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# SOVEREIGN RISK AND CDS. THE CASE OF ROMANIA

**Case Studies**

## Abstract

*The objective of this paper is to study the relationship between changing sovereign risk rating given by credit rating agencies for Romania and CDS of this borrower on the international capital market. For this purpose was used event study methodology type, the event is changing the qualifier sovereign risk by Fitchratings over the period June 2008 - August 2011. Two events are considered, one of worsening sovereign risk qualifier another one of the improvement. In case of increased risk, the main conclusion is that CDS continues moving after the announcement in the direction triggered before the event. If case of risk reduction, the market anticipated positive change of sovereign rating, the reaction is strong on the day the notice of the event and favorable effect remains in the window + 20 days .*

**Introduction and literature reference**

Credit rating agencies are known as independent providers of credit opinions and play an important role in the market (Dittrich, 2007). Credit ratings agencies provide an assessment of the creditworthiness of issuers, which is essentially an assessment they made timely payment of debt, loans in general (Rousseau, 2009). Papers on credit rating can be grouped into: papers studying the effects of rating on the capital market, papers focused on accuracy and stability of rating and papers focus on industrial organization structure of the world market rating. This article falls into the first category and aims to study the relationship between changing qualification sovereign risk rating agencies for Romania and CDS that debtor on the international capital market.

Klimaviciene (2011) examines whether sovereign credit rating announcements convey price relevant information to investors in Baltic stock markets, ( Estonia, Latvia, and Lithuania) and tests the degree of anticipation and price reaction. Event study methodology is employed to test for the price impact of sovereign credit rating announcements by Moody's, S&P, and Fitch. This enables to analyse whether there is an anticipation of the forthcoming announcement in a particular market, a price impact on the announcement day, and a possible delayed reaction. His results indicate that there is an asymmetric reaction: the price impact of negative events is several times larger than that of positive events. Although some types of rating announcements are anticipated, there is still a significant price impact on the announcement day.

The main conclusion is that sovereign credit rating announcements contain pricing relevant news in addition to information already in a public domain.

Martin Johansson and Johanna Nederberg (2014) investigate the European CDS markets response to earnings announcements between the years 2011-2013. They investigate if the CDS market reacts to earnings news in terms of abnormal spread changes. Exploring the pre- and post announcement window the study examines the efficiency of the CDS market. The results imply that announcements provide valuable information to the CDS market, with statistically significant results on the 5 % and 10 % significant level for negative and positive news respectively. Paper shows that the market has a rather symmetric reaction to negative and positive earnings news since there is no significant difference in effects. The paper reveals that there is no significant difference in the response between different credit rating groups. In terms of market efficiency, the study cannot confirm that there is anticipation for earnings announcements.

D. Revoltella, F.Mucci, D.Mihaljek, (2010) study develop an alternative measure of country risk that extracts the volatile, short-term market sentiment component from the sovereign CDS spread in order to improve its reliability in periods of market distress. They show that there measure of country risk sheds some light on the observed stability of cross-border bank flows to CEE banks during the crisis. Dessertine (2013) analyses the markets' learning effect from the crisis through two successive downgrades of the French government by the main rating agencies and concluded that the market value of bank stocks is not affected by the downgrade.

**Methodology**

Methodology of type "event study" (freely translated, the study about the event) is used to investigate the effect of an event on a dependent variable (Klimavi ien , 2011). The method is based on the assumption that the market is efficient in a semi-strong form (Fama, 1970) and that manages to anticipate the event and to incorporate it in the price of financial assets. Anticipated results to be obtained in the absence of the event called normal results and the changes in the results over the normal is called "abnormal" as the result deviates from the normal.

Applying this methodology involves the following steps:

1. Identification of the event, the precise definition of the event, which will be the day 0
2. Identification of windows of time prior to, during and after the event
3. Determination of normal result
4. Determination abnormal result

The main difficulty of this method is the determination of what constitutes normal resulst. There are several methods mentioned in this specialized studies, among which the most common are: the model based on the market, the normal result is obtained by a regression for estimating parameters related causal relationship between the variable studied and a default indicator model mean (constant mean model) which includes determining the normal result as an average of previous results on a predetermined period of time (eg 120 days before the event); CAPM model and alternatives to this model (such as price arbitrage model) (Baum C. et al, 2014).

In this paper qualifier event is sovereign risk modification by Fitchratings over the period June 2008 - August 2011. Are considered two events, one of worsening sovereign risk qualifier and another improvement. The choice of this period is justified by two major events produced: Fitch has downgraded strong Romania in November 2008, with two steps at once, from BBB negative to BB + negative and placed back our country in a class investment only to 4 July 2011. The window of

time was defined as a range (-20 days, 20 days) around the event.

The result was considered normal average CDS (credit default swaps) for contracts denominated in Euro sovereign, 10 years for a period of 120 days preceding the event.

Abnormal result was determined based on the relationship:

$ARi,t = Ri,t – E[Rit]$

The $AR_{i,t}$ represents the deviation from normal result and $E[Rit]$ are normal results, determined as the average of the last 120 days before the event.

Hypotheses from which I started are:

H1) CDS anticipated event before it begins to change and the direction of event

H2) In the announcement day are strong reactions

H3) CDS continues its movement direction after the announcement triggered before the event.

The following are the main results of the research.

**Risk sovereign CDS**

During October 2008 - August 2011 CDS Romanian government bonds denominated in Euro, for 10 years, evolved as follows:

The graph (Figure 1. CDS - 10-year government bonds, Romania) highlights the strong impact of the crisis in 2008, when two rating agencies have significantly degraded Romania, from investment grade to speculative grade. Only in 2011 Fitch reviewed Romania and placed it in investment grade, while Standard & Poor; revised its sovereign rating to BBB- Romania until May 2014.

Based on this information, we defined two events as zero moments:

- Event I (EI) is downgrading Romania 11/09/2008; the result of the determination period of time normally reference to 120 days before the 20 days prior to the event. Analysis window was - 20 days + 20 days after that date.

- Event II (EII) is to improve the qualification of 07/04/2011 sovereign risk; the result of the determination period of time normally reference to 120 days before the 20 days prior to the event. Analysis window was - 20 days + 20 days after that date.

Average of 120 days EI is about 270 basis points and the mean of 120 days related EII is about 259.8 basis points.

For them the results is as follows - Chart 2 EI results

The graph shows that the market anticipated a deterioration of the risk qualification as strong deviation is positive, but there are doubts as to whether the breach is diminishing as they approached the day of the announcement. Explanation reduction comes from examining the behavior of other agents: thus two weeks before, on 27.10.2008, the agency Standard & Poor;s degrading Romania to speculative grade and the

market already incorporated information. Therefore, the peak deviation is to be found at the end of October 2008 for then to descend significant deviation. But three days before the announcement of Fitch, the market begins to anticipate the negative event, the deviation starts to increase, but the peak is not reached in time zero, but the edge interval 20 days. This observation can be interpreted by the fact that Fitch decided degradation comes validate previous decision of Standard & Poor; s and emphasizes negative outlook. Therefore, the negative event, EI, increased the studied variables than usual after the event, which confirms the hypothesis H3. Hypothesis H1 is not confirmed, nor refuted, because we anticipated market EI is unclear whether or reacted rather the actions of rating agency Standard & Poor; s. H2 hypothesis is invalidated, since the peak deviation was not reached on the day of the event. A confirmation that the market is not anticipated EI and spread upward, over the entire range 20, the shock wave induced by EI.

Regarding the EII event, the result is as follows - Chart 3. EII results

Deviations from the average are not permanent negative in the 20 days prior to the event, but on average, the aggregate effect (EA) is negative. Determined as:

$$EA = \sum_{i=1}^{20} \left( AR_{i,t} \right)$$

obtain a value of EA = -7.84, so the average market anticipated positive change sovereign rating (H1 is confirmed). This time hypothesis H2 is confirmed as strong reaction on the announcement, but the maximum negative deviation is recorded the day after the announcement. H3 hypothesis is also confirmed, because the favorable effect of the event remains in the + 20-day window.

**Conclusions**

The research sought to identify the relationship between CDS and sovereign risk rating of Romania in the period June 2008 - August 2011. Observing the evolution of Romanian CDS over the analyzed period led to the conclusion that the country has been hit hard by the financial crisis in 2008 . The financial market has anticipated deterioration Romanian qualifier sovereign risk, but the peak deviation from normal result is not recorded at the time zero, but the edge interval of 20 days and used the analysis window. In case of damage risk, CDS acquis continues in the direction of movement after the announcement triggered before the event. If qualifier improve risk anticipated market average positive change sovereign rating, the reaction is strong and favorable effect on the day the notice of the event window persists + 20 days.

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Figure 1. CDS - 10-year government bonds, Romania
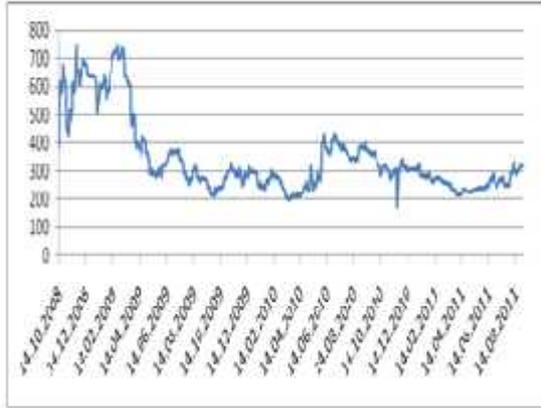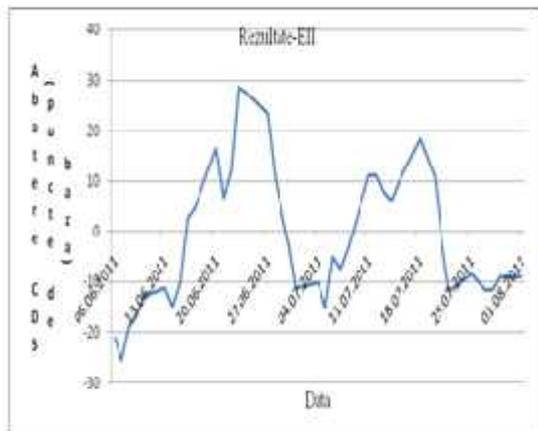


Source: EIKON, 2014

**Chart 2 EI results**
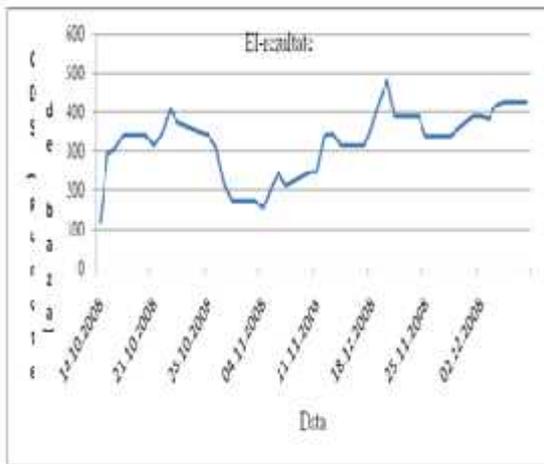


Souce: EIKON, 2014

**Chart 3. EII results**



Souce: EIKON, 2014