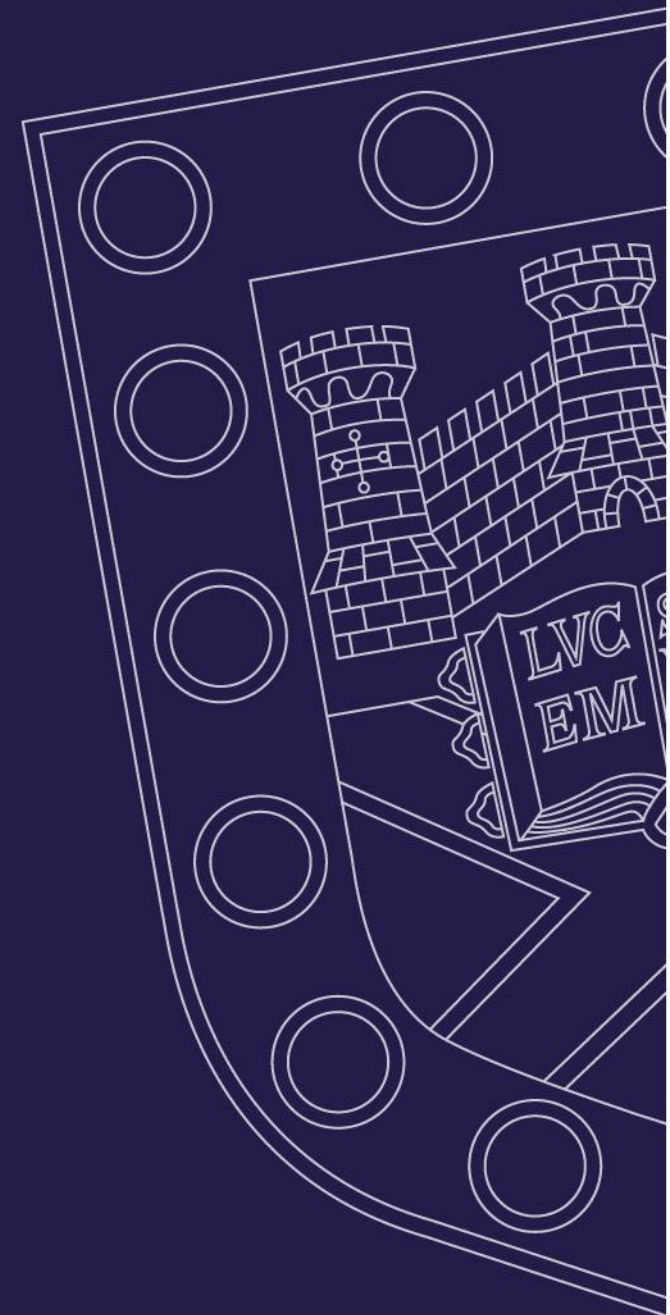# Data governance and financial market infrastructures: Delivering public goods

Dr Joseph Lee
Co-Director, Centre for Corporate and Commercial Law
University of Exeter

Where are we now?

- Stock exchange interconnections (funded by British Academy)
- Blockchain in financial services (ESRC-IAA)
- FMI interconnections project (ESRC)
- AI in financial services (ESRC-IAA)

Data governance from an exchange perspective

- Data governance defines how an exchange manages its data assets, and how improved decision-making should be operationalised. Aims
  - To understand where datasets are and how to access them
  - To put in place effective processes to protect data from threats of inappropriate release and access
  - To acquire and develop the right resources and skillsets to manage data
  - To appreciate the importance of data stewardship, ownership, policies, and standards lays the groundwork for sustainable governance

Data ownership

- Exchanges create the data sets
  - What is the attribute required to claim ownership? IP rights over the data sets i.e. copy right
- What are the data sets of which the exchange has ownership
  - Market data, but what kind of market data
  - Indices
  - Database right?
- The exchange enforces the enterprise business rules
  - What are these rules in place?

Data ownership

- What are the constraints or how to define data use in the organisation? What are the policies and regulatory framework i.e. agreements?
  - Open access and the reason for this
  - Business model
    - X % of the total revenue
  - Public interest
    - Providing access rights to Fintech developers
    - Or other legitimate reasons ie research
- How to design the Data Processing Agreement (DPA) or Data Transfer Agreement (DTA)?

Data stewardship

- Does the exchange own the data?
  - Raw data
  - Trading data (post and pre-trade data; derivative repositories)
  - Corporate data of listed companies (sustainability reporting; climate change reporting)
  - Personal data i.e. personal trading data; personal governance data
- If not, the exchange is a data steward (data controller and data processor) which is a caretaker of the data assets

Data stewardship

- What are the exchange legal and ethical responsibilities?
  - Accuracy of corporate data
    - Bad data traveling multiple layers
  - Quality of corporate data
  - Access rights (data standards)
  - Maintaining APIs
  - Possibility of using disclaimer clauses
  - Moral duty
    - Is it ethical to collect social media data ie using web scraping method
    - What are the ethical implications of using predictive technologies?
    - Is it ethical to forecast which companies will end up in insolvency or reorganisation?
    - Who has the right to access that forecast? How is one to interpret and use that prediction?

Data policies

- Data policies are the rules that the exchange utilises to manage its data assets, including enforcing authentication and access rights to data and compliance with laws and regulations.
  - What are the laws and regulations?
  - Cyber security
  - Fair trade
  - Access rights
    - Conducting due diligence on the Fintech developer

Data standards

- What are the precise criteria, specifications and rules for the definition, creation, storage and usage of data within the exchange? (for digital regulatory reporting DRR, to define the standards of data and data formats; for instance, defining the data formats for OTC derivatives)

- What are the implications for business models i.e. cost to consume and manage the data, the associated entitlements and the usage rights?

- Open standards?

- Interoperability?

Data trusts

- A data trust is to provide ethical, architectural and governance support for trustworthy data processing
- Data trust is a means of facilitating data sharing in order to support industry's, government's and academe's access to the data that is the raw material of AI development.
- Agreements that supply the trust that will ensure exchanges [of data] are secure and mutually beneficial
- What can the exchange contribute to a data trust to facilitate future generation of financial services?
  - Financial inclusion (access to finance)
  - Sustainable finance
    - Impact monitoring and reporting on Green bond transactions
    - Recording and tracking green data
    - Is information public-good? Who should pay for it?

Data governance for listed companies

- Data sets are corporate assets (industry data)
- Personal data i.e. identification of shareholders or ultimate shareholder
- Internal control
- Cross-border data flows
- What can the exchange do to enhance corporate governance, performance, and value?
  - Using Big data to ensure independent directors' quality of independence

Summary

- The exchanges have data sets which can contribute to AI/Machine learning development
  - Industry data
  - Personal data
- Obstacles for sharing the data sets with other third parties i.e. government, industry, researchers, and individuals
  - Industry data
    - Exchanges have IP rights in industry data
    - Exchanges could be exposed to legal risk & reputational risk for the quality and accuracy of the data sets
    - Some industry data sets may contain personal data
  - Personal data
    - Data protection law; privacy law
- Some solutions
  - Data governance and data trusts
  - What are the models of data governance and data trusts?

The roles/functions of the exchange in digital/smart finance

- Market infrastructure provider
- Technology firm
- Market regulator
- Data firm
- Market maker?

Further questions

- **What is the role of the stock exchange (FMI) in developing data governance framework?**
  - Stock exchange is a data company
  - It is also a data aggregator company (sharing with other economic actors)
  - It manages personal data
  - It plays a role as a trusted third party
  - It can act as a credit rating company
- **What can this achieve?**
  - Access to finance i.e. for KYC
  - Shared-economy, and
  - Citizen capital market
  - Improve market safety and integrity (transparency, mitigating systemic risk and prevent market abuse); i.e. developing machine readable regulation;
  - Digital transformation
- **What are the risks?**
  - Losing competitiveness (IP rights and internal control)
  - Losing licence
  - Lost of data while sharing data (data breaches)
  - Losing legitimacy, if misuse of data
  - Surveillance capitalism and accountability

Further questions

- **How to balance the role of a trusted third party and data protection, privacy right, and market competition?**