ABSTRACT

In this papper will be discussed stuck portofolio construction by using data in market and genaerally this data contain noise. To control noise will be penalty function. Basic knowledge of the penalty function is to transform a restricted (constrained) problem becomes unrestricted (unconstrained) by adding a penalty parameter (θ) into the objective function. The purpose is to control the residual value of alpha (associated risk factors) that contains noise, by selecting the proper value of θ. In this chapter, the chosen θ is 10 because the risk is smaller than the other θ value (θ=0.01, θ=0.1, θ=4 θ=7, θ=10). λ as the risk aversion (a behavioral measurement of risk evasion) also has an important role to suppress the value of the risk, as small as possible. 10 is λ value that produces the smallest risk .

In the theoretical calculation of λ=0,01, the risk value is 0.045321894 up to λ=10 resulting 0.043919803, when without noise, λ=0,01 the risk value is 0.068250803 up to λ=10 resulting 0.067448832. The value λ=10 and θ=10 this experiment using AALI and ADHI stock. The value of λ=10 with a mean variance (MV) produces value of risk at point 0.049443196, while λ=10 and θ=10 with the data noise produces value of risk at point 0.049406612. Risk portofolio on data asummed that they contain noise small compared with the risk portofolio in MV.

Keywords: *Penalti Function, Residual Alpha, Stock Portofolio*