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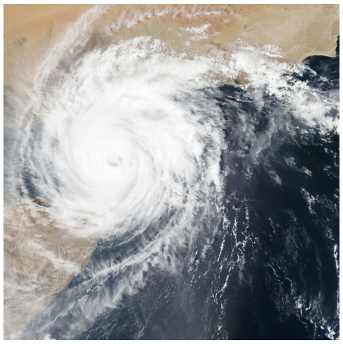
Analyzing the Economic Impacts of Climate Change



While the causes, degree and timetable for climate change may be debatable, what's certain is that even a small climate change will have a dramatic impact on businesses, particularly those associated with agriculture where success and failure hinge on the weather. Passkey has partnered with IHS Markit to help Farm Credit organizations analyze just how climate change could hit their balance sheets with a new suite of climate-related stress test scenarios.

"Beyond being a regulatory requirement, stress testing reveals the likely impact of various scenarios on things like liquidity, asset and liability values and credit worthiness; and climate change is a valid, emerging risk that should be considered," says Jonathan Ablett, head of economic modeling with IHS Markit.

There are two types of risk associated with climate change: physical risk, such as natural disasters that damage assets or higher average temperatures that may reduce harvests or require more expensive inputs, and transition risk as businesses are affected by new policies, technologies and products to adjust to the market shifts caused by climate changes. In addition to macroeconomic measures like GDP, inflation and interest rates, climate scenarios also consider things like emissions, carbon taxes and emissions trading systems, as well as changes in commodity prices and consumer preferences toward sustainable products.

"In developing these scenarios, we gathered energy, agricultural and financial experts to discuss potential narratives and what each would imply in terms of production and additional investment needed to drive growth. This allows our clients to assess which assets will be devalued due to physical risk," says Jonathan. "Organizations can then develop plans to ameliorate the identified risks and prepare for the likely outcomes."

At the macro level, the climate scenarios reveal a shift in where food and other products will be produced and how global trade flow will alter. At the Farm Credit organization level, the scenarios reveal the economic impact of various degrees of climate change, which ag industry clients can translate that into downstream impacts on their portfolios and balance sheets.

"The introduction of new technologies that reshape production will devalue some assets, and companies will need to make tough decisions about things like decommissioning or replacing production facilities," says Jonathan. "For Farm Credit organizations, it may mean making portfolio adjustments or changing the risk appetite in certain sectors."

Off-the-shelf stress testing scenarios can yield results very quickly. Many institutions opt to add additional data points or customized scenarios specific to their business models, which lengthens the process: some institutions have requested upwards of

800 variables, others are interested in only five. In terms of frequency, some clients request data monthly, others are satisfied with quarterly updates.

For more information about IHS Markit's stress-testing scenarios, contact Ryan Ray, Associate Director at IHS Markit.

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