CPA Practice Advisor

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With water risk rising in some companies and basins as a more urgent problem than climate change, University of Michigan researchers have worked out a way to measure how it affects stock volatility.

Peter Adriaens, an entrepreneurship professor at the Zell Lurie Institute at Michigan Ross, along with current and former students Kristine Sun and Ran Gao, wanted to know how the financial and operational risks can be quantified when a business faces water access constraints.

Peter Adriaens

"My ultimate objective is can we extract market signals out of stock volatility behavior that tells companies how financially exposed they are," Adriaens said. "What we wanted to measure is what is the opportunity cost to a company of not having water in a bucket. How is this going to impact a company?"

A series of stories in the *Financial Times* last month estimated that $84 billion was

exposures of four electric utilities in 2007-08, a two-year period that captured multiple drought events, commodity (coal) price fluctuations and systemic risk in the financial markets.

And Adriaens asked the question whether these asset risk pricing and stock sensitivity metrics can be used to make portfolio allocation decisions. The opportunity then arises to extract market signals for corporate water sustainability. The premise is that business water risk has a measurable and material impact on equity and portfolio volatility.

"Business water risk is not about price, but about opportunity cost. It's about businesses losing economic output," Adriaens said. "The loss of economic output is what is being valued in the market...opportunity costs and the fear of stranded assets."

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