# UNIVERSITI TEKNOLOGI MARA

# TECHNICAL REPORT

## PORTFOLIO OPTIMIZATION OF SHARIAH AND CONVENTIONAL ASSETS IN FBMKLCI BY USING MEAN-VARIANCE AND MEAN-LOWER PARTIAL MOMENTS

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**NOR SYAZWANI BINTI MAT ZIN (2017996285)**

**NURULHUDA BINTI ZOLI (2017994277)**

**NIK NUR AQILA BINTI MOHD (2017565887)**

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# Abstract

Nowadays, financial portfolio optimization has a pivotal role for the problem that occurs in mathematics, statistics, financial and computational literature. In context of Malaysia, the assets are categorized into two which are shariah and conventional assets. Both assets are related to different kinds of business and investment activities, hence there would be a difference in risks and returns as well. The objective of this study is to identify the risk for portfolio of shariah, conventional and combination of assets (shariah and conventional assets). The closing prices for year 2009 to 2019 are collected from FBMKLCI and FTBSM Hijrah Shariah. The risk in the In-sample portfolio is minimized by using Mean-Variance and Mean-LPM with three target returns of 1,1.75 and 2.5 percent. Then, the sample is backtested by using the out of sample to get the realized return. In-sample result shows that the risk of portfolio of combination assets has the lowest risk as compared to shariah and conventional while out of sample analyse the realized return for the assets have a slight difference between each other. Then, the optimal Mean-Variance model can also minimize the lower partial moments. For future research, the researcher might improve this study in other risk measure models such as the Mean-CVaR model. From this model, the researcher could get an accurate result because it is the risk assessment measure quantifying the amount of tail risk the portfolio of investments.

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