

PORTFOLIO OPTIMIZATION OF EQUITY
MUTUAL FUNDS:
MALAYSIAN CASE STUDY

JAISREE A/P SIVALINGAM

FAKULTI SAINS DAN TEKNOLOGI
UNIVERSITI MALAYSIA TERENGGANU

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Portfolio optimization of equity mutual funds : Malaysian case study / Jaisree Sivalingam.

PERPUSTAKAAN SULTANAH NUR ZAHIRAH
UNIVERSITI MALAYSIA TERENGGANU (UMT)
21030 KUALA TERENGGANU

1100076401		

Lihat sebelah

HAK MILIK
PERPUSTAKAAN SULTANAH NUR ZAHIRAH UMT

**PORTFOLIO OPTIMIZATION OF EQUITY MUTUAL FUNDS:
MALAYSIAN CASE STUDY**

**By
Jaisree a/p Sivalingam**

**A final year project submitted in partial fulfillment of
the requirements for the award of the degree of
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**MATHEMATICS DEPARTMENT
FACULTY OF SCIENCE AND TECHNOLOGY
UNIVERSITY MALAYSIA TERENGGANU
2009**

1100076401



**JABATAN MATEMATIK
FAKULTI SAINS DAN TEKNOLOGI
UNIVERSITI MALAYSIA TERENGGANU**

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Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk **PENGOPTIMUMAN POTFOLIO AMANAH SAHAM EKUITI: KAJIAN KES DI MALAYSIA**, oleh **JAISREE A/P SIVALINGAM** No. Matriks: **UK 13493** telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Matematik sebagai memenuhi sebahagian daripada keperluan memperolehi Ijazah Sarjana Muda Sains Matematik Kewangan, Fakulti Sains dan Teknologi, UMT.

Disahkan oleh:

Penyelia Utama

Nama: Dr. Zabidin Bin Salleh

DR. ZABIDIN BIN SALLEH
Pensyarah
Jabatan Matematik
Fakulti Sains dan Teknologi
Universiti Malaysia Terengganu
21030 Kuala Terengganu

Cop Rasmi:

7/5/2009

Tarikh:

Ketua Jabatan Matematik

Nama: Dr. Haji Mustafa Bin Mamat


Cop Rasmi:

Tarikh: 7/5/09

DR. HJ. MUSTAFA BIN MAMAT
Ketua
Jabatan Matematik
Fakulti Sains dan Teknologi
Universiti Malaysia Terengganu /
21030 Kuala Terengganu.

DECLARATION

I hereby declare that the thesis entitled Portfolio Optimization of Equity Mutual Funds: Malaysian Case Study is the result of my own research except as cited in the references.

Signature : 

Name : Jaisree a/p Sivalingam

Matric No : UK 13493

Date : 7th May 2009

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PENGOPTIMUMAN POTFOLIO AMANAH SAHAM EKUITI: KAJIAN KES MALAYSIA

ABSTRAK

Kajian ini bertumpu kepada amanah saham ekuiti dari “Public Bank Berhad”, “CIMB” dan “Malayan Banking Berhad”. Amanah saham ekuiti ini dikelaskan ke dalam empat klaster berdasarkan ciri-ciri mereka dan dikategorikan sebagai saham inferior, saham stabil, saham berprestasi baik dan saham agresif berdasarkan kepada kadar pulangan, varians dan index Treynor. Berdasarkan kepada keputusan analisis klaster, kadar pulangan, dan varians Klaster 2 dan Klaster 3 diwakilkan dalam bentuk segitiga set kabur bagi menampakkan kemeruapan pasaran saham. Untuk mencari allokasi aset yang optimum dalam setiap klaster, suatu model hybrid yang menggabungkan set kabur dan pengoptimuman digunakan. Ini dilakukan dengan memaksimumkan kadar pulangan kabur untuk suatu risiko yang boleh ditanggung dan meminumkan risiko kabur untuk pulangan kabur yang diminati secara berasingan pada aras kepastian yang berbeza.

PORTFOLIO OPTIMIZATION OF EQUITY MUTUAL FUNDS: MALAYSIAN CASE STUDY

ABSTRACT

This study focuses on the equity mutual funds of Public Bank Berhad, CIMB and Malayan Banking Berhad. The equity mutual funds or equity trust is grouped into four clusters based on their characteristics and categorized as either inferior funds, stable funds, good performance funds and aggressive funds based on their return rates, variance and treynor index. Based on the cluster analysis, the return rates and variance of Cluster 2 and Cluster 3 are represented as triangular fuzzy number to reflect the uncertainty of financial market. To find the optimal asset allocation in each cluster, we develop a hybrid model of optimization and fuzzy. This done by maximizing the fuzzy return for a tolerable fuzzy risk and minimizing the fuzzy risk for a desirable fuzzy return separately at different confidence levels.