# Central Bank Regulatory Framework to Support FinTech in Payment System

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**Statements and opinions expressed herein are solely those of the speaker and not necessarily those of the Bank of Jamaica**

# Outline

1. What is Fintech?
2. Payment Systems Fintech use cases
3. Definitions:
   - DLT
   - Digital Currency
   - Cryptocurrency
4. Regulatory treatment for Fintech
5. Features of sandboxing
6. Sandboxing reports in other countries
7. Bank of Jamaica's approach

# What is 'FinTech'?

- FinTech – Financial Technology

- Broadly defined as rapid technological change or innovation applied to financial services (Zetzsche, Buckley, Barberis & Arner, 2017)

- A catchall term representing developments in the technologies used to enable and support banking and financial services often times in support of financial inclusion

# Payment System Use Cases in FinTech

- **Uses of FinTech in the payment systems:**
  - ***Post trade operations*** – Digital Ledger Technology (DLT) to speed up trade settlement, specifically the clearing, settlement and asset servicing cycle.
    - Money Transmission – (Virtual Currency)
    - Innovative Lending – (P2P)
  - ***Smart Contracts*** – Self executing digital contracts converted to code using blochain technology without the service of an intermediary.
    - E.g. - Digital Ledger Technology embedded within syndicated loans to reduce operational risks, costs and time incurred in the various processes – Back Office
  - DLT can be used to achieve real time ***cross-border payment*** and settlement Operations

# Definitions
# What is DLT?

- DLT (distributed ledger technology, or blockchain) features:
  - A continuous and perpetual record of information; data include:
    - Transactions
    - Contracts—some can be executed automatically by contingencies being met
    - Archive-type data
  - The record is held in and copied in numerous ledgers that are maintained and updated by operators of nodes in the DLT network
  - Only those with permission or rights to the data can use it or grant access to others
- Nodes are points of processing where information is exchanged and compared

# Definitions
# The "Rules" of DLT

- By design, there is no central database or processing facility
- All nodes are equal, hence, peer-to-peer
- Each new transaction updates the record adding to the data
- The vector of processing is forward only—"mistakes" require a "next" transaction to make a correction (i.e., some bookkeeping rules)


**Taken from:** ***Defining FinTech: for 2018 and Beyond*** **– Richard Heckinger 2018**

# Definitions
# A Word Re- Digital Currencies?

- Digital currency ( digital money, Cybercash)is a payment method existing only in electronic form

- Digital currency can be transferred between entities and individuals with the help of technology like computers, smartphones and the internet (Technopedia)

# Definitions
# A Word Re- Digital Currencies?

- Most of what is deemed as money (e.g., Euro, Dollars, Yen, Sterling) is in digital form
  - For example, the U.S. economy is $18 trillion per year, yet its supply of notes and coins in circulation is about $1.6 trillion (Heckinger, Richard 2018)

  - **Most transactions and balances are in digital form**
    - Payments of all kinds
    - Credit cards
    - Debit cards
    - Mobile phone
    - Money cards
  - DLT is being adopted for use with any digital currency

# Definitions
# A Word Re- Digital Currencies?

- Central banks are interested in DLT for use with existing digital currencies
  - Payment systems
  - Supervisory data

- Commercial banks are starting to use DLT
  - For their own data processing
  - Collaboratively, creating private networks for settling transactions, netting, etc., with or without a private cryptocurrency
  - To support their own cryptocurrency for use by correspondents and counterparties

# Definitions
# A Word Re- Crypto Currencies?

- Crypto-currency – any form of currency that usually exists digitally, and that has no central issuing or regulating authority, but instead uses a decentralized cryptographically secured system to record transactions, manage the issuance of new units and prevent counterfeiting and fraudulent transactions. (Merriam-Webster Dictionary)

# Definitions
# A Word Re- Crypto Currencies?

- Crypto currencies challenge definition of “money”
  - Almost anyone can create one; very low barriers to entry
  - Acceptance, trust, security and commitment are big questions

- Recall that Money, is traditionally defined as
  - Medium of exchange
  - Store of value
  - A unit of account
- Of course, money is whatever we agree it is;
- often defined as “Legal Tender” to create some certainty of acceptance

# Definitions
# A Word Re- Crypto Currencies?

- Desirable characteristics of money
  - Available but reasonably scarce
  - Relatively stable in value
  - Not easy to counterfeit or degrade
  - Transportable
  - Fungible
- There is usually a certain amount of seigneurage that accrues to the sovereign (i.e., the issuer),

  - Over 1500 crypto currencies (as of March 2018)

# Definitions Cryptocurrency vis-a vis Digital Currency?

Cryptocurrencies and virtual currencies are categories of digital currencies.

# Payment System Use Cases in FinTech

- Different types of firms providing services
  - Tech firms
  - Existing non-bank financial firms
  - Entrants from other industries (telcos, retail)
  - Non-firm networks (Bitcoin)

# Regulatory Treatment for FinTech - Risk

Issues and challenges with FinTech:

- FinTech & digital currencies particularly, are usually not specifically regulated and do not fit easily into the existing regulatory framework and structures.

- The online and 'borderless' nature of these technologies pose a challenge for regulation and regulators.

- Also, regulation naturally imposes costs on payment system providers and their intermediaries. The flipside is that digital currency providers may benefit from not being subject to these costs.

# Regulatory Treatment for FinTech - Risk

- **Risks posed by Fintech**
  - ***Data Security and Privacy***
    - New firms who may not be competent at protecting sensitive information
    - New structures/processes that may be inherently harder to secure
    - Tradeoff between security and functionality
  - ***Consumer Protection***
    - New firms or methods create different risks
    - UDA(A)P (Unfair, Deceptive Acts & Practices)
    - Disparate Impact
    - Thinly capitalized firms

# Regulatory Treatment for FinTech - Risk

- **Systemic Risk**
  - Impact on payments system
  - Impact of asset backed securities
  - Loss of resilience
  - Competitive and Concentration
    - What if only one "bank" wins
    - What if all banks use the same vendors

# Regulatory Treatment for FinTech -Approaches

- Several approaches have been taken to regulation this new wave of technology:
  1. ***Information/moral suasion*** – Public warnings; Investor/buyer information; Research papers
  2. ***Regulation of specific entities*** – Limited set of regulations for specific types of entity (e.g. those that enable interaction between digital currencies and traditional payment instruments and/or the real economy) (record-keeping, reporting, prudential measures, AML/TF - Examples: United States, France, Canada, Singapore, Sweden
  3. ***Interpretation of existing regulations*** – Application of regulation based on "interpretation" of how existing framework (e.g. tax law treatment) may be applied to digital currencies or digital currency intermediaries

# Regulatory Treatment for FinTech -Approaches

- There are several approaches to the regulation of this new wave of technology:
  4. ***Overall regulation*** – Dedicated regulation, covering all three aspects (consumer protection, prudential/organizational rules for stakeholders, and specific operating rules as payment systems)
  5. ***Prohibition*** – A ban on specific services. Ban on digital currency acceptance by retailers; Ban on digital currency-based financial instruments (Example: China & Belgium); Ban on digital currency exchangers; Ban on Bitcoin transactions between banks (Example: China & Mexico).

# Risks to Regulation?

- Risks posed by regulation

1. Regulation can be ineffective at preventing risks

2. Regulation **is** the risk

    - Suppress innovation
    - Deny access
    - Stifle competition
    - Distort Markets

# Risks to Regulation?

- **FINTECH – Why might regulation fail?**
- Risks to effective regulation
  1. Poor Regulatory Structure
     - Forcing square pegs into round holes
     - Too many (or too few) cooks in the kitchen
       - Fractured Regulatory Environment
     - Not the right type of authority
  2. Regulation Lagging Innovation
     - Takes a while to pass laws/promulgate regulations
     - Need to assess the issue before government acts
     - Compounding innovation
     - Innovation responds to regulatory impediments (Life finds a way)

# Risks to Regulation?

3. Lack of Expertise or Resources
   - Different skill sets/tools needed
   - Staying up to date isn't cheap
   - It isn't your only job

4. Politics
   - Politics can move slowly
   - What is popular isn't always right
   - Special interests and regulatory capture

# Risks to Regulation? What can be done?

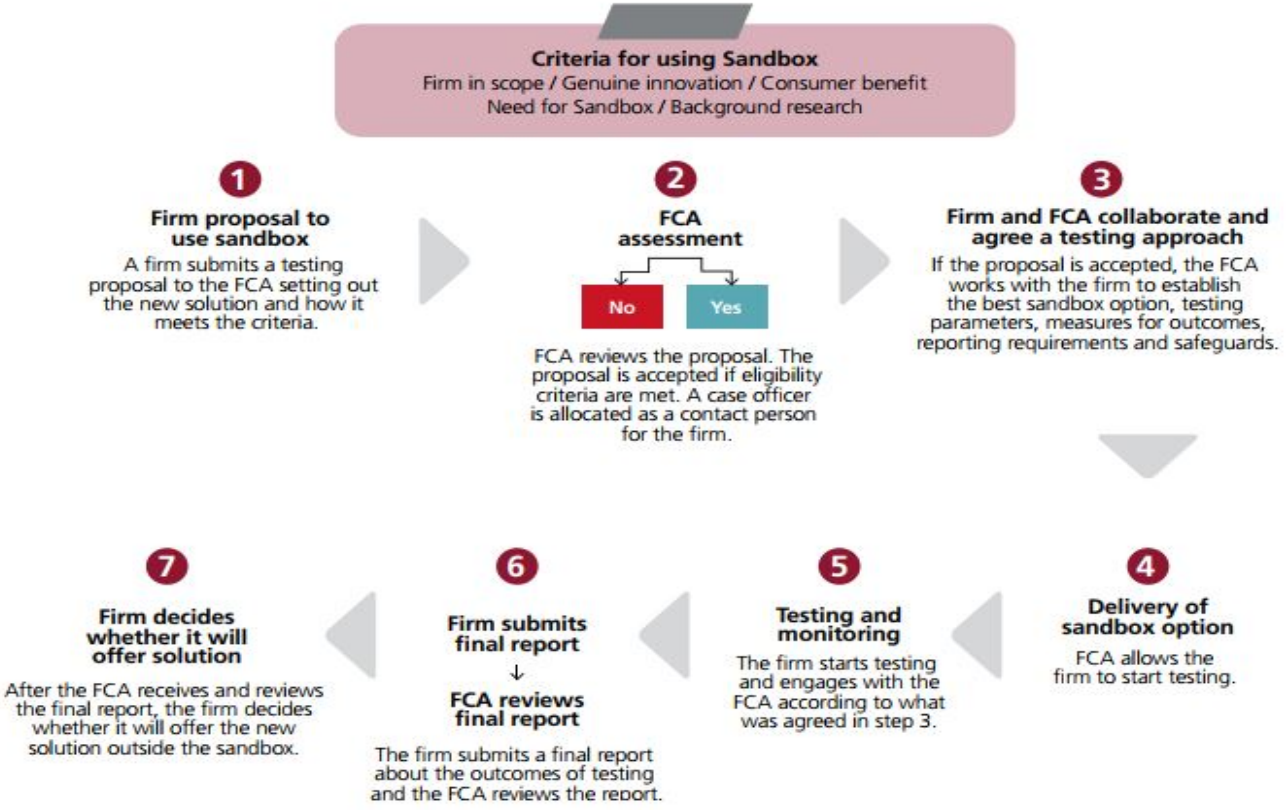
- Engagement
- Experimentation
- Reevaluation of current regulation/regulatory structure
- Revisiting regulation over time

# Regulatory Treatment for FinTech: Sandboxing

- The globally accepted strategy for dealing with FinTech is 'sandboxing'.
- Sandboxing is not new, simply put it's a pilot project:
  - The word sandbox originally referred to the small box filled with sand where children play and experiment in a controlled environment.
  - In the computer science world, a sandbox is a closed testing environment designed for experimenting safely with web or software projects.
  - ***In the FinTech world, it is a testing ground for new business models and products that face unique relationships with current regulation and regulatory institutions***.

# Features of a Sandbox

- Each country's Regulatory Sandbox has unique features.
  - UK Sandbox Diagram:



# Sandbox: Features (1)

- Broadly speaking, each jurisdiction has a criteria for use, which forms a part of the entry test:
  1. Scope of the applicant firm: Does it support the financial ecosystem?
  2. Consumer benefit: Is there a benefit?
  3. Objective of testing: Why should it be tested here?
  4. Genuine innovation
  5. Applicant firm background research: What research have you done?
  6. Testing plan: How do you plan to test your innovation?

- All of which are submitted to the regulators for approval.

# Sandbox: Features (2)

- Regulators then request applicant firms to assess their levels of risk to see whether the product or service enhances:
  - market stability;
  - market transparency; or
  - a company's processes to protect clients, consumers, counterparties and the broader financial system.

- This helps determine the utility of the innovation within the sandbox, or whether it is already covered in existing regulation.

# Sandbox: Features (3)

- Regulators then act to:
  - Apply sectorial restrictions on the participant
  - Restrict the interaction with target customers (Example: Hong Kong Monetary Authority's sandbox is open for services targeting "staff members or focus groups of selected customers", while the Monetary Authority of Singapore (MAS) allows the applicant to choose the type of customer, and the Australian Securities and Investments Commission (ASIC) and the Mauritius Investment Board deem services offered to retail and wholesale clients eligible).
    - The more that retail clients comprise the focus of the FinTech, the more restrictions regulators have imposed as the type of customers has to be appropriate to the tested products and to the exposed risks.

# Sandbox: Features (4)

- Regulators then act to:
  - Determine the time and size the firm is allowed to operate in the Sandbox. For example:
  - Duration: 6, 12 or 24 months + Extensions; or

# Sandbox: Features – Mandatory Provisions

- Of particular note are the mandatory provisions which form the minimum requirements to access.
  1. licensing fees;
  2. an entity's capital requirements;
  3. leadership requirements;
  4. credit rating and relative size;
  5. financial soundness;
  6. risk management;
  7. confidentiality of customer information;
  8. management's fitness;
  9. handling of customers' monies and assets by intermediaries;
  10. AML/CTF measures.

# Sandbox: Features – Mandatory Provisions

11. audit requirement;
12. know-your-client requirements;
13. suitability requirements;
14. dispute resolution requirements;
15. certain disclosure and reporting requirements;
16. the requirement to issue and distribute a prospectus

Each country determines which requirement(s) may be waived for participation.

# Sandbox: Features – Mandatory Provisions

- Sandbox rules typically specify the grounds upon which to withdraw the privilege. Reasons for forced exit from the sandbox include:
  1. risks exceeding the benefits;
  2. non-compliance with laws or regulatory impositions; and
  3. the purpose of being in the sandbox not being achieved.

- **Note:** The true value lies in the substance of the sandbox, which is the extent to which it can promote beneficial innovation based upon an in-depth knowledge exchange between innovator and regulator.

# Sandbox: Countries

There are a number of countries with a sandbox in operation:

1. UK
2. Hong Kong
3. Malaysia
4. Singapore
5. Abu Dhabi
6. Australia
7. Mauritius
8. Netherlands
9. Indonesia
10. Brunei-Darussalam
11. Canada
12. Thailand
13. Bahrain
14. Switzerland

# Country Reports on Sandbox: United Kingdom

- The sandbox is open to authorized firms, unauthorized firms that require authorization and technology businesses. The sandbox seeks to provide firms with:
  a) The ability to test products and services in a controlled environment;
  b) Reduced time-to-market at potentially lower cost;
  c) Support in identifying appropriate consumer protection safeguards to build into new products and services;
  d) Access to finance.

- The sandbox also offers tools such as restricted authorization, individual guidance, waivers and no enforcement action letters.

# Country Reports on Sandbox: United Kingdom

- Participants have used the sandbox to test a range of business models involving different technologies including online platforms, biometrics etc. However, distributed ledger technology (DLT) has been the most popular technology (some 17 different propositions).

- The Financial Conduct Authority (FCA) reports that it has helped reduce the time and cost of getting new, innovative, ideas to market.

- In addition, the sandbox has helped FinTech firms gain access to finance – according to the FCA, at least 40% of firms in the first cohort received investment either during or following sandbox testing.

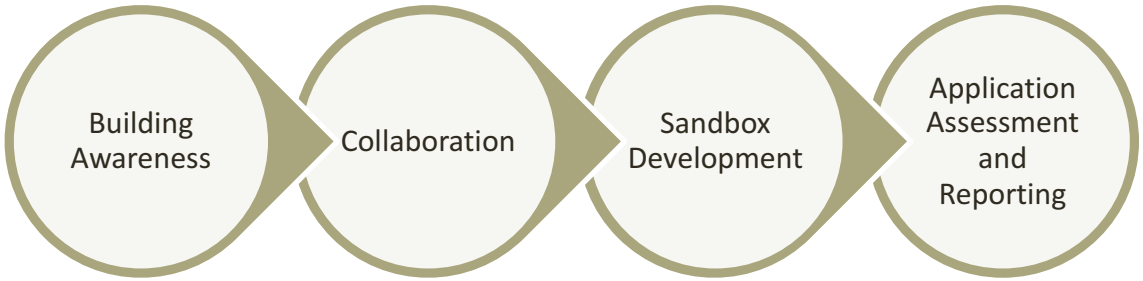
# Country Reports on Sandbox: United Kingdom

- The FCA also identifies challenges encountered by some sandbox participants, in particular, the difficulties in obtaining key banking services, particularly firms wishing to leverage DLT to become payment institutions, or electronic money institutions.

- The FCA concludes that the sandbox was the right step in the right direction.

# Bank of Jamaica's Approach

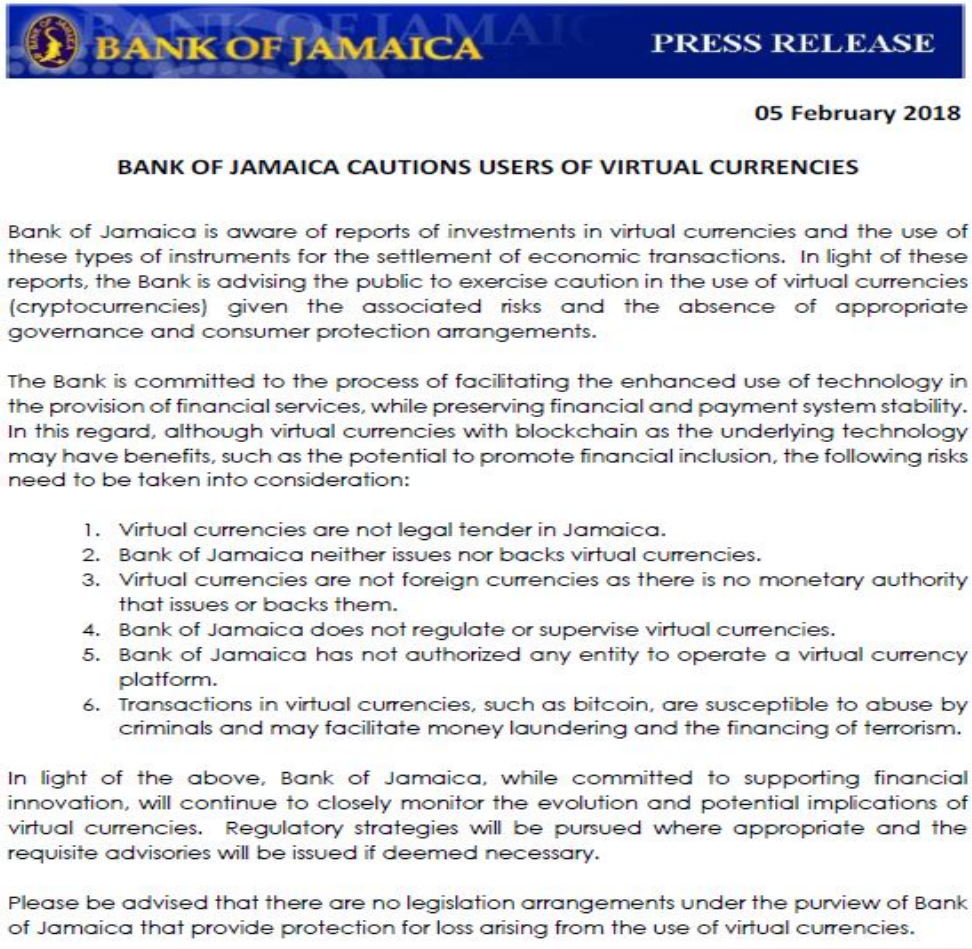
- The Bank of Jamaica has begun its FinTech regulatory journey commencing with:




1. Public Awareness Statement;
2. Fintech Survey;
3. Setting up Sandbox Arrangement; and
4. Provide information on applications received by Bank of Jamaica.

# Bank of Jamaica's Approach: Public Awareness Statement

- Bank of Jamaica's public awareness statement advises the public:
  - Virtual currencies are not legal tender in Jamaica;
  - Bank of Jamaica does not regulate or supervise virtual currencies;
  - Bank of Jamaica has not authorized any entity to operate a virtual currency platform.



BANK OF JAMAICA PRESS RELEASE

05 February 2018

**BANK OF JAMAICA CAUTIONS USERS OF VIRTUAL CURRENCIES**

Bank of Jamaica is aware of reports of investments in virtual currencies and the use of these types of instruments for the settlement of economic transactions. In light of these reports, the Bank is advising the public to exercise caution in the use of virtual currencies (cryptocurrencies) given the associated risks and the absence of appropriate governance and consumer protection arrangements.

The Bank is committed to the process of facilitating the enhanced use of technology in the provision of financial services, while preserving financial and payment system stability. In this regard, although virtual currencies with blockchain as the underlying technology may have benefits, such as the potential to promote financial inclusion, the following risks need to be taken into consideration:

1. Virtual currencies are not legal tender in Jamaica.
2. Bank of Jamaica neither issues nor backs virtual currencies.
3. Virtual currencies are not foreign currencies as there is no monetary authority that issues or backs them.
4. Bank of Jamaica does not regulate or supervise virtual currencies.
5. Bank of Jamaica has not authorized any entity to operate a virtual currency platform.
6. Transactions in virtual currencies, such as bitcoin, are susceptible to abuse by criminals and may facilitate money laundering and the financing of terrorism.

In light of the above, Bank of Jamaica, while committed to supporting financial innovation, will continue to closely monitor the evolution and potential implications of virtual currencies. Regulatory strategies will be pursued where appropriate and the requisite advisories will be issued if deemed necessary.

Please be advised that there are no legislation arrangements under the purview of Bank of Jamaica that provide protection for loss arising from the use of virtual currencies.

# Bank of Jamaica's Approach: Survey

- The Bank of Jamaica chairs and is represented at the CARICOM FinTech Work Group and recently participated in a survey on digital currency.
- CARICOM Fintech Work Group fosters collaboration, build capacity and information sharing among Caribbean Countries.
- Our response to the recent survey on digital currency shared information on Jamaica's experience with digital in the categories of:
  - The legal and regulatory framework;
  - Information on proposals;
  - Issues and challenges faced when dealing with digital currency.

# Bank of Jamaica's Approach: Sandbox

In setting up the Bank of Jamaica sandbox arrangements the following ten step process was implemented:

1. Approval of sandbox from Senior Management
2. Develop governance arrangements
3. Setup an Internal Fintech Work Group for assessments
4. Drafted Guidelines for Sandbox
5. Development of operational procedures for assessment
6. Authorization for piloting of applications
7. Pilot assessment
8. Approval or revocation of FinTech applicants
9. Publish approved entities
10. Report on sandbox applicants and approved products

# Bank of Jamaica's Approach: Applicants Received

To-date the Bank of Jamaica received proposals and requests for clarification, position and information on FinTech. Some of the applications received by the Bank of Jamaica include:

1. Cryptocurrency
2. Central Bank Digital Currency
3. Digital Jamaica Dollar and Digital Wallet
4. Digital Currency Exchange
5. Securities Blockchain Platform
6. Cryptocurrency Trading
7. KYC Database
8. Token Issuance

# ACKNOWLEDGEMENT

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***"FINTECH OPPORTUNITIES AND CHALLENGES IN PAYMENT SYSTEMS"***
CENTRAL BANKING TRAINING SERIES WINDSOR 2018 – CUMBERLAND LODGE WINDSOR

***IN PARTICULAR:***

***FINTECH: RISK AND REGULATION***
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**DEFINING FINTECH: FOR 2018 AND BEYOND**
RICHARD HECKINGER
VICE PRESIDENT & SENIOR POLICY ADVISOR, FINANCIAL MARKETS GROUP, FEDERAL RESERVE BANK OF CHICAGO (RETIRED)

**NEW APPROACHES IN UNDERSTANDING AND SUPERVISING DIGITAL CURRENCIES**
CORDELIA KAFETZ
HEAD, FINTECH HUB,
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# FINALE

Thank you for participating.

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