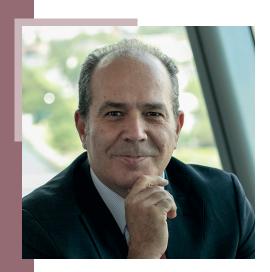# SCALING AI IN FINANCE

FAUSTO PARENTE

Executive Director – European Insurance and Occupational Pensions Authority (EIOPA)

Scaling AI in insurance: Striking the right regulatory balance

Artificial Intelligence (AI) is rapidly changing the way insurers operate, offering opportunities to enhance efficiency, improve risk modelling, and deliver more tailored services to consumers. AI already plays a growing role across the insurance value chain—from pricing and underwriting to claims handling and customer interaction—and this trend is set to accelerate. According to EIOPA's 2024 Digitalisation Report[1], 50% of non-life insurers and nearly a quarter of life insurers already use AI, with many more planning to adopt it within the next three years.

The main drivers of AI adoption include increasing availability of real-time and behavioural data, customer expectations for digital services, and the potential to cut costs and enhance operational precision. At the same time, AI is seen as a strategic tool to improve fraud detection and support financial inclusion through better-targeted offerings.

Yet, scaling AI across the sector is far from straightforward. Many insurers face structural limitations—legacy IT systems, fragmented data sources, and a lack of AI-specific skills. There are also risks linked to model explainability, potential discrimination and bias, cybersecurity vulnerabilities, and concentration risk in the AI supply chain. These challenges are particularly relevant for high-impact use cases where decisions may affect customer access to products or claims outcomes.

To provide a consistent legal foundation for the development and use of AI across sectors, the EU has introduced the AI Act, a landmark regulation that classifies AI systems based on their risk. In the insurance context, AI systems used for pricing and risk assessment in life and health insurance are designated as "high-risk" and will be subject to specific requirements.

While the AI Act offers greater legal clarity, it also adds a new compliance layer for firms already navigating complex sectoral rules under Solvency II, IDD, and DORA. Coordinating the application of these frameworks is essential to avoid excessive burden, or uncertainty—particularly for smaller players or early-stage innovations. Taken together, the AI Act and existing financial and digital regulations do provide a solid foundation to support the responsible development of AI in insurance. The sector benefits from established principles on governance, risk management, and consumer protection, while the AI Act introduces a risk-based framework that offers clarity for high-risk use cases.

> **Scaling AI in insurance depends not only on regulation, but on supervisory clarity and trust.**

To support sound implementation, EIOPA recently published a supervisory Opinion on AI governance and risk management. The Opinion clarifies supervisory expectations on how existing sectoral legislation should be interpreted considering AI, especially for use cases that are not covered by the AI Act's high-risk classification. It promotes a risk-based and proportionate approach, encouraging undertakings to adapt governance measures—such as human oversight, data quality controls, and documentation—based on the specific characteristics and risks of each AI application.

At the same time, building supervisory capacity is essential. AI challenges traditional supervisory methods, requiring new expertise to assess model design, data pipelines, explainability techniques, and emerging risks. EIOPA is working to foster supervisory convergence by promoting common interpretations and expectations across Member States. This is vital to ensure a level playing field and to provide consistent signals to the market.

A particularly dynamic area is Generative AI (GenAI), which introduces distinct challenges and opportunities. These systems, capable of generating text, images, or code, open new frontiers—from internal process automation to customer communication—but also raise concerns about hallucinations, misuse, and explainability. To better understand emerging practices, EIOPA is currently conducting a survey on GenAI adoption, governance, and use cases in the insurance sector. Preliminary results suggest rapid uptake, especially in back-office functions such as document summarisation, internal tooling, and code assistance.

GenAI use is likely to expand, and building supervisory knowledge now will help ensure firms adopt appropriate safeguards from the start. EIOPA's ongoing work aims to foster a constructive dialogue between supervisors and industry, combining innovation with strong consumer protection and prudential safeguards.

Ultimately, the successful scaling of AI in insurance depends not only on regulatory design but also on supervisory clarity, capacity, and trust. A coherent and proportionate framework—anchored in sound supervision and cross-sectoral coordination—can give firms the confidence to invest, innovate, and deploy AI responsibly across the value chain.

1. *EIOPA's Report on the digitalisation of the European insurance sector - EIOPA*

RUAIRI O'CONNELL

Director of International – Financial Conduct Authority (FCA)

The UK's approach to AI in financial services: enabling responsible innovation

As Director of International at the Financial Conduct Authority (FCA), I see first-hand how Artificial Intelligence (AI) has the potential to reshape global financial services. We are committed to enabling the safe and responsible use of AI, helping to realise its potential for consumers and markets while managing the associated risks.

We take a principles-based, outcomes-focused approach to regulation. Rather than introducing new AI-specific rules, we apply existing frameworks, such as our Consumer Duty and the Senior Managers and Certification Regime to ensure firms remain accountable and deliver good outcomes. These frameworks provide a strong foundation for managing AI-related risks including fairness, transparency and accountability.

Promoting innovation and supporting the safe and responsible integration of AI into financial services is central to our 5-year strategy. In October 2024 we launched our world-leading AI Lab, bringing together policy, supervisory, and data science teams, to explore the implications of AI for regulation, and to strengthen our internal capabilities. The AI Lab also acts as a hub for experimentation and engagement with industry and academia.

In January 2025, we convened two events through the AI Lab bringing together over 400 experts from industry, academia and public sector. The first initiative, our AI Spotlight, explored emerging AI use cases across the sector. We have since launched a Digital Showcase to highlight these examples and provide insight into how firms are experimenting with AI across cross-cutting themes such as transparency, data quality, and compliance. The second initiative, our AI Sprint, explored the strategic, regulatory and practical implications of AI adoption.

Building on what we heard, we launched our Supercharged Sandbox in June in collaboration with Nvidia to support firms in the early stages of AI product development. We designed these using insights from our AI Sprint and enhancing the infrastructure of our Digital Sandbox and TechSprint programme to help firms explore and refine their AI solutions. Alongside supporting innovation in financial services, the Supercharged Sandbox provides the FCA valuable insight into the testing of AI propositions in a safe and responsible way.

> We are enabling responsible innovation by combining regulatory engagement with practical experimentation.

For firms that already have solutions ready to be deployed, we are piloting an AI Live Testing programme, enabling firms to test AI systems in controlled, real-world settings with close regulatory consultation. Together, the Supercharged Sandbox and AI Live Testing provide a coherent and flexible support framework that meets firms at different stages of development and helps them innovate with AI safely and responsibly.

AI Live Testing will provide valuable insight into how firms are deploying AI and the challenges they face. It demonstrates our commitment to applying existing regulatory tools rather than creating new ones. The initiative also helps us understand how firms manage AI-related risks such as bias, explainability and data quality, and how they align these practices with current regulatory expectations.

Our regulatory strategy is iterative and collaborative. We are working closely with domestic and international partners, including the International Organization of Securities Commissions (IOSCO), the International Association of Insurance Supervisors (IAIS) and the Financial Stability Board (FSB), to share insights while strengthening our engagement with other jurisdictions to promote shared understanding. We believe that combining principles-based regulation, outcomes-focused oversight and practical experimentation strikes the right balance between enabling innovation and ensuring well-functioning markets.

We are also leading by example in how we adopt and govern AI within our own operations. Our internal use of AI is firmly risk-based, with policies and frameworks evolving alongside technology to manage risks such as security and data protection. We already use AI tools to monitor scam websites, enabling faster consumer warnings and takedowns. We have also developed a synthetic data tool for sanctions screening that has transformed our assessment of firms' systems. We are working closely with the Alan Turing Institute and Plenitude Consulting to generate realistic and comprehensive synthetic data to enhance innovation in the detection of money laundering.

As our Chief Data, Information and Intelligence Officer, Jessica Rusu has emphasised we must be both a regulator and an innovator. This means setting expectations for firms while demonstrating how firms can adopt AI responsibly.

Through the AI Spotlight, AI Sprint, Supercharged Sandbox, and AI Live Testing, as well as close collaboration with external stakeholders, we are enabling responsible innovation by combining regulatory engagement with practical experimentation. These efforts help firms innovate safely, protect consumers and markets, and reinforce the UK's position as a global centre for innovation, trust, and international cooperation.

JUTARO KANEKO

Deputy Commissioner for International Affairs – Financial Services Agency, Japan (J-FSA)

Japan's approach to AI: Promoting innovation with responsible risk management

How is the use of AI developing in the Japanese financial sector, and what are the main drivers and obstacles to scaling its use further?

In Japan's financial services sector, the use of conventional AI technologies—such as fraud detection, market analysis and forecasting, and marketing—is already well established. With the growing adoption of generative AI, new use cases are emerging that offer further improvements in operational efficiency and customer experience. Many financial institutions are now aiming for more advanced applications, including the potential development of entirely new financial services.

At the same time, there is increasing awareness of critical challenges associated with complex AI systems like generative AI. These include ensuring transparency, explainability, and fairness, as well as managing the risks of misuse in financial crimes and the potential impact on financial system stability. In light of risks such as hallucination—where AI generates plausible yet entirely inaccurate responses based on stochastic estimates—most use cases involving generative AI do not present outputs directly to customers. Instead, they incorporate human judgment in the process—a practice commonly referred to as "human in the loop."

How are the Japanese authorities approaching the regulation and supervision of AI use in finance (e.g. in terms of hard and soft laws, sector specific regulation...)?

As Japan's integrated regulatory and supervisory authority responsible for financial stability, consumer protection, and market integrity, the Financial Services Agency (FSA) is committed to fostering an environment in which financial institutions can confidently pursue AI-driven innovation. When challenges arise in the course of innovation, the FSA seeks to resolve them through dialogue and collaborative engagement, ensuring that regulatory responses do not unduly discourage financial institutions from taking initiative.

To support this, the FSA is working to clarify the applicability of existing regulations and provide safe harbors where appropriate. Its fundamental stance is technology-neutral: existing laws and regulations apply regardless of whether specific technologies such as AI are used. However, where the unique characteristics of AI warrant special consideration, the FSA is prepared to review and revise relevant laws, guidelines, and supervisory frameworks.

Given the rapid pace of AI development, it is essential to maintain flexible and adaptive policymaking through ongoing dialogue with financial institutions. The FSA actively supports the sound and responsible use of AI in the financial sector. In line with this approach, the FSA launched a public-private forum in June 2025 and held its first meeting in the same month. The forum serves as a platform for incorporating the views of market participants and academia into the development of necessary policies, including the formulation of regulations and guidance.

How do you see the downsides arising from new developments such as generative AI?

A recent survey by FSA identified hallucination as a prominent risk associated with generative AI, alongside its potential misuse in financial crimes. Hallucination is particularly problematic from the standpoint of financial consumer protection. Unlike fraud or scams, it arises from the model's inherent design, making it difficult to regulate through traditional frameworks. As AI-based services begin to be offered directly to ordinary retail investors, the need to ensure their protection will become increasingly important.

This risk is especially concerning in financial services like investment advisory (e.g., robo-advisors), where misleading outputs could result in real financial losses for retail investors. Similar concerns apply to bank loan approvals and insurance pricing, particularly when consumers have limited alternatives.

> **The FSA actively supports the sound use of AI in the financial sector.**

In my understanding, three core challenges stand out: First, hallucinated outputs are often highly convincing and confidently presented, making them difficult to detect. Second, financial institutions may lack incentives to implement human-in-the-loop oversight, as expert review across disciplines can offset the cost benefits of AI. Third, some AI developers include liability waivers in their terms of service, placing the burden of responsibility on consumers.

To address these issues, I would like to propose a three-tiered defense strategy: The first tier is developing new architectures that prevent hallucination or further enhancing safeguards such as retrieval-augmented generation (RAG) which mitigate it. The second tier is proper intervention where service providers ensure sufficient human oversight before outputs reach consumers, with industry self-regulation playing a complementary role. The third tier consists of compensation mechanisms, such as introducing liability insurance for AI-related losses and establishing industry-led compensation funds to provide a safety net.

JODI MARLETTE

Director, Compliance and
Security Assurance – Amazon
Web Services (AWS)

Striking the right balance: Regulation and AI innovation in financial services

Financial institutions are adopting AI to enhance operational efficiency, improve risk management, and deliver better customer experiences. AI can help enable more sophisticated fraud detection, improved customer service experiences through chatbots, and personalized product recommendations. The availability of vast amounts of data combined with cloud computing's processing power has made AI implementation more feasible and cost-effective than ever before.

For example, Mastercard uses AWS's AI services to improve fraud-detection capabilities globally. Using AI, Mastercard has enabled detection of three times the number of fraudulent transactions and reduction of false positives tenfold, leading to billions of dollars in merchant savings and providing a better experience for customers. AWS also has a partnership with AXA, to co-develop its Digital Commercial Platform (DCP), a risk-management solution. This new solution integrates industry, business and environmental data with geospatial analytics (geographic data associated with a specific location, to uncover patterns, relationships, and insight) and GenAI technologies to help clients monitor their assets and

navigate complex and interconnected risks including supply chain disruption, natural disasters and cyber threats.

European businesses see significant obstacles to scaling AI adoption effectively. AWS recently commissioned a Strand Partners report "Unlocking Europe's AI Potential" (https://www. unlockingeuropesaipotential.com/) that gives us some data points on this. It discussed AI with businesses and citizens across Europe, and key findings included:

44% of European businesses see regulatory uncertainty as the primary barrier to AI adoption. Fragmented rules across borders are making it even harder. Businesses of all sizes seek more guidance on AI policies and compliance.

56% of businesses say digital skills shortages limit innovation, with only 25% having a strong AI skillset enabling confident assessment and use of AI.

Additionally, many financial institutions point to data quality and integration issues, legacy system constraints, and issues relating to explainability. These technical and operational challenges need to be addressed to give the industry confidence and clarity to enable broader AI adoption in the sector.

An important part of enabling adoption is the regulatory landscape governing AI in financial services, which combines both horizontal frameworks like the EU Artificial Intelligence (AI) Act and sector-specific regulations. While the AI Act establishes important foundational principles through its risk-based approach, questions remain about how it will interact with existing financial regulations and newer frameworks like the EU Digital Operational Resilience Act (DORA) in practice. There is also the EU Cloud and AI Development Act (CAIDA), which will also impact the AI landscape in the EU and beyond.

To effectively support AI development in financial services, regulatory frameworks need several key characteristics: they must remain technology neutral to accommodate rapid innovation, achieve harmonization across jurisdictions, clearly delineate how different regulations interact, and strike the right balance between risk mitigation and enabling innovation.

Moving forward, regulators should partner with the industry to enable appropriate adoption and maintain flexibility to adapt as AI capabilities evolve at the intersection of AI and financial sector requirements. Ensuring proportionate implementation, supporting international coordination and

reducing compliance complexity where possible should be the priorities in any regulatory work. Success will mean protecting consumers and maintaining stability while enabling European financial institutions to compete globally through responsible AI innovation.

Looking at opportunities to evolve, there are several areas where adjustments could help foster innovation while maintaining appropriate safeguards. In the EU AI Act the classification of AI systems as "high-risk" could be more nuanced to reflect the actual risk levels in financial services contexts. Additionally, clearer guidance on how different regulatory frameworks interact would help institutions implement AI solutions more confidently.

> **A flexible, principles-based regulatory approach can help EU FS succeed in the global AI evolution.**

From our engagement with financial institutions across Europe, we understand their concerns about potential regulatory overlap and the cumulative burden of compliance. Smaller institutions and startups may struggle to navigate regulatory requirements as they innovate with AI technologies.

The key is to maintain strong protection for consumers and financial stability while ensuring European financial institutions can effectively compete in the global AI race. This means adopting a flexible, principles-based approach can help to ensure that the EU and its financial services sector can access the products and services they want from the providers they choose without artificial regulatory barriers.

DANIEL KAPFFER

Chief Financial Officer & Chief Operating Officer - DekaBank Deutsche Girozentrale

AI in Asset Management: Striking the Balance between innovation and regulation

Artificial intelligence is rapidly reshaping the asset management sector. Its adoption is driven by a need for more sophisticated decision-making, greater operational efficiency, and the ability to meet growing client expectations for personalized, digital services. Asset managers are turning to AI to gain a competitive edge—using machine learning to optimize portfolios, natural language processing to analyze vast streams of unstructured data, and automation to streamline operations and compliance.

At the core of this shift is the potential for AI to unlock insights from data at a scale and speed. In a sector where market dynamics are complex and volatility is increasing, the ability to process information in real time can significantly enhance risk management and investment performance. Furthermore, as investors demand tailored solutions and seamless digital experiences, AI plays a growing role in client engagement through personalized recommendations and robo-advisory services.

Yet, the path to scaling AI effectively is not without challenges. Availability of data in a format that is ready to be processed by AI remains a major barrier. Many firms lack access to high-quality, well-governed datasets needed to apply augmentation techniques models. Legacy systems are still widespread and often incompatible with modern AI tools, limiting innovation. We may even have to rethink GDPR rules. Currently these are viewed from a risk perspective only.

Additionally, the sector faces a shortage of professionals with expertise at the intersection of data science, the mathematical and statistical background for AI and financial services. This talent gap slows the pace of adoption.

In parallel, regulatory complexity adds another layer of difficulty. The EU's Artificial Intelligence Act (AI Act), along with sector-specific rules shapes the environment in which AI is being developed and deployed. We need to reconsider whether the AI Act was not to early and to comprehensive. Questions remain about its proportionality and coherence. It might develop as a barrier to adoption and hence Europe falling behind in yet another technology.

To support AI development without compromising safety, policymakers must strike a careful balance.

To support AI development without compromising safety, policymakers must strike a careful balance. The regulatory framework must not only protect consumers and ensure market stability, but also leave room for experimentation and innovation. This means tailoring requirements to the real-world risk of specific applications, avoiding unnecessary duplication between laws, and enabling firms to test new AI tools in safe, supervised environments.

Several policy steps could support this goal. Clarifying how the AI Act interacts with financial sector rules would give firms the legal certainty they need. Making requirements more proportionate—by adjusting obligations based on company size or AI use case—would ease compliance for smaller firms. Expanding regulatory sandboxes would also create space for innovation under supervisory oversight. Finally, investment in digital and AI skills across the financial sector is essential to ensure that firms and regulators alike are equipped to manage the shift.

In conclusion, AI is by far the most important digital innovation after the introduction of the internet. But realizing its potential requires a regulatory framework that is clear, flexible, and forward-looking.