Artificial intelligence in banking and asset management

Dr Alexander Ressos, TEP
Attorney-at-Law (Switzerland and Germany),
Solicitor (England & Wales and Hong Kong)
Of Counsel, KGP Legal LLC
alexander.ressos@kgplegal.com.sg
www.ressos.com.sg

From statistical models to machine learning

Banks used statistical models long before the term artificial intelligence became fashionable. Credit scoring, market risk models and fraud rules have been part of banking for decades. What changed in the 2010s was the arrival of machine-learning techniques that learn patterns from large data sets without being programmed rule by rule. When MAS reviewed the practices of selected banks in 2024, it found significant use of artificial intelligence in three areas: risk management, customer engagement and servicing, and internal operational processes.[1]

The models observed in that review were often decision-tree-based techniques such as XGBoost, LightGBM and CatBoost. Banks used them to detect abnormal market movements, to estimate loan prepayment rates, to flag suspicious transactions in anti-money laundering systems and to detect fraud. In customer engagement they predicted customer preferences and personalised product recommendations. In operations they automated the checking of customer information, triaged information technology incidents and forecast the demand for cash at automated

© 2026 Dr Alexander Ressos. General information only, not legal, tax or investment advice. No client relationship is created. All Singapore law advice is provided by a duly licensed and regulated firm of Singapore advocates and solicitors only on the basis of an express written letter of engagement. More information at SingaporeIQ.com and ressos.com.sg.

teller machines.[2] These applications are unspectacular. They nevertheless account for most of the value that artificial intelligence creates in banks, because they touch processes that run millions of times a year.

The arrival of generative AI

The launch of ChatGPT in November 2022 changed the conversation. Large language models could summarise documents, draft text, answer questions on internal knowledge bases and write computer code. MAS noted that these models offered better performance in tasks such as clustering documents and enabled new uses, among them the generation of marketing content and the analysis of multimodal data.[3]

Adoption was cautious at first. In mid-2024 the use of generative AI in banks appeared to MAS to be at an early stage, focused on assisting staff to raise productivity and kept away from direct customer-facing applications. Banks were exploring the technology for risk management, the summarising of customer interactions, marketing content, investment analysis and coding assistants for staff. The reasons for the caution were practical. Generative models can produce fluent and confident statements that are simply wrong. Their outputs are difficult to test against a ground truth. Most banks also use models pre-trained by external providers whose training data they cannot fully inspect.[4]

By 2026 the frontier had moved again, towards so-called agentic systems that plan a sequence of steps, call other tools and act with a degree of autonomy. MAS treats such systems as a distinct category of risk because of their capacity for autonomous decision-making, tool use and the chaining of actions across several steps or agents.[5] An agent that can draft a payment instruction, check it against a sanctions list and submit it raises questions that a summarising tool does not.

© 2026 Dr Alexander Ressos. General information only, not legal, tax or investment advice. No client relationship is created. All Singapore law advice is provided by a duly licensed and regulated firm of Singapore advocates and solicitors only on the basis of an express written letter of engagement. More information at SingaporeIQ.com and ressos.com.sg.

The local banks as adopters

Singapore's three local banks have made artificial intelligence part of their public strategy. DBS, the largest of them and originally the Development Bank of Singapore whose origins Part C describes, reported that its artificial intelligence initiatives generated a record S$1 billion of economic value in 2025.[6] The figure is the bank's own estimate and rests on its own methodology. It is nonetheless significant because few banks anywhere attempt to quantify the return on their models at all, and because the claim exposes management to questions from investors when the figure falls short.

The same bank has spoken openly about the consequences for employment. In February 2025 its then chief executive, Piyush Gupta, said that the bank expected to reduce its workforce by about 4,000 contract and temporary positions over three years as artificial intelligence took over tasks, while creating some 1,000 new roles linked to the technology.[7] Group headcount fell from 41,638 at the end of 2024 to 39,983 at the end of 2025, although the change reflects many factors besides automation.[8] OCBC and UOB have also introduced generative AI assistants for their staff and use machine learning in credit, fraud detection and anti-money laundering. Their programmes are described in their annual reports and in the industry training initiatives discussed below.[9]

Asset and wealth management

In asset and wealth management, artificial intelligence enters through research, portfolio analysis, client reporting and the preparation of client meetings. The advisers whom MAS and the Institute of Banking and Finance (IBF) presented as examples in September 2026 included a wealth manager with more than twenty years of experience who uses AI tools for meeting preparation and portfolio analysis. The Deputy Prime Minister stressed that she "remains responsible for the advice she gives".[10] The sentence summarises the regulatory position in the wealth business. A recommendation to a client remains a regulated act of the representative and the institution, whatever tool helped to produce it.

© 2026 Dr Alexander Ressos. General information only, not legal, tax or investment advice. No client relationship is created. All Singapore law advice is provided by a duly licensed and regulated firm of Singapore advocates and solicitors only on the basis of an express written letter of engagement. More information at SingaporeIQ.com and ressos.com.sg.

MAS has accordingly placed the provision of financial advisory and fund management services among the uses of higher risk materiality, together with credit scoring and insurance underwriting. For such uses, controls on transparency, explainability and fairness are to be applied with greater rigour, since failure or poor performance could have significant consequences for customers.[11] The family offices and external asset managers described in Part E fall under the same expectations when they are licensed or exempt financial institutions, although proportionality reduces the burden for those whose use of the technology is limited.

Public support for adoption

The state has supported adoption through funding as well as through regulation. MAS's Financial Sector Technology and Innovation scheme, in its fourth version, provides up to S$220 million over three years. One of its six tracks is an "AI pathfinder" track, alongside tracks for centres of excellence, infrastructure and platforms, institution projects, a hackathon scale-up grant and manpower.[12] The design is typical of Singapore's approach to the financial sector, which Part D traced back to the development strategy of the 1990s and 2000s: the regulator funds shared capabilities and pilots, while leaving commercial deployment to the institutions.

Notes

1. MAS, *Artificial Intelligence Model Risk Management: Observations from a Thematic Review*, Information Paper, December 2024, paras 1.1 and 2.1: key areas of significant use are "risk management, customer engagement and servicing, as well as to support internal operational processes". ↩
2. MAS, Information Paper, December 2024, para 2.1: use of decision-tree-based models such as XGBoost, LightGBM and CatBoost to "detect abnormal financial market movements", "estimate loan prepayment rates", in AML systems and fraud detection, to personalise product recommendations, to automate checking and verification processes, to triage IT incidents and to forecast "ATM cash withdrawals". ↩

© 2026 Dr Alexander Ressos. General information only, not legal, tax or investment advice. No client relationship is created. All Singapore law advice is provided by a duly licensed and regulated firm of Singapore advocates and solicitors only on the basis of an express written letter of engagement. More information at SingaporeIQ.com and ressos.com.sg.

3. MAS, Information Paper, December 2024, paras 2.1 and 2.3: the launch of ChatGPT in November 2022 "has led to an increased interest"; generative AI models "offer better performance in tasks such as clustering documents" and enabled new use cases, "e.g., to generate text content and images for marketing, or to process multimodal data for financial analysis". ↩
4. MAS, Information Paper, December 2024, para 2.4: use of generative AI in banks "appears to still be at an early stage", with the focus on assisting or augmenting humans for productivity, "and not in applying Generative AI to direct customer facing applications"; use cases include risk management, summarising customer interactions, marketing content, investment analyses and copilots – MAS, Information Paper, December 2024, paras 7.1.1(a)–(b) and 7.2.1: risks of hallucinations and unexpected behaviours, "a key concern highlighted by banks"; lack of easily available ground truths; most banks use generative AI models "pre-trained by an external party", with unknown biases from pre-training data and concentration risks. ↩
5. MAS, *Response to Feedback Received on Guidelines on Artificial Intelligence Risk Management*, P017-2025, 7 October 2026, para 12.4: "agentic AI introduces a distinct set of risks that warrant dedicated attention" given "its capacity for autonomous decision-making, tool use, and chaining of actions across multiple steps or agents". ↩
6. Wikipedia, "DBS Bank" (accessed November 2026), section on recent history, citing Heng Young Zhan, "DBS unlocks S$1 billion in AI value in 2025", *The Business Times*, 14 January 2026: AI initiatives "hit a record S$1 billion" in 2025. ↩
7. Statements of Piyush Gupta reported in February 2025 (Reuters and *The Straits Times*, 24–25 February 2025): about 4,000 contract and temporary roles to be reduced over three years; around 1,000 AI-related roles to be created. ↩
8. Wikipedia, "DBS Bank" (accessed November 2026), finances table, citing DBS Group Holdings Ltd, *Annual Report 2025*, p. 175: 41,638 employees in 2024 and 39,983 in 2025. ↩

© 2026 Dr Alexander Ressos. General information only, not legal, tax or investment advice. No client relationship is created. All Singapore law advice is provided by a duly licensed and regulated firm of Singapore advocates and solicitors only on the basis of an express written letter of engagement. More information at SingaporeIQ.com and ressos.com.sg.

9. OCBC and UOB announcements on internal generative AI tools for staff (2023–2025) and the use of machine learning in credit, fraud and AML; see the annual reports of OCBC and UOB for 2025. ↩
10. Gan Kim Yong, Deputy Prime Minister and Chairman of MAS, keynote address at the IBF Distinction Evening, 24 September 2026 (mas.gov.sg): example of a UBS wealth manager with over twenty years' experience who uses AI tools for meeting preparation and portfolio analysis; "she remains responsible for the advice she gives, not the AI tools". ↩
11. MAS, Response to Feedback, 7 October 2026, para 3.10: controls relating to transparency, explainability and fairness "should be applied with greater rigour for use cases of higher risk materiality, such as credit scoring, insurance underwriting, and the provision of financial advisory or fund management services". ↩
12. MAS, "Financial Sector Technology and Innovation Scheme (FSTI 4.0)" (mas.gov.sg, published 31 August 2026, accessed November 2026): "up to S$220 million over three years"; tracks: Centre of Excellence, Infrastructure & Platform, Institution Project, Global FinTech Hackcelerator Scale-Up Grant, Manpower and AI pathfinder. ↩

Disclaimer

This article is provided for general information only. It is based on publicly available sources as at its date of publication. These sources have not been independently verified against licences, regulatory registers or the records of the entities concerned. It is not legal, tax, financial or investment advice. Nor is it a recommendation to invest in, transact with or use the services of any entity mentioned. Law and regulation change frequently, so the content may be incomplete or outdated. To the fullest extent permitted by law, Dr Alexander Ressos and the publisher of SingaporeIQ exclude all liability for loss or damage arising from the use of or reliance on this article. Readers should obtain advice on their specific circumstances before acting or refraining from action.

© 2026 Dr Alexander Ressos. General information only, not legal, tax or investment advice. No client relationship is created. All Singapore law advice is provided by a duly licensed and regulated firm of Singapore advocates and solicitors only on the basis of an express written letter of engagement. More information at SingaporeIQ.com and ressos.com.sg.

Names and trademarks of the entities discussed belong to their owners and are used for identification only. Their mention implies no endorsement, affiliation or allegation of wrongdoing. All Singapore law advice is provided by a duly licensed and regulated firm of Singapore advocates and solicitors only on the basis of an express written letter of engagement. Corrections and updates: contact@ressos.com.

© 2026 Dr Alexander Ressos. This article may be quoted with attribution to SingaporeIQ (SingaporeIQ.com). Reproduction in full and any commercial use require prior written consent. The Legal Terms at https://singaporeiq.com/legal-terms apply.

Author contact: Dr Alexander Ressos, TEP · contact@ressos.com

© 2026 Dr Alexander Ressos. General information only, not legal, tax or investment advice. No client relationship is created. All Singapore law advice is provided by a duly licensed and regulated firm of Singapore advocates and solicitors only on the basis of an express written letter of engagement. More information at SingaporeIQ.com and ressos.com.sg.