

**CITY UNIVERSITY OF HONG KONG**

香港城市大學

**Exchange Traded Funds - Performance  
Evaluation and Strategic Product  
Development in Emerging Asia**  
亞洲ETF基金績效評估與戰略產品開發研究

**Submitted to  
College of Business  
商學院**

**in Partial Fulfillment of the Requirements  
for the Degree of Doctor of Business Administration  
工商管理學博士學位**

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**August 2014  
二零一四年八月**

## **Abstract**

Facing the increasing level of fluctuations and risks in the financial markets, investors are increasingly facing the dilemma between higher demand for returns and lower tolerance of risks. Exchange Traded Funds has emerged in recent years as an important alternative, enjoying the conservative nature as well as the potential for higher risk adjusted returns. However, much is yet to be learned about its behavioral characteristics, as well as the traditional risk and return factors. This thesis conducts the comprehensive empirical studies on the construction of more active ETF portfolios, with higher returns and lower risk level, across different emerging markets. The investigations are conducted from the three aspects and have uncovered some interesting findings as follows.

Firstly, Empirical studies have been conducted on the performance of ETF across different markets worldwide but with emphasis on Asia focused ETFs, against the benchmark indexes. In terms of return, risk and tracking errors measures. Experiment results have shown that the performance of ETFs are generally inferior to the underlying indexes, and there are significant variations involved in the tracking process. Besides, their performance are also sensitive to the ETF characteristics, among which geographical locations and economic development are identified as important influential factors.

Secondly, empirical studies have been conducted, using the Markowitz portfolio optimization model, to construct an optimal ETF portfolio in the emerging markets. With the proposed approach, portfolio performance has improved against the benchmark market index. The performance is sensitive to the optimization criteria chosen and optimization parameters used.

Thirdly, this thesis has taken a behavioral finance perspective to investigate additional behavioral factors during the ETF investment process. Utilizing the factor analysis and logistic regression, some behavioral characteristics, that are unique for the ETF investment and the Hong Kong regions, have been identified.

Work in this thesis lays the ground for further researches in the ETF research field. It provides the convincing evidence that ETF portfolio construction using optimization algorithm represent the important investment alternative. It also provides important information concerning the behavioral characteristics of ETF investment in the Hong Kong capital market. It unveils many unique characteristics in Hong Kong and explore possible implications toward further development of the ETF industry in the region by gaining deeper insight into the ETF market structure in Asia.

Keywords: Exchange Traded Funds; ETFs; Sharpe Ratio; Correlation; Risk Adjusted Return; Markowitz Portfolio Theory; Behavioral Finance; Portfolio allocation; Diversification