

2021

# Third Annual Global Survey of Climate Risk Management at Financial Firms

## Taking the Next Steps

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# Executive Summary

Financial institutions have improved their management of climate risk across scenario analysis, governance, strategy, disclosure and their risk management organization over the past 12 months. But there is still lots of work to be done.

The availability of reliable models (particularly in the short term), climate risk resiliency (long term) and regulatory uncertainty remain pressing concerns, and climate risk continues to be improperly priced. On the positive side, climate risk scenario analysis and quantification are on the rise, risk reporting and staffing levels have increased, and product innovation is on the upswing.

These are among the most important findings of the GARP Risk Institute's (GRI's) third annual climate risk survey ('Survey'), which furthers the Global Association of Risk Professionals' mission to promote best practices in risk management globally.

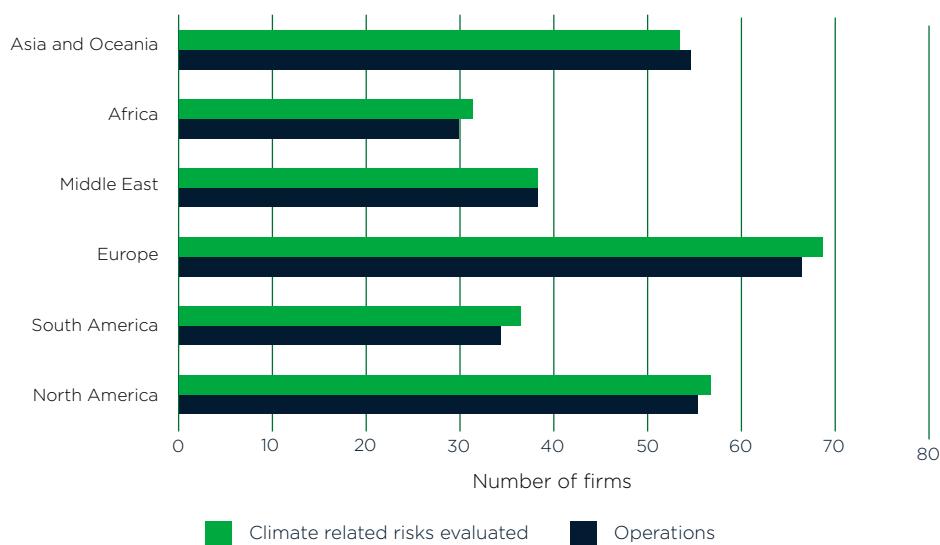
Climate risk management is fast-evolving with ever-increasing expectations, making it difficult for firms to understand the current state of emerging practices or the maturity of their own approaches relative to their peers. But over the past three years, we've provided much-needed insights on climate risk regulation, trends, practices and obstacles impacting the financial services community.

In 2019, GRI ran its first global [Climate Risk Management Survey](#). For participating firms, it provided valuable benchmarking information; for others, it gave a useful snapshot of the range of practices across the financial system and the challenges and barriers that firms were facing. The 2020 [Survey](#) mapped out the continuing journey. And in this third Survey, we are seeing emerging signs of a growing sophistication across the firms and improvement in quantifying climate-related risks.

The commitments firms are increasingly making to reduce their emissions – in line with, for example, the Paris Agreement – is one noticeable trend we've seen in 2021. As these 'alignment' strategies become more widespread – across both financial and non-financial firms – they will have a growing influence on climate risk management. In this year's Survey, we have therefore added more questions on alignment.

The number of firms participating in this year's Survey jumped from 71 (2020) to 78, comprising 47 banks or building societies (referred to as 'banks' throughout for simplicity); 20 asset managers; and 11 other firms (insurers, financial market infrastructure). These firms operate and assess their climate-related risks in all regions of the world (Figure 1). Collectively, they have around USD 46 trillion of assets on their balance sheets, manage assets of close to USD 50 trillion and account for about USD 3.3 trillion in market capitalization.

**FIGURE 1: REGIONAL SPREAD OF FIRMS' OPERATIONS**



Given our series of surveys, we can look at how practices are changing over time. Care is needed, however, when assessing trends, as any year-on-year comparisons will reflect a mixture of both evolving practices at firms and changes in the population of participating firms. 48 of the 71 firms that participated in the 2020 survey also participated in the 2021 survey.

Like last year, we used a maturity model to score and rank the participating firms on their current climate risk management capabilities across six dimensions: (1) governance; (2) strategy; (3) risk management; (4) metrics, targets and limits; (5) scenario analysis; and (6) disclosures. This model provides a useful snapshot of current climate risk management practices across the financial services industry; it helps firms prioritize areas to improve upon, and guides less experienced firms on their climate risk journey.

MORE FIRMS ARE  
COMMITTING TO  
**REDUCE  
THEIR  
EMISSIONS**



# Key Takeaways

## **Use of scenario analysis is increasing and becoming more mainstream.**

Around 70% of firms are using it, with a rising number employing scenarios as a regular part of risk assessment, and with more firms using their main stress testing infrastructure/technology. Over half of the firms using scenario analysis have evaluated and taken action.

**But there remains a large divergence between the most and least advanced firms.** A quarter of firms are not measuring their climate risk at all, while a similar percentage are using all of metrics, targets and limits.

**There has been a shift towards greater use of quantitative analysis to assess the climate risk of counterparties.** Fewer firms this year are using purely qualitative assessment techniques.

**More firms (91%, up from 84% last year) have identified climate-related opportunities.** Firms are expecting greater impacts on their strategies from both climate-related risk and opportunities than in last year's survey, with a particularly pronounced increase in impacts expected in the short term. There is an enormous amount of product innovation, and fewer firms regard a lack of demand for products as a major challenge.

**Transition risk is a higher priority at more firms than physical risk or portfolio alignment.** Boards at more than half of the firms have seen papers about it.

## **There has been an intensification of supervisory activity on climate risk.**

Nearly 80% of the firms report that their regulators have published formal expectations for climate risk management, and over 50% have announced climate risk stress tests. Many regulators are also focused on other environmental risks, such as biodiversity loss or pollution.

**Firms continue to note many barriers and challenges –** the availability of reliable models is the most pressing concern for the greatest number of firms, followed by regulatory uncertainty. Without good-quality models, it is not surprising that nearly all firms (94%) continue to believe that climate risks haven't been fully incorporated into market prices.

**Firms are very confident in the resilience of their climate risk strategies in the short term, but not over the long term.** 77% of firms think that their strategy is resilient over the next 1 to 5 years, but that confidence weakens (dropping to 22%) as we look toward 15 years and beyond. Long-term optimism, however, actually increased from last year's survey.

**Climate risk staffing levels have increased at 91% of the firms over the past two years,** and nearly 90% of firms expect levels to rise in the next two years. Head of climate risk teams report directly to a C-suite member at more than half the firms, indicating high organizational focus on this risk.

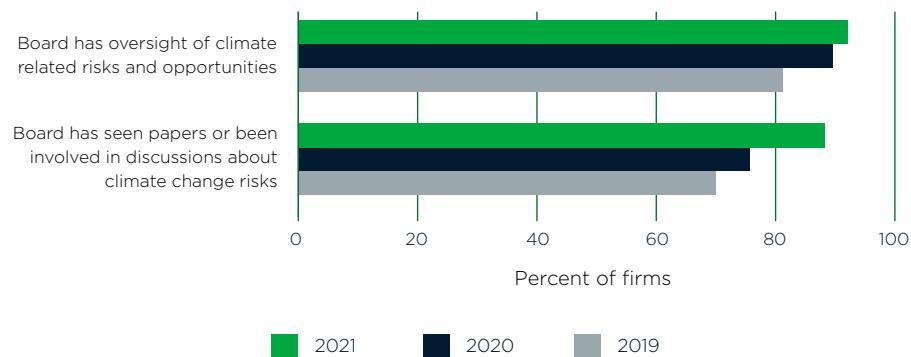


# Governance

Effective risk management begins with engagement at the highest level of an organization – namely, the board and senior management. Assessing how mature an organization is in managing climate risk requires understanding the role the board plays in overseeing climate-related issues, as well as how senior management measures and manages those issues.

To assess firms' governance of climate risk, participants were asked about board-level oversight of climate risk. Questions about the climate risk material provided to and reviewed by the board, and the responsibilities of C-level executives for climate risk management, were included.

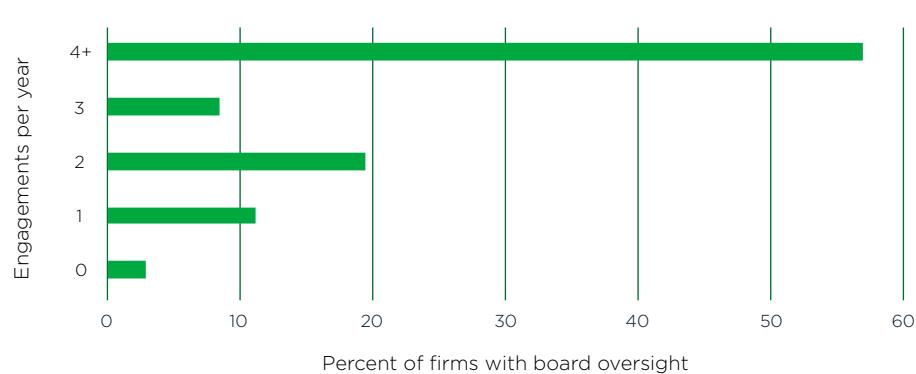
## FIGURE 2: BOARD OVERSIGHT AND ENGAGEMENT



As Figure 2 shows, board oversight and engagement has risen in each survey, with 92% of firms in the 2021 survey having board oversight of climate risk. There is little difference to note across firms in different sectors, except that there has been a significant increase in board oversight at the asset managers in this year's survey relative to last year's.

In 2021, nearly 90% of the boards have seen climate-related papers – a significant jump from 70% in 2019. The majority of these boards have received papers/proposals about climate-related issues four or more times in the last year, indicating a very high level of engagement. This frequency is not common across all firm types in our sample – with boards at the asset management firms seeing papers less frequently.

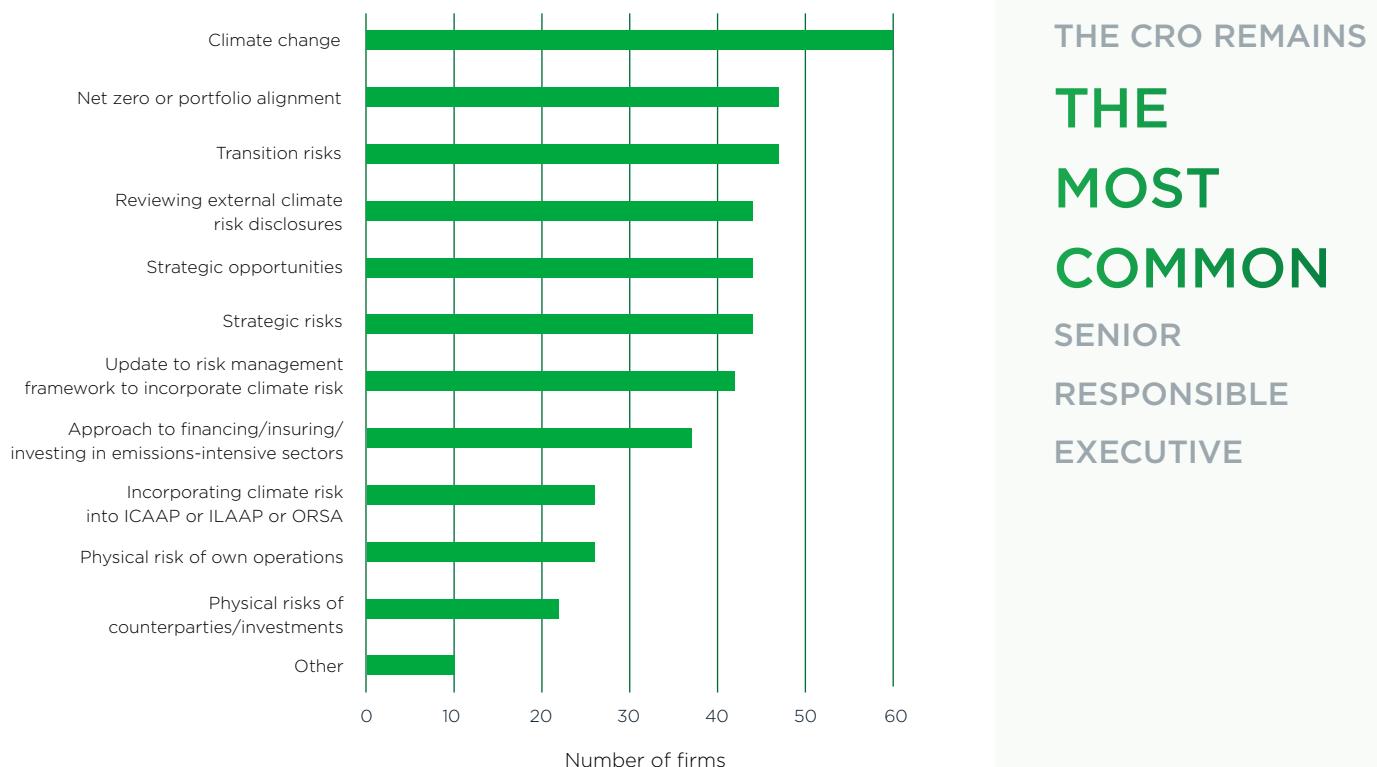
## FIGURE 3: FREQUENCY OF BOARD ENGAGEMENT



As Figure 4 shows, the most common topic discussed by boards is climate change itself, followed by transition risk and 'alignment' – that is, aligning the businesses/portfolios to a particular climate-related pathway. The least common topic is physical risks of counterparties, and physical risk of a firm's own operations, followed by incorporation into regulatory risk assessment of ICAAP/ILAAP/ORSAs.

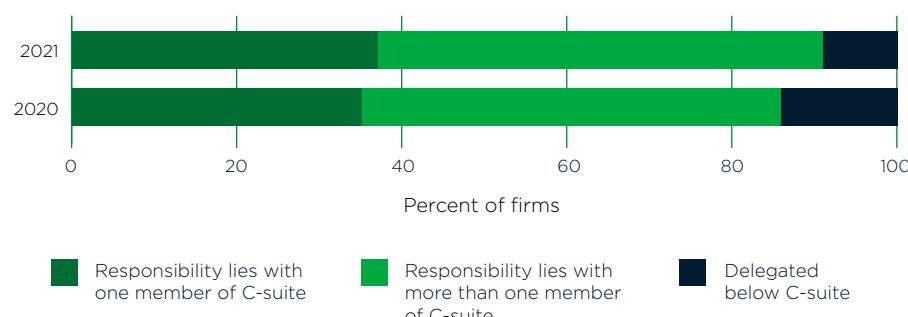
**92%**  
OF  
**FIRMS'**  
**BOARDS**  
OVERSEE  
CLIMATE RISK

**FIGURE 4: TOPICS DISCUSSED BY BOARDS**



C-Level executives are accountable for climate-related risk assessments and management efforts at over 90% of firms in this year's survey, up from 86% last year. Typically, responsibility is split across more than one executive (Figure 5).

**FIGURE 5: ACCOUNTABILITY FOR CLIMATE-RELATED RISK ASSESSMENTS AND MANAGEMENT EFFORTS**



As in last year's survey, the chief risk officer (CRO) remains the individual most commonly named as the senior responsible executive for climate risk management. At banks and insurers, the CRO is generally responsible, but the responsibility within asset managers is more often split between four or five executives – most commonly a combination of the head of sustainability, the CRO, the chief executive officer (CEO), the chief operating officer (COO) and the chief investment officer (CIO).

THE CRO REMAINS  
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EXECUTIVE**

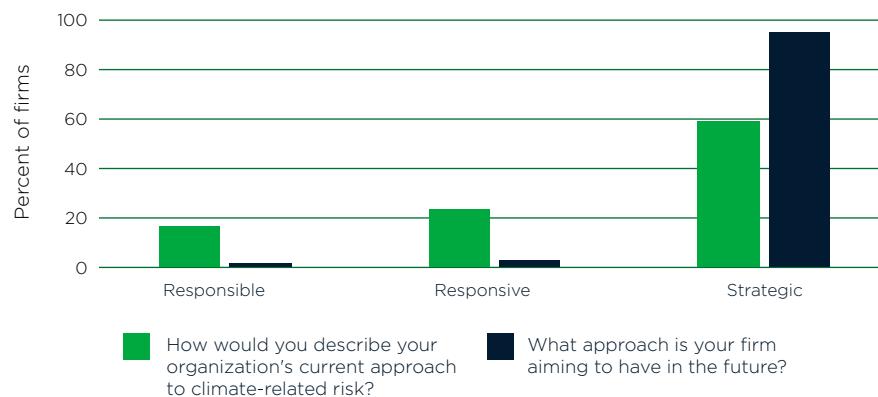
# Strategy

After establishing sound governance, effective risk management requires a firm to be clear on its strategy. But firms differ in their levels of ambition. Using terminology borrowed from the Bank of England, we asked firms to specify whether their approach to climate risk management was ‘responsible,’ ‘responsive’ or ‘strategic,’ with each category corresponding to different levels of maturity.

- **‘Responsible’** is an approach driven primarily by corporate social responsibility (CSR), focusing on reputational risks.
- **‘Responsive’** means that climate change is viewed as a financial risk, albeit from a relatively narrow, short-term perspective.
- **‘Strategic’** implies a more comprehensive approach, taking a long-term view of the financial risks, with board engagement.

More firms today regard themselves as already operating at a strategic level (59%, up from 52% last year), and almost all of the remaining firms aim to be strategic within the next 1 to 5 years (Figure 6).

**FIGURE 6: CURRENT AND ASPIRATIONAL APPROACH TO CLIMATE RISK MANAGEMENT**

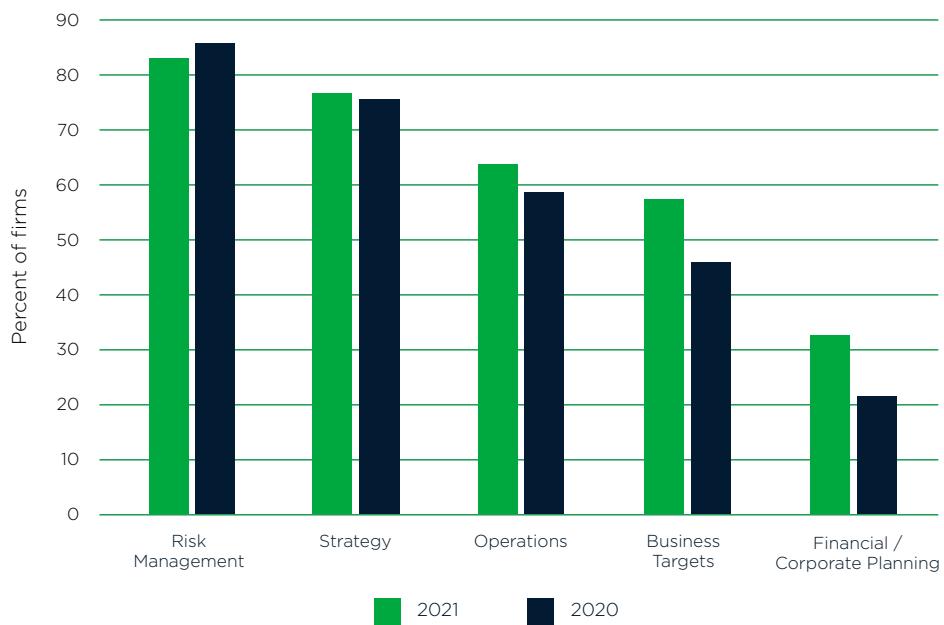


This level of strategic ambition needs to be operationalized. As Figure 7 shows, firms have reviewed the impact of climate risks and opportunities on many aspects of their business, with the majority of firms assessing the effects on their risk management, strategy and operations across the past two years.

Interestingly, in 2021, we also saw an 11% increase in firms' assessment of the effects of climate risks and opportunities on business targets and finance/corporate planning – which were previously the least reviewed areas.



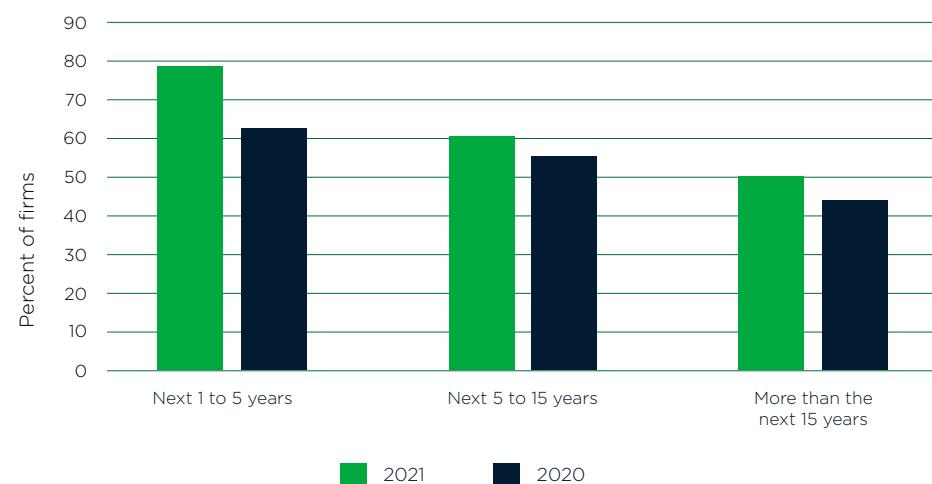
**FIGURE 7: ASPECTS OF BUSINESS REVIEWED FOR CLIMATE RISKS AND OPPORTUNITIES**



With more aspects of the firms having been reviewed, it is perhaps not surprising that more climate-related opportunities are being identified: 91% of firms have identified opportunities, up from 84% last year. As Figure 8 shows, more firms are seeing opportunities at each time horizon relative to last year's survey, with "1 to 5 years" horizon experiencing the largest jump (62% to 78%) from 2020 to 2021.

These opportunities progressively decrease as the time horizon extends – in a similar pattern to last year. In terms of sectoral trends, insurers see greater opportunities at longer time horizons relative to other firm types.

**FIGURE 8: TIME HORIZON FOR OPPORTUNITIES**

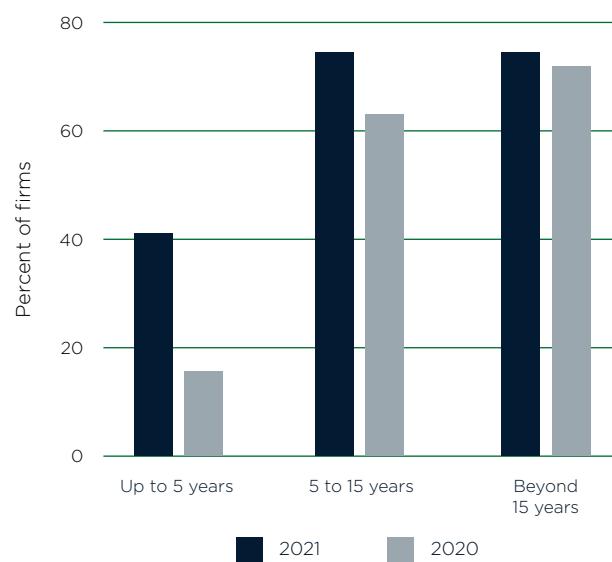


**91%**  
**OF FIRMS**  
HAVE IDENTIFIED  
CLIMATE-RELATED  
OPPORTUNITIES

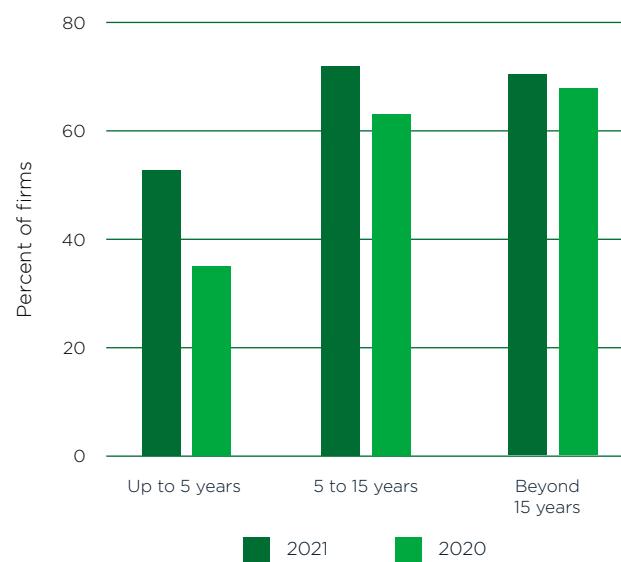
To further explore the strategic impacts, firms were asked how they expected climate risk and opportunities to impact their strategy over the next five years and beyond. Figure 9 shows that at each time horizon there has been an increase since last year in the proportion of firms anticipating a significant impact on their strategy from the risks or opportunities associated with climate change, with a particularly pronounced increase over the next five years. As in last year's survey, both risks and opportunities are expected to have more significant impacts on strategy beyond the 5-year horizon.

## FIGURE 9: STRATEGIC RISKS AND OPPORTUNITIES

A significant impact on strategy expected from: climate risks

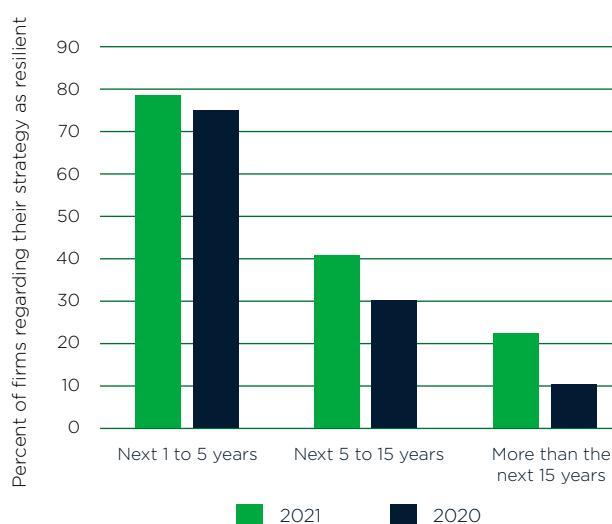


A significant impact on strategy expected from: climate opportunities



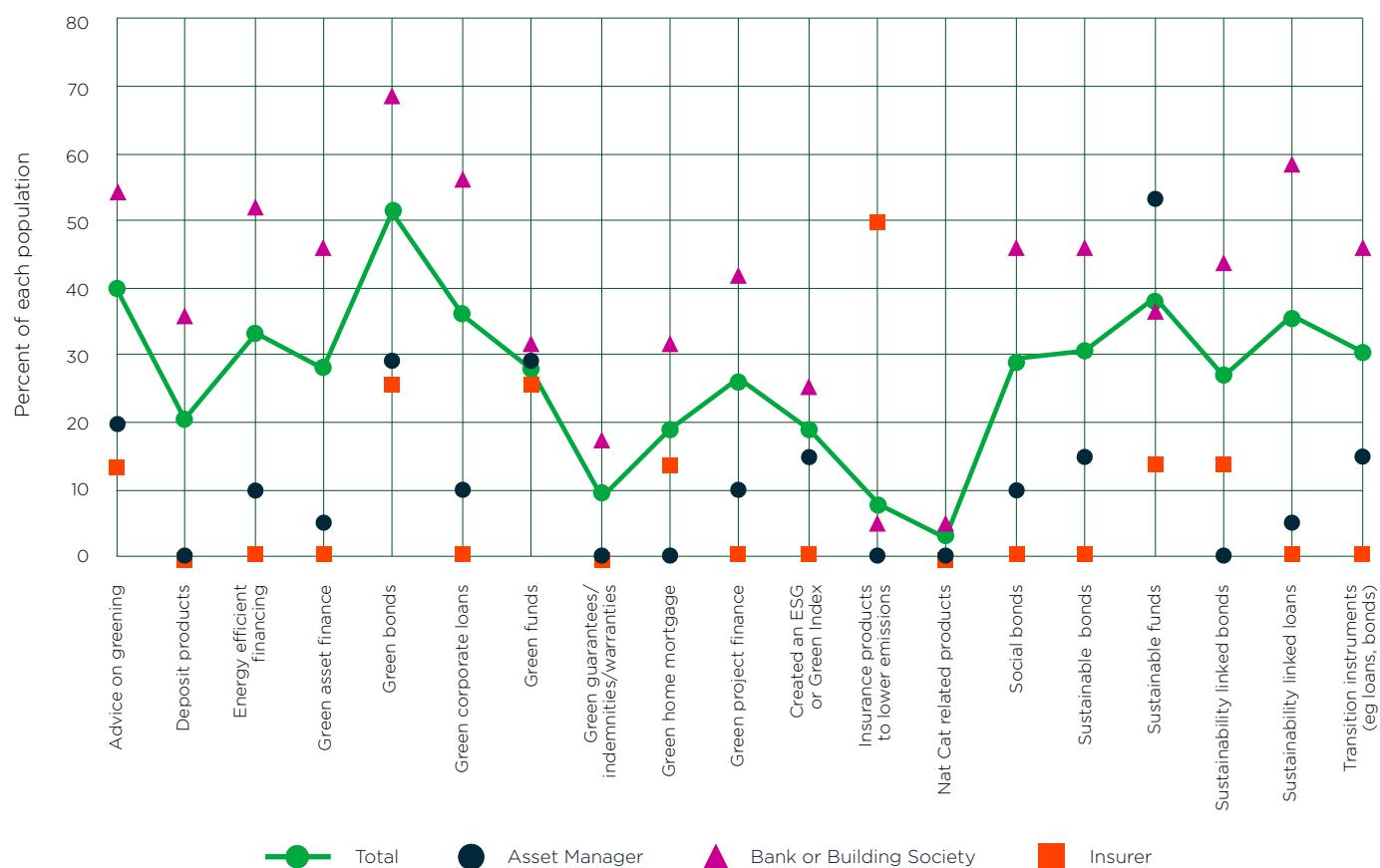
The perception that significant impacts from climate change are expected to be felt in the longer term is further illustrated in Figure 10. 77% of firms felt their strategy was resilient over the next 1 to 5 years, similar to last year's survey (73%). But that confidence weakens as we look more into the future, albeit less sharply than noted in last year's survey.

## FIGURE 10: FUTURE STRATEGIC RESILIENCE



In preparation for changing risks and opportunities, around two thirds of firms have altered existing products (e.g., converting funds into ESG or green funds, or reducing finance to coal-fired power stations). There has also been a great deal of product innovation, as illustrated in Figure 11. Indeed, firms have created a range of products – including green or sustainable bonds, loans and funds – with different types of financial institutions offering products that are most relevant to their particular business models.

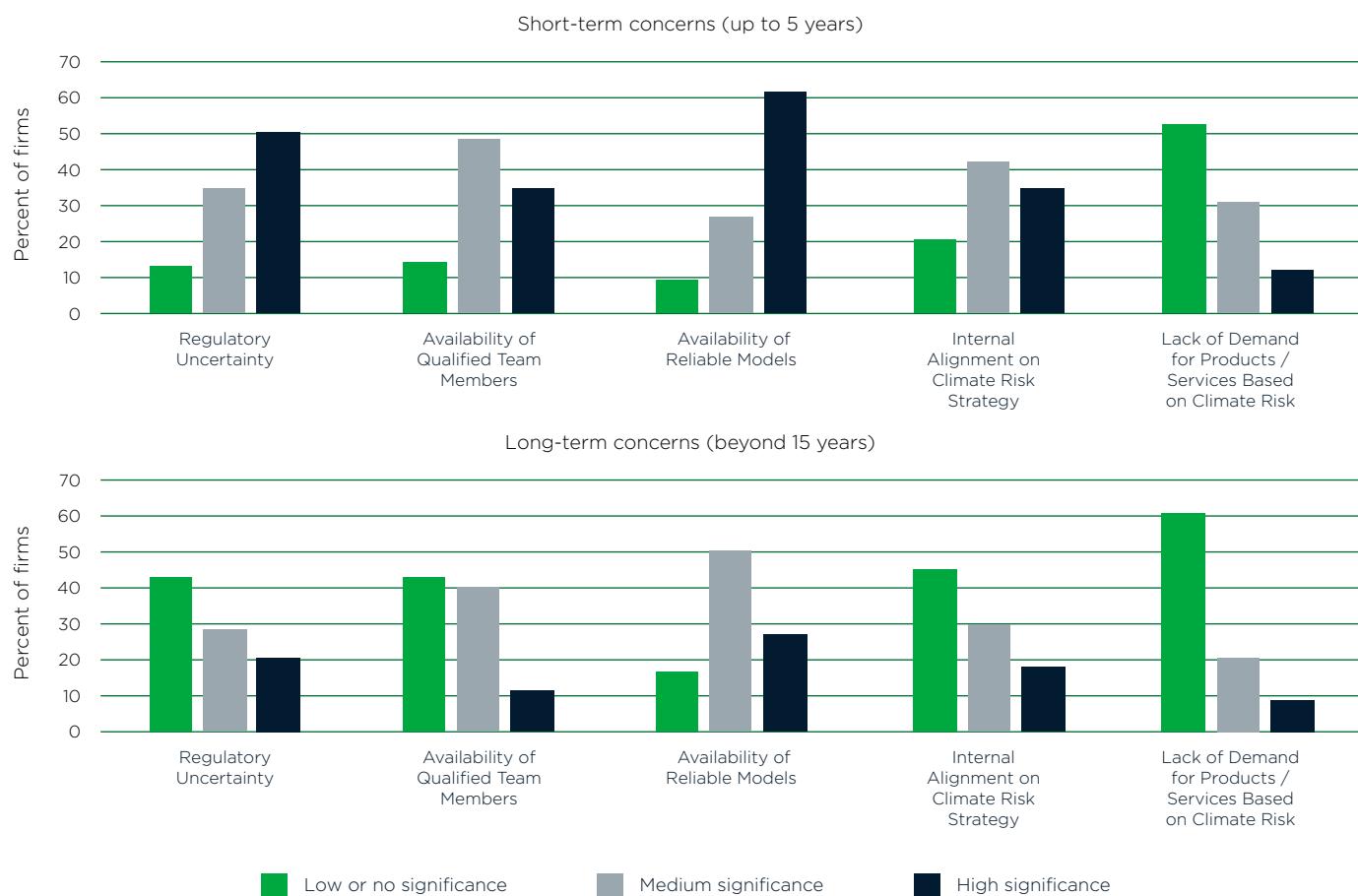
**FIGURE 11: NEW PRODUCTS OR SERVICES CHANGED DUE TO CLIMATE RISK**



But despite the progress that firms are making, they still face many challenges as they establish climate risk strategic and management practices within their firms. As Figure 12 shows, the availability of reliable models is the most pressing concern for the greatest number of firms, followed by regulatory uncertainty.

Firms report that the short-term concerns are more significant than last year, apart from the demand for products and services (which is surely a reflection of the success they have had in launching new products and services). In contrast, firms' concerns ease in the long term, suggesting that they expect more reliable data to become available, new approaches to be developed and the availability of experienced staff to improve.

## FIGURE 12: FUTURE BARRIERS AND CHALLENGES

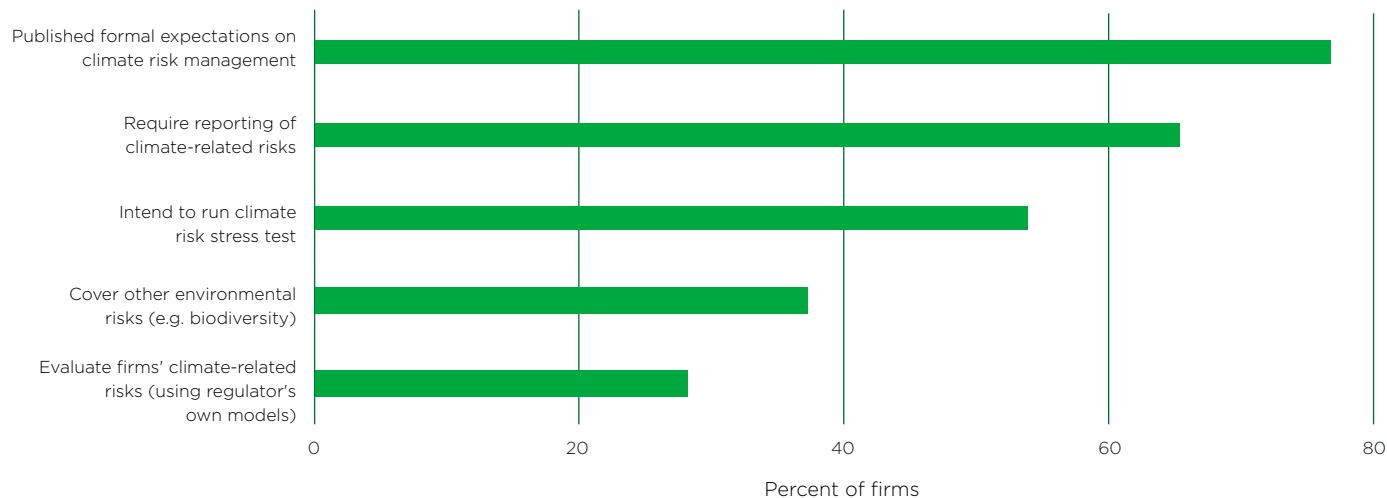


Considering the intensification of supervisory activity on climate risk (Figure 13), the fact that regulatory uncertainty remains a highly significant short-term concern is not surprising. Nearly 80% of the firms report that their regulators have published formal expectations for climate risk management, while 65% say that regulators are now requiring them to report their climate-related risks.

What's more, over half of the firms have regulators who have announced their intention to include them in a climate risk stress test. Some regulators have started evaluating climate-related risks at firms using their own models – for example, via 'top-down' stress testing.

With nearly 40% of firms reporting that their regulators have expanded their scope to cover other environmental risks (like biodiversity loss or pollution), we are also seeing different risks being emphasized. Regulatory alignment is therefore expected to be a challenge for firms to navigate.

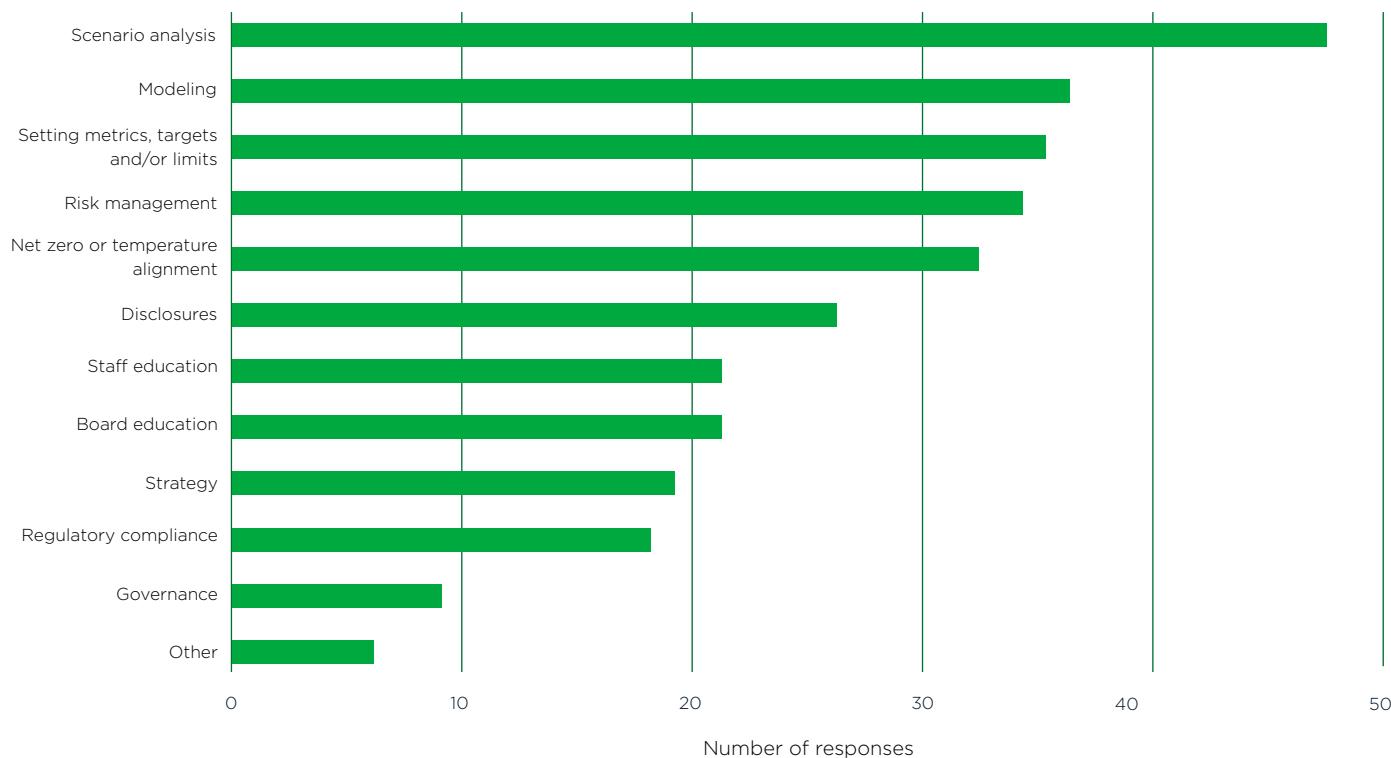
## FIGURE 13: REGULATORY EXPECTATIONS ON CLIMATE-RISK MANAGEMENT



Given the diversity of challenges, it is perhaps not surprising that over 80% of firms are working with external organizations, such as universities, industry associations and consulting companies. These organizations are providing support for a range of activities (Figure 14).

Scenario analysis is the most common area of support (most likely due to the broad data and modeling challenges it poses), alongside rising regulatory interest. (More details on firms' progress in this area are presented on page 26.)

## FIGURE 14: RANGE OF SUPPORT FROM EXTERNAL ORGANISATIONS



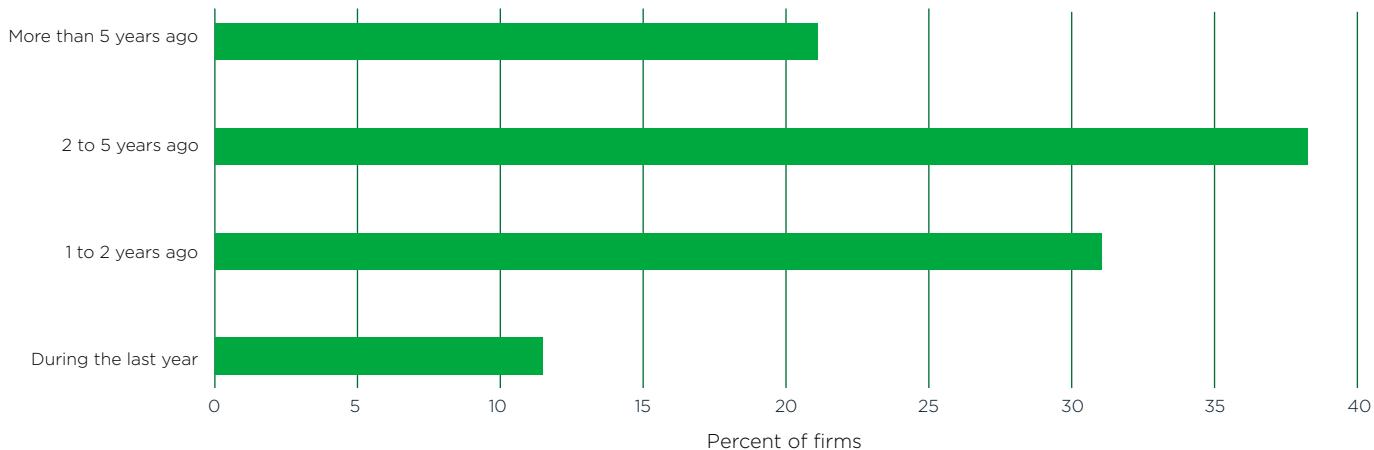


# Risk Management

This section looks at how firms identify, assess and manage climate risk, and how these processes are being integrated into their overall risk management frameworks. Due to the increasing focus on firms' support for the transition to a net-zero environment, we have introduced questions about portfolio alignment.

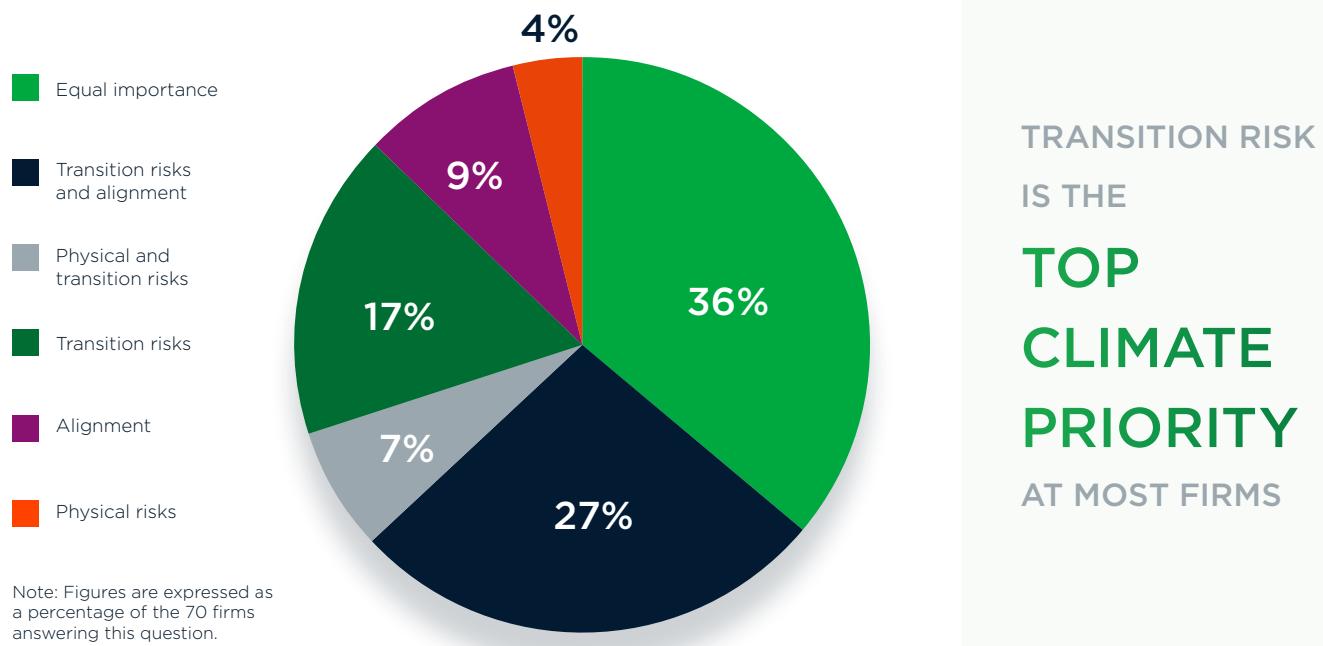
To get a sense of how long they have been managing climate risk, we asked firms when they were first introduced to this risk. The majority of survey participants started addressing it between 1 to 5 years ago. Understandably, firms that have been addressing climate risk over a longer period generally have better climate risk management, as it takes time to build up the expertise, internal alignment and business processes (Figure 15).

**FIGURE 15: TIME PERIOD FOR INTRODUCTION OF CLIMATE RISK**



We wanted to understand whether physical risk, transition risk or portfolio alignment were expected to have the greatest impact on firms' strategies and risk management. More firms noted transition risk as a priority (61 firms, or 87%), followed by alignment (50 firms, or 71%) and then physical risks (33 firms, or 47%). However, these risks are on an equal footing at just over a third of the firms responding to the survey (Figure 16).

**FIGURE 16: ASSESSING THE RELATIVE SIGNIFICANCE OF PHYSICAL RISK, TRANSITION RISK AND PORTFOLIO ALIGNMENT**

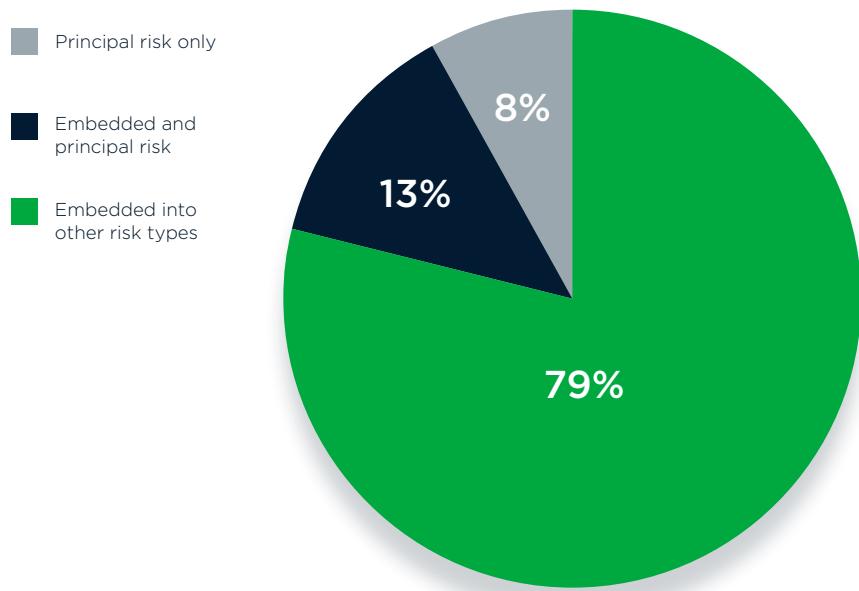


Firms need to decide how they wish to embed climate risk within their risk management framework. There are two main approaches: they can either treat climate risk as a standalone ('principal') risk type or view it as a cross-cutting ('transverse') risk that should be embedded within other existing risk types.

The majority of respondents consider climate financial risk as a factor in other risk types, principally credit, operational, reputational and business/strategic risk. Looking at differences between financial institution types, almost all banks consider it in credit risk, while the majority consider it in market/traded risk; insurers tend to also consider it within insurance underwriting and legal risk; and asset managers prioritized it in business/strategic and market/traded risks. The different focus of financial institutions is not surprising, given the variation in their balance sheets and business models.

Only a minority of respondents, 21%, consider climate financial risk as a principal risk, with 13% of firms treating it as both principal and transverse, potentially to bring more focus to it.

### **FIGURE 17: WHERE DOES CLIMATE RISK FIT IN THE RISK FRAMEWORK?**



An important part of embedding climate considerations into risk management is to include it in due diligence - either for counterparties that firms lend to, the companies they invest in, or those they insure.

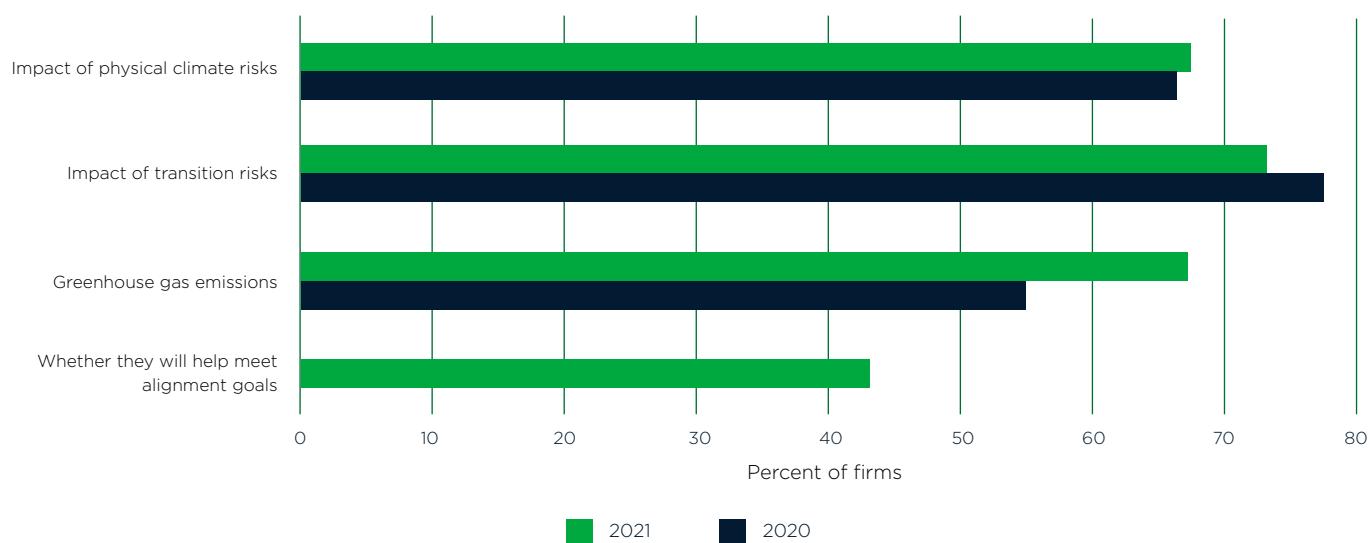
There has been little change in the proportions of firms including transition and physical risk assessments since last year (around 75% and 60%, respectively). But an increasing proportion of firms are looking at greenhouse gas (GHG) emissions, perhaps as an input to assessing transition risk or portfolio alignment.

This year, we also wanted to find out more about how firms are working on portfolio alignment. Over 40% of firms reported that their due diligence also includes an assessment of whether a counterparty/investment contributes to their own temperature alignment or net zero goals.

Figure 18 provides a breakdown of the different types of assessments that firms are including in their due diligence.

NEARLY  
**92%**  
**OF FIRMS**  
REGARD  
CLIMATE AS A  
'TRANSVERSE' RISK

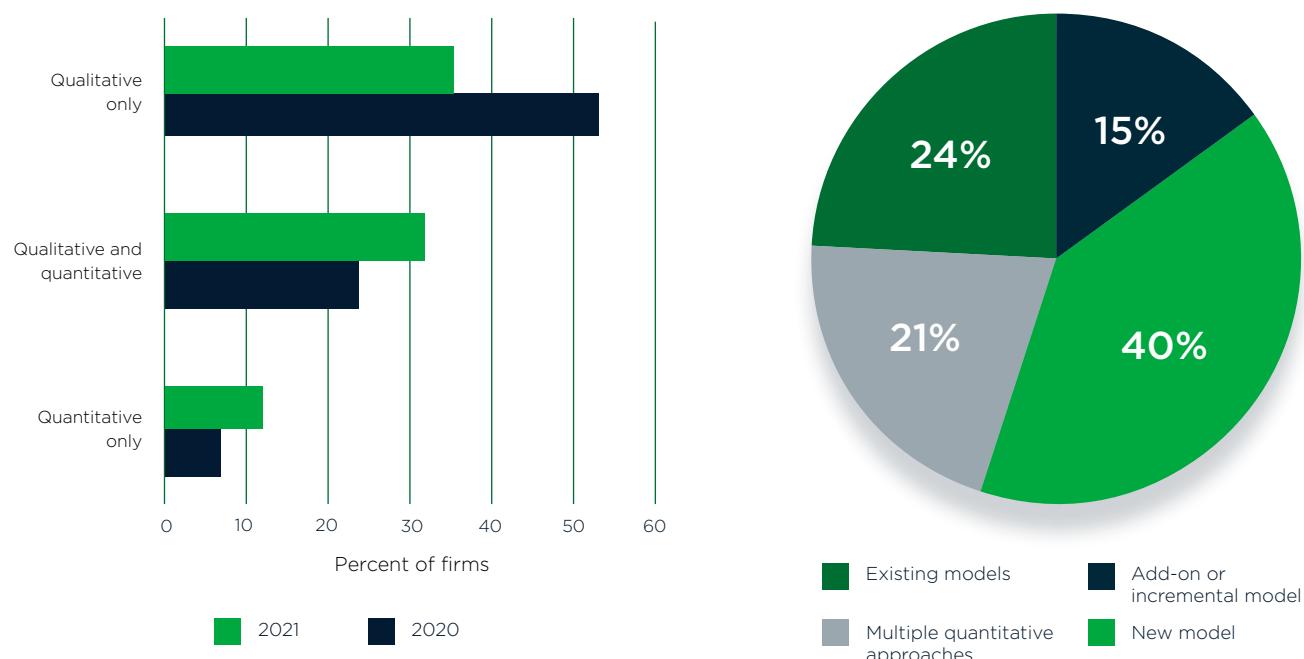
**FIGURE 18: DUE DILIGENCE OF COUNTERPARTIES' CLIMATE RISK COVERAGE**



One interesting trend to note is the shift in this year's survey toward greater relative use of quantitative analysis to assess the climate risk of counterparties or companies that are invested in or insured. As Figure 19 indicates, relatively fewer firms are using purely qualitative assessment techniques.

The most popular approach to quantification is to develop new models, rather than use add-ons or change existing models. Around a fifth of firms are using a combination of quantification approaches.

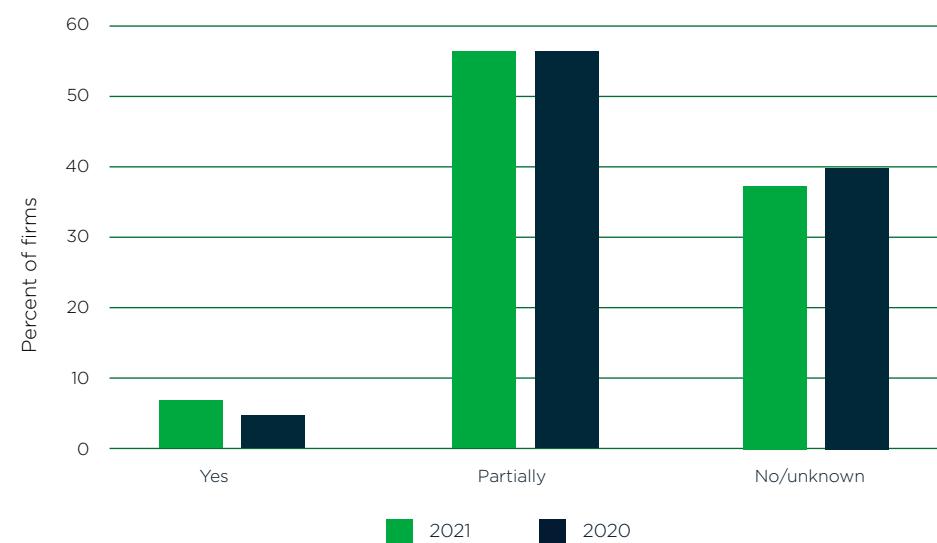
**FIGURE 19: HOW COUNTERPARTIES ARE RISK ASSESSED AND FORMS OF QUANTITATIVE ASSESSMENTS**



Despite all this activity, very few firms believe that climate risks are fully incorporated into market pricing. As Figure 20 indicates, there has been little change in firms' views since last year, with just 6% of firms thinking that climate risk is priced correctly, and the vast majority thinking that it was either not included in the market's pricing of products, or, if it was included, only partially.

Those firms that felt it was being (at least partially) reflected in prices pointed to a few areas, such as emerging market sovereign bonds, green bond prices, and some lines of insurance (for example, natural catastrophe peril modeling). Firms continue to find it difficult to source robust and reliable data on climate risk that will allow them to price the risk.

**FIGURE 20: IS CLIMATE RISK BEING PRICED IN BY MARKETS?**



In terms of how firms are organizing themselves, they have adopted a myriad of different structures for their staff working on climate risk. A key decision is whether to set up a dedicated climate risk team – that is, where the staff spend the majority of their time working on climate risk. This sort of structure has been adopted at 42% of firms (unchanged from last year).

Dedicated teams tend to be set up most frequently as independent climate risk functions/teams but are sometimes positioned as sub-groups within other (established) risk teams. Practices do vary by type of financial institution, though, with a dedicated team being far more common in banks and insurers than asset managers.

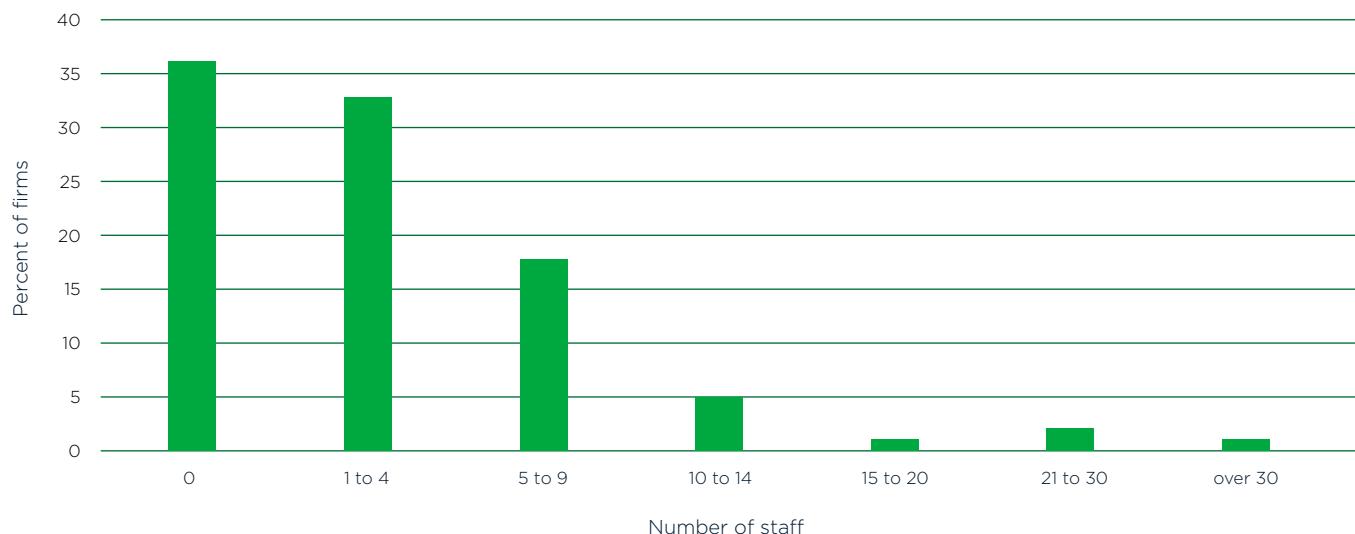
For the 58% of firms without dedicated teams, the staff working on climate risk are in a variety of areas: most common is to be embedded in other risk teams or spread across multiple other teams (e.g., risk management, front line, sustainable investing teams, ESG or corporate responsibility teams).

JUST  
**6%**  
OF FIRMS  
THINK THAT  
CLIMATE RISK IS  
CORRECTLY PRICED

It is hard to get a good sense of the current level of staffing on climate risk. To get a rough idea, we asked firms to report the numbers working full and part time on climate.

On average, for climate risk, firms employ just under five full-time staff and 22 part-time staff. But there is a huge variation, ranging from 0 to 100 full-time staff, and 0 to 200 part-time staff. Figure 21 illustrates the range of full-time staff, which should be more reliable than the part-time figures.

## FIGURE 21: NUMBER OF FULL-TIME STAFF WORKING ON CLIMATE RISK



The trends in staffing are far clearer: they have been rising and are expected to continue to do so. Staffing levels have increased at 91% of the firms over the past two years, and nearly 90% of firms expect levels to rise in the next two years.

Over 90% of climate risk teams are led by senior staff (more than 10 years of experience) located in the head office. In fact, almost half of the firms in our survey had no junior staff working on climate risk. Most firms, moreover, noted that they expect the number of employees working on climate risk management to increase over the next two years, and several believe the increase will be significant.

At more than half of the firms, the person leading the climate risk effort reports directly to a C-suite member – most commonly the CRO or CEO. For the other firms, the climate lead reports to someone below the C-suite, the majority of whom sit within the risk function.

Most frequently, staff working on climate risk are located in the head office (more than 60% of firms), but there are other considerations affecting staff location – such as to be near a concentration of risk staff, to be close to investment teams, or because of the volume of regulatory developments in a certain region.

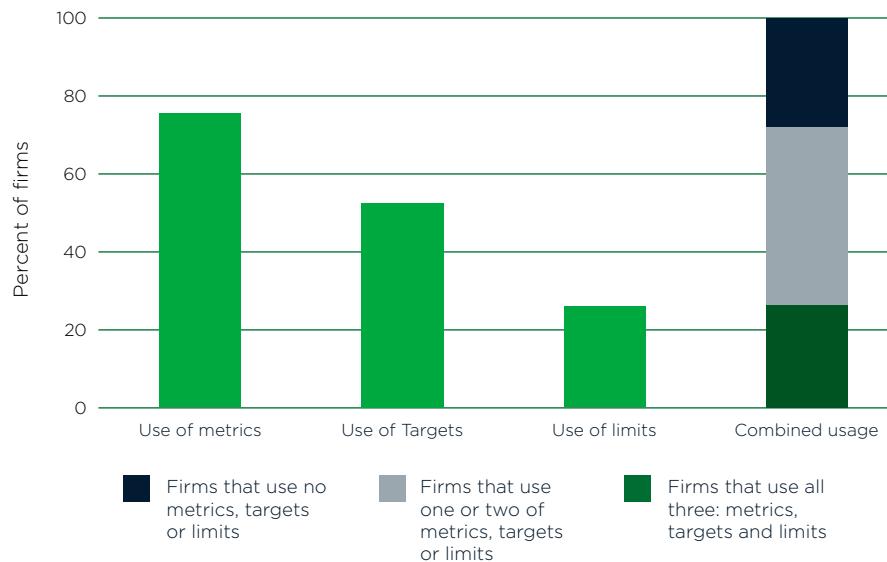


# Metrics, Targets and Limits

An integral part of effective climate risk management is the use of metrics, targets and limits, which collectively help firms to understand these risks and incorporate them into their risk appetite statements. For the survey, these terms were defined as follows:

- A metric is a measure used to assess climate risk (e.g., portfolio carbon intensity)
- A target is the outcome the organization aims to achieve (e.g., goal of portfolio carbon intensity below a)
- Limits represent the worst outcome the organization is prepared to accept without taking corrective action (e.g., portfolio carbon intensity must remain below b).

**FIGURE 22: USE OF METRICS, TARGETS AND LIMITS ACROSS RESPONDENTS**



Around three quarters of firms in our sample use metrics, around half use targets, but only around a quarter use limits (see Figure 22). Interestingly, there is a large divergence of practice: a quarter of firms are not measuring their climate risk at all, while a similar percentage are using all of metrics, targets and limits. These proportions are similar to last year's survey.

Each are used for different purposes. Metrics are the most common in each category. Targets are more commonly used for managing the firms' own operations – e.g., measuring carbon emissions – and for measuring net zero or portfolio alignment. Limits are set to cap a firm's exposure to risks and tend to be used most frequently to manage asset risks.

Only a small number of respondents are measuring their liability risks. This practice tends to be more common among insurers – which is not surprising, given this sector's focus on its liabilities.

Typically, the targets and limits used by firms are not only part of the risk management framework, but also support firms' strategies. Alignment targets, in contrast, are least likely to be part of risk management (Figure 23). This may indicate that firms are choosing to align a portfolio strategically, with a particular emissions or temperature pathway, rather than on the basis of risk management.

**FIGURE 23: INTEGRATION WITH STRATEGY AND RISK MANAGEMENT**



All targets are most commonly monitored at an annual or quarterly frequency, which probably aligns with reporting cycles (Figure 24).

**FIGURE 24: FREQUENCY OF MONITORING TARGETS AND LIMITS**



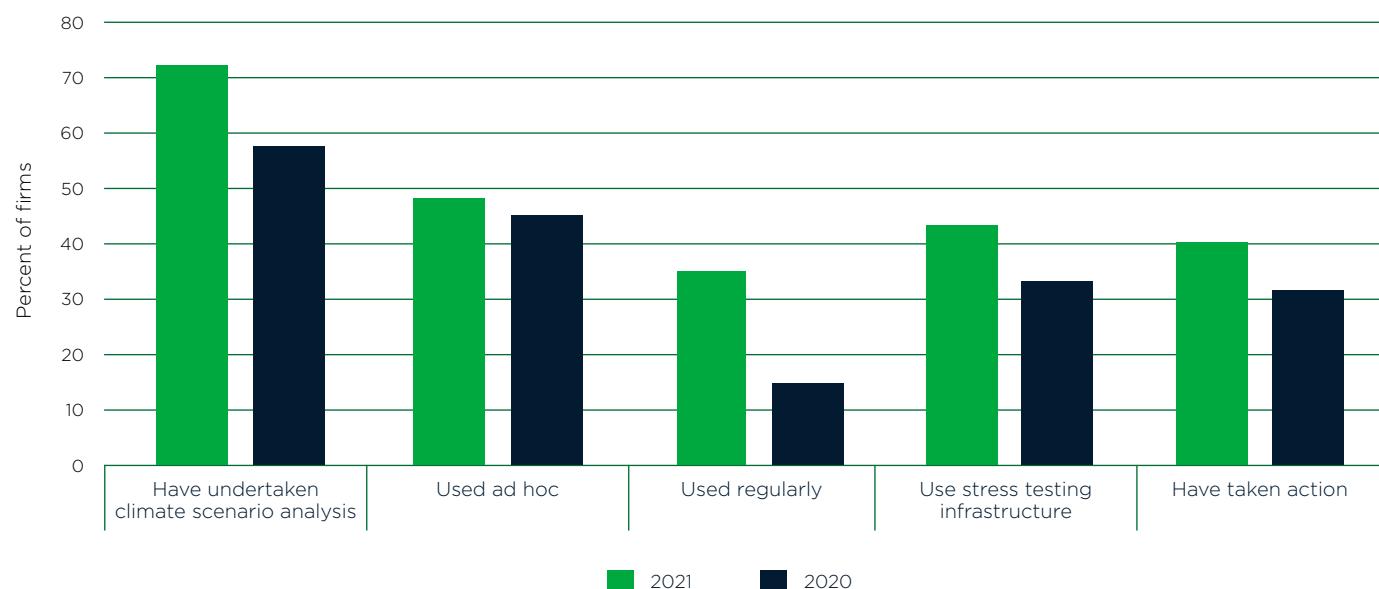
Asset targets and limits are set most commonly at the sectoral/industry level or at the organization level, and less commonly at the counterparty or legal entity level. One consequence of this is that a portfolio with limited climate-related risk may contain individual counterparties with high exposure, and risk managers will therefore need to understand the climate risk of each counterparty.



# Scenario Analysis

Given the range of uncertainty over issues such as climate policies, technology shifts and the path of emissions, climate scenario analysis is one of the key tools for identifying and quantifying the potential financial risks from climate change. With supervisors increasingly setting climate scenario analysis exercises, firms must build their capabilities quickly, and often use external partners to help.

**FIGURE 25: USE OF SCENARIO ANALYSIS**

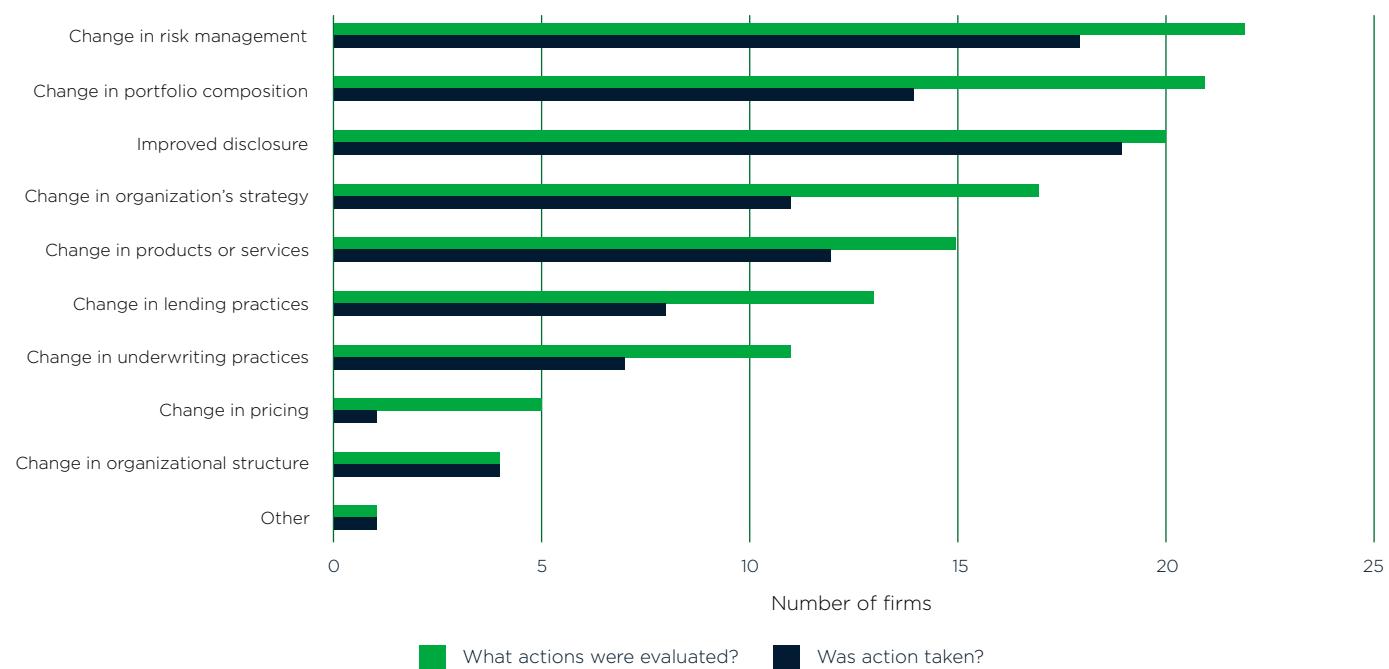


As Figure 25 shows, around 70% of respondents stated that they use scenario analysis, up from just under 60% in last year's survey. There has also been an increase in the proportion of firms using scenario analysis as a regular part of risk assessment. This may indicate more of a mainstreaming of the techniques, supported by the increase in the percentage of firms using their main stress testing infrastructure for the analysis.

Like last year's survey, over half of the firms using scenario analysis have taken action. But, this year, we asked firms to distinguish between actions that they had evaluated and those that they had actually taken as a result of climate scenario analysis (Figure 26).

The most common actions evaluated were whether there should be changes or improvements in the firm's risk management, portfolio composition, disclosures and organizational strategy. The most common area where action was actually taken was to improve disclosures (at 20 firms), closely followed by a change in risk management (18 firms).

## FIGURE 26: ACTIONS EVALUATED AND TAKEN AS A RESULT OF SCENARIO ANALYSIS

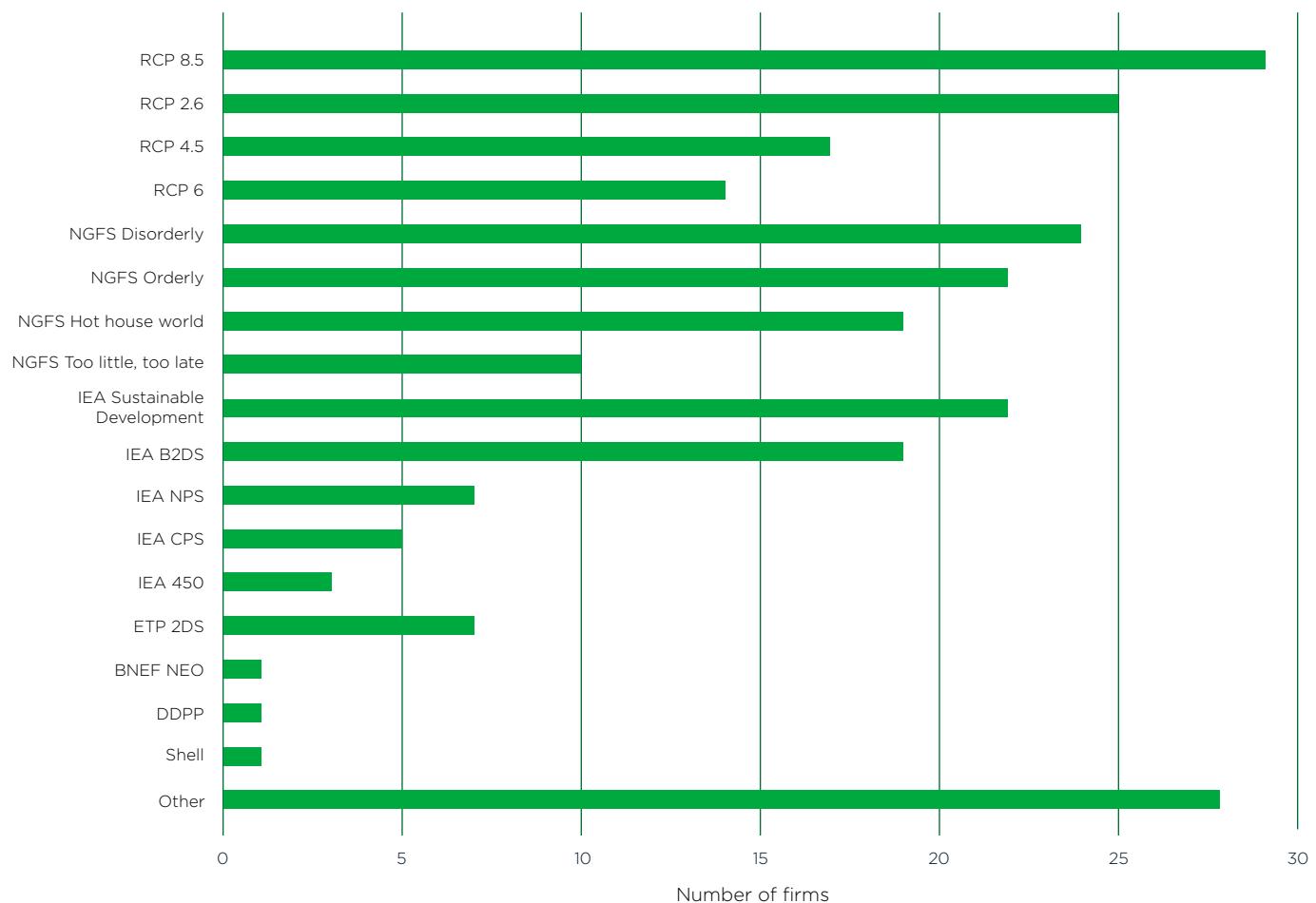


It is encouraging to see firms using the results of scenario analysis. On a similarly positive note, most of the firms currently not employing scenario analysis plan to use it within the next two years. All these factors point to a mainstreaming of climate scenario analysis across the financial sector.

Firms continue to use scenarios of different time horizons, as per the 2019 and 2020 surveys. This year, the most commonly used time horizon was 10 to 30 years.

Perhaps the most significant development since last year's survey has been the development of reference scenarios by the Network for Greening the Financial system (NGFS), which published its second vintage of [scenarios](#) in June 2021. As Figure 27 shows, these have proven very popular with financial firms.

**FIGURE 27: SCENARIOS USED BY FINANCIAL FIRMS**



This year, GARP undertook a deep dive on a range of aspects of climate scenario analysis on behalf of the UK's [Climate Financial Risk Forum](#) (CFRF). The analysis provides more detail on the current maturity of firm's practices, covering issues such as the motivation for undertaking scenario analysis; the range of scenarios used and why they chose them; the scope of their analysis and the risks examined; actions evaluated and taken as a result; and how firms are building scenario analysis capability. This analysis will be published alongside other CFRF outputs in 2021 Q4.

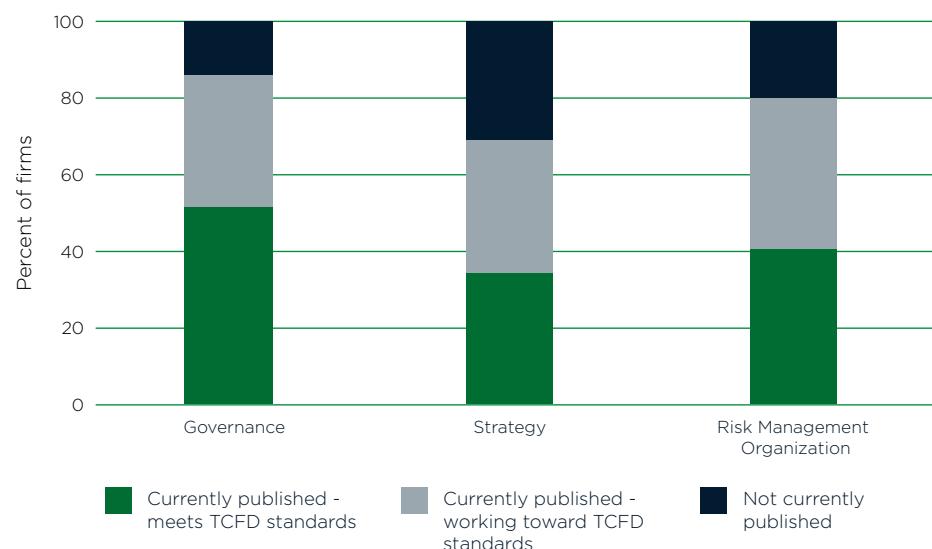


# Disclosures

Although not a direct indication of climate risk management capability, disclosures provide an additional insight into the maturity of firms' practices, since firms that disclose must go through rigorous approval processes before signing off on any public statements.

We asked participants about their governance, strategy and risk management disclosures, as well as their progress to meeting the Task Force on Climate-Related Disclosures (TCFD) recommendations. Figure 28 shows that governance disclosures are both the most common, and that firms expect they are most likely to meet TCFD recommendations. Only one firm in the sample does not intend to meet the TCFD expectations; the majority are working to meet the TCFD recommendations within the next one to two years.

**FIGURE 28: EXTERNAL DISCLOSURES AND TCFD REQUIREMENTS**



Relative to last year's survey, progress has been made across all categories, with over half of the governance disclosures now expected to meet TCFD recommendations (up from under a quarter last year) and similar improvements seen in the strategy and risk management disclosures.

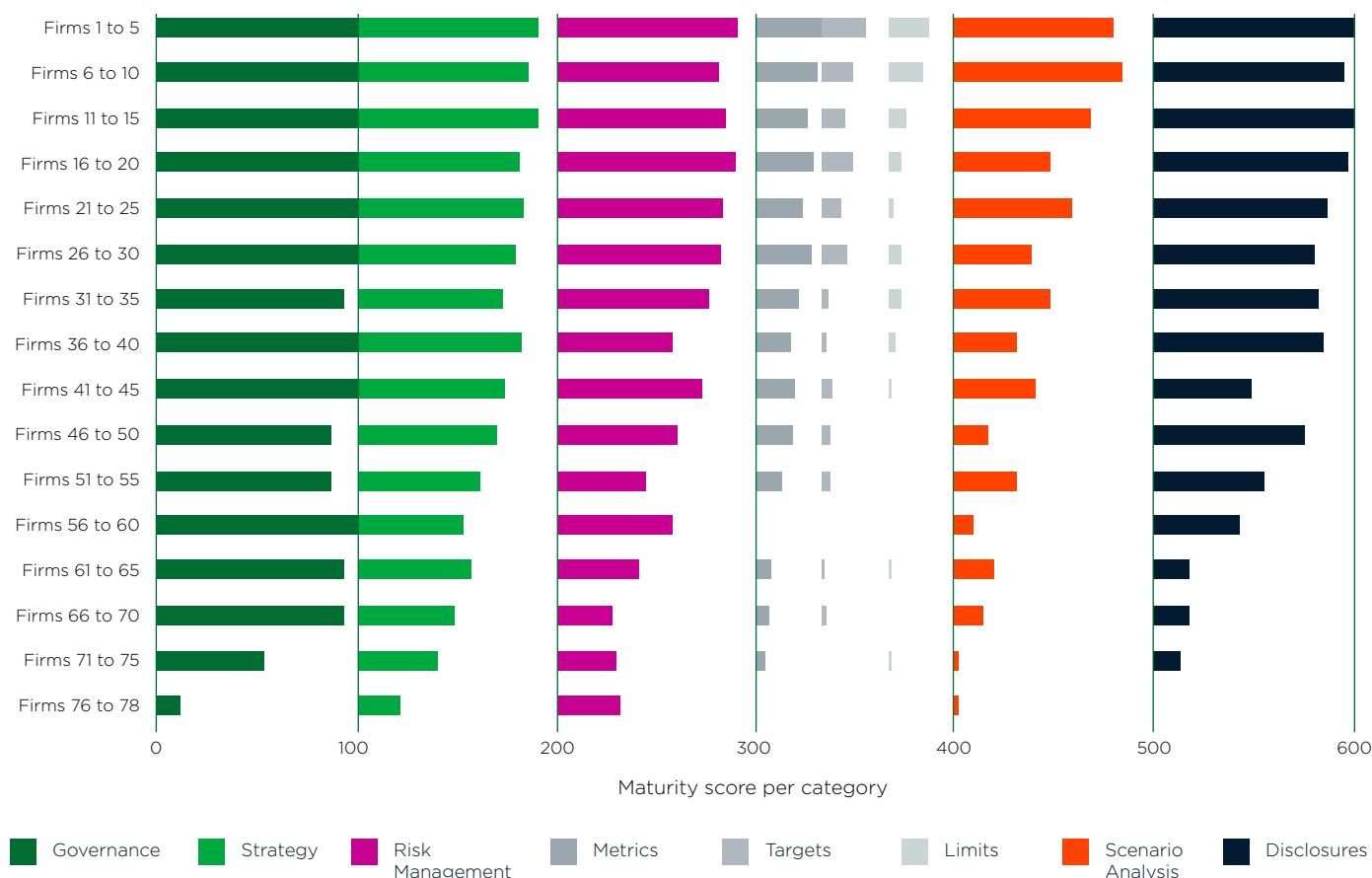


# Putting It All Together: A Maturity Model for Climate Risk Management

To help firms prioritize future improvement areas, over the past two years, we have used a maturity model as a measure of firms' progress in building a set of capabilities. The maturity model for climate risk management has been refined each year, reflecting changes to the questions and rising expectations.

Figure 29 shows the scores firms received for each dimension. The completeness of each color within its 100-point bar provides a quick snapshot of current capabilities within that dimension. Firms 1 to 5, for example, score very well on governance and disclosure, and a little less well on strategy, risk management and metrics. Firms 76 to 78, in contrast, score low for most categories, and do not score at all for targets or limits.

**FIGURE 29: MATURITY MODEL OF CLIMATE RISK MANAGEMENT**

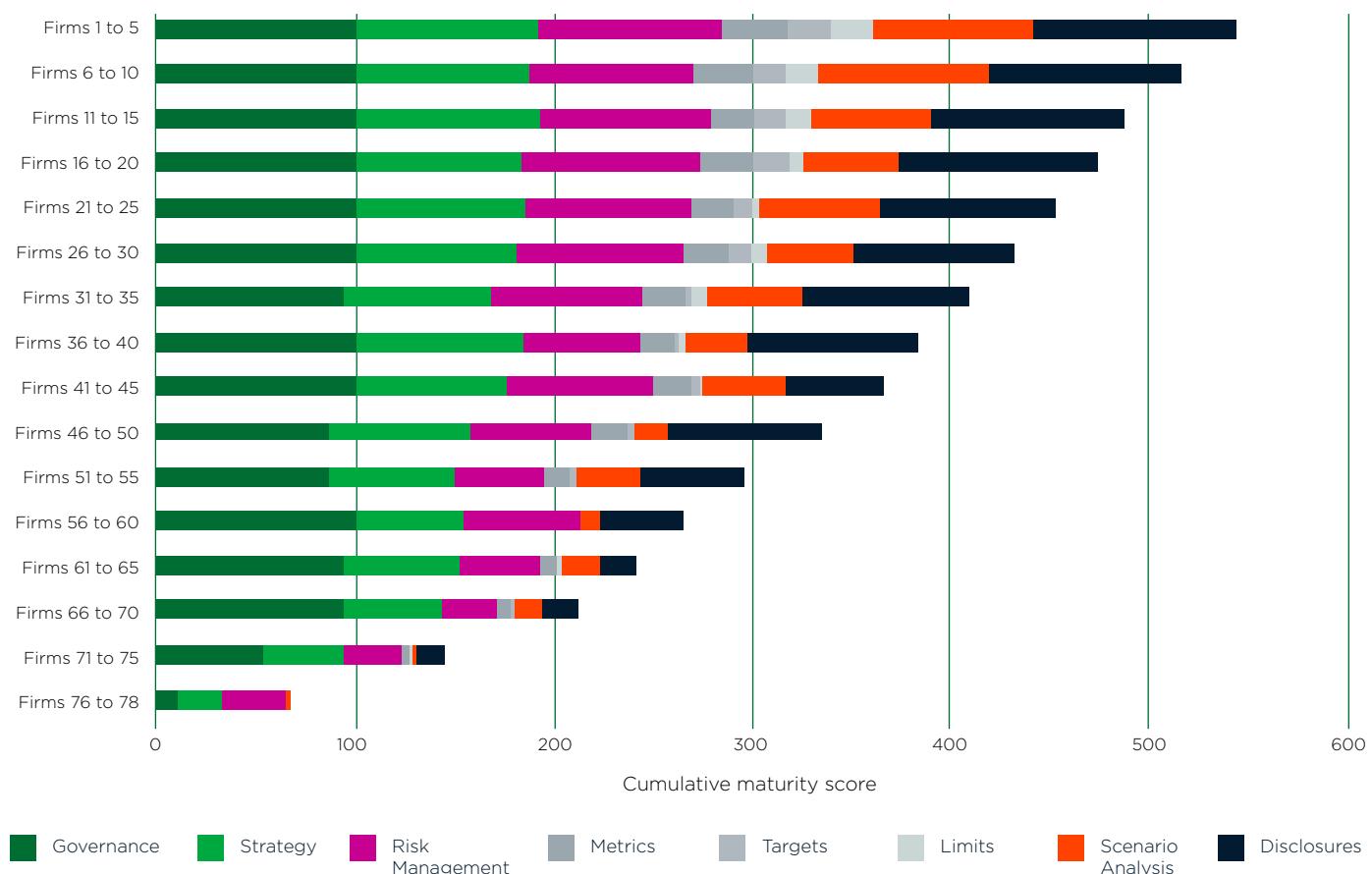


Similar to last year, we see that most firms scored well on governance, having board-level governance and C-level responsibility for climate risk.

Figure 30 adds all the scores into a total, to give a better sense of the spread between the best in class (Firms 1 to 5, which score around 530 out of a theoretical maximum of 600) and the weakest in class (Firms 76 to 78, which score 70, on average). The maturity model for 2021 shows a wide distribution of progress in climate risk management, as in previous years, with some firms already having more advanced capabilities, and others just getting started.

Over the three years of the survey, climate risk management has improved in five of the six dimensions, with metrics, targets and limits the exception (Figure 31). This is not particularly surprising, given that metrics, targets and limits impact the risk/return trade-off and are difficult to establish. Progress has been easier to achieve on the softer aspects, such as governance and risk management organization. (Note that Risk Management was not a separate dimension in the 2019 survey).

**FIGURE 30: RANGE OF PRACTICE ACROSS FIRMS**



**FIGURE 31: CLIMATE RISK MANAGEMENT IMPROVES OVER TIME**



# Conclusions

In this third Annual Climate Risk Management Survey, we are seeing emerging signs of a growing sophistication across the firms and improvement in quantification of the risks.

Firms are investing in all aspects of climate risk management, partly driven by the significant risks and opportunities that they see but also, undoubtedly, by increasing regulatory scrutiny. With regulatory interest rising, maintaining alignment across different regulators and jurisdictions will be a challenge.

The availability of reliable climate risk models remains a significant concern in the short term, and the availability of relevant data is often cited as a challenge. This is perhaps part of the reason why nearly all firms (94%) continue to believe that climate risks haven't been fully incorporated into market prices. And, of course, if markets aren't pricing the risk, it isn't being managed effectively.

Despite this, firms are making progress. We have seen an increase in the average scores in most of the dimensions over the three years of running the survey, which is encouraging. Staffing levels are increasing and are expected to continue to do so, as firms are rising to the challenges that they face.

The overall message from this year's survey is that we see improvements across many aspects of climate risk management, although the quantification and setting of hard metrics, targets and limits are areas that remain far less mature.

GARP will continue to undertake the annual survey, for as long as we and participating firms see value in benchmarking climate risk management practices. Ahead of the fourth survey in 2022, we welcome feedback from readers. Please email any comments to [climaterisksurvey@garp.com](mailto:climaterisksurvey@garp.com).

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