Modeling the time-series evolution of the credit default swap indices

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This study investigates the time series dynamics of credit default swap indices ("CDX") using an affine jump-diffusion model. We use daily CDX investment-grade index (CDXIG), and the CDX high-yield index (CDXHY) in the period between November 2003 and July 2011. This time period spans the height of the global credit crisis. Our empirical evidence suggests that CDXIG and CDXHY spreads evolve differently during periods of tranquil markets and markets in crisis. In more extreme bad times, CDXIG spreads exhibit greater jump intensity and have a higher jump component of the conditional volatility of spreads. In contrast CDXHY spreads exhibit greater jump intensity and a higher jump component of volatility in tranquil markets. We also find evidence that CDXIG and CDXHY spreads are unlikely to jump in tandem, other than when a market shock occurs.