.gŠŸ°pUH'
000000E0 19 67 F1 A6 71 30 B7 10 5C D6 A8 28 E0 39 09 A6 .gñ|q0·.\Ö"(à9.|
000000F0 79 62 E0 EA 1F 61 DE B6 49 F6 BC 3F 4C EF 38 C4 ybâê.ab†Iö¼?Li8Ä
00000100 F3 55 04 E5 1E C1 12 DE 5C 38 4D F7 BA 0B 8D 57 óU.â.Á.Ð\8M+ø..W
00000110 8A 4C 70 2B 6B F1 1D 5F AC 00 00 00 00 ŠLp+kñ._¬....
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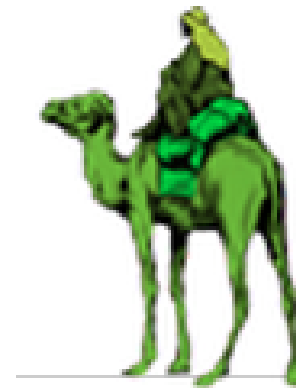
source: Bitcoin Genesis Block, <https://commons.wikimedia.org/wiki/File:Bitcoin-Genesis-block.jpg>

The Dangers of the Blockchain

1. Dangers for public interests

a) a stomping ground for criminals

- money laundering
- terrorism finance
- drugs and arms dealing
- exploitation of children
- human trafficking
- blackmailing
- tax evasion
- sanctions and embargo evasion



Silk Road
anonymous market

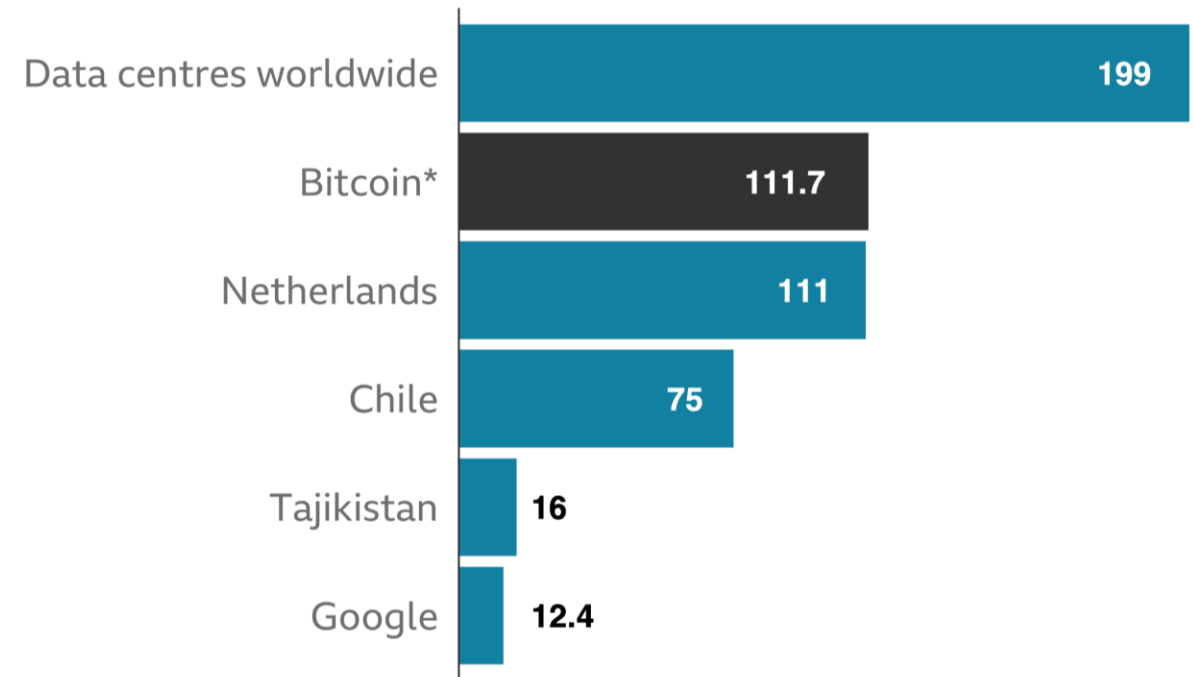
The Dangers of the Blockchain

1. Dangers for public interests

b) macroeconomic dangers

- source of financial instability
- undermining monetary policy
- environmental damage

Annual power consumption, in TWh



*All figures 2019 except Bitcoin, which is annualised middle estimate for bitcoin electricity consumption in January 2021

Source: Forbes, IEA, EIA, Cambridge Centre for Alternative Finance

The Dangers of the Blockchain

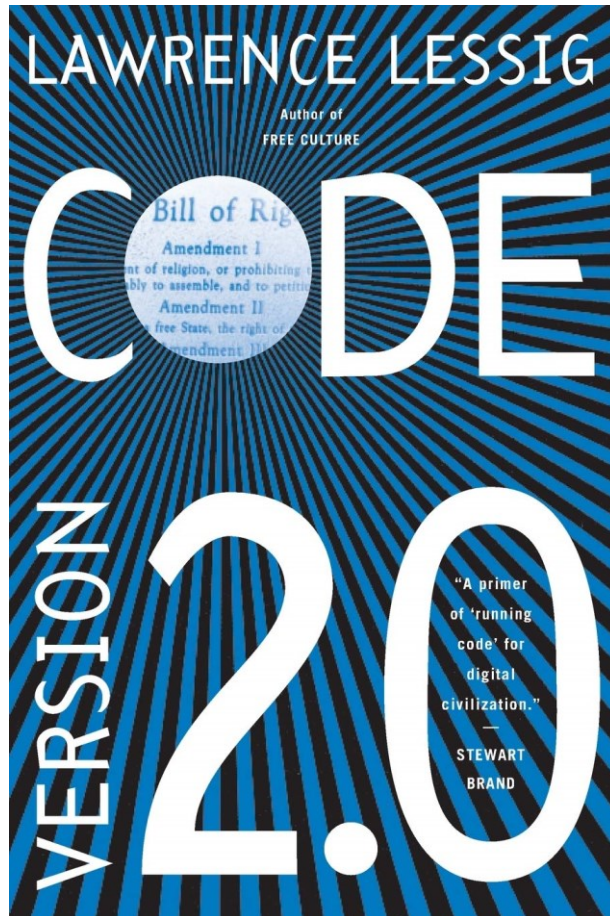
2. Dangers for private interests

- asymmetric information
- Ponzi schemes
- fraud
- theft
- ransomware
- gambling
- technological defects
- bankruptcy



A-Legal Blockchain?

- Code as Law



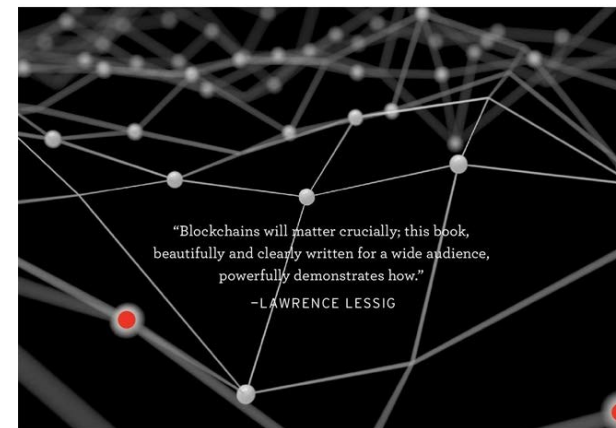
- The *lex cryptographia*

BLOCKCHAIN and the LAW

Primavera De Filippi

Aaron Wright

The RULE of CODE





Conclusion

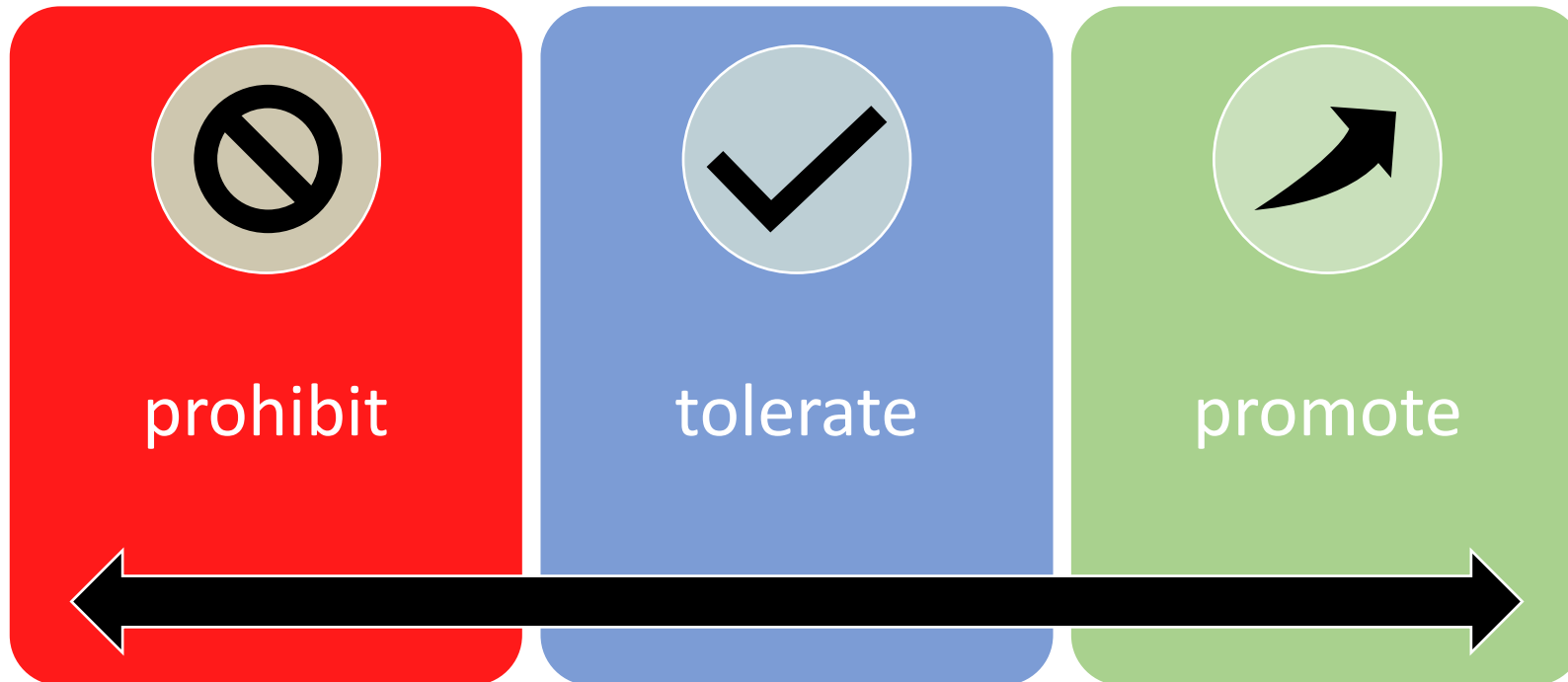
- blockchain = independent of the state
 - but creates a plethora of legal problems
 - must be submitted to a law
- which one?



The International Regulation of the Blockchain

1. The Confusion About Policy

The divergent positions of states concerning the crypto economy





***example:
China***

- 2013: prohibition for financial institutions to engage in crypto-activities
- 2017: prohibition of ICOs
- 2021: prohibition of mining and of offering crypto assets to Chinese residents



tolerate

example:
USA

- application of general rules (anti-money laundering, federal securities law, state money transmission laws)
- neither prohibition nor favour
- technological neutrality of the law



promote

***example:
Switzerland***

- regulatory “sandbox”: deposits of up to CHF 1mn without banking licence
- “FinTech licence”: deposits of up to CHF 100mn under a light regulatory regime
- aim: becoming the world’s “crypto valley”

2. The Confusion About the Proper Legal Category

What is Bitcoin?

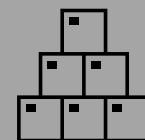
money



security



commodity



money



- cryptocurrency is not legal tender (exception: El Salvador)
- but may function as a means of payment
- applicability of rules on anti-money laundering (AML), e.g. know your customer (KYC)



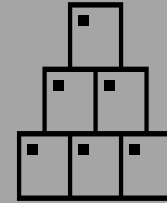
security



- many crypto assets are used for investment purposes
- traded on crypto exchanges
- subject to rules of financial law (e.g. duty of issuer to register, publication of prospectus, prohibition of market manipulation)

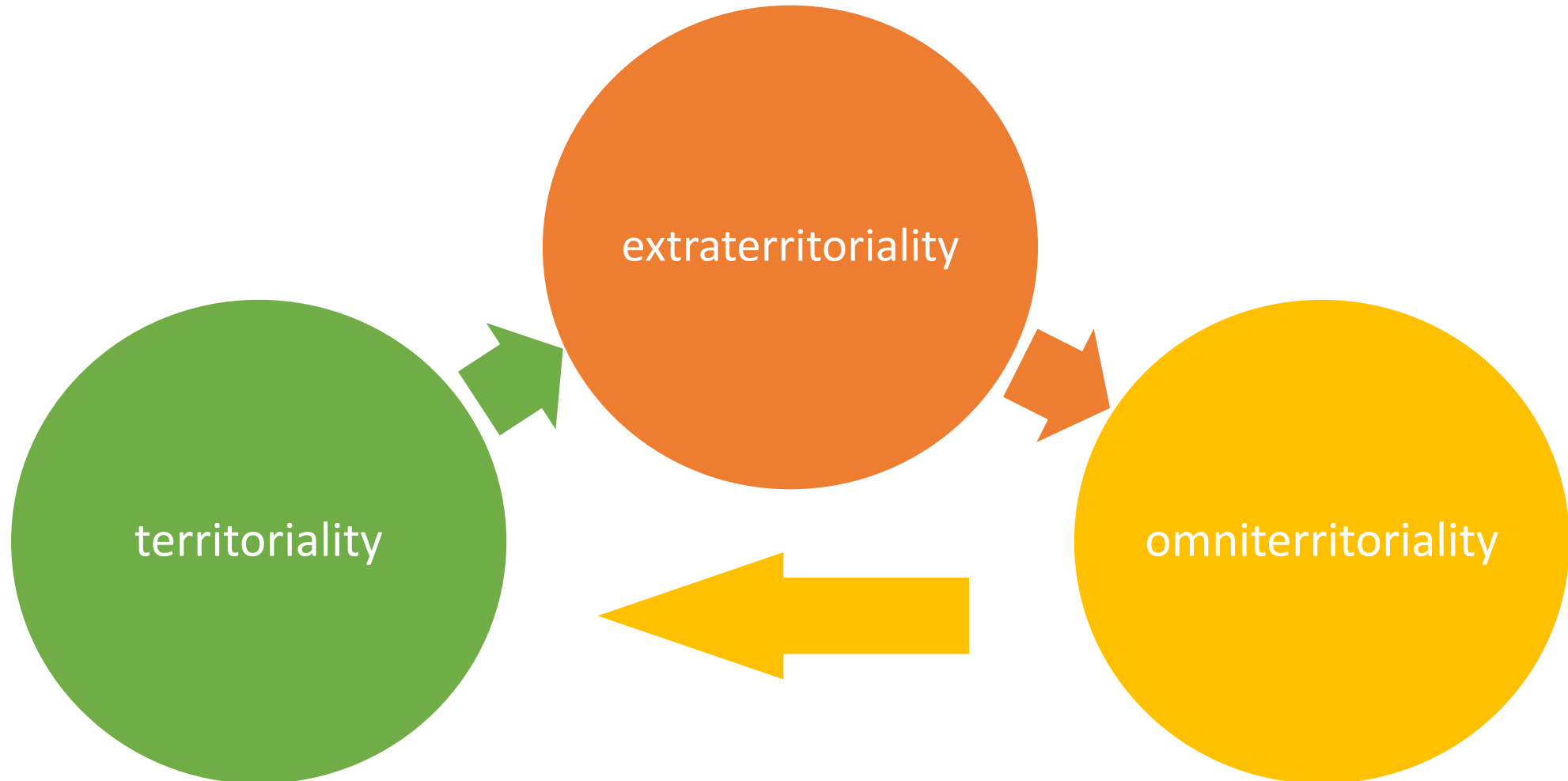


commodity



- some crypto assets lack an issuer and are recorded on a completely distributed blockchain, e.g. Bitcoin
- some authorities consider them to be commodities (e.g. U.S. CFTC)
- result: supervision of derivatives market applies

3. The Confusion About Jurisdiction





territoriality

- principle of sovereignty of states under public international law
- prohibition to use force outside of the state's territory
- limits “jurisdiction to enforce”



extraterritoriality

- “prescriptive” and “adjudicative” jurisdiction are not territorially limited
- a state can apply its law to events outside of its territory
- condition: genuine link



omniterritoriality

- the nodes are distributed over the planet
- the blockchain is accessible from any point on the Earth
- result: each state can regulate the crypto economy



4. The Consequences

- each state
 1. follows its own policy
 2. characterises the products differently
 3. has jurisdiction to regulate the blockchain
- worldwide legal chaos



4. The Consequences

- this chaos hurts the actors and the functioning of the crypto economy
- but it also undermines the efforts of states aiming for a tighter regulation
- possibility of regulatory arbitrage



Conclusion

- all states have jurisdiction to regulate the blockchain
- but divergences of national laws create inefficiencies
- more coordination and cooperation between states are necessary
- a global phenomenon calls for worldwide regulation