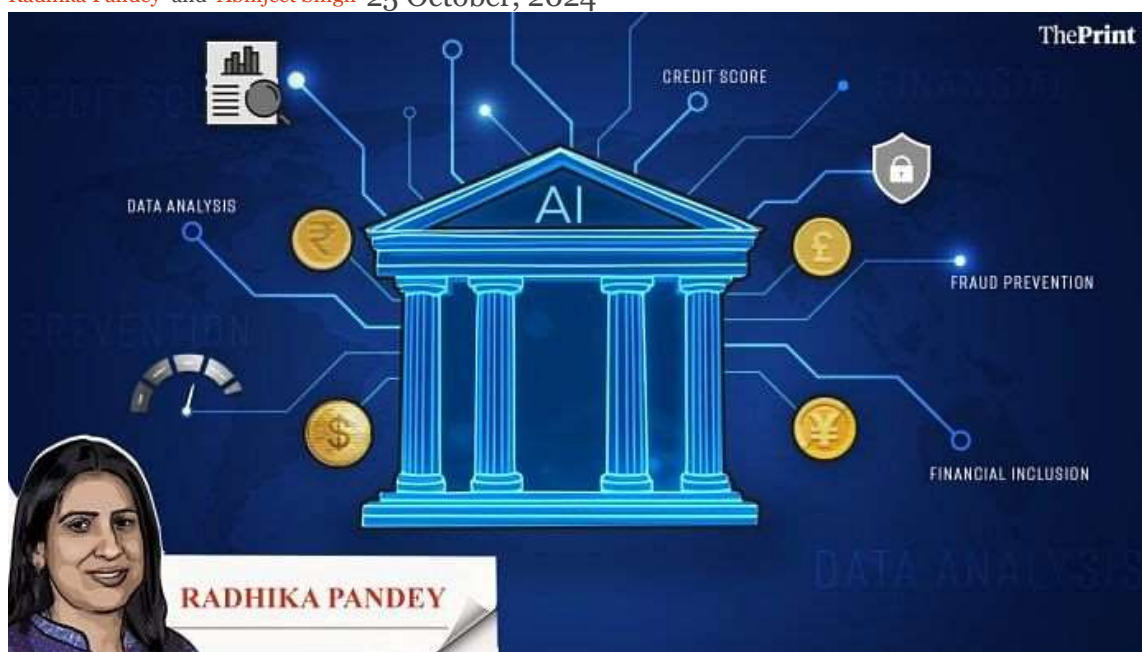


AI is revolutionising banking & finance, but over-reliance, misuse may pose financial stability risks

If many market participants tend to use similar models, correlated risk & herding behaviour can amplify stability risks. Regulatory guardrails are important.

Radhika Pandey and Abhijeet Singh 25 October, 2024



Artificial Intelligence (AI) is transforming the landscape of the financial sector. Recent breakthroughs in computing power, combined with the vast availability of data, have sparked a renewed interest in AI across various industries, with finance being a prominent area of focus.

Financial institutions are increasingly incentivised to use AI for their business models, owing to the opportunities for cost reduction, risk management and productivity enhancements.

These institutions are currently using AI for a variety of tasks, including credit scoring to expand access to credit, reshaping client interface, automated fraud detection, stress testing, credit portfolio monitoring, automated compliance with financial regulation, forecasting and guiding investment related behaviour, to mention a

few. AI also has the potential to strengthen central banks' supervisory oversight and support them in their monetary policy mandate.

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AI and central banking

Globally, central bankers have been widespread adopters of AI. Central banks are using AI-based techniques to identify outliers in data, regardless of its shape and distribution. The model identifies outliers, which could then be reviewed by experts to refine the algorithm. This feedback loop overcomes the "black-box" nature of AI-based models.

An interesting use case of such models is their ability to process anecdotal texts, interviews with economists and market participants to generate a time series of sentiments. The sentiment index can be a valuable tool to nowcast GDP or predict economic recessions.

Use of AI-based models can support monetary policy decisions by extracting information from a wide array of traditional and non-traditional data sources. The tools can also help in breaking down the drivers of inflation, i.e., how much of inflation is due to past price increases, inflation expectations, output gap or international factors.

AI-based systems have the potential to improve the oversight of payment systems by detecting anomalous transactions from the regular ones. Timely identification of such transactions is crucial to address issues, such as cyber attacks and money-laundering.

Recently, the Reserve Bank of India Innovation Hub (RBIH) developed an AI model to tackle mule account fraud. A mule account is created by one person, but operated by another. These accounts are often used for money laundering and tax evasion.

Credit scoring, financial inclusion and fraud detection

Customer interface is being reshaped as banks are increasingly using AI-driven chatbots and virtual assistants to provide personalised services to customers. AI is being increasingly used to speed up lending decisions. Traditionally, lenders have relied on credit scores to make lending decisions.

Data on payment history typically serves as the foundation of most credit scoring models, which use regression and statistical analyses to generate credit scores, using limited structured data. However, banks and fintechs are increasingly relying on unstructured data, including social media activity, mobile phone use and text messaging to generate a more nuanced view on creditworthiness.

The use of AI-based algorithms to this data has enabled assessment of the willingness to pay of borrowers. This leads to faster segmentation of borrowers, leading to quicker credit decisions.

The use of AI and machine learning algorithms may help in providing greater access to credit to the underserved population. In traditional credit scoring models, a potential borrower must have a sufficient amount of credit history to be considered 'scorable'.

However, these metrics have been difficult to ascertain for borrowers with thin credit files, especially those employed in the unorganised sectors. This runs counter to the financial inclusion objectives, and potentially excludes a larger customer base that banks can tap into.

AI-based solutions can facilitate regulatory compliance through automated reporting and ensuring adherence to evolving regulatory standards, thereby reducing the risk of misconducts and penalties. Banks in India are increasingly leveraging AI tools for these objectives.

A recent RBI paper, using text mining on annual reports of banks, shows that the adoption of artificial intelligence by private sector banks increased by six fold in 2022-23 as compared to 2015-16.

Other emerging use cases

One of the emerging applications of AI in finance is the robo-adviser, a virtual financial adviser that delivers algorithm-based investment advisory services to investors on digital platforms, assisting them with portfolio selection with no human intervention.

Robo-advisers are considered less costly, compared to conventional wealth managers, and could negate the behavioural biases of investors. Though the use of robo-advisory services in India is at a nascent stage, the usage is expected to increase in the coming years.

Bias, risks and mitigation measures

While the benefits of AI in financial services are plentiful, the concomitant risks associated with the misuse of data and proliferation of bias require considerable policy measures and regulatory guardrails.

Data biases or inaccurate information could result in mistrust for the technology.

The application of AI on a wider scale has the potential to accelerate financial stability risks. If many market participants tend to use similar AI and machine learning programmes in say, credit scoring or financial market activities, the consequent correlated risk and herding behaviour could amplify financial stability risks.

Globally, jurisdictions are responding to these risks through policy interventions. The European Union's (EU) AI Act, enacted in July 2024, has a broad, risk-based classification of AI systems, which are use-case agnostic. The use cases in financial services, such as insurance and credit underwriting, are [categorised as high-risk systems](#) under the Act, the rules for which are set to come into effect from August 2027.

The Monetary Authority of Singapore, in 2018, had introduced the '[FEAT principles](#)'. These principles and assessment methodology are based on "fairness, ethics, accountability and transparency" measures for responsible use of AI.

In India, SEBI has required [reporting of use of AI applications](#) by its registered institutions from 2019. At a broader level, the National Strategy for Artificial Intelligence strives to strike a balance between innovation and safety.

Given the complexity and the risks associated with these models, there might be need for [explainability assessments](#) to mitigate such risks.

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Views are personal.