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# Are smart contracts substituting all dumb contracts?

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# Problem identification

- What are the (realistic) potential uses of smart contracts? First the definition:
  - “A smart contract is a computer code running on top of a blockchain containing a set of rules under which the parties to that smart contract agree to interact with each other. If and when the pre-defined rules are met, the agreement is automatically enforced.” (from BlockchainHub)
- So a smart contract is a contract that is easily signed (agreed between the parts). However, we know that contracts are always incomplete
- Thus, smart contracts increase the contract efficiency (easing the contracting process through tokenization - *ex ante*), however, it does not have any role to play in case of conflict (dealing with renegotiation and problems after the contract signature)

# Tokenization

- The smart contract thus builds on the tokenization of ownership
  - Codify the asset into small parts
  - Those parts are manipulated using blockchain (registered and traded)
- Dividing ownership into small parts is the same concept as equitization
- That is, blockchain facilitates the use of equity
  - Using equity is partly good because it allows risk sharing...
  - ...But also bad because of information asymmetry, incompleteness, etc. Smart contracts do not help with that
  - (Actually, we do not see so much equity being used)

# Smart contract – a contract for decentralization

- Smart contracts is a tool of implementing decentralized trade (without the need of third parties)
  - Peer-to-peer or business-to-business trade or...
  - It decrease the cost and the time necessary to agree and sign the contract, the adjustment and continuous agreements are automatic according to the algorithm.
- But the costs of decentralization goes beyond costs of signing the contract – great literature about it
  - Much under the header of transaction costs theory
  - One cannot identify all future circumstances (hence also cannot write code for them)
  - The “ex post” transaction costs (information, incompleteness) are not changed by the Smart contracts
- Bottom line
  - The choice between the efficiency of decentralized and centralized mechanisms will depend on the cost of signing the contract but also the expected costs of renegotiation (the smart contract decrease the first, but not the second)

# The trade-off

- So what one needs to address is whether centralized trading is more expensive than decentralized trading
  - Taking into account all costs, not just “tokenization” costs
- Looking at other markets, we will see probably both kinds of transactions (OTC-like and exchange-like)
- How can we begin looking at this?
  - Transaction costs theory proposes to use the ability to deal with conflict as a driver
  - When conflict is difficult to solve, decentralization tends to be more expensive (as in infrastructure projects, as PPAs)
  - When conflict is less relevant (within a firm, a small neighborhood) decentralization can be less expensive



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Thank you

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