

Wongwiwat Lawanwatthanakul 2010: A Study on Investment Guideline in Retirement Mutual Fund for Cooperative Members: An Application of Linear Programming Technique. Master of Arts (Cooperative Economics), Major Field: Cooperative Economics, Department of Cooperative. Thesis Advisor: Associate Professor Vinai Artkongharn, M.A 128 pages.

The primary objective of this study was to find the optimal portfolio of retirement mutual funds by using linear programming technique. The analysis would find the optimum investment proportion, given the objective function and various constraints.

This study utilized only secondary data which were the Net Asset Value of all 55 retirement mutual funds (RMF) existed during the period of January 2007 to December 2008. The analysis has calculated the weekly rate of return of all RMFs. The rate of return on Treasury Bill on January 2, 2008 was used as a proxy of the risk free rate of return. Beta was used as the measurement of the riskiness of each RMF. The CAPM concept was used to figure out which RMFs the investors should invest by comparing whether the expected rate of return was greater than the required rate of return or not. Then, linear programming technique was used to find the optimal investment portfolio. The analysis comprised two options. The first one is to maximize return given a specified level of risk and other constraints. The second one is to minimize risk given a specified level of return and other constraints.

The study found that the rates of return of nearly all of the equity RMFs and mixed RMFs were negative (as a result of the financial crisis around the world) while the debt RMFs and money RMFs had positive rate of return. Most of the RMFs had beta less than one. There were only 35 RMFs that their expected rates of return were greater than their required rates of return. In other words, there were only 35 RMFs that investors should invest during the period. The analysis to find out the optimal investment portfolio found that in order to maximize return the first five RMFs that investors should invest were: RMF2, RMF3, NFRMF, NGRM and UOBGBRMF. When the investors would like to minimize risk, the first five RMFs that investors should invest were: RMF2, RMF3, NFRMF, UOBGBRMF and F-RMF. The diversification among the RMFs was also suggested.

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Thesis Advisor's signature