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## Geographical diversification and risk throughout the credit default swap market

AREA: 2  
TYPE: Application

*Diversificación geográfica y riesgo a través del mercado de Credit Default Swaps*  
*Diversificação geográfica e risco de crédito através do mercado de default swaps*

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*This paper aims to show an empiric vision about risk perception in global financial markets. The analysis of the risk is based on the credit default swaps evolution from sovereign bonds and corporate bonds during the last five years. Also, there are differences between some agents in the market, since there are new situations. The most important is that Latin-American countries have lower risk than some European countries. As well, companies highly geographical diversified have lower levels of risk than national sovereign bond.*

*El presente artículo pretende mostrar una visión empírica de la percepción del riesgo en los mercados financieros globales. El análisis de dicho riesgo se centra en la evolución de la cotización de los credit default swaps, tanto de deuda soberana como de deuda corporativa, en los últimos cinco años. Durante este análisis se pueden observar las distorsiones existentes así como las novedades en cuanto a percepciones del riesgo. Lo más novedoso es que países de América Latina tienen menos riesgo de impago que países europeos. También como las empresas altamente diversificadas geográficamente presentan niveles de riesgo inferiores que la deuda soberana nacional.*

*Este artigo pretende mostrar uma visão empírica da percepção de risco nos mercados financeiros globais. Essa análise de risco concentra-se na evolução do preço de credit default swaps, tanto da dívida soberana como da dívida empresarial, nos últimos cinco anos. Durante esta análise, podemos observar as distorções e os desenvolvimentos nas percepções de risco. A maior novidade é que os países latino-americanos têm um menor risco de incumprimento do que os países europeus. Também como as empresas altamente diversificadas geograficamente apresentam níveis mais baixos de risco do que a dívida soberana nacional.*

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## 1. Introduction

This paper is an extract of a presentation in Georgetown University during the seminar "International Law, politics and economics: perspectives from Spain and the USA." Date: 1<sup>st</sup> October 2010. This seminar was included in the course from Rey Juan Carlos University: University expert in International Law, Economics and Politics from the United States and Spain perspective.

The aim of this paper is to show the relationship between diversification and risk in the companies. The article will also explain the different sovereign risks by geographical areas. We will analyze the differences during the last five years. In order to explain those relationships, I will use the credit default swaps (CDS) market.

First of all, I will explain what a credit default swap is. It is a financial contract between the buyer, who pays a premium, and the seller of protection against a default to a bond, usually from a government or a corporation. This financial instrument is quoted in the Over the Counter (OTC) market. The CDS market has grown a lot in a short period of time. The market started as an inter-bank market to exchange credit risk. Now, it involves financial institutions from insurance companies to hedge funds. However, the minimum contract is at least 10 million dollars and it is scored in basis points. A basis point is a hundredth of a percentage point (0.01%). Basis points are normally used to measure changes or differences between rates, yields or simply changes which are very small.

### KEY WORDS

**Default,  
diversification,  
sovereign, risk,  
corporation,  
rating**

### PALABRAS CLAVE

**Default,  
diversificación,  
soberano, riesgo,  
multinacional,  
rating**

### PALAVRAS-CHAVE

**Default,  
diversificação,  
soberano,  
multinacional,  
rating**

## 2. Comparison between sovereign risks of default

With the great world crisis, the emerging countries have done better in GDP than the developed countries in Europe or USA. A reason for this is the lower financial market evolution founded in the emerging countries. Before this crisis, the emerging countries were countries with higher potential growth and with higher risk as well. Sometimes, this fact had been a handicap for the multinational companies to invest in those countries.

To carry out this analysis I will choose the senior CDS of 10 years maturity. This election is because most of the analysis about sovereign bonds, we were chosen this kind of bond.

The CDS used in this analysis are: USA, France and Germany, PIIGS (Portugal, Ireland, Italy, Greece and Spain), Mexico and South America (Argentina, Brazil, Chile, Colombia and Peru).

The division is made in terms of geographical zones and similar economies. However, there are big differences between the countries.

### JEL CODE

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The graph and the table below show that in the last period the higher risk is in the poor European economies. On the other hand, countries like Mexico or Brazil have nowadays a lower risk of default. This situation is new for the European Union, why the emerging countries in America have better macroeconomic situation than Greece or Portugal?

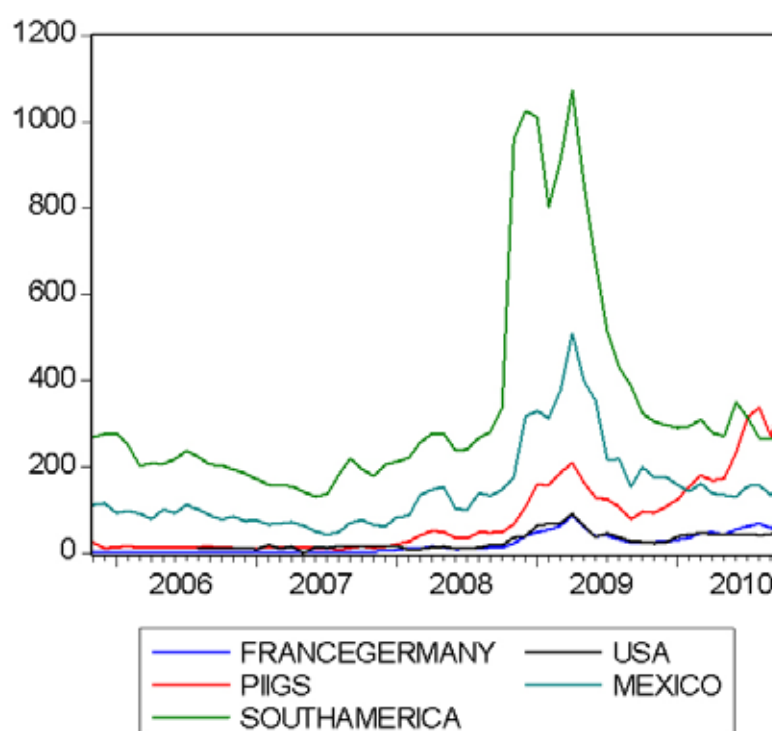
With this data, Portugal has the double risk of default that Peru. In fact, all the PIIGS have higher risk than Latin American countries: Mexico, Brazil, Chile, Colombia and Peru.

Figure 1

Country	CDS (30/09/10)	Country	CDS (30/09/10)
USA	57,32	Germany	49,49
Mexico	163,09	France	88,74
Argentina	742,405	Portugal	309,935
Brazil	153,40	Ireland	319,41
Chile	89,44	Italy	221,33
Colombia	157,91	Greece	798,455
Peru	145,335	Spain	234,44

Source: Datastream. Thomson Reuters

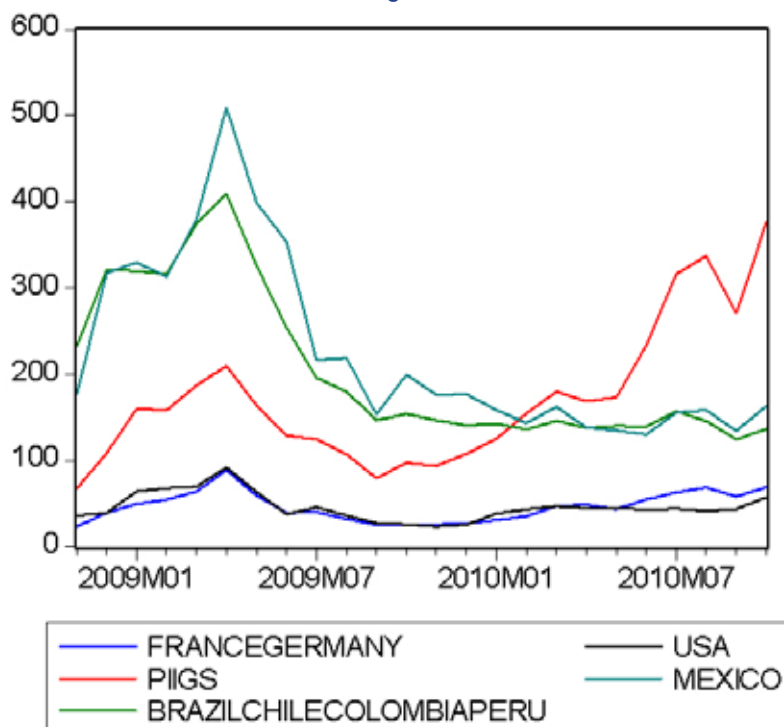
Figure 2



The reason for this change is very complex and it is probably a mixture of economic and political decisions and it is influenced by the bond crisis in South America in the 80's. After this crisis, for instance, the weight of sovereign bond in GDP is lower in South American countries than in European countries.

If we focus on the last two years the change is still more obvious. In addition, I have crossed off Argentina (in South America) because it had a very great financial crisis a few years ago.

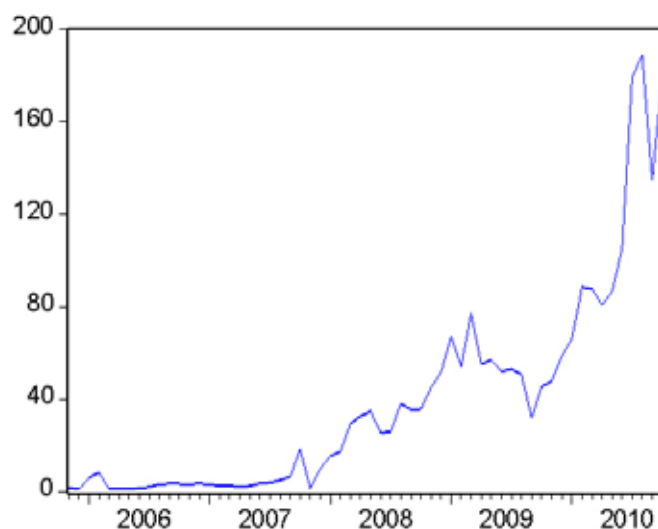
Figure 3



I want mention the gap between different European countries too. A couple of examples are Spain and Germany. The gap has increased during the last three years. This is a problem for the common currency (Euro) because there are countries with high risk of default. This situation can make European Central Bank be in the side of some countries and make a drawback to another countries. For this reason, the decisions are very controversial.

In addition, I would like to refer to volatility. This is a market with high volatility during the last five years. For example, the average between one month and the following are from 15 per cent to 25 per cent. Standard deviation respect the average in European countries is approximately 0,90 and in South American countries around 0,40. For this reason, it is a very risky market and only for institutional investors.

Figure 4



In the table below, I list the different cases in terms of ratings agencies between European countries and Latin-American countries. The European countries have ratings of double A and Latin-American countries have ratings of double B. The rating A is better than rating B. What is the meaning of this? In my opinion, there are two main meanings. One is that the European countries have a financial market with more connections with other countries like Germany or France. A default of one of them would cause a global default and collapse the financial market. The other reason is the origin of the income of the ratings agencies.

Figure 5

Country	Standard & Poor's	Fitch	Value 30/09/10
USA	AAA	AAA	57,32
Germany	AAA	AAA	49,49
France	AAA	AAA	88,74
Mexico	A	BBB	163,09
Argentina	B	B	742,405
Brazil	BBB-	BBB-	153,40
Colombia	BBB-	BB+	157,91
Chile	A+	A	89,44
Peru	BBB-	BBB-	145,335
Greece	BB-	BBB+	798,455
Italy	A+	AA-	221,33
Ireland	BBB+	A+	319,41
Spain	AA	AA+	234,44
Portugal	BBB+	AA	309,935

Source: Datastream. Thomson Reuters

Why do the markets anticipate the risk earlier than politicians or organizations? This is because the market is the first one in founding the problems in an economy. Politicians try to solve the problems themselves. If the politicians admitted these problems, they would lose votes and their popularity will fall down. It is very hard to make correct decisions.

### 3. Comparison between corporate CDS and national sovereign CDS

Now I will discuss about the corporate CDS and their relations with sovereign CDS.

The first point is the relation between the corporate CDS and the price of the company in exchange market. Theoretically, this relation must be negative. When the CDS goes up the price goes down. This is because with a higher risk the shareholders do not want to be them during more time and the new shareholders do not want to buy these stocks.

With the correlation matrix, this relationship is not very clear. Usually, it is negative, but there are some that are positive. Negative values are not constant. Some of them have more correlations and others have less. For this reason, we can say that the risk of default is not a main component of the price.

Figure 6

<b>Alcoa</b>	-0,8235	<b>Cisco</b>	-0,4644	<b>Repsol</b>	-0,7299
<b>AT&amp;T</b>	-0,3923	<b>Coca Cola</b>	0,0639	<b>Santander</b>	-0,6155
<b>BoA</b>	-0,8764	<b>Heinz</b>	-0,0272	<b>Telefonica</b>	0,0332
<b>BBVA</b>	-0,7861	<b>Iberdrola</b>	-0,4550	<b>Verizon</b>	-0,4786
<b>Boeing</b>	-0,8256	<b>Kraft</b>	-0,4286	<b>Volkswagen</b>	0,6977
<b>Campbell</b>	-0,2210	<b>Pepsi</b>	-0,3784	<b>Walmart</b>	0,4704

Source: Datastream. Thomson Reuters

Normally, we think in sovereign bond like financial instruments without risk. After the results of the previous chapters, we know that there is a risk of losing the money invested in them. The following question is if the multinational companies have more or less risk than sovereign bond.

Now, I will analyse from the most important economy in the world, USA.

In USA, some companies have a lower risk than the sovereign CDS. During last years the gaps are decreasing and, in some occasions, the corporate risk is below than treasure risk.

Figure 7

<b>USA</b>	Alcoa	AT&T	BoA	Boeing	Campbell	Cisco
<b>57,32</b>	<b>406,825</b>	<b>68,46</b>	<b>182,525</b>	<b>86,585</b>	<b>56,395</b>	<b>89,35</b>
<b>USA</b>	Coca Cola	Heinz	Kraft	Pepsi	Verizon	Walmart
<b>57,32</b>	<b>51,75</b>	<b>77,1</b>	<b>82,14</b>	<b>56</b>	<b>116,25</b>	<b>57,215</b>

Source: Datastream. Thomson Reuters dates from 30/09/2010

Also, there is an important correlation between original sovereign CDS and national companies. This correlation is positive. It is due to four reasons. The most important is that the global situation is the same for all of them. The second is that national market is the most important market for those companies. In addition, those companies have a great sovereign bond in their hands. And last, it is because usually your bonds are connected with the sovereign bond or some financial indicator like Euribor (in Europe).

Figure 8

	Alcoa	AT&T	BoA	Boeing	Campbell	Cisco
USA	<b>0,924797</b>	<b>0,572786</b>	<b>0,784077</b>	<b>0,757307</b>	<b>0,372890</b>	<b>0,715243</b>
	Coca Cola	Heinz	Kraft	Pepsi	Verizon	Walmart
USA	<b>0,761195</b>	<b>0,294544</b>	<b>0,384541</b>	<b>0,727429</b>	<b>0,484334</b>	<b>0,755813</b>

Source: Datastream. Thomson Reuters

#### 4. Case of Spain

In the case of Spain, the sovereign CDS is higher than some Spanish corporations. This situation is new for us. The sovereign CDS until the end of 2008 was lower than corporate CDS. These companies are Telefonica, Banco Santander, BBVA, Iberdrola and Repsol YPF. They are the most important Spanish companies.

Why do these companies have a lower risk? Because they are highly diversified. In this case, geographical diversification works very well for the companies. The diversification makes that the incomes come from other countries. The influence of the situation in a country is not an insurmountable obstacle.

In my opinion, this is one of the reasons for these companies are diversifying around the world, especially in America.



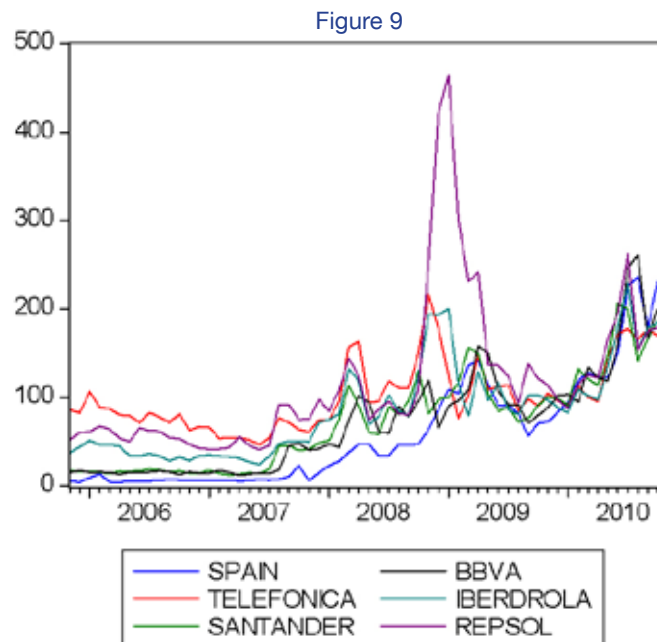


Figure 10

Spain	Santander	Iberdrola	Repsol	Telefonica	BBVA
234,44	187,16	185,08	179,05	170,035	200,46

Source: Datastream. Thomson Reuters

The correlations between Spain CDS and corporates CDS are the following:

Figure 11

	Santander	Iberdrola	Repsol	Telefonica	BBVA
Spain	0.940176	0.851904	0.644826	0.731093	0.909670

Source: Datastream. Thomson Reuters

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## 5. Conclusion

This article reveals the relationship between different CDS. Latin-American countries have a lower risk than some developed European countries (for example Spain). Other conclusion is that highly diversified companies have lower risk than some countries, and the gap with the most important countries is decreasing.

In the case of Spain, it is safer to invest in corporate bonds than to do it in sovereign bonds, this is an important result for the future.

I would like to finish with an advice: *Geographical diversification is not an option for the companies, it is essential for their progress. This makes their level of risk lower and their profit higher.*

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