

# Firm-Level Cybersecurity Risk and Idiosyncratic Volatility

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## KEY FINDINGS

- The authors propose a new measure of firm-level cybersecurity risk that applies textual analysis to earnings conference call transcripts; they use that measure to investigate the effect of cybersecurity risk on firm-level return volatility.
- They find that discussion of issues related to cybersecurity risk during earnings calls is associated with an increase in the component of volatility that responds only to firm-specific news.
- The authors show that the impact of cybersecurity risk on firm-level volatility is robust to alternative measurements of the language in earnings call discussions and to different industry classifications.

## ABSTRACT

The authors propose a measure of firm-level cybersecurity risk developed by employing pattern-based sequence-classification method from computational linguistics to determine the proportion of time devoted to issues related to cybersecurity risk during earnings conference calls. Using their measure, they investigate the effect of cybersecurity risk on firm-level return volatility; they examine both idiosyncratic volatility and implied volatility and find that firm-level cybersecurity risk is positively correlated to idiosyncratic volatility on the days on which earnings calls are held. This suggests that the discussion of issues related to cybersecurity risk during earnings calls is related to an increase in the component of the volatility that responds only to firm-specific news. That positive relationship is robust to alternative measurements of the language in earnings call discussions and to industry classifications.

## TOPICS

*[Security analysis and valuation](#), [risk management](#), [big data/machine learning](#)\**

Risks associated with data breaches and cyberattacks have been identified as one of the most important factors on which regulators, investors, and company executives should focus. In February 2018, the US Securities and Exchange Commission (SEC) issued its “Statement and Guidance on Public Company Cybersecurity Disclosures,” which states that “given the frequency, magnitude and cost of cybersecurity incidents, the Commission believes that it is critical that public companies take all required actions to inform investors about material cybersecurity risks and incidents in a timely fashion, *including those companies*

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