The Empty Promise of Cryptoassets and Smart Contracts

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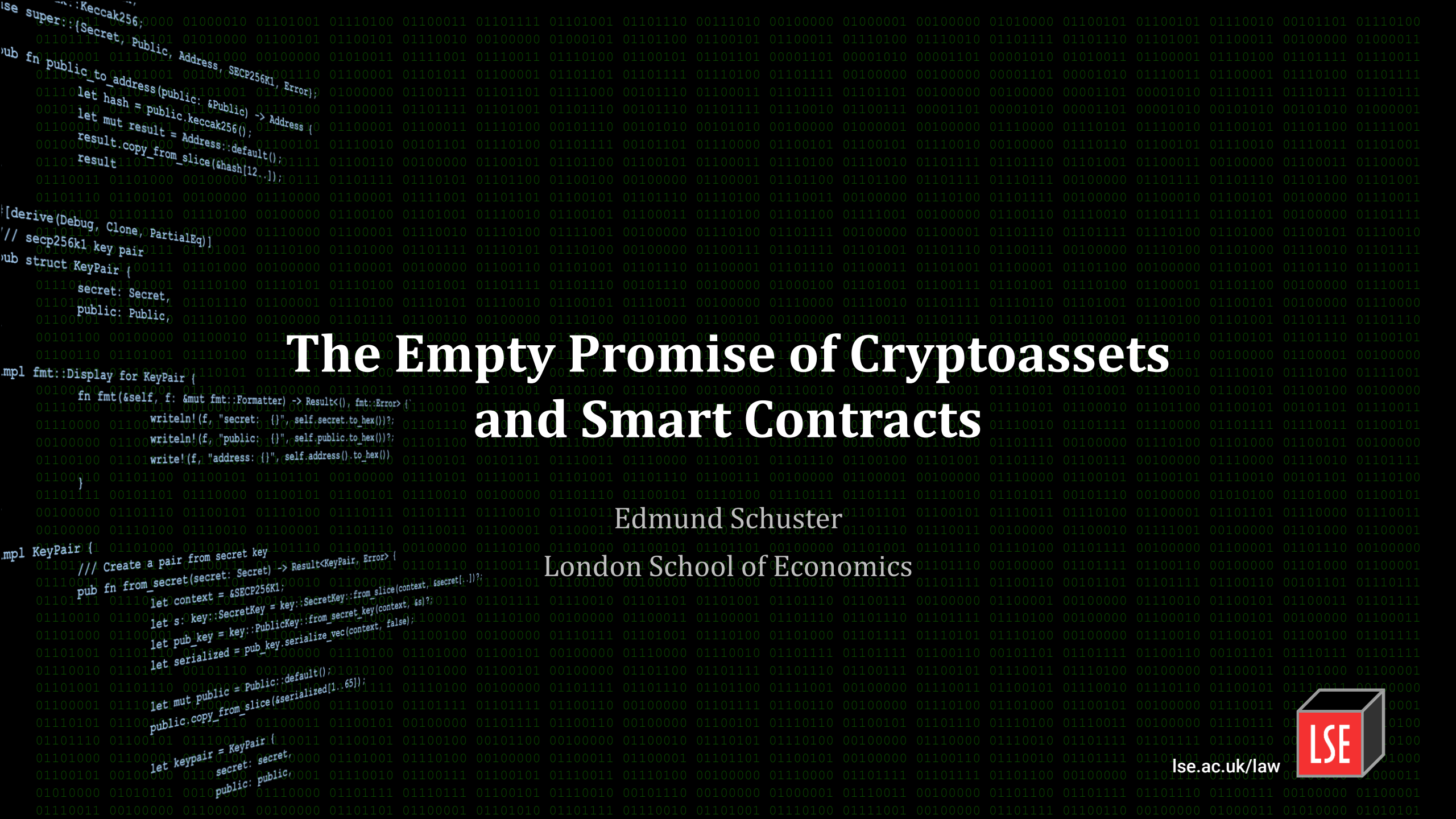


Motivation?

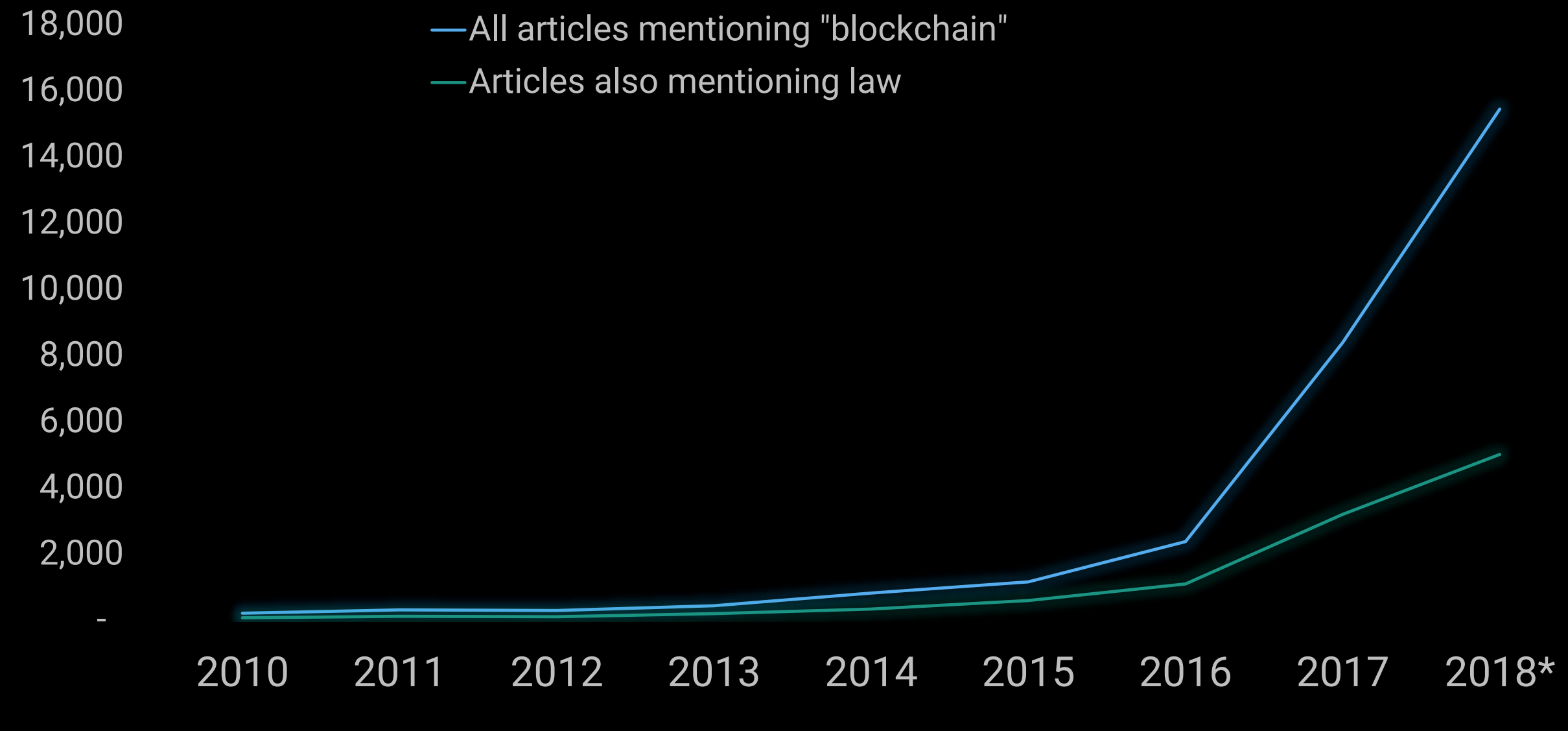
Blockchain technology raises many intriguing *legal* questions

- When are cryptotokens securities / transferable financial instruments?
- The market for LemonCoins and mandatory disclosure
- How should we characterise the legal relationship between a coder/node/initiator/etc and the users of cryptoassets/ cryptocurrencies
- Is a DAO a legal person? Should it be?
- What does a GDPR-compliant blockchain look like?
- Is it a crime to “steal” from a poorly implemented brainwallet?

I am interested in the legal foundation of cryptoassets

Also…

Google Scholar-indexed papers mentioning "Blockchain"



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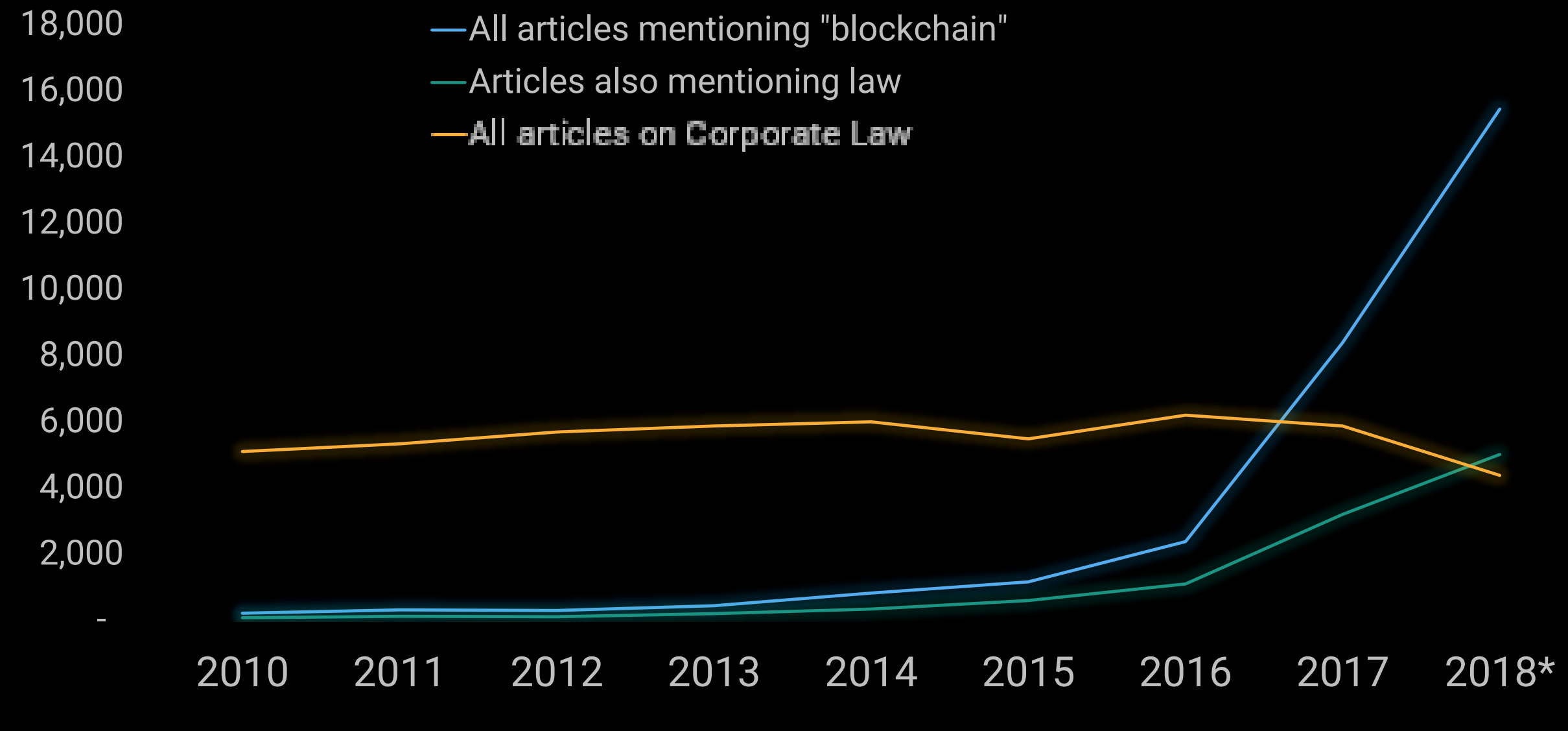

Overview

The status quo

- What are blockchains to a (this!) lawyer?
- My (very narrow) definition of “cryptoassets”
- Legal obstacles for putting assets on a blockchain and tokenizing the world: A simple argument for why the law would have to adapt for making it all work

Will or should the law adapt to a blockchain future?

- The promise of cryptoassets and smart contracts
- Checking against reality…

Why (“non-naked”, real world-connected) cryptoassets will, in my view, never work

Legal analogues of blockchains

The "physical world"

- Value embodied in physical objects (and control over these objects – "possession")
- Peer-to-peer transactions
- "No double spending" enforced by the law of physics
- *Correlation between possession and legal rights is (and has long been) reflected in legal rules*

The world of intangibles (and similar assets)

- What type of intangibles? No physical correlate / weak correlate
- Transacting in intangibles:

1. P2P + (some) trust – e.g. assigning rights
2. Central ledger, and trust only in the record-keeper – e.g. securities, land register
3. **Now: Blockchains – solve the double-spending problem at the heart of 1. and 2.**

Legal analogues of blockchains

So in this sense, blockchains replicate features of the physical world

Tokenizing assets is, of course, nothing new

We have been here before

- Bills of exchange and the lex merchant (*lex mercatoria)*
- Intrinsically worthless physical objects as representations of valuable rights
- Establishing negotiability – early version of “code is law”?
- How did the law react?

Cryptoassets

My (very narrow) definition of “cryptoassets”

- Distinguish “naked” blockchains from crypto-tokens as representations of legally rights – “cryptoassets”
- Cryptocurrencies are “naked” in this sense
  - Like merchants deciding to care about the actual pieces of paper, rather than anything they may represent
  - But there are other examples – (cryptokitties! )
- Other tokens stand in for *something* – are meant to convey rights of some sort
  - E.g. “security tokens”, putting assets on the blockchains, etc
  - Can be extended to most relevant smart contracts

→ **This type of cryptoasset must be tethered to legal reality to fulfil its purpose**

Cryptoassets: Current Legal Obstacles

A simple argument against the feasibility of cryptoassets:

1. To the extent that cryptoassets represent legal rights, they (currently) must follow applicable legal rules
   - See e.g. a cryptobond
2. The law places limits on what can be agreed, even between sophisticated parties
   - Capacity, fraud, *ordre public*, …
3. Legal rules cannot fully be encoded in any formal algorithmic system

→ **If you want to put anything that is tethered to legal reality on the blockchain, you need a system of legal realignment**

Cryptoassets: Current Legal Obstacles

Possible solutions

a) Choice of law / contract?
b) Oracles?
c) Give the state “write permission”! A *super* key valid for all transfers
   - State (e.g. judges) can rectify the blockchain where appropriate
d) ?

Cryptoassets: Current Legal Obstacles

Possible solutions

a) ~~Choice of law / contract?~~

b) ~~Oracles?~~ **“garbage in – garbage out”; equivalent to c)!**

c) ~~Give the state “write permission”! A *super* key valid for all transfers~~

d) ?

Cryptoassets: Current Legal Obstacles

The alternative?

- State of the blockchain and “state of the world” *slowly* drift apart
- Cryptoassets *quickly* lose their significance as representations of the real world

→ Choice between rock & hard place?

- Create a centralised token – all the overhead, none of the advantages **OR**
- Certainty that tokens will not be treated as real representations of *anything*

Cryptoassets: A Legal Fix?

Objection: But AI!!

- **No**

Law could embrace Blockchain technology

- In principle, code is law (or something very close to this) could be adopted by the/a relevant legislator
- Problem: The endorsement would have to be (very nearly) absolute
- Smallest exceptions could hurt

The Potential Benefits of Smart Contracts

Could (should) this happen?

- Arguably depends on costs and benefits
- See e.g. settlement finality

Potential benefits of cryptoassets and smart contracts

- How smart can smart contracts be?
- Complexity and usefulness
- Lawyers do **not** spend most of their time suing people for breach of crystal-clear obligations
- Blockchains are not needed for algorithmic agreements
- *If you can code it, it probably doesn't matter too much*

Cutting Out the *Boring, Really Efficient* Middlemen?

Land register E&W

- around £ 5.5 trillion in assets on a ledger
- Cost to users? Around 0.006%, including profit to taxpayer and services

BNY Mellon

- $33.3 trillion in assets under custody
- Total revenue $11bn (0.03%)

Self-execution only *really* works in a credit-free world

Cryptoassets: No Legal Fix in Sight

Why do promises always/often sound so convincing?

- Cost of change and the right comparator
- Change is hard – starting from scratch is lazy

So could (should) the law “give in”?

- Cost/benefit
- History?
- Turkeys and Christmas?
- Democracy?

Conclusion

A truly blockchain-based economy is incompatible with the current legal systems of virtually all countries

Giving the state special privileges renders blockchain solutions entirely pointless

Smart contracts can only reflect rights and obligations that do not in reality create significant friction

I highly doubt that the law will adapt to the extent necessary, nor should it

[None of this applies to pure cryptocurrencies and other “naked” blockchains]

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