Die Bedeutung von Credit Default Swaps in der Finanzkrise

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Abstract

This work analyzes the role of credit default swaps (CDSs) during the global financial crisis. It discusses their implied contribution to the turmoil and assesses recent regulatory propositions. Furthermore, the usability of CDS for anticipating credit events throughout the crisis is compared with ratings, bonds and stocks. Results show that on average ratings lag behind entity failure events by at least two days. In contrast, all market-based indicators reflect the increased hazard prior to such events. In addition, the research suggests that the stock and CDS markets clearly lead the bond market, while no clear leadership between stocks and CDS was found.

Executive Summary

Problem

Credit default swaps (CDSs) are financial instruments, used for the purpose of transferring debt credit risk from one party to another. They allow market participants to hedge risks or express their view about the creditworthiness of a referenced entity. Nevertheless, CDSs have come under scrutiny throughout the financial crisis of 2007-2009. They are blamed for various reasons, such as facilitating the growth of sub-prime mortgage lending, posing systemic risk to the financial system, and encouraging speculation on the financial health of institutions. As a consequence, public authorities and politicians have called for regulation of the so far unregulated market.

Despite the aforementioned criticisms, CDSs have the major advantage of reflecting credit risks in their price. Traditionally, investors rely on rating agencies' opinions about the underlying credit quality of an obligor. In recent times, however, raters are being accused of being late in the adjustment of their ratings. In contrast, the CDS market remained liquid and seemed to anticipate events throughout the crisis. A good example represents Bear Stearns. In the days prior to its collapse, it was still assigned an investment grade rating, while the CDS spreads hiked considerably.

This paper's main goal is to examine the quality of rating agencies and CDS in anticipating events throughout the financial crisis. Furthermore, bonds and stocks are added to the model framework, since these market-based indicators can also price credit risk. In addition, the role of CDS during the financial turmoil and recent regulatory propositions are critically observed.

Approach

The author uses survival analysis to test whether the above described early warning indicators provided useful information regarding the creditworthiness of entities prior to their collapse. In particular, the so-called Cox regression is implemented, since it does not require an exact distributional specification of survival times. The model examines the effect of covariates on the hazard of a failure event. It assumes that this effect does not vary over time, which is also referred to as the proportionality assumption. The sample contains major banks and financial institutions. Long term credit ratings as well as synthetically created bond spreads with a constant 5-year maturity are considered to match the 5-year maturity of CDSs. The observed period lasts from May 1, 2007 until May 12, 2009. Data is downloaded from Datastream and Reuters 3000 Xtra. The events considered are bankruptcy, first time government aid and acquisition.

First, CDS spread changes, bond spread changes, stock returns, and numerical ratings are regressed on a single basis to examine their explanatory power regarding events during the crisis. Second, the lead-lag relationship between indicators is analyzed. For this purpose, a goodness-of-fit test is implemented to examine whether one of the aforementioned variables adds new information to price discovery, when another is already taken into account. If not, it is assumed that the market represented by the latter variable clearly leads the market represented by the former variable. Moreover, tests for the proportionality assumption are carried out.

Findings

The results suggest that ratings did not anticipate events properly throughout the crisis. They furthermore seem to have lagged behind them by at least two days on average. In contrast, all market-based indicators reflected the increased hazard significantly prior to entity failure. The lead-lag relationship between the market-based indicators shows that bonds were clearly led by stocks and credit default swaps. Unfortunately, the proportionality assumption for bonds could not be tested. Thus, the argument is only true if bond spreads had the same effect on hazard throughout the crisis. Although results provide some indication that the stock market may have led the CDS market more often than the other way round, the difference for our sample is rather small to draw conclusions. In fact, both markets add new information regarding the risk of entity failure at any point in time during the observation period. Therefore, no clear leadership could be observed.

General Assessment

This paper shows that ratings lag behind crucial events. Unfortunately, to the author’s knowledge no comparable studies exist. The results of the lead-lag relationship tests are in line with previous literature. Despite this fact, some researchers find that the stock market clearly leads the CDS market when using other methodologies. This is not the case in this study.