

ABSTRACT

Asymmetric volatility resulting from market return shocks might reflect the existence of volatility risk premium. This study investigates the existence and sign of volatility risk premium of Hong Kong Hang Seng Index (HSI) by frequently rebalancing the Delta-Hedged option portfolios (buy the option and hedge with the underlying asset). Both bid-ask and tick-by-tick data from January 1997 to February 2004 are used to find the relationship between sign and magnitude of volatility risk premium and the mean of delta-hedged portfolio (a long call position, hedged with a short position of the underlying asset in order to keep the portfolio keeps risk-neutral) gains.

The data used in this study is based on Hong Kong Hang Seng Index options for the reason that Hong Kong stock market has already been considered as a mature stable and efficient financial market. More and more worldwide investors prefer Hong Kong stock market when they invest in Asian financial markets. Many economists have investigated Hong Kong stock market, but seldom concern volatility risk premium especially in recent years. While in this study, the delta-hedged portfolio set up by HSI option and Hang Seng Index is used to investigate if the volatility risk is priced in Hong Kong stock market.

Two approaches can be used to test the implications between delta-hedged gains and volatility risk premium: cross-sectional and time-series. Most of the tests based on at-the-money call options because deep away-from-the-money options have

little transactions and have no contribution to this study. Call options are also more manageable than put options. In the previous studies more researchers prefer study the call options.

This study employs a non-parametric ¹ method to investigate volatility risk premiums of Hong Kong Hang Seng Index options. This method firstly used by Bakshi and Kapadia (2003), they allow the investigation of volatility risk premium without strong restriction on neither the pricing kernel nor assuming a parametric model of the volatility process. GARCH (1,1) has already been proved a very important method to be used to estimate stochastic volatility term structure. Hence -in this study, the volatility is computed by both GARCH (1,1) and common history volatility method. Ordinary Least Square (OLS) is the main regression model used to examine the relation between volatility and previous delta-hedged gains under time-series. In cross-sectional tests, panel regression is used to test the relation between delta-hedged gains and VEGA.

Key Words: Hang Seng Index, Volatility Risk Premium, Stochastic Volatility, GARCH, Delta-Hedged Gains

² Non-parametric method is developed to used when researches knows nothing about the parameters of variable. Non-parametric test is more powerful in testing the differences between groups and variables, and also testing the relationship between variables.