The Truncated Levy Flight (TLF) model has been successfully used to model the return distribution of stock markets in developed economies and a few developing economies such as India. Our primary purpose was to use the TLF to model the S&P 500 and the firms operating in the Ghana Stock Exchange. We assess the predictive efficacy of the TLF model by comparing a simulation of S&P 500 index and that of firms in the stock market in Ghana, using data from the same time period (June 2007 to September, 2013). We find that the Levy models relatively accurately model the return distributions of the S&P 500 but do not accurately model the return distributions of firms in the Ghana stock market. We highlight the research implications of these findings and call for further research using data from emerging economies such as those in sub-Saharan Africa. (Received September 19, 2015)