

# **DIGITAL ASSETS: PROMISE AND CHALLENGES**

**ITAY GOLDSTEIN**  
**WHARTON SCHOOL**



**VADUZ ROUNDTABLE**  
**THE FINANCIAL SYSTEM 2030**

# A FINTECH REVOLUTION?

- Technology has always influenced the way the financial industry operates
- What is so special about the current FinTech revolution?
  - The pace at which new technologies are tested and introduced into finance is faster than ever before
  - Much of the change is happening from outside the financial industry, as young start-up firms and big established technology firms are attempting to disrupt the incumbents

# A GLIMPSE INTO ACADEMIC RESEARCH

- FinTech initiative launched in 2016 at the *Review of Financial Studies* solicited research proposals on issues in FinTech
  - A crowdsourcing view on what FinTech is about
  - First special issue published in 2019
- Currently, a booming area of research focusing on several key topics:
  - Peer-to-peer lending
  - Big data and machine learning
  - Blockchain and digital assets

# WHAT IS FINTECH? A WORD CLOUD



# **BLOCKCHAIN AND DIGITAL ASSETS: THE KEY PREMISE**

- The key premise is decentralization
- Traditional finance features central players, such as financial intermediaries and governments, who facilitate transactions and recordkeeping
- In theory, with blockchain:
  - Transactions happen in a decentralized way
  - Consensus evolves without any centralized recordkeeping
  - Information is shared by all
- Motivation strengthened in the aftermath of the global financial crisis and the distrust in central players
- This is enabled by technology

# POTENTIAL GAINS FROM DECENTRALIZED CONSENSUS

- Decentralized information alleviates the systemic risk from the failure of a central player
  - For example, a central counterparty (CCP) or a central computer system
- Decentralized process eliminates market power and rent extraction by large intermediaries
  - Key concern in finance due to the prevalence of large intermediaries and their effect on the efficiency of the system
- Flexibility of the process enables efficient trading of a large variety of assets
  - Many assets are traded inefficiently with large frictions in traditional financial systems, e.g., corporate bonds
  - With new technologies, non-fungible tokens enable trading on many non-traditional assets, such as artwork

# LIMITED SCOPE OF DECENTRALIZATION

- Experience with financial technologies suggests that financial intermediaries cannot be easily displaced
  - Experience with peer-to-peer lending shows that financial intermediaries can end up dominating the new technologies
  - Various forces in blockchain economics push back to concentration
    - Mining pools
    - Large investment in equipment
    - Interactions with blockchain governance
- Traditional benefits of intermediation are still present
  - Monitoring
  - Liquidity transformation



# OTHER CHALLENGES

- Protocol for consensus generation
  - Proof- of-Work is most widely used, but strategies of participants can lead to adverse outcomes
    - Coordination problems, forks, etc.
  - Other protocols, e.g., Proof-of-Stake are not as widely tested and pose other challenges
- Energy costs
  - So far, the process behind blockchain consensus generation has been very costly on energy
  - This makes it unviable, especially with current concerns of sustainability



# OTHER CHALLENGES – CONT'D

- Blockchain impossibility triangle
  - The idea is that blockchain can achieve only two out of the three objectives:
    - Consensus
    - Decentralization
    - Scalability
- Broader legal and regulatory framework
  - Large uncertainty on this issue with some recent negative shocks
    - Banning cryptocurrencies altogether in some places
- Some of the current applications generate bad reputation
  - Volatility of cryptocurrencies,
  - Fraudulent ICOs
  - Hard-to-justify prices for NFTs

# CONCLUSION

- The idea of decentralized finance has a lot of positive aspects
- But, the forces for centralization and intermediation are strong
- A realistic middle ground is one where intermediaries continue to play a role, but some of the benefits of the technologies are still achieved
  - *Partial decentralization*
- There are also some other obstacles on the way to that equilibrium