

Implementasi algoritma multi-objective co-variance based artificial bee colony dalam masalah optimisasi portofolio = Implementation of multi objective co variance based artificial bee colony algorithm in portfolio optimization problem

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Abstrak

Masalah optimisasi portofolio adalah masalah untuk mencari portofolio dengan return maksimal dan risiko minimal. Pada skripsi ini, digunakan model optimisasi portofolio multi objektif. Algoritma Multi-objective Co-variance based Artificial Bee Colony M-CABC digunakan untuk menyelesaikan masalah optimisasi portofolio. Algoritma M-CABC merupakan pengembangan dari algoritma Artificial Bee Colony ABC menggunakan konsep kovariansi statistik dan dipakai untuk masalah optimisasi portofolio. Implementasi dilakukan dengan menggunakan lima sampel data OR-Lib; port1, port2, port3, port4, dan port5. Hasil yang didapat dibandingkan dengan unconstrained efficient frontier dari lima sampel data. Dari hasil simulasi, Algoritma M-CABC menghasilkan solusi yang cukup dekat dengan solusi pada unconstrained efficient frontier.

Portfolio optimization problem is a problem to find portfolio with maximum return and minimum risk. In this skripsi, multi objective portfolio optimization model is used. Multi objective Co variance based Artificial Bee Colony M CABC algorithm is used to solve porto folio optimization problem. M CABC algorithm is developed from Artificial Bee Colony ABC algorithm using statistical co variance concept and is used for portfolio optimization problem. Implementation is done using five OR Lib data samples port1, port2, port3, port4, dan port5. Obtained results is compared with unconstrained efficient frontier of five data samples. From simulation results, M CABC algorithm gives solutions that is near solutions on the unconstrained efficient frontier.