認購權證的B-S評價對實際價格的比例與現貨價格對履約價的比例之關係

葉怡成, 陳定中, 蔡宜真
資訊管理學系
資訊學院
icyeh@chu.edu.tw

摘要

Although the phenomenon that the price of the in-the-money option is overestimated, and the price of the out-of-the-money option is underestimated by the Black-Scholes model is generally accepted in academic circles, there are no quantitative investigations between the magnitude of overestimation (underestimation) of the price and the in-the-money (out-of-the-money) magnitude; that is the study of the relation between the ratio of B-S theoretic price to the real price ( ) and the ratio of current price to the exercise price ( ). In order to explore this subject, using B-S model and historical standard deviation, and every year randomly selecting 10 warrants released in 2002 to 2005; therefore, there are 40 warrants in our appraisal analysis, we explored whether there is the fixed relation between the two above mentioned ratios or not. This research first built the relations of B-S theoretic price ( ) to the real price ( ) for every warrant by linear regression analysis: . The results discovered that the ' ' value is close to 0; therefore, the ' ' value may be regarded as the ratio of B-S theoretic price to the real price ( ). Then, we proposed the "bell-shape" general regression relation of to ' ' value, and estimated the regression coefficient. The results showed that this relation has remarkable explanation ability. It is noteworthy that this relation indicates that when the warrant is in deep-in-the-money or deep-out-of-the-money, the ' ' value will become small; that is, the real price is greater than the price estimated by the by B-S model, and when the warrant is in near-the-money, the real price will be close to the B-S model price.

關鍵字：B-S model, call warrant, regression analysis, in-the-money, out-of-the-money.