

Answering the bell

21st Annual fair valuation pricing survey

A Conversation with the Mutual Fund Director Forum

December 13, 2023



Meet today's speakers



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Topics For Today

- Rule 2a-5 implementation
 - Adequacy of Resources
 - Impact on Board Reporting
 - Impact on Risk Assessment
 - Impact on Vendor Due Diligence
- Technology on the Rise
- Board Governance Trends
- Other Key Findings

Survey **Overview**

Purpose

- Provide data, insights and information to determine how survey practices, policies, and procedures benchmark to other fund groups in the industry
- Identify emerging, maturing and industry practices and trends within the industry

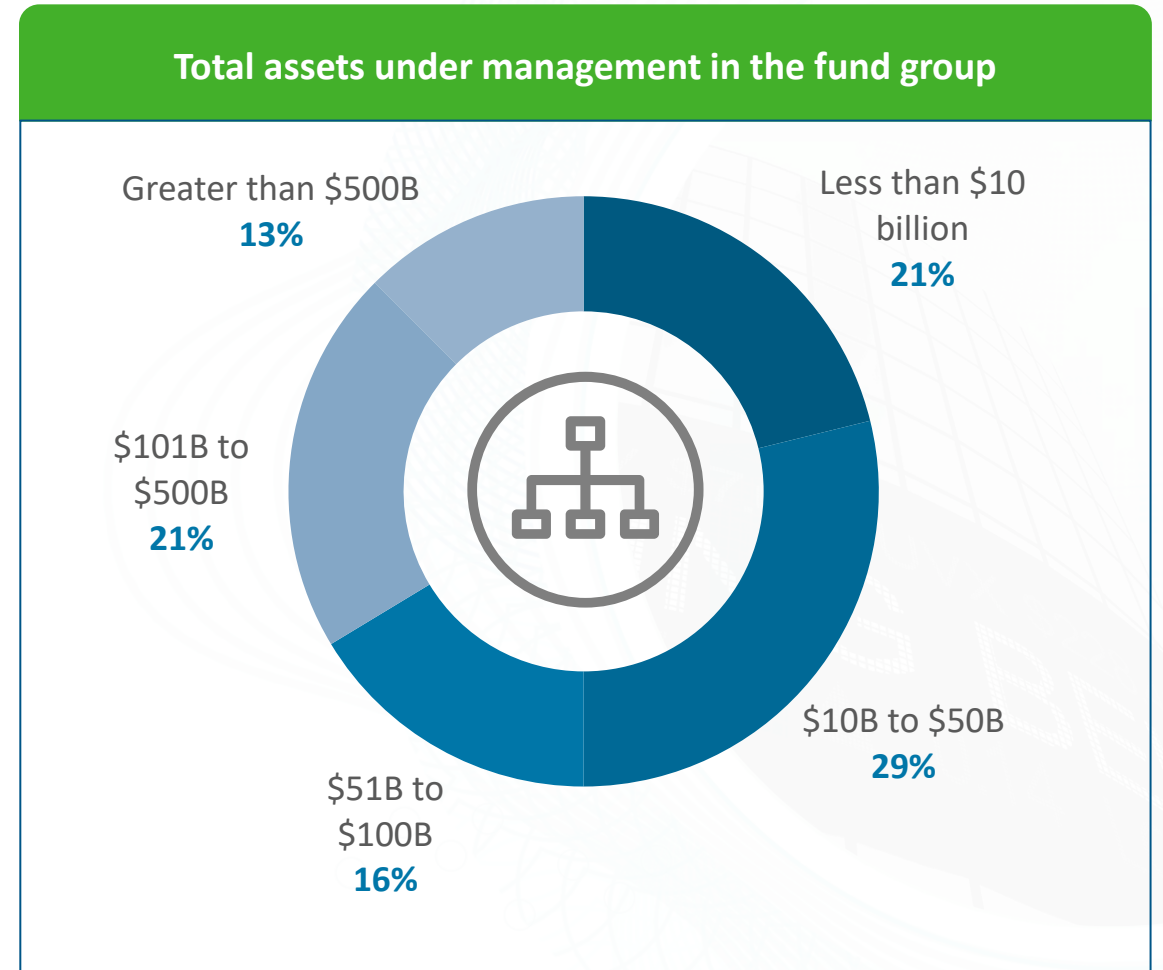
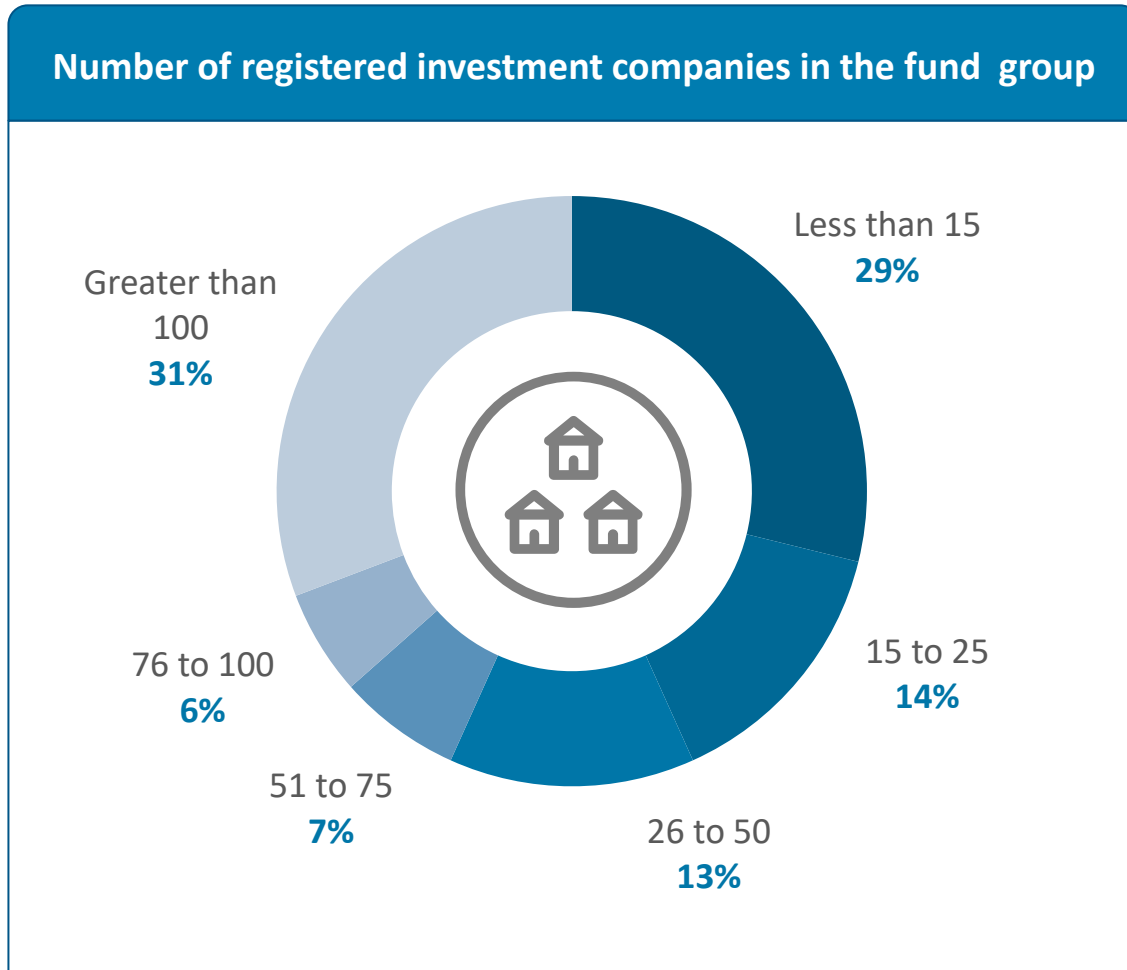
Topics covered

- **Valuation governance**
- **Risk assessment**
- General policies and procedures
- **Technology**
- Roles and responsibilities
- Pricing sources
- Interactions with pricing vendors
- Specific fair value considerations by asset type
- Foreign currency exchange rates
- ASC 820 considerations
- SEC examinations
- **Rule 2a-5**



FV Survey Fund Group Participants Metrics

A record **104 fund groups** participated in this year's survey. The survey was conducted in the summer of 2023 with results published on **September 15, 2023**.





A record **104 fund groups** participated in this year's survey. 3rd time in the survey history with over 100 participants.

21st edition FVS Themes:

Use of Technology - UP

Board delegation - UP

Virtual meetings - DOWN

Diversity in fund group valuation practices - UP

Risk assessment/Risk-based governance - UP

Pricing venter due diligence - UP



What will Year 2 of Rule 2a-5 bring? What role with the SEC play in Year 2?

Rule 2a-5 Implementation



Impact of Rule 2a-5 the adequacy of resources

Rule 2a-5 requires the valuation designees to annually report to their respective fund group's board of directors/trustees (the "Board") on the adequacy of valuation resources.

- **86%** of fund groups with less than \$10 billion in assets under management ("AUM") reported that they had **less than five** valuation-focused FTEs.
- **69%** of fund groups with greater than \$500 billion in assets under management had **10 or more** valuation-focused FTEs.
- **All** of the fund groups reporting the use of more than **15 FTEs** held fixed-income investments, many also held private credit investments, nearly all held private equities, most of which was acquired through actively seeking such investments.

Full-time equivalents based on size of fund group

AUM in billions	Fewer than 5 FTEs	5 or more but fewer than 10 FTEs	10-15 FTEs	More than 15 FTEs
Greater than \$500	8%	23%	8%	61%
\$101-500	45%	36%	14%	5%
\$51-100	47%	47%	6%	0%
\$10-50	74%	20%	3%	3%
Less than \$10	86%	9%	0%	5%

Impact of Rule 2a-5 on Board activities

A shift in valuation oversight, related to overall Board involvement and reporting.

- **34%** of FV survey participants indicated that over the last year the Board had delegated more responsibilities to management, up from just **10%** noting such last year.
- Board ratification has declined, as shown below.

Board ratification of:	21 st Edition	16 th Edition
All or certain valuations determined by parties other than pricing vendors	17%	52%*
Another party's periodic review of valuation policies and procedures	62%	86%
Another party's periodic evaluation of pricing vendors	41%	77%

**Statistic excluded both pricing vendors and brokers in the 16th edition.*



Impact of Rule 2a-5 on Board reporting

A noticeable impact on Board oversight appears to be around Board reporting. Overall, **54%** of FV survey participants indicated that their Boards are now receiving more valuation materials than they did in the past, up from just **16%** reporting such last year.

- **52%** of FV survey participants noted that they changed certain aspects of Board reporting over the last year based on requests by the Board. Some Boards wanted more detail (**13%** of those), and some wanted less (**10%** of those).
- **27%** of FV survey participant indicated that there was a change in the format of materials, such as adding or changing valuation dashboards.
- **19%** of FV survey participants noted that they created additional dashboard reports, presumably to promote more visual snapshots of key valuation indicators (“KVIs”) and to better illustrate trending.
- **33%** of FV survey participants noted that they reported matters under the prompt notification provision to the Board in the first year of the Rule.

Most common KVIs on dashboards	2023	2022
% of Level 3 investments	90%	71%
Number of price challenges	85%	74%
Back-testing results of trades	79%	86%
Unchanged (stale) prices	75%	76%
Back-testing results of foreign equity fair value factors	67%	71%

Rule 2a-5 left its mark

- **70%** of FV survey participants added that, as part of their Rule 2a-5 risk assessment, they identified and documented the risk associated with key inputs and assumptions specific to each asset class or portfolio holding and the appropriate application of fair value methodologies, up from **55%** reporting such in the prior year and **32%** two years ago.
- **52%** of FV survey participants described their risk assessment as containing a few high-level/general risks (five or fewer), and **20%** of FV survey participants described their risk assessment as containing specific detailed risks encompassing and/or directly targeting all or nearly all asset classes.
- **13%** of FV survey participants have added new risks within their risk assessment since the adoption of the Rule. Examples of new risks identified included bank sector failure, counterparty risk, insufficiency of resources, and the risk of manual processes/lack of automation for back-testing, data maintenance, and reporting.
- Just **16%** of FV survey participants indicated that they have deployed new testing relating to evaluating fair valuation methodologies used by pricing vendors.
- Pricing vendor due diligence has increased overall, as shown below.

Areas in which pricing vendor due diligence has changed	% reporting change
Increased focus on <u>vendor documentation</u> of back-testing performed	44%
Using new platforms and documentation that the pricing <u>vendors are providing</u>	43%
Developed standard vendor <u>due diligence questionnaire</u> to be used for primary, secondary, and tertiary vendors	29%
<u>More frequent primary</u> vendor due diligence meetings (e.g., moved to quarterly from annually)	19%
<u>More frequent secondary/tertiary</u> vendor due diligence meetings (e.g., moved to annually from ad hoc))	17%

Changes made as a result of Rule 2a-5 adoption

Changes made as a result of Rule 2a-5 adoption	Percentage reporting change
Use of dashboards provided to the board or board-designated committee	46%
Information provided by pricing vendors to help support our assessment of pricing	39%
Due diligence process	34%
Information provided by pricing vendors to help test fair value methodologies	27%
Use of back-testing	26%
Constituency of the adviser's valuation committee	18%
Price challenge process	15%
Evaluation of fourth-party risks	13%
Involvement of portfolio managers or other front office personnel in valuing internally fair-valued investments	10%
Use of calibration	10%

Changes made as a result of Rule 2a-5 adoption *(continued)*

Changes made as a result of Rule 2a-5 adoption	Percentage reporting change
Involvement of portfolio managers or other front office personnel in performing daily or periodic internal controls over the valuation function	5%
Parties permitted to interact with pricing vendors	2%
Use of secondary pricing sources	2%
Use of tertiary pricing sources	1%



Rule 2a-5 areas of fund group divergence

Periodically Assess and Manage Valuation Risks

- Definition of material valuation risk varies across survey participants (59% use a NAV error)
- 52% described their risk assessment as containing a few high level/general risks (five or fewer) whereas 20% describe their risk assessment as containing specific risks encompassing o and/or directly targeting nearly all asset classes.

Testing Fair Value Methodologies for Appropriateness and Accuracy

- Back-testing of fixed-income securities shows great disparity across fund groups relative to frequency and the securities tested.
 - 41% back-test 100% of securities each day
 - 30% back-test monthly
 - 15% back-test quarterly

Timing of Communications with Boards

- 34% of FV survey participants have had a detailed conversation with Board members to understand their prompt notification expectations.
- FV survey participants were split amongst those that will communicate certain items when they arise as opposed to only communicating them as part of required annual or quarterly communications.

Technology use on the rise

Continued **investment** in technology

68% of FV survey participants reported that they had **begun to use or increase their use** of different forms of technology for valuation purposes. This applies to both larger and smaller fund groups.

- Greater than \$500 billion AUM – **92%** of participants
- Less than \$10 billion AUM – **60%** of participants

Area of Technology with increased usage	2023	2022
Spreadsheet tools (i.e., macros, queries, pivot tables)	36%	36%
Data analytics	23%	21%
Data visualization tools	23%	22%
Data management/Data lake for valuation data	22%	16%
Workflow management tools	17%	19%
Robotics process automation (RPA)	10%	10%
Software programming language	10%	11%

Continued **investment** in technology

Technology in use Trending

Type of Technology in Use	2023	2022	2021	2020
Spreadsheet tools (i.e., macros, queries, pivot tables)	90%	97%	93%	83%
Data analytics	36%	38%	36%	34%
Data management/data lake for valuation data	34%	34%	34%	23%
★ Data visualization tools	32%	28%	26%	21%
Workflow management tools	27%	29%	35%	36%
Robotics process automation (RPA)	15%	19%	16%	14%
Software programming language	14%	11%	Did not ask	Did not ask

Continued **investment** in technology

Technology in use by AUM

Type of Technology in Use	All	Larger Fund Groups	Smaller Fund Groups
Spreadsheet tools (i.e., macros, queries, pivot tables)	90%	97%	87%
Data analytics	36%	66%	20%
Data management/data lake for valuation data	34%	49%	26%
Data visualization tools	32%	57%	19%
Workflow management tools	27%	46%	17%
Robotics process automation (RPA)	15%	29%	9%
Software programming language	14%	26%	9%



Continued **investment** in technology

20% of FV survey participants reported that they create **dynamic day-over-day pricing thresholds** for fixed-income securities to respond to market activity and/or changes in key market indicators.

- Greater than \$500 billion AUM – **45%** of participants
- Less than \$100 billion AUM – **16%** of participants

2 FV survey respondents used cognitive automation, natural language processing, machine learning, or artificial intelligence:

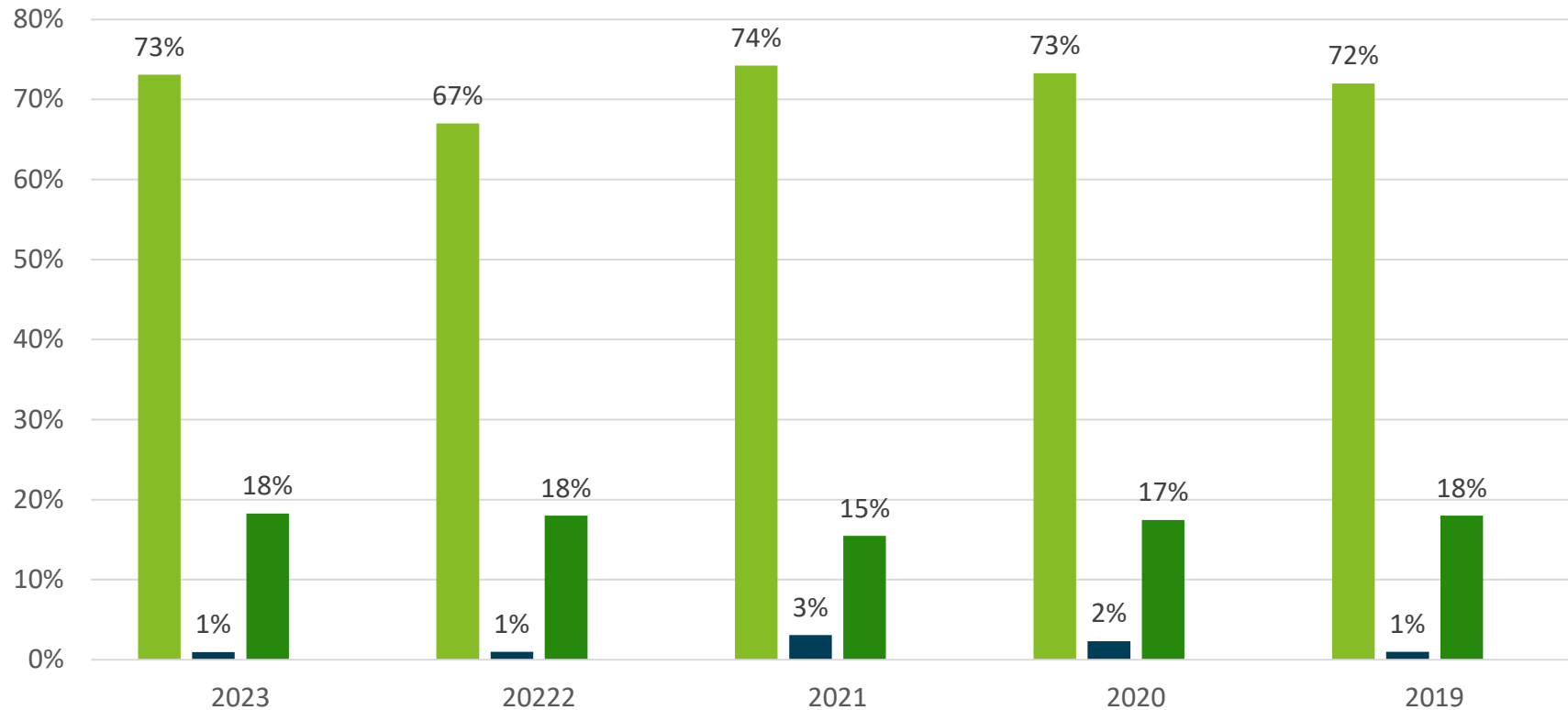
- We are in the early/pilot stages of using AI/ML to perform advanced analytics and enhance **dynamic fixed income daily exception thresholds** based on market movement
- To perform advanced analytics

Board governance trends



Governance – the Basics

Board's Valuation Governance Model



■ The Board has delegated responsibility for overseeing valuation matters to a separate Board committee (Valuation Committee, Audit Committee, Risk Committee, etc.), subject to the overall Board's oversight

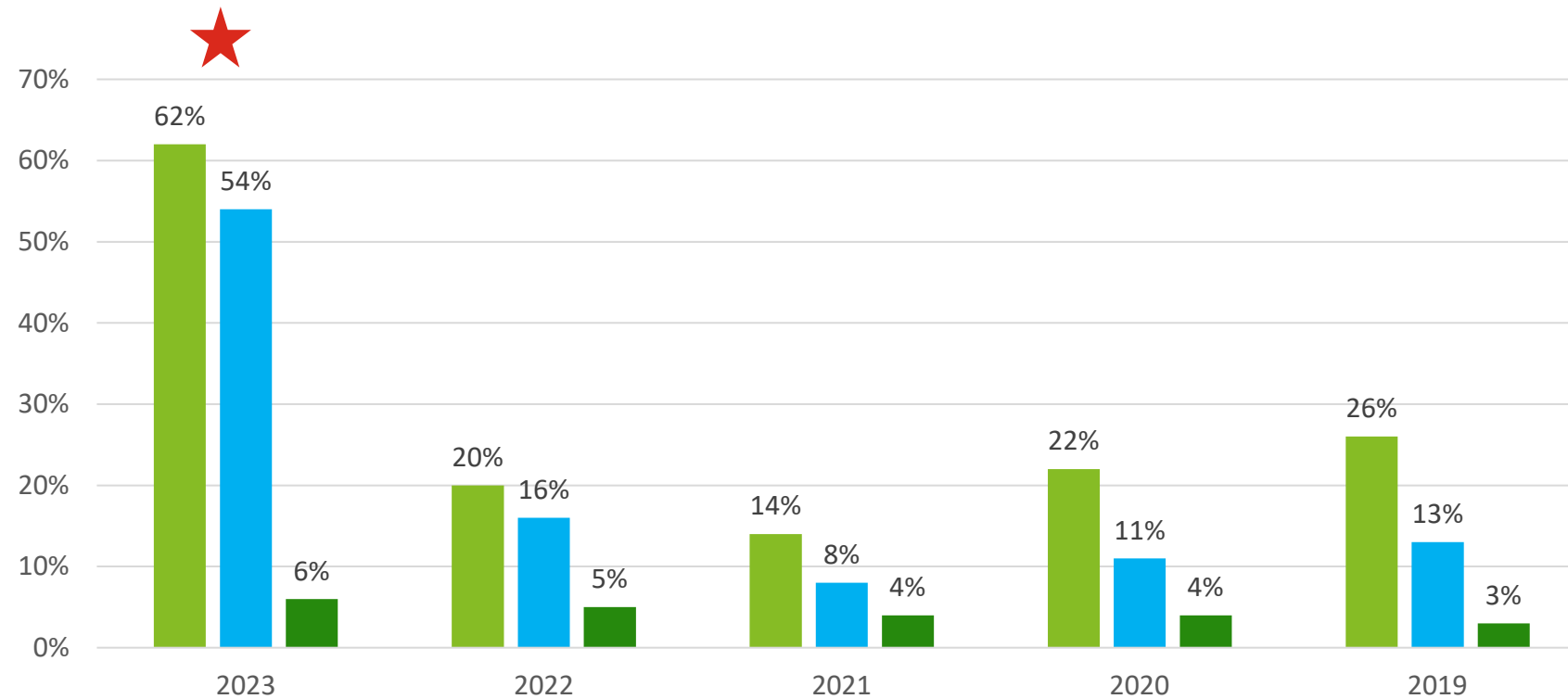
■ The Board has not delegated responsibility for overseeing valuation matters to a separate committee; however, one or more Board members have been designated to focus on valuation matters and report back to the Board

■ The full Board oversees all valuation matters without using a separate committee



Governance – the Basics

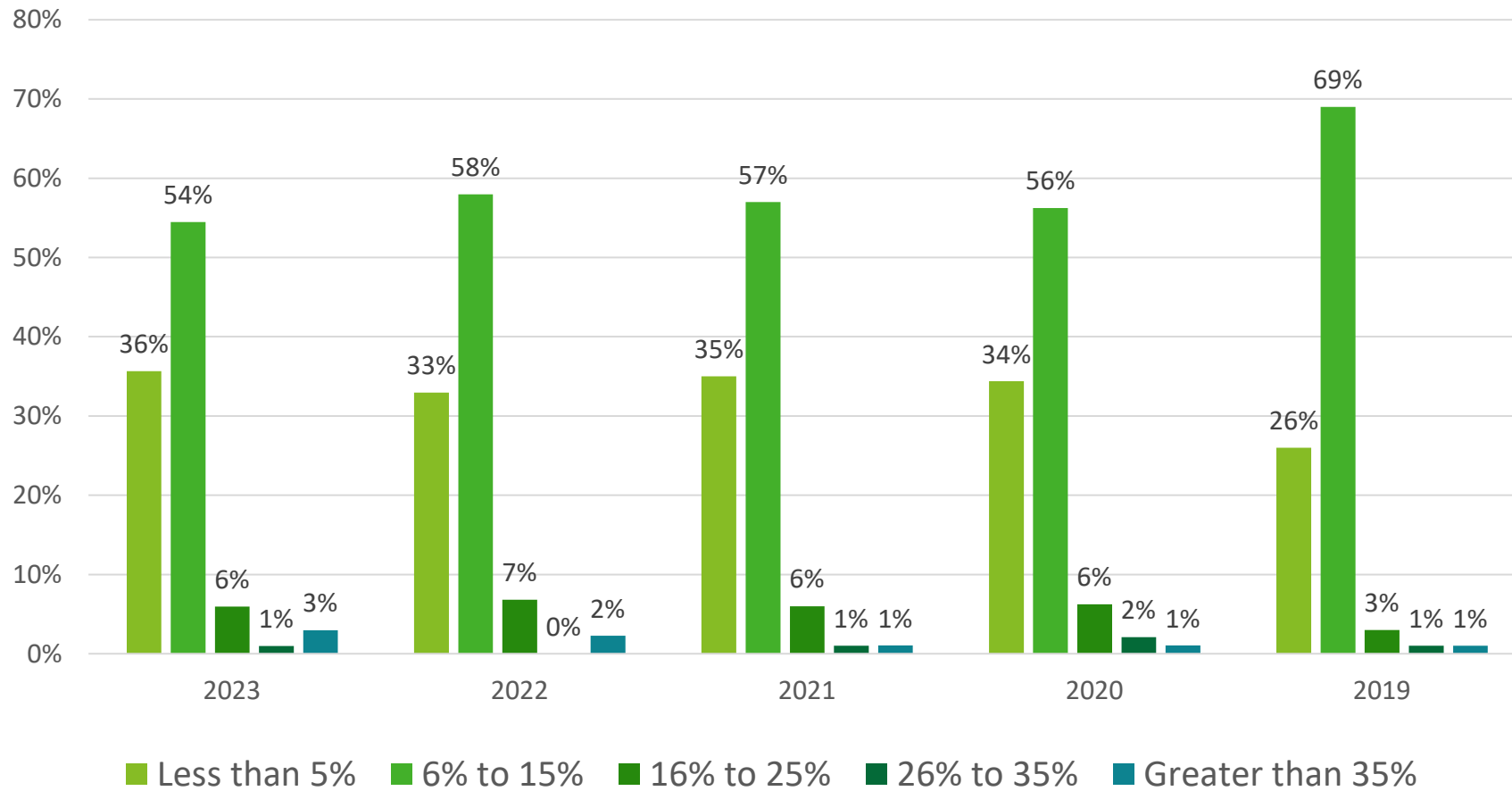
Changes relative to Board Activity and Reporting



- Level of detail provided to the Board
- Board is now receiving additional items that it previously did not receive
- Frequency of Board discussions on valuation

Governance – the Basics

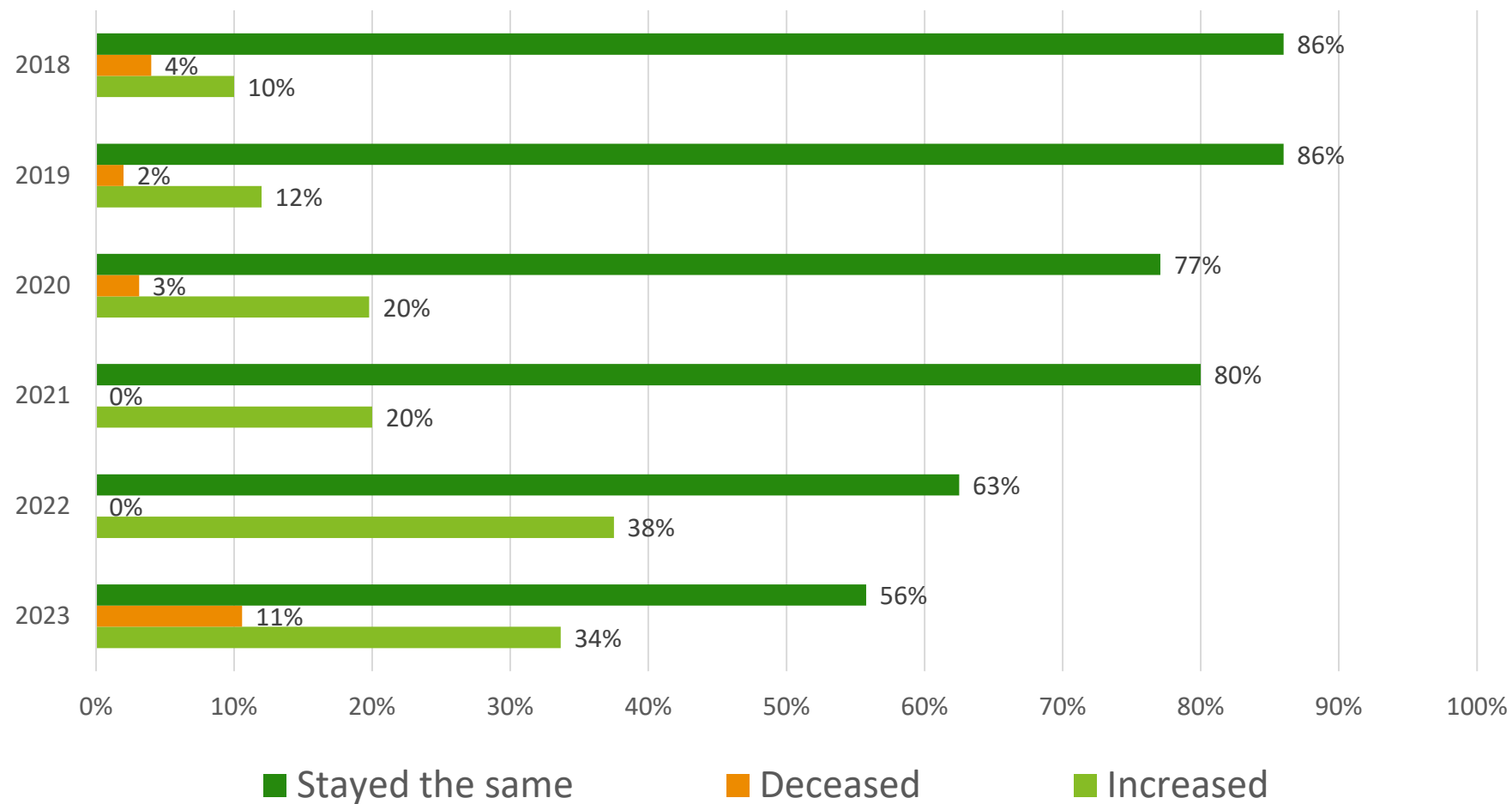
Board agenda time spent on valuation matters





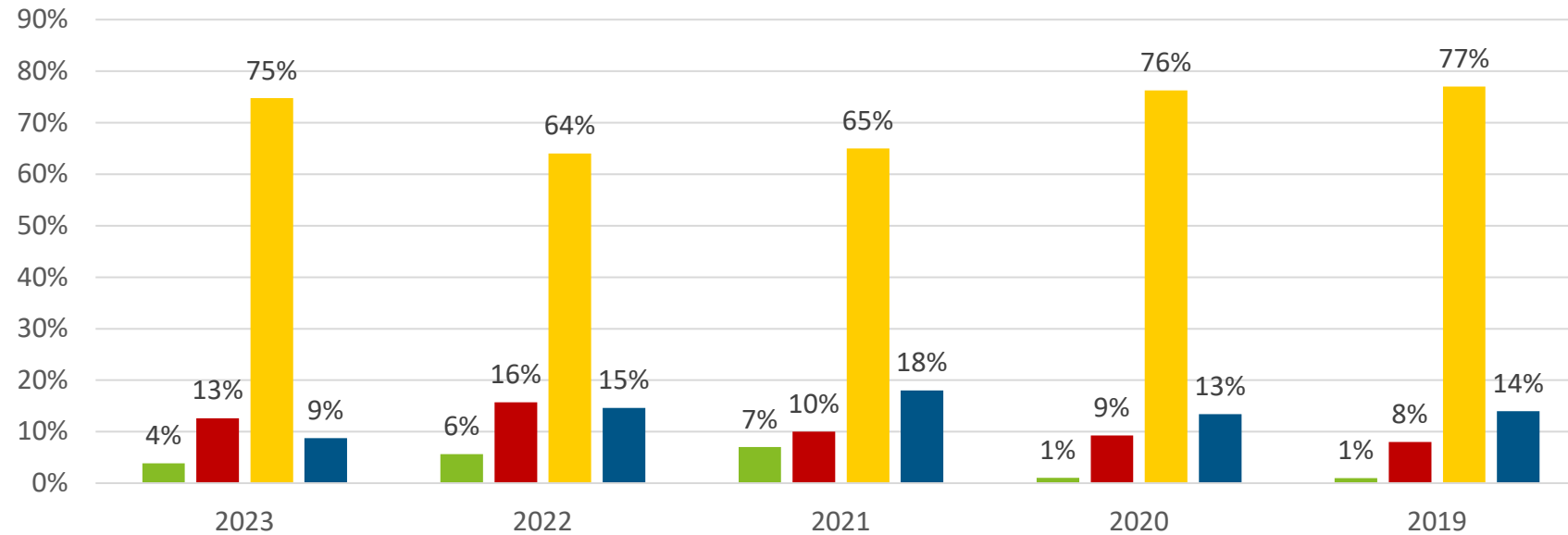
Governance – the Basics

Change in Board agenda time spent on valuation matters



Governance – the Basics

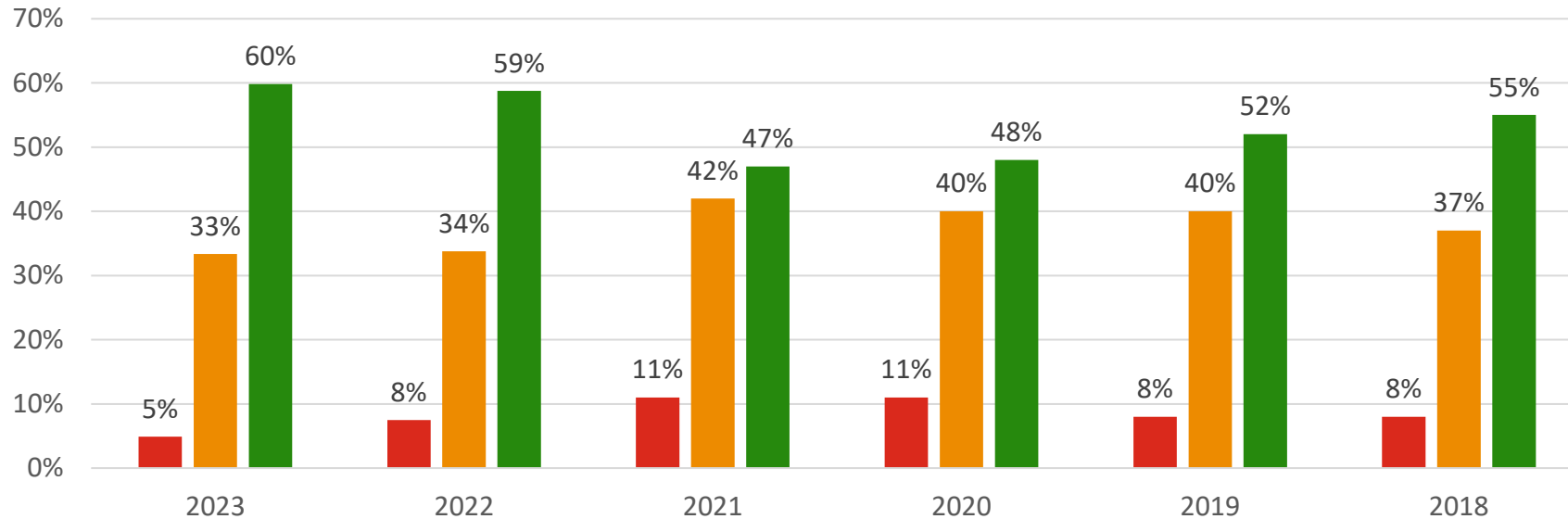
Visiting Pricing Vendors (Virtual or In-Person)



- Yes, at least one board member attends every pricing vendor site visit/virtual visit
- Yes, at least one board member attends at least one (but not every) pricing vendor site visit/ virtual visit
- No, at least one board member does not attend
- N/A, we do not visit pricing vendors

Governance – Key Tools

Tool #1 – Proactive Board's "real-time" involvement

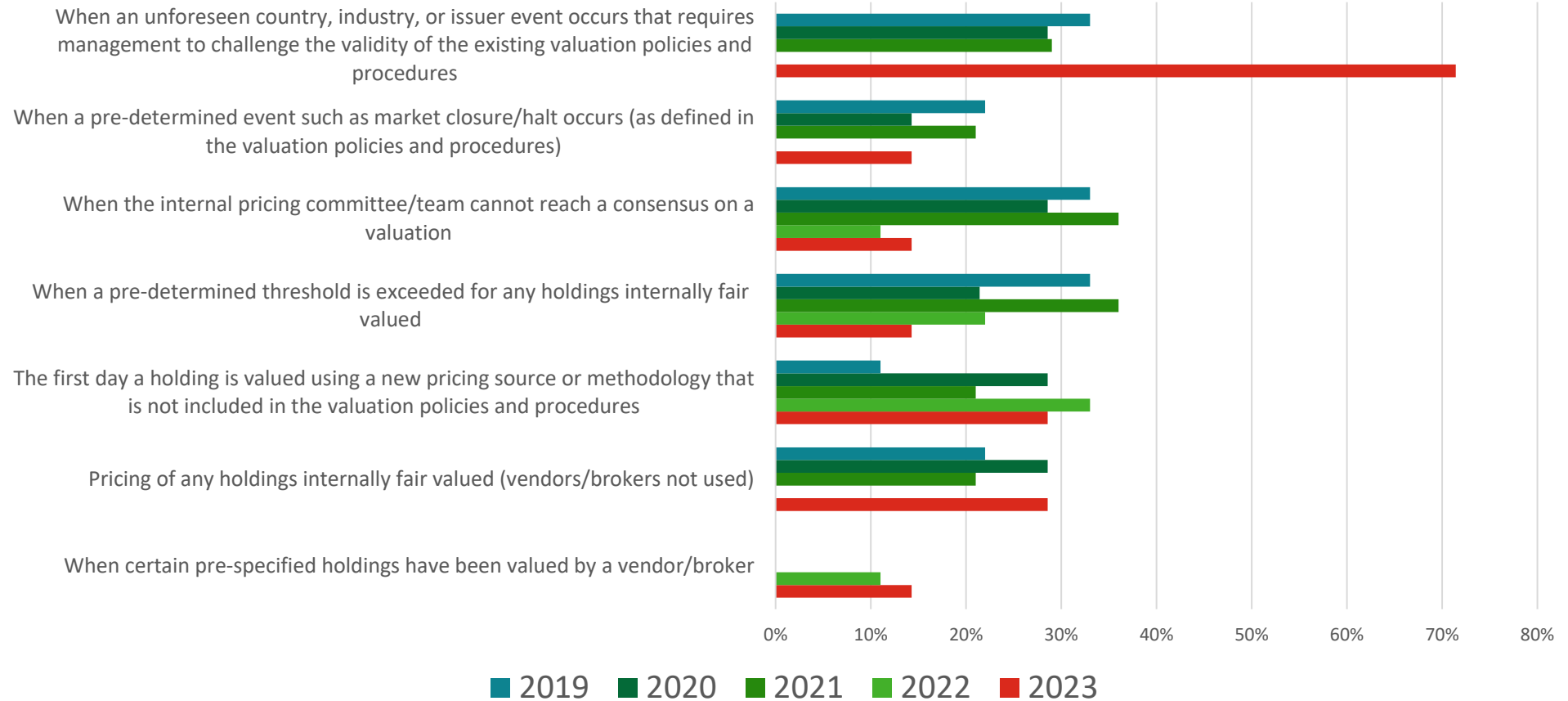


- Valuation policies and procedures explicitly identify certain circumstances in which one or more non-interested Board members must be involved in the evaluation of the pricing of one or more holdings prior to use of such valuation
- Valuation policies and procedures explicitly identify certain circumstances in which one or more non-interested Board members must be notified (within a few days) of the valuation of one or more holdings (Please note that this represents notification and not active participation)
- Valuation policies and procedures do not explicitly identify certain circumstances in which non-interested Board members must be notified or must be involved (Please select this even if one or more non-interested Board members may be involved on a real-time basis at management’s discretion or upon an impromptu request from one or more Board members)

Governance – Key Tools

Tool #1 – Proactive Board's "real-time" involvement

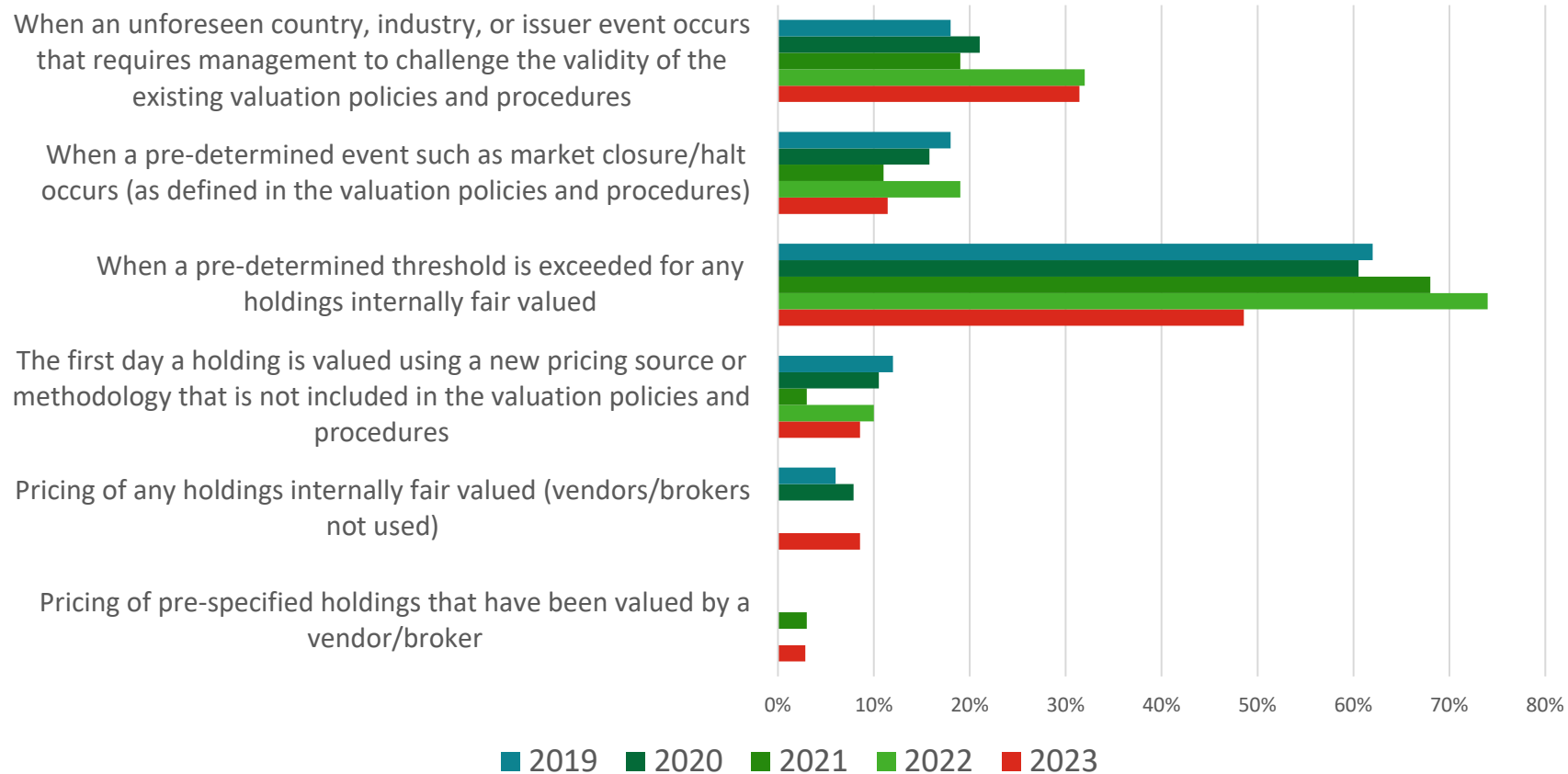
Reasons Why Involvement Is Required



Governance – Key Tools

Tool #1 – Proactive Board's "real-time" involvement

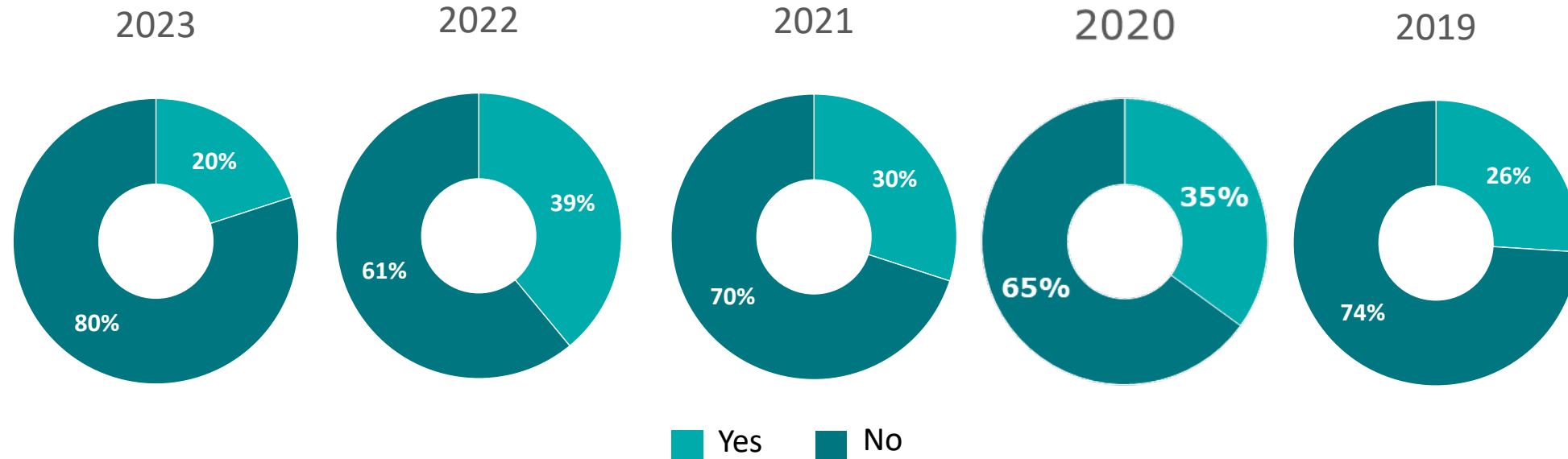
Reasons Why Notification Is Required





Governance – Key Tools

Tool #2 – Ad Hoc Valuation Discussions: Did they occur between meetings?



Common issues that prompted an ad hoc discussion include:

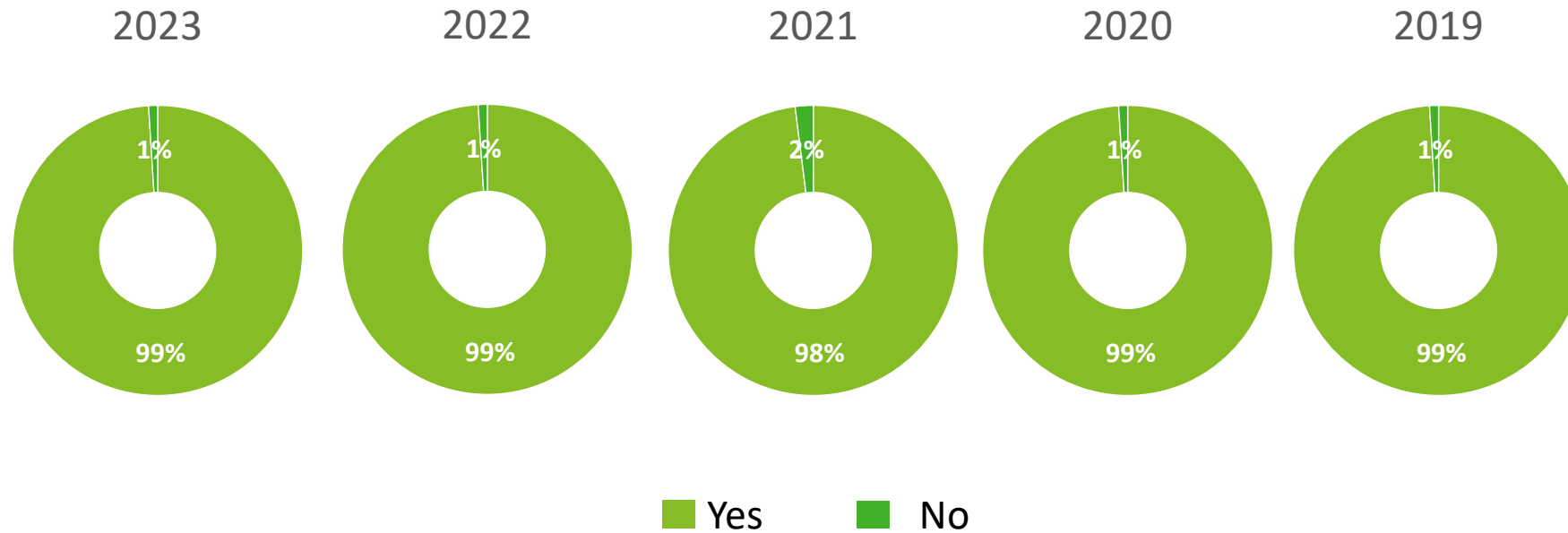
- Bank failures
- Valuation of Russian securities

The Consideration of Active Board Oversight – Governance – Key Tools – by AUM

Tool #2 – Ad Hoc Valuation Discussions: Did they occur between meetings?	ALL	>\$100 AUM
Yes	20%	37%
No	80%	63%

Governance – Key Tools

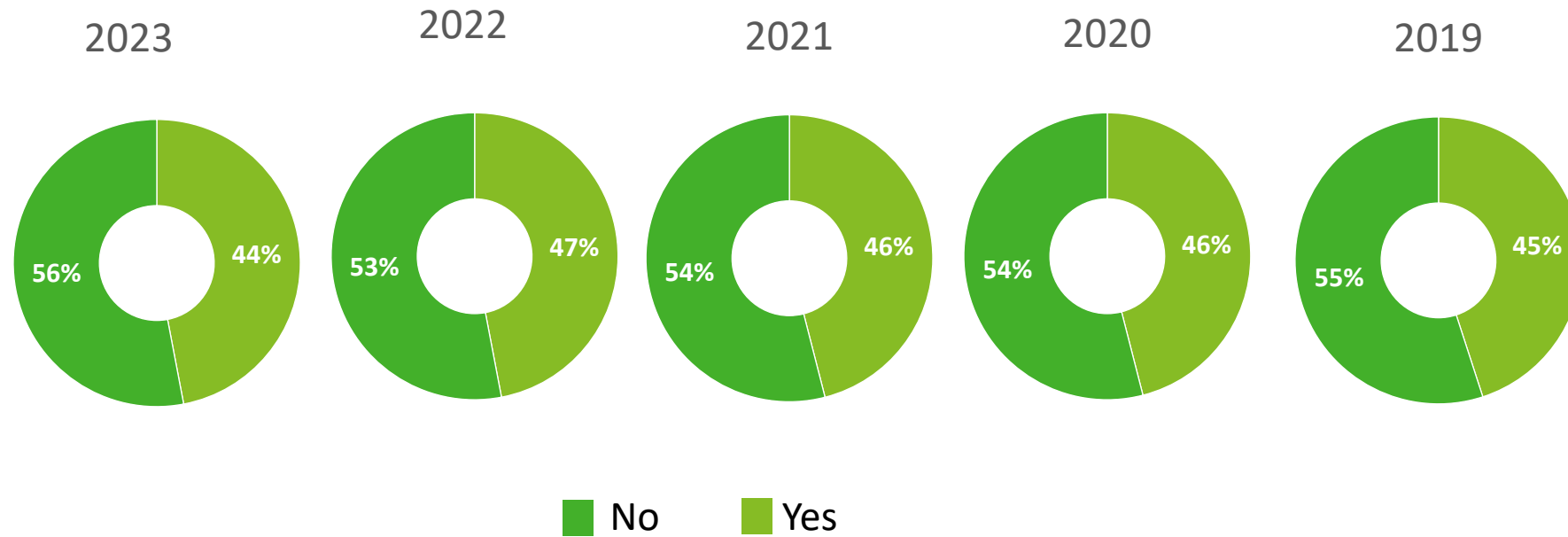
Tool #3 – Valuation Risk Reporting: Does the Board receive summarized reporting on valuation?





Governance – Key Tools

Tool #3 – Valuation Risk Reporting: Does the Board receive KVIs in a dashboard format?



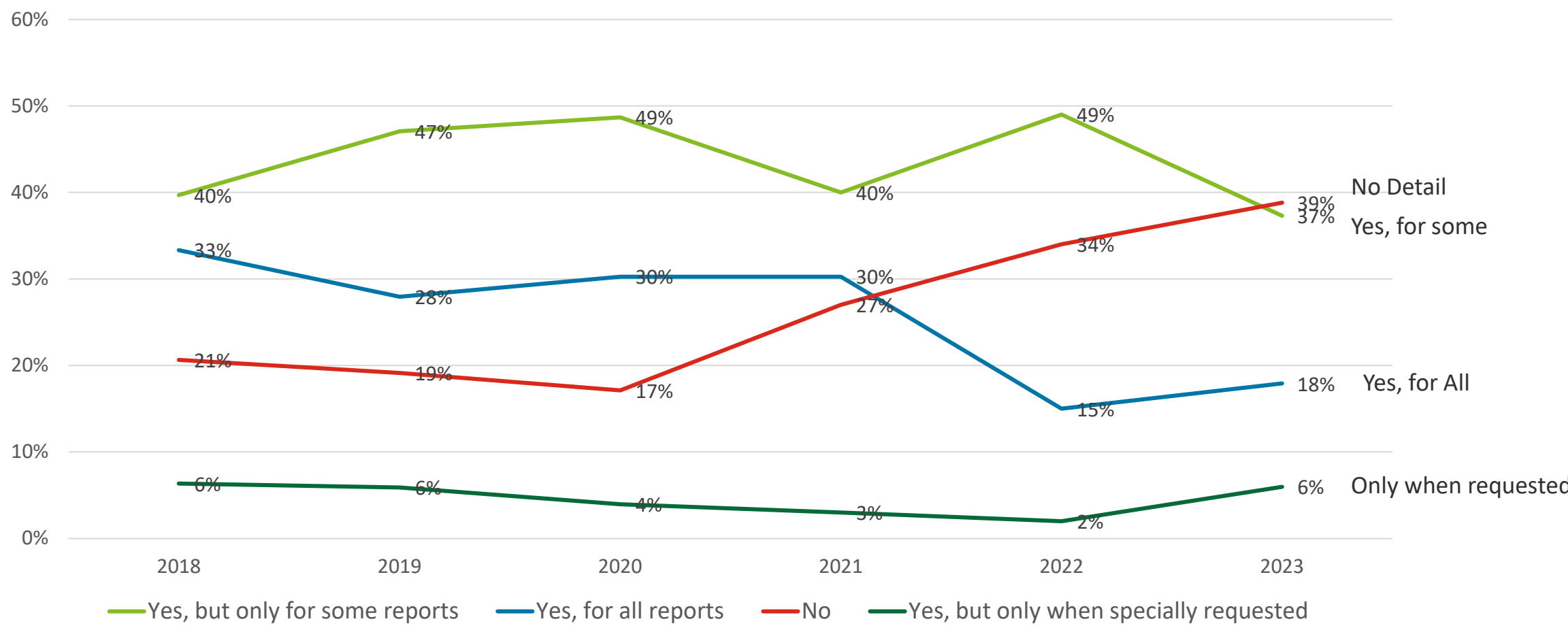
The Consideration of Active Board Oversight – Governance – Key Tools – by AUM

Tool #3 – Valuation Risk Reporting: Does the Board receive KVIs in a dashboard format?	ALL	>\$100 AUM
Yes	47%	57%
No	53%	43%



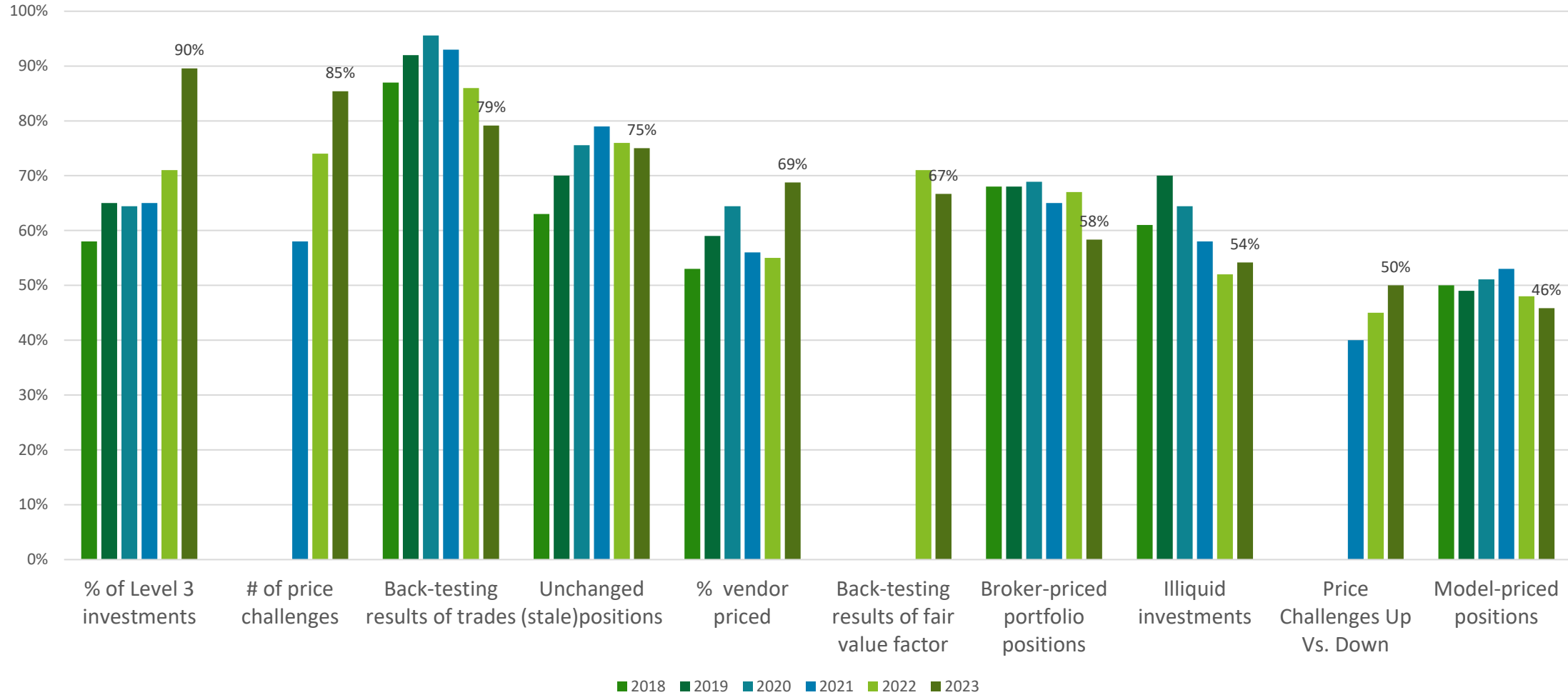
Governance – Key Tools

Tool #3 – Valuation Risk Reporting: Does the Board also receive detailed data supporting the summarized reports?



Governance – Key Tools

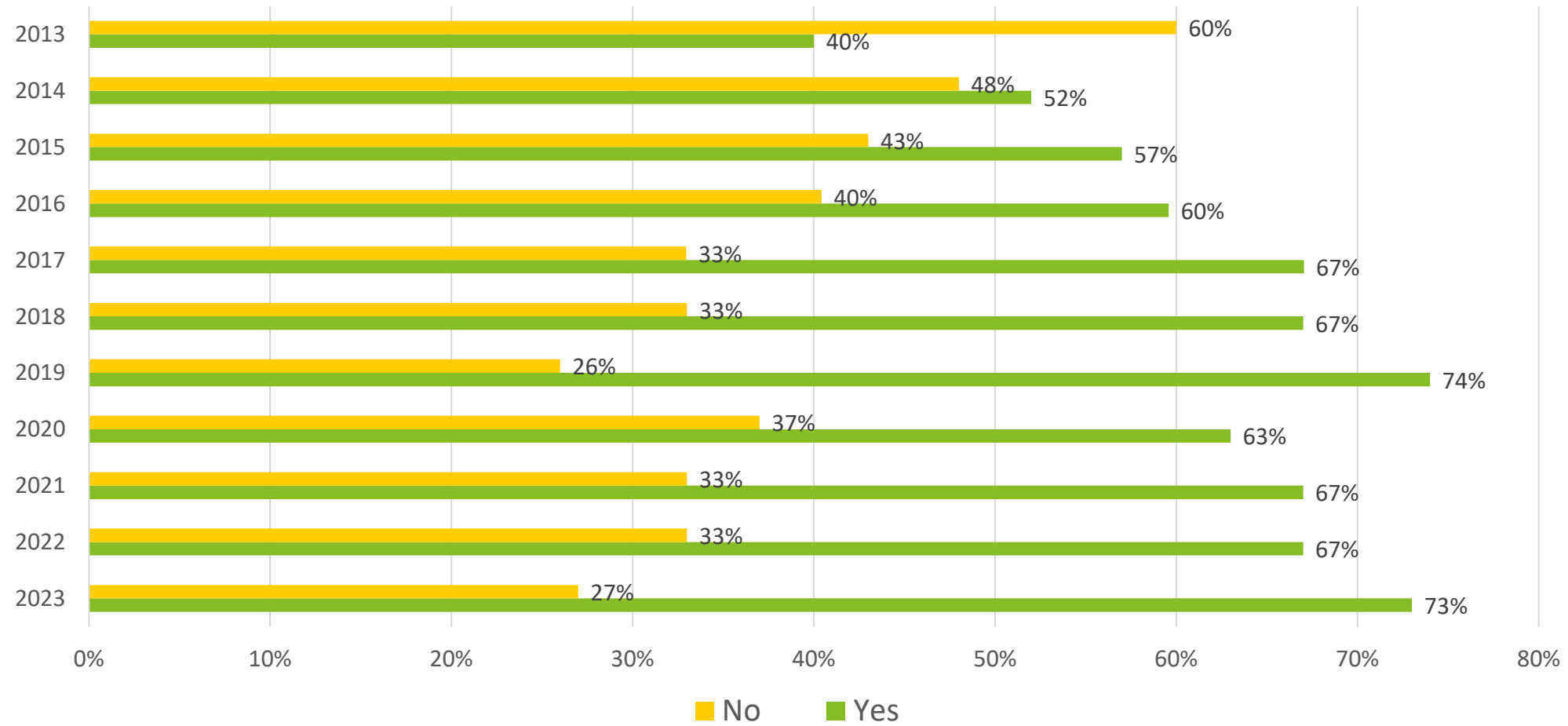
Tool #3 – Valuation Risk Reporting: KVIs & Dashboards





Governance – Key Tools

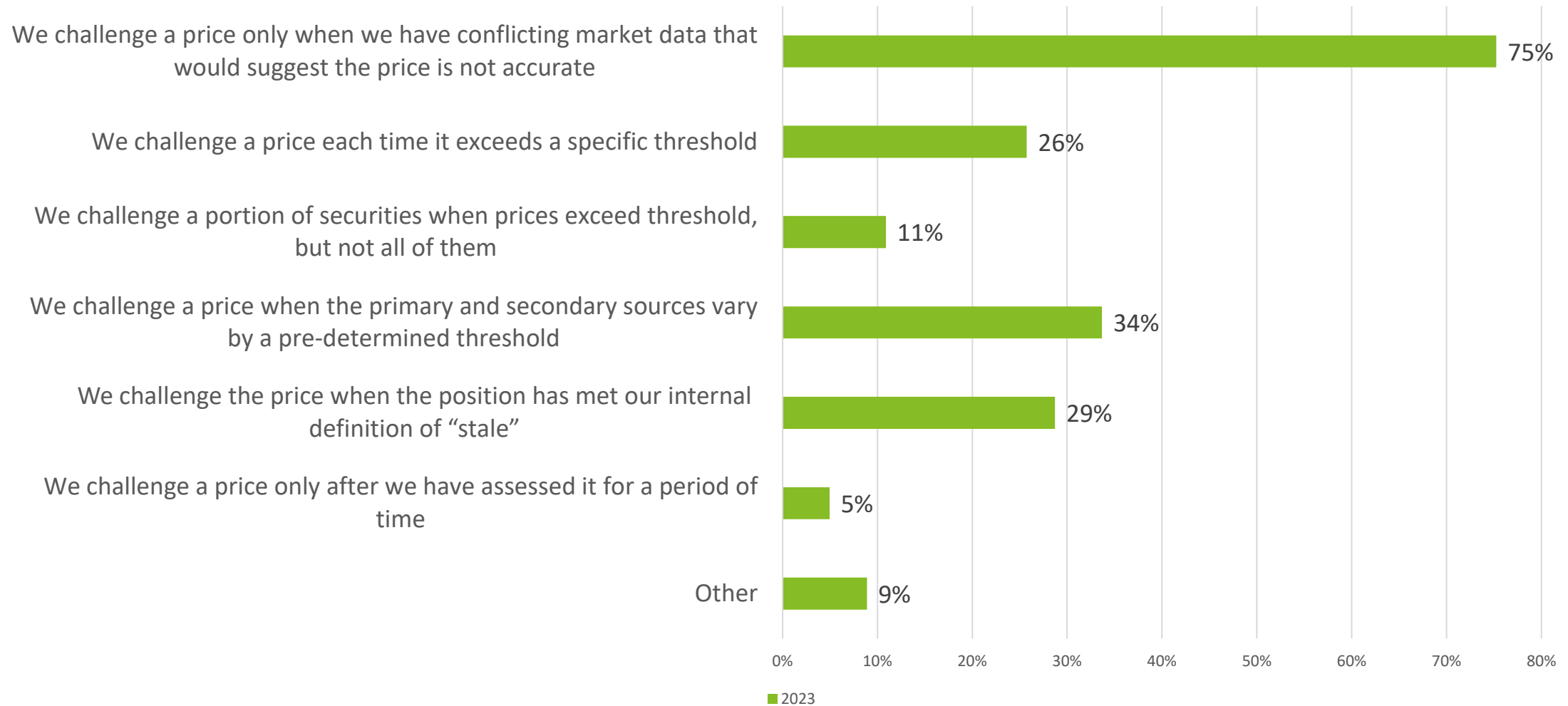
Tool #3 – Valuation Risk Reporting: Do boards review information on price Challenges?





Governance – Key Tools

Tool #3 – Valuation Risk Reporting: Price Challenge Review



Security-specific observations



Key findings related to certain investment types

Equities – FV Factor

Use of a zero trigger to value foreign equities	2023	2022	2021	2020	2019	2013	2023 >\$100 AUM	2023 <\$100 AUM
Yes	63%	62%	61%	56%	55%	47%	79%	53%
No	37%	38%	39%	44%	44%	53%	21%	47%

Mutual Funds V. ETFs – FV Factor

Difference between ETFs and Mutual Funds for determining if a foreign equity price should be adjusted	2023 (passive)	2023 (active)	2022	2021	2020	2019	2023 >\$100 AUM	2023 <\$100 AUM
Identical	35%	40%	49%	43%	23%	21%	21%	73%
Slightly different	26%	21%	21%	22%	18%	21%	29%	7%
They are significantly different	39%	40%	30%	35%	59%	58%	50%	20%

Key findings related to certain investment types

Fixed Income – 3pm V 4pm

Value fixed-income investments using a price adjusted to reach 4 p.m. ET	2023	2022	2021	2020	2023 >\$100 AUM	2023 <\$100 AUM
Yes	84%	84%	79%	69%	80%	79%
Yes, we obtain those prices, but we normally use the pre-4 p.m. price	6%	7%	4%	8%	15%	10%
No	10%	9%	17%	23%	5%	11%

Fixed Income – Bid V Mid

Use of bid or mean for fixed-income	2023	2022	2021	2023 >\$100 AUM	2023 <\$100 AUM
Bid for all	61%	59%	60%	62%	60%
Mean for all	29%	31%	27%	28%	30%
Differs based on security type	10%	11%	13%	10%	10%

Key findings related to certain investment types

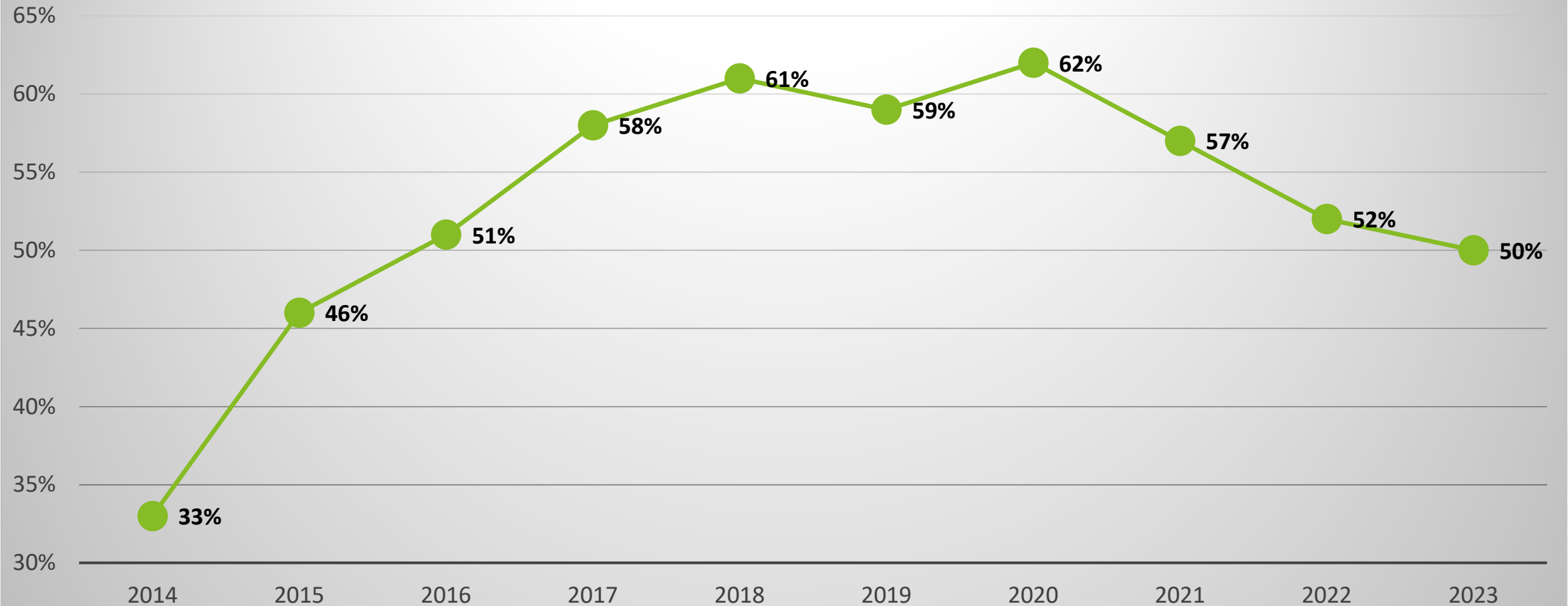
Derivatives – Cleared Swaps

How do you determine valuation for <u>cleared</u> swaps?	2023	2022	2021	2020	2019	2018		2023 >\$100 AUM	2023 <\$100 AUM
Pricing vendor	72%	70%	65%	62%	63%	54%		80%	72%
Clearinghouse	19%	21%	26%	30%	29%	28%		17%	23%

Key findings related to certain investment types

Private Equity

Percentage that hold private equity investments

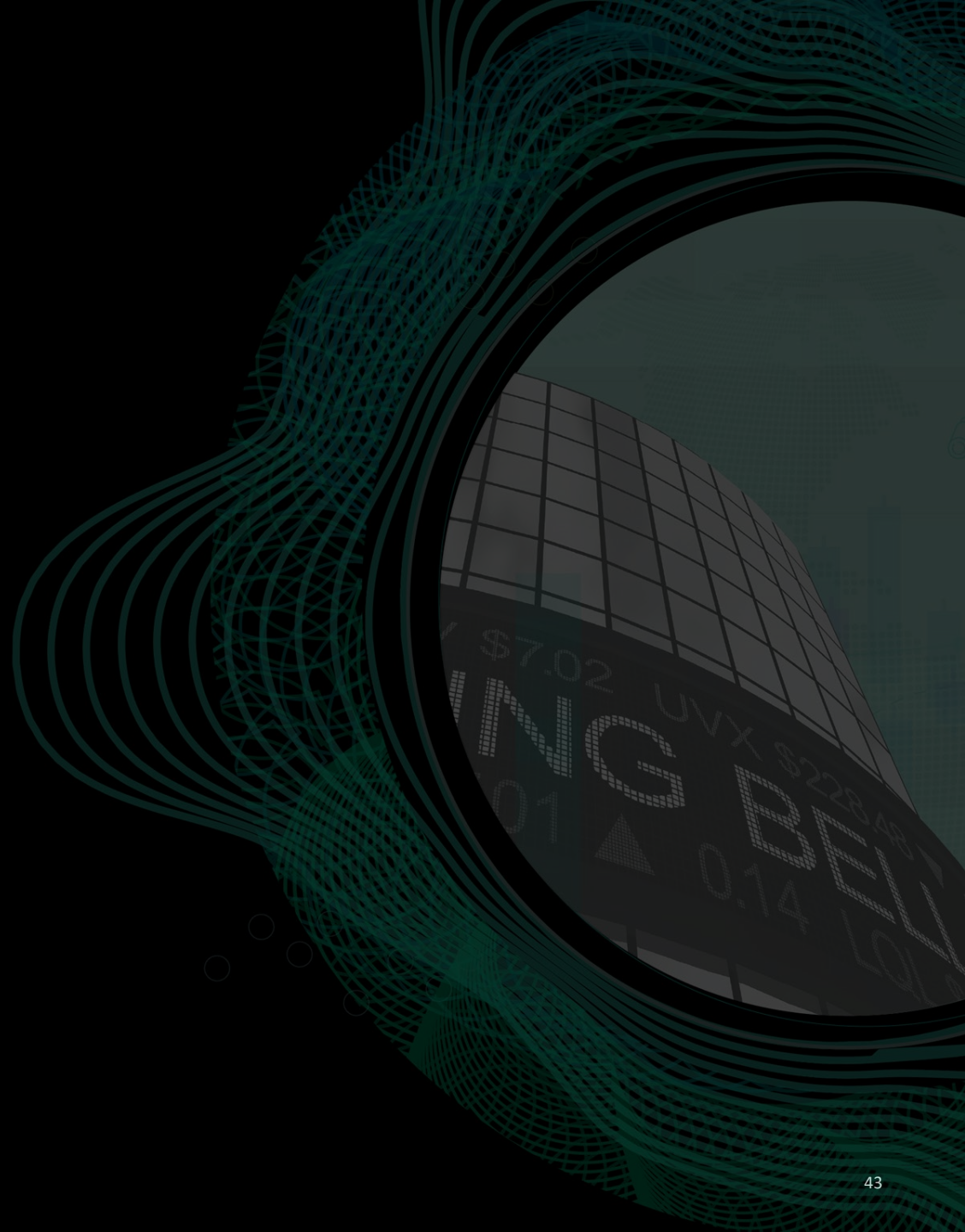


Key findings related to certain investment types

Private Equity

- For the **50%** of FV survey participants who hold private equities in their fund portfolios, **54%** use external specialists to assist with the valuation.
- The most common valuation methodology used for the largest percentage of private equity holdings is a comparable company analysis, with **65%** of participants, while **11%** use a discounted cash flow (“DCF”) model
- Calibration was mentioned 14 times in the 2a-5 adapting release – **60%** are maintaining internal documentation around their consideration of calibration this year; up from **50%** last year and **34%** in 2021

Other key survey findings



Other key FV survey findings

Russian invasion of Ukraine

- **86%** are valuing Russian-based local equities at zero, and **77%** are valuing Russian-based depositary receipt equities at zero
- **46%** of FV survey participants holding Russian rubles indicated that they are valuing them using current foreign exchange rates, compared to **69%** reporting such last year. The movement away from using the current rates has resulted in some FV survey participants (**52%**) reporting the Russian rubles at zero.

Remote work

- **17%** note that more than half of their valuation resources are working virtually, including **6%** that work **100%** in a remote setting. Forty-nine percent indicated that none of their valuation resources are currently working virtually on a full-time basis.
- As noted in prior surveys, the COVID-19 pandemic changed how Boards conducted meetings. **49%** noted that Board meetings are now operating just as they did pre- pandemic, fairly consistent with the **53%** reporting such last year. However, **34%** of FV survey participants have scheduled a mix of in-person and virtual board meetings and are not planning to meet **100%** in person in the near future (subject to continued SEC relief).
- **37%** compared to **54%** last year, are only conducting due diligence visits of pricing vendors virtually, while **58%**, compared to **45%** last year, indicated that they conduct a mix of virtual and in-person meetings at pricing vendors.



Other key FV survey findings (continued)

Use of thresholds for back-testing & vendor-to-vendor compares

- There's been continued growth in recent years in the number of FV survey participants setting specific thresholds or tolerances to investigate price differences when back-testing from 2021 (68%) to 2023 (80%). On a similar note, there is an increase from prior year in those employing a particular threshold or tolerance before performing comparisons to secondary external sources, from 36% to 48%.

SEC Inspections

- Despite the recent uptick in SEC activity focused on fund groups' compliance with rules and regulations, only 11% of FV survey participants were visited during the last year by the SEC's Division of Examinations, and half of those indicated that the examination included a focus on one or more aspects of valuation. We believe that regulatory examinations of compliance with Rule 2a-5 may increase and may continue into 2024.

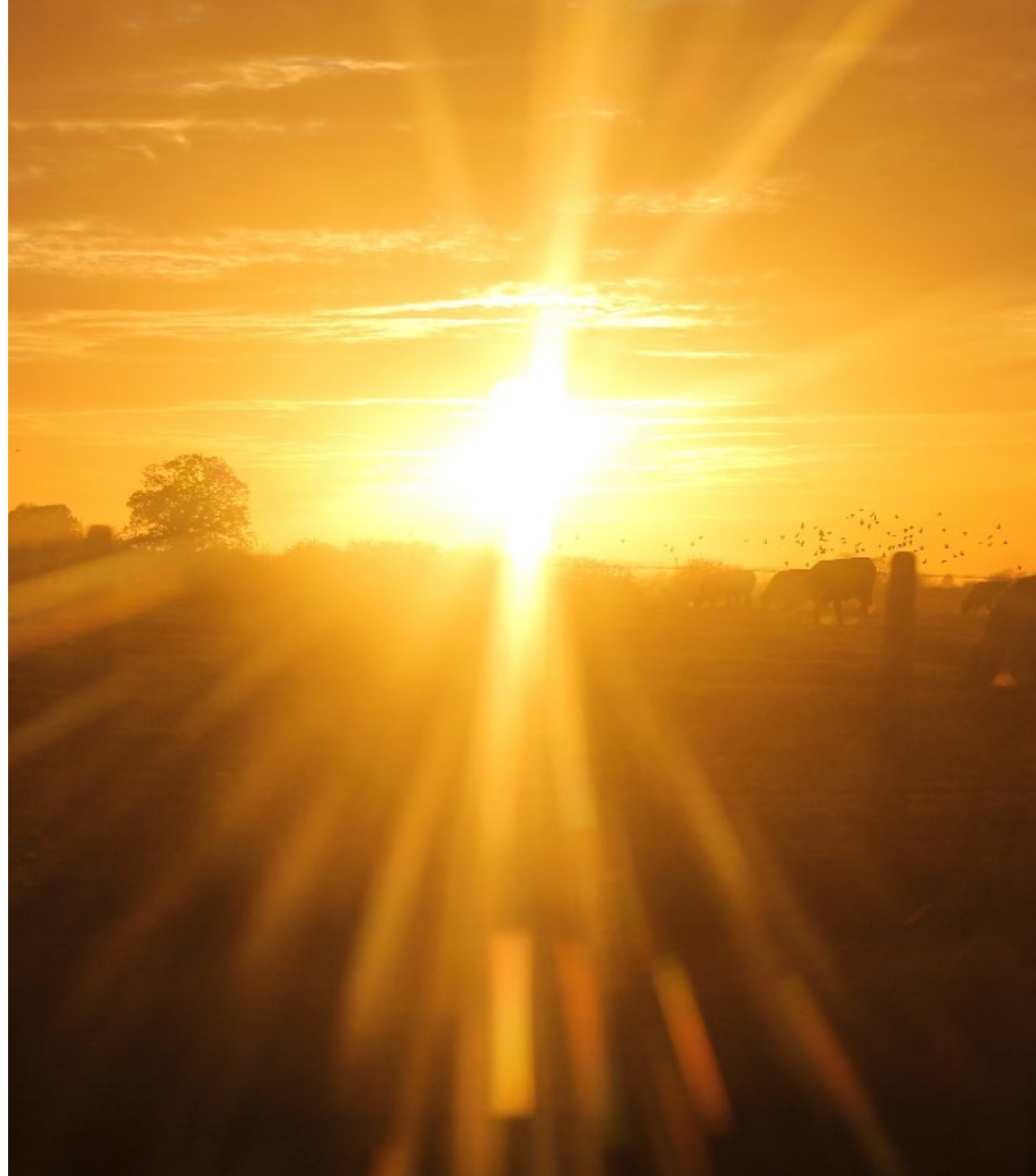
Risk Committee

- 36% of fund groups indicated that the Board has a Risk Oversight Committee in place. This is an increase from 30% in the prior year and 28% two years ago.

Looking ahead

Looking ahead – What to be on the outlook for on the valuation front

- Working towards finding more benefits and efficiencies associated with rule 2a-5 (policies & procedures, valuation operating model)
- Benchmarking rule 2a-5 matters; convergence on the horizon in some areas may make sense
- Continued consideration of conflicts of interest involving sub-advisers and portfolio managers
- Assessing the role of the fund accountant in the valuation process and overall valuation resources
- The importance of testing the accuracy of what technology is now able to provide and ensuring the proper controls are in place
- An opportunity exists in valuing less liquid positions both in strengthening the valuation operating model and the used of 3rd parties



Thank you

Questions



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