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Abstract

This paper examines the relationship between volatility and the probability of occurrence of expected extreme returns in the Canadian market. Four measures of volatility are examined: implied volatility from firm option prices, conditional volatility calculated using an EGARCH model, idiosyncratic, and expected shortfall. A significantly positive relationship is observed between a firm's idiosyncratic volatility and the probability of occurrence of an extreme return in the subsequent month for firms. A 10% increase in idiosyncratic volatility in a given month is associated with the probability of an extreme shock in the subsequent month (top or bottom 1.5% of the returns distribution) of 26.4%. Other firm characteristics, including firm age, price, volume and book-to-market ratio, are also shown to be significantly related to subsequent firm extreme returns. The effects of conditional and implied volatility are mixed. The E-GARCH and expected shortfall measures of conditional volatility are consistent with mean reversion: high short term realizations of conditional volatility foreshadow a lower probability of extreme returns.

Keywords: Extreme returns; Implied volatility; Conditional volatility; Idiosyncratic volatility; Expected shortfall.

JEL Codes: G10, G11, G14, G17

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