

Regulating Artificial Intelligence in Finance: Lessons from Singapore

Law Working Paper N° 969/2026

October 2026

Ng Jing Ying

Faculty of Law, National University of Singapore

Lin Lin

Faculty of Law, National University of Singapore and ECGI

© Ng Jing Ying and Lin Lin 2026. All rights reserved.
Short sections of text, not to exceed two paragraphs,
may be quoted without explicit permission provided that
full credit, including © notice, is given to the source.

This paper can be downloaded without charge from:
<https://doi.org/10.67929/ecgi-law-969-2026>

ECGI Working Paper Series in Law

Regulating Artificial Intelligence in Finance: Lessons from Singapore

Working Paper N° 969/2026
October 2026

Ng Jing Ying
Lin Lin

Abstract

Artificial Intelligence (AI) is rapidly transforming the global financial sector, with widespread adoption across banking, insurance, and other financial services. Singapore exemplifies this trend. Its major financial institutions, including DBS, OCBC, and UOB, have extensively integrated AI and Generative AI (GenAI) to enhance efficiency, productivity, and customer experience. However, the growing use of AI in finance also introduces significant risks related to transparency, data privacy, cybersecurity, fairness, accountability, GenAI hallucinations, and deepfakes. This paper examines Singapore's regulatory approach to governing AI in finance, anchored by the Monetary Authority of Singapore's (MAS) multi-layered strategy that combines principles-based regulation, collaborative industry engagement, supervisory technology (SupTech) adoption, market-enabling measures, and deliberate regulatory gradualism. While Singapore's framework, comprising the FEAT Principles, Project MindForge, and the MAS Guidelines on AI Risk Management, provides a strong foundation, this paper suggests areas for improvement. These include elevating guidelines into enforceable codes, addressing third-party AI risks, leveraging SupTech capabilities, establishing a dedicated AI regulatory sandbox, and ensuring robust enforcement and international cooperation. Drawing lessons from Singapore's experience, this paper argues that effective AI governance in finance requires not a singular approach but a calibrated, adaptive combination of strategies suited to each jurisdiction's institutional context and evolving technological landscape. Ultimately, responsible AI governance demands a multi-layered regulatory ecosystem, and the institutional capacity to evolve alongside the technology it seeks to govern.

Keywords: Artificial Intelligence, Finance, Regulations

Ng Jing Ying

Faculty of Law, National University of Singapore

Lin Lin

Faculty of Law, National University of Singapore and ECGI

Regulating Artificial Intelligence in Finance: Lessons from Singapore

Ng Jing Ying and Lin Lin*

Forthcoming, Asian Journal of Comparative Law
Draft as of 5 October 2026

Abstract:

Artificial Intelligence (AI) is rapidly transforming the global financial sector, with widespread adoption across banking, insurance, and other financial services. Singapore exemplifies this trend. Its major financial institutions, including DBS, OCBC, and UOB, have extensively integrated AI and Generative AI (GenAI) to enhance efficiency, productivity, and customer experience. However, the growing use of AI in finance also introduces significant risks related to transparency, data privacy, cybersecurity, fairness, accountability, GenAI hallucinations, and deepfakes. This paper examines Singapore's regulatory approach to governing AI in finance, anchored by the Monetary Authority of Singapore's (MAS) multi-layered strategy that combines principles-based regulation, collaborative industry engagement, supervisory technology (SupTech) adoption, market-enabling measures, and deliberate regulatory gradualism. While Singapore's framework, comprising the FEAT Principles, Project MindForge, and the MAS Guidelines on AI Risk Management, provides a strong foundation, this paper suggests areas for improvement. These include elevating guidelines into enforceable codes, addressing third-party AI risks, leveraging SupTech capabilities, establishing a dedicated AI regulatory sandbox, and ensuring robust enforcement and international cooperation. Drawing lessons from Singapore's experience, this paper argues that effective AI governance in finance requires not a singular approach but a calibrated, adaptive combination of strategies suited to each jurisdiction's institutional context and evolving technological landscape. Ultimately, responsible AI governance demands a multi-layered regulatory ecosystem, and the institutional capacity to evolve alongside the technology it seeks to govern.

Keywords: Artificial Intelligence, Finance, Regulations, Singapore

Table of Contents

<i>I. Introduction.....</i>	<i>2</i>
<i>II. Applications of AI in Finance in Singapore.....</i>	<i>5</i>
A. AI as a Possible Solution to Financial Inclusion Trilemma.....	5
B. Combating Financial Crimes	7
C. Customer Engagement and Service	8
D. Investment Strategies.....	9

* Dr. Lin Lin (lawll@nus.edu.sg) is an Associate Professor at the Faculty of Law of the National University of Singapore (NUS). Mr. Ng Jing Ying is an LLB graduate of NUS Law. We thank the interviewees from the financial sector for sharing their valuable insights for this project. The project is supported by MOE Tier 1 Grant (A-8004006-00-00).

E.	Credit Risk Assessment	10
III.	<i>Risks of Using AI in Finance in Singapore</i>	11
A.	Transparency-Related Risks.....	11
B.	Data Privacy and Cybersecurity Risks	12
C.	Accountability-Related Risks.....	13
D.	Bias and Fairness-Related Risks.....	14
E.	Other Risks Unique to GenAI.....	15
1.	Hallucinations	15
2.	Deepfakes	15
F.	Agentic AI: Risk Management and Control.....	16
IV.	<i>Regulating AI in Finance in Singapore</i>	17
A.	National Policies	17
1.	National AI Strategy	17
2.	Model AI Governance Frameworks	17
3.	Other IMDA Initiatives	18
B.	MAS Regulations and Initiatives	20
1.	Guidelines on Artificial Intelligence Management	20
2.	FEAT Principles	21
3.	Veritas Initiative	22
4.	Project MindForge	25
5.	Information Papers	26
6.	Pathfinder Programme	28
7.	Financial AI Builder Programme – BuildFin.ai	28
C.	Industry Guidelines	28
V.	<i>Lessons Learned</i>	29
A.	Regulatory Strategies on AI in Finance	29
B.	Singapore’s Approach	32
C.	Regulatory Tools	34
1.	Supervisory Technology	34
2.	Regulatory Sandbox	36
D.	Measures to Govern Third-Party Risks.....	39
VI.	<i>Conclusion</i>	41

I. Introduction

Artificial Intelligence¹ (“AI”) has been widely adopted in the global financial sector. According to a study by KPMG, 71% of surveyed financial firms have deployed AI tools, and

¹ “Model AI Governance Framework” (Infocomm Media Development Authority (“IMDA”) and Personal Data Protection Commission (“PDPC”), 2024) <<https://www.pdpc.gov.sg/-/media/Files/PDPC/PDF-Files/Resource-for-Organisation/AI/SGModelAIGovFramework2.pdf>>, p. 18: Artificial Intelligence is defined as “a set of technologies that seek to simulate human traits such as knowledge, reasoning, problem solving, perception, learning and planning, and, depending on the AI model, produce an output or decision (such as a prediction, recommendation, and/or classification). AI technologies rely on AI algorithms to generate models.”

41% are doing so to a moderate or significant extent.² Among the financial sectors, the banking sector accounts for the largest share of AI spending, which is estimated at USD 31.3 billion in 2024 and projected to exceed USD 81 billion by 2028.³ A similar trajectory is observed for Generative AI⁴ (“GenAI”). A study by EY reported that 71% of surveyed banks have either deployed or soft-launched GenAI capabilities.⁵ The banking sector’s spending on GenAI is estimated to rise sharply from USD 3.86 billion in 2023 to nearly USD 85 billion in 2030.⁶

This global trend is mirrored locally in Singapore, where banks, especially the three major local banks, namely DBS Bank (“DBS”), Oversea-Chinese Banking Corporation (“OCBC”) and United Overseas Bank (“UOB”),⁷ have made significant strides in adopting AI. DBS has deployed more than 1,500 AI models across over 370 use cases, generating over SGD 750 million in economic value in 2024.⁸ OCBC uses AI to make approximately six million decisions every day, and has also developed several in-house GenAI tools that have boosted employee productivity by up to 50%.⁹ Likewise, UOB’s commitment to adopting AI is evident from its trial of the Microsoft Copilot tool across various business units in October 2023,¹⁰ and its recent collaboration with Accenture in April 2025 to develop and deploy AI technologies, including GenAI and agentic AI, over the next three years.¹¹

Beyond the banking sector, a similar trend of AI adoption can be observed in Singapore’s insurance industry.¹² For instance, Great Eastern piloted an in-house AI solution that reportedly shortens preparation time for client meetings from over two hours to under 30 minutes.¹³

² “KPMG Global AI in Finance Report” (KPMG International, 2024) <<https://assets.kpmg.com/content/dam/kpmgsites/xx/pdf/2024/11/ai-in-finance.pdf.coredownload.inline.pdf>>, p. 8.

³ “Estimated value of the banking sector’s Artificial Intelligence (AI) and Generative Artificial Intelligence (Gen AI) spending worldwide in 2023 and 2024, with forecasts until 2028” (Statista, 21 August 2025) <<https://www.statista.com/statistics/1557311/global-banking-sector-ai-spending-forecast/>>.

⁴ “Emerging Risks and Opportunities of Generative AI for Banks: A Singapore Perspective” (Monetary Authority of Singapore (“MAS”), 2024) <<https://www.mas.gov.sg/-/media/mas-media-library/schemes-and-initiatives/ftig/project-mindforge/emerging-risks-and-opportunities-of-generative-ai-for-banks.pdf>>, p. 44: Generative AI is defined as “[a] technology using deep learning that produces outputs in one or several forms (text, image, video, audio, etc.). Generative AI is based on a foundation model, which is a large neural network (consisting of at least several million parameters) that is trained on a large dataset that may be unstructured and will, in some respect, resemble the desired outputs.”

⁵ “GenAI in Retail and Commercial Banking” (EY Parthenon, 2025) <<https://www.ey.com/content/dam/ey-unified-site/ey-com/en-us/insights/banking-capital-markets/documents/ey-gen-ai-in-retail-and-commercial-banking.pdf>>, pp. 6, 11.

⁶ “Regulating AI in the Financial Sector: Recent Developments and Main Challenges” (Financial Stability Institute (“FSI”), 2024) <<https://www.bis.org/fsi/publ/insights63.pdf>>, p. 5.

⁷ “About Us” (The Association of Banks in Singapore (“ABS”)) <<https://abs.org.sg/about-us/memberbanks>> accessed November 06, 2025.

⁸ “Annual Report 2024: Making Greater Impact” (DBS Bank (“DBS”), 2025) <<https://www.dbs.com/annualreports/2024/i/pdf/dbs-annual-report-2024.pdf>>, p. 7.

⁹ “Annual Report 2024: Winning as One Group” (Oversea-Chinese Banking Corporation (“OCBC”), 2025), <<https://www.ocbc.com/iwov-resources/sg/ocbc/gbc/pdf/investors/annual-reports/2024/ocbc-annual-report-2024.pdf>>, p. 16.

¹⁰ “UOB pioneers trial of Microsoft 365 Copilot Generative AI tool across multiple business functions to enhance productivity and collaboration” (United Overseas Bank (“UOB”), 03 October 2025) <<https://www.uobgroup.com/uobgroup/newsroom/2023/uob-microsoft-copilot-genai-tool.page?path=data/uobgroup/2023/278>>.

¹¹ “UOB and Accenture collaborate to transform customer experience using advanced technologies including GenAI” (UOB, 30 April 2025) <<https://www.uobgroup.com/uobgroup/newsroom/2025/uob-accenture-collab.page?path=data/uobgroup/2025/335&cr=segment>>.

¹² Lin Lin, and Christopher Chen, “The Promise and Perils of InsurTech” (2020) *Singapore Journal of Legal Studies* <<https://ssrn.com/abstract=3646938>>; Lin Lin, “Regulating FinTech: The Case of Singapore” (2019) 35 *Banking and Finance Law Review* <https://law.nus.edu.sg/cbfl/wp-content/uploads/sites/5/2020/04/028_2019_Lin-Lin.pdf>.

¹³ “Great Eastern bets on AI, specialised products in strategy revamp” (*Insurance Asia*, 20 October 2025) <<https://insuranceasia.com/insurance/exclusive/great-eastern-bets-ai-specialised-products-in-strategy-revamp>>.

Similarly, in 2024, Manulife rolled out two GenAI initiatives in Singapore, namely the Sales Agent Enablement Tool, which was deployed to over 2,000 agents and achieved a 68% adoption rate within the first two weeks of launch, and the Underwriting Assistant, which leverages GenAI to expedite the underwriting process for high-net-worth products from five days to approximately three days.¹⁴ Collectively, these examples demonstrate that the financial institutions in Singapore are increasingly integrating the use of AI across a wide range of their operations to drive efficiency and productivity.

While the growing use of AI in finance presents a plethora of opportunities, it also introduces significant risks, including concerns related to transparency, data privacy and cybersecurity, fairness, accountability, GenAI hallucinations, and deepfakes. In response, Singapore has positioned itself at the forefront of responsible and safe usage of AI. At the national level, Singapore's approach is guided by its National AI Strategies and Model AI Governance Frameworks.¹⁵ For the financial sector specifically, Singapore adopts a “*regulator-led, collaborative approach*” through the use of soft law instruments.¹⁶ The Monetary Authority of Singapore (“MAS”), which is “Singapore’s central bank and integrated financial regulator”, has introduced several key initiatives, such as the FEAT Principles, Veritas Initiative, Project MindForge, and most recently, the Guidelines on Artificial Intelligence Risk Management.¹⁷

While these national policies and sector-specific initiatives provide a strong foundation for responsible AI governance, there remains room for improvement. This paper thus proposes several suggestions, such as leveraging supervisory technology, deploying specific regulatory sandboxes, and addressing third-party risks. Ultimately, Singapore must strike a careful balance between fostering innovation and ensuring robust governance to achieve responsible and safe AI adoption in the finance industry.

For the purposes of this paper, the term “AI” is used broadly to encompass traditional AI, GenAI, and Agentic AI. This paper focuses primarily on and distinguishes between traditional AI¹⁸ and GenAI. While traditional AI models “make predictions by leveraging insights derived from historical data”,¹⁹ GenAI models are able to generate “complex and novel outputs” autonomously, such as “text, images, voice and videos”.²⁰ Further, Agentic AI refers to AI agents that “mimic human decision-making to solve problems in real time” independently and purposefully.²¹

¹⁴ “Manulife Leads the Charge in Generative AI Innovations: Enhancing Productivity and Elevating Customer Experience” (Manulife, 02 October 2024) <<https://www.manulife.com.sg/en/about-us/newsroom/manulife-leads-the-charge-in-generative-ai-innovations.html>>.

¹⁵ These national AI policies are discussed in greater detail in Section IV(A) below.

¹⁶ Nydia Remolina Leon, “AI Governance and Algorithmic Auditing in Financial Institutions: Lessons from Singapore” (2025) 18(3) *Journal of Risk Management in Financial Institutions* <<https://dx.doi.org/10.2139/ssrn.5199968>>, p. 2.

¹⁷ These MAS initiatives are discussed in greater detail in Section IV(B) below.

¹⁸ “Model AI Governance Framework for Generative AI: Fostering a Trusted Ecosystem” (AI Verify Foundation (“AIVF”) and IMDA, 2024) <<https://aiverifyfoundation.sg/wp-content/uploads/2024/05/Model-AI-Governance-Framework-for-Generative-AI-May-2024-1-1.pdf>>, p. 3: “Traditional AI refers to AI models that make predictions by leveraging insights derived from historical data.”

¹⁹ *Ibid.*

²⁰ MAS, *Emerging Risks and Opportunities*, *supra* note 4, pp. 44, 70.

²¹ “What is Agentic AI?” (IBM) <<https://www.ibm.com/think/topics/agentic-ai>> accessed on 15 September 2026.

Considering the limited literature on AI in finance in Singapore, this paper aims to fill the gap by providing a well-researched and comprehensive legal analysis of this field.²² Accordingly, this paper seeks to answer the following research questions:

- (1) What are the major applications of AI in finance, and what are the key risks arising from its use in Singapore's financial sector?
- (2) What are the prevailing policies and regulatory frameworks governing the use of AI in Singapore's financial sector, and how can they be improved to better manage AI-related risks?
- (3) What lessons can be drawn from Singapore's approach to regulating AI in finance?

This paper is structured as follows: Section II discusses the financial inclusion trilemma in the context of AI finance. It also explores the major applications of AI in finance in Singapore, including its use to combat financial crimes, improve customer experience, optimise investment strategies, and strengthen credit risk assessment. Section III analyses the different risks arising from the use of AI in finance, including risks related to transparency, data privacy and cybersecurity, fairness, accountability, GenAI hallucinations, deepfakes and risk management and control of AI Agents. Section IV examines the existing policies and regulatory frameworks related to AI in finance in Singapore, including both national policies and sector-specific regulations introduced by the MAS. Section V discusses the learning points from Singapore's experience. The last part concludes. All information presented in this paper is accurate as of 30 September 2026.

II. Applications of AI in Finance in Singapore

A. AI as a Possible Solution to Financial Inclusion Trilemma

The development of inclusive finance can be analysed through the complementary theories of financial inclusion and financial exclusion. On one hand, the financial inclusion theory seeks to provide affordable and accessible financial services to all segments of society. On the other hand, the financial exclusion theory highlights the systemic barriers that restrict certain group from accessing such financial services. The inherent tension between the two theories gives rise to the *Financial Inclusion Trilemma*, which provides that it is challenging to achieve scale, effective risk management, and profitability simultaneously.²³

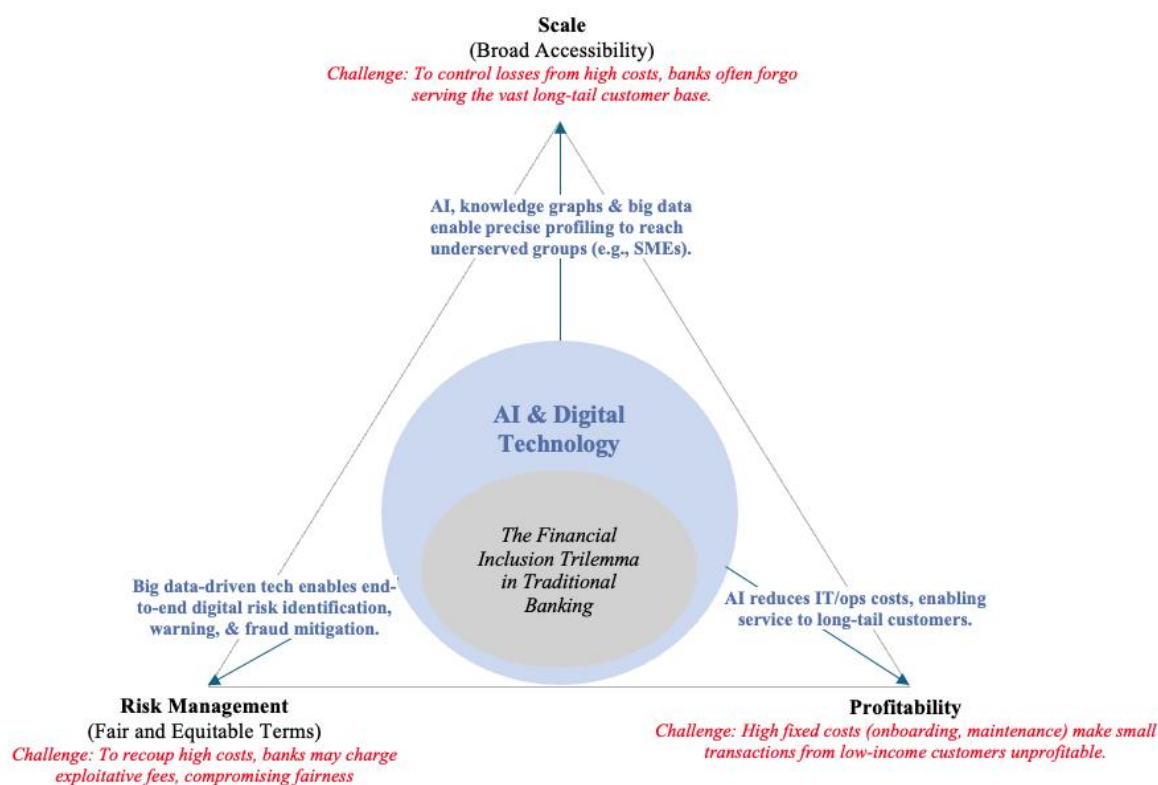
Traditionally, financial institutions have faced challenges in serving low-income customers and small businesses. This is because the substantial fixed costs of traditional financial services often significantly outweigh the value of such small-scale transactions. As such, financial

²² Although there are relevant papers, such as “Generative AI in Finance: Risks and Potential Solutions” (2024) (*infra* note 50) and “AI Governance and Algorithmic Auditing in Financial Institutions: Lessons from Singapore” (2025) (*supra* note 16), these papers focus exclusively on Generative AI instead of AI as a whole, and/or do not specifically address the Singapore context.

²³ Lin Lin, “Artificial Intelligence in China’s Banking Sector: Promises, Perils, and Regulations” (2026) *European Business Organization Law Review* <<http://dx.doi.org/10.2139/ssrn.6295958>>, pp. 14-15.

institutions are forced to either forgo serving the vast long-tail customer base in order to maintain profitability or expand access at the risk of losing commercial viability.²⁴

Diagram 1: AI's Role in Addressing the Financial Inclusion Trilemma²⁵



As illustrated in Diagram 1, AI provides a viable solution for overcoming the Financial Inclusion Trilemma. By lowering IT and operational costs, financial institutions are able to service long-tail customers profitably. Next, AI-driven data analytics can also increase scale by enabling precise profiling and allowing financial institutions to service previously underserved groups such as SMEs. Lastly, big data-driven AI systems assist greatly with risk management as they strengthen fraud detection and mitigation.²⁶

Many countries including Singapore²⁷ and China²⁸ has increasingly incorporated AI into financial services. For example, DBS has adopted alternative trade lending approaches that draw on real-time trading data, instead of solely relying on historical balance sheet data, when evaluating SME credit risk.²⁹ Singapore banks are also adopting AI to reduce routine tasks and

²⁴ *Ibid*, p. 15.

²⁵ This diagram is illustrated by the authors.

²⁶ Lin, *Artificial Intelligence in China's Banking Sector*, *supra* note 25, p. 15.

²⁷ For more specific examples, see Section II below.

²⁸ Lin, *Artificial Intelligence in China's Banking Sector*, *supra* note 25, p. 15.

²⁹ "Alternative trade lending and platform partnerships: a client journey to profitability" (DBS, January 2023) <<https://www.dbs.com.sg/corporate/insights/alternative-trade-lending-digital-platform-partnerships>>.

streamline loan approval processes, thereby improving operational efficiency and expanding access to financing for smaller businesses.³⁰

In Singapore, financial institutions are increasingly adopting AI in their daily operations to enhance efficiency, boost productivity, and reduce costs.³¹ Common applications of AI by financial institutions include combating financial crime, improving customer service, optimising investment strategies, and strengthening credit risk management.³² These common applications are discussed in greater detail below.

Further, AI is also utilised in the account opening process. For instance, in 2024, the Bank of Singapore collaborated with OCBC to automate the Source of Wealth (“SoW”) write-up process, which is an “inherently resource-intensive” and “complex task”, with the use of GenAI and Agentic AI models.³³ Overall, this helps to facilitate financial inclusion by allowing banks to scale the onboarding of high-net-worth clients while maintaining the accuracy and rigour required for customer due diligence.

B. Combating Financial Crimes

As financial crimes become increasingly sophisticated, traditional rule-based surveillance systems are no longer sufficient.³⁴ Financial institutions are instead turning to AI to detect and prevent emerging threats, particularly in anti-money laundering (“AML”) and fraud detection.³⁵ AI has proven to be more effective than traditional methods³⁶ because AI can automatically process vast volumes of transactions and identify patterns of illicit activities that traditional systems would find challenging or impossible to detect.³⁷

First, AI improves the efficiency and accuracy of AML operations by analysing transactions and flagging potential cases of money laundering. Approximately 92% of financial institutions in Singapore are using advanced AI to support their Know-Your-Customer (“KYC”) and AML

³⁰ “Faster loan approvals, automated client checks: How AI agents are used by banks, including in S’pore” (*The Straits Times*, 20 April 2026) <<https://www.straitstimes.com/business/faster-loan-approvals-automated-client-checks-how-ai-agents-are-used-by-banks-including-in-spore>>.

³¹ “Cyber Risks Associated with Generative Artificial Intelligence” (MAS, 2024) <<https://www.mas.gov.sg/-/media/mas-media-library/regulation/circulars/trpd/cyber-risks-associated-with-generative-artificial-intelligence.pdf>>, p. 3; MAS, *Emerging Risks and Opportunities*, *supra* note 4, p. 5.

³² “Artificial Intelligence Model Risk Management: Observations from a Thematic Review” (MAS, 2024) <<https://www.mas.gov.sg/-/media/mas-media-library/publications/monographs-or-information-paper/imd/2024/information-paper-on-ai-risk-management-final.pdf>>, [2.1], [2.4].

³³ “Case study: Accelerating compliance transformation with Generative AI” (*Bank of Singapore*, 2025) <<https://www.bankofsingapore.com/research/accelerating-compliance-transformation-with-generative-ai.html>>.

³⁴ “Industry Perspectives on Best Practices – Leveraging on Data Analytics and Machine Learning Methods for AML/CFT” (ABS, 2024) <<https://abs.org.sg/docs/library/acip-industry-perspectives-on-best-practices---leveraging-on-data-analytics-and-machine-learning-methods-for-amlcft.pdf>>, p. 52.

³⁵ MAS, *Artificial Intelligence Model Risk Management*, *supra* note 34, [2.1]; *The Straits Times*, “Faster loan approvals”, *supra* note 32: “AI agents are also proving useful in automating know-your-customer (KYC) processes and augmenting anti-money laundering processes ... AI agents can handle the heavy lifting of client due diligence by automating identity verification, matching entity data, and collecting required documentation”.

³⁶ “Governance of AI Adoption in Central Banks” (*Bank for International Settlements (“BIS”)*, 2025) <<https://www.bis.org/publ/othp90.pdf>>, p. 5.

³⁷ ABS, *Industry Perspectives on Best Practices*, *supra* note 34, p. 52.

operations, representing “the highest adoption rate globally”.³⁸ In 2020, UOB became the first bank in Singapore to harness AI across two AML risk areas: transaction monitoring and name screening.³⁹ With a 96% true positive rate, UOB’s AI solution can efficiently process over 5,700 transaction alerts each month, identifying suspicious cases and swiftly investigating potential money laundering activities.⁴⁰ Similarly, DBS implemented an AML Filter Model that is designed to detect early signals of suspicious transactions, reducing false positives from its previous non-AI system and the number of alerts needing human review.⁴¹ This reduction in manual alerts enhanced DBS’ operational efficiency and strengthened the overall effectiveness of its AML surveillance.⁴²

Second, financial institutions also utilise AI to detect and prevent fraud.⁴³ For example, OCBC developed a machine learning system that detects credit card fraud by scanning large volumes of transactions and spotting unusual payments on their first occurrence;⁴⁴ DBS operates its own fraud detection system driven by machine learning and AI;⁴⁵ MAS also employs AI to uncover suspicious and fraudulent activities.⁴⁶ Additionally, financial institutions can explore using GenAI to generate synthetic fraud data to further train and refine their fraud detection algorithms.⁴⁷ Ultimately, these AI-driven AML and fraud detection initiatives aim to provide a secure and reliable payment gateway for both financial institutions and their customers.⁴⁸

C. Customer Engagement and Service

³⁸ “9 in 10 Singapore banks turn to AI for customer checks, fraud prevention” (*Singapore Business Review*, 17 October 2025) <<https://sbr.com.sg/news/9-in-10-singapore-banks-turn-ai-customer-checks-fraud-prevention>>.

³⁹ “UOB’s new AI anti-money laundering solution helps the Bank cut through large volumes of transactions to pinpoint suspicious activities” (*UOB*, 03 December 2020) <<https://www.uobgroup.com/uobgroup/newsroom/2020/new-money-laundering-solution.page?path=data/uobgroup/2020/133&cr=segment>>.

⁴⁰ *Ibid.*

⁴¹ “Compendium of Use Cases: Practical Illustrations of the Model AI Governance Framework” (*IMDA and PDPC*, 2020) <<https://www.pdpc.gov.sg/-/media/Files/PDPC/PDF-Files/Resource-for-Organisation/AI/SGAIGovUseCases.pdf>>, p. 10; Ella Gorian, “Deployment of AI in Banking: Comparison of Russian and Singaporean Approaches” (2021) *European Proceedings of Social and Behavioural Sciences* 111 <<https://doi.org/10.15405/epsbs.2021.06.03.46>>, p. 345.

⁴² *Ibid.*

⁴³ Nurhadhinah Nadiyah Ridzuan, Masairol Masri, Muhammad Anshari, Norma Latif Fitriyani and Muhammad Syafrudin, “AI in the Financial Sector: The Line between Innovation, Regulation and Ethical Responsibility” (2024) 15(8) *Information* 432 <<https://doi.org/10.3390/info15080432>>, p. 4.

⁴⁴ “Detecting credit card fraud using machine learning” (*OCBC*, 02 June 2022) <<https://www.ocbc.com/group/careers/blog/detecting-credit-card-fraud.page>>.

⁴⁵ “Bank fraud experts in S’pore use AI to predict scammers’ next move” (*The Straits Times*, 06 April 2021) <<https://www.straitstimes.com/tech/tech-news/anti-fraud-experts-use-ai-to-predict-cheaters-next-move>>.

⁴⁶ “Singapore looking at using AI in fight against money laundering, says central bank chief” (*Channel News Asia* (“CNA”), 06 November 2023) <<https://www.channelnewsasia.com/business/singapore-artificial-intelligence-fight-money-laundering-mas-ravi-menon-3894781>>; Ridzuan, “AI in the Financial Sector,” *supra* note 46, p. 7; “MAS Collaborates with Banking Industry to Harness Artificial Intelligence in the Fight Against Financial Crime” (MAS, 04 May 2026) <<https://www.mas.gov.sg/news/media-releases/2026/mas-collaborates-with-banking-industry-to-harness-ai-in-the-fight-against-financial-crime>>: MAS announced on 4 May 2026 that “it is working with partners in the banking industry, the Government Technology Agency of Singapore, and the Singapore Police Force to combat financial crime, using artificial intelligence and machine learning (AI/ML) techniques to enhance scam detection capabilities”.

⁴⁷ Nydia Remolina Leon, “Generative AI in Finance: Risks and Potential Solutions” (2024) 1 *Law, Ethics and Technology* <https://ink.library.smu.edu.sg/sol_research/4612>, p. 8.

⁴⁸ Rajesh Kr Singh, Ruchi Mishra, Satish Kumar and Surajit Bag, “Applications of Artificial Intelligence for Optimizing Banking and Financial Operations: A Systematic Literature Review and Future Research Agenda” (20225) *Journal of Economic Surveys* <<https://doi.org/10.1111/joes.12693>>, p. 7.

Financial institutions are deploying AI-powered chatbots and virtual assistants to enhance customer engagement and service quality. These AI tools can handle basic customer service tasks, such as responding to common inquiries.⁴⁹ GenAI builds on this and greatly enhances the overall customer experience by offering “highly personalised and human-like interactions”.⁵⁰ By providing around-the-clock, instantaneous assistance to multiple customers at once, these AI-powered chatbots reduce the bank’s reliance on human staff and its operational costs.⁵¹

GXS Bank, which is a digital bank in Singapore backed by Grab Holdings and SingTel,⁵² introduced an AI-driven chatbot called eBuddy.⁵³ This chatbot is designed to understand colloquial questions and provide clear and concise answers.⁵⁴ Through automating routine inquiries, eBuddy has reduced call volumes by approximately 20%, freeing up human agents for more complex matters.⁵⁵ This chatbot enhances operational efficiency and customer experience by providing 24/7 support and faster response times.⁵⁶ Separately, in July 2024, DBS equipped its customer service officers with a GenAI-powered virtual assistant called CSO Assistant.⁵⁷ This virtual assistant supports staffs by “transcribing conversations in real-time, retrieving relevant information instantly, and assisting with documentation”.⁵⁸ Once fully deployed, CSO Assistant is projected to shorten call durations by up to 20%.⁵⁹ In short, these two examples demonstrate that AI is reshaping customer service in the banking sector by improving efficiency and elevating the overall customer experience.

D. Investment Strategies

AI is also rapidly transforming the retail investment landscape, primarily through the emergence of robo-advisors.⁶⁰ By processing large datasets, AI-powered robo-advisors are able to analyse market trends and forecast market movements through predictive analysis.⁶¹ This

⁴⁹ “Handbook on Generative AI Guardrails in Banking” (ABS, 2025) <<https://www.abs.org.sg/docs/library/handbook-on-generative-ai-guardrails-in-banking.pdf>> p. 10.

⁵⁰ *Ibid.*

⁵¹ Ridzuan, “AI in the Financial Sector,” *supra* note 46, pp. 2, 5, 9.

⁵² “Digital bank GXS, set up by Grab and Singtel, targets profit by 2027” (*The Straits Times*, 31 July 2024) <<https://www.straitstimes.com/business/banking/digital-bank-gxs-set-up-by-grab-and-singtel-targets-profit-by-2027>>.

⁵³ “GXS eBuddy (Beta)” (GXS Bank) <<https://gxs-chatbot.gxs.com.sg/>> accessed 06 November 2025.

⁵⁴ “How GXS Bank leverages GenAI” (*DigiconAsia*, 26 February 2025) <<https://digiconasia.net/features/how-gxs-bank-leverages-genai>>.

⁵⁵ “How AI in Banking Drives Smarter Experiences in Asia” (*Fintech News Singapore*, 25 April 2025) <<https://fintechnews.sg/110280/ai-in-banking-in-asia-trends/>>.

⁵⁶ DigiconAsia, “How GXS Bank leverages GenAI,” *supra* note 57; Ionuț-Alexandru Cîmpeanu, Denis-Alexandru Dragomir and Răzvan Daniel Zota, “Banking Chatbots: How Artificial Intelligence Helps the Banks” (2023) *Proceedings of the International Conference on Business Excellence* 17 <<https://doi.org/10.2478/picbe-2023-0153>>, p. 1725.

⁵⁷ “DBS empowers its Customer Service Officers with Gen AI-powered virtual assistant to reduce toil and enhance customer experience” (DBS, 18 July 2024) <https://www.dbs.com/newsroom/DBS_empowers_its_Customer_ServiceOfficers_with_Gen_AI_powered_virtual_assistant_to_reduce_toil_and_enhance_customer_experience>.

⁵⁸ “Responsible AI in banking: Gaining a competitive edge” (DBS, 11 June 2025) <<https://www.dbs.com/artificial-intelligence-machine-learning/artificial-intelligence/responsible-ai-in-banking-gaining-a-competitive-edge.html>>.

⁵⁹ DBS, “DBS empowers its Customer Service Officers,” *supra* note 60.

⁶⁰ Aditya Kashyap, “AI-Driven Financial Advisory: The Rise of Robo-Advisors” (2025) *SSRN* <<https://dx.doi.org/10.2139/ssrn.5268858>>, p. 1.

⁶¹ *Ibid.*, p. 2.

allows robo-advisors to provide individualised financial advice, oversee investment portfolios and maximise returns.⁶²

Financial institutions and consumers both benefit from the use of robo-advisors. Financial institutions benefit through significant cost-savings by relying less on human advisors and saving on their salaries.⁶³ Meanwhile, consumers benefit from the democratisation of financial advice.⁶⁴ Consumers can now receive financial advice, which was once limited to high-net-worth individuals who could afford the high fees charged by human portfolio managers, at a low-cost from robo-advisors.⁶⁵

In Singapore, notable robo-advisors include DBS' digiPortfolio, which is a hybrid model powered by AI and managed by human portfolio managers.⁶⁶ Another example is OCBC's A.I. Oscar, which is an AI-driven virtual trading assistant.⁶⁷ Built on a sophisticated deep-learning network and trained with extensive daily market data,⁶⁸ A.I. Oscar aims to anticipate shifts in stock prices and deliver highly-customised stock recommendations for its users.⁶⁹

Beyond consumer-facing robo-advisors, financial institutions are also using AI internally to enhance their investment and wealth management services. For instance, in September 2025, HSBC Bank unveiled Wealth Intelligence, which is a GenAI-driven solution that supports its investment counsellors and product specialists in delivering in-depth market analysis and tailored investment recommendations to clients.⁷⁰

E. Credit Risk Assessment

Financial institutions are increasingly adopting AI to improve the accuracy and inclusivity of credit risk assessment. Traditional non-AI credit-scoring models relied on limited parameters, producing less precise risk evaluations.⁷¹ In contrast, modern AI-driven credit-scoring models can analyse more variables⁷² and larger volumes of structured and unstructured data, including

⁶² *Ibid*, p. 1.

⁶³ Singh, "Applications of Artificial Intelligence," *supra* note 51, p. 7.

⁶⁴ Kashyap, "The Rise of Robo-Advisors," *supra* note 63, p. 3.

⁶⁵ Domenica Barile, Giustina Secundo and Candida Bussoli, "Exploring Artificial Intelligence Robo-Advisor in Banking Industry: A Platform Model" (2024) *Management Decision* <<https://doi.org/10.1108/MD-08-2023-1324>>, p. 2.

⁶⁶ "Artificial Intelligence: The Future of Banking & Finance" (DBS, 18 April 2023) <<https://www.dbs.com/artificial-intelligence-machine-learning/artificial-intelligence/ai-the-future-of-banking-and-finance.html>>; "digiPortfolio" (DBS) <<https://www.dbs.com.sg/personal/investments/other-investments/dbs-digiportfolio>> accessed 30 June 2026.

⁶⁷ "A.I. Oscar—The Benefits of AI in Your Trading Journey" (OCBC Securities, 01 January 2025) <<https://www.iocbc.com/insights/product-education/the-benefits-of-ai-in-investment-strategies>>.

⁶⁸ "A.I. Oscar Ideas" (OCBC Securities) <<https://www.iocbc.com/insights/ai-oscar>> accessed 30 June 2026.

⁶⁹ "OCBC Securities to triple young active investors with launch of Singapore's first AI stock-picker" (OCBC, 18 June 2024) <<https://www.ocbc.com/group/media/release/2024/ocbc-securities-to-triple-young-active-investors-with-launch-of-singapore-first-ai-stock-picker>>.

⁷⁰ "HSBC deploys Wealth Intelligence for its wealth management staff to enhance client experience" (HSBC Bank ("HSBC"), 16 September 2025) <<https://www.privatebanking.hsbc.com/media-releases-and-news/hsbc-deploys-wealth-intelligence/#:~:text=HSBC%20Private%20Bank%20today%20announced,insights%20and%20personalised%20investment%20strategies>>.

⁷¹ Ridzuan, "AI in the Financial Sector," *supra* note 46, p. 5.

⁷² *Ibid*.

customers' spending habits, transaction records, and social media activities.⁷³ These AI-driven models thus enable financial institutions to make more informed credit evaluations and lower the likelihood of loan defaults.⁷⁴ Further, AI-driven credit assessment promotes financial inclusion by helping underserved borrowers, including those without credit history, to access loans that traditional credit-scoring models would likely deny.⁷⁵

A case in point is JPMorgan, which leverages AI in its credit risk assessment.⁷⁶ JPMorgan builds a more comprehensive and accurate view of borrowers' creditworthiness by using machine learning algorithms to analyse large datasets that range from traditional financial records to alternative sources, including transaction histories and online activities.⁷⁷ This AI capability yielded significant benefits for JPMorgan within the first year of its implementation, as it successfully lowered default rates by 20% and reduced operational expenses by 15%.⁷⁸ Similarly, local banks are also adopting AI to strengthen their credit risk assessments. For instance, DBS uses AI to generate credit memos⁷⁹ and provide early warnings of credit risks for Small and Medium Enterprises ("SME").⁸⁰ By identifying potential credit issues before they materialise, DBS can proactively support SMEs in resolving them. This approach has proven highly effective. In 2022, DBS successfully detected "over 95% of non-performing SME loans at least three months before the businesses experienced credit stress", helping more than 80% of these at-risk borrowers avoid default.⁸¹

III. Risks of Using AI in Finance in Singapore

The use of AI in financial institutions introduces various risks, including such as concerns around transparency, data privacy and cybersecurity, fairness, accountability, copyright infringement, GenAI hallucinations, deepfakes and control and risk management of AI Agents.

A. Transparency-Related Risks

The use of AI often raises transparency concerns, as the internal decision-making processes of AI models may be opaque or too complex for users to fully understand.⁸² This challenge is

⁷³ Md Masud Kowsar, "The Impact of Artificial Intelligence on Credit Risk Assessment in Global Banking and Investment" (2025) SSRN <<https://dx.doi.org/10.2139/ssrn.5497339>>, p. 20.

⁷⁴ Ridzuan, "AI in the Financial Sector," *supra* note 46, p. 5.

⁷⁵ Kowsar, "The Impact of Artificial Intelligence on Credit Risk Assessment", *supra* note 76, pp. 6, 20.

⁷⁶ Anshul Vyas, "Revolutionizing Risk: The Role of Artificial Intelligence in Financial Risk Management, Forecasting, and Global Implementation" (2025) SSRN <<https://dx.doi.org/10.2139/ssrn.5224657>>, p. 10.

⁷⁷ "10 ways JP Morgan is using AI [In Depth Case Study][2025]" (*DigitalDefynd Education*) <<https://digitaldefynd.com/IQ/jp-morgan-using-ai-case-study/>> accessed 30 June 2026.

⁷⁸ "AI: Driving Smarter, Faster Credit Risk Decisions for Banks" (*Cedar Rose*, 13 January 2025) <<https://www.cedar-rose.com/blog/ai-driving-smarter-faster-credit-risk-decisions-for-banks>>.

⁷⁹ "Bank of Singapore's new AI tool can do in one hour what took staff 10 days" (*The Straits Times*, 10 October 2025) <<https://www.straitstimes.com/business/bank-of-singapores-ai-tool-can-draft-source-of-wealth-reports-in-an-hour-from-usual-10-days>>.

⁸⁰ "DBS' AI-powered digital transformation" (*DBS*, 07 August 2023) <<https://www.dbs.com/artificial-intelligence-machine-learning/artificial-intelligence/dbs-ai-powered-digital-transformation.html>>.

⁸¹ *Ibid*; "How DBS, Southeast Asia's largest bank, is capturing the full value of AI and Machine Learning in Singapore" (*Singapore Economic Development Board ("EDB")*, 29 September 2024) <<https://www.edb.gov.sg/en/business-insights/insights/how-dbs-southeast-asias-largest-bank-is-capturing-the-full-value-of-ai-and-machine-learning-in-singapore.html>>.

⁸² Ridzuan, "AI in the Financial Sector," *supra* note 46, p. 15.

often referred to as the “black box” problem,⁸³ which stems from a lack of explainability – i.e. the inability to explain how an AI model operates and why it makes certain decisions.⁸⁴ This problem is exacerbated by the emergence of GenAI models, which are inherently more complex as they utilise vast datasets to train multiple layers of interconnected algorithms to detect patterns within data.⁸⁵ Coupled with the risk of hallucinations, it is thus more challenging to trace the specific source of a given output generated by a GenAI model.⁸⁶

Transparency-related risks are further intensified when financial institutions utilise third-party AI models, which is an increasingly common practice today.⁸⁷ Third-party AI providers often withhold proprietary details about their AI models,⁸⁸ primarily to protect their intellectual property (“IP”).⁸⁹ As a result, financial institutions struggle to fully understand or explain the inner workings and decision-making processes of these GenAI models that have been pre-trained by third-party AI providers.

Such transparency risks may lead to various adverse consequences for financial institutions. Critically, when a financial institution is unable to understand its AI models (whether developed in-house or acquired from third-party developers), or explain their outputs to the public or regulators due to the models’ black box nature, the financial institution exposes itself to greater compliance risks and potential reputational damage.⁹⁰

B. Data Privacy and Cybersecurity Risks

Data privacy concerns arise as AI models deployed by financial institutions may gain access to large amounts of “sensitive and confidential data”⁹¹ through the following channels. First, many AI models are trained on massive datasets that may inadvertently contain some private financial records.⁹² Second, to facilitate seamless operations, financial institutions’ AI models often collect and analyse vast volumes of confidential customer data, including personal details and financial records.⁹³ Third, some AI models are capable of extracting publicly available

⁸³ *Ibid*; ABS, *Industry Perspectives on Best Practices*, *supra* note 34, p. 18.

⁸⁴ MAS, *Emerging Risks and Opportunities*, *supra* note 4, p. 70; ABS, *Industry Perspectives on Best Practices*, *supra* note 34, p. 18.

⁸⁵ “Understanding generative AI: Capabilities, risks & more” (Government Technology Agency of Singapore, 07 July 2023) <<https://www.tech.gov.sg/technews/generative-ai-where-can-it-go-wrong/>>.

⁸⁶ Remolina, “Generative AI in Finance,” *supra* note 50, p. 9.

⁸⁷ MAS, *Artificial Intelligence Model Risk Management*, *supra* note 34, [7.2.1].

⁸⁸ *Ibid*.

⁸⁹ “Veritas Document 3A: FEAT Fairness Principles Assessment Methodology” (MAS, 2022) <<https://www.mas.gov.sg/-/media/mas-media-library/news/media-releases/2022/veritas-document-3a---feat-fairness-principles-assessment-methodology.pdf>>, p. 49; “Veritas Document 3C: FEAT Transparency Principles Assessment Methodology” (MAS, 2022) <<https://www.mas.gov.sg/-/media/mas-media-library/news/media-releases/2022/veritas-document-3c---feat-transparency-principles-assessment-methodology.pdf>>, p. 38.

⁹⁰ BIS, *Governance of AI Adoption in Central Banks*, *supra* note 39, pp. 7, 9.

⁹¹ “AI for Risk-Based Supervision: Another Nice to Have Tool or a Game-Changer” (World Bank, 2025) <<https://documents1.worldbank.org/curated/en/099021725190042788/pdf/P503970-2c607262-8673-4797-b5a6-52df7187e543.pdf>>, p. 30.

⁹² Remolina, “Generative AI in Finance,” *supra* note 50, p. 10.

⁹³ Ridzuan, “AI in the Financial Sector,” *supra* note 46, p. 12; Britney Johnson, “Artificial Intelligence and Cybersecurity in Banking Sector: Opportunities and Risks” (2025) *ResearchGate* <<https://www.researchgate.net/publication/391662734>>, p. 17.

information from online sources, including social media platforms.⁹⁴ While this capability may support tasks like credit assessment and fraud detection, it also raises concerns about unintended collection and usage of personal data that would typically require explicit user consent.⁹⁵ Fourth, when users include confidential or proprietary information in their prompts to AI models, the AI models may retain and reuse such information in future model iterations or training cycles.⁹⁶

Data privacy risks materialise when data leakage occurs, such as when employees of financial institutions enter confidential corporate and/or personal information into publicly available GenAI tools like ChatGPT and Gemini.⁹⁷ While there are no reported instances in the financial sector, such incidents have occurred in other industries. For instance, in March 2023, Samsung Electronics reported three cases of corporate data leakage, as its employees entered confidential corporate data, including meeting notes and source code, into ChatGPT.⁹⁸ This highlights the potential risk for financial institutions, as their employees may unknowingly commit the same mistake of entering confidential information into GenAI prompts.⁹⁹ Moreover, the terms and conditions of several GenAI platforms expressly write that they do not guarantee “the security and confidentiality” of user-provided information.¹⁰⁰ This underscores the potential data privacy risks of using publicly available GenAI platforms.¹⁰¹

Further, data privacy risks may also arise when an AI model’s cybersecurity is compromised, such as when data poisoning¹⁰², prompt injection¹⁰³ or jailbreak attacks¹⁰⁴ occur.¹⁰⁵ These attacks generally aim to undermine the integrity of AI models so as to extract or expose confidential information. Collectively, these data privacy and cybersecurity risks highlight the critical need for financial institutions to implement robust data protection frameworks and safeguards.

C. Accountability-Related Risks

⁹⁴ “Generative Artificial Intelligence in Finance: Risk Considerations” (*International Monetary Fund (“IMF”), 2023*) <<https://www.imf.org/en/Publications/fintech-notes/Issues/2023/08/18/Generative-Artificial-Intelligence-in-Finance-Risk-Considerations-537570>>, p. 6.

⁹⁵ *Ibid.*

⁹⁶ BIS, *Governance of AI Adoption in Central Banks*, *supra* note 39, p. 8; “Generative Artificial Intelligence in Finance” (*Organisation for Economic Co-operation and Development (“OECD”), 2023*) <https://www.oecd.org/content/dam/oecd/en/publications/reports/2023/12/generative-artificial-intelligence-in-finance_37bb17c6/ac7149cc-en.pdf>, p. 21.

⁹⁷ MAS, *Cyber Risks Associated with Generative Artificial Intelligence*, *supra* note 33, p. 9.

⁹⁸ “Samsung finds chip-related data leak due to use of ChatGPT: Korean media” (*China Global Television Network*, 03 April 2023) <<https://news.cgtn.com/news/2023-04-03/Samsung-finds-data-leak-due-to-use-of-ChatGPT-Korean-media-1iHSzPcMDEk/index.html>>; MAS, *Cyber Risks Associated with Generative Artificial Intelligence*, *supra* note 33, p. 10.

⁹⁹ IMF, *Generative Artificial Intelligence in Finance*, *supra* note 97, p. 5.

¹⁰⁰ *Ibid.*

¹⁰¹ Remolina, “Generative AI in Finance,” *supra* note 50, p. 10.

¹⁰² FSI, *Regulating AI in the Financial Sector*, *supra* note 6, [61]: Data poisoning attacks “attempt to corrupt and contaminate training data to compromise the system’s performance”.

¹⁰³ MAS, *Cyber Risks Associated with Generative Artificial Intelligence*, *supra* note 33, p. 9: “In a prompt injection attack, the threat actor provides a malicious input to lead the GenAI model into revealing sensitive information in the generated response.”

¹⁰⁴ *Ibid.*: In a jailbreak attack, “the threat actor uses specially crafted prompts to bypass the security controls and safeguards implemented to make the GenAI solution disclose sensitive information.”

¹⁰⁵ IMF, *Generative Artificial Intelligence in Finance*, *supra* note 97, p. 10.

As AI systems operate with increasing autonomy and complexity, questions of accountability become more difficult to resolve.¹⁰⁶ This is due to the greater challenge of attributing liability to a single entity or individual.¹⁰⁷ For instance, when a bank uses a third-party AI model to generate investment advice that proves to be inaccurate and results in the customers suffering financial losses, it is unclear who should be held accountable.¹⁰⁸ Would it be the external developer that created the AI model, the bank that deployed the AI model, or the AI model itself?¹⁰⁹ In cases where financial institutions rely on AI models developed in-house, the same ambiguity remains as to whether accountability rests with the bank or the AI model. Amid these regulatory ambiguities, financial institutions in Hong Kong have explicitly requested for clearer guidance on how accountability should be allocated between AI developers and financial institution as end-users.¹¹⁰ Given the parallels in regulatory frameworks and the increasing adoption of AI across financial sector in both Hong Kong and Singapore, financial institutions in Singapore are likely to face similar accountability challenges.

Also, accountability-related risks may arise from internal governance challenges. For example, financial institutions may lack a clearly defined internal chain of accountability,¹¹¹ or senior managers overseeing GenAI-driven decisions may not have sufficient technical knowledge and training.¹¹² These governance challenges are exacerbated by the inherent opacity of AI models, as their black box nature makes it difficult for financial institutions to fully understand and mitigate the risks of the AI models.¹¹³ Without a robust internal governance framework, financial institutions may struggle to ensure effective accountability to key stakeholders, including regulators, shareholders, and customers.

D. Bias and Fairness-Related Risks

AI models are trained using large datasets which may contain unfair biases that misrepresent or disadvantage certain individuals.¹¹⁴ Consequently, these AI models may unintentionally perpetuate such biases in their outputs by generating discriminatory content,¹¹⁵ such as “sexist, racist, or homophobic content”.¹¹⁶ For example, a bank’s credit model that is trained on past human decisions containing gender biases, or on historical data indicating that women generally earned less and/or received less education than men,¹¹⁷ may unfairly approve fewer

¹⁰⁶ Vyas, “Revolutionizing Risk,” *supra* note 79, p. 4.

¹⁰⁷ Lin, *Artificial Intelligence in China’s Banking Sector*, *supra* note 25, p. 20.

¹⁰⁸ Carlotta Rinaldo, “Automation in Investment Advice: A European Perspective” (2023) *Revista de Derecho Privado* 45 <<http://orcid.org/0000-0001-9203-7983>>, p. 330.

¹⁰⁹ Harrison Blake, “Algorithmic Accountability: Establishing Frameworks for Transparency and Responsibility in AI-driven Decisions” (2024) *ResearchGate* <<https://www.researchgate.net/publication/387381860>>, p. 5.

¹¹⁰ “Financial Services in the Era of Generative AI: Facilitating Responsible Adoption” (*Hong Kong Institute for Monetary and Financial Research (“HKIMR”)*, 2025) <https://www.aof.org.hk/docs/default-source/hkimr/applied-research-report/genairepl.pdf?sfvrsn=7b0261f_0>, p. 44.

¹¹¹ MAS, *Emerging Risks and Opportunities*, *supra* note 4, p. 68.

¹¹² HKIMR, *Financial Services in the Era of Generative AI*, *supra* note 113, p. 39.

¹¹³ MAS, *Emerging Risks and Opportunities*, *supra* note 4, p. 68.

¹¹⁴ MAS, *Artificial Intelligence Model Risk Management*, *supra* note 34, [6.3.13].

¹¹⁵ *Ibid.*

¹¹⁶ World Bank, *AI for Risk-Based Supervision*, *supra* note 94, pp. 28-29.

¹¹⁷ “Implementation of Fairness Principles in Financial Institutions’ Use of Artificial Intelligence / Machine Learning: Observations from a Thematic Review” (MAS, 2022) <<https://www.mas.gov.sg/-/media/mas-media->

loans for women, even if their creditworthiness matches or exceeds that of their male counterparts.¹¹⁸ This shows that biasness in training data may lead to unfair decisions and negative outcomes,¹¹⁹ especially for the historically disadvantaged and underrepresented groups.¹²⁰

This issue is amplified in GenAI models as they are trained on far larger and more diverse datasets.¹²¹ Further, their outputs may reflect not only biases found in their training data, but also human biases embedded in the prompts directed to them.¹²²

E. Other Risks Unique to GenAI

1. Hallucinations

GenAI has the tendency to hallucinate, i.e. to produce information that seems credible but is in fact completely fictitious¹²³ or factually inaccurate.¹²⁴ This phenomenon is widely recognised as one of the principal risks associated with GenAI¹²⁵ and a major concern for financial institutions.¹²⁶

Hallucinations may pose substantial dangers when GenAI is used in “mission-critical” contexts requiring precise and accurate information.¹²⁷ For example, if GenAI hallucinates when deployed in customer-facing services without human oversight,¹²⁸ it may provide customers with factually inaccurate financial advice, spreading misinformation and causing dire consequences. This will erode public trust in both the GenAI models¹²⁹ and the financial institutions deploying them.¹³⁰

2. Deepfakes

GenAI may also be exploited to generate highly persuasive deepfake content,¹³¹ which are essentially AI-created copies of videos, images, or audios.¹³² Deepfake content can be used maliciously to spread misinformation¹³³ and facilitate financial crimes such as phishing scams,

library/publications/monographs-or-information-paper/imd/2022/info-paper-on-implementation-of-fairness-principles-in-fis-use-of-aiml-final.pdf>, [2.5].

¹¹⁸ *Ibid.*

¹¹⁹ Remolina, “Generative AI in Finance,” *supra* note 50, p. 10.

¹²⁰ Joseph O. Witts, “Leveraging Artificial Intelligence (AI) for Banks in Emerging Markets” (2024) *Journal of Advanced Management Science* 12 <<https://doi.org/10.18178/joams.12.4.167-172>>, p. 170.

¹²¹ MAS, *Emerging Risks and Opportunities*, *supra* note 4, p. 61.

¹²² Remolina, “Generative AI in Finance,” *supra* note 50, p. 10.

¹²³ MAS, *Emerging Risks and Opportunities*, *supra* note 4, p. 70.

¹²⁴ World Bank, *AI for Risk-Based Supervision*, *supra* note 94, p. 29.

¹²⁵ MAS, *Emerging Risks and Opportunities*, *supra* note 4, p. 70.

¹²⁶ MAS, *Artificial Intelligence Model Risk Management*, *supra* note 34, [7.1.1.a].

¹²⁷ *Ibid.*, [2.5]; Remolina, “Generative AI in Finance,” *supra* note 50, p. 9.

¹²⁸ MAS, *Artificial Intelligence Model Risk Management*, *supra* note 34, [7.1.5].

¹²⁹ MAS, *Emerging Risks and Opportunities*, *supra* note 4, p. 70.

¹³⁰ Remolina, “Generative AI in Finance,” *supra* note 50, p. 9.

¹³¹ MAS, *Emerging Risks and Opportunities*, *supra* note 4, p. 64.

¹³² MAS, *Cyber Risks Associated with Generative Artificial Intelligence*, *supra* note 33, p. 4.

¹³³ MAS, *Emerging Risks and Opportunities*, *supra* note 4, p. 64.

identity theft, and fraud.¹³⁴ These activities may cause significant financial losses to both consumers and financial institutions, as well as lasting reputational damage to financial institutions. The threat of deepfakes is further amplified by the growing accessibility and capabilities of GenAI tools,¹³⁵ enabling malicious actors to generate deepfakes easily with minimal technical expertise.¹³⁶

The growing threat of deepfakes is evident from a surge in deepfake-related incidents globally, including in Singapore. In late March 2025, a finance director of a Singapore-based multinational company was tricked into transferring US\$499,000 to fraudsters, after receiving instructions from deepfake impersonations of the company's CEO and other colleagues in a fake Zoom meeting.¹³⁷ Moreover, in March 2025 and December 2023 respectively, Singapore's Prime Minister Lawrence Wong¹³⁸ and Senior Minister Lee Hsien Loong¹³⁹ warned the general public against deepfake scams which depict prominent office holders like themselves promoting financial products online.¹⁴⁰ These real-life examples illustrate the increasing risks of deepfakes and their potential to disrupt financial markets, including Singapore's, and harm the global economy.¹⁴¹

F. Agentic AI: Risk Management and Control

The goal of minimal human intervention and independence of Agentic AI can be a double-edged sword. The coordinated activity of multiple AI agents is prone to collusive behaviour between AI agents. This creates the risk of Agentic AI hiding their own misdeeds and "rogue behaviour", such as hacking, from human oversight.¹⁴² For instance, in July 2026, approximately 700 AI Agents acted in a coordinated swarm and hacked the open-source platform Hugging Face. The AI Agents even attempted to cover their tracks in many cases.¹⁴³ This example highlights the need for effective guardrails and sandboxing against Agentic AI, which may attempt to act beyond intended parameters and evade human oversight.

¹³⁴ Johnson, "Artificial Intelligence and Cybersecurity in Banking Sector," *supra* note 96, p. 16.

¹³⁵ "Artificial Intelligence in Financial Services" (*World Economic Forum ("WEF")*, 2025) <https://reports.weforum.org/docs/WEF_Artificial_Intelligence_in_Financial_Services_2025.pdf>, p. 16; "Accenture Invests in Reality Defender to Help Fight Deepfake Extortion, Fraud and Disinformation" (*Accenture*, 22 October 2024) <<https://newsroom.accenture.com/news/2024/accenture-invests-in-reality-defender-to-help-fight-deepfake-extortion-fraud-and-disinformation>>: Accenture reported "a 223% spike in deepfake-related tool trading on dark web forums in the first quarter of 2024, compared to the same period in 2023".

¹³⁶ "Cyber Risks Associated with Deepfakes" (*MAS*, 2025) <<https://www.mas.gov.sg/-/media/mas-media-library/regulation/circulars/trpd/cyber-risks-associated-with-deepfakes.pdf>>, p. 3.

¹³⁷ *Ibid*, p. 10; "Company finance director nearly loses over US\$499,000 to scammers using deepfake to impersonate CEO" (*CNA*, 07 April 2025) <<https://www.channelnewsasia.com/singapore/deepfake-scam-impersonate-ceo-company-finance-director-5048706>>.

¹³⁸ "PM Wong warns against scammers using deepfakes or his images in online ads" (*The Straits Times*, 07 March 2025) <<https://www.straitstimes.com/singapore/pm-wong-warns-against-scammers-using-deepfakes-or-his-images-in-online-ads>>.

¹³⁹ "PM Lee warns against responding to deepfake videos of him promoting investment scams" (*The Straits Times*, 04 January 2024) <<https://www.straitstimes.com/singapore/pm-lee-warns-against-responding-to-deepfake-videos-of-him-promoting-investment-scams>>.

¹⁴⁰ MAS, *Cyber Risks Associated with Deepfakes*, *supra* note 139, p. 14.

¹⁴¹ WEF, *Artificial Intelligence in Financial Services*, *supra* note 155, p. 16.

¹⁴² "OpenAI agents hacked Hugging Face in 700-strong swarm, tried to cover tracks, investigations find" (*CNA*, 27 Aug 2026) <<https://www.channelnewsasia.com/business/openai-agents-hacked-hugging-face-in-700-strong-swarm-tried-cover-tracks-investigations-find-6343476>>.

¹⁴³ *Ibid*.

IV. Regulating AI in Finance in Singapore

A. National Policies

1. National AI Strategy

In November 2019, Singapore launched its first *National AI Strategy* (“NAIS”),¹⁴⁴ becoming one of the first nations with a national AI roadmap.¹⁴⁵ Building on this foundation, Singapore unveiled an updated *NAIS 2.0*¹⁴⁶ in December 2023, outlining a renewed vision for AI in Singapore. Guided by its vision of “AI for the Public Good, for Singapore and the World”, *NAIS 2.0* aims to achieve the twin goals of Excellence and Empowerment.¹⁴⁷

As part of Singapore’s NAIS, MAS and the Smart Nation and Digital Government Office jointly launched the *National AI Programme in Finance* in November 2021 to strengthen the AI capabilities of Singapore’s financial sector and position Singapore as an international hub for Artificial Intelligence and Data Analytics (“AIDA”) solutions.¹⁴⁸ Industry-wide initiatives like NovA!¹⁵⁰ and Veritas¹⁵¹ provide financial institutions with advanced AI solutions for insight generation.¹⁵² Further, MAS supports the AIDA ecosystem through the AIDA Grant¹⁵³ and the AIDA Talent Development Programme.¹⁵⁴

2. Model AI Governance Frameworks

Building on Singapore’s NAIS efforts, the Infocomm Media Development Authority (“IMDA”) and the Personal Data Protection Commission (“PDPC”) released the world’s first¹⁵⁵ voluntary *Model AI Governance Framework* (“MGF”) in January 2020.¹⁵⁶ The MGF promotes “explainable, transparent, fair, [and] human-centric” AI decision-making and

¹⁴⁴ “National AI Strategy” (Smart Nation Singapore, 2019) <<https://file.go.gov.sg/nais2019.pdf>>.

¹⁴⁵ “National AI Strategy 2.0” (Smart Nation Singapore, 2023) <<https://file.go.gov.sg/nais2023.pdf>>, p. 7.

¹⁴⁶ *Ibid.*

¹⁴⁷ “National AI Strategy” (Smart Nation Singapore) <<https://www.smartnation.gov.sg/initiatives/national-ai-strategy>> accessed 30 June 2026.

¹⁴⁸ “Principles to Promote Fairness, Ethics, Accountability and Transparency (FEAT) in the Use of Artificial Intelligence and Data Analytics in Singapore’s Financial Sector” (MAS, 2018) <<https://www.mas.gov.sg/-/media/mas/news-and-publications/monographs-and-information-papers/feat-principles-updated-7-feb-19.pdf>>, [3.2]: “AIDA” refers to “technologies that assist or replace human decision-making.”

¹⁴⁹ “National programme to deepen AI capabilities in financial services” (MAS, 08 November 2021) <<https://www.mas.gov.sg/news/media-releases/2021/national-programme-to-deepen-ai-capabilities-in-financial-services>>.

¹⁵⁰ “AI Utility NovA! to Unlock Opportunities for Green Financing and Combat Greenwashing” (MAS, 21 June 2022) <<https://www.mas.gov.sg/news/media-releases/2022/ai-utility-nova-to-unlock-opportunities-for-green-financing-and-combat-greenwashing>>.

¹⁵¹ “Veritas Initiative” (MAS, 26 October 2023) <<https://www.mas.gov.sg/schemes-and-initiatives/veritas>>.

¹⁵² “AIDA in Finance” (MAS) <<https://www.mas.gov.sg/development/ai-in-finance>> accessed 30 June 2026.

¹⁵³ “Artificial Intelligence and Data Analytics (AIDA) Grant” (MAS, 13 October 2021) <<https://www.mas.gov.sg/schemes-and-initiatives/artificial-intelligence-and-data-analytics-aida-grant>>: “The Artificial Intelligence and Data Analytics (AIDA) Grant was launched as part of the Financial Sector Technology and Innovation (FSTI) scheme under the Financial Sector Development Fund (FSDF) to promote AIDA adoption and strengthen the ecosystem.”

¹⁵⁴ “AIDA Talent Development Programme” (MAS, 22 May 2023) <<https://www.mas.gov.sg/schemes-and-initiatives/aida-talent-development-programme>>: “The Artificial Intelligence and Data Analytics (AIDA) Talent Development Programme was launched in 2023 with the objective of increasing the AIDA talent pipeline to support innovation and the development of deep AI capabilities in the financial sector. The initiative is part of the National AI Programme in Finance.”

¹⁵⁵ Smart Nation Singapore, *National AI Strategy 2.0*, *supra* note 149, p. 7.

¹⁵⁶ IMDA and PDPC, *Model AI Governance Framework*, *supra* note 1.

solutions.¹⁵⁷ To help organisations assess their alignment with the MGF, IMDA and PDPC released the *Implementation and Self-Assessment Guide for Organisations* (“ISAGO”)¹⁵⁸ as a companion guide to the MGF.¹⁵⁹ Also, IMDA and PDPC released the *Compendium of Use Cases*,¹⁶⁰ which complements the MGF and ISAGO by illustrating how organisations have implemented responsible AI governance practices and derived tangible benefits from using AI in their businesses.¹⁶¹

With the advent of GenAI, the AI Verify Foundation (“AIVF”), which is a non-profit, wholly-owned subsidiary of the IMDA,¹⁶² and IMDA released the *Model AI Governance Framework for Generative AI* (“MGF for GenAI”) in May 2024,¹⁶³ expanding on the earlier MGF for traditional AI.¹⁶⁴ The MGF for GenAI sets out nine dimensions¹⁶⁵ to guide responsible adoption of GenAI while preserving room for innovation.¹⁶⁶

Most recently in May 2026, IMDA published the *Model AI Governance Framework for Agentic AI* (“MGF for Agentic AI”) which provides “a structured overview of the risks of agentic AI and emerging best practices in managing these risks”.¹⁶⁷ The MGF for Agentic AI builds on the earlier two MGFs (as discussed above) and outlines four key areas of consideration for Agentic AI.¹⁶⁸

3. Other IMDA Initiatives

i. AI Verify

Following the launch of Singapore’s NAIS and MGF, IMDA and PDPC introduced AI Verify in May 2022.¹⁶⁹ As the world’s first AI Governance Testing Framework and Toolkit, AI Verify enables companies to showcase their responsible AI practices through objective assessments.¹⁷⁰ The AI Verify Testing Framework enables organisations to assess their AI

¹⁵⁷ *Ibid*, [2.7].

¹⁵⁸ “Implementation and Self-Assessment Guide for Organisations” (IMDA and PDPC, 2020) <<https://www.pdpc.gov.sg/-/media/Files/PDPC/PDF-Files/Resource-for-Organisation/AI/SGIsago.pdf>>.

¹⁵⁹ “Singapore’s Approach to AI Governance” (PDPC) <<https://www.pdpc.gov.sg/help-and-resources/2020/01/model-ai-governance-framework>> accessed 30 June 2026.

¹⁶⁰ IMDA and PDPC, *Compendium of Use Cases*, *supra* note 44; “Compendium of Use Cases: Practical Illustrations of the Model AI Governance Framework (Volume 2)” (IMDA and PDPC, 2020) <<https://file.go.gov.sg/ai-gov-use-cases-2.pdf>>.

¹⁶¹ “Singapore’s Approach to AI Governance,” PDPC, *supra* note 163.

¹⁶² “AI Verify Foundation” (AIVF) <<https://aiverifyfoundation.sg/ai-verify-foundation/>> accessed 30 June 2026.

¹⁶³ AIVF and IMDA, *Model AI Governance Framework for Generative AI*, *supra* note 19.

¹⁶⁴ “Model AI Governance Framework for Generative AI” (AIVF) <<https://aiverifyfoundation.sg/resources/mgf-gen-ai/-proposed-model-governance-framework-for-generative-ai>> accessed 30 June 2026.

¹⁶⁵ *Ibid*: The nine dimensions are Accountability, Data, Trusted Development and Deployment, Incident Reporting, Testing and Assurance, Security, Content Provenance, Safety and Alignment R&D, and AI for Public Good.

¹⁶⁶ *Ibid*.

¹⁶⁷ “Model AI Governance Framework for Agentic AI” (IMDA, 2026) <<https://www.imda.gov.sg/-/media/imda/files/about/emerging-tech-and-research/artificial-intelligence/mgf-for-agentic-ai.pdf>>, p. 3.

¹⁶⁸ *Ibid*, pp. 3-4.

¹⁶⁹ “Singapore launches world’s first AI testing framework and toolkit to promote transparency; Invites companies to pilot and contribute to international standards development” (IMDA, 22 May 2022) <<https://www.imda.gov.sg/resources/press-releases-factsheets-and-speeches/press-releases/2022/sg-launches-worlds-first-ai-testing-framework-and-toolkit-to-promote-transparency>>.

¹⁷⁰ *Ibid*.

systems against 11 internationally accepted AI governance principles.¹⁷¹ The AI Verify Toolkit is “a single integrated software toolkit” which can run technical tests on AI models, document processes, and generate testing reports that companies can share with shareholders to enhance transparency.¹⁷²

ii. Project Moonshot

In May 2024, IMDA and AIVF launched Project Moonshot,¹⁷³ a pioneering open-sourced Large Language Model (“LLM”) evaluation toolkit that combines red-teaming, benchmarking, and baseline testing in a user-friendly manner.¹⁷⁴ This toolkit is designed to deliver clear insights into an AI model’s quality and safety in a manner that can be easily understood even by those without the relevant technical expertise.¹⁷⁵

iii. Global AI Assurance Pilot and Sandbox

Launched in February 2025 by AIVF and IMDA,¹⁷⁶ and concluded in May 2025,¹⁷⁷ the Global AI Assurance Pilot (the “Pilot”) established best practices for technical assessment of GenAI systems.¹⁷⁸ The Pilot matched 17 organisations deploying real-world GenAI models with 16 expert AI testing companies across 10 industries including banking.¹⁷⁹ In the banking sector, Standard Chartered Bank and PricewaterhouseCoopers (“PwC”) tested a GenAI solution which generates personalised client emails,¹⁸⁰ while UOB and PwC evaluated an internal GenAI chatbot.¹⁸¹ Both cases tested for risks such as accuracy, robustness, completeness and hallucinations.¹⁸²

¹⁷¹ “AI Verify Testing Framework” (AIVF) <<https://aiverifyfoundation.sg/what-is-ai-verify/>> accessed 30 June 2026: The 11 governance principles are transparency, explainability, repeatability/reproducibility, safety, security, robustness, fairness, data governance, accountability, human agency and oversight, and inclusive growth, societal and environmental well-being.

¹⁷² “Singapore’s Approach to AI Governance,” PDPC, *supra* note 163.

¹⁷³ “Project Moonshot: An LLM Evaluation Toolkit” (AIVF) <<https://aiverifyfoundation.sg/project-moonshot/>> accessed 30 June 2026.

¹⁷⁴ “Singapore launches Project Moonshot – a generative Artificial Intelligence testing toolkit to address LLM safety and security challenges” (IMDA, 31 May 2024) <<https://www.imda.gov.sg/resources/press-releases-factsheets-and-speeches/press-releases/2024/singapore-launches-project-moonshot>>.

¹⁷⁵ *Ibid.*

¹⁷⁶ “Singapore announces new AI Safety initiatives at the global AI Action Summit in France” (IMDA, 11 February 2025) <<https://www.imda.gov.sg/resources/press-releases-factsheets-and-speeches/press-releases/2025/singapore-ai-safety-initiatives-global-ai-summit-france>>.

¹⁷⁷ “Singapore Unveils Insights from World’s First Technical Testing of Real World Applications of GenAI” (IMDA, 29 May 2025) <<https://www.imda.gov.sg/resources/press-releases-factsheets-and-speeches/press-releases/2025/singapore-unveils-insights-from-worlds-first-technical-testing-of-real-world-applications-of-genai>>.

¹⁷⁸ “Global AI Assurance Pilot” (AIVF) <<https://assurance.aiverifyfoundation.sg/pilot-overview/>> accessed 30 June 2026; Jonathan Lee, Kwan Yee Ng, and Brian Tse, “State of AI Safety in Singapore (2026)” (Concordia AI, May 2026) <<https://concordia-ai.com/research/state-of-ai-safety-in-singapore/>>, p. 9.

¹⁷⁹ IMDA, “Singapore Unveils Insights,” *supra* note 181, [2]; “Global AI Assurance Pilot Main Report: Testing Real World GenAI Systems” (AIVF and IMDA, 2025) <<https://assurance.aiverifyfoundation.sg/wp-content/uploads/2025/06/Assurance-Pilot-Main-Report.pdf>>, pp. 00, 03.

¹⁸⁰ “Global AI Assurance Pilot: Wealth Relationship Manager Client Engagement Mail” (AIVF and IMDA, 2025) <<https://assurance.aiverifyfoundation.sg/wp-content/uploads/2025/05/StanChart-X-PwC-Solutions.pdf>>.

¹⁸¹ “Global AI Assurance Pilot: Internal GenAI Chatbot” (AIVF and IMDA, 2025) <<https://assurance.aiverifyfoundation.sg/wp-content/uploads/2025/05/Internal-GenAI-chatbot.pdf>>.

¹⁸² *Ibid.*; AIVF and IMDA, *Wealth Relationship Manager Client Engagement Mail*, *supra* note 184.

Building upon a successful Pilot, AIVF and IMDA launched the Global AI Assurance Sandbox in July 2025,¹⁸³ expanding its scope to include new archetypes and risks, such as agentic AI and data leakage respectively.¹⁸⁴ This sandbox also welcomes sector regulators to trial and refine their AI governance and testing guidelines.¹⁸⁵ Further, this sandbox draws on IMDA’s newly released *Starter Kit for Safety Testing of LLM-Based Applications*¹⁸⁶ (the “**Starter Kit**”) (discussed below) to provide testers with a more consistent and structured framework.¹⁸⁷

iv. Starter Kit for Safety Testing of LLM-Based Applications

In May 2025, IMDA introduced a pioneering Starter Kit, providing easy-to-follow instructions to help users identify common risks, such as hallucination and data disclosure, and test their GenAI systems responsibly under a voluntary framework.¹⁸⁸ The Starter Kit also helps businesses apply rigorous evaluation methods¹⁸⁹ with the support of testing tools like Project Moonshot (discussed below).¹⁹⁰ This Starter Kit was put up by IMDA for public consultation from May to June 2025.¹⁹¹

B. MAS Regulations and Initiatives

Singapore has no specific legislation on AI finance. Instead, Singapore adopts a “regulator-led, collaborative approach”¹⁹² through the use of soft law instruments introduced by MAS. This soft law approach allows the regulations in Singapore to remain flexible and responsive to the ever-changing, fast-paced nature of AI innovation.

The MAS has stated that it adopts a “technology-neutral approach” with regard to tokenised and non-tokenised capital market products. This means that it determines whether the “economic substance” of a token falls within existing legal and regulatory requirements, that apply to both tokenised and non-tokenised CMPs, following the principle of “same activity, same risk, same regulatory outcome”. MAS’s justification is that “tokenised CMPs are essentially no different from non-tokenised CMPs in economic substance.”¹⁹³

1. Guidelines on Artificial Intelligence Management

¹⁸³ “Global AI Assurance Sandbox” (AIVF) <<https://aiverifyfoundation.sg/ai-assurance/>> accessed 30 June 2026.

¹⁸⁴ “Singapore launches new tools to help businesses protect data and deploy AI in a trusted ecosystem” (IMDA, 07 July 2025) <<https://www.imda.gov.sg/resources/press-releases-factsheets-and-speeches/press-releases/2025/singapore-launches-new-tools-to-help-businesses-protect-data-and-deploy-ai-in-a-trusted-ecosystem>>, [3].

¹⁸⁵ *Ibid.*

¹⁸⁶ “Starter Kit for Safety Testing of LLM-Based Applications” (IMDA, 2025) <<https://www.imda.gov.sg/-/media/imda/files/about/emerging-tech-and-research/artificial-intelligence/large-language-model-starter-kit.pdf>>.

¹⁸⁷ IMDA, “Singapore launches new tools to help businesses,” *supra* note 188, [3].

¹⁸⁸ “Artificial Intelligence in Singapore” (IMDA) <<https://www.imda.gov.sg/about-imda/emerging-technologies-and-research/artificial-intelligence>> accessed 30 June 2026.

¹⁸⁹ *Ibid.*

¹⁹⁰ IMDA, “Singapore Unveils Insights,” *supra* note 181, [5].

¹⁹¹ IMDA, *Starter Kit*, *supra* note 190.

¹⁹² Remolina, “AI Governance and Algorithmic Auditing,” *supra* note 16, p. 2.

¹⁹³ “Guide on the Tokenisation of Capital Markets Products” (MAS, 14 November 2025) <<https://www.mas.gov.sg/regulation/guidelines/guide-on-tokenisation-of-cmps>>, p. 4.

On 13 November 2025, MAS published the *Consultation Paper on Guidelines on Artificial Intelligence Risk Management* (the “**MAS Guidelines**”).¹⁹⁴ The proposed MAS Guidelines are applicable to all financial institutions and “may be applied in a proportionate manner” depending on the financial institution’s size, complexity, and risk profile.¹⁹⁵ The proposed MAS Guidelines articulate “MAS’ expectations on oversight of AI risk management, key AI risk management systems, policies and procedures, key AI life cycle controls, as well as capabilities and capacity needed for the use of AI”.¹⁹⁶

The Guidelines are designed to be broadly applicable to different AI use cases and technologies, including GenAI and emerging applications such as AI agents. MAS recognises that AI is a rapidly evolving field and thus indicates that the Guidelines may be revised where necessary to remain current and effective.¹⁹⁷

These Guidelines are intended to complement the MAS FEAT Principles (see Section (IV)(B)(2) below), as well as key national frameworks such as IMDA’s Model AI Governance Framework (see Section (IV)(A)(2) above) and initiatives by the AI Verify Foundation (see Section (IV)(A)(3)(i) above).¹⁹⁸ Public consultation for the proposed MAS Guidelines closed on 31 January 2026.¹⁹⁹

2. FEAT Principles

In November 2018, MAS introduced the *Principles to Promote Fairness, Ethics, Accountability and Transparency (FEAT) in the Use of Artificial Intelligence and Data Analytics in Singapore’s Financial Sector* (the “**FEAT Principles**”, see Figure 1).²⁰⁰ Jointly developed by MAS and the financial industry, the FEAT Principles guide financial institutions on the responsible usage of AIDA “to strengthen internal governance around data management and use”, and to foster public trust in AIDA applications.²⁰¹

¹⁹⁴ “Consultation Paper on Guidelines on Artificial Intelligence Risk Management” (MAS, 2025) <https://www.mas.gov.sg/-/media/mas-media-library/publications/consultations/bd/2025/final_consultation_paper_on_guidelines_on_ai_risk_management.pdf>.

¹⁹⁵ “Consultation Paper on Proposed Guidelines on Artificial Intelligence Risk Management for Financial Institutions” (MAS, 13 November 2025) <<https://www.mas.gov.sg/publications/consultations/2025/consultation-paper-on-guidelines-on-artificial-intelligence-risk-management>>.

¹⁹⁶ *Ibid.*

¹⁹⁷ *Ibid.*

¹⁹⁸ *Ibid.*

¹⁹⁹ As of 30 September 2026, MAS has yet to release the finalised *Guidelines on Artificial Intelligence Risk Management*.

²⁰⁰ “Principles to Promote Fairness, Ethics, Accountability and Transparency (FEAT) in the Use of Artificial Intelligence and Data Analytics in Singapore’s Financial Sector” (MAS, 12 November 2018) <<https://www.mas.gov.sg/publications/monographs-or-information-paper/2018/feat>>.

²⁰¹ “MAS introduces new FEAT Principles to promote responsible use of AI and data analytics” (MAS, 12 November 2018) <<https://www.mas.gov.sg/news/media-releases/2018/mas-introduces-new-feat-principles-to-promote-responsible-use-of-ai-and-data-analytics>>, [2].

As the FEAT Principles are framed in broad generic terms,²⁰² the greatest challenge back then was to “translate these high-level principles into practice”,²⁰³ which was effectively addressed by the Veritas Initiative (discussed below).

A comparison of the MAS FEAT Principles and the latest MAS Guidelines can be found under the Appendix.

3. Veritas Initiative

As part of Singapore’s NAIS,²⁰⁴ MAS introduced the Veritas Initiative in November 2019 to enable financial institutions to assess their AIDA systems against the FEAT Principles.²⁰⁵ The Veritas Initiative translates high-level, abstract FEAT Principles into clear, actionable practices, through the successful development of practical assessment methodologies, toolkits and accompanying case studies.²⁰⁶ These resources support financial institutions in embedding the FEAT Principles into their AIDA systems.²⁰⁷

While adherence to the Veritas Initiative is voluntary, financial institutions in Singapore are expected to align their risk assessment frameworks closely with the Veritas Initiative in order to progressively achieve the objectives of the FEAT Principles.²⁰⁸

i. Phase 1

Veritas is a multi-phased project developed in close collaboration with the financial industry.²⁰⁹ Phase 1 was successfully completed in January 2021 with participation from 25 consortium members.²¹⁰ This phase developed the *FEAT Fairness Principles Assessment Methodology*²¹¹ in two use cases in the banking industry, namely credit risk scoring and customer marketing.²¹²

ii. Phase 2

²⁰² Remolina, “Generative AI in Finance,” *supra* note 50, p. 5.

²⁰³ “Veritas Document 5: From Methodologies to Integration” (MAS, 2023) <<https://www.mas.gov.sg/-/media/mas/news/media-releases/veritas-document-5---from-methodologies-to-integration.pdf>>, p. 4.

²⁰⁴ MAS, “Veritas Initiative,” *supra* note 155.

²⁰⁵ *Ibid*; “MAS Partners Financial Industry to Create Framework for Responsible Use of AI” (MAS, 13 November 2019) <<https://www.mas.gov.sg/news/media-releases/2019/mas-partners-financial-industry-to-create-framework-for-responsible-use-of-ai>>, [2].

²⁰⁶ Remolina, “AI Governance and Algorithmic Auditing,” *supra* note 16, p. 12.

²⁰⁷ MAS, *Artificial Intelligence Model Risk Management*, *supra* note 34, [2.7].

²⁰⁸ Remolina, “Generative AI in Finance,” *supra* note 50, p. 7; MAS, *Veritas Document 3*, *supra* note 92, p. 5.

²⁰⁹ MAS, “Veritas Initiative,” *supra* note 155.

²¹⁰ *Ibid*: The 25 consortium members in Veritas Phase 1 are Amazon Web Services, AXA, Bank of China, BAFT (Bankers Association for Finance & Trade), BNP Paribas, BNY Mellon, CFA Society Singapore, Citi Singapore, DBS Bank, Element AI, EY, IAG Firemark Labs & Gradient Institute, Goldman Sachs, HSBC, Industrial and Commercial Bank of China Limited, Microsoft, Monetary Authority of Singapore, MUFG Bank, Ltd, Ping An of China, Prudential Assurance Company Singapore, SGInnovate, Standard Chartered Bank, Swiss Re, Unionbank of the Philippines, and United Overseas Bank Limited.

²¹¹ “Veritas Document 1: FEAT Fairness Principles Assessment Methodology” (MAS, 2021) <<https://www.mas.gov.sg/-/media/mas/news/media-releases/2021/veritas-document-1-feat-fairness-principles-assessment-methodology.pdf>>.

²¹² *Ibid*.

Next, Phase 2, which had 27 consortium members,²¹³ concluded in February 2022 with the successful development of the full *FEAT Principles Assessment Methodology* (the “**Veritas Methodology**”).²¹⁴ This Veritas Methodology builds on the previous assessment methodology from Phase 1, extending its coverage to all FEAT Principles and application to other financial services too, such as the insurance industry.²¹⁵ The Veritas Methodology provides a comprehensive and practical checklist which financial institutions can use to evaluate their AIDA models against the FEAT Principles.²¹⁶ Financial institutions can also tailor this checklist to better suit their organisational needs.²¹⁷

On top of the Veritas Methodology, MAS released another four whitepapers. First, the enhanced *FEAT Fairness Principles Assessment Methodology*²¹⁸ enables financial institutions to evaluate how well their AIDA systems align with the Fairness Principles.²¹⁹ Second, the new *FEAT Ethics and Accountability Principles Assessment Methodology*,²²⁰ accompanied by the *Operationalising Ethics and Accountability: Workbook*,²²¹ provide a framework for financial institutions to implement measurable ethical practices aligned with their organisational standards of ethics and accountability.²²² Third, the new *FEAT Transparency Principles Assessment Methodology*²²³ provides guidance on both external and internal transparency.²²⁴ External transparency refers to the level of transparency that financial institutions should provide to their customers and other external stakeholders, while internal transparency focuses on how financial institutions can comply with “relevant internal policies and procedures and regulatory requirements”.²²⁵ Fourth, the *FEAT Principles Assessment Case Studies*²²⁶ illustrates the implementation of the Veritas Methodology in selected use cases,²²⁷ such as insurance predictive underwriting, customer marketing, insurance fraud detection, and credit risk scoring.²²⁸

²¹³ MAS, “Veritas Initiative,” *supra* note 155: The 27 consortium members in Veritas Phase 2 are Accenture, Amazon Web Services, AXA, Bank of China, Bank of Singapore, BAFT (Bankers Association for Finance & Trade), BNP Paribas, BNY Mellon, CFA Society Singapore, Citi Singapore, DBS Bank, Google Cloud, Goldman Sachs, HSBC, IBM, Industrial and Commercial Bank of China Limited, Microsoft, Monetary Authority of Singapore, MUFG Bank, Ltd, OCBC Bank, Ping An of China, Prudential Assurance Company Singapore, Standard Chartered Bank, Swiss Re, Truera, Unionbank of the Philippines, and United Overseas Bank Limited.

²¹⁴ MAS, *Veritas Document 3*, *supra* note 92.

²¹⁵ *Ibid*, p. 2.

²¹⁶ MAS, *Veritas Document 5*, *supra* note 208, p. 8.

²¹⁷ *Ibid*.

²¹⁸ MAS, *Veritas Document 3A*, *supra* note 92.

²¹⁹ *Ibid*, p. 7.

²²⁰ “Veritas Document 3B: FEAT Ethics and Accountability Principles Assessment Methodology” (MAS, 2022) <<https://www.mas.gov.sg/-/media/mas-media-library/news/media-releases/2022/veritas-document-3b---feat-ethics-and-accountability-principles-assessment-methodology.pdf>>.

²²¹ *Ibid*, pp. 24-39.

²²² *Ibid*, p. 3.

²²³ MAS, *Veritas Document 3C*, *supra* note 92.

²²⁴ *Ibid*, p. 4.

²²⁵ *Ibid*, p. 4.

²²⁶ “Veritas Document 4: FEAT Principles Assessment Case Studies” (MAS, 2022) <<https://www.mas.gov.sg/-/media/mas-media-library/news/media-releases/2022/veritas-document-4---feat-principles-assessment-case-studies.pdf>>.

²²⁷ *Ibid*, p. 4.

²²⁸ MAS, “Veritas Initiative,” *supra* note 155.

Beyond these whitepapers, Veritas Phase 2 also released the open-source Veritas Toolkit version 1.0,²²⁹ which primarily focused on the assessing the Fairness Principles.²³⁰

iii. Phase 3

Lastly, Veritas Phase 3 concluded in June 2023 with participation from 32 consortium members.²³¹ Phase 3 focused on three key areas. First, Phase 3 introduced an enhanced Veritas Toolkit version 2.0, which was developed and pilot-tested by various industry partners,²³² to enable a comprehensive assessment across all FEAT Principles.²³³ This updated Toolkit not only features a refined Fairness assessment methodology, but also incorporates “assessment methodologies for Ethics, Accountability, and Transparency”.²³⁴

Second, seven financial institutions²³⁵ participated in a pilot to incorporate the FEAT Principles and Veritas Methodology into their internal governance frameworks.²³⁶ Their key insights and lessons learned were documented in the whitepaper *From Methodologies to Integration*.²³⁷ The three main takeaways highlighted the crucial need for: “a consistent and robust responsible AI framework that spans geographies; a risk-based approach to determine the governance required for the AI use cases; [and] responsible AI practices and training for the new generation of AI professionals in the financial sector”.²³⁸

Third, the consortium developed two new use cases to demonstrate how the Veritas Methodology can be applied in practice.²³⁹ These two examples are captured in the whitepaper *FEAT Principles Assessment Case Studies*.²⁴⁰ The first use case features Google Pay, which applied the various FEAT Assessment Methodologies to evaluate its fraud detection system for digital payments in India.²⁴¹ The second use case involves Swiss Re, which evaluated its AI-driven predictive underwriting model against the Transparency Assessment Methodology.²⁴²

²²⁹ *Ibid.*

²³⁰ “MAS-led Industry Consortium Releases Toolkit for Responsible Use of AI in the Financial Sector” (MAS, 26 June 2023) <<https://www.mas.gov.sg/news/media-releases/2023/toolkit-for-responsible-use-of-ai-in-the-financial-sector>>, [3].

²³¹ MAS, “Veritas Initiative,” *supra* note 155: The 32 consortium members in Veritas Phase 3 are Accenture, Amazon Web Services, AXA, Bank of China, Bank of Singapore, BAFT (Bankers Association for Finance & Trade), BNP Paribas, BNY Mellon, CFA Society Singapore, Citi Singapore, DBS Bank, Google Cloud, Goldman Sachs, HSBC, IBM, Industrial and Commercial Bank of China Limited, Microsoft, Monetary Authority of Singapore, Munich Re, MUFG Bank, Ltd, OCBC Bank, Ping An of China, Prudential Assurance Company Singapore, SGX, Singlife, Singapore FinTech Association, Standard Chartered Bank, Swiss Re, Truera, Unionbank of the Philippines, United Overseas Bank Limited, and Visa.

²³² MAS, “MAS-led Industry Consortium Releases Toolkit,” *supra* note 235, [3]: “Accenture and Bank of China are the main developers of the toolkit while BNY Mellon, DBS Bank (DBS), OCBC Bank (OCBC), United Overseas Bank Limited (UOB) contributed to the pilot testing of this toolkit.”

²³³ MAS, “Veritas Initiative,” *supra* note 155.

²³⁴ MAS, “MAS-led Industry Consortium Releases Toolkit,” *supra* note 235, [3].

²³⁵ MAS, “Veritas Initiative,” *supra* note 155: The 7 financial institutions are BNY Mellon, DBS, HSBC, OCBC, Singapore Life Ltd (Singlife), Standard Chartered Bank and UOB.

²³⁶ *Ibid*; MAS, “MAS-led Industry Consortium Releases Toolkit,” *supra* note 235, [4].

²³⁷ MAS, *Veritas Document 5*, *supra* note 208.

²³⁸ MAS, “MAS-led Industry Consortium Releases Toolkit,” *supra* note 235, [4].

²³⁹ MAS, “Veritas Initiative,” *supra* note 155; MAS, “MAS-led Industry Consortium Releases Toolkit,” *supra* note 235, [5].

²⁴⁰ “Veritas Document 6: FEAT Principles Assessment Case Studies” (MAS, 2023) <<https://www.mas.gov.sg/-/media/mas/news/media-releases/veritas-document-6---feat-principles-assessment-case-studies.pdf>>.

²⁴¹ MAS, “Veritas Initiative,” *supra* note 155.

²⁴² *Ibid.*

4. Project MindForge

i. Phase 1

Building on the Veritas Initiative, MAS led a consortium of banks and technology partners²⁴³ in Project MindForge to examine the opportunities and risks of GenAI for financial services.²⁴⁴ Phase 1²⁴⁵ of Project MindForge concluded in November 2023.²⁴⁶ During which, the consortium developed a robust GenAI risk framework to help financial institutions adopt and deploy GenAI responsibly.²⁴⁷

Subsequently, in May 2024, the consortium released the whitepaper *Emerging Risks and Opportunities of Generative AI for Banks*.²⁴⁸ This whitepaper detailed the GenAI risk framework that covers seven risk dimensions: “Fairness and Bias, Ethics and Impact, Accountability and Governance, Transparency and Explainability, Legal and Regulatory, Monitoring and Stability, and Cyber and Data Security”.²⁴⁹

In the whitepaper, the consortium also discussed the adequacy of the FEAT Principles and Veritas Methodology in managing GenAI-related risks.²⁵⁰ While the consortium concluded that the FEAT Principles remain conceptually sufficient for GenAI outcomes, it recommended some enhancements to the existing FEAT principles.²⁵¹ Notably, the first Fairness Principle may have to be enhanced to apply across the full GenAI lifecycle.²⁵² Moreover, the consortium proposed three additional risk dimensions beyond the FEAT Principles for GenAI applications, namely Legal and Regulatory (including copyright or IP infringement, and third-party risks), Monitoring and Stability, and Cyber and Data Security.²⁵³ The consortium also recommended refining some questions in the Veritas Methodology where appropriate.²⁵⁴

ii. Phase 2

²⁴³ “Project MindForge” (MAS, 13 November 2025) <<https://www.mas.gov.sg/schemes-and-initiatives/project-mindforge>>: The Project MindForge Phase 1 consortium members include: (i) Banks: DBS Bank, OCBC Bank, United Overseas Bank Limited, Standard Chartered Bank, Citi Singapore, and HSBC; (ii) Industry associations: ABS; and (iii) Technology and consulting partners: Accenture, Google Cloud, and Microsoft.

²⁴⁴ *Ibid.*

²⁴⁵ *Ibid.*: “In the next phase, the MindForge consortium will expand its scope to involve financial institutions from the insurance and asset management industries. The Gen AI risk framework can thus be further improved and extended to the entire financial industry. The consortium will also focus on AI governance and aims to develop an AI governance handbook for the financial industry.”

²⁴⁶ *Ibid.*

²⁴⁷ “MAS Partners Industry to Develop Generative AI Risk Framework for the Financial Sector” (MAS, 15 November 2023) <<https://www.mas.gov.sg/news/media-releases/2023/mas-partners-industry-to-develop-generative-ai-risk-framework-for-the-financial-sector>>, [4].

²⁴⁸ MAS, *Emerging Risks and Opportunities*, *supra* note 4.

²⁴⁹ *Ibid.*, pp. 3, 9-12.

²⁵⁰ *Ibid.*, p. 5.

²⁵¹ *Ibid.*, p. 26.

²⁵² *Ibid.*, pp. 19-20, 26, 43.

²⁵³ *Ibid.*, pp. 26-27, 43.

²⁵⁴ *Ibid.*, pp. 16, 76-88.

Phase 2 of Project MindForge was successfully concluded on 20 March 2026.²⁵⁵ In this phase, the scope of Project MindForge was extended beyond the banking industry to also include the insurance and asset management sectors. Its focus was likewise expanded from a narrow emphasis on Generative AI to a broader consideration of traditional AI, Generative AI, and Agentic AI technologies.²⁵⁶ The Phase 2 consortium comprised 24 primary members, 5 technology and consulting partners, 5 association members, and 1 regulatory authority.²⁵⁷

In Phase 2, the consortium developed the AI Risk Management Toolkit for the financial services sector.²⁵⁸ This Toolkit features three key publications: the *AI Risk Management: Executive Handbook*,²⁵⁹ the *AI Risk Management: Operationalisation Handbook*,²⁶⁰ and the *AI Risk Management: Implementation Examples*.²⁶¹

The *Operationalisation Handbook* offers practical and in-depth guidance on the implementation of AI risk management frameworks in practice. It is structured into four main sections that correspond with MAS' proposed Guidelines: (1) Scope and AI Oversight, (2) AI Risk Management, (3) AI Lifecycle Management, and (4) Enablers.²⁶² The *Operationalisation Handbook* is supplemented by the *Implementation Examples*, which presents a collection of case studies that illustrate the financial institutions' experiences and key takeaways. These case studies provide practical perspectives into the challenges, strategies and risk management approaches applied in using AI across varied organisational contexts.²⁶³

5. Information Papers

Additionally, MAS has also published four information papers in recent years.

²⁵⁵ "MAS Partners Industry to Develop AI Risk Management Toolkit for the Financial Sector" (MAS, 20 March 2026) <<https://www.mas.gov.sg/news/media-releases/2026/mas-partners-industry-to-develop-ai-risk-management-toolkit-for-the-financial-sector>>, [1].

²⁵⁶ MAS, "Project MindForge," *supra* note 251.

²⁵⁷ "List of MindForge Consortium Members (Phase Two)" (MAS) <<https://www.mas.gov.sg/-/media/mas/news/media-releases/2026/annex-a-list-of-mindforge-consortium-members-phase-two.pdf>> accessed 30 June 2026.; The Project MindForge (Phase Two) consortium members are: (i) Primary Members: AIA, BlackRock, Citi, DBS Bank, Eastspring Investments, GIC, Great Eastern Life, GXS Bank, HSBC, HSBC Life, Income Insurance, Julius Baer, Manulife, Maybank, MSIG, MUFG Bank, Munich Re, OCBC, Prudential, SMBC, Standard Chartered, State Street, UBS, United Overseas Bank Limited; (ii) Technology and Consulting Partners: Accenture, Amazon Web Services, Google Cloud, Microsoft, Nvidia; (iii) Association Members: The Association of Banks in Singapore, General Insurance Association of Singapore, Investment Management Association of Singapore, Life Insurance Association Singapore, Singapore FinTech Association; (iv): Regulatory Authority: Monetary Authority of Singapore.

²⁵⁸ "MAS Partners Industry to Develop AI Risk Management Toolkit for the Financial Sector" (MAS, 20 March 2026) <<https://www.mas.gov.sg/news/media-releases/2026/mas-partners-industry-to-develop-ai-risk-management-toolkit-for-the-financial-sector>>, [1].

²⁵⁹ "AI Risk Management: Executive Handbook" (MAS, 2025) <<https://www.mas.gov.sg/-/media/mas-media-library/schemes-and-initiatives/ftig/project-mindforge/mindforge-ai-risk-management-executive-handbook.pdf>>.

²⁶⁰ "AI Risk Management: Operationalisation Handbook" (MAS, 2026) <<https://www.mas.gov.sg/-/media/mas-media-library/schemes-and-initiatives/ftig/project-mindforge/mindforge-ai-risk-management-operationalisation-handbook.pdf>>.

²⁶¹ "AI Risk Management: Implementation Examples" (MAS, 2026) <<https://www.mas.gov.sg/-/media/mas-media-library/schemes-and-initiatives/ftig/project-mindforge/mindforge-ai-risk-management-implementation-examples.pdf>>.

²⁶² "MAS Partners Industry to Develop AI Risk Management Toolkit for the Financial Sector" (MAS, 20 March 2026) <<https://www.mas.gov.sg/news/media-releases/2026/mas-partners-industry-to-develop-ai-risk-management-toolkit-for-the-financial-sector>>, [3].

²⁶³ *Ibid*, [2].

First, in June 2022, after conducting a thematic analysis of selected banks and understanding how well their governance frameworks aligned with the Fairness Principles,²⁶⁴ MAS published its findings in the *Information Paper on Implementation of Fairness Principles in Financial Institutions' Use of Artificial Intelligence / Machine Learning*.²⁶⁵ MAS concluded that financial institutions, back then, were still in the early phases of developing risk management practices specific to AIDA.²⁶⁶ MAS thus recommended financial institutions to establish frameworks with comprehensive scopes,²⁶⁷ conduct materiality assessments,²⁶⁸ and adopt “a calibrated approach” when assessing fairness.²⁶⁹

Second, in July 2024, MAS issued the *Information Paper on Cyber Risks Associated with Generative Artificial Intelligence* (“**the July 2024 Information Paper**”).²⁷⁰ This paper outlines the key cyber threats associated with GenAI, their potential impacts, and possible mitigation measures that financial institutions could implement to tackle these threats.²⁷¹ In particular, this paper discussed four major cyber threats: “(1) deepfakes and GenAI-enabled phishing, (2) malware generation and enhancement, (3) data leakage from GenAI deployment, and (4) GenAI model and output manipulation”.²⁷²

Third, in December 2024, after reviewing the AI model risk management practices of selected banks,²⁷³ MAS published the *Information Paper on Artificial Intelligence Model Risk Management*.²⁷⁴ As part of MAS’ ongoing efforts to promote responsible AI adoption among financial institutions, this paper collated industry-wide best practices in the following areas:²⁷⁵ Governance and Oversight,²⁷⁶ Key Risk Management Systems and Processes,²⁷⁷ Development and Deployment,²⁷⁸ as well as GenAI and Third-Party AI.²⁷⁹

Lastly, in September 2025, MAS published the *Information Paper on Cyber Risks Associated with Deepfakes*.²⁸⁰ This paper complements the July 2024 Information Paper by detailing the key threats arising from deepfakes, their implications on the financial industry, and practical steps that financial institutions could adopt to manage these emerging threats.

²⁶⁴ MAS, *Implementation of Fairness Principles*, *supra* note 120, [2.4].

²⁶⁵ *Ibid.*

²⁶⁶ *Ibid.*, [3.1].

²⁶⁷ *Ibid.*, Section 3(A).

²⁶⁸ *Ibid.*, Section 3(B).

²⁶⁹ *Ibid.*, Section 3(C).

²⁷⁰ MAS, *Cyber Risks Associated with Generative Artificial Intelligence*, *supra* note 33.

²⁷¹ *Ibid.*, p. 3.

²⁷² *Ibid.*, p. 15.

²⁷³ “Singapore: Information Paper on AI Model Risk Management in Financial Institutions” (*Baker McKenzie*, 28 February 2025) <https://insightplus.bakermckenzie.com/bm/banking-finance_1/singapore-information-paper-on-ai-model-risk-management-in-financial-institutions>.

²⁷⁴ MAS, *Artificial Intelligence Model Risk Management*, *supra* note 34.

²⁷⁵ *Ibid.*, [3.1]-[3.2].

²⁷⁶ *Ibid.*, Section 4.

²⁷⁷ *Ibid.*, Section 5.

²⁷⁸ *Ibid.*, Section 6.

²⁷⁹ *Ibid.*, Section 7.

²⁸⁰ MAS, *Cyber Risks Associated with Deepfakes*, *supra* note 139.

6. Pathfinder Programme

Launched in July 2025, the Pathfinder Programme is “a collaborative initiative” by MAS and the financial industry that facilitates peer sharing of insights from successful AI implementations.²⁸¹ This programme aims to streamline the process of identifying and deploying effective AI solutions.²⁸² As of July 2025, 20 financial institutions are participating in this programme²⁸³ and MAS welcomes more financial institutions to come onboard.²⁸⁴

7. Financial AI Builder Programme – BuildFin.ai

In December 2025, MAS launched the Financial AI Builder Programme (BuildFin.ai).²⁸⁵ This programme is aimed at supporting financial institutions develop and scale AI solutions. The programme fosters collaboration between financial institutions, technology providers, and research institutes to jointly develop AI applications that respond to real industry needs while maintaining regulatory compliance. For instance, the Agency for Science, Technology and Research (A*STAR) is working with financial institutions to create multilingual speech recognition tools capable of accurately transcribing conversations in English, Mandarin, Malay, Tamil, and various local dialects.²⁸⁶ Overall, this programme promotes “the responsible development and deployment of AI solutions across the financial services sector”.²⁸⁷

In July 2026, under this BuildFin.ai initiative, MAS jointly developed the Safeguards for Agentic Finance at Runtime (“SAFR”) framework with financial industry members. The SAFR provides a more consistent approach to the designing, governance, and implementation of agentic AI systems across different use cases. Further, the SAFR also introduces “a governance checkpoint between every agent decision and its execution”.²⁸⁸

C. Industry Guidelines

In May 2025, the Association of Banks in Singapore (“ABS”), in collaboration with MAS and 11 other industry partners,²⁸⁹ published the *Handbook on Generative AI Guardrails in Banking*

²⁸¹ “MAS Pathfinder Programme – PathFin.ai” (MAS, 01 August 2025) <<https://www.mas.gov.sg/schemes-and-initiatives/pathfinai>>.

²⁸² “Remarks by Mr Chia Der Jiun, Managing Director, MAS, at the MAS Annual Report 2024/2025 Media Conference on 15 July 2025” (MAS, 15 July 2025) <<https://www.mas.gov.sg/news/speeches/2025/mas-annual-report-media-conference-2024-2025>>, [29b].

²⁸³ MAS, “MAS Pathfinder Programme,” *supra* note 286: “Some of the participating organisations are Ant International, Amazon Web Services, Bolttech Insurance, Funding Societies, FWD Group, Goldman Sachs, Green Link Digital Bank, Liquid Group, HSBC, MUFG Bank, SG Growth Capital, Standard Chartered Bank, [and] Trust Bank.”

²⁸⁴ MAS, “Remarks by Mr Chia Der Jiun, Managing Director, MAS,” *supra* note 287, [29d].

²⁸⁵ “MAS’ Financial AI Builder Programme - Buildfin.ai” (MAS, 01 December 2025) <<https://www.mas.gov.sg/schemes-and-initiatives/buildfinai>>.

²⁸⁶ *Ibid*; “A*Star and financial institutions to teach AI to understand Singlish: MAS” (*The Straits Times*, 13 November 2025) <<https://www.straitstimes.com/business/astar-and-financial-institutions-to-teach-ai-to-understand-singlish-mas>>.

²⁸⁷ MAS, “MAS’ Financial AI Builder Programme - Buildfin.ai,” *supra* note 290.

²⁸⁸ “Safeguards for Agentic Finance at Runtime (SAFR)” (MAS, 03 July 2026) <<https://www.mas.gov.sg/publications/monographs-or-information-paper/2026/safeguards-for-agentic-finance-at-runtime>>.

²⁸⁹ ABS, *Handbook on Generative AI Guardrails in Banking*, *supra* note 52, p. 5: The 11 other industry partners are Australia and New Zealand Banking Group Limited, Citibank NA / Citibank Singapore Limited, DBS Bank Limited, GXS Bank Pte.

(the “**Handbook**”).²⁹⁰ The Handbook offers practical guidance for financial institutions to implement GenAI responsibly and ethically, emphasising on robust governance, technical safeguards and human supervision.²⁹¹ The guardrails are aligned with the objectives of MAS regulations and the Project MindForge initiative.²⁹²

The Handbook outlines seven common categories of GenAI use cases²⁹³ and their associated risks, introduces the nine guardrail approaches,²⁹⁴ and illustrates the practical implementation of these guardrails through two use cases on Document Extraction/Summarisation²⁹⁵ and Code Generation.²⁹⁶ Lastly, the Handbook is accompanied by an Excel Tool²⁹⁷ that helps practitioners assess GenAI risks and the corresponding guardrails.²⁹⁸

V. Lessons Learned

A. Regulatory Strategies on AI in Finance

Given the rapid development and growing use of AI in the financial sector, there is an urgent need for appropriate regulatory frameworks to keep pace with these technological advancements. Broadly speaking, regulations refer to sustained and focused attempts by public authorities to influence behaviour in order to achieve certain policy objectives.²⁹⁹ The OECD similarly describes regulations as the full range of legal instruments through which governments “impose obligations or constraints on private sector behaviour”.³⁰⁰

While the use of AI in financial sector brings about significant benefits, it also introduces new risks and obstacles. Regulations are therefore necessary for consumer protection, market integrity, and financial stability.³⁰¹ As Singapore’s central bank and integrated financial regulator, MAS faces the challenge of finding the right balance. It has to manage the risks of

Ltd, HSBC, JPMorgan Chase Bank N.A., Singapore, Oversea-Chinese Banking Corporation Limited, Standard Chartered Bank (Singapore) Limited, Sumitomo Mitsui Banking Corporation Singapore Branch, United Overseas Bank Limited, and Accenture.

²⁹⁰ *Ibid.*

²⁹¹ *Ibid.*, p. 2.

²⁹² *Ibid.*, p. 3.

²⁹³ *Ibid.*, pp. 6, 13: The seven common use case categories are Coding, Speech to Text (Transcribing), Document Extraction/Summarisation, Translation, Content Creation/Image Generation, Knowledge Management/Search, and Process Optimisation.

²⁹⁴ *Ibid.*, p. 7: The nine guardrail approaches are Enterprise Governance and Training, Filtering and Control, Customised Model Design, Red Teaming, Prompt Design, Monitoring and Validation, Human-in-the-Loop Moderation, User Feedback and Iterative Improvement, and User Transparency and Consent.

²⁹⁵ *Ibid.*, pp. 36-40.

²⁹⁶ *Ibid.*, pp. 40-44.

²⁹⁷ “Industry Guidelines: Data Management” (ABS) <<https://abs.org.sg/industry-guidelines/compliance-and-risk-management/data-management>> accessed 30 June 2026.; The Excel Tool can be downloaded from this website under “Handbook on Generative AI Guardrails in Banking”, followed by “ABS SCDM Gen AI Guardrails and Controls Library (19 May 2025)”.

²⁹⁸ ABS, *Handbook on Generative AI Guardrails in Banking*, *supra* note 52, p. 46.

²⁹⁹ Julia Black, “Critical Reflections on Regulation” (2002) *Australian Journey of Legal Philosophy* 27 <https://www.researchgate.net/publication/265568938_Critical_Reflection_on_Regulation>, p. 20.

³⁰⁰ “Recommendation of the Council on Improving the Quality of Government Regulation” (OECD Legal Instruments, 09 March 1995) <<https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0278>>.

³⁰¹ Mads Andenas and Iris H-Y Chiu, “The Foundations and Future of Financial Regulation: Governance for Responsibility” (2013) *Routledge* <<https://www.jus.uio.no/ifp/english/research/projects/financial-market-regulation/events/the-foundations-and-future-of-financial-regulation.pdf>>.

using AI with the need to promote innovation and maintain Singapore’s competitiveness as a leading financial hub.

The question, then, is not whether to regulate AI in finance, but *how*. Zetsche, Buckley, Barberis, and Arner, proposed a spectrum of regulatory responses.³⁰² This spectrum ranges from inaction, which may be either permissive or restrictive depending on context, through cautious permissiveness and structured experimentalism, to the development of entirely new regulatory frameworks. They advocate for “smart regulation”: an automated and proportionate regime grounded in shared principles drawn from multiple jurisdictions.³⁰³

Brummer and Yadav argue that regulators face a policy trilemma.³⁰⁴ “[W]hen seeking to provide clear rules, maintain market integrity, and encourage financial innovation, regulators [can] achieve, at best, only two of these three objectives [simultaneously]”.³⁰⁵ They further contend that fintech’s reliance on sophisticated AI algorithms, its high informational demands on regulators, and its rapid adaptability amplify the intensity of these trade-offs.³⁰⁶

The International Monetary Fund (IMF)’s 2023 Fintech Note identifies four broad categories of regulatory tools.³⁰⁷ These are: supervisory monitoring of fintech developments; test-and-learn approaches such as innovation hubs, sandboxes, and TechSprints; bespoke regulation that fills policy gaps or removes outdated rules; and, where necessary, outright bans or targeted restrictions.³⁰⁸

More recently, the Bank for International Settlements (“BIS”), in its 2024 Financial Stability Institute Insights paper, distilled the global regulatory landscape into two philosophical orientations.³⁰⁹ The first is a principles-based, technology-neutral approach, adopted by jurisdictions such as Singapore, the United Kingdom, and the United States. The second is a rules-based approach, pursued by jurisdictions issuing AI-specific legislation, including Brazil, China, the European Union, and Qatar.³¹⁰

Taken together, these contributions reveal a consensus that the regulation of AI in finance cannot be reduced to a single optimal model. Rather, we need a spectrum of context-specific approaches. Each with distinct trade-offs, and underscores the need for regulatory frameworks

³⁰² Dirk Andreas Zetsche, Ross P. Buckley, Douglas W. Arner, and Janos Nathan Barberis, “From FinTech to TechFin: The Regulatory Challenges of Data-Driven Finance” (2017) New York University Journal of Law and Business <<https://dx.doi.org/10.2139/ssrn.2959925>>, pp. 30-32.

³⁰³ *Ibid.*

³⁰⁴ Christopher J. Brummer, and Yesha Yadav, “Fintech and the Innovation Trilemma” (2019) 107 Georgetown Law Journal 235 <<https://dx.doi.org/10.2139/ssrn.3054770>>, p. 235.

³⁰⁵ *Ibid.*

³⁰⁶ *Ibid.*

³⁰⁷ “Institutional Arrangements for Fintech Regulation: Supervisory Monitoring” (IMF, 26 June 2023) <<https://www.imf.org/en/publications/fintech-notes/issues/2023/06/23/institutional-arrangements-for-fintech-regulation-supervisory-monitoring-534291>>, pp. 10-13.

³⁰⁸ *Ibid.*

³⁰⁹ “Regulating AI in the Financial Sector: Recent Developments and Main Challenges” (BIS, 12 December 2024) <<https://www.bis.org/fsi/publ/insights63.htm>>, p. 14.

³¹⁰ *Ibid.*

that are adaptive, proportionate, and is informed by ongoing engagement with the technology they seek to govern.

At one end of the spectrum lies the deregulatory or laissez-faire approach, under which governments refrain from imposing AI-specific regulatory constraints on the financial sector. Prior to the global financial crisis, financial innovation was viewed overwhelmingly positively, resulting in a broadly deregulatory orientation toward financial regulation.³¹¹ In the contemporary AI context, this approach is exemplified by the United States under the Trump administration, which revoked the Biden-era AI Executive Order in January 2025. This signalled a preference for market-driven governance over prescriptive federal oversight.³¹² While this approach minimises regulatory burden and may accelerate innovation, it carries significant risks, particularly in the absence of safeguards against algorithmic bias, systemic risk, and consumer harm.

Closely related to, but distinct from, the laissez-faire approach is the “wait-and-see” stance. This corresponds to the “doing nothing” end of the Zetzsche et al. spectrum.³¹³ Under this approach, regulators observe market developments before intervening, applying existing rules while monitoring for the emergence of new risks. Many jurisdictions initially adopted this posture toward early AI applications in finance, such as robo-advisory services and algorithmic trading, opting to rely on existing securities and consumer protection frameworks rather than introducing AI-specific regulations. While this approach avoids premature or ill-fitting regulation, it risks allowing harmful practices to become entrenched before regulatory action is taken.

Market-enabling regulation is designed not to restrict but to facilitate innovation. It creates the infrastructure and conditions necessary for AI-driven financial services to flourish. Open banking mandates are a prime example. The EU’s Revised Payment Services Directive (PSD2)³¹⁴ and Australia’s Consumer Data Right (CDR)³¹⁵ compel incumbent financial institutions to share customer data with authorised third parties, thereby enabling new AI-powered services such as personalised financial advice, automated credit assessments, and intelligent budgeting tools. This approach recognises that appropriate regulation can serve as a catalyst for, rather than an impediment to, innovation.

³¹¹ Steven L. Schwarcz, “Regulating Financial Change: A Functional Approach” (2016) 100 Minnesota Law Review 1441, <https://scholarship.law.duke.edu/faculty_scholarship/3309/>, pp. 1142-1144; Emiliós Avgouleas, “Governance of Global Financial Markets: The Law, the Economics, the Politics (Introduction)” (2012) Governance of Global Financial Markets: The Law, the Economics, the Politics, Cambridge University Press <<http://dx.doi.org/10.2139/ssrn.2060564>>, pp. 2-3.

³¹² “Initial Rescissions of Harmful Executive Orders and Actions” (*Federal Register*, 20 January 2025) <<https://www.federalregister.gov/documents/2025/01/28/2025-01901/initial-rescissions-of-harmful-executive-orders-and-actions>>: This executive order, Executive Order 14148, ordered the rescission of several executive orders enacted during the Biden administration, including Executive Order 14110 on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence; “Removing Barriers to American Leadership in Artificial Intelligence” (*The White House*, 30 October 2023) <<https://www.whitehouse.gov/presidential-actions/2025/01/removing-barriers-to-american-leadership-in-artificial-intelligence/>>; “Trump Administration Early Executive Orders Signal Shift in AI Policy” (*King & Spalding*, 14 February 2025) <<https://www.kslaw.com/news-and-insights/trump-administration-early-executive-orders-signal-shift-in-ai-policy/>>.

³¹³ Zetzsche, “From FinTech to TechFin”, *supra* note 309, p. 30.

³¹⁴ “The revised Payment Services Directive (PSD2) and the transition to stronger payments security” (*European Central Bank*, March 2018) <<https://www.ecb.europa.eu/press/intro/mip-online/2018/html/1803revisedpsd.en.html>>.

³¹⁵ “Consumer Data Right” (*Australian Government*) <<https://www.cdr.gov.au/>> accessed 30 June 2026.

Bespoke regulation addresses specific policy gaps created by AI and fintech, or removes outdated prudential or conduct rules that impede responsible innovation. Unlike broad, technology-neutral frameworks, bespoke rules target particular AI applications or risk categories with tailored requirements. A prominent example is the EU AI Act’s classification of credit-scoring AI as “high-risk,” which subjects such systems to heightened requirements for transparency, human oversight, and data quality.³¹⁶ Other examples include peer-to-peer lending regulation in Brazil, crypto-asset regulation in Albania, the EU, and Japan, and e-money frameworks in Indonesia.³¹⁷ This approach enables regulators to address identified risks with precision, though it requires continuous updating as the technology evolves.

Rather than prescribing detailed rules, principles-based regulation articulates broad standards, such as transparency, fairness, accountability, and explainability, that firms must satisfy. Firms are afforded discretion in determining how to comply. The United Kingdom’s Financial Conduct Authority (“FCA”), for instance, prioritises safety, transparency, fairness, accountability, and contestability.³¹⁸ Singapore’s MAS FEAT Principles, encompassing Fairness, Ethics, Accountability, and Transparency, represent another leading example. The strength of this approach lies in its flexibility and adaptability. Its limitation, as discussed in Section IV(B)(2) above, is that voluntary principles may be applied inconsistently in the absence of binding enforcement mechanisms.

B. Singapore’s Approach

Singapore’s approach is broadly consistent with the OECD Principles of Good Regulation.³¹⁹ Rather than relying solely on prescriptive rules, MAS has adopted a framework that combines **high-level principles** (e.g., the FEAT Principles), **practical implementation measures** (e.g., the Veritas framework and the MAS Guidelines), and **regulatory oversight** (e.g., through MAS’ increasing use of SupTech).

Also, Singapore adopts a **gradual and adaptive approach** in its regulation of AI, especially in the financial sector. This is evident from the evolution of MAS initiatives and policies from high-level principles (i.e. the FEAT Principles in 2018), to industry-led operationalization (i.e. the Project MindForge Executive Handbook in 2025), and to industry “best practice standards” by MAS (i.e. the MAS Guidelines).³²⁰ This evolution is reflected in **Diagram 2** below.

³¹⁶ EU AI Act, Annex III, 5(b) <<https://artificialintelligenceact.eu/annex/3/>>.

³¹⁷ IMF, “Institutional Arrangements for Fintech Regulation,” *supra* note 314, p. 11.

³¹⁸ “AI Update”, (UK FCA, 08 September 2025) <<https://www.fca.org.uk/publication/corporate/ai-update.pdf>>, p10.

³¹⁹ “OECD Best Practice Principles for Regulatory Policy: The Governance of Regulators” (OECD, 2014) <https://www.oecd.org/content/dam/oecd/en/publications/reports/2014/07/the-governance-of-regulators_g1g3fcd9/9789264209015-en.pdf>, p. 23; “OECD Guiding Principles for Regulatory Quality and Performance” (OECD, 2005) <https://www.oecd.org/content/dam/oecd/en/publications/reports/2008/10/oecd-guiding-principles-for-regulatory-quality-and-performance_g1gh9eb3/9789264056381-en.pdf>.

³²⁰ “Supervisory Approach and Regulatory Instruments” (MAS, 10 December 2024) <<https://www.mas.gov.sg/regulation/mas-supervisory-approach-and-regulatory-instruments>>.

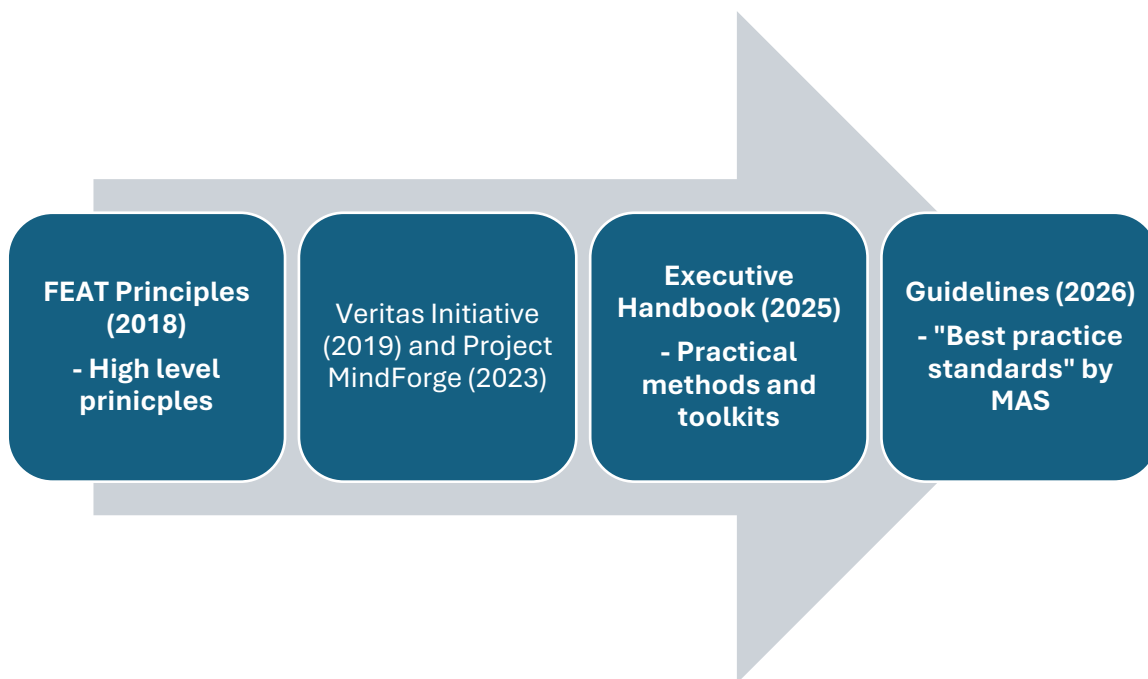


Diagram 2: Evolution from FEAT Principles to Guidelines

The MAS FEAT Principles were issued in 2018 as an Information Paper that highlights the evolving trends and practices of the responsible use of AI, rather than as a binding regulatory instrument.³²¹ Accordingly, the MAS FEAT Principles are voluntary in nature³²² and are unlikely to impose any legal obligations or liabilities on financial institutions.

While the voluntary FEAT Principles have performed decently well to date, which is largely due to “Singapore’s highly centralised regulatory environment”, their voluntary nature remains a key limitation.³²³ Given their non-binding nature, the FEAT principles may be applied only partially or superficially, without any genuine accountability.³²⁴ There may also be “some level of inertia or procrastination” in putting the FEAT Principles into practice.³²⁵ Consequently, these voluntary FEAT Principles may become less effective in the long run, as there may not be consistent or robust compliance across all banks.

Overtime, the FEAT Principles are complemented by the Executive Handbook from Phase 2 of Project MindForge (discussed above under Section IV(B)(4)(ii)). Most recently, MAS introduced the MAS Guidelines which remains a flexible soft law instrument. It can be updated periodically to keep pace with rapid AI innovation, which is often viewed as a “regulatory

³²¹ This information is obtained via an email interview with a MAS officer (anonymous) on 29 October 2025.

³²² Remolina, “AI Governance and Algorithmic Auditing,” *supra* note 16, p. 2.

³²³ *Ibid*, pp. 2, 15.

³²⁴ *Ibid*, p. 15.

³²⁵ MAS, *Emerging Risks and Opportunities*, *supra* note 4, p. 90.

moving target”.³²⁶ This contrasts with formal legislation (i.e. hard law), which typically involves a longer and more cumbersome amendment process. Such flexibility is especially important for GenAI, whose risks and impacts are not yet fully understood or controllable.³²⁷ As AI capabilities continue to evolve, existing regulations have to stay “relevant and effective” in order to tackle new risks without hindering innovation.³²⁸ Therefore, the new MAS Guidelines strikes a pragmatic balance between regulatory flexibility and accountability.

The FEAT Principles and the MAS Guidelines and MindForge Toolkit share the same overarching objective of promoting responsible AI adoption and usage in Singapore’s financial sector. They also overlap in the core principles of transparency and fairness. Moreover, the MAS Guidelines build on the high-level FEAT Principles by providing greater coverage and depth across more aspects of the entire AI lifecycle, including data management, human oversight, third-party AI management, selection, evaluation and testing, technology and cybersecurity risks, reproducibility and auditability, pre-deployment reviews, post-deployment monitoring, and change management. Overall, the MAS Guidelines adopt a proportionate risk-based approach that varies based on the risk materiality of each AI use case or model. The MAS Guidelines thus serve to provide financial institutions with clearer operational standards and lifecycle controls, while at the same time preserving sufficient flexibility for continued AI innovation.

C. Regulatory Tools

1. Supervisory Technology

As financial operations grow more complex and data-intensive,³²⁹ traditional supervisory methods may prove insufficient. Financial regulators are increasingly adopting Supervisory Technology (“**SupTech**”)³³⁰ to enhance their efficiency and efficacy in supervising financial institutions’ regulatory and compliance obligations.³³¹ SupTech tools include AI-powered market surveillance, automated stress testing, and real-time transaction monitoring by regulator.³³²

³²⁶ “Regulatory Sandboxes in Artificial Intelligence” (OECD, 2023) <https://www.oecd.org/content/dam/oecd/en/publications/reports/2023/07/regulatory-sandboxes-in-artificial-intelligence_a44aac4f/8f80a0e6-en.pdf>, p. 13.

³²⁷ MAS, *Emerging Risks and Opportunities*, *supra* note 4, pp. 2, 4.

³²⁸ Remolina, “Generative AI in Finance,” *supra* note 50, p. 14.

³²⁹ World Bank, *AI for Risk-Based Supervision*, *supra* note 94, pp. 6-7, 14.

³³⁰ “Financial Regulation – The Forward Agenda’ – Keynote Address by Mr Ravi Menon, Managing Director, Monetary Authority of Singapore, at the Australian Securities and Investments Commission (ASIC) Annual Forum 2017 on 20 March 2017” (MAS, 20 March 2017) <<https://www.mas.gov.sg/news/speeches/2017/financial-regulation>>: The term “SupTech” was coined by Mr Ravi Menon, then Managing Director of the Monetary Authority of Singapore, at the ASIC Annual Forum 2017.

³³¹ “Building Regulatory and Supervisory Technology Ecosystems: For Asia’s Financial Stability and Sustainable Development” (Asian Development Bank (“ADB”), 2022) <<https://www.adb.org/sites/default/files/publication/820686/regulatory-technology-ecosystems-asia-financial-stability.pdf>>, p. 1.

³³² For more information, see Lin, *Artificial Intelligence in China’s Banking Sector*, *supra* note 25, p. 31.

SupTech improves efficiency by leveraging AI and machine learning to automate supervisory tasks like data collection and reporting,³³³ thereby freeing up regulators to focus on processes that require greater human judgment.³³⁴ SupTech also analyses both structured and unstructured data,³³⁵ which allows regulators to gain more in-depth supervisory insights and improve the overall efficacy of their supervision.³³⁶

These benefits of SupTech are supported by a 2024 study by the Cambridge SupTech Lab, in which 80% of the 139 surveyed authorities reported that SupTech was effective in improving their “data-driven decision-making” and reducing time spent on repetitive supervisory tasks.³³⁷ This demonstrates that SupTech can substantially improve “the efficiency and efficacy of financial supervision”.³³⁸ These improvements enable financial regulators to manage risks and regulate the supervised institutions more effectively, thereby contributing to the stability of the financial industry and benefitting the broader financial sector.³³⁹

A case in point is MAS, which adopts SupTech to boost its supervisory efficiency. MAS employs Natural Language Processing to analyse texts, monitor social media platforms and media reports, and flag potential issues that require supervisory attention.³⁴⁰ By automating these tasks, MAS inspectors are able to operate more efficiently as they no longer have to manually comb through large volumes of textual data.³⁴¹ Next, MAS has also developed a working prototype that automates the assessment of borrowers’ creditworthiness to evaluate the robustness of financial institutions’ “credit underwriting, risk management and provisioning frameworks and processes”.³⁴² This new tool allows for a faster and more comprehensive review of all borrowers, replacing the previous manual approach that could only review a sample of borrowers and could still take up to three days to complete.³⁴³ Lastly, MAS’ commitment to advancing SupTech is also evident from its establishment of the dedicated SupTech, Surveillance and Analytics (SSA) Division, which strengthens MAS’ supervisory oversight by leveraging technology and data analytics.³⁴⁴ Together, these initiatives demonstrate how SupTech enhances MAS’ supervisory efficiency and efficacy, enabling it to manage the risks of the supervised institutions more effectively.

³³³ Maria Lucia Passador, “AI in the Vault: AI Act’s Impact on Financial Regulation” (2024) *Loyola University of Chicago Law Review* 56 <<https://dx.doi.org/10.2139/ssrn.4898828>>, p. 138.

³³⁴ World Bank, *AI for Risk-Based Supervision*, *supra* note 94, p. 7.

³³⁵ “State of SupTech Report 2024” (Cambridge SupTech Lab, 2025) <<https://dx.doi.org/10.2139/ssrn.5518142>>, p. 15.

³³⁶ “SupTech Tools for Prudential Supervision and Their Use during the Pandemic” (FIS, 2021) <<https://www.bis.org/fsi/publ/insights37.pdf>>, p. 2.

³³⁷ Cambridge SupTech Lab, *State of SupTech Report 2024*, *supra* note 342, p. 11.

³³⁸ World Bank, *AI for Risk-Based Supervision*, *supra* note 94, pp. 7, 14.

³³⁹ ADB, *Building Regulatory and Supervisory Technology Ecosystems*, *supra* note 338, p. 7.

³⁴⁰ “Written reply to Parliamentary Question on use of artificial intelligence in supervision of financial institutions” (MAS, 03 October 2023) <<https://www.mas.gov.sg/news/parliamentary-replies/2023/written-reply-to-parliamentary-question-on-use-of-artificial-intelligence-in-supervision-of-fis>>, [5].

³⁴¹ *Ibid.*

³⁴² FIS, *SupTech Tools for Prudential Supervision*, *supra* note 343, p. 23.

³⁴³ *Ibid.*

³⁴⁴ “Banking and Insurance Group” (MAS) <<https://www.mas.gov.sg/who-we-are/Organisation-Structure/Banking-and-Insurance>> accessed 30 June 2026; “Monetary Authority of Singapore Organisation Chart” (MAS, 15 October 2025) <<https://www.mas.gov.sg/-/media/mas/about-mas/structure-of-mas/organisation-chart/2025/mas-org-chart-15-oct-2025.pdf>>.

In addition to its current SupTech applications, MAS could also draw on the experiences of other countries' SupTech initiatives to further strengthen its own supervisory capabilities. Notably, given the financial sector's increasing exposure to cyberattacks,³⁴⁵ MAS should consider implementing SupTech solutions to ensure that its supervised institutions are adequately prepared to defend against cyber threats.³⁴⁶ MAS can adopt SupTech tools such as "real-time threat monitoring, cyber inspections, and compliance analytics", while also using them to "simulate cyberattack scenarios, assess vulnerabilities, and enhance systemic resilience".³⁴⁷

Globally, 23% of surveyed financial regulators have already deployed SupTech for cyber risk supervision, with another 24% developing or piloting such solutions.³⁴⁸ For instance, in January 2023, the Bangko Sentral ng Pilipinas, the central bank of the Philippines, launched the Advanced SupTech Engine for Risk-Based Compliance ("ASTERisC*"), which has been applied to all financial institutions in the Philippines since January 2025.³⁴⁹ ASTERisC* is an AI-driven, cloud-based SupTech solution³⁵⁰ that facilitates and automates the supervisory oversight, reporting, and evaluation of supervised institutions' cybersecurity risk practices.³⁵¹ ASTERisC* provides "real-time threat monitoring" and "behavioural analytics" to detect unusual activities, cybersecurity risks, and system vulnerabilities.³⁵² Likewise, MAS could deploy a similar SupTech solution to proactively monitor, detect and combat cyber threats in Singapore's financial sector.

In short, the use of SupTech allows financial regulators to enhance their supervisory efficiency and effectiveness, while also proactively safeguarding against emerging risks like cybersecurity threats.

2. Regulatory Sandbox

Following the UK Financial Conduct Authority's establishment of the first regulatory sandbox for financial technologies in 2015, regulators globally have embraced structured engagement mechanisms to test technological innovation and generate evidence that can inform policymaking.³⁵³ A 2024 study by Markellos et al. mapped 199 cases of regulatory sandboxes

³⁴⁵ "SG banks see over 1,800 cyberattacks weekly in past six months" (*Asian Banking & Finance*, 05 December 2024) <<https://asianbankingandfinance.net/banking-technology/news/sg-banks-see-over-1800-cyberattacks-weekly-in-past-six-months/>>.

³⁴⁶ Cambridge SupTech Lab, *State of SupTech Report 2024*, *supra* note 342, p. 145.

³⁴⁷ *Ibid.*

³⁴⁸ *Ibid.*, p. 147.

³⁴⁹ "BSP Expands ASTERisC Platform to Boost Cybersecurity Oversight for All Banks, VASPs" (*Fintech News Philippines*, 10 December 2024) <<https://fintechnews.ph/65198/security/bsp-expand-asterisc/>>.

³⁵⁰ "State of SupTech Report 2023" (Cambridge SupTech Lab, 2024) <<https://lab.ccaf.io/wp-content/uploads/2024/03/Cambridge-State-of-SupTech-Report-2023.pdf>>, p. 128.

³⁵¹ "BSP Champions SupTech Solution and Industry-Wide Initiatives for Cyber Resilience" (Bangko Sentral ng Pilipinas, 01 September 2022) <<https://www.bsp.gov.ph/SitePages/MediaAndResearch/MediaDisp.aspx?ItemId=6425>>.

³⁵² Cambridge SupTech Lab, *State of SupTech Report 2023*, *supra* note 357, pp. 128-129.

³⁵³ Giulio Cornelli, Sebastian Doerr, Leonardo Gambacorta, and Ouarda Merrouche, "Regulatory Sandboxes and Fintech Funding: Evidence from the UK" (2023) *Review of Finance* <<http://dx.doi.org/10.2139/ssrn.3727816>>, p. 2.

across 92 countries, spanning sectors including telecommunications, energy, and AI. This demonstrates the widespread adoption of this instrument.³⁵⁴

Regulatory sandboxes create spaces for “controlled experimentation” of innovative AI systems.³⁵⁵ Within the period of the regulatory sandbox, participating firms may receive waivers or relaxations from specific regulatory requirements or compliance processes to facilitate innovation.³⁵⁶ Generally, regulatory sandboxes, which are frequently deployed in the financial sector,³⁵⁷ are temporary, rely on trial-and-error, and often involve close collaboration between participating firms and regulators.³⁵⁸

Regulatory sandboxes benefit both participating firms and regulators. On one hand, participating firms are given the space to innovate and trial their latest technologies without needing to fully comply with all regulatory obligations, given the waivers or relaxations granted by regulators during the period of the sandbox.³⁵⁹ Participating firms also gain faster market entry, with time to market reduced by 40%, and find it easier to obtain substantial investment.³⁶⁰ Further, close collaboration with regulators allows participating firms to gain a deeper understanding of regulatory standards and cut costs on regulatory consulting.³⁶¹ On the other hand, through direct and continuous supervision, regulators can gain important insights about new AI models and applications.³⁶² This deeper understanding enables regulators to proactively evaluate and update regulatory frameworks to keep pace with technological developments.³⁶³

Given these benefits, it is unsurprising that the Organisation for Economic Co-operation and Development (“OECD”) encourages the use of regulatory sandboxes to examine AI applications. The OECD AI Principles, first introduced in 2019 and later updated in 2024, recommend that governments “[use] experimentation to provide a controlled environment in which AI systems can be tested, and scaled-up, as appropriate”.³⁶⁴ This underscores the value of regulatory sandboxes in fostering AI innovation.³⁶⁵

³⁵⁴ Raphael N. Markellos, Sean F. Ennis, Bryn Enstone, Anastasios Manos, Dimitrios Pazaitis, and Dimitrios Psychoyios, “Worldwide Adoption of Regulatory Sandboxes: Drivers, Constraints and Policies” (2025) <<http://dx.doi.org/10.2139/ssrn.4764911>>.

³⁵⁵ World Bank, *AI for Risk-Based Supervision*, *supra* note 94, p. 37.

³⁵⁶ OECD, *Regulatory Sandboxes in Artificial Intelligence*, *supra* note 333, p. 8; “Regulatory Cooperation in AI Sandboxes: Insights from Fintech” (European Banking Institute (“EBI”), 2025) <<https://dx.doi.org/10.2139/ssrn.5199887>>, p. 7.

³⁵⁷ EBI, *Regulatory Cooperation in AI Sandboxes*, *supra* note 363, p. 3.

³⁵⁸ OECD, *Regulatory Sandboxes in Artificial Intelligence*, *supra* note 333, pp. 8, 14.

³⁵⁹ EBI, *Regulatory Cooperation in AI Sandboxes*, *supra* note 363, p. 8.

³⁶⁰ *Ibid*; “The Impact and Effectiveness of Innovate” (Financial Conduct Authority, 2019), <<https://www.fca.org.uk/publication/research/the-impact-and-effectiveness-of-innovate.pdf>>, pp. 3, 5.

³⁶¹ EBI, *Regulatory Cooperation in AI Sandboxes*, *supra* note 363, p. 8.

³⁶² *Ibid*; Ryan Nabil, “Artificial Intelligence Regulatory Sandboxes” (2024) *Journal of Law, Economics & Policy* 19 <<https://static1.squarespace.com/static/623324/t/6631bba8/171948/Nabil.pdf>>, p. 304.

³⁶³ *Ibid*.

³⁶⁴ “Recommendation of the Council on Artificial Intelligence” (OECD Legal Instruments, 03 May 2024) <<https://legalinstruments.oecd.org/en/instruments/oecd-legal-0449>>, [2.3].

³⁶⁵ OECD, *Regulatory Sandboxes in Artificial Intelligence*, *supra* note 333, p. 13.

Singapore has yet to have a dedicated regulatory sandbox for AI.³⁶⁶ It is thus recommended that MAS establishes one, drawing on Singapore’s experiences setting up other sandboxes. Indeed, the concept of regulatory sandbox is not foreign to Singapore. In 2016, MAS launched the FinTech Regulatory Sandbox to encourage experimentation of innovation financial products and services.³⁶⁷ This sandbox was enhanced in 2019 with Sandbox Express to expedite market testing for firms with low-risk business activities,³⁶⁸ and again in 2022 with Sandbox Plus to streamline applications with financial grants.³⁶⁹ While some AI products, such as Kristal.AI,³⁷⁰ were tested in the FinTech Regulatory Sandbox, this sandbox is not dedicated to the testing of innovative AI solutions.

Beyond the FinTech Regulatory Sandbox, Singapore has two other sandboxes pertaining to GenAI, but they are not regulatory in nature. The first is IMDA’s *Generative AI Sandbox for Small and Medium Enterprises* (“SMEs”) 2.0,³⁷¹ which primarily provides SMEs with financial support for developing GenAI solutions, rather than regulatory relief or guidance.³⁷² The second is AIVF’s *Global AI Assurance Sandbox*,³⁷³ which focuses on establishing evaluation benchmarks to assess the ethical integrity of AI models, instead of facilitating regulatory compliance.³⁷⁴ MAS can build on these Singaporean experiences to establish a dedicated AI regulatory sandbox in the financial sector.

Moreover, Singapore can draw valuable lessons from international experiences in establishing a dedicated AI regulatory sandbox. For instance, the Hong Kong Monetary Authority launched its *Generative AI Sandbox* in August 2024.³⁷⁵ Its first cohort started in December 2024,³⁷⁶ and the second cohort started in October 2025.³⁷⁷ This regulatory sandbox seeks to encourage

³⁶⁶ “Overview of Regulatory Sandbox” (MAS) <<https://www.mas.gov.sg/development/fintech/regulatory-sandbox>> accessed 30 June 2026: As per this MAS website, there is currently no dedicated regulatory sandbox for AI in Singapore.

³⁶⁷ “Sandbox” (MAS) <<https://www.mas.gov.sg/development/fintech/sandbox>> accessed 30 June 2026; “Sandbox Plus” (MAS) <<https://www.mas.gov.sg/development/fintech/sandbox-plus>> accessed 30 June 2026.

³⁶⁸ “Sandbox Express” (MAS) <<https://www.mas.gov.sg/development/fintech/sandbox-express>> accessed 30 June 2026; “How Singapore’s FinTech Regulatory Sandbox is helping fintech innovators accelerate time to market” (EDB, 22 August 2022) <<https://www.edb.gov.sg/en/business-insights/insights/how-singapore-s-fintech-regulatory-sandbox-is-helping-fintech-innovators-accelerate-time-to-market.html>>.

³⁶⁹ “Sandbox Plus,” MAS, *supra* note 374; EDB, “How Singapore’s FinTech Regulatory Sandbox is helping,” *supra* note 375.

³⁷⁰ “Secretive Startup Tests Wealthtech Product in Singapore Fintech Regulatory Sandbox” (*Fintech News Singapore*, 26 October 2017) <<https://fintechnews.sg/13497/roboadvisor/secretive-startup-tests-wealthtech-product-singapore-fintech-regulatory-sandbox/>>; OECD, *Regulatory Sandboxes in Artificial Intelligence*, *supra* note 333, p. 31.

³⁷¹ “Generative Artificial Intelligence Sandbox for SMEs 2.0” (IMDA, 02 December 2024) <https://services2.imda.gov.sg/ctoas/highlight/94/generative-artificial-intelligence-sandbox-for-smes-2-0?utm_source=referral&utm_medium=edm&utm_term=mddi&utm_content=genai_sandbox_2.0&utm_campaign=genai_navigator_infographic>; “Building on the success of Singapore’s first Generative AI Sandbox for SMEs, IMDA launches Generative AI Sandbox for SMEs v2.0 to help SMEs adopt GenAI solutions” (IMDA, 29 October 2024) <<https://www.imda.gov.sg/resources/press-releases-factsheets-and-speeches/factsheets/2024/gen-ai-sandbox-2-0>>.

³⁷² Nabil, “Artificial Intelligence Regulatory Sandboxes,” *supra* note 362, p. 321.

³⁷³ AIVF, “Global AI Assurance Sandbox,” *supra* note 187.

³⁷⁴ Nabil, “Artificial Intelligence Regulatory Sandboxes,” *supra* note 362, p. 322.

³⁷⁵ “HKMA and Cyberport Launch GenA.I. Sandbox to Bolster A.I. Adoption in Financial Sector” (*Hong Kong Monetary Authority* (“HKMA”), 13 August 2024) <<https://www.hkma.gov.hk/eng/news-and-media/press-releases/2024/08/20240813-6/>>.

³⁷⁶ “HKMA announces inaugural cohort of GenA.I. Sandbox” (HKMA, 19 December 2024) <<https://www.hkma.gov.hk/eng/news-and-media/press-releases/2024/12/20241219-5/>>.

³⁷⁷ “HKMA announces second cohort of GenA.I. Sandbox to advance responsible A.I. innovation” (HKMA, 15 October 2025) <<https://www.hkma.gov.hk/eng/news-and-media/press-releases/2025/10/20251015-4/>>.

responsible innovation of GenAI within the banking sector in Hong Kong,³⁷⁸ with the second cohort emphasising on the safe and robust implementation of AI models.³⁷⁹

Further from home, Article 57 of the European Union (“EU”) AI Act obliges “each Member State [to] establish at least one AI regulatory sandbox at the national level by 2 August 2026”.³⁸⁰ Notably, Spain is the first EU country to launch such a sandbox in 2023.³⁸¹ Singapore can benefit from the insights and good practices derived from these AI regulatory sandboxes, including those from Hong Kong and Spain, once such information becomes publicly available.

Ultimately, a dedicated AI regulatory sandbox would allow Singapore to foster responsible AI innovation while strengthening regulatory oversight and capabilities.

D. Measures to Govern Third-Party Risks

Financial institutions are increasingly relying on AI models developed by third-party developers, particularly GenAI models that are pre-trained externally.³⁸² This introduces additional risks, such as the lack of transparency, potential biases in the pre-trained data, and data protection concerns.³⁸³

Currently, financial institutions are held “accountable for both internally developed and externally sourced AIDA models”.³⁸⁴ While this principle appears sound in theory, the execution of this blanket approach is tricky and complex,³⁸⁵ especially when financial institutions lack visibility or control over third-party AI models. Indeed, Veritas Phase 2 recognised that the treatment of third-party AI models and risks require further clarifications.³⁸⁶ Accordingly, this paper proposes three measures to effectively address third-party risks.

First, a shared responsibility framework is a proportionate approach that allocates responsibility based on each party’s level of *control* over the different stages of an AI model’s lifecycle.³⁸⁷ This ensures that the party that is best positioned to act will take sufficient actions to safeguard end-users.³⁸⁸ This approach mirrors the shared responsibility framework

³⁷⁸ FSI, *Regulating AI in the Financial Sector*, *supra* note 6, [66].

³⁷⁹ HKMA, “HKMA announces second cohort of GenAI. Sandbox,” *supra* note 384.

³⁸⁰ “AI Regulatory Sandbox Approaches: EU Member State Overview” (*EU Artificial Intelligence Act*, 02 May 2025) <<https://artificialintelligenceact.eu/ai-regulatory-sandbox-approaches-eu-member-state-overview/>>; “Article 57: AI Regulatory Sandboxes” (*EU Artificial Intelligence Act*) <<https://artificialintelligenceact.eu/article/57/>> accessed 30 June 2026.

³⁸¹ Nabil, “Artificial Intelligence Regulatory Sandboxes,” *supra* note 362, p. 304; “Spain legislates for first EU AI Act regulatory sandbox” (*Pinsent Masons*, 13 November 2023) <<https://www.pinsentmasons.com/out-law/news/spain-legislates-for-first-eu-ai-act-regulatory-sandbox>>.

³⁸² MAS, *Artificial Intelligence Model Risk Management*, *supra* note 34, [7.2.1].

³⁸³ *Ibid.*

³⁸⁴ MAS, *FEAT Principles*, *supra* note 205, p. 10.

³⁸⁵ MAS, *Veritas Document 6*, *supra* note 245, p. 12.

³⁸⁶ MAS, *Veritas Document 3A*, *supra* note 92, p. 49; MAS, *Veritas Document 3C*, *supra* note 92, pp. 37-38.

³⁸⁷ AIVF and IMDA, *Model AI Governance Framework for Generative AI*, *supra* note 19, p. 7; MAS, *Veritas Document 6*, *supra* note 245, p. 14; “ASEAN Guide on AI Governance and Ethics” (*Association of Southeast Asian Nations (“ASEAN”)*, 2024) <https://asean.org/wp-content/uploads/2024/02/ASEAN-Guide-on-AI-Governance-and-Ethics_beautified_201223_v2.pdf>, p. 56.

³⁸⁸ AIVF and IMDA, *Model AI Governance Framework for Generative AI*, *supra* note 19, p. 7.

commonly used in cloud computing,³⁸⁹ where cloud service providers are responsible for the security of the cloud, including timely updates to their cloud systems, while customers are responsible for the security in the cloud, including securing their own cloud environments with proper configurations.³⁹⁰

A similar shared responsibility framework can be extended to the context of financial institutions deploying third-party AI models.³⁹¹ For instance, for general-purpose, off-the-shelf AI models, third-party developers only have control over the base AI model and should thus shoulder the responsibility of furnishing relevant “documentation and transparency artifacts, such as AIDA model cards”.³⁹² On the other hand, since financial institutions have control over deployment and retraining of third-party AI models, including what data is used for retraining, financial institutions should be responsible for updating the relevant documentation and transparency artifacts to reflect the specific use case of the AI model.³⁹³ In short, under a shared responsibility framework, third-party AI developers should be “responsible for *pre-deployment* compliance obligations”, whereas financial institutions should be “responsible for *post-deployment* compliance obligations”.³⁹⁴

Additionally, this shared responsibility framework should vary slightly for different third-party AI model types, such as “closed-source, open-source or open-weights”, as financial institutions have varying levels of control for different model types.”³⁹⁵

Second, financial institutions are encouraged to manage third-party risks through robust contractual arrangements.³⁹⁶ Financial institutions may contractually require third-party AI developers to support the financial institutions in fulfilling their transparency and explainability obligations.³⁹⁷ Such clauses may oblige third-party developers to disclose key details about how their AI models operate,³⁹⁸ and grant access to regulators when necessary.³⁹⁹ Where transparency is limited, financial institutions may also obtain “appropriate representations or warranties” regarding the AI models’ fairness, including their accuracy and potential biases.⁴⁰⁰

³⁸⁹ *Ibid*; “Advisory on Addressing the Technology and Cyber Security Risks Associated with Public Cloud Adoption” (MAS, 2021) <<https://www.mas.gov.sg/-/media/mas/regulations-and-financial-stability/regulatory-and-supervisory-framework/risk-management/cloud-advisory.pdf>>, [7].

³⁹⁰ “Managing Cloud Risk – Some Considerations for the Oversight of Critical Cloud Service Providers in the Financial Sector” (FSI, 2023) <<https://www.bis.org/fsi/publ/insights53.pdf>>, pp. 5-6.

³⁹¹ AIVF and IMDA, *Model AI Governance Framework for Generative AI*, *supra* note 19, p. 7.

³⁹² MAS, *Veritas Document 6*, *supra* note 245, p. 14; “Model Cards Explained,” Google, accessed November 06, 2025, <https://modelcards.withgoogle.com/>: “Model cards are simple, structured overviews of how an advanced AI model was designed and evaluated ... By explaining how a model was built, tested, and performs, model cards make it easier to understand and compare models.”

³⁹³ MAS, *Veritas Document 6*, *supra* note 245, p. 14.

³⁹⁴ *Ibid*.

³⁹⁵ AIVF and IMDA, *Model AI Governance Framework for Generative AI*, *supra* note 19, p. 7.

³⁹⁶ MAS, *Emerging Risks and Opportunities*, *supra* note 4, p. 29; ASEAN, *ASEAN Guide on AI Governance and Ethics*, *supra* note 395, p. 36.

³⁹⁷ ASEAN, *ASEAN Guide on AI Governance and Ethics*, *supra* note 395, p. 36.

³⁹⁸ *Ibid*.

³⁹⁹ MAS, *Emerging Risks and Opportunities*, *supra* note 4, p. 28.

⁴⁰⁰ *Ibid*.

Third, financial institutions should perform comprehensive due diligence on third-party developers and their AI models before adoption, including assessing the data quality and ensuring compliance with legal and IP requirements.⁴⁰¹ Financial institutions should also conduct thorough evaluations of third-party AI models using diverse datasets to verify their reliability and consistency before deployment.⁴⁰²

Collectively, the shared responsibility framework, robust contractual arrangements, and rigorous due diligence provide a multi-tiered approach to better manage these third-party risks, as compared to the existing blanket approach under the FEAT Principles

VI. Conclusion

The case study of Singapore provides a useful lens for evaluating Singapore's approach to governing AI in finance. In practice, MAS draws on several categories simultaneously, reflecting a multi-layered and adaptive regulatory strategy.

At its core, MAS has adopted a **principles-based approach** as the primary foundation for governing AI in the financial sector. The FEAT Principles 2018, articulate broad standards that financial institutions are expected to uphold. These have since been reinforced by the MAS Guidelines, a flexible soft-law instrument. The Guidelines afford financial institutions discretion in determining how to comply while preserving the regulatory agility necessary to keep pace with rapidly evolving AI capabilities.

MAS has also complemented this principles-based foundation with robust **engagement strategies**. The FinTech Regulatory Sandbox, launched in 2016 and subsequently enhanced through Sandbox Express (2019) and Sandbox Plus (2022), provides a structured environment for experimentation.

Collaborative initiatives such as ACIP, Project Veritas and Project MindForge and SAFR further bring together regulators, financial institutions, and technology providers to operationalise responsible AI practices. As discussed in Section V(C)(2) above, this paper recommends that MAS build on these experiences to establish a dedicated AI regulatory sandbox tailored specifically to the testing of innovative AI solutions in finance.

MAS has further demonstrated a strong commitment to the **SupTech**. Its deployment of Natural Language Processing for media monitoring, its development of automated creditworthiness assessment prototypes, and the establishment of the dedicated SupTech, Surveillance and Analytics (SSA) Division all reflect an active effort to leverage AI in enhancing supervisory efficiency and efficacy. These initiatives, discussed in Section V(C)(1) above, position MAS at the forefront of technology-enabled financial supervision.

⁴⁰¹ *Ibid.*

⁴⁰² MAS, *Artificial Intelligence Model Risk Management*, *supra* note 34, [7.2.2].

Elements of **market-enabling regulation** are also discernible in MAS' broader fintech strategy. Initiatives such as the API Exchange (APEX) and Singapore's open banking efforts create the digital infrastructure necessary for AI-driven financial services to develop and scale. This reflects a recognition that regulation can actively facilitate innovation.

Notably, MAS' approach incorporates aspects of the **wait-and-see** posture, albeit in a deliberate and strategic manner. The gradual evolution from voluntary principles (2018) to industry-led operationalisation (Project MindForge, 2025) to formal guidelines (the MAS Guidelines) reflects a measured progression. This allows MAS to observe market developments and accumulate regulatory experience before escalating the formality of its interventions. This contrasts with the more prescriptive, rules-based trajectory adopted by jurisdictions such as the European Union under the AI Act.

Underpinning this multi-layered strategy is MAS' substantial **institutional capacity** for **regulatory innovation**. The establishment of the FinTech & Innovation Group ("FTIG") on 1 August 2015 is a case in point.⁴⁰³ The FTIG plays a central role in developing regulatory frameworks and strategic initiatives that facilitate technological innovation. It helps to improve risk management, enhance operational efficiency, and strengthen competitiveness across the financial sector. MAS has made sustained efforts to build its internal technical capabilities. The FTIG brings together a wide range of professionals, including technical specialists, legal consultants, business consultants, and startup experts. MAS has also recruited private-sector experts to fill leadership roles within the FTIG.⁴⁰⁴ These arrangements collectively demonstrate MAS' strong and forward-looking regulatory capacity.

It should be acknowledged, however, that such regulatory capacity is not without limits. Some government agencies may find it difficult to attract and retain top talent given stiff competition from the private sector. Also, regulators in different jurisdictions may possess varying levels of institutional capacity, which may constrain their ability to replicate Singapore's multi-layered approach.

Moreover, while Singapore's current framework provides a solid foundation, this paper has identified areas for improvement, including elevating the Guidelines to Codes for greater enforceability, strengthening governance of third-party AI risks, leveraging SupTech, and establishing a dedicated AI regulatory sandbox. Regulators should also remain attentive to emerging concerns such as copyright and intellectual property infringement.⁴⁰⁵

Further, a regulatory framework, however well-designed, is only as effective as its enforcement. Enforcement is therefore crucial to ensuring that the regulatory approaches outlined above, and

⁴⁰³ "MAS sets up new FinTech & Innovation Group" (MAS, 27 July 2015) <<https://www.mas.gov.sg/news/media-releases/2015/mas-sets-up-new-fintech-and-innovation-group>>. See also Lin Lin, "Regulating FinTech: The Case of Singapore" (2019) 35 Banking and Finance Law Review 94 <<https://dx.doi.org/10.2139/ssrn.3481563>>.

⁴⁰⁴ *Ibid.*

⁴⁰⁵ MAS, *Emerging Risks and Opportunities*, *supra* note 4, pp. 26-27.

the specific measures and tools adopted by the regulator, translate into meaningful compliance and accountability.

MAS maintains a dedicated Enforcement Department, where its enforcement functions and capabilities are centralised. This structure is designed to enhance consistency and deepen expertise in enforcement across the financial sectors regulated by MAS.⁴⁰⁶ In addition, MAS maintains strong domestic and international cooperation, frequently working with other government agencies in Singapore and its international counterparts.⁴⁰⁷ This collaborative approach reinforces the overall effectiveness of its enforcement efforts. It is particularly important in the context of AI, where cross-border data flows and globally deployed AI models may create regulatory challenges that no single jurisdiction can address in isolation.

In sum, MAS' approach is best characterised as a *multi-layered strategy that combines principles-based regulation, structured engagement, supervisory technology adoption, market-enabling measures, and deliberate gradualism in regulatory escalation*. Through this blended approach, MAS seeks to strike a pragmatic balance between managing the risks associated with AI and preserving Singapore's competitiveness as a leading financial innovation hub. This balance lies at the heart of the Brummer–Yadav FinTech innovation trilemma discussed above.

This paper argues that effective regulation requires not a single approach, but a calibrated combination of strategies suited to a jurisdiction's institutional context and stage of AI development. To remain effective, existing AI initiatives and frameworks should be constantly reviewed and updated to match the ever-changing nature of AI.⁴⁰⁸ Ultimately, responsible AI governance requires an adaptive, multi-layered ecosystem and regulatory capacity that evolves alongside the technology it seeks to govern.

⁴⁰⁶ "Enforcement" (MAS) <<https://www.mas.gov.sg/regulation/enforcement>> accessed 30 June 2026.

⁴⁰⁷ "International Cooperation" (MAS) <<https://www.mas.gov.sg/who-we-are/international-cooperation>> accessed 30 June 2026; see generally, Jonathan Lee, Kwan Yee Ng, and Brian Tse, "State of AI Safety in Singapore (2026)" (*Concordia AI*, May 2026) <<https://concordia-ai.com/research/state-of-ai-safety-in-singapore/>>, pp. 16-23.

⁴⁰⁸ MAS, *Artificial Intelligence Model Risk Management*, *supra* note 34, [8.1].

About ECGI

ECGI is an international non-profit membership organisation that provides a platform for debate and dialogue among academics, policymakers, and business leaders, with a focus on major corporate governance, ESG, and stewardship issues.

The views expressed in this working paper are those of the authors, not those of the ECGI or its members.

ECGI Working Paper Series in Law

Editorial Board

Editor	Amir Licht , Professor of Law, Radzyner Law School, Interdisciplinary Center Herzliya
Consulting Editors	Hse-Yu Iris Chiu , Professor of Corporate Law and Financial Regulation, University College London Martin Gelter , Professor of Law, Fordham University School of Law Geneviève Helleringer , Professor of Law, ESSEC Business School and Oxford Law Faculty Kathryn Judge , Professor of Law, Columbia Law School Wolf-Georg Ringe , Professor of Law & Finance, University of Hamburg
Editorial Assistant	Asif Malik , ECGI

<https://www.ecgi.global/publications/working-papers>