SOUTH AFRICAN RESERVE BANK

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Topic for discussion: Leveraging artificial intelligence (AI) from a South African perspective

Good morning. It is a privilege to be with you today to discuss a topic that is rapidly reshaping the contours of our financial ecosystem – **artificial intelligence (AI).**

Disclaimer:

- *Let me begin with a brief disclaimer: The views I share today are intended to stimulate dialogue and reflection. They do not represent official policy positions of the central bank, nor do they constitute regulatory guidance. As we explore the opportunities and risks of AI, it's important to recognise that this is a rapidly evolving field, and our collective understanding – and regulatory frameworks – must evolve alongside it*.

General overview

There has been rapid growth in the digital technology landscape over the past decade. Technologies such as AI have gained more traction. There are different types of AI systems, including machine learning. There are simple and complex forms of AI. For the purpose of this discussion today, I will not dwell too much on describing these technologies but rather on their use and impact.

When referencing AI in its broadest form, financial institutions and market infrastructures have been using AI for many years. More recently, AI has emerged as a transformative force, reshaping industries, revolutionising workflows and redefining human-machine interactions. Leading this AI revolution is generative (Gen)AI, a subset of AI that enables machines not just to perform tasks but also to create, innovate and imagine, among other capabilities.

In this regard, the issues related to AI and its impact on financial stability were already considered by the Financial Stability Board (FSB) in 2017.[1] Since then, the use cases in the financial system have broadened and AI continues to advance. This is highlighted in a number of reports, including the *2024 Annual Report* of the Bank for International Settlements (BIS), the International Monetary Fund's (IMF) October 2024 *Global Financial Stability Report* and the work of the Organisation for Economic Co-operation and Development (OECD).

The convergence of AI and GenAI marks a pivotal moment in the evolution of technology, unlocking new opportunities across various domains. There are many applications of Gen AI, including its use in various business processes and assurance functions. Today, I'm going to take a narrow focus, looking at whether the transformative power of AI can be harnessed while safeguarding the safety and soundness of financial institutions to maintain the stability of the financial system.

Shifts in the financial sector

The adoption of GenAI within the financial services sector has increased substantially and this trend continues to accelerate globally, largely to improve operational efficiency and regulatory compliance. As highlighted in the 2025 World Economic Forum white paper titled 'Artificial Intelligence in Financial Services', banks, insurers and other market participants are projected to spend nearly US$97 billion by 2027 on AI technological advancements; that is almost triple the US$35 billion spent in 2023.[2]

The use of GenAI by the South African financial sector is picking up. Financial institutions are exploring its use primarily to enhance productivity, improve processes and reduce risk through anomaly detection. The South African Reserve Bank (SARB) continues to gather data to strengthen its assessment of the prevalence of AI and its impact on the financial system.

The largest four banks and the two largest insurers are leading the way in adopting AI and GenAI technologies.[3] AI is significantly transforming the banking sector in South

[1] Financial Stability Board (November 2017). Artificial Intelligence and machine learning in financial services
[2] World Economic Forum (January 2025). Artificial Intelligence in Financial Services
[3] S Malinga, ITWeb (18 March 2024). Big-four banks take lead in SA's GenAI, AI deployments

Africa, driving innovation, enhancing customer experiences and improving operational efficiency. Some notable use cases of AI in South African banks include the following:

1. **Customer service and support**: AI-powered chatbots and virtual assistance enable the creation of personalised product offerings.
2. **Fraud detection and prevention**: AI algorithms monitor transitions in real time to detect and mitigate fraud risks. Machine learning models analyse customer behaviour to identify anomalies that may indicate fraud.
3. **Credit scoring and risk management**: AI assesses creditworthiness using non-traditional data sources such as social media activity, utility payments and mobile phone usage, making it easier to extend credit to underserved populations.
4. **Processing automation**: Banks use robotic process automation to automate repetitive and time-consuming tasks such as data entry, account reconciliation and compliance reporting, thereby reducing operational costs and errors.
5. **Investment and wealth management**: AI-driven robo-advisers provide investment advice and portfolio management services based on algorithms and customer preferences, making wealth management accessible to a broader audience.

While the use of these technologies is increasing exponentially and the potential benefits and risks are recognised, alignment is crucial at both microprudential and macroprudential levels. The role of central banks and regulators is critical in shaping responsible AI governance at financial institutions to support the stability of the sector.

Microprudential elements

These are licensed and supervised institutions, so clearly there are microprudential elements to consider.

Insurers have been using AI in data analysis and predictive modelling. And according to the July 2025 International Association of Insurance Supervisors (IAIS) Practice paper on the supervision of AI in insurance, insurers are now actively testing and deploying AI more broadly throughout the insurance value chain, including in:

- policy administration and claims management;
- tailored customer engagement; and
- enhanced risk management and fraud detection.

Similar trends are evident in the banking sector, where AI use cases include broad use in anti-money laundering and countering the financing of terrorism (AML/CFT) compliance, deeper understanding of client profiles and improved tailoring of client offerings and market segmentation. In currency markets, algorithmic trading continues

to evolve. A widely hailed benefit is that AI will free up talent to focus on high order thinking processes.

Despite the benefits, there is also recognition that these technologies can introduce new risks from a microprudential perspective, including:

- ethical biases where algorithms may unintentionally reinforce discrimination;
- accountability challenges linked to the opaque and complex nature of some AI systems;
- skills shortages and key person dependencies due to the demand for AI talent that is outpacing supply;
- infrastructure challenges introduced by legacy systems, which often require significant upgrades to support AI;
- vendor lock-in and high entry barriers, which may reduce competition and slow innovation; and
- cybersecurity risks, which could also contribute to legal and other compliance risks.

Looking at these elements, it is clear that central banks and financial supervisors should be looking more closely at the implications of wider AI adoption – how it can potentially mitigate risks as well as broader institutional governance elements. This is especially important in using GenAI because of the autonomous nature of AI models – there may likely be deviations from the original intent and what these models end up focusing on.

Macroprudential elements

At a macroprudential level, the use of AI can help enhance analytics, improve risk aggregation, assist in the development of early warning indicators and improve the detection of detrimental lending practices that could undermine system stability. It also enables improved cross-sectoral analytics and deep dives into interconnectedness.

However, the same AI that provides beneficial analytics can also present risks that may amplify existing vulnerabilities within the financial system. The 2024 FSB report on AI highlights how the widespread use of AI models by market participants could lead to increased market concentration and the emergence of new systemic risks, such as:

- Privacy and cybersecurity risks which arise when AI systems, which rely on large volumes of data, unintentionally expose sensitive information or create new security vulnerabilities.
- Market correlation and herding behaviour, with similar AI models making identical decisions that can amplify procyclicality. “Application of AI and machine learning

could result in new and unexpected forms of interconnectedness between financial markets and institutions," the FSB noted in 2017.

- Data concentration that introduces over-reliance on limited data sources introducing systemic bias.
- Third-party dependency, inflating the dominance of cloud service providers and raising concentration and resilience concerns.
- Regulatory non-compliance and unintended outcomes. AI may allow information sharing but a lack of coordination across different national authorities can contribute to non-compliance and reputation and legal risks for financial institutions, with unintended outcomes.

South African financial institutions must comply with many regulations, which can be challenging when integrating AI. Regulations like the Protection of Personal Information Act 4 of 2013 (POPIA) may impose strict requirements on data usage and privacy. The regulatory landscape for AI is still evolving, leading to uncertainty about future requirements and potential compliance costs. Ensuring AI systems are auditable and that decisions can be explained are crucial for regulatory compliance. Black box AI models pose challenges in this regard.

With all these identified risks, can we harness AI for financial stability? My preliminary answer is yes. But there are conditions.

The first step is in the microprudential area. As supervised institutions embark on their AI journey, the usual regulatory principles will apply – they need to be aware of both opportunities and risks, they need to manage risks to maintain the safety and soundness of the institution and they need to remember that the accountability remains with the humans.

In the insurance sector, the International Association of Insurance Supervisors (IAIS) has provided guidance on a risk-based AI governance framework[4] that is built on four pillars:

- Governance and accountability
- Robustness, safety and security
- Transparency and explainability
- Fairness, ethics and redress

Data issues are critical to resolve – institutions that do not have the appropriate and sufficient data, as well as suitable data governance and skills, will have challenges with

[4] International Association of Insurance Supervisors (July 2025). Application Paper on the supervision of artificial intelligence

the adoption of AI. There are potential risks related to the breadth of data on which AI is trained. As central banks, we have certain data standards that we have relied upon. We need to understand the implications of increasing use of big data from multiple sources.

Clear mapping of areas in which AI is used, having clear accountability measures and matching these to risk appetite are essential. For financial institutions this means that multiple governance checks are required. AI committees are not a silver bullet – risk, ethics and other committees need to be actively involved.

Identifying and managing operational risks are also vital. Financial institutions must understand model risk elements associated with AI, but most of them do not have the expertise to review their own models or undertake comprehensive assessments of model accuracy and quality.

Assessing the impact of AI adoption on other policy imperatives, including environmental, social and governance (ESG) and other objectives. Using AI to enhance the depth of information provided, as well as providing more granular data to supervisors to assist them with tracking of financial stability risks would also be useful.

As supervisors, we need to ensure that senior managers and boards of financial institutions understand and manage what their AI models are doing. If we use AI in the way we are currently using people, are we interviewing AI adequately? Do we perform ongoing assessments on whether they are performing as planned? Is there sufficient know-how within the organisation or are we placing sole reliance on third-party providers?

The above issues reflect the in-country issues well. However, what happens when AI models are signed of and developed for use by a large insurance or banking group with cross-border operations? When these models are applied at the subsidiary level, are they matched to the business model or do they add complexity? Do the subsidiaries have sufficient know-how and understanding at management and board level? With third-party dependencies, how do we think about and manage potential regional spillovers for large regional banks and insurers?

Under the G20 South African Presidency, coordinating with various international organisations, a report will be produced suggesting how central banks, regulators and supervisors can monitor AI adoption and the tools needed (e.g. big data analytics, advanced analytics) to supervise and monitor AI-related risks in the financial sector.

Let me not get carried away with supervisory issues and turn to the role of central banks.

The role of central banks

In the rapidly changing AI landscape, the role of central banks is crucial. As highlighted in several BIS publications and ongoing work across various international organisations,

central banks are both directly and indirectly affected by the impact of AI, both in their role as stewards of monetary and financial stability and as users of the technology.

I have already touched on the microprudential elements. As microprudential supervisors, central banks must ensure that individual institutions adopt AI responsibly and have adequate governance to manage risks presented by the adoption of AI, while taking advantage of opportunities. This is the first step to safeguard stability – by minimising risks and taking advantage of potential benefits.

However, as stewards of financial stability, central banks should harness their own capabilities to take advantage of the granular data and analytics provided by individual institutions and consider how AI can help them improve their own supervisory capabilities. In this regard, it is important for central banks to view themselves as users of technology, including AI, to enhance their capabilities.

I will limit my comments to regulatory and supervisory technologies (RegTech and SupTech respectively) and analytics that complement monitoring and decision-making in financial stability.

In the realm of SupTech, AI empowers regulators with real-time monitoring, predictive analytics and automated reporting, enabling proactive and data-driven supervision.

For RegTech, AI enhances compliance by automating checks, detecting fraud, processing regulatory documents and managing regulatory changes efficiently.

Central banks and regulators can leverage AI to improve microprudential oversight, financial inclusion, cybersecurity and climate risk analysis. However, successful adoption requires addressing challenges such as data governance, model transparency, regulatory alignment and capacity building within the central bank.

To ensure the safe, sound and responsible adoption of AI in the financial sector, regulators and central banks can implement several effective approaches. Core considerations for responsible AI use include:

- **Building AI expertise for financial stability:** Central banks and regulators need to develop internal AI expertise at all levels, particularly within financial stability teams. The right staff must be in place and well-capacitated. This includes training staff to understand, supervise and leverage AI for monitoring risks and improving internal processes. AI specialists should be integrated into functions and committees to ensure that those responsible for financial stability at both micro and macro levels are equipped to deal with AI-related risks. In addition, central banks should consider developing their own AI platforms to keep pace with technological changes.
- **Establishing direct AI-to-AI communication links:** Secure, real-time application programming interface (API) links should be established between the AI systems of central banks and those of regulated entities and other authorities. This will allow

continuous monitoring, benchmarking and scenario analysis, enabling authorities to detect and respond to systemic risks, feedback loops and coordination problems before they materialise. Such links also facilitate counterfactual analysis, allowing authorities to simulate market shocks and test crisis-response scenarios across the financial system.

- **Developing automatic, trigger-based crisis facilities:** Traditional, discretionary crisis-response mechanisms may be too slow for AI-driven market events. Central banks and regulators should establish automatic, pre-committed liquidity facilities that activate when certain triggers are met. This reduces uncertainty, prevents destructive AI-driven fire sales and helps stabilise markets at the speed that AI crises require.
- **Enhancing monitoring and surveillance of the use of AI:** Regularly assess the use of AI in systemically important institutions.
- **Prioritising cybersecurity and operational resilience:** As the integration of AI increases the attack surface, central banks and regulators need to invest in strong cybersecurity and operational resilience. This includes protection against new threats such as rapid injection, data poisoning and model theft, as well as ensuring business continuity during disruptions.

Addressing emerging financial stability risks from AI: Supervisors should prioritise monitoring and mitigating risks such as:

- **Herding and procyclicality,** which is when AI models make similar decisions, they could exacerbate market swings and trigger systemic shocks.
- **Market concentration and third-party dependency,** where excessive reliance on a few big tech or cloud providers could create single points of failure.
- **Climate and operational risks,** highlighting the importance of managing the energy consumption of large AI models and the potential for operational disruptions.
- **Misuse and opacity,** where the risks of malicious use, lack of transparency and unpredictable behaviour from AI systems require continuous monitoring and clear lines of accountability.

By focusing on these priorities, central banks and regulators can harness AI to strengthen financial stability, while proactively managing new and increasing risks that AI introduces to the financial system.

Central banks and AI governance

Central banks are increasingly exploring AI to enhance their core functions, such as economic forecasting, payments, supervision and even banknote production. Yet, they

remain cautious, given their mandate for stability, transparency and public trust. The BIS recently published a comprehensive framework for AI governance in central banks. It outlines a holistic risk taxonomy covering strategic, operational, cybersecurity, third-party and reputational risks. Central banks are encouraged to adopt a low-risk appetite and ensure AI governance aligns with national laws and international standards. The BIS also recommends practical steps for responsible AI adoption, which includes:

- forming interdisciplinary AI committees;
- establishing guiding principles;
- maintaining AI inventories; and
- adapting the framework as needed.[5]

There is an increasing need for collaboration among central banks. We operate in a world where risk moves at digital speed – a single event in one jurisdiction can ripple across the globe within seconds. Traditional oversight tools were not built for this environment. To fully realise the benefits of AI while safeguarding financial stability, central banks and regulators must prioritise collaboration, caution and capacity-building**.** Caution is essential to ensure that AI deployment does not outpace regulatory preparedness or compromise ethical standards. Equally important is capacity-building. As AI technologies continue to rapidly evolve, regulatory institutions must invest in developing internal expertise across data science, machine learning, ethics and financial risk. This includes upskilling staff, recruiting multidisciplinary talent and fostering a culture of continuous learning.

The South African experience

At the SARB, we recognise this transformation and have taken bold steps to ensure we are not only adapting, but leading. In late 2024, the SARB launched its AI Strategy, which is built around a use-case approach that targets four key focus areas central to our mandate:

1. Economic statistics
2. Economic research
3. Prudential supervision and regulation
4. Financial stability

[5] Bank for International Settlements (January 2025). Governance of AI adoption in central banks

This strategy is being implemented through practical, high-impact use cases across departments. The strategic use cases driving transformation include the following:

- **Remote sensing for economic nowcasting,** where the central bank is developing a satellite imagery processing pipeline to measure socioeconomic variables in real time. This supports monetary policy formulation by offering insights into inflation, growth risks and the informal sector – enhancing policy efficacy and inclusivity.
- **Anomaly detection in financial surveillance,** where AI is being used to detect contraventions of exchange control regulations, enabling data-led policy decisions, improving surveillance of cross-border transactions and supporting risk-based supervision.
- **Advanced fraud detection and screening,** where AI models are being deployed to detect anomalies in payment transactions, integrate with crime reporting systems and prevent the outflow of fraudulent funds. This strengthens financial stability and supports South Africa's efforts to address greylisting concerns.
- **AI web transformation maps** are being leveraged to dynamically adapt content in response to user interactions.
- **Copilot for business productivity,** where AI-powered Copilot tools are being implemented to boost operational efficiency across the SARB. These tools support collaboration, manage unstructured data and enhance research, analytics and knowledge management.

As AI transforms industries, its deployment must be ethical, transparent and accountable. The Prudential Authority (PA) is planning to reshape its regulatory landscape to ensure responsible innovation while safeguarding the safety and soundness of our financial sector.

Key governance concerns that are being addressed through supervision and regulation include:

- fairness and anti-discrimination;
- liability and accountability;
- disclosure and explainability; and
- data privacy and protection.

The SARB continually advocates for principles such as fairness, transparency, accountability, consumer protection, continuous monitoring, ethical training, independent audits, whistleblower protection and sustainability. The SARB's journey with AI is not just about technology – it is about transforming how we govern, supervise

and serve. We are committed to ensuring that AI enhances financial stability, supports inclusive growth and upholds public trust.

Recognising the urgency, the PA also launched a multipronged strategy to integrate AI into its regulatory and supervisory frameworks, which includes the following:

- **Development of SupTech** by modernising our internal systems to support advanced analytics, enabling more agile and data-driven supervision.
- **Collaboration with the SARB's Fintech Unit** to engage with industry innovators to explore AI applications in fraud detection, credit risk modelling and operational resilience.
- **A sector-wide AI adoption survey** to help understand how banks and insurers are adopting AI, identifying use cases, risks and governance gaps.
- **Interim guidelines for responsible AI use** standards are being developed to guide financial institutions on transparency, explainability and ethical AI deployment.

Collaboration and regional approaches

International cooperation is essential. To further support resilient and effective financial systems in the age of AI, the following actions are recommended:

- **Strengthening international collaboration and capacity building:** We should establish an international community of practice for sharing AI tools, models, data, best practices and regulatory approaches. This will help us reduce duplication of efforts and improve our collective resilience. By collaborating with other central banks, academia and the private sector, we can identify common vulnerabilities and address cross-border risks more effectively.
- **Practical recommendations for the Macroeconomic and Financial Management Institute of Eastern and Southern Africa (MEFMI) region:** The SARB and MEFMI can strengthen regional financial resilience by jointly building capacity in macroeconomic and financial management. Through their cooperative framework, they can share expertise, align on key policy areas and support institutional development to foster a more stable macroeconomic environment across the region**.**

Conclusion: The need for a balanced approach

As we look to the future, the FSB gave some homework to national authorities and standard-setting bodies across three areas:

- Explore ways to address data and information gaps in monitoring developments in AI use within the financial system and assessing their financial stability implications.

- Evaluate whether current regulatory and supervisory frameworks adequately address both domestic and international vulnerabilities.
- Identify ways to enhance regulatory and supervisory capabilities for overseeing policy frameworks related to AI applications in finance.

Achieving these goals will require engagement with regulated sectors, investment in people's skills and collaboration at national, regional and international levels.

- **Capacity building:** We should invest in education and training programmes to enhance the AI literacy and skills of our regulators and policymakers. We need to set clear objectives on how to use AI responsibly in our environments – AI should be used to assist higher order decision-making by humans, not just replace them. The BIS Innovations Hub continues to provide guidance in this regard.
- **Collaborative efforts:** We must promote collaboration between regulators, financial institutions, AI technology providers and other key stakeholders, including academia. By sharing knowledge and best practices, we can facilitate a unified approach to managing AI risks and fostering innovation. For the SARB, our key priorities are clear.

In closing, central banks should be at the forefront of discussions on AI adoption within the financial sector. In South Africa, the SARB and the PA aim not merely to adapt to change but to actively shape it. By leveraging AI responsibly and providing guidance to financial institutions, we can help build a more resilient, inclusive and future-fit financial system for South Africa. This journey will not be easy but it is one we must undertake with the financial sector, ensuring that we don't get lost in the technology but rather focus on achieving policy objectives. We need financial institutions that are safe and financially sound – hence the governance elements are essential. We must also not lose sight of the importance of humans working alongside AI, with humans remaining accountable – including in the central bank.

Thank you.