The impact of political risk on the sovereign spread: the case of Latin America and the Euro Zone

Abstract

We used sovereign spread of bonds of sixteen euro zone and six Latin American countries to investigate whether there is any relationship between the perceived political risk of those countries and the return required by investors in their sovereign bonds.

We found that there is a negative relationship between the perceived political risk of such issuer countries, measured by The Kaufmann, Kraay & Mastruzzi (2010) Governance Indicators, and the spread paid to the buyers of sovereign debt, which means that investors charge a premium risk by investing in bonds of countries perceived as politically unstable.

Key words: Political risk, governability, sovereign spread

Track: Financial Markets, Investment and Risk Management.

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I. Introduction.

The global bond market is by far the largest source of public offering instruments in the second decade of the 21st century. In this sense, according to estimates from the Bank for International Settlements (BIS), the nominal value of bonds outstanding at December 2010 was 95 billion dollars, equivalent to 130% of the world´s Gross National Product (PTB), where 70% were local emissions, and was followed in importance by the global stock market capitalization with an estimated 55 billion dollars for the same date. The main actor of this market is the U.S. with 39% of the total amount issued, followed by Japan with 20%.

Despite the importance of the bonds within the investment menu in which corporations, individuals and governments put their excess resources, there are still many aspects of the valuation of these instruments on which the academic community is just beginning to develop lines of depth research.

Such is the case of the identification of the economic variables that affect the setting of interest rates that come to those who purchase debt instruments susceptible to insolvency events. There is still no consensus on what are the most important variables in determining these rates.

In this regard, there is a substantial body of work that began with Merton (1974), who was the first to develop a model for pricing corporate debt using the economic determinants of financial stress that are characteristics of the issuers of such a debt, in particular, the levels of financial leverage and the volatility of its assets.

More recently, several studies have been conducted to link yield than corporate bonds earned in excess on riskless debt issued by the Federal Government which is going to be called spread along this article. The characteristics of the debt markets, of the issuers, and the variables used to explain the sovereign spread will be discussed in the following paragraphs.

II. Theoretical Foundations.

So, this article explores the impact that can have on the sovereign spread a variable that has only recently captured the interest of academics and investment managers of fixed income instruments: "political risk". In this regard, in a July 2012 interview, as quoted by Goodman (2012), for the financial weekly Barron's, Mohamed El-Erian, head of Pimco, the largest family of bond funds of the planet with assets of 1,8 billion, said referring to the conceptualization of investment strategies in fixed income for the coming years: “Market participants need to pay a lot more attention to political developments," he says. "Last summer's (Treasury) downgrade, Europe today, the fiscal cliff – these are all purely political issues. Plus, there's active debate as to what the euro zone, the biggest economic region in the world, will look like."

Despite the importance of the political issue, however, there are few references in the literature on the impact of political risk on the cost of sovereign debt. The seminal studies have focused on the fact that a non-payment is a political decision of weighing the positive impact of defaulting on a payment schedule versus reputational costs, the seizure of national assets and disruption of international business operations of the debtor country, Eaton & Gersovitz (1981), Bulow & Rogoff (1989) and Gibson & Sundaresan (1999).

In this regard, Duffie, Pedersen & Singleton (2003) developed a model for pricing sovereign bonds issued in local currency, allowing incorporate default risks, restructuring and a liquidity premium. Unlike private corporate bonds where a breach may stop the total amount of payments, bond issuers default on sovereign rather than absolute terms, which means that they may differ and renegotiate payments through restructurings, where in many cases the creditors will not know the discount that they will be forced to grant until very advanced the restructuring process.

The authors found that the spread of Russian sovereign bonds varies over time, and responded to political events, the level of international reserves and the price of oil, in the case of the latter two variables with a negative correlation. Political risk of Russian debt was strongly affected by the fact that the Ministry of Finance of the late nineties of the 20th century was less committed to pay the debt incurred during the Soviet administration than others issued later in those events in which the public fund were insufficient to honor all commitments.

In line with the study of country risk, Keswani (2005) studied the structure of interest rates for brady bonds of Argentina, Mexico and Venezuela for the period October 1993 to 1996. While the main focus of his work was to evaluate the performance of structural and reduced models on the valuation of these bonds, he found an additional result that opens a new line of research on the possible determinants of sovereign borrowing costs. According to him there is a high covariance between bond prices of the countries studied, from that fact, he used a reduced form model to determine the probability of insolvency of the brady bonds of countries in the sample, finding that there is an unknown common factor that determines such a probability. The author proposes that the political risk is a possible candidate to be the common factor that affects part of the spread of such bonds, but does not dwell on it.

In their seminal study of spread of sovereign debt in emerging markets, Mauro, Sussman & Yafeh (2000) analyzed the behavior of these spreads in the periods 1870-1913 and 1992-2000; the first of these periods is considered a golden age for the movement of capital flows internationally and the second represents a surge in the issuance of sovereign roles compared to previous decades.

The authors compared the behavior of spreads on sovereign bonds between the two periods, finding that in the nineties, such differentials changed in a more pronounced and frequent way, besides these changes tended to occur

simultaneously for several countries. The effect of diversification obtained when building portfolios with bonds of several emerging countries in recent years is much lower than that achieved in the late nineteenth and early twentieth century. Country-specific events were assessed with greater intensity in the nineteenth century, reflecting greater integration between national financial markets in recent years.

In line with the previous study, Beck (2001) used the sovereign spread of 9 countries in the period December 1998-August 2000, in order to assess whether these differentials were affected by variables such as the volatility of stock markets of developed countries, finding that they had no explanatory power. By contrast, structural variables of long and medium term explained part of the monthly variations of such differentials.

Among the medium-term variables were forecasts of investment banking and multilateral agencies about the macroeconomic indicators of each country and the evolution of international interest rates. The long-term variables were not explicitly modeled but appear as intercepts of the regressions estimated, and then those intercepts were related to the credit ratings of countries studied, under the assumption that those ratings capture structural information of such countries, obtaining high correlations, which allowed the author to infer the existence of explanatory power of such variables on the sovereign spreads.

Rowland (2005) relying on the pooled data analysis technique, studied the determinants of sovereign spreads, credit ratings and credit capacity of sixteen emerging markets using information from dollar-denominated sovereign debt produced in July 2003. The Growth Rate of the Gross Domestic Product (GDP) per capita, Inflation, External Debt levels as a percentage of GDP, debt service as a percentage of state revenue, the level of international reserves and the degree of openness of the economy were factors that explained the potential credit and financial costs of sovereign borrowing.

But it was not until the study of Moser (2007) when appears in the literature political variables measured explicitly. Moser defined sovereign risk as the ability and willingness of a country to pay down debt, and included the political risk as part of sovereign risk. To assess whether financial markets take into account political events on the valuation of sovereign debt, collected yield spreads of 12 Latin American countries during the period 1992-20007, using information contained in the index EMBI, EMBI + and EMBIG calculated by J.P. Morgan.

To operationalize the concept of political event, the author relies in a series of announcements of changes in economic cabinets for the sample countries, including the removal of the ministers of finance and / or economics, obtained from the Wall News Street Journal, the Economist and the Financial Times. Through least squares regressions found that the spread started to increase 40 days before the date of announcement of the change, and remained part of the increase during the 40 days following the announcement.

Investors showed sensitivity to changes in cabinet, which was particularly severe in the case of finance ministers, as these changes questioned maintaining fiscal discipline in the countries of the sample and the will to fulfill their commitments debt.

Following the inclusion of strictly political variables, Hartelious, Kashiwase & Koedres (2008) noted that the spread of sovereign debt of emerging countries had declined in the period 2002-2007, this reduction could be due either to excess liquidity in the international markets that increased prices of all titles offered or to improvements in the leading of those countries that increased the likelihood that these should honor its commitments to its creditors.

To address this concern studied the sovereign spread of bonds of these countries, as measured by the Emerging Market Bond Index (EMBI) of J.P. Morgan, to factors related to the liquidity of the international financial markets and the macroeconomic performance of countries.

The authors found that the sovereign spread is sensitive to both the information contained in the credit ratings of the rating agencies S & P, Fitch and Moody's and to the expectations for the evolution of interest rates set by the Federal Reserve; and the volatility of these expectations. Risk ratings synthesized both countries macroeconomic performance and the quality of decisions made by public managers.

At about the impact of macroeconomic performance, Akitoby & Stratmann (2008) studied the effect of fiscal policy on the sovereign spread of countries included in the EMBI Global Index. The authors found that adjustments aimed at strengthening income of those countries have greater impact on reducing the spreads than those intended to reduce spending. Moreover, financial markets took into account the composition of spending, where cuts of current spending showed a greater impact on reducing the spread than investment reductions. Financial markets punished through the sovereign spread current expenses financed with debt, and rewarded by reducing such a differential of return in the times when such expenditures were financed with tax increases.

The design of political institutions according to Akitoby & Stratmann (2008) also had an impact on sovereign spread as the market rewarded the right-wing governments, while penalized leftist regimes that fund current expenditures with debt increases. They also found that the cost of debt rose in election years.

More recently, Liu & Spencer (2009) used the Brazilian case to propose a structure model of interest rates to explain the spread on dollar-denominated sovereign debt through domestic macroeconomic variables. From a financial macro model of the Brazilian economy, the authors allowed the volatility of the system to be influenced by country risk elements that are latent in macroeconomic and financial variables.

The sovereign spread depended mainly on the country risk in periods where the probability of insolvency of the country was higher, but in periods of medium and low risk macroeconomic variables played a greater role in determining such a differential. In all cases, the domestic interest rate was the most important variable in explaining the cost of sovereign debt.

Now referring directly to political institutions, Akitoby & Stratmann (2010), delved into the study of the impact of political institutions on the financial cost of debt traded on international markets, following the methodology developed in Akitoby & Stratmann (2008), and found that markets rewarded democracy and electoral accountability by demanding lower interest rates. Political institutions have an impact on the cost of sovereign debt that goes beyond fiscal and economic outcomes that these institutions promote.

Turning to the impact of macroeconomic management, Baldacci & Kumar (2010) evaluated the impact of the fiscal deficit and public debt for the period 1980-2008, in a group of 31 countries including both developed and emerging, finding that the fiscal deterioration significantly impacted interest rates albeit nonlinear. The magnitude of the impact on rates depended on fiscal conditions at the beginning of the analysis, institutional development and spillover to the global financial markets.

Finally, Jaramillo & Tejada (2011) found that the investment grade status of a sovereign bond substantially reduces financial costs due to improved market expectations assigned to these bonds and expanding the base of potential investors. Based on macroeconomic data emerging from 35 countries in the period 1997-2010, they estimated that the spread of a BBB-rated country can be 160 basis points less than those of a country rated BB +.

While global financial conditions play a key role in determining the spread of sovereign debt, low external public debt ratios as a percentage of GNP and high rates of growth in the domestic economy help improve the market's expectations. High levels of international reserves are only relevant in reducing the spread of countries whose bonds are rated below investment grade.

The study of the cost of credit risk requires, in addition to identifying the factors or variables that could force investors to demand a premium for holding sovereign debt, solve problems of a practical nature as to estimate the own credit risk premium or spread from market information that is incomplete by the absence of daily transactions of securities to be studied and the difficulty of observing the structure of interest rates.

There are two sources from which the empirical data are collected to calculate the spread between risk bearing bonds and risk-free counterparts. The first source, the spot market or cash market, refers to the buying and selling securities with credit risk by market specialists (over the counter), and auctions of debt securities of U.S. central government (treasuries).

The second one, the derivatives market, refers to the purchase and sale transactions of hedge contracts against the event of insolvency of corporate and sovereign bonds, using as main vehicles the Credit Default Swap (CDS), which are put options on those securities that are marketed under the conditions set by the International Swaps and Derivatives Association (ISDA).

With respect to the cash market, the seminal works in the area of credit risk compare the difference between yields to maturity of corporate bonds and coupons bearing debt of the central government of a country, as they are considered risk free securities, both securities of similar maturity, giving to that difference the name of credit spread (Elton, Gruber, Agrawal & Maan, 2001).

One of the main drawbacks of this cash market is that the risk bearing securities and the risk free ones are not issued simultaneously, so those doing empirical work try to match corporate and government securities of similar maturity issued on the dates close as possible, meaning that the measured differential is an estimate of the real which is not observable. Examples of papers using cash market measures of the spread are Campbell & Taksler (2003), Covitz & Downing (2007) and Elton et al. (2001).

A special situation within the cash market is the measuring of sovereign debt spread of emerging markets which benefit from the existence of indexes EMBI, EMBI + and EMBIG calculated by J.P. Morgan that include direct measures of those returns: Given the availability of such an estimator, The J.P. Morgan indexes have been used extensively since the late 90s of the twentieth century as the sovereign spread estimates, as shown in Ferruci (2003), Grandes (2003), Rowland (2005), Baldacci & Kumar (2010), Akitoby & Stratmann (2010), Jaramillo & Tejada (2011) among others.

As for the derivatives market, the use of the CDS premiums as estimates of the credit spread started with Duffee (1999) and Hull, Predescu & White (2004), which stated that the price of a CDS is equals the spread between a corporate bond and a risk-free title. For such equality to be satisfied, must be fulfilled an equilibrium condition (absence of arbitrage).

As demonstrated on Duffee (1999), the equilibrium condition that prevents arbitrage holds only under certain conditions, such as the differential between variable rate notes and risky papers with floating rate. But this case, while interesting in theory, is very irrelevant in practice, given that variable rate instruments are little used. The equilibrium condition also holds when CDS premiums are written on a fixed-rate corporate bond which is sold at par, the payment dates of the corporate bond and CDS match, and if the recovery value of the bond in insolvency is a fixed fraction of their face value (Houweling & Vorst, 2005).

Ericsson, Jacobs & Oviedo (2009) evaluated the determinants of credit risk as the dependent variable using the prices of CDS. In their analysis, the authors chose to use the premium charged for the coverage of the risk of insolvency

rather than the cash spread; first, because the CDS market is much more liquid than the bond market, amounting to 2006, date it ended data collection cited in the study, about 20 trillion in notional or nominal value of contracts outstanding. Second, because as the price of CDS directly measures the spread is not necessary to specify a structure of interest rates and risk free family riskless asset from which it has to be estimated, thus avoiding incorporate to the analysis the disadvantages of using a specification that is not correct and would add "noise" to the estimated spread. And finally, the CDS market, while more liquid, responds more quickly to changes in credit risk than the bond market (Blanco, Brennan & Marsh, 2005).

Among the articles that CDS quotes as estimations of the spread are Berndt, Douglas, Duffie, Fergunson & Schranz, (2005), who established the relationship between the probability of insolvency resulting from the CDS with those estimated by Moody 's using the risk neutrality assumption in their models for estimating probabilities of insolvency and Zhang, Zhou & Zhu (2005), who explained how much of the CDS is explained by the volatility of the shares of companies issuing debt and the by sudden changes (jumps) in the value of the assets of those companies.

Thus, this paper is organized as follows: Section III presents the research objectives. Section IV shows the methodology used to study the variables affecting the spread, Section V discusses the data, Section VI discusses the results and Section VII presents the conclusions and possible avenues for future research development.

III. Research Objectives.

The objective of this work is to increase the quantitative evidence for the hypothesis that political risk has a significant influence on the spread of sovereign bonds, i.e. the higher the political risk, the higher the spread should provide a country to finance its debt.

We will study the impact of political risk on spread paid by American and European sovereign bonds, using for the first group, the EMBI as a proxy of the sovereign spread, and in the second group, the daily prices of CDS issued on sovereign bonds, as an instrumental variable cost of credit risk. As a measure of political risk we used The Worldwide Governance Indicators by the World Bank, which follows the methodology described on Kaufmann, Kraay & Mastruzzi (2010), plus another set of key macroeconomic variables traditionally used in the literature, which are going to be presented in the methodology section.

IV. Methodology.

Following the model proposed by Jaramillo & Tejada (2011), we replaced the variable regarding the credit rating for six governance indicators, by the World Bank. The study covered the period 2002-2010, and used an OLS model in order to explain the impact of political risk on the spread of sovereign debt, for two group of countries: six Latin-American and sixteen members of the euro zone. The selected countries are presented in Appendix 1 and 2.

To measure the sovereign spread we used in the case of euro zone countries daily prices of CDS (derivatives market), while for the group of Latin American countries, we preferred the use of the weighted spread of these countries included in EMBI Index, which is an index measuring the weighted spreads of 27 emerging countries.

The following equation shows the model run for both groups of countries, where the set of control variables or macroeconomic variables are the same that those used by Jaramillo & Tejada (2011), Edwards (1984, 1986), Akitoby & Stratman (2010) :

where:

The dependent variable is:

S Corresponds to spread or yield spread of the annual average of the daily rates of the five-year CDS, for the group of countries in the euro zone, and for the group of Latin American countries the annual average of the daily weighted spread of these countries included in EMBI Index.

Among the explanatory variables are:

1. The set of control variables used by to Jaramillo & Tejada (2011), Rowland (2005), Hartelious et al. (2008), Liu & Spencer (2009), Akitoby & Stratmann (2010), Ferrucci (2003), Baldacci & Kumar (2010), among others, These variables are according to (Kumar & Okimoto, 2011) which better explain the cost of funding of sovereign debt. For this investigation were taken the following control variables:

   A measure of the stock market volatility, it represents the risk appetite of investors in the international financial markets. It was estimated using the VIX index which is based on S&P 500 options prices. The VIX is often used as a proxy for investor´s attitude toward risk and appears to explain movements of the emerging market bond spread in recent years (Hartelius et al. 2008). Literature predicts a positive sign for the coefficient of this variable.

   It is a measure of the availability of resources to be provided in the short term by the financial system in response to the policies of the Fed and is measured by the annual average implied yield of the three-month Fed Funds futures contract on U.S., this information was obtained from Bloomberg. In this regard, Hartelius et al. (2008) and Jaramillo & Tejada (2011) believe that speculators in the bond market take into account the abundance of short-term resources when designing their investment strategies so that the greater abundance of resources the lower the

federal funding costs and the lower the risk premium required to buy emerging market bonds, therefore the expected sign of the coefficient of this variable is negative.

This variable corresponds to the annual growth rate of GDP of all the countries selected. The sign of this variable is expected to be negative, consistent with Beck (2001), Baldacci & Kumar (2010), Rowland (2005), Akitoby & Stratmann (2010), Ferrucci (2003), Grandes (2003), Jaramillo & Tejada (2011), because with a higher GDP growth rate, there are more resources available to ensure debt service payments. Both this variable as those reported below were collected from the databases of the World Bank.

This variable is a measure of the financial leverage of each country of our sample. It is calculated dividing internal and external debt of each country by its GDP at the end of each year. The sign of this variable is positive, as reported by Akitoby & Stratmann (2010), Ferrucci (2003), Rowland (2005), Baldacci & Kumar (2010), Grandes (2003), Jaramillo & Tejada (2011). The higher the level of indebtedness the higher the risk premium required by the investors in order to buy sovereign debt of a particular country.

This variable is a measure of the amount of resources available to honor debt payments in the short term. It is calculated dividing the total international reserves of each country in U.S. dollars by its nominal GDP, also expressed in U.S. dollars.The expected sign of this variable is negative as reported by Akitoby & Stratmann (2010), Ferrucci (2003), Rowland (2005), Baldacci & Kumar (2010), Grandes (2003), Jaramillo & Tejada (2011). The higher the level of this indicator for each country the lower should be the premium charged by investors in order to buy its sovereign debt.

2. The set of political variables constitute the main novelty of this research, because there are not other references in the literature that had included quantitative measures of political risks to try to explain the spread on sovereign bonds. This set of six governance variables are indices calculated annually by the World Bank, using the methodology of Kaufmann et al. (2010), to quantify the performance of each country in terms of the issues that are described in the following paragraphs.

   The value of each one of these variables ranges between 2.5 and -2.5, where the maximum score (+2.5) corresponds to the ideal situation in each variable. The higher the score obtained by a country in each dimension of governance, the lower the premium required by the investors in order to buy sovereign debt of a country, in

consequence it is expected a negative sign in all Kaufmann et al. (2010) variables. In the next paragraphs we present the description of each variable reported by Kaufmann et al. (2010):

Voice and accountability: capturing perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.

Political stability and absence of violence/terrorism: capturing perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism.

Government effectiveness: capturing perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.

Regulatory quality: capturing perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.

Rule of law: capturing perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.

Control of corruption: indicates perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.

And finally,

ε= Error term.

V. Data analysis.

a. **For the countries the Euro Zone countries:**

We ordered the data by year and ran the OLS model with the variables described above. The results obtained with the full set of variables were not in line with the expected results; particularly, the explanatory power and the coefficients´ sign of some variable.

Given the fact that the World Bank´s indicators are highly correlated by design, as pointed out by Kaufmann et al. (2010), it was not appropriate to keep all the indicators simultaneously. To solve this limitation we ran regressions among these indicators and found that "Control of corruption" was which best captured the information contained in the governance indicators, and this variable was selected to run a new model, the of governance indicators were dropped .

The model estimated exceeded the statistical test of autocorrelation and normality of residuals. We performed the Durbin-Watson test, obtaining a value 1.755, which allowed us to discard residuals´ autocorrelation problems. Also, it was found that such residuals are normally distributed, according to the Kolmorogov-Smirnov and Anderson-Darling tests.
The variables included in the final model are described in the following table:

Table 1. Data description of Euro Zone countries

	Mean	SD	N
CDS	62,628	103,528	93
VIX	22,429	7,608	93
Fed Funds futures rate	1,885	1,782	93
Real GDP growth rate	1,125	3,747	93
Control of corruption	1,172	0,643	93

Source: author´s calculations.

b. **For the Latin-American countries :**

As in the previous group, data were sorted by year and ran the OLS model with the variables described in the methodology section. The results obtained with all the variables were not satisfactory in terms of signs and expected levels of significance, in addition it showed self-correlation and absence of normality of the residuals, which is solved by applying the natural logarithm to the dependent variable.

Like in the euro zone sample, it was not appropriate to include in the model the six governance indicators simultaneously, to overcome this limitation we also performed simple regressions between them; finding that the indicator "Regulatory quality", was which best captured the information of all government indicators.

Finally, we applied the Durbin-Watson test for residues of the selected model, obtaining a value 1.814, which allowed us to discard residuals autocorrelation problems. As in the European sample, it was found that such residuals are normally distributed, according to the Kolmorogov-Smirnov and Anderson-Darling test.

The variables included in the Latin-American model are described in the following table:

Table 2. Data description of Latin American countries

	Mean	SD	N
Ln Spread (EMBI)	5,638	0,721	54
VIX	21,197	7,696	54
Real GDP growth rate	3,973	4,474	54
Domestic public debt to GDP	29,344	10,473	54
Reserves to GDP	13,781	5,405	54
Fed Funds futures rate	2,110	1,912	54
Regulatory Quality	0,183	0,798	54

Source: author´s calculations.

VI. Results

We estimated a standard linear regression model for linking multiple spread of Latin American and European sovereign debt with a set of control variables and a set of political risk variables.

The inconsistencies in the signs and low levels of explanation on some of the independent variables included in both data sets caused the elimination of some of the variables included in the original model. A special adjustment was made to the dependent variable for the group data from Latin American countries by calculating the spread´s the natural logarithm. It is noteworthy that this treatment has been frequently used in the literature on the determinants of yield spread on sovereign debt markets, being the precursor of this procedure Edwards (1984).

For the group of euro zone countries, we found that all the independent variables but VIX (the risk appetite of international investors) exhibited a high explanatory power on the sovereign spreads. The signs of their coefficients correspond to those predicted by the relevant literature reviewed.

As we said before, VIX was an exception in our model because not only did not have explanatory power on the sovereign spread, and its sign was negative contrary to what was reported by Hartelius, et al. (2008) and Jaramillo & Tejada (2011).

Our adjusted model, which is presented in the following table, showed an R^2 of 0.332 and an F Fisher of 12.426, what is reflecting a robust estimation:

Table 3. Regression Results: Sovereign Spreads Euro Zone

	Coefficients	Standard Error	t-Statistics	P-value
Interception		50,515	3,177	0,002
VIX	-0,013	1,682	-0,102	0,919
Fed Funds futures rate	-0,279	7,080	-2,293	0,024
Real GDP growth rate	-0,344	3,036	-3,130	0,002
Control of corruption	-0,279	13,736	-3,273	0,002
R-squared = 0,332				
Observations = 93				
F = 12,426				

Source: author´s calculations.

The variables with the highest level of significance in the euro zone countries model were the Future Rates, the GDP´s growth rate and the Control of corruption.

The model of Latin American countries presents an R^2 of 0.868 and an F Fisher of 59.175 reflecting a more robust model than in the case of the euro zone countries, as shown in the following table:

Table 4. Regression Results: Sovereign Spreads Latin American

	Coefficients	Standard Error	t-Statistics	P-value
Interception		0,308	16,627	0,000
VIX	0,189	0,009	1,939	0,058
Real GDP growth rate	-0,072	0,010	-1,148	0,257
Domestic public debt to GDP	0,524	0,004	9,004	0,000
Reserves to GDP	-0,315	0,008	-5,193	0,000
Fed Funds futures rate	-0,198	0,035	-2,157	0,036
Regulatory Quality	-0,852	0,048	-15,871	0,000
R-squared = 0,868				
Observations = 54				
F = 59,175				

Source: author´s calculations.

For Latin American countries, The Governance Indicators (Regulatory quality) and the Federal Funds future rate were the most relevant variables, as in the euro zone case. The VIX, Debt / GDP, Reserves / GDP were also significant, in the group of Latin American countries. In all cases the coefficient sign´s of these variables were consistent with those reported previously in the literature.

In the case of Fed Funds futures rate, a liquidity proxy for international financial market, the reported negative sign agrees with that reported by Hartelius et al. (2008) and Jaramillo & Tejada (2011).

In the case of the rate of growth of GDP, although this variable has no explanatory power of the Latin countries´ sovereign spread, it is worth noting that the sign matches the results found by Beck (2001), Grandes (2003) and Rowland (2005).

The variable Debt / GDP has a positive sign, showing that investors require a premium to be compensated for the risk of default of a high level of debt, a result consistent with, Ferrucci (2003), Grandes (2003), Rowland (2005), Baldacci & Kumar (2010), Akitoby & Stratmann (2010), Jaramillo & Tejada (2011).

These preliminary results suggest that the level of institutional development, which is associated among other things to the adequate provision of justice and public policies that promote fiscal discipline, is taken into account by international investors when estimating a risk premium they require for investing in sovereign bonds denominated in U.S. dollars.

In the euro zone countries, where institutions are supposed to be more developed, the sovereign spread´s explanatory variables are associated to the potential growth of the economy (GDP growth rate) and institutional problems associated with corruption controls.

In Latin American countries studied, where the institution has much more room for improvement, investors are concerned about the financial leverage of the public sector and the availability of resources to fulfill immediate debt payments (Debt / GDP and Reserves / GDP) and about the Regulatory quality, that captures the perceptions about the government's ability to formulate and implement coherent policies and laws that permit and promote the development of both the public and private sector. This does not mean that control of corruption is not a subject of interest in these countries. There are just too many to problems to face, that affect the behavior of the variables proposed by Kaufmann et al. (2010) used in this article. Given the fact that governance variables are highly correlated, all of them are proxies of each other.

International variables such as Market Liquidity, measured by the expected availability of three-month Federal Funds, has explanatory power in both euro zone and Latin America spreads as was expected, since this variable is closely associated with potential changes in the term structure of interest rates that affects all fixed income securities denominated in the same currency, in this case the U.S. dollar.

The behavior of appetite for risk, as measured by the VIX volatility indicator, which is significant for the Latin countries but not for the euro zone, could be linked to the institutional investors´ propensity, in the last decade, to purchase high yield bonds also known as junk bonds. Only sovereign bonds of Chile and Mexico were rated as investment grade during the study´s period (2002-2010); Peru, Brazil and Colombia achieved their investment grade rating, in late 2009 and 2010. Venezuela kept its speculative rating during the full period of our analysis. In consequence, a good portion of the

sample of Latin-American sovereign securities represented the high yield bond segment susceptible to the appetite of international investors seeking to offset the secular decline in interest rates in the U.S. This was not the case of the euro zone sovereign securities (Appendix 1 and 2).

VII. Conclusions.

We used 5-year CDS on sovereign bonds of sixteen euro zone countries, and the spread of sovereign debt of six Latin American countries that are part of EMBI Index, to investigate whether there is any relationship between the perceived political risk, as measured by the indices of governance by Kaufmann et al. (2010), and the return required by investors in such bonds.

We took as independent variables, in addition to Political Risk, a set of variables previously identified by the literature as relevant in setting the risk premium required by investors in sovereign debt. These variables are: the volatility of the returns of the U.S. stock market (VIX), the international financial market´s liquidity measured by the annual average implied yield of the three-month Fed Funds futures contract, the growth rate of GDP for each country in the sample, the level of debt of each country measured by the Debt / GDP ratio, the level of international reserves measured by the Reserves / GDP ratio.

We found that there is a negative relationship between the perceived political risk of such issuer countries, measured by The Kaufmann et al. (2010) Governance Indicators, and the spread paid to the buyers of sovereign debt, which means that investors charge a premium risk by investing in bonds of countries perceived as politically unstable.

Among the Kaufmann´s indicators is Regulatory quality regulatory who best captured the governance risk in the case of Latin American countries, while the Control of corruption was the relevant index for euro zone countries.

The rest of the independent variables followed the behavior reported in previous studies. An interesting exception was the behavior of the VIX variable, which in the case of the Latin countries had a significant explanatory power of the sovereign spread and positive coefficient as expected, but for the euro zone has no explanatory power of such spread and a negative coefficient, suggesting that international investor have an appetite for high yield bonds as suggested by anecdotal evidence.

This work should be extended to analyze the spread of corporate bonds issued by Latin and European companies, to verify whether the impact of political risk is taken into account in setting the yield required by investors in those securities.

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Appendix 1. List of Euro Zone Countries

Country	Sovereign Rating as Oct. 2012
Germany	AAA
Austria	AA+
Belgium	AA
Cyprus	B
Slovak	A
Slovenia	A
Spain	BBB-
Estonia	AA-
Finland	AAA
Francia	AA+
Greece	CCC
Netherlands	AAA
Ireland	BBB+
Italy	BBB+
Malta	A-
Portugal	BB

Source: Standard & Poor´s

Appendix 2. List of Latin American Countries

Country	Sovereign Rating as Oct. 2012	Date of obtaining "investment grade"
Brazil	BBB	2009
Chile	A+	2000
Colombia	BBB-	2011
Mexico	BBB	2000
Peru	BBB	2009
Bolivarian Republic of Venezuela	B+	-

Source: Standard & Poor´s