

Credit Portfolio Management for the ‘New Normal’: Next Generation Stress-Testing to Navigate Economic Uncertainty

IACPM Fall conference

November 2023



Banks need to rethink stress testing to navigate uncertain scenarios

Traditionally, Banks have focused on economic scenarios rooted in sector specific impacts

The basis of such scenarios has been historical events, often biased towards events in the past few decades



However, we have seen many recent examples of scenarios that can manifest across industries, several of which were unprecedented

- **Pandemic** with wide ranging impacts across industries
- **Supply chain disruptions** affecting multiple industries
- **Behavioral and technology, e.g.,** shifts in working model, preference for digital over brick and mortar
- **Environmental e.g.,** Transition to low-carbon economy, extreme weather events, environmental legislation
- **Exacerbated magnitude and pace of impact e.g.,** Connectivity through social platforms, interlinkages through common investor, uncertainty around GenAI deployment and adoption, accelerated deposit outflow/surges

Banks need to revisit 3 core elements of stress testing framework



Approach to scenario definition and testing



Integration in risk decisions

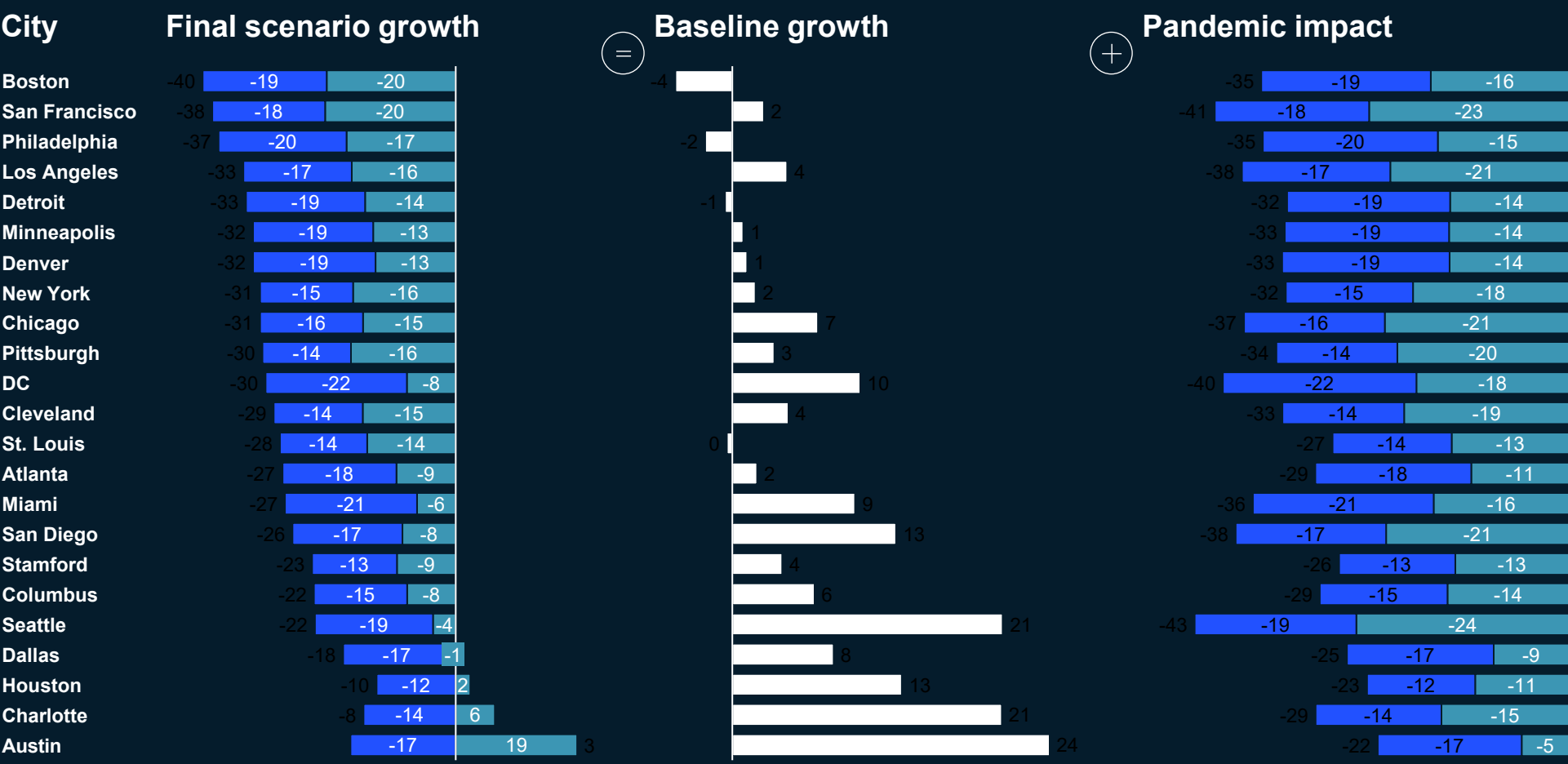


Enablers and capabilities

Pandemic and WFH: Models that ignore structural hybrid work uptake could overestimate demand for office floorspace by ~5-40%

Change in floorspace demand 2019-30; %; by scenario

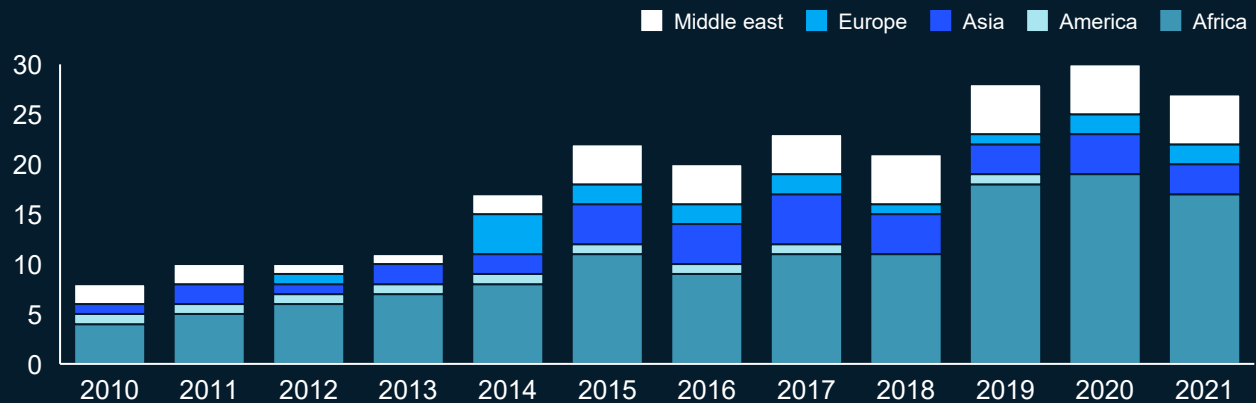
Where we work¹



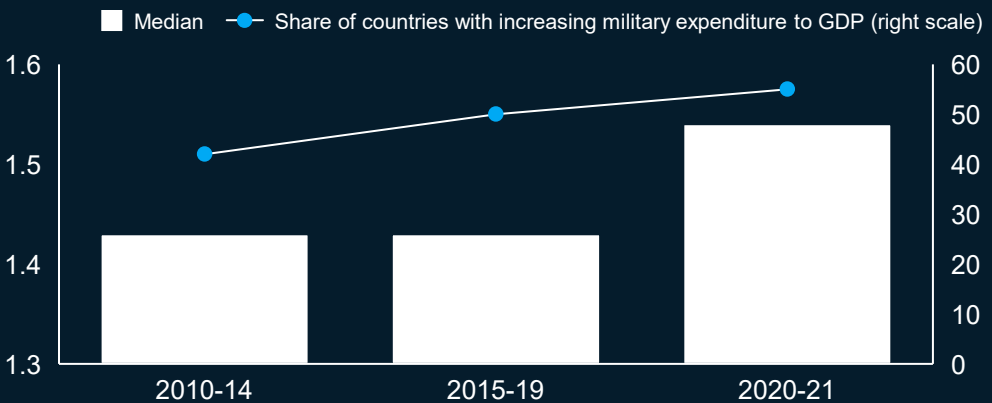
- Baseline growth: anchored on historical employment and population growth trends
- Scenarios incorporate migratory and attendance shocks

Geopolitical: Even before Ukraine, military conflicts were on the rise signaling increased risk of escalations

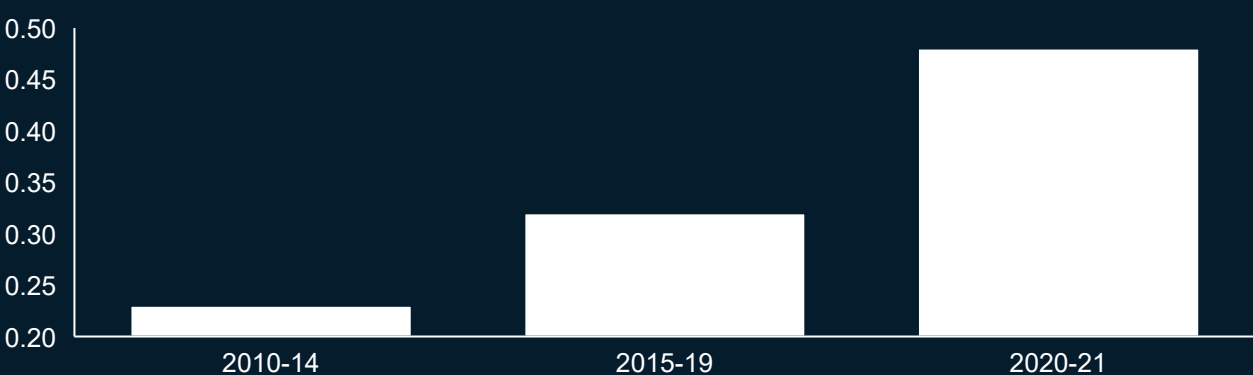
International Military Conflicts, 2010-21
(Number of disputes)



Ratio of Military Expenditure to GDP, 2010-21,
(Percent)



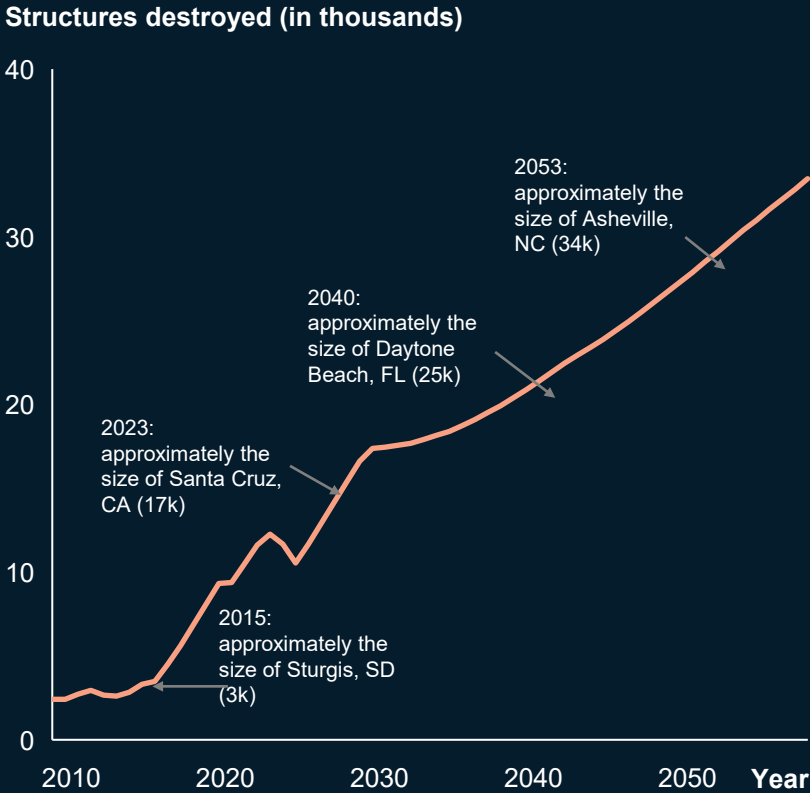
US-China Foreign Policy Distance¹, 2010-21
(Index)



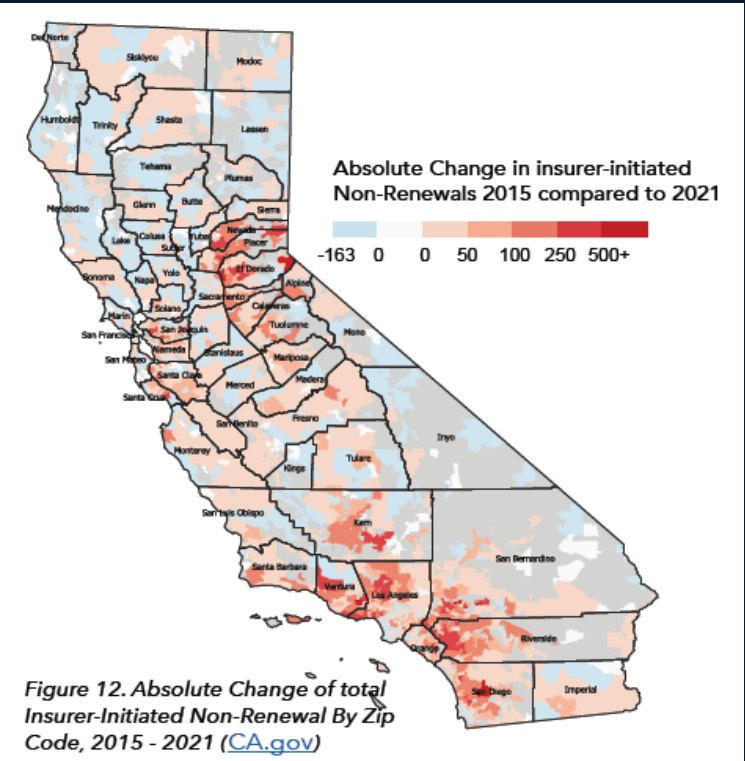
1. Disagreement in the voting behavior of the United States and China on foreign policy issues in the United Nations
2. Countries that rejected the motion in the United Nations in March 2022 to condemn Russia's war on Ukraine

Physical climate risk: 2023 will be an unprecedented year for damages from Wildfire; Expect significant shifts in insurance premium and availability

2023 is a tipping point for wildfire risk in US



Insurance initiated no-renewals in California increased $\approx 750\%$ since 2015

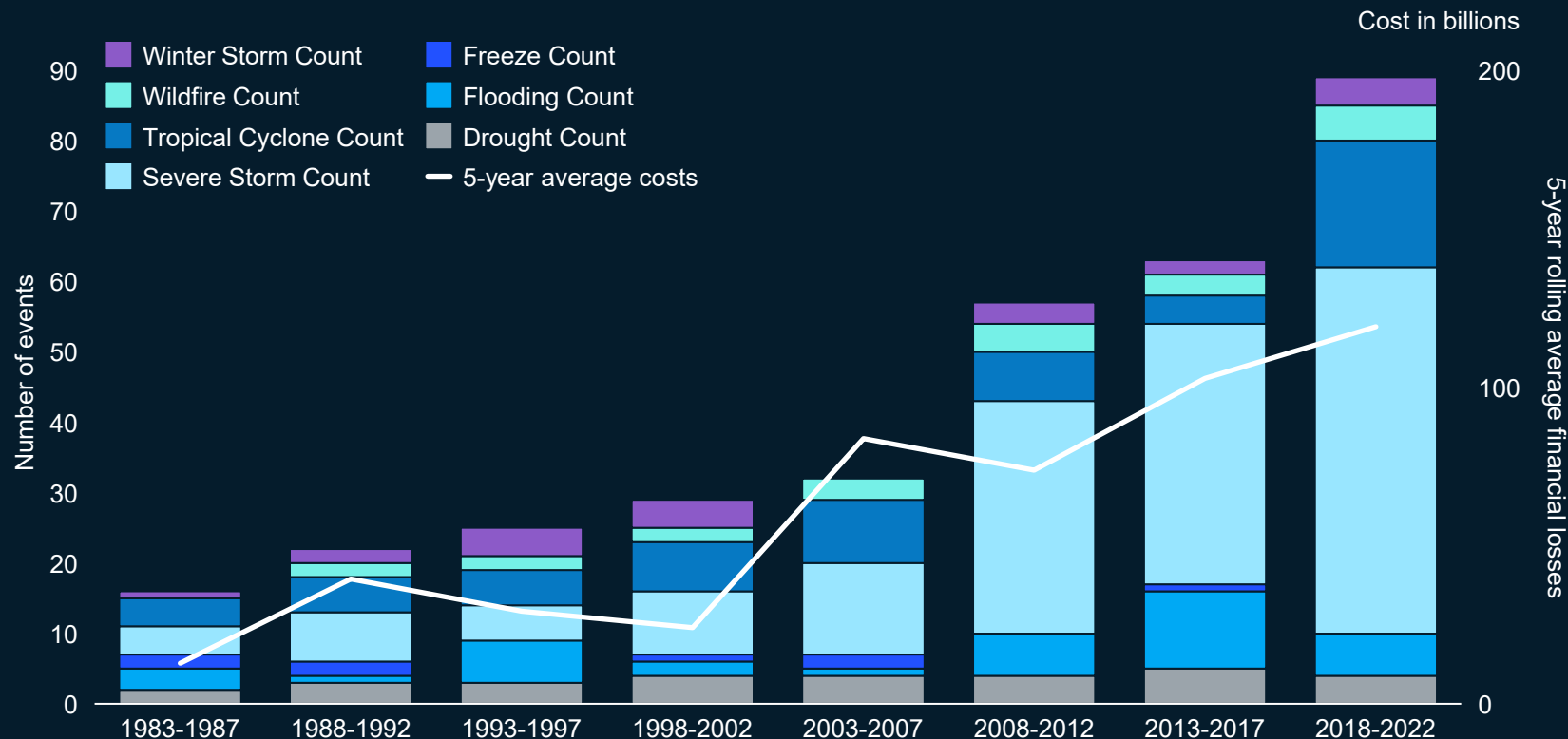


The changing severity, frequency, and geography of physical risks have implications on insurance operations & market dynamics

The frequency of natural disasters in the US has more than doubled in recent years...

United States Billion-Dollar Disaster Events 1983-2022¹

Number of events; \$B USD losses, CPI-adjusted



...with market & operational implications

Illustrative examples

- Property market has experienced a **significant tightening of capacity** due to elevated loss experience, causing **reinsurance prices to jump 30-45%**¹
- Carriers are **reconsidering operations in high-loss states** like Florida and California²
- “**Secondary perils**” like hail and thunderstorms, which previously were not considered as main risk drivers, **have caused 50%+ of total insured losses**⁴

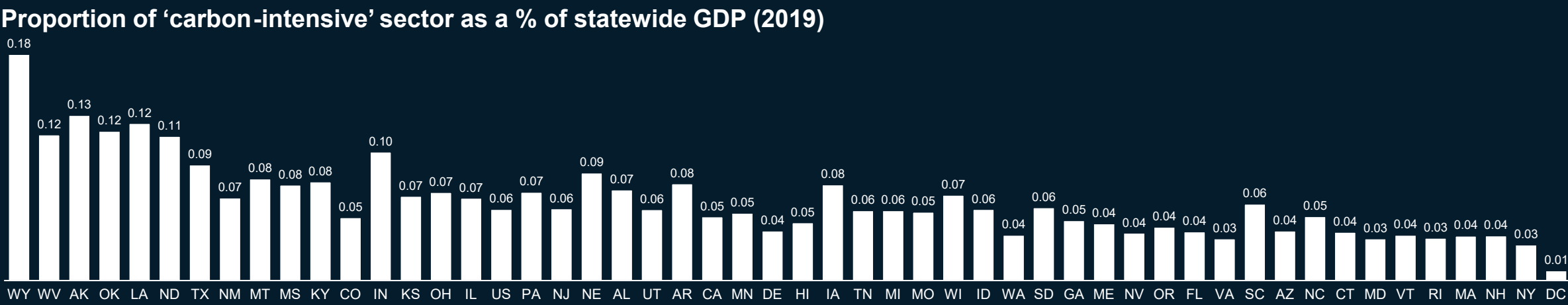
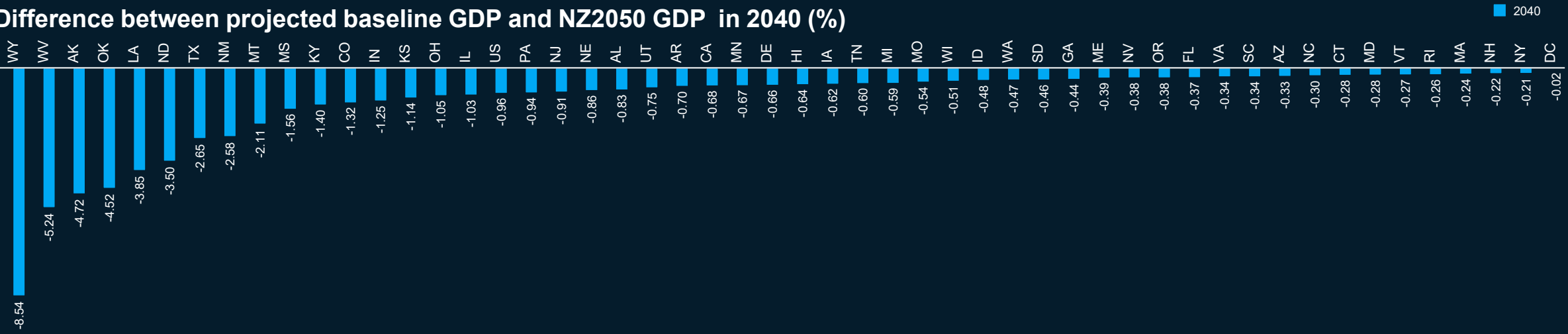
1. <https://www.businessinsurance.com/article/20230110/NEWS06/912354781/Property-insurance-rates-to-keep-surging-in-2023>

2. NOAA National Centers for Environmental Information (NCEI) U.S. Billion-Dollar Weather and Climate Disasters (2022)

3. <https://www.nytimes.com/2023/05/31/climate/climate-change-insurance-wildfires-california.html>

4. <https://www.insurancejournal.com/news/international/2023/01/31/705330.htm#:~:text=At%20the%20same%20time%2C%20total,secondary%20perils%2C%20said%20the%20report.>

Transition to low-carbon economy has varying degree of impacts across sectors – translating to different levels of statewide impact



Source: Scenarios from Bank of Canada assessment of sectoral GVA impact, BEA/BLS information on state level industrial production

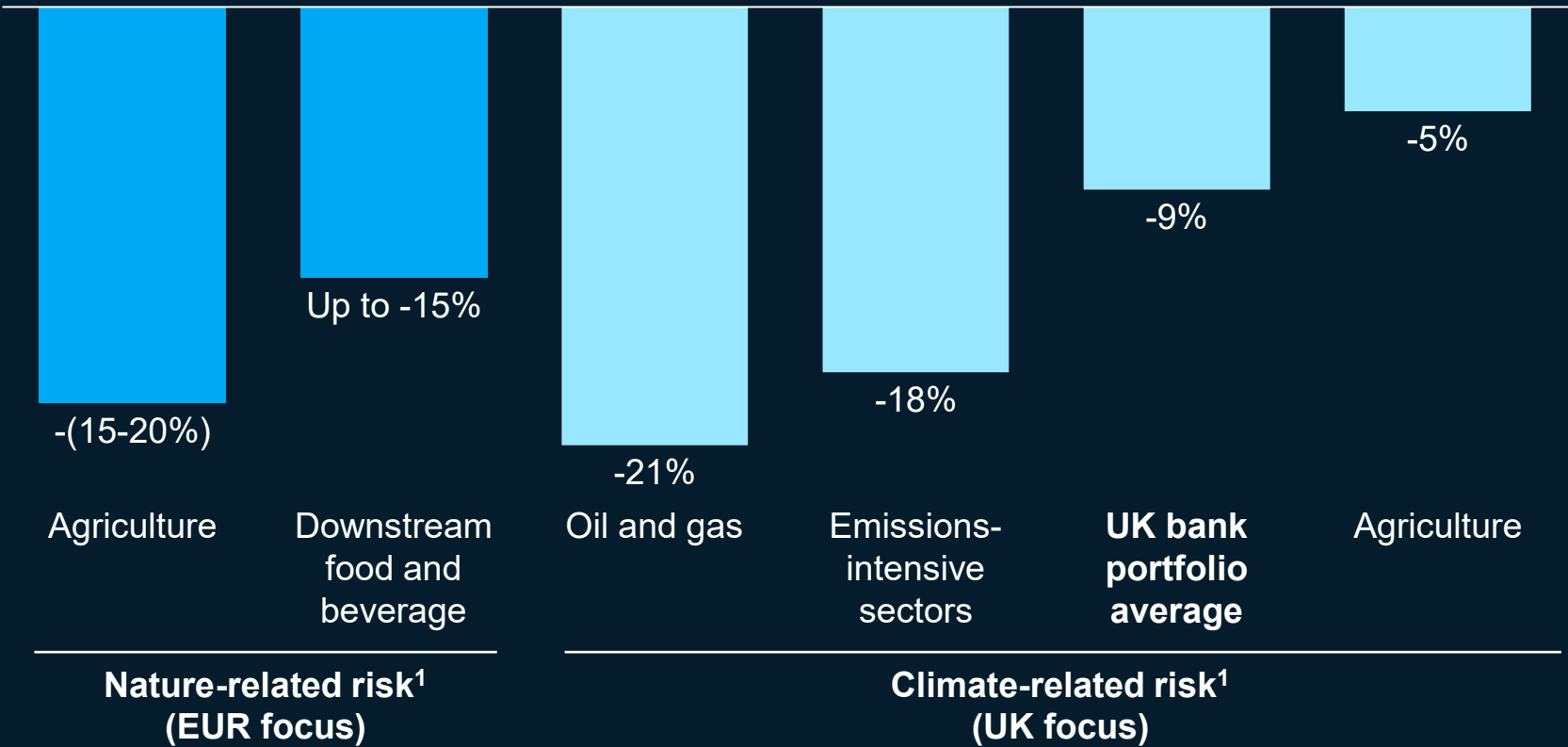
Note: Carbon-intensive sectors include Petroleum and coal products manufacturing, Oil and gas extraction, Agriculture, forestry, fishing and hunting, Transportation and warehousing, Utilities, Coal Production, Energy-intensive manufacturing

McKinsey & Company 7

Evidence from nature related stress tests indicate that impacts may be similar in magnitude to climate for some sectors

Ranges based on previous work: Cumulative expected credit losses 2020-2050 by sector and source

% change loan book value relative to baseline (expected losses as a share of total lending)

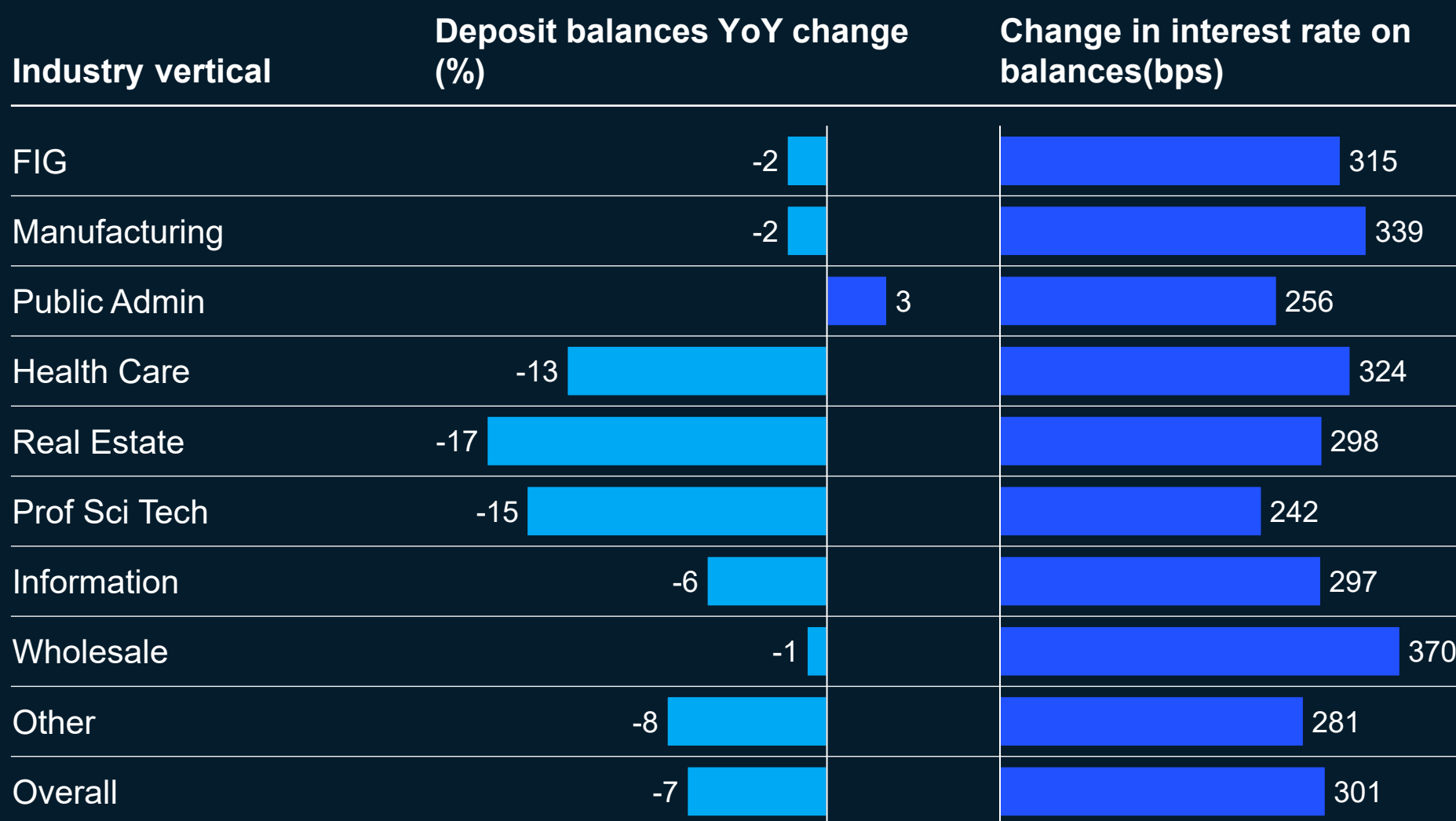


“Nearly 75% of all bank loans in the euro area are to companies that are highly dependent on at least one ecosystem service”

Frank Elderson,
Executive Board,
European Central Bank,
July 2023

1. Nature-related risk estimates here are calculated using McKinsey’s NatuRisk toolkit. Climate-related risks are taken from the Bank of England’s Climate Biennial Exploratory Scenarios (CBES) climate stress test.

Industry verticals see varying degree of deposit outflows despite increases in interest rates offered



- **Public Admin, Wholesale, FIG, and Manufacturing have the most stable balances**

- **Balances related to real-estate and professional/technical services are most volatile**

Interest rate is calculated from Interest Only DDA, Hybrid DDA, MMDA, IOLTA, Escrow, Sweep

Source: McKinsey Portfolio Navigator: Commercial Deposit (data extracted August 31, 2023)

Characteristics of recent scenarios set it apart from traditional scenarios used for stress testing



Idiosyncratic nature



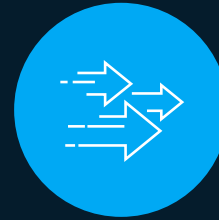
Cross-sector propagation



Second-order impacts



Beyond financial impacts



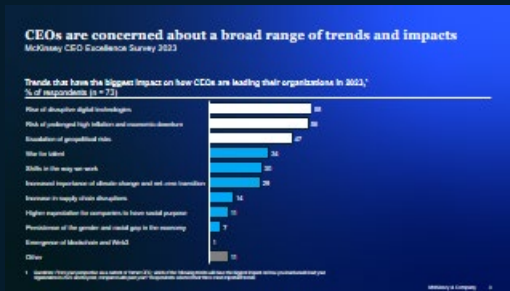
Fast escalation due to hyperconnectivity



Interlinkages across scenarios

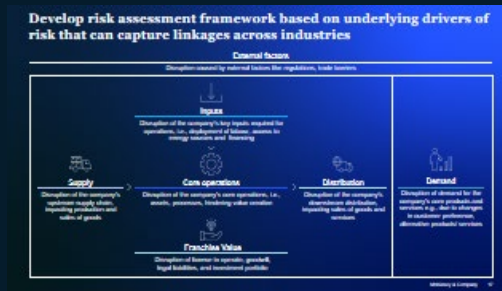
The diverse nature of scenario drivers and impacts has significant implications for banks' stress testing approach

A Selects and define scenarios



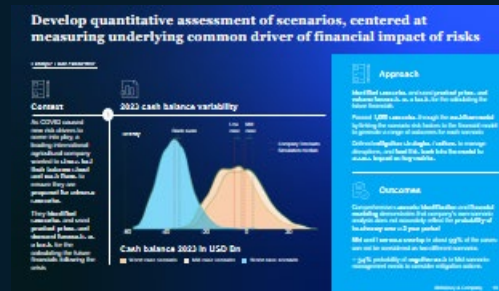
- Apply both top-down (expert group) and bottom-up (LOB driven) approaches
- Leverage external and internal insights to identify potential future scenarios
- Consider historical scenarios but adjust for speed, severity and scope of impact

B Identify impact drivers



- Conduct detailed sector and borrower level analysis
- Prioritize most material drivers for quantification
- Establish and build out central 'knowledge hubs'
- Leverage Risk ID process and BU input

C Quantify impacts



- Consider both first and second order impacts
- Reflect pull-forward effects of market prices
- Leverage existing models where possible

D Integrate with business decisions



- Define full range of decisions:
 - Immediate risk mitigation
 - Tactical decisions
 - Strategic decisions
- Align impact likelihoods and time horizons with decision types

Scenarios should reflect current trends and potential impacts

McKinsey CEO Excellence Survey 2023

Trends that have the biggest impact on how CEOs are leading their organizations in 2023, ¹ % of respondents (n = 73)



Scenarios vary across multiple dimensions:

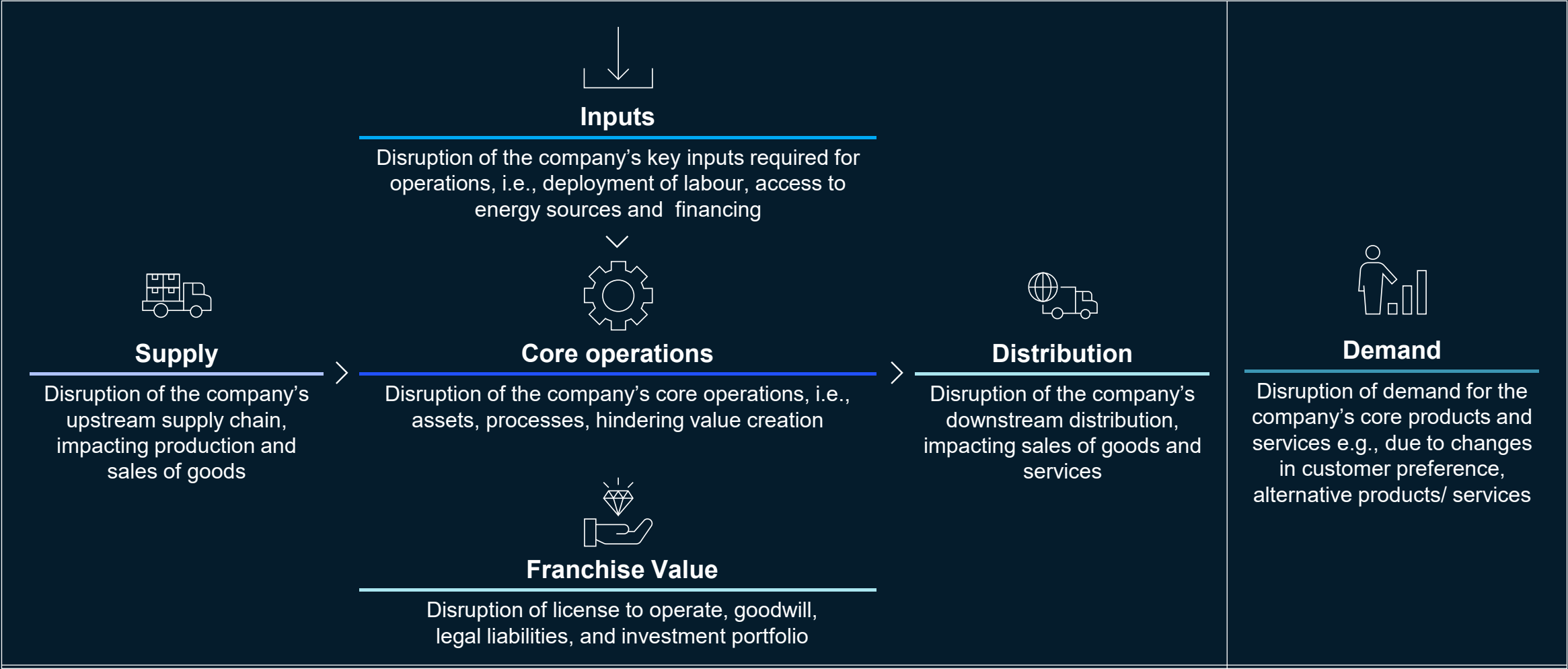
- **Time horizon** – gradual evolution to rapid escalation
- **Underlying drivers** – macroeconomic, event-driven, behavioral, technological
- **Risk impact** – financial, reputational, strategic

1. Questions: From your perspective as a current or former CEO, which of the following trends will have the biggest impact on how you lead/would lead your organization in 2023 and beyond, compared with past year? Respondents selected their three most important trends

Banks need a granular risk assessment framework that reflects underlying drivers of risk and linkages across industries

External factors

Disruption caused by external factors like regulations, trade barriers, technology



Potential impact levels should be mapped across portfolio segments and prioritized

Examples/not exhaustive/suggestive

Expected impact: ■ Strongly negative ■ Negative ■ Medium negative ■ Slightly negative ■ None ■ Slightly positive ■ Positive

Example of risk / opportunity assessment and prioritization

Scenario ...							
Scenario – Geopolitics							
Scenario – Pandemic							
Industries		Supply	Input	Core operations	Distribution	Franchise value	Demand
	Commercial Real Estate						
	Transportation						
	Automotive						
	Travel and Leisure						
	Digital entertainment						
	Tech						

Output



Prioritized areas of the value chain impacted by scenarios

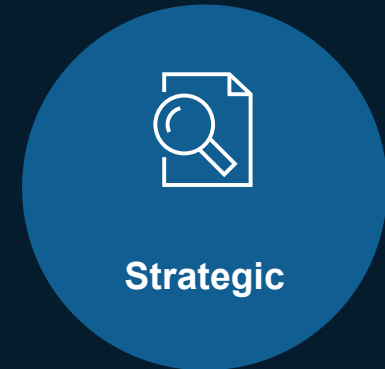
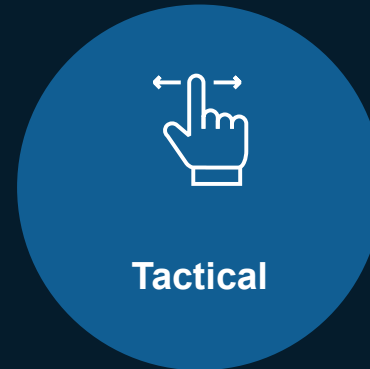


Identified **priority threats and opportunities** for each scenario, along each step of the value chain across industries



Defined **qualitative and quantitative inputs** to feed the impact assessment effort

Stress scenarios can support a full range of business decisions



Decision type	<ul style="list-style-type: none"> • Respond to evolving stresses and escalating threats to reduce losses 	<ul style="list-style-type: none"> • Mitigate and manage risks to stay within risk appetite 	<ul style="list-style-type: none"> • Adjust long term strategy to reflect future impacts on losses and value
Examples	<ul style="list-style-type: none"> • Pandemic • Evolving recession/crisis • Commodity price shocks 	<ul style="list-style-type: none"> • CCAR/capital stress testing • Climate impact on credit • Rate volatility 	<ul style="list-style-type: none"> • Climate transition • Natural capital
Action steps	<ul style="list-style-type: none"> • Adjust underwriting policy • Tighten limits • Work through distressed assets 	<ul style="list-style-type: none"> • Adjust underwriting policy • Adjust credit scoring • Update risk appetite limits 	<ul style="list-style-type: none"> • Identify business opportunities • Adjust capital allocation • Invest in new capabilities
Information needed	<ul style="list-style-type: none"> • Rapid assessment of losses • Underlying drivers to identify mitigants 	<ul style="list-style-type: none"> • Expected and stressed losses aligned with portfolio maturity • Loan level drivers of impact 	<ul style="list-style-type: none"> • Impact on portfolio values and market size/share with and without portfolio change assumptions

Banks will need to develop capabilities across four key areas

Develop new capabilities and expanded domain knowledge to support the future-looking risk vision, scope, and ways of working



Develop an agile and dynamic approach of collaboration between front and second line

Implement tailored governance to enable timely decision making and triaging of new and emerging risks to ensure the right response

Develop models and analytical processes that support the full spectrum of business decisions, including rapid impact analysis

Banks will need to focus on 5 elements to navigate uncertain scenarios

- 1 Redefine scenario definition approach, leveraging both top-down and bottom up approaches – make thoughtful use of historical data
- 2 Identify and capture the full range of impact channels, including 2nd order effects, cross-scenario impacts and asset value impacts
- 3 Systematically define how scenario analysis supports decision making across different time horizons
- 4 Develop new and leverage old analytics, including capabilities to run stress tests in agile set-up (<1 week from identification to measurement)
- 5 Evolve skills, organization and governance to support stress tests developed in agile set-up

Questions

Today's Speakers



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Leader in Risk and Banking Analytics Service Lines. Has more than 15 years of experience and demonstrated success conceptualizing, building, managing and improving analytics solutions for risk assessment in the financial sector