AI innovation in capital markets

Introduction

The Chair stated that artificial intelligence (AI) is an important topic for capital markets. Capital markets have been early adopters of AI through algorithmic trading. There are many benefits to the use of AI for capital market activities, such as improved liquidity, better risk pricing and the development of more tailored financial products. There are also certain risks and uncertainties, with issues related to data manipulation, lack of explainability and third-party dependencies, particularly with digital service providers located outside the EU. Market events such as the 2010 flash crash have also demonstrated the risks of using AI and algorithms for algo trading activities. A question, from a policy perspective, is whether there are the right tools available to ensure responsible use of AI with the present combination of capital market regulations, and horizontal legislation such as the AI Act, the General Data Protection Regulation (GDPR), the Digital Markets Act (DMA) and the Digital Services Act (DSA).

1. The level of AI adoption and its main benefits

1.1 Current AI adoption and future prospects

An official stated, drawing on findings from a 2024 survey on AI and Machine Learning regarding the adoption of AI across financial services, that 75% of financial entities surveyed, most of which were banks, had adopted AI for some of their processes, primarily for operational optimisation. However, only 2% of firms have fully replaced human decision-making with AI, highlighting a cautious and incremental adoption trend. Looking to the future, the recent IOSCO report on AI in capital markets predicted that AI would be used more widely in areas such as trading strategies, risk management, and regulatory compliance.

A Central Bank official agreed that AI use is gradually extending to core capital market activities, such as algorithmic trading and robo-advice services. However, these AI applications are less developed in Europe than in the US. AI is also already widely used by supervisory authorities for regulatory compliance, including fraud detection, anti-money laundering (AML) and combating the financing of terrorism (CFT) compliance and regulatory reporting, and it is prevalent in back-office functions.

1.2 Use cases of AI in capital markets

An industry representative observed that AI and machine learning have been utilised within the banking sector for over a decade, significantly contributing to operational efficiency, compliance and enhanced client services. AI's strength in processing unstructured data is particularly useful in cases where data is not entirely normalised or accurate, such as with payment invoices. AI helps improve payment reconciliation and straight-through processing rates. In terms of compliance, AI supports automatic alert systems that monitor trader behaviour and bolster fraud detection by identifying payment anomalies, thus enhancing client protection. This is all the more important given that financial criminals are also adopting AI tools, making it imperative for banks to stay ahead. AI can also help banks enhance client services by providing tools such as cash flow intelligence for treasurers, accelerating their forecasting and delivering actionable insights.

The industry representative emphasised that generative AI (Gen AI) has the potential to make AI more accessible and mainstream. Gen AI is democratising AI usage by enabling business users, not just data scientists, to query large datasets in natural language, using conversational analytics to produce customised, actionable insights quickly. Gen AI also aids software and technology development by supporting coding and documentation. Gen AI can aid in the management of legacy systems and enhance transparency and control in this area. Some international banks are developing their own Gen AI tools that operate within their company firewalls to assist employees with tasks such as writing, summarising, problem-solving, and generating ideas. While AI will not replace humans, it will empower those who can leverage it.

Another industry representative explained that asset managers also benefit significantly from AI, particularly in operational optimisation and risk management. Machine learning enhances algorithmic trading by enabling the analysis of large data volumes and the prediction of market movements, thus informing better trading strategies and allowing the execution of trades at high speeds. In customer service, AI-powered chatbots and virtual assistants manage client interactions and offer personalised investment advice. In the future, an acceleration of AI adoption can be expected in the capital markets, especially through the integration of AI with blockchain, which should facilitate more secure, efficient and transparent transactions. Predictive analytics should also improve, allowing more accurate forecasts of market trends and client behaviours. The next step for asset managers is to leverage AI to enhance the way they interact with customers, developing highly personalised investment products, simplifying the investment process for customers and boosting client convenience.

A Central Bank official added that AI presents particularly promising opportunities for less developed capital markets to enhance market liquidity by optimising data collection and analysis. This has been emphasised in recent IMF and FSB reports.

An official noted that the greatest short-term benefit of AI lies in automating complex processes and analysing unstructured data in real time. Compliance and risk automation continue to dominate AI use cases, supporting

the streamlining of regulatory reporting, risk assessments, and fraud detection. A development of AI-enabled personalised financial guidance for consumers can also be expected. At the beginning of 2025, the UK Financial Conduct Authority (FCA) launched an AI Lab to enable firms to test new AI solutions in a safe environment. Innovations tested include for AI solutions that assess biometric verification systems for bias, improve fairness in identity verification checks and enhance transparency about the use of AI through explainability tools.

A public representative agreed that AI has the potential to reduce operational costs, boost efficiency and enhance risk management across the capital markets sector by enhancing workflow productivity, streamlining regulatory reporting across the EU and simplifying compliance with the EU's complex regulatory landscape. AI applications can also foster greater market integration, ensuring more consistent access to financial products and services for investors, and contribute to the growth of markets that are still under-developed in Europe.

1.3 The extent of transformation

The Chair invited panellists to comment on whether AI is mainly improving efficiency and reducing costs or has the potential to fundamentally transform business models in a more disruptive way.

An industry representative considered that while AI could transform the delivery of banking services, enhancing efficiency and customer experience, the fundamental services provided by banks, such as financial intermediation and providing adequate financing to the real economy, will remain unchanged. Therefore, although AI will change the operational model, the core value proposition of banks will remain the same.

A Central Bank official mentioned recent ESMA research showing that only 14% of fund managers currently declare that AI plays a key role in their investment decisions. This suggests that AI has not yet had a transformative effect on core capital market activities, such as investing. However, a Deloitte study predicts that investment decisions will mostly be based on AI by 2027, though that may be overly optimistic.

A public representative suggested that AI is due to play a pivotal role in advancing capital markets in three key areas. First, AI can support the development of fairer and more accessible capital markets notably by enhancing fraud detection and enabling greater product personalisation. Second, AI can strengthen market integrity and competitiveness by facilitating more effective and adaptive regulation. Third, AI can contribute to more sustainable and customer-focused capital markets by improving the quality of information available to retail investors, empowering them and enhancing their protection, which are key objectives of the Savings and Investments Union (SIU).

The public representative agreed that AI has not yet been transformative, mainly due to ongoing issues around customer trust and digital literacy. Without resolving these foundational challenges, it will be difficult for AI to radically change the current way of doing business.

2. Risks and challenges

2.1 Risks from AI use and policy responses

The Chair noted that the risks associated with AI include potential bias, inconsistent answers and other outcome quality issues, which remain barriers to broader adoption. Within banks, there is reluctance to embrace AI fully when there is insufficient control over outputs.

A Central Bank official noted that, although some AI-related risks, including those relating to explainability and model risk from large language models (LLMs), are specific to AI, the risks posed by AI are already covered by the existing regulatory framework. Therefore, new regulatory requirements do not seem necessary, and regulators should adopt a technology-agnostic regulatory approach.

An official questioned whether the risks posed by AI are, in fact, novel risks or merely an amplification of existing risks, suggesting this issue needs to be further clarified. Key risks posed by AI in the capital markets area include herding and market manipulation, where models behave similarly without central coordination. Addressing these risks is an ongoing focus. Cybersecurity threats are also a major concern, particularly as AI enables bad actors to carry out more sophisticated and frequent attacks on financial services. These areas are central to current risk management considerations. To manage AI risks, the UK for example is using existing regulatory tools, focusing on consumer protection, operational and model risk, and accountability and governance. Before introducing any AI-specific regulations, the UK authorities are monitoring whether AI introduces new risks or just amplifies existing ones.

An industry representative explained that AI is a general-purpose technology with the potential for both beneficial and harmful applications. Most AI-related risks are already covered by robust existing regulations in the financial sector.

An industry representative emphasised that AI must also be used responsibly in a way that respects individual rights. Ethical concerns with AI include bias, fairness, transparency and accountability, and are increasingly prominent. The human factor remains crucial with AI.

2.2 Third-party dependencies

An industry representative emphasised that scalability is critical for unlocking AI's full value, with the need for robust infrastructure to manage large datasets and complex computations. At present, US hyperscalers provide the infrastructure that is needed for financial firms to leverage AI without having to invest in proprietary infrastructure, but this creates significant dependencies. Storing and processing sensitive client data with these providers also raises potential data security, privacy and GDPR compliance challenges. Additionally, AI performance often hinges on the quality, accuracy and relevance of third-party datasets.

Cost and economic efficiency are other key considerations. While hyperscalers offer attractive, flexible pricing models, long-term dependencies and potential price increases must be carefully weighed against those positives. Although US providers currently perform well, the evolving geopolitical

environment necessitates proactive planning for alternative solutions. It can no longer be guaranteed that European firms will benefit from frictionless access to new technologies developed in the US in the longer term. In addition, there is the possibility of disruptive technology emerging from non-US providers, as occurred with DeepSeek. Therefore, Europe must invest in data centres and strive for technological sovereignty by fostering European hyperscalers, while simplifying digital regulations.

Another industry representative emphasised the importance of operational resilience, suggesting that firms using AI should design systems that allow for switching between AI models and cloud service providers (CSPs). The Chair questioned if switching between CSPs is feasible with the current market concentration. The industry representative responded that their organisation is comfortable with the prospect of switching between three or four major CSPs. Changes are also occurring quickly in the field of AI models, with the development of smaller, more targeted AI models that are potentially less energy-intensive and that require less advanced technology and chips to run, which could open up new provider options. While this may not be sufficient for the most advanced AI applications, many established use cases in the financial sector do not require the most advanced solutions.

The industry representative highlighted that access to a sufficient AI talent base is another important factor. Europe potentially has a strong position, with statistics showing that over 20% of the world's advanced AI researchers have studied in the EU, although many of them work in other regions.

A public representative highlighted that the barrier to having more data centres in Europe is more related to investment and energy supply than regulation. The EU is addressing this challenge, as well as other existing dependencies in digital, industrial and energy sectors. Europe needs a more autonomous economic model including more data centres, but building the necessary capacity and infrastructure will take time.

An official agreed that third-party risks are critical to consider, requiring monitoring of outsourced operations. Ensuring effective oversight and rigorous testing of third parties raises important questions about the frameworks and processes firms must adopt. There are also synthetic data techniques that support model training without using real customer data, thus preserving privacy.

3. Policy issues to be considered further

A Central Bank official emphasised that the lack of a common definition of AI tools in EU regulatory frameworks, despite existing OECD definitions, should be a key consideration. Ongoing debates about AI cover many different tools. It is necessary to differentiate between traditional AI tools that are already embedded in many capital market processes, and Gen AI.

Regulatory overlaps must also be avoided. AI is already subject to a wide range of AI and data regulations, which does not facilitate innovation. Some requirements create obstacles to the use of AI, and thus to its capacity to support European competitiveness. For example, GDPR poses challenges for training LLMs on client data. Such issues must be addressed. The need for any new regulation must also be carefully assessed, although it is acknowledged that there are real risks associated with AI, some of which remain to be clarified. For example, there are ongoing debates on possible herding risks related to AI and potential collusion effects among LLMs.

An industry representative warned that the significant compliance burden for financial institutions associated with regulations, and the potential impact of legal uncertainty due to overlaps and ambiguity in the interpretation of regulation on technology usage and innovation, should not be underestimated. The Draghi report highlighted concerns about competitiveness within the EU due to the large number of technology laws. Legal uncertainty also increases the risks for financial institutions. Complexity arises from the interplay between legislation such as the GDPR, the Digital Operational Resilience Act (DORA), DSA, DMA and the AI Act. Specific examples include the impact of GDPR privacy rights under the AI Act, and how to define what constitutes a substantial modification to an AI model that would trigger provider obligations. The recently announced AI Continent action plan aims to harness Europe's potential to promote the development and deployment of AI solutions. This includes simplification measures, providing an opportunity for the EU to develop clear, concise, non-overlapping regulations in partnership with the private sector.

A public representative noted that the European Parliament seeks to foster innovation while safeguarding consumer interests. The EU is trying to strike a balance between innovation and consumer protection; however, consumers must come first. The objective is to create a transparent market with proper human oversight. The various legislative instruments complement each other. GDPR, in combination with the AI Act, ensures privacy and data security. The Data Act together with the AI Act address access to high-quality data and its economic value, The Data Governance Act together with the AI Act ensure that AI systems comply with ethical and legal standards. The Financial Data Access Regulation (FiDA) combined with the AI Act promotes the fair and safe use of AI in finance. While this regulatory setup may seem complex, it reflects the complexity of the underlying technologies. Simplification is needed, but not deregulation, and human oversight must be preserved in all cases.

The Chair noted that sector-specific regulations are typically easier to apply than horizontal frameworks, due to the way supervisory structures are established.