

Abstract

The dissertation is composed of three empirical research papers analyzing the development on credit derivatives markets in recent years characterized by the global financial crisis in 2007-2009 and subsequent European sovereign debt crisis. The basic motivation of the thesis is to contribute to the clarification of the turbulent development on credit derivatives markets. The first paper addresses main flaws of a collateralized debt obligation (CDO) market during the global financial crisis. The second paper examines the impact of the Greek debt crisis on sovereign credit default swap (CDS) reliability. The third paper analyzes whether a resulting change in CDS terms restored confidence in CDS contracts. An introductory chapter presents a common framework for the three papers.

In the first paper, we examine valuation of a Collateralized Debt Obligation (CDO) in 2007-2009. One Factor Gaussian Copula Model is presented and five hypotheses regarding CDO sensitivity to entry parameters are analyzed. Four main deficiencies of the CDO market are then articulated: i) an insufficient analysis of underlying assets by both investors and rating agencies; ii) investment decisions arising from the valuation model based on expected cash-flows and neglecting other factors such as mark-to-market losses; iii) mispriced correlation; iv) obligation of the mark-to-market valuation. Relevant recommendations for the renewal of the CDO market are then stated.

The second paper examines whether repeated questioning of reliability of a CDS contract during the EMU debt crisis influenced sovereign EMU CDS prices in general. We regress the CDS market price on a model risk neutral CDS price obtained from an adopted reduced form valuation model in the 2009-2013 period. We look for a breakpoint in the single-equation and multi-equation econometric models in order to show the changes in relationships between the CDS market and model prices. Our results differ according to the risk profile of a country. We find that in the case of riskier countries, the relationship between the market and model price changed when market participants started to question the ability of CDS contracts to protect their buyers. Specifically, it weakened after the change. In the case of less risky countries, the change happened earlier and the effect of a weakened relationship is not observed.

The third paper investigates effects of new credit derivatives' definitions launched by International Swaps and Derivatives Association (ISDA) in October 2014. First, using a SUR model I observe whether the change increased the link between the CDS price as a hedging instrument and the bond spread as a hedged instrument. Second, using an ARFIMA-FIGARCH model I observe whether the extent of the long memory of CDS changes and their volatilities decreased. Data of liquid EU sovereigns and 3-year and 5-year maturities are analyzed. The first analysis reveals a limited positive impact on some countries – Belgium, France, Italy, Portugal and Spain – and only 5-year maturity. The second analysis concludes that the extent of long memory in the data did not decrease after the change, leading to the conclusion that the efficiency of the CDS market did not improve according to the efficient markets' hypotheses.