Political risk and sovereign spreads in Latin America

Riesgo Político y Spread Soberanos en América Latina

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Received 4 September 2015
Revised 9 February 2016
4 March 2016
Accepted 12 March 2016

Abstract

Purpose – The purpose of this paper is to explore the relationship between six different dimensions of political risk in a country and its spread for a sample of 12 Latin American countries.

Design/methodology/approach – The methodology applied consists of panel estimators with fixed effects. In addition, a panel data model with instrumental variables is considered to tackle with potential problems of endogeneity in the model.

Findings – The results show there is a strong positive relationship between political risk and sovereign spread in Latin America, i.e., greater political risk is associated with greater sovereign spread. This effect is particularly significant when the political risk is associated with a weak rule of law or low-quality regulation in the country.

Research limitations/implications – The main limitation of this study concerns the potential risks of endogeneity which might exist between sovereign risk and political risk measures, which may not have been completely eliminated with the econometric methodology used.

Originality/value – This paper contributes to the literature of sovereign risk by studying the dimension of political risk in detail. Specifically, six dimensions of political risk are studied. Additionally, it provides empirical evidence, including the 2008 financial crisis period, regarding the determinants of spreads on Latin American economies.

Keywords Political risk, Global financial crisis, Rule of law, Latin American economies, Regulatory quality, Sovereign spreads

Paper type Research paper

Resumen

Propósito – En este trabajo se estudia la relación existente entre 6 diferentes dimensiones de riesgo político de un país y su spread soberano para una muestra de 12 países latinoamericanos.

Diseño/metodología/enfoque – La metodología utilizada corresponde a estimadores de panel con efectos fijos. Además, se considera un modelo de panel con variable instrumental para lidiar con posibles problemas de endogeneidad en el modelo.

Recomendaciones – Los resultados muestran que existe una fuerte relación positiva entre riesgo político y spread soberanos en América Latina, es decir, mayor riesgo político está asociado a mayor spread soberano. Este efecto es particularmente significativo cuando el riesgo político está asociado a un Estado de Derecho débil o a una baja calidad regulatoria en el país.

limitaciones de la investigación – La principal limitación de este estudio son los potenciales riesgos de endogeneidad que pudieran existir entre las medidas de riesgo político y riesgo soberano, y que no hayan sido eliminadas completamente con la metodología econométrica utilizada.

La originalidad/valor – este trabajo contribuye a la literatura de riesgo soberano estudiando la dimensión de riesgo político en detalle. En particular, se consideran 6 posibles dimensiones del riesgo

Academia Revista Latinoamericana de Administración
Vol. 29 No. 2, 2016
pp. 165-180

1012-8255
DOI 10.1108/ARLA-08-2015-0228

político. Además, provee evidencia empírica reciente, incluyendo el período de crisis financiera del 2008, respecto a los determinantes de spread en economías latinoamericanas.

Palabras clave Riesgo Político, Spread Soberanos, Economías Latinoamericanas, Crisis Financiera Global, Estado de Derecho, Calidad Regulatoria
Tipo de documento Trabajo de investigación

1. Introduction

Over the last decade the perception about sovereign risk in emerging countries has significantly improved, this fact is reflected in a significant fall in spreads of the emerging market bonds index (EMBI) calculated by JP Morgan, which reached 300 basis points on average for Latin American countries in 2006. However, this downward trend was affected by the 2007-2008 subprime crisis, which had a significant impact on Latin American economies.

While it is true that Latin American countries have been characterised by having high and volatile spreads – as was the case of Ecuador in 1999, Argentina in 2001 and Venezuela in the last few years; the reduction of spreads over time has also been accompanied by developments in the countries of the region in order to reduce political instability, aiming to consolidate their economy, improve the accountability of their institutions, respect for property rights and, in some cases, diminish the participation of the government in the economy. Said efforts could be considered appropriate to encourage the development of companies in the private sector.

Therefore, the interest of examining the impact of political factors on sovereign spreads arises, given that spreads are a measure of a country's risk for default – which is a political decision. Hence, the core focus of this paper is to empirically analyse the existing relationship between sovereign spreads and various measures of political risk over the last decade.

Although there is little literature related to this specific topic, evidence has been found for an increase in the probability of falling into default when there is political instability, as well as the extent to which government action negatively affect cash flows through which foreign investment is brought into the country. For example, Cuadra and Sapriza (2006) indicate that the majority of Latin American countries have more vulnerable public institutions than developed countries in Europe and Asia do, a factor that contributes to their (more volatile) economic performance, therefore the degree of political stability is of considerable interest for the determination of the creditworthiness of a country. However, as mentioned by Ferrari and Rolfini (2008) political risk is somewhat difficult to measure, since it is influenced by economic and political changes at the global level. More recently, Bekaert *et al.* (2014) showed that political risk explains one-third of the variability of the sovereign spread in emerging economies.

For this study the sample refers to a set of 12 countries for the period 2000-2013. In order to quantify the political risk, government indicators have been used reflecting various aspects regarding instability and political uncertainty, these are: voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law and control of corruption. We start with a base model composed of macroeconomic variables and global factors that have been determining factors in the evolution of the EMBI spread, and then we extend the model with political risk variables.

The main results show that first, there is a statistically significant relationship between sovereign spreads and political risk, i.e. the countries which showed increased political risk present greater spread. However, only two of the six dimensions of political

risk analysed are significant: regulatory quality and rule of law. This result is interesting because it shows heterogeneity in the effects of political risk on sovereign spread.

This paper is arranged as follows: in Section 2 the relevant literature is briefly reviewed, Section 3 describes the database and descriptive statistics, in Section 4, the empirical model used is described, Section 5 presents the main findings, and finally the conclusion can be found in Section 6.

2. Literature review

In this section, we briefly describe the little literature focused on understanding the relationship between political risk and sovereign spreads; subsequently we describe more general literature about determinants of sovereign spreads with an emphasis on emerging economies.

2.1 Political risk and sovereign spreads

The presence of political uncertainty has become relevant as a determinant of country risk, given that it has been shown that it leads to higher levels of volatility in credit spreads. Diamonte *et al.* (1996) showed that political risk is an important determinant of stock return and in turn has greater impact on emerging markets than on developed ones. Moser (2006) found evidence that financial markets in Latin America are affected immediately on the day political news such as changes in the cabinet of ministers is reported. Cuadra and Sapriza (2006) studied the impact of political risk and interest rates on sovereign default. They found evidence that political uncertainty caused by the change of government increases the probability of default and the level and volatility of spreads. D'Erasmo (2008) argued that the low probability of a government deciding to fall into default or taking more debt, is directly associated with a reduction of the sovereign rating of the country.

Bekaert *et al.* (2014) gave a more precise definition of political risk. These authors defined it as the risk arising in a country due to government action or imperfections of the executive, legislative or judicial institutions which negatively affect the value of investment in that country. The authors studied four factors affecting the sovereign spreads: global economic conditions, country-specific economic factors, liquidity of sovereign bonds and political risk. They break down the sovereign spreads to extract and measure the influence of political risk, employing the indices of political risk from the "International Country Risk Guide" and Coplin-O'Leary, to be able to predict new events of political risk and produce three rates of foreign investment risk: government action, company-specific risk and country-specific risks. Some of their results show that global factors and bond features are important to explain spreads, but mainly in their analysis they discovered that on average one-third of sovereign spreads reflects political risk, so it is the most important determinant in sovereign spreads. The variable "quality of institutions" is the most significant dimension of political risk.

Erdem and Varli (2014) incorporate political risk to analyse the sovereign ratings as well. By studying bonds in different credit rating scales, they found that the most significant factors are the ratio of budgetary balance to GDP, GDP per capita, government indicators and reserves to GDP in all the linear models presented regardless of the rating scale. Baldacci *et al.* (2011) show low levels of political risk associated with tighter spreads, particularly during the financial crisis. These authors indicate that despite that both global financial conditions and the appetite for the risk of investors are important factors of the sovereign spread, factors specific to

each country, in particular, fiscal stability and political factors, are both or more important. Finally, Petrova *et al.* (2010) also consider political risk among other factors between the determinants of sovereign spreads in emerging economies. These authors use a dynamic panel methodology that allows differentiating between short- and long-term effects. They found that political risk is a determinant of sovereign spreads in the long run, not so in the short term where financial stress variables are most relevant.

2.2 Determinants of the sovereign spreads in emerging economies

The literature on the determinants of sovereign spreads in emerging economies began with the work of Edwards (1984) that shows that these spreads are strongly related to macroeconomic factors of each economy, such as public debt and gross investment over GDP ratios, rather than external shock. Eichengreen and Mody (1998) identify the debt to GDP ratio, debt-to-export and the maturity of the bond as important determinants. Similarly Cantor and Packer (1996) and Hund and Lesmond (2008) also found a strong relationship between credit spreads and the fiscal balance, income per capita, GDP growth, inflation, external debt, economic development and default history.

Baldacci and Kumar (2010) show that a country's fiscal position significantly impacts the sovereign spreads for a panel of 31 developed and emerging countries in the period 1980-2008. This effect is, however, non-linear and depends on the initial conditions of the countries, such as the initial fiscal position, institutions, structural factors and the level of access to global credit. Hilscher and Nosbusch (2010) showed that the EMBI spreads tend to be higher for countries that have recently experienced adverse shocks in their terms of trade. Kamin and Von Kleist (1999) argue that during the 1990s the credit rating played an important role as a credit trust and find that Brady bond spreads have a strong positive relationship with the maturity of the bond, currency denomination and credit rating. Jaramillo and Tejada (2011) show that the investment grade status reduces the sovereign spreads in emerging economies by 36 per cent. Hartelius *et al.* (2008) incorporated expected changes in credit rating in the analysis, in addition to the observed rating, and conclude that with the levels of global liquidity, measured through three-month US Federal Funds futures rate, they are important determinants of sovereign spreads.

In addition to macroeconomic factors specific to each economy, others authors have documented the importance of regional and global factors on the dynamics of sovereign spreads. Ferrucci (2003) and Özatay *et al.* (2009) found a strong relationship between sovereign bond spreads and global factors, such as the VIX and the performance of the US Treasury. Weigel and Gemmill (2006) study credit risk, measured by "distance-to-default", of Argentina, Brazil, Mexico and Venezuela. The authors document the regional factors, such as the volatility of the US stock index. USA account for 45 per cent of the variance in the credit spread. Global factors explain 25 per cent of the variance, while specific factors explain only 8 per cent. McGuire and Schrijvers (2003), using principal components, show that global factors account for one-third of the variation in daily sovereign spreads in their sample of 15 emerging countries[1].

In the case of emerging countries in Central and Eastern Europe, the evidence is mixed. On the one hand, Arora and Cerisola (2001) and Attinasi *et al.* (2009) found that the key specifics of each country, such as the sustainability of the fiscal policy and low debt levels, are important determinants of sovereign spreads. On the other hand, Ebner (2009) found that market variables are more significant than the macroeconomic

fundamentals to explain the sovereign bond spreads issued in euros for a sample of 11 countries of Central and Eastern Europe in the period 1999-2007. Luengnaruemitchai and Schädler (2007) show that there is a gap between a model of sovereign spreads that incorporates economic fundamentals and global risk aversion measures, with the spreads actually observed after 2002. The authors identify exuberant markets or the inability to correctly measure the determinants of the spreads, as possible explanations to this phenomenon.

Csontó (2014) recently analysed the determinants of sovereign spreads considering three possible levels (regimes) of global volatility. Specifically, increases in correlation between spreads of countries in medium- and high-volatility regimes have been documented; a particularly high impact of global factors in high-volatility periods, and finally countries with strong macro fundamentals are less exposed to high-volatility regimes[2].

Other articles in the literature have studied potential spillovers effects from developed to emerging economies, or among emerging countries, with mixed results. On the one hand, Sy (2002), Martell (2005) and Arellano (2008) evidence that the sovereign spread depends mostly on specific considerations of the country and not on the developed markets. On the other hand, Borri and Verdelhan (2011) show that countries tend to fall into default when US investors, who are averse to risk, experience adverse economic conditions, which are transmitted to the emerging economies. Godoy (2006) concludes that there is a regional contagion effect; which is reflected in that a fall in the credit rating of a country also reduces the credit rating of the other countries of the region.

Another line of research, relates to the impact of the international crisis on the country risk of emerging markets. For example, Calvo and Talvi (2005) show that the 1998 Russian crisis brought serious consequences on the capital flows from emerging markets, especially in Latin America.

3. Data and hypothesis

3.1 Data and descriptive statistics

The database corresponds to an annual panel with 12 Latin American economies in the period 2000-2013. The sample of countries includes Argentina, Brazil, Colombia, Chile, Dominican Republic, Ecuador, Mexico, Panama, Peru, El Salvador, Uruguay and Venezuela. The main dependent variable are the EMBI spreads prepared by JP Morgan, which is defined as the bond yield differential of each country on the performance of the US Treasury expressed in basis points. Specifically the EMBI+ [3] is used which covers sovereign bonds and quasi-sovereign bonds that are relatively liquid and dollar-denominated, if this series is not available, we use the EMBI. This applies to Chile, Dominican Republic, El Salvador and Uruguay. Table I shows the descriptive statistics of the EMBI spread by country. The greatest variation in spreads occurs in Argentina, Brazil, Dominican Republic and Ecuador, in some cases this variation occurs because the country fell into default or was very close to doing so and because of the presence of international crises such as the one in 2008. On average the lowest EMBI spread occurs in Chile and the highest occurs in Argentina.

Our main independent variable is country political risk measure. We use six political risk indicators available in the database of "Governance Indicators" of the World Bank[4]. In particular, we consider: first, "voice and accountability", which measures the degree in which a country's citizens are able to participate in the election of the government, such as freedom of expression, freedom of association and freedom of communication; second, "political stability and absence of violence", which measures the perception of a possible event of political instability and/or

	Mean	Median	SD	Min.	Max.	First year in the sample
Argentina	2,037.29	866.50	2,183.58	216.00	6,303.00	2000
Brazil	431.07	269.50	364.25	142.00	1,445.00	2000
Chile	144.56	144.58	50.51	64.83	218.00	2000
Colombia	314.20	217.00	176.29	112.00	642.86	2000
Dominican Rep.	539.72	462.61	273.05	207.81	1,232.71	2001
Ecuador	1,330.07	836.00	1,216.34	530.00	4,731.00	2000
Mexico	207.07	165.00	95.94	98.00	392.00	2000
Panama	276.07	223.50	130.80	129.00	540.00	2000
Peru	283.29	211.00	170.90	114.00	621.00	2000
Salvador	432.57	389.00	210.86	199.00	854.00	2007
Uruguay	425.17	242.00	441.01	127.00	1,706.00	2002
Venezuela	854.29	894.00	437.72	182.00	1,862.00	2000
Number of observations: 158						

Table I.
Descriptive statistic EMBI spreads by country

Notes: This table provides descriptive statistics of EMBI spreads for the sample of 12 Latin American countries included in the analysis. The spread data were collected from Bloomberg and JP Morgan's website

political violence, including terrorism; third, "government effectiveness", which measures the perception 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; fourth, "regulatory quality", which measures the perception of the government's ability to formulate and implement policies and strong regulations that permit and promote private sector development; fifth, "rule of law", which measures the degree in which agents have confidence and attitude to meet the rules of society, and in particular the quality of compliance with contracts, property rights, maintenance of order and the courts, as well as possible events of crimes and acts of violence; and sixth, "control of corruption", which measures the extent in which public power is exercised in private gain, including large and petty forms of corruption, as well as capture of the state by minorities selected for sale and private interest. Finally, we average these six indicators following the methodology of Erdem and Varli (2014). All the political risk indicators are continuous variables defined in the range (−2.5, +2.5) where the negative number represents greater political risk and the positive number represents less political risk.

Our baseline specification is an extended version (with political risk variables) of the model in Hilscher and Nosbusch (2010). We include as control variables changes in the terms of trade. A negative relationship with spreads is expected from this variable, because a positive number means that a country's exports have become more expensive in relation to its imports. This information is obtained from the World Bank. An index of prices of commodities from International Monetary Fund (IMF) are included, since most of the economies in the sample correspond to countries whose main income comes from the production of a commodity. We also includes as control the ratio of external debt to GDP and Central Bank's reserves to GDP. Foreign debt is an indicator of the ability to pay of a country and the likelihood of falling into default so we expect a negative relation with the spreads. This data comes from the World Bank. The reserves ratio is a liquidity indicator so we expect a negative relation with the spreads as well. This data comes from the IMF World Economic Outlook dataset.

We also include sovereign rating as control variable. This variable is included since it represents a good indicator of non-payment of the debt. In addition, Cantor and Packer (1996) argue that this variable is a good overview of a country's macroeconomic health. These data are obtained from the rating agency Standard & Poors, and the conversion to linear numerical scale from 1 (minimum rating) to 46 (maximum rating) created by Erdem and Varli (2014) is used. A negative relationship between scale rating and spreads is expected.

Two variables are added as global factors measures. First, the VIX index, which measures the volatility of global markets, and is obtained from the options traded on the S & P 500 index. Özatay *et al.* (2009) indicate that it is a measure of risk appetite of international investors. It is expected that the VIX will have a positive relationship with the spreads. These data are obtained from the Chicago Board Options Exchange. Second, the US ten-year Treasury bond rate. This variable is a proxy of the global liquidity conditions. The sign expected for this variable is uncertain, since some authors, such as Eichengreen and Mody (1998), Kamin Von Kleist (1999) and Moser (2006) found a negative relationship between interest rates and spreads, others such as Ferrucci (2003) and Hilscher and Nosbusch (2010) have found a positive relationship. The data come from the Federal Reserve of the Bank of St Louis. Finally, a crisis dummy is added which takes the value 1 in 2008 and 0 in the remaining years. The descriptive statistics of the variables considered in the study are presented in the Table II.

	Mean	Median	SD	Min.	Max.	*p*5	*p*95
EMBI spread (pbs)	616.69	355.50	934.92	64.83	6,303.00	118.00	1,707.00
Political variables (−2.5 to +2.5)							
Control of corruption	−0.17	−0.35	0.70	−1.28	1.56	−1.01	1.42
Government effectivity	−0.10	−0.12	0.57	−1.19	1.26	−1.01	1.20
Political stability	−0.33	−0.16	0.73	−2.39	1.00	−1.79	0.81
Regulatory quality	0.04	0.19	0.70	−1.64	1.54	−1.17	1.46
Rule of law	−0.39	−0.58	0.69	−1.79	1.37	−1.29	1.27
Voice and accountability	0.19	0.13	0.50	−0.96	1.24	−0.64	1.07
Average	−0.13	−0.22	0.59	−1.31	1.25	−1.03	1.16
Country variables							
Terms of trade	0.02	0.01	0.04	−0.03	0.19	−0.02	0.11
Debt (% GDP)	0.38	0.35	0.19	0.16	1.43	0.19	0.64
Reserves (% GDP)	0.12	0.11	0.07	0.01	0.33	0.04	0.27
Sovereign rating (scale 1-45)	20.49	20.00	10.14	1.00	44.00	3.00	40.00
Global variables							
VIX (%)	19.80	20.29	5.15	12.00	28.57	12.00	28.57
US 10-year treasure rate (%)	3.95	4.11	1.09	1.74	6.02	1.74	6.02
Number of observations: 158							

Notes: This table contains descriptive statistics for the variables used in the empirical analysis. The data are classified as EMBI spreads, political variables, macroeconomic country-specific variables and global variables. The data were collected from Bloomberg and JP Morgan's website, the World Bank's Worldwide Global Indicators database, IMF's database, and the Federal Reserve Bank of St Louis database

Table II.
Descriptive statistics

3.2 Hypothesis

Two hypotheses are tested in this study. The first hypothesis is regarding countries with lower levels of political risk, either because they have less corrupt or more efficient governments, better political stability, better established rule of law, among other features, have lower levels of country risk, measured by the sovereign spreads. The second hypothesis seeks to establish whether fundamental or global factors most significantly affect the sovereign spreads in Latin America in a period characterised by a financial crisis.

4. Empirical model

The impact of political risk over the sovereign spread of a country is investigated in this study, estimating different specifications of the following panel model with fixed effects:

$$\text{sovereign spread}_{i,t} = \beta_0 + \beta_1 X_{i,t} + \beta_2 \text{ political risk}_{i,t} + \delta_i + \varepsilon_{i,t}.$$

In this specification, the coefficient β_2 will allow us to test our first hypothesis. This coefficient is expected to be negative, i.e. the greater the political risk, the greater the sovereign spread. Political risk is approximated using six alternative measures plus the average of these variables. In this specification, $X_{i,t}$ represents the set of control variables described in the previous section. The control variables correspond basically to variables that can be classified as country-specific macro variables and global variables. δ_i is a fixed effect by country and $\varepsilon_{i,t}$ is the stochastic model error. The estimated standard errors consider cluster by country[5].

As we mentioned above, our empirical model corresponds to an extension of the model proposed by Hilscher and Nosbusch (2010) to study the determinants of sovereign spreads in emerging economies, which are expanded by the political risk variable. Following these authors, we estimate a model in which the changes in the term of trades is instrumented by a commodity price index, in order to reduce the potential endogeneity problems of this variable.

5. Results

5.1 Basic results

The basic findings of the panel with fixed effects regression model are presented in Table III. In the first column, the estimated model shows that the impact of macroeconomic and global variables account for 52 per cent of the changes in the EMBI spreads. In relation to global variables, the most important is the VIX. Its estimated coefficient is positive as expected and highly significant. A similar effect has been recently obtained by Bekaert *et al.* (2014). Jaramillo and Weber (2013) and Csontó (2014) also show that the state of the economy, measured by different VIX levels, is an important factor when analysing sovereign spreads. The estimated coefficient for the ten-year rate of the US Treasury is negative but not significant. This is consistent with the findings of Eichengreen and Mody (1998) that report a negative effect of the interest rate of the USA over sovereign spreads, as so do Kamin Von Kleist (1999) and Moser (2006).

With regard to macroeconomic fundamentals variables, we found that changes in the terms of trade present a positive sign, however, this variable is not significant. The reserves to GDP ratio, has a non-significant negative coefficient, although high levels of reserves are more associated with greater liquidity, they do not necessarily reflect solvency for the payment of the debt; this is similar to the findings of Weigel and Gemmill (2006), who found that the reserves are significant only for Argentina and

Table III.
Basic results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Term of trade	16.6 (−20.11)	17.74 (−20.57)	16.62 (−20.35)	18.3 (−20.3)	17.84 (−19.42)	26.49 (−21.1)	18.38 (−19.69)	20.13 (−20.26)
VIX	0.22 (−0.07)***	0.22 (−0.07)***	0.22 (−0.06)***	0.24 (−0.07)***	0.24 (−0.07)***	0.24 (−0.07)***	0.22 (−0.07)***	0.24 (−0.07)***
US 10-year rate	−0.97 (−0.74)	−1.11 (−0.84)	−0.96 (−0.74)	−0.93 (−0.70)	−0.78 (−0.66)	−0.77 (−0.60)	−0.95 (−0.75)	−0.82 (−0.64)
Debt/GDP	34.49 (−10.88)***	35.55 (−11.28)***	34.45 (−10.84)***	33.07 (−9.39)***	35.38 (−10.34)***	35.37 (−9.96)***	34.38 (−11.06)***	34.12 (−10.56)***
Reserves/GDP	−15.21 (−21.44)	−18.2 (−23.2)	−15.17 (−21.78)	−17.06 (−22.51)	−12.51 (−20.57)	−12.28 (−18.9)	−14.33 (−21.29)	−12.91 (−19.91)
Sovereign rating	−0.16 (−0.23)	−0.16 (−0.23)	−0.16 (−0.24)	−0.14 (−0.22)	−0.12 (−0.19)	−0.11 (−0.18)	−0.16 (−0.23)	−0.13 (−0.2)
Crisis dummy (2008)	7.52 (−2.87)**	7.49 (−2.9)**	7.54 (−2.95)**	6.99 (−3.18)*	7.33 (−2.82)**	6.67 (−2.73)**	7.48 (−2.81)**	7.08 (−2.83)**
Control of corruption		3.55 (−5.91)						
Government effectivity			0.42 (−3.24)					
Political stability				−3.41 (−3.79)				
Regulatory quality					−3.47 (−1.83)*			
Rule of law						−7.87 (−2.78)**		
Voice and accountability							−1.37 (−3.23)	
Average political risk								−6.96 (−3.17)*
Obs.	158	158	158	158	158	158	158	158
Adjusted R^2	0.52	0.52	0.52	*0.53*	0.53	0.54	0.52	0.53

Notes: This table reports panel estimates of the following model for a sample of 12 Latin American countries for the period 2000-2013:

$$\text{sovereign spread}_{i,t} = \beta_0 + \beta_1 X_{i,t} + \beta_2 \text{ political risk}_{i,t} + \delta_i + \varepsilon_{i,t}.$$

The sovereign spread refers to EMBI sovereign spread obtained from Bloomberg database and JP Morgan's webpage. The political risk variables comes from the World Bank's Worldwide Global Indicators database. The control variables include macroeconomic country-specific variables (term of trade, debt, reserves and sovereign rating) and global variables (VIX, US ten-year bond interest rate and a crisis dummy taking the value of 1 in 2008 and 0 otherwise). These variables are collected from the IMF's database and the Federal Reserve Bank of St Louis's database. *t*-Test reported in parenthesis. Standard errors are clustered at the country level. *,**,***Significant at the 1, 5 and 10 per cent levels, respectively

Mexico. We find a strong effect of the external debt to GDP. The estimated coefficient for this variable is positive and highly significant across models. This implies that an increase in the external debt of a country increases the bond spreads and makes it a riskier country. This is consistent with results from Hilscher and Nosbusch (2010). Baldacci *et al.* (2011) also found that public debt is a significant factor in explaining the spreads in emerging economies.

It can also be observed that the coefficient of the sovereign rating presents the expected negative sign but it is not significant. The sovereign rating may contain macroeconomic information of a country, so it would be expected to have explanatory power. This evidence differs from the one presented by, for example, Levy-Yeyati and Williams (2010) and Jaramillo and Tejada (2011) which show that changes in credit rating have significant impact on the variation in spreads. On the other hand, it shows that the 2008 crisis, has had a significant impact, given that its coefficient is positive and significant at 5 per cent. This is explained by the sudden stop on international capital flows, which had repercussions on Latin America economies.

Csontó (2014) argues that global risk aversion reached its peak after the Lehman-Brothers collapse by the end of 2008 and that the correlations between the spreads of emerging countries increased substantially during this significant financial stress period. Our basic results provide evidence that exogenous or global variables have greater significance than the macroeconomic variables on spreads, confirming the results of investigations by Weigel and Gemmill (2006), Borri and Verdelhan (2011) and Csontó (2014)[6].

Starting from the second column in Table III, different political risk variables are incorporated. We expect negative sign on the estimated coefficients for these variables. As can be observed, "control of corruption" and "government effectiveness" present unexpected coefficients with positive signs but they are not significant, while the variables of "political stability "and "voice and accountability " have negative coefficients but they are significant either. The variables that are significant are the "regulatory quality" whose coefficient is negative (−3.47) and it is significant at 10 per cent, and also "rule of law" which presents a negative sign at (−7.87) 5 per cent significance.

The last column contains the average score of the six political risk measures analysed. Consistent with what is expected, this variable has a negative estimated coefficient (−6.96) and it is statistically significant at the 10 per cent. Hence, on average, less political risk (highest score assigned to the country above the indicator) would lead to a reduction in sovereign spreads. An increase in the standard deviation for the political risk variable translates into an increase of between 5 and 10 basis points (bps) in spreads depending on the considered specification. These results are in line with the previous work of Baldacci *et al.* (2011) and Bekaert *et al.* (2014) who find that high levels of political risk is associated to larger spreads. For example, Baldacci *et al.* (2011) documented an increase of 5 bps in spreads by an increase of a standard deviation in their political risk measure.

The overall analysis of the results in Table III indicates that most of the macroeconomic fundamental variables are not statistically significant but the foreign debt over GDP ratio. This lack of result may be is explained by the existence of non-linear effects between macroeconomic fundamentals and spreads as suggested in the work of Baldacci *et al.* (2011) and Csontó (2014). Another possible explanation is that our empirical model does not distinguish between short- and long-term effects, as suggested by Petrova *et al.* (2010). Regarding global variables, the VIX variable and the crisis dummy appear highly significant. These results indicates that Latin American countries remain vulnerable to sudden financial market condition changes.

Finally, regarding political risk variables, we find that three of them have an impact on the sovereign spreads: the regulatory quality variable, which measures the ability of the government to manage policies that allow the development of the private sector; rule of law, which measures the degree of compliance with the rules of society, contracts, property rights and order; and the average political risk variable. It is important to note that a contribution of this paper is that it not only confirms the existence of a strong relationship between political factors with sovereign spreads, but also identifies which specific political risk dimensions have a more important effect[7].

5.2 Robustness analysis

This section describes a series of robustness exercises that have been performed to verify the consistency of the basic results. First, we study the robustness of the results to instrumenting the terms of trade variable with a commodities index as suggested by Hilscher and Nosbusch (2010); second, we extend the basic model by adding temporal dummies; third, we check if the results change if the crisis dummy takes the value 1 during 2008 and 2009 instead of only the year 2008 as presented in the basic results; finally, an analysis of sub-periods is performed in order to isolate the effects of the 2008 crisis from the results, hence pre and post financial crisis estimates are presented[8].

By following Hilscher and Nosbusch (2010), a commodities index by country is used as an instrument for terms of trade. For each country in the sample, the most important commodity is identified and then the commodity price for that commodity is collected. As shown in Table IV, the results are robust, i.e., both the signs and the significance levels of the VIX and the debt to GDP ratio remain. The 2008 crisis dummy also remains significant. Interestingly, now the sovereign rating variable appears significant at 5 per cent. The variables of interest which are political risk and regulatory quality are now more significant than in the basic specifications in Table III.

When the base model is reestimated by incorporating temporary effects to the specification, the basic results regarding the inverse relationship between political risk and sovereign spreads are maintained. With respect to the other determinants that are incorporated in the model, we see that the VIX variable is still positively correlated with the sovereign spreads, however, it loses significance[9]. With respect to incorporating a 2008-2009 dummy instead of a 2008 dummy, the results do not change significantly.

Finally, some changes are observed in the basic results in the subsample analysis. In the period 2000-2007, the coefficient estimated for the regulatory quality variable is negative and significant as in the basic results, however, the coefficient estimated for the variable rule of law remains negative as before, but loses significance. Interestingly, the variable government effectiveness now appears negative and significantly affecting the sovereign spreads. In the period 2010-2013, all the variables used as a proxy for political risk appear with a negative sign as expected, but only government effectiveness and participation and accountability are significant. Despite observing some changes from a quantitative point of view, we believe that qualitatively, the main message of this paper is still there.

5.3 Policy implications

Our results have implications for policymakers and investors. The first implication is that the political risk is a relevant factor in order to quantify country risk. The quality of the rule of law and the regulatory framework in which the investors operate are particularly important, rather than the specific characteristics of the current government. In other words, financial markets do not severely punish countries in

Table IV.
Robustness test (instrumental variable estimation of term of trade)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Term of trade	75.73 (53.27)	78.74 (55.69)	74.73 (53.83)	73.59 (52.52)	88.03 (52.55)*	67.52 (51.25)	79.1 (56.14)	75.03 (52.61)
VIX	0.341 (0.13)**	0.348 (0.14)**	0.342 (0.14)**	0.383 (0.14)***	0.414 (0.14)***	0.351 (0.13)***	0.347 (0.14)**	0.382 (0.14)***
US 10-year rate	−0.054 (0.91)	−0.0953 (0.91)	−0.0525 (0.91)	0.427 (0.97)	0.768 (0.97)	0.262 (0.90)	−0.0314 (0.92)	0.488 (0.96)
Debt/GDP	34.66 (4.90)***	35.11 (5.14)***	34.64 (4.92)***	31.80 (5.09)***	34.96 (4.85)***	34.26 (4.76)***	34.52 (4.93)***	32.99 (4.91)***
Reserves/GDP	−24.25 (17.61)	−25.64 (18.16)	−24.42 (17.75)	−22.3 (17.51)	−21.48 (17.49)	−22.96 (17.15)	−23.46 (17.93)	−20.62 (17.54)
Crisis dummy (2008)	7.458 (2.13)***	7.367 (2.18)***	7.458 (2.14)***	6.944 (2.17)***	7.174 (2.11)***	6.901 (2.11)***	7.381 (2.18)***	7.091 (2.13)***
Sovereign rating	−0.551 (0.23)**	−0.551 (0.23)**	−0.548 (0.23)**	−0.538 (0.22)**	−0.553 (0.22)**	−0.489 (0.22)**	−0.558 (0.23)**	−0.534 (0.22)**
Control of corruption		1.766 (5.44)						
Government effectivity			−0.612 (5.56)					
Political stability				−5.295 (3.23)				
Regulatory quality					−6.216 (3.10)**			
Rule of law						−9.444 (3.79)**		
Voice and accountability							−1.502 (4.95)	
Average political risk								−10.93 (5.97)*
Obs.	122	122	122	122	122	122	122	122

Notes: This table reports panel estimates of the following model for a sample of 12 Latin American countries for the period 2000-2013:

$$\text{sovereign spread}_{i,t} = \beta_0 + \beta_1 X_{i,t} + \beta_2 \text{ political risk}_{i,t} + \delta_i + \varepsilon_{i,t}.$$

The sovereign spread refers to EMBI sovereign spread obtained from Bloomberg database and JP Morgan's webpage. The political risk variables comes from the World Bank's Worldwide Global Indicators database. The control variables include macroeconomic country-specific variables (term of trade, debt, reserves and sovereign rating) and global variables (VIX, US ten-year bond interest rate and a crisis dummy taking the value of 1 in 2008 and 0 otherwise). These variables are collected from the IMF's database and the Federal Reserve Bank of St Louis's database. In this specification, the term of trade variable is instrumented using a country-specific commodity price index. The most relevant commodity for each country is identified and its price is used as instrument. The commodity price data comes from Bloomberg database. *t*-Test reported in parenthesis. Standard errors are clustered at the country level. *,**,***Significant at the 1, 5 and 10 per cent levels, respectively

which property rights are respected and regulation is adequate despite the low quality of governments.

A second implication is that global factors appear to be more important than local macroeconomic factors, without the latter losing relevance. This implies that in high-volatility periods in global markets, Latin American economies as a whole become more risky. This evidence is consistent with Csontó (2014), which documents increases in the correlation of spreads among countries with high-volatility regimes. Policymakers and investors should take in consideration the level of global volatility when assessing the country risk in Latin American economies.

Finally, our results show that public debt is a better macroeconomic indicator than fiscal deficit in order to quantify country risk in Latin American countries. This result implies that adequately monitoring debt levels appears to be more important than monitoring the fiscal deficit. This result is valid in the context of linear models such as the one presented in this paper. Baldacci *et al.* (2011) show that both variables are important for understanding spreads, but only when considering non-linear effects.

6. Concluding remarks

This paper explores the role of political risk, measured by six different indicators, in explaining sovereign spread variations for a sample of 12 Latin American countries between 2000 and 2013. This sample is relevant because significant variations of the sovereign spreads were observed during the global financial crisis of 2007, and because economic/political crisis occurred in Argentina and Ecuador in the early 2000, and more recently in Venezuela.

The results obtained through fixed effects panel estimator confirm the existence of a direct relationship between political risk and sovereign spreads, that is, the greater the political risk, the greater the sovereign spreads. However, we document that not all of the political risk dimensions have the same effect on the sovereign spreads. Specifically, we found that the regulatory quality and rule of law measures are the most significant political risk factors. We also find that public debt over GDP, sovereign credit rating, the VIX volatility index and the financial crisis dummy of 2008 are significant determinants of the spreads during the analysed period.

There are several extensions of this work that deserve further scrutiny: an event study to quantify the impact of political news on sovereign spreads, the study of the effects of these political news in the volatility of the spreads instead of the average effect – following a similar approach to the one developed by Peiris (2010); and finally, the comparison of results for the sample of Latin American countries with those from a sample of emerging economies in Central Europe and Eastern Asia.

Notes

1. These authors show that a single global factor explains 80 per cent of the effect associated with global factors. In addition this single factor is associated with the investors' level of risk aversion.
2. Jaramillo and Weber (2013) also show that the emerging government bond yields issued in the domestic markets depend on the level of global risk aversion. In the two states analysed, the fiscal position of the economy plays an important role in explaining the bond yields levels.
3. The EMBI+ is composed of 109 financial instruments for 19 emerging countries since 1994.
4. http://info.worldbank.org/governance/wgi/index.aspx#home

5. In unreported results, an extended version of this model has been estimated which includes temporary effects per year. The results obtained of the relationship between political risk and sovereign spreads remain.
6. Preliminary analyses, not reported in our paper, of other determinants of sovereign spreads were considered as price indexes, exchange rates between local currencies and the US dollar, the fiscal deficit and trade balance, and finally, a measure of the number of years that have passed since the last default faced by each country (see Hilscher and Nosbusch, 2010; for details of this last variable). However, given its low significance in the various models used we decided not to include them in our basic specification. Ebner (2009) and Peiris (2010) performed a similar procedure to focus on a subset of the variables considered initially in the group of possible determinants.
7. Baldacci *et al.* (2011) also performed a similar analysis studying different aspects of political risk. These authors found that the risk of expropriation is the most important political risk to affect the sovereign spreads of emerging countries.
8. In this version of the paper, we only report the results of the first robustness check (the IV estimation of terms of trade). The remaining results are available upon request.
9. In the literature about sovereign spreads, the global aversion is usually measured by the VIX variable, however, this variable acts as a proxy of a latent global factor, which in the case of McGuire and Schrijvers (2003), for example, is estimated by the first main component from the daily variation of sovereign spreads in 15 emerging economies. It is likely that the time dummies capture this latent global factor better than the VIX in the new specifications.

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