

Fama/French Forum

Fama and French answer topical and timeless questions.

JAN 30, 2012

Q&A: Are Stock Returns Normally Distributed?

Q&A

What is the best way to describe the distribution of stock returns—a normal distribution, lognormal, or something else? What should investors do with this information?

EFF/KRF: Distributions of daily and monthly stock returns are rather symmetric about their means, but the tails are fatter (i.e., there are more outliers) than would be expected with normal distributions. (This topic takes up half of Gene's 1964 PhD thesis.) In the old literature on this issue, the popular alternatives to the normal distributions were non-normal symmetric stable distributions (which are fat-tailed relative to the normal) and t-distributions with low degrees of freedom (which are also fat-tailed). The message for investors is: expect extreme returns, negative as well as positive.

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