Irving Fisher Committee on Central Bank Statistics

BIS

AI governance and implementation:
A central banking perspective

Bruno Tissot & Olivier Sirello, Bank for International Settlements / Irving Fisher Committee on Central Bank Statistics

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The views expressed are those of the authors and do not necessarily reflect the views of the BIS, the IFC, its members or the other institutions mentioned in this presentation.

Experience of central banks as both producers and users of data

- **Survey on AI/ML in central banks** by the Irving Fisher Committee on Central Bank Statistics of the BIS
- Released in **April 2025**
- **Broad geographical coverage** (60 jurisdictions) across all continents
- Recent policy input
  - The use of artificial intelligence for policy purposes, submitted by the BIS to the G20 Finance Ministers and Central Bank Governors - October 2025

Outline

1. AI in central banks

- Expectations
- Applications
- Challenges

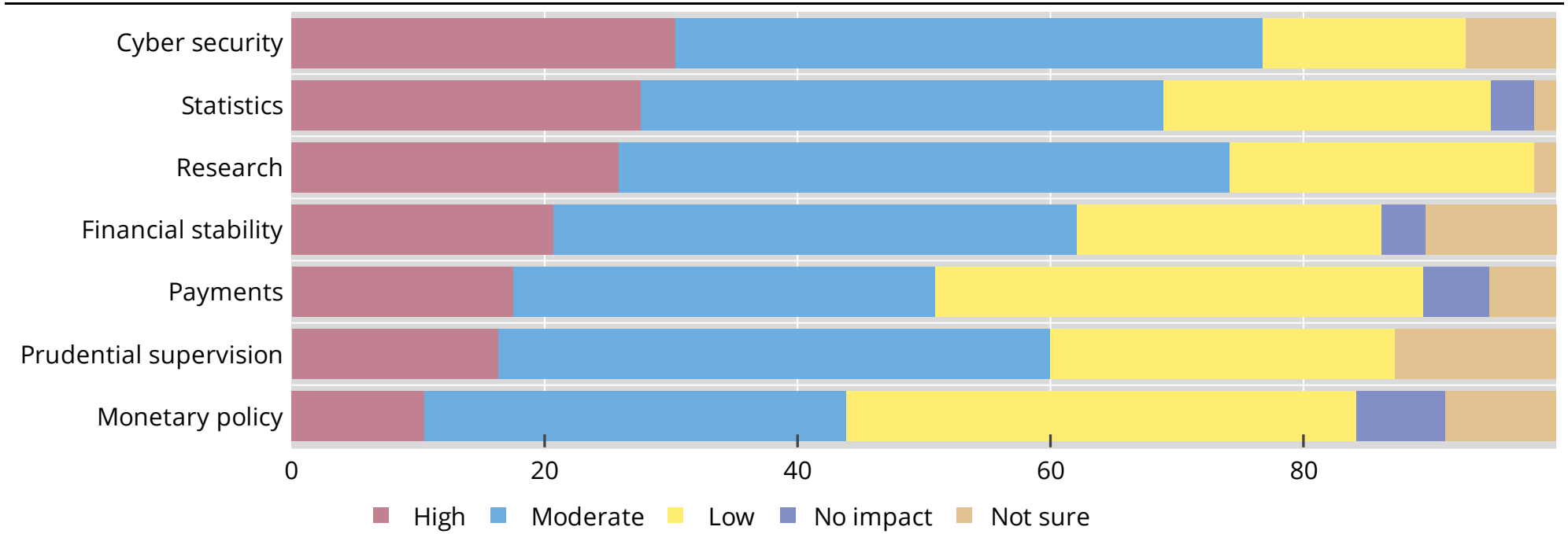
2. Looking forward: making the most of AI

- Data quality
- Statistical infrastructure
- Data processes and systems
- Literacy

1. AI in central banks: expectations

Share of the expected impact from AI/ML (from “high” to “not sure”) per each functional domain in the next two years

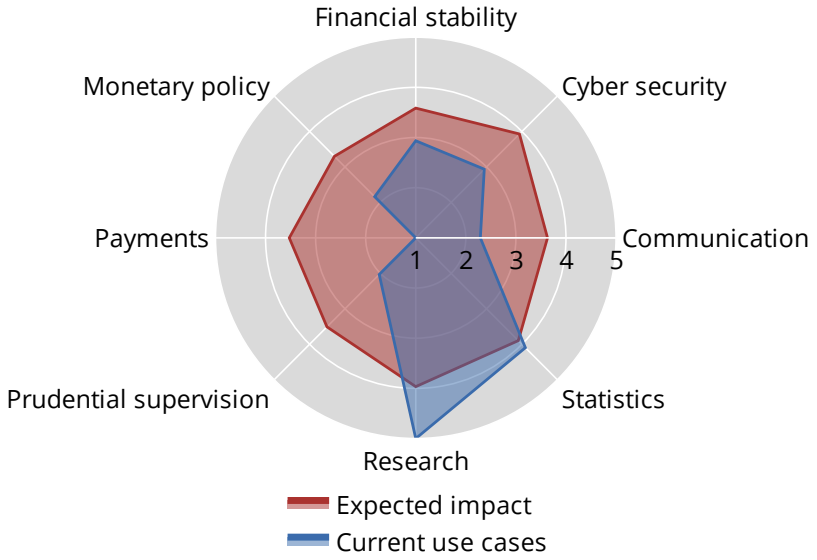
In per cent of respondents



1. AI in central banks: applications

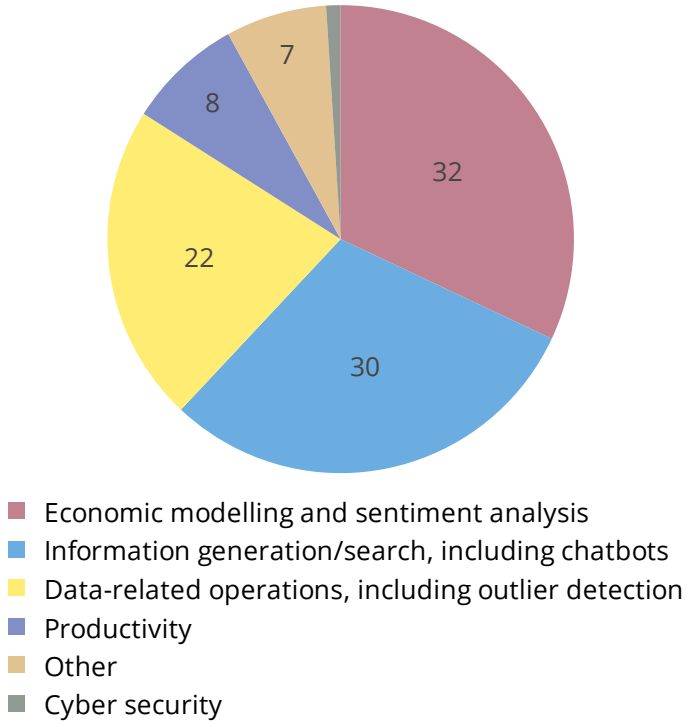
A. Expected impact and current applications of AI/ML[1]

Normalised scores, 1–5



B. Reported AI/ML use cases by application scope[2]

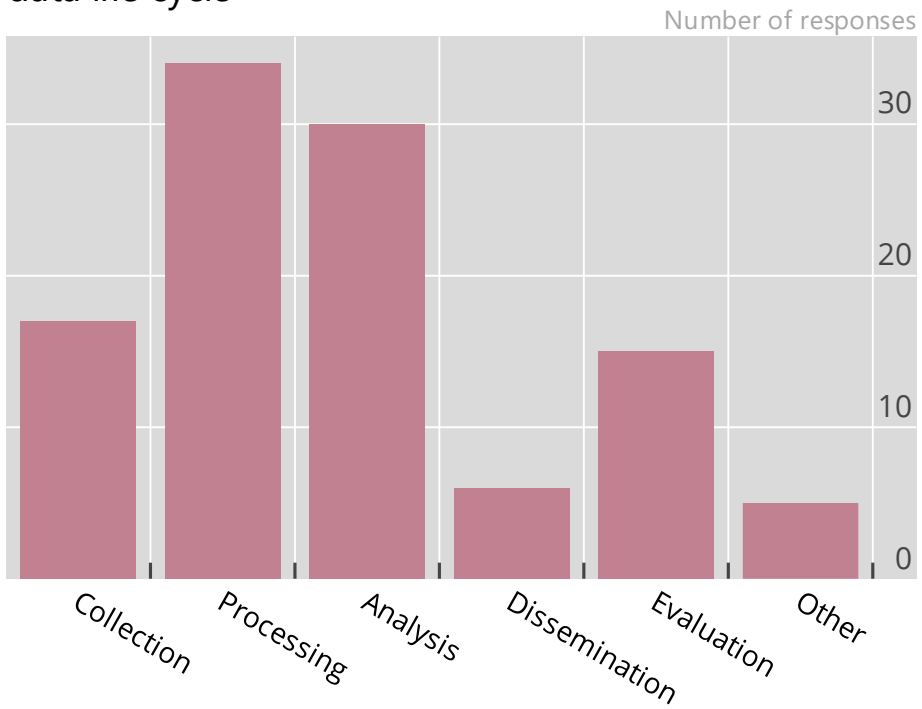
% of responses



[1] Expected impact is calculated as the average of the responses rated on a scale from 1 to 5 (1 = not sure; 2 = not impactful at all; 3 = slightly impactful; 4 = moderately impactful; 5 = highly impactful). The number of current use cases is presented normalised on a scale from 1 (min) to 5 (max). [2] Pilot or ongoing use cases also included. Respondents could indicate more than one answer.

1. AI in central banks: applications in official statistics

Statistical applications of AI/ML across the phases of the data life cycle



- Key examples in statistical work:
  - Data quality management
  - (Data and metadata) editing
  - Generation of synthetic data
  - Statistical disclosure control

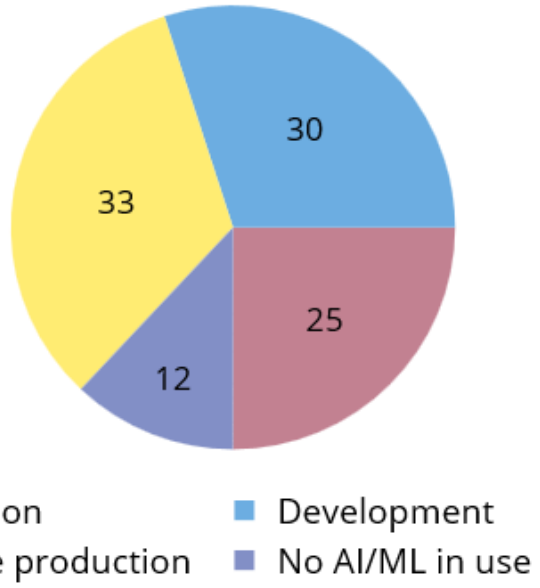
[1] For the main sequences of the production of official statistics as described in the Generic Statistical Business Process Model (GSBPM).

1. AI in central banks: exploration…

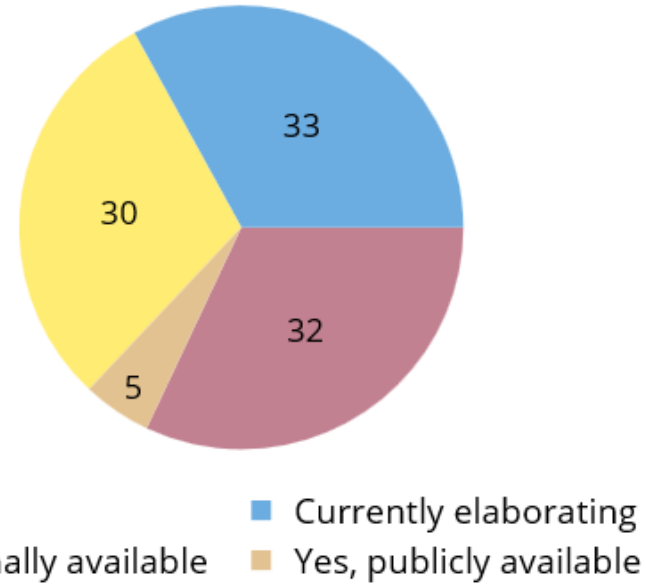
Mostly exploration of new AI/ML techniques, with limited use for day-to-day operations, while governance frameworks for using AI have still to be developed

In per cent of respondents

A. State of AI/ML adoption



B. Policies for using AI



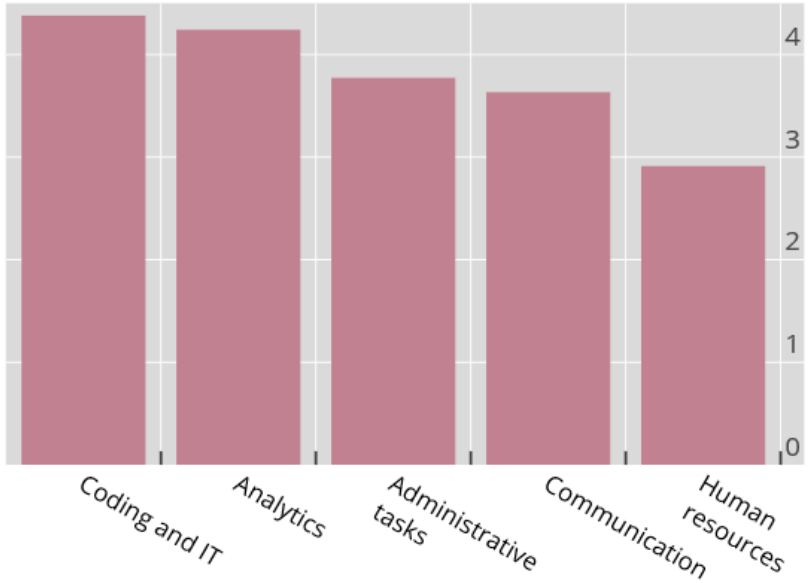
Source: IFC (2025).

1. AI in central banks: … esp. in IT

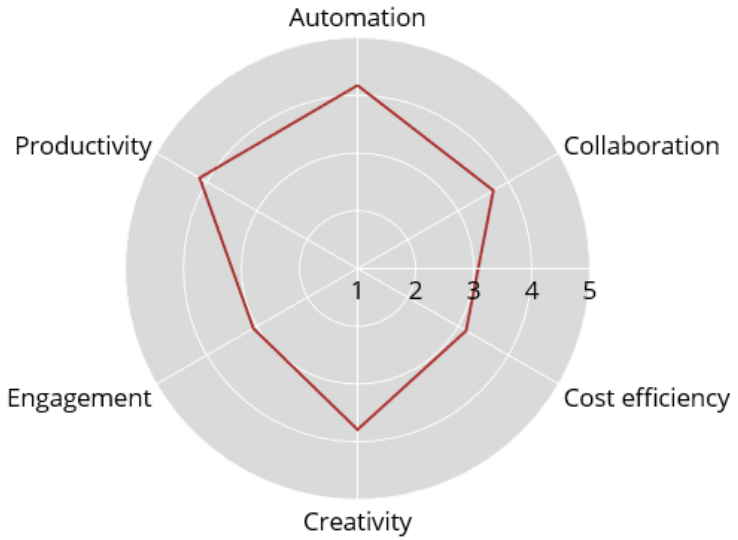
A key impact of AI will be on IT, by driving automation / productivity in programming and data analytics

Normalised scores, 1–5[1]

A. AI's largest impact is expected to be in coding and analytics



B. Automation and productivity are the most anticipated benefits

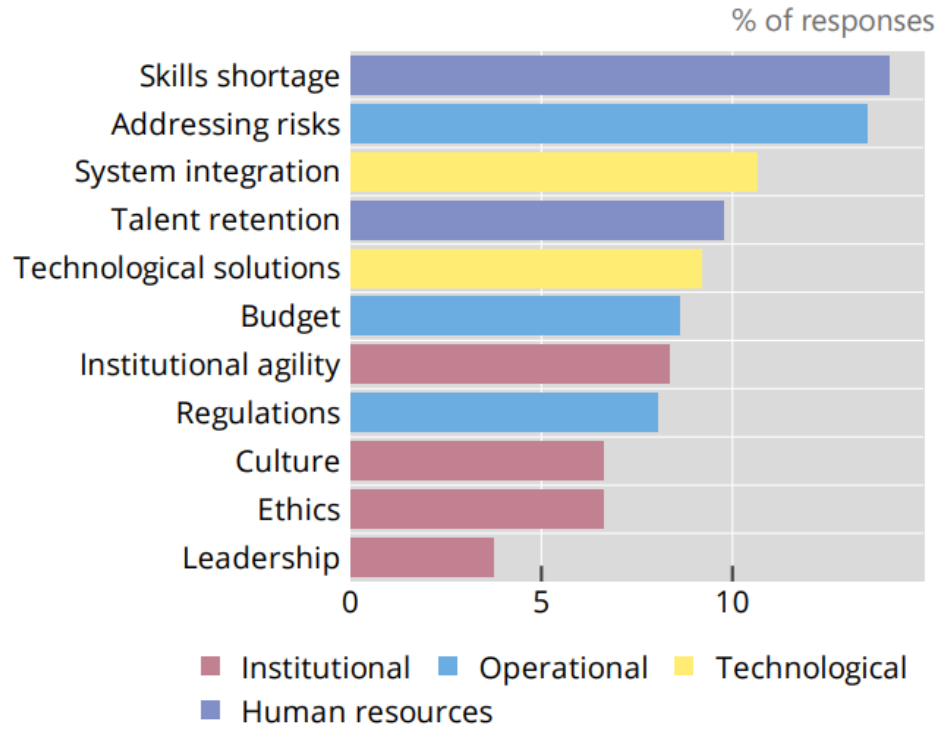


[1] Normalised scores on a scale from 1 to 5 (1 = not sure; 2 = not impactful at all; 3 = slightly impactful; 4 = moderately impactful; 5 = highly impactful).

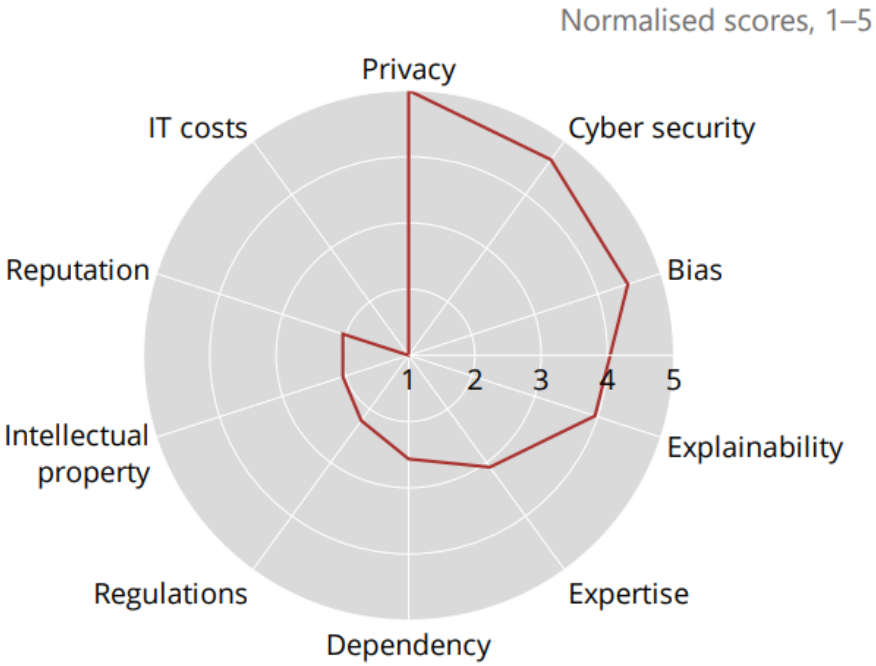
Source: IFC (2025).

1. AI in central banks: important challenges…

A. Skills shortage and addressing risks are key barriers



B. Privacy, cyber security and biases are top concerns[1]

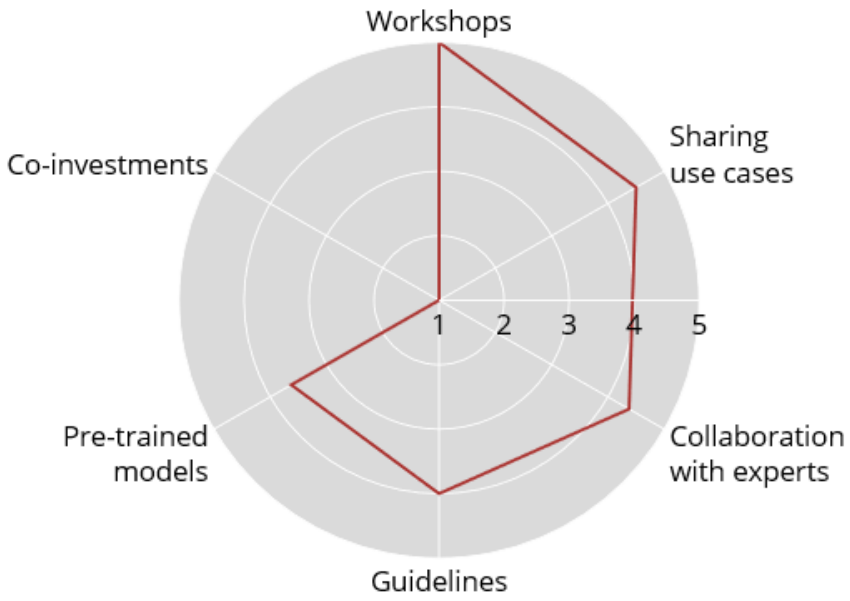


[1] Normalised scores from 1 to 5 (1 = not sure; 2 = not impactful at all; 3 = slightly impactful; 4 = moderately impactful; 5 = highly impactful).

1. AI in central banks: … calling for collaboration, cooperation and sharing

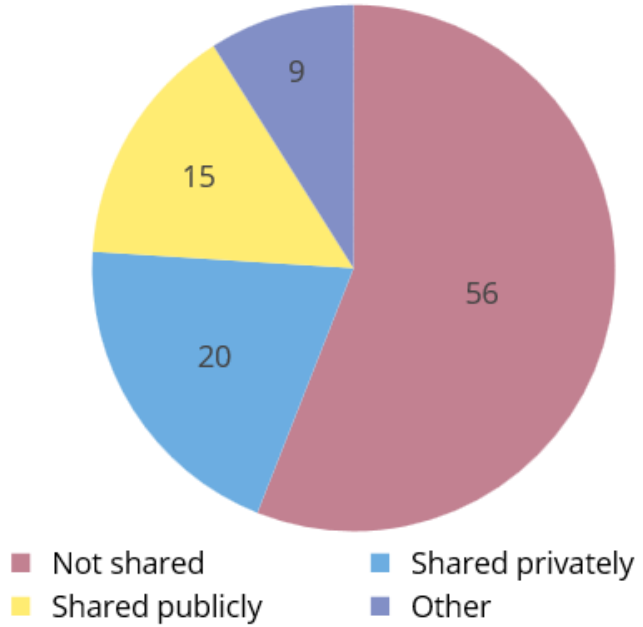
A. Sharing knowledge, code and use cases is a priority…[1]

Normalised scores, 1–5



B. …yet most central banks do not share AI/ML code or models[2]

% of responses

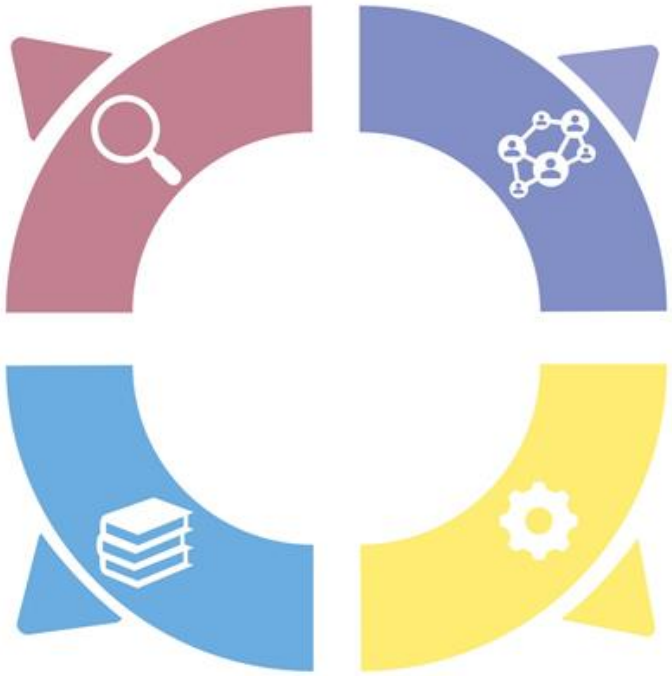


[1] Normalised scores on a scale from 1 to 5 (1 = not sure; 2 = not impactful at all; 3 = slightly impactful; 4 = moderately impactful; 5 = highly impactful). [2] Respondents could indicate more than one answer ("Not shared" = no code is shared outside or within the central bank; "Shared privately" = code is shared within the central bank only or with similar national authorities; "Shared publicly" = code is shared with the public, including through the institution's website).

Source: IFC (2025).

2. A **roadmap** to make the most of AI in central banks

Acting as data curators
Ensuring high-quality, well-documented, and machine-readable data.



Improving the global data infrastructure
Facilitating data access, sharing and collaboration on data, models and tools.

Advancing user literacy
Building AI expertise through knowledge-sharing and talent strategies.

Modernising data processes and systems
Adopting modern, metadata-driven and scalable platforms and fostering interoperability through standards.

2. A roadmap to make the most of AI in central banks: **data quality**

Acting as data curators
Ensuring high-quality, well-documented, and machine-readable data.

- Securing and enhancing the **quality of** (central banks') **statistical information**, including through sound data governance, stewardship and management
  - Metadata and machine-readable documentation
  - Data management systems
  - Responsible data use

- **Contributing to global data framework(s)** to improve the availability and reuse of high-quality data

2. A roadmap to make the most of AI in central banks: **infrastructure**

- Strengthening **statistical infrastructure as a fundamental public good**
- Data **standards** (eg SDMX)
- Unique (global) **identifiers**, including persistent ones
- Data **access** and adequate **sharing**
- Beyond data sharing: use cases, models, tools and **software**
  - Open source software

Improving the global data infrastructure

Facilitating data access, sharing and collaboration on data, models and tools.

2. A roadmap to make the most of AI in central banks: **processes and systems**

- IT solutions to **store**, **integrate** and **protect** information
- **Interoperability** at various levels, especially semantic and system
  - Taxonomies
  - Application Programming Interfaces
  - Broadly, standards
- **Cloud-based services**: weighting benefits and limitations

Modernising data processes and systems

Adopting modern, metadata-driven and scalable platforms and fostering interoperability through standards.

2. A roadmap to make the most of AI in central banks: **literacy**

Advancing user literacy

Building AI expertise through knowledge-sharing and talent strategies.

- Attracting and retaining **data and AI-savvy profiles**
- **Cultivating an adaptive practice**
  - Flexibility
  - Multidisciplinary data science approaches (IT, statistics and subject-matter expertise)
- AI **literacy**:
  - Internal *versus* external
  - Various levels and profiles (basic, intermediate and advanced)

Thank you

Questions? IFC.secretariat@bis.org

- Full report
  - **Governance and implementation of artificial intelligence in central banks**
    IFC Report, no 18, April 2025 by Douglas Kiarelly Godoy de Araujo, Rafael Schmidt, Olivier Sirello, Bruno Tissot and Ricardo Villarreal

- IFC related publications
  - **Machine learning in central banking** (IFC Bulletin, no 57)
  - **Data science in central banking: applications and tools** (IFC Bulletin, no 59)
  - **SDMX adoption and use of open source tools** (IFC Report, no 17)
  - **Data science in central banking: enhancing the access to and sharing of data** (IFC Bulletin, no 64)
  - **Generative artificial intelligence in central banking** (IFC Bulletin, forthcoming)

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