Stock Options as Lotteries

Brian H. Boyer and Keith Vorkink

Abstract

We investigate the relationship between skewness and average returns on individual equity options. Recent theories predict a negative relationship between asset returns and skewness, and subsequent empirical research has found support of this relationship in the equity market. However, options markets may offer a better environment than equities for testing skewness preferences for two reasons. First, options markets offer much more skewness to lottery preferring investors. Our skewness estimates for individual equity options are larger than the skewness estimates found in equity markets by factors of 4 or 5 in some cases. Second, options markets also allow an investor to construct measures of ex-ante skewness on options that have less model error than the skewness estimates used in other asset markets (including equities). Consistent with the theoretical predictions, we find that individual equity options exhibit a significant negative relation between average returns and skewness. Options with high levels of expected skewness offer surprisingly low returns (weekly alphas in some cases are less than -50 percent) indicating that for skewness preferring investors, skewness features of an investment may be of first-order importance when compared to other moments of the distribution such as mean and variance. We find that our results robust to a number of alternative explanations.