

# REGULATORY APPROACHES TO ARTIFICIAL INTELLIGENCE IN FINANCE

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OECD ARTIFICIAL  
INTELLIGENCE  
PAPERS

September 2024 **No. 24**

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# Foreword

This report examines the policy approaches to Artificial Intelligence (AI) in finance, based on the results of a survey of 49 OECD and non-OECD jurisdictions. The report provides information on current and potential use cases of AI in finance and some of the risks observed by survey respondents and provides a stocktake of the policy frameworks applicable to the use of AI in finance in different forms. The report concludes with a discussion on the possible future need to ensure that applicable frameworks remain fit for purpose and the importance of broader guidance.

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The report supports the work of the OECD Committee on Financial Markets, chaired by Aerd Houben, and was discussed by the Committee in May 2024. This report was approved and declassified by the OECD Committee on Financial Markets on 26 July 2024.

The authors gratefully acknowledge valuable input and feedback provided by the following individuals and organisations: Agustín Alifracó, Central Bank of the Republic of Argentina; Julia Sheldrake and Jana Schmitz, Department of the Treasury of Australia; Angelika Schlögel, Ewelina Boula and Dominik Freudenthaler, Austrian Ministry of Finance; Stanislava Saria and Alexander Natter, Austrian Financial Market Authority; Konrad Richter and Andreas Timel, Oesterreichische Nationalbank, Austria; Ariane Meunier, FOD Financiën - SPF Finances Belgium; Marco Valerio Geraci, National Bank of Belgium; Rita Girão, Banco Central do Brasil; Polyá Filipova, Bulgarian Ministry of Finance; Connor Colvin, Finance Canada and Nathan Holman, Department of Finance Canada; Claudia Alarcón Inzunza, Financial Market Commission, Chile; Juan Sebastian Ortégón Ocampo and María Paula Rueda Viviescas, Superintendencia Financiera de Colombia; Pamela Méndez, Superintendencia General de Valores, Costa Rica; Jose Pablo Barquero, Banco Central de Costa Rica; Luis Diego Fernández, Consejo Nacional de Supervisión del Sistema Financiero, Costa Rica; Tajana Labudović, Croatian Financial Services Supervisory Agency; Croatian National Bank; Josef Mladek, Ministry of Finance of the Czech Republic; Ivan Zahradka, Czech National Bank; Lars Brander IIsøe Hougaard, Camilla Neuenschwander, Danish Financial Supervisory Authority; Mirjam Rannula, Estonian Ministry of Finance; Jan Ceyskens, Ana-Maria Fimin, Ivan Keller and Mattias Levin, European Commission, European Banking Authority, European Insurance and Occupational Pensions Authority; Claudia Guagliano, Anne Chone and Giulio Bagattini, European Securities and Markets Authority; Ursel Baumann, European Central Bank; Tatu Rasanen, Bank of Finland; Jean Dalbard, Arthur Frappereau, Cécile Mahe, Clément Robert, Ministère de l'Économie, des Finances et de la Souveraineté industrielle et numérique, Direction générale du Trésor, France; Bernd Auras, Bundesministerium der Finanzen, Germany; Eleftheria Kostika, Bank of Greece; Anson Law, Hong Kong Monetary Authority; Peter Sajtos, Central Bank of Hungary; Guðrún Inga Torfadóttir, Ministry of Finance, Iceland and Ólafur Hlynsson, Central Bank of Iceland; Novita Bachtiar, Otoritas Jasa Keuangan, Indonesia; Mai Santamaria and Jefferson Vieira, Department of Finance, Ireland; David Marzuk, Bank of Israel; Gian Paolo Ruggiero, Laura Larducci and Luca Ferrais, Italian Ministry of Economy and Finance;

Giuseppe Grande, Ilaria Supino, Giuseppe Ferrero, Banca d'Italia; Daniela Gariboldi, Commissione Nazionale per le Società e la Borsa (CONSOB), Piero Franchini, Institute for Insurance Supervision (IVASS); Ryosuke Ushida, Financial Services Agency of Japan; Jeonghyun Kim, Financial Services Commission of Korea; Indulis Podnieks, Ministry of Finance of the Republic of Latvia; Karolina Krisciukaiyte, Bank of Lithuania; Alexandre Briand, Banque Centrale du Luxembourg; Karen O'Sullivan and Anna Curridori, Commission de Surveillance du Secteur Financier, Luxembourg; María Antonieta Campa Rojas, Banco de México; Gibran Watfe, De Nederlandsche Bank; Annette Gittos, Ministry of Business, Innovation and Employment, New Zealand and Simon McLoughlin, New Zealand Treasury and New Zealand Financial Markets Authority; May Camilla Bruun-Kallum, Finanstilsynet, Norway; Claudia Canepa, Superintendencia of Banking, Insurance and Private Pension Funds Administrators, Peru; Adam Głogowski and Paweł Gasiński, National Bank of Poland and Krzysztof Gorczyca, Polish Financial Supervision Authority; Carla Marques, Banco de Portugal; Serban Matei, Bank of Romania and Vlad Cristian, Romanian Financial Supervisory Authority; Alan Lim, Xuchun Li and Maeve Woh, Monetary Authority of Singapore; Peter Pénzeš, National Bank of Slovakia and Roman Chandoga, Ministry of Finance of the Slovak Republic; Borut Poljšak, Bank of Slovenia; Katherine Gibson and Thiropathy Moodliyar, Financial Sector Conduct Authority, South Africa; Eulalia Ortiz Aguilar, Ministry of Economy, Trade and Enterprise, Spain and José Ramón Martínez, Bank of Spain, Spanish National Securities Market Commission; Fanny Samuelsson, Finansinspektionen, Sweden; Christiane Hoppe, Swiss Financial Market Supervisory Authority and Olivier Steudler, Swiss National bank; Zeynep Özge Yetkin, Central Bank of the Republic of Türkiye; Kimblery Moran, Richard Lomas, Bank of England and Prudential Regulation Authority, Fayyaz Muneer and Patrick Keenan, HM Treasury, Financial Conduct Authority; Mike Carlson, Peter Grills, Rohan Paris and Paull Randt, U.S. Department of the Treasury; Juraj Corba, Slovakian Ministry of Investments, Regional Development and Informatisation and Chair of the OECD Working Party on AI Governance, as well as Karine Perset, Luis Aranda, Lucia Russo, Rashad Abelson, Liv Gudmundson and Greta Gabbarini from the OECD.

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# Abbreviations and acronyms

**ACN** Italian Cybersecurity Agency

**ACPR** Prudential Supervision and Resolution Authority (Autorité de Contrôle Prudentiel et de Résolution) (France)

**ADI** Authorised Deposit-taking Institutions

**AEs** Advanced Economies

**AI** Artificial Intelligence

**AI RMF** AI Risk Management Framework

**AML** Anti-Money Laundering

**AOP** Automated Order Processing

**APRA** Australian Prudential Regulation Authority's

**ASIC** Australian Securities & Investments Commission

**BaFin** Federal Financial Supervisory Authority (Germany)

**BCRA** Banco Central de la República Argentina

**BDAI** Big Data and Artificial Intelligence

**CFR** Code of Federal Regulation

**CFT** Combating of Terrorism Financing

**CFTC** Commodity Futures Trading Commission

**CGAD** Corporate Governance Annual Disclosure Act

**CGAD-R** Corporate Governance Annual Disclosure Model Regulation

**Consob** Commissione Nazionale per le Società e la Borsa

**CPFB** Consumer Financial Protection Bureau (US)

**CRD** Capital Requirements Directives

**CSA** Canadian Securities Administrators

**CSSF** Commission de Surveillance du Secteur Financier (Luxembourg)

**DETEC** Federal Department of the Environment, Transport, Energy and Communications (Switzerland)

**DFSA** Danish Financial Services Agency

**DNB** De Nederlandsche Bank

**DORA** Digital Operational Resilience Act

**DSIT** UK Government's Department for Innovation, Science, and Technology

**EBA** European Banking Authority

**EC** European Commission

**ECOA** Equal Credit Opportunity Act

**EIOPA** European Insurance and Occupational Pensions Authority

**EMDEs** Emerging Markets and Developing Economies

**ESMA** European Securities and Markets Authority

**FCA** Financial Conduct Authority UK

**FCRA** Fair Credit Reporting Act

**FDIC** Federal Deposit Insurance Corporation

**FFIEC** US Federal Financial Institutions Examination Council

**FHA** Fair Housing Act

**FINMASA** Financial Market Supervision Act (Switzerland)

**FINRA** Financial Industry Regulatory Authority (US)

**FRB** Federal Reserve Board (US)

**FRFI** Federally Regulated Financial Institutions

**FRPP** Federally Regulated Pension Plans

**FSMA** Financial Services and Markets Act

**GDPR** General Data Protection Regulation

**Gen AI** Generative Artificial Intelligence

**GPT** Generative Pre-trained Transformer

**HFT** High Frequency Trading

**HKMA** Hong Kong Monetary Authority

**ICT** Information and Communication Technology

**IDD** Directive 2016/97 on insurance distribution

**IMDA** Infocomm Media Development Authority (Singapore)

**INAI** Instituto Nacional de Transparencia, Acceso a la Información y Protección de Datos Personales (Mexican Data Protection Authority)

**IOSCO** International Organisation of Securities Commissions

**IRB models** Internal Ratings-Based models

**IT** Information Technology

**LLMs** Large Language Models

**MaRisk** Model Risk Framework (Germany)

**MiFID II** Markets in Financial Instruments Directive 2014

**ML** Machine Learning

**MRM** Model Risk Management

**NAIC** National Association of Insurance Commissioners (US)

**NBB** National Bank of Belgium

**NBFIs** Nonbanking Financial Institutions

**NCUA** National Credit Union Administration (US)

**NIST** National Institute of Standards and Technology (US)

**NLP** Natural Language Processing

**OCC** Office of the Comptroller of the Currency (US)

**OCR** Optical Character Recognition

**OJK** Otoritas Jasa Keuangan (Indonesian Financial Services Authority)

**OSFI** Office of the Superintendent of Financial Institutions (Canada)

**P/C** Property/Casualty

**PoC** Proof of Concept

**PRA** Prudential Regulation Authority

**Regtech** AI for Regulatory purposes

**RFI** Request for Information

**SBS** Superintendency of Banks, Insurance and AFP (Peru)

**SEC** US Securities and Exchange Commission

**SL** Supervisory Letter

**SMEs** Small and Medium-sized Enterprises

**Suptech** AI for Supervisory purposes

**UCSPA** Unfair Claims Settlement Practices Act

**UDAAP** Unfair or Deceptive Acts or Practices

**UTPA** Unfair Trade Practices Act



# Executive summary

AI technologies and tools have been around for many decades, and their deployment in finance has been increasing in recent years. Following years of acceleration in the application of more traditional AI techniques (also known as ‘narrow’ AI), the past years have seen very rapid developments in content-generating capabilities (GenAI) and the increasing use of all these techniques in finance. The use of AI in finance has the potential to deliver important benefits to financial consumers and market participants through efficiencies and productivity improvement, and to improve customer welfare through cost reductions and enhanced quality of products and services (e.g. customisation, extension of credit to thin file SMEs) (OECD, 2021<sup>[1]</sup>). At the same time, the wider deployment of AI in finance could amplify risks already present in financial markets while also giving rise to new challenges and risks. GenAI can exacerbate AI-related risks and raises a number of additional issues (e.g. risk of market manipulation) (OECD, 2023<sup>[2]</sup>). There is a role for policy consideration, and possible action, to ensure that financial market participants are duly protected and the markets around financial products and services remain fair, orderly and transparent when AI is involved in finance.

This report analyses the different regulatory approaches to the use of AI in finance in OECD and non-OECD jurisdictions based on an OECD survey.<sup>1</sup> The vast majority of respondents reported that they have appropriate regulation in place, while acknowledging that there may be some gaps and more general guidance may be valuable. The absence of explicit sectorial regulation for AI in finance in the majority of respondent jurisdictions could be (at least partially) explained by the fact that existing financial regulation, laws and guidance applies to financial activities regardless of the technology used. Where AI is used within areas for applications that are covered by existing rules or guidance, such rules or guidance should generally apply regardless of whether the decision came from AI (with or without human intervention), traditional models or humans. This includes, for example, general rules on prudent business, consumer/investor protection laws and regulations, guidance on model risk management, third-party risk management, disclosure requirements, handbooks related to IT governance, and cyber-security and operational resilience laws and regulations, as well as fairness laws, which continue to apply irrespective of the technology used. Advances in technology do not render existing safety and soundness standards and compliance requirements inapplicable. Many of the risks related to AI are not necessarily new or unique to AI innovation but rather exacerbated and amplified by the use of such innovation – or manifest in different ways (OECD, 2023<sup>[2]</sup>; 2021<sup>[1]</sup>).

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<sup>1</sup> The report is based on 49 responses to the OECD Survey on Regulatory Approaches to AI in Finance by 38 OECD countries (i.e. Australia, Austria, Belgium, Canada, Chile, Colombia, Costa Rica, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Türkiye, United Kingdom, United States) as well as by 6 accession candidates to the OECD (i.e. Argentina, Brazil, Bulgaria, Croatia, Peru, Romania) and 4 non-OECD member jurisdictions (i.e. Hong Kong, China, Indonesia, Singapore, South Africa), as well as a consolidated answer provided by the EU Institutions (i.e. EC, EBA, EIOPA, ESMA) and was conducted in Q1 2024.

The vast majority of respondent jurisdictions have introduced some form of policy that covers AI in (parts of) finance, albeit in different forms: cross-sectorial legislation covering part of financial activity; binding rules or proposals issued by financial regulators, and non-binding policy guidance or clarifications released by financial regulators/supervisors. Importantly, these approaches are not mutually exclusive. For example, in jurisdictions with binding legislation covering parts of finance, existing sectorial regulation continues to apply without necessarily explicitly referencing AI and given the tech-neutral approach of OECD member countries.

In particular, some respondents have introduced (or are in the process of introducing) legislation related solely to AI, such as for example Brazil, Chile, Colombia and Peru. These legislations are cross-sectorial and, in the case of the EU AI Act, have explicit provisions for specific parts of the financial sector. For example, the EU AI Act regulates AI-based creditworthiness assessments by banks, as well as pricing and risk assessments in life and health insurance with heightened requirements applying to these AI financial applications as they are considered high risk use cases. A small number of rules or proposed rules have also been introduced by financial regulators aiming at specific sectors or parts of the activities.

Non-binding policy guidance (e.g. principles, guidelines, white papers) on the use of AI has been reported in several respondent jurisdictions and is either explicitly targeting financial activity or are cross-sectorial and inclusive of financial activities. Such guidance can be government-led with blueprints or white papers covering all parts of economic activity, including finance (e.g. US President Biden's Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence; or the UK Government's White Paper "A pro-innovation approach to AI Regulation"). Such guidance also encourages financial regulators to consider using their full range of authorities to protect consumers and investors from risks that may arise from the use of AI (e.g. the United States). Non-binding guidance has also been issued by financial regulators in some jurisdictions either providing broad recommendations for the use of AI in finance or focusing on specific areas of activity (e.g. Robo-advice services, creditworthiness assessment).

Only a minority of financial regulators/supervisors in respondent jurisdictions have issued specific supervisory expectations or clarifications around the use of AI in finance. Some respondents have reported that, at the practical implementation level, there may be a need for additional regulatory/ supervisory guidance to assist authorised/supervised entities in their compliance, given unique issues arising in the deployment of AI innovation, depending on the case. Finally, the majority of respondents to the survey do not plan to introduce new regulations around AI in finance in the near future.

Although existing rules have been reported to be applicable to the use of AI in finance by most respondents to the survey, there may be a need to continue to review existing regulatory frameworks to ensure they remain fit for purpose. Indeed, a majority of respondents have noted that they continue to analyse with a view to better assess whether any further strengthening or expanding of existing rules beyond what is already in place would be necessary, or useful, to deliver on the policy objectives of regulatory authorities. This could be beneficial if, for example, any gaps are identified in the future in the way risks are mitigated with existing rules or if possible re-interpretation of existing rules or guidance would be useful to deliver on the policy objectives of the authorities. Where new regulations are being introduced, there may be a need to assess any possible interplay between existing and new rules that may require further expansion or adjustment of existing rules, for example to address any possible incompatibilities that will only become evident post implementation of the new laws. All the above will need to be done taking into account future developments in the evolution of AI innovation.

Further initiatives could be promoted to foster convergence in the interpretation and application of existing rules at the international level, too. Closer coordination, information sharing and greater alignment between regulators, domestic and international, could be helpful in effectively identifying and addressing emerging risks.

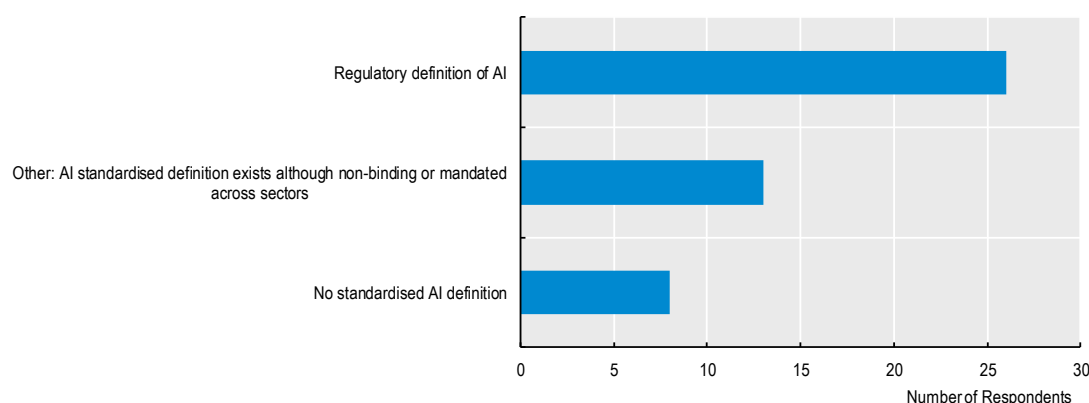
# 1 Defining AI and mapping current and potential uses in finance

## 1.1. Defining Artificial Intelligence (AI)

Reaching a common understanding of what the term Artificial Intelligence (AI) encompasses is important to any discussion around regulation or policies for its use in finance (and beyond), not least because of AI's global nature. The rapid pace of AI innovation and the speed of its evolution make it challenging to define AI in a future-proof manner. In many cases, AI's cross-sectorial nature can translate into different approaches to the description of AI by different agencies or organisations. A level of consistency in how AI is described, such as the updated OECD definition (OECD, 2024<sup>[3]</sup>), may be useful for the efficient and effective regulation and supervision of financial (and other) activities involving the use of AI innovation.

Although there is no general definition of AI that enjoys universal consensus, an established AI definition exists in the majority of respondents at the national level, albeit not always prescribed by regulation (Figure 1.1). In the EU, a regulatory AI definition is framed under the AI Act (EU, 2024<sup>[4]</sup>) and is based on the OECD updated 2023 definition (OECD, 2024<sup>[3]</sup>). The updated OECD AI definition as well as a notion of AI lifecycle have also been incorporated into the first international Treaty on AI adopted at the Council of Europe on 17 May 2024, with many non-European countries participating in the negotiations (Council of Europe, 2024<sup>[5]</sup>). Other countries with legally established definitions include Peru (Law 31814/2013 for the promotion of the use of AI in favour of the economic and social development of the country) and Brazil (draft bill 2338/2023).

Figure 1.1. AI definition



Note: Based on a total of 49 responding jurisdictions.

Source: 2024 OECD Survey on Regulatory Approaches to AI in Finance.

Outside the EU, the definitions of AI are generally non-legal definitions, and remain non-prescriptive or non-mandated across the financial sector. For example, in the US, AI is defined in President Biden's Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence ("EO 14110") (The White House, 2023<sup>[6]</sup>).<sup>2</sup> Definitions can also be prescribed as part of supervisory guidelines for the financial sector, such as the case of Korea (Financial Sector AI Guideline<sup>3</sup>) and Indonesia (OJK's Guideline on principles of responsible and trustworthy use of AI within the financial technology industry). In other cases, the definition is provided at the national, cross-sectorial level and cover for the financial services, too, such as in Colombia (CONPES 3975 National Policy for Digital Transformation and Artificial Intelligence); Israel (report "Principles of Policy, Regulation and Ethics in AI" issued by the Israeli Ministries of Innovation, Science and Technology and Justice); Switzerland (Swiss Competence Network of Artificial Intelligence's standardised terminology) and Singapore (IMDA, 2024<sup>[7]</sup>)

Non-legal definitions are not prescriptive or mandated across the financial sector, and different participants of the financial system may have slightly different definitions of AI. For example, in the US, the National Association of Insurance Commissioners (NAIC) has a separate definition of AI.<sup>4</sup>

Some respondents have no widely accepted AI definition (e.g. Costa Rica, Mexico, Türkiye, and Hong Kong, China). The UK Government's 2023 White Paper outlined a context-based regulatory framework for AI, combined with cross-sectorial principles and international collaboration, which has received strong support from stakeholders across society (DSIT UK, 2024<sup>[8]</sup>). Financial market participants in the UK highlighted that such response would not be useful, pointing to the use of alternative, principles-based or risk-based approaches to the definition of AI with a focus on specific characteristics of AI or risks posed or amplified by AI (Bank of England, 2023<sup>[9]</sup>). South Africa defines automated advice under the Financial Advisory and Intermediary Services Act, 2002 (Act No. 37 of 2002) as the furnishing of advice through an electronic medium that uses algorithms and technology without the direct involvement of a natural person.

Internationally-agreed definitions by standard-setters are also endorsed by respondents to the OECD survey, irrespective of whether there is a nationally agreed definition or not. OECD member countries have approved a revised version of the OECD's definition of an AI system underpinning the OECD AI Principles: "*An AI system is a machine-based system 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. Different AI systems vary in their levels of autonomy and adaptiveness after deployment*" (OECD, 2024<sup>[3]</sup>) (Figure 1.2). Other standard setters' definitions include the one provided by IOSCO (IOSCO, 2021<sup>[10]</sup>).

While the discussion of definitions is of interest and meaningful, from a supervisory perspective the most important factor is to confirm that financial institutions understand the risks and have proper governance, risk management, and control tools - regardless of whether something is called AI or not.

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<sup>2</sup> Defines AI as a machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations, or decisions influencing real or virtual environments. AI systems use machine- and human-based inputs to perceive real and virtual environments; abstract such perceptions into models through analysis in an automated manner; and use model inference to formulate options for information or action (The White House, 2023<sup>[6]</sup>).

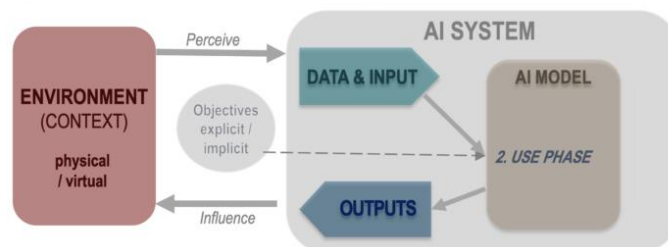
<sup>3</sup> An AI system is that, given specific goal, acquires data, recognizes the environment, interprets the acquired data, infers knowledge or processes information, and determines the best action to achieve that goal, thereby achieving the goal in physical or digital dimensions, refers to a human-designed software or hardware system that operates in (FSC, 2023<sup>[98]</sup>).

<sup>4</sup> A branch of computer science that uses data processing systems that perform functions normally associated with human intelligence, such as reasoning, learning, and self-improvement, or the capability of a device to perform functions that are normally associated with human intelligence such as reasoning, learning, and self-improvement. This definition considers machine learning to be a subset of artificial intelligence (NAIC Model Bulletin: Use of Artificial Intelligence Systems by Insurers (December 4, 2023) (NAIC, 2023<sup>[67]</sup>).

Figure 1.2. Updated OECD definition of AI system

**USE PHASE** (once the model is built):

An AI system is a **machine-based** system, 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;**

**Different AI systems vary in their levels of autonomy and adaptiveness [after deployment].**

Source: OECD (2023<sup>[11]</sup>), Updates to the OECD's definition of an AI system explained, <https://oecd.ai/en/work/ai-system-definition-update>

## 1.2. The use of AI in finance

All respondents to the OECD survey unanimously reported that financial sector participants currently experiment with, develop and/or deploy AI tools (Figure 1.3). However, authorities do not have complete visibility of the use of AI by financial sector participants, as there are generally no legal requirements for supervised financial sector entities to inform authorities about the use or experimentation with AI mechanisms. In most cases, financial supervisors are aware of these trends based on regular supervisory interactions (including examinations), industry engagement and feedback from the market, innovation facilitators (such as regulatory sandboxes and innovation hubs), firm's public disclosure, market reports and other non-official sources. In some cases, financial supervisors have gathered non-exhaustive information about the use of AI in finance through Requests for Information/Comments (e.g. (Bank of England and FCA, 2019<sup>[12]</sup>; ESMA, 2023<sup>[13]</sup>; SEC, 2021<sup>[14]</sup>; SEC, 2023<sup>[15]</sup>; US Interagency, 2021<sup>[16]</sup>; CFTC, 2024<sup>[17]</sup>).

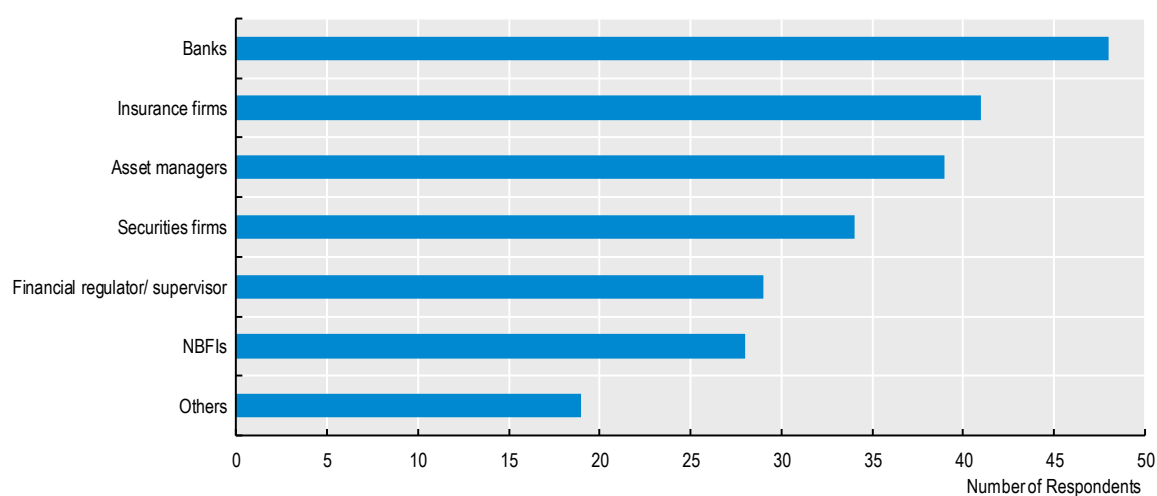
It is important to underline the different ways of interaction of a financial sector firm with AI innovation, noting that pilots and experimentation, or the development of AI-based tools does not equate to deployment and implementation of the technology for service provision and that the use of AI in Finance is constantly evolving.<sup>5</sup> That is, just knowing that a financial institution is using AI is not useful or meaningful on its own, as the details matter and drive the risks. Financial sector participants use open-source software, vendor provided tools, and in some cases, pre-trained models (e.g. automation on major cloud service provider platforms; pricing and trading models employing Machine Learning (ML) techniques; automated trading and risk management systems; Natural Language Processing (NLP) and Optical Character Recognition (OCR)) to extract, analyse and synthesize large data sets, and deploy Large Language Models (LLMs) and other advanced AI models.

The majority of respondents report that AI is currently being developed or deployed by many types of financial institutions for a number of years now, including banks, insurance companies, and payment and

<sup>5</sup> For example, 60% of use cases reported in Luxembourg were in production (CSSF, 2023<sup>[82]</sup>).

e-money institutions. In the EU, for example, 95% of banks are reported as using and/or developing AI/ML applications for various use cases. Asset managers and securities firms are also reported to experiment with AI tools in most jurisdictions. Other types of firms reported to use AI include third-party service providers partnering with financial institutions, data aggregators, payment processors, as well as pension funds (e.g. Costa Rica) and long-term savings providers (e.g. Israel); microfinance institutions (e.g. Peru) but also FinTech firms (e.g. Estonia, Italy) and crypto-asset service providers (e.g. Estonia). Respondents also mentioned the experimentation and/or use of AI for regulatory/supervisory purposes (RegTech and SupTech solutions) in their jurisdictions (e.g. Australia, Indonesia).

**Figure 1.3. Indicative types of financial firms currently experimenting with or deploying AI**

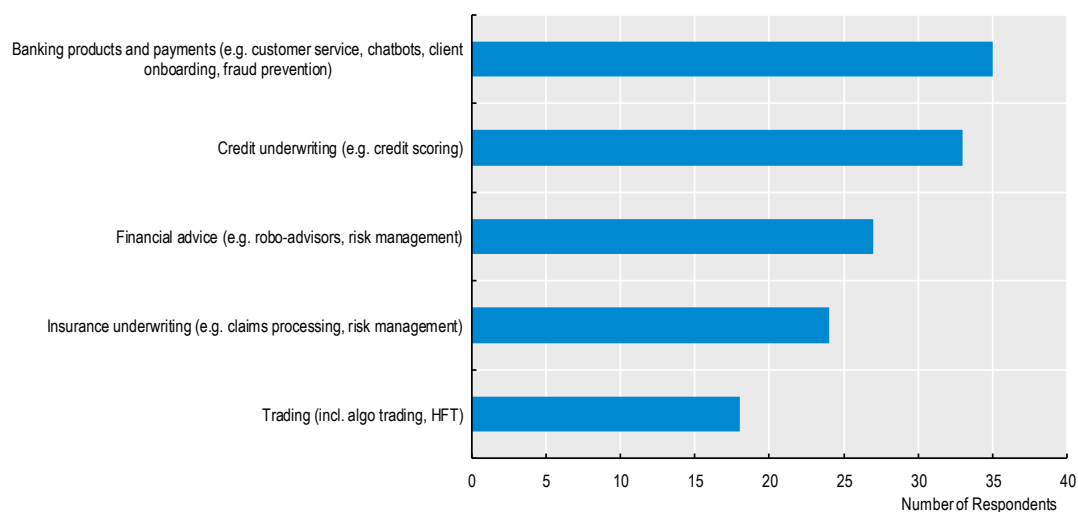


Note: NBFIs category comprises NBFIs other than the ones depicted on a standalone basis (insurance firms; asset managers). Chart depicting only indicative types of firms as reported by respondents to the survey, with possible selection bias built into these findings as most regulators have jurisdiction over banks, but regulatory jurisdiction over non-bank financial institutions tends to be mixed globally.

Source: 2024 OECD Survey on Regulatory Approaches to AI in Finance. Based on a total of 49 responding jurisdictions.

In terms of products and activities involved in the use or experimentation of AI by financial sector participants, AI is used for the provision of a variety of products and services (Figure 1.4). Most respondents reported the use of AI in banking and payment products, both for client onboarding and for customer support. In credit, the use of AI has been widely observed across respondents for credit underwriting through AI-based credit scoring. Alternative data scoring is particularly important for MSMEs facing financing constraints, and AI-based models can support creditworthiness assessments of thin file companies with limited credit history and/or collateral (OECD, 2021<sup>[11]</sup>). Such tools are being experimented and/or applied across Advanced Economies (AEs) and Emerging Markets and Developing Economies (EMDEs) (e.g. Hong Kong, China) (HKMA, 2021<sup>[18]</sup>).

**Figure 1.4. AI development or use involved in numerous products across sectors**



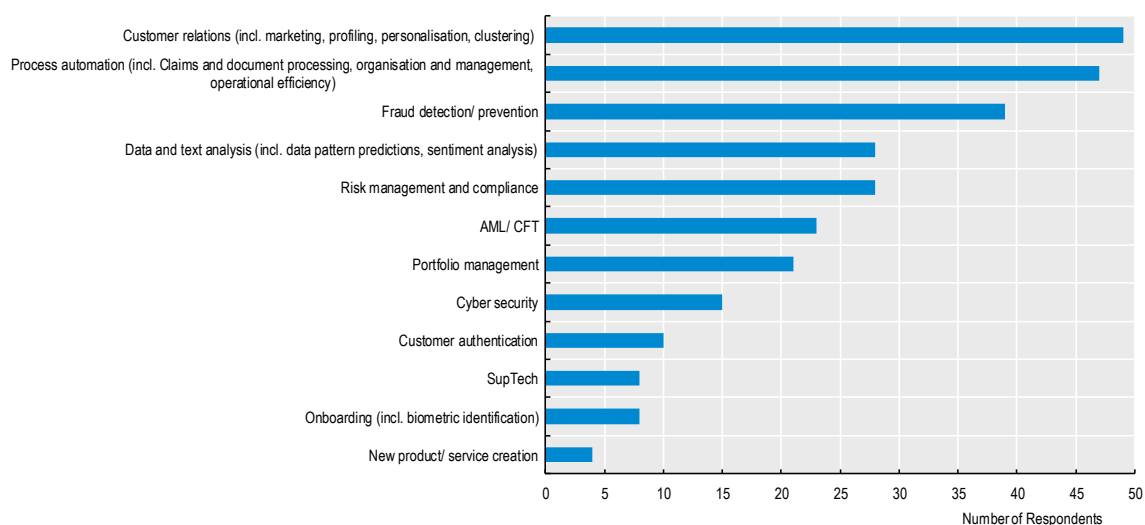
Note: Chart depicting only indicative types of products as reported by respondents to the survey, with possible selection bias built into these findings as most regulators have jurisdiction over banks, but regulatory jurisdiction over non-bank financial institutions tends to be mixed globally. Source: 2024 OECD Survey on Regulatory Approaches to AI in Finance. Based on a total of 49 responding jurisdictions.

Financial institutions are currently using AI for a variety of tasks, which vary depending on the size and type of institution. The most frequently reported use cases in the OECD Survey involve either customer relations and the use of AI to improve (i) the efficiency and effectiveness of customer service and marketing; or (ii) process automation and support for back-office operations. These use cases are reflecting the potential benefits of the use of AI in finance, namely the potential to increase efficiencies and reduce costs; improve performance and tailor/ personalise products and services; strengthen risk management and controls; and expand access to credit and other bank services.

Reported customer-facing uses include virtual assistants, chatbots, robo-advisors, credit and insurance decisioning and pricing and marketing/product recommendations. The latter involves optimisation of products and services, tailoring and personalisation (e.g. targeted online advertising), assessment of the terms at which products are offered (e.g. price setting) as well as customer onboarding, customer due diligence and identification (e.g. biometric identification).

The second most reported use case category is process automation for back-office operations optimisation across sectors of financial activity. These include automated fraud detection, detection and prevention of financial crime and/or market abuses, cyber-security threat detection and monitoring, AML/CFT monitoring (e.g., reducing the rate of false positives and false negatives), stress testing and capital optimisation, trading and portfolio management optimisation and support functions for financial advice, risk management (e.g. loss forecasting) and credit portfolio monitoring. AI is also reported to be used to enhance procedures on data information, collection and textual analysis, document processing as well as treasury management (e.g., data verification and reconciliation, cash-flow forecasting). In terms of AI in algorithmic trading, evidence from OECD economies point to the use of ML models being used to analyse large datasets and identify patterns and signals to optimise, forecast, predict, guide or direct investment-related behaviours or outlines (SEC, 2023<sup>[15]</sup>). AI has also been reported to be used for compliance, as in the example of Italy, where the Bank of Italy and some supervised entities have developed a proof of concept (PoC) of an AI-based tool that allows financial institutions to automatically verify compliance with financial regulation. Such proof of concept is also an example of public-private cooperation in AI-related experimentations.

**Figure 1.5. Use cases and tasks involving the use of AI in finance**



Note: Chart depicting only indicative types of use cases and tasks as reported by respondents to the survey, with possible selection bias built into these findings as most regulators have jurisdiction over banks, but regulatory jurisdiction over non-bank financial institutions tends to be mixed globally.

Source: 2024 OECD Survey on Regulatory Approaches to AI in Finance. Based on a total of 49 responding jurisdictions.

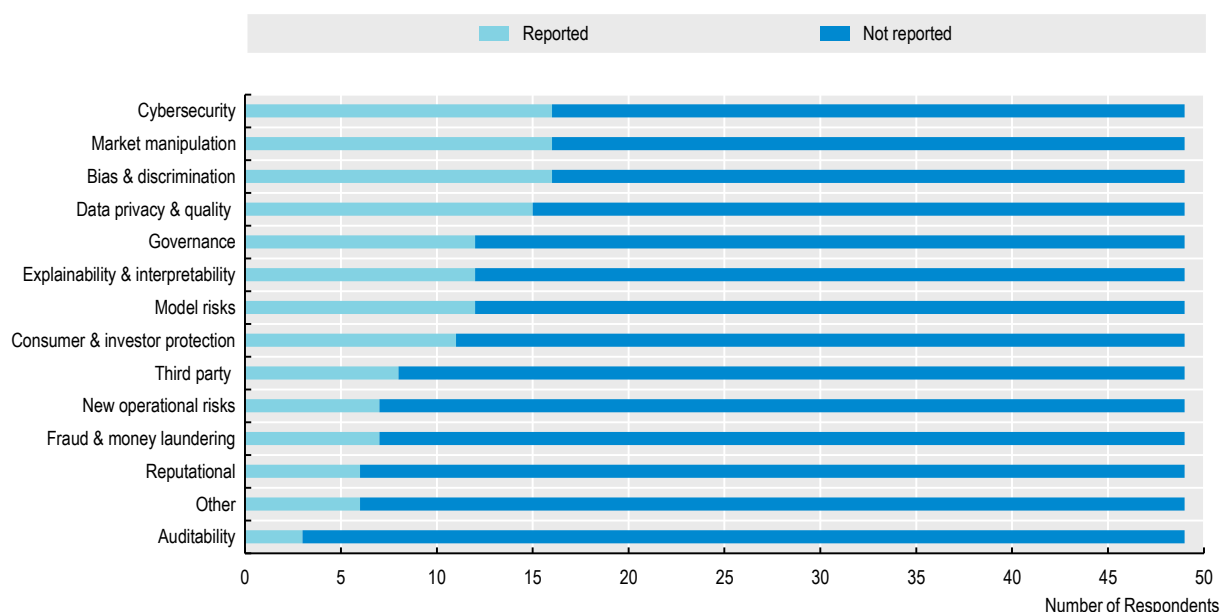
Financial supervisors are increasingly adopting the use of AI technologies for supervisory purposes and SupTech use cases have been reported by several respondents to the survey. Supervisors report the use of AI for predictive analytics, the study of non-linear interactions between variables, and analysis of larger and richer datasets, which can potentially help forecast GDP growth, bank distress and financial crises prediction (e.g. UK). Indicatively, the Bank of England is exploring how AI-enabled text analysis of newspapers can help improve economic forecasting and how AI can create ‘faster indicators’, which may enable real-time economic analysis. The PRA introduced a cognitive search tool with AI capabilities that helps supervisors gain more insights from firm management information by extracting key patterns from unstructured and complex datasets, while the UK FCA has been exploring how AI can provide additional levels of insight across the organisation (e.g. NLP to generate insights from unstructured text documentation; predictive analytics to forecast where risks may lie across the supervisory waterfront; and simulation techniques to generate realistic synthetic data sets) (Bank of England, 2022<sup>[19]</sup>). In Italy, Consob is developing Proof of Concept (PoC) based on AI techniques in the areas of market surveillance (for insider trading identification); consumer protection; and risk-based analysis of issuers (Consob, 2022<sup>[20]</sup>). The Bank of Indonesia reported the use of AI in assisting decision making regarding supervisory policy (e.g. around liquidity & credit risks).

### 1.3. AI in finance risks

Survey respondents have reported identified risks stemming from the use of AI in finance (non-exhaustive list Figure 1.6). As highlighted by various respondents, AI adoption in the financial sector is currently confined to narrow usages (e.g. consumer support, process automation) but it is expected to broaden significantly in the near future. Respondents have noted that they monitor current market developments to identify additional potential risks. Risks categorisation is also likely to adapt due to the risk inter-relationship which entails that existing risks may be exacerbated due to the use of AI, causing a spillover effect from one business area to another, or even creating brand new risks.



Figure 1.6. Indicative financial sector risks related to the use of AI in finance



Note: Chart depicting only risks that respondents reported in their response to the survey. Non exhaustive list.

Source: 2024 OECD Survey on Regulatory Approaches to AI in Finance. Based on a total of 49 responding jurisdictions.

The most reported risk areas included cybersecurity, market manipulation, as well as bias and discrimination risks. Risks related to cyber-security were linked to the vulnerability of AI systems to cyberattacks, including adversarial attacks directly targeting the decision-making processes. In particular, respondents have noted that Gen AI can be used as a tool to create sophisticated phishing messages or deepfakes which can lead to increased cases of identity theft or fraud. Also, market manipulation risks were noted to be raised by AI-stimulated herding effects, misinformed financial advice, hallucinations and deepfakes. The areas of market manipulation, discrimination and privacy all share an underlying issue of using quality data. Due to the high volume and complexity of financial data, respondents highlighted the difficulty in ensuring the high quality, relevance, security and confidentiality of the data. This may result in risks of data poisoning, misuse of personal data, among other breaches.

Respondents have identified weak governance as another highly reported risk area. As highlighted by the EU, governance structures are complex to navigate as the relationships between different variables considered in a model are not apparent. The “black box” nature of AI raises risks connected to the lack of explainability and interpretability. The lack of explainability and interpretability is the negative counterpart to the AI systems’ high levels of autonomy (compared to traditional models), which can increase operational efficiency but also make it complex to evaluate and criticise its results. AI algorithms have a dense architecture that relies on many parameters and are often a set of interactive models, whose input signals may not be easily identifiable or even known. This can be challenging for financial institutions both at the operational level, by making it hard to detect flaws, and the reporting level. Lack of explainability can also hamper the ability to assess whether an AI approach is conceptually sound, as it is difficult to explain the decision-making processes to the regulators, customers and other stakeholders. Also, with a broader use of models in different business areas, a lack of understanding of the models, techniques and their limitations could cause significant model risk, another source of risk prevailing in responses to the survey.

Respondents have flagged several risk areas resulting from dependence of financial institutions on third parties for AI services provision, thereby increasing the possibilities for fraud occurrences and creating new operational risks. Jurisdictions reported that as banks open up their IT infrastructures and increasingly

rely on third party providers, they face heightened risks of third-party dependency. Third party risks reported include deficiencies in third-party knowledge and control, vendor lock-in, concentration risk, and model maintenance issues. Such technical set-up can also heighten the risks of money laundering and fraud incidents. In addition, in some cases, financial regulators may not have any supervisory authority over these third parties, leading to potentially unassessed risks (e.g. similar types of risks arising in the provision of cloud services). Another related risk category identified by respondents pertains to new operational risks, namely reliability, technical failures, system errors, and model drift. These risks can disrupt financial operations, thereby leading to financial losses and financial fragility.

As noted by some respondents, different risks pertaining to data privacy, discrimination and model risk can be distinguished at different stages of interaction with AI systems. The issue of data quality can pre-determine the system to be flawed, at the input level. Nevertheless, even high quality of data could be deformed at the modelling stage which carries model-related risks. Lastly, the use of the AI systems by market participants is seen by some respondents as dependant on the governance structures. This can be illustrated by the use case of AI for credit decision-making process used by numerous respondents to highlight the ensuing risks. Poor quality of data was also noted to run the risk of resulting in biased datasets, with models incorporating biases which are difficult to detect. This poses risks of consumer discrimination (financial exclusion, ethical wrongdoing) as well as credit and investment concentration. From the industry standpoint, this was reported to have possible implications for financial exclusion of certain cohorts of customers. The use of chat bots and virtual assistants may exclude customers with less access to technology and/or digital literacy skills. Furthermore, respondents noted that AI models have inherent flaws that can deny access to a service for no particular reason, which can be hard to spot for market participants due to their black box nature.

All of the abovementioned risk areas can result in significant reputational consequences for financial institutions, and in the potential for legal and regulatory risks to arise. Deploying a biased or flawed AI system might trigger the occurrence of data breaches, cyber-attacks, or fraud incidents which can financially harm the institutions as well as lower consumer trust.

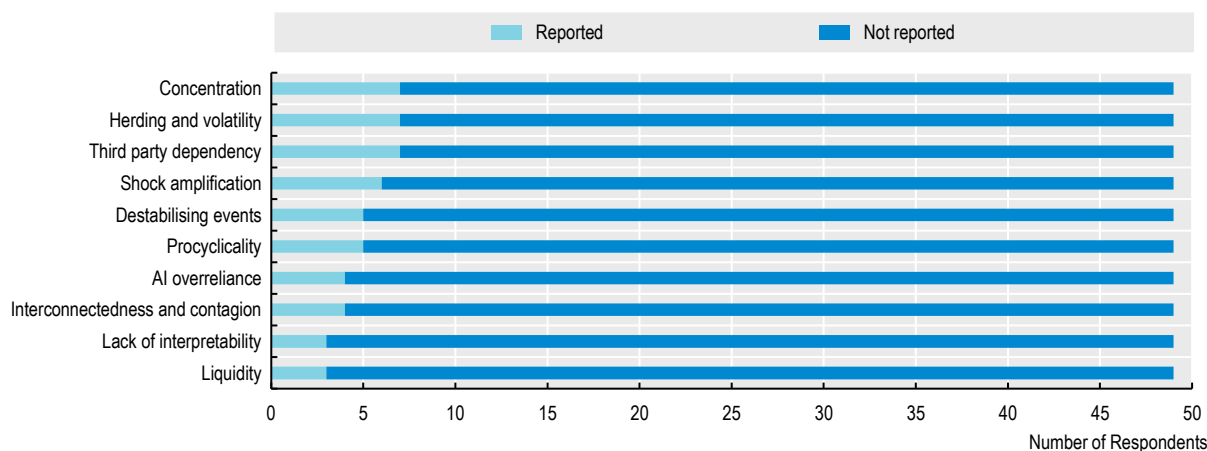
Other risk areas that have been identified by respondents relate to auditability of AI systems, competition and copyright infringements. Also, several jurisdictions have flagged risks ensuing from the fast pace of development of AI, which can cause difficulties with the procurement of a highly skilled personnel.

The approach to dealing with AI-specific financial risks varies among the respondents as to the chosen form of policy-making. Certain jurisdictions have observed that financial market participants treat AI risks among other risk categories and AI risk is not distinguished as a separate category or treat AI risks as a separate category but that is not specific to the financial sector.

### **1.3.1. Financial stability risks**

The majority of the survey respondents noted that so far there have not been indications that the use of AI in finance has given rise to major risks to financial stability (see Figure 1.7 and Figure 1.8 for non-exhaustive list of emerging risks related to the use of AI in finance). However, almost all respondents highlighted that such risks are expected to emerge in the future but have not been clearly formulated as of yet. Thus, jurisdictions called for further assessment of whether the risks are already pronounced to the extent capable of jeopardising financial stability, both at the current stage, and considering the emerging developments.

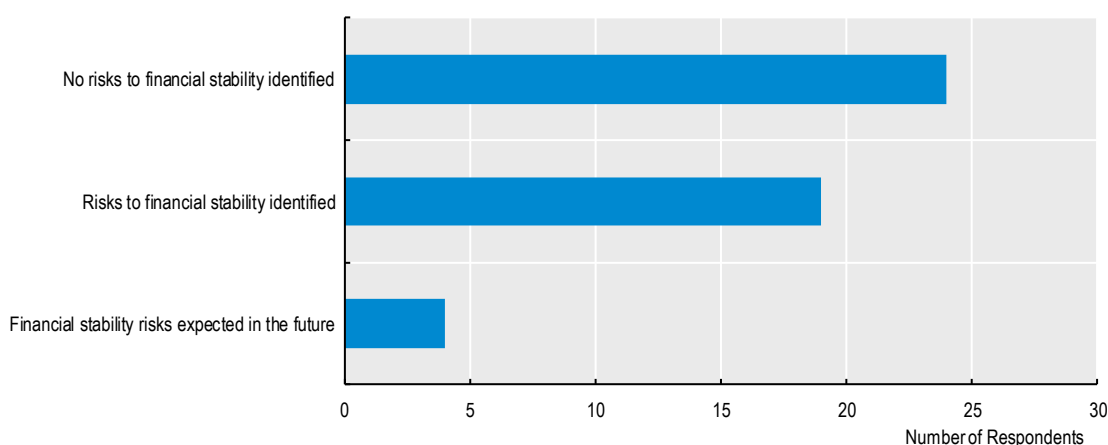
**Figure 1.7. Indicative risks to financial stability identified in relation to the use of AI in Finance**



Note: Chart depicting only risks to financial stability and only those risks that respondents reported in their response to the survey.  
 Source: 2024 OECD Survey on Regulatory Approaches to AI in Finance. Based on a total of 49 responding jurisdictions.

The top three financial stability risk areas identified by respondents are concentration risks, herding and volatility, and third party dependency (Figure 1.7). Possible interaction and/or interconnections between reported risks to financial stability were also noted by respondents, possibly amplifying the impact of each of these risks. It was also noted that the widespread introduction of AI could potentially create new sources and channels for transmitting systemic risks. In particular, the respondents have observed that AI solutions are reliant on scarce appropriate hardware, and that the market of AI is dominated by a few large vendors. As a result, respondents have noted that reliance on cloud components and on third party services by financial institutions could create concentration risk where a failure or risk event could affect financial stability. Certain third parties providing data and AI models could also emerge as future potential critical third parties as a result of the increasing use of these data and models.

**Figure 1.8. Identification of current financial stability risks by each jurisdiction**



Source: 2024 OECD Survey on Regulatory Approaches to AI in Finance. Based on a total of 49 responding jurisdictions.

Respondents have also identified financial stability risks stemming from potential shock amplification by the AI systems, as well as volatility and liquidity issues. Volatility could be exacerbated due to herd

mentality bias incorporated by the AI systems, which could in turn affect market liquidity. As respondents point out, AI models are not trained for black swans and tend to rely on similar data bases. Sudden market movements are made more frequent by the increasing speed with which orders are placed and executed by AI-based systems. Thus, in case of an unexpected shock, the same errors might occur across the systems, potentially leading to fire sales, bank runs or similar destabilising events. For example, cybersecurity risks are discussed by respondents in the context of not just direct damages but also loss of confidence and the ensuing panic, which can affect financial stability at large.

Furthermore, financial stability risks may result from overreliance on AI systems, which can automate and accelerate the procyclicality of financial conditions. This effect can be stimulated by developing inherently procyclical risk assessments and credit underwriting decisions. Respondents have referred to the use of AI prudential models to calculate capital requirements and/or to calculate the technical provisions, which could entail risks arising from the “black-box” nature of AI. Another reported risk area stems from overreliance on AI systems, which is directly linked to other risks (lack of interpretability), which makes it challenging to assess/validate the contribution of specific risk drivers.

A distinction was made by the respondents in relation to GenAI, due to the high degree of market power concentration and volume of data used by models such as Chat GPT. According to some jurisdictions, GenAI hallucinations are a concern that could become systemically significant if misleading information spreads throughout the financial system. In particular, the area of social media manipulation seems to be of special concern to many respondents. It has been pointed out that such social media posts may include rumours (e.g. fuelled by AI-generated deepfakes) that can distort trading activity, thereby affecting the stability of the financial system.

# 2 Policy approaches to AI in finance

## 2.1. Mapping of different policy approaches to AI in finance

The vast majority of respondents reported that they have appropriate regulation in place, while acknowledging that there may be some gaps and more general guidance may be valuable. The lack of explicit sectorial regulation for AI in finance could be [partially] explained by the fact that existing financial regulation, laws and guidance applies to activities regardless of technology used (i.e. even if AI is not specifically referenced). This includes for example general rules on prudent business, consumer/investor protection laws and regulations, guidance on model risk management, third-party risk management, disclosure requirements, handbooks related to IT governance, and cyber-security and operational resilience laws and regulations, as well as fairness laws, which continue to apply irrespective of the technology used. Advances in technology do not render existing safety and soundness standards and compliance requirements inapplicable; indeed, the vast majority of OECD jurisdictions emphasise a technology-neutral approach to applicable requirements and expectations. Where AI is used within areas for applications that are covered by existing rules or guidance, such rules or guidance should generally apply regardless of whether the decision came from AI (with or without human intervention), traditional models or humans.

Almost all OECD and non-OECD jurisdictions responding to the survey have introduced some form of policy that covers AI in (parts of) finance, albeit in different forms. Some jurisdictions have introduced, or are in the process of introducing, AI legislation (for example, Brazil, Chile, Colombia, EU members, Peru). Such legislations tend to be cross-sectorial and in the case of the EU AI Act have explicit provisions for only part of the financial sector.

Rules have also been proposed by financial regulators aiming at sectors or certain types of activities (e.g. US SEC). Non-binding policy guidance (e.g. principles, white papers) has been reported in more than a dozen respondents and is either explicitly targeting financial activity or are cross-sectorial requirements and inclusive of financial activities. Also, supervisory authorities of some respondents have internal or public guidance setting out supervisory expectations for AI in finance.

Nevertheless, at the practical implementation level, individual jurisdictions may see a need for additional regulatory/supervisory guidance to assist authorised/supervised entities in their compliance, given unique issues arising in the deployment of AI innovation, depending on the case. Although only a small number of respondents to the survey have already issued clarifications, a majority of respondents have noted that they continue to review existing regulatory frameworks to ensure they remain fit for purpose and/or whether any further strengthening or expanding of existing rules beyond what is already in place would be necessary, or useful, to deliver on the policy objectives of regulatory authorities. Finally, the majority of respondents to the survey do not plan to introduce new regulations around AI in finance in the near future.

It should be highlighted that the above approaches are not mutually exclusive. For example, in jurisdictions with binding legislation covering parts of finance, existing sectorial regulation continues to apply without necessarily explicitly referencing AI and given the tech-neutral approach of OECD member countries.

## 2.2. Existing policy frameworks applicable to the use of AI in finance

The lack of explicit sectorial regulation for AI in finance could be (at least partially) explained by the fact that existing financial regulation, laws and guidance often applies to activities, regardless of the technology used (i.e. even if AI is not specifically referenced). This includes for example general rules on prudent business, consumer/investor protection laws and regulations, guidance on model risk management, third-party risk management, disclosure requirements, handbooks related to IT governance, and cyber-security and operational resilience laws and regulations, as well as fairness laws, which continue to apply irrespective of the technology used. Advances in technology do not render existing safety and soundness standards and compliance requirements inapplicable. Where AI is used within areas for applications that are covered by existing rules or guidance, such rules or guidance should generally apply regardless of whether the decision came from AI, traditional models or humans.

Many of the risks related to AI are not necessarily new or unique to AI innovation but rather exacerbated and amplified by the use of such innovation – or manifest in different ways (OECD, 2021<sup>[1]</sup>; 2023<sup>[2]</sup>). Therefore, while some requirements may be specific to AI in some jurisdictions, particularly where AI gives rise to novel sources/evolution of risks, existing financial rules and regulations can be used to manage those risks are applied regardless of the specific technology that a financial institution uses (tech neutral approach, see Section 2.3.5.) This is the case even for the EU AI Act, where the uses of AI in the financial sector beyond the two cases identified as high-risk and any other use cases (e.g. onboarding) will be dealt with in accordance with pre-existing legislation (e.g. Markets in Financial Instruments Directive (MiFID) II) applicable irrespective of technology used. Indicatively, MiFID II includes requirements for investments firms and trading venues engaged in algorithmic trading and high-frequency trading (HFT), activities that can also be based on AI systems.

In Japan, while there is no specific legislation/ regulation/ policy framework for the use of AI in the financial sector, existing regulation and guidance could apply to AI depending on the use case (e.g. model risk management, IT governance, cyber-security, consumer/investor protection). Similarly in the UK, the Bank of England and the FCA adopt a technology-agnostic, outcomes-based approach to supervision and regulation, including around the use of AI, and consider the existing policy framework as fit for purpose to manage the risks and challenges posed by AI in finance. The Bank of England and the Financial Conduct Authority set out its views on the regulatory framework applicable to the use of AI in UK financial markets in its Discussion Paper 5/22 (Bank of England and FCA, 2022<sup>[21]</sup>). The paper provides an overview of the key rules and guidance under the existing framework that are most relevant to mitigating the risks associated with AI.

In the US, the 2021 Interagency Request for Information and Comment on Financial Institutions' Use of AI, Including ML, issued by US financial authorities<sup>6</sup> contains an appendix with a non-exhaustive list of laws, regulations, supervisory guidance, and other statements issued by the agencies that may be relevant to AI. This includes existing laws and regulations relating to safety and soundness and consumer protection. As noted in the RFI, other laws, regulations, guidance, and statements may also be relevant based on the particular facts and circumstances, while some laws and regulations are applicable to any process or tool a financial institution employs, regardless of whether or how a financial institution uses AI (US Interagency, 2021<sup>[16]</sup>) (Figure 2.2). In the case of the securities markets, for example, the federal securities laws, regulations and rules would generally apply to a registrant's use of AI (see non-exhaustive or comprehensive examples in Section 2.2.1 Areas covered by existing financial sector rules). The latest Financial Stability Oversight Council annual report notes, among other things, that existing requirements and guidance may apply to AI (FSOC, 2023<sup>[22]</sup>). These include general risk management requirements that

<sup>6</sup> RFI issued by the Office of the Comptroller of the Currency, the Board of Governors of the Federal Reserve System, Consumer Financial Protection Bureau, Federal Deposit Insurance Corporation and National Credit Union Administration.

would apply to any technology used by financial institutions and to domain-specific use cases like fair lending that already have established rules to which AI must conform.

**Table 2.1. Existing US rules that may be relevant to the use of AI in the banking sector**

RULE	SOURCE
<b>Laws and Regulations</b>	12 CFR 364, 12 CFR 263 (FRB); 12 CFR 30, (CFR, 2024 <sup>[23]</sup> )
Section 39 of the Federal Deposit Insurance Act as implemented through the agencies' safety and soundness regulations	12 CFR 364, 12 CFR 263 (FRB); 12 CFR 30, (CFR, 2024 <sup>[23]</sup> )
Sections 501 and 505(b) of Gramm-Leach-Bliley Act as implemented through the agencies' regulations and standards, including Interagency Guidelines Establishing Information Security Standards	12 CFR 364, 12 CFR 225, 12 CFR 30, 12 CFR 748 (CFR, 2024 <sup>[23]</sup> )
Fair Credit Reporting Act (FCRA)/Reg. V	
Equal Credit Opportunity Act (ECOA)/Reg. B	
Fair Housing Act (FHA)	
Section 5 of the Federal Trade Commission Act (prohibiting UDAP) and sections 1031 and 1036 of the Dodd-Frank Act (prohibiting unfair, deceptive, or abusive acts or practices (UDAAP))	
<b>Supervisory Guidance and Statements</b>	
Interagency Statement on the Use of Alternative Data in Credit Underwriting	FDIC FIL–82–2019, (FDIC, 2019 <sup>[24]</sup> ); Federal Reserve CA Letter 19–11, (Federal Reserve, 2024 <sup>[25]</sup> ) and OCC Bulletin 2019–62, (OCC, 2019 <sup>[26]</sup> )
Supervisory Guidance on Model Risk Management	“Supervisory Guidance on Model Risk Management,” Federal Reserve SR Letter 11–7, (Federal Reserve, 2011 <sup>[27]</sup> ); OCC Bulletin 2011–12 (OCC, 2011 <sup>[28]</sup> ); and FDIC Financial Institution Letter (FIL)–22–2017, (FDIC, 2017 <sup>[29]</sup> )
Third-Party/Outsourcing Risk Management	FDIC: Guidance for Managing Third-Party Risk (FIL)–44–2008, (FDIC, 2008 <sup>[30]</sup> ) OCC Bulletin 2013–29, OCC Bulletin 2020–10; NCUA: Evaluating Third Party Relationships, Supervisory Letter (SL) 07–01 (Oct. 2007); and FRB: Guidance on Outsourcing Risk (SR 13–19), (Federal Reserve, 2019 <sup>[31]</sup> ); Interagency Guidance on Third-Party Relationships: Risk Management (FED, FDIC and OCC, 2023 <sup>[32]</sup> ).
New, Modified, or Expanded Bank Products and Services	OCC Bulletin 2017–43, (OCC, 2017 <sup>[33]</sup> ); and NCUA 19–CU–04 (Dec. 2019), (NCUA, 2019 <sup>[34]</sup> ).
CFPB Innovation Spotlight on Providing Adverse Action Notices When Using AI/ML Models	Patrice Alexander Ficklin, Tom Pahl, and Paul Watkins, CFPB Blog, Innovation spotlight: Providing adverse action notices when using AI/ML models (July 7, 2020), (CFPB, 2020 <sup>[35]</sup> ).
<b>Examination Manuals/Procedures/Other Resources</b>	
Federal Financial Institutions Examination Council Information Technology Examination Handbook	FFIEC IT Examination Handbook, (FFIEC, 2024 <sup>[36]</sup> )
Consumer Compliance Manuals and Booklets	OCC <i>Consumer Compliance</i> series of <i>Comptroller's Handbook</i> booklets, (OCC, 2024 <sup>[37]</sup> ); NCUA: Evaluating Compliance Risk—Updated Compliance Indicators, SL–17–01 (March 2017), (NCUA, 2019 <sup>[34]</sup> ).
Interagency Fair Lending Examination Procedures	Interagency Fair Lending Examination Procedures, (FFIEC, 2009 <sup>[38]</sup> ).
CFPB Examination Procedures, ECOA Baseline Review Module 5: Fair Lending Risks Related to Models	CFPB ECOA Baseline Review, p. 24, (CFPB, 2019 <sup>[39]</sup> ).

Note: Non-exhaustive list collected by US banking regulators, does not include relevant securities laws.

Source: (US Interagency, 2021<sup>[16]</sup>).

In EU countries, as regards the area of investment services, the applicable EU legal framework is MiFID II / MiFIR package which is also technology neutral. This means that the general principles and conduct rules engrained in the legislation for the protection of investors apply irrespective of any IT tools that may be used for the provision of the financial services. Similarly, in the US, the federal securities laws, regulations and rules would apply to a registrant's use of AI. The same applies to the Canadian securities markets, where while not directly targeted, AI is not immune from the current regulation, particularly for registration activities<sup>7</sup> and prudent business practices, as well as disclosure requirements for reporting issuers (i.e. public companies) and related securities law obligations that would apply to their use of AI, if their use of AI is material information that needs to be disclosed in an offering document or continuous disclosure filing. In addition, the use of AI may pose additional risks or increase the scope and impact of existing risks including cybersecurity and privacy that may require specific risk disclosure where this information would be material. Importantly, public companies in Canada are also subject to provisions in securities laws and rules that prohibit a public company from making misleading statements and this provision would apply to any misleading statements by a public company on its use of AI or its prospects relating to AI.

There are also examples of existing financial regulations covering the use of advanced models or automation in decision-making without directly referencing AI (e.g. Australia, EU). For example, in the EU, MiFID II, the Commission Delegated Regulation (EU) 2017/584 and the Commission Delegated Regulation (EU) 2017/589<sup>8</sup> introduce requirements to be met both by investment firms and trading venues engaged in algo-trading and HFT. These include requirements around governance for trading and investment decision-making algorithms. EBA Guidelines on loan origination and monitoring (EBA/GL/2020/06) set out principles for the use of advanced statistical models and technology-enabled innovations within loan origination. In Australia, ASIC Regulatory Guide 241 on electronic trading covers market integrity rules on automated order processing (AOP) and addresses mitigation of risks to the efficiency and integrity of markets from the use of algorithms and automated access to markets.

### **2.2.1. Areas covered by existing financial sector rules**

Respondents to the survey provided non-exhaustive examples of rules and regulations that may apply to the use of AI in finance (Figure 2.1).<sup>9</sup> These can be grouped under a set of areas involving ethical and equity considerations (e.g. anti-discrimination); risk management and model risk management in particular; investor and consumer protection; rules related to data protection and management; governance and accountability; disclosure; information and communications technology (ICT) management; operational resilience and cyber-risk; as well as outsourcing and third-party risk management.

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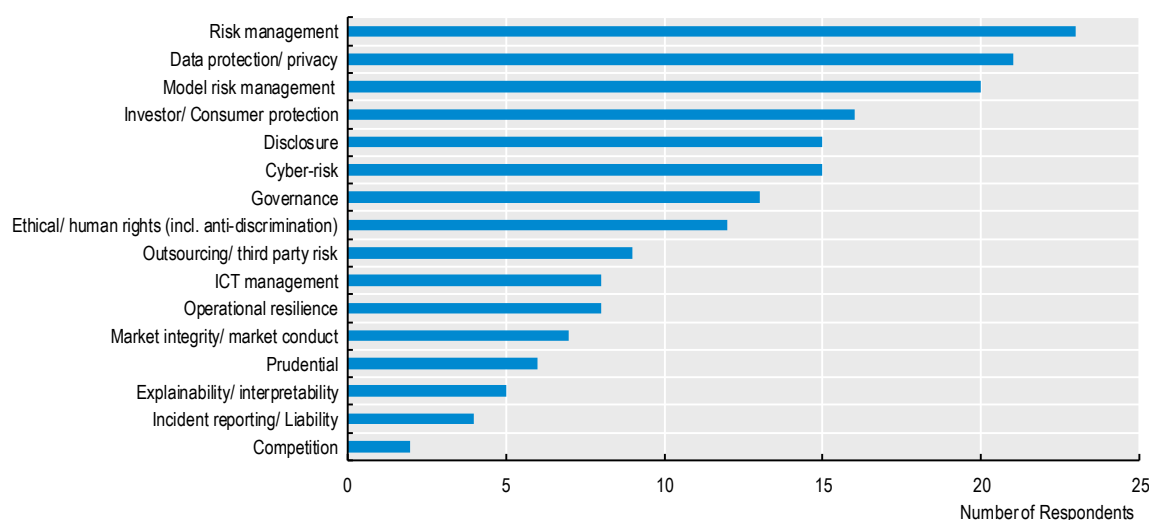
<sup>7</sup> Section 11.1(b) of National Instrument 31-103.

<sup>8</sup> Of 19 July 2016 (RTS 6) developed by ESMA under Article 17(7)(a) of MiFID II.

<sup>9</sup> Non-exhaustive list of areas and of respondent examples outlined in the Section.



Figure 2.1. Examples of areas covered by existing financial sector rules



Note: Non-exhaustive, as reported by respondents to the survey.

Source: 2024 OECD Survey on Regulatory Approaches to AI in Finance. Based on a total of 49 responding jurisdictions.

### *Risk management and model risk management*

The general frameworks for risk management and specifically model risk management are prime examples of rules that may apply to AI-based models in finance and have been mentioned by the vast majority of respondents to the survey.<sup>10</sup> Some examples include Canada, Denmark, the EU and its member states, the UK, the US, and Peru.

Indicatively, in the EU, investment firms and exchanges engaging in algo-trading are required to put in place effective systems and risk controls, in order to prevent errors and ensure resilience and proper functioning of their trading systems (MiFID II). Under the same regulation, trading venues are required to have systems ensure resilience, stability and reliability (capacity to deal with peak order volumes, test to ensure continuity of services, install circuit breakers and carryout stress tests). Also, requirements on IT and management of ICT risks are foreseen by the new EU harmonized regulatory framework on digital operational resilience anchored in the new Digital Operational Resilience Act (DORA).

Another example in the UK involves the Bank of England RRA's Supervisory Statement 1/23 'Model Risk Management principles for Banks' and its principles on model identification and model risk classification (Bank of England, 2023<sub>[40]</sub>). Similar principles issued by the German BaFin (around model choice, data, validation, explainability) and it is underscored that the nature of the requirements (high-level principles) is intentionally high-level as it is intended to be applicable to all model types used in Finance, including AI/ML models (BaFin, 2022<sub>[41]</sub>). In Peru, the financial supervisor has guidelines for model development, validation and ongoing monitoring that continues to apply to AI-based models. In New Zealand, Guidance on AI and privacy laws was issued in 2023 by the privacy regulator.

In the US, the supervision risk management principles contained in issuances by the Federal Banking Regulators (FDIC, OCC, and FRB) provide a framework for banks that implement AI to operate in a safe, sound, and fair manner, commensurate with the materiality and complexity of the particular risk of the activity or business process supported by AI usage. The federal financial regulatory agencies have issued

<sup>10</sup> For analysis of the commonalities of broader AI risk management frameworks see (OECD, 2023<sub>[96]</sub>).

various guidance and supervisory materials to help banks apply sound risk management principles, including Supervisory Guidance on Model Risk Management (see Figure 2.2). Of particular importance to some countries are rules for internal rating models that are used by banks (e.g. Austria). If AI is incorporated in such models, it needs to stand up to established statistical model validation methods (e.g., in-sample vs out-of-sample tests, bias-free, basic explainability, etc.) based on currently existing rules.

In Canada, the Office of the Superintendent of Financial Institutions (OSFI) has issued guidance on different aspects that would apply to the use of AI by federally regulated financial institutions (FRFIs) including around model risk management (Guidance E-23 (OSFI, 2024<sup>[42]</sup>)). Currently a proposed updated guideline is in consultation and it sets out OSFI's expectations related to enterprise-wide model risk management (MRM) built on strong model lifecycle principles (Guidance E-23 (OSFI, 2024<sup>[43]</sup>)). It will apply to all federally regulated financial institutions and to all models, including AI/ML, whether they require formal regulatory approval or not.

### *Consumer and investor protection and market conduct*

Consumer financial laws apply to covered entities and activities, regardless of the technology used, and thus apply to AI-based finance. Some examples are US laws prohibiting against unfair, deceptive or abusive acts or practices (UDAAP), the US Equal Credit Opportunity Act, which prohibits discrimination and requires adverse action notices to consumers, and the US Fair Credit Reporting Act. Similar rules to protect equity are reported in e.g. Colombia, Greece, Bulgaria<sup>11</sup>, Greece, Portugal<sup>12</sup>, Indonesia<sup>13</sup>, South Africa<sup>14</sup>, among other countries. Broader Financial Consumer Protection frameworks existing across OECD economies may also be applicable (e.g. Korean Financial Consumer Protection Act).

Brokers, dealers, investment advisers, registered investment companies, among other entities, in the US are currently subject to extensive obligations under federal securities laws, regulations and rules<sup>15</sup> that are designed to promote conduct that, among other things, protects investors from abusive practices, and that may apply whether or not AI is involved in financial market activities. Some examples include (i) requirements covering customer complaints<sup>16</sup> and reporting to FINRA of certain specified events related to customer complaints, as well as statistical and summary information on customer complaints and (ii) a federal fiduciary duty for investment advisers, whether or not registered with the U.S. Securities and Exchange Commission (U.S. SEC), which is made enforceable by the anti-fraud provisions of the Advisers Act<sup>17</sup>. As a fiduciary, an investment adviser owes its clients a duty of care and a duty of loyalty. Under its duty of loyalty, an adviser must – among other requirements - make full and fair disclosure of all material facts relating to the advisory relationship, while the adviser's duty of care includes inter alia a duty to act

<sup>11</sup> Law on Consumer Protection.

<sup>12</sup> Decree Law No 72/2008 and Law no. 27/2021 Portuguese Charter of Human Rights in the Digital Age.

<sup>13</sup> Code of Conduct for Responsible and Trustworthy AI in the Financial Technology Industry (beneficial, fair, accountable, transparent, explicable, robust, and secure) (OJK, 2023<sup>[83]</sup>) and Circular Letter No. 9/2023 on AI Ethics.

<sup>14</sup> Financial Advisory and Intermediary Services Act, 2002 (Act No. 37 of 2002).

<sup>15</sup> Including rules of self-regulatory organisations (the Financial Industry Regulatory Authority, Inc., FINRA) in the case of broker-dealers. FINRA is the sole national securities association registered with the SEC under Section 15A of the Exchange Act. Generally, all registered broker-dealers that deal with the public must become members of FINRA, a registered national securities association, and may choose to become exchange members.

<sup>16</sup> See FINRA Rule 3110(b)(5), See FINRA Rule 4530; see also FINRA Rule 4311(g) (addressing certain requirements for carrying agreements relating to customer complaints (FINRA, 2024<sup>[84]</sup>)).

<sup>17</sup> Generally, these anti-fraud provisions cover manipulative or deceptive conduct, including an affirmative misstatement or the omission of a material fact that a reasonable investor would view as significantly altering the total mix of information made available.

in the best interest of its clients as well as seek best execution of a client's transactions where the adviser has the responsibility to select broker-dealers to execute client trades. With respect to broker-dealers, in 2019 the Commission adopted Regulation Best Interest ("Reg BI"), which was designed to enhance the quality of broker-dealer recommendations to retail customers by requiring broker-dealers and their associated persons to act in the best interest of their retail customers at the time they make recommendations, and reduce the potential harm to retail customers that may be caused by conflicts of interest by requiring broker-dealers that make recommendations to retail customers to, among other things, establish, maintain, and enforce policies and procedures reasonably designed to identify and disclose, mitigate, or eliminate, conflicts associated with a recommendation, including conflicts of interest that may result from those recommendations, whether or not AI is involved.<sup>18</sup> Notably, the standard of conduct established by Reg BI cannot be satisfied through disclosure alone.<sup>19</sup>

Insurance market regulation covering insurance firms and pension funds includes requirements such as the general prohibition on discriminatory practices in violation of the principle of equality for the conclusion, execution and termination of insurance contracts that may apply to the use of AI. Indicatively, in the US, the Unfair Trade Practices Act (UTPA)<sup>20</sup> regulates trade practices in insurance by defining and prohibiting practices that constitute unfair methods of competition or unfair or deceptive acts and practices, and the Unfair Claims Settlement Practices Act (UCSPA)<sup>21</sup>, sets forth standards for the investigation and disposition of claims arising under policies or certificates of insurance. Property and Casualty Model Rating Law (#1780) requires that property/casualty (P/C) insurance rates not be excessive, inadequate, or unfairly discriminatory.

#### *Operational resilience, ICT management and cyber-security, including outsourcing to third-parties*

Operational resilience and ICT management rules are perhaps the best intuitive example of existing financial regulation applying to AI-based systems used in finance, as they comprise physical and electronic architecture of IT and communication systems, including hardware and software, networks, data and operating environments. Operational resilience rules for financial market actors protect critical processes, systems and functions including ICT and aim at identifying and protecting against threats and possible failures that can disrupt normal business operations. This includes cyber-threats that could be exacerbated in case of deployment of advanced AI systems such as GenAI models (OECD, 2023<sup>[2]</sup>).

The majority of respondents reported regulation covering operational resilience as example of rules that may apply in the use of AI in finance. For example, in the EU, the Digital Operational Resilience Act (DORA)<sup>22</sup> applicable to financial institutions, the EBA Guidelines on ICT and security risk management<sup>23</sup> and the EIOPA Guidelines on information and communication technology security and governance, all provide rules for the protection, detection, containment, recovery and repair capabilities against ICT-related

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<sup>18</sup> See, e.g., Exchange Act Release No. 86031 (June 5, 2019) [84 FR 33318 (July 12, 2019)] (Reg BI Adopting Release); available at <https://www.sec.gov/rules/final/2019/34-86031.pdf>.

<sup>19</sup> *Id.*

<sup>20</sup> Unfair Trade Practices Model Act #880 (NAIC, 2021<sup>[100]</sup>).

<sup>21</sup> Unfair Claims Settlement Practices Model Act (#900) (NAIC, 1997<sup>[97]</sup>).

<sup>22</sup> Regulation (EU) 2022/2554, "DORA", explicitly refers to ICT risk and sets rules on ICT risk-management, incident reporting, operational resilience testing and ICT third-party risk monitoring (EU, 2022<sup>[85]</sup>).

<sup>23</sup> EBA Guidelines on ICT and security risk management (EBA, 2019<sup>[102]</sup>).

incidents. Similar frameworks exist in other respondents to the survey (e.g. Argentina<sup>24</sup>, Costa Rica<sup>25</sup>, Germany<sup>26</sup>, Latvia<sup>27</sup>, Slovenia, South Africa<sup>28</sup> and Switzerland<sup>29</sup>). Such regulations may also include cyber-security (e.g. US SEC Regulation SCI for broker-dealers' obligation to establish, maintain, and enforce written policies and procedures reasonably designed to ensure its SCI systems have levels of capacity, resiliency, availability, and security adequate to maintain their operational capability<sup>30</sup>; Portugal's Decree-Law 65/2021 regulating the legal framework for cyberspace security).

Rules also exist around outsourcing and third-party provision in financial services (e.g. Australia, Canada, Israel, and Switzerland). For example, in Australia, CPS 230 on Operational Risk<sup>31</sup> has a substantial focus on the management of service provider arrangements, which may capture organisations beyond the financial sector. Subcontracting and technology rules may also be part of rules around anti-money laundering and combatting the financing of terrorism (e.g. Portugal<sup>32</sup>). In the EU, DORA rules for so-called "critical third-party service providers" may also apply, while the European Commission's new AI Office, which will be responsible for enforcing and overseeing the new rules for general-purpose AI systems, will ensure that service providers fulfil their responsibilities and assist users in implementing these systems.

In Canada, the OSFI has proposed updated guidelines for the management of operational risk and expectations related to technology and cyber risk management, both applying to all federally regulated financial institutions (OSFI, 2024<sup>[42]</sup>). Also, Canadian OSFI has issued Guidance B-10 where it sets out its expectations for managing risks associated with third-party arrangements (OSFI, 2023<sup>[44]</sup>). The guideline can also be used in risk management of third parties providing AI services to financial institutions. When it comes to third party service provision and liability management, the Israeli rules provide that the licensee is liable toward the client for damages caused following the deployment of the digital tools, in the sense that the licensee will not be entitled to send the client to claim damages from a third party that is involved in providing the service and applies also to the use of AI-related innovation.

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<sup>24</sup> Comunicación "A" 7724 establishes cyber-resilience requirements for all financial institutions, although not specifically related to AI.

<sup>25</sup> General IT Governance and Management Regulations.

<sup>26</sup> BaFin published four circulars for IT in financial institutions (BAIT) (BaFin, 2022<sup>[86]</sup>), in payment and e-money institutions (ZAIT) (BaFin, 2021<sup>[87]</sup>), in insurance undertakings (VAIT) (BaFin, 2019<sup>[88]</sup>) and in asset management firms (KAIT) (BaFin, 2019<sup>[89]</sup>).

<sup>27</sup> Law on the Security of Information Technologies; Regulatory provisions for information technology and security risk management; Regulatory provisions on reporting of significant incidents of payment services; Normative provisions on the use of external services.

<sup>28</sup> Joint Standard 2 of 2024 on Cybersecurity and Cyber Resilience Requirements, published on 17 May 2024.

<sup>29</sup> FINMA circular 2023/1 on operational risks and resilience (FINMA, 2022<sup>[90]</sup>).

<sup>30</sup> See 17 CFR 242.1000 through 242.1007 (CFR, 2024<sup>[95]</sup>). While not directly a cyber-security rule, the SEC has also adopted Regulation S-ID, which requires broker-dealers and investment advisers to develop and implement a written identity theft prevention program, which may implicate concerns related to cyber-security in certain circumstances. See 17 CFR 248.201 (CFR, 2024<sup>[95]</sup>). Regulation S-ID implements the identity theft red flags rules and guidelines provisions (Section 615(e)) of the FCRA as amended by the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 ("Dodd-Frank Act").

<sup>31</sup> Due for implementation in July 2025.

<sup>32</sup> Banco de Portugal notice no. 1/2022 of June 6 (Banco de Portugal, 2022<sup>[91]</sup>).

### *Data-related frameworks*

The use and development of AI tools must adhere to existing data protection regulatory and legal frameworks that indirectly regulate aspects of AI applications and that are in place across OECD economies. These include, for example, the requirements of EU regulation 2016/679 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data (General Data Protection Regulation, GDPR) which mandates transparency, consent, data minimisation, the right to explanation when personal data is processed and the right for the data subject to challenge the decision made by automated decision-making systems – which could include AI systems. Among other things, GDPR stipulates that automated individual decision-making, including profiling, where it produces legal effects or significantly affects a person, is subject to strict conditions under Article 22 of the Regulation unless measures are in place to protect the data subject’s rights, freedoms, and interests (including means for obtaining human intervention, expressing views, and challenging decisions).<sup>33</sup>

Similar frameworks exist across OECD economies, for instance, in Colombia (Personal Data Protection Law and Decree 1377); Korea (Personal Information Protection Act) and Mexico, are also applied to finance depending on the situation.

Existing rules that may apply to the use of AI in financial regulations include for example, the broker-dealer and investment adviser framework in the US, the Credit Information Act in Korea and EU and Australian regulation on insurance. US SEC Regulation S-P requires broker-dealers, registered investment advisers, and investment companies to disclose certain information about their privacy policies and practices, limits the instances in which these entities may disclose non-public personal information about consumers to non-affiliated third parties without first allowing the consumer to opt out, and requires these entities to adopt written policies and procedures that address administrative, technical, and physical safeguards for the protection of customer records and information.<sup>34</sup>

Regulation S-P also limits the re-disclosure and re-use of non-public personal information, and it limits the sharing of account number information with non-affiliated third parties for use in telemarketing, direct mail marketing, and email marketing. In the EU, product oversight and governance requirements for insurance and pensions providers encompass fair and ethical use of data (EIOPA, 2021<sup>[45]</sup>). In Australia, Prudential standards CPS 234 on Information Security and Guidance CPG 235 on Managing Data Risk regulations are applicable to AI.

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<sup>33</sup> In December 2023, the Court of Justice of the European Union (CJEU) released two judgements on the interpretation of article 22 of the GDPR vis-a-vis two data processing practices by credit information agencies (CJEU, 2023<sup>[104]</sup>) (CJEU, 2023<sup>[92]</sup>) (CJEU, 2023<sup>[93]</sup>).

<sup>34</sup> The SEC recently adopted amendments to the safeguards provisions of Regulation S-P to modernize and enhance the protection of customer and consumer financial information. See Regulation S-P: Privacy of Consumer Financial Information and Safeguarding Customer Information, Exchange Act Release No. 100155 (May 16, 2024), 89 FR 47688 (June 3, 2024). These amendments will require broker-dealers, registered investment advisers and investment companies to, among other things, (a) adopt an incident response program as part of their written policies and procedures that must be reasonably designed to detect, respond to, and recover from unauthorized access to or use of customer information, (b) notify affected individuals whose sensitive customer information was, or is reasonably likely to have been, accessed or used without authorisation as soon as practicable, but not later than 30 days after becoming aware of such an incident; and (c) adopt as part of their safeguarding policies and procedures specified procedures reasonably designed to require oversight, including through due diligence on and monitoring of, the entity’s service providers. These amendments will become effective on August 2, 2024, 60 days after publication in the Federal Register, with required compliance dates for large entities and small entities set at 18 and 24 months after publication in the Federal Register, respectively.

### *Governance requirements and disclosure*

Financial regulation of respondents also includes governance and organisational requirements for financial sector participants across sectors, and that may address the use of AI systems. Several examples were reported in the insurance sector (e.g. US). In the US, the Corporate Governance Annual Disclosure Act (CGAD)<sup>35</sup> requires insurers to report on governance practices and to provide a summary of the insurer's corporate governance structure, policies, and practices. The content, form, and filing requirements for CGAD information are set forth in the Corporate Governance Annual Disclosure Model Regulation (#306) (CGAD-R) (NAIC, 2015<sub>[46]</sub>). The requirements of CGAD and CGAD-R apply to elements of the insurer's corporate governance framework that address the insurer's use of AI systems to support actions and decisions that impact consumers.

In the EU, governance requirements for insurance and reinsurance companies established by Directive 2009/138/EC (Solvency II) and Directive 2016/97 on insurance distribution (IDD) require undertakings to have in place an effective system of governance which provides for sound and prudent management of the business. This includes requirements to establish an effective governance system and to create governance functions (i.e. the audit, actuarial, compliance and risk management functions), which, in addition to the designation of a Data Protection Officer (Article 37 of GDPR), already provide several "lines of defence" to address potential issues arising from AI. Additionally, the IDD requires that insurance distributors act in the best interests of their customers, in line with the principle of fair processing of data contained in the GDPR, as well as with Article 5 of the Unfair Commercial Practices Directive which considers unfair those practices that materially distort or are likely to materially distort the economic behaviour of an average consumer, highlighting the need to pay special attention to vulnerable consumers. Product oversight requirements also apply, and products proposed to the customer should be consistent with their demands and needs. Governance arrangements for the financial services industry in the EU are also included in CRDIV (Art. 74).

A similar example for the insurance sector includes the Australian Prudential Regulation Authority's (APRA) prudential regulation which is applicable to AI. These includes standards for Prudential Standards<sup>36</sup> CPS 510 on Governance, CPS 310 on Audit and Related Matters and CPS 230 on Operational Risk (due for implementation in July 2025).

Disclosure obligations are in place for financial institutions and other types of companies in a number of jurisdictions, including with respect to public disclosure of information that may be deemed material to investors, and which could include information pertaining to the company's use of AI. In the US, the federal securities laws, regulations, and rules would apply to a registrant's use of AI, as the disclosure regime is not technology specific and AI may be used in connection with a range of regulated activities. For example, public companies in the US have an obligation to disclose all material information about the company to investors, which may include the company's use of AI. As another example, US investment advisers and registered investment companies have various disclosure obligations under federal securities laws and are subject to such regulations whether or not they are using AI, and investment advisers may need to include disclosure regarding the use of AI in their disclosure documents. In addition, registered investment companies may have the term "artificial intelligence", "AI", or similar terms in their name or may refer to such terms in their disclosure.<sup>37</sup>

<sup>35</sup> Corporate Governance Annual Disclosure Model Act (#305) (NAIC, 2014<sub>[105]</sub>).

<sup>36</sup> These standards and guidance are targeted towards APRA regulated entities including Authorised deposit-taking institutions (ADI), insurance, and superannuation entities.

<sup>37</sup> Section 35(d) of the Investment Company Act of 1940 prohibits a registered investment company from adopting as part of its name or title any words that the U.S. SEC finds are materially deceptive or misleading. See 15 U.S.C. 80a-

## 2.3. Introduction of policy frameworks explicitly targeting the use of AI in finance or applicable to finance

The vast majority of OECD countries have introduced some form of policy guidelines that cover AI in (parts of) finance, albeit in different forms since 2019. Only few respondents have reported absence of AI frameworks targeting (part of) the financial sector, including e.g. Chile, Costa Rica, Iceland, and Türkiye. Apart from the EU member countries, only a few jurisdictions have introduced or are in the process of introducing AI legislation (e.g. Colombia, Brazil, and Peru), while in most cases these rules are horizontal/cross-sectorial and not applying exclusively to the financial sector. That said, there are also cases where specific rules have been proposed by financial regulators aiming at parts of the financial sector or certain types of activities (e.g. US SEC). Non-binding policy guidance (e.g. principles, white papers) has been reported by certain respondent countries and is either explicitly targeting financial activity or cross-sectorial and applying to finance (see Section 2.3.2).

### 2.3.1. Binding and proposed rules

Many respondents to the OECD survey have introduced AI legislation, comprising for example Brazil, Colombia, EU members<sup>38</sup>, Norway and Peru (Figure 2.2). In the EU, the AI Act is the first comprehensive legislation regulating the use of artificial intelligence in the EU, setting a common framework for the use and supply of AI systems in the EU, depending on the level of risk from the use of AI, and (EU, 2024<sub>[4]</sub>).<sup>39</sup> Although the EU AI Act has explicit provisions for part of the financial sector, it is not *lex specialis*, thus it applies to various sectors, including finance. AI-based creditworthiness assessments by banks, as well as pricing and risk assessments in life and health insurance are considered high-risk AI use cases in the EU AI Act,<sup>40</sup> and heightened requirements apply to these AI financial applications.<sup>41</sup> The remaining uses of AI in the financial sector will be dealt with in accordance with existing legislation, without additional legal obligations arising from the AI Act.

Outside the EU, for example, Peru has introduced horizontal AI regulation for the use of AI that supports economic and social development in the country, enacted in June 2023. Reference to AI models is also included in the country's model risk management regulation. In Argentina, while there is no unique law concerning AI, the country has a set of regulations issued by regulatory authorities (including the Central Bank among other authorities). In Colombia, Conpes 3975 was enacted with the objective of designing a national policy for digital transformation and the implementation of AI, setting out guidelines and strategies to promote the adoption and effective use of AI in various sectors of the Colombian economy. Draft AI legislation is currently under discussion at the Senate and Chamber of Representatives of the country.<sup>42</sup>

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34(d). Rule 35d-1 under the Investment Company Act of 1940 addresses the names of registered investment companies that the U.S. SEC defines as materially misleading or deceptive. See 17 CFR 270.35d-1.

<sup>38</sup> Excluding Croatia (pending response to the Survey).

<sup>39</sup> On 21 May 2024, the Council of the European Union approved the EU AI Act. This was the final stage in the legislative process and comes after the EU Parliament voted to adopt the legislation on 13 March 2024. The new regulation will apply two years after its entry into force, with some exceptions for specific provisions.

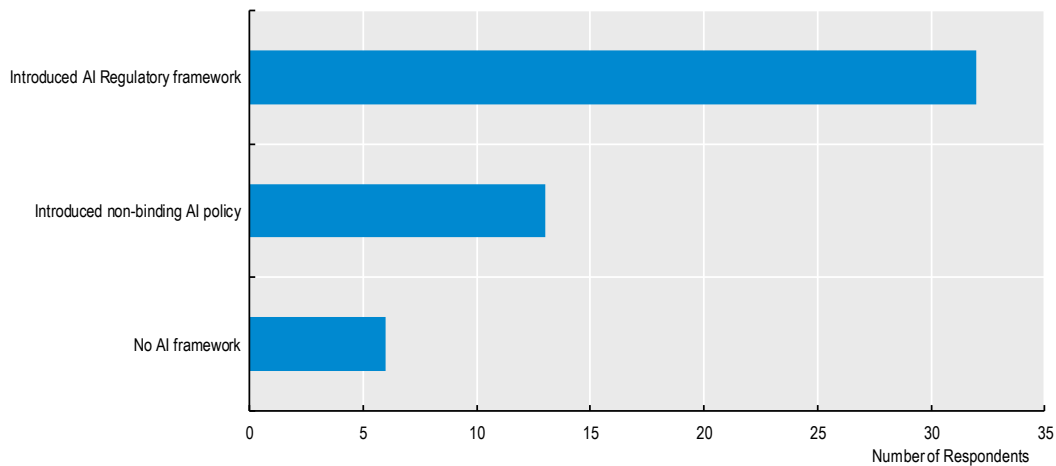
<sup>40</sup> AI Act, article 6.

<sup>41</sup> 1. The EU AI Act introduces also new requirements for so-called general purpose AI systems, including LLMs and GenAI applications, in a horizontal manner.

<sup>42</sup> Four bills are under discussion in Colombia at the time of writing of this report: Bill 59-23 aiming to establish public policy guidelines for the development, use and implementation of artificial intelligence; Bill 91/23 establishing the duty of information for the responsible use of AI in Colombia; Bill 130/23 creating the harmonisation of AI with people's right

In Brazil, draft Bill 2.338/2023 aims to regulate the use of AI in the country and is currently discussed in Congress (Senado, 2023<sup>[47]</sup>). Separately, Finland enacted national legislation on automated decision-making within the public administration, which included statutory pension insurance.

**Figure 2.2. Existence of binding and/or proposed rules covering AI in (part of) financial activity**



Source: 2024 OECD Survey on Regulatory Approaches to AI in Finance. Based on a total of 49 responding jurisdictions.

Separate from any cross-sectorial non-binding AI policy introduced (see Section 2.3.2), financial regulators in a number of OECD countries have issued rules targeted towards specific financial sector activity. For example, the U.S. SEC has proposed specific rules (not finalised) targeted towards financial sector and certain types of activity, separate from the framework proposed by the Executive Order 14110.

In 2023, the U.S. SEC proposed rules that would require broker-dealers and investment advisers to take certain steps to address conflicts of interest associated with their use of predictive data analytics and similar technologies to interact with investors to prevent firms from placing their interests ahead of investors' interests ("2023 Proposing Release") (US SEC, 2023<sup>[48]</sup>).<sup>43</sup> In the Proposing Release, the U.S. SEC proposed new rules under the Securities Exchange Act of 1934 ("Exchange Act") and the Investment Advisers Act of 1940 ("Advisers Act") that would require broker-dealers and investment advisers to eliminate, or neutralize the effect of, certain conflicts of interest associated with their interactions with investors through these firms' use of technologies that optimise for, predict, guide, forecast, or direct investment-related behaviours or outcomes. The Commission also proposed amendments to rules under the Exchange Act and Advisers Act that would require firms to make and maintain certain records in accordance with the proposed conflicts rules. The CFTC electronic trading risk principles rule is another example, in part aimed at managing risks associated with automated trading systems that may involve the use of AI (CFTC, 2021<sup>[49]</sup>).

In Argentina, Banco Central de la República Argentina (BCRA) established a new regulation (Communication "A" 7724) that sets out the requirements that financial institutions, public and private, must follow in order to manage risks associated with the development and usage of AI or other autonomous

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to work, as well as Statutory Bill 200/23 at the Chamber of Representatives, aiming to define and regulate AI in Colombia.

<sup>43</sup> The proposed rule applies more broadly to conflicts of interest associated with the use of predictive data analytics.



learning algorithms (BCRA, 2023<sup>[50]</sup>). In South Africa, fit and proper requirements for financial services providers include requirements where advice is provided on financial products through automated advice (Financial Advisory and Intermediary Services Act (Act No. 37) of 2002). Draft legislation on Joint Standard - Governance requirements for financial institutions by the prudential and market conduct authorities proposes a requirement that a financial institution employing AI must conduct an impact assessment that entails, at a minimum the ongoing assessment of the combination of measures in place to ensure the ethical and trustworthy use of AI or ML. A further proposed requirement in this draft legislation is that the internal control functions of a financial institution must provide the governing body periodically with independent assurance of the effectiveness of the financial institution's technology, information, AI, and ML arrangements, including any outsourced services.

### **2.3.2. Non-binding policy guidance**

Governments and policymakers have also opted for non-binding policy guidance and principles aiming at guiding the development of safe and responsible governance for the use of AI (in finance and across sectors), coordinating national authorities' approaches, as well as setting supervisory expectations for financial sector participants. These policy guidelines are issued under different types of instruments (e.g. blueprints, recommendations, principles, etc.) and do not carry the weight of law or impose any legal liability (Figure 2.3).

Non-binding policy guidance aims at setting priorities and providing guiding principles for the promotion of AI innovation in a safe and responsible manner and are issued at the Government-level (cross-sectorial) or by financial authorities (targeting specific financial sector activity). Examples of cross-sectorial guidance include e.g. Argentina, Indonesia, Israel, Japan, Singapore, Slovenia, the US, the UK, while some of these countries have also issued sector-specific guidelines and recommendations.

Although such policy guidance takes different forms in different jurisdictions (or even within the same jurisdiction when multiple guidance is issued), important commonalities can be identified in terms of content. In effect, the vast majority of guidance establishes general expectations for AI users and systems emphasizing the importance of fairness and ethical use, accountability, compliance, transparency, governance, and development of safe, secure, and robust AI systems.

In the US, EO 14110 encourages federal agencies, such as the SEC and CFTC, to *"consider using their full range of authorities to protect American consumers and investors from fraud, discrimination and threats to privacy and to address other risks that may arise from the use of AI"* (The White House, 2023<sup>[6]</sup>). Prior to that, the White House Office of Science and Technology Policy had published the Blueprint for an AI Bill of Rights, providing guidance on the design, development, and deployment of AI and other automated systems so that they protect the rights of the American public (The White House, 2022<sup>[51]</sup>). Individual US agencies and offices have also issued reports related to AI, including sections of the Financial Stability Oversight Council's annual reports (FSOC, 2023<sup>[22]</sup>).

Similar in the UK, The Government published its White Paper "A pro-innovation approach to AI Regulation" in March 2023, outlining a non-statutory framework to drive innovation in AI, while also mitigating potential risks (UK Government, 2023<sup>[52]</sup>). It adopts a principles-based approach to governing AI, with five core principles. In line with the US framework, the UK Government indicated that it would be for the UK's independent regulators to interpret and apply these cross-cutting principles to AI use cases within their remits as they consider appropriate.

The Japanese Government is currently developing AI Guidelines for Businesses that take into account advances in GenAI, to complement existing cross-sectorial AI guidelines (METI Japan, 2024<sup>[53]</sup>). In Switzerland, the Federal Council adopted the Guidelines on AI for the Confederation in 2020.<sup>44</sup> Along the

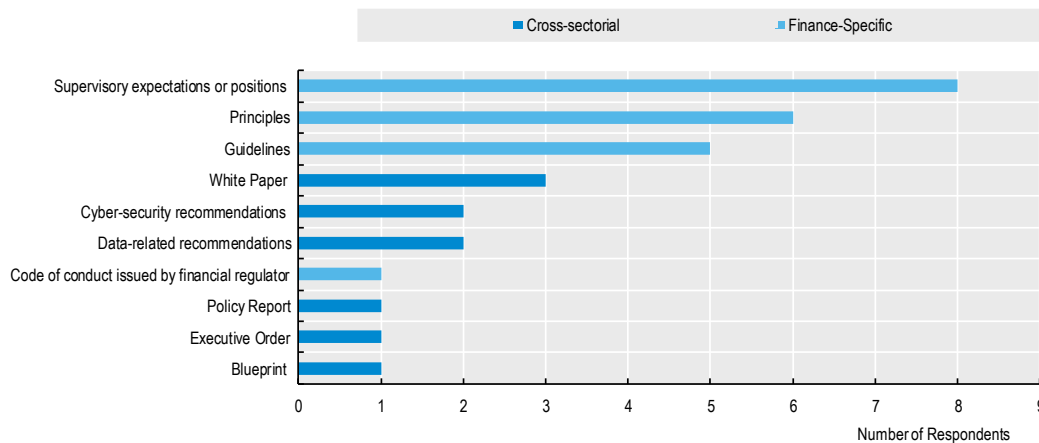
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<sup>44</sup> These Guidelines were re-evaluated in 2022 and found to be still relevant. The next evaluation is planned in 2024.

same lines, the Policy Report issued in 2023 by the Israeli Ministry of Innovation, Science and Technology, in conjunction with the Ministry of Justice, provides cross-sectorial policy recommendations for AI. The Secretary of Informational Technologies of Argentina issued a series of guidelines named "Recommendations for a Reliable AI", directed specifically to the public sector (Ministerio de Justicia, 2023<sup>[54]</sup>).

For example, Estonia<sup>45</sup>, Indonesia and Singapore have similar national-level soft regulation issued by the Ministries of Communications: in Indonesia, guidance on AI Ethics has been issued as a complement to the country's National Strategy<sup>46</sup>, while in Singapore, a Model AI Governance Framework<sup>47</sup> by the Infocomm Media Development Authority (IMDA)<sup>48</sup>. Slovenia has a national Programme to Promote the Development and Use of Artificial Intelligence in the Republic of Slovenia by 2025 (NpUI) which was adopted in May 2021 and provides the framework for the systemic support, regulation and implementation of all activities related to AI across sectors.

**Figure 2.3. Examples of non-binding policy guidance reported by respondents to the survey**



Note: At national level only, non-exhaustive list of respondents' actions. Excludes national strategies.

Source: 2024 OECD Survey on Regulatory Approaches to AI in Finance. Based on a total of 49 responding jurisdictions.

Codes of conduct or other voluntary industry standards targeted at the use of AI in finance have been reported by certain respondents to the survey (e.g. Argentina, Canada, Denmark, Hong Kong, China), Indonesia, Netherlands, Singapore, Slovenia, Spain, Switzerland, and the UK) and are being developed in others (e.g. Japan). Similar initiatives by non-industry bodies are also observed in OECD countries; indicatively, the US National Institute of Standards and Technology (NIST) developed the AI Risk Management Framework (AI RMF) in collaboration with the private and public sectors, aiming to better manage AI-associated risks to individuals, organisations, and society. In March 2023, NIST launched the Trustworthy and Responsible AI Resource Center, which will facilitate implementation of and international alignment with the AI RMF.

<sup>45</sup> White Paper currently under consultation (MKM, 2024<sup>[94]</sup>).

<sup>46</sup> Circular Letter No. 9/2023 on AI Ethics by the Ministry of Communications and Informatics of Indonesia.

<sup>47</sup> First edition issued on 23 January 2019, second on 21 January 2020.

<sup>48</sup> Falling under the Ministry of Communications and Information of Singapore.

### **2.3.3. Finance-specific non-binding policy guidelines**

Finance-specific guidance, principles and recommendations have been issued in e.g. Denmark, the US, Korea, Luxembourg<sup>49</sup>, the Netherlands, Poland as well as Hong Kong, China and Indonesia. More specifically, the Danish FSA published a set of recommendations focusing on the use of supervised ML by financial firms (DFSA, 2019<sup>[55]</sup>), while the Dutch Central Bank released General Principles for the use of AI in the financial sector in the same year (DNB, 2019<sup>[56]</sup>). Korea has issued several financial sector-specific AI guidelines in 2021 (FSC, 2021<sup>[57]</sup>); AI development and utilisation guide for the financial sector in 2022 (FSC, 2022<sup>[58]</sup>) and Financial sector AI security Guideline in 2023 (FSC, 2023<sup>[59]</sup>).

In the US, the NAIC the NAIC adopted its Principles on AI for insurance entities in 2020. In Poland, a Position of the Polish Financial Supervision Authority was issued in 2019 on the provision of robo-advice services and selected issues arising from the entry into force of the EBA Guidelines on outsourcing and their inclusion in the activities of banks (KNF, 2020<sup>[60]</sup>). The Indonesian financial regulator (Otoritas Jasa Keuangan or OJK) published a Code of Conduct for Responsible and Trustworthy AI in the Financial Technology Industry. The Hong Kong Monetary Authority released recommendations to the banking sector on High-level Principles on AI, followed by a circular on Consumer Protection in respect of Use of Big Data Analytics and Artificial Intelligence by Authorised Institutions, setting out some guiding principles on consumer protection aspects in respect of the use of big data analytics and artificial intelligence (HKMA, 2019<sup>[61]</sup>; HKMA, 2019<sup>[62]</sup>). Concerned authorised institutions include licensed banks, restricted licensed banks and deposit-taking companies in Hong Kong, China.

In Germany, BaFin published general principles for the use of algorithms in the financial sector, with a focus on algorithms in the area of Big Data, AI and ML (BaFin, 2021<sup>[63]</sup>). It sets out key general principles (e.g. clear management responsibility) and specific principles for the development phase and application phase of BDAI/ML applications. In Denmark, a paper containing recommendations for financial institutions using supervised machine learning was released in 2019 (DFSA, 2019<sup>[55]</sup>) and a framework for applying data-ethical principles in 2023 .

In the EU, ESMA has published high-level guidance for firms that use automated systems for provision of investment advisory and discretionary portfolio management services (ESMA, 2018<sup>[64]</sup>). In Colombia, the SFC has provided instructions related to the development of the advisory activity in the securities market and implementation of technological tools for the provision of professional recommendations (External Circular 019 of 202).

### **2.3.4. Supervisory expectations released by financial supervisors**

Supervisory authorities in respondent jurisdictions have internal or public guidance setting out supervisory expectations specific to the use of AI in finance. These are aimed to provide both supervisors and supervised entities with principles and practical guidance to ensure the appropriate use of AI in their activities. Such guidance may also serve as a pedagogical tool helping supervisory staff better understand the issues at stake and anticipate any possible challenges.

In May 2024, the European Securities and Market Authority (ESMA) issued a public statement on the use of Artificial Intelligence (AI) in the provision of retail investment services (ESMA, 2024<sup>[65]</sup>). The statement intends to provide some initial guidance to investment firms<sup>50</sup> utilising AI, in light of their key obligations under MiFID II and to emphasise the imperative to always prioritise clients' best interests. As noted by ESMA, such Statement, based on MiFID II framework, is without prejudice to the broader EU framework

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<sup>49</sup> (CSSF, 2018<sup>[101]</sup>).

<sup>50</sup> Including credit institutions providing investment services.

on the digital governance (e.g., the mentioned AI Act and DORA), of which AI is a component, and to any additional actions that firms are expected to undertake to ensure compliance with it.

.In France, the Banque de France ACPR published a discussion paper containing a set of non-binding guidance for financial players, setting out the supervisor's points of attention with regard to the development, use and control of AI (Banque De France, 2020<sub>[66]</sub>). In line with the general principles of financial regulation, the document repeatedly stresses the need for proportionality between the level of risk and the tools used to manage that risk.<sup>51</sup>

The NAIC Model Bulletin on the Use of Artificial Intelligence by Insurers was adopted in 2023 and reminds insurers that decisions or actions made or supported by AI must comply with all applicable insurance laws and regulations, sets forth expectations as to how insurers will govern the use of AI in accordance with the NAIC's Principles on AI, and advises insurers of the type of information the Department may request during an investigation or examination. Importantly, it is clarified that insurers are responsible for the compliance of third-party AI systems with all applicable insurance laws and regulations within their respective jurisdictions (NAIC, 2023<sub>[67]</sub>)<sup>52</sup>.

In Belgium, the NBB banking supervision started to develop in 2021 an internal document containing supervisory expectations when off/on-site supervisors had to discuss/review AI models. A second version of the supervisory expectations has been finalised in 2023. In Norway, a letter was communicated to all non-life insurance companies addressing governance of the use of AI. In Peru, the Superintendency of Banks, Insurance and AFP (SBS) issued the Model Risk Management regulation (MRM regulation) in 2023, which establishes the expectations for the model risk management framework for financial institutions, and which includes some guidelines for AI models throughout the model life cycle.

Such guidance can also be topic-specific (e.g. cyber-risk, data in AI). For example, the Central Bank of Ireland has set out findings from the use of Big Data and related technologies in insurance (Central Bank of Ireland, 2023<sub>[68]</sub>). Similar efforts have been made in Mexico, where the national data protection authority (Instituto Nacional de Transparencia, Acceso a la Información y Protección de Datos Personales or INAI) has issued general recommendations for the treatment of personal data in AI (INAI, 2022<sub>[69]</sub>). The European Banking Authority (EBA) has identified four key pillars for the development, implementation and adoption of Big Data and Advanced Analytics, which interact with each other and are thus not mutually exclusive (data management; technological infrastructure; organisation and governance; and analytics methodology). These pillars require review by institutions to ensure they can support the roll-out of advanced analytics, which also include explainability and interpretability requirements (EBA, 2020<sub>[70]</sub>).

Cyber-related guidelines for the use of AI across sectors has been issued in e.g. Australia<sup>53</sup>, Italy<sup>54</sup>, Spain and the US. General guidelines have been also provided to market participants through financial innovation

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<sup>51</sup> For example, *"The validation process should be proportional to the risks, in particular in terms of regulatory compliance"* (page 46)

<sup>52</sup> As of May 2024, twelve states have adopted the NAIC Model Bulletin, and an additional four states have otherwise addressed the use of Artificial Intelligence (AI) systems by insurers licensed to do business in their states via related activity.

<sup>53</sup> The Australian Signals Directorate's Australian Cyber Security Centre published Guidelines for secure AI system development in November 2023, in partnership with the UK National Cyber Security Centre and a range of international partners. The AI Ethics Principles and Guidelines for secure AI system development are sector-agnostic and ISO/IEC 42001:2023 are designed to be applicable across various AI systems and contexts.

<sup>54</sup> The Italian Cybersecurity Agency (ACN) issued the "Guidelines for secure AI system development" (GCHQ, 2023<sub>[103]</sub>).

facilitators such as sandbox arrangements, as is the case in Spain (Government of Spain, 2023<sup>[71]</sup>).<sup>55</sup> More recently, the US Department of the Treasury released a report on managing AI-specific cybersecurity risks in the financial sector (US Treasury, 2024<sup>[72]</sup>). The report identifies significant opportunities and challenges that AI presents to the security and resiliency of the financial services sector and outlines a series of next steps to address immediate AI-related operational risk, cybersecurity, and fraud challenges.

### **2.3.5. Concepts underpinning AI rules and guidance: tech neutrality, proportionality and risk-based supervision**

OECD members adopt a technology-agnostic, outcomes-based approach to financial regulation and supervision, which includes the approaches of these countries towards AI. Given the technology-neutral approach, financial regulation and supervision is not defined by specific technologies, but rather focuses on the identification and mitigation of risks to policy objectives for any given activity. Importantly, many of the risks related to AI are not new or unique to AI innovation although the use of AI in many instances exacerbates pre-existing risks and may also give rise to novel sources of risk (OECD, 2021<sup>[1]</sup>; 2023<sup>[2]</sup>). While some requirements may be specific to AI where this innovation may give rise to novel or evolving risks, many of the rules and regulations discussed in the survey are applied regardless of the specific technology that a financial institution uses.

For example, in the case of the US SEC 2023 Proposing Release, the Commission is not seeking to identify which technologies a firm should or should not use. Rather, the proposal builds off existing legal standards and, as discussed throughout the release, is designed to address certain risks to investors associated with firms' use of certain technology in their interactions with investors, regardless of which such technology is used. The proposal also is designed to permit firms the ability to employ tools that they believe would address these risks that are specific to the particular technology they use consistent with the proposal.

There are different approaches to rules-based versus principles-based policies for AI in finance. Prescriptive rules (e.g. EU AI Act legislative framework) provide explicit clarity on requirements by supervised entities and a level of certainty, while allowing for enforcement action to be taken based on whether actions have infringed the explicit rules. At the same time, under a principles-based approach (e.g. US SEC 2023 Proposing Release), rules are designed to be sufficiently broad and principles-based to continue to be applicable as technology develops. This provides firms with flexibility to develop approaches to their use of technology consistent with their business model, subject to the over-arching requirement that allows the regulatory authority to meet its policy objective (in this example, prevent the firm from placing its interests ahead of investor interests).

The principle of proportionality also informs OECD members' approach to AI rules in finance and is embedded across their legal and regulatory frameworks. Proportionality allows assessments of compliance with rules that are commensurate with the risk profile and systemic importance of different financial sector participants. It stems from the need to limit public intervention - in the form of rules, sanctions and oversight - to what is actually needed to achieve the desired policy objectives (Restoy, 2019<sup>[73]</sup>; Angeloni, 2018<sup>[74]</sup>). For example, in the UK, the PRA and the FCA must have regard to in discharging their general functions (including making rules) - namely that *"a burden or restriction which is imposed on a person, or on the carrying out of an activity, should be proportionate to the benefits, considered in general terms, which are expected to result from the imposition of that burden or restriction"* (Financial Services and Markets Act (FSMA (UK Gov, 2000<sup>[75]</sup>)). The Fintech law in Chile incorporates such a proportional approach for required

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<sup>55</sup> Establishes a controlled testing environment (Sandbox) for testing compliance with the proposed Regulation of the European Parliament and of the Council establishing harmonized standards on artificial intelligence, for the testing of high-risk AI systems, as well as general-purpose and foundational models.

operational systems and capital, among other aspects, and therefore, any requirement related to the use of AI will be guided by this principle, too.

The German model risk framework (MaRisk) is one example of tech neutral, proportionate approach to rules applicable to AI in finance. The MaRisk framework defines that a proportionate implementation should consider the complexity of a model, the risks associated with its application and its relevance within risk management. General requirements for IT more broadly also apply a risk-based and proportionate manner. Without explicitly making reference to AI given the tech neutral principle, these requirements are expected to cover for the use of AI when the complexity of the model is assessed in such proportionate manner.

Proportionality is closely associated with risk-based supervision, and some of the rules applicable to AI (e.g. prudential regulation for the banking sector) are based on such approach where rule/action is commensurate with the risks involved. For example, in Canada, Federal Financial Institutions OSFI guidelines covering federally-regulated financial institutions are principle-based but their implementation is risk-based. For example, materiality is the determining factor in any assessment of whether information or a risk factor is required to be disclosed by a reporting issuer/public company. Also, in the example of Italy, existing policy frameworks applicable to the Italian financial sector generally follow a risk-based approach, even when the use of AI technologies is involved. In this regard, MiFID II and the level 2 regulatory framework (in particular, the Commission Delegated Regulation (EU) 2017/589) lay down that the proportionality principle must be preserved, and the nature, scale and complexity of the business must be taken into account when considering the organisational requirements for investment firms engaged in algo-trading and high-frequency trading (HFT). Similarly in Switzerland, the supervisory framework for financial institutions, including AI, is risk-based (FINMASA).<sup>56</sup> The EU AI Act offers a classification for AI systems with different requirements and obligations tailored on such risk-based approach.<sup>57</sup>

One of the reasons why the above concepts are particularly pertinent for the discussion on AI in finance is that in most cases they underpin the non-binding rules, such as principles and guidance issued across many OECD countries and applicable to the financial industry. Therefore, it may help supervised entities better understand how to practically apply such guiding principles. For example, the Hong Kong Monetary Authority (HKMA) in its circular on “Consumer Protection in respect of Use of Big Data Analytics and Artificial Intelligence by Authorised Institutions” stated that banks should adopt a risk-based approach commensurate with the risks involved in their AI-related applications when applying the guiding principles.<sup>58</sup> Similarly, the White Paper of the CSSF in Luxembourg ties recommendations the use of AI in finance with the corresponding risk, in a risk-based manner.

## 2.4. Clarifications issued by financial regulators and supervisors

As discussed above, financial regulators in OECD member countries adopt a technology-agnostic approach to regulation and supervision, and as a general rule, all sectorial rules applicable to financial

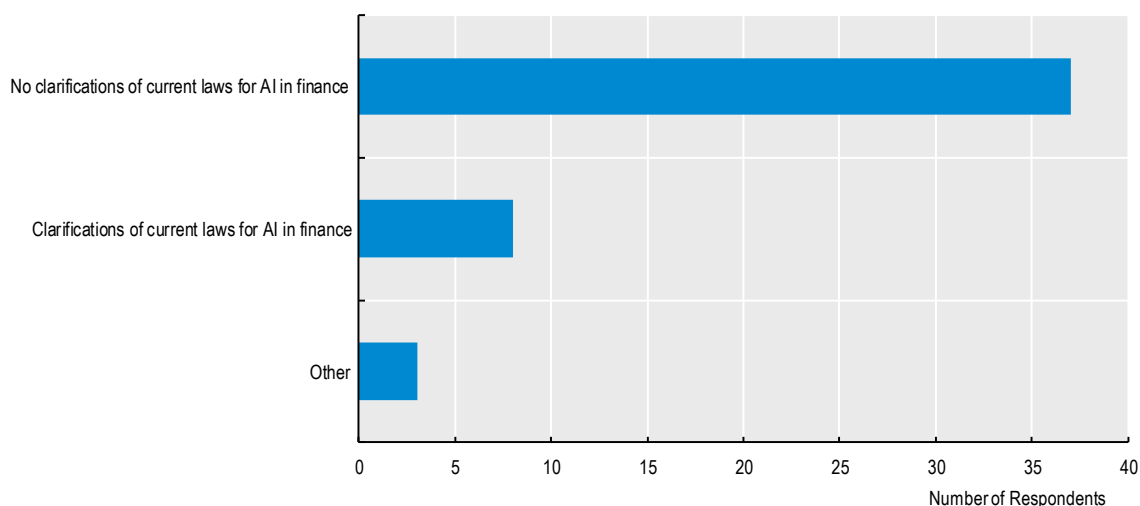
<sup>56</sup> Article 24, para. 2 of the Financial Market Supervision Act (FINMASA).

<sup>57</sup> Under the EU AI Act, some AI systems presenting 'unacceptable' risks are prohibited. A wide range of 'high-risk' AI systems that can have a detrimental impact on people's health, safety or on their fundamental rights are authorised, but subject to a set of requirements and obligations to gain access to the EU market. AI systems posing limited risks because of their lack of transparency will be subject to information and transparency requirements, while AI systems presenting only minimal risk for people will not be subject to further obligations. The regulation also provides specific rules for general purpose AI (GPAI) models and lays down more stringent requirements for GPAI models with 'high-impact capabilities' that could pose a systemic risk and have a significant impact on the internal market.

<sup>58</sup> The same was the case with the circular “High-level Principles on Artificial Intelligence” issued by HKMA for the banking sector, and which applies in a proportionate manner reflecting the nature of their AI applications and the level of risks involved.

market participants are also applicable when AI is involved in the provision of a financial service or product. However, only a small number of respondents to the survey have already issued clarifications (Figure 2.4). Some respondents have reported that, at the practical implementation level, there may be a need for additional regulatory/supervisor guidance to assist authorised/supervised entities in their compliance, given unique issues arising in the deployment of AI innovation, depending on the case.

**Figure 2.4. Clarifications around the applicability of existing rules/ regulations/ other policy frameworks on AI applications in finance**



Source: 2024 OECD Survey on Regulatory Approaches to AI in Finance. Based on a total of 49 responding jurisdictions.

The US Consumer Financial Protection Bureau (CFPB) has issued numerous circulars and guidance to affirm that existing consumer financial laws apply with equal force, regardless of the technology firms use. Circular 2022-03<sup>59</sup> explains that the CFPB underscored that companies using complex, black-box algorithms must follow the law and provide accurate and specific explanations for denying applications. In Circular 2023-03<sup>60</sup>, The guidance explains that even for adverse decisions made by complex algorithms that may rely on data harvested through consumer surveillance or data not typically found in a consumer's credit file or credit application, creditors must provide accurate and specific reasons for the adverse action. The Circular notes that the CFPB has underscored the harm that can result from consumer surveillance and the risk to consumers that these data may pose. Some of these data may not intuitively relate to the likelihood that a consumer will repay a loan (e.g. purchasing history) and the CFPB and the prudential regulators have previously noted that these data may create additional consumer protection risk.

In the same vein, in collaboration with the U.S. Department of Justice, Civil Rights Division, the Equal Employment Opportunity Commission, and the Federal Trade Commission, the CFPB also issued a Joint Statement on Enforcement Efforts Against Discrimination and Bias in Automated Systems in April 2023, which underscored that existing legal authorities apply to the use of new technologies. The statement noted that automated systems have the potential to perpetuate unlawful bias, automate unlawful discrimination and produce other harmful outcomes, while also offering the promise of advancement. The agencies reiterated their resolve to monitor the development and use of automated systems and promote

<sup>59</sup> Adverse Action Notification Requirements in Connection with Credit Decisions Based on Complex Algorithms.

<sup>60</sup> Adverse Action Notification Requirements and the Proper Use of CFPB's Sample Forms Provided in Regulation B.

responsible innovation. The agencies pledged to vigorously protect individuals' rights regardless of whether violations occur through traditional means or advanced technologies.

Regarding the robo-advisers who may be using AI, a number of respondents have issued clarifications and guidance because of the unique issues raised by such tools (e.g. Australia, Canada, Israel, Poland, US). In Australia, Regulatory Guide 255 covers the provision of digital advice to retail clients, including robo-advice, and addresses system design and documentation needing to clearly set out the purpose, scope and design of algorithms, monitoring, testing, change management and security to prevent unauthorised access to algorithms. The Canadian CSA published Staff Notice 31-342 Guidance for Portfolio Managers Regarding Online Advice which provides guidance for Portfolio Managers and registered dealers on how online advice can be provided while complying with regulatory requirements. While the Staff notice does not directly address AI, it is focused on online advice, which commonly does use AI. Similarly, the Polish Financial Supervision Authority has issued a position on the provision of robo-advising services. In the US, the SEC's Division of Investment Management issued guidance for investment advisers with suggestions on meeting disclosure, suitability and compliance obligations under the Advisers Act, noting that robo-advisers, as registered investment advisers, are subject to the substantive and fiduciary obligations of the Advisers Act. This guidance update notes that there may be a variety of means for a robo-adviser to meet its obligations to clients under the Advisers Act, and that not all of the issues addressed in the update will be applicable to every robo-adviser. To the extent that robo-advisers use AI, this guidance may be applicable to such use. In Israel, with respect to portfolio management based on algorithmic applications by an authorized entity related to a banking corporation, restrictions are imposed on the types of assets that can be included in a portfolio managed in this manner.

Clarifications have been issued by jurisdictions for the banking sector, covering the use of ML in internal ratings-based models or credit assessment models, as well more broadly for their activity (e.g. Hong Kong, China; EU; Italy; Portugal, US). At European level, the EBA published a paper on ML used in the context of internal ratings-based (IRB) models (EBA, 2021<sup>[76]</sup>). The report discusses the interaction of prudential rules for IRB with two other legal frameworks, namely the GDPR and the AI Act, calling for some clarifications in order to reduce legal uncertainty and avoid unintended consequences of the AI Act. Additional guidance may be needed to clarify the combination with the existing financial regulatory framework after the entry in force of the AI Act. In Italy, Banca d'Italia published a paper to present a discussion of theoretical issues and of the regulatory and institutional context for the application of AI to credit scoring (Banca d'Italia, 2022<sup>[77]</sup>). The paper also describes the results of a survey of a selection of Italian financial intermediaries on their experience in adopting such models. Banco de Portugal issued a Circular<sup>61</sup> explaining that in situations involving the selling of a credit product and where the creditworthiness assessment of bank customers relies exclusively on automated decision-making processes, notably based on AI models, institutions should inform the bank customer of that fact.<sup>62</sup> Similarly in Hong Kong, China, HKMA issued High-level Principles on Artificial Intelligence to provide clarification on the use of AI by banks in Hong Kong. The US CFPB has also publicly communicated particular risks associated with AI and consumer surveillance, including digital redlining.

Additional clarifications were released around risk management and AI in finance in Germany. In particular, German supervisors have issued a consultation paper on the use of machine learning in risk management which explains that existing regulation applies to AI applications and elaborates on aspects that are specifically relevant in the context of AI applications in finance (Deutsche Bundesbank and BaFin, 2021<sup>[78]</sup>).

Innovation facilitators and experimentation of regulators can be additional ways to provide indirect clarifications to industry participants (e.g. Colombia, possibly EU, Japan). One of the examples is the FSA's Proof of Concept Hub case which clarified that the use of AI for compliance checks could be in compliant

<sup>61</sup> Circular Letter No. CC/2020/00000044,

<sup>62</sup> In line with EBA Loan Origination Guidelines Section 4.3.3 which specifically deals with automated credit granting.



with existing regulations and supervisory guidelines as long as the AI model is deployed in an appropriate manner. AI sandboxes as provided for by the EU AI Act could possibly serve this purpose, too, among other potential benefits. Similarly in Colombia, these would be possible through application of Law 1955<sup>63</sup> which establishes the conditions, requirements and prudential requirements for the establishment of Innovative Technological Development Companies under the framework of regulatory sandboxes.

## 2.5. Strengthening or expanding existing rules beyond what is already in place to make sure they sufficiently cover AI in finance and address potential risks

Although existing rules have been reported to be applicable to the use of AI in finance by most OECD countries and non-OECD respondents to the survey, there may be a need to continue to review existing regulatory frameworks to ensure they remain fit for purpose. There may also be a need to evaluate whether any further strengthening or expanding of existing rules beyond what is already in place would be necessary, or useful, to deliver on the policy objectives of regulatory authorities. This could be beneficial if, for example, any gaps are identified in the future in the way risks are mitigated with existing rules or if possible re-interpretation of existing rules or guidance would be useful to deliver on the policy objectives of the authorities. Where new regulations are being introduced, there may be a need to assess any possible interplay between existing and new rules that may require further expansion or adjustment of existing rules, for example to address any possible incompatibilities that will only become evident post implementation of the new laws. All the above will need to be done also in line with future developments in the evolution of AI innovation in mind.

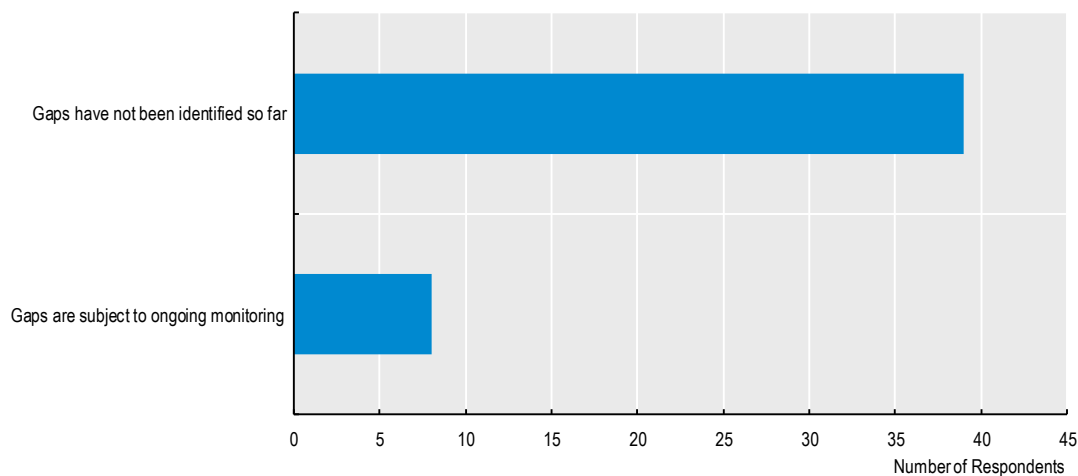
Most respondents to the OECD survey have not identified any gaps to the current regulatory and supervisory framework applicable to AI in finance.<sup>64</sup> At the same time, respondents highlight that this is an area of continuous ongoing monitoring and investigation, to better assess whether there is a need to strengthen or expand existing rules applicable to AI in finance (e.g. Australia, Switzerland, Singapore, UK). Importantly, this work will also need to be done in the international context; for example, forthcoming updates of earlier work on AI by the Financial Stability Board (FSB, 2017<sup>[79]</sup>) and IOSCO (IOSCO, 2021<sup>[80]</sup>), and work underway by the Basel Committee on Bank Supervision's Financial Technology Group.

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<sup>63</sup> Law of 2019 Regulatory Sandbox Article 166 of the National Development Plan.

<sup>64</sup> A potential incompatibility reported by Canada was reported by the CSA in Section 8.25 Advising Generally of NI 31-103 Registration Requirements, Exemptions and Ongoing Registrant Obligations provides a statutory exemption for firms providing advice that does not purport to be tailored to the needs of the person receiving the advice, and which could represent an incompatibility in the future.

**Figure 2.5. Potential gaps in existing rules and ongoing monitoring**



Source: 2024 OECD Survey on Regulatory Approaches to AI in Finance. Based on a total of 49 responding jurisdictions.

German BaFin and Bundesbank also noted that although from their perspective the current regulation was sufficient for AI/ML in risk models but that there may be a need to re-interpret them appropriately to capture the specifics of AI/ML (Deutsche Bundesbank and BaFin, 2021<sup>[78]</sup>).

### 2.5.1. Updating rules

In Canada, OSFI is in the process of reviewing existing rules/regulations/other policy frameworks that relate to the use of AI applications in finance to identify possible incompatibilities. OSFI also plans to expand the scope of Guideline E-23 to address emerging risks, including AI related risks, and to clarify OSFI's expectations that all FRFIs and federally regulated pension plans (FRPP) appropriately assess and manage model risks at the enterprise level. Indeed, models increasingly leverage significant amounts and types of data, as well as employ more complex techniques. Some model risks are also being exacerbated by digitalisation and the use of advanced analytics, including artificial intelligence and machine learning (AI/ML). OSFI's risk-based approach will also recognize FRFIs' and FRPPs' desire to innovate and preserve agility in model development while maintaining the importance of appropriate model risk management (OSFI, 2024<sup>[42]</sup>).

The US SEC's 2023 Proposing Release states that the Commission believes the current regulatory framework should be updated to help ensure that firms are appropriately addressing conflicts of interests associated with certain technologies. As a result, the Commission has proposed specific protections to complement those already required under existing regulatory frameworks to better protect investors from harms arising from these conflicts (see Section 2.3.1).

Other rules could also need some updating in the future where compliance with existing regulatory standards becomes more difficult. The Commission Delegated Regulation (EU) 2017/589 Self-Assessment process could provide a potential example to illustrate this, regarding the use of AI in algorithmic trading. This assessment is annually provided by investment firms and can be seen as a robust approach in helping to ensure that financial institutions which fall under its scope are continuously assessing their controls around algorithmic trading, but it requires a good level explainability of the trading system used. In this context, there may also arise challenges in implementing any criminal penalties, stemming from the difficulty of applying subjective responsibility criteria to an algorithm.

### Strengthening rules

Certain guidelines and non-binding policy guidance issued in relation to the use of AI in finance could be considered for possible further strengthening. For example, upon evaluation, the Indonesian OJK might consider transitioning certain guidelines to regulations, which would allow for enforcement action with penalties for violations of the rules.

Model risk management is another area where some respondents noted the potential need to strengthening or clarifications to address issues particularly relevant to models with AI characteristics.

Regulatory alignment between different areas of policy making applicable to the use of AI in finance, such as data regulation and financial regulation regarding the AI models used in finance.

### Further clarifications

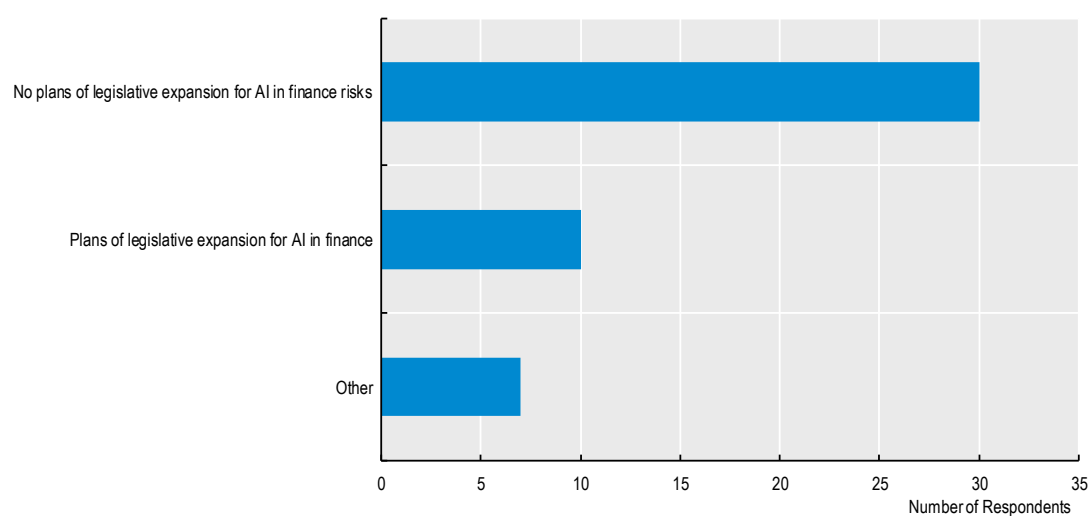
Depending on a financial institution's specific use of AI, credit risk, market risk, reputation risk, compliance risk, and other risks may need to be addressed. Existing regulations and policy frameworks, in many cases, speak to these types of risks, though regulators continue to evaluate whether further clarifications are appropriate. This includes some more specific guidance on the way some of the existing requirements are to be delivered in a practical manner and from a compliance standpoint. One such example is understanding what degree of explainability is required in certain applications of AI in Finance.

Similarly, in the EU, the EBA has undertaken initiatives aiming to foster convergence in the interpretation and application of existing rules (e.g. how to apply prudential rules on internal model validation when a model is based on AI/ML).

## 2.6. Future plans for regulation around AI in finance

The majority of respondents to the survey do not plan to introduce new regulations around AI in finance. Some jurisdictions have new legislation under discussion in their legislative bodies (e.g. Brazil, Canada, Chile) (see also Section 2.3.1).

**Figure 2.6. Plans for future regulation on AI in finance**



Source: 2024 OECD Survey on Regulatory Approaches to AI in Finance. Based on a total of 49 responding jurisdictions.

Several jurisdictions have ongoing workstreams that do not involve binding legislation. For example, Korea is in the process of publishing the Explainable AI Guide and forming a Financial AI Council (expected in 2024). In the US, EO 14110 is a broad policy framework, that has a number of tangible deliverables to produce best practices in the use of AI by both the private and public sector and directs agencies to use their existing authorities to promote the safe and trustworthy deployment of AI. In Singapore, work is also underway in areas related to GenAI as well as around model risk management frameworks. In Indonesia, OJK's banking sector plans to issue guidelines of AI implementation in the banking sector, while there may be business specific AI regulation for each industry (including finance) in the future. The Financial Sector Conduct Authority (FSCA) of South Africa, as the market conduct regulator, is currently conducting a market study on AI within the Financial Sector of South Africa, while South Africa is also considering including Governance principles in respect of the use of AI and ML for financial institutions.

Some jurisdictions are also in the phase of investigation, without any plans for regulation (e.g. Australia, Japan, Switzerland, UK). In Switzerland, the Federal Council wants to harness the potential of AI while minimising the risks it poses to society. At its meeting on 22 November 2023, it therefore instructed DETEC to prepare an overview of possible regulatory approaches to AI, which is expected to be available by the end of 2024. The analysis will build on existing Swiss law and identify possible regulatory approaches for Switzerland that are compatible with the EU AI Act and the Council of Europe's AI Convention. In the UK, the UK Government's Department for Innovation, Science, and Technology (DSIT) have an ongoing work programme to support the safe and responsible deployment of AI, although this is not specific to financial market participants. Japanese authorities are enhancing their dialogue with the private sector to identify opportunities and potential risks of AI in finance.

In Australia, following the 2023 consultation on supporting "Safe and Responsible AI in Australia", the Government is considering next steps including: reviewing existing legal frameworks to ensure a regulatory system that is flexible and fosters innovation, while also enforcing adequate safeguards to prevent and mitigate harm; considering options to introduce guardrails focused on testing, transparency, and accountability for AI systems, especially in high-risk settings; collaborating with industry to consolidate existing principles and guidelines into a single, internationally aligned AI Safety Standard that assists Australian businesses in adopting AI responsibly; ensuring the security of AI tools, such as using principles like security by design, through the Government's work on the 2023-2030 Australian Cyber Security Strategy. The Australian Government has formed an interim AI expert advisory group to support current efforts and assess proposed and planned policy initiatives.

In Canada, as part of the regular federal financial institutions statutes review, the Department of Finance Canada has launched consultations on how the federal financial sector framework should respond to emerging technological and geopolitical trends and whether any changes to the framework are needed (Government of Canada, 2024<sup>[81]</sup>). Among other issues, the review will examine how AI could be used in the financial sector, and whether and how the framework should adapt to harness the benefits, manage any risks and ensure responsible innovation. This will include examining whether the current framework can effectively manage the risks of AI in the financial sector, or if new rules or tools are needed. Also, the CSA is researching and discussing policy considerations in the context of the digital transformation of financial markets impacting Canadian capital markets including the use of AI and working to build regulatory capacity for emerging digital business models. There are currently no specific/short-term plans or work underway regarding public companies/reporting issuers' obligations and AI, and this issue is under review.

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