Volatility Models for and Applications in China's SSE50 Options Market

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Abstract

We investigate the effectiveness of various volatility models using China's SSE50 index. Amongst the ARCH, GARCH and GJR-GARCH models, the GARCH and GJR-GARCH models perform much better than the ARCH model both in sample and out of sample. Moreover, we do not observe any significant asymmetric volatility reponse to past returns in the GJR-GARCH model. Furthermore, in 5 out of the 7 options we investigate, the GARCH volatility forecast outperforms the option implied volatility in forecasting future realized volatility. We formulate an option trading strategy by exploiting the volatility spread between the GARCH volatility forecast and the option implied volatility. We show that a simple volatility-spread trading strategy with delta-hedging can yield robust profits for the SSE50 options.

Keywords: *volatility estimation, volatility forecasting, Chinese stock market, option pricing, market efficiency*

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Dear Conference Organizer,

I have corresponded with Ms. Tracy Skolmen regarding our submission. As we are still working on the paper's draft, we will for now submit an abstract of our paper. We aim to finish our draft by early August and will submit the full paper to Tracy around that time.

Thank you for your understanding and consideration.

Yours,

Yeguang Chi