

DOCTORAL THESIS

An assessment of the conditional risk-return relations: evidence from four Asian emerging stock markets

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**An Assessment of the Conditional Risk-Return Relations:
Evidence from Four Asian Emerging Stock Markets**

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A thesis submitted in partial fulfillment of the requirements

for the degree of

Doctor of Philosophy

Principle Supervisor: Prof. Gordon Y. N. TANG

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ABSTRACT

This thesis is an empirical study of the risk-return relations conditional on the market excess returns in four Asian emerging stock markets. In the process of exploring such relations, the approach of this thesis is different from previous studies in which only conditional beta-return relation is examined. Realizing the empirical results that stock returns are not normally distributed with significant kurtosis, this study extends the existing literature by analyzing the conditional relations between returns, beta, and higher moments of stock returns.

We begin our investigation by testing the Capital Asset Pricing Model (CAPM) in the Hong Kong, Korean, Singaporean, and Taiwan stock markets for the period 1986 to 1998. Our results for market beta are consistent with evidence reported in Pettengill *et al.* (1995). We find that when tests of the CAPM are done in the whole period, positive coefficients of beta offset negative ones, making flat the average relation between return and beta. When taking into account the difference between positive and negative market excess returns, we show that a significant relation between return and beta exists in both up-market and down-market periods.

We also find that other risk measures like unsystematic risk, skewness, total risk, and kurtosis play significant roles in explaining the cross-sectional variations in stock returns but the signs of their coefficients are different from what we expected from the traditional finance theory. When a conditional framework is introduced to the pricing model, all these seemingly unreasonable results are completely restored. Like beta, unsystematic risk, total risk, and kurtosis of stock returns are significantly and positively (negatively) related to realized returns when the market excess returns are positive (negative). Furthermore, skewness is significantly but negatively (positively) related to realized returns during up (down) markets. Our results strongly support that investors prefer positive skewness but ask for compensation for bearing higher unsystematic risk, total risk, and kurtosis. Hence, other risk measures in addition to beta are also important in pricing risky assets and investors do not hold diversified portfolios. Furthermore, we also find that the average

monthly market excess return is insignificantly positive and the symmetry of the risk-return relations in up and down markets is weak.

In summary, this study contributes to the literature through extending Pettengill *et al.* (1995) study by including higher moments of stock returns in testing the risk-return relations in four Asian emerging stock markets. In addition, it contributes to the literature by providing a more complete sensitivity analysis to portfolio formation on CAPM as Chen *et al.* (1986) claimed that the sensitivity of results to different portfolio aggregation techniques is an important area for research. The results should provide useful guidance for portfolio managers in making their optimal investment decisions.

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