

A Simple and Precise Method for Pricing Convertible Bond with Credit Risk

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Abstract

This paper presents a new model for valuing hybrid defaultable financial instruments, such as, convertible bonds. In contrast to previous studies, the model relies on the probability distribution of a default jump rather than the default jump itself, as the default jump is usually inaccessible. As such, the model can back out the market prices of convertible bonds. A prevailing belief in the market is that convertible arbitrage is mainly due to convertible underpricing. Empirically, however, we do not find evidence supporting the underpricing hypothesis. Instead, we find that convertibles have relatively large positive gammas. As a typical convertible arbitrage strategy employs delta-neutral hedging, a large positive gamma can make the portfolio highly profitable, especially for a large movement in the underlying stock price.

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