

Product

Credit Default Swap Analysis

Example

Trader buys protection on a corporate entity via a Credit Default Swap (CDS), and she wishes to hedge with a corporate bond that matures after the CDS termination. (A buy-side investor who wishes to hedge an illiquid corporate bond position or a sell-side, structured-note group faces this problem. Convertible bond arbitrage traders face a closely related problem.)

Two Sources of Risk

- Credit event of the corporate entity – jump to default risk (JTD)
- Mark to market risk from credit spread volatility – CS01
- Impossible to hedge simultaneously both sources of risk

Questions

How can we frame an optimal trading strategy problem?

What fraction of the CDS premium can be captured by hedging?

What is the optimal bond holding?

Management Challenge

Management can measure the net CS01 and JTD exposures of the portfolio, and it can observe CDS market premiums, but when residual risk is unavoidable, what part of the paid premium is reasonably recoverable from hedging activities?

Our Product

Our proprietary decomposition of the CDS premium addresses these questions: it is based on an optimal trading strategy; it estimates that part of the premium, which can be conditionally captured by hedging with the bond; it produces the necessary bond position; and it provides an intuitive guide for management. When the CDS and bond terminations coincide or when the credit spread uncertainty is very low, the decomposition produces the usual CDS premium. When there is a termination mismatch between the CDS and the bond, then uncertainty in future credit spread levels produces a gap between the CDS premium and the conditionally achievable value. The gap represents a risk adjustment to the CDS premium.