# AI Act: key measures and implications for financial services

## 1. Market trends and AI adoption

### 1.1 Current uptake of AI in finance

Artificial Intelligence (AI) is increasingly used by fintechs and more established financial firms to automate routine tasks, better predict market evolutions and manage risks. This allows firms to enhance operational efficiency, reduce costs and improve risk management and decision-making. AI is also used to provide customers with more tailored products and improved service, potentially fostering innovation and greater customer satisfaction. At present, AI applications in the financial sector are more focused on operational efficiency, but it is expected that as the deployment of AI continues, an increasing number of firms focus on customer-oriented applications that may boost customer demand and loyalty.

Key use cases for financial services include AML and fraud detection, where AI's ability to analyze vast amounts of data in real-time is transforming how financial institutions detect and prevent fraudulent activities. Additionally, AI-driven credit scoring models are helping to redefine how credit-worthiness is assessed, incorporating a broader range of data to provide more accurate and inclusive assessments. Trading is a third area of application. AI helps traders to optimize their order execution, identify arbitrage opportunities and manage portfolios more effectively.

The use of AI is progressing significantly in all sectors of finance and more generally of the economy. According to a McKinsey survey published in 2024, 91% of financial services companies are either assessing AI or already using it in production[1]. It is estimated that approximately 60% of European financial institutions are using AI to enhance fraud detection capabilities[2] and 50% of trading firms are using AI. A report published by EIOPA in 2024 also shows that 50% of non-life insurance firms surveyed and 24% of life insurance firms use AI for their operations[3].

### 1.2 Future trends and developments

Looking ahead, new generations of AI, such as generative AI, are expected to further accelerate this trend, driving innovation and new use cases. These advancements will offer opportunities to increase efficiency across the financial sector, enhance personalization, and ultimately make AI a key component of financial firms' competitiveness.

Generative AI leverages Large Language Models (LLMs) to generate new content such as text, images, and also enhance data analysis by identifying patterns in vast datasets, synthesizing insights and generating predictive models. In the financial sector, generative AI can be applied for example to automated report generation, personalized client communication, fraud detection through anomaly pattern identification, and enhanced predictive analytics for market trends and risk management. As this technology evolves, it will offer the potential to streamline operations, increase customer engagement, and uncover new insights from financial data.

High-performance and quantum computing and the combination of AI with other technologies such as blockchain are also expected to amplify the uptake and impact of AI, enabling even more advanced AI applications and greater levels of efficiency, security, and personalization. Quantum enabled AI, for instance, could revolutionize risk management and portfolio optimization, solving problems that are currently beyond the capabilities of traditional computing. Similarly, AI's integration with blockchain could enhance the transparency and security of financial transactions, paving the way for more robust and trustworthy financial systems and supporting the further automation of securities value chains.

However, the integration of AI is not without challenges for firms. Implementation costs, complexity in system integration, the shortage of skills and the challenges associated with data quality and availability pose significant obstacles to a wide scale adoption of AI at present. AI also

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1. The state of AI in 2024: McKinsey Global Survey results, McKinsey, 2024.
2. Artificial intelligence in financial services, PwC, 2024.
3. See *Eurofi Views Magazine* September 2024, P. Hielkema, EIOPA.

creates new potential issues in terms of fairness, bias and transparency that need to be addressed from a customer perspective. The rapid pace of AI-driven innovation also presents new challenges for regulators and supervisors, requiring them to continually adapt their skills and strategies to effectively navigate these evolving developments.

The recently adopted EU Artificial Intelligence Act (AI Act), which aims to ensure that AI systems are safe and respect fundamental rights will address some of these challenges. It will enter into force in August 2024 and will be implemented in stages by August 2026. Work is also underway in other major financial jurisdictions such as the US, the UK and Japan to provide further guidance for the use of AI-based systems.

## 2. Objectives and key measures of the AI Act

The EU Artificial Intelligence Act (AI Act) was formally adopted by the European Parliament in March 2024 and by the European Council in May 2024 and will enter into force in August 2024[4].

The Act establishes a harmonized regulatory framework across the EU to address the growing influence of AI technologies in a cross-sectoral manner[5]. It aims to protect fundamental rights and ensure safety while fostering innovation. This framework is designed to complement existing sector-specific regulations, such as financial regulations that already address certain risks posed by AI, without imposing specific AI requirements[6].

As the world's first comprehensive AI law, the Act also seeks to position the EU as a global leader in the ethical use of AI by setting standards in line with the EU's commitment to a "human-centric" approach to AI, that could influence global AI governance[7].

### 2.1 Risk-based approach to AI regulation

In order to balance the ethical use of AI and the protection of human rights with the need for innovation, the AI Act adopts a risk-based and proportionate legislation. The Act categorizes AI systems into four risk levels: minimal risk, limited risk, high risk, and unacceptable risk. This classification determines the regulatory requirements each AI system must comply with.

The AI Act sets out a methodology for the classification of AI systems and establishes a list of high-risk use cases of AI across a number of sectors including financial services in Annex III of the AI Act. Providers, deployers, and distributors of AI systems will be required to evaluate the level of risk posed by their systems based on this methodology and classification, which will also offer greater legal certainty for AI system operators[8].

- Minimal Risk: AI systems in this category, such as AI-enabled video games or spam filters, will remain subject to the existing legislation without additional legal obligations related to the AI Act due to their low potential for harm. These systems represent the majority of existing AI systems. Voluntarily, providers of those systems may choose to apply the requirements for trustworthy AI and adhere to voluntary codes of conduct.

- Limited Risk: Systems such as chatbots or AI-enabled text or image generation systems fall into this category. They will be subject to transparency and user notification obligations in order to ensure that users are aware that they are interacting with an AI system and reduce the risk of deception, misuse or manipulation.

- High Risk: High-risk AI systems are those that can have a significant impact on people's safety, health, or fundamental rights and those that can lead to disruptions in the ordinary conduct of social and economic activities[9]. These systems will have to comply with stringent requirements related to risk management, data governance, transparency, and human oversight before being deployed in the market, in order to prevent harm and ensure that these systems are reliable and trustworthy.

- Unacceptable Risk: AI systems deemed to pose unacceptable risks, such as those that manipulate human behavior through subliminal techniques, enable biometric identification,

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4. The AI Act was signed by the presidents of both institutions on June 13, 2024. The Act is set to be published in the *Official Journal of the EU* in July 2024, and it will enter into force 20 days after publication.

5. The AI Act defines an AI system as "a machine-based system designed to operate with varying levels of autonomy, that may exhibit adaptiveness after deployment and that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments". Recital 11 further sets out the reasons for this definition, notably setting out that it is based on key characteristics that distinguish it from simpler traditional software systems of programming approaches.

6. For instance, AI-enabled trading algorithms must adhere to the existing requirements under the MiFID II/MiFIR framework and the market abuse regulations and therefore the associated risks are already partly mitigated by the existing framework.

7. Artificial Intelligence Act, European Parliament, March 2024.

8. Artificial Intelligence – Q&A – European Commission, August 2024 https://ec.europa.eu/commission/presscorner/detail/en/QANDA_21_1683

9. AI systems can classify as high-risk in two cases: (i) the AI system is intended to be used for a high-risk use case listed in Annex III of the AI Act, (ii) the AI system is embedded as a safety component in products covered by existing product legislation, such as AI-based medical software.

individual predictive policing or social scoring, are banned outright under the AI Act as they are deemed to violate fundamental rights. For example, systems like social scoring by public authorities, are considered to potentially infringe on human dignity and lead to unfair discrimination.

High-risk systems, which are the acceptable AI systems on which the highest level of requirements will be imposed, are listed in Annex III of the regulation. Two types of AI systems are considered 'high risk' in the financial sector due to their potential impact on individuals' financial well-being and the integrity of financial markets.

- AI systems intended to be used to evaluate the creditworthiness of natural persons or establish their credit score, with the exception of those AI systems used for the purpose of detecting financial fraud.

- AI systems intended to be used for risk assessment and pricing in relation to natural persons in the case of life and health insurance.

The AI Act imposes strict obligations on high-risk AI systems to ensure safety, transparency, accuracy and fairness and also respect for fundamental rights. Providers must implement risk management, ensure the use of high-quality and unbiased data, maintain transparency through documentation and user information, and ensure human oversight and cybersecurity. For instance, AI systems used for credit scoring must be transparent about the data sources and algorithms used to ensure that decisions are made fairly and without bias. The Act also mandates that these systems undergo regular audits and assessments to ensure they meet the required standards of accuracy and reliability. High-risk AI systems must undergo conformity assessments and be registered in an EU database before deployment. Providers are also required to monitor AI systems after deployment and ensure liability mechanisms are in place for compensation in case of harm.

The Act also includes penalties for non-compliance that can reach up to 3% of a company's annual global turnover for violations concerning high-risk systems and up to 1% for less risky systems.

## 2.2 Specific measures for Generative AI systems

With the rise of powerful general-purpose AI models (GPAI), such as large language models (LLMs), which serve as the foundation for many generative AI systems, the AI Act has introduced additional obligations for GPAI developers, particularly when these models have high-impact capabilities that could pose systemic risks[10]. These models may propagate harmful biases across multiple applications if they are not properly developed or may be misused, potentially affecting many individuals. They are however challenging to regulate due to their versatility and broad applicability across various domains, which is why obligations are imposed on their providers.

The EU AI Act introduces rules and oversight for GPAI model providers to ensure that models are developed in a safe, transparent and fair way. Providers are required to maintain up-to-date technical documentation, share relevant information with downstream providers, and comply with Union copyright laws, while also disclosing training data summaries[11].

When potential systemic risks are identified in connection with the use of GPAI models, providers must assess and mitigate them by conducting evaluations, adversarial testing, and ensuring robust cybersecurity measures. The AI Act mandates additional responsibilities, such as tracking incidents and implementing corrective actions, especially for AI models with significant capabilities or widespread usage.

One of the challenges in implementing these measures will be defining the responsibilities of different actors in the AI value chain involved in the development or use of GPAI models, including developers, providers, and users of AI systems. This may be complex, as GPAI models can be adapted and used in various high-risk applications by third parties. It is necessary to provide clear guidelines on how these responsibilities are distributed to ensure accountability and compliance across the entire AI ecosystem[12].

## 2.3 Implementation timeline and next steps

The AI Act will be implemented in a phased way to allow stakeholders sufficient time to comply with the new regulations. While the Act officially comes into force in August 2024, its provisions will be phased in over a two-year period to facilitate a smooth transition. This gradual rollout aims to help all companies, including smaller ones, to adjust to the new requirements and achieve compliance without disrupting their operations. The obligations will affect both providers of AI systems (*e.g.* a developer of a CV-screening tool) and deployers (*e.g.* a bank buying this screening tool).

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10. Background Consultation Trustworthy General-Purpose AI, European AI Office, July 2024.
11. Exceptions to these requirements are granted to open-source AI models unless they pose systemic risks.
12. The European Union AI Act: premature or precocious regulation?, Bruegel, March 2024.

- <u>August 2024:</u> The AI Act comes into force, marking the beginning of the regulatory framework's implementation.

- <u>February 2025:</u> Prohibitions on AI systems deemed to pose unacceptable risks, such as those that manipulate or deceive people, will take effect. This includes bans on systems like social scoring and predictive policing, which could violate fundamental rights and freedoms.

- <u>August 2025:</u> Rules for General Purpose AI Models (GPAI) will become applicable, requiring developers of these models to comply with the specified documentation, testing, and cyber-security requirements.

- <u>August 2026:</u> The full range of obligations for high-risk AI systems, including those in the financial services sector will be enforced.

In parallel, the Commission will issue by 2026 several pieces of secondary legislation including delegated acts, implementing acts and guidelines specifying how the AI Act's provisions should be applied in practice. Delegated acts are expected to cover areas such as the definition and classification of AI systems and GPAI models, transparency and documentation requirements, whereas implementing acts should focus more on operational guidelines for the implementation of the AI Act, such as codes of practice and establishing the AI Act governance system. Additionally, the Commission will provide practical guidance on more specific aspects of the AI Act implementation (*e.g.* guidelines for classifying AI systems, for implementing disclosure requirements…).

The European Commission is conducting targeted consultations to identify the need for specific guidance or implementation measures, particularly for high-risk systems.

A targeted consultation on AI in the financial sector launched in June 2024, which aims to assess the main use cases and risks of AI, the potential impacts of the AI Act in the sector and the interactions with the existing acquis, is due to be finalized in September 2024[13].

The European AI Office also initiated in July 2024 a call for participants to help draft the first Code of Practice for GPAI providers, inviting industry stakeholders, civil society organizations, and academic experts to contribute in a collaborative way. This consultation will address transparency and copyright-related rules for GPAI models, and

risk assessment and mitigation for GPAI models posing systemic risk, as well as the monitoring of the codes of practice. This Code, which will detail the AI Act rules for providers of GPAI models, will apply 12 months after the entry into force of the AI Act (August 2025).

A voluntary scheme taking up some key obligations of the AI Act (the AI Pact) will be provided for developers wanting to start implementing obligations of the AI Act ahead of the legal deadline.

The AI Pact also aims to initiate engagement between the AI Office, the Commission's implementing body of the AI Act, and organisations developing and utilizing AI systems.

## 2.4 Governance of the AI Act implementation

A new AI office has been created within the European Commission to draft secondary legislation (*e.g.* delegated acts, guidelines, codes of practice) setting out how the provisions of the AI Act should be applied in practice. The AI Office is moreover in charge of the EU's international engagement in the area of AI and the promotion of responsible stewardship and good governance of AI in collaboration with international partners[14].

To ensure EU-wide coherence and cooperation in the implementation and application of the AI Act, a European Artificial Intelligence Board (AI Board) will also be established, comprising representatives from Member States, with specialized subgroups for national regulators and other competent authorities including the European Data Protection Supervisor. The AI Office will also offer strategic guidance to the AI Board. The AI Board will provide guidance on all matters related to AI policy, notably AI regulation, innovation and excellence policy and international cooperation on AI.

In addition, the AI Act establishes two advisory bodies to provide expert input: the Scientific Panel and the Advisory Forum. These bodies will offer insights from stakeholders and interdisciplinary scientific communities, informing decision-making and ensuring a balanced approach to AI development.

The AI Act moreover establishes a two-tiered governance system, where national authorities are responsible for overseeing and enforcing rules for AI systems, while the EU level is responsible for governing general-purpose AI models[15].

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13. Targeted Consultation on Artificial Intelligence in the Financial Sector, European Commission, June 2024.
14. The EU is involved in multilateral forums where AI is discussed – notably G7, G20, the OECD, the Council of Europe, the Global Partnership on AI and the United Nations – and the EU has close bilateral ties with *e.g.* Canada, the US, India, Japan, South Korea, Singapore, and the Latin American and Caribbean region. Source AI Q&A European Commission August 2024.
15. Artificial Intelligence Questions and Answers, August 2024.

# 3. Potential issues to be further considered

The comments of different private and public sector stakeholders on the AI Act highlight different aspects that may require further clarification or assessment for a successful implementation of the AI Act, possibly through secondary legislation and additional guidance. These issues may affect all sectors, but are quite relevant for the financial sector, which is highly data-driven.

## 3.1 Impact on innovation and the uptake of AI

While the AI Act seeks to balance the objectives of risk mitigation and innovation, a potential concern with regulating AI is that risk mitigation may overshadow innovation and ultimately impact the competitiveness of EU firms. The potential impacts of the AI Act will require careful consideration during the drafting of secondary legislation and continuous monitoring in the early stages of implementation[16].

Financial regulators, meanwhile, face the challenge of keeping pace with rapid advancements in AI. Adequate resources and collaboration between regulatory bodies and the industry will be essential[17].

According to the European Commission, the AI Act is designed to support innovation in several ways. The strengthening of user trust, which the Act aims to achieve, is expected to drive demand for AI from companies and public authorities. By increasing legal certainty and harmonizing rules, the Act will also help AI providers access larger markets with products that gain consumer and user confidence. Moreover, the Act promotes innovation through regulatory sandboxes and real-world testing, allowing companies to experiment with new AI technologies in controlled environments. These measures, alongside the AI Board's role in fostering innovation and excellence policy, aim to create a supportive framework for AI development and deployment.

The European Commission has also acknowledged the challenges the AI Act may pose for smaller firms and is exploring ways to mitigate these impacts. On 24 January 2024, the Commission adopted an AI innovation package, which includes measures to support European startups and SMEs in developing trustworthy AI that align with EU values and regulations[18].

## 3.2 Interactions with European data regulations

The AI Act does not exist in isolation; it interacts with existing financial regulation and also European data regulations, creating both overlaps and synergies that need to be carefully managed.

The AI Act's requirements for data transparency and governance must in particular be aligned with the provisions of the Data Act and the European Data Strategy, which regulate data access and sharing within the EU. Ensuring consistency between these regulations is essential to avoid conflicts and ensure that AI systems can operate effectively while respecting data protection and privacy standards[19].

There are moreover interactions with the General Data Protection Regulation (GDPR). The handling of personal data by AI systems is a critical concern, and the AI Act must be fully compatible with the GDPR. This interaction is particularly important for high-risk AI systems that process large amounts of personal data, such as those used for financial services. The AI Act must ensure that these systems adhere to GDPR principles, including the rights of data subjects and the requirements for data minimization and security[20].

The potential interactions between the AI Act and the FIDA (Financial Data Access) proposal, which aims to govern the access to and sharing of customers' financial data in the context of open finance, must also be considered. FIDA may increase the data available for AI systems to analyze, potentially enhancing AI-driven insights and financial services. Additionally, AI can play a significant role in maximizing the benefits of broader data sharing within open finance by improving data processing and generating valuable insights. To fully leverage these synergies, it is necessary to ensure that the FIDA and AI Act requirements –

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16. Throughout the legislative process, several potential negative impacts of the AI Act proposal were raised. These included fears that the AI Act could stifle innovation and place European companies at a disadvantage compared to regions with less restrictive regulations, such as the U.S. or China. Additionally, concerns were expressed that high compliance costs and complexities – especially for high-risk systems and in areas such as transparency and data governance – might deter investment in AI. Smaller companies could be disproportionately burdened, potentially driving innovation to regions with more favorable regulatory environments. Larger institutions may also face significant obstacles, as the constraints imposed by the AI Act could limit their ability to effectively implement AI systems and hinder their access to and use of data.

17. The risk that overly complex requirements might also confuse consumers, eroding trust in AI-driven financial services was also raised. Clear, accessible communication about AI systems is therefore essential. See Encountering the AI revolution: the role of development cooperation, Friends of Europe, April 2024.

18. Commission launches AI Innovation package to support AI startups and SMEs, 24 January 2024.

19. Europe's rushed attempt to set the rules for AI, Financial Times, July 2024.

20. Data minimization is a key principle under the GDPR (Article 5(1)(c)), which requires that personal data collected must be adequate, relevant, and limited to what is necessary for the purposes for which they are processed. This means organizations, including those using AI systems, should collect only the data they need to fulfill specific, legitimate purposes and no more than that.

particularly around privacy, transparency, and data governance – are sufficiently aligned to avoid conflicts and overlaps.

## 3.3 Data quality and standardization issues

The absence of explicit standards for data quality in the AI Act raises potential concerns in the financial sector. The quality of data indeed directly influences the accuracy, fairness, and effectiveness of AI systems used in the financial sector. Without sufficiently high quality and standardized data, there is a risk that AI systems may produce biased or inaccurate outcomes, leading to flawed decision-making and potential legal, financial, and reputational consequences.

Moreover, the lack of standardized data practices across the EU could result in inconsistencies in AI outputs across different jurisdictions, complicating the regulatory oversight of AI systems and increasing the complexity of compliance for cross-border financial institutions. This inconsistency could create a fragmented regulatory environment, where the same AI system might be deemed compliant in one member state but not in another, leading to legal uncertainties and potential conflicts[21].

To address these challenges, there is a need for the development and implementation of clear and robust data quality standards that are sufficiently harmonized across the EU. These standards should encompass guidelines for data collection, processing, and validation to ensure that the data used in AI systems is accurate, relevant, and free from bias[22]. Furthermore, the standardization of data practices would facilitate greater interoperability of AI systems across different sectors and jurisdictions, enabling financial institutions to leverage AI more effectively while ensuring compliance with EU regulations.

Strong data governance is also essential to ensure the integrity of AI-driven financial services, as AI and data usage expand, to ensure that data is collected, processed, and shared in a consistent and secure manner. This requires promoting policies that drive common standards and best practices for data governance. Without such standards, the financial sector risks producing biased or inaccurate outcomes, potentially undermining consumer trust and financial stability[23].

# 4. International context of AI regulation

Global regulatory coordination is an important theme for AI with the fast uptake of these technologies in all jurisdictions and sectors of the economy. Consistency of requirements is important for multinational companies operating in various jurisdictions, as potential inconsistencies of rules and standards could complicate compliance efforts and increase operational costs, ultimately slowing down the pace of innovation and the development of an effective AI ecosystem. Consistency is also important from a risk and financial stability perspective, as differences in standards may lead to regulatory arbitrage, creating potential risks in the financial system particularly from the use of high-risk AI systems in a cross-border context.

## 4.1 Global context of AI regulation

The regulation of artificial intelligence (AI) has become a priority on the global stage as governments, international organizations, and financial institutions recognize the profound impact of AI technologies on economies, societies, and financial systems. Various international bodies, including the OECD, the IMF, and the BIS, have been actively developing recommendations and guidelines to ensure the safe, ethical, and effective deployment of AI technologies worldwide. However, it is necessary to ensure that these principles are translated into actionable regulations that are consistently applied across different jurisdictions.

The Organisation for Economic Co-operation and Development (OECD) has been a leading force in setting international standards for AI. In 2019, the OECD published its AI Principles, which were the first intergovernmental standards agreed upon by OECD member countries. These principles emphasize the importance of human-centric AI that is trustworthy and respects fundamental rights. The guidelines also call for transparency, accountability, and the promotion of sustainable development[24] through AI.

Recently, the OECD has updated these principles to reflect the rapid advancements in AI technologies and the emerging challenges they pose. The updated guidelines underscore the need for continuous monitoring of AI systems and ensuring that they are aligned with evolving societal values and ethical standards. Additionally, the OECD has introduced new recommendations for enhancing cross-border cooperation on AI governance,

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21. AI in Financial Services: Regulatory Challenges and Opportunities, European Banking Authority, 2024.
22. Towards a European Data Quality Framework for AI, European Commission, 2024.
23. Eurofi Views Magazine, September 2024, Giuseppe Siani, Banca d'Italia.
24. *i.e.* ensuring that AI systems are designed and implemented in a way that contribute to long-term social, economic, and environmental goals.

recognizing that the global nature of AI requires a coordinated international response[25].

The International Monetary Fund (IMF) and the Bank for International Settlements (BIS) have also been active in the AI regulatory space, particularly concerning its implications for the global financial system.

The IMF is investigating AI's broader impact on economies and societies by gathering global knowledge through surveillance activities, and by convening key actors to share successful policy responses, foster international consensus and harmonize regulations. The IMF has been assessing in particular the potential macroeconomic impacts of AI in terms of labor markets, productivity, and financial stability and the related opportunities and risks in terms of economic growth, as well as the measures needed to mitigate these risks. The Fund has also established an AI Preparedness Index assessing the level of AI readiness across 174 countries.

The BIS, on the other hand, has focused mainly on the implications of AI for central banking and financial supervision. The BIS has published several reports examining how AI can be used to enhance the efficiency and effectiveness of central bank operations, such as in monetary policy implementation and financial stability monitoring. The BIS has also explored the ethical and governance challenges associated with the use of AI in financial supervision, emphasizing the need for transparency, accountability, and the avoidance of algorithmic bias.

## 4.2 Approaches to AI regulation in major financial jurisdictions

In addition to the international organisations, major jurisdictions around the world are developing their own regulatory frameworks to manage the risks and opportunities presented by AI systems. These approaches vary to a certain extent in terms of content and progress, reflecting different regulatory philosophies, economic priorities, and technological capacities. However major jurisdictions such as the EU, the UK, the US and Japan are committed to ensuring that their efforts in this area are aligned with global standards by engaging in international discussions and collaborations at G7, OECD and IMF levels[26].

### 4.2.1 The UK's principles-based approach to AI regulation

The United Kingdom has taken a proactive approach to AI regulation, focusing on creating a flexible and innovation-friendly framework. The UK government has published a series of guidelines and policy papers outlining its approach to AI regulation, which emphasizes a principles-based framework rather than prescriptive rules. This approach is designed to foster innovation while ensuring that AI systems are used responsibly.

One of the key aspects of the UK's approach is the establishment of the AI Council, an independent expert committee that advises the government on AI policy and regulation. Moreover, the UK's regulatory framework for AI is being integrated with its broader digital and data strategies, ensuring that AI regulation is consistent with its commitments to data protection, cybersecurity, and digital innovation. The UK is also exploring the use of regulatory sandboxes to allow companies to test AI technologies in a controlled environment, helping to identify potential risks and regulatory challenges before AI systems are fully deployed in the market[27].

### 4.2.2 The US landscape of AI regulation

The United States's approach to AI regulation aims to balance innovation with concerns about security and ethics. This involves a mix of federal initiatives, state legislation, and voluntary commitments from the private sector. This combination of federal and state laws should allow for tailored approaches to regulation but may also lead to a certain level of fragmentation in the US regulatory landscape, at least in the first stages.

In October 2023 the Biden administration released an executive order on AI which directed a whole-of-government approach to analysing and understanding the impacts of AI and providing guidance. This executive order emphasizes safety standards, data privacy, algorithmic accountability, and national security, requiring AI developers to share safety test results and establish cybersecurity protocols[28]. It has since driven significant regulatory developments.

In 2024 efforts have been made to implement the Biden administration order in a number of areas. The U.S. Department of Commerce and the National Institute of Standards and Technology (NIST) have released new guidance and tools

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25. Recommendation of the Council on Artificial Intelligence, OECD, May 2024.
26. This is the case in particular of the UK and Japan. See for example Asia-Pacific Regulations Keep Pace with Rapid Evolution of Artificial Intelligence Technology, Data Matters Privacy Blog, August 2024.
27. Europe's rushed attempt to set the rules for AI, Financial Times, July 2024; Recommendation of the Council on Artificial Intelligence, OECD, May 2024.
28. United States approach to artificial intelligence, European Parliamentary Research Service, January 2024.

aimed at improving the safety and trustworthiness of AI systems. These efforts include the development of AI testbeds, guidelines for managing generative AI risks, and international collaboration on AI safety standards. Furthermore, the US administration has continued to push for AI governance through bilateral and multilateral engagements, including cooperation with the European Union via the Trade and Technology Council (TTC) and partnerships with the UK's AI Safety Institute, which is dedicated to ensuring the safety of advanced AI systems[29].

A key deliverable for the financial services sector is the best practices report from the US Treasury for financial institutions, released in March 2024, which highlights the opportunities from AI and also proposes next steps to address AI-related operational risk, cybersecurity and fraud challenges. The US SEC and CFTC have also recently launched consultations and proposals on the use of AI in the financial services sector and the identification of bias and market manipulation risks[30].

### 4.2.3 Japan's approach to AI regulation

Japan also aims to take a balanced approach to AI regulation, with a combination of "soft law" guidelines and legislative initiatives aimed at managing the rapid development of AI technologies. The country's regulatory strategy is anchored in the "Social Principles of Human-Centric AI" which emphasize innovation, privacy protection, fairness, and accountability[31].

The soft-law approach, which involves issuing nonbinding guidelines that encourage companies to voluntarily adopt ethical AI practices, allows for flexibility and continuous adaptation to technological advancements. Key documents, such as the AI Governance Guidelines published by the Ministry of Economy, Trade, and Industry (METI), provide frameworks for companies to implement responsible AI practices while ensuring alignment with international standards[32].

However, in response to the growing influence of AI and the potential risks associated with generative AI technologies, Japan is shifting towards more concrete legislative measures. In 2024, new legislation was proposed to regulate foundational AI models, addressing concerns such as disinformation and privacy violations, marking a step towards a more regulated AI environment[33]. In addition, sector-specific laws, such as the Financial Instruments and Exchange Act, also impact the use of AI for certain financial activities, such as algorithmic trading for which risk management protocols are mandated[34].

***Note written by Lucie Truchet***

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29. Department of Commerce announces new guidance and tools 270 days following President Biden's Executive Order on AI, U.S. Department of Commerce, July 2024.

30. The Securities and Exchange Commission (SEC) recently put out a proposal on the use of predictive data analytics by SEC registrants. This proposal is tackling risks such as bias when supervised entities are deploying AI. The Commodity Futures Trading Commission (CFTC) also recently made a request for comment on the use of AI by its registrants, which include banks, asset managers, exchanges and clearing houses in order to understand how they are deploying AI, particularly in markets, trading and other use cases and the possible risks and obstacles to overcome. One risk that is being evaluated in a factual way is the risk of market manipulation. See Eurofi Ghent Summary February 2024.

31. Japan's Social Principles of Human-Centric AI are a set of guidelines published in 2019 by the Japanese government designed to ensure that AI development aligns with human rights, societal values, and sustainability goals. These principles aim to create an «AI-Ready Society» as part of Japan's broader vision for Society 5.0, a future society that leverages advanced technologies like AI to enhance well-being.

32. Data Protection Laws and Regulations Report 2024: Trends in AI Governance in Japan, ICLG, February 2024.

33. Japan joins global AI regulation race with comprehensive 2024 legislative push, Digital Watch Observatory, February 2024.

34. Asia-Pacific Regulations Keep Pace With Rapid Evolution of Artificial Intelligence Technology, Data Matters Privacy Blog, August 2024.

# Annex:
# AI in finance: key use cases and future outlook

## 1. Level of adoption and main use cases of AI in the financial sector

### 1.1 Uptake of AI in the financial sector

The uptake of AI in the financial sector has been rapid and widespread, driven by the need for efficiency, enhanced customer experience, and competitive advantage. According to a recent survey published by McKinsey in 2024, 91% of financial services companies are either assessing AI or already using it in production[35].

Financial institutions of all sizes are adopting AI technologies at an increasing pace. Large banks and asset management firms are leading the way, investing heavily in AI to optimize their operations and gain a competitive edge. Smaller firms are also beginning to embrace AI, particularly in areas such as customer service, credit scoring, and risk management. This widespread adoption is supported by the growing availability of AI tools and platforms that are accessible even to smaller firms with limited resources[36].

### 1.2 Main use cases of AI in the financial services sector

#### 1.2.1 Fraud detection and prevention

One of the most widespread applications of AI in finance is in fraud detection and prevention. AI algorithms can analyze vast amounts of transactional data in real-time, identifying patterns and anomalies that could indicate fraudulent activity. By leveraging machine learning, these systems continuously improve their accuracy, adapting to new types of fraud as they emerge. For example, AI can detect unusual spending patterns on credit cards or flag suspicious transactions in real-time, allowing financial institutions to respond promptly[37]. As of 2024, approximately 60% of European financial institutions are using AI to enhance their fraud detection capabilities[38].

#### 1.2.2 Credit scoring and risk assessment

AI-driven credit scoring models are transforming the way financial institutions assess credit-worthiness. Traditional credit scoring systems rely heavily on historical financial data, which may not fully capture an individual's or a business's financial behaviour. AI models, however, can incorporate a wider range of data sources, such as social media activity, online behaviour, and even alternative financial data, to generate more accurate and inclusive credit scores. This may be beneficial for individuals and small businesses with limited credit history, thereby promoting financial inclusion[39]. By 2024, 63% of financial services firms reported that AI facilitates the creation of new financial products, including advanced credit scoring systems[40].

#### 1.2.3 Algorithmic trading

Algorithmic trading is another area where AI has made significant inroads. By using AI, algorithms, traders can execute orders at optimal times, identify arbitrage opportunities, and manage portfolios more effectively. AI can process vast amounts of market data faster than any human, identifying trends and making trades based on pre-set parameters or predictive models. This has led to increased efficiency and profitability in trading activities, though it has also raised concerns about market stability and the need for regulatory oversight[41]. Currently, AI-enabled trading accounts for a significant portion of daily trading volumes on major European stock exchanges, with over 50% of trading firms utilizing AI[42].

#### 1.2.4 Customer service and personalization

AI-powered chatbots and virtual assistants are revolutionizing customer service in the financial

35. The state of AI in 2024: McKinsey Global Survey results, McKinsey, 2024.
36. Recommendation of the Council on Artificial Intelligence, OECD, May 2024.
37. Recommendation of the Council on Artificial Intelligence, OECD, May 2024.
38. Artificial intelligence in financial services, PwC, 2024.
39. Artificial Intelligence Act, European Parliament, March 2024.
40. The state of AI in 2024: McKinsey Global Survey results, McKinsey, 2024.
41. The European Union AI Act: premature or precocious regulation?, Bruegel, March 2024.
42. Artificial intelligence in financial services, Deloitte, 2024.

sector. These tools provide 24/7 support, handling routine inquiries and transactions, thereby freeing up human agents to deal with more complex issues. Additionally, AI enables financial institutions to offer personalized services, such as tailored investment advice or customized product recommendations based on individual customer profiles. This enhances customer satisfaction and loyalty[43]. In 2024, approximately 46% of European financial institutions reported that AI has significantly improved customer experience and customer engagement[44].

# 2. Perspectives offered by generative AI in the financial sector

Generative AI, a new generation of AI, leverages Large Language Models (LLMs)[45] to generate new content such as text, images, and enhance data analysis by identifying patterns in vast datasets, synthesizing insights and generating predictive models. In the financial sector, generative AI can be applied to automated report generation, chatbots, personalized client communication, fraud detection through anomaly pattern identification, and enhanced predictive analytics for market trends and risk management. As this technology evolves, it offers the potential to streamline operations, increase customer engagement, and uncover new insights from financial data. Approximately 55% of financial services firms in Europe are actively seeking to implement generative AI workflows[46].

## 2.1 Content creation for marketing and communication

In marketing and communication, generative AI can automate personalized content creation, enabling financial institutions to generate tailored marketing materials, reports, and client communications at scale. By analyzing customer data, generative AI can craft messages that resonate with individual clients, addressing their specific needs and preferences. This capability allows firms to engage with clients more effectively, ensuring that communications are not only timely but also highly relevant. Moreover, the automation of content creation saves significant time and resources,

allowing marketing teams to focus on strategy rather than execution. As a result, customer engagement is strengthened, leading to better client relationships and improved business outcomes[47]. Generative AI has become a key tool for enhancing customer engagement, with 34% of firms using it for personalized marketing and communication[48].

## 2.2 Personalized financial services

Generative AI can be used to create more personalized financial products and services. By leveraging its ability to analyze vast datasets and detect patterns, generative AI can tailor financial offerings to individual customers based on their unique financial behaviour, preferences, and needs. For instance, when developing an insurance policy or an investment portfolio, generative AI models can consider a client's financial history, risk tolerance, and future goals. Unlike traditional models that rely on broad categories or historical averages, generative AI can dynamically adjust its outputs to align precisely with an individual's unique profile. This hyper-personalization can lead to better customer outcomes, higher satisfaction rates, and increased loyalty, as clients receive financial products that are more tailored to their needs[49].

## 2.3 Enhanced predictive analytics

Generative AI can also enhance predictive analytics by enabling financial institutions to generate and evaluate an extensive range of scenarios. Traditional predictive models often rely on analyzing past data to forecast future trends, but generative AI can go a step further by creating entirely new data scenarios. For example, in risk management, generative AI can simulate potential market conditions, economic crises, or unexpected events, providing financial institutions with the insights needed to prepare for a wide array of possibilities. This not only improves the accuracy of predictions but also allows institutions to develop robust risk mitigation strategies, ultimately enhancing financial stability[50]. Generative AI is increasingly being used for investment research and scenario analysis, with 37% of financial firms focusing on these applications[51].

43. Artificial Intelligence prospects for financial services and policy approach, Eurofi, September 2020.
44. AI Act gives financial sector opportunity to promote trust, PwC, 2024.
45. Generative AI leverages Large Language Models (LLMs) to generate new content by predicting the most likely sequence of words, phrases, or sentences based on the patterns it has learned from vast amounts of text data.
46. AI Act gives financial sector opportunity to promote trust, PwC, 2024.
47. Recommendation of the Council on Artificial Intelligence, OECD, May 2024.
48. AI Act gives financial sector opportunity to promote trust, PwC, 2024.
49. The European Union AI Act: premature or precocious regulation?, Bruegel, March 2024.
50. Artificial Intelligence Act, European Parliament, March 2024.
51. Artificial intelligence in financial services, Deloitte, 2024.

# 3. AI-powered finance: future trends and developments

Beyond generative AI, new AI applications and AI systems could potentially drive further innovation and transformation of traditional business models in the future.

## 3.1 Autonomous financial ecosystems

In the future, AI could potentially help to create fully autonomous financial ecosystems for certain activities, where AI systems would handle all operations without human intervention, from market analysis to decision-making, trading, and compliance. Such ecosystems would rely on AI to continuously learn and adapt, optimizing financial strategies and operations in real-time. This level of autonomy, if achievable, could revolutionize the efficiency of financial markets, reducing latency and human error, and enabling financial institutions to operate 24/7 with minimal oversight[52]. The potential issues in terms of accountability and transparency would however have to be managed.

## 3.2 Predictive behavioural finance

AI could advance into the realm of predictive behavioural finance, where it not only analyzes financial data but also anticipates human behavior in response to market conditions. This could involve AI systems that integrate psychological and sociological data with financial data to predict how different segments of the population will react to specific economic events or policy changes. Such capabilities could allow financial institutions to preemptively adjust strategies and offerings to mitigate risks or capitalize on predicted behaviours[53].

## 3.3 Quantum AI for finance

Quantum computing, when combined with AI, could drastically change the landscape of finance by enabling the processing of complex calculations and data sets that are currently beyond the reach of classical computers. Quantum AI could lead to breakthroughs in areas such as risk modeling, portfolio optimization, and fraud detection. Financial institutions might use quantum AI to solve problems that require the simultaneous analysis of vast amounts of variables, potentially leading to new financial products and services that are currently unimaginable[54].

## 3.4 AI-driven ethical finance platforms

The future might see the rise of AI-driven ethical finance platforms that ensure all investments and financial products adhere to specific ethical guidelines, such as environmental, social, and governance (ESG) criteria. These platforms could use AI to assess the ethical implications of investment portfolios continuously, automatically rebalancing them to align with an investor's ethical preferences. This could lead to a new standard in socially responsible investing, where AI not only maximizes returns but also ensures that investments contribute positively to society[55].

## 3.5 AI in hyper-personalized finance

While AI-enabled personalization is already a trend, future AI systems could take this to an entirely new level by delivering hyper-personalized financial products that adjust in real-time based on a user's changing circumstances. For example, AI could offer financial advice that adapts to real-time shifts in a user's employment status, spending habits, or even health data, integrating these changes seamlessly into financial planning. This could make financial services far more responsive and tailored, potentially leading to better financial outcomes for individuals[56].

## 3.6 Real-time and predictive economic monitoring

AI could be utilized to create real-time global economic monitoring systems that not only track economic indicators but also predict and respond to economic crises before they unfold. These systems could be used by governments and financial institutions to stabilize markets and prevent recessions, offering predictive insights that guide policy decisions and market interventions. This kind of proactive economic management could transform how economies are managed[57].

52. The Future of AI in Banking, McKinsey, 2024.
53. AI in Fintech - Trends for 2024 and Beyond, Pragmatic Coders, 2024.
54. The Future of AI in Banking, McKinsey, 2024.
55. 7 AI Trends in Finance in 2024, Datarails, 2024.
56. AI in Fintech - Trends for 2024 and Beyond, Pragmatic Coders, 2024.
57. How AI is Revolutionizing the Financial Landscape in 2024, The Recursive, 2024.