Tracking Error and Long-term Error Performance of Leveraged Exchange-traded Fund: The Norm or Myth?

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Abstract

Exchange-traded Fund (ETF), tracking an index and trading like a stock, was once an innovation of the financial market. Unlike the traditional ETFs, the LETFs use derivatives and active trading strategies to target a multiple return on the underlying index. The aim of LETFs is obviously different from that of the traditional ETFs. In this sense, does it means the LETFs repeat the norm of the traditional ETFs? We study 46 LETFs from U.S., Canada, France, Germany, Korea and Japan. We find that most inverse LETFs are in negative tracking error and skewness. We further examine the variances of LETFs via the GARCH(1,1) and MS-GARCH models. For the LETFs with the same underlying index, the probability distributions in different tracking error regimes are difference. This shows that the active management affects the LETF ignoring the same underlying index and target returns. Applying the MS-GARCH models, we find that the volatility changes along the regimes for the LETFs with the target returns of -2x and in long history.

Keywords: Leverage exchange-traded funds, tracking error, regime switching

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