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The United States Credit Rating Downgrade: European Reaction

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The United States Credit Rating Downgrade:
European Reaction

by

Brian Scott Roseman

An original report for the completion of the degree

Master of Science
in
Financial Economics

Utah State University
Logan, Utah

2012

United States Credit Rating Downgrade: European Reaction.

Plan B Paper by Brian Roseman
Utah State University, Logan Utah

Abstract: The purpose of this paper is to answer the important question of how investors viewed the debt obligations from European countries in reaction to the United States credit rating downgrade by Standard and Poor's on August 5 2011. During this period there were a handful of countries in Europe that still had AAA ratings. This paper looks at the reaction of investors towards Europe, through the medium of Credit Default Swaps (CDSs). By analyzing the changes in CDS spreads, I am able to determine the perceptions of investors regarding the risk of European Sovereigns during the timeframe surrounding the U.S downgrade. The results in this study show that investors perceived greater risk in European countries than in the United States. The Increase in CDS spreads in European countries are driven by countries with less GDP, more corruption, countries that had not been downgraded, and countries that were not part of the European Union or Euro Zone.

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Part 1 - Introduction

Since the end of the global financial crisis in 2009, and continuing through 2010 and 2011, many countries have continued to face substantially high levels of default risk. Recently, investors have particularly been concerned with higher potential default risk in Europe. Research argues that the potential of a sovereign debt default would result in a flight to quality. A study by Eichengreen, Hale, and Moody (2006) show that during the 1994 Mexican Crisis, the 1997 Asian Crisis, and the 1998 Russian Crisis, yields on U.S. government bonds decreased which is consistent with the idea of a flight to quality. Most recently the

trouble in Europe might indicate that the U.S debt could be viewed as safer than the European debt; however an important event occurred that complicated the flight to quality thesis. On August 5, 2011, Standard and Poors(S&P) downgraded the AAA rated U.S long term debt instruments for the first time in the nation's history. The main objective of this study is to examine the perception of financial markets to default risk in Europe surrounding the U.S credit rating downgrade. In particular, I examine credit default swap (CDS) spreads on European sovereign debt surrounding the U.S downgrade.

Results from my tests show that CDS spreads on the debt issued by European countries increased while U.S. CDS spreads did not during the period surrounding the U.S credit downgrade. It is interesting that CDS spreads for U.S debt decreased nearly 8% in the three days after the U.S downgrade. However, European CDS spreads increased more than 9% during the same time period. This asymmetric reaction suggests that although the U.S credit had been downgraded, the market perceived that European debt was at a higher risk for default.

This result has two possible explanations. First, the U.S downgrade had a ripple effect that had a negative impact on Europe, causing a perception that European debt was also at risk of default. . Particularly, the uncertainty caused by the U.S downgrade could have spread to a global level of uncertainty, which adversely affected European CDS spreads. Second, it is possible that the CDS spreads on U.S debt already contained the information regarding the downgrade, and European CDS spreads might not have been accurately priced before the U.S credit downgrade. The evidence supporting this second explanation is sparse however as I find that changes in U.S CDS spreads in the 30 days prior to the downgrade were generally negative. To the contrary, changes in CDS spreads in Europe in the same 30 days were generally positive. I am left to conclude that the U.S credit downgrade resulted in some sort of financial contagion that directly affected the market's perception of default risk in Europe.

A natural extension to this analysis is to determine macroeconomic factors that influenced the increase in European CDS spreads surrounding the U.S. downgrade. I find some evidence that a European country's GDP is inversely related to changes in CDS spreads surrounding the downgrade indicating that countries with lower GDP were affected more by the U.S. downgrade. I also show that countries that were more corrupt had greater increases in CDS spreads surrounding the U.S. downgrade. Additionally, I find that European countries that had not experienced a downgrade prior to the event day also had increasing CDS spreads surrounding the U.S. downgrade. Finally, I provide some evidence that countries that were not part of the European Union and Euro monetary system had the greatest increase in CDS spreads surrounding the U.S. credit downgrade. These results suggest that smaller, more corrupt countries that were not part of the EU or the Euro monetary system were subject to greater financial contagion caused by the U.S. downgrade.

The results in this study provide an important contribution to the literature by showing that while S&P downgraded the U.S. long-term debt because of higher levels of riskiness, CDS spreads in Europe increased much more for smaller countries that were perceived as corrupt, countries that were not part of the European Union, and countries that were not part of the Euro Zone.

Understanding Credit Default Swaps

To provide a better understanding of this study, it is necessary to understand Credit Default Swaps. A CDS is a contract between two parties, usually an investor and a bank, where the bank will sell the investment protection to the investor. If an investor holds a bond of an entity, they face default risk. Credit Default Swaps are designed to protect investors from default risk. By paying a small premium (The CDS spread) an investor can be insured against a bond payment default. The bank will collect these CDS spreads, or

premiums, and when a firm or country defaults on their bond payments, the bank will pay the investor a predetermined amount, which would most likely be a large cash settlement. CDS contracts are customizable, so that the specifics of the contract are determined by those involved in the contract. The bank that is collecting CDS spreads will charge a higher spread if a firm or country is approaching default. If the probability of a default is high, then the bank will need to charge a higher spread to protect its position.

To illustrate how a CDS spread works, imagine a government bond (Assuming \$1000 Face Value) that has a CDS spread of 100 basis points (1%), and pays a coupon of 500 basis points (5%). The investor will receive the coupon from the bond on a semiannual basis, 5% of \$1000 paid in two payments, being \$25 every six months. From the coupon payment that is being received from the bond the investor will pay the CDS spread to the bank. The CDS spread is 1% of 1000, or 10 dollars, which will be paid either quarterly or semiannually depending on the terms of the contract. If it is semiannually like the bond, then the investor will pay 5 dollars every 6 months. Essentially the investor is holding a 4% coupon bond (5% coupon minus 1% CSD spread) that is protected in the case of a default. Credit Default Swaps are usually more complex than the scenario presented; however the example given will provide enough intuition to understand the idea in this study.

In this paper, many of the figures and tables will show the level of change for a CDS spread. If a spread increases, then the market outlook of that particular country is bleak, and if a CDS spread decreases, then the outlook for that country is good.

The United States Scenario

Initially, one would expect that a downgrade in U.S long term debt would indicate that the United States has a greater default risk generally, and the CDS spread is expected to go up. The CDS spreads for Europe might remain unchanged or go down depending on whether there is a flight to quality. However, there is the possibility that the opposite might be true. If the U.S downgrade creates a financial contagion, then CDS spreads might increase in Europe because of greater uncertainty caused by the downgrade.

Part 2 – Related Literature

As far as is known, there has been no other research done that studies Europe's reaction to the United States downgrade. There have been influences from other papers to help construct the basis of this project. The biggest influences have been Ismailescu and Kazemi, 2010, who looked at the spillover effects of credit downgrades on the CDS market of emerging countries. Their primary purpose was looking at the information in a credit downgrade, and what effects it had on the market. In their results they show that the CDS market anticipated downgrades, as well as spillover effects.

In a recent paper, Maltritz, Buhn, and Eichler (2012) examine factors that determine the default risk of a country. In their study they take a comprehensive look at the financial and debt structure of a country, including GDP per capita, debt to GDP ratios, and other ratio factors. Their approach has to do more with the monetary and sovereign debt structure.

In another study, Kamin and DeMarco (2012) suggest that the United States could possibly lead the entire world into the global financial crisis. The main finding in their paper indicates that the United States began global turmoil and that the crisis spread to other countries shortly after 2008.

Hypothesis Development

Below I state three hypotheses that can be tested using CDS spreads in Europe surrounding the U.S.

downgrade: H1- Under the assumption that CDS markets are efficient; the announcement of Standard and Poors to downgrade the United States credit rating should reveal no new information. Therefore there should be no dramatic movements in either the United States or in European CDS spreads.

H2- If the efficient market assumption in H1 does hold, then there will likely be a greater negative reaction in the United States than in Europe. Since the United States is being downgraded, the market would require higher CDS spreads for American debt than European Debt. This should be especially evident in AAA rated countries. H2 predicts that because of greater risk of American bonds, and no change in the risk of European bonds, CDS spreads will likely decrease for European debt.

H3- If the U.S downgrade presents some level of financial contagion, or rippled effect, then it is possible that the data will show a negative reaction in Europe. H3 predicts that European CDS spreads will increase in response to the U.S downgrade because of the possibility that systematic risk in the U.S will begin to spread globally.

Part 3 – Data and Summary Statistics

The majority of the data used in this paper was obtained from Bloomberg. Bloomberg contains the most complete data of CDS spread levels for the countries in Europe and the United States. I gathered CDS spread data for the 61 day period surrounding the U.S downgrade, which occurred on August 5, 2011. I also obtained other data regarding the dates of country downgrades. This data came directly from Standard and Poors.

Table 1 shows the countries that were involved in the study. The table does not include every country in Europe because data from Bloomberg was not available for every country. The 32 countries being studied are listed alphabetically in column 1, with their average CDS price in column 2. Column 3 lists the change in CDS prices across the time period of the study.

There are a few interesting observations from this table. There are 25 countries with a CDS spread of over 100 basis points (A 1% annual spread that will be paid to a bank for protection), and 16 of these countries are over 200 basis points. The lowest spread is Norway with 34 basis points, and the highest being Greece with 2,254 basis points.

The most notable observation, and is seen in table 1, all of the 33 countries in the study saw increased CDS spreads during the time period of the study, except for one country, and that country was the United States. During the time period of the study (30 trading days before and 30 trading days after August 5 2011) investors had to pay higher CDS spreads for protection on European Countries, but less for protection on the United States, even though the United States had just been downgraded. The only two countries that had lower CDS spread levels than the United States were Norway and Sweden.

Summary Statistics

Table 2 reports statistics that describe the sample. To find the effects of what countries would have the biggest CDS spread reaction, statistics were gathered on common factors that are used to analyze a country. Panel A of Table 2 shows the summary statistics for the European countries. The average country has CDS spread change of 0.904%, a GDP per capita of \$25,585, and an unemployment rate of 10.13%. Corruption data was obtained from Transparency International, an independent firm that rates the

corruption of corporations and government with a particular country. The corruption index ranges from 1 - 10. A rating of 10 is the least corrupt, and a rating of 1 being the most corrupt. The average European country has a corruption perception value of 5.72. The average currency exchange rate (Fx rate) across Europe decreased -.529%. The credit rating scale is from 1 to 8, where a AAA rated country is given a ranking of 1. A rating of AA is given a value of 1.33 and a rating of A is given a value of 1.67. A BBB rated score is given a ranking of 2, and a CCC rated country is a 3. The average across Europe is 2.94, or in between a B and CCC rating. The average country was downgraded .24 times in the year previous to the study.

Table 3 shows the correlation between major variables used in the analysis. The most significant correlation is between corruption and GDP/Capita. The lower the GDP the lower the corruption index, indicating that countries that are the least corrupt have the highest GDP.

Part 4 – Results

Initial Examination

I begin my examination of CDS spreads for European countries surrounding the U.S downgrade by plotting CDS spreads, as well as CDS spread changes starting 30 days before the U.S. downgrade until 3 days after the downgrade. This will provide a general idea of what is happening during the sample time period.

In Figure 1 I show the level of CDS spreads for European countries compared to the United States. I can see that the average CDS spread for European countries is about 300 basis points, compared to the 50 basis points of the United States. Beginning approximately 10 days before the downgrade, or July 26th,

2011, European CDS spreads begin to steadily increase through the event day, while the United States shows no apparent increases or decreases. Figure 2 shows the change in CDS spreads. Day -30 through day -9 I see that Europe and the United States are tightly correlated, however in the days leading up to the downgrade the two seem to be negatively correlated. Interestingly, European spreads begin to increase and U.S spreads begin to decrease. These results indicate that even though the U.S was downgraded, the CDS market viewed European countries as a greater risk of default than the United States.

I further investigate this peculiar pattern in CDS spreads by comparing European countries that still hold a AAA rating with the United States. In Figure 3 I find that AAA European spreads and U.S spreads are similar from day -30 to day -7. However the two spreads diverge with the European spreads continuing to increase dramatically compared to U.S spreads which remain relatively constant. This pattern is also apparent in figure 4 when looking at changes in CDS spreads. The two groups are tightly correlated until day -7, when European spreads begin to increase and the United States spreads begin to decrease.

The results in this subsection seem to indicate that although Standard and Poors downgraded the U.S debt, the CDS market viewed European countries as the greater threat to default. I continue to explore this finding next using a standard event study methodology.

Event Study – CDS spreads surrounding the U.S downgrade

Table 4 reports the changes of CDS spreads more in depth. The first row is a bench mark from an 11 day period 30 trading days before the downgrade to 20 days before the downgrade. Column 1 and 2 provide results that are similar to the conclusions I draw from examining the figures. The U.S spreads are generally decreasing, while European spreads are generally increasing. It is however the abnormal changes that are of interest. Looking at the U.S spreads abnormal changes (or the difference between CDS spreads during

the 21 day period surrounding the U.S. downgrade benchmark) in column 3 I see that the weeks leading up to August 5th the CDS change is positive. However on the event day the CDS spreads dramatically decrease.

Looking at the European spreads, which are shown in column 4, the benchmark is close to zero. In this 10 day period there is no significant movement in the spread. In the weeks following however the CDS spreads increase at a very high rate. From day -10 until the downgrade Europe is generally increasing at a significantly high rate. The p-values suggest that these spread changes are statistically significant. Further, the changes in spreads also represent economic significance as the changes are greater than 10% each event window period. This result rejects hypothesis 1 and 2 in favor of hypothesis 3.

What is driving the changes in CDS spreads – Univariate Tests

To help us understand what macroeconomic factors influenced the reaction in CDS spreads, in my next set of tests I sort countries into quartiles based on different factors. Table 5 reports the changes in CDS spreads across the different quartiles that represent different macroeconomic variables. While there has been more in depth studies of what factors go into the credit ratings of a country (Maltritz, Buhn, and Eichler 2012) however my findings in Table 4 are simplified to understand this particular event of the United States downgrade. The factors that were analyzed include GDP per capita, unemployment rates, the Corruption index, the country's credit rating, and the country's foreign exchange change. I examine average daily changes in CDS spreads from day -3 until day 3, where day zero is the U.S downgrade date.

Column 1 of table 5 examines the GDP relationship with changes in CDS spreads. The countries that had low GDP/Capita had the highest reactions to the United States downgrade. The countries that had high

GDP/Capita had low CDS spread changes. On average High GDP countries had changes in CDS spreads that were 13% higher than those that had low GDP/Capita.

When sorting across unemployment quartiles, I do not find that changes in CDS spreads are related to unemployment rates. The countries that had the highest unemployment rate had a CDS change of 15.69%, while countries that had lowest unemployment rate had a CDS change of 18.44%. This is a difference of 2.75% and is statistically close to zero.

In column 3 of Panel A, I find that the most corrupt countries had CDS spread changes of 23.93%. The least corrupt countries had spread changes of 11.09%. The difference between the most corrupt and least corrupt countries is 11.09% and is statistically different from zero (at the .05 level).

Countries credit ratings do not seem to have an effect on changes in CDS spreads. The biggest reaction occurred for countries that had a BB rating; these countries saw an increase of 21.50%, while the lowest rated countries saw the least reaction of the group, a reaction of 17.86%.

The remaining factors include foreign exchange rates(column [5] of Panel A), a downgrade indicator variable (column [1] of Panel B) , which is equal to one if the country has been downgraded during the period prior to the U.S. downgrade, EU member indicator variable (column [2] of Panel B), Euro zone indicator variable (column [3] of Panel B), IMF Borrower dummy variable (column [4] of Panel B), and IMF voting power indicator variable (column [5] of Panel B). When examining spread changes in these variables, I find that the only factors that influence changes in CDS spreads surrounding the U.S downgrade include the downgrade dummy variable, the EU member dummy variable, and Euro Zone member dummy variable.

The countries that were not downgraded in the months before the study had a larger change in CDS spreads than those countries that were downgraded earlier in 2011. Members of the European Union had a greater change in CDS spreads than non European Union countries, and those that did not use the Euro also had greater changes in CDS spreads than those that did use the Euro..

I recognize the need to control for these factors in a multivariate framework. In the next section, I control for these factors in a regression analysis.

What is driving the changes in CDS spreads – Multivariate Tests

Table 6 controls for the factors described above in a multivariate framework. Each column consists of a controlled regression of multiple variables. Column [1] regresses all the factors that had multiple data points. Column [2] regresses all factors that are determined by a dummy variable. The results indicate that downgrade factors predict the level of CDS spread changes. If a European country has been downgraded, the CDS spread will go down. If a country has received no previous downgrade, the CDS spread will go up. Column [3] is a regression of all the variables together in a single regression. Table 6 reports the results from estimating the following equation:

$$CDS\ ret_{i,t-3,t+3} | U.S\ DOWNGRADE\ DATE = \beta_0 + \beta_1 GDP/Capita_i + \beta_2 Unemployment_i + \beta_3 Corruption_i + \beta_4 FXrate_i + \beta_5 Downgrade_i + \beta_6 EU_i + \beta_7 EURO_i + \beta_8 IMF_Borrower_i + \beta_9 IMF_Votes_i + \varepsilon_{i,t-3,t+3} \quad (1)$$

The dependant variable is the average change in CDS spreads from day t, to day t+3, where day t is U.S downgrade day. The independent variables have been defined previously. I use White (1980) robust standard errors to control for conditional heteroskedasticity.

In table 6, I see countries that have higher corruption, shown in column 3, higher exchange rate changes in

column 4, the use of the Euro in column 7, and IMF voting power in column 9 results in higher changes in CDS spreads. The CDS change is negative if they have high GDP/capita, high unemployment, had not had downgrades in the past, and were not part of the European Union.

From column 10 when I regress all the variables together I see that it has an r-squared of .3102, the highest from the whole table. Also from column 10 I see the most significant variable is the downgrade variable.

Part 5 – Conclusion

This study examines the CDS spread market in Europe and in the U.S. surrounding the S&P downgrade of the U.S. credit rating on August 5, 2011. My results show that U.S. CDS spreads remained relatively constant surrounding the downgrade. However, European CDS spreads increased markedly. These results indicate that, in spite of the downgrade to the U.S. credit rating, the market predicted greater default risk in Europe than the U.S.

In addition, the credit rating downgrade in the U.S. might have been a "trigger" event that caused a ripple in the market. In my second set of tests, I provide some evidence that European countries with less GDP per capita and more corruption caused the increase in CDS spreads surrounding the U.S. downgrade. Further, I also find some evidence that European countries that were not downgraded prior to the U.S. downgrade also exhibited a greater increase in CDS spreads. ,

Appendix

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Tables and Figures

Table 1 Sample of Countries			
	Country	CDS Spread (U.S\$)	Change in CDS Spreads (%)
	[1]	[2]	[3]
[1]	Armenia	744.267	.914 %
[2]	Austria	103.038	1.341%
[3]	Belgium	220.000	.889%
[4]	Bulgaria	259.208	.590%
[5]	Croatia	360.003	.007%
[6]	Cyprus	658.642	2.371%
[7]	Czech Republic	105.050	.573%
[8]	Denmark	83.384	1.838%
[9]	Estonia	109.832	.732%
[10]	Finland	56.773	1.172%
[11]	France	136.345	1.280%
[12]	Germany	68.525	1.238%
[13]	Greece	2254.13	1.093%
[14]	Hungary	365.108	.802%
[15]	Ireland	848.855	.127%
[16]	Italy	334.183	1.552%
[17]	Kazakhstan	192.558	.627%
[18]	Latvia	239.856	.427%
[19]	Lithuania	239.722	.419%
[20]	Netherlands	64.480	1.527%
[21]	Norway	34.880	1.268%
[22]	Poland	191.979	.865%
[23]	Portugal	971.689	.607%
[24]	Romania	288.755	.526%
[25]	Russia	175.591	.655%
[26]	Slovakia	138.172	.772%
[27]	Slovenia	156.350	.947%
[28]	Spain	350.869	.720%
[29]	Sweden	45.548	1.245%
[30]	Turkey	215.869	.569%
[31]	Ukraine	515.247	.516%
[32]	United Kingdom	75.476	.388%
[33]	United States	52.172	(.018%)
Average CDS price and change over the time frame of sample			
The time frame of the sample being 30 trading days before August 5, and 30 trading days after.			

Table 2 Summary Statistics							
Panel A. European Countries							
	<i>CDS Change</i>	<i>GDP/Capita</i>	<i>Unemployment</i>	<i>Corruption</i>	<i>FX Rate Change</i>	<i>Rating</i>	<i>No. of Downgrades</i>
	[1]	[2]	[3]	[4]	[5]	[6]	[7]
Mean	.904%	25584.96	10.13%	5.7183	-.529%	2.7964	.24351
Std. Dev	4.485%	11572.13	4.284%	2.1575	15.495%	1.6950	.42931
Min	-28.89%	5700.00	3.60%	2.1000	-473.51%	1.00	0
Max	23.56%	54600.00	20.10%	9.3000	5.001%	8.00	1
Panel B. United States							
Mean	-.004%	47200	9.60%	7.10	1	1.33	

Table 3 Correlation Matrix									
	GDP/Capita	Unemployment	Corrupt	FXRate	Downgrade	EU	EURO	IMF_Borr	IMF_Votes
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
<i>GDP/Capita</i>	1	-.32135 (.0001)	.84475 (.0001)	.06717 (.0031)	-.00131 (.9541)	.23533 (.0001)	.43832 (.0001)	-.29303 (.0001)	.33161 (.0001)
<i>Unemployment</i>	-.26680 (.0001)	1	-.22394 (.0001)	.02834 (.2127)	-.00381 (.8670)	.11460 (.0001)	.05184 (.0225)	-.04156 (.0675)	-.11802 (.0001)
<i>Corrupt</i>	.83927 (.0001)	-.19182 (.0001)	1	.05651 (.0129)	.00279 (.9023)	.36548 (.0001)	.37580 (.0001)	0.37597 (.0001)	-.15359 (.0001)
<i>FXRate</i>	-.00536 (.8138)	.02057 (.3657)	-.00313 (.8904)	1	.01071 (.6378)	-.01929 (.3963)	.03596 (.1138)	.01519 (.5043)	.02278 (.3167)
<i>Downgrade</i>	-.00108 (.9620)	-.00489 (.8297)	.00322 (.8875)	.01814 (.4251)	1	.00005 (.9983)	.00038 (.9865)	-.00592 (.7954)	-.000006 (.9979)
<i>EU</i>	.32863 (.0001)	.17122 (.0001)	.37322 (.0001)	-.00661 (.7712)	.000005 (.9983)	1	.44909 (.0001)	-.05997 (.0083)	.09496 (.0001)
<i>EURO</i>	.51495 (.0001)	.08245 (.0003)	.36243 (.0001)	.00218 (.9237)	.00038 (.9865)	.44909 (.0001)	1	-.16480 (.0001)	.33312 (.0001)
<i>IMF_Borr</i>	-.30366 (.0001)	-.00645 (.7766)	-.38729 (.0001)	.00063 (.9779)	-.00592 (.7945)	-.05997 (.0083)	-.1648 (.0001)	1	-.21994 (.0001)
<i>IMF_Votes</i>	.34273 (.0001)	-.17013 (.0001)	.14456 (.0001)	.00862 (.7048)	-.00006 (.9979)	.09496 (.0001)	.3331 (.0001)	-.21994 (.0001)	1

Table 4
CDS Percentage Changes Around U.S. Downgrade

	United States	European Countries		United States Abnormal Changes	European Country Abnormal Changes	
	[1]	[2]		[3]	[4]	
	<u>Mean</u>	<u>Mean</u>	<u>T Value</u>	<u>Mean</u>	<u>Mean</u>	<u>T Value</u>
<i>t-30, t-20 (bench)</i>	-7.26%	.145% (.9240)	.10	0	0	N/A
<i>t-10, t</i>	4.13%	25.85%*** (.0001)	9.53	11.38%	25.69%*** (.0001)	8.41
<i>t-5, t</i>	-11.01%	16.03%*** (.0001)	9.90	3.75%	15.88%*** (.0001)	5.89
<i>t-3, t</i>	1.34%	10.74%*** (.0001)	6.83	8.59%	10.60%*** (.0007)	3.75
<i>t</i>	2.13%	1.69% (.0805)	1.81	9.39%	1.54% (.4863)	.7
<i>t+1, t+3</i>	-7.62%	8.62%*** (.0001)	9.74	-.01%	8.48%*** (.0003)	4.12
<i>t+1, t+5</i>	-16.31%	.789% (.5177)	.65	-9.05%	.64% (.7248)	.36
<i>t+1, t+10</i>	-18.37%	6.33%*** (.0001)	4.5	-11.11%	6.18%*** (.0004)	.0004

t = 8 August 2011, the day of the reaction to the U.S downgrade from AAA to AA+.
benchmark = Average changes of the 30 trading days before the event, until 20 days before the event.
Abnormal changes are changes of the period, minus the bench.

Table 5

CDS Spread Changes for European Countries around U.S. Downgrade sorted by different factors

t-3 to t+3

	GDP/Capita	Unemployment	Corruption	Rating	FX Rate
	[1]	[2]	[3]	[4]	[5]
<i>High to Low</i>					
<i>Q IV</i>	13.01%*** (.0055)	15.69%*** (.0092)	23.93%*** (.0003)	19.13%*** (.0005)	25.83*** (.0003)
<i>Q III</i>	15.91%*** (.0032)	23.88%*** (.0019)	28.14%*** (.0001)	18.97%*** (.0022)	19.82%*** (.0004)
<i>Q II</i>	21.12%*** (.0046)	19.44%*** (.0005)	12.53%** (.0176)	21.50%*** (.0042)	12.07%*** (.0048)
<i>Q I</i>	27.41%*** (.0001)	18.44*** (.0015)	12.85%*** (.0056)	17.86%*** (.0046)	19.74%*** (.0063)
<i>Q IV – Q I</i>	-14.41%*** (.0028)	-2.75% (.6394)	11.09%** (.0404)	1.27% (.8172)	6.09% (.3564)
	Downgrade	EU	EURO	IMF borrower	IMF Votes
	[1]	[2]	[3]	[4]	[5]
<i>Indicator 1</i>	7.76%*** (.0438)	26.46%*** (.0009)	14.73%*** (.0002)	20.14%** (.0390)	16.89%*** (.0015)
<i>Indicator 0</i>	23.23%*** (.0001)	17.73%*** (.0001)	23.45%*** (.0001)	19.25%*** (.0001)	20.19%*** (.0001)
<i>Difference</i>	-15.48%*** (.0003)	8.73* (.0930)	-8.72%** (.0294)	.89% (.8874)	-3.29% (.4909)

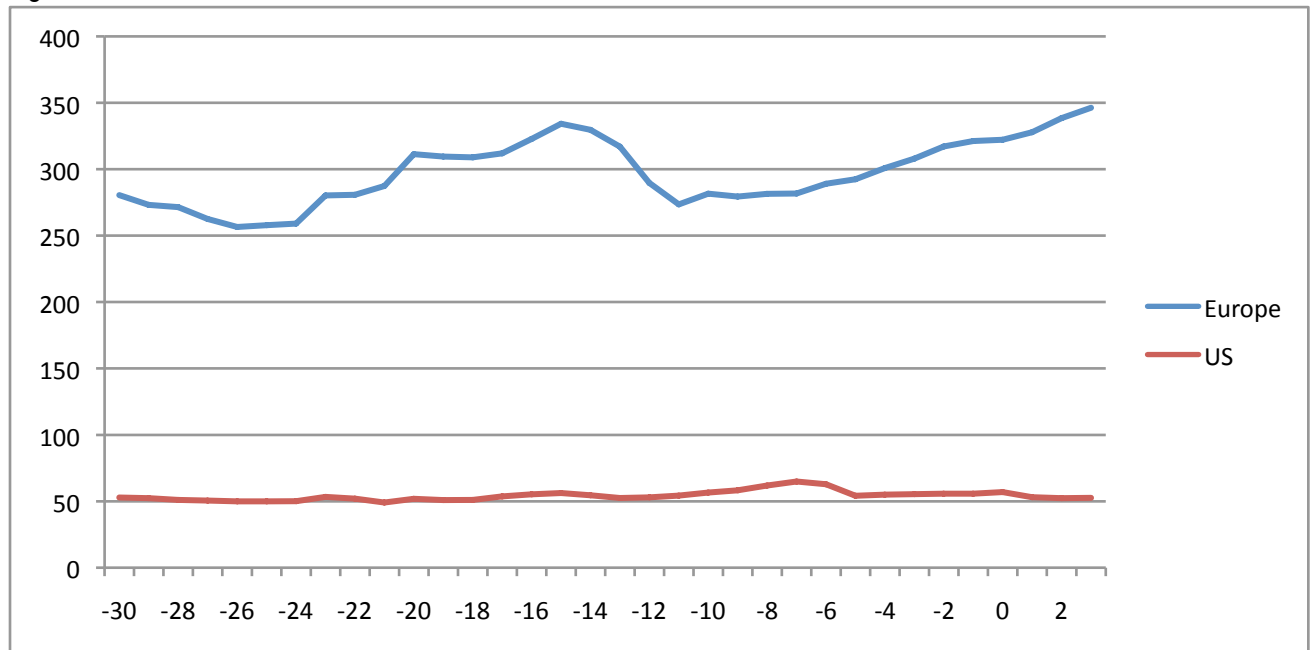
Table 6

$$CDS\ ret_{i,t,t+3} | U.S\ DOWNGRADE\ DATE = \beta_0 + \beta_1 GDP/Capita_i + \beta_2 Unemployment_i + \beta_3 Corruption_i + \beta_4 FXrate_i + \beta_5 Downgrade_i + \beta_6 EU_i + \beta_7 EURO_i + \beta_8 IMF_Borrower_i + \beta_9 IMF_Votes_i + \varepsilon_{i,t-3,t+3}$$

	[1]	[2]	[3]
<i>Intercept</i>	.07587 (.8596)	.0676** (.0268)	.08410 (.8713)
<i>GDP/Capita</i>	.000132 (.9780)		-.0006 (.9915)
<i>Unemployment</i>	.09536 (.7807)		.27174 (.4106)
<i>Corrupt</i>	.00482 (.6507)		-.00165 (.8820)
<i>FXRate</i>	4.76283 (.1711)		7.176 (.1227)
<i>Downgrade</i>		-.08662** (.0199)	-.09877** (.0115)
<i>EU</i>		-.00587 (.8644)	.05206 (.2389)
<i>EURO</i>		.05333 (.1306)	.07247** (.0503)
<i>IMF_Borr</i>		-.01126 (.7642)	-.01221 (.7592)
<i>IMF_Votes</i>		.03569 (.2357)	-.01221 (.3910)
<i>Adj. R2</i>	-.0486	.1152	.1833

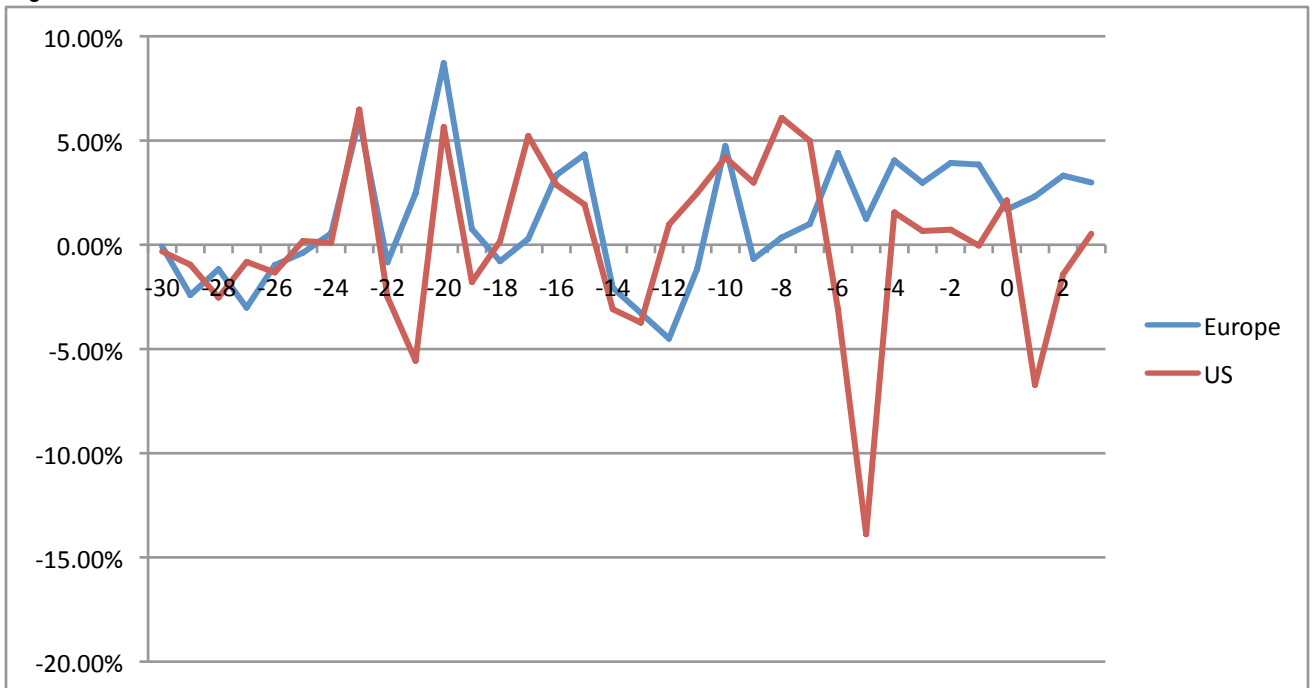
United States Absolute CDS Spreads vs. European Countries CDS Spreads

Figure 1



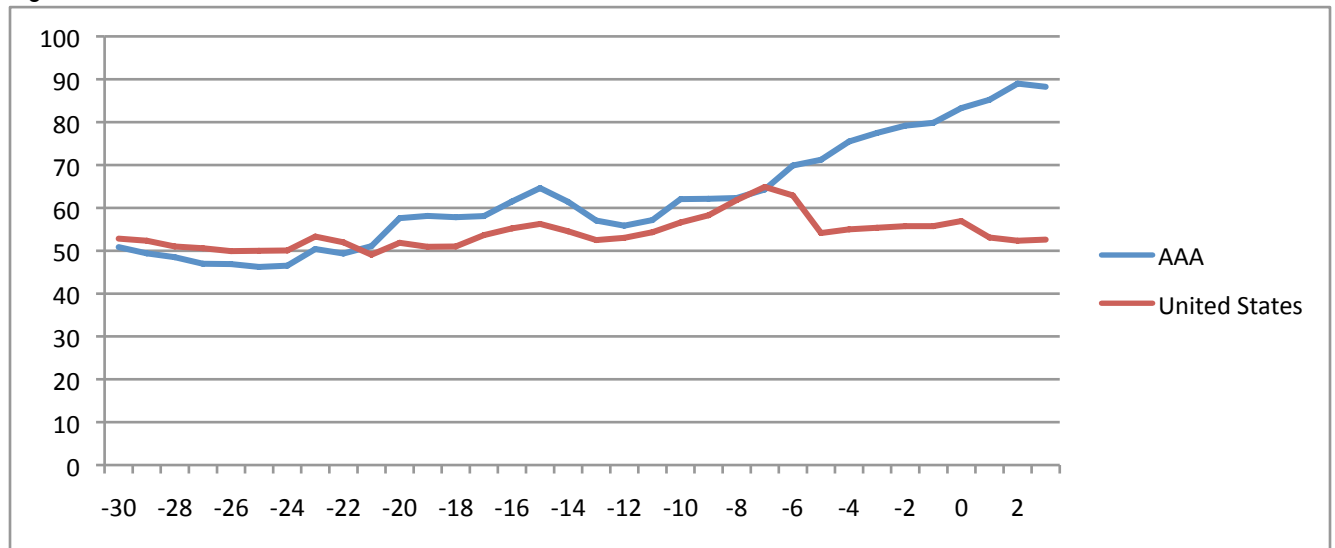
United States CDS Changes vs. European CDS Changes

Figure 2



United States Absolute CDS Spreads vs. European AAA Countries CDS Spreads

Figure 3



United States CDS Changes vs. European AAA CDS Changes

Figure 4

