Moody's Analytics

Better Faster Decisions

Moody's Integrated Risk Analysis

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Today’s agenda

1. Integrated risk and resilience analytics
2. Application: Country/Industry risk integration analysis
3. Application: Single firm risk integration
4. Application: Multiple risk impact on loan portfolio

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Integrated Risk & Resilience Analytics

Moody's Integrated Risk Analytics

Combining our risk methodologies for a tailored holistic assessment

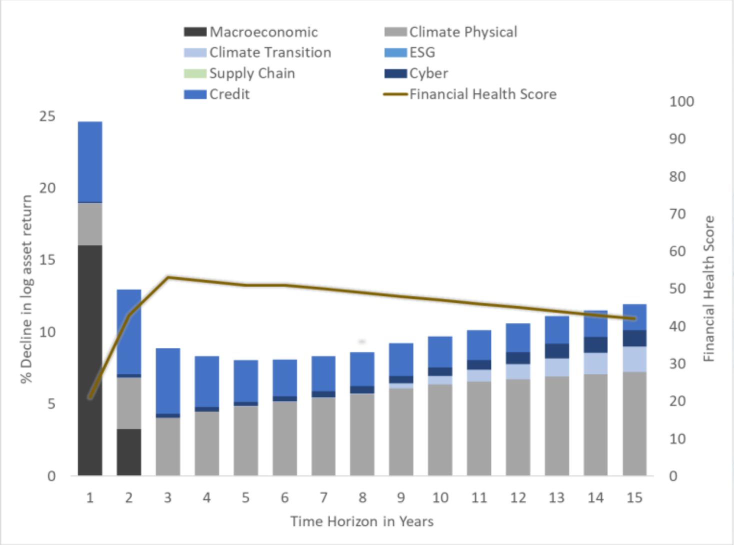
DOMAIN-NATIVE RISK ASSESSMENTS

- Credit
- Macroeconomic
- ESG Risk
- Climate
- Cyber
- Supply Chain
- Legal
- Reputational
- Innovation
- Terrorism
- ...

Measured in silos and different scales

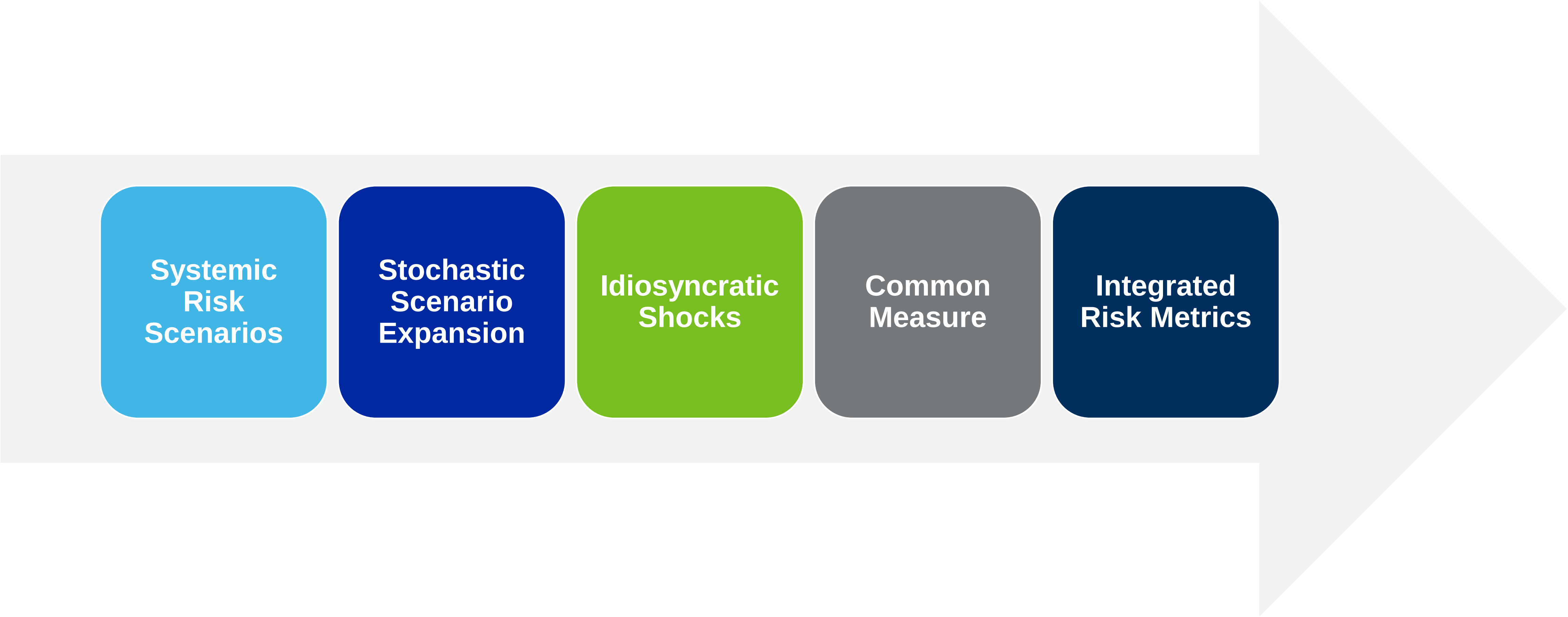
TRANSLATING RISK ASSESSMENTS IN A COMMON LANGUAGE, ACCOUNTING FOR RISK INTERDEPENDENCIES

Integrated Risk Analytics



Like-for-like comparison across risk types

Moody’s Integrated Risk Analytics Structure

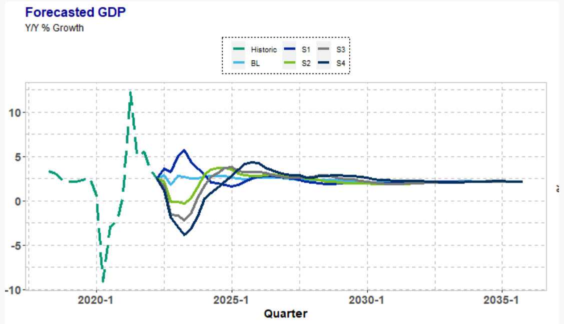


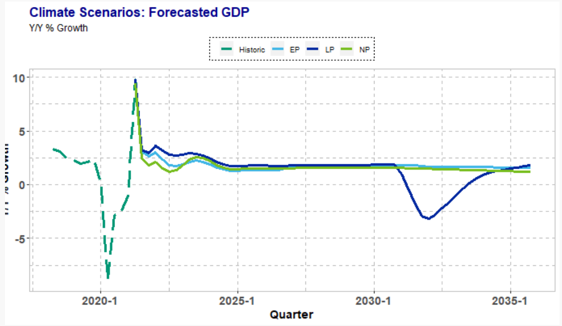
Moody's Integrated Risk Analytics structure

Macro Systemic Risk Scenarios with Weights

Baseline, stressed macro and climate scenarios

Macro Scenario Projections

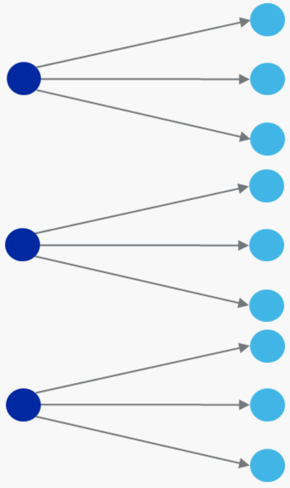




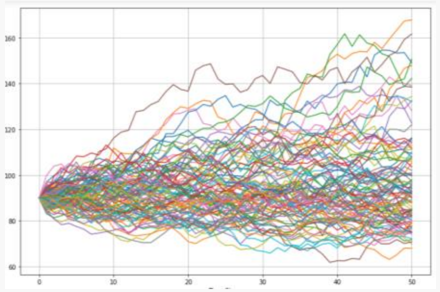
Stochastic Scenario Expansion

Simulations around systemic scenarios

Set up unique paths of macroeconomic and climate scenarios



Expand Scenarios for each unique path

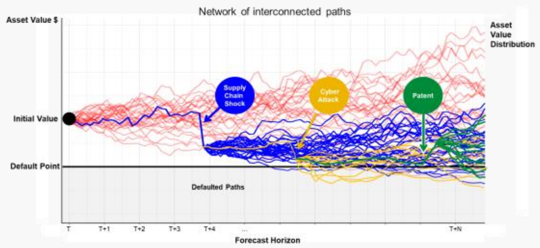


Forecasting horizon

Firm-level inputs

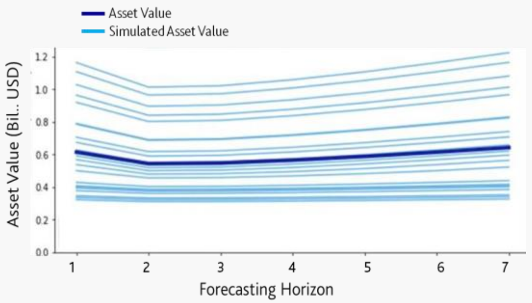
Idiosyncratic Shocks

Create paths for idiosyncratic risks, and map them to asset values



Enterprise Value Engine

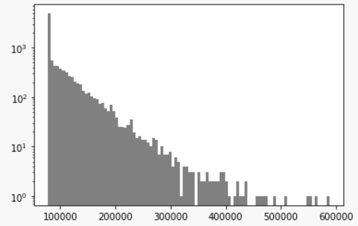
Expanded Asset Value distribution



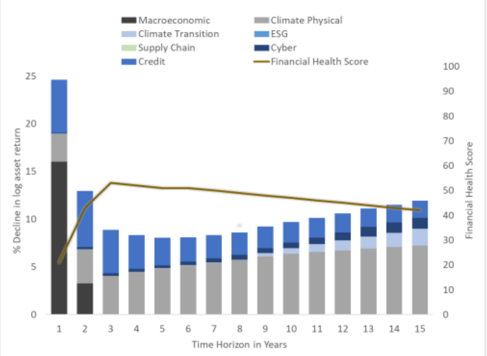
Portfolio Risk Metrics

- Portfolio Expected Value and Volatility
- Higher Order Moment Analysis
- Conditional Statistics and Tail Risk Analysis

Analysis at horizon T



Integrated Risk Dashboard



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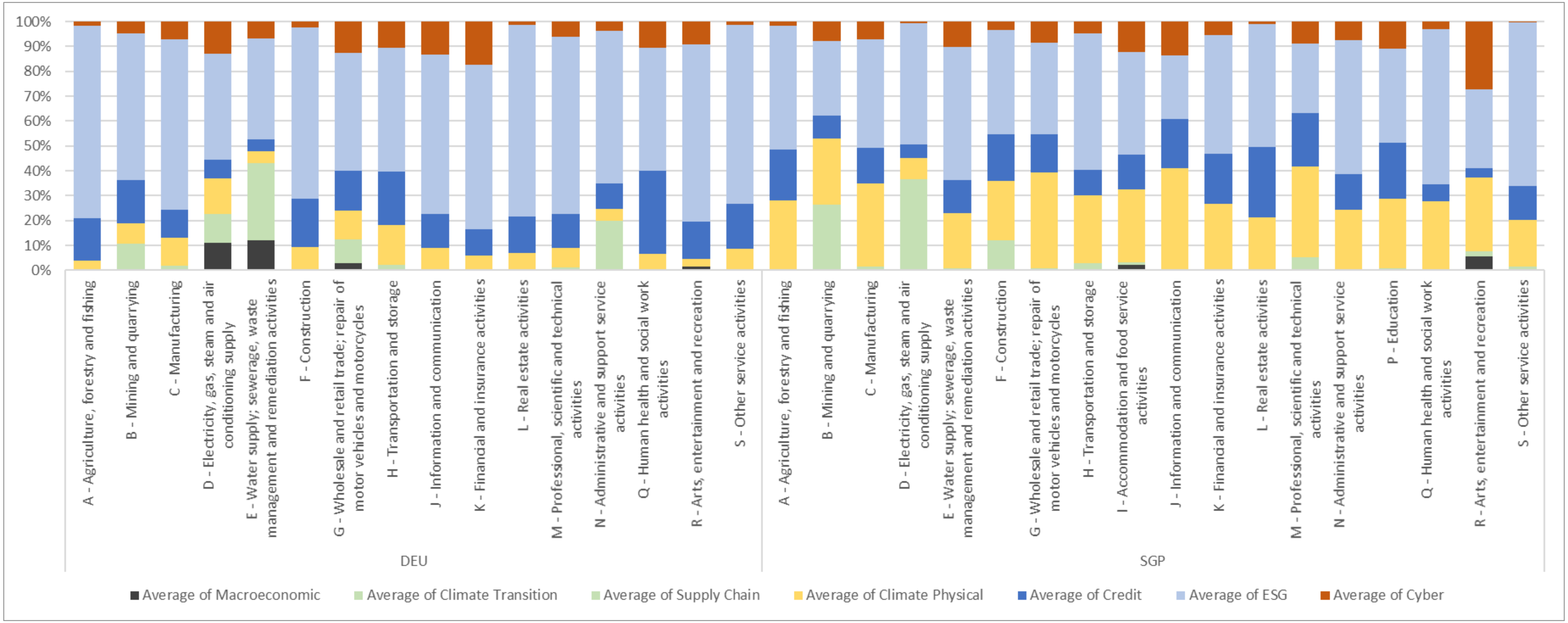
Country/Industry risk integration analysis

Risk contribution by type of event

Risk Contributions by NACE for DEU vs SGP at 15-year time horizon



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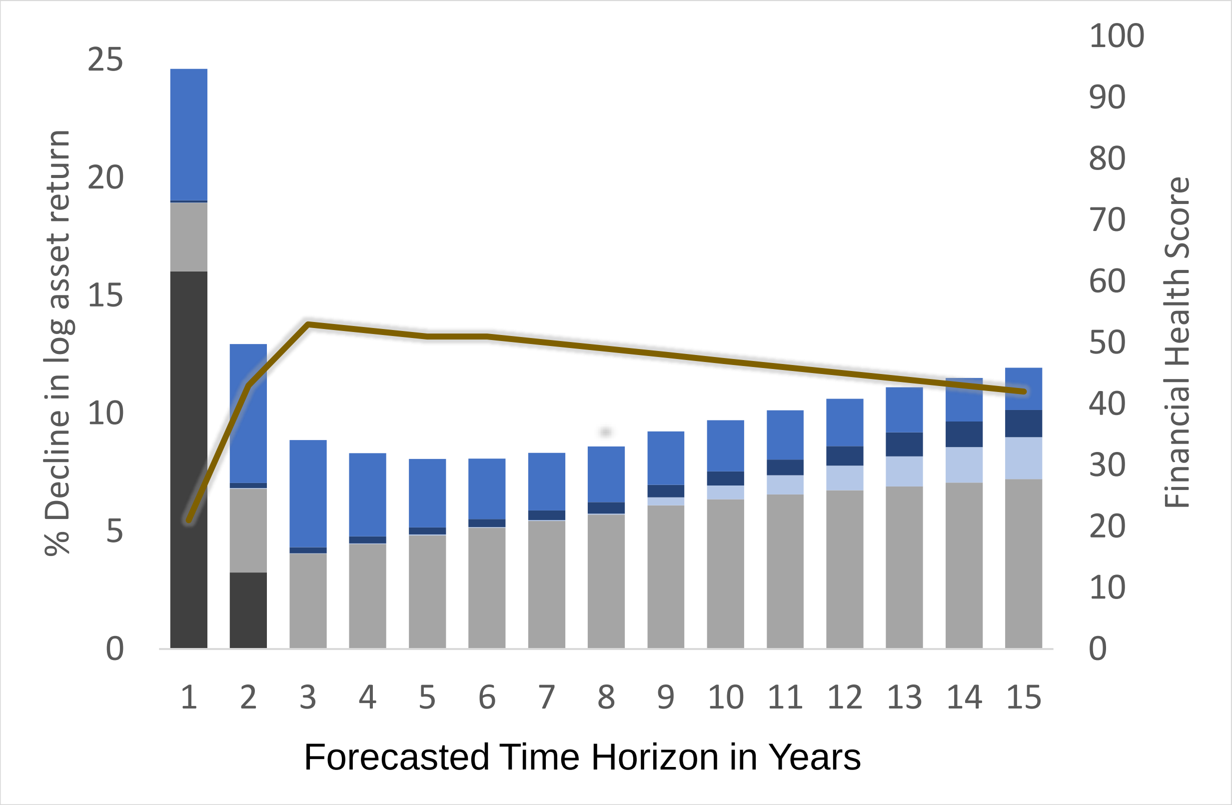
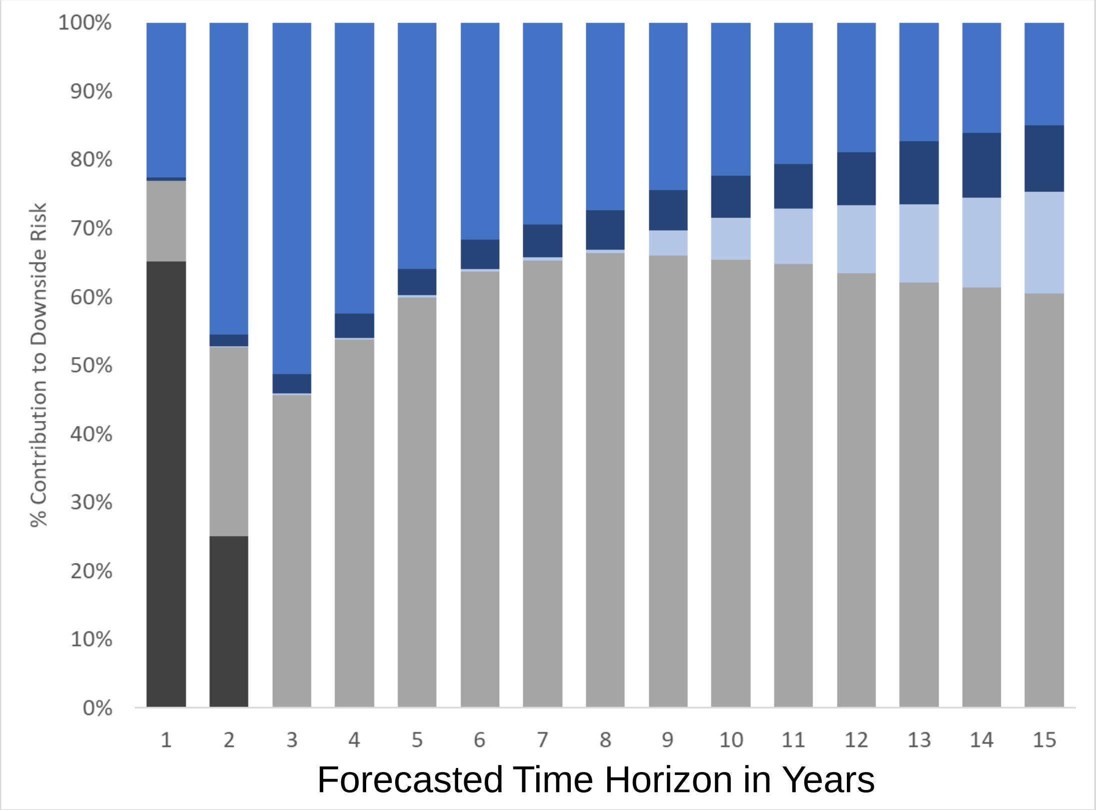
Single firm risk integration

Downside risk contribution by type of event

US Oil Producer

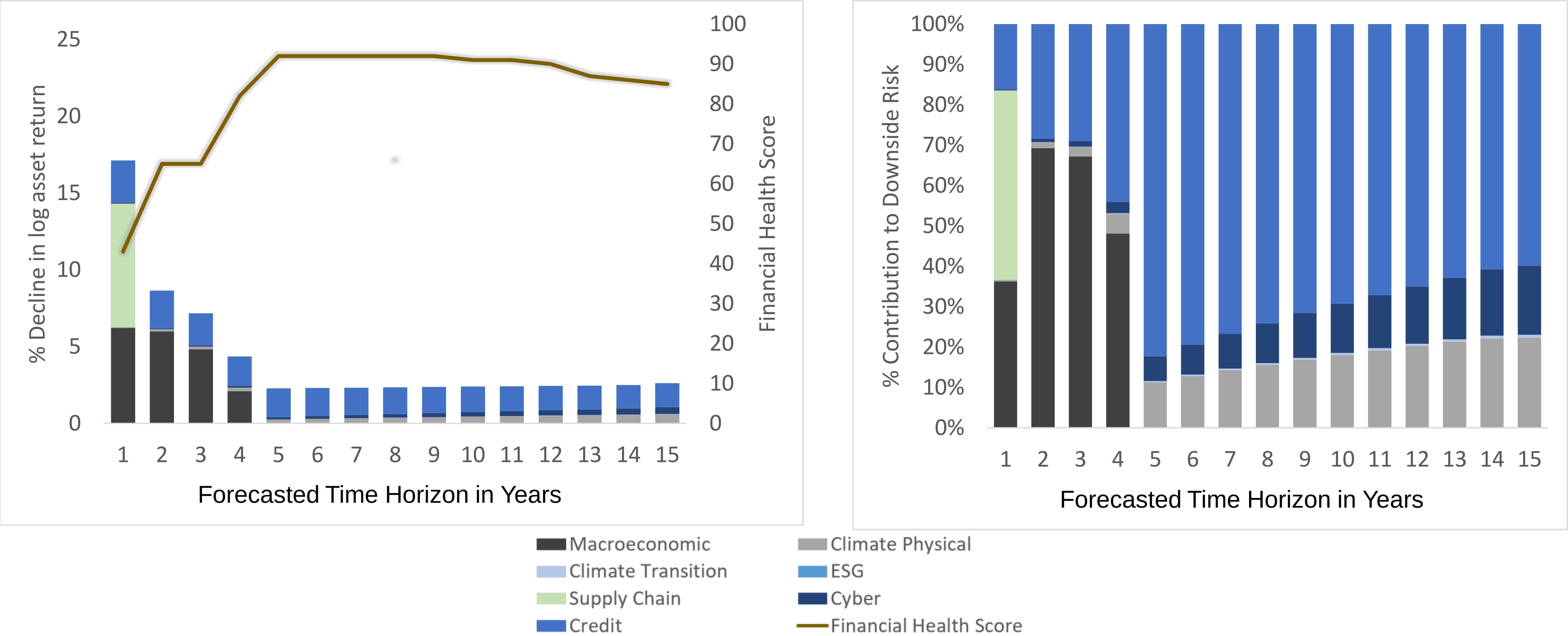




Macroeconomic
Climate Physical
Climate Transition
ESG
Supply Chain
Cyber
Credit
Financial Health Score

Downside risk contribution by type of event

UK retailer



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Portfolio-level credit risk assessment

Impairment analysis

We present results for a sample portfolio of 1,094 firms, selected in such a way that the portfolio is well-diversified across industries and geographies.

Share of exposure at risk (percentages of the total loan amount)

Scenarios	ECL 12-month	ECL lifetime	IFRS 9 impairment
Macro	0.178	1.194	0.291
Macro + Climate	0.190 **(+6.7%)**	1.271 **(+6.5%)**	0.310 **(+6.5%)**
Macro + Climate + Idiosyncratic risks	0.212 **(+19.1%)**	1.315 **(+10.1%)**	0.345 **(+18.6%)**

Percentage increase from additional risk

VaR and EC analysis

Share of exposure at risk (percentages of the total loan amount)

Scenarios	EL	VaR	EC	RWA
Macro	0.178	2.469	2.291	25.9
Macro + Climate	0.190 **(+6.7%)**	2.542 **(+3.0%)**	2.352 **(+2.7%)**	26.7 **(+3.1%)**
Macro + Climate + Idiosyncratic risks	0.212 **(+19.1%)**	2.715 **(+10.0%)**	2.503 **(+9.3%)**	28.4 **(+9.5%)**

Moody's ANALYTICS

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