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Political risk and expected government bond returns

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ABSTRACT

Political risk relates to both the ability and the willingness of governments to repay debts. We find that bond prices only slowly adapt to changes in political risk. The expected bond returns for countries whose political risk ratings have improved are higher than those for countries whose political risk ratings have deteriorated. This change in political risk premium cannot be explained by the risk factors default premium, term premium, and liquidity, or by momentum, changes in credit ratings, economic risk or financial risk. The risk-adjusted performance is 7.6% per annum for emerging bond markets and 0.8% per annum for euro government bonds.

1. Introduction

The importance of political risk in developed government bond markets has recently been highlighted. Examples are the euro crisis and the October 2013 debate between the Republicans and Democrats on the US debt ceiling. These recent political developments have had a large influence on bond prices. During the US debt ceiling debate, US bond markets were clearly pricing in an increased possibility of a US default.[1] This sharp rise of short-term bond yields was reversed as soon as a resolution was found on 16 October, 2013. During the euro crisis, stock markets and European bond yields fluctuated heavily depending on estimates of whether Greece would leave the Eurozone and whether Italy and Spain needed a bailout by the other European countries. Changes in the Greek, Italian, and Spanish governments were needed to regain the trust from both investors and other European countries. As such, political risk seems to be very important for bond prices, even in developed markets.

In this paper, we analyze the relationship between political risk and bond prices. Our main contribution is to show that *changes* in political risk ratings *predict* the bond risk premium. Bonds from countries whose political risk ratings have improved outperform those from countries whose political risk ratings have deteriorated. By using political risk rating changes one can avoid the largest losses in bad times (when credit spreads increase) and keep up with the market index in good times.

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[1] Nippani and Smith (2014) provide a detailed analysis on this event and the reaction of the financial market.

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We use political risk ratings from the Political Risk Services (PRS) group. PRS collects political information and converts this into risk points based on a subjective analysis of the available information.[2] The resulting political risk ratings are commercially but not publicly available. The ratings cover political risk in a broad sense, including government stability, socioeconomic conditions, investment profiles, internal and external conflicts, corruption, and law and order. The ratings are updated every month.

At the end of each month we select the four countries with the highest improvements in political risk ratings ('Best 4') and the four countries with the highest deteriorations ('Worst 4'). We evaluate the portfolio returns in the subsequent month. We find that selecting the Best 4 leads to higher bond risk premiums, measured by realized bond returns, especially when compared to the Worst 4. The return of this investment strategy based on political risk changes is called the change in political risk premium.

We investigate whether the change in political risk premium is subsumed by other well-known factors driving the bond markets. We control for the term premium and the default premium, which are found to be priced-in risk factors for corporate bond returns in Gebhardt et al. (2005). In addition, we analyse factors related to momentum, liquidity, credit ratings, and macroeconomic developments. The change in political risk premium cannot be explained by the risk factors. The unexplained alpha of a regression that takes into account the default, term and liquidity premium is 0.8% per annum for bonds issued by the euro countries in euros and 7.6% for emerging market bonds denominated in US dollars.

The bond market does not seem to react to changes in political risk in a timely matter. A logical explanation is that political risk ratings are not public information, and that it is not straightforward to quantify political risk. Changes in political risk ratings also contain valuable information for credit agencies. Countries with improving (deteriorating) political risk ratings on average also get a subsequent improvement (deterioration) in credit ratings.

Our findings are an important contribution to the literature on the price discovery in government bond markets. The US bond market reacts quickly to important macroeconomic announcements (Balduzzi et al., 2001) and order flows (Brandt and Kavajecz, 2004). Nowak et al. (2011) confirm that economic announcements are also important for the price discovery in emerging government bond markets and observe a slower absorption of information compared to developed government bond markets. We show for both the Eurozone and emerging countries that bond prices react to changes in political risk ratings, but both bond markets are not fully efficient in terms of the speed with which they adjust to these changes in political risk.

We also contribute to the literature on predicting financial market returns using changes in political risk. Erb et al. (1996a, 1996b) investigate the predictive power of various risk measures up to 1995, including those from PRS. They find predictive power of political risk changes for currency returns, but not for bond returns. We use a substantially longer sample period, up to 2014, which includes more bad times. We report significant predictive power for bond returns, especially in bad times. We also focus on bond returns with the same currency, eliminating any noise that currencies may have on the analysis. We conclude that changes in political risk are important for the price discovery in both developed and emerging government bond markets.

Related to our study is a strand of literature with the focus on the *level* of political risk and the relation with financial markets.[3] We empirically confirm such a link by showing that poor political risk ratings are associated with poor credit ratings and high bond yields. Hence, unsurprisingly, countries which score poorly on political risk need to pay investors a higher bond risk premium. A recent study by Bekaert et al. (2014) finds that political risk accounts for one third of the sovereign credit spread in emerging market government bonds issued in US dollars, a very significant result underscoring the importance of political risk for bond yields.

The remainder of this study is organized as follows. Section 2 describes the data, including political risk ratings, bond data and credit ratings. Section 3 presents the methodology. The main results are discussed in Section 4. Section 5 investigates the importance of the components that make up the total political risk ratings. Section 6 concludes.

2. Data

In this section we first describe the political risk ratings. We then present the bond data and provide sample statistics on political risk ratings, spread levels and credit ratings.

2.1. Political risk ratings

The political risk ratings used in this study are produced by the Political Risk Services (PRS) group in the International Country Risk Guide.[4] The political risk rating consists of 12 components, which are shown in Table 1. PRS collects political information and converts this into risk points for each individual risk component on the basis of a consistent evaluation process. The political risk ratings are made on the basis of a subjective analysis of the available information. The ratings are distributed monthly on a commercial basis to subscribers. We have a database of the real-time total ratings and the 12 components from December 1993 to April 2014.

[2] The PRS group was established in 1979, placing it among the first commercial providers of political and country risk forecasts. Several academic studies have made use of their data (see for example Bekaert et al., 2014).

[3] Erb et al. (1999) find a strong relation between emerging market bond spreads and the composite risk rating of PRS, of which 50% is based on political risk. Similar findings are reported by Butler et al. (2009), who link state corruption to higher municipal bond yields, and Qi et al. (2010), who show that greater political rights are associated with lower corporate bond yield spreads. There is more empirical work on the importance of political risk for equity markets. See for example Erb et al. (1996a), Bittlingmayer (1998); Santa-Clara and Valkanov (2003), Belo et al. (2013), Mei and Guo (2004), Boutchkova et al. (2012) and Pástor and Veronesi (2012, 2013).

[4] An alternative data source would be the newspaper coverage of policy-related economic uncertainty, see Baker et al. (2013) and www.policyuncertainty.com. These data, however, only cover five countries of the 35 countries we analyze.

Table 1
Components of Political Risk Ratings.

Component	Max points	Short description what each component assesses
A. Government Stability	12	Ability to carry out declared program and stay in office
B. Socioeconomic Conditions	12	Socioeconomic pressures that could constrain government action or fuel social dissatisfaction
C. Investment Profile	12	Factors affecting the legislative risk of investments
D. Internal Conflict	12	Political violence and its actual or potential impact on governance
E. External Conflict	12	Risk to the incumbent government from foreign action
F. Corruption	6	Corruption within the political system.
G. Military in Politics	6	Involvement is a diminution of democratic accountability
H. Religious Tensions	6	Single religious group may seek to replace civil law by religious law
I. Law and Order	6	Strength and impartiality of the legal system and popular observance of the law
J. Ethnic Tensions	6	Tension attributable to racial, nationality or language divisions
K. Democratic Accountability	6	How responsive a government is to its people
L. Bureaucracy Quality	4	Ability to minimize revisions of policy when governments change
Total	100	0–49.9: Very high risk; 50–59.9: High risk; 60–69.9: Moderate risk; 70 to 79.9 Low risk; >79.9: Very low risk

Source: https://www.prsgroup.com/ICRG_Methodology.aspx. This link provides a more detailed description of each component.

To assess political risk, PRS makes the following classification: if the points awarded are less than 50% of the total, that component can be considered as very high risk. The 50–60% range indicates high risk, 60–70% moderate risk, 70–80% low risk and 80–100% very low risk. The same categorization applies to the total score.

2.2. Bond data

This study uses the European Monetary Union (EMU) bond index and the Emerging Market Bond Index (EMBI+) of J.P. Morgan. The J.P. Morgan EMU government bond index is a popular market capitalization weighted index that consists of bonds issued by 11 countries: Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal and Spain. All bonds are issued in euros or before 1999 in legacy currencies like the German mark and the French franc. The EMU index started in January 1999 with nine countries, and contains all fixed rate bonds with a maturity larger than one year. Austria and Greece were added in April 2001. Greece was removed in April 2012 because the country did not have any remaining outstanding bonds with a fixed coupon and therefore none of Greece's outstanding bonds were index eligible. There is no rating restriction. The very small EMU countries in terms of outstanding debt like Malta have not been added to the index. Panel A of Table 2 provides an overview.

The EMBI+ index is J.P. Morgan's most liquid US dollar emerging market debt index. Only issues with a current amount outstanding of USD 500 million or more and a remaining life of greater than 2½ years are eligible for inclusion in the index. The index started in January 1994. Panel B of Table 2 shows all 24 countries that were part of the index at some point in time. Note that by using historical constituents we avoid a survivorship bias.

Table 2
Composition J.P. Morgan indexes.

Country	Member of index	Country	Member of index
Panel A EMU government bond index			
Austria	4/2001–current	Ireland	1/1999-current
Belgium	1/1999-current	Italy	1/1999-current
Finland	1/1999-current	The Netherlands	1/1999-current
France	1/1999-current	Portugal	1/1999–current
Germany	1/1999-current	Spain	1/1999-current
Greece	4/2001–3/2012		
Panel B EMBI + government bond index			
Argentina	1/1994–current	Nigeria	1/1994–9/2006
Brazil	1/1994–current	Panama	1/1994–current
Bulgaria	1/1994–11/2013	Peru	1/1994–current
Colombia	5/1999–current	Philippines	1/1994–8/1998; 4/1999 – current
Croatia	3/2011–current	Poland	1/1994–3/2007
Ecuador	1/1994–current	Qatar	11/2000–7/2002
Egypt	5/2002–3/2008	Russia	1/1994–current
Hungary	4/2011–current	South Africa	12/1994–1/1997; 4/2002–current
Indonesia	10/2006–current	South Korea	4/1998–6/2002
Malaysia	1/2002–11/2004	Turkey	7/1999–current
Mexico	1/1994–current	Ukraine	7/2001–current
Morocco	1/1994–10/2006	Venezuela	1/1994–current

Note: The J.P. Morgan EMU government bond index is a market cap-weighted index for fixed rate government bonds with a maturity larger than 1 year. There are no rating requirements for inclusion in the index. The J.P. Morgan EMBI+ (Emerging Market Bond Index) is a market cap-weighted index for fixed rate government bonds with a maturity larger than 2.5 years. This is the smallest emerging market bond index for USD-denominated debt in terms of number of countries due to three selection criteria: a country must be at least investment grade; the amount outstanding should be at least $500 million; and bond trading must be sufficiently liquid. The end date 'current' is April 2014.

Table 3
Average spread, political risk rating and credit rating.

Panel A: EMU countries											
High spread				Average spread				Low spread			
Country	Spread	Polrisk	Rating	Country	Spread	Polrisk	Rating	Country	Spread	Polrisk	Rating
Greece	363	75	A−					Austria	22	87	AAA
Portugal	174	82	A+					France	15	77	AAA
Ireland	124	86	AA					Finland	13	92	AAA
Italy	84	77	AA−					Netherlands	10	88	AAA
Spain	79	77	AA					Germany	−1	85	AAA
Belgium	34	82	AA+								
Average	143	80	AA−					Average	12	86	AAA
Panel B EMBI + countries											
Argentina	1590	69	B−	Morocco	472	70	BB	Panama	305	73	BB+
Nigeria	1314	47	BB−	Hungary	397	74	BB+	Qatar	287	77	BBB+
Ecuador	1215	57	CCC+	Croatia	396	72	BBB−	Indonesia	277	59	BB
Venezuela	922	55	B+	Turkey	402	60	BB−	South Korea	242	76	BBB
Russia	718	62	BB+	Colombia	358	56	BB+	Poland	211	79	BBB+
Ukraine	611	64	B	Peru	348	63	BB+	South Africa	184	68	BBB
Brazil	573	66	BB	Philippines	346	64	BB	Egypt	157	63	BB+
Bulgaria	515	71	BB	Mexico	338	70	BBB−	Malaysia	110	73	BBB+
Average	932	61	B+	Average	382	66	BB+	Average	222	71	BBB−

Note: The 11 EMU countries are divided in two groups on basis of the average bond spread compared to Germany. The left panel contains the 6 countries with the highest spread and the right panel contains the 5 countries with the lowest spread. The 24 EMBI+ countries are divided in three groups on basis of the average bond spread compared to the US. The left panel contains the 8 countries with the highest spread and the right panel contains the 8 countries with the lowest spread. Political risk is higher when the (political risk) rating is lower. Political risk rating (Polrisk) and average credit rating (S&P, Moody's and Fitch) are averages over time. The average credit rating is rounded and translated to the notation style of S&P. For EMU countries the average spread (in basis points) is from Barclays Capital and based on the option adjusted spread calculated by comparing each country's yield curve to the German zero curve (fixed at the beginning of the month causing small spreads for Germany at month-end after large interest rate changes). For EMBI+ countries the average spread (in basis points) is from J.P. Morgan and based on the strip spread (the value of collateralized flows (if any) are 'stripped' from the bond) calculated by comparing each country's yield curve to the US Treasury curve. Averages are based on the period January 1999 to April 2014 for EMU countries and based on the period January 1994 to April 2014 for EMBI+ countries. The exact data period for each country is shown in Table 2.

2.3. Spread and credit rating data

Table 3 shows the average spread levels, political risk rating levels, and credit ratings over the sample period for each country. A clear pattern arises: on average, countries with a poor credit rating have higher spreads and lower political risk ratings.[5] The worst eight EMBI+ countries (sorted by spread) have an average spread of 9.32%, a B+ rating and a political risk score of 61. In contrast, the best five EMU countries (sorted by spread) have an average spread of 0.12%, an AAA rating and a political risk score of 86.

Fig. 1A shows the average spread over time for the EMU universe. It can be seen that the recent crisis period stands out. Fig. 1B shows the average spread over time for the EMBI+ universe for which, contrary to the EMU universe, multiple good and bad times have occurred over time.

The default and term spread factors for the EMU and EMBI+ universes are shown in Fig. 2A and B, respectively. The default premium is defined as the return of the market index over US Treasuries for EMBI+ and over German bunds for EMU. The term premium is defined as the return of US Treasuries over cash for EMBI+ and the return of German bunds over cash for EMU. The sum of the default premium and term premium is equal to the EMBI+ or EMU return in excess of cash. For both EMU and EMBI+ the term premium is positive due to generally declining yields in Germany and US over time and the average bond index yields being higher than cash. For EMU the default premium starts to play a role at the end of 2007, with negative returns followed in 2012 by positive returns when the more risky European bond markets started to recover from the crisis. The default premium for EMU is zero over the entire period. Contrary to EMU, we do see a positive default premium for EMBI+.

Table 4 shows the average changes in spreads, political risk ratings and credit ratings. Again looking at two EMU groups and three EMBI+ groups, there is a clear correlation between spread changes on the one hand, and credit rating changes and political risk rating changes on the other hand. The EMU group with the largest spread increases has an average annual spread increase of 9.1%, a drop in political risk ratings of 11.1 points and a rating drop of 7.3 notches (a 1-notch upgrade is for example from BB to BB+). The EMBI+ group with the largest spread increases has an average spread increase of 0.81%, a drop in political risk ratings of 4.8 points and a rating drop of 0.7 notches. At the other end of the spectrum, the EMBI+ group with the largest spread decreases has an average spread decrease of 6.0%, a rise in political risk ratings of 0.3 points and an average rating improvement of 3.0 notches.

These results show that political risk is relevant for bond yields. Both for levels and for changes, there is a clear relationship with ratings and spreads. Countries with good (improving) political risk ratings are also countries with good (improving) credit ratings and low (decreasing) spreads. In the remainder of this study, we will investigate whether the most recent political risk ratings are fully incorporated in bond prices, or whether bond prices only partially incorporate current political risk. A recent

[5] Appendix A shows the average political risk ratings also including the average scores on the twelve components that make up the total political risk rating.

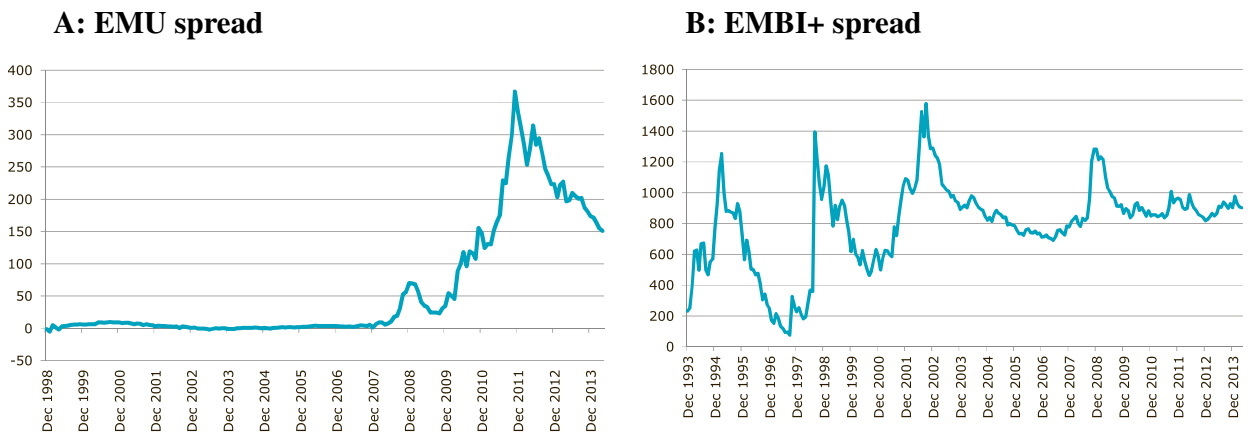

Fig. 1. A: EMU spread B: EMBI+ spread Note: The graphs show the equally weighted spread development through time. The spread is based on the changes of all countries in the index in each month. The spread level of country entries in and exits from the index does not influence the spread.

study by Bekaert et al. (2014) shows the importance of the political risk level for the bond market. Therefore, we focus our research on the changes in political risk.

3. Methodology

3.1. Forming portfolios

To investigate the importance of political risk for bond prices, and to examine whether changes in political risk predict bond prices, we construct portfolios based on 1-year changes in political risk ratings.[6] At the end of each month[7] we rank the countries that are at that moment in the index and for which political risk ratings are available. The four countries with the largest improvement of the political risk rating represent the Best 4 portfolio, and the four countries with the largest deterioration of the political risk rating represent the Worst 4.[8] The weights for the countries within each of these two portfolios are based on their respective market capitalization scaled to add up to 100%. When countries have the same political risk rating change they both enter the portfolio, leading to more countries in the portfolio. The change in political risk premium is defined as the return of the Best minus Worst portfolios in the subsequent month. The portfolios are constructed for both the EMU and EMBI+ universes of countries. The composition of the Best and Worst portfolios changes every month. For EMU, the turnover is about 50% per month for both the Best and Worst portfolio – comparable to replacing each month one country with a 25% weight with another country. For EMBI+, this figure is even 60% per month.[9]

3.2. Risk-adjusted performance

We need to make sure that the relation between changes in political risk ratings and bond prices we document in the next section is really something new. It could be that we are capturing indirectly a known premium when constructing two portfolios based on changes in political risk ratings.

First, we want to control for the default and term premium defined in Section 2.3. Gebhardt et al. (2005) found these premiums to be priced risk factors for corporate bond returns and they have since become part of the standard asset pricing model for bonds.

Second, it could be that on average the government bonds in the long and short portfolios based on changes on political risk differ in terms of liquidity risk. Longstaff (2004) and Monfort and Renne (2013) find priced liquidity measures based on comparing the less liquid bonds from respectively US and German government related agencies to liquid government bonds of these countries.

[6] The 1-year look-back period is a compromise between up-to-date information and avoiding too many zero changes as PRS often leaves many components unchanged in the monthly updates. With the 1-year look-back period the frequency of zero changes is 11% for both EMU and EMBI+. Using e.g. 3-month changes the frequency of zero changes rises to 32%.

[7] The political risk data are available about a week before the end of the month, hence using monthly data we actually delay the information.

[8] Using portfolios is a commonly used technique for examining the cross-sectional importance of a fundamental variable isolating the cross-sectional variation from the time-series variation. The alternative would be to use predictive regressions. For an excellent debate on predictive regressions vis-à-vis using portfolios see Thornton and Valente (2012). They show that the Cochrane and Piazzesi (2005) forward rates factor, found to be successful in in-sample predictive regressions for excess bond returns, actually has no economic value in a true real-time exercise.

[9] Estimated transaction costs are about 0.17% per year for EMU when assuming a 1 basis point bid-ask spread per duration traded (average duration 5.8 years). For EMBI+ the costs are 0.76% per year, assuming a 3 basis point spread per duration traded (average duration 6.4 years). This leaves a large positive return difference net of costs between the Best and Worst portfolios, as shown in Section 4.

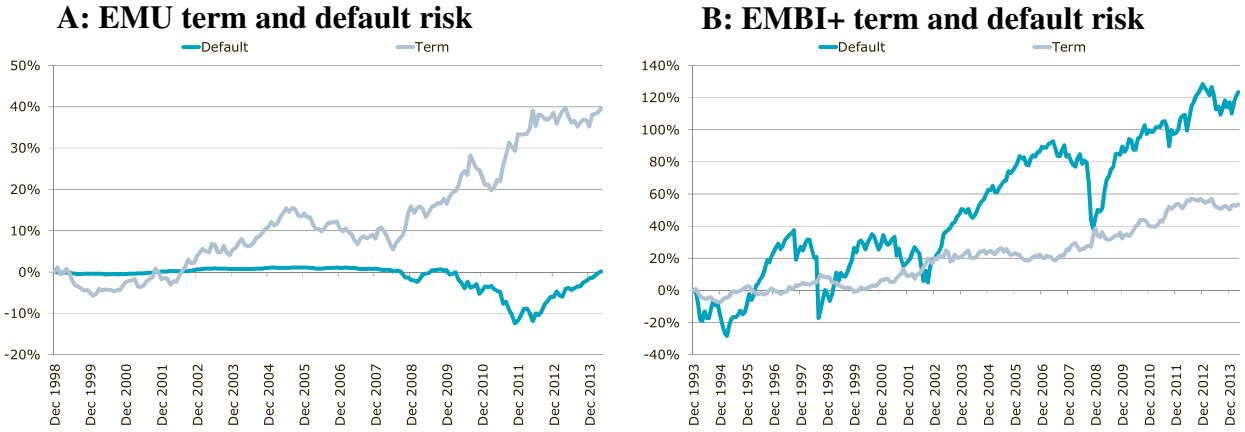

Fig. 2. A: EMU term and default risk B: EMBI+ term and default risk Note: The graphs show the cumulative term and default risk premiums through time for EMU and EMBI+. The default premium is the return of the market index over US Treasuries for EMBI+ and over German bunds for EMU. The term premium is the return of US Treasuries over cash for EMBI+ and the return of German bunds over cash for EMU. The sum of the default and term premium is equal to the market return over cash.

Third, the changes in the subjective assessments by experts at the PRS group could be influenced by changes in market bond yields. In that case we are perhaps selecting portfolios based on past bond returns, i.e. momentum. We measure momentum as the return differences between Best 4 and Worst 4 portfolios based on 1-year bond returns.

Finally, we control for the changes in financial and economic risk ratings from the PRS group and changes in credit ratings to make sure the political risk rating changes are primarily driven by true political risk changes and not financial and economic risk changes in disguise, or adjustments by credit agencies. To do so we construct the returns of Best 4 minus Worst 4 portfolios based on 1-year changes in financial risk ratings and economic risk ratings, and 1-year changes in average credit ratings based on ratings from S&P, Moody's and Fitch.

To control for all the aforementioned effects we run versions of the following regression:

$$\Delta POL_t = \alpha + \beta_1 DEF_t + \beta_2 TERM_t + \beta_3 LIQ_t + \beta_4 \Delta CRED_t + \beta_5 \Delta FIN_t + \beta_6 \Delta ECO_t + \beta_7 MOM_t + \varepsilon_t \quad (1)$$

Table 4
Changes in average spread, political risk rating and credit rating.

Panel A: EMU countries											
High spread change				Average spread change				Low spread change			
Country	Spread	Polrisk	Rating	Country	Spread	Polrisk	Rating	Country	Spread	Polrisk	Rating
Greece	4960	−10.0	−14.33					Belgium	39	−1.5	−0.67
Portugal	132	−18.5	−9.50					Netherlands	17	−11.0	−0.33
Spain	121	−6.0	−6.00					Finland	6	−3.5	0.67
Italy	117	−9.5	−5.00					Germany	5	−0.5	0.00
Ireland	88	−9.0	−7.33					Austria	−2	0.5	−0.33
France	42	−13.5	−1.33								
Average	910	−11.1	−7.3					Average	13	−3.2	−0.1
Panel B: EMBI + countries											
Argentina	432	−15.0	−4.50	Mexico	−111	−6.5	3.83	Turkey	−253	2.5	4.00
Venezuela	376	−21.5	−4.50	Malaysia	−118	4.5	1.67	Peru	−275	2.5	3.67
Indonesia	29	−3.5	3.00	South-Africa	−134	−4.0	0.33	Morocco	−280	1.5	1.00
Nigeria	4	−3.0	0.00	Egypt	−154	−4.5	−0.33	Poland	−470	−4.0	4.33
Croatia	−11	−5.0	−1.33	Ecuador	−165	−4.0	−1.67	Colombia	−519	8.5	0.67
Hungary	−25	−2.5	−1.33	Philippines	−168	−0.5	3.00	Ukraine	−643	−2.0	−2.33
Panama	−46	11.0	2.00	Russia	−200	−12.0	3.00	Brazil	−909	1.5	5.67
Qatar	−110	1.0	1.33	South-Korea	−251	−2.0	3.33	Bulgaria	−1419	−8.5	6.67
Average	81	−4.8	−0.7	Average	−163	−3.6	1.7	Average	−596	0.3	3.0

Note: The 11 EMU countries are divided in two groups on basis of the average bond change in spread compared to Germany. The left panel contains the 6 countries with the largest spread change and the right panel contains the 5 countries with the smallest spread change. The 24 EMBI+ countries are divided in three groups on basis of the full period change in bond spread compared to the US. The left panel contains the 8 countries with the largest spread change and the right panel contains the 8 countries with the smallest spread change. The political risk is higher when the (political risk) rating change is negative. Political risk rating change (Polrisk) and average credit rating change (S&P, Moody's and Fitch) are based on the full research period. The average credit rating change is translated in a number based on notches, e.g. a downgrade from BBB+ to BBB is translated to −1. Changes are based on the period January 1999–April 2014 for EMU countries and based on the period January 1994–April 2014 for EMBI+ countries. The exact data period for each country is shown in Table 2.

Table 5
Ranking portfolios on 1-year changes in political risk ratings.

	EMU			EMBI+		
	Index	Worst 4	Best 4	Index	Worst 4	Best 4
Return p.a.	4.8%	4.5%	5.6%	10.5%	9.0%	14.6%
Stdev p.a.	3.8%	4.4%	4.1%	13.9%	19.4%	13.7%
Sharpe ratio	0.60	0.47	0.77	0.52	0.29	0.82
Rating		AA+	AA+		BB	BB
Rating change		−0.37	−0.02		−0.31	0.52

Note: Each month the countries are sorted on basis of the one year change of political risk. The four countries with the largest increase (or smallest decrease) in political risk ratings are grouped in the Best 4 portfolio and the four countries with the largest decrease (or smallest increase) in political risk scores are grouped in the Worst 4 portfolio. The portfolios are aggregated on basis of the market cap of the relevant countries. The Sharpe ratio is calculated as the total return in excess of the 3-month Euribor rate for the EMU and the return in excess of the 3-month US Libor rate for the EMBI+. The rating is based on the average rating of S&P, Moody's and Fitch over the whole sample and in the notation of S&P. The rating change is measured in notches and annualized, e.g. a downgrade from AA+ to AA in one year is translated to −1. The sample period is from January 1999 to April 2014 for EMU and from January 1994 to April 2014 for EMBI+.

where ΔPOL_t is the change in political risk premium, α the unexplained return, DEF_t the default premium, and $TERM_t$ the term premium. LIQ_t is a liquidity measure based on the market cap weighted excess returns of KfW compared to Germany for EMU and the market cap weighted excess return of REFCORP compared to US treasuries for the emerging markets.[10] $\Delta CRED_t$, ΔFIN_t, ΔECO_t, and MOM_t represent the returns of the Best 4 minus Worst 4 portfolios based on the change in credit ratings, financial risk ratings, economic risk ratings, and past 12-month bond returns, respectively. We also consider restricted versions of Eq. (1) to analyze the relevance of each individual control factor. We use Newey–West standard errors to correct for heteroscedasticity and auto-correlation.

4. Political risk premium

4.1. Portfolios based on past 1-year changes in political risk ratings

Our main contribution lies in examining the predictive power of changes in political risk ratings. We construct portfolios based on 1-year changes in political risk ratings (ΔPOL).[11] Note that a portfolio based on 1-year changes of political risk can be quite different from a portfolio based on the level of political risk. First, a portfolio based on the level of political risk has a much lower turnover through time. Second, the average monthly rank correlations between the rankings based on the level and 1-year change of political risk are only 23% and 13% respectively for the EMU and EMBI+ universes.

The characteristics of the Best 4 improving countries and the Worst 4 deteriorating countries are presented in Table 5. Strikingly, we observe for both the EMU and EMBI+ universes that the Best 4 portfolios outperform the Worst 4 portfolios and the index. For EMU, the annualized return is 5.6% for the portfolio of the countries that have shown the largest improvement in political risk ratings, at a risk of 4.1% and Sharpe ratio of 0.77. This is 1.1% per annum higher than the returns on the portfolio of countries that have shown the largest deterioration in political risk ratings, and 0.8% per annum higher than the index.

For the EMBI+ universe, a similar picture emerges. The Best 4 market cap-weighted portfolio has higher returns compared to both the index and the Worst 4 portfolio. Compared to the index the return is 4.1% per annum higher, and the Sharpe ratio is 0.82 compared to 0.52 for the index.[12] Thus, changes in political risk ratings predict the differences between the bond risk premiums of the various countries.[13] Political risk ratings also predict credit ratings. For example, for EMBI+ the Best 4 portfolio sees on average an improvement in the credit rating during the investment month.[14] These results suggest that changes in political risk are not directly incorporated in government bond prices or credit ratings.

A potential explanation for these findings is that the importance of political risk has been underestimated. Only recently have Bekaert et al. (2014) shown that political risk can explain one third of the credit spread. In addition, political risk is difficult to

[10] REFCORP is short for the Resolution Trust Corporation which is a US government corporation established to rescue savings and loan institutions that failed during the savings and loan crisis. REFCORP provided liquidity to these organizations by issuing bonds. KfW is short for Kreditanstalt fur Wiederaufbau ("Reconstruction Credit Institute") is owned by the Federal Republic of Germany and the States of Germany. REFCORP and KfW bonds have the same standing as Government bonds in case of a credit event. Hence price differences are only due to liquidity differences.

[11] We have also analyzed results based on the political risk level. Both the return and risk are higher for the Worst 4 portfolio and lower for the Best 4 portfolio. The Sharpe ratios of both portfolios do not deviate much from the index. The result indicates that political risk is an important risk factor and that knowledge of the political risk level is incorporated in the bond market, confirming the results of Bekaert et al. (2014). Contrary to our results for the changes in political risk, forecasting future bond market returns with the political risk level is not possible.

[12] Changing to more concentrated portfolios selecting the Best 3 gives a Sharpe ratio of 0.86 for EMU and the same Sharpe ratio of 0.82 for EMBI+. Also the Best 4 equal-weighted (as opposed to market-cap weighted) portfolios have a strong performance with a Sharpe ratio of 0.81 for EMU and 0.70 for EMBI+.

[13] In practice the portfolios we use to determine the changes in political risk premium would incur transaction costs. The typical transaction costs are a one basis point bid-ask spread on the yield for developed markets and a five basis point spread on the yield for emerging bond markets. Given the turnover and index duration of the bond indices these transaction costs would amount to about 10 basis points annual costs for the EMU universe and about 50 basis points annual costs for the EMBI+ universe for the Best minus Worst portfolios. Net returns are still positive and significant for the EMBI+ universe.

[14] We also examined spread changes, which are part of the returns. We find that changes in political risk ratings predict spread changes. For EMU, the Worst 4 portfolio on average sees a spread widening of 21 points in the month after the formation of the portfolio, compared to a 3 point spread tightening for the Best 4 portfolio. For EMBI+, these respective figures are 9 points spread widening for the Worst 4 and 11 points spread tightening for the Best 4 portfolio.

Table 6
Price discovery change in political risk premium.

	ΔPOL_t	ΔPOL_{t-1}	ΔPOL_{t-2}
Panel A.: EMU			
Return p.a.	1.1%	1.0%	0.4%
Stdev p.a.	2.7%	2.7%	2.9%
Sharpe ratio	0.41	0.36	0.14
Panel B: EMBI+			
Return p.a.	5.6%	2.6%	1.7%
Stdev p.a.	13.1%	11.4%	13.1%
Sharpe ratio	0.43*	0.23	0.13

Note: Based on 1-year changes in political ratings at the end of each month we form Best 4 and Worst 4 portfolios and compute the return difference in the subsequent month to create the change in political risk premium ΔPOL_t. To study the price discovery we delay the information from the change in political risk by 1 to 2 months, denoted by ΔPOL_{t-1} to ΔPOL_{t-2}. The 1%, 5% and 10% significance levels are denoted by ***, ** and *, respectively. The sample period is from January 1999 to April 2014 for EMU and from January 1994 to April 2014 for EMBI+.

measure and the political risk ratings that we employ are not public information. This difficulty level is aggravated when considering we look at changes in political risk ratings. Perhaps it is easier to pinpoint countries that score poorly on political risk than to measure which countries are improving.

The predictive power of changes in political risk is best illustrated with an example. Obvious events to investigate are large historical defaults like Russia in 1998 and Argentina in 2001. The negative bond returns before and during the Russian default were correctly predicted by the change in political risk, but also by the change of the economic risk, credit rating changes and momentum. Financial risk was the only indicator that selected Russia in the best portfolio because of a stronger current account to GDP before the default. The political risk change also predicted the negative returns in Argentina before and during the default. Economic risk and credit rating changes were also successful in this event, whereas financial risk changes and momentum were not successful. Both defaults were not followed by quick recoveries.

Therefore, we have investigated a third case in more detail. Just after the default of Argentina in 2001, the financial markets of its larger neighbor Brazil were also plagued by turmoil in 2002. The turmoil was primarily caused by the presidential elections in October 2002. After leading the country for eight years president Cardoso was succeeded by newcomer Lula da Silva. Financial markets became nervous when Lula da Silva, a former president of a steel workers' union, was leading the polls in 2002, and political risk ratings worsened. The yield of Brazilian government bonds more than doubled from 11.7% on 15 March 2002 to 25.5% on 30 July 2002. The yield remained high until the elections in October.

After the elections the markets were reassured by a sound policy from the new president, and political risk ratings improved, leading Brazil to be selected in the Best 4 portfolio. Bond yields declined from 23.9% on 15 October 2002 back to 11.7% on 17 April 2003. The Brazilian bond market return was 75%, which was substantially higher than the emerging US dollar government bond market that had a return of 29%. The other indicators we have investigated were less successful in this case. The change in financial risk and economic risk selected Brazil in the Worst 4 portfolio after the elections when the bond market recovered. The change in the credit rating and momentum selected Brazil in the Worst 4 portfolio before the elections, but kept the country in the Worst 4 portfolio during the recovery. Political risk is the only indicator that successfully predicted the recovery of the Brazilian bond market and avoided investing during the crisis. We will further investigate the nature of political risk in good and bad times in Section 4.3.

4.2. Changes in political risk ratings and price discovery in bond markets

We further investigate the price discovery of government bonds related to changes in political risk in Table 6. We first define a Best minus Worst portfolio based on 1-year changes in political risk (ΔPOL). As a second step we delay the political risk data by one and two months and recalculate the changes in political risk premium. Both for the EMU and EMBI+ universes, ΔPOL has positive returns and a high Sharpe ratio of 0.41 for EMU[15] and 0.43 for EMBI+. The result for EMBI+ is statistically different from zero. Both for the EMU and EMBI+ universes the political risk premium more than halves after delaying the information by two months. We conclude that bond markets need a few months to incorporate most of the information in the changes of political risk.

4.3. Changes in political risk ratings and crisis periods

To better understand the strong performance of the Best 4 portfolios based on past 1-year changes in political risk ratings we further investigate the performance in crisis and recovery periods. To identify 'good' and 'bad' times we use the changes in the market cap-weighted spread based on the constituents of the EMU and EMBI+ index. A month is allocated to 'good' times if the spread decreased and to 'bad' times if the spread increased. Note that portfolios based on the best *levels* of political risk ratings

[15] The size of the changes in political risk premium for the EMU universe is robust for the shorter sample period from January 2008 to April 2014.

would have relatively good returns in bad times and relatively poor returns in good times. The question here is: What about the performance of the portfolios based on the past 1-year changes in political risk ratings?

The results in Table 7 show that the outperformance of the Best 4 based on 1-year changes in political risk ratings is mostly achieved in bad times. The Best 4 portfolio performs similar to the index and the Worst 4 portfolio in good times. In bad times the Best 4 portfolios for both EMU and EMBI+ do much better than the index and the Worst 4 portfolios. Hence, the key finding in Table 5 that 1-year changes in political risk ratings result in superior bond portfolios is driven by keeping up in good times and doing much better in bad times.

For EMU, for example, in good times the index has an annualized return of 3.9% and the Worst 4 and Best 4 portfolios have annualized returns of 4.5% and 4.2%, respectively. There is a clear difference, however, in bad times, where the Worst 4 portfolio returns −0.8%, the index 0.4% and the Best 4 portfolio 2.0%. This difference is statistically different at a significance level of 1%, showing that the changes in political risk are mainly important in bad times. We see a similar picture for EMBI+. In good times there is little difference between the index, Worst 4 and Best 4 portfolios. But in bad times the index loses 25.6% per annum and the Worst 4 portfolio as much as 32.3%. The Best 4 portfolio manages to limit the loss to 17.5% per annum in periods of rising spreads. Similar to the results for the EMU universe, the difference between the returns of the Best and Worst portfolios in bad times is statistically significant at a significance level of 1%. The results show that the changes in political risk are able to predict differences between bond market returns in bad times. In such periods, both developed and emerging bond markets need time to discover the new price that incorporates the changed political landscape.

4.4. Changes in political risk ratings: really something new?

The results so far show that changes in political risk ratings are a strong predictor of future differences between bond market returns. We now investigate whether changes in political risk ratings represent a new important bond factor or whether it represents an existing bond factor in disguise. To investigate this, we construct a number of Best and Worst portfolios based on other characteristics. Table 8 contains the characteristics of the Best minus Worst portfolios based on 1-year changes in political risk (ΔPOL), credit risk ($\Delta CRED$), financial risk (ΔFIN), economic risk (ΔECO), and 12-month momentum (MOM). In addition, it shows the performance of the default, term and liquidity premium.

As already observed from Table 6, both for the EMU and EMBI+ universes ΔPOL has positive returns and a high Sharpe ratio of 0.41 for EMU and 0.43 for EMBI+. Of the other Best minus Worst portfolios none has such high Sharpe ratios in both the EMU and EMBI+ universe. For the EMU universe, momentum (MOM) does have a Sharpe ratio of 0.44 but it has a zero Sharpe ratio for EMBI+. For the EMBI+ universe, the Best minus Worst portfolios based on changes in economic risk (ΔECO) has a Sharpe ratio of 0.55 but for EMU the Sharpe ratio is just 0.10. The Best minus Worst portfolios based on changes in financial risk (ΔFIN) for EMU has a small negative return, but for EMBI+ it even has a large negative return and a Sharpe ratio of −0.41. As explained in Section 4.1, selecting bond markets based on financial risk put Russia in the Best 4 portfolio during its default in 1998 due to a strong current account and Brazil in the Worst 4 portfolio during its 2003 recovery.

Of the well-known risk factors for bonds, the default premium (DEF) is zero for EMU and 5.0% for EMBI+. The bond risk premium ($TERM$) for both universes yields about 2.3% per annum, reflecting partially the declining yields over the sample period. The liquidity premium is slightly positive for EMU (Germany) and zero for EMBI+ (US).

Hence, the main candidates to explain the strong performance of the Best minus Worst portfolios based on changes in political risk ratings are the bond risk premium ($TERM$) for both universes; momentum (MOM) for the EMU universe; and the default premium (DEF) and changes in economic risk (ΔECO) for the EMBI+ universe.

4.4.1. Loadings on risk factors

We first investigate the loading of the Best minus Worst portfolios based on changes in political risk ratings (ΔPOL) on the default premium, the term premium and liquidity premium, which are generally seen as risk factors in the bond literature. The first 3 columns of Table 9 show the results.

For both EMU and EMBI+ we find that ΔPOL loads significantly and negatively on the default premium (DEF). Hence, on average portfolios based on relatively positive changes in political risk ratings invest in the less risky countries. DEF explains around 20% of the monthly variation in the returns of ΔPOL. Because for EMU the default premium is zero and for EMBI+ it is strongly

Table 7
Excess return portfolios on political risk changes in good times and bad times.

	EMU			EMBI+		
	Index	Worst 4	Best 4	Index	Worst 4	Best 4
Full sample	2.3%	2.1%	3.2%	7.2%	5.7%	11.3%
Good times	3.9%	4.5%	4.2%	31.6%	33.9%	32.7%
Bad times	0.4%	−0.8%	2.0%	−25.6%	−32.3%	−17.5%

Note: The table shows the excess returns of portfolios formed monthly on changes in the ex-ante available political risk ratings. The full sample results are split in periods of good times and bad times based on one month changes of the aggregate market cap weighted credit spread. For EMBI+ 140 months are selected as good and 104 months as bad. For EMU 99 months are selected as good and 85 months as bad. The sample period is from January 1994–April 2014 for EMBI+ and from January 1999–April 2014 for EMU.

Table 8
Characteristics of the change in political risk premium and alternative return premia.

	ΔPOL	DEF	TERM	ΔCRED	ΔFIN	ΔECO	MOM	LIQ
Panel A.: EMU								
Return p.a.	1.1%	0.0%	2.3%	0.6%	−0.2%	0.2%	1.9%	0.3%
Stdev p.a.	2.7%	2.3%	3.9%	4.4%	2.9%	2.4%	4.3%	0.7%
Sharpe ratio	0.41*	0.02	0.57**	0.14	−0.08	0.10	0.44**	0.38*
Correlation								
Δ*POL*	100%							
DEF	−47%	100%						
TERM	18%	−33%	100%					
Δ*CRED*	43%	−85%	29%	100%				
Δ*FIN*	14%	−38%	9%	43%	100%			
Δ*ECO*	22%	−49%	25%	41%	29%	100%		
MOM	30%	−48%	18%	65%	17%	32%	100%	
LIQ	7%	28%	−28%	−19%	16%	−23%	−10%	100%
Panel B: EMBI+								
Return p.a.	5.6%	5.0%	2.2%	−1.2%	−6.2%	7.7%	−0.1%	−0.1%
Stdev p.a.	13.1%	13.9%	4.6%	14.1%	15.0%	13.9%	16.7%	1.6%
Sharpe ratio	0.43**	0.36*	0.48**	−0.08	−0.41	0.55***	0.00	−0.05
Correlation								
Δ*POL*	100%							
DEF	−44%	100%						
TERM	8%	−17%	100%					
Δ*CRED*	46%	−33%	18%	100%				
Δ*FIN*	−41%	42%	−12%	−17%	100%			
Δ*ECO*	34%	−22%	−1%	45%	5%	100%		
MOM	37%	−43%	10%	58%	−29%	33%	100%	
LIQ	16%	−7%	−1%	9%	−3%	−3%	4%	100%

Note: *DEF* is the return of the market index over German bunds for EMU, and over US treasuries for EMBI+. *TERM* is the return of German bunds over cash for EMU, and of US treasuries over cash for EMBI+. *LIQ* is based on the market cap weighted excess return of KfW compared to Germany for EMU and the market cap weighted excess return of REFCORP compared to US treasuries for EMBI+. Based on 1-year changes in political ratings at the end of each month we form Best 4 and Worst 4 portfolios and compute the return difference in the subsequent month to create the change in political risk premium (Δ*POL*). Similarly based on credit ratings (average rating S&P, Moody's and Fitch), financial risk ratings, economic risk ratings and 12-month bond returns we create the change in credit rating risk premium (Δ*CRED*), the financial risk premium (Δ*FIN*), the economic risk premium (Δ*ECO*) and 12-month momentum (*MOM*). The 1%, 5% and 10% significance levels are denoted by ***, ** and *, respectively. The sample period is from Jan. 1999 to Apr. 2014 for EMU and from Jan. 1994 to Apr. 2014 for EMBI+.

positive, the alpha for EMU is equal to the Best minus Worst return at 1.1% and for EMBI+ even larger at 7.7% per annum. Hence, controlling for the default premium makes the results for political risk changes even stronger.[16]

The bond risk premium (*TERM*) and liquidity premium (*LIQ*) have limited explanatory power for Δ*POL* explaining 3% or less of the variation on monthly returns. Only for EBMI+ Δ*POL* loads significantly on the liquidity factor but due to the slightly negative return of the liquidity factor the alpha is 5.7%, 0.1% higher than the return spread for Δ*POL* reported in Table 8.

The results for the multiple regression of Δ*POL* on *DEF*, *TERM*, and *LIQ* are shown in the 4th column in Table 9 labeled '3F'. The explanatory power for EMU rises to 28% but alpha remains high at 0.8% per annum. In contrast to only using the significant default premium, the alpha is no longer significant with a significance level of 11%. Note that the effective sample is quite short for Europe (only since the end of 2007 did yields of European countries start to diverge), which makes it harder to find a statistically significant result. For EMBI+ the alpha is still highly significant at 7.6%. The 3 factors together explain 21% of the variation in monthly returns. Hence, the risk factors cannot explain the strong performance of Best 4 minus Worst 4 based on changes in political risk.

4.4.2. Other factors explain Δ POL?

The risk factors *DEF*, *TERM* and *LIQ* cannot really explain the alphas from Δ*POL*. It could be, however, that forming portfolios based on changes in political risk ratings is a momentum strategy in disguise. We are also interested in the potential overlap between changes in political risk changes on the one hand, and changes in credit ratings, financial risk and economic risk on the other hand – even though there is no literature documenting predictive ability of these three factors. The last 4 columns in Table 9 show the results.

It is noteworthy that in both cases there is a significant positive loading on Δ*CRED* and momentum. Hence, countries with relatively improving political risk ratings are also on average countries with relatively improving credit ratings and a better than average bond market performance. The alphas, however, are only marginally reduced, although for EMU sufficiently to make it insignificant in the regression on momentum. We have further investigated the developments of political, economic and financial risk for two specific EMU countries in detail: Ireland and Portugal. In both Ireland and Portugal, political risk has been better able

[16] Given the importance of default risk for EMBI+, we also perform a double sort. First, we form two groups based on default spreads, and then sort further based on changes in political risk ratings within the default spread groups. The key finding is that both within the low spread group and within the high spread group, the Best 4 portfolio outperforms the Worst 4 portfolio. The result is strongest within the high spread group with a 6.3% return difference between the Best 4 and Worst 4 portfolios. For EMU, a double sort is not feasible due to the small universe.

Table 9
Regression of the change in political risk premium on alternative return premiums.

	DEF	TERM	LIQ	3F	Δ*CRED*	Δ*FIN*	Δ*ECO*	*MOM*
Panel A: EMU								
α	1.1%	0.8%	1.0%	0.8%	1.0%	1.2%	1.1%	0.8%
p-value α	0.04	0.08	0.07	0.11	0.07	0.05	0.06	0.13
Coefficient	−0.56	0.13	0.29	-	0.26	0.13	0.25	0.19
p-value coefficient	0.00	0.15	0.49	-	0.02	0.44	0.20	0.05
3F coefficient	−0.59	0.06	1.10	-	-	-	-	-
3F p-value	0.10	0.20	0.02	-	-	-	-	-
R^2	22%	3%	1%	28%	18%	2%	5%	9%
Panel B: EMBI+								
α	7.7%	5.1%	5.7%	7.6%	6.1%	3.4%	3.1%	5.6%
p-value α	0.02	0.07	0.06	0.02	0.03	0.13	0.13	0.05
Coefficient	−0.41	0.23	1.32	-	0.42	−0.36	0.32	0.29
p-value coefficient	0.01	0.29	0.02	-	0.00	0.02	0.02	0.01
Multivariate coefficient	−0.17	−0.08	1.02	-	-	-	-	-
Multivariate p-value	0.03	0.58	0.03	-	-	-	-	-
R^2	19%	1%	3%	21%	21%	17%	11%	14%

Note: This table presents the results of restricted versions of the regression in Eq. (1),

$$\Delta POL_t = \alpha + \beta_1 DEF_t + \beta_2 TERM_t + \beta_3 LIQ_t + \beta_4 \Delta CRED_t + \beta_5 \Delta FIN_t + \beta_6 \Delta ECO_t + \beta_7 MOM_t + \varepsilon_t.$$

Based on past 1-year changes in political ratings at the end of each month we form Best 4 and Worst 4 portfolios and compute the return difference in the subsequent month to create the change in political risk premium (Δ*POL*). Similarly based on 1-year changes in credit ratings (average rating S&P, Moody's and Fitch), financial risk ratings and economic risk ratings we create the change in credit rating risk premium (Δ*CRED*), the change in financial risk premium (Δ*FIN*), the change in economic risk premium (Δ*ECO*) and previous 12-month bond returns (*MOM*). *DEF* is the return of the market index over German bunds for EMU, and over US Treasuries for EMBI+. *TERM* is the return of German bunds over cash for EMU, and of US Treasuries over cash for EMBI+. *LIQ* is based on the market cap weighted excess return of KfW compared to Germany for EMU and the market cap weighted excess return of REFCORP compared to US treasuries for EMBI+. "3F" is the multiple regression on *DEF*, *TERM* and *LIQ*. The constant (α) is expressed per annum. We use Newey–West standard errors to correct for heteroscedasticity and autocorrelation. The sample period is from Jan. 1999 to Apr. 2014 for EMU and from Jan. 1994 to Apr. 2014 for EMBI+.

to forecast both the increase and decrease of the bond market spread. The development of the political risk does not seem to be directly related to developments in the economic and financial risk. The most pronounced changes in political risk of the two countries can be linked to important elections. The credit rating is more closely related with the political risk. However, the relation seems to be asymmetric in these examples, with ratings not immediately reacting to a more positive development after the crises in both Ireland and Portugal.

For EMBI+ the loading on Δ*FIN* and Δ*ECO* is significant, contrary to the results for EMU. The loading on Δ*FIN* is negative which is mainly caused by its wrong position in Russia during the 1998 default, whilst Δ*POL* rightly included it in the Worst 4 portfolio. The positive loading on Δ*ECO* suggests that countries with relatively improving political risk ratings are on average countries with relatively improving economic risk ratings. The magnitude of the premium for Δ*ECO* at 7.7% (see Table 8 Panel

Table 10
Ranking portfolios on 1-year changes in political risk ratings: Subsamples.

	EMU			EMBI+		
	1999–2014/4			1994–2014/4		
	Best	Worst	BMW	Best	Worst	BMW
Return p.a.	5.6%	4.5%	1.1%	14.6%	9.0%	5.6%
(p-value)			(5.3%)			(2.7%)
Stdev p.a.	4.1%	4.4%	2.7%	13.7%	19.4%	13.1%
Sharpe ratio	0.77	0.37	0.41	0.82	0.29	0.43
	1999–2007			1994–2003		
Return p.a.	4.4%	4.1%	0.3%	19.2%	10.2%	9.0%
(p-value)			(0.0%)			(5.3%)
Stdev p.a.	3.3%	3.2%	0.3%	17.0%	25.5%	17.7%
Sharpe ratio	0.36	0.27	1.15	0.85	0.22	0.51
	2008–2014/4			2004–2014/4		
Return p.a.	7.4%	5.1%	2.3%	10.2%	7.9%	2.3%
(p-value)			(8.7%)			(10.7%)
Stdev p.a.	5.0%	5.6%	4.2%	9.3%	10.6%	5.9%
Sharpe ratio	1.20	0.67	0.54	0.88	0.55	0.39

Note: Each month the countries are sorted on basis of the one year change of political risk. The four countries with the largest increase (or smallest decrease) in political risk ratings are grouped in the Best 4 portfolio and the four countries with the largest decrease (or smallest increase) in political risk scores are grouped in the Worst 4 portfolio. The portfolios are aggregated on basis of the market cap of the relevant countries. The Sharpe ratio is calculated as the total return in excess of the 3-month Euribor rate for the EMU and the return in excess of the 3-month US Libor rate for the EMBI+. Between parentheses (Best Minus Worst = BMW returns) the p-value of a 1-sided mean-test testing the hypothesis that the return of BMW is larger than zero.

B) is such that the Δ*POL* alpha of 5.6% is reduced to 3.1%. This causes the Δ*POL* alpha to become insignificant. The return of Δ*ECO* is for 75% achieved in Russia while the return of Δ*POL* is more evenly coming from multiple countries.

The results suggest that Δ*POL* is a new important factor for the bond risk premium. There is some overlap with momentum and changes in credit ratings but Δ*POL* has much stronger performance for both universes. Changes in economic risk ratings are also strong for EMBI+ and 46% correlated with Δ*POL*, which could be interesting for further research. For EMU, however, Δ*ECO* has no predictive power.

4.5. Changes in political risk ratings and high and low volatility periods

Fig. 1A and B show that the EMU spreads are relatively flat before 2008, whereas the EMBI+ spread are relatively volatile before 2004. Consequently, it is interesting to investigate the importance of changes in political risk in two subsamples: One where spread volatility is relatively low and one where spread volatility is relatively high. The results are shown in Table 10.

The Table shows that for EMU the volatility is relatively low at around 3.2% per annum during 1999–2007, whereas the volatility averages 5.3% per annum during 2008–2014. For EMBI+ it is the other way around, with high volatility in the 1994–2003 sample period and less high volatility from 2004 to 2014.

Importantly, we see that the predictive ability of changes in political risk ratings is quite robust. The Sharpe ratios of the Best Minus Worst (BMW) portfolios are generally in line with those of the full sample. A positive exception is the 1999–2007 period for EMU where the low volatility of BMW combined with the 0.3% per annum outperformance leads to a Sharpe ratio of 1.15. We conclude from these subsample results that the key conclusion regarding the predictive ability of changes in political risk ratings is robust over time and robust over low and high volatility periods.

4.6. Changes in political risk ratings and country size

The positive returns of Δ*POL* could be related to information asymmetries. Most notably, estimating political risk could be more difficult and more costly for smaller countries. As a result, political risk information could be more valuable for these countries. For larger countries, the returns of Δ*POL* could therefore be smaller. We test the Δ*POL* strategy for EMU and EMBI+ leaving out the largest countries, and also test the strategy when leaving out the smallest countries. The results are shown in Table 11.

For EMU, results are stronger when leaving out the larger countries (BMW has a return of 1.4%) than when leaving out the smaller countries (BMW has a return of 0.3%). For EMBI+, however, it is the other way around. BMW has a return of 1.5% when leaving out the larger countries, and this rises to 2.6% when leaving out the smaller countries. We can thus not conclude with confidence that information asymmetry is one of the driver of our results. Interestingly, in general the return gap for EMBI+ declines when making the universe smaller, indicating that some of the best opportunities are removed when excluding small or large countries.

Table 11
Ranking portfolios on 1-year changes in political risk ratings and excluding countries.

	EMU			EMBI+		
	Worst 4	Best 4	BMW	Worst 4	Best 4	BMW
All countries						
Return p.a.	4.5%	5.6%	1.1%	9.0%	14.6%	5.6%
Stdev p.a.	4.4%	4.1%	2.7%	19.4%	13.7%	13.1%
Sharpe ratio	0.47	0.77	0.41	0.29	0.82	0.43
Exclude larger countries (*exclude market cap > 10%*)						
Return p.a.	3.7%	5.1%	1.4%	11.8%	13.1%	1.2%
Stdev p.a.	4.9%	4.2%	3.1%	20.8%	14.2%	14.5%
Sharpe ratio	0.25	0.61	0.46	0.41	0.69	0.09
Exclude smaller countries (*exclude market cap < 2%*)						
Return p.a.	4.4%	4.7%	0.3%	9.7%	12.3%	2.6%
Stdev p.a.	4.1%	3.8%	2.0%	15.6%	13.6%	9.8%
Sharpe ratio	0.48	0.60	0.17	0.41	0.66	0.26

Note: Each month the countries are sorted on basis of the one year change of political risk. The four countries with the largest increase (or smallest decrease) in political risk ratings are grouped in the Best 4 portfolio and the four countries with the largest decrease (or smallest increase) in political risk scores are grouped in the Worst 4 portfolio. The portfolios are aggregated on basis of the market cap of the relevant countries. The Sharpe ratio is calculated as the total return in excess of the 3-month Euribor rate for the EMU and the return in excess of the 3-month US Libor rate for the EMBI+. The rating is based on the average rating of S&P, Moody's and Fitch over the whole sample and in the notation of S&P. The rating change is measured in notches and annualized, e.g. a downgrade from AA+ to AA in one year is translated to −1. The sample period is from January 1999 to April 2014 for EMU and from January 1994 to April 2014 for EMBI+.

5. The relevance of individual political risk components

Table 9 shows that yearly changes in political risk ratings are an important determinant of the bond risk premium. In this section we look at the importance of the individual political risk components shown in Table 1. Which components contribute most to the predictive ability of the total political risk rating?

The results in Table 12 for both EMU and EMBI+ show that most of the 12 components have a low and insignificant alpha based on the regression on the factors *DEF*, *TERM*, and *LIQ*. This is no surprise, given the small changes over time of these components (see Table A1 and Table A2 in Appendix A, row 'Changes'). The three components that stand out with higher returns are the components A, B, and to a lesser extent C denoting government stability, socioeconomic conditions and the investment profile, respectively. For EMU, the risk-adjusted return difference between the most improving countries and most deteriorating countries for the socioeconomic conditions component is equal to 0.70%, compared to 0.77% based on the total political risk rating. For EMBI+ the risk-adjusted return for the government stability component is 7.3% compared to 7.6% for the total political risk rating.

Hence, the ability of governments to carry out their declared programs and to stay in office, socioeconomic conditions (such as unemployment and poverty) that could constrain government action or fuel social dissatisfaction, and the legislative risk of investments, are important factors for both EMU and EMBI+ government bond investors. Huang et al. (2014) find that the relationship between international political crises and the level bond yields depends on the government stability and legal investor protection confirming the importance of these components for bond market risk. For emerging US dollar debt (EMBI+), we also find democratic accountability and bureaucracy quality to be important.

6. Conclusion

We find political risk to be an important determinant of the differences in global government bond risk premia. First, the level of political risk is closely related to the creditworthiness of a country. Countries with high political risk are on average countries with poorer credit ratings and higher bond risk premia.

Second, we find that changes over time in political risk are closely related to changes in the creditworthiness of a country. Countries for which political risk is improving are on average also the countries with improving credit ratings and relatively positive bond returns over the past year. Moreover, we find that the bonds from these countries going forward have higher returns than the bonds from countries with a relatively worse political risk. That is, whereas we find that political risk levels are properly incorporated in bond prices, changes in political risk levels contain information about future bond risk premiums. As such, bond prices do not immediately incorporate past changes in political risk. These same past changes in political risk also have some predictive ability for changes in ratings.

We therefore conclude that although bond market participants and rating agencies do take into account the political risk of a country, in terms of changes in political risk both bond prices and ratings do not seem to be fully efficient. These findings are robust when accounting for the term premium, default premium, and liquidity factors. Bond return momentum, financial risk,

Table 12
Alpha of the components of change in political risk premium.

	EMU	EMBI+
Total political risk	0.77%	7.6%**
A. Government Stability	0.04%	7.3%***
B. Socioeconomic Conditions	0.70%	5.3%**
C. Investment Profile	0.38%	1.6%
D. Internal Conflict	0.15%	−0.4%
E. External Conflict	−0.02%	−2.9%
F. Corruption	0.00%	0.9%
G. Military in Politics	0.00%	0.6%
H. Religious Tensions	−0.05%	−0.5%
I. Law and Order	0.05%**	0.7%
J. Ethnic Tensions	0.00%	0.6%
K. Democratic Accountability	0.00%	2.7%**
L. Bureaucracy Quality	−0.01%	2.6%*

Note: This table presents the alphas of the restricted regression in Eq. (1),

$$\Delta \mathrm{POL}_t = \alpha + \beta_1 DEF_t + \beta_2 TERM_t + \beta_3 LIQ_t + \varepsilon_t$$

Based on 1-year changes in political ratings at the end of each month we form Best 4 and Worst 4 portfolios and compute the return difference in the subsequent month to create the change in political risk premium
(ΔPOL). *DEF* is the return of the market index over German bunds for EMU, and over US Treasuries for EMBI+. *TERM* is the return of German bunds over cash for EMU, and of US Treasuries over cash for EMBI+. *LIQ* is based on the market cap weighted excess return of KfW compared to Germany for EMU and the market cap weighted excess return of REFCORP compared to US treasuries for EMBI+. The constant (α) is expressed per annum. The (total) political risk rating is based on the 12 components with the weights listed in Table 1. We apply the same methodology on the individual components to form Best 4 and Worst 4 portfolios and compute the alphas. The 1%, 5% and 10% significance levels are denoted by ***, ** and *, respectively. We use Newey–West standard errors to correct for heteroscedasticity and autocorrelation. The sample period is from Jan. 1999 to Apr. 2014 for EMU and from Jan. 1994 to Apr. 2014 for EMBI+.

economic risk and liquidity risk also cannot explain these results, and results are robust for sub-samples. Our conclusion is that the change in political risk is a novel driver of future differences in global government bond risk premiums.

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Appendix A. PRS component scores per country

Table A1
Descriptive statistics political risk scores for EMU countries.

	Total and components												
	A	B	C	D	E	F	G	H	I	J	K	L	Total
Max	12	12	12	12	12	6	6	6	6	6	6	4	100
Changes	2.7	0.8	0.9	0.6	0.3	0.2	0.0	0.1	0.1	0.1	0.1	0.0	5.1
Austria	8	9	11	11	11	5	6	5	6	4	5	4	87
Belgium	8	8	10	11	12	4	6	5	5	3	6	4	82
Finland	9	9	11	11	12	6	6	6	6	6	6	4	92
France	8	8	11	10	10	4	5	5	5	3	6	3	77
Germany	9	8	11	11	11	5	6	6	5	4	6	4	85
Greece	8	7	10	9	10	2	5	5	4	5	6	3	75
Ireland	8	9	10	11	11	3	6	5	6	6	6	4	86
Italy	8	8	10	10	11	3	6	5	4	5	5	3	77
Netherlands	8	10	11	11	12	5	6	4	6	5	6	4	88
Portugal	8	8	10	10	10	4	6	6	5	6	6	3	82
Spain	8	7	11	9	10	4	5	5	5	4	6	3	77

Note: Average political risk scores and components from January 1999 to April 2014. “Changes” shows the average absolute change of a score per country.

Table A2
Descriptive statistics political risk scores for EMBI+ countries.

	Total and components												
	A	B	C	D	E	F	G	H	I	J	K	L	Total
Max	12	12	12	12	12	6	6	6	6	6	6	4	100
Changes	2.7	0.6	0.9	1.0	0.7	0.2	0.1	0.1	0.2	0.1	0.2	0.1	5.8
Argentina	8	5	6	10	10	2	4	6	3	6	5	3	69
Brazil	8	6	7	9	11	3	4	6	2	4	4	2	66
Bulgaria	8	4	10	11	10	3	5	5	4	5	5	2	71
Colombia	8	4	8	5	9	3	2	5	2	5	4	2	56
Croatia	7	5	9	11	11	2	5	5	5	5	6	3	72
Ecuador	7	4	5	8	10	3	2	5	3	4	4	2	57
Egypt	10	5	7	9	10	2	3	3	4	6	2	2	63
Hungary	7	7	8	11	10	3	6	6	4	4	6	3	73
Indonesia	7	6	8	8	10	3	3	1	3	2	5	2	59
Malaysia	11	8	9	11	11	3	5	4	3	4	3	3	73
Mexico	8	7	9	9	11	2	4	6	2	4	6	3	70
Morocco	10	5	8	10	10	3	4	4	6	5	3	2	70
Nigeria	8	2	5	8	10	1	1	2	2	2	3	1	47
Panama	8	6	9	10	10	2	5	5	3	5	5	2	71
Peru	7	5	8	7	10	3	4	6	3	3	4	2	62
Philippines	8	5	8	8	11	2	3	3	3	5	5	3	64
Poland	8	6	10	10	11	3	6	5	5	6	6	3	78
Qatar	11	8	10	11	10	2	4	4	6	6	2	2	77
Russia	9	5	7	8	9	2	4	5	4	3	3	1	61
S. Africa	8	5	10	9	11	3	5	5	3	4	5	2	68
S. Korea	9	7	8	10	9	3	5	6	4	6	6	3	76
Turkey	9	5	8	8	8	2	3	4	4	2	4	2	60
Ukraine	7	5	7	10	10	2	5	5	4	4	4	1	64
Venezuela	8	4	4	8	10	2	1	5	3	5	4	1	55

Note: Average political risk scores and components from January 1994 to April 2014. “Changes” shows the average absolute change of a score per country.

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