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# MODERNIZING ASSET LIABILITY MANAGEMENT

**Changing priorities in ALM technology, data and analytics**

Celent Risk Team

May 2023

A division of Oliver Wyman

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# CONTENTS

# EXECUTIVE SUMMARY

# HEIGHTENED FOCUS ON ASSET LIABILITY MANAGEMENT

Recent stresses in the financial sector are causing risk professionals to want more from ALM analytics and technology

A volatile business environment, evolving regulatory requirements, more integrated approaches to risk management, and technology change all signal a need for best practices in asset liability management (ALM)

Celent and SAS went to the market to see what issues are key to banks and where they are in the journey—in each region of the globe. These are the results of a global survey of 266 Risk, Treasury, Finance, and IT professionals[1]

With its mission of ensuring a firm's long-term stability and profitability, ALM is a crucial function in risk management. ALM was originally developed as a best practice to cope with the fluctuating interest rate environment after the global recession of the 1970s

Today, as rising interest rates are again roiling the industry and triggering dramatic bank failures, banks are aspiring to strengthen their ALM and liquidity risk programs

### System modernization

**80%**

see digital transformation leveraging advanced technology as crucial to their ALM journey

### Model granularity

**48%**

see high-performance analytics with high portfolio and market granularity as key to their organization—making this the top priority for modeling

### Speed of analytics

**65%**

expect intraday analysis and stress testing to become the norm within three years

Source: Celent/SAS Asset Liability Management Survey, 2023. N = 266
1. See details on banks and professionals surveyed in "About the Survey" on page 29

# BANK PRIORITIES FOR THE ALM JOURNEY

Industry leaders aim to integrate risk processes, strengthen scenario-based analytics, and modernize their ALM technology

### Integrated balance sheet management

Banks are making progress toward integrated balance sheet risk management as well as increasing risk's collaboration with Treasury, Finance, and business units. Banks also indicate they are making progress toward integrating credit risk and ALM

However, it is taking a lot of effort to get there, with 70% of banks relying on manual processes to facilitate data sharing between ALM and other risk or business functions

### Forward-looking risk management

ALM is becoming a more scenario-based process with closer connections to stress testing networks across the organization

Banks are looking to strengthen forward-looking risk management capabilities in areas like funding, capital planning, and expected credit loss. Reverse stress testing is also a high priority for banks

In the current high-risk climate, we expect forward-looking risk management to become a priority for more banks globally

### Digital transformation in ALM

Banks are feeling the need to take advantage of technology evolution to support best practices in ALM

Many firms are already using digital technologies in their ALM functions. Most other banks have the ambition to implement next generation technologies like cloud-first, API-driven systems and machine learning over the next two years

Topping the list of desired technology improvements is real-time data to enable intraday analysis

**45%** **see implementing next-generation systems as the top priority for their ALM and liquidity risk management solutions in 2023**

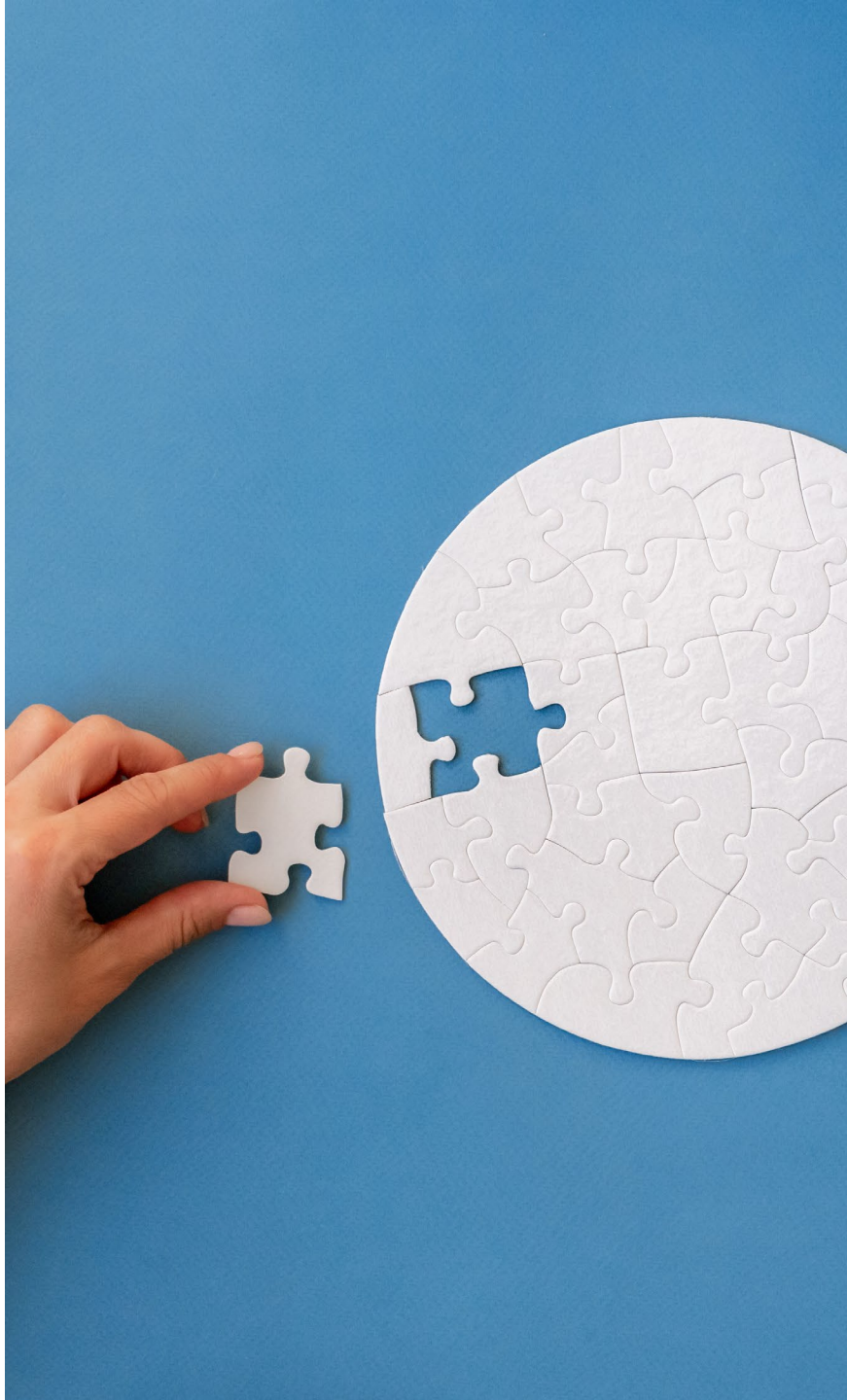
**59%** **plan to focus on forward-looking risk management capabilities over the next two years**

**75%** **think the industry will achieve integrated balance sheet risk management within three years**

# 1

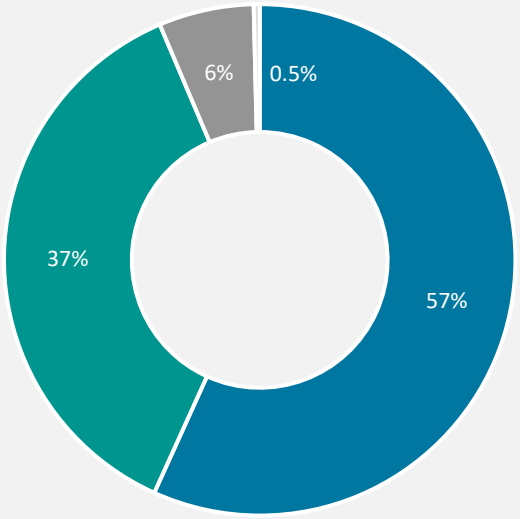
# ALM FUNCTIONAL CAPABILITIES

- Satisfaction with current ALM systems
- Strengths and weaknesses of current ALM programs/functions
- Best practices in ALM operations
- Progress in achieving best practices



# OVERALL SATISFACTION WITH CURRENT ALM SYSTEMS IS HIGH

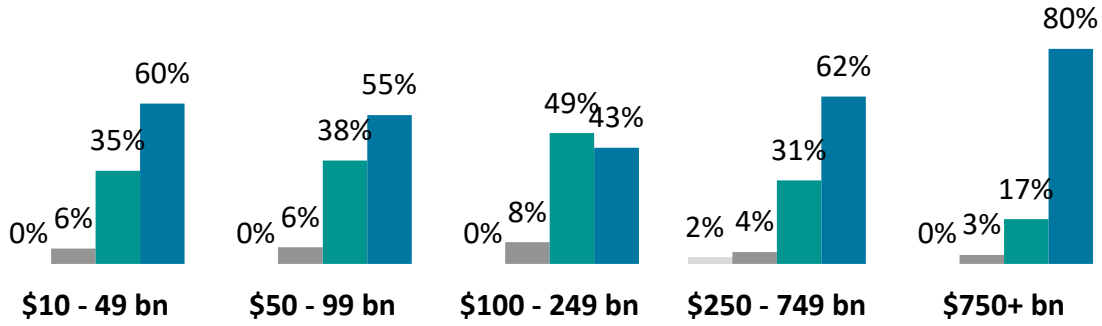
## Satisfaction with Current ALM Systems



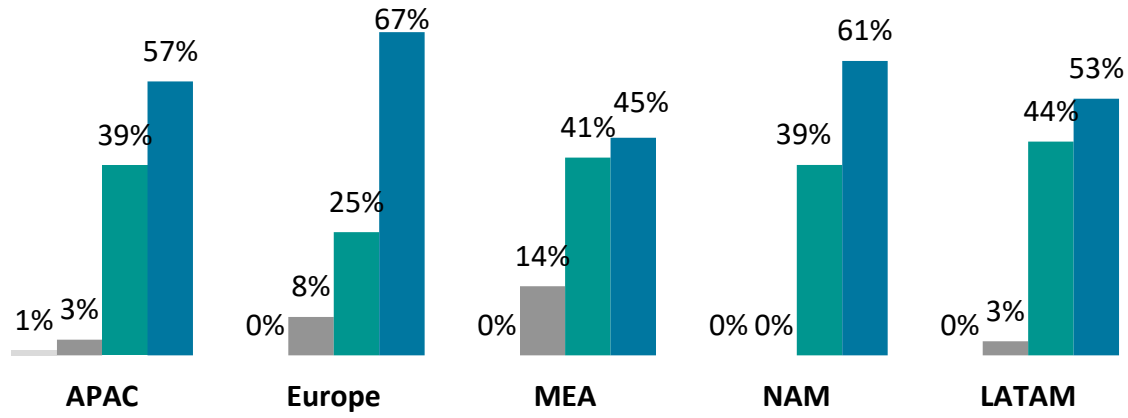

- Very useful with timely actionable information
- Satisfactory but lacking flexibility and extensibility
- Only meeting minimal regulatory and management requirements
- Unsatisfactory

While 57% of firms express high satisfaction with their systems, 43% say they do the job but have limitations. As this study will make clear, **many firms are seeking enhancements to meet evolving business, risk management, and regulatory needs**

Satisfaction is highest among top-tier institutions. 80% of firms with assets of $750 billion or more said their ALM systems were very useful. Satisfaction is lowest at Tier 3 banks ($100-249 billion in assets), with only 43% giving high marks to their systems



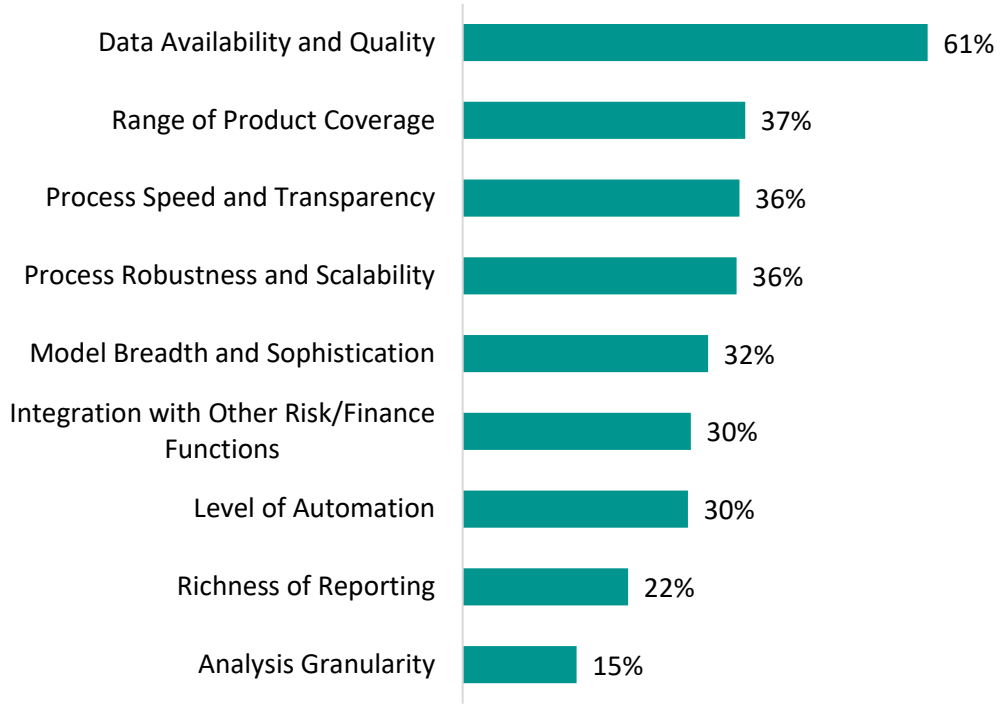

European institutions express the most satisfaction with their ALM systems, followed by North American firms



# YET FIRMS PERCEIVE MORE WEAKNESS THAN STRENGTH IN THEIR ALM PROGRAMS

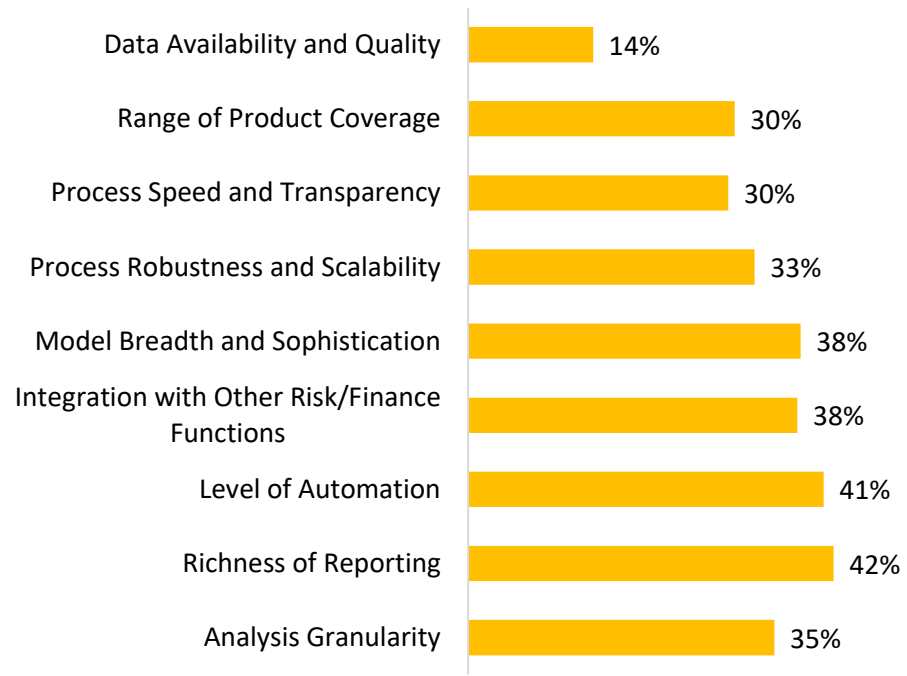
## Strengths

Firms are confident first and foremost about their capabilities around data availability and quality. A much smaller percentage of firms have confidence in their ability to support granular analysis and reporting, automation, or integration with other stakeholders




## Weaknesses

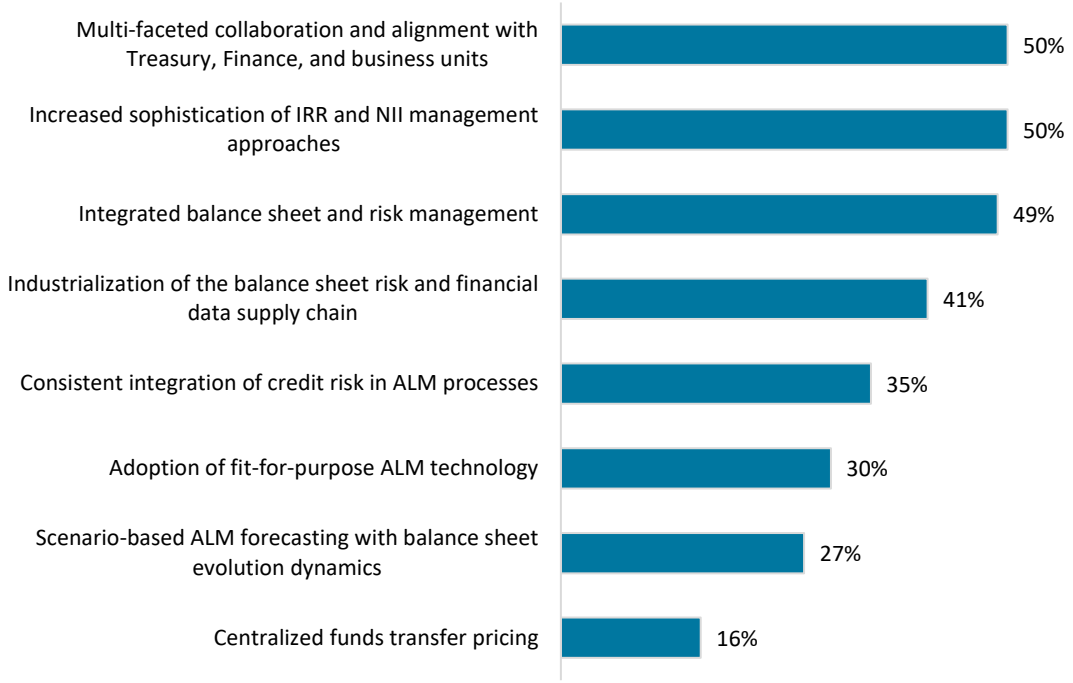
Firms perceive a range of weaknesses in their ALM programs, Reporting and automation capabilities, model breadth and the ability to integrate with other risk and finance functions are the most frequently cited areas



# IMPLEMENTATION OF BEST PRACTICES IS A WORK IN PROGRESS

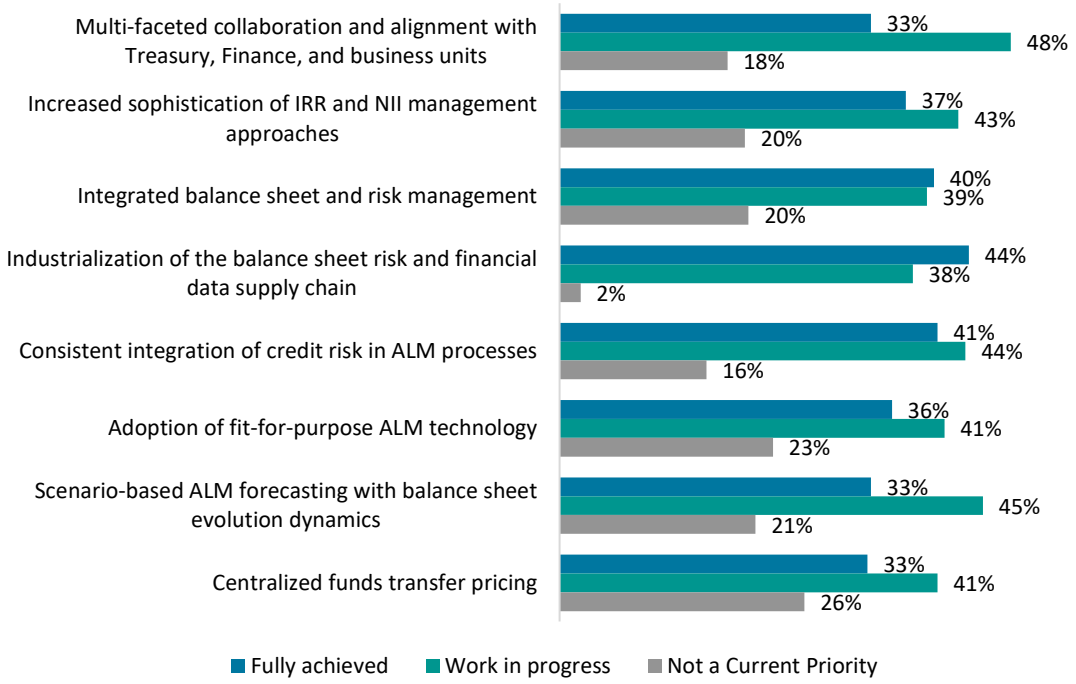
## Best Practices in ALM Operations

ALM alignment with other functions; interest rate risk (IRR) and net interest income (NII) sophistication; and integration and industrialization of the balance sheet top the list of best practices. Funds transfer pricing is a focus for Sweden and Canada, but less of a priority elsewhere




## Progress Toward Implementing Best Practices

Firms have made the most progress in industrializing the balance sheet, especially in Europe and Latin America, and integrating the balance sheet and risk management—led by North America. Other best practice areas are a work in progress for a majority of firms



# 2

# ALM TECHNOLOGY & INFRASTRUCTURE

- Current state of ALM technology
- Adoption of technologies and capabilities to support ALM processes

# TECHNOLOGY ARCHITECTURE TRENDS IN ASSET LIABILITY MANAGEMENT

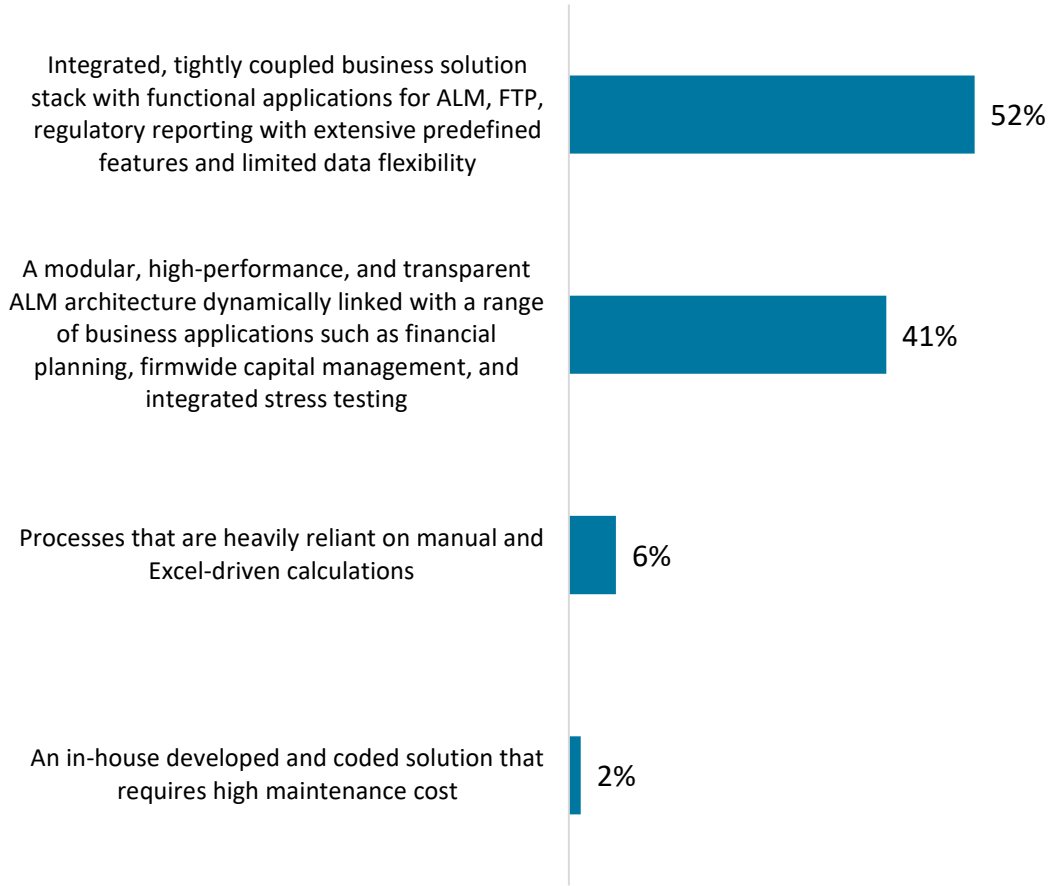
Banks are moving to high-performance, modular systems to support ALM functions

A majority of firms globally (52%) indicate that they use functional but inflexible solutions to cover ALM and related functions. This reliance on incumbent technology means that developing new features to support evolving risk, finance and regulatory needs is slow and cumbersome for many firms. This is likely to be a driver for eventual system replacement for firms relying on incumbent systems

41% of firms have deployed more flexible and dynamic solutions that are more capable of supporting integrated balance sheet risk management. Users of these systems can extend functionalities by adding solutions, which can still be a significant exercise. Regulatory change and evolving risk management practices make it likely that some firms using such systems will at some point opt to replace or significantly augment these systems

A small number of firms across all tier sizes indicated lack of dedicated systems and a heavy reliance on manual processes. A handful of Tier 2* firms and some smaller firms indicate they are using dated, proprietary systems, mostly in Middle East/Africa

**What best describes your ALM technology?**




*$250-749 billion in assets

# ADOPTION TIMELINES FOR ALM TECHNOLOGIES AND CAPABILITIES

Banks see digital technologies as critical to their ALM journey

Technology evolution is transforming risk functions. At least one-quarter of firms report being in production with a range of next-generation tools. A substantial number of firms have achieved intraday analytic capabilities, have at least some degree of process automation and orchestration, and are deploying cloud-based ALM technology

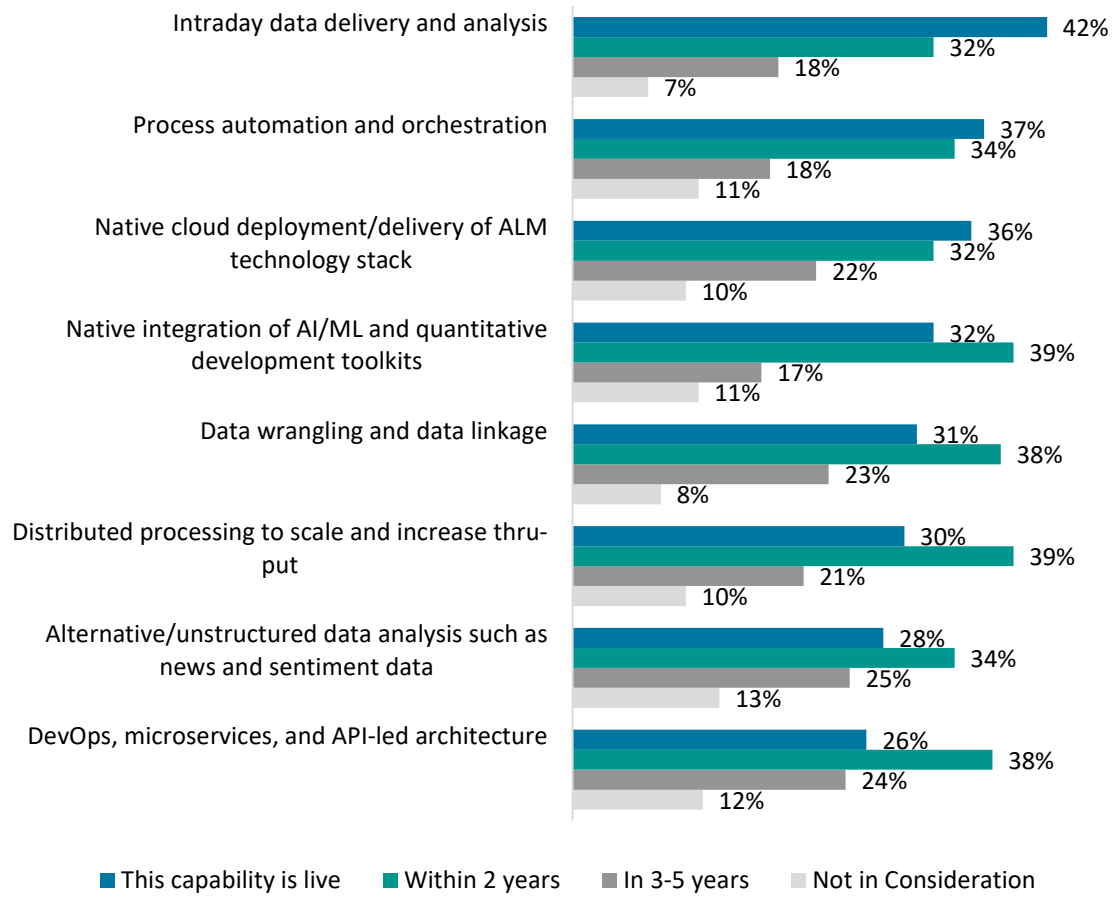
A smaller but still meaningful cohort of firms are live with ALM technology incorporating AI model life cycle tools, advanced data management techniques and alternative data to support the delivery of enhanced insights

An average of 32% to 35% (across all technologies) of firms in Asia Pacific, Europe, Middle East/Africa and Latin America and nearly 40% of firms in North America report these capabilities are live. 57% of firms in North America say they are using ALM tools with native AI modeling capabilities

This trend is visible among all tier sizes, suggesting that small firms access these advanced capabilities through vended solutions

**The technology landscape is poised to evolve quickly, as an additional 30 - 39% of firms expect to have these next-generation technologies in place within two years**

**Next-Generation Technology Timelines in ALM**



# 3

# MODELING AND ANALYTICS

- Modeling capability priorities
- Must-have functionalities for ALM analytics
- Preparing for the IBOR transition

# MODELING FEATURES: FOCUS ON ESSENTIAL ALM

High-performance, granular analytics stand out as the highest priority in modeling capabilities

High-performance, granular analytics are cited as the most important modeling capability for ALM functions

Firms also emphasize the ability to consume models through APIs to support maintenance, deployment, and sharing of models

### Variations by Region

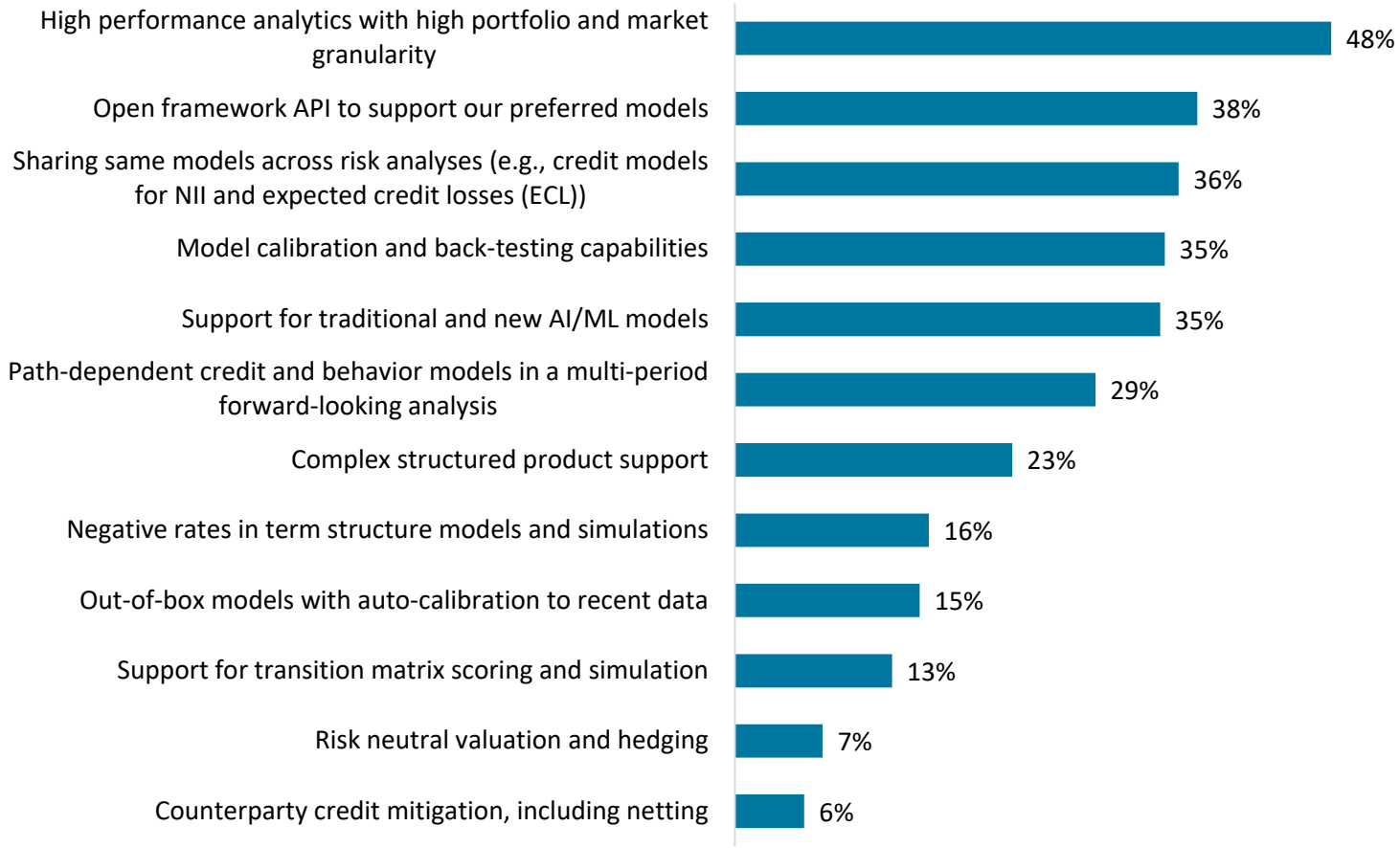
Support for machine learning models is the second highest priority in **North America**, reflecting the emphasis on advanced analytics in this region

Forward-looking credit models are a top-three priority in **Middle East/Africa**

Model calibration and back-testing is a priority in **Asia Pacific** and is a particular focus in India and Malaysia

Forward-looking credit models are a top-two priority in **Japan and the UAE,** suggesting an emphasis on accurate default risk modeling in these regions

**Most important modeling capabilities**



# ANALYTIC FEATURES: MANAGING RISK AND SUPPORTING THE BUSINESS

Back-testing, balance sheet optimization, and historical data are the highest priority items in analytics

Asked to prioritize the most important analytic capabilities for ALM functions, firms cited analytic features across the board. **This highlights the need for a broad range of analytic techniques to support ALM activities**

Firms place the highest priority on essential ALM forecasting and balance sheet optimization features

Access to point-in-time analysis to support audit and regulatory requirements is also a high priority—particularly in North America and the MEA region, as well as Brazil

Analytics to support the business, such as valuation and financial accounting as well as rollover/new business assumptions, are also top five priorities

More firms see reverse stress testing as high priority than forward-looking stress testing and it is a top-three focus in Europe. Firms in Hong Kong and Germany cite it as the highest priority area. **In the current high-risk climate, we expect that reverse stress testing and non-maturity liability modeling will become higher priorities for firms**

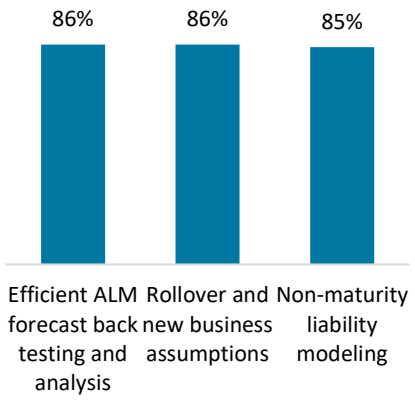
**Must-have functionalities for ALM analytics**


Note: % of respondents citing features as high priority

# ANALYTIC FEATURES: REGIONAL PRIORITIES

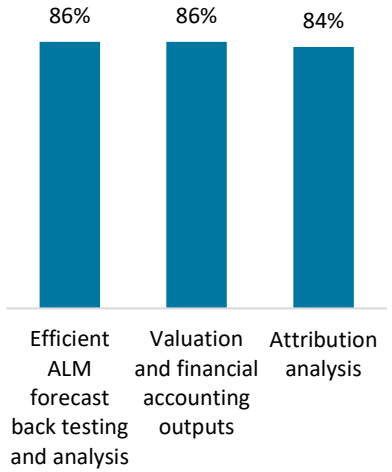
Back testing and balance sheet optimization are global priorities, while non-maturity deposit modeling is the top priority in North America

## ASIA PACIFIC



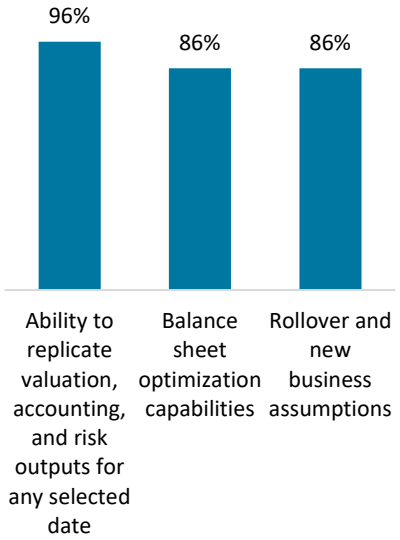

**Back testing, support for the business, and liability modeling for non-maturity deposits are the top 3 priorities in Asia Pacific**

## EUROPE



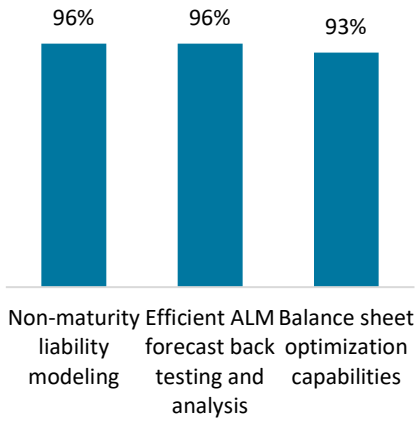

**Back testing and support for financial accounting are priorities in Europe**

## MIDDLE EAST/AFRICA



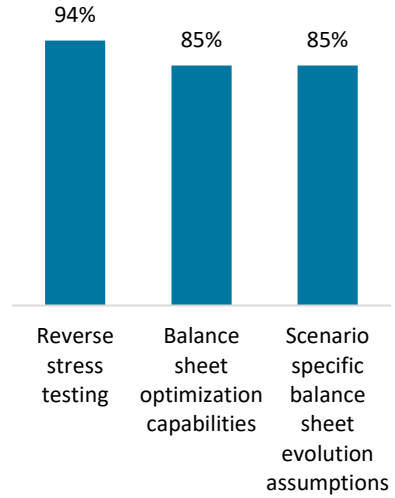

**Concern with supporting audit and regulatory make historical analytic features the top priority in MEA**

## NORTH AMERICA




**Non-maturity liability modeling is the top priority in Canada and a top-3 priority area in the US**

## LATIN AMERICA



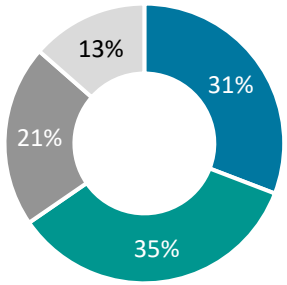

**Stress testing and balance sheet features are a priority in Latin America**

Note: % of respondents citing features as high or medium priority

# PREPARING FOR THE IBOR* TRANSITION

North America and Asia Pacific are making the most headway, while 26% of banks overall say they have not begun their IBOR Journey

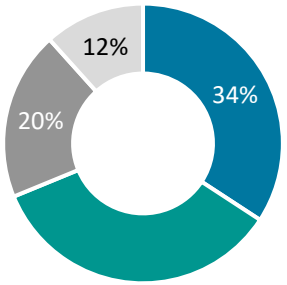
### Cashflowing in ALM covers the full list of ARRC** conventions for new SOFR‡ products




- This capability is live
- In development
- Yet to start
- Not in our plans

Asia Pacific and North America lead in this capability

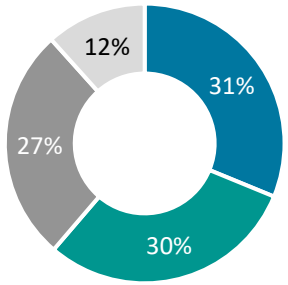
### ALM systems incorporate fallback events (and rates) in cashflow generation and NII forecasting




- This capability is live
- In development
- Yet to start
- Not in our plans

A majority of firms in North America are developing fallback capability

### We have an internal model for SOFR forward curve

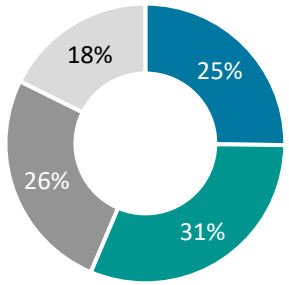



- This capability is live
- In development
- Yet to start
- Not in our plans

Use of internal SOFR curves is more prevalent among Tier 1 and 2 firms*

*$250 billion or more in assets.

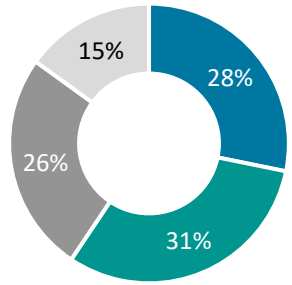
### We use a third party SOFR forward curve




- This capability is live
- In development
- Yet to start
- Not in our plans

Use of third-party SOFR curves is more prevalent in Asia Pacific

### We are prepared and in production now




- This capability is live
- In development
- Yet to start
- Not in our plans

More firms in North America say they are ready for IBOR, followed by Asia Pacific

*Interbank Offered Rate **Alternative Reference Rates Committee ‡Secured Overnight Financing Rate

# 4

# INTEGRATED BALANCE SHEET MANAGEMENT

- Integration of ALM, Liquidity Risk, IRRBB, FTP
- Credit risk integration with ALM
- Integration of the ALM function with other processes

# CLEAR PROGRESS TOWARD AN INTEGRATED APPROACH TO BALANCE SHEET RISK

But most firms are relying on process-heavy approaches to modeling and disparate systems to put it all together

### Process-heavy approach

Banks indicate a clear trend to an integrated approach to the balance sheet

- 80% say they are working on or have achieved integrated balance sheet management
- 82% say they are integrating balance sheet risk with financial data

However, it is taking a lot of effort to get there. Only 29% of firms have fully automated processes for sharing data across functions

### Reliance on static credit risk factors

Credit risk is in scope for ALM, with 96% of firms saying they are dovetailing credit risk into ALM. However, 63% are managing credit risk based on static demographic parameters or risk factors, which is likely to lead to less accurate ALM

Relatively few firms (33%) are using models across credit risk and ALM. These leaders are using a more forward-looking approach that factors in default risk over the credit risk lifecycle—as called for by IFRS 9 and CECL—and carrying this over into ALM for more accurate risk management

### System silos

For many firms, integrating balance sheet risk involves manual and semi-automated processes across siloed systems for ALM, liquidity risk, and other functions

This means a lot of work is being done to link up and integrate the various risk streams to support an integrated approach to the balance sheet

Large banks are closing these gaps by integrating processes, sharing models, and orchestrating data across systems. Smaller banks have the option to use multipurpose systems to consolidate these risk functions

**71%** **use manual or partially automated processes for data sharing and reconciliation across functions**

**67%** **are not using integrated models to support ALM alignment with credit risk**

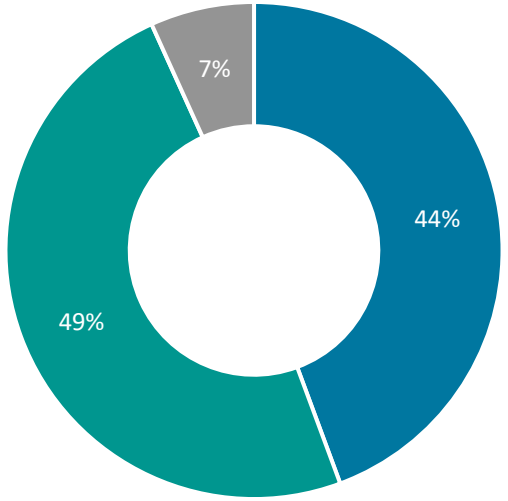
**56%** **run ALM, liquidity risk, IRBB*, and FTP** on separate systems**

*Interest Rate Risk in the Banking Book **Funds Transfer Pricing

# CLEAR TREND TOWARD INTEGRATING ALM WITH ADJACENT RISK FUNCTIONS

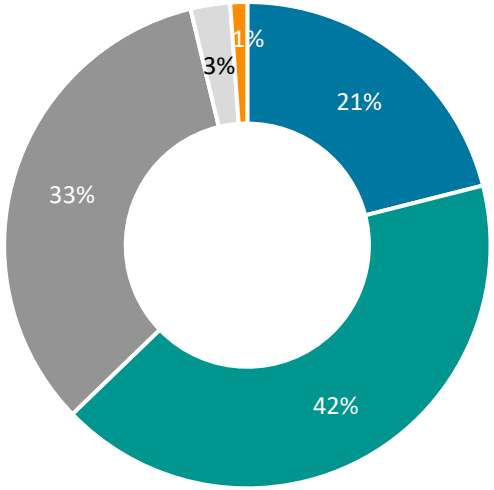
A majority of firms maintain separate systems for **ALM**, **Liquidity Risk**, **IRRBB**, and **FTP**

Nearly **half of the firms plan to consolidate systems**



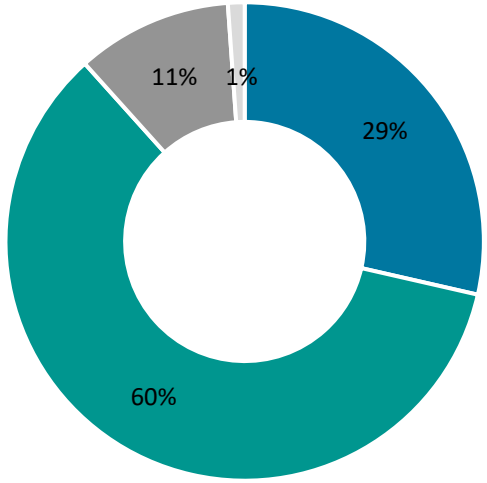

96% of firms say **credit risk** is in scope for their ALM process

Most are **not using integrated models**




Most firms say they have achieved a degree of **automation in data sharing/reconciliation between ALM and other processes**

However, **only 30% are fully automated**



# ALM IS WELL INTEGRATED WITH BUSINESS STRATEGY FUNCTIONS

Levels of ALM integration with regulatory risk management are somewhat lower

The importance of ALM for guiding the business is reflected in the level of integration of ALM functions with business and product strategy and financial planning

This is especially true in North America, where 71% of firms say they have fully integrated ALM with product and pricing strategy, and 54% assert full integration with business strategy and financial planning

Fewer firms have fully integrated ALM with regulator-mandated risk management functions such as CECL/IFRS9, stress testing, and Basel Pillar 2 capital requirements

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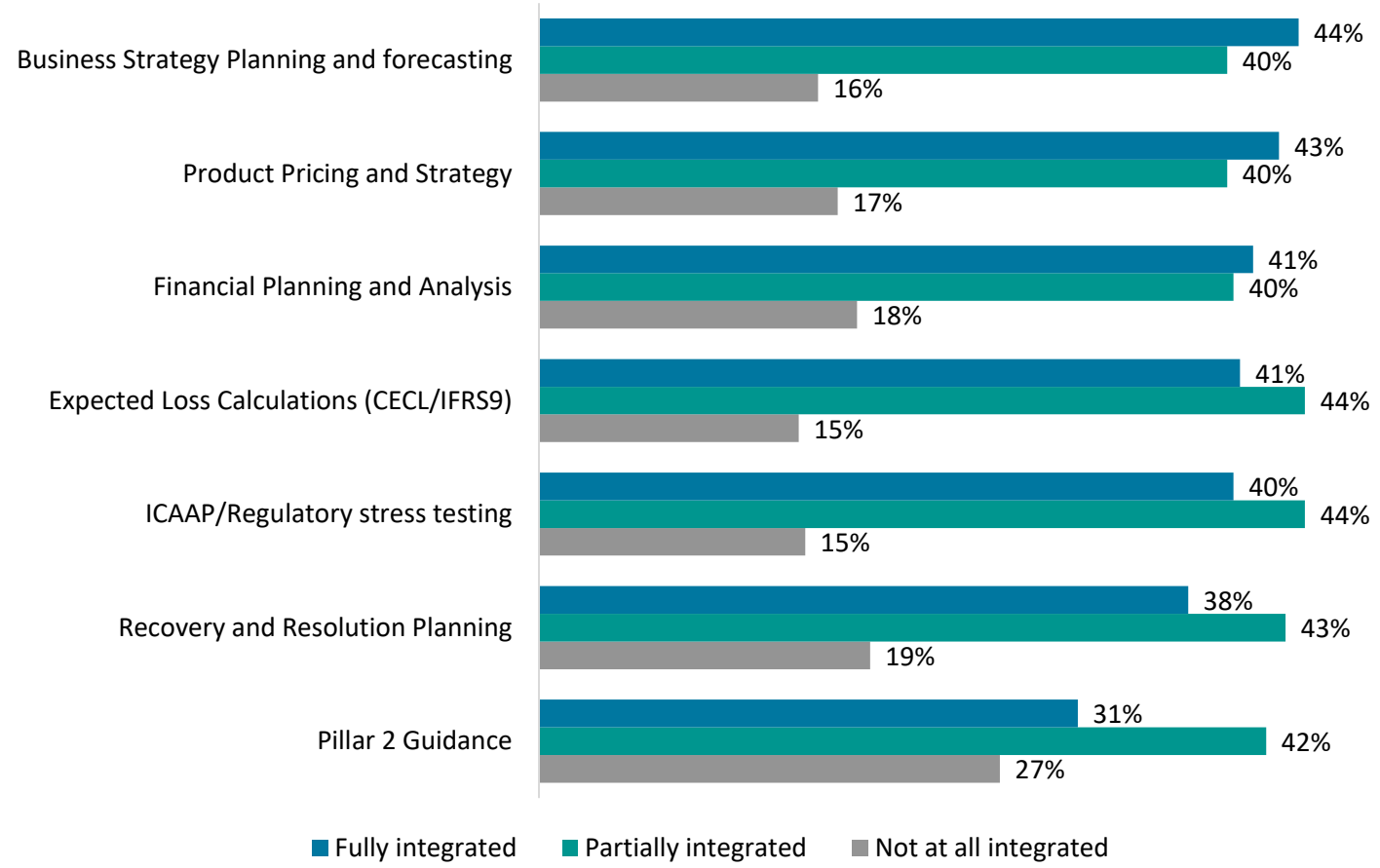
North America exhibits the highest levels of integration, with an average of 46% of firms citing full integration of ALM with these business and risk functions, followed by Europe at 42%

The lowest levels of ALM integration with other functions are found in Middle East/Africa and Latin America where an average 23% and 21% of firms respectively say they have not integrated ALM at all with these other functions

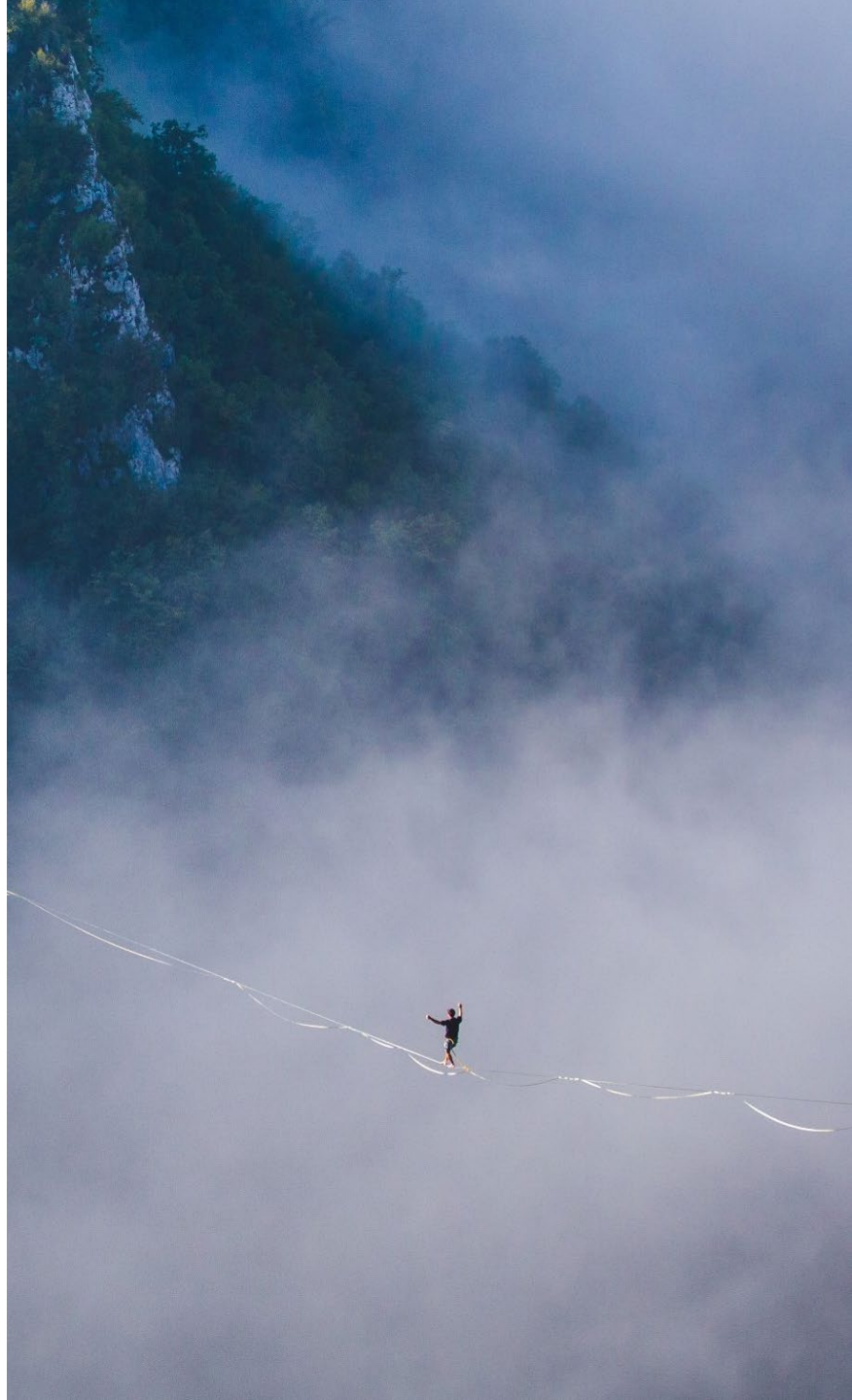
**Integration of the ALM function with Business and Risk processes**



# 5

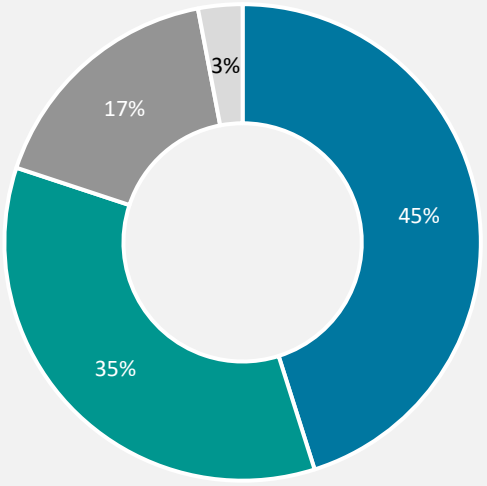
# ALM PRIORITIES FOR 2023 AND BEYOND

- Priorities for ALM and liquidity risk management solutions
- Planned enhancements for ALM processes
- What the next three years will bring to ALM processes



# IMPLEMENTING NEXT-GENERATION SYSTEMS IS A TOP PRIORITY FOR ALM IN 2023

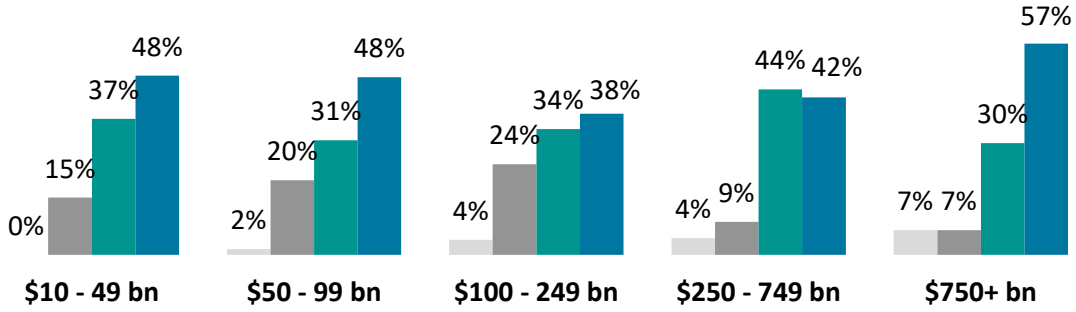
**Top priority for ALM and liquidity risk management solutions in 2023**



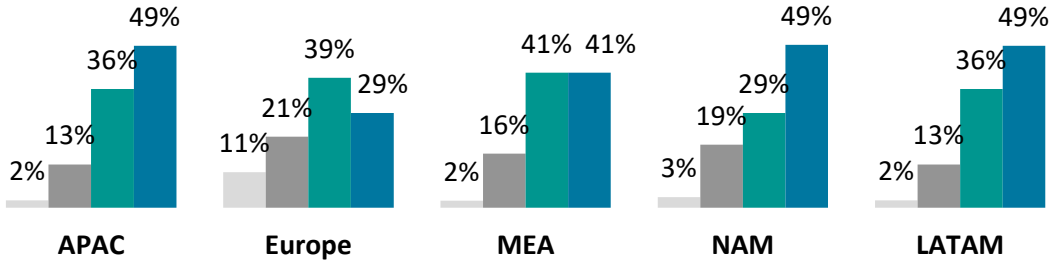

- Implementing next-generation ALM solutions
- Comprehensive enhancements to ALM functionalities
- Enhancing data quality and modeling capabilities
- Extending existing system to support additional business cases

80% of firms are considering serious improvements to their ALM function by modernizing their systems, including use of cloud, and/or implementing comprehensive process enhancements. While not every firm will realize these ambitions, this underscores a **need for technology and process transformation at many firms**

A majority of Tier 1 firms ($750 bn or more in assets) emphasize their intention to implement next-generation ALM technology as early as 2023. Nearly half of Tier 3 and Tier 4 firms ($50 – 249 bn in assets) are looking to install new systems as well, highlighting both the need for improvements at mid-market firms as well as their propensity to choose digitally-enabled, cloud-based systems




Appetite for installing modern ALM systems is high in North America and Asia Pacific; as well as in Latin America—underscoring the increased use of digital solutions and cloud in that region. European firms look first to enhancements to existing processes and technology, with less zeal for breaking ground with new systems



# SHORT-TERM ALM ENHANCEMENT PRIORITIES

Forward-looking simulation and ALM alignment with other functions are the most-cited priorities for improvement

Nearly 60% of firms will seek to improve the ability of their ALM function to support forward-looking simulation capabilities for risk management and decision making

Increasing the alignment of ALM with the Risk, Treasury, and Finance functions—as well as business units—is also a priority item across firms

A majority of firms are also focused on increasing automation and efficiency in regulator-mandated risk management areas such as Pillar 2, as well as improving cycle times for ALM processes overall

Almost half of firms plan improvements in analysis granularity through enhanced data management

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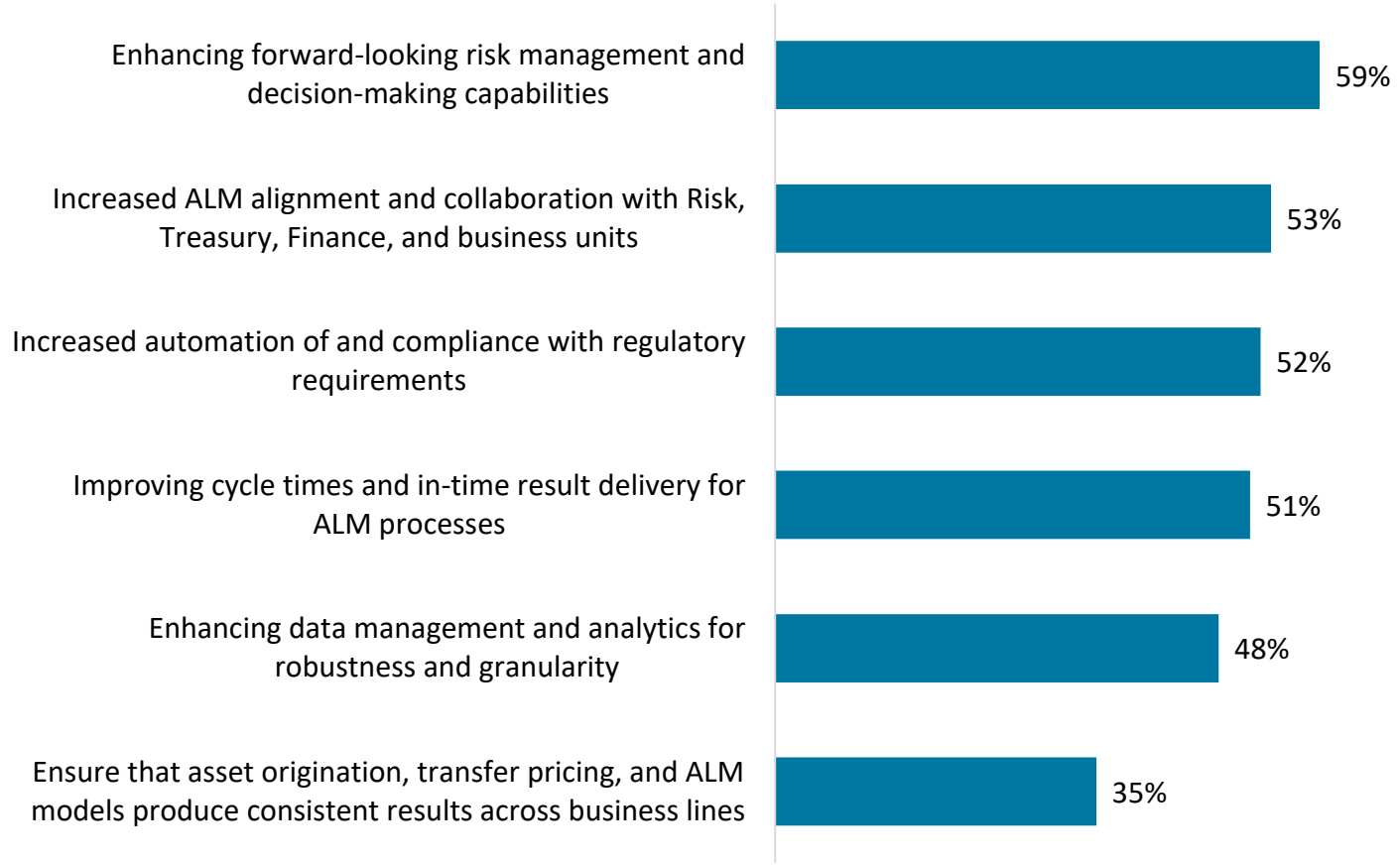
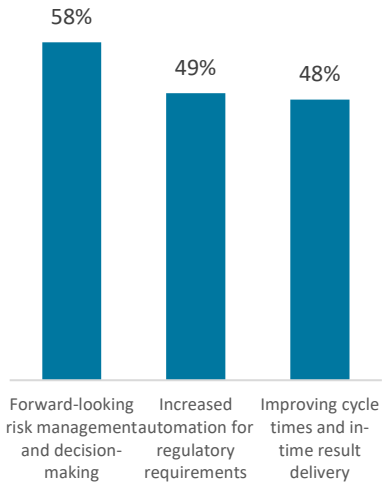
Funds transfer pricing is less of a focus, perhaps because of lighter regulation in this area. However, Turkey and France place a high priority on FTP, with 75% and 70% of firms respectively planning enhancements over the next two years

**What features of your ALM processes will you seek to enhance in the next two years?**



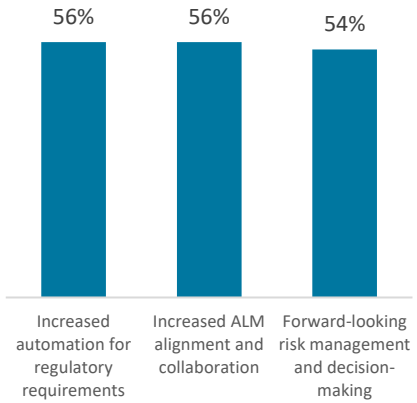
# SHORT-TERM ALM ENHANCEMENTS: REGIONAL PRIORITIES

## ASIA PACIFIC



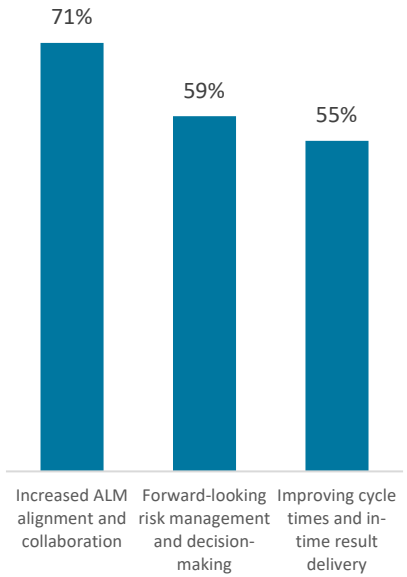

**Forward-looking simulation, increasing regulatory compliance, and improving cycle times are enhancement priorities in Asia Pacific**

## EUROPE



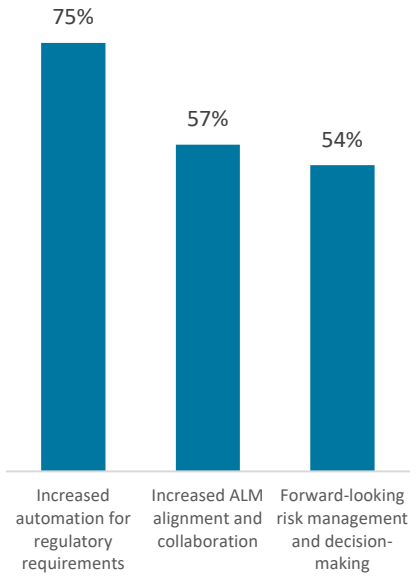

**European firms are equally focused on enhancing regulatory compliance, ALM alignment and forward-looking risk capabilities**

## MIDDLE EAST/AFRICA



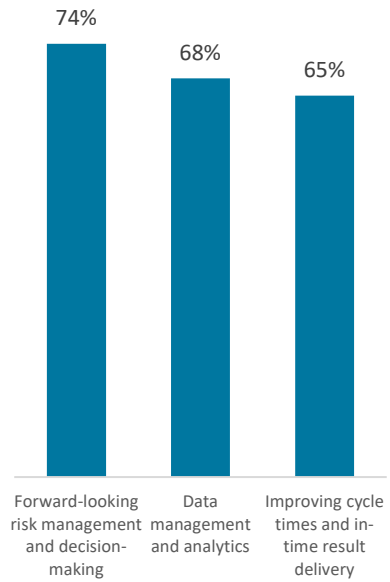

**ALM alignment with other functions leads the list of planned enhancements in MEA. Forward-looking simulation and improving cycle times follow**

## NORTH AMERICA




**North America is focused primarily on enhancing regulatory compliance. ALM alignment and forward-looking risk management capabilities are also priorities for a majority of firms**

## LATIN AMERICA




**Firms in Latin America are seeking to improve forward-looking analytic capabilities, data analytics, and cycle times**

# THE FUTURE OF THE ALM FUNCTION

Most firms expect integrated balance sheet risk management, technology modernization, and intraday analysis within three years

75% of firms see integrated balance sheet risk management as the most reliable trend in ALM. Confidence in integrated balance sheet management is strong across all regions

In particular, 82% of firms in the Middle East and Africa strongly agree or agree with this forecast

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About two-thirds see technology as driving ALM transformation

MEA and Europe are the strongest proponents of digitizing the Risk back office

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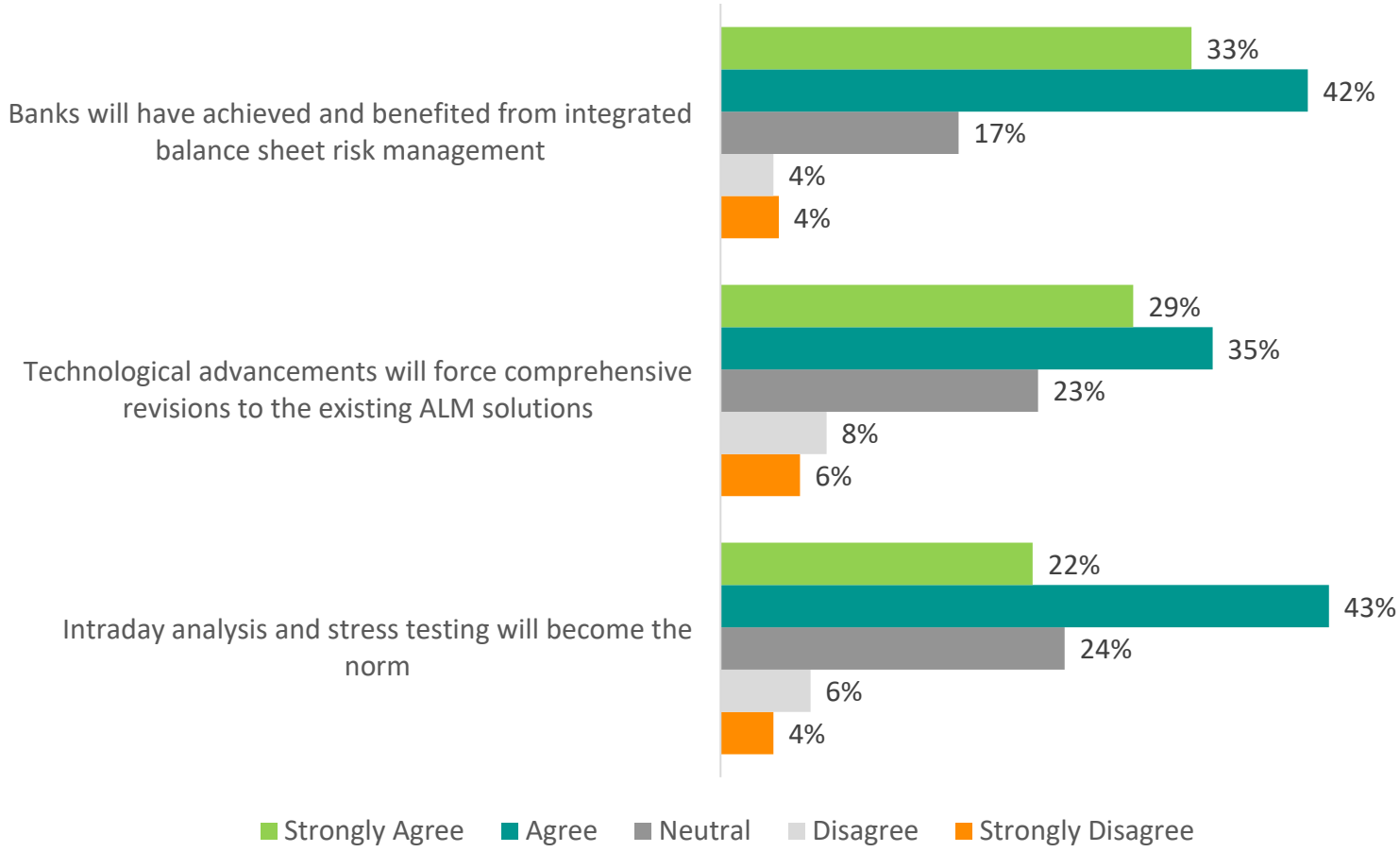
About two-thirds also think intraday analysis—even intraday stress testing—will be standard in three years

MEA and North America are the most confident about the widespread implementation of intraday analytic capabilities

**What do you feel the next 3 years will bring to ALM processes?**



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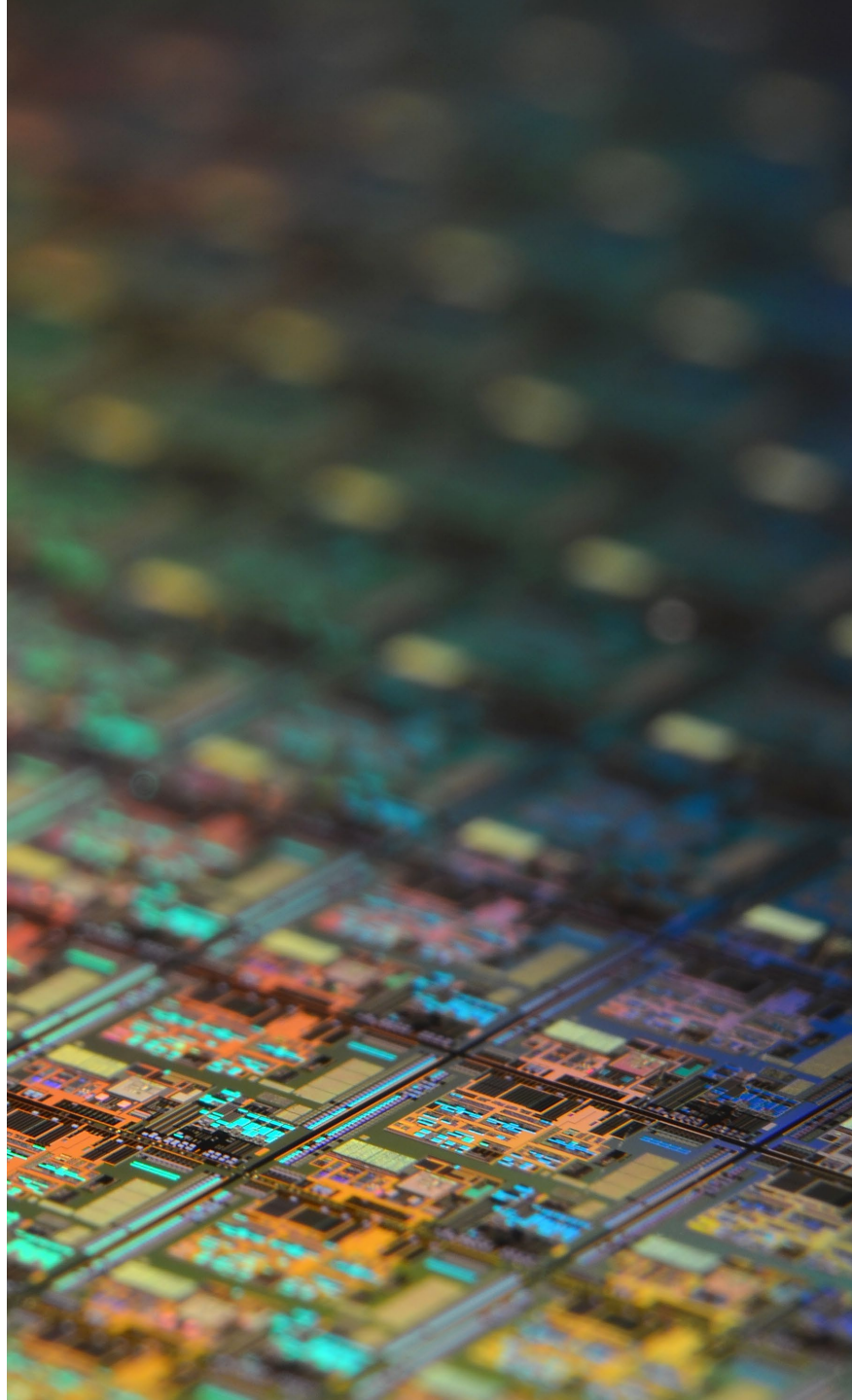
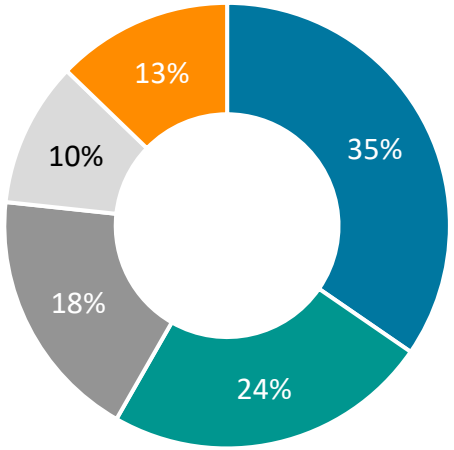
# ABOUT THE SURVEY



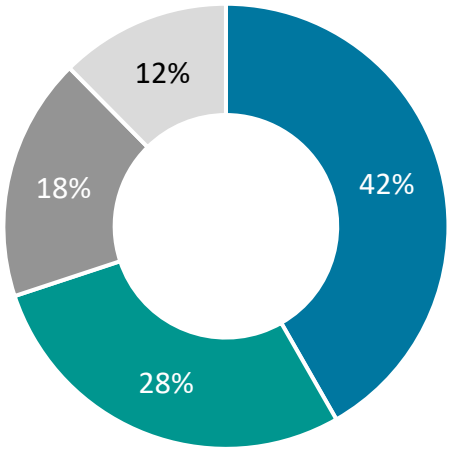
# ABOUT THE SURVEY

This survey on technology and analytics trends in asset liability management was designed by Celent and SAS Institute. The survey was fielded in 22 countries and regions globally in March 2023. A total of 266 Risk, Treasury, Finance, and IT professionals completed the survey. The distribution of survey respondents by location, type and size of institution, and respondent's role is shown below

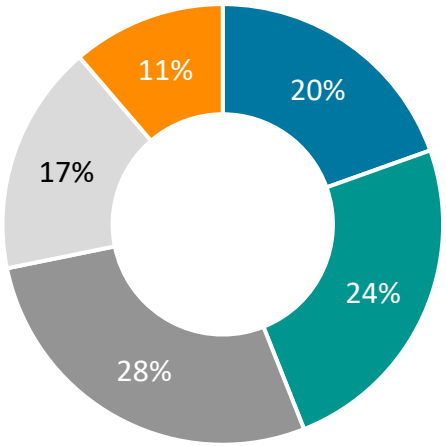
**Global region**



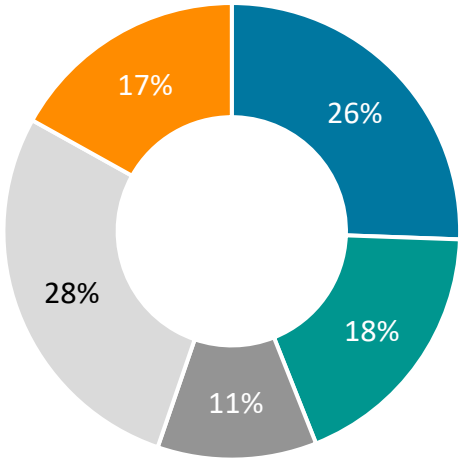

**Institution type**




**Asset size**




**Area of responsibility**




Source: Celent/SAS Asset Liability Management Survey
N = 266

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# QUALIFICATIONS, ASSUMPTIONS, AND LIMITING CONDITIONS

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