RESEARCH REPORT

Transforming Risk Management

New research finds that banks urgently need to bring risk management up to date

SAS | FT LONGITUDE

Contents

Section 01

Executive summary

For banks, complexity and uncertainty are growing. Geopolitical tensions are raising credit risk. Digital sales and servicing are challenging operational resilience. Volatile interest rates and credit risk are affecting balance sheets in unpredictable ways. And new regulations continue to emerge.

Add to this the fact that many banks' **technology infrastructure is outdated**, and there is now an **urgent need to update risk management**. Instead of evaluating threats in silos, banks have to be able to understand how different events are interconnected. They also need to identify and quantify risks rapidly and respond immediately.

They also have to work even more **closely with the finance function so they can use risk data to evaluate opportunities quickly and accurately**. What level of liquidity will generate a certain margin on a new banking product? How much additional capital will achieve higher returns in a particular market segment? Banks can only answer these questions if their **risk data and the analysis of this data are integrated and accessible** to everyone who needs them.

Bringing **data, analysis and processes** together also helps banks make more informed decisions about customers. Imagine how much more **insightful credit decisions** and how much more **powerful marketing campaigns** could be if banks had all of the data about their customers in a central location.

This is the **destination**, and getting there requires **significant investment**. Our survey of 300 banks around the world, conducted in collaboration with FT Longitude, reveals their progress so far – and how **banks can accelerate the pace of change**. Many of the questions are repeated from our **first survey on this topic in 2021**, enabling comparisons over a three-year timeframe.

The good news is that most banks see the strategic importance of risk and, as a result, plan to increase their investment in risk management in the next 12 months. In particular:

- **75%** intend to increase investment in technology infrastructure, up from 51% in 2021.
- **64%** plan to scale up spending on third-party software, compared with 43% in 2021.

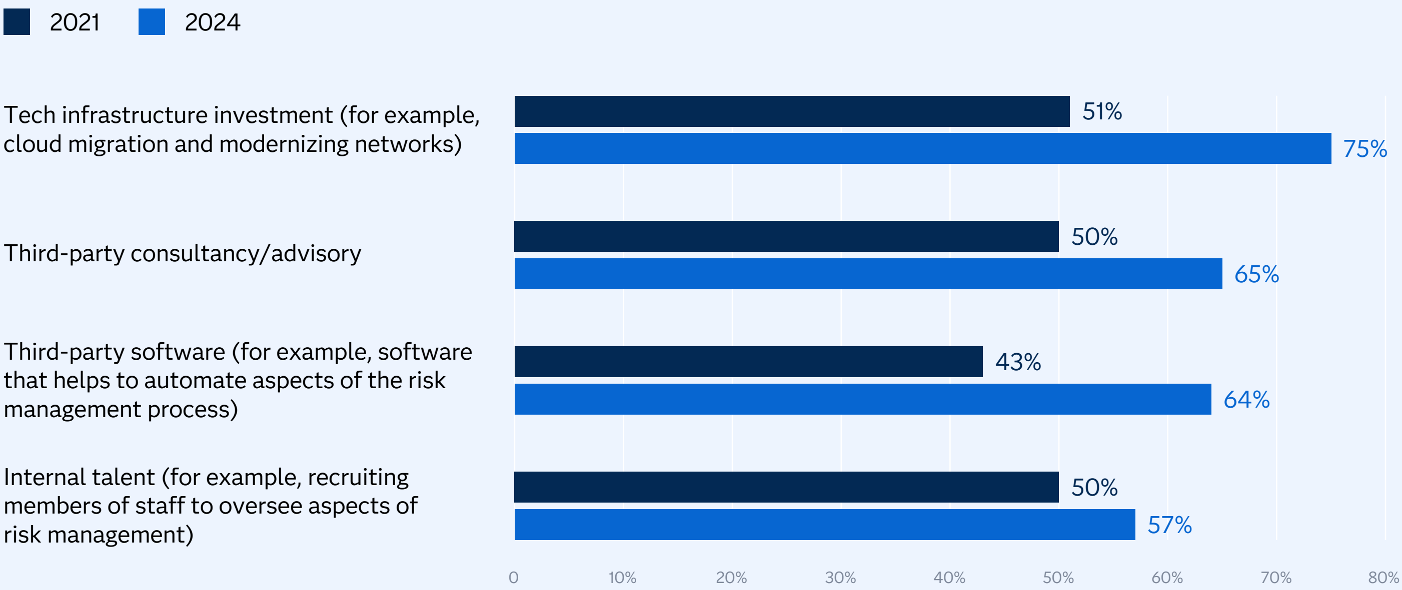
This is driven by a need to automate risk management processes, improve simulation capabilities, rationalize hardware costs and consolidate software providers.

75% intend to increase investment in technology infrastructure.

64% plan to scale up spending on third-party software.

KEY INSIGHT

Spending on risk management is going up
(percentages indicate banks that plan to increase spending in each area)



Question: In the next 12 months, does your organization plan to increase or decrease its spending in the following aspects of risk management compared with the previous 12 months? Answer: "Increase" or "Significantly increase."

What the survey tells us

- Just 18% of banks are very satisfied with the models they use for asset liability management (ALM) and liquidity risk. As a result, 67% of all banks plan to modernize risk modeling during the next two years, up from 54% in 2021. AI and machine learning are their top investment priorities.
- Less than a quarter of banks are highly satisfied with their approach to ALM and liquidity risk. In response, 77% plan to invest in integrated balance sheet management that enables them to assess the impact on the balance sheet of interest rate risk and credit risk.
- Aspirations for AI are high, but banks' use of this technology is only just starting. Just 17% report widespread use of generative AI for risk management. A lack of skills is the top barrier to AI adoption, followed by difficulties integrating with legacy infrastructure and poor data governance.
- Banks continue to struggle with access to important data that is held in siloed systems. Despite this, just 14% plan to consolidate customer data "to a significant extent." And only 31% say that all of their data should come from a single source, such as a data lake. This is partly because many do not realize the wide-ranging benefits of integrating customer and non-customer data.

67% of banks surveyed plan to modernize risk modeling during the next two years.

77% of banks plan to invest in integrated balance sheet management.

17% of banks report widespread use of generative AI for risk management.

Section 02

Risk modeling: Transforming how, rethinking why

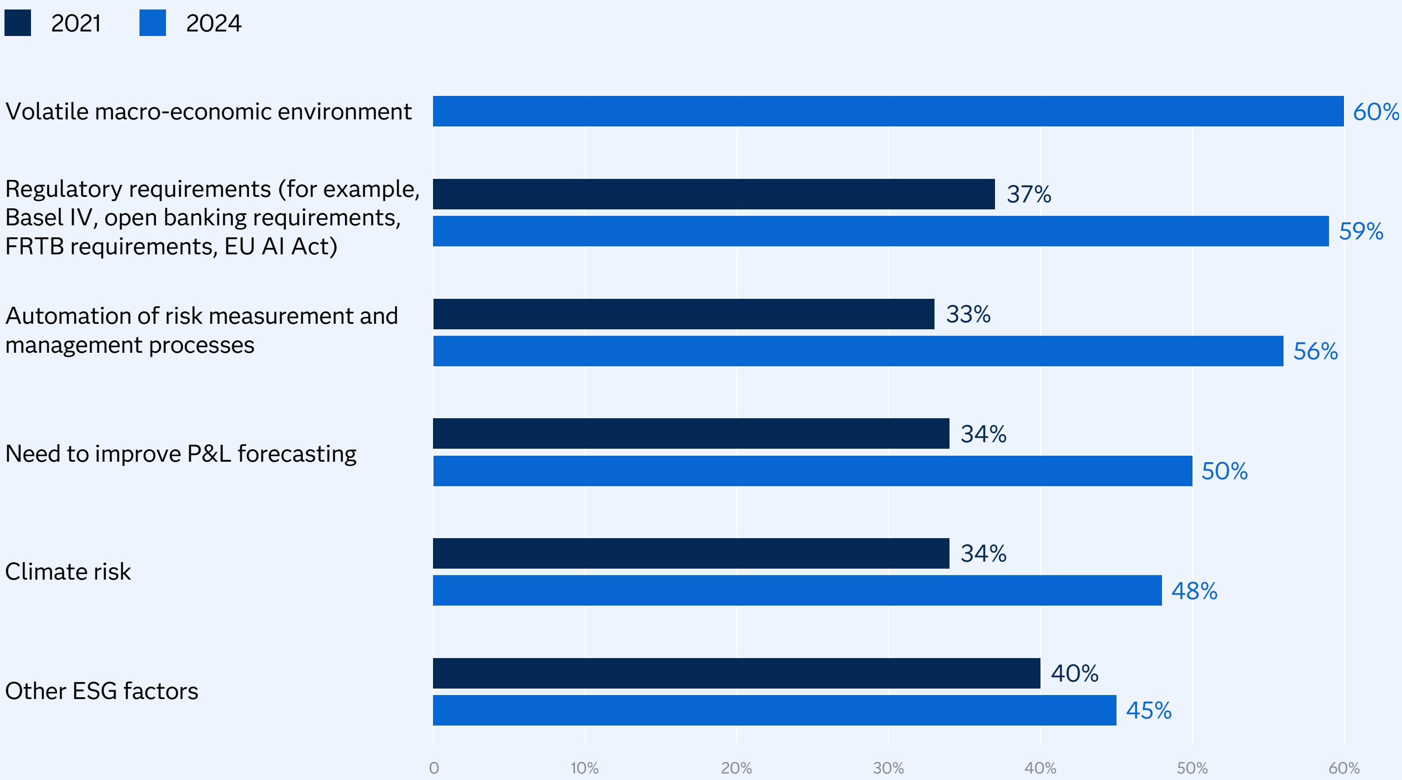
The number of factors that shape banks' approaches to risk modeling has grown. The volatile macro-economic environment was mentioned most frequently as an issue that influences credit risk modeling and decision-making. Increasing turbulence means certain models need to be updated with urgency following a change in market conditions. Increasing volatility also requires more granular models and credit strategies to better assess target customers and stay competitive and profitable. The current lead times, which can amount to a number of months, are simply too long.

Flagged by 59% of survey respondents, regulation is the second most important factor affecting risk modeling; in 2021, it was just 37%. Banks must contend not only with constantly evolving financial services regulation, especially with respect to model risk management and model validation, but also with regulations such as the EU AI Act, which applies to every bank operating in Europe – even those that are headquartered outside the region. The surge in new rules has resulted in 56% of banks surveyed declaring that risk management is driven by regulatory requirements rather than business goals, up from 46% in 2021.

The percentage of **respondents who say the need to automate risk processes impacts risk modeling has increased from 33% in 2021 to 56%. In a reflection of the growing commoditization of retail banking, 70% of surveyed banks say that automation significantly influences their approach to risk modeling.**

KEY INSIGHT

More and more factors are affecting risk modeling



Question: To what extent are each of the following factors influencing your organization's approach to risk modeling? Answer: "A lot" or "To a great extent."

These factors have made risk modeling absolutely critical: 63% of banks surveyed now say it can be a competitive advantage – up from 47% in 2021. But there is still room for improvement. For example, just 18% are "very satisfied" with the sophistication and granularity of the models they use for ALM and liquidity risk.

"We must continue to strengthen our risk modeling capabilities because they drive our profit engine," explains Adam Ennamli, Chief Risk Officer, General Bank of Canada. "Their accuracy, reliability and explainability can make or break stakeholder trust. We want to deepen our understanding of modeling so that we can incorporate more diverse and dynamic economic scenarios."

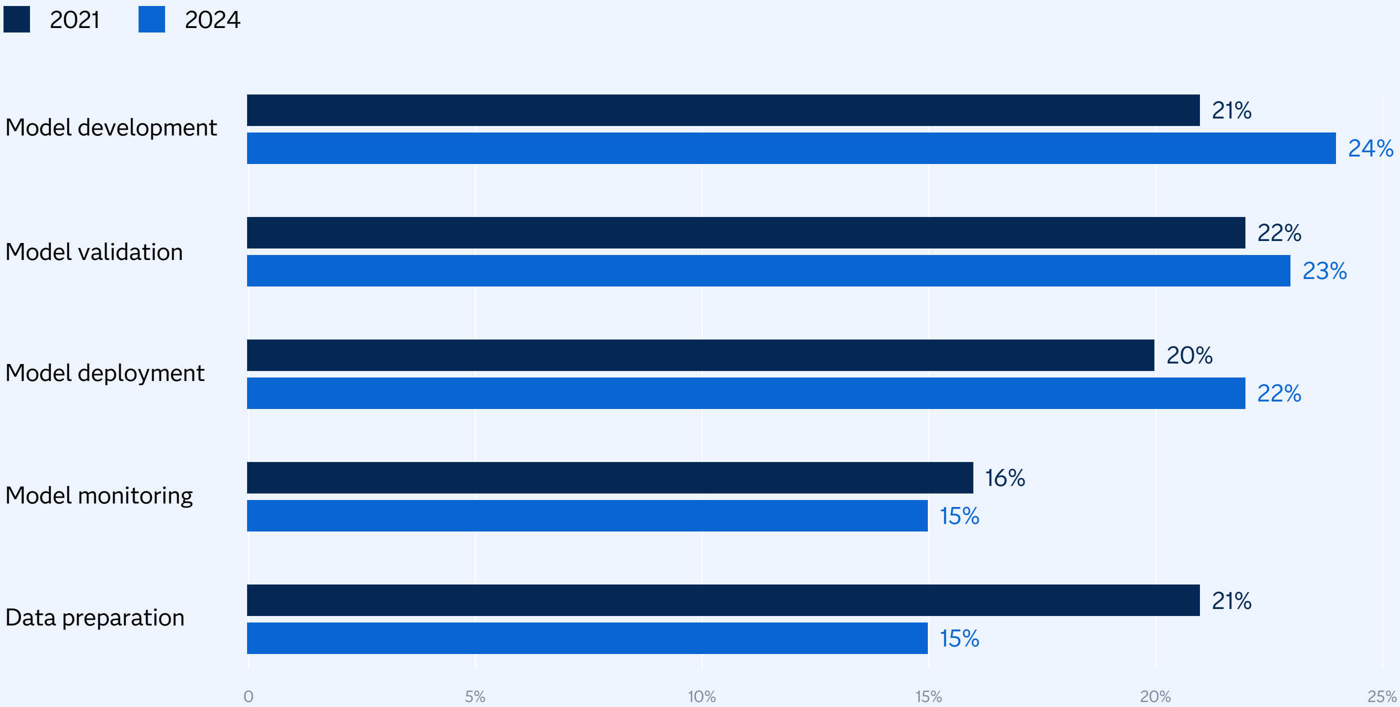
> "We must continue to strengthen our risk modeling capabilities because they drive our profit engine."
>
> **Adam Ennamli,**
> Chief Risk Officer,
> General Bank of Canada

What needs to change?

The phases of the model management life cycle that are most in need of modernization are development, validation and deployment. Model deployment stands out as the top priority for improvement for the largest banks (those with more than US$50 billion in assets).

KEY INSIGHT

Model development, validation and deployment are most in need of modernization



Question: Please rank the phases of the risk modeling lifecycle to indicate in which phase you are weakest (ie, most need of modernization). Rank from 1 to 5, where 1 = the phase in which you are weakest (most in need of modernization) and 5 = the phase in which you are strongest (least in need of modernization).

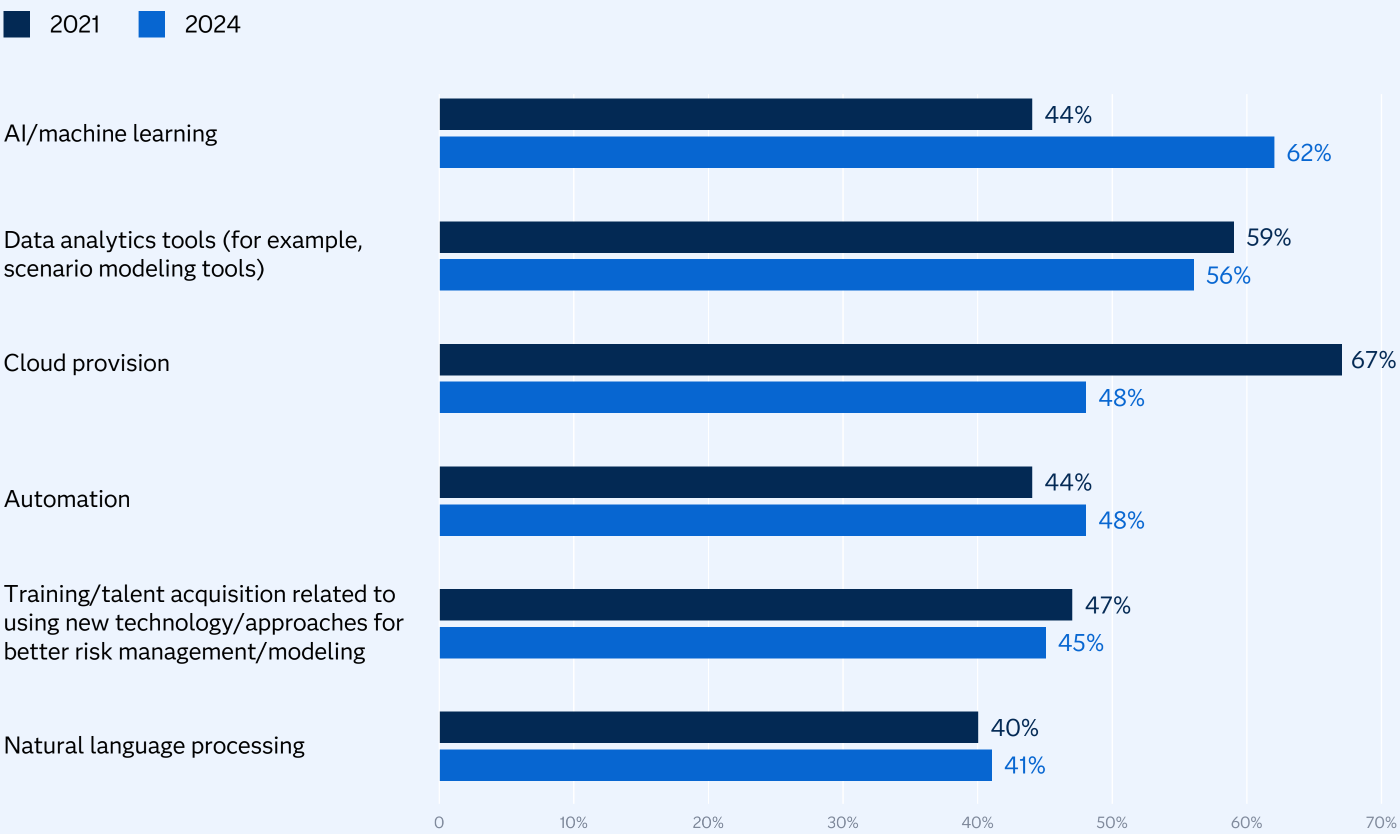
Model deployment (the process of putting risk models into operation) needs drastic improvement because banks' models have increased in number and sophistication. Many of these need to be calibrated annually, and they need to be approved by the regulatory supervisor, which creates a significant workload.

To improve the quality of models and hasten the speed at which they are developed and deployed, 67% of banks surveyed plan to modernize their risk modeling capabilities during the next two years, up from 54% in 2021. AI and machine learning are the top priorities for investment, followed by data analytics (including tools that enable scenario modeling), and then the cloud.

Interestingly, the proportion that flags cloud as a priority for investment declined from 67% to 48% since 2021. This reflects many banks' growing prioritization of AI, which has emerged as a vital tool for risk modeling in recent years.

KEY INSIGHT

AI and data analytics are the top investment priorities for risk modeling



Question: Which of the following tools/technologies/approaches does your organization plan to invest most in over the next 12 months in order to improve its risk modeling capabilities? Rank the top three options, where 1 = the area you plan to invest most in.

Automation might only be the fourth priority, but banks should not overlook it. "Many banks face a trade-off between keeping a low-performing model or incurring the time and cost to refresh it," says Anselmo Marmonti, Vice President of Risk, Fraud and Compliance Solutions, SAS.

"Automation technology significantly speeds up the validation and deployment process, allowing banks to drastically improve the time to market of their models at much lower cost."

Anselmo Marmonti, Vice President of Risk, Fraud and Compliance Solutions, SAS

Many banks struggle with upgrading modeling. For example, 67% of banks surveyed say recruiting the right skills is a challenge – an increase of 20 percentage points since 2021. Implementing more user-friendly solutions, such as low-code, no-code and automation, can help mitigate these concerns. Banks are also increasingly interested in generative AI capabilities that, by facilitating natural language queries, support model development.

Section 03

Balance sheet management: Toward integration

Very few of the banks surveyed are highly satisfied with their approach to ALM (20%) and liquidity risk (22%). The re-emergence of interest rate risk has exposed weaknesses caused by the lack of integration between systems used for ALM, liquidity risk and credit risk. Siloed systems make it impossible for banks to assess the interdependencies between interest rate changes and credit risk and to calculate the overall impact on the balance sheet.

The majority of banks surveyed say that their ALM function is "fully integrated" with a number of key finance processes, likely reflecting that data used for these processes is integrated. But the reality is that very few banks – even the largest and most technologically advanced – have integrated systems and automated processes that span ALM, liquidity risk and credit risk. This makes it impossible to run sophisticated scenario analysis.

Integrating ALM, liquidity risk and credit risk systems would enable banks to run complex scenario analyses, helping them assess the impact of interest rate changes on the balance sheet. This integration would optimize the balance sheet, improve forecasting and allow for greater automation, reducing the need for human intervention.

The survey also reveals that banks are planning immediate investments to enhance their ALM and liquidity risk capabilities. For example, 68% of banks without a native cloud deployment plan to implement one within the next two years.

Opinions are divided on the best approach: 41% of banks surveyed say they plan to enhance existing systems, while 38% intend to deploy new, next-generation systems designed for integrated balance sheet management. These will likely be deployed to enable:

- "What-if" and scenario analysis that can be configured and performed by non-technical users.
- More accurate and granular calculations.
- Full integration between ALM, liquidity risk and credit risk.
- Integration with modeling capabilities to support the development and deployment of behavioral models, including those using unstructured data.
- Balance sheet optimization and forecasting.

KEY INSIGHT

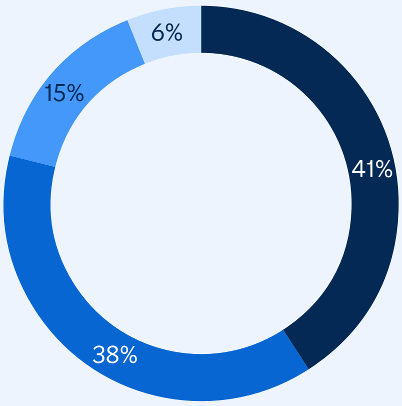
Improving ALM functionalities and integrating next-generation solutions are top priorities

Comprehensive enhancements to ALM functionalities

Implementing next-generation ALM solutions (for example, a cloud-native ALM solution)

Enhancing data quality and modeling capabilities

Extending existing system to support additional business cases



Question: What is your top priority for ALM and liquidity risk management solutions?

"Banks can no longer take decisions relating to liquidity, capital or credit risk in isolation."

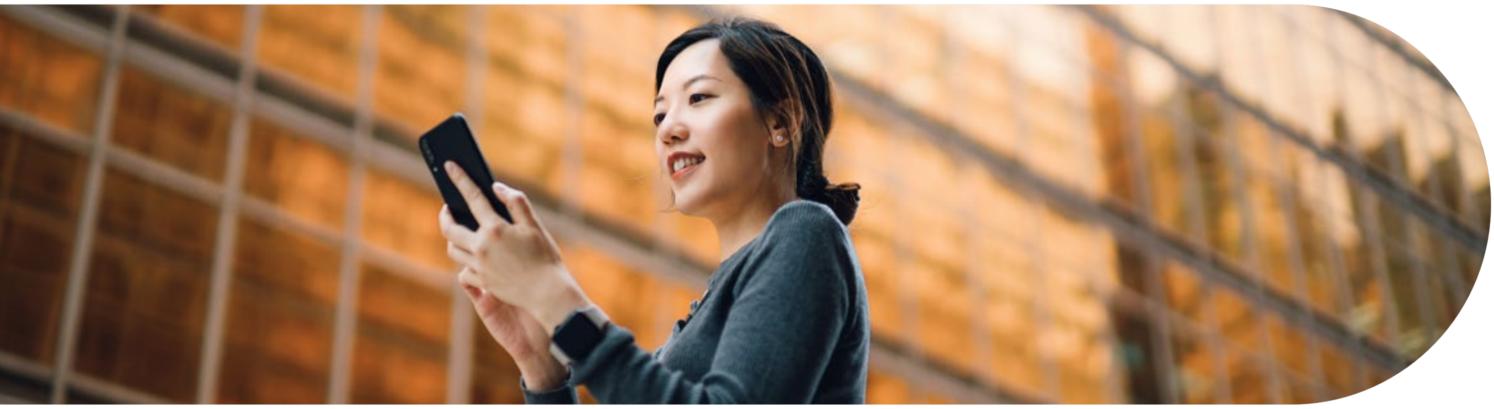
Carlos Diaz Alvarez,
Chief Risk Officer,
Santander Portugal

Changing these crucial systems is complex, but it's a worthwhile investment and there are now best practices to follow to transition efficiently. Successful implementation requires early involvement from IT and business teams, with leadership from the C-suite.

"Banks can no longer take decisions relating to liquidity, capital or credit risk in isolation," says Carlos Diaz Alvarez, Chief Risk Officer, Santander Portugal. "We can extract key information from separate systems to make holistic decisions, but we need more granularity and integration."

Section 04

The AI gold rush begins



Banks are increasingly enthusiastic about AI's potential to strengthen risk management. For example, 62% of banks surveyed consider AI investment a top priority for improving risk modeling in the next 12 months, up from 44% in 2021. This shift is driven by a growing focus on automating regulatory compliance as banks move from understanding risk model frameworks to streamlining their implementation. Additionally, user-friendly AI tools are making advanced tasks – such as balance sheet scenario analysis – accessible to non-technical employees.

"We've started to experiment with generative AI for very specific use cases," explains Adam Ennamli, Chief Risk Officer, General Bank of Canada. "It can generate preliminary risk reports for the risk team to review, which can cut the human effort involved by around 80%."

"We're looking to introduce AI in the next 18 months to make risk, fraud and AML processes more efficient," adds Ratul Ahmed, Divisional Board Member for Group Model Risk Management and Validation, Commerzbank. "The technology can help with document scrubbing and gathering and assessing data. We're also seeking to automate various tasks, especially in model validation, to free up the team's time for more complex tasks." But adoption lags ambition:

- **Just 40%** of banks surveyed report widespread use of AI for risk management
- **Only 17%** of banks report widespread use of generative AI.

Reflecting the level of investment needed to roll out AI at scale, the largest banks are furthest ahead. For example, 38% of those with more than US$50 billion in assets use generative AI for fraud detection, compared with just 11% of those with less than US$3 billion in assets.

AI will improve risk modeling, but it will also create new challenges. "Growing use of AI means models are increasingly being used outside of their original use case of forecasting," adds Evan Sekeris, Chief Model Risk Officer, Capital One. "This creates its own challenges, primarily around explainability, but we're also seeing the number of models in the industry. These challenges will only escalate as new AI models are developed for traditional forecasting purposes."

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Ratul Ahmed,
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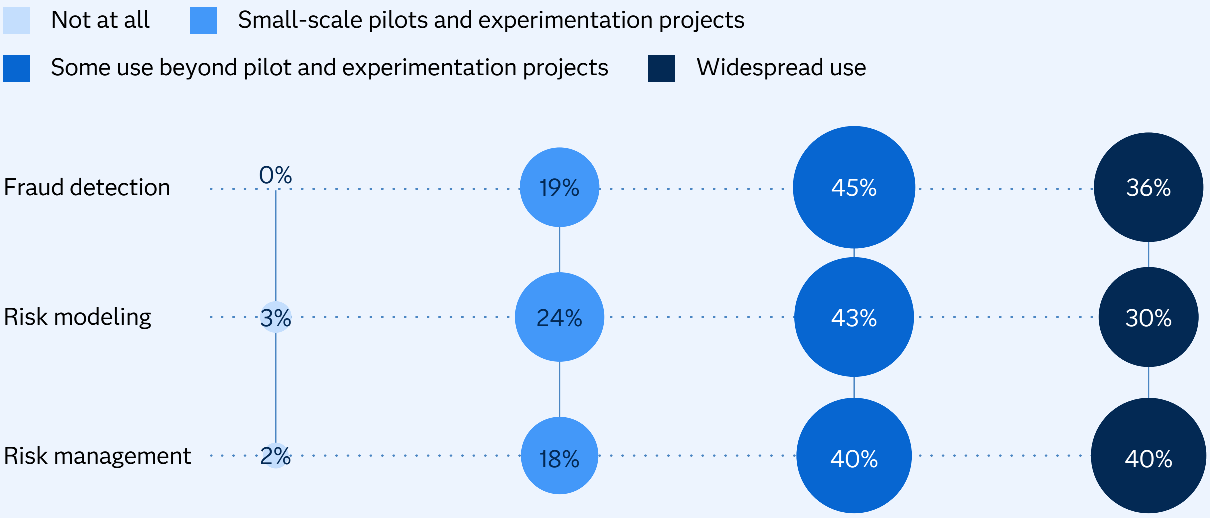
Commerzbank

"The more AI is used in risk models, the more complex they become to validate," continues Sekeris. "There will still need to be checks and balances at the validation stage, but the emphasis for managing these models will have to shift to monitoring performance in real time to identify deviations."

KEY INSIGHT

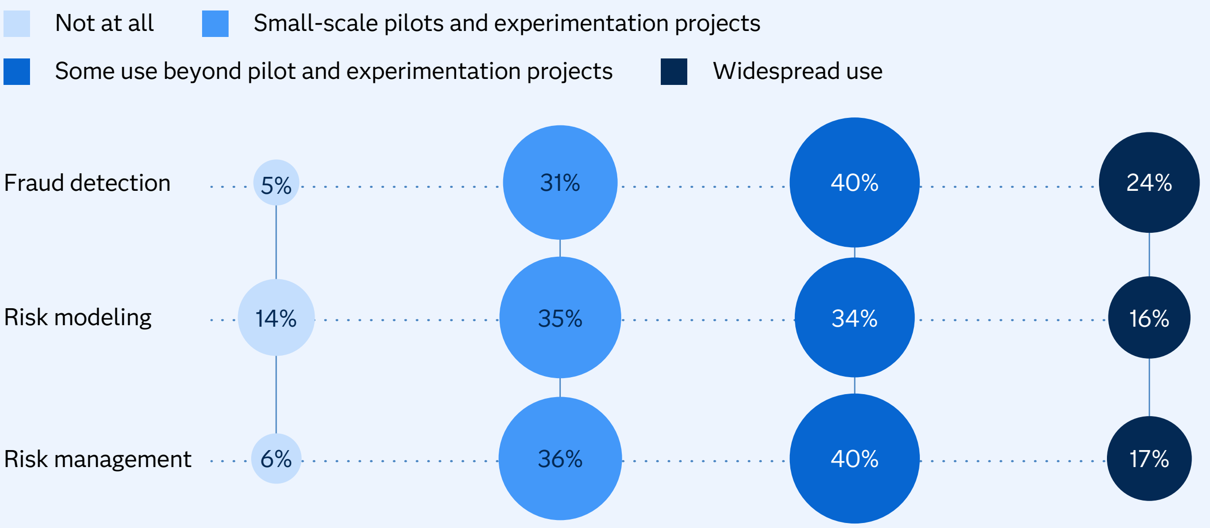
Only the minority of businesses report widespread use of AI (excluding generative AI) for risk management, risk modeling and fraud detection



Question: To what extent does your organization use AI (excluding generative AI) in each of the following areas?

KEY INSIGHT

Even fewer businesses use generative AI



Question: To what extent does your organization use generative AI in each of the following areas?

Growing use of AI means models are increasingly being used outside of their original use case of forecasting. This creates its own challenges, primarily around explainability, but we're also seeing the number of models explode. These problems will only escalate as new AI models are developed for traditional forecasting purposes. The more AI is used in risk models, the more complex and difficult they become to validate.

Evan Sekeris
Chief Model Risk Officer,
Capital One

A lack of skills is the top barrier to AI

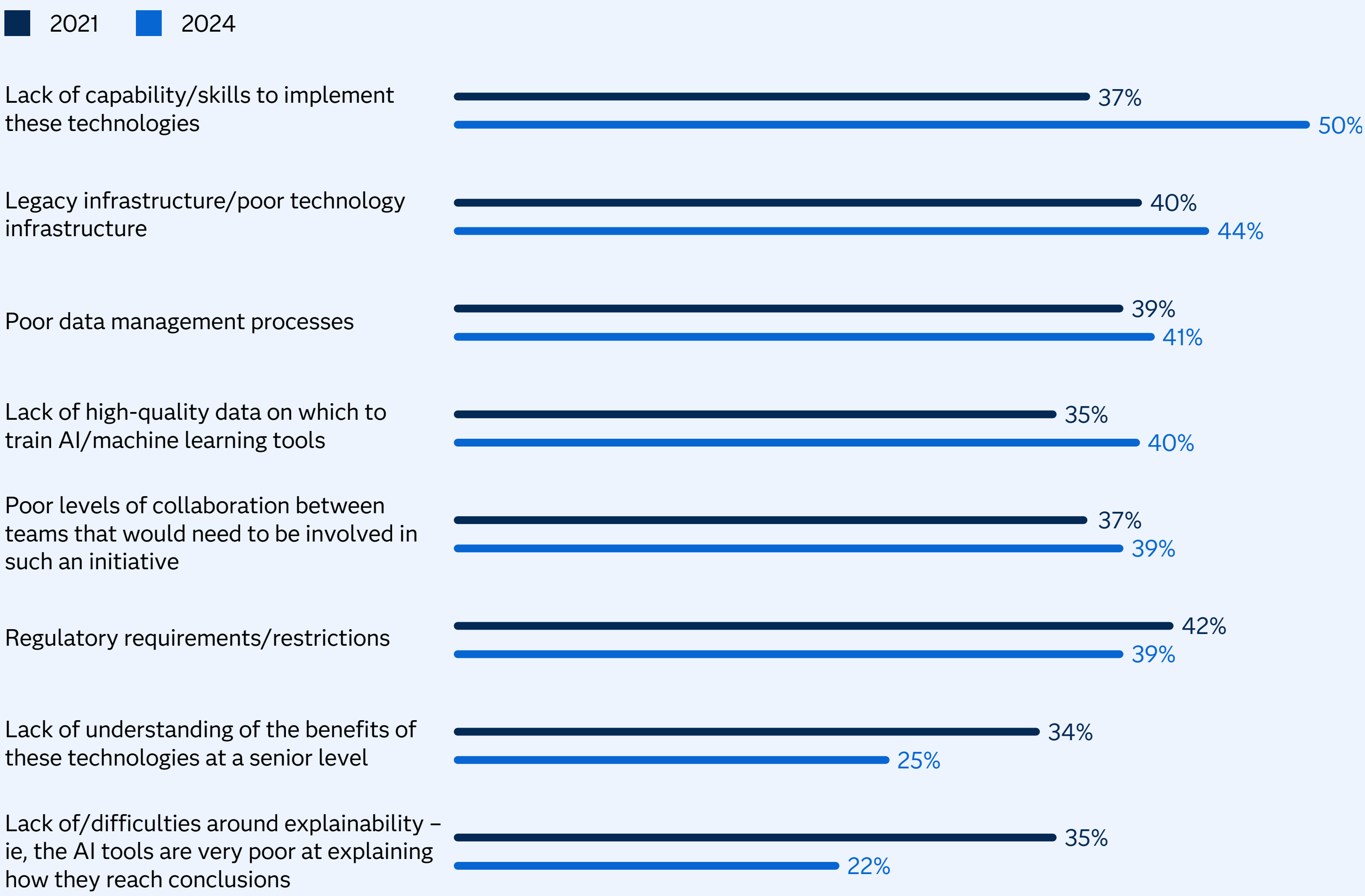
Banks cite several hurdles preventing them from fully adopting AI. The biggest challenge is a lack of skilled talent, with 50% of banks surveyed ranking it as a top-three risk – up from 37% in 2021. This increase reflects growing competition for experts who can implement and manage AI. In 2021, regulatory requirements were the top barrier; this year, they have dropped to a shared fifth place.

Banks may find it easier than expected to overcome the challenges posed by the shortage of AI specialists. Hybrid profiles – those with both deep functional and technical expertise – are difficult to find and retain.

However, many providers now offer low-code and no-code AI solutions, along with ready-to-use intellectual property that non-technical employees can easily use. This reduces the need to recruit hybrid profiles.

KEY INSIGHT

Lack of skills is stopping banks from using AI more



Question: What are the top three barriers to increasing the use of AI (including generative AI) and machine learning to strengthen risk management and risk modeling within your organization?

Section 05

Data: Banks have more to do

Data governance needs focus

Banks face a significant data challenge. Their data is often fragmented and siloed, while its volume has grown exponentially. This slows AI adoption, hinders risk model modernization and limits banks' ability to understand interconnected risks.

In fact, surveyed banks ranked poor data management as the third biggest barrier to using AI and machine learning for improving risk modeling and management.

"Banks are further complicating their data challenges by not having effective data management and governance frameworks," explains Julie Muckleroy, Global Banking Strategic Advisor, SAS. "While already facing an explosion of data from numerous sources, the lack of effective management and governance means that banks also have incomplete and duplicative data, and that prevents the consolidation and integration that is key to driving AI maturity and delivering a more holistic approach to strategic decisioning. Get the basics right, and banks will go much further, much faster."

"While already facing an explosion of data from numerous sources, the lack of effective management and governance means that banks also have incomplete and duplicative data."

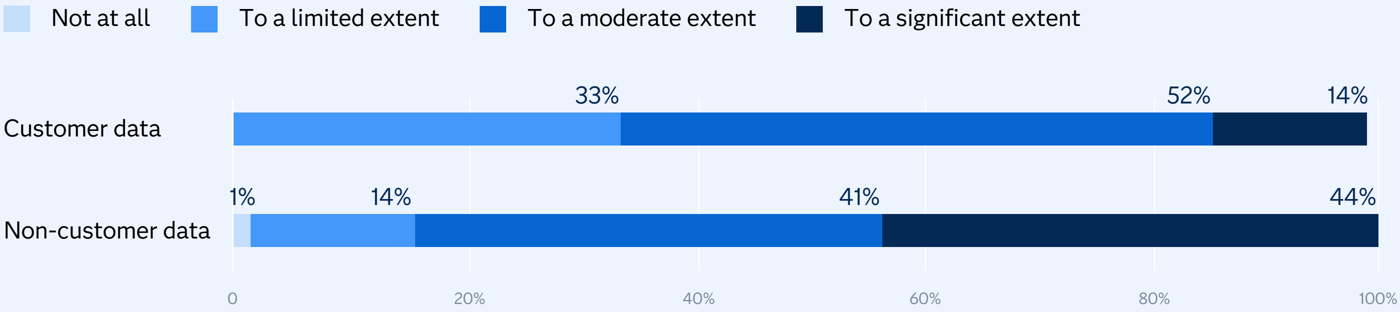
Julie Muckleroy,
Global Banking
Strategic Advisor,
SAS

Data consolidation brings new business opportunities

Few banks have plans to consolidate their data. Only 14% of those surveyed intend to significantly consolidate customer data, and fewer than half say the same for non-customer data.

KEY INSIGHT

Only a minority of banks plan to consolidate their data to a significant extent

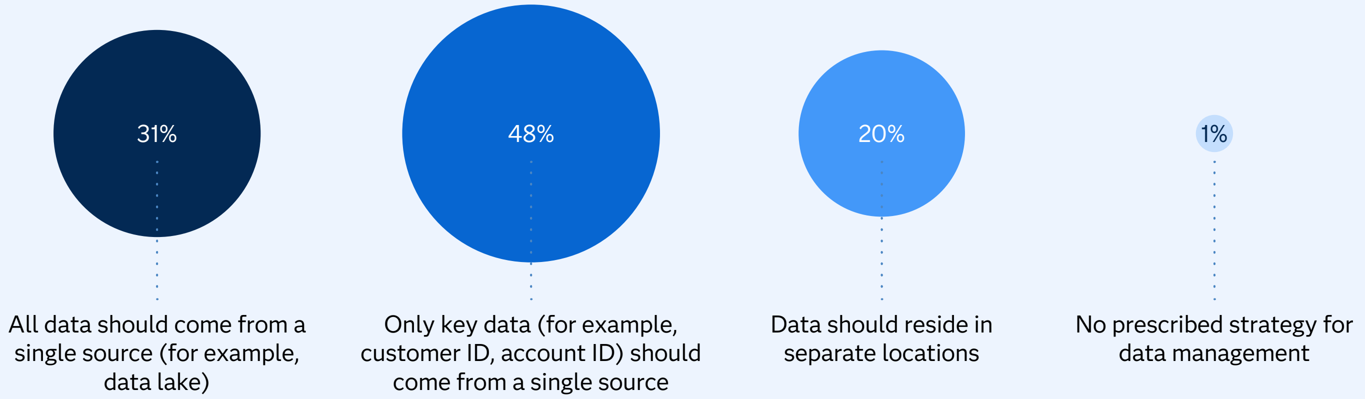


Question: To what extent are you planning to consolidate customer and non-customer data across different silos in the next 12 months?

When asked about their data management strategies, just 31% of surveyed banks say that all data should come from a single source, such as a data lake. Many more (48%) say that only certain data, such as customer IDs and account IDs, should come from a single source. The largest banks – those with more than US$50 billion in assets – are more keen to consolidate their data. In fact, 53% believe all data should come from a single source.

KEY INSIGHT

Less than a third of banks believe that all data should come from a single source



Question: Which statement best describes your bank's data management strategy?

Banks are hesitant to consolidate data due to their perception that there are few tools to integrate information and concerns about storing sensitive data centrally.

However, new technologies are emerging that allow banks to consolidate data while maintaining strict safeguards for sensitive information.

Survey data also suggests that banks may not fully recognize the broad benefits of data consolidation. They rank improved risk management as the top advantage, followed by better customer experience and improved fraud detection. However, only 29% of banks surveyed see improved marketing as a major benefit, despite the fact that consolidated data can enable more personalized and effective marketing campaigns.

"Data consolidation and storage require exemplary management and governance, which can be challenging for some banks. But these are essential for business acceleration," explains Julie Muckleroy, SAS. "Attracting new customers, assessing new business models and identifying revenue opportunities all depend on data-driven insights. Integrating customer and non-customer data allows banks to better analyze market trends, understand customer behavior and deliver real-time, hyper-personalized experiences that deepen customer relationships and drive revenue growth."

> "Data consolidation and storage require exemplary management and governance that can be a challenge for some banks, but it is key for business acceleration."
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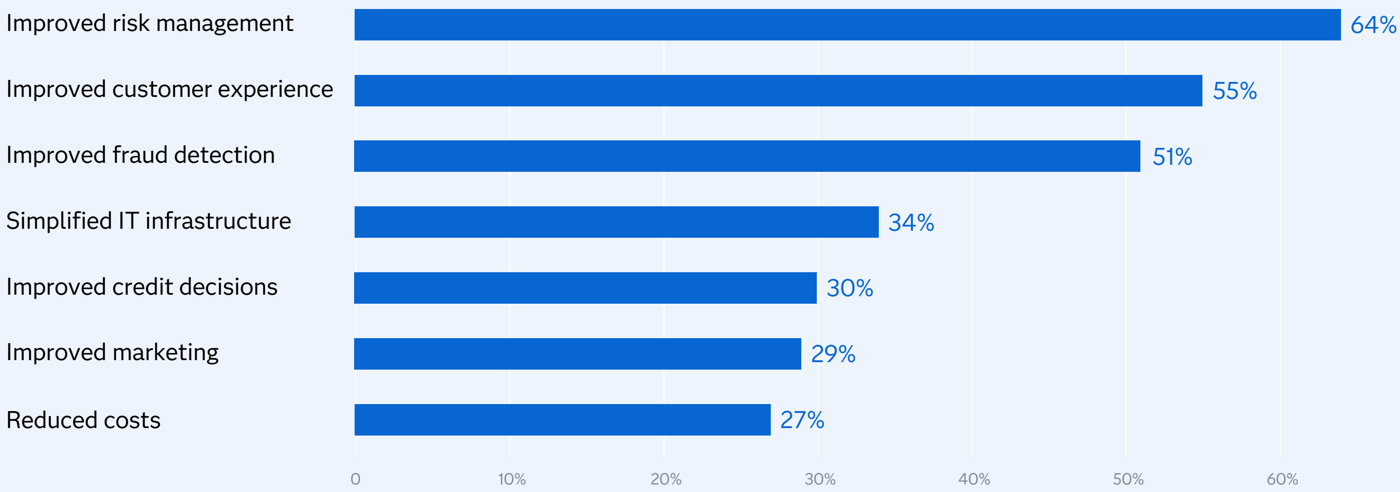
> **Julie Muckleroy,**
> Global Banking Strategic Advisor, SAS

KEY INSIGHT

Banks say that better risk management is the main benefit of consolidating customer data



Question: What are the main expected benefits of consolidating customer data?

Section 06

Conclusion

Banks have made steady progress in augmenting risk management capabilities since this survey was first conducted in 2021. However, increasing complexity, aging IT infrastructure and emerging technologies such as AI have raised the bar even higher.

Banks acknowledge the need for change. Two-thirds (67%) of those surveyed intend to modernize risk modeling within the next two years, and 77% plan to invest in integrated balance sheet management that enables them to better assess the impact of interest rate risk and credit risk.

Banks have limited experience in some of the areas where they plan to increase spending. For example, only 16% of banks surveyed report widespread use of generative AI for risk modeling, yet it remains their top investment priority for improving modeling.

Strengthening risk management requires certain fundamentals:

- A skilled workforce.
- Strong strategic partnerships with third-party technology and software providers.
- Close collaboration between risk teams and the broader business.

Banks that succeed in these areas will not only enhance resilience but also improve customer satisfaction and, ultimately, drive revenue growth.

67% of banks intend to modernize risk modeling in the next two years.

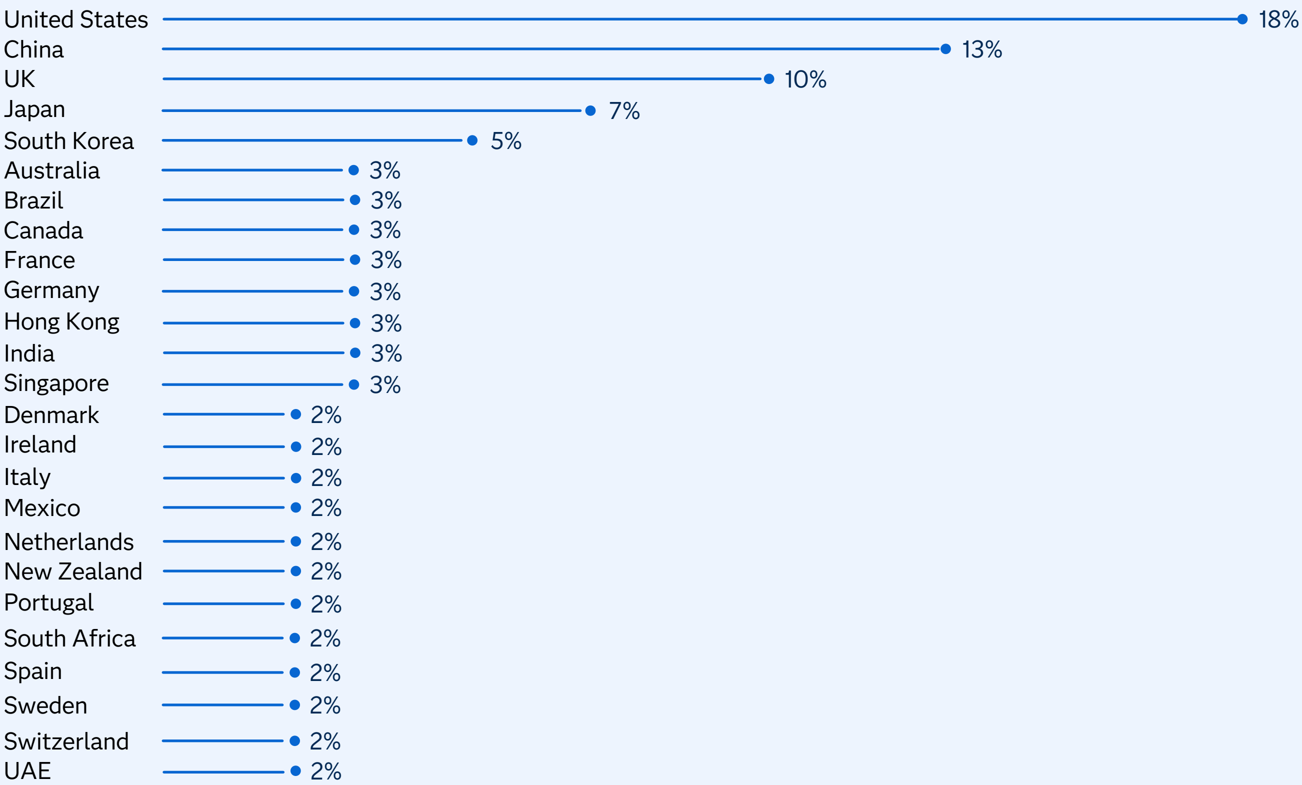
77% of banks plan to invest in integrated balance sheet management.

Section 07

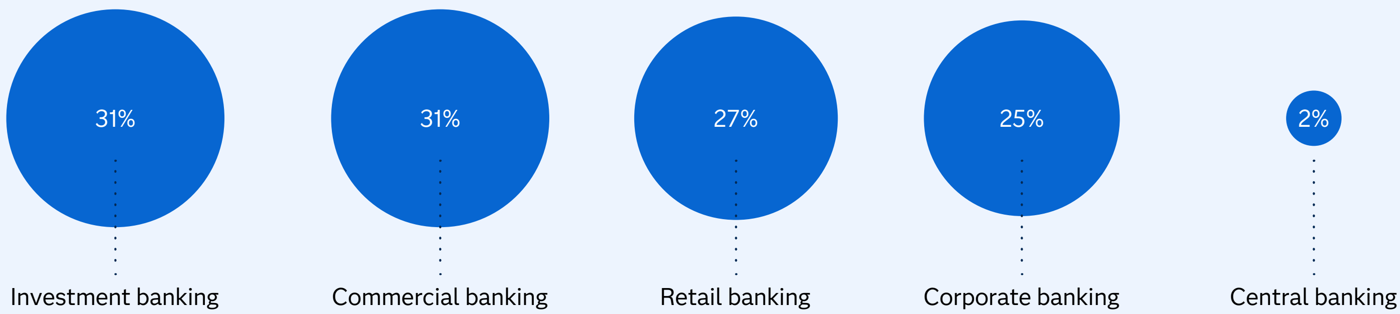
About the research

The findings in this report are based on an October 2024 survey of 300 senior managers and executives at investment, commercial, corporate and retail banks located in APAC, EMEA and the Americas. Every participating bank had more than US$3 billion in assets under management, and 15% had more than US$50 billion.

Country breakdown



Banking sector



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SAS is the global leader in data and AI, empowering banks to transform complex data into decisive actions with speed and precision. Our cloud-native platform accelerates digital transformation, strengthens risk management and ensures compliance. With advanced analytics, SAS helps banks boost customer intelligence and build operational resilience. Trusted by 90% of Fortune Global 500 banks, we deliver measurable outcomes to solve the industry's toughest challenges.

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