

McKinsey  
& Company

# McKinsey on Risk & Resilience

Resilience for sustainable,  
inclusive growth



The articles in *McKinsey on Risk & Resilience* are written by risk experts and practitioners from McKinsey's Risk & Resilience Practice and other firm practices. This publication offers readers insights into value-creating strategies and the translation of those strategies into company performance.

This issue is available online at [McKinsey.com](https://www.mckinsey.com). Comments and requests for copies or for permissions to republish an article can be sent via email to [McKinsey\\_Risk@McKinsey.com](mailto:McKinsey_Risk@McKinsey.com).

Cover image:  
© AlSimonov/Getty Images

**Editorial Board:**

Venky Anant, Jason Atkins, Bob Bartels, Oliver Bevan, Richard Bucci, Joseba Eceiza, Mihir Mysore, Luca Pancaldi, Thomas Poppensieker, Kayvaun Rowshankish, Sebastian Schneider, John Walsh, David Weidner, Olivia White

**External Relations,  
Global Risk & Resilience Practice:**  
Bob Bartels

**Editor:** Richard Bucci, David Weidner

**Contributing editors:**  
Rama Ramaswami, David Schwartz

**Art Direction and Design:**  
Leff Communications

**Data Visualization:**  
Richard Johnson, Matt Perry,  
Jonathon Rivait, Jessica Wang

**Managing Editor:**  
Heather Byer

**Editorial Production:**  
Mark Cajigao, Nancy Cohn, Roger Draper, Ramya D'Rozario, Gwyn Herbein, Drew Holzfeind, LaShon Malone, Pamela Norton, Kanika Punwani, Charmaine Rice, Diane Rice, Dana Sand, Regina Small, Sarah Thuerk, Sneha Vats, Pooja Yadav

**McKinsey Global Publications**

**Publisher:** Raju Narisetti

**Global Editorial Director  
and Deputy Publisher:**  
Lucia Rahilly

**Global Publishing Board  
of Editors:** Roberta Fusaro,  
Bill Javetski, Mark Staples,  
Rick Tetzeli, Monica Toriello

Copyright © 2023 McKinsey & Company. All rights reserved.

This publication is not intended to be used as the basis for trading in the shares of any company or for undertaking any other complex or significant financial transaction without consulting appropriate professional advisers.

No part of this publication may be copied or redistributed in any form without the prior written consent of McKinsey & Company.

# Contents

## Resilience for sustainable, inclusive growth

---



### 5 The resilience agenda for sustainable, inclusive growth

The first comprehensive action agenda for sustainable, inclusive growth was presented at the 2023 annual meeting of the World Economic Forum.



### 12 Business building: The path to resilience in uncertain times

In an uncertain economy, executives' first instinct might be to cut costs and shore up established holdings. A better way is to build new businesses.



### 19 Addressing the revolving door in risk

As the field of risk management evolves, the value proposition for employees has to evolve as well.



### 29 Survival through purpose: How Ukrainian businesses endured amid extreme uncertainty

Ukrainian businesses that have survived and thrived in the face of an unforeseen Russian invasion offer lessons in resilience.

## Addressing climate risk and sustainability

---



### 39 Managing financed emissions: How banks can support the net-zero transition

Banks finance carbon-emitting businesses, and they finance decarbonization of the economy as well. How effectively they address financed emissions can make all the difference.



### 49 A devilish duality: How CEOs can square resilience with net-zero promises

Amid turbulence on the path to net zero, leaders will have to be much nimbler to balance resilience with an energy future that is secure, affordable, and clean. Five actions can help.

# Contents (continued)

## Managing risk in uncertainty

---



**57** **A technology survival guide for resilience**  
Resilience means understanding the criticality of a business process, the capability of the underlying technology, the business impact if the technology fails, and the organization's risk tolerance.



**66** **Response and resilience in operational-risk events**  
Direct losses from operational-risk failures are mounting, and in today's volatile economic environment, consequent losses in share price are many times greater.



**73** **Rate reset presents banks with IRRBB challenge**  
By focusing on six key areas, banks can more accurately manage rising interest rates and credit spread risk across business lines, meet regulatory demands, and create competitive advantage.



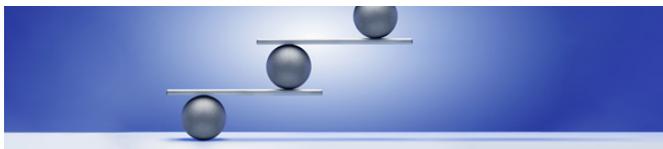
**80** **Navigating economic uncertainty: New guidance for credit risk management**  
Amid persistent complexity, bank leadership teams need to urgently revisit their approaches to credit risk management.

## The evolution of risk organizations

---



**88** **Risk and resilience priorities, as told by chief risk officers**  
Amid the storm of crises and disruptions, leading financial institutions are recognizing risk's strategic and resilience-building role.



**94** **The next frontier in risk efficiency**  
As global risks increase and economic uncertainty persists, the risk functions within the financial services industry must continue to evolve talent to ensure organizational resiliency.

# Introduction

Today's uncertainty and disruption of business and society is challenging leaders in unforeseen ways.

The liquidity scare in banking and accompanying interest rate sensitivity is just the latest in a series of concerning developments. A range of disruptions, including geopolitical conflicts and inflation in the short term and shifts in customer behavior and supply chain structures in the long term, have upended the concept of risk and resilience. We are living and working in a world of risks come to fruition. Ever-present crises and continuous external shifts are the new normal.

It is amid this environment that with this, our 14th edition, we are changing the title of our cornerstone publication to *McKinsey on Risk & Resilience*.

This change is more of an acknowledgment than a shift. Even before the past year, our work, research, and analysis on these pages had come to reflect the reality that many threats have come to life. "Risk," as defined by financial institutions, has not changed, and we understand that the management of existing and potential threats is only part of the function. Positioning and growth amid this environment is equally essential in an effort to build resilience.

This issue explores four key themes: resilience for sustainable and inclusive growth, addressing climate risk and sustainability, managing risk in uncertainty, and the evolution of risk organizations.

Now more than ever, resilience is center stage. And its necessity stretches beyond any single organization or entity. Our socioeconomic systems have become deeply interconnected in ways that are not always apparent until crisis strikes. In other words, resilience—the ability to survive and thrive amid continuous tumult—is at a premium.

This does not mean becoming risk-averse and playing defense. Leaders must identify the opportunities from disruptions and changes and play offense, thus balancing opportunities and risks toward resilient growth paths that satisfy the appetites of investors, markets, and stakeholders in their organizations while fending off rivals. This implies shifting management capacity from detailed planning exercises to more dynamic resource allocation, better foresight, and quicker adaptation capabilities in areas where the environment has changed.

In this issue, we start by offering our most recent views on resilience as developed and extensively discussed by the Resilience Consortium forums in Davos, where we collaborated with the World Economic Forum, among others, to develop six strategic resilience themes that are dominating boardroom discussions.

Our attention then turns to Ukraine, and businesses share lessons from the first year of operating amid war.

We then provide our latest views on climate risk and share research, insights, and best practices to help banks manage financed emissions in the net-zero transition.

We take a deep dive into financial and nonfinancial risks, affecting both corporates and banks, including technology, interest rates, operational risk events, and credit risk management.

Finally, we identify organizations succeeding in today's environment and the keys to their success. The squeeze on resources for chief risk officers also is addressed, and we examine what is needed and what is not when it comes to building a team and management system that is strong and nimble and meets the moment.

As always, we hope you find these articles useful, informative, and actionable. We encourage you to dive deeper into McKinsey.com and reach out to let us know what you think at [McKinsey\\_Risk@McKinsey.com](mailto:McKinsey_Risk@McKinsey.com).



**Thomas Poppensieker**  
*Senior partner and chair,  
Global Risk & Resilience Editorial Board*

# Resilience for sustainable inclusive growth

**5**

The resilience agenda  
for sustainable,  
inclusive growth

**12**

Business building:  
The path to resilience in  
uncertain times

**19**

Addressing the revolving  
door in risk

**29**

Survival through purpose:  
How Ukrainian businesses  
endured amid extreme  
uncertainty

# The resilience agenda for sustainable, inclusive growth

The first comprehensive action agenda for sustainable, inclusive growth was presented at the 2023 annual meeting of the World Economic Forum.

*This article is a collaborate effort by Rima Assi, Maria del Mar Martinez Márquez, Daniel Pachod, Thomas Poppensieker, and Sven Smit, representing views from McKinsey's Risk & Resilience Practice.*



**Leaders of public-** and private-sector organizations have lately faced a lifetime's worth of disruption and crises. They have had to steer through global conflict, energy uncertainty, food shortages, supply interruptions, high inflation, market volatility, and severe climate events in a world still emerging from the COVID-19 pandemic. Unavoidably comes a recognition that the current and future operating environment is one of continuous natural and man-made disruptions. The reality has serious implications; understanding it comes with commensurate responsibilities.

The disruptions cannot be treated in isolation, one after another, as they arise and reverberate through our fragile ecosystems and stressed networks. There aren't enough resources in the world to do that. Many now agree that *resilience* is our key challenge: we must strengthen our resilience beyond a survival capacity to enable long-term, sustainable, and inclusive growth. The time has come now to act on this understanding.

Enter the “resilience agenda.” This complex effort has been developed by the Resilience Consortium—government ministers, chief executives, and heads of international organizations—working with ongoing World Economic Forum (WEF) initiatives. The resilience agenda is designed to accelerate collective action across key resilience themes. It is the first serious program to coordinate long-term solutions throughout the broad fabric of our disrupted world.

The resilience agenda was presented in depth at the 2023 annual meeting of the WEF in Davos, Switzerland.<sup>1</sup> Discussions focused on cultivating leadership thinking and motivating real progress on the resilience objectives. Three key concepts were stressed:

1. *The resilience agenda is a complex, continuous effort that will extend through years and decades.* Given the level of disruption we are experiencing and the interconnectedness of the

themes, the integrated resilience agenda is an urgent necessity for our times. The disruptions revealed hidden connections among the themes—supply chain vulnerabilities emerged, energy security came into focus, and the contours of what must be an affordable energy transition became clearer. Intersectoral links can seemingly be adduced ad infinitum. Technology, for example, can become a growth engine for business and society, as it provides new answers for energy needs and healthcare provision.

2. *The long-term perspective is imperative.*

*Governments and companies naturally focus on finding solutions to immediate problems.*

Of equal—even paramount—importance for organizations and societies, however, is a long-term focus on strategic objectives. The need for the long view is glaring in terms of climate risk; it also extends to the global supply chain, the geopolitical environment, technological innovation, people and education, and healthcare. Within and across these themes, long-term risks emerge—demographic trends, data privacy issues, and stubborn inequities in every socioeconomic dimension large and small. All must be accounted for in strategic planning for sustainable growth.

3. *Progress will come only through public–private collaboration and international cooperation.*

Individual governments and companies cannot by themselves resolve the world's problems or open exclusive paths to sustained growth. In defining long-term growth parameters, the private and public sectors have never needed each other more than they do right now. Disruptions do not respect borders; successful economic development will come only with international cooperation and engagement.

## **The six resilience themes**

The resilience agenda addresses six themes, which become the deeply interconnected areas of action (Exhibit 1).

---

<sup>1</sup> The full white paper presenting the resilience agenda, “Seizing the momentum to build resilience for a future of sustainable inclusive growth,” was created by the World Economic Forum in collaboration with McKinsey. With a foreword by Børge Brende, president of the World Economic Forum, and Bob Sternfels, McKinsey's global managing partner, the paper is available on McKinsey.com and WEF.org.

## The resilience agenda addresses six resilience themes.

### Geopolitical

- Adapt business strategies to act flexibly in different geopolitical spheres
- Enhance foresight capabilities and scenario planning
- Collaborate with policy makers based on a deeper understanding of economic and geopolitical interdependencies

### Climate, energy, and food

- Accelerate energy transition toward renewables on all fronts
- Work on transitional solutions such as blue hydrogen and carbon capture, storage, and utilization
- Decarbonize by preserving and recuperating the natural environment
- Provide incentives for transition funding and decarbonization
- Prioritize food and basic needs in the transition for inclusive growth

### Trade and supply chain

- Understand supply chain dependencies
- Reduce geopolitical, technological, and single-sourcing vulnerabilities
- Preserve beneficial supplier relationships and prosperous global interconnections
- Spot over-the-horizon risks with early sensing and scenario planning
- Provide fair trade opportunities for smaller, developing economies

### People, educational, and organizational

- Cultivate flexible operating models and adaptable leadership capable of embracing uncertainty
- Decentralize decision making supported by self-sufficient teams
- Focus on long-term talent development; upskill and reskill existing workforce
- Invest in education to reduce growing talent gap and social inequality

### Healthcare

- Prioritize preventative and holistic health
- Increase capacity and productivity of the healthcare system
- Enhance resistance against future pandemics and health crises
- Ensure inclusion and equitable care

### Digital and technological

- Develop digital and technological strategies toward long-term productivity enhancements
- Anticipate cyber risks and vulnerabilities attending technology change
- Develop ethical parameters to protect personal privacy and promote inclusivity

McKinsey & Company

The linkages and the vulnerabilities within and across the themes must be explored so that actions in one area can be aligned with the goals in the others and even accelerate progress toward them. The actions within the themes are broadly described below.

### Geopolitical resilience

Multinational institutions need to adapt business strategies and reconfigure business models if they are to act flexibly in different geopolitical spheres. Policy makers and business leaders should deepen their grasp of economic and geopolitical interdependencies, collaborating with one another to enhance planning for a wide range of scenarios. Institutions active in sensitive regions should center business plans around a coherent set of values and a global ethos. Leaders need to know what they are for and what they are against so they can confidently engage (or disengage).

Policy makers can set incentives to encourage private-sector investment in R&D, manufacturing, and distribution. Industry dynamics and country-level competitiveness can be

improved by optimizing company policies and standards on sensitive business areas such as trade, intellectual property, R&D, data, and environmental, social, and governance (ESG) aims. Organizations can craft detailed, analytical scenarios that clarify concrete future actions, especially for highly probable, high-impact threats. An agenda of actions for each threat, an essential step, should be compiled based on a thorough understanding of geopolitical developments. Public–private sector cooperation in such scenario planning is necessary, since interests are highly interdependent.

### Climate, energy, and food resilience

Today's energy uncertainty is exacerbating the effects of a long-term decline in energy investment. This averaged 7.7 percent per year between 2010 and 2014, and disinvestment has been measured ever since (–2.4 percent annually for the 2014–22 period). Coupled with insufficiently diversified supply chains, as well as scarcity of the labor and raw materials essential for the energy transition, static investment is putting the availability and security of energy at risk.

# Organizations should define supply chain dependencies and reduce geopolitical, technological, and single-sourcing vulnerabilities.

The green-energy transition must include energy security and affordability among its primary objectives. A sustainable path will require “both/and” approaches, including efficiency improvements, transitional solutions (such as blue hydrogen and carbon capture, utilization, and storage), as well as clean electrification with renewables. The resilience agenda specifies actions to achieve decarbonization, energy diversification, grid electrification, and R&D in the scarce materials on which the transition depends. It also highlights the business opportunities in the net-zero transition, citing research suggesting trillions in untapped value.

Food, water, energy, and climate change are fundamentally interlinked challenges. Failure to solve the resilience equation will risk climate events of great magnitude and physical damage. Recent and ongoing events constrain food availability and push up prices. Food system resilience, together with nutrition security, are necessary for populations to live healthily. Diverse stakeholders will have to work together for a green-farming transition to make healthier food more plentiful. Energy availability and decarbonization are needed to contain climate change and enable all countries to produce food sustainably. Together, the public and private sectors must think through these interconnected issues and ensure that efforts are aligned to create food and water security along with energy availability.

## Trade and supply chain resilience

Organizations should define supply chain dependencies and reduce geopolitical, technological, and single-sourcing vulnerabilities. At the same time, resilience efforts must not sacrifice long-held supplier relationships and the global interconnections that enable prosperity. To build resilient supply chains, leaders should emphasize themes in three areas:

1. **Spot over-the-horizon risks using “early sensing” and scenario planning.** Unlike attempts at prediction, this approach seeks to assess a range of potential outcomes given active forces and trends, then connects the outcomes to trigger-based escalation and action protocols.
2. **Reconfigure sourcing footprints,** making moves measured against the value of retaining existing sources of supply. Vertical integration, where appropriate, can also be considered. The potential benefits of adding new sourcing locations should be weighed against the challenges inherent in unwinding long-held supplier relationships. In anticipation of potential supply disruptions, such as input shortages, companies can deploy multisourcing strategies.
3. **Build capabilities in the supply chain organization,** practicing disruptive scenarios and rehearsing lessons from past mistakes and

near misses. Acquire requisite new technology and data while building capabilities for demand sensing and dynamic forecasting, including upskilled in-house talent deployed to supply chain digital teams. Regarding international collaboration and competition, governments should clarify a clear rules-based framework to remove uncertainty and improve conditions for long-term investments and resilient growth.

### **People, educational, and organizational resilience**

Organizations need flexible operating models and adaptable leadership. Leaders should cultivate talent so that decision making can be decentralized and is supported by self-sufficient teams with on-the-spot knowledge. At the same time, tomorrow's economy will need new skills. Societies and organizations must invest in education, especially early education. Leaders must close growing skill gaps and reduce social inequalities while upskilling and reskilling the existing workforce.

The supply gap in talent is even wider in low- and middle-income countries, where the pandemic depressed education. Poverty in education means a loss of potential income for individuals and an acute talent shortage at the national or regional level. To overcome these challenges, organizations must invest in organizational resilience, matching talent to strategy. That is a proven means to create value. Resilient organizations absorb shocks and turn them into opportunities, “bouncing forward” during crisis times. To build resilience in talent, leadership, and education, organizations need to act on a number of themes: organizational flexibility, adaptable leadership, diversity and inclusion, continuous talent and capability building, and a transformative approach to learning that addresses strategic skills.

### **Healthcare resilience**

A multifaceted approach is needed to meet rising healthcare demand and alleviate healthcare supply constraints while enhancing emergency preparedness. The overarching goal is to ensure equitable access to care for all. Reducing health inequities across social groups strengthens healthcare systems and contributes significantly to economic growth.

Research indicates that by investing in preventative and chronic care, healthcare systems can reduce the global disease burden by 25 percent. The preventative approach promotes longer high-quality life—an 18-year gap in average life expectancy separates populations in low- and high-income countries. Investment areas include environmental sustainability, health education, availability of healthier food and clean water, and access to vaccines and preventive treatments generally.

Societies need to increase the capacity and productivity of the healthcare system and expand the workforce. These improvements will come at a cost, but the burden can be reduced with digitization and other innovations by up to 15 percent. Effective actions are needed to support and retain the current workforce while hiring, training, and developing new talent. More women doctors, nurses, and other caregivers are sorely needed, in an environment that provides equal pay for equal work.

### **Digital and technological resilience**

Digitization and technology will be key drivers of long-term productivity gains. They will add agility and speed to organizations. As with all innovation, these efforts will be highly iterative and fast changing. It is nonetheless important that leaders develop a long-term perspective on the growth impact of the changes, identify seed opportunities, and develop a portfolio approach to growth. Technology will be a key driver of change in all resilience areas—especially in the energy transition, education, healthcare, and supply chains. Disruption and risk resulting from technological transitions must be carefully managed. Action areas here will include cybersecurity—since threats continue to proliferate—and societal advocacy. Societal objectives include ethical parameters protecting personal privacy, as well as the promotion of inclusivity and the eradication of the digital divide. The International Labour Organization estimates that achieving universal broadband coverage means connecting three billion people who have never used the internet. Doing this alone could create 24 million new jobs worldwide, including millions of jobs for young people.

# We must realize the underdeveloped potential of public–private collaboration to foster resilience.

Technology will be one of the biggest economic-development factors, and it can be affected significantly by geopolitical trends. Policy makers should provide guidance to the private sector on acceptable dependencies versus those that should be reduced. The impact of digital innovation on society, meanwhile, can be challenging or even unwanted. Strategies to train workers on developing higher skills and to provide alternative careers are needed to prevent sections of the workforce from becoming disadvantaged and suffering a loss in living standards.

## Four resilience enablers

The actions within the themes of the resilience agenda are made possible by a group of essential enablers:

- **Leadership and capabilities.** A new leadership culture is needed to steer the resilience agenda. Resilience leaders can lean into uncertainty, extending foresight capabilities. They can also act deliberately to secure long-term solutions while managing the short-term issues. They can reshape their organizations for speed and agility by decentralizing decision making to self-sufficient teams.
- **Finance.** Funding resilience will require one of the largest capital allocations in history. Public institutions alone do not have sufficient resources; private capital is needed, and returns on those investments will have to be addressed.

Enhancements of financial and fiscal capacity for resilience will be achieved through better incentive structures, longer-term capacity planning, and the leveraging of capital and insurance markets.

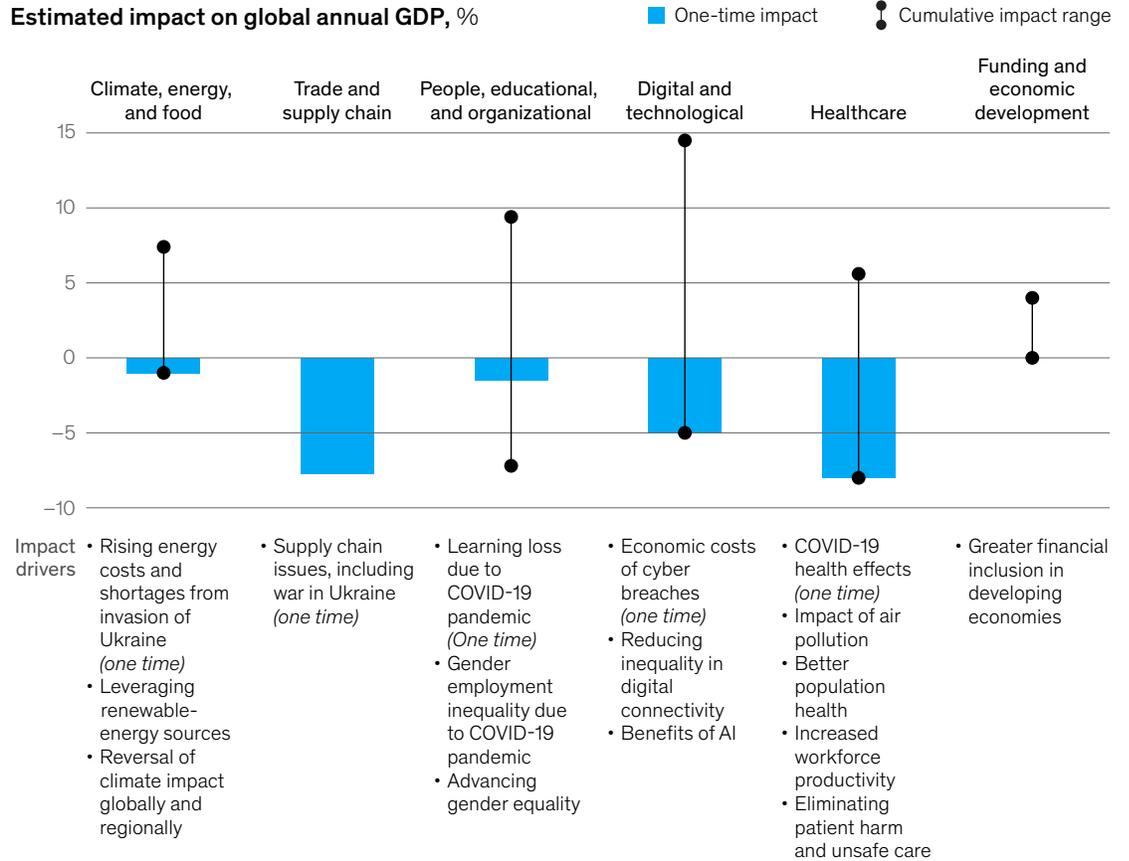
- **Sustainable economic development.** Actions here will include improving the availability and affordability of housing, healthcare, and energy through scalable interventions; investing in youth education, the youth workforce, and an inclusive future economy; making balanced investments in technology to enhance productivity; supporting small business; and improving the investment environment.
- **Public- and private-sector collaboration.** We must realize the underdeveloped potential of public–private collaboration to foster resilience. This should be done through both small-scale projects of local importance and large projects with national vision. Strong project pipelines should be developed, with projects prioritized according to impact. Implementation must be highly efficient with optimal allocation of risks.

## The value at stake

The value at stake in the resilience agenda for long-term growth is enormous. Leading research shows that action or inaction within these resilience themes could have short- and long-term impact on GDP ranging from –8 percent to +15 percent (Exhibit 2).

Exhibit 2

**Action or inaction within the resilience themes can have an impact on GDP ranging from –8 to +15 percent.**



Source: McKinsey and World Economic Forum analysis

McKinsey & Company

In monetary terms, these percentages equate to many trillions of dollars. When regarded from the

standpoint of human life—as well as of life itself—the values are much higher.

**Rima Assi** is a senior partner in McKinsey's Dubai office, **Maria del Mar Martinez Márquez** is a senior partner in the Madrid office, **Daniel Pacthod** is a senior partner in the New York office, **Thomas Poppensieker** is a senior partner in the Munich office, and **Sven Smit** is a senior partner in the Amsterdam office.

The authors wish to thank their coauthors on the full white paper, “Seizing the momentum to build resilience for a future of sustainable inclusive growth.” This paper was created by the World Economic Forum in collaboration with McKinsey and is freely available on [McKinsey.com](https://www.mckinsey.com) and [wef.org](https://www.wef.org). From the World Economic Forum: Andre Belelieu, head, Insurance, Asset Management and Institutional Investors; Andrej Kirn, head, International Organizations and Humanitarian Agenda; Miriam Schive, deputy head, International Organizations and Humanitarian Agenda. From McKinsey & Company: David Frances, Mihir Mysore, Alfonso Natale, Michael Thun, and Andreea Zugravu.

Copyright © 2023 McKinsey & Company. All rights reserved.

# Business building: The path to resilience in uncertain times

In an uncertain economy, executives' first instinct might be to cut costs and shore up established holdings. A better way is to build new businesses.

*by Matt Banholzer, Ralf Dreischmeier, Laura LaBerge, and Ari Libarikian*



© Tamara Dragovic/Getty Images

**In stable times**, business building is a powerful way to extend into new and higher growth areas. In times of great disruption and uncertainty, however, building new businesses becomes a critical path to improving an organization's ability to survive and thrive.

Many leaders are bracing for a rough economic ride—they're girding their companies against a series of acute global risks. In addition to geopolitical instability, volatile commodity markets, and rising inflation, they anticipate continued waves of global health crises, more frequent and severe climate hazards, and major shifts in consumer and industrial demand. These developments, they feel, could put long-term pressure on their business models—thus heightening the need for resilience.<sup>1</sup>

The new reality is that crisis and disruption are here to stay, and conventional approaches won't work the way they did in the past. Business building, by contrast, is a way to diversify, shore up, protect, and expand when others are contracting. Committing resources to a new business, however, is only part of a winning strategy. Incumbents need a tool kit: a road map, a sense of urgency, and an entrepreneurial mindset, using their advantages—resources and talent—and eliminating disadvantages, such as barriers to innovation and systems that don't support new initiatives and growth.

Traditionally, resilience meant cutting costs and preserving capital. While belt-tightening shouldn't be ignored, the cost focus alone has never been sufficient—and it certainly isn't in today's market. Business is not facing just a momentary inflection

# 50%

of all revenue during the next five years is expected to come from new businesses, products, and services.

but also a state of volatility and long-term change that is becoming the new normal. In an extended volatile environment, companies must create optionality to enhance their risk profiles—not only their exposure to markets or geographies but also their exposure to system-level changes (Exhibit 1).

New businesses can be the best way for incumbents to grow now and in future evolutions of the world's current era of volatility. Established companies have many advantages in building new businesses: infrastructure, talent, facilities, and brand. Incumbents may, of course, face challenges with innovations, processes, and cultures that don't lend themselves to internal entrepreneurship—but these are all execution-driven challenges, and none are insurmountable.

Companies can diversify in a few ways, but building new businesses constitutes an especially powerful approach. For example, our research suggests business building helped companies weather pandemic disruptions: 34 percent of companies that prioritized business building kept their revenues from shrinking during the pandemic, compared with 26 percent of companies that

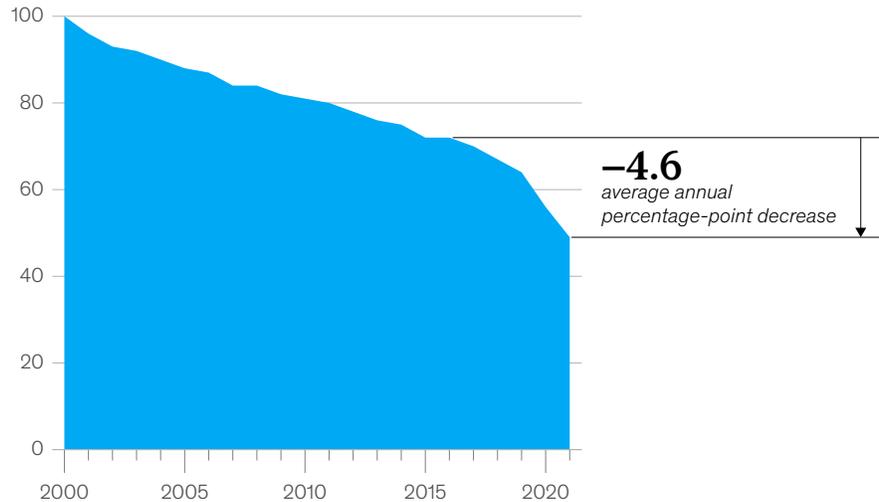
---

<sup>1</sup> Børge Brende and Bob Sternfels, "Resilience for sustainable, inclusive growth," McKinsey, June 7, 2022.

Exhibit 1

**Corporate longevity is declining: The share of top 500 global companies has fallen and accelerated amid disruption.**

Share of global companies maintaining a top 500 position in 2000,<sup>1</sup> %



<sup>1</sup>Top 500 defined by market capitalization at the end of the calendar year.  
Source: Corporate Performance Analytics by McKinsey; McKinsey analysis

McKinsey & Company

prioritized other organic-growth strategies.<sup>2</sup> Business building provides both financial as well as operational diversification that is broader than typical cost-saving measures (Exhibit 2).

At a basic level, newly built businesses help established companies form new customer relationships and accelerate growth. Organic growth typically generates more value, and it spares companies from paying a takeover premium on top of the stand-alone value of the acquired business.<sup>3</sup> Because new businesses don't have legacy costs, they can yield higher profit margins and be less exposed to cash flow pressures.

And when new businesses have offerings and operating models that differ substantially from those of existing holdings, they help insulate an organization against inflation, supply chain disruption, and economic down cycles. Achieving these benefits involves focusing on businesses that foster resilience and growth.

**New businesses that build resilience**

Considering the challenges facing companies today, four types of new-business builds are particularly well suited to resilience. Many of these can be started rapidly and begin generating earnings

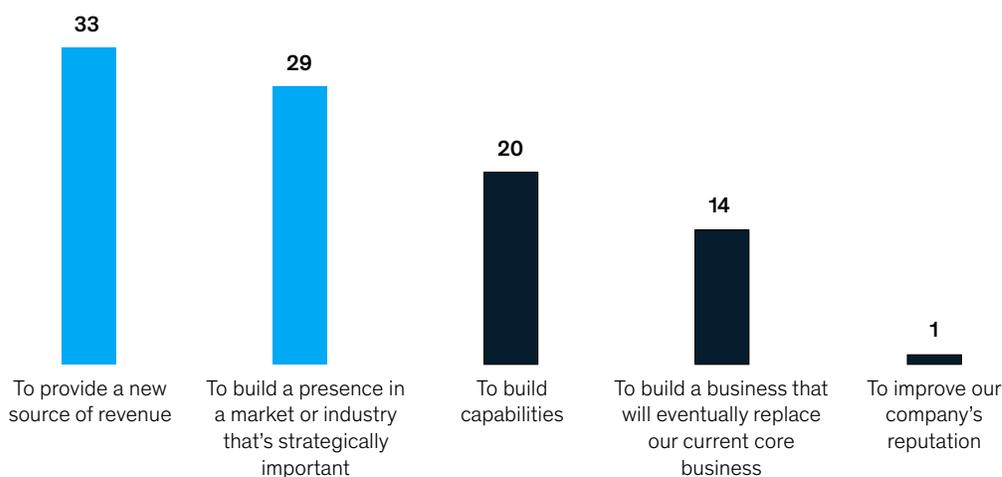
<sup>2</sup> Shaun Collins, Ralf Dreischmeier, Ari Libarikian, and Upasana Unni, "Why business building is the new priority for growth," *McKinsey Quarterly*, December 10, 2020.

<sup>3</sup> Marc Goedhart and Tim Koller, "The value premium of organic growth," McKinsey, January 19, 2017.

Exhibit 2

**Today, nearly a third of companies building new businesses are doing so to build a source of strategic diversity.**

Organization's primary reason for building a new digital business,<sup>1</sup> % of respondents (n = 851)



<sup>1</sup>Question: What was your organization's primary reason for building a new digital business?  
Source: McKinsey Digital Strategy Survey, 2022

McKinsey & Company

within 24 months—enabling success in early stages and beyond.

**The countercyclical businesses**

Catering to markets or customers with relatively inelastic (and growing) demand allows established companies to better counter cyclical swings. For example, data sales related to transaction processing are less directly correlated to consumer spend than swipe fees, which tend to go up and down with the economy and consumer confidence.

There are several approaches to building ventures that help organizations diversify away from exposure to inflation. For example, some service

businesses generate more stable revenues than comparable product or capital goods businesses, because they can supplement their sales of larger-ticket items such as elevators or automobiles with services that are smaller but longer touch. In such cases, companies can shift their sales model to accommodate cash-strapped customers and move from a “sell the air compressor” model to a “sell the tire refill” model. At times, even more straightforward approaches to inflation mitigation (for example, cost pass-throughs) are more palatable to customers if accompanied with updated business models (for example, where sales are linked to outcomes). In consumer products, for example, the notion of the “Lipstick Index”<sup>4</sup>

<sup>4</sup> Andrea Felsted, “Our lipstick obsession says a lot about the economy,” *Washington Post*, September 13, 2022.

was coined to describe how certain, more accessible products (small “affordable luxuries”) can become popular during times of economic difficulty when larger purchases need to be put on hold. Finding these pockets of growth within whatever business you’re in (and even scaling to new businesses through novel delivery platforms, for instance) can be critical to survival and future growth but won’t happen if an organization is narrowly focused on cost.

### **Resource-light businesses**

When interest rates rise and cash flow dwindles, new ventures that can scale without proportional additions of equipment or workers can reinforce the bottom line of a company whose other divisions require substantial capital assets and head count. These commonly take the form of marketplace convenors. Uber and Airbnb, for example, famously created e-commerce versions of these models. More recent examples are companies that have provided platforms for services that others provide, such as Verbling, which connects language tutors to students, and Bosch-owned Azena, which created an Internet of Things ecosystem for security devices. Companies such as these, with existing relationships and access to users or providers, are in a privileged position to scale these businesses rapidly with little capital of their own at risk.

Similarly, we are seeing new businesses built by “asset owners” take on more business functions that used to be done later in the value chain. Residential real-estate companies such as RXR built businesses during the 2008–09 financial crisis that enabled them to offer new end-to-end customer experiences—for example, move-in assistance or digital concierges for housekeeping or grocery delivery. This isn’t limited to residential real estate: commercial warehouse providers now offer logistical services beyond the four walls, workforce training, and more. If your organization

might not be the best owner of the asset or function, it can still be the best connector of whatever the asset is to whomever needs to use it, depending on your business context.

### **Consolidated or robust supply-chain-driven businesses**

A McKinsey survey in 2020 found that industries experienced supply chain disruptions lasting for a month or longer every 3.7 years. And this was before COVID-19 lockdowns, trade tensions, war in Ukraine, disruptive weather, and other difficulties snarled global supply chains. This year brought sharp increases in prices of commodities such as fertilizer, aluminum, coal, and steel. While supply chains and commodities tend to correct in the long term, midterm disruptions abound and highlight the comparative resilience of businesses that operate with light exposure to global logistics and overseas production.

These patterns are generating a lot of interest in circular business models,<sup>5</sup> which reclaim the initial product for its raw materials to be used in future production. Such models are meeting new needs from a supply chain perspective but also from an environmental standpoint. One example that is being highlighted as a success is EMMA Safety Footwear.<sup>6</sup> The company created the first safety shoe that had a fully circular business model back in 2017 but couldn’t scale it enough to be profitable. It then engaged with industry competitors to create a bigger ecosystem that has the scale to be fully profitable and significantly less vulnerable to shocks that affect access to raw materials and overseas supply chain disruptions.

Similarly, successful businesses have been built based on providing insights that reduce input costs by increasing yield. Such businesses have thrived in disparate sectors such as semiconductor manufacturing (by increasing chip yields) and agricultural production (by increasing

---

<sup>5</sup> Jos van Hillegersberg, Matthias Olthaar, and Dennis Vegter, “Supply chains in circular business models: Processes and performance objectives,” *Resources, Conservation, and Recycling*, November 2020, Volume 162.

<sup>6</sup> “The circular economy: From enthusiasm to realism,” *European Business Review*, November 11, 2021.

crop yields while reducing input costs such as fertilizer or pesticides).

**Adjacent businesses facing less (or at least different) headwinds**

Often, value pools adjacent to a company's core can be unequally affected by headwinds. The adjacencies—commonly value-chain or market-segment adjacencies—can be value areas to enter, as some incumbent advantages may be transferrable. Our research suggests companies that master moving into adjacencies can deliver 3 percent more TSR over time.

News Corporation was a traditional print-media conglomerate that found itself needing to radically pivot in order to survive. Digital-heavy investment has transformed News Corporation into a market leader in the online real-estate, streaming, and information aggregation sectors. It didn't just move its news from print to online (though it did that as well). It executed M&A-led entries into digital brands such as REA in Australia and Move in the United States and built out adjacent services such as mortgage brokering through the same

platforms. It also purchased complementary data businesses that could plug into existing services and aggregated intellectual property from thousands of news information sources, in different formats and languages.

This play can win across sectors. Many consumer-packaged-goods companies quickly adapted their channel mix, launched direct-to-consumer (D2C) offerings, tailored products for comfort and at-home use, and de-emphasized items like suits or corporate-office furniture and equipment. Materials companies moved downstream, often using D2C or white-label brands where their inputs could capture more value. And financial institutions, which commonly catered to business-to-business or other institutional investors, successfully entered retail banking (Exhibit 3).

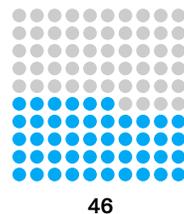
**Making business building part of the resilience agenda**

In a McKinsey survey in 2020, findings suggested that 24 percent of new businesses started by large corporations went on to become viable, large-

Exhibit 3

**As uncertainty has grown over the past three years, executives have doubled down on business building at top-performing companies.**

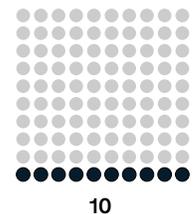
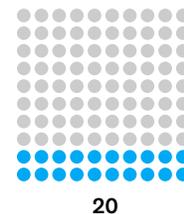
**Company executives who consider business building a top 3 priority, 2022,<sup>1</sup>**  
% of respondents (n = 995)



**Median share of digital-technology spending on new digital business separate from the core in next 3 years, by performance, 2022,<sup>2</sup>** %

Top economic performers<sup>3</sup>

All others



<sup>1</sup>Question: How important is building new businesses at your organization currently? Responses exclude "Don't know."

<sup>2</sup>Question: Over the next 2 years, how is your organization planning to allocate its digital and technology spending across the following initiatives or transformations?

<sup>3</sup>Companies with respondents who reported increases of ≥15% in their organizations' revenue and EBIT over the past 3 years.

Source: Leap by McKinsey Global Survey on New Business Building, 2022; McKinsey Digital Strategy Survey, 2022

McKinsey & Company

scale enterprises. In the current environment, more companies could benefit from the resilience new businesses can provide. But building new businesses is not without risk. Just 20 percent of incumbent companies created 66 percent of the viable, large-scale businesses that have been built in the past ten years.<sup>7</sup> While today's heightened uncertainty could make the prospect of building new businesses less attractive to executives occupied with the health of existing businesses, the risk of *not* broadening the business portfolio could be even greater. Corporate longevity has never been lower, and more than 50 percent of all revenue over the next five years is expected to come from businesses and offerings not in existence today.

Research suggests that the risks of building new businesses can be mitigated and that incumbents possess certain advantages over start-ups.<sup>8</sup> Take a look at what established companies can do to boost their new businesses' odds of success.

***Follow a proven playbook.*** Applying a rigorous business-building methodology can raise the success rate of new businesses and avoid common critical pitfalls.<sup>9</sup>

**Matt Banholzer** is a partner in McKinsey's Chicago office; **Ralf Dreischmeier** is a senior partner in the London office; **Laura LaBerge**, based in the Stamford office, is director of growth strategy and innovation; and **Ari Libarikian** is a senior partner in the New York office.

Copyright © 2022 McKinsey & Company. All rights reserved.

***Make business building a habit.*** Our 2020 survey found that frequent business builders—those that launched four or more businesses in the past ten years—see higher returns on investment, on average, than those building fewer new businesses. These frequent business builders are 2.2 times more likely than other companies to generate returns of five or more times their original investment. The difference can be attributed, in part, to the benefits of having a portfolio of new companies and developing capabilities to build and scale these ventures.<sup>10</sup>

***Start today.*** Our research suggests those that innovated and built new businesses in the last downturn outperformed by 10 percent in the crisis and 30 percent through the cycle. Market discontinuities can create opportunities—the time to start is now.

---

Business building is not without risk, but not taking the leap may be even riskier.

---

<sup>7</sup> "Why business building is the new priority for growth," 2020.

<sup>8</sup> "Building new businesses: How incumbents use their advantages to accelerate growth," McKinsey, December 12, 2019.

<sup>9</sup> "Why business building is the new priority for growth," 2020.

<sup>10</sup> Ibid.

# Addressing the revolving door in risk

As the field of risk management evolves, the value proposition for employees has to evolve as well.

*by Farah Dilber, Ida Kristensen, Anu Madgavkar, and Olivia White*



**It's not just a figment** of our collective anxiety: our complex and interconnected world really has become more volatile. The past few years have brought a succession of public health, economic, environmental, and geopolitical shocks. They've also shown that the price of inadequate risk management can be high. As episodes from the 2008 financial crisis to this fall's meltdown in cryptocurrency platforms have shown, the consequences can quickly cascade in finance. The same is true in other sectors as well. Supply chain<sup>1</sup> breakdowns have caused factory shutdowns and shortages of essential goods worldwide, while product safety failures have caused real harm and major legal liabilities. But risk isn't only about extraordinary events; day-to-day operational failures can also lead to losses, regulatory action, and drops in share price.

Companies need to anticipate and avoid or manage a wider range of disruptions than ever before—and that's where risk and compliance professionals come in. They are charged with keeping their employers resilient<sup>2</sup> by protecting their finances, operations, technology infrastructure, organizational strength, reputations, and business models. Think of the credit risk analyst who flags shaky loan applications, the product safety engineer who certifies that standards are met, the healthcare compliance officer who protects patient data, the risk manager who warns about a reputational issue with a potential vendor, and the business continuity planner who swings into action when a typhoon hits a key supplier.

As risk management has become a bigger imperative, companies have been scrambling to fill these critical roles.<sup>3</sup> Previous MGI research<sup>4</sup> projected that risk-related jobs will grow twice as fast as all occupations in the United States. In 2021, the US unemployment rate for compliance officers was less than half the national unemployment rate, the sign of a tight market.

In most cases where demand for talent outstrips supply, the advice would be to stop holding out

for candidates who perfectly match a checklist of required skills and experience. Recent research<sup>5</sup> from MGI and McKinsey's People and Organizational Performance Practice analyzed four million de-identified online work histories through 2019, across four major economies. Zooming in on the 17,000 risk and compliance professionals in the data set shows that companies are already hiring people into these roles from an extraordinarily wide range of backgrounds. Here, we look at which industries and occupations they're coming from and whether they're staying to build careers in risk.

The talent scarcity that has spurred companies to hire from a broader pool may be due to risk and compliance being relatively new as a formal profession (see sidebar, "A brief history of risk management"). It may also be due to retention challenges. Only 13 percent of the people in our data set who started in a risk and compliance role remained in the field through the end of the period we observed.

Not all of this inflow and outflow is negative. There is value for companies and workers alike in having people rotate through risk. But an overreliance on individuals who are new to the field could become a vulnerability in and of itself. Employers and the profession as a whole can benefit from a greater emphasis on developing and retaining risk professionals with deeper expertise. As the field evolves, the value proposition for employees has to evolve as well. This is an opportune moment for companies to bring more of this function out of "back-room silos" and into the heart of the business.

### **Companies are already casting wide nets to fill the growing need for risk-related roles**

The people in our data set who were risk professionals at the end of their observed work histories took two types of routes to get there. Some started out in the field and stayed in their professional lanes, building specialized expertise over time. But they were the minority; a far larger group transitioned into risk.

<sup>1</sup> "Supply chains: To build resilience, manage proactively," McKinsey, May 23, 2022.

<sup>2</sup> Fritz Nauck, Luca Pancaldi, Thomas Poppensieker, and Olivia White, "The resilience imperative: Succeeding in uncertain times," McKinsey, May 17, 2021.

<sup>3</sup> Mengqi Sun, "Competition for compliance officers intensifies amid regulatory pressures," *Wall Street Journal*, January 19, 2022.

<sup>4</sup> *The future of work after COVID-19*, McKinsey Global Institute, February 18, 2021.

## A brief history of risk management

**Roles dedicated** to preventing and mitigating risk may be a wholly modern business phenomenon, but the basic principles have been practiced for centuries. In medieval times, seafaring nations distributed cargo onto different ships as a hedge against storms and pirates, while fire societies were formed to secure goods from burning houses. During the Enlightenment Era, advances in probability theories transformed insurance from speculation to mass products backed by hard math.

Recognizably modern professional approaches to risk management gained wider traction after World War II. As part of the rebuilding effort, engineers developed models to help identify potential issues prior to embarking on large projects. They also explored a new methodology of evaluating risk by considering the feasible detrimental outcome measured by likelihood of occurrence and magnitude of potential consequence. Around the same time, factory workers sought coverage for work-related illnesses and accidents. In the 1970s, financial institutions explored the use of derivatives to manage risk. Chief risk officer positions started to emerge with the mandate to manage market and credit risk.

The 21st century has brought in a new wave of regulations worldwide. Not only has this increased the compliance burden for individual institutions, it has also formalized expectations that industries need to manage risk overall. Pharmaceutical companies, for example, must consider risk when allocating significant capital to develop new drugs that must clear multiple scientific and regulatory approval hurdles before they can be brought to market; they also face compliance, supply chain, and quality risks. In 2002, the Sarbanes-Oxley Act in the United States outlined financial record-keeping rules, and stock exchanges added risk management governance rules for listed companies. Other countries enacted their own rules for audit, accounting, and internal controls.

Just as catastrophes in the past, such as fires and earthquakes, propelled safety standards and insurance markets, more recent crises have similarly provoked regulatory responses, compliance demands, and advances in risk management. The 2008 global financial crisis sent shock waves around the world and ushered in strong risk-related regulation, notably the 2010 Basel III Accord, which increased supervision

and capital reserve standards for the financial sector.

Major data breaches and hacking incidents have led companies to beef up their cybersecurity defenses and teams. In 2018, the European Union implemented extensive GDPR regulations requiring businesses to protect personal data and creating new compliance demands. The rise of fintech firms has created the need for updated financial regulation and compliance standards. Meanwhile, with climate disasters occurring more frequently and the associated losses climbing ever higher, climate risk management has moved from the purview of development agencies and into the private sector. The COVID-19 pandemic caused unprecedented disruptions to healthcare systems, global supply chains, and more, placing resilience at the top of corporate and policy agendas. More than ever, companies need a robust understanding of their exposure to different types of shocks, vulnerabilities, and potential losses to bolster their strategic resilience.

A whopping 90 percent of the risk and compliance professionals in our data set did not start in risk roles (Exhibit 1).<sup>6</sup> This is double the share of tech professionals<sup>7</sup> who broke into their field from nontech occupations—a striking comparison, since tech is similarly a relatively new and fast-moving

field where demand is projected to remain strong well into the future. As a discipline, risk is heavily reliant on bringing in fresh talent to fill roles. Indeed, there is often value in bringing someone into risk who has well-rounded business experience.

<sup>6</sup> Our analysis focused on the following occupational categories: managers, all other (which includes regulatory affairs managers, compliance managers, and loss prevention managers); compliance officers; business operations specialists, all other (which includes business continuity planners and sustainability specialists); financial examiners; financial specialists, all other (which includes financial quantitative analysts, fraud examiners, investigators, and analysts); and credit authorizers, checkers, and clerks.

<sup>7</sup> Davis Carlin, Anu Madgavkar, Dana Maor, and Angelika Reich, "Overcoming the fear factor in hiring tech talent," McKinsey, August 31, 2022.

Individuals with non-risk-related backgrounds master new skills when they enter the field. We refer to the jump in skills associated with a role move as the “skill distance” associated with that move; this metric reflects the fraction of skill requirements for a new role that were not part of the job someone previously held. The workers who were new to risk and compliance moved an average skill distance of some 40 percent. This is slightly higher than the 35 percent average across all occupations, but it is hardly insurmountable. Furthermore, this skill distance is roughly the same whether or not workers trying to break into risk and compliance change industries. Employers that take a skills-based view when evaluating candidates have the option to draw on talent across industries rather than just looking close to home.

Shifting into risk management from a nonrisk occupation also requires people to make more job

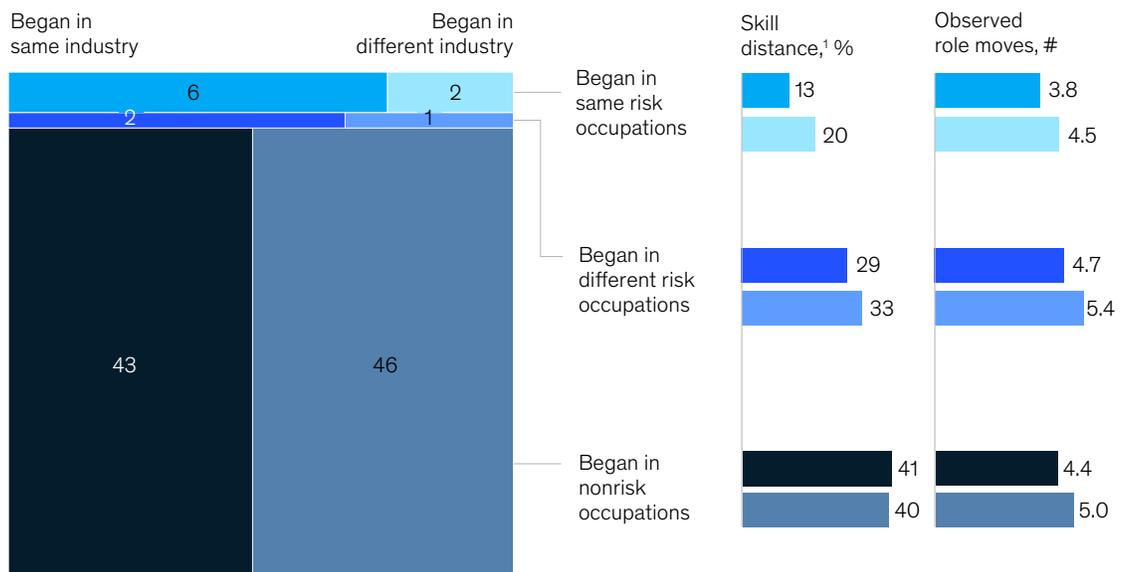
moves through the course of their career—between 10 and 15 percent more, on average—than those who stay in the same risk occupation. Perhaps surprisingly, however, people who started in different risk-related occupations moved about 10 percent more frequently than those who started in nonrisk occupations. This holds whether or not they changed industries, perhaps reflecting the fact that specific types of risk functions are often siloed within companies—and that when committed risk professionals want to branch out and develop new capabilities, they sometimes have to change employers to do so.

Not only do most risk and compliance professionals shift roles, but nearly half of them switch industries over the course of their careers. As Exhibit 1 shows, those risk professionals who change industries undertake more role moves on average than those who remain within the same industry.

Exhibit 1

### Ninety percent of risk and compliance workers started in nonrisk roles.

Share of workers who are currently employed in risk and compliance occupations, %



<sup>1</sup>Measured as share of nonoverlapping skill requirements between two roles, which shows the proportion of new skills required when someone moves into a new role. We identify skill requirements for each role from job posting data, weighted by skill frequency, which gives more weight to skills that are unique to a particular role rather than common across roles.  
 Source: McKinsey’s proprietary Organizational Data Platform, which draws on licensed, de-identified, public professional-profile data, as well as 2018–19 job posting records; McKinsey Global Institute analysis

Overall, 70 percent of the risk and compliance talent moving across industries came from industrials, consumer discretionary products, finance, and technology (Exhibit 2). But companies in certain sectors are more likely to hire people who already “speak the industry language.” Sixty percent of risk professionals in finance and 57 percent of those in healthcare started within the same industry. In both of these industries, regulations tend to be extensive, reflecting the consequences associated with things going wrong in these areas. Companies can benefit from developing professionals who combine mastery of risk management, knowledge of unique compliance requirements, and general industry know-how.

### **Which non-risk-related occupations are the primary launching pads for people who enter the field?**

Companies are hiring people into risk roles who started their careers in all sorts of other white-collar professions. Some emerge as more common launching pads. Ten occupations were the starting points for 45 percent of these risk and compliance workers with nonrisk backgrounds, although they collectively account for just 5 percent of the varied “desk jobs” that feed into the field (Exhibit 3). The greatest numbers were sales representatives, financial analysts, accountants and auditors, management analysts, and engineers.

When moving into risk-related occupations, almost 60 percent of those with nonrisk backgrounds navigate skill distances that are smaller than the average needed to enter the field. They include

those who came from nine of the ten most common nonrisk starting occupations (with engineers being the exception). These jobs involve transferable skills, which makes a move into risk viable. Financial analysts, accountants and auditors, some marketing professionals, and customer service representatives all bridge a skill distance of 30 percent or less when they enter risk occupations. They are able to apply existing skills such as cost analyses, stakeholder presentations, and report preparation and dissemination while adding new capabilities such as regulation impact evaluation, procedure monitoring, and scenario planning.

But people can and do make bigger professional leaps. Some 40 percent of workers entering risk from other types of occupations bridged an above-average skill gap; in fact, almost half of this group overcame a skill distance of 50 percent or more. This group includes people who started their careers as insurance sales agents, teachers, and billing clerks. For example, one individual in our data set worked as a head cashier for a communications company for a few years before becoming a Title 31 compliance officer, a job that involves reporting large casino transactions to thwart money laundering and identity theft. This career move involved a skill distance of about 70 percent.

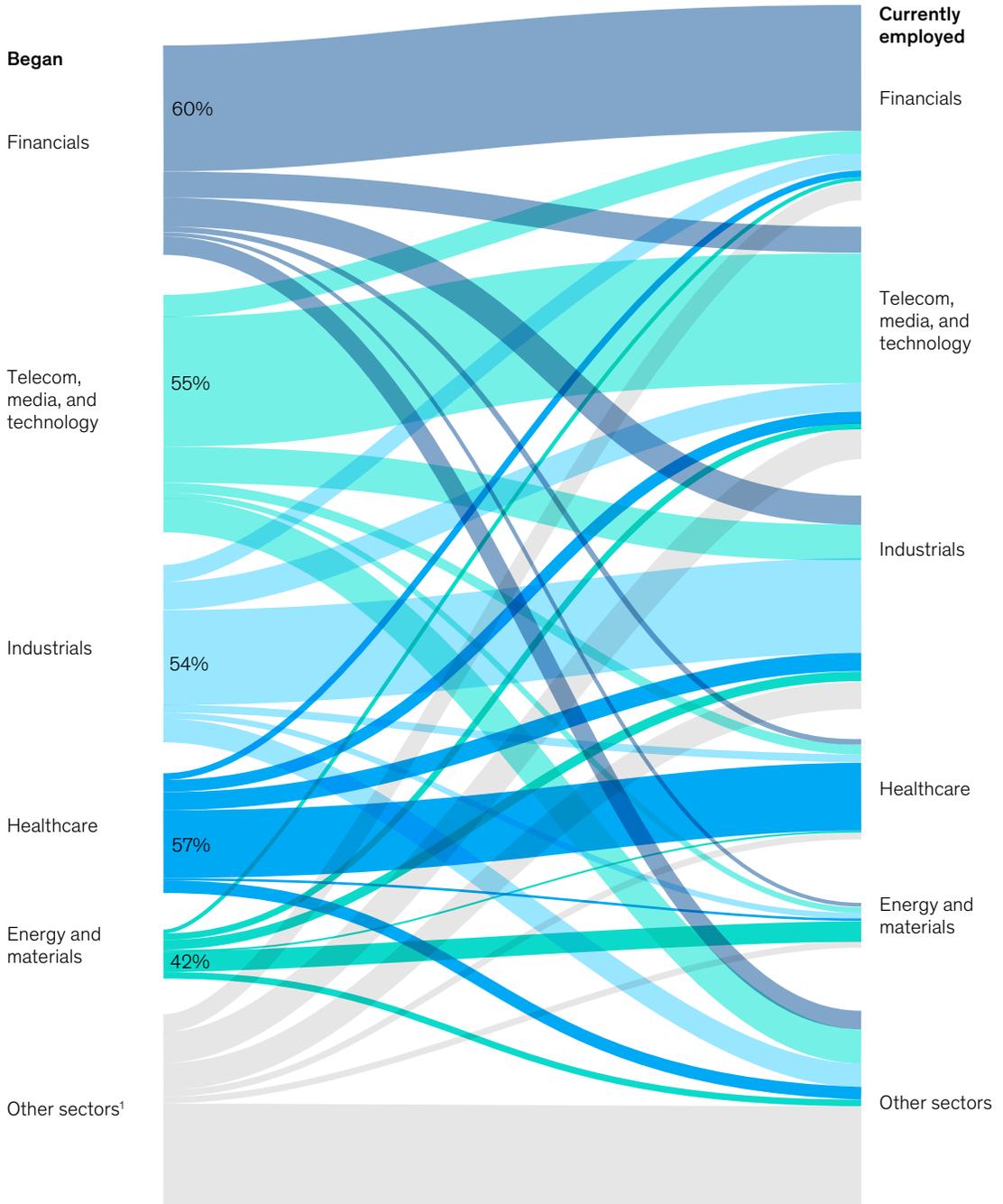
Hiring managers can take a chance on someone who doesn’t fit the mold precisely if they see that the candidate’s mind works in a way that meshes with what the role requires. Regardless of starting occupations, workers moving into risk and compliance for the first time generally bring a

## **Companies are hiring people into risk roles who started their careers in all sorts of other white-collar professions.**

Exhibit 2

**Companies in certain sectors prefer to hire risk and compliance talent with industry experience.**

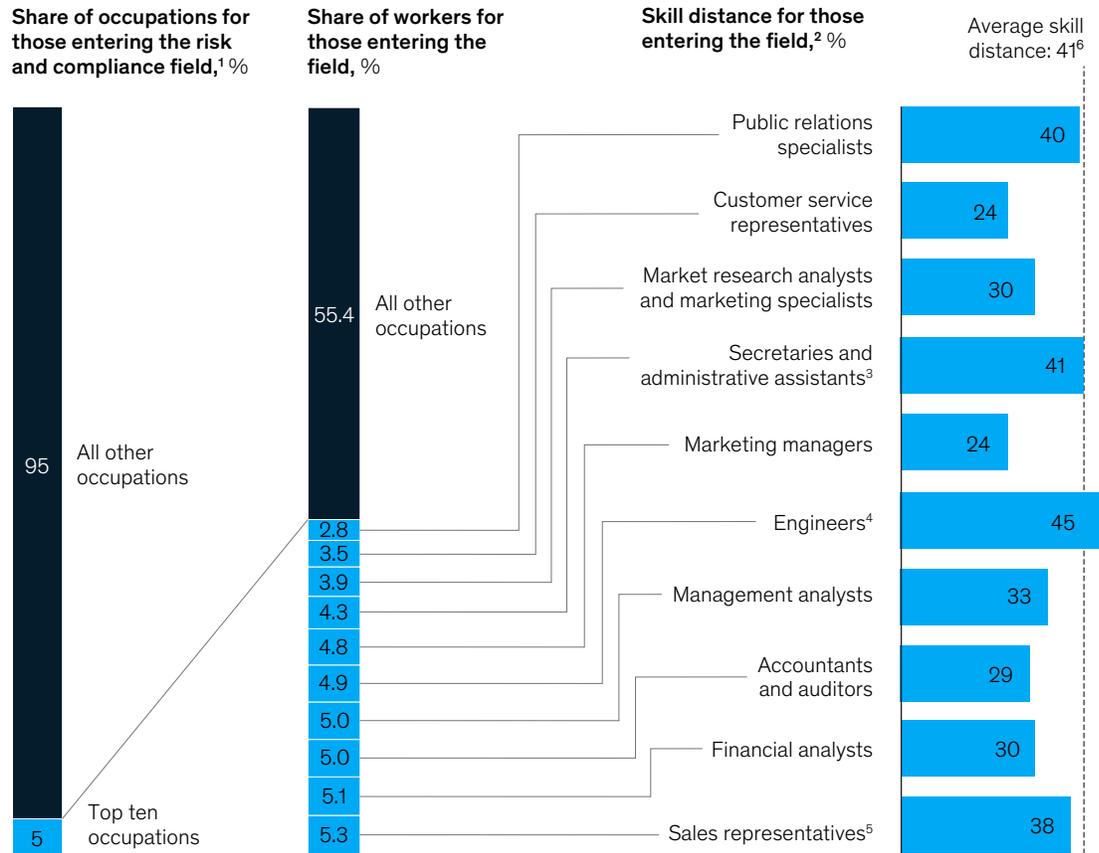
**Where workers in risk and compliance began and are currently employed**



¹Other sectors include consumer discretionary, consumer staples, and real estate. Note that "Other sectors" to "Other sectors" includes cross-industry moves (eg, from real estate to consumer staples).  
 Source: McKinsey's proprietary Organizational Data Platform, which draws on licensed, de-identified, public professional-profile data, as well as 2018–19 job posting records; McKinsey Global Institute analysis

Exhibit 3

## Ten starting occupations launch 45 percent of workers who break into risk from other types of white-collar roles.



<sup>1</sup>The analysis considers risk and compliance workers who started in nonrisk white-collar occupations. This group accounts for 89 percent of all workers who enter the risk and compliance field. <sup>2</sup>Measured as share of nonoverlapping skill requirements between two roles, which shows the proportion of new skills required when someone moves into a new role. We identify skill requirements for each role from job posting data, weighted by skill frequency, which gives more weight to skills that are unique to a particular role rather than common across roles. <sup>3</sup>Secretaries and administrative assistants include legal secretaries, executive secretaries, and executive administrative assistants, etc. <sup>4</sup>Engineers include industrial engineers, civil engineers, mechanical engineers, etc. <sup>5</sup>Sales representatives include sales representatives in wholesale and manufacturing, technical and scientific products, etc. <sup>6</sup>Average represented for all workers entering the risk and compliance field.

Source: McKinsey's proprietary Organizational Data Platform, which draws on licensed, de-identified, public professional-profile data, as well as 2018–19 job posting records; McKinsey Global Institute analysis

set of transversal skills from their prior experience. These include information processing (the ability to compile, categorize, tabulate, audit, and verify data quickly and accurately), inductive reasoning (the ability to combine pieces of information and form general conclusions), and the ability to navigate a complex organization and influence others. These skills are not specific to any given domain, and they can make someone a great candidate for a role in risk and compliance. Importantly, selecting for these skills can remove the “paper ceiling”<sup>8</sup> that

often blocks many talented candidates without college degrees (including underrepresented minorities) from certain roles.

### Few people stay on a risk and compliance career track over the long term

In addition to documenting how thousands of risk professionals first entered the workforce, our data set shows the subsequent paths of people who started

<sup>8</sup> *New at McKinsey Blog*, “Tearing the ‘paper ceiling’: McKinsey supports effort driving upward mobility for millions of workers,” McKinsey, September 23, 2022.

their careers in risk. More often than not, those paths are leading them out of the discipline altogether.

Eighty-seven percent of the workers in our data set who started in risk and compliance roles did not stay in the field. This is higher than the 67 percent of the total workers in our sample who left their starting occupational category (Exhibit 4).

The 13 percent who stayed in the risk profession throughout their observed work histories continued to make role moves and add skills over time. More than half of that group moved into a different risk occupation, a different industry, or both. One worker in our sample started as a financial examiner with a consumer discretionary company before taking a job as a compliance officer with a financial services company. After accumulating a few years of experience in that role, this individual went on to become the director of anti-money laundering

and fraud at another financial company, then assumed a more general senior operational risk management role.

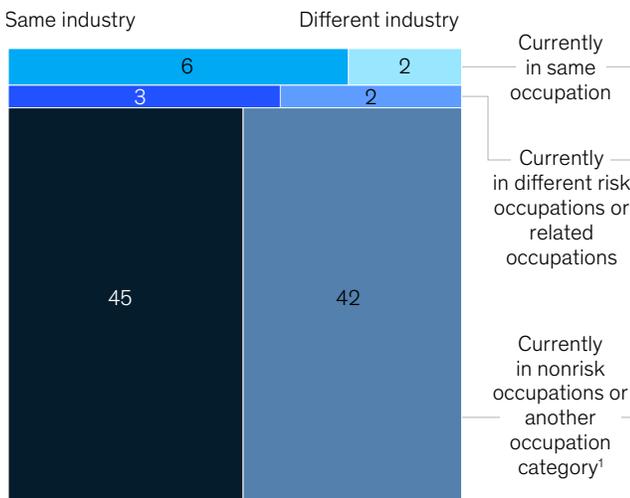
Many professionals appear to be treating risk and compliance jobs as training grounds rather than destinations—and this is not necessarily detrimental. It can be healthy for individual companies if workers rotate in and out of risk to become more well-rounded. They bring differing operational perspectives into the risk function, then diffuse what they learned into the fabric of the organization when their stint is over. It can also be healthy for broader industries to have risk professionals moving across companies (or even from industry to industry) to cross-pollinate best practices.

But should companies be concerned about the rate at which people are leaving the field altogether? If they have a thoughtfully designed rotational

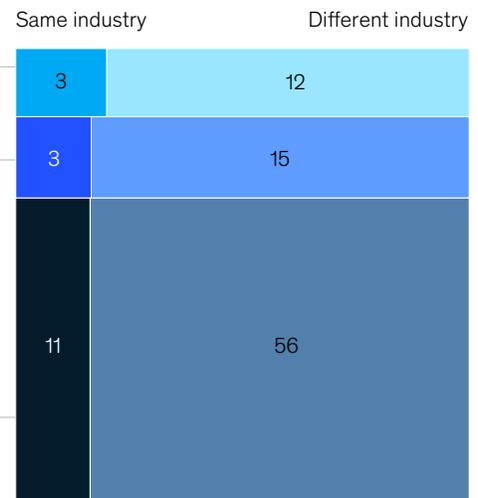
Exhibit 4

### Workers who started in risk and compliance left the field at above-average rates.

Share of workers who began in risk and compliance by current occupations, US and UK, %



Share of workers who began in a specific occupation by current occupations, US and UK, %



<sup>1</sup>An occupation category refers to a grouping of an average 43 related occupations. Examples of occupation categories include STEM professionals, managers, business/legal professionals, builders, educators and workforce trainers, etc. Source: McKinsey's proprietary Organizational Data Platform, which draws on licensed, de-identified, public professional-profile data, as well as 2018–19 job posting records; McKinsey Global Institute analysis

program to give their entire employee base a risk mindset and related experience, perhaps not. But in the absence of a deliberate rotational strategy, high turnover could be occurring because people dislike the roles as structured or cannot see paths to advancement. Companies in this boat need to take action to avoid developing but then losing expertise and institutional memory.

Meanwhile, demand does not appear to be waning anytime soon. Filling roles with people who are new to risk is one strategy for meeting demand; rotational programs are another. But companies need to think simultaneously about retaining people for the long haul.

### **Companies can create a stronger employee value proposition in risk and compliance**

As our complex and interconnected world has gotten more volatile, the stakes associated with getting risk management right have never been higher. With risk and compliance becoming increasingly vital functions, companies need to position the field as a desirable career path that will attract more entry-level talent and ensure that more people stay in the field to develop expertise over time.

A key place to start is by articulating the purpose attached to risk roles. In a 2021 McKinsey survey,<sup>9</sup> 70 percent of respondents said that their individual sense of purpose is largely defined by their work; the importance of meaningful work was especially pronounced among younger respondents. Roles focused on climate and sustainability risks, in particular, may resonate with Gen Z workers. The risk function has a clear purpose attached to it: ensuring the organization's stability, customer safety, and adherence to the rule of law. Beyond promoting these values in the hiring process, managers can help people see how their day-to-day work contributes to these priorities and recognize them as key contributors to the business.

Another priority for improving the appeal of risk as a professional path is reevaluating the day-to-day experience and responsibilities of specific

roles. Some of them, particularly more junior-level compliance roles, have traditionally involved detailed review and documentation to ensure that regulations are followed to the letter and that all government reporting requirements are met. If companies situate this work in the back office, siloed away from frontline operations, it stands to reason that people might leave the field to vary their experience and raise their profiles. Now, however, compliance management systems can remove some of the administrative burden, which opens the door to making compliance jobs into meatier roles where workers can exercise more judgment.

In addition to reexamining and perhaps redesigning specific roles, clear learning and advancement tracks can help junior-level professionals develop into senior risk leaders. People need coaching and well-designed learning pathways to make a mental jump from documenting adherence to rules to thinking more holistically about potential threats and shoring up vulnerabilities. One aspect of this is becoming fluent with predictive analytics and the scenario modeling tools that are transforming the field. Companies can create a win-win by adopting cutting-edge risk management technologies and creating learning programs for mastering them, whether internal or external.

Another option for breaking down silos and formalizing risk training could be lateral rotations. This could have the benefit of giving employees in other functions a solid grounding in why risk management matters while giving junior-level risk professionals more exposure and a better understanding of the risk-related challenges on the front lines. Beyond rotations, involving risk and compliance employees in other types of cross-functional initiatives could improve their connectivity with the rest of the company.

Compensation is another important lever for attracting and retaining risk talent, just as it is in any tight market. In tracking the career moves people made over time, our data set showed that people who started in risk-related jobs were on track to roughly match the lifetime earnings of "desk workers" who started in nonrisk jobs across

<sup>9</sup> Naina Dhingra, Andrew Samo, Bill Schaninger, and Matt Schrimper, "Help your employees find purpose—or watch them leave," McKinsey, April 5, 2021.

all industries. They are on track for 1.1 times higher lifetime earnings than the average worker—but tech professionals, who are similarly in demand, are on track for lifetime earnings that are 1.3 times higher than the average. While risk careers are a solid earning option, compensation may need to be reassessed if companies continue to expand their risk teams, extending a war for talent.

As the nature of risk management changes, companies have an opportunity to elevate the

entire function and bring more of it out of the back office. It is possible to make this happen; after all, in the not-too-distant past, technology professionals were mostly walled off in IT departments and help desks. Now they are front and center in every aspect of corporate operations. In a volatile world, risk management similarly needs to permeate the broader organization and inform both operations and strategy. Risk and compliance professionals at all levels need opportunities to grow in tandem with the field.

**Farah Dilber** is an associate partner in McKinsey's Bay Area office, where **Olivia White**, a director of the McKinsey Global Institute, is a senior partner; **Ida Kristensen** is a senior partner in the New York office; and **Anu Madgavkar** is a partner in the New Jersey office.

The authors wish to thank Nina Chen, Kanmani Chockalingam, and Tiyasha Mitra for their contributions to this article.

Copyright © 2022 McKinsey & Company. All rights reserved.

# Survival through purpose: How Ukrainian businesses endured amid extreme uncertainty

Ukrainian businesses that have survived and thrived in the face of an unforeseen Russian invasion offer lessons in resilience.

*by Oleksandr Kravchenko, Mihir Mysore, Daryna Ostafiichuk, and Andrew Prihodko*



**In the 14 months** since Russia invaded Ukraine, Ukraine's military successes have deservedly captured the world's attention.

No less deserving of attention is the resilience of civilian Ukrainian businesses. Their ability to survive and, in many ways, thrive in extremely difficult situations is justifiably a source of pride and deserves to be recognized and celebrated far beyond Ukraine's borders.

Organizations around the world routinely ask themselves the question: "How do I prepare to respond to the unknowable?" Yet examples of actual unknowable events are elusive. The Russian invasion, especially the attack on Kyiv, represents a unique class of events: one that had not been a part of any scenario build, gave little clear warning ahead of time, scaled within hours, and had a large, immediate, and irreversible impact on companies across the country. The lessons learned in this situation apply to any company hoping to create a tool kit to deal with true black swans.

To compile data for this article, we surveyed executives across more than 100 Ukrainian businesses, analyzed economic data, and interviewed Ukraine's top business leaders.

### **Impact of the invasion on Ukrainian businesses**

To say that conducting routine business in Ukraine has been difficult is an understatement. For more than a year, Ukrainian businesses and citizens have endured a 600-mile front line with territories under regular shelling, energy infrastructure attacks that decreased electricity generation capacity by half, and disrupted fuel supply chains and damaged refineries, the latter leading to hours of waiting in gas station lines to get just ten to 20 liters (2.5 to 5.5 gallons) of fuel.

As we have detailed in other articles, the invasion has ravaged lives and livelihoods across the nation. Beyond the enormous human sacrifices and the many wounded as a direct result of the war, 6.9 million in-country Ukrainians have been

## **Viacheslav Klymov, cofounder of Nova Poshta, a logistics services provider**

"We didn't really believe [there would be] a war since, like most other entrepreneurs, we thought only the escalation in the east was possible. However, we still had a plan for a crisis. On the first day of the war, top management and co-owners met in the office and decided to dedicate that day to ensuring the safety of our own families as well as the families of our coworkers. From the second day of the war, management was gathering in the reserve headquarters, adjusting logistics models and implementing reactive actions. Our core decision

was to continue operations—all in all, the company was idle for only one day.

Regardless of our plan, the situation we faced was far from ideal. In the first week of the war, the volume of our deliveries dropped by 95 percent. Our logistic terminals and big branches were attacked with rockets. We demonstrated our resilience—the second day after the attack, our terminal or branch would reopen and operate. We lost connection with some of our branches for days, but even when the

city was getting occupied, we were keeping the branch open for several days to give out all the parcels that were already there.

The change in the logistics market occurred in mid-March: we reached 30 percent of the prewar volume of parcels; in May it was already 65 percent; and in July, 80 percent. We worked 24/7 to hold on and restore our volume. Having the client's parcel as the center of the operations and tracking its each movement helped us stay afloat."

displaced,<sup>1</sup> with an additional 8.1 million refugees crossing the border into neighboring countries.<sup>2</sup> The economy has been ravaged, contracting by 30 percent relative to prewar levels.<sup>3</sup> Unemployment is at an all-time high of 26 percent.<sup>4</sup> More than 150,000 residential buildings (that is, more than 1.2 million households), 3,170 educational institutions, and 1,216 medical institutions have been damaged or destroyed—a total impact exceeding \$143 billion as of March 2023.<sup>5</sup> Regular shelling of Ukraine’s energy infrastructure has reduced Ukraine’s electricity generation capacity to half its prewar levels. Disrupted fuel supply chains and damaged refineries have strained logistics.

businesses we surveyed, only 2 percent suspended operations completely, mostly as a result of business-critical facilities being inoperable or inaccessible due to the conflict. Nearly two-thirds (63 percent) suffered a large negative impact in some form, but not to a degree that required suspending operations. About 20 percent of companies experienced little direct impact and continued business as usual. About 15 percent experienced a positive momentum—typically companies in the transportation and banking sectors that were aided by a spike in demand for transportation services (especially truck operators) and favorable government regulation for the banking sector (Exhibit 1).

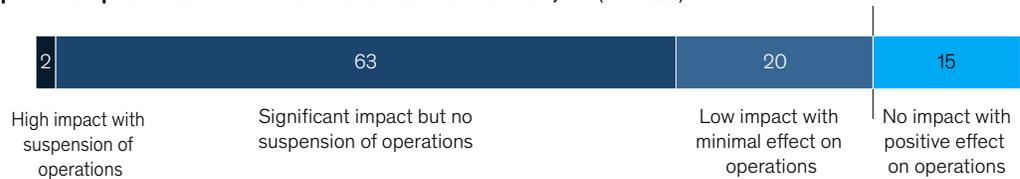
Within this broad environment, Ukraine’s businesses have operated with surprising resilience but saw a wide range of impact on their operations. Of the

The impact on sales, however, has been extremely deep and wide-ranging. One-fifth of companies lost more than half of their sales revenues, and the vast

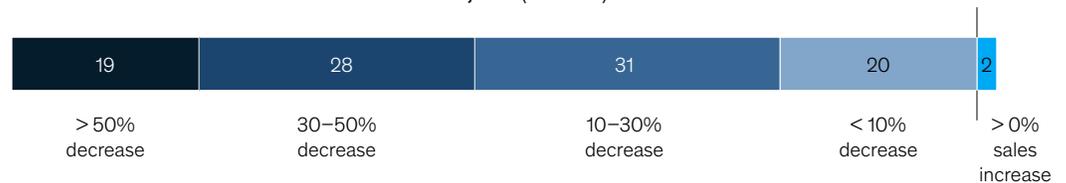
Exhibit 1

### The impact of the war has varied across Ukrainian businesses.

Impact on operations as a result of the war in Ukraine,<sup>1</sup> % (n = 122)



Impact on sales as a result of the war in Ukraine,<sup>2</sup> % (n = 122)



<sup>1</sup> Question: How has the war impacted your business?

<sup>2</sup> Question: How has the war affected the sales volumes of your organization?

Source: American Chamber of Commerce in Ukraine in collaboration with McKinsey

McKinsey & Company

<sup>1</sup> “The number of internally displaced persons in Ukraine is increasing again, according to the IOM,” International Organization for Migration in Ukraine, September 1, 2022.

<sup>2</sup> Operational Data Portal: Ukraine Refugee Situation, UN Refugee Agency, accessed March 2023.

<sup>3</sup> Olena Harmash, “Ukraine suffers biggest economic fall in independent era due to war,” Reuters, January 5, 2023.

<sup>4</sup> *Inflation Report, January 2023*, National Bank of Ukraine, February 2, 2023.

<sup>5</sup> “The total amount of damage caused to Ukraine’s infrastructure due to the war has increased to almost \$138 billion,” Kyiv School of Economics, January 24, 2023.

majority of companies (nearly 80 percent) lost more than 10 to 30 percent of their total sales—a heavy impact for any organization. This reduction in demand has been the biggest challenge that Ukrainian businesses have had to navigate—more so than physical attacks on facilities, disrupted supply chains, interruptions in energy supply, or impact on employee morale (Exhibit 2). The reduction occurred for two reasons. First, as real incomes deteriorated, partly due to persistent unemployment, consumer spending suffered. This is likely to remain a major challenge for Ukrainian businesses in the foreseeable future. Second, companies that relied on physical storefronts have seen a large drop in footfall. Sixty-seven percent of retailers, for instance, felt that

military attacks on their facilities and stores were the largest threat they faced.

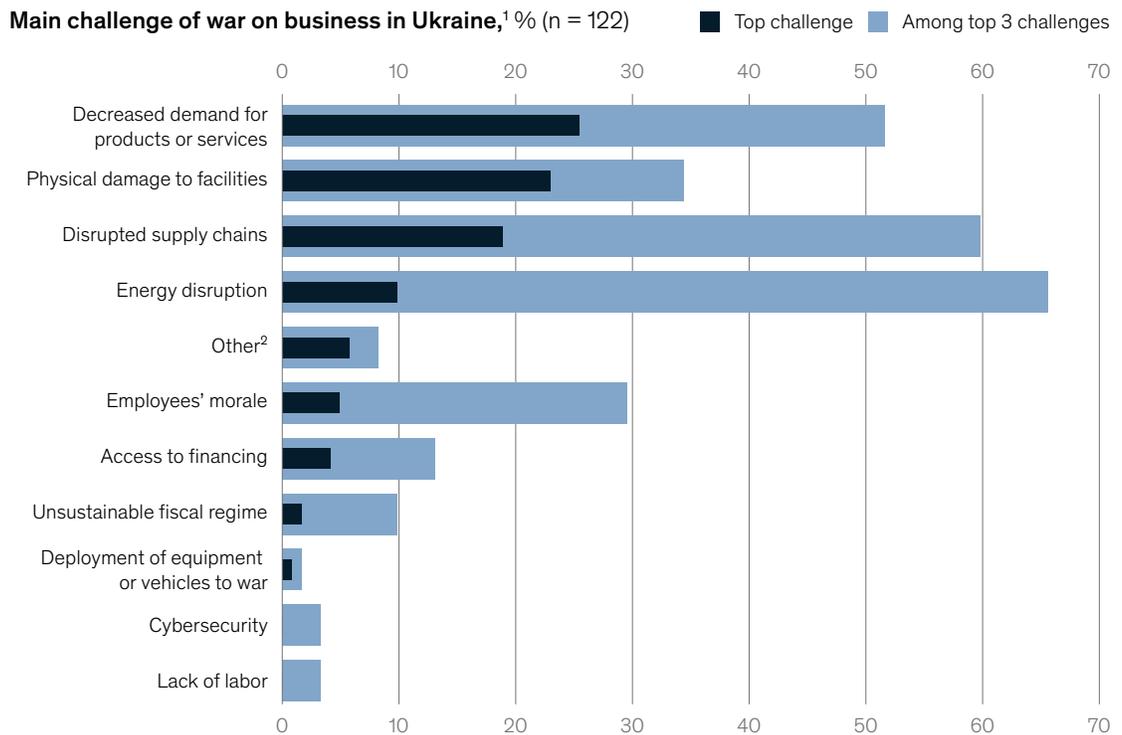
### How Ukrainian business responded, and what worked well

How did companies that faced a large reduction in sales, attacks on their facilities, and extreme shortages in energy and their supply chains respond? Our interviews with several business leaders across Ukraine provided some consistent themes.

The initial reaction was surprise. While the 2014 Crimea invasion and breakout of the war in eastern Ukraine had trained most business leaders to be

Exhibit 2

## Ukrainian businesses cite decreased demand, physical damage to facilities, and disrupted supply chains as main challenges of war in 2022.



<sup>1</sup>Question: What were the most challenging impacts of the war? (Please pick and rank top 3.)  
<sup>2</sup>Other challenges (eg, staff safety, relocation of staff and production site, inflation).

Source: American Chamber of Commerce in Ukraine in collaboration with McKinsey

McKinsey & Company

aware of the speed with which issues could escalate, the scale of the recent invasion, and the bombing of most of Ukraine's biggest cities, Kyiv in particular, was not something many expected. Of the leaders we interviewed and surveyed, none had prepared for an invasion of this scale. Nonetheless, businesses responded quickly—and largely successfully—in four critical areas.

### **Providing people with safety and purpose**

For businesses, the focus on people meant both providing safety for employees and maintaining their morale and motivation. The early emphasis, almost universally, was a focus on safety. The mechanics of obtaining employee head counts, ensuring employee relocation to safer locations, and structuring outreach to families quickly became an urgent, nontrivial task. Within the first week, however, the focus shifted. As companies' assets were bombed and critical infrastructure came under recurring attack, initial concerns about safety evolved into maintaining operations despite the extreme situation.

This push worked. Ninety percent of companies that suffered physical damage to facilities remained open (or reopened quickly). Many of these companies had to close, relocate, or find work-arounds for parts of their operations, but the company operations

overall remained up and running. While this outcome seems almost natural in hindsight, motivating employees to return to workplaces during ambiguity and under dangerous working conditions required significantly more than just monetary reimbursement. In the context of war, employees working in companies that placed a significant emphasis on values and purpose, beyond pure financial incentives, were much more likely to continue to show up to work, because they understood the importance of their work to a broader society.

Partly because of this focus, Ukrainian businesses retained most of their employees. Two-thirds of companies have maintained more than 90 percent of their workforce a year into the conflict.

### **Nerve center: A shift to a wartime operating model**

Given the constantly shifting reality of the situation, ensuring continuity required flexible problem-solving on a near-hourly basis across all levels of organizations. This was particularly important as initial assumptions turned out to be incorrect and had to be changed quickly. For instance, shortly after the start of the invasion, many business leaders assumed that the first impact would be on communications. They started to put in place work-arounds to address this. A communications breakdown, however, never materialized in a

## **Igor Khyzhnyak, CEO of Comfy, a consumer electronics retailer**

"We have always been maintaining a focus on corporate culture, open communications, and shared values. From the first days of the full-scale invasion, I openly communicated with the team about the situation in the company by hosting daily live streams from the office, stores, or on the road, while at the same time supporting employees with relocating and settling in the safer regions—this made employees feel engaged and valued. Second, Comfy has been consistently proving its values orientation

by supporting Ukrainian defenders and volunteers from 2014, but in 2022, we doubled down on social responsibility. Organizing support of defenders and volunteers has united employees around a shared mission: protecting Ukrainian independence. As a result, we saw that the employer NPS [net promoter score] grew significantly, suggesting employees are proud to be part of Comfy. Focus on communications, culture, and values helped us ensure full transparency and made

employees more engaged and motivated. For example, during the first days of war, when we were reluctant to reopen stores and bring employees to workplaces, teams in some stores proactively reached out, asking for permission to reopen stores and start working. Another example is the team of the store in the occupied city of Melitopol volunteered to organize a campaign to encourage looters to return stolen goods. Many people actually returned, and some even paid for, the stolen appliances."

## Taras Kytsmey, cofounder and board member of IT company SoftServe

“We have developed a separate organizational structure to run the company in wartime. This management group was meeting every day to discuss key problems and to take agile actions: What is the situation with the clients? Are our people safe? What is happening on the battlefield? The group was responsible for both controlling the contingency plan execution, including providing business continuity (access to electricity with generators, access to internet with the help of Starlink and fiber-optic connections) and responding to unexpected challenges, such as escalation of war, in a fast and agile way. In order to focus on the most critical tasks, some of the noncore decisions were fully delegated to branch offices so that the wartime management was taking care of the most urgent matters.”

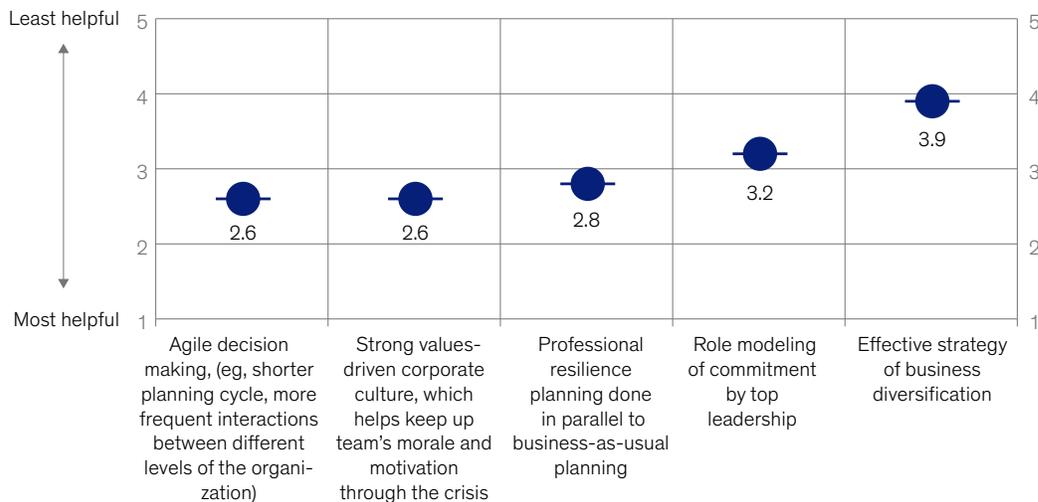
meaningful way. The first major infrastructure problem (in the areas not directly affected by conflict) turned out to be a debilitating lack of fuel. As companies started to resolve the fuel issue, the energy infrastructure was affected. The response to this called for an organizational ability that could not be achieved through normal operations. It required standing up some version of a “nerve center”—a specific organizational architecture that allows institutions to navigate fast-moving disruptions. Decision making moved, for instance, to cross-silo teams focused on specific outcomes, and interaction among different parts of the organization occurred in a more fluid way.

This sense of purpose and an operating model that emphasized agility proved to be the two most powerful forces that allowed companies to navigate the crisis (Exhibit 3).

Exhibit 3

### Businesses in Ukraine view an agile operating model as the most helpful factor in navigating the war.

Techniques most helpful in addressing the impact of the war in Ukraine,<sup>1</sup> rank (1 = high, 5 = low)



<sup>1</sup>Question: Which of the below was the most helpful in addressing the war's impact?  
Source: American Chamber of Commerce in Ukraine in collaboration with McKinsey

### **Leveraging contingency plans and risk mitigation strategies**

The third area in which Ukrainian companies responded quickly and successfully was in their resilience or contingency plans—even though these plans did not anticipate anything close to

dealing with a full-scale war. It turned out that several elements of the contingency plans already in place were universally helpful, allowing organizations to respond faster than they otherwise might have done.

Successful Ukrainian businesses often use diversification strategies to address Achilles' heels such as vulnerable business lines and over-dependence on single revenue sources, suppliers, and locations.

### **Fadi Hraibi, chairman of the board of steel company Interpipe**

“One of the core factors of our resilience during the war was our strategic decision of diversification of the sales market. About seven years ago, we decided to have no more than 15 percent of our revenue in a single market. This decision was driven by the hit in 2014, when Ukraine was first attacked in the east and started to break bonds with Russia. Although this decision sometimes caps our revenue potential in the growing markets, it helps us diversify the risks and withstand major disruptions. In 2022, our diversification strategy helped us to quickly adjust and avoid major losses when the market structure and supply chain blocked some of the markets—it was relatively easy to refocus and double down on the market with rising demand and prices to avoid significant revenue loss.”

Contrast that approach with diversification outside of war. For many, it is a strategic choice frequently implemented in a cautious way—a so-called no-regret move—in the hopes of avoiding significant losses to the potential earnings in a business-as-usual scenario.

But diversification of the “core pain points” suggests prioritizing strategic resilience over potential marginal earnings. Companies can invest in resilience, even if it is not economically attractive or it means giving up some growth opportunities.

### **Personal commitment**

Senior leaders gained new appreciation for their position as role models. Their decision to be present, communicating early and sincerely, also appeared to play an important role in setting employee aspirations on presence and continuity, inspired in part by the actions of the country's leaders.

### **Igor Smelyansky, CEO of postal company Ukrposhta**

“Looking back, one of the core factors of withstanding the war was personal leadership—showing employees that the situation is under control, and everyone is at their place working. In this way people felt safe and appreciated, while the leadership felt empowered and determined to keep it going this way. The message was that the engine of the company is running and each of us is a critical part of it. Although people were motivated by brave country leadership, mobilizing them to continue working for the company required leadership of the company to show that they are sharing risk and working side by side with employees wherever they are and remind the importance of the company for millions of people in this trying time. Besides that, being in hands-on mode helped us be informed and able to make decisions fast.”

### **Future focus, and what businesses are hoping to do differently**

Inevitably, navigating such an extreme, uncertain situation for so long meant that businesses faced more than their fair share of disappointments. Based on this experience, there are three areas that leaders are focusing on moving forward (Exhibit 4).

### **Increased diversification of supply chain and revenue sources**

After the attack on Crimea in 2014, Ukrainian companies that were exposed to Russian markets and markets in east Ukraine suffered a sharp fall in revenue. As a result, many Ukrainian companies

Exhibit 4

**Going forward, businesses in Ukraine see diversification of supply chain and revenue sources as a key priority.**

Planned changes to business after war is over,<sup>1</sup> % (n = 122)

46	29	18	7
Increase investment in diversification	Plan for the “what ifs” to make sure business is resilient to extreme scenarios	Attract and maintain a resilient team and workforce	Other <sup>2</sup>

<sup>1</sup>Question: Looking forward, what would you change the most about your company after the invasion?

<sup>2</sup>Eg, foster collaboration in the leadership team, foster resilience in workforce, provide infrastructure to ensure safety of employees, increase digitization and agility, ensure IT independence.

Source: American Chamber of Commerce in Ukraine in collaboration with McKinsey

McKinsey & Company

originally pursued active attempts at diversification across geographies and the sector.

However, for many companies, this diversification push lost steam after some initial moves, as other business priorities, the passage of time, and optimism bias crowded out that initial focus. Reinstating this focus has become a priority for many businesses. Forty-nine percent of respondents listed this as their top priority to get right, especially after the invasion and even at the cost of additional investments.

**Injecting imagination into resilience and scenario planning**

A consistent theme among leaders is how to inject more imagination into scenario planning. One way that businesses are considering approaching this is to pick examples of historical issues, including ones that never became major crises, and use “what if” thinking to review the different ways in which they could have become far larger challenges. They would then test their strategic plans against these hypothetical outcomes and ensure that they are robust. Twenty-nine percent of leaders across Ukraine listed scenario planning as their top priority moving forward.

**Building a resilient workforce**

As the war enters its second year, business leaders are especially focused on the question of how to maintain momentum as initial adrenaline wears off and the challenges of prolonged conflict mount. They are focused on building greater resilience in their workforce through several mechanisms: formal capability building that emphasizes flexibility, greater situational awareness and problem-solving, establishing escalation mechanisms and protocols, regular use of tools such as premortems, and continuing to build trust within their teams.

**The lessons that Ukraine’s businesses can teach leaders globally**

Some of the lessons that Ukrainian businesses can teach us are ones that we have already learned from other contexts. Nerve centers and agile operating models, for instance, were critical enablers of fast response during the COVID-19 pandemic. Yet, as the sense of urgency faded, many organizations around the world found it tough to sustain that momentum. Ukraine serves as an important reminder that shared purpose, hope, and personal commitment during a major disruption can sometimes do what traditional levers cannot.

It also serves as a reminder of how easily hard-won lessons (for instance, on scenario planning and testing Achilles' heels) can be lost as a major disruption fades from memory and smaller day-to-day challenges take its place.

These experiences also offer some surprises that are not commonly discussed in traditional resilience planning. The focus on building resilience in supply chains and navigating geopolitical shifts over the past few years has reduced the attention management teams give to revenue diversification. It is entirely possible that, if the macroeconomic environment continues its shift toward lower consumer demand, having such revenue diversification will be one of the dimensions that shapes future success. It also offers an important perspective on the need to build a resilient

workforce—a challenge that isn't unique to Ukraine. Many companies today struggle to ensure the right balance of judgment, situational awareness, and proactive action orientation in their workforce at all levels. They also struggle with enabling leaders at every level to dust themselves off after a setback and recommit to the path forward. The tools that Ukrainian businesses are using, from providing purpose and hope to creating tangible tool kits to enable escalations of protocols, could become important sources of insight for businesses around the world.

Above all, Ukrainian businesses, civilians, and soldiers are collectively showing the rest of the world how quiet resolve and determination—to persevere, survive, and thrive as a free society—can shape remarkable outcomes.

**Oleksandr Kravchenko** is a partner in McKinsey's Kyiv office, **Mihir Mysore** is a partner in the Houston office, **Daryna Ostafiichuk** is a consultant in the Warsaw office, and **Andrew Prihodko** is a consultant in the Miami office.

The authors wish to thank Serhii Bilozor and Oleg Prokhorenko for their contributions to this article.

Copyright © 2023 McKinsey & Company. All rights reserved.

# Addressing climate risk and sustainability

**39**

Managing financed emissions: How banks can support the net-zero transition

**49**

A devilish duality: How CEOs can square resilience with net-zero promises

# Managing financed emissions: How banks can support the net-zero transition

Banks finance carbon-emitting businesses, and they finance decarbonization of the economy as well. How effectively they address financed emissions can make all the difference.

*This article is a collaborative effort by Mark Azoulay, Alessandro Casoli, Thomas Kansy, Daniel Mikkelsen, Munya Muvezwa, Daniel Stephens, Sophie Underwood, Shally Venugopal, and Dee Yang, representing views from McKinsey's Global Banking Practice.*



**Over the past few years,** many banks have made public commitments to reduce their “financed emissions,”<sup>1</sup> meaning the emissions they finance in the real economy, in line with the objectives of the Paris Agreement. This commitment is seen in the number of banks joining the Net-Zero Banking Alliance (NZBA), which grew from 43 to 122 banks, representing 40 percent of global banking assets, in just over a year. Membership requires that banks commit to transitioning the emissions from their lending and investment portfolios to align with a net-zero pathway. Even more banks have conducted internal assessments of their financed emissions and are considering whether they want to set a public target. Yet more are considering the journey to measure and set targets for their financed emissions. Stakeholders increasingly expect such efforts, and in many geographies, emerging regulatory requirements will change the disclosure of financed emissions from a voluntary task to one required by financial or securities regulation.

The process of assessing and setting targets for financed emissions is far from simple. It involves multiple complexities arising from differences between sectors, geographic variation, shifting counterparty plans, changing industry standards, and a nascent and rapidly evolving data environment, to name a few forces. Furthermore, the actions that banks take to achieve targets

often create pressure on other objectives, such as revenue growth in critical business areas, and require changes to key processes and policies—a situation that calls for careful reconciliation. Finally, banks must balance their goal of reducing financed emissions with the simultaneous goal of financing reduced emissions—which often involves increasing financing to responsibly heavy emitters who need capital to decarbonize their businesses.

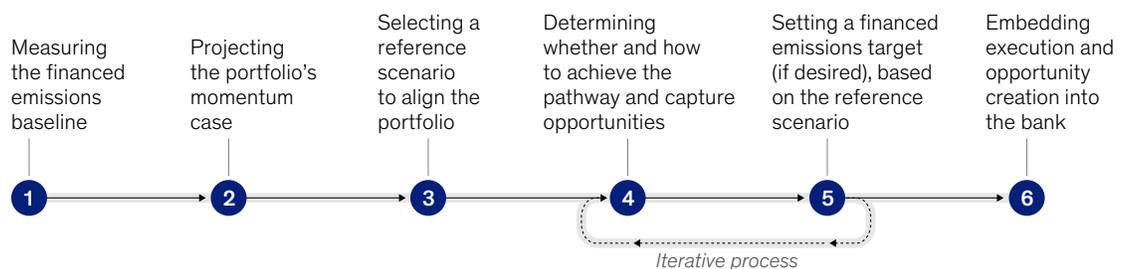
Against this backdrop, best practices are emerging. These can enable banks to create durable, reliable emissions measurement capabilities; set and monitor progress toward well-defined targets; and identify opportunities to support clients in their decarbonization transition. In this article, we outline some of the most critical insights for conducting effective financed emissions baselining and target setting, following a six-step process (Exhibit 1).

### Step 1: Measuring the financed emissions baseline

Before they can set objectives, decision makers need to establish their starting point. The emission baseline is a “footprint”—a measure of emissions in a specific time period, such as a year—that is taken as the starting point against which to measure change. A robust and accurate baseline is critical to understanding the current state of a bank’s

Exhibit 1

### Plans to reduce financed emissions should follow a six-step process.



McKinsey & Company

<sup>1</sup> “Financed emissions” fall into Scope 3, category 15 of the Greenhouse Gas Protocol. The relevant industry bodies are discussing an additional category, “facilitated emissions,” meaning emissions that arise from facilitation activities by capital markets. Because this category is not yet a requirement for disclosure, it is not a focus of this article.

business, the distance to be traveled, and the practical client and operational considerations that must be addressed.

Building a robust emissions baseline requires clear definitions of what the bank will measure in terms of the following criteria:

- **Breadth of sector coverage.** Most banks that have measured their financed emissions baseline have started with a short list of prioritized heavy-emitting sectors, such as oil and gas, power generation, automotive, and mining. The NZBA requires its members to eventually set sector-level targets for priority sectors: agriculture, aluminum, cement, coal, commercial real estate, residential real estate, iron and steel, oil and gas, power generation, and transport. It is important to note that the Science Based Targets initiative has set standards for some, but not all, of these sectors. We recommend undertaking this exercise in waves, starting initially with a few priority sectors and then moving to cover the remaining sectors required by NZBA and regulation, as well as any other sectors that constitute the majority of a bank's portfolio. This creates a comprehensive view of the portfolio and prepares the organization for measurement and action on climate commitment.
- **Asset class coverage.** Currently, the Partnership for Carbon Accounting Financials (PCAF)—the financial industry's primary greenhouse-gas accounting standards body—has provided guidance for six asset classes: listed equities and corporate bonds, business loans and unlisted equities, project finance, commercial real estate, mortgages, and motor vehicle loans. Draft methods have also been published for green bonds, sovereign bonds, and emissions removals. However, the coverage may extend further, as many banks have significant portfolios in other asset classes.<sup>2</sup>
- **Parts of value chain included.** Typically, banks include only specified value chain components in the baseline. This follows the approach pioneered by the Katowice banks as part of the Paris Agreement Capital Transition Assessment (PACTA) developed by the 2<sup>o</sup> Investing Initiative (2DII).<sup>3</sup> The value chain segments in focus are those that control the source of the majority of emissions in a given sector. For example, for automotive manufacturing, the focus is ordinarily on automotive manufacturers (not upstream suppliers of parts or downstream users), as they control the choice of vehicle engine, which ultimately determines emissions.
- **Greenhouse gases included.** Some banks have included only CO<sub>2</sub> in their emissions measurement, but other gases, especially methane, are critical drivers of emissions in certain sectors, including oil and gas and especially agriculture. We recommend as broad a definition as feasible, including all greenhouse gases, especially where they constitute the majority of emissions, as in agriculture. Doing so allows the bank to obtain a more holistic picture of its emissions baseline. The resulting data can be captured in a CO<sub>2</sub>-equivalent metric.
- **Scope of emissions.** For covered counterparties in the bank's portfolio, the baseline typically should include Scope 1 emissions (direct emissions, as from fossil-fuel combustion) and Scope 2 emissions (indirect emissions, as from purchasing electricity, heat, or steam). It should include Scope 3 emissions (emissions from use of products) where they are material, as in oil, gas, and mining. We recommend including Scope 3 in part because international standards and regulatory requirements tend to include Scope 3—but also because insight into Scope 3 at a counterparty level is critical to enabling business development activities.

---

<sup>2</sup> *New methods for public consultation - Draft*, Partnership for Carbon Accounting Financials, November 10, 2021.

<sup>3</sup> *Credit portfolio alignment: An application of the PACTA methodology by Katowice Banks in partnership with 2DII*, 2<sup>o</sup> Investing Initiative, September 2020.

- **Time period for baseline.** Most guidance recommends using the latest available year, which often means at least a one-year lag, based on when emissions reports are available. We recommend using the latest available data and noting any trends that affect potential target setting, with some exceptions where explicitly guided by industry standards (for example, in aviation, where the COVID-19 pandemic resulted in very different emissions profiles in 2020 and 2021 than the norm).
- **Legal entities and attribution.** The measurement and attribution of emissions requires understanding in which sector the legal entities are active. For example, a diversified company might span multiple sectors. Sometimes financing might be identified for a specific purpose or sector, such as a renewable-energy investment that requires bank finance; often, however, sector classification is not straightforward. We recommend taking as granular an approach as feasible, given the existing data, and considering a future tagging system to understand what will be financed.
- **Data and attribution.** In assessing portfolio emissions, banks should work to identify the best possible data source and decide how emissions are attributed. The climate data landscape is currently disparate and requires a carefully crafted data strategy that incorporates a clear climate data ownership model and an operating model for processes and procedures related to climate data acquisition and use, all built around a set of use cases. Often this requires combining multiple inputs—counterparties' own data, third-party data sources, and where available, emissions estimates using public data sets for proxy development—and ensuring they are consistent. Estimates often rely on using emissions factors, which can be drawn from various sources (and are of varying quality). Corporate reporting of carbon emissions remains unstandardized in

most geographies and is often not required for non-listed companies. However, efforts are under way to address this,<sup>4</sup> which may increase data quality and coverage.

- **Score the data.** Working with the preceding criteria, the bank should assess the quality of the baseline data. Scoring methods exist for rating data coverage and quality; an example is PCAF's data quality score. Scoring enables a better understanding of how reliable the data are and where improvements are needed for future iterations of the emissions baseline.

## Step 2: Projecting the portfolio's momentum case

Banks should build a momentum case—a view about what will happen to a given sector or given counterparty—for each sector. The momentum case is essentially the unmanaged outcome: If the bank continued to finance its current counterparties at the current rate, what would its financed emissions be next year, in 2025, and in 2030? The momentum case is based on counterparties' announced targets and aspirations, industry and asset-level forecasts, and announced government policies and targets. Banks can also create bespoke scenarios and simulate sensitivities within the portfolio (for example, counterparties drawing on their lending facility, or counterparties missing their announced targets).

The projections in this step will be most accurate and relevant if the process includes the following efforts:

- **Detailed counterparty-level analysis of announced targets.** Banks should deeply understand announced targets, particularly for the high-exposure and high-emission counterparties. In some cases, this requires translating different counterparties' announced targets to a comparable metric and aligning targets set by parent companies with those of their subsidiaries, which typically have different emissions profiles and hence trajectories. This

<sup>4</sup> *The disclosure puzzle: The role of PACTA*, 2° Investing Initiative.

# A good momentum case needs to be derisked and account for realistic assessments of how quickly a sector or large counterparties will decarbonize.

work may get simpler, because sources that provide emissions data (for example, CDP, Planetrics by McKinsey, Transition Pathway Initiative, and Trucost) are starting to make data on targets available.

- ***Involvement of sector bankers and sector expertise.*** Because momentum cases are fundamentally views about a given sector or given counterparty, it is critical that a bank's momentum cases take into account the knowledge of its individual bankers who serve clients in those sectors. This is particularly true in the sectors that are the largest exposures for a bank and where it likely has the most internal expertise.
- ***Accounting for realistic changes to the trajectory.*** Banks cannot simply base their momentum cases on the “house” view of each sector. A good momentum case needs to be derisked and account for realistic assessments of how quickly a sector or large counterparties will decarbonize. Even the best-laid plans for decarbonization may be derailed by exogenous disruptions, such as macroeconomic impacts, supply chain challenges, and regulatory changes. A bank must ensure that the momentum case is reliable, as it will constitute the basis for understanding the gap to target and the actions necessary to accelerate decarbonization. To account for uncertainty, some institutions have used a range of scenarios and outcomes, as opposed to single scenarios, in developing their momentum case.
- ***Embedding an understanding of technology assumptions.*** In some instances, the momentum case is predicated on the scaling of near-term technologies. Banks should start to build insight and expertise in these technologies, given the impact they could have on the reliability of their momentum case.
- ***Analysis of government policies to understand their impact.*** It is important to understand how government targets and existing and announced policies affect counterparties' emissions, and therefore banks' financed emissions. This is especially true in cross-cutting sectors such as power—which often represent the majority of counterparties' Scope 2 emissions. For example, a target of 100 percent clean electricity, such as the US 2035 target, has an impact on the emissions intensity of electricity-intensive sectors such as aluminum. Last, there are ways for banks to accelerate the achievement of policy targets that provide opportunities for “green growth.” For example, a government target for a significant proportion of heat pumps in residential real estate creates a market for products that finance their deployment.

## **Step 3: Selecting a reference scenario to align the portfolio**

Once a bank understands the momentum case, it can model what it would take to align the portfolio with the Paris Agreement. In practice, there is not just one “Paris aligned” view of the world; rather,

various organizations have published a range of reference scenarios. These represent pathways to Paris alignment and set out the associated temperature rises, probabilities, and emissions trajectories for particular sectors.

A thoughtful choice of a reference scenario for a given sector requires consideration of three issues:

- **Temperature ambition.** The Paris Agreement expresses an objective to keep global temperatures well below 2°C higher than preindustrial levels—ideally just 1.5°C higher. A pathway well below 2°C is very different from a 1.5° pathway: the latter requires much deeper and faster decarbonization, especially between now and 2030. Therefore, the bank’s choice of its temperature ambition has huge implications for the speed of transition required across the bank’s portfolio. The NZBA requires a 1.5° pathway, which means that the more than one hundred banks in the alliance globally are required to align their lending with this pathway.
- **Core scenario.** The existing reference scenarios are published by organizations including the Intergovernmental Panel on Climate Change,<sup>5</sup> International Energy Agency,<sup>6</sup> Network for Greening the Financial System, One Earth Climate Model,<sup>7</sup> and UN Inevitable Policy Response.<sup>8</sup> Banks should choose a scenario for each sector for which they intend to set targets.
- **Scenario expansion.** Off-the-shelf scenarios often lack the detail necessary to set targets for the bank’s priority sectors or geographies, or include assumptions that differ from a bank’s in-house views (for example, on new oil and gas exploration). Some banks therefore “augment” climate models to create custom versions of these scenarios, interpolating more specific geographic or industry-level data as required for their portfolios.

#### **Step 4: Determining whether and how to achieve the pathway and capture opportunities**

Once the bank has established its financed emissions baseline, developed a momentum case, and selected a reference scenario, it has the information it needs for decision making, beginning with whether and how to achieve the reference scenario selected for each sector. It is critical for banks to assess if and how they can feasibly align with that pathway, taking into account the full set of business constraints they face.

In some exercises, this step receives too little attention. We believe that for banks to create a durable target approach, they must get this step right. A thorough process of feasibility assessment includes a few common components:

- **Understand the business implications of potential targets.** Banks need to assess what it would take, in terms of emissions reductions, new green and decarbonization finance, and P&L impact, to achieve the chosen reference scenario, while also considering capital allocation constraints, sectoral and counterparty concentration limits, and credit risk performance. Emissions feasibility assessments that are made in a vacuum—ignoring these realities—are difficult to operationalize. Determining the potential range of impacts on the business requires scenario analysis (Exhibit 2).
- **Extensive involvement of the business and risk.** This exercise must include the business and risk leadership for the relevant sectors. Because the business and risk partners will be implementing the required changes to meet a pathway, it is critical that they fully understand the trade-offs required and the speed of the migration of the portfolio—and believe they can execute the plan while delivering against all the constraints above.

<sup>5</sup> See chapter 2: “Mitigation pathways compatible with 1.5°C in the context of sustainable development,” in *Global warming of 1.5°C*, Intergovernmental Panel on Climate Change, October 2018.

<sup>6</sup> *Net zero by 2050*, International Energy Agency, May 2021.

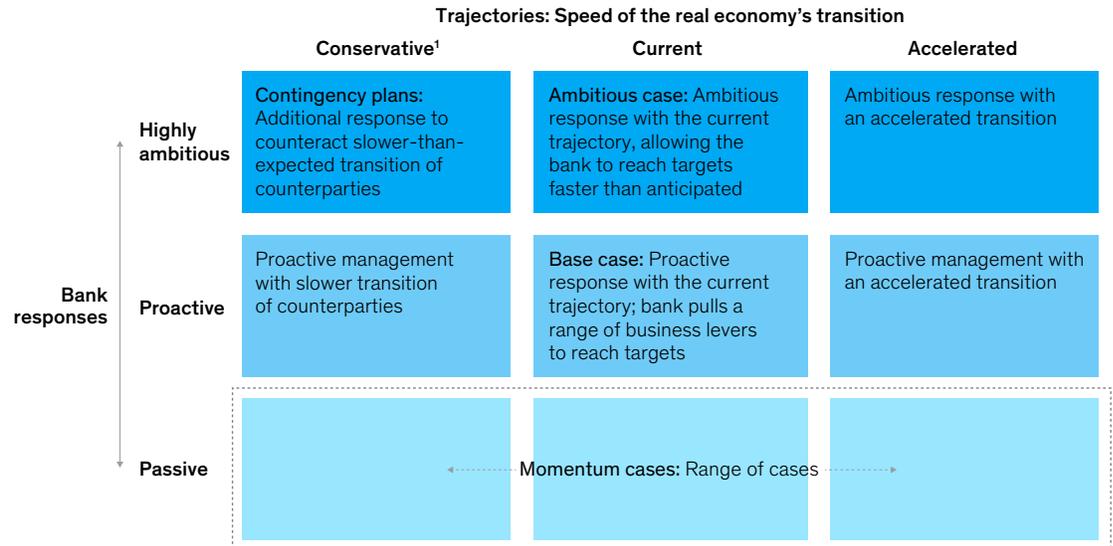
<sup>7</sup> Alison Atherton et al., *One Earth Climate Model: Sectoral pathways to net-zero emissions*, UN Environment Program Finance Initiative, May 2022.

<sup>8</sup> *Preparing financial markets for climate related policy and regulatory risks*, UN Inevitable Policy Response, December 2021.

Exhibit 2

**Scenario analysis can show the range of potential outcomes when evaluating business implications of a given net-zero target.**

**Transition trajectories and possible responses**



<sup>1</sup>For example, historical trends.

McKinsey & Company

- *Identify execution levers required to achieve the target for each sector.* Banks need to build a detailed approach to ensure that they achieve their emissions reductions target. A range of levers can be used to reduce financed emissions, including accelerating green finance and helping existing counterparties in their decarbonization transition.
- *Purposefully identify growth opportunities.* McKinsey Global Institute estimates that achievement of net zero will require about \$9 trillion per year of capital expenditure until 2050 in transport, buildings, infrastructure, power, agriculture, industry, and more.<sup>9</sup> Banks that move quickly to embed net zero into their business execution will be best placed to capture share. Areas for growth need to go beyond classic green-finance activities such as renewables lending and green bonds. There will not be enough of that business, at a high enough return, to support a successful alignment of the portfolio. A feasible pathway will need to use decarbonization finance, for example, as a tool to grow while also aligning the portfolio with emissions reduction targets. This is true for lending, and as targets begin to include facilitated emissions, it will include higher return advisory businesses as well.
- *Building capabilities to understand decarbonization technologies.* Hard-to-abate sectors rely heavily on new technologies to achieve net-zero targets. Banks should start building the capabilities to understand these technologies; such capabilities will open up

<sup>9</sup> "The net-zero transition: What it would cost, what it could bring," McKinsey Global Institute, January 2022.

business opportunities and support reliable credit assessments.

- **Explicitly address the use of carbon credits.** Counterparties can use carbon credits to pursue two objectives: to become carbon neutral, they can compensate by purchasing avoidance and reduction credits, and to become net zero, they can neutralize by purchasing removal credits. Banks need a perspective on counterparty use of carbon credits, as well as an approach to prioritize real emission reductions.

### Step 5: Setting a financed emissions target (if desired), based on the reference scenario

Based on the momentum case, the reference scenario, and the feasibility assessment, banks should then decide what the target should be. In practice, the process of setting targets overlaps with the earlier work of selecting a reference scenario. Determining whether scenarios are feasible would involve estimating the business impact of achieving the target associated with each scenario and evaluating whether meeting the target would be feasible.

Setting the target requires decisions in a few key areas:

- **Financed emissions target metrics.** Banks generally choose metrics from among the four commonly used metrics for financed emissions. These are absolute emissions (reduction in total sector-level financed emissions); physical intensity (reduction in emissions per unit of activity, such as kilometers traveled); economic intensity (reduction in emissions per unit of revenue); and absolute financing (reduction in exposure to a sector over time). In making a choice, considerations should include the metric's potential impact on ability to finance clients and grow the portfolio, robustness in terms of outcomes for the environment, ease of tracking and measurement, levers available to meet the target, and relevance to the sector's decarbonization pathway. Sometimes a bank adopts multiple metrics (see sidebar, "Other approaches to portfolio alignment").
- **Granularity.** Most banks have publicly announced their targets at a sector level. However, many banks internally have cascaded those targets down to a more granular level, to ensure they are fully actionable.

## Other approaches to portfolio alignment

**The Glasgow Financial Alliance for Net Zero** refers to four other approaches that can be used to ensure portfolio alignment with a net-zero target:

1. binary target measurement, or measuring the percentage of underlying counterparties that have themselves set science-based targets
2. benchmark divergence, or measuring counterparties' divergence from a

net-zero benchmark, expressed as a percentage indicating the extent to which a company undershot or overshot the target

3. implied temperature rise, which builds on the benchmark-divergence model, translating this to a temperature score that describes the global-warming outcome if the global economy were to exhibit the same emissions intensity as the portfolio

4. maturity scale alignment metrics, which assign a score of "aligned," "aligning," "committed to aligning," or "not aligned" based on qualitative and quantitative assessments

In practice, however, the financed emissions approach is the one banks have most commonly adopted to date.

- **How to handle decarbonization financing.** A target focused purely on reducing financed emissions may not effectively address how to finance reduced emissions. In setting targets, banks should create credible ways to measure and report their transition financing while still meeting their financed emissions targets. This approach, addressing the demand for carbon, not just the supply of carbon, will be increasingly critical to the successful transition of a lending portfolio or an advisory book of business. This includes aligning with approaches being developed by bodies such as the International Capital Markets Association that have been exploring the structuring of financial instruments for decarbonization financing.

## Step 6: Embedding execution and opportunity creation into the bank

For banks to reach targets, they must embed their net-zero commitments into their operations, including their commercial execution, credit operations, and management reporting. This effort needs to take into account the bank's other constraints, including capital, liquidity, profitability, and reporting requirements. A complete effort involves several practices:

- **Embed targets into credit policies, data, and incentives.** To ensure alignment with their emissions targets, leading banks are building dedicated frameworks for activities including product development, credit assessment, and pricing. In addition, leading banks are beginning to embed emissions data into data collection processes and looking to digitize and automate the process of measuring financed emissions. Further, banks are starting to consider how to incentivize bankers to achieve net-zero targets, which can be challenging if the targets conflict with short-term returns.
- **Measure, report, disclose, and adjust.** Regulatory requirements and evolving investor expectations are leading banks to publish information on their emissions exposures and remediation activities. Many stakeholders

are increasingly focused on the quality of that reporting and the credibility of commitments, including gaining more detailed insight into how banks will achieve and implement commitments. Finally, banks often caveat that there is some risk of restating the emissions baseline, as data and methodologies improve.

- **Optimize the balance sheet for emissions.** Ultimately, emissions are one more factor around which to optimize the balance sheet. Emission optimization helps make explicit the trade-off between emissions, financial objectives, and risk constraints.
- **Exercise sectoral leadership in must-win sectors.** In hard-to-abate sectors, some banks are working in collaboration with industry to develop solutions and standards. Banks and asset owners in the maritime industry, for example, have drafted the Poseidon Principles, which support climate standards and assessments specific to maritime shipping finance.
- **Involve the board and management.** In most banks, net-zero commitments have been approved by the board or CEO. During this process, it is important to go beyond traditional board governance committees (for example, risk and reputation) to tap into the expertise of all board members, including those who may have experience and insight into real-economy counterparties of the bank. In addition, it is important to bring the whole organization along on the journey. Robust and ongoing syndication is required with those on the ground, such as sector teams and those responsible for risk, finance, model risk management, and data.
- **Acquire and retain talent and expertise.** The industry is experiencing a shortage of deep and practical expertise on climate topics. It is critical that banks start now to improve their capabilities through both upskilling and hiring. Many new capabilities are required: capturing and appraising climate data, assessing clients' emissions reduction targets and transition

plans, and forming a perspective on specific projects and strategies a client might adopt and developing new products and offerings.

- **Get and manage climate data.** Sourcing client-level emissions data and other external climate data is very challenging; it often involves multiple data vendors and extracting client-level data from multiple sources, including often unstructured data sets. Several actions can support improved availability and usability of climate data, including assigning accountable data leads and clearly defining roles and responsibilities for data ownership and use, mapping the data landscape by priority use cases, building high-quality targeted data assets, and expanding the bank's existing data architecture to incorporate climate data effectively.
- **Build client engagement.** Typically, banks have specialist groups handle emissions

calculations and assessments in an initial set of priority sectors, which simplifies the initial task of involving the bankers and building their capabilities. However, as an institution starts to move to other sectors, involving the bankers and credit teams becomes critical. This requires a concerted effort on two fronts: building the capabilities of frontline teams and cascading emission reductions targets to priority clients, including development of client-level account plans for client engagement.

---

Banks can play a critical role in facilitating an effective transition to a lower-carbon global economy. Banks can facilitate the growth of green alternatives and help companies that need to decarbonize. Through allocating capital and supporting their clients, they have the potential to be—as they must be—leaders in the transition.

**Mark Azoulay** is a partner in McKinsey's London office, where **Alessandro Casoli** is an associate partner, **Thomas Kansy** is a partner, and **Daniel Mikkelsen** is a senior partner; **Munya Muvezwa** is a partner in the Charlotte office; **Daniel Stephens** is a senior partner in the Washington, DC, office, where **Shally Venugopal** is an associate partner; **Sophie Underwood** is an associate partner in the Brisbane office; and **Dee Yang** is a partner in the New York office.

Copyright © 2022 McKinsey & Company. All rights reserved.

# A devilish duality: How CEOs can square resilience with net-zero promises

Amid turbulence on the path to net zero, leaders will have to be much nimbler to balance resilience with an energy future that is secure, affordable, and clean. Five actions can help.

*by Bob Sternfels, Anna Moore, Daniel Pachtod, and Humayun Tai*



**What a difference a year makes.** In November 2021, business leaders showed up in force in Glasgow at the UN Climate Change Conference (COP26), pledging to take on the challenge of reaching net-zero greenhouse-gas-emission goals by 2050. While no one believed that the path to net zero would suddenly become easy, commitments made to target nearly 90 percent of CO<sub>2</sub> emissions for reduction signaled that the private sector was truly engaged. Then major new headwinds began swirling: surging inflation, war in Europe, energy insecurity, and a potential global recession. Still, governments pressed ahead, passing major climate legislation packages in Europe and the United States. More than 3,000 companies have made commitments on net-zero pathways.

At the time of COP26, McKinsey released a perspective on the requirements needed to secure a net-zero carbon emission transition.<sup>1</sup> It was clear, given the challenges to deploying capital at scale, managing economic dislocations, and scaling up supply chains and infrastructure, that the path would not be linear and would include slowdowns and backstepping. Ultimately, sustainable systems are more value creating than traditional ones. But countries and companies must balance trade-offs among net-zero commitments, affordability for citizens, and security of energy and materials supply.

As disruptions have intensified, the moment confronts CEOs—an organization’s ultimate integrator—with a devilish duality. As net zero has become an organizing principle for business, executives are on the spot to lay out credibly how they will deliver a transition to net zero while building and reinforcing resilience against the certain volatility of ongoing economic and political shocks. The zigs and zags of present conditions will tempt some leaders with exclusive choices—doubling down on fossil fuels, for example, at the expense of new and emerging renewable technologies. Leaders will face multiple calls on their attention, as well as concerns about how quickly to drive a sustainability agenda forward.

We believe that the right response to such challenges has always been a matter of “and,” not “or”—that is, maintaining focus on the long term while adjusting in the face of present conditions rather than opting for one or the other. A resilient stance, being prepared to withstand shocks and poised to accelerate into a changed reality, permits companies to weather not just the current moment but also the future storms that are likely to come their way in a world of rising risks.

The task is neither simple nor easy.<sup>2</sup> Yet as leaders prepare to gather in Egypt for the 2022 UN Climate Change Conference (COP27), there is also good news: today’s reality is that sustainability, economic competitiveness, affordability, and national security dovetail as never before. To make the most of the situation, CEOs can shape strategy around resilience now to tap value-creating businesses tomorrow as the world continues to head toward net zero in the long run. In this article, we present five core actions to help meet the dual imperatives at the heart of a new sustainability strategy.

## Stormy weather

The path to net zero was always going to be fraught with complexities. Recently, several “weather fronts” have emerged, posing significant challenges to leaders across both the private and public sectors.

## Energy availability and security

The Russian invasion of Ukraine and the resulting energy crisis in Europe are reminders that, fundamentally, disruption in energy markets can wreak havoc on the global economy. In response, countries are boosting the use of fossil fuels, including coal and gas, and extending the life of conventional energy infrastructure, which is under growing pressure.

Physical risks are proliferating. Europe saw a record-breaking heat wave this summer. Floods devastated Pakistan this autumn, and tropical storms raged across Japan, the Koreas, and China.

---

<sup>1</sup> “Solving the net-zero equation: Nine requirements for a more orderly transition,” McKinsey, October 27, 2021.

<sup>2</sup> “The net-zero transition: What it would cost, what it could bring,” McKinsey Global Institute, January 2022.

In the United States, Texas saw an unprecedented grid failure in 2021, with a near miss in California this year. There are important choices to be made, some of which entail trade-offs between climate mitigation and climate adaptation—for example, rebuilding versus relocating and investing in cooling versus keeping energy consumption down—all of which occur within a limited envelope of infrastructure funding.

### **Affordability**

Prices are rising across the globe, driven by the energy crisis in Europe, the growing food crisis resulting from the invasion of Ukraine, and a recovery from the COVID-19 pandemic that has been faster than expected, and, though welcome, has put pressure on supply chains. The outlook is ominously recessionary.

There is a growing perception that net zero comes at the expense of affordability, with a zero-sum trade-off. The universal problems of supply chain and talent shortages complicate the equation, particularly as deployment for the new assets and infrastructure needed for the net-zero transition pick up. This, in turn, could result in price spikes for the key inputs needed for the net-zero transition. Companies also face growing challenges in securing the parts, labor, and specialized skills they need to execute on net-zero commitments. From heat pumps to recycled textiles and insulation installers to carbon management data scientists, companies are struggling to match supply to customer demand.

### **Governance and regulation**

A key tenet of any orderly transition to meeting net-zero goals is demonstrating ongoing governance and cooperation among public- and private-sector institutions, meeting commitments, and maintaining public support for progress toward cutting greenhouse gases. The war in Ukraine has already reduced the potential for such cooperation. Also, the United States is seeing growing backlash against standardized environmental, social, and governance (ESG) reporting requirements and skepticism of ESG funds that some criticize as punishing fossil-fuel producers and hurting local economies. The outlook for aligned standards, requirements, and public support is becoming murkier.

## **Shaping a resilient sustainability strategy**

There is an increasingly popular view that leaders will need to navigate a zero-sum trade-off between addressing climate action headwinds and sticking to their commitments for achieving an orderly net-zero transition. However, while the path to net zero will not be a straight line, and some regions will step back commitments for the short term, the long-term trajectory remains intact.

More important, these discontinuities also create opportunities and imperatives. We believe that the potential is great to shape a resilient sustainability strategy that creates a virtuous cycle of managing short-term shocks; bolstering prospects for an affordable, clean, and secure energy future; and improving the long-term competitiveness and value creation of companies. In part, this is because competitors may be tempted to pause during this period of turbulence. That creates a chance for those who stay the course to gain strategic distance:

- *Energy independence via accelerated use of renewables and clean power and capture of the full potential of energy efficiency and distributed electricity.* Diversifying the energy supply with renewables, green hydrogen, and green power promotes national energy security and economic competitiveness. In Europe, the invasion of Ukraine and the effort to develop a future free of dependence on Russian gas has prompted Europe to raise its commitment to renewables (alongside imported natural gas in the medium term and possibly nuclear power in the longer term). Of course, energy market resiliency must be built in tandem—for example, by rewarding the firming of capacity in power markets as the share of intermittent power generation grows. Even prior to the invasion of Ukraine, industrial policy across the larger European economies was focusing on clean-energy tech as a source of national competitiveness. Examples include European cleantech export policies, support for rare-earth minerals needed for new climate tech, and national funding to drive local new-energy industrial growth (such as the US Infrastructure Investment and Jobs Act). Companies that

operate in this space or serve those in it have clear long-term growth prospects.

- ***New value from existing systems.*** It is becoming increasingly apparent that it may be possible to repurpose existing methods of carbon-intensive production with additional enabling technologies to future proof them for a sustainable future. Numerous examples—such as retrofitting existing industrial production facilities for carbon capture, use, and storage (CCUS); using hydrogen blends in methane carriers; and employing direct air capture (DAC)—are emerging to lower carbon intensity and transform existing systems into cleaner alternatives. Owners and operators of this infrastructure that invest in future proofing through CCUS, DAC, or other tech stand to make significant gains. Repurposing rather than stranding these assets will not just enable affordability and system resiliency but also provide incumbents with greater confidence that decarbonizing their legacy assets is feasible.
- ***Sustainable materials transition.*** The energy transition requires a materials transition. Projected electric-vehicle demand, for example, will raise demand for cobalt, copper, lithium, nickel, and rare-earth minerals, putting further upward pressure on pricing across these commodity classes. Commitments to decarbonize automotive, consumer goods, packaging, and other sectors are also already driving supply-demand shortages in aluminum, plastics, and steel. We expect, for example, a 50 to 60 percent shortage of same-cycled plastics compared with demand in 2030, driving significant green premiums. If supply eventually meets demand, early movers will most stand to gain. With the current commodity cycle at a peak, cash can be reinvested in nascent materials opportunities that will be in clear demand in the longer term.
- ***New sources of capital.*** Investors and incumbents have started a new wave of capital deployment toward net zero, including investments in new materials, new climate tech, and more adaptive supply chains. These

investments are increasingly following a “private equity plus” model, with heavily involved investors helping build new green challengers from the outset. Countries and regions with hard-to-abate sectors are also increasingly important sources of climate tech and transition capital as they seek to decarbonize while preserving economic growth. These ventures are in their early stages as voluntary and policy-driven demand materializes and grows. But they demonstrate that while there is some ESG-related backlash, a broader set of clean investments are continuing to grow.

- ***Voluntary carbon market (VCM) development.*** A critical pillar of enabling net zero and financing asset decarbonization is the ability to value carbon with liquidity. VCM will be critical. Although the situation is unsettled now, we see expanded dialogue and more concrete actions toward establishing VCM at the country and private-financing levels. For example, several Southeast Asian governments are shaping national voluntary carbon exchanges, and company commitments to voluntary carbon have grown.
- ***Reshaped value chains and reindustrialized nations.*** In some developed economies, game-changing policies are supporting new net-zero value chain plays. The US Inflation Reduction Act commits \$370 billion in climate spending, targeting the creation of new sustainable industries across the country and accelerating cleantech, such as green hydrogen. Another US legislative measure, the Bipartisan Infrastructure Law, is poised to prompt reindustrialization, replacing value chains based on internal-combustion engines with electric- and battery-based alternatives. In the European Union, the Fit for 55 and REPowerEU packages will create new winners across industries and reshape value chains in a way that brings affordability to the fore. New forms of public-private partnerships will therefore also need to take shape. Instilling more control within regions and individual countries will enable them to protect against price shocks for citizens.

Done well, pursuing these opportunities should create a virtuous cycle for economies among

affordability, decarbonization, energy security, job creation, and resilience. Renewable energy is one obvious example with the potential to promote energy security, create high-quality jobs, and reduce emissions in tandem. New sources of capital and VCM could make sustainable investments more affordable, bringing them to market sooner, and successful delivery of these projects would in turn boost returns and attract further capital. Sustainable materials could facilitate the energy transition while creating new value from existing systems and infrastructure. And so on. These examples illustrate the power and possibility of the “and”—a flywheel-like effect that enables meeting security, socioeconomic, and sustainability goals in parallel.

Across these opportunities, incumbents are positioned to succeed more often than not. Every incumbent player, especially in hard-to-abate sectors, has two sets of opportunities: decarbonizing while extending fossil-fuel-based core business (potentially earning green premiums as a result, as early movers in sustainable materials already are) *and* building new sustainable businesses. Incumbents can use existing cash flows and strong balance sheets to fund new sustainable businesses that lay the foundation for future growth. They can afford to invest for the long haul and place bets across multiple new clean technologies—another advantage when the end point is clear but the precise path to get there is not.

### **Resilience today and value tomorrow: Five actions for CEOs**

The pressure to demonstrate real progress on and create true value through sustainability is growing. The world has, however, entered an era that is increasingly challenging for CEOs and business leaders to navigate. There is a new strategic paradigm—one with reasonable certainty of where the world needs to be in the medium and long term and tremendous volatility in terms of how and when it will get there.

Leaders must build resilience to today's shocks to build tomorrow's champions. Some approaches will be easier than others and offer a good starting point.

### **Accelerate capital deployment with a private-equity mindset**

Leading with resilience while navigating toward net zero means participating early in the materials transition and green-business-building wave to secure exposure to promising innovations (exhibit). Earlier-cycle investments have higher risk but also higher returns because they benefit from early policy funding, greater willingness for counterparties to participate (for example, through sustainable aviation fuel contracts, which guarantee demand from airlines that allows investment in supply), new talent, and the opportunity to gain first-mover advantage in nascent and emerging value chains.

In many industries, there will be multiple sustainability winners. For example, we expect both hydrogen-fueled and electric vehicles to be part of the 2050 ground transport system. This is another reason to consider an investor mindset—spreading bets across multiple potential investments earlier. Companies can further manage their transition risk by aggressively pursuing operational decarbonization measures that already pay for themselves (for example, through energy efficiency) while making longer-term investments in sustainable infrastructure and building new businesses. Pursuing energy efficiency and rapidly scaling distributed clean heating (for example, via heat pumps) will become a critical lever in Europe to manage the energy crisis.

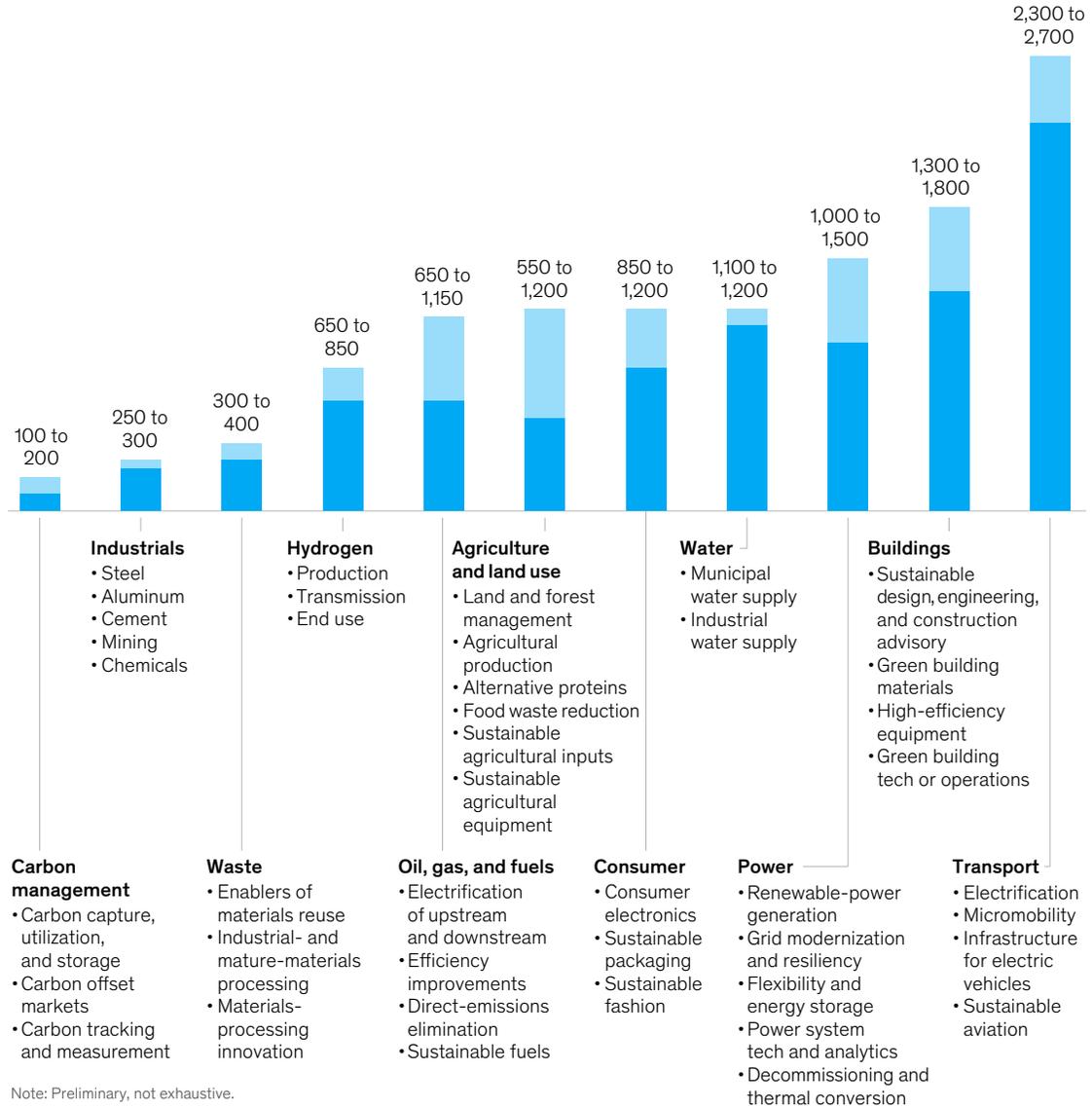
### **Play offense through a sustainable value creation strategy**

Two objectives should be paramount: to extend and decarbonize the core business and to build new sustainable businesses in reshaped value chains. This would represent an “*Apollo 11* moment” in many industries—a moon shot requiring not just incremental improvements but wholesale rethinking of how to build, operate, and maintain every sector of the economy. Leaders need to make quantum leaps to meet the moment, by getting smart on climate tech fast, engaging with the innovation ecosystem, and leveraging their engineering and business-building talent. Similarly, a focus on sustainability—and ESG measures, more broadly—is defensible, pragmatic, and needed. CEOs can articulate their approach to ESG topics proactively

Exhibit

## Eleven high-potential value pools could be worth more than \$12 trillion of yearly revenues by 2030 as the net-zero transition advances.

Addressable market size in 2030, selected categories, \$ billion



by focusing on resilience and value creation, not simply as part of “right to play” and risk mitigation.

### Go beyond net zero

CEOs should also look to make their companies net nature positive. Actions include moving ahead in the game on biodiversity, demonstrating stewardship

of shared water and air resources, ensuring a responsible supply chain, and contributing to a just transition, among other steps. Adaptation investments to address physical risks will also be critical. Companies able to weather the storm, literally, will have a material advantage.

In some instances, sustainability aims come into conflict—for example, lithium brine operations are less carbon intensive than hard-rock extraction but consume far more water. CEOs will need to weigh current trade-offs carefully and invest in innovation that meets multiple aims, “squaring the circle” in an increasingly complex ecosystem. The bar is rising on sustainability; companies need to have a plan on these and other factors.

### **Build the partnership and ecosystem muscle**

CEOs should realize that the challenge of maintaining resiliency while driving toward net zero is too great to go it alone. New public–private partnerships will be needed because many of the emerging energy and materials value chains will require full ecosystem development. Consider, for example, clean-fuel consortiums, such as those developing around hydrogen hubs, and shared CCUS networks. There are also opportunities to partner with competitors on shared tech road maps to mitigate tech risk and to better direct innovation funding.

### **Aggressively reskill leadership teams, boards, and frontline workers**

As companies embrace a sustainable future, they will need new skills. Sustainable fashion, for

example, requires fully rethinking design, manufacturing, procurement, marketing, and waste management processes while also better tracking carbon emissions and circularity. Talent across the organizations will need to reskill to meet these new demands. Companies need to identify the skills needed for their more sustainable business models and work toward acquiring them *and* building them internally.

---

Navigating the current turbulent period for the net-zero agenda may require temporary responses that, in some cases, may look like setbacks. They need not be. CEOs who understand the virtues of strategic resilience know that addressing immediate hardship and building a sustainable future can—and should—be pursued at the same time. By maintaining vision, moving nimbly, playing offense, and embracing opportunity instead of recoiling from risk, leaders can improve the future of their businesses and the planet.

**Bob Sternfels** is McKinsey’s global managing partner and is based in McKinsey’s Bay Area office, **Anna Moore** is a partner in the London office, and **Daniel Pachtod** and **Humayun Tai** are senior partners in the New York office.

Copyright © 2022 McKinsey & Company. All rights reserved.

# Managing risk in uncertainty

**57**

A technology survival guide  
for resilience

**66**

Response and resilience in  
operational-risk events

**73**

Rate reset presents banks  
with IRRBB challenge

**80**

Navigating economic  
uncertainty: New guidance  
for credit risk management

# A technology survival guide for resilience

Resilience means understanding the criticality of a business process, the capability of the underlying technology, the business impact if the technology fails, and the organization's risk tolerance.

*by Jim Boehm, Wolfram Salmanian, and Daniel Wallace*



**It's no secret** that in highly competitive business environments, the demand for organizations to grow and increase revenue and profit continues to rise. While meeting the demand and staying current through digitalization, organizations must remain mindful to be efficient, maintain or reduce costs, and keep employee spending in line.

Moving forward in those two areas is difficult enough, but moving in those directions adds stress on corporate technology systems across the technology stack, from data to applications and network infrastructure. Technology constraints include capacity limitations, system uptime, data quality, and the ability to recover from a catastrophic technological, physical, or cyber event.

Resilient technology is critical in maintaining uninterrupted services for customers and servicing them during peak times. This requires a resilient infrastructure with heightened visibility and transparency across the technology stack to keep an organization functioning in the event of a cyberattack, data corruption, catastrophic system failure, or other types of incidents.

Resilient technology needs to be agile, scalable, flexible, recoverable, and interoperable. In addition, resilience needs to exist not only in the architecture and design but also through deployment and ongoing monitoring.

## Understanding criticality

To achieve resilience, an organization needs to understand the criticality of a given process, evaluate the underlying technology, recognize the corresponding business impact, and know the risk tolerance of the organization and external stakeholders. To get there, an organization needs to understand where and what its resilience is today and be able to answer the question: Could we recover and rebuild after a catastrophic event?

In a 2022 McKinsey survey on technology resilience that assessed the cybersecurity maturity level of more than 50 leading organizations across North America, Europe, and other developed markets, 10 percent of respondents indicated they have been forced to rebuild from bare metal (for example, due to a catastrophic event), with 2 percent stating

that they have already attempted to recover from bare metal but were unsuccessful (for example, deliberate testing).

Additionally, 20 percent of respondents indicated they had already attempted to recover from bare metal and were successful, 8 percent attempted to recover from bare metal, 18 percent noted they had plans to attempt to recover from bare metal, while 36 percent stated there were no plans to recover from bare metal.

Technology resilience is the sum of practices and foundations necessary to architect and deploy technology safely across the technology stack (see sidebar "McKinsey technology resilience principles"). Technology resilience prepares organizations to overcome challenges when their technology stack is compromised, reducing the frequency of catastrophic events and enabling them to recover faster in the case of an event.

In the McKinsey survey, when asked what the recovery time objective was for their highest critical applications, 28 percent of respondents said immediate, while 34 percent said it was less than an hour, 14 percent said less than two hours, and 20 percent said less than four hours. One of the respondents in the survey stated, "Critical systems and applications down for a significant amount of time can cost financial institutions billions of dollars."

Resilience capabilities fall on a maturity spectrum from simple redundancy to duplicate servers through to advanced capabilities with resilience built into architecture by design.

- **Architecture and design:** Mature organizations incorporate technology resilience into enterprise design and architecture. Resilient designs incorporate elements of lessons learned from operations, incidents, and industry trends to make risk-informed technology investments.
- **Deployment and operations:** Resilient operations should consider not only operational contingencies, such as disaster recovery or performance demands that increase exponentially, but also the root cause of incidents that arise during business as usual

## McKinsey technology resilience principles

The following are five principles that we see as foundational for maintaining resilient technology:

- Applications, systems, platforms, and the IT workforce itself are flexible and scalable. On an ad hoc basis, the enterprise can scale up or down services to support changing availability, capacity, or performance demands as business requirements shift.
- Data sets, applications, and network technology infrastructure are fully visible to owners of data and applications and are traceable within the environment. Owners are empowered to raise problems and prevent outages before they occur.
- Data sets and applications are built to be agile and mobile. They must not be tied to a single platform or environment but rather can be rapidly moved between or across platforms as needed.
- The architecture of applications, data platforms, network environment, and the IT workforce is resilient by design—that is, the architecture was built to compensate for probable failures (at lower maturities) and recursively inform future designs (at higher maturities).
- Systems are interoperable and leverage standard API schemas that are defined and well-architected both internally and between and among third-party services.

to improve procedures, training, and technology solutions.

- **Monitoring and validation:** This consists of reactive or backward-looking metrics at lower maturity levels. At higher maturity levels, organizations shift to more proactive (and ultimately predictive) measures to stress-test solutions prior to rollout or drill preplanned responses and contingency plans for the most likely eventualities.
- **Response and recovery:** Organizations with high technology resilience not only respond as incidents occur but also continuously feed lessons from their own operations, industry trends, and catastrophic events back into the design, operation, monitoring, and planning for their enterprises.

Understanding the components behind the life cycle allows an organization to chart what its technology resilience journey looks like through four maturity levels. Levels one and two are foundational capabilities, while levels three and four are more advanced (Exhibit 1).

Level one consists of basic capabilities where resilience is left to individual users and system owners, and monitoring involves users and customers reporting system outages.

Level two consists of passive capabilities where resilience is through manual backups, duplicate systems, and daily data replication. There is also monitoring at the platform or data center level for system outages.

Level three consists of active resilience through failover. Resilience exists through active synchronization of applications, systems, and databases, and active monitoring at the application level for early indicators of performance and stability issues.

Level four consists of inherent resilience by design. Resilience is architected into the technology stack from the start through inherent redundancy and active monitoring at the data level, which includes anomaly detection and mitigation.

From a life cycle standpoint, the range for architecture and design goes from limited visibility

## A technology resilience journey is one of evolving complexity and maturity.

### The resilience journey by level

#### Foundational capabilities

##### 1 Ad hoc resilience

Resilience left to the individual users and system owners

Monitoring consists of users and customers reporting system outages

##### 2 Passive resilience

Resilience through manual backups, duplicate systems, and daily data replication

Monitoring for system outages at the platform or data center level

#### Advanced capabilities

##### 3 Active resilience through failover

Resilience through active synchronization of applications, systems, and databases

Active monitoring at the application level for performance and stability

##### 4 Inherent resilience by design

Resilience architected into the technology stack through inherent redundancy

Active monitoring at the data level including anomaly detection and mitigation

McKinsey & Company

of dependencies for critical and noncritical applications in level one to dependencies and data flows built in for resilience from initial design for critical and noncritical apps in level four.

For deployment and operations, regular system outages in level one take the place of resilience tests, and in level four, random, in-production failover tests validate resiliency.

In the case of monitoring and validation, in level one, users monitor their own systems for outages, whereas in level four, monitoring and alerting is built in by design, allowing for proactive response.

For response and recovery, responses to incidents in level one are ad hoc and based on best judgment, while in level four, detailed and diverse “break glass” procedures are drilled in by design.

### Resilience spectrum

At the most basic level, resilience is left to the individual system owners and users. The database administrator is responsible for backups of organizational data, and individual employees must back up their own data. Moving along the maturity scale, organizations rely on centralized resilience capabilities managed by IT or a resilience function.

Such an organization provides for centralized backup solutions, maintains redundant core systems, and monitors for system outages and application failures.

Resilience can be achieved passively by conducting manual backups daily. Shifting to an active approach involves monitoring for early indicators of data corruption or anomalous system behavior and taking preemptive action. Those indicators include an increasing volume of corrupt data, an unusually high number of brief network outages, and a greater than usual number of servers that require reboots. Active resilience further occurs through the continual synchronization of applications, systems, and databases such that redundancy is always maintained. Periodic failover tests are also conducted to validate resilience.

The most advanced level of resilience consists of inherent resilience. The primary differentiator is that resilience is built into the technology stack by design. Inherent resilience includes capabilities such as duplicate processing across systems, modular redundancy, and automatic fault tolerance within systems. True inherent redundancy enables the ability to conduct random in-production failover tests to validate resiliency. Only the technology that enables an organization’s most critical business processes needs to be inherently resilient by design.

Most organizations fall within the passive-to-active resilience capability spectrum while making a continual shift toward active resilience.

## How to become resilient

It's one thing to lay the groundwork and point out the issues behind resiliency, but just how does one get there? There are three keys to establishing and growing a more resilient technology environment:

1. **Blame-free culture:** When problems arise, teams and managers don't look for whom to blame. They focus on fixing the problem and preventing recurrences. Teams celebrate members who expose vulnerabilities and weaknesses as necessary to build more resilient technology.
2. **Metric-driven approach:** Teams relentlessly measure their own performance and focus on which incidents they created (for example, from releases or patches) or repeat incidents that have the same root cause.
3. **Rehearse the outage:** Teams anticipate problems and iteratively build up and train to respond to complete system outages. They build from individual applications to systems to products (systems of systems) to entire services.

When asked in the McKinsey survey how often they test critical applications, slightly more than 60 percent of respondents said they test at least quarterly. Of those, 14 percent said they test weekly, 26 percent test monthly, and 26 percent test quarterly. Overall, 28 percent said they test every six months, while 6 percent indicated they test annually. One respondent said, "There are quarterly tests. The most critical systems will be tested each time, less critical systems are spread out to every other test cycle or annual at a minimum."

## Risk-based resilience

Companies are moving to risk-based technology resilience (see sidebar "A European bank works toward technology resilience"). The approach recognizes that not all assets are created equal,

nor can they be equally protected in today's all-encompassing digital environment.

Some capabilities and underlying assets are more critical to a company and its business than others. In the case of a large electric utility, for example, these include the technology systems that enable the delivery of electricity and natural gas to customers. In the case of a global financial-services institution, the trading platforms and those that support customer transactions are most critical. The digital business model is, in fact, entirely dependent on trust and the ability to continuously provide customer-facing services. Ensuring resilience over those assets is at the heart of an effective strategy to protect against catastrophic events.

## Three levers for building technology resilience

Reaching high maturity levels of technology resilience requires building the necessary capabilities and processes, using three levers as guidance.

1. **Prioritize services:** Not all business services and systems should be treated equally when deploying technology resilience capabilities. Rather, organizations should define their most critical services. These comprise the crucial services needed to fulfill obligations to customers, business partners, regulators, and society.

After identifying and obtaining cross-business agreement on these services, understanding the underlying technology landscape is essential, including which applications and systems enable the most critical business services, their dependencies, and how they are interconnected.

Having visibility and transparency into the most critical services and underlying applications, systems, and dependencies allows for assessing the current resiliency level and prioritizing the target resiliency on an application-by-application and system-by-system basis.

In the McKinsey study on resilience, respondents were asked, "How long did it take

## A European bank works toward technology resilience

**Understanding technology resilience** is an ongoing process, and by employing the three levers—prioritization, assessments, and remediation—organizations can find success. When it comes to technology resiliency, one European bank with traditional data centers recognized it needed to understand its deficiencies to be able to withstand any type of incident it might face, whether technologically based or cyber-related.

Regulatory findings and recent crises such as the COVID-19 pandemic, geopolitical conflicts, energy crises, and flood risks led management to evaluate and strengthen its technology resilience and crisis capabilities.

Understanding that its technology landscape consisted of a mainframe and server environment that was largely on premises in data centers, the bank analyzed how it could enhance resiliency—particularly by leveraging the cloud for out-

of-region recovery—and flexible scaling of resources and related services.

The bank included cybersecurity and data privacy efforts to harmonize application and infrastructure requirements as one of the key levers for efficient implementation.

### An Asian fintech leverages cloud for resilience

A fintech with a cloud-only infrastructure landscape launched its business and immediately faced security, performance, and scalability challenges. Through a review of the cloud configuration, the fintech identified gaps and set a path to enhance its resiliency. This was done primarily via the setup of regions/availability zones, load balancing, data mirroring, and snapshots/backups combined with testing. The initiative enabled continuous service delivery in the face of outages and cyberattacks and supported the hypergrowth of customers using its services.

### Oil and gas company transforms in face of acute threats

A large oil and gas provider faced frequent cyberattacks, even as it undertook a digital transformation that had the potential to increase the exposure of its critical systems. A successful attack on its assets had the potential to affect the economy of an entire nation.

The organization started by identifying and protecting its “crown jewels,” its most important assets, via a library of controls. This was supported by building capabilities and addressing silos (for example, between information technology and operational technology capabilities). The organization outlined and implemented its plan for a holistic cybersecurity transformation, including a three-year implementation program with prioritized initiatives, an estimated budget, and provisions to integrate technology resilience in its digitization effort.

you to get all your highest critical applications in line with recovery time objectives?” Here, 26 percent of respondents said less than a year, while 28 percent said less than two years, and 26 percent said less than three years.

One survey respondent said, “Being clear on which systems are most critical is an ongoing challenge.” While another said, “It was during Superstorm Sandy that the bank became very concerned about its robustness, or lack thereof, and this became front and center immediately afterward.”

- 2. Assess current level of resilience and review past crises:** The next step involves assessing existing technology resilience. Organizations should assess their maturity along the same S-curve of technology resilience, whether they

have resilient architecture and capabilities, passive resilience capabilities, active resilience with failover capabilities, or are inherently resilient by design.

Typically, organizations should assess current capabilities across the four dimensions in the technology resilience life cycle. The most mature organizations incorporate technology resilience into application and system architecture by design. In deployment and operations, resilient operations should consider not only operational contingencies but also the root cause of incidents that arise during business as usual to improve procedures, training, and technology solutions. Monitoring and validation involves reactive or backward-looking metrics at lower maturity levels. At higher maturity levels, organizations shift to proactive measures to look

for early indicators of resilience issues and test responses and contingency plans for the most likely eventualities. In response and recovery, organizations with high technology resilience not only respond as incidents occur but they also continuously learn from their own operations, industry trends, and catastrophic events and then feed that back into technology design, operation, monitoring, and planning.

Organizations should also assess past technology-related incidents to identify and uncover common contributing factors that can be addressed to increase technology resilience. Typically, this consists of selecting a broad set of recent incidents of varying duration and impact across business functions to evaluate. It can also include reviewing past incident-response logs, incident reports, and other documents to identify contributing factors, patterns, and insights that can shed light on causes behind the incidents. Meeting with engineers, product or system owners, release managers, and others involved in the incident and response can uncover what happened, what could have been done to prevent the incident, and initiatives that are already under way.

Once completed, it's then possible to identify and ultimately remediate common factors that led to these incidents, which may include the technology environment itself, the architecture of applications, interfaces between systems and third parties, and the way resilience was built into individual applications and systems.

- 3. Remediate gaps through cross-functional approach:** Achieving technology resilience requires remediating gaps identified from the assessment of the organization's technology and diagnostic of past incidents. In addition to directly remediating the gaps identified, organizations should take the following specific steps:

*Determine ownership and accountability* of technology resiliency activities. Distributed systems can have multiple owners, and developers aren't always incentivized to architect and design for resilience. Applications and systems must have clear

ownership, developers need incentives with performance goals tied to the resilience of the applications they build, and third-party contracts must include resilience requirements and clauses. The absence of clear system ownership and responsibility to remediate gaps will adversely affect the resilience of systems and business processes.

*Enhance governance* toward resiliency levels. Oversight of resilience must be implemented from the executive level on down. The C-suite needs to communicate its intention and prioritization of resilience down through all levels of the organization with continuous and consistent messaging. Town halls, quarterly newsletters, and webinars are all potential avenues. Likewise, awards and other forms of monetary and nonmonetary incentives may be considered.

*Increase resilience* of individual applications and application groups. The resilience of individual applications and systems also needs to be addressed and remediated. Those that have the highest number of incidents and support the most critical business processes need to be prioritized for remediation.

*Strengthen the hosting setup*, whether on premises or on cloud. The underlying platforms on which applications reside also need to be designed and architected for resilience. Organizations should work to increase the resilience of their on-premises and cloud platforms through remediating known gaps and addressing contributing factors from past incidents.

*Work with third parties* to increase the resilience of third-party platforms on which critical business processes and services depend. There could be incentives for third parties to build resilience into their systems, and contracts must have clear language on performance requirements for resilience.

*Implement regular testing*, with a focus on automatic failover capabilities for large-scale environments and selective exercises for testing recovery from backups. Resilience is a continual journey, and systems must be regularly tested

and validated to ensure they meet resiliency requirements. Monthly failover testing of business-critical applications is essential both at the application and platform level. Failover tests should be designed to test not just the expected but also the unexpected, such as through hard shutdowns or introduction of capacity surges that mirror real scenarios. Where resilience is built in by design, applications should be randomly shut off in production to test whether inherent resilience is truly architected and built into the application or system.

In the McKinsey survey, when asked what failover scenarios respondents planned or tested, 92 percent said they tested for a single data center failure and for nonphysical impact, while 52 percent said a dual data center failure, and 83 percent said physical impact (Exhibit 2).

When asked, “Do you run unplanned failover testing?” (that is, randomly shut off systems and test the organization’s ability to respond/recover), 54 percent said none, while 26 percent said most critical applications only, and 20 percent said they test for all applications (Exhibit 3).

## The journey to technology resilience in three steps

With an understanding of the three levers to technology resilience, an organization can embark on its technology journey in three steps.

### Technology resilience diagnostic

Identify two to three critical business processes and map the underlying data sets, applications, and technology systems that enable the processes. Evaluate the resilience of each component of the value stream. This will lead to uncovering the technology resilience of the data, applications, and systems that underpin critical business processes along with risk-mitigating actions.

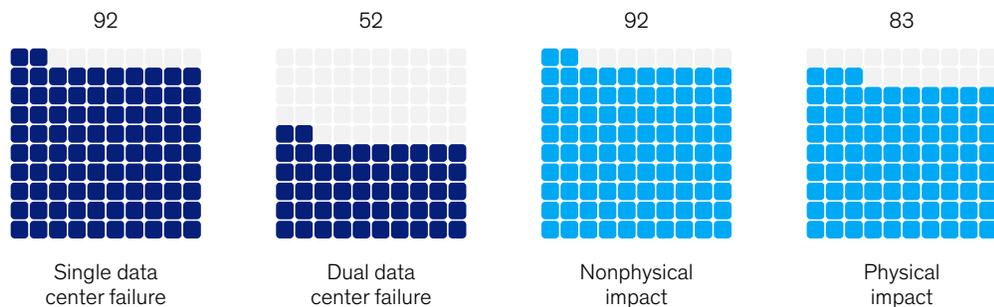
### Conduct an incident retrospective

Conduct a retrospective on recent technology-related incidents to identify common contributing factors and develop remediation actions to decrease the incident rate and increase the resilience of the technology environment. Interview developers, release engineers, and others involved with the incidents to uncover contributing factors and what could have been done to prevent them. The result will provide a stronger perspective on

Exhibit 2

## Single data center failure and nonphysical and physical impact are top of mind in failover testing and planning.

Scenarios planned and tested in failover,<sup>1</sup> % of respondents

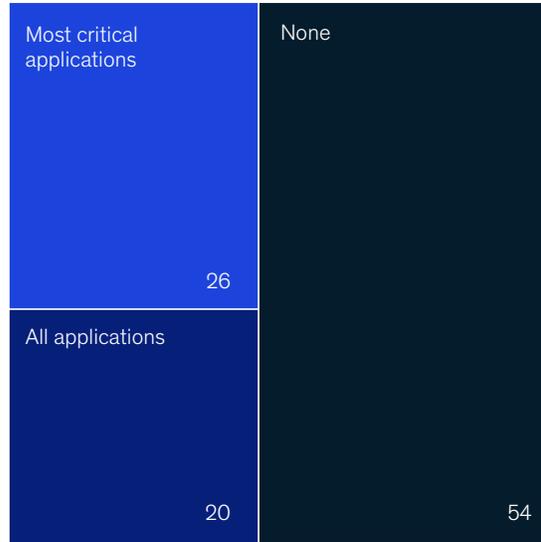


<sup>1</sup>Question: What scenarios did you plan/test failover for?  
Source: Survey of BCM leaders at top banks (pilot, n = 50)

Exhibit 3

**More than half of survey respondents say they do not perform random failover testing, while only one in five tests all applications.**

**Unplanned failover testing, by type,<sup>1</sup> % of respondents**



<sup>1</sup>Question: Do you run unplanned failover testing (eg, randomly shut off systems and test the organization's ability to respond/recover)?  
Source: Survey of BCM leaders of top banks (pilot, n = 50)

McKinsey & Company

contributing factors that led to the incidents and actions that can be taken to decrease the incident rate and increase technology resilience.

**Develop a redundant technology capability**

Design a resilient architecture for one or more components of the technology stack and a future-state technology architecture to address the previous diagnostic and incident retrospective. These capabilities should include a transition and implementation plan and requirements for ongoing monitoring, maintenance, and validation. The result should be a resilient technology architecture, transition, and implementation plan along with monitoring and validation requirements.

Achieving resilience is not a one-time activity; rather, it's an ongoing process and capability that will take time to evolve into a solid defense mechanism.

As with all types of protection, it's not "you get what you pay for" but rather "you get what you prepare for." It would be easy to throw money at all forms of resilience, but understanding what you possess and then having visibility and transparency into what you have will bring focus, allowing any organization to remain resilient and either stay up and running or get back to a steady state as soon as possible.

---

**Jim Boehm** is a partner in McKinsey's Washington, DC, office, **Wolfram Salmanian** is a consultant in the Munich office, and **Daniel Wallace** is an associate partner in the New York office.

Copyright © 2023 McKinsey & Company. All rights reserved.

# Response and resilience in operational-risk events

Direct losses from operational-risk failures are mounting, and in today's volatile economic environment, consequent losses in share price are many times greater.

*by Hugh Dang, Merlina Manocaran, Scott Murff, and Olivia White*



© The Good Brigade/Getty Images

**Controls fail.** Natural disasters strike. Product defects occur. No industry or company is a stranger to operational risk. These incidents carry a hefty price tag: according to the ORX global banking database, more than 65,000 loss events on average occurred from 2016 to 2021, with losses totaling close to \$600 billion over the six-year period.<sup>1</sup>

Direct financial losses don't capture the full impact. Operational-risk events can color a company's reputation among its customers and employees, prompting questions over whether the event reflects foundational issues. Regulators may increase their scrutiny, shifting their interaction model for a particular company or a broader industry.

Perhaps the most telling sign of these near- and long-term repercussions lies in the stock price. Shareholders take operational-risk events seriously: in the months after an event, equity losses are on average five times greater than direct financial

losses. Moreover, the severity of the damage can vary widely, depending on the type of event, industry in which it occurs, and broader market volatility. The following data and discussion give a snapshot of what is at stake in operational-risk events. It's far greater than the immediate damages reported in a headline (see sidebar, "Methodology").

### Operational-risk events trigger persistent declines in share price

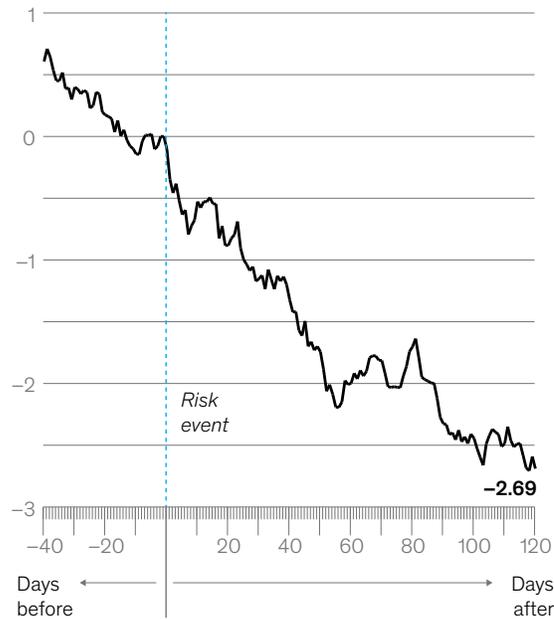
As news of operational-risk events hits the market, share price declines somewhat, in line with the actual fines, settlements, and monetary losses. But over time, total shareholder returns (TSR) continue to fall. Across our sample of nearly 500 operational-risk events at companies in North America and Europe, TSR declined by 2.7 percent in total returns compared with peers during the 120 days after the event. This is equivalent to \$1.9 billion on average, or 3.7 times the average actual loss of \$500 million (Exhibit 1).

<sup>1</sup>Banking operational risk loss data report 2022, ORX, June 2022.

Exhibit 1

## The impact of operational-risk events on shareholder returns deepens in the ensuing weeks.

**Shareholder returns relative to peers on days before/after event,<sup>1</sup>**  
% (cumulative)



<sup>1</sup>Fama-French 3 model for asset pricing, which accounts for risk factors for size, value, and market.

Exhibit 2

**The impact of operational-risk events on shareholder returns varies over time according to the type of event.**

Shareholder returns relative to peers on days before/after event, by event type,<sup>1</sup> % (cumulative)

Improper business or market practices (n = 212)



Suitability, disclosure, and fiduciary events (n = 188)



<sup>1</sup>Fama–French 3 model for asset pricing, which accounts for risk factors for size, value, and market.

McKinsey & Company

**In the eyes of shareholders, not all operational-risk events are created equal**

The decline in share price that follows an operational-risk event varies depending on the type of incident that caused it (Exhibit 2). The two most common subrisks in the data set are:

1. **Improper practices.** The market reacts negatively but gradually to events linked to improper business or market practices. The data indicate that short-lived recovery can occur in the days after the event, but over the period of 120 days, declines are nearly 2.9 percent versus comparable peers, or seven times the average actual losses from such events.
2. **Suitability, fiduciary, and disclosure.** Violations of suitability, disclosure, and fiduciary standards also trigger declines over time, but these occur faster. By fewer than 60 days after the event, average share price drop is 2.8 percent below peers', approximately the level at which it remains at 120 days.

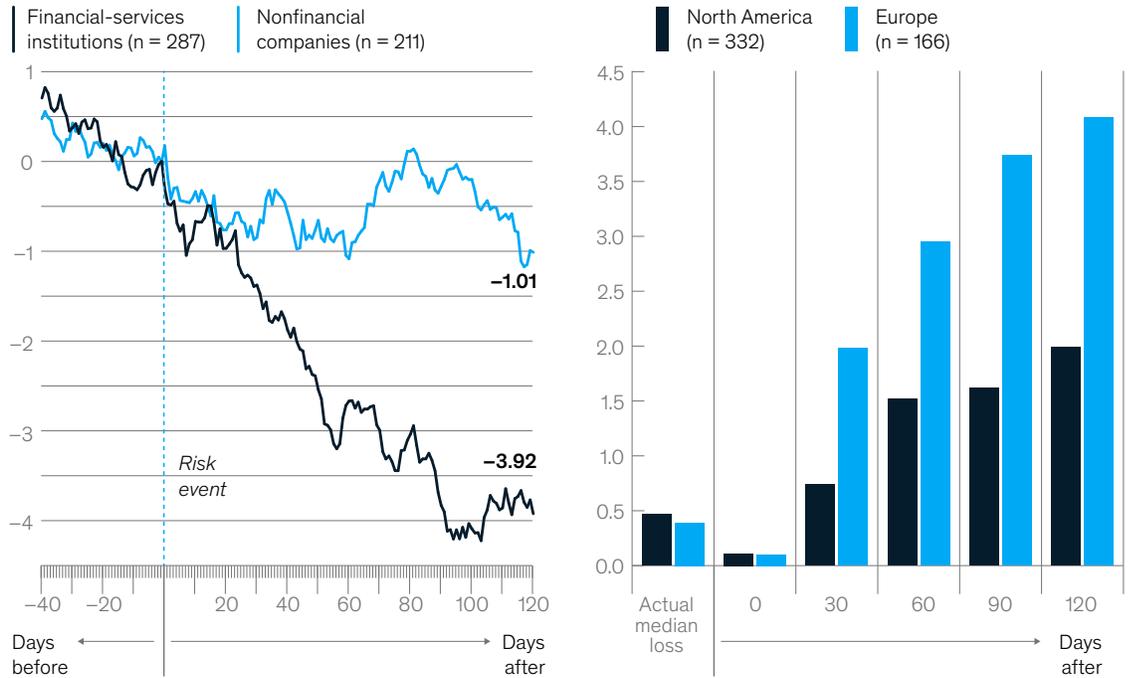
**North American and European markets respond differently**

The way companies communicate information about such events to investors may influence market response. Our analysis indicates that European markets tend to react faster and more strongly. Within three days, shareholder losses equal reported losses from the event itself; by 30 days, losses are five times reported losses. By 120 days, the European companies in our data set had seen a decline of more than 4 percent in their share price, equivalent to ten times direct losses.

The reaction of North American markets is only half as strong, and it's more gradual. But as with European markets, TSR continues to drop over time, perhaps as more information emerges. Investors in both geographies seem to assume that the losses exceed the amounts reported, perhaps believing that operational-risk incidents signal more general mismanagement that may compromise the company's ability to create value (Exhibit 3).

**The impact of operational-risk events on shareholder returns is greater for European versus North American companies.**

**Shareholder returns relative to peers on days before/after event, by event type,<sup>1</sup> % (cumulative)**



<sup>1</sup>Fama–French 3 model for asset pricing, which accounts for risk factors for size, value, and market.

McKinsey & Company

**Markets punish financial-services firms more harshly for operational risks**

Operational-risk events affect the share price of firms of all types, but shareholders punish financial institutions more strongly. By 120 days after event, financial firms see a decline of nearly 4 percent in TSR versus peers, while other firms see a decline of only 1 percent—equivalent to 14.0 times and 0.9 times associated reported losses, respectively. This observation holds in both North America and Europe.

The data suggest that shareholders may read more into what an operational mishap says about future earnings potential for a financial institution. Our data don't indicate whether the perception is due

to differential conjecture about firm management, implications for future regulatory scrutiny, or something else (Exhibit 4).

**The impact on TSR from operational-risk events is largest when markets are volatile**

Our analysis indicates that when markets are volatile, operational-risk events trigger larger drops in the share price of affected companies compared with peers that have not had events. To analyze a statistically significant number of operational-risk events, we looked at loss events over five-year periods in the data set. In the 2005–10 period, the average drop in TSR (120 days after the event) for all

## Methodology

**To understand** the effect of operational-risk events on share price, we analyzed operational-risk events between 2006 and 2020 at organizations from North America and Europe (including the United Kingdom), across sectors. Our analysis was similar to that undertaken by McKinsey in 2005,<sup>1</sup> which looked only at financial institutions.

All analysis is based on public data, including the financial statements of these organizations and their peers. We filtered an initial database of 19,010 operational-risk events sourced from the SAS Institute's SAS OpRisk Global Data. We isolated a group of 498 that met the following criteria: inflation-adjusted losses were at least \$50 million; all affected organizations are publicly traded European and North American companies and institutions; only events with end dates in or after 2006 were considered (as dated from their first appearance in a major news outlet such as the *Wall Street Journal* or Bloomberg News).

The 498 risk events examined included events occurring at companies in North America (332) and Europe including the United Kingdom (166). Both financial (287) and nonfinancial (211) companies were represented. Of these events, two sets of subrisks stood out: improper business or market practices (210 incidents) and suitability, disclosure, and fiduciary events (189). All other events were grouped in a third category which includes theft, fraud, and disasters (99).

Stock price and company-level data were sourced from the S&P Global database. Abnormal returns were calculated in two ways: how the affected firm compared with the broader market and how it performed against peers (adjusted by the Fama–French three-factor model, including market, size, and value premium). The top 2 percent of gainers over a 160-day sampling window were excluded as outliers.

A final point is that two alternative methodologies for measuring impact were also explored, both widely used in academic research and industry analysis. The first alternative approach measures abnormal return for each company as the difference between actual and overall market return (instead of using the Fama–French three-factor model). Accordingly, the impact from operational-risk events is defined as the average cumulative abnormal return over 120 days from approximately 500 operational risk events in our sample. The second alternative approach estimates the impact as the average excess cumulative return of the affected companies relative to that of their respective industry peers over the same time window. The results and detectable patterns were much the same under the different calculation and measurement approaches.

---

<sup>1</sup>Robert S. Dunnet, Cindy B. Levy, and Antonio P. Simoes, "The hidden costs of operational risk," McKinsey, December 1, 2005.

events in the rolling five-year period was nearly 7 percent versus only 1.5 percent during the 2010–15 period. Over this same period, S&P 500 volatility dropped nearly 40 percent.<sup>2</sup> In times of high market uncertainty, firms should be particularly aware that operational-risk losses can have a magnified effect on shareholder value (Exhibit 5).

### What can leaders do?

The findings have several urgent implications for leaders as they think about the overall resilience of their institutions, how to minimize the risk of such events occurring, and how to respond when crises do hit.

The findings strongly suggest that broad market forces and industry dynamics can magnify adverse effects. Effective crisis and mitigation planning has to take account of these factors. Experience supports this view. In the not-so-distant past, especially before the financial crisis of 2008–09, many companies approached operational-risk measures from a regulatory perspective, with an economy of effort, if not formalistically. Incurring costs and paying fines for unforeseen breaches and events were accordingly counted as the cost of doing business. Amid crises, furthermore, communications were sometimes aimed at

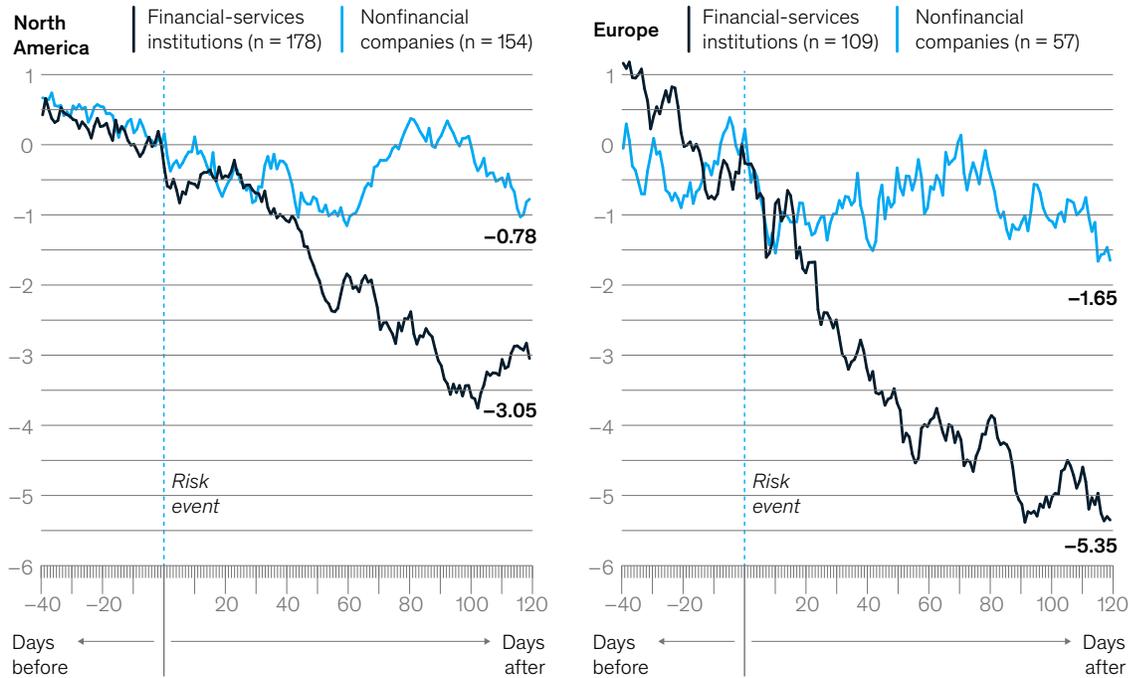
---

<sup>2</sup>S&P 500 volatility is calculated as the standard deviation of daily return in the rolling five-year period.

Exhibit 4

### The effect of operational-risk events on shareholder returns is greater for financial institutions than other types of firms in North America and Europe.

Shareholder returns relative to peers on days before/after event, <sup>1</sup>% (cumulative)



<sup>1</sup>Fama–French 3 model for asset pricing, which accounts for risk factors for size, value, and market.

McKinsey & Company

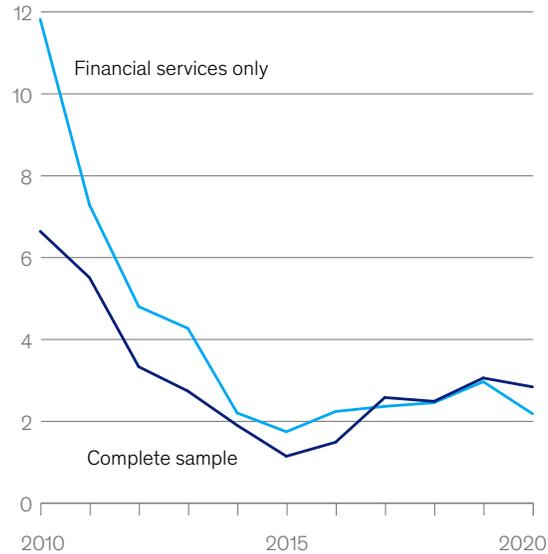
**In times of high market uncertainty, firms should be particularly aware that operational-risk losses can have a magnified effect on shareholder value.**

Exhibit 5

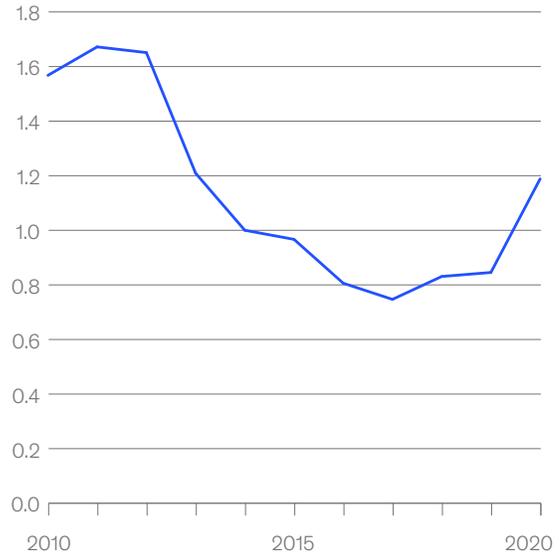
**The outcome of operational-risk events on shareholder returns can be affected by market volatility.**

**Loss from operational-risk events,<sup>1</sup> %**

**Rolling average loss**



**S&P 500 volatility**



<sup>1</sup>Fama–French 3 model for asset pricing, which accounts for risk factors for size, value, and market.

**McKinsey & Company**

minimizing true losses—an approach that risked a damaging cycle of upward revisions.

The present environment, however, is unforgiving of such approaches. An accelerated pace of change, especially in digitization and social media, magnifies the negative effects of missteps in the aftermath of crisis events. Leaders are consequently grappling with the long-term effects of operational-risk events, seeking crucially to avoid the dangers of underestimating their impact on market value.

The directional change in the response to operational risk has been from this formalistic,

regulatory approach toward corporate resilience and the reduction of the most material risks. Part of this involves the development of robust monitoring and response capabilities, designed to help organizations understand their own position, that of their peers, and the broader market. In shaping their rapid-response capabilities, furthermore, organizations will need to manage stakeholders proactively. This includes developing an effective plan for communications, since the ways organizations communicate information to investors about operational-risk events have a bearing—positive or negative—on the market’s response.

**Hugh Dang** is a specialist in McKinsey’s Waltham, Massachusetts, office; **Merlina Manocaran** is a partner in the New York office; **Scott Murff** is a consultant in the Denver office, and **Olivia White** is a senior partner in the Bay Area office.

Copyright © 2023 McKinsey & Company. All rights reserved.

# Rate reset presents banks with IRRBB challenge

By focusing on six key areas, banks can more accurately manage rising interest rates and credit spread risk across business lines, meet regulatory demands, and create competitive advantage.

*by Andreas Bohn, Marc Mitrovic, and Sebastian Schneider*



**Rising interest rates** around the world can be helpful to banks, but they come with challenges—especially after an extended period of low borrowing costs. Aside from the direct impacts of monetary tightening, which may have positive or negative effects, banks face increased uncertainty around customer behaviors in both their loan books and deposits. Amid heightened regulatory risk, leading institutions are now revisiting the impact of these changes across data, models, and risk management activities.

Fast changes in central bank interest rates can lead to significant shifts in customer behaviors and bank risk exposures. In the loan book, drawing and repayment patterns may change, and there can be significant disruptions in mortgage pipelines. There is a higher risk of deposit decay-rate instability, which can require increased use of decay and hazard models to fix repricing tenors.<sup>1</sup> Meanwhile, a more intense competitive environment can cause individual players to see declines in liquidity

coverage and gains in deposit beta—the percentage of rate change passed on to customers.

In Europe, many of these challenges are subject to regulatory oversight through the European Banking Authority’s (EBA) new guidelines for interest rate risk in the banking book (IRRBB), published in October 2022. The expanded framework motivates banks to balance risks against key metrics, including net interest income (NII) and economic value of equity (EVE), which represents the net value of assets and liabilities. It also provides rules and recommendations on how to calculate key metrics, for example, with respect to the modeling and composition of balance sheet exposures, yield curve scenarios, behavioral assumptions, and subrisk categories (Exhibit 1). To meet IRRBB obligations, many banks are now abandoning the lens of the past 15 years—predicated on “lower for longer”—and taking action to manage the impacts of higher rates across the business.

Exhibit 1

## Interest rate risk in the banking book framework balances net interest income risk and economic value risk due to interest rate changes.

### IRRBB<sup>1</sup> key drivers

Risk to net interest and income		Risk to economic value	
<p><b>Balance sheet exposure</b></p> <ul style="list-style-type: none"> <li>Contractual cash flows and margins</li> <li>Contractual options and rights</li> <li>Statutory rules and regulations</li> <li>Implicit caps and floors and statutory rules</li> <li>Nonperforming exposure</li> <li>Hedging strategies and instruments</li> </ul>	<p><b>Yield curve scenarios</b></p> <ul style="list-style-type: none"> <li>Parallel shock up</li> <li>Parallel shock down</li> <li>Steepening</li> <li>Flattening</li> <li>Short rate up</li> <li>Short rate down</li> <li>Additional bank-specific scenarios</li> </ul>	<p><b>Behavioral adjustments</b></p> <ul style="list-style-type: none"> <li>Stability, tenor, and rate elasticity of nonmaturing deposits</li> <li>Termination and rollover of term deposits</li> <li>Mortgage prepayments, pipeline risk, and drawing behavior</li> <li>Drawing of committed credit lines</li> </ul>	<p><b>Subrisk categories</b></p> <ul style="list-style-type: none"> <li>Gap risks</li> <li>Basis risks</li> <li>Option risks</li> <li>Credit spread risk</li> </ul>

<sup>1</sup>Interest rate risk in the banking book.

McKinsey & Company

<sup>1</sup> McKinsey Treasury Survey, January 2023.

## IRRBB's new definition of risk to net interest income

The current test for IRRBB supervisory outliers is focused on changes in banks' EVE—the difference in the value of assets and liabilities before and after hypothetical rates shocks. Going forward, however, the EBA's proposed test would equally assess the impact of shocks on NII. Methods for measuring NII risk are evolving. The new supervisory outlier test requires a calculation based on a static balance sheet, but many banks (around one in three) are starting to use the more realistic assumptions and responses to market scenarios represented by a dynamic balance sheet.<sup>2</sup> Moreover, rising numbers of banks report that a combination of higher rates and the new methodology are causing them to breach the test limit.

McKinsey's most recent Treasury Survey also reveals some potentially damaging approaches to measurement of delta NII, with the majority of respondents applying floors on deposit and mortgage rates. This has the effect of producing higher levels of variability when rates move up or down. A minority of banks apply floors on market rates.<sup>3</sup>

In calculating the impact of interest rate shocks, the EBA guidelines say banks should adopt an expanded definition of risk to NII that includes market value changes in the other comprehensive income (OCI) category (for example, revenues, expenses, gains and losses), a correction position on a bank's common equity tier-1 (CET1) capital. Just 56 percent of banks currently impose limits on OCI, according to McKinsey's survey. In addition, banks should consider increases or declines in profit or losses and capital over a longer time horizon. This, in turn, impacts how they should treat and interpret behavioral models.

To understand how best to manage IRRBB exposure in the new regulatory environment, banks need to gauge trade-offs in the relationship between bank EVE and NII. The basic rule is that if a bank's NII declines, it is less able to retain

earnings. In a positive rate environment, an upward shock to interest rates yields a negative delta EVE and a positive delta NII. Therefore, a critical task is to ensure that behavioral models can impart the insights into deposits to minimize NII volatility while remaining delta EVE neutral. In practice, this means optimizing reinvestment and hedging activities. Ideally, then, it makes sense to agree on an optimal delta EVE/delta NII position.

McKinsey research shows that banks are taking a range of approaches to balancing delta EVE against delta NII in various rate scenarios. The differences are usually associated with variables that include currency mix, yield curves, behavioral assumptions, and pricing. However, the basic rule is that a bank's ability to immunize NII across rate scenarios will be contingent on its ability to manage EVE, as well on as the modeling choices it makes.

## A new approach to deposit modeling and hedging

The EBA guidelines provide clarifications and extensions for modeling, first relating to maximum tenors and then to the scope of relevant deposits, which have been expanded to include operational deposits by financial institutions.

Best practices for deposits modeling and hedging include the following:

- **Customer segmentation in line with regulatory classifications.** Balances should be assigned to distinct segments. Behavioral and regulatory features can be used for segmentation, complemented by advanced analytics and expert judgment.
- **Core balance modeling.** Banks must determine their long-term stable balances, taking into consideration migration between current accounts, term deposits, and savings deposits.

<sup>2</sup> The static balance sheet assumption, a key component of the European Union-wide stress tests, means that the balance sheets of participating banks are assumed to remain constant over the stress test horizon in terms of total volume, maturity, and product mix.

<sup>3</sup> McKinsey Treasury Survey, 2021–2022.

- **Deposit volume modeling.** Efforts should be made to measure the evolution of deposit volumes. Industry best practice is to use the age-period-cohort model, taking into account the survival rate and expected volume.
- **Deposit beta.** This is defined as the sensitivity of client rates to changes in market rates or the pass-through rate. There is a trend toward regime-based deposit betas to better capture the variability of market rates being passed through to customers in different interest rate regimes. Calculation of deposit beta should inform hedging strategy.
- **Hedging strategy.** Risk profile of modeled liabilities can be covered by different hedging instruments. The hedging strategy can focus on economic value or net interest margin, or it can target the optimization of the risk-return profile. An increasing number of institutions are using stochastic models to test hedge ratios in the presence of convexity and optionality.

An increasingly common approach is to apply advanced analytics to the modeling task, for example, by using machine learning to estimate classification probabilities and predict allocations as rates and regulatory treatments change. A random forest model, for example, creates multiple binomial regression-based decision trees and simultaneously selects variables. Often the analytics will point to previously unconsidered drivers, leading to higher-than-expected prediction accuracy.

The current rate environment also requires heightened attention to modeling and management of mortgages and other term loans. Acceptance rates may become more volatile due to changing prepayment behavior, as can loan life spans.

Best practices on quantification, hedging, and pricing of prepayment risks are evolving. They include:

- **Customer segmentation.** Banks can divide the mortgage portfolio into customer segments through analysis of behavioral features.
- **Prepayment behavior.** Banks should quantify “constant” prepayments and prepayments

subject to specific criteria, such as interest rate level, prepayment penalties, age of mortgage, and additional borrower background. They should adjust expectations to reflect likely shorter tenors.

- **Interest rate scenarios.** Banks should model a range of scenarios and simulate potential prepayment behavior for each scenario.
- **Hedging ratios and strategy.** Banks should evaluate the value of mortgages under various rate scenarios and derive sensitivities to economic value and P&L. They should select hedging instruments reflecting fair value and P&L changes.
- **Pricing.** Institutions should adjust pricing based on analysis of maturities and prepayment behaviors.

In a more volatile rate environment, pipeline risk increases, with acceptance rates tending to be less predictable as prices move between first lock and full drawing. In fixed-rate mortgages, meanwhile, prepayment rights can lead to significant reductions in repricing tenors. At the time of writing, average repricing tenors are well below the regulatory cap. Meanwhile, just a quarter of banks hedge pipeline risk, our most recent Treasury Survey shows.

There are related uncertainties around the quantum and timing of drawdowns. Again, some banks are tackling the challenge with advanced analytics, which they apply at each step in the process, from the initial lock, through client acceptance, and at full approval. Early indications are that use of supervised and unsupervised learning provides powerful insights into acceptance rates, contingent on the banks’ ability to marshal sufficient data across financial, behavioral, and macroeconomic dimensions. The analytics can also provide vital insights into potential hedging ratios and hedge timing.

## Focusing on credit spread risk

The new IRRBB guidelines expand the perimeter for credit spread risk in the banking book (CSRBB) and set higher expectations for bank governance with respect to credit decisions. CSRRB is defined as a

# It is not always the case that credit spread volatility is directly correlated to credit rating, and higher-rated companies are often more volatile.

combination of two elements: changes in “market credit spread” and changes in “market liquidity spread,” representing the liquidity premium that sparks market appetite for investment and creates willing buyers and sellers.

There is still uncertainty regarding the scope of CSRBB. However, the guideline asks banks to consider all instruments that may be subject to credit spread risk, including off-balance-sheet items such as loan commitments. Assets at fair value should always be included, while changes in the institution’s own funding rate cannot be used to offset credit risk. Indeed, institutions should not exclude any instrument in the banking book from the perimeter of CSRBB ex ante, including assets, liabilities, derivatives, and other off-balance-sheet items. Potential exclusion of instruments should be done only in the absence of sensitivity to credit spread risk and should be appropriately documented and justified (Exhibit 2).

It is not always the case that credit spread volatility is directly correlated to credit rating, and higher-rated companies are often more volatile, McKinsey research shows. A key but sometimes ignored driver is debt tenor. To offset the risks associated with the above approaches, the EBA has introduced an idiosyncratic component to measures of credit spread risk in the banking book.

With banks starting to implement the CSRBB alongside IRRBB rules, some have adopted strategic change programs, allowing them to

simulate CSRBB for the entire balance sheet, including issuances. Consequently, they can measure the full impact of changes in market liquidity and credit spread for both assets and liabilities. This helps them reflect a more dynamic view of the impact of changes to funding spreads in internal risk management frameworks and make economic capital calculations that go beyond the regulatory interpretation of the EBA guideline. Currently, just 28 percent of banks measure the risk of variation in their funding rates over time, McKinsey’s Treasury Survey shows.

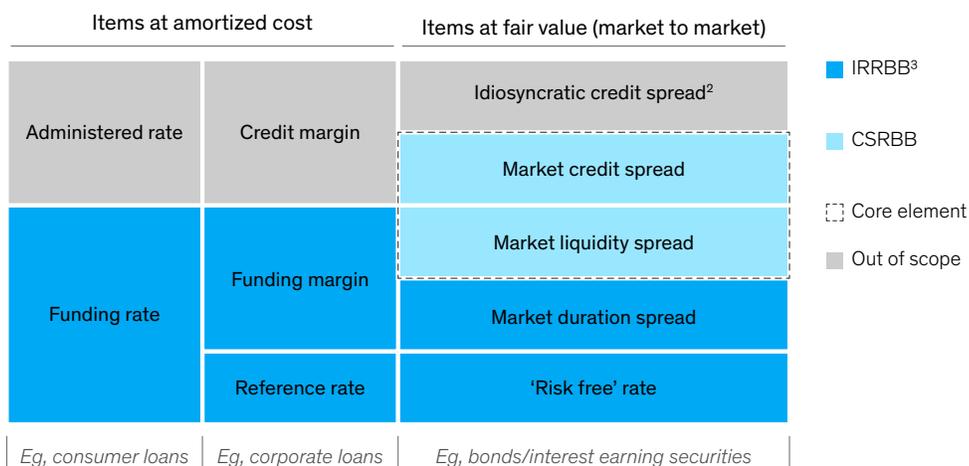
## **Balancing the framework with six priorities**

The EBA’s new standards for managing IRRBB are designed to help banks navigate the impacts of shifting rate environments on securities portfolios, pensions, and fair-value accounting. Meanwhile, the new supervisory outlier test threatens to capture many more banks than the existing method.

To tailor the operating model to the demands of IRRBB, we recommend an approach focused on governance, organization, and processes. As a first step, many banks review committee structures, and terms of reference, benchmarked against peers. A common action is to review organizational capabilities (size, skills, mandates) and responsibilities. For processes, some leading banks apply a twin strategic risk management and operational risk management lens, taking into

## Credit spread risk in the banking book is increasingly in focus.

### Scope of CSRBB<sup>1</sup>



#### Instruments generally included

Instruments sensitive to volatility in credit spreads that may impact the institution's income and capital

#### No instrument excluded ex-ante

Includes assets, liabilities, derivatives, and other off-balance-sheet items such as loan commitments, irrespective of their accounting treatment

#### Exclusions from scope to be justified

Any potential exclusion of instruments should be done in the case of the absence of sensitivity to credit spread risk and should be appropriately documented and justified

#### Assets at fair value always included

Assets at fair value should always be included

#### Own credit spread

A worsening of credit worthiness of the institution should not have any positive impact on the credit spread risk measure

<sup>1</sup>Credit spread risk in the banking book.

<sup>2</sup>Instrument/borrower specific.

<sup>3</sup>Interest rate risk in the banking book.

Source: Consultation on draft Guidelines on IRRBB and CSRBB, (EBA/CP/2021/37), European Banking Authority, December 2021; Standards: Interest rate risk in the banking book, Basel Committee on Banking Supervision, April 2016.

#### McKinsey & Company

account escalation processes and remediation playbooks. Another common strategy is to apply dedicated KPIs to process efficiency, again ensuring alignment with peer groups.

Once a baseline is established, banks should seek out ways to manage changes in NII, including using advanced analytics and potentially switching to fair-value accounting for securities. It is increasingly common to fully integrate credit spreads into the steering process, with the focus on fair-value securities, while refining behavioral models to

reflect higher levels of rate elasticity. It will also be imperative for banks to measure and manage operational deposits. All of this will best be achieved under a holistic governance framework that balances delta NII and EVE through six key priorities:

- 1. Data integrity:** ensuring completeness of data, exhaustive and correct data attribution, reliable data transfer, and central storage
- 2. Behavioral models:** employing a full suite of behavioral models for deposits, mortgages, and

committed credit lines to capture changes to client behavior in different rate scenarios

3. **Supervisory outlier test:** allowing for rapid and frequent calculation of supervisory outlier testing for economic value and net interest income, including sensitivity and scenario analyses
4. **Business and hedging strategy:** reviewing repricing profile of assets, liabilities, and off-balance-sheet position, aligning average tenors, as well as considering application of derivatives and hedge accounting

5. **Credit spread risk:** allowing for calculation CSRBB for a wide range of balance sheet items, which can also be leverage for a broader management of spread risk, including funding-spread risk

6. **Reporting:** establishing a flexible and dynamic reporting framework that is easily accessible for multiple users and allows for drill downs

By paying close attention to management of these six areas, leading banks have shown that they can more accurately gauge the impact of rising interest rates and credit spread risk across key business lines, meet regulatory expectations, and create the impetus for competitive advantage.

**Andreas Bohn** is a partner in McKinsey's Frankfurt office, where **Marc Mitrovic** is an expert; **Sebastian Schneider** is a senior partner in the Munich office.

Copyright © 2023 McKinsey & Company. All rights reserved.

# Navigating economic uncertainty: New guidance for credit risk management

Amid persistent complexity, bank leadership teams need to urgently revisit their approaches to credit risk management.

*by Kirtiman Pathak, Christophe Rougeaux, and Himanshu Singh*



© kalleho Seisa/Getty Images

**There is nothing** new under the sun, as the old expression goes. But there sure are plenty of surprises. Rising interest rates, high inflation, low unemployment, supply chain concerns, elevated commodity prices, strong but evolving consumer balance sheets, low consumer sentiment, and febrile geopolitics are among factors leading to bouts of financial and economic volatility and deepening uncertainty for bank credit exposures. Indeed, the historical data used to support credit decisions often do not compute in the current context. Many banking leaders are quickly realizing that new approaches are required to navigate current conditions and to spot potential opportunities.

Faced with an array of unusual correlations, banks need to find ways to balance macro and micro risks, incorporating the diverse factors shaping the economy and understanding the implications for clients and portfolios. However, the current combination of events is unprecedented, and the challenge cannot be finessed by simple tweaks to model parameters. To both minimize risk and unlock pockets of value, more fundamental changes are required.

As discussed in a recent McKinsey article, organizations that thrive in uncertainty hone three kinds of edge: superior insights, clarity and commitment to specific actions, and speed of execution.<sup>1</sup> In this article, we discuss five imperatives that may support edge sharpening across the following dimensions in credit risk management:

- creating a range of scenarios to quickly model potential outcomes at a granular level
- revisiting risk limits and triggers to reflect changes in the business cycle
- creating new decisioning metrics
- prebaking menus of actions
- enabling faster and more flexible execution

Decision makers that align their credit playbooks with these five imperatives may be better equipped to navigate uncertainty and develop a deeper understanding of the factors shaping credit quality over time.

## **Five capabilities to navigate uncertainty**

In the past year, the global economy has faced multiple challenges, and orthodoxies that have evolved over recent decades have become more uncertain. To navigate these headwinds, banks require tools to help them understand the fundamental drivers of portfolio and obligor performance. Optimally, they should also reevaluate tactical and strategic tool kits and ensure that operating models enable rapid execution. Five steps can support actions to achieve these outcomes.

### **1. Cultivate the ability to quickly simulate impacts on portfolios and obligors across multiple scenarios**

Increased uncertainty around future events, constantly shifting drivers, and an unusual combination of economic factors require banks to run scenarios that incorporate numerous external factors. The more factors and factor combinations that they can model, the easier it will be to identify and scope potential impacts on portfolios and obligors.

To support accurate modeling, scenarios must go beyond traditional approaches, many of which rely on a few standardized macroeconomic inputs. In a period of increased complexity, scenario generation requires more granular factors, incorporating both economic and broader uncertainties (for example, geopolitical risks, supply chain shocks). These should be combined with agile forecasting capabilities that enable rapid calculation of potential portfolio income and losses. Leading institutions enable faster action by generating new metrics every two weeks or every month, rather than every quarter, as was common in the past.

<sup>1</sup> Michael Birshan, Ishaan Seth, and Bob Sternfels, "Strategic courage in an age of volatility," McKinsey, August 29, 2022.

To develop insights on the portfolio and obligor level based on scenarios, some banks are embracing new approaches to forward-looking credit assessment (Exhibit 1). To that end, they are exposing a range of transaction metrics to discrete combinations of granular macroeconomic drivers—for example, food prices and utility bill inflation or rent increases and retail-customer interest charges. This approach enables banks to identify microsegments that may be vulnerable to specific scenarios or may prove more resilient. While the vulnerable microsegments present risks, the more resilient segments create potential opportunities for sustainable growth.

To effectively conduct these analyses, many banks are turning to highly automated implementation platforms that are capable of modeling and refining multiple scenarios and enabling analysis of impacts across portfolios and segments (macroeconomic or driver based). In many cases, the platforms incorporate a business-driver forecasting module, focusing on variables including scenario-conditioned volumes, revenues, and expenses.

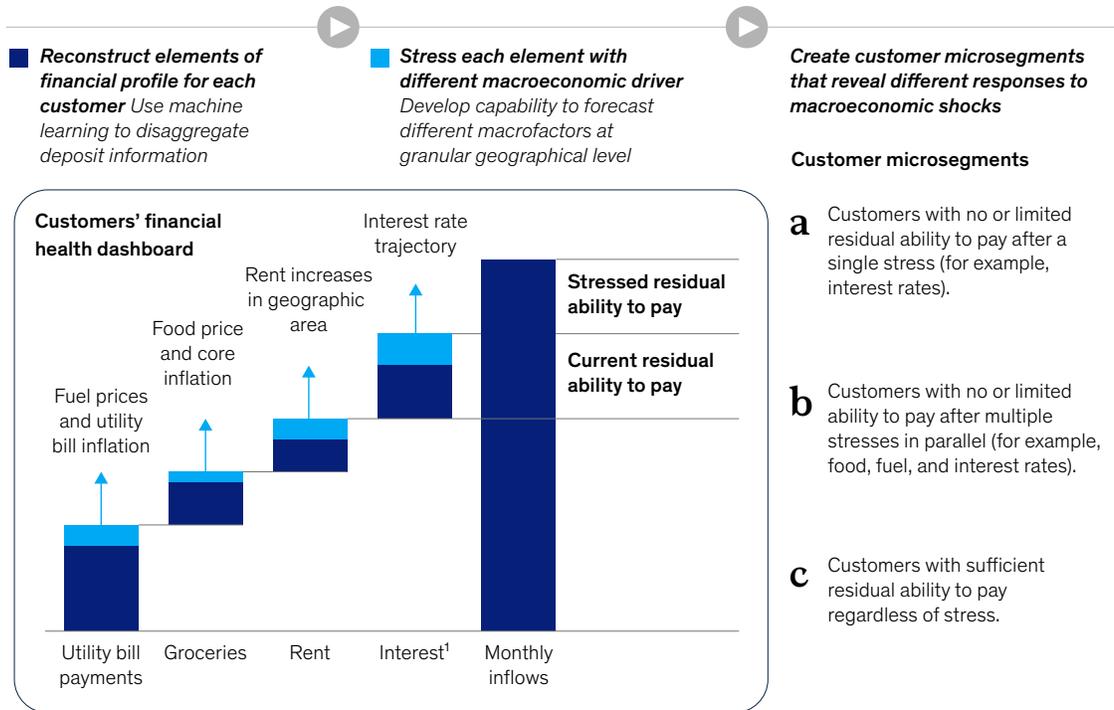
## 2. Refine risk limits and triggers

At most banks, current levels of risk appetite were set during an extended period of low interest rates and dampened volatility. Current economic

Exhibit 1

## Forward-looking assessment of borrowers can identify microsegments with differing responses to stress.

### How a credit assessment dashboard can identify microsegments



<sup>1</sup>For example, interest on credit cards or mortgage.

McKinsey & Company

# The reasonable assumption is that through-the-cycle portfolio behavior may significantly change, so banks need to revisit these views of client performance in a higher rate environment.

consensus suggests these conditions may not return anytime soon. Indeed, the reasonable assumption is that the business cycle has shifted, and through-the-cycle portfolio behavior may significantly change. Banks therefore need to revisit through-the-cycle views of client performance in a higher rate environment, as well as verify that monitoring frameworks, triggers, and cascading mechanisms are still relevant and workable—from both a risk management and business growth perspective.

In assessing risk limits, it makes sense to proceed by business unit, product, industry, and geography. Limits for measures—including “one in X year” losses, the impact of stress scenarios, and the portfolio effects of downgrades or defaults—should take into account shifting correlations and potential idiosyncratic events. This will lead to limit reanchoring that better reflects potential risks and outputs under different scenarios, as well as generating new estimates of capital needs.

Banks should also consider baseline- and stress-loss outcomes, using the information to reevaluate triggers around risk appetite. There will be areas in which they want to tighten up on credit provision, but others where the risk/return trade-off may be more favorable in the next two to three years, based on the assumption that through-the-cycle portfolio behavior will be different than in the past.

At one bank with a diversified corporate portfolio, this exercise generated surprising results. Projected scenarios showed that the bank’s diversified portfolio had become relatively more concentrated in smaller sectors of the economy. This prompted decision makers to reevaluate sector concentration limits and refine individual obligor limits to better match the expected risk/return profile.

### **3. Develop forward-looking decisioning metrics**

Effective analysis is predicated on having access to appropriate metrics, but current metrics are often backward looking; their ability to predict the future is tightly bound to relationships with historical trends. In a volatile world, in which many of those historical relationships are being upended, the predictive power of existing approaches is limited. In response, banks need to develop more forward-looking metrics that highlight risks and opportunities quickly enough to formulate a sensible strategy.

Creating a longer horizon of predictability is no simple task, but it can help to break performance down into groups of significant drivers and assess relevant trends both at portfolio and obligor levels. One institution built a performance matrix, plotting a range of business drivers (for example, a drop in demand, risks and receivables repayments, or dependency on energy) against potential impact intensities across industries

(Exhibit 2). It periodically reviewed the trends around drivers, helping calibrate the outlook for each industry under evolving scenarios. This was helpful in both managing risk and identifying pockets of opportunity.

For large individual obligors, it can make sense to go further, modeling revenues and costs under various scenarios and shocks to create cash flow curves and understand debt service coverage. This process can both highlight red flags and point to growth opportunities. Some banks are adding continuous-monitoring tools. These generate early-

warning signals based on financial and forward-looking KPIs such as news flows (Exhibit 3), and can indicate declining credit quality as much as 12 months in advance. Forward-looking indicators can also help risk managers define triggers for timely action at portfolio and obligor levels.

**4. Use decision metric outputs to inform and ‘prebaked’ management levers**

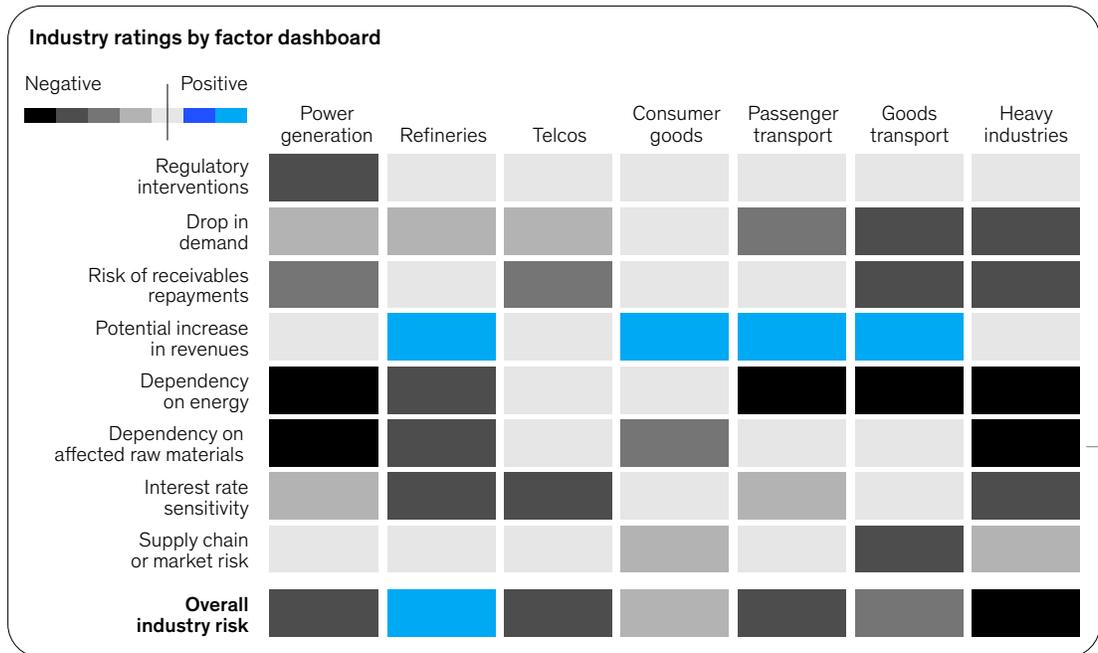
Accelerating change implies a higher bar for management preparedness. To adapt to deepening uncertainty, leadership teams can benefit from developing a set of “prebaked” actions that can be

Exhibit 2

**Structured, forward-looking and fundamentals-driven credit assessment can inform industry risk rankings.**

**Credit assessment factors for industry rating by profit and loss dashboard**

- 1 Identify dimensions of forward-looking credit assessment (eg, emerging regulation, risk of unpaid accounts receivables)
- 2 Determine how each dimension affects each sector (eg, interest rate sensitivities can impact power generation and oil refineries differently)
- 3 Calibrate what positive or negative looks like for each industry based on expert judgment

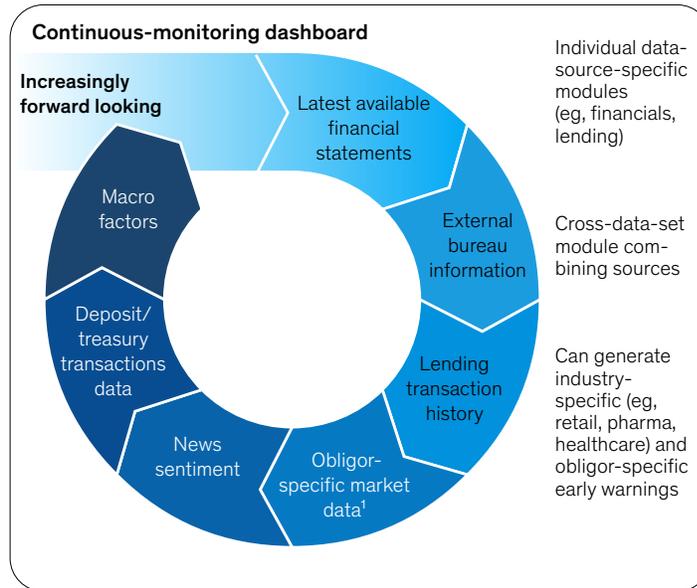


McKinsey & Company

Exhibit 3

## Early-warning signals can be developed at industry and obligor level, combining multiple data sources.

### Structure of continuous-monitoring dashboard

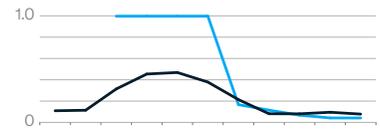


<sup>1</sup>For example, equities, credit default swaps.

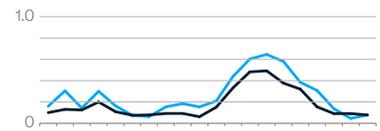
McKinsey & Company

### Results

**News module**, based on real-time external sentiment, often most sensitive and shows sharp movement when risk profile changes, like a “binary” switch



**Cross-data-set module**, incorporating interactions between data from various sources, most closely reflects the behavior of the overall portfolio



implemented at short notice. Aligning in advance also allows for more creativity than decisions made at the spur of the moment, and will enable more clinical execution when required.

Through judicious monitoring of forward-looking metrics and indicators, bank leadership teams can take effective action across diverse aspects of credit oversight, from designing collections/ repossessions to adjusting portfolio allocation and refining customer engagement strategies—as well as timely planning for second-order impacts such as talent shortages. To ensure effective implementation, training at scale and across functions may be required; for example, upskilling of relationship managers and credit analysts on restructurings.

### 5. Enable agile decision making through cross-functional perspectives and flatter hierarchies

Typical decision-making hierarchies are often insufficiently nimble to respond to a highly unpredictable environment. Banks need to rework their governance frameworks to enable much greater speed of decision making. While it can help to prebake actions and define initiation parameters, mobilization is also a challenge. To be effective, decisions should be operationalized through existing governance processes but at much faster speeds.

Speedy decision making requires efforts to ensure that at each forum there is 360-degree information flow, facilitated by cross-functional collaboration. In addition, there needs to be much

more real-time interaction between the risk function and the front office. The objective should not be absolute precision, but rather an increased ability to rapidly understand the direction of travel so that actions can be aligned. Similarly, to minimize bottlenecks, authority should be delegated within prescribed limits. Evaluating and adjusting authorities based on plausible scenarios will ensure they remain fit for purpose and help the organization react more rapidly.

### **The route to transformation**

As the global economy continues to surprise and the interest rate environment resets, banks should assess whether they have the capabilities and processes in place to create the three edges that will help them manage through uncertainty.

A good place to start is a structured evaluation of capabilities and processes, potentially through analysis across a single representative portfolio. This can help decision makers rapidly identify the capabilities that need to be enhanced across the board. Similarly, focusing on a few select, high-impact portfolios can help illuminate pockets of value. Optimally, the exercise should be undertaken both from a risk function and business perspective, helping ensure that risks are managed and value realized across the institution.

A range of digital tools can provide additional support. For example, machine learning can help

identify and classify deposits and card-account spending in different categories. This can be aggregated at the borrower level to determine likely disposable income and potential shocks under various scenarios. Finally, a continuous-monitoring tool can centralize data from treasury transactions, news, forward-looking industry-specific indicators, and markets to generate segment- and obligor-level early-warning signals.

---

Amid persistent complexity, bank leadership teams need to urgently revisit their approaches to credit risk management. To navigate the changes required, there is an impetus to take action across the five dimensions discussed above, with analysis and responses optimized through highly automated implementation platforms.

As decision makers consider their options, a helpful first step will be to revisit current capabilities and resources and enhance data and forecasting capabilities—as well as to reconsider the assumptions that underlie them. At the very least, this will require refreshed tool libraries and more agile decision-making frameworks. Effectively implemented, these will help banks hone edges in credit insight, clarity, and execution, and help them marshal the inevitable risks and opportunities that define a new era of uncertainty.

**Kirtiman Pathak** is a senior expert in McKinsey's Stamford office, **Christophe Rougeaux** is an associate partner in the Waltham office, and **Himanshu Singh** is a partner in the New York office.

The authors wish to thank Andrea Cristofori, Ryan Mills, Bobby Shimer, and Xiaohan Wang for their contributions to this article.

Copyright © 2023 McKinsey & Company. All rights reserved.

# The evolution of risk organizations

**88**

Risk and resilience  
priorities, as told by chief  
risk officers

**94**

The next frontier in risk  
efficiency

# Risk and resilience priorities, as told by chief risk officers

Amid the storm of crises and disruptions, leading financial institutions are recognizing risk's strategic and resilience-building role.

*This article is a collaborative effort by Marc Chiapolino, Filippo Mazzetto, Thomas Poppensieker, Cécile Prinsen, and Dan Williams, representing views from McKinsey's Risk & Resilience Practice.*



© Ulrike Schmitt-Hartmann/Getty Images

**At this moment**, economies and societies are enduring several crises simultaneously. All have major humanitarian impact and potentially long-lasting second- and third-order effects. The era is defined by the interplay of complex disruptions with disparate origins and long-term consequences. Climate change, the COVID-19 pandemic, record inflation and monetary tightening, supply disruptions, and increased geopolitical risk—all pose urgent questions of organizational resilience that cannot be addressed in isolation.

In a business environment subject to constant disruption, superior risk management has become a competitive advantage in all industries. Financial institutions are no exception. They are seeking to become more resilient. With scenario-based foresight, monitoring of early indicators, and crisis-response capabilities, they can become capable of absorbing the shocks, pivoting, and accelerating into new realities. In this first of a series of articles on risk management in banks, we explore perspectives of chief risk officers (CROs) from some of the world's leading banks on the evolving context and priorities.

## What CROs are thinking

To discover the latest thinking of banks on risk and resilience, McKinsey conducted survey-based research in late 2021, engaging with more than 30 CROs. We asked about the current and evolving banking environment, risk management practices, and forthcoming priorities. We quickly discovered that the great majority of CROs were already taking a long-term view when planning actions and identifying future themes. This perspective was only strengthened by the 2022 disruptions such as high inflation and geopolitical turmoil. Here is what the CROs said.

### The banking environment

Regarding the economy and business environment, respondents pointed out that banks were especially exposed to accelerating market dynamics, climate change, and cybercrime.

Most responding CROs (67 percent) cited pandemic effects as having had significant impact on

employees and in the area of nonfinancial risk. Few, however, expected those effects to retain their force in three years' time.

Climate change, on the other hand, is expected to grow in importance. Almost all respondents (92 percent) assessed climate regulation as one of the five most important forces in the financial industry in the coming three years. Three in four (75 percent) stressed the significance of climate-transition risk—those financial and other risks arising from the transformation of global energy systems away from carbon-based fuels.

Cybercrime was consistently assessed as one of the top five risks by most executives (58 percent and increasing), now and in the coming three years. Other high-ranking risks included evolution of work practices and AI—its use and misuse. Forty-two percent of CROs ranked these risks in their top five risks in the coming three years.

Looking at the evolution of financial services, CROs identified accelerated digitization and the entry of nontraditional competitors, fintechs especially, as the top trends they are following. All respondents agreed that digital transformation is the most consequential initiative today; this will be true also in the coming three years, as these transformations bear significant operational and execution risks.

The entry of nontraditional competitors will significantly affect the financial sector, according to 75 percent of respondents; 67 percent see integration of fintech-vendor services into banks as a major trend in the coming years.

Interestingly, at the end of 2021, only one CRO identified the geopolitical environment as a risk of serious consequence for banks—a result not unlike the view most executives held in 2019 toward the danger of a global pandemic occurring in 2019. It is likely, therefore, that the industry is exposed now to unanticipated risks that could strike in the future. Building a resilient model means increasing banks' ability to respond effectively to unforeseen events.

### More on the major risks banks face

We noted that the top three risks which most concerned the CROs in our survey were direct financial impact, harm to customers, and reputational damage (such as from conduct events). Each of these risks were ranked first by approximately 30 percent of responding CROs. They ranked the potential harm caused by these risks as greater than that from other risks such as legal or regulatory events.

A great majority of CROs stated that cyber, data, and technology risks (including related IT and third-party risk) and climate risk will mostly underlie the adverse impact. Eighty percent of CROs, that is, identified these risks as rising in importance year after year and considered them among the top five risks. Credit risk also remained as one of the top risks for 70 percent of CROs, but was seen as decreasing in impact over time. Interestingly, other types of financial risks—for example, interest-rate risk, liquidity risk, and market or price risk—were rarely included among the top five risks.

On the topic of data, poor data quality was of greatest concern for 58 percent of respondents. The majority, that is, ranked this risk well above other data-related risks, such as unauthorized data access (28 percent) and lack of data availability. Half of respondents were also concerned that data

issues will most hinder usage of advanced-analytics models. Regarding risks related to models, potential data issues ranked ahead of inaccurate models, model misuse, or privacy and security concerns.

Regarding time expenditure of CROs and board risk committees, the regulatory agenda ranked as the top time-consuming agenda item (40 percent) followed by emerging risks (15 percent), strategy for business growth or innovation (14 percent), and specific risk decisions (13 percent).

Most respondents (60 percent) expected the institutional share of staff dedicated to the regulatory agenda to grow in the coming three years, with additional regulatory resources needed most of all for climate risk, a number of nonfinancial risks (cyber, conduct), and credit risk.

### How can risk functions lead the resilience effort?

Leading organizations, public and private, including financial institutions, are attempting to move to a *resilient* stance in relation to the disrupted environment. The drive for resilience is a turn away from the narrow crisis-response reflex and toward an agile state, where large, complex organizations protect against proximate risks, absorb shocks, and then pivot into the new realities. Decisions

**Resilience is a leadership orientation toward making choices in the crisis that set up organizations for growth in recovery periods.**

made during crises have lasting effects, beyond the downturn. Resilience is a leadership orientation toward making choices in the crisis that set up organizations for growth in recovery periods. Risk must now become a function contributing to, if not leading, the resilience efforts of banks.

CROs acknowledge that they need to spend more time considering “over the horizon risks.” This gap in thinking was brought into sharp focus by the heavy impact the COVID-19 pandemic and geopolitical tensions had on their institutions’ risk profiles—including second- and third-order effects—such as supply chain risk, inflation, and rising interest rates—which were not anticipated by most banking executives.

Institutions were little prepared to address these highly consequential risks. The failure goes well beyond risk functions, however. Many organizations used forecasting to develop market strategies, but this approach failed to pick up major reality shifts in the recent past—from the financial crisis of the 2000s to the pandemic to geopolitical realignments. Leading institutions are moving to scenario-based foresight to increase institutional resilience against over-the-horizon risks. The risk function can play an important role here in ensuring that the scenarios capture existing and expected risks, while aligning function priorities against scenarios.

In this area, risk leaders can focus on two important themes:

- 1. Risk functions need to develop more sophisticated risk-identification processes.**  
New risks emerge quickly in this dynamic environment, so they need to be discovered fast, along with their potential impact areas.
- 2. Investment is needed in foresight tools,** such as “nowcasting,” which can feed nearly live quantitative data to help define scenarios and understand their impact on the main metrics of the bank. The risk and resilience function, modeling the strategic institutional stance, can

develop planning cadences in which scenarios and action plans are continually refreshed.

## **Where is risk management going?**

CROs are seeing five main areas that are structurally evolving to shape risk management in the future.

### **1. Evolution of the three-lines-of-defense model**

Expectations on the role of the risk function are changing, and greater collaboration is expected across the lines of defense. The first line of defense, the owners of particular processes and operations, are seen by CROs as becoming more proficient in risk management and therefore handling more risk-taking decisions, such as those entailed in underwriting, collections, fraud management, and, in some cases, designing regulatory models.

As a consequence, the three-lines-of-defense framework is evolving to refocus the risk function on typical second-line responsibilities, including appetite setting and monitoring, policy setting, the challenge role, and second-line controls and reporting. To be effective in its second-line role, the function should be stepping up its competence in new risk types arising in the domains of cyber and tech security as well as climate change.

Almost all respondents to our survey said that for financial risks, the delineation of roles and responsibilities between the first and second lines is clearly defined and well understood in their organization. The divisions are less clear for nonfinancial risks, however.

### **2. Digitization: New technology, tools, data, and an ‘old’ issue**

The risk function can rely on new technologies, tools, and more data, even if some of these building blocks retain “old” issues. For example, new internal and external data and new technology, including AI, can improve the quality of risk monitoring and decision making, with early-warning systems and real-time controls. Here, the digital transformation,

highly valued by all responding CROs, is expected to improve the basic efficiency of the function.

Many CROs believe, however, that they will continue to be affected by the old issue of poor data quality. As previously mentioned, more than half of respondents (58 percent) believe that advanced-analytics applications will be negatively affected by data issues, especially poor data quality. The vulnerabilities can be addressed by exploring and developing new types of algorithms to improve the quality of risk decisions. The effort can be supported by an analytics center set up within the bank.

Reporting and monitoring, a core responsibility of the risk function, remains excruciatingly difficult, prone to manual intervention, and burdensome in most institutions, despite almost ten years of costly interventions after BCBS 239.<sup>1</sup> Improvements are therefore sorely needed. Digital budgets have already grown significantly in recent years, however. Only 25 percent of CROs foresee an increase in the share of budget dedicated to digitizing activities. This means that needed improvements in reporting and monitoring will have to be achieved largely through improving risk-function efficiency.

Most CROs see existing digitization resources as the means to gain efficiency in traditional risk areas as well, especially credit risk, which will attract the bulk of investments, as credit decision making is digitized and the controls are automated.

### 3. Regulatory expectations

Prudential regulation is already having a significant impact on banks' market positioning and risk agenda. These effects are expected to retain their strength (or grow in importance) in the next three years.

New regulatory areas, including refinements to existing regulation, continue to emerge. AMLA, the European Union's new anti-money laundering authority, for example, will become operational in 2023. It is expected to pursue regulatory harmonization across borders, which will affect

banks' coordination and supervisory responsibilities. This move is in line with the general regulatory push for consistency in policies, tools, and risk decisions in complex institutions, along with the ability of those institutions to perform global oversight.

While retaining focus on existing regulation, CROs are closely watching the development of climate and environmental, social, and governance (ESG) regulation, which is set to evolve and tighten in the next three years. CROs believe that climate and ESG will soon be among the main regulatory themes affecting the financial-services industry.

Banks have been prone to poor regulatory remediation processes. In response, risk functions at leading institutions are seeking to build best-in-class processes, specialized skills, and organizational models needed to lead regulatory projects. In particular, attention is being given to agile ways of working. Overall, early and proactive engagement with regulators is the most important means to achieve alignment of regulatory demands with compliance and control strategies.

### 4. Market shifts and new risk priorities

Banks are coming under increased cost pressures as risk levels could rise in the short term. Low-cost market entrants, such as fintechs, are challenging business models. CROs are about evenly split in their expectations on the size of future risk budgets. Most of those who see a reduction in real spending are from banks that are leading in the digital transformation of the function. These institutions are driving cost reduction programs at the group level. Most CROs expect risk budgets will reflect shifting priorities and maturity in managing the different risks. For example, risk professionals have observed a 5 percent decrease in credit risk over the past two years; conversely, they expect certain risks to rise in importance, including model risk, climate risk, and technology-related risks. Such changes tend to affect the risk skill mix rather than the size of the function.

---

<sup>1</sup> A standard for risk data aggregation and risk reporting developed by the Basel Committee on Banking Supervision in 2013.

## 5. Creating and demonstrating value as a risk function

Historically, the risk and compliance functions in banks have focused on defining frameworks and establishing standard risk processes and governance—such as those around risk identification and assessment, monitoring and reporting, and remediation. Now, leading organizations are starting to focus on the value that those functions can and should create. This helpful shift moves attention and resources from more bureaucratic, documentation-oriented exercises to execution and business outcomes. When properly carried through, the focus on value becomes a powerful lever for business simplification, helping to rationalize processes and controls, reduce unprofitable products and services, and consolidate risk assessments. The path ultimately supports better institutional performance, including fewer losses experienced and reduced capital requirements for potential large, idiosyncratic events. Successful institutions able to focus on positive outcomes are more productive and more responsive to all stakeholders—customers, investors, and regulators.

### CROs' future priorities

CROs are preparing for the future by leading a number of long-term efforts simultaneously. They are seeking to deepen and accelerate the digital transformation of the function, to win the war for risk talent, and to build state-of-the-art expertise in regulation, cybersecurity, analytics, and digital innovation. Rather than seeing fintechs and other new entrants as adversarial threats, for example,

forward-looking risk leaders are embracing the new approaches. They are designing digital and lean transformations within the bank to become catalysts for innovation, possibly including partnering with fintechs. Those efforts are ongoing even as risk managers address more immediate macroeconomic and political disruptions.

Clearly, in this period of economic crisis and change, risk capabilities are needed more than ever. The needs grow in the areas of digital processes, with strong analytics and data control. Equal attention must be given to the “hard” components of these changes—analytics engines and data infrastructure—and to the “soft” ones as well—the upskilling of people.

The CROs of leading banks are increasingly seeing the risk function's role as central to institutional strategy and resilience building. Progress toward this shift—to a holistic resilience function with a strategic role—has accelerated under the stress of simultaneous crises. Risk is able to anticipate evolving trends in the economic and regulatory environment and identify emerging threats. Foresight in traditional focus areas for banking as well as in newer topics such as ESG, cyber, and geopolitical changes creates potential first-mover advantages. Only by locating risk within institutional strategy will banking CEOs and CROs be able to exploit such valuable intelligence. In times of crisis, resilient organizations find the ways to make consequential moves early and accelerate into the new realities. As conditions improve, they can shift into growth faster than those they left behind.

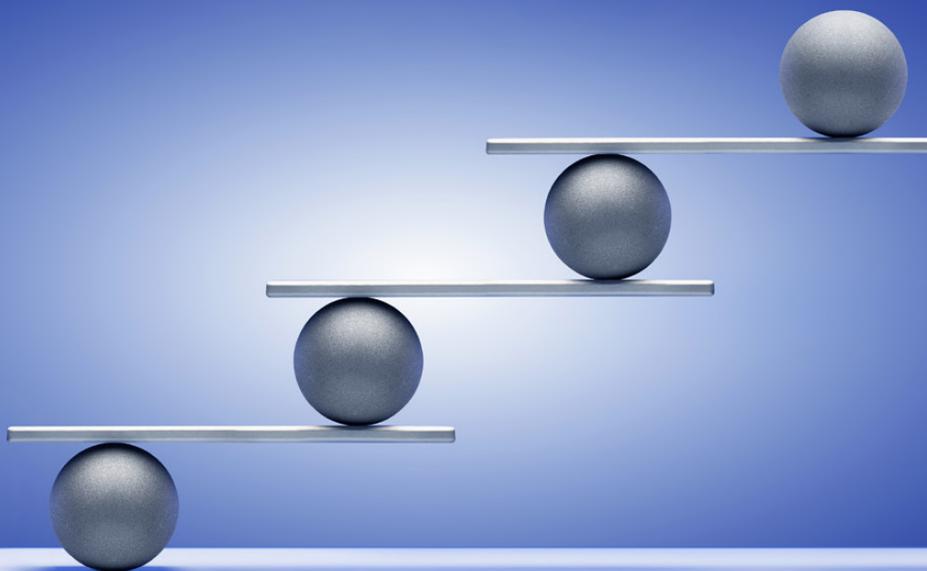
**Marc Chiapolino** is a partner in McKinsey's Paris office, **Filippo Mazzetto** is an associate partner in the Milan office, **Thomas Poppensieker** is a senior partner in the Munich office, **Cécile Prinsen** is an expert in the London office, and **Dan Williams** is a partner in the Washington, DC, office.

Copyright © 2022 McKinsey & Company. All rights reserved.

# The next frontier in risk efficiency

As global risks increase and economic uncertainty persists, the risk functions within the financial services industry must continue to evolve talent to ensure organizational resilience.

*This article is a collaborative effort by Marc Chiapolino, Angela Luget, Filippo Mazzetto, Thomas Poppensieker, and Dan Williams, representing views from McKinsey's Risk & Resilience Practice.*



**Chief risk officers** (CROs) in the financial-services industry are taking a hard look at their resourcing levels. After years of adding personnel to improve controls of global, multidimensional, and emerging risks, CROs are now also being asked to help improve their institutions' overall efficiency. This is a reasonable request and a tough one—especially in the context of recent inflationary pressures. On the other hand, CROs feel pressured by supervisors to increase their resources, both on the organizational and regulatory fronts. In any case, CROs must maintain the correct level of resources for proper risk management oversight in line with their fiduciary duties, but it can be difficult to determine the correct resource allocation across many types of risks, fragmented activities, and geographies.

To help CROs benchmark their resourcing levels against peers and learn where efficiencies might be found in their own organizations, McKinsey surveyed CROs at more than 30 large banks in Europe, North America, and Australia—more than half of them global, systemically important banks. We asked them about the resources for their second line of defense (LOD2) risk function at a granular level (based on approximately 80 risk and compliance management activities to ensure comparability and explainability) and the main drivers of their risk function's evolution over the past few years (for example, organizational structure, offshoring, functional maturity, and the bank's business model).

An analysis on a limited data sample indicates that adding more people does not necessarily lead to better risk management. Based on our research, risk efficiency and effectiveness are generally positively correlated. Moreover, in our experience, it is possible to reduce costs by 15 to 25 percent on a gross basis (with a portion being reinvested) while increasing risk effectiveness through a well-structured risk transformation program.

### **Rightsizing the risk function**

To rightsize the risk function, many CROs are mapping their risk resources by activity. But comparing risk functions with peers and identifying

possible gaps is a difficult exercise. There is significant variation among banks about how they divide responsibilities between LOD1 and LOD2 (for example, in the credit underwriting, financial crime, or fraud processes), as well as between the different LOD2s (for instance, between risk, compliance, legal, and finance). To be relevant, comparisons need to be made at the activity level, as granularly as possible.

In our survey conducted in 2021, we focused on a metric known as risk full-time-employee (FTE) intensity, which is simply the number of FTEs in the risk function divided by the total number of FTEs at the bank. For more than 90 percent of the banks in our sample, risk FTE intensity was between 1.6 and 3.5 percent, with a median of 2.6 percent, for a common standardized scope of core risk activities (excluding financial crime and compliance activities). Compared with a similar survey two years earlier, banks below the median tended to still build up their risk resources slightly, while banks above the median tended to streamline, thus converging toward the median. Looking forward, half of CROs expect to grow the number of risk FTEs over the next three years, while 20 percent anticipate a decrease of more than 10 percent.

The largest banks skew lower due to a slight downward correlation between scale and FTE intensity. These scale benefits helped reduce risk FTE intensity by 0.2 to 0.3 percent for a bank with 150,000 employees versus a bank with 50,000 employees. We found no obvious relation between FTE intensity and geographical footprint or business model at the bank level (for example, primarily wholesale versus primarily retail banking), although we observed a higher intensity of wholesale activities within universal banks (approximately 2 times higher).

Among the banks in our survey, substantial variations exist in risk FTE intensity across all risk functions due to factors such as LOD1 maturity, the maturity of the bank's data management, systems and processes, the degree of supervisory scrutiny, and the history of risk events. Even so, the averages are helpful guideposts.

On the cost side, risk costs among the banks surveyed accounted for approximately 2.5 percent of operating expenditures. Large universal banks, especially with sizable corporate and investment banking, tend to have lower-cost-intensity ratios versus FTE ratios, driven by their higher use of near- and offshoring for risk FTEs as well as a lower ratio of average risk FTE cost versus front office average FTE cost.

### Allotting resources for individual risks

Within the LOD2 risk function, credit risk management represents the bulk of the FTEs, with a median FTE intensity of 1.25 percent. We saw an average decrease of 4 to 5 percent of credit risk FTEs in the past two years, primarily in the credit underwriting area. That was largely due to continued automation of the underwriting process and reallocating more of these responsibilities to LOD1 (Exhibit 1).

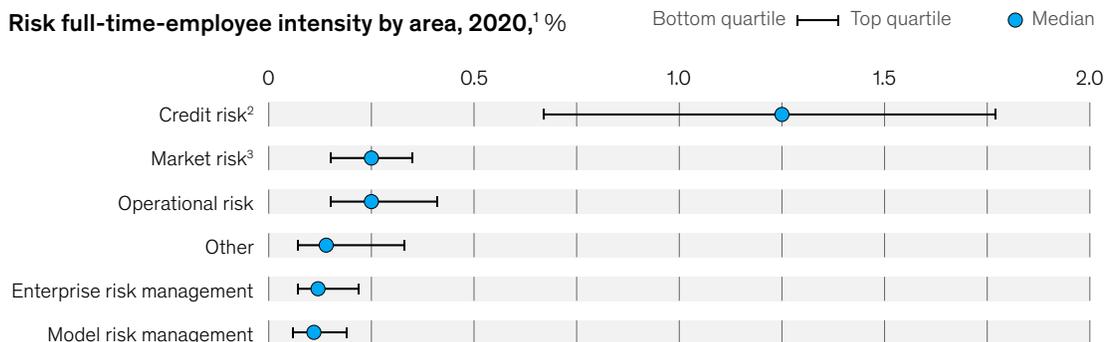
We also found that market risk has an FTE intensity of, on average, 0.25 percent. This rose slightly

from two years ago, particularly among banks that had the lowest FTE intensity in market risk. Regulatory activity, particularly the Fundamental Review of the Trading Book, helped lift this average. Likewise, operational risk (excluding compliance) also has an FTE intensity of 0.25 percent, which has decreased over the past two years. Several banks have drastically streamlined their operational-risk functions by reallocating more responsibilities to the LOD1 (for example, monitoring and testing). Today fewer “generalist” operational-risk staff support the businesses, with more resources being allocated to building stronger LOD2 expertise on new nonfinancial risks (such as cyber, data, and IT risks).

The remaining risk FTEs are almost evenly split between model risk management, enterprise risk management, and other activities. Model risk management resources have been trending upward as many banks continue to build this function to implement regulations (for example, SR 11-7 in the United States) and expand the types of models being overseen, from regulatory capital

Exhibit 1

## Risk full-time-employee intensity varies by risk area, with credit risk consuming most of the resources.



<sup>1</sup>Number of full-time employees in the risk function divided by the total number of full-time bank employees. Scope normalized between banks.

<sup>2</sup>Excluding counterparty credit risk.

<sup>3</sup>Including counterparty credit risk.

McKinsey & Company

# Some banks devote less than 10 percent of their risk resources to transversal risk teams and shared service centers, while others allocate more than 50 percent.

models to underwriting models, market pricing models, compliance models, and climate risk models, among others.

This upward trend in risk management resources is set to continue as the types of models requiring validation continue to grow with the introduction of the Prudential Regulatory Authority CP6/22 in the United Kingdom in June 2022. While many banks have built climate risk teams, by and large these are small (less than 15 FTEs in most cases) and serve mostly as a coordinating function. Other established teams conduct climate stress tests and incorporate climate risk into existing risk frameworks, processes, and models.

## Three organizational levers to reshape risk for better efficiency and effectiveness

CROs can use these survey results to benchmark against peers as they consider different ways to reshape their risk functions. We learned in our survey work that three organizational levers are of particular interest: refocusing LOD2 responsibilities, balancing resources between individual businesses and geographies versus cross-business and global teams, and near- and offshoring.

First, there is an ongoing trend to refocus the risk function on traditional LOD2 responsibilities, including appetite setting and monitoring, policy setting, the challenge role, and second-line controls and reporting. Generally, LOD2 also needs to

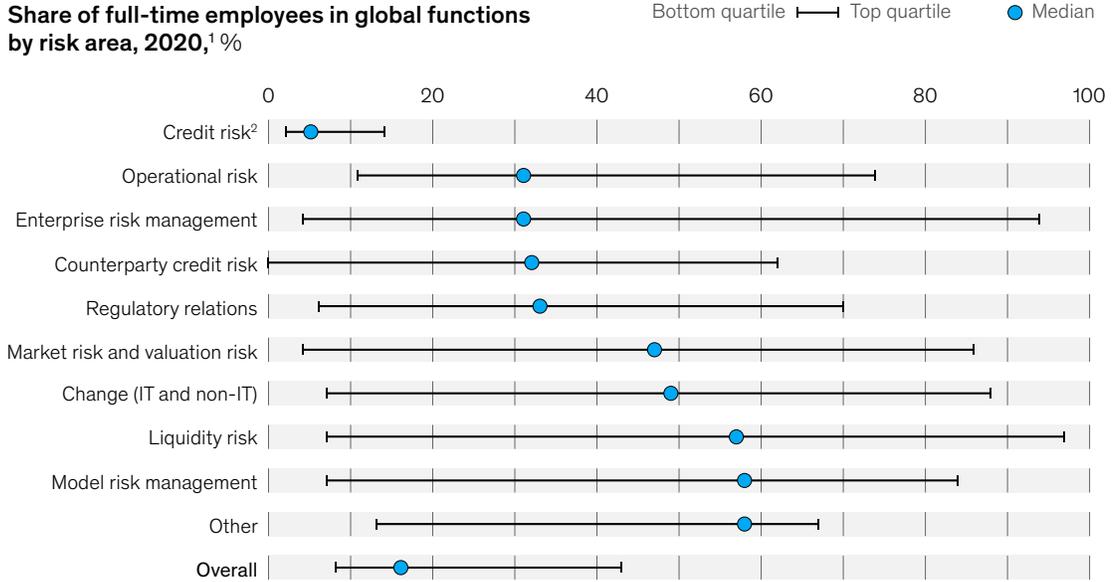
step up competence in new risk types, such as those arising in the domains of cyber and tech security as well as climate change. Meanwhile, LOD1, the owners of particular processes and operations, needs to become more proficient in risk management and handling more risk-taking decisions, such as those entailed in underwriting, exceptions management, remediation, collections, know-your-customer (KYC) and anti-money laundering (AML) and sanctions transaction monitoring, fraud management, and, in some cases, developing regulatory models.

Another choice CROs face with potentially important implications for their function's efficiency is how much to dedicate resources to support and supervise individual businesses and geographies versus teams with a global or cross-business mission (for example, in transversal risk teams or in shared services centers). This creates opportunities to mutualize tools and expertise, standardize processes and practices across the banks, facilitating risk management (for example, through consolidation of data at the bank level). The approaches to this issue are wide ranging. Some banks in our survey devote less than 10 percent of their risk resources to transversal risk teams and shared service centers, while others allocate more than 50 percent (Exhibit 2).

Among the activities typically managed globally are model risk management and model validation, liquidity risk management, enterprise risk management (ERM) activities such as stress testing

Exhibit 2

**Credit risk full-time employees are almost fully aligned on business units or geographies, even for banks that rely on global functions in other areas.**



<sup>1</sup>Full-time employees not allocated per business area and/or regional units.  
<sup>2</sup>Excluding counterparty credit risk.

McKinsey & Company

and regulatory management, and risk modeling/ analytics. Market risk is usually managed globally since it is primarily related to capital markets and Treasury services. Meanwhile, data management, reporting, and LOD2 controls are all good candidates for shared service centers.

On the other hand, credit risk management, and in particular underwriting and portfolio management, is typically managed through specific businesses or geographies. In these cases, being close to originators, clients, and products is unmistakably valuable.

Last, there is the question of near- and offshoring, though in reality most banks don't make much use of either. Less than one-third of the banks in our sample reported having more than 10 percent

of their risk FTEs near- or offshored. These are typically the largest, most international banks with top corporate and institutional banking operations and a significant share of staff in high-cost locations (for example, Hong Kong, London, New York, Paris, Singapore, and Zurich). Only a limited number of other banks are considering ramping up near- and offshoring capacity.

Among the group of banks with 10 percent or more of their risk FTEs near- and offshored, the median allocation is 33 percent. Two strategies dominate. One is to offshore only the parts of processes that require the most manual work (for instance, data collection for modeling, back testing of models, and reporting), with FTEs reporting to onshore managers. This approach typically limits the maximum offshoring level to around 30 percent

of risk FTEs. Alternatively, some banks choose to near- and offshore full processes (for example, full-modeling life cycle, counterparty rating, or the onboarding process), with managers sitting alongside those operations. This approach permits a higher level of offshoring.

The risk functions with the highest share of near- and offshore FTEs are operational risk (up to 58 percent) and ERM (up to 41 percent). The remaining functions (for example, credit risk and market risk) allocate, on average, 20 percent of their FTEs to near- and offshore locations. No obvious relation exists between the proportion of risk FTEs in near- and offshore locations and FTE risk intensity—although near- and offshoring obviously help mitigate costs for banks in major financial hubs.

### **Building an efficient and effective risk function**

Based on our research, risk efficiency and effectiveness are positively correlated. Once the organizational-design choices are made, the best-performing banks share several traits:

- **A strong risk culture** where LOD1 responsibilities are clearly defined and both LOD1 and LOD2 have the capabilities to execute on their responsibilities. This allows the risk function to focus on its LOD2 role instead of compensating for LOD1 shortcomings.
- **A best-in-class credit underwriting process**, with front-to-back workflow and digital straight-through processing for private individuals and small and medium-size enterprises. For corporate-credit underwriting, the process should incorporate credit risk scoring models that are streamlined, standardized, and digitally enabled.
- Enhanced **digital-monitoring capabilities** using counterparty-level credit monitoring tools (for example, anticipatory action early-warning system), automated counterparty ratings, and automated portfolio stress testing.
- **Risk reporting** that is automated and managed across business units using demand management and modern data architecture. General risk users are supported by self-service risk reporting that is relevant, automated, and based on timely, trusted data. For more advanced information users, flexible query capabilities and what-if forecasting capabilities are available.
- **Improved financial-crime processes**, such as streamlined KYC tools that use dynamic checklists of standards and requirements, and advanced analytics to AML and fraud systems to reduce false-positive rates to as low as 50 to 60 percent.
- **A front-to-back market**, counterparty credit risk, and liquidity risk-aligned architecture and models that support data quality (such as risk systems and front-office systems using the same data or even integrated data) and that also reduce discrepancies and manual adjustments and checks required in LOD2.
- Risk organization and governance designed for **agile decision making** (such as reduced organizational complexity, consolidated teams with similar activities, and zero-based governance meetings) and rationalized risk policies.
- **A performance management** in place, with dashboards of metrics for risk efficiency and effectiveness monitored over time and compared across sites and regions, which facilitates the sharing of tools and best practices.
- End-to-end strategy for **model development and validation**, supported by a common model inventory and streamlined process, automation tools, and document repositories across LOD1 and LOD2.

Many CROs are moving to a phase more focused on improving efficiency now that their risk functions have been established. The good news is that once a bank's risk function reaches a certain level of maturity, adding more FTEs doesn't necessarily lead to better risk management. While the risk appetite and circumstances of each institution vary, many CROs are struggling to control costs due to the increasing complexity of risks and regulations, compounded by sky-high inflation. In our

experience, it is possible to reduce costs by 15 to 25 percent on a gross basis, while increasing risk effectiveness through a well-structured risk transformation program. Leading firms typically reinvest part of these savings to continue to build and reinforce their risk functions.

An understanding of the suite of tools available to CROs, including benchmarks, modeling, and advanced analytics, allows for increased efficiency and effectiveness within their risk organizations.

**Marc Chiapolino** is a partner in McKinsey's Paris office, **Angela Luget** is a partner in the London office, **Filippo Mazzetto** is an associate partner in the Milan office, **Thomas Poppensieker** is a senior partner in the Munich office, and **Dan Williams** is a partner in the Washington, DC, office.

The authors wish to thank Cécile Prinsen for her contributions to this article.

Copyright © 2023 McKinsey & Company. All rights reserved.

**McKinsey Risk & Resilience Practice**

*Global coleader and North America*

Ida Kristensen  
Ida\_Kristensen@McKinsey.com

*Global coleader and Europe*

María del Mar Martínez  
Maria\_Martinez@McKinsey.com

*Asia-Pacific*

Akash Lal  
Akash\_Lal@McKinsey.com

*Eastern Europe, Middle East, and North Africa*

Luis Cunha  
Luis\_Cunha@McKinsey.com

*Latin America*

Elias Goraieb  
Elias\_Goraieb@McKinsey.com

*Chair, Risk & Resilience Editorial Board*

Thomas Poppensieker  
Thomas\_Poppensieker@McKinsey.com

*Coleaders, Risk Knowledge*

Luca Pancaldi and Sebastian Schneider  
Luca\_Pancaldi@McKinsey.com and  
Sebastian\_Schneider@McKinsey.com

## In this issue

The resilience agenda for sustainable, inclusive growth

Business building: The path to resilience in uncertain times

Addressing the revolving door in risk

Survival through purpose: How Ukrainian businesses endured amid extreme uncertainty

Managing financed emissions: How banks can support the net-zero transition

A devilish duality: How CEOs can square resilience with net-zero promises

A technology survival guide for resilience

Response and resilience in operational-risk events

Rate reset presents banks with IRRBB challenge

Navigating economic uncertainty: New guidance for credit risk management

Risk and resilience priorities, as told by chief risk officers

The next frontier in risk efficiency

June 2023

Designed by Leff Communications

Copyright © McKinsey & Company

McKinsey.com