



ARTIFICIAL INTELLIGENCE (AI) IN FINANCE

Opportunities, Challenges and Implications for Policy Makers

[OECD Report](#) Findings

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Contents

- Impact of AI on specific financial activities
- Challenges and risks
- Policy recommendations



Impact on business models and activity



Asset Management

- ✓ Identify signals, capture underlying relationships in big data
- ✓ Optimise operational workflows, risk management
- ✓ Potentially alpha generating

- Concentration, competition issues
- Convergence of strategies



Algo Trading

- ✓ Enhance risk management, liquidity management
- ✓ Facilitate execution of large orders, optimise order flow

- Herding behavior, one-way markets
- Bouts of illiquidity in stress, flash crashes
- Market volatility and stability
- Collusion among machines, manipulation



Credit intermediation

- ✓ Reduce underwriting cost, efficiencies
- ✓ Credit extension to thin file / unscored clients
- ✓ Financial inclusion and SME financing gaps

- Risks of disparate impact in credit outcomes
- Potential for discriminatory or unfair lending, biases
- Exacerbated in BigTech lending



Blockchain-based Finance

- ✓ Augment capabilities of smart contracts (autonomy)
- ✓ Risk management (e.g. audit of code)
- ✓ Support DeFi applications, building of autonomous chains

- 'Garbage in, garbage out' conundrum
- Amplifies risks of decentralised finance



Challenges and risks

Governance & Accountability

- Model governance arrangements
- Accountability and lines of responsibility
- Outsourced models of infrastructure

Non-financial risks (data, fairness)

- Biases, unfair treatment and discriminatory results (inadequate use of data or \poor quality data)
- Data privacy, confidentiality

Explainability

- Why and how the model generates results
- Inability to adjust strategies in time of stress
→ amplify systemic risks, pro-cyclicality
- Incompatible with regulatory/supervisory frameworks and internal governance
→ Difficult to supervise AI/ML models

Robustness and Resilience

- Unintended consequences at firm/market level
- Overfitting, Model drifts (data, concept drifts),
- Correlations interpreted as causation
→ Importance of human involvement

Policy Frameworks

- AI complexity challenges technology-neutral approach (e.g. explainability, self-learning, dynamic adjustment)
- Potential incompatibilities with existing legal/reg frameworks
- Risk of fragmentation of policies (across sectors)
- Skills and employment





Policy responses: some examples

OECD AI Principles

- Values-based principles for the responsible stewardship of trustworthy AI
- E.g. benefit people and planet; respect rule of law; transparency, responsible disclosure; robust, secure safe functioning; accountability; facilitation of investment in R&D and skills; cross-border cooperation.

European Commission Regulatory Proposal

- Address AI risks and lay down harmonised rules on the use of AI across sectors of activity
- Strongest requirements for high-risk AI applications (incl. assessment of creditworthiness)
 - Requirements to use detailed and specific risk and quality management systems and subject the system to a conformity assessment; use high-quality data that is representative, free from errors and complete; keep records and logs, and be transparent to users about the use and operation of the AI-driven applications
- Requirement for human oversight by suitably trained individuals, the use of kill switches and/or explicit human confirmation of decision making; ensure the accuracy, robustness and security of the system; conduct post-market monitoring and notify the regulator about serious incidents, as well as register the system on a public register.

US Government Consultation

- Request for Information and comment on financial institutions' use of AI, including ML
 - Issued by Comptroller of the Currency, Federal Reserve System, Federal Deposit Insurance Corporation, Consumer Financial Protection Bureau, National Credit Union Administration
- Seeks input on questions related to explainability, the broader or more intensive data processing and usage, risk of overfitting, cybersecurity risks, fair lending considerations, oversight of third parties and other considerations



Policy recommendations (1/2)

Support AI while protecting investors and markets

- Identify and mitigate emerging risks
- Examine potential need to update/adjust frameworks for model governance and risk management

Apply proportionality

- Contextual and proportional framework for the application of regulatory/ supervisory requirements
 - e.g. critical applications (credit)

Sharpen focus on better data governance

- Consider specific requirements or best practices for data management
 - Data quality, adequacy of the dataset used depending on the intended use
 - Sense checking of model results against baseline datasets
 - Requirements for additional transparency over use of personal data, opt-out options

Disclosure requirements

- Consider disclosure requirements around the use of AI techniques
 - Including information around the AI system's capabilities and limitations, suitability requirements



Policy recommendations (2/2)

Strengthen model governance and accountability mechanisms

- Require explicit model governance frameworks and attribution of accountability
 - Strengthen existing arrangements
- Assist oversight with adequate documentation and audit trails of processes

Require firms to provide assurance around the robustness and resilience of AI models

- Introduce/reinforce frameworks for appropriate training, retraining and rigorous testing of AI models
 - Ensure that AI-based decisioning operates as intended & in compliance with applicable rules
- Promote **ongoing monitoring and validation** of AI models, throughout lifetime of model
 - Identify, prevent and address model drifts
 - Model validation separate from model development, and adequately documented

Place emphasis in human primacy in decision making for higher-value use-cases

- Human AND Machine, especially for critical services (e.g. lending)

Deploy resources to keep pace with advances in technology

- Research and skills upgrade
- Multidisciplinary dialogue at cross-border level; communication efforts to build **TRUST**



Thank you!

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