

Abstract

Managing risk is a central concern for every derivatives portfolio manager, as failure to do so often initiates a path that leads to the destruction of the trader's capital. A particular type of risk – stochastic - is of special importance for this investment genre because it is magnified by the use of leverage in these markets.

Stochastic risk is the possibility of experiencing a string of unsuccessful trades imbedded in a longer and otherwise successful stream that will completely deplete the capital. The underlying assumption being that the portfolio manager is pursuing a trading strategy with a positive expected value. The market will not long support the manager who is following an unsuccessful strategy.

Though probability theory is an obvious place to look for methods of understanding and offsetting this risk, in reality it offers limited assistance. To overcome its shortcomings, a Monte Carlo simulation model will be developed to measure the magnitude of negative trade intervals, or drawdowns, so that adequate capital can be set aside in order to withstand these periods. An arbitrary payoff scheme will be used to demonstrate the model over a period of 500,000 trades.

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