

**Study on Return Distribution of All Share Price Index and Stock Market Volatility at
Colombo Stock Exchange**

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Abstract

Stock market studies have been increasingly popular around the world, as the stock market is one of the most important aspects of economic progress in a country. While difficult, the volatility in financial markets gives an excellent opportunity for us to reconsider our assumptions. Market indices are used by many investors to manage their investment portfolios and keep tracking the financial markets. The use of a normal distribution to forecast the likely range of future returns on an investment is frequent in the investing sector, even the stock market returns are not normally distributed, and finding a better-fitting distribution for any stock market in the globe is crucial. Colombo Stock Exchange (CSE) provides a transparent and regulated environment for both investors and businesses to meet in Sri Lanka. Currently the broad market index of CSE is All Share Price Index (ASPI) and we identified that ASPI returns distribution is non-normal, using daily and monthly ASPI for a five year period from 1st of January 2017 to 31st of March 2021. This study examines which distribution is preferable to describe this non-normal behavior. Generalized logistic distribution was fitted first. Since the shape parameter was not significant, location scale t-distribution was fitted. That was applicable and the Q-Q plots were well fitted on the reference line. It concludes that the location scale t-distribution provides one of the better fits to returns of ASPI.

Keywords: *ASPI, CSE, generalized logistic distribution, location scale t distribution*

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