AI ACT: IS THE EU APPROACH THE RIGHT ONE?

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AI in finance: from regulatory guidance to technology-enhanced supervision

A confirmed trend toward broader adoption

Artificial intelligence (AI) plays an increasingly important role in the financial sector. The ACPR's latest studies on digital transformation, published this January, confirm this trend: AI is the most commonly adopted category of new technology. Use cases range from internal productivity tooling, customer relationship management, all the way to compliance processes or anti-fraud scenarios, including a limited integration of machine learning (ML) into regulatory Basel or Solvency models.

The financial industry nevertheless proceeds at a cautious pace on this path to widespread adoption of AI-based systems. A plateau might even be reached due to the persistence of legacy systems, to the difficulty of measuring the net benefits of AI, and to regulatory uncertainty.

A complex risk mapping

This wide range of AI use cases should nonetheless be broken down according to the criticality of the corresponding process and to its impact on consumer and financial stability. For example, a chatbot enabling a customer to navigate an insurer's website presents far less significant risk than an automated claims management process relying on AI to deny or triage incoming claims. The European Commission has considered this risk gradation – from a slightly different perspective - in its "Proposal for a regulation laying down harmonised rules on artificial intelligence" (AI Act). The project seeks to establish a fair and balanced framework for developing responsible AI while guaranteeing fundamental rights.

Indeed, the AI Act explicitly adopts a risk-based approach and classifies all use cases according to a four-level scale. However, the level of risk associated to an AI-based system depends not just on the use case, but also on its technical implementation, starting with algorithmic design. The distinction is thus far missing from the Commission's proposal. This blind spot may be attributed to the AI Act's very broad definition of AI (intended to cover all present and future techniques), which does not accommodate any differential treatment, for example, between a very large deep neural network and a single decision tree.

Similarly, the AI Act acknowledges the need for a "human in the loop" within any AI-based system. The principle is easy to understand. Yet, poorly implemented, it may reveal illusory: a human ill equipped to control the results of an AI algorithm could be subject to complacency or less vigilance. In order to provide tangible guarantees, human intervention must be relevant with respect to the process actually implemented. This will probably be one of the most important areas of investigation in the coming years.

Supervisory roadmap and challenges

Within the financial sector, the draft AI Act grants the sectoral authority the responsibility to supervise the use of AI by industry participants. This will ensure that the requirements derived from the AI Act are consistent with sector-specific requirements on internal control and governance. In particular, financial regulation includes not only client protection measures, but also measures designed to ensure stability and trust in the sector. The risks of AI in this sector should therefore be considered in both regards, while the project focuses mainly on fundamental rights.

Making cross-sectoral and sectoral perspectives mutually consistent will be at stake for the forthcoming work by European Supervisory Authorities (EBA, ESMA and EIOPA), which over the coming years will be required to draw up a set of guidelines on the use of AI in the financial sector.

Such high-level guidance will be necessary but not sufficient. A major challenge for supervisors is to ramp up their AI auditing and evaluation capabilities at a pace and a scale proportionate to the adoption by the industry. This means overcoming a number of technical and methodological issues: for example the absence of standard metrics for assessing algorithmic equity, or the lack of maturity of existing explanatory methods for AI – not to mention generally-applicable AI audit frameworks. The ACPR launched several initiatives around these questions, which called for the industry as well as academic, technical and regulatory experts to co-construct a methodology for evaluating and auditing AI-based systems.

One such initiative aimed to study how state-of-the-art AI explainability methods enable to understand the behaviour of "black box" algorithms. The ACPR hosted in summer 2021 its first Tech Sprint on the explainability of ML-based credit scoring algorithms to various kinds of audience (from financial services consumers to internal and external auditors). Explainability was one of the pillars on which the ACPR had built its AI governance principles; the Tech Sprint confirmed at a very practical level that it is also a key enabler for supervisors to guarantee that AI-based systems satisfy ethical standards, internal control and consumer protection requirements.

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AI governance: Ensuring a trusted and financially inclusive insurance sector

Without question, artificial intelligence – or AI – plays a vital role in Europe's digital transformation and is already having – and will continue to have – considerable impact in all areas of financial services.

This is certainly true for the insurance sector, where data processing and mathematical models are at the core of any insurer's business and are used to determine underwriting decisions, pricing policies, settle claims, as well as to prevent fraud. For example, the use of historical customer data and survey data is used to inform new products at the product development stage and micro segmentation and personalised pricing based on non-risk individual behavioural data to estimate price elasticity and churn propensity at the pricing and underwriting stage. Other examples include virtual assistants and chatbots that use natural language processing communicate with consumers as part of the sales or customer service process, and the automated segmentation of claims by type and complexity at the claims management stage.

In a thematic review published by the European Insurance and Occupational Pensions Authority (EIOPA) in 2019, some 30% of respondents indicated that they were already actively using AI in their business, with a further 25% at proof-of-concept stage. Given the impetus that the COVID-19 pandemic has given to the digital transformation, the figures will have certainly increased during the last two years.

This is no bad thing. The use of AI in the insurance sector benefits both providers and consumers. Providers can expect cost efficiencies across the entire insurance value chain as AI improves prediction, accuracy and automation. Consumers also see benefits: A wider choice and better tailored products. In addition, they may notice the cost efficiencies from providers transformed into more competitively-priced products.

It is essential to ensure, however, that AI does not lead to any exclusions. This is particularly relevant given the trend towards increasingly data-driven business models, where the need for high quality data that is free from bias becomes all the more important so as to avoid discriminatory outcomes of AI systems, often disproportionately affecting vulnerable groups.

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Such issues have been highlighted by EIOPA's consultative expert group on digital ethics in insurance. The principles developed by this multidisciplinary stakeholder group take into account the specificities of the insurance sector and lay down the key governance pillars for the ethical and trustworthy use of AI in insurance. The group's report on AI governance principles provides guidance to insurers on how to implement key principles in practice throughout the lifecycle of an AI application, which at the same time needs to be adapted to concrete AI use cases.

Transparency and explainability of AI algorithms play a key role here, especially in customer-facing AI applications. Indeed insurers must be able to meaningfully explain how their algorithms work and be accountable for their systems, enabling consumers to have access to adequate redress mechanisms.

This is where regulation and supervision can help to ensure good consumer outcomes.

Legislation also needs to adapt to the digital age. In this regard, the European Commission's legislative proposal for an Artificial Intelligence Act will provide a legal framework for the use of AI in the European Union. EIOPA supports the Commission's risk-based approach reflected in the AI Act. Indeed, not all AI systems pose the same opportunities and risks and hence the need for proportionality.

In itself, the insurance sector is already highly regulated. Sector-specific regulatory frameworks, such as the Solvency II Directive and the Insurance Distribution Directive, already cover the use of AI. In addition, cross-sectoral frameworks, such as the General Data Protection Regulation (GDPR) provide a sound basis for AI in the insurance sector. Further regulation should also take into account AI use cases in insurance.

Finally, the fast pace of technological development worldwide, coupled with growing global interconnectedness underlines why international coordination is so important. EIOPA works closely with colleagues at international level, in particular in the International Association of Insurance Supervisors (IAIS) to ensure a common coordinated approach at global level.

To conclude, AI is transforming the way people live, touching all aspects of daily life from education to the workplace to the home. This is why its use must be ethical, fair and without bias.

Developing a sound AI governance framework is therefore essential for a well-functioning, trusted and financially inclusive insurance sector and EIOPA will continue its work in this field to ensure good outcomes for policyholders.

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Future of the financial services: artificial intelligence, data and open finance

It might be challenging to argue that current regulation of financial services does not cover all of technological innovation. Or that fundamental rights are absent from the supervisor's focus. Yet if you are looking for the evidence of the importance of the data, its processing, interoperability and portability you don't have to go any further then Artificial Intelligence ("AI") to understand that we are talking about one single digital world. And, though having only one set of rules (why not activity/performance-based?) or at least supervision would be ideal, let's focus on the extent of what is already working and what is possible. Regulatory sandboxing is a part of the proposed AI Act and one of the financial sector's innovation supporting measures. Identifying technological and regulatory gaps might be much easier in a data sandbox.

Data is at the core of any AI or machine learning model, and quality datasets are the key component required for such innovation to flourish in a responsible and productive manner. Policy makers are thus focusing on data management policies and practices, also emphasized in the European Commission's proposal for the AI Act, laying down special rules for data and data governance in relation to AI use cases.

Data sharing initiatives

The European Union recognizes the potential of data and has already proposed various policies on data sharing, most of them applying also in finance. The Digital Finance Strategy aims to establish common financial data spaces, with a view to integrate European capital markets, support innovation and efficiency. The Digital Finance Strategy proposes disclosure of all the data in a standardized and machine-readable format, supports RegTech and SupTech initiatives and put forward a framework for Open Finance. The Commission's Data Governance Act supports the establishment of European data spaces, one of them in the field of financial services. It emphasizes the importance of data sharing for the public interest and creates the base for data sharing and data access in the financial services sector.

Identifying technological and regulatory gaps might be much easier in a data sandbox.

Development of Open Finance Ecosystems

The highly anticipated Data Act, will set the rules for business-to-government and business-to-business data sharing and ensure its fairness. The next step would be to encourage the development of a full Open Finance Ecosystem on the basis of data portability and sharing standards.

Open Finance bears many advantages for all stakeholders: customers, businesses and governments. Open Finance ecosystems can promote the re-use of data and also their good structure, authenticity, integrity, interoperability, machine-readable format and enhanced cybersecurity.

The development of Data Sharing initiatives in the context of such Open Finance ecosystems would allow, for instance, portability of SME credit files, which in turn that will make it easier for SMEs to access financing, addressing financing gaps for small businesses - one of the main policy challenges of many European members. It will also enhance lender transparency in a safe environment, promoting better quality offering for clients. New and alternative data sources and advanced analytics can be harnessed to allow for better access to finance, promoting greater and fairer competition from new financial service providers, including FinTechs. Insurance undertakings can benefit from better predictability of insured events models and effectively detect insurance frauds. Credit services providers can also profit from portable data when assessing the creditworthiness of prospective clients with AI-based techniques.

Data Sandboxes

Data sandboxes are one efficient and inclusive way of materializing these benefits. They can allow Fintech SMEs and start-ups to test their innovative financial services and help with their faster introduction to the financial services market. Governments can benefit from the assurance that new Fintech solutions are complying with the legal requirements, such as data protection, privacy or future AI standards.

The European Union understands the potential of open finance and plans to unlock this through the issuance of a legislative proposal for a new Open Finance Network by the end of 2022, as announced in its Digital Finance Strategy.

The Czech Republic has delved extensively into the issues of AI, data portability and digital assets, pushing for international legal framework. More initiatives will follow in line with the progress of the European Commission's agenda and sandboxing is part of the Czechia's recovery and resilience plan.

The future of financial services provision lays in the establishment of an Open Finance ecosystem, and it will be necessary to consider and adopt legislative proposals allowing this crucial area to fulfil its potential without undermining financial customer protection.

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AI for finance: from financial inclusion to compliance

Artificial intelligence (AI) in finance has grown rapidly in recent years. The IDC estimates that revenues generated from AI will reach $156.6 billion in 2020, up by 12.3% from 2019. Similarly, the AI FinTech market is predicted to grow to $22.6 billion by 2025 with an annual growth rate of 23.37% between 2020 and 2025. Given the staggering growth in its market share, there is little doubt that AI in financial services is here to stay.

The growth of AI in financial services

Over recent years, AI tools from machine learning (ML) to natural language processing (NLP) have transformed financial services. A survey by NVIDIA found that 83% of respondents agreed that AI is important to their financial institution's future success, whilst 34% agreed that AI will increase annual revenues by at least 20%. The potential of AI to transform financial services is derived from its improvements to the effectiveness and efficiency of financial services. A report published by the Alan Turing Institute identifies a range of benefits in the use of AI in the form of improvements to financial inclusion, better performance of investments, and consumer empowerment.

Inevitably, the emergence of new technologies also increases the risk of potentially adverse consequences. One source of such risks is the entry into the market by a range of new players with technology-focused offerings. A recent report by the World Economic Forum (WEF) on technology innovation and systemic risk identified this and other concerns as potential causes for systemic risk. Financial market infrastructures may not be able to cope with the ever-evolving demands. Importantly, the report identifies a number of solutions to concerning developments around systemic risk, including the use of regulatory technology (RegTech) and supervisory technology (SupTech) solutions.

RegTech and SupTech: AI for regulators

As the prevalence of technology in financial services grows, so too does the use of supervisory and regulatory technologies. A 2016 research paper by Douglas Arner, Janos Barberis, and Ross Buckley discusses the potential for RegTech to revolutionise regulatory reporting, anti-money laundering checks, capital assessments, stress testing, and many others. Andy Haldane is quoted in the paper as describing his vision for financial supervision with a series of screens displaying "a global map of financial flows, charting spill-overs and correlations."

Data standardisation empowers firms to deploy ML and NLP tools for regulatory reporting.

More recently, a 2021 book co-edited by William Coen and Diane R Maurice discusses opportunities for RegTech and SupTech for the years to come. From the development of open-source data standards like FIRE to regulators' initiatives such as BIRD, data within financial institutions is one key requirement for effective RegTech and SupTech solutions. In the book, Abur and Dyck discuss how thanks to data standardisation firms can deploy ML and NLP tools for regulatory reporting. Regulators that use such tools find themselves in a position where they can effectively evaluate the data received from established financial players and new entrants into the market and take any remedial action in a timely manner. Nonetheless, the WEF's report notes that appropriate regulatory responses directly addressing AI may also be needed.

The EU's AI Act

One example of a prominent regulatory development in the AI space is the EU's proposal for an AI regulation. The EU's proposed AI regulation is a welcome development in setting standards for best practice on AI. Its risk-based approach offers a promising means for protecting stakeholders without adversely impacting innovation and research and development. It is worth noting that many of the proposals regarding actions to be taken for providers of high-risk AI tools are already standard practice for many AI developers. The Singaporean government's model AI governance framework raises the importance of a human-in-the-loop approach to developing AI tools and even goes so far as to highlight the benefits to developers. Similarly, auditability and explainability are key not only to users of the tools but also to developers that continue to work on expanding the capabilities of their AI tools. Combined with the entity-based model of financial services regulation, the EU's AI act should foster stakeholders' confidence in the use of AI in financial services.

The future

There is little doubt that AI in financial services is here to stay. From financial inclusion through FinTech to compliance through RegTech and SupTech, AI has improved efficiencies across the spectrum of financial services. Regulatory models should continue to develop with this growing market to ensure stakeholders can maximise the opportunity.