

Session 4: Opportunities for Advancing Science and Informing Practitioner Decisions

- Session objective: Practitioner and scientific community suggestions for opportunities and priorities
- Structure:
 - 30 mins – Session 2 reporting-out and discussion
 - 30 mins – Session 3 reporting-out and discussion
 - 30 mins – General discussion

Session 2 Reporting-Out

Steve Rose, Jae Edmonds, John Weyant

July 24, 2019

Session 2 (Perspectives from practitioners) panelist guidance

- **Goal:** Characterize the needs of different types of decision-makers
- **Panelists asked to provide perspectives on the following:**
 - **Needs**
 - Decision-making needs – What decision-making need led you to global emissions scenarios? For instance, what is your overarching objective, what decisions are being informed, and/or what questions do you need to answer?
 - Technical needs – What, if any, specific quantitative information is required to support your decision-making? What is the resolution of your analytical needs (e.g., time horizon, geographic, economic, technological)? What other information is the climate-related information combined with to inform decisions?
 - **Approaches – past and present**
 - Please describe your previous approach for informing your needs (e.g., process, conceptually design, analytical tools, input data, output results and resolution, non-climate-related information used)?
 - Please describe your current approach for informing your needs (e.g., process, conceptually design, analytical tools, input data, output results and resolution, non-climate-related information used)?
 - **Challenges and ideas for improvement**
 - Please discuss challenges you encountered in developing and implementing your approaches for appropriately informing your needs.
 - Please discuss any ideas you would like the group to discuss for potentially addressing your challenges and/or better informing your needs.

Lessons From Session 2

- Large number of financial sector players
 - Public and private sectors have different objectives and information needs
 - Each with different objectives and scenario requirements
 - Each has different planning horizon **at present**.
- Socio-economic scenarios only one input to the process
- The need for granular information (spatial and temporal)
- Need for many scenarios and disruptive scenarios (**some of these may already be available**)
 - Common vs company specific scenarios
 - Far reaching structural changes
- All have a need for uncertainty characterization with many alternative formulations:
 - Scenarios
 - Risk assessments
 - Stress tests
 - More qualitative approaches risk assessment approaches
- Evaluate transition and physical risk simultaneous
- Needs for scenario information may sometimes overlap
 - This creates a need to assess where synergies and feedbacks might be important
- Sometimes there may be a need for boundary conditions to traditional analyses
- The potential role of IAM scenarios varies by application

Needs – Decision-making needs

- General

- Already considering – already planning for, under another name, what could be worse
- Don't manage to zero risk
- What is climate-related for each firm?
- Different kinds of risk – strategic, credit and investment, market, operational
- Manage risk enterprise-wide
- Company-level vs market risk
- Risk vs. material risk?
- Risk management as testing plans
- Base risk on something that may or may not happen
- Resiliency of finance system and supporting low-carbon transition – financial system objectives: soundness, financial stability, price stability
- Stress testing companies v system
- Risk assessment v stress testing
- Scenarios for policymakers at state, national and international level in order to set goals, determine policy and assess performance

- General (cont.)

- Disorderly transition scenarios
- Evaluate transition and physical risk simultaneously
- Monetary policy impacts
- Tail risks
- Assess climate co-benefits
- Aligning with Paris
- Transition, physical, and financial risk
- Short-term stress testing analysis and long-term scenario analysis
- Local to global interest
- Link risk and credit quality

- Transition risk

- Multiple elements: policy & legal, technical, market, reputation
- Is there a build-up of carbon intensive risk in industry?

Needs – Technical needs

- Scenarios
 - Plausible
 - More than one, diverse outcomes, ranges
 - Timeline
 - Can vary with position in company
 - Max horizon 2050?
 - Benchmarks vs scenarios
 - Consider climate policy, technologies, markets
 - Consider policy uncertainty
- Comparability – How important, and in what (scenarios or methods?)
- Evaluate risk in single and multiple sectors, and regions
- Differentiate companies
- Developing new risk assessment tools v utilizing existing
- Granularity
- Combine granular/detailed and aggregate information

Challenges and ideas for improvement

- Single scenario issues – e.g., infinite pathways, developer bias, analysis and understanding
- Disclosure of commercially sensitive information (litigation risk)
- Capital reallocation time – time to react
- Non-optimal use – as forecasts, one or the other future (actually move between scenarios and/or hedge)
- Decision-maker time horizon vs. scenario horizon/time steps vs. climate risks – practical, conceptual, and mechanical questions
- What could be worse than the worse already considered?
- Common vs company specific scenarios?
- Tail and volatility risks
- Lower and higher resolution data needs
- Representing policy – carbon prices vs more specific
- Politics and risks they create
- Wide ranges of results
- Considering uncertainties
- Second-best world
- Incentive, knowledge, behavioral, and technological obstacles
- Stakeholder interests unclear
- Uncertainties about 2050 will continue
- Scenarios not reflecting adaptation by companies
- Data availability

Challenges and ideas for improvement

- Aggregate risk implications for the economy
- Boiling down to one or two metrics
- How granular should model results get (vs other data sources)?
- Need to manage for impact, not cause
- Common communication of future risk conditions
- Past data not a good predictor for climate risks
- Far reaching structural changes (difficult to model)
- Evaluate transition and physical risk simultaneous
- Financial system interlinkages – model feedback loops between climate, economy and financial system – is a financial module possible?
- Incomplete data
- Public finance and investment
- Different asset pools and different concerns
- Government backstop on risk vs private insurance
- Non-market decisions
- Familiarity with the science
- Differentiating companies
- Considering climate policy, technology, and markets
- Disorderly transition scenarios
- Indirect impacts
- Translating science / models for practitioners
- Making climate scenario data and climate data easier to access and understand