Market Risk and Model Risk of Financial Institutions Writing Covered Warrants

Financial institutions writing derivative warrants are exposed tomodel risk, the risk that models may be incorrectly or inappropriatelyapplied. Fat tail return distributions, forecast error in thevolatility input, and inaccurate hedging calculation are possiblecauses of model risk. Understanding model risk in the valuation andtrading of derivative securities is particularly important foremerging markets, because asset returns are too fat-tailed to benormal, and volatility is hard to forecast accurately by any methodand forecast errors remain very large. This paper provides empiricalsimulation of market risk and model risk for financial institutionswriting derivative warrants in Hong Kong, Taiwan, and Japan markets.Important market imperfections such as transaction costs and issuingcosts are considered in the simulation design. Our empiricalsimulation results show that model risk is higher for derivativewarrant issuers in emerging markets such as Taiwan and Hong Kong . Wealso discuss possible methods for reducing the model risks, namelyreducing the issuing period, volatility markup, and timing ofissuance.