

Valuing Institutions: A Measure of the Bond Market's Views of Term Limits in Developing Countries*

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Abstract

We study the effect of changes to political institutions on the perception of country risk. In particular, we consider the impact of information about a change in executive term limits on a country's bond spreads over 101 events in seven emerging markets. We uncover an interesting asymmetry. Investors respond significantly to news about restrictions on the length or number of terms an executive leader can serve, leading to lower country risk spreads over US Treasuries. The one day abnormal returns following news about a restriction of term limits is 2 percentage points below the prediction. Over ten days, the cumulative abnormal return is 5 percentage points. Both numbers are statistically significant. On the other hand, the response to an extension of executive terms in office is not significant in the long run. The result is robust to a non-parametric test. We find a more muted and less asymmetric response in private markets with a 2% abnormal return ten days after extensions, but no long-term effect of restrictions. The relation between investors' responses and countries' institutions shows tentative evidence that reactions are muted in better institutionalized countries, and stronger when the judiciary signals its independence from the executive.

1 Introduction

On 26 February 2010, the Constitutional Court of Colombia rejected a referendum on a constitutional reform that would have allowed Alvaro Uribe to run for a third term in the Colombian presidency. In the following days, Colombia's sovereign bond spread over US Treasuries narrowed. On the other hand, five years earlier, when the same Court upheld an amendment to the constitution allowing the re-election of Uribe, the bond market did not respond. We look across 101 events related to developing countries' executive term limits — 73 of which loosened the constraints on the executive, 28 of which tightened them — and find these responses to be more general. Term limit restrictions lead to a significant reduction in the measured riskiness of dollar-denominated sovereign debt while the effect of extensions is weaker and insignificant. This result holds if we consider spreads of sovereign debt over

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Treasuries¹ or when we consider prices of insurance on government bonds² where we have that data. We further analyse these results by considering the response of stock market indices, and by exploring the variation in the response of spreads as a function of the degree of institutionalization of the relevant country.

Our paper is part of the broader research program around institutions and growth. The seminal literature started by D Acemoglu, S. Johnson, and J. Robinson (2001) argue that extractive political institutions retard growth by narrowing power to small interest group which then fosters the persistence of extractive economic institutions. As we discuss below, term limits can be thought of within this framework, since political office can be used by insiders to prevent potential reformers from competing for office (e.g. Tabarrok (1994); Glaeser (1997)). Longer terms could also be used to create connections with private interests through, say, lobbying, encouraging extraction ((Reed et al. (1998), Dick and Lott (1993); Lopez (2003))). However, the impact of term limits should depend on the initial institutional level of a country. Querubin (2011) considers the case of the Philippines and finds that the imposition of term limits for all elected offices did not break the power of dynasties in the country since members of the same families were able to alternate in different political offices. In the case of US governors as in T. Besley and A. Case (1995) and Timothy Besley and Anne Case (2003), the impact of term limits on fiscal policies must interact with the institutional constraint imposed by different balanced budget rules. Moreover, List and D. M. Sturm (2006) provides evidence that the impact of term limits on environmental policies depends on a state's density of environmental organizations, and on the strength of political competition.

In this paper, we consider the immediate reaction of financial markets to news about a potential institutional change in emerging countries, and directly compare the magnitude of the impact with the degree of institutionalization — including the degree of electoral competition.

The impact of term limit changes. We consider a specific type of institution: executive term limits. A “shock” to term limits, e.g. a change in the constitutional rule defining their length or their number, may change investors' perceptions of the country's *ability-to-pay* because of the growth implications of the institutional change, or as signal of possible future institutional changes.³

The merits and drawbacks of term limits have been discussed for some time⁴. However, there are no clear theoretical or empirical implications of term limits on fiscal policies emerging from the literature. By extension, the impact of term limits changes on country risk spreads is uncertain. A contribution we make is to provide some empirical spice to this theoretical delicacy. By measuring investors' response to potential changes, we infer *investors' beliefs* about the value of various institutions in various countries. Since this response should be anticipated by forward-looking leaders and legislators, we also

¹The usual measure of the spread as an indicator of country risk is the stripped spread, which is what we consider in the rest of the paper. “Spread” refers to the fact that the bond yield is considered relative to a US Treasury of comparable maturity, while “stripped” refers to the fact that the yield of the instrument of interest has been “stripped” of the payments linked to collateral. Section 2 provides more details.

²We use Credit Default Swaps [CDS] prices on the relevant sovereign bonds. CDS are a form of insurance where a regular premium is paid in return for payment in case of a ‘credit event’ such as default of the underlying.

³Because tax revenues, for instance, depend on growth, while debt servicing traditionally does not, a change in expected growth alters investors' expectations of sovereign risk. It might also impact directly or indirectly the perceived *willingness* of a country to service its debt: willingness matters since an important aspect of sovereign debt is that it is not easily enforceable (Eaton, Gersovitz, and Stiglitz (1986)).

⁴Aristotle, in *The Politics*, recommends that “[T]hese principles having been laid down and this being the nature of democratic government, the following institutions are democratic in character: [...] no office to be held twice, or more than a few times, by the same person, or few offices except the military ones; short tenure either of all offices or of as many as possible.”

learn something about the *political calculus of institutional reform* within these countries.

Empirical results are mixed. Empirical papers studying term limits give different conclusions, which leads us to be quite agnostic *ex ante* about the potential reactions of investors. That literature mainly looked at impacts on fiscal spending. T. Besley and A. Case (1995) show that in US States, incumbent governors subject to term limits increase taxes and spending (the reputational constraint is inoperative), and minimum wages fall in the corresponding term. In a 2003 update to their paper (Timothy Besley and Anne Case (2003)), with more recent data, the effect of taxes is not present (taxes actually fell in ‘lame-duck’ years). GDP growth rates are not affected. J. Johnson and Crain (2004) extend the analysis to 48 democracies and also find that government spending increases when term limits are binding. Two-term limits generate fiscal cycles and thus more variance (and therefore, uncertainty) than one-term limits. In contrast, Chiara Dalle Nogare and Ricciuti (2011) consider 52 countries and find no impact on government spending or deficits, except in presidential systems where a lame duck is correlated with reduced public spending. In a more specific study, List and D. M. Sturm (2006) suggest that environmental policies are affected by the presence of term limits in a direction that directly depends on the ideology of the electorate.

Costs of imposing term limits. Term limits may restrict the possibility of re-electing a competent politician (Smart and D. Sturm (2006)). Term limits reduce the time to build power and network capital, and higher turnover might generate policy instability and reduce the provision of public goods (Tabarrok (1994)). Finally, term limits might aggravate the shirking problem and reduce the incentive to provide effort and represent accurately the preferences of their constituents (Reed et al. (1998)). If these concerns from the theory are foremost in investors’ minds — that is if their view is that the relevant politician is *competent* in some sense — then the removal of term limits should be associated with a tightening of country bond spreads.

Benefits of term limits. Reputational incentives might lead a politician to misrepresent her preferences initially to make re-election more likely, and therefore make the screening process for voters more difficult⁵. Term limits reduce a politician’s time to acquire the ability to reform institutions to block outsiders, or to benefit from an incumbency advantage, and thus benefit risk-averse ideological voters (Tabarrok (1994); Glaeser (1997)). They also reduce the time to become influential and thus generate more logrolling, and reduce the time available to be influenced by lobbies in favor of spending programs (Reed et al. (1998), Dick and Lott (1993); Lopez (2003)). It might shorten the time and money spent for re-election (Hayek (1979), Glazer and Wattenberg (1996)). The initial arguments in favor of term limits focused on US institutions where legislators’ ability to direct spending towards their own district generates negative externalities: a district is the only beneficiary of its legislator’s ability to increase, say, targeted earmarks, but all districts incur the cost of an increase in spending. Term limits might solve the subsequent coordination problem (Dick and Lott (1993); Buchanan and Congleton, 1994; Chari, Jones, and Marimon (1997)).

Political Business Cycles. We have seen that various models of term limits reach different conclusions and that empirical studies also show a variety of results. The empirical work has mostly focused on the

⁵List and D. M. Sturm (2006) presents empirical evidence showing that incumbents choose different environmental policies when they face term limits than when they do not. Initially, they choose policies *relatively* biased towards their constituency’s preferences. See also the discussion in Smart and D. Sturm (2006) and Morris (2001).

link between term limits and Political Business Cycles (PBCs) because the incentives for re-election affect the choice of fiscal and monetary policies.⁶ The PBC literature notably links political institutions with fiscal outcomes, which might subsequently affect “sovereign risk”, and thus a country’s bond spreads⁷. Akitoby and Stratmann (2008) show that financial markets care about the relative composition of austerity plans in terms of spending cuts and tax increases. Block and Vaaler (2004) suggest that investors and credit rating agencies are election-averse: bond yields rise and downgrades happen more often before an election. Our focus on emerging markets is linked to the recent findings that PBCs are more significant in those countries (Brender and A Drazen (2005)). The announcement of a future constitutional referendum on the removal of term limit restrictions may signal impending populist spending before that vote⁸. Parra and Santiso (2008) observe that ‘during electoral cycles, fiscal and monetary policies tend to be expansionary’. Parra and Santiso (2009) provides empirical support for this in Latin American countries over 1990-2006 (in contrast to OECD countries where they do not find an effect). They find political business cycles considerations are particularly likely to be important in countries where re-election is permitted⁹, though this might be changing over time.¹⁰ In elections where concerns about pre-election spending are paramount, we might anticipate an announcement of a constitutional referendum on a term limit extension to be associated with an increase in spreads.

The importance of political shocks. We test whether news about term limit changes impacts debt spreads. If there is an effect, the implications are important. Uribe and Yue (2006) show in a structural model that a temporary shock to bond spreads has a significant and persistent impact on GDP and investment. In particular, they find that a sudden rise of 1% in the spread leads to a .2% fall in output and a .6% fall in investment after two quarters. Because those macro variables determine the long-term spread, a negative feedback loop prevents the spread from falling back to “steady-state” for a number of quarters. Thus *shocks to spreads matter*. One potential source of shocks is news about an institutional change. Kaminsky (1999) finds, for instance, that political news explains around 18% of the largest stock price movements during the Asian crisis while economic news explains only 16%, and has a stronger quantitative impact on the stock market. Moser (2007) and Moser and Dreher (2010) consider the impact of particular political events on investors’ behavior. The former shows that spreads increase following the reshuffling of economic or finance ministers. The latter argues that the replacement of a central bank governor is perceived negatively by international investors. The effect is not due to the governor personally but, they argue, results from the signal sent about the stability of a country’s institutions and the independence of its Central Bank.¹¹

⁶See Persson and Tabellini (2000), ch.16 for a review.

⁷The literature is vast. See, for example, Nordhaus (1975), Tufte (1980), Alesina, Roubini, and Cohen (1997), Stein and Streb (1998), and Persson and Tabellini (2000).

⁸However, see Allan Drazen and Marcela Eslava (2010) who find no evidence of Colombian municipal elections increasing the deficit — though spending is pro-voters. In their work, and in M Eslava (2006) it is targeted spending, but not increases in the overall deficit, which is important.

⁹Parra and Santiso (2009) note, ‘incumbent candidates in Latin American democracies increase considerably the components of government expenditure which may be observed by voters. Where there is non-immediate re-election and when re-election is forbidden, the opposite is true.’

¹⁰Santiso and E Frot (2010) write that ‘while analysts’ recommendations between 1997 and 2008 tended to be consistently negative as elections approached, in 2006 they were no longer systematically negative.’ They conclude, in particular, ‘for Brazil, Chile and Colombia, Uruguay or Peru, analysts no longer anticipate the risks of a credibility gap in economic policies.’

¹¹There is also evidence of investor sophistication in the interpretation of political news and potential future policies. Kueng(2012) for instance, compares tax-exempt and taxable bonds to infer investors’ expectations of inflation conditional on the outcome of presidential elections, and shows that beliefs can be quite accurate.

Some Examples. We consider executive term limit changes in emerging markets to measure investors' reaction to the effect of a change in the probability of a change in institutions. By examining debt spreads, we can infer the change in the perception of country-risk. We find that investors react strongly to term limit restrictions — lowering country risk spreads — while the impact of term limit extensions is not significant. We present now some examples to illustrate the kinds of events we are interested in.

Before becoming president in 1994, Fernando Cardoso was a popular Finance Minister who had successfully brought an end to the Brazilian hyperinflation. Upon assuming the presidency, he initiated a large scale process of privatisation in a governing right-of-center alliance. At that point the Brazilian constitution limited the president to a single four-year term, but Cardoso's push for re-election began with a statement around September 4th, 1996 in which he announced support for the 'concept' of presidential re-election. We identify a set of 'extension' events relating to news around his possible reappointment. There is evidence from our reading of the press at that time that his re-election was backed by financial market participants. Notably, the *Emerging Markets Report* on March 13th, 1997, quotes the S&P sovereign ratings head as saying "Standard & Poor's will put Brazil on a review for an upgrade in the coming weeks based on a possible upcoming constitutional amendment allowing President Fernando Henrique Cardoso to run for a second term in 1998."

Alvaro Uribe was president of Colombia between 2002 and 2010. One Senate bill approving a second term for Uribe passed on April 30th 2004. At this time, *the Economist* published a leader stating 'the Conservatives came on board only after Mr Uribe acceded to their demands to increase social spending. More horse-trading on policy — and on political appointments — will be needed if he is to succeed. Mr Uribe risks exchanging his reputation as an independent, corruption-busting warrior leader for that of just another callow politician'.¹² Investors may have thus anticipated increased sovereign debt issuance and demanded higher spreads. On the other hand, Uribe was widely perceived as a strong fiscal conservative. In 2009, Uribe sought again to extend his time in office. The response of the media at this point was generally unfavorable. As the Senate approved a referendum for another term, for example *the Economist* headlined a story 'Uribe edges toward autocracy'. The Constitutional Court rejected the term limit extension for Uribe on February 26th 2010. If our suspicion that foreign investors did not favor another term for Uribe is correct, we would expect that spreads to fall following this news.

These are two examples which illustrate the events we are considering, and why we might anticipate an effect of news about constitutional changes in weakly institutionalized settings on sovereign debt prices. In Section 2 we describe how we select relevant events and model the determination of bond spreads, and then present the data we use in our analysis. Section 3 presents the main result, its robustness to a non-parametric test, and some analysis of our findings conditional on various event characteristics. Section 4 provides potential interpretations of our headline finding noting the importance of the level of the country's institutional development. Section 5 concludes.

¹²'Double or quits - Colombia's president', *the Economist*, 1 May 2004.

2 Methodology and Data

Our goal is to detect the market reaction to a change in executive term limits in a developing country. We argue that the reaction captures the change in investors' perceptions of the probability of default. We use an event study to analyze the impact of a 'shock' to a high-frequency series. Event studies are applied extensively in finance — Serra (2002) and Bowman (2006), among many others, list 3 steps:

- Explain the series in an estimation window, using a model, e.g. a linear regression;
- compute the forecast errors in an event window, aggregate over the cross-sectional variable and infer the average effect; and
- analyze the abnormal returns and test their significance.

We select our events by surveying mostly English language newspapers covered by the *LexisNexis* and *Factiva* databases by looking for all articles mentioning "term limits" or its derivatives. Once we find an event, we run a more specific search linked to it to determine its exact date and to have a good understanding of its context. Events are described by a country and a specific date. We also distinguish the events on whether they restrict or extend executive term limits, and code which branch of the government appears to instigate the move. Given these events, we then consider changes in our country risk measure, the country's bond stripped spread over US Treasuries. We regress the variable of interest on variables exogenous to the event that have been shown to explain country risk and investors' behavior in the literature, and add an indicator for days around the event. The coefficient on this indicator is our measure of the abnormality due to the event. In doing so, we rely on the assumption that these events are exogenous shocks to investors' beliefs.

2.1 Selecting variables

2.1.1 Dependent variables

We want to understand the impact of an executive term limits change on perceived sovereign credit risk. We have two primary dependent variables which are specifically linked to country risk. First, for all countries in our sample of events, we consider JP Morgan's Emerging Market Bond Index Global (EMBI henceforth), and more specifically the stripped spread which is a representative bond yield over US Treasuries, stripped of any collateral effect and other potential enhancements. The stripping process means that the level of the stripped spreads reflects directly the change in the value of the bond, while the non-stripped spread would also reflect the change in the value of the collateral, for instance a Treasury bill. Second, as a robustness check, we consider the price of a Credit Default Swap (CDS) on sovereign debt of that country, for different maturities. CDS are, by construction, a price on default: the buyer of a sovereign CDS effectively buys insurance against sovereign default by paying a regular premium while the instrument repays in case of a credit event of the underlying asset which is defaulted upon. Bonds are instead interest instruments and are indirectly linked to a sovereign's default where the riskiness of a borrower must be inferred by the interest premium charged over a safe rate. Thus, the stripped spread mostly reflects the expectation, and the distribution, of the loss in case of default. Remolona, Scatigna, and Eliza Wu (2007) show that when dividing the bond spread into an expected loss and a risk premium component, most of the variation is explained by the latter. Moreover, as is discussed below, the close relation between bonds and CDS should give us confidence that bond spreads

are inherently related to country risk, which is what matters for our interpretation. Indeed, given that we use fairly high-frequency (i.e., daily) data, the other constituents of the bond spread do not present us with a problem. For instance, liquidity should not vary at the daily frequency. The bottom line is that our identification technique should help us to control for the risk premium asked by investors, while the event will only impact the perceived country-specific risk *itself*. Finally we note also that political risk has been shown to be a significant determinant of bond spreads (e.g. Hund and Lesmond (2008)).

We consider both CDS and EMBI, but focus on the EMBI, for several reasons. A rich literature has been developed on the relationship between Sovereign – and US corporate bonds¹³ — and corresponding CDS markets.¹⁴ CDS are potentially better indicators of credit risk (Cossin and Hricko (2001)). The bond spread includes not only the sovereign risk, but also a premium for liquidity¹⁵ and potentially a call option.¹⁶ Moreover, Ammer and Cai (2011) suggest that CDS leads the bond spread 58% of the time, and Zhu (2006) argues that CDS are more responsive to a change in the credit condition of the reference institution.

However, the EMBIs and their derivatives are available for a larger set of countries over a longer time period. CDS data is available only starting in December 2002.¹⁷

Moreover, the long-run behavior of bond yields and CDS premia are similar. Ammer and Cai (2011) find that in the sovereign markets, CDS premia and bond yields are highly correlated (76%), which is what matters for our estimation window.¹⁸ In terms of measuring default, Hilscher and Nosbusch (2010) find that country default probabilities explain 65% of the variation in EMBI spread (on this, see also Longstaff, Mithal, and Neis (2005), Favero, Pagano, and Thadden (2009) and Borri and Verdelhan (2011))¹⁹ (see also Remolona, Scatigna, and Eliza Wu (2007)). Third, CDS premia also reflect institutional factors such as the Cheapest-To-Deliver option²⁰. Finally, the liquidity premium argument in favor of CDS contracts is weakened by our use of the EMBI indices — JP Morgan requires certain liquidity thresholds to be met for an issue to be included in the index²¹. Moreover, Cumby and Evans (1995) suggest that even in the nineties, the most traded Latin American bonds are more liquid than US corporate bonds. Furthermore, the liquidity comes together with the fact that CDS markets are traded Over-The-Counter (e.g. Bai and Wei, 2012).

For these reasons, we settled on using the JP Morgan EMBI Global stripped spread and consider the CDS market on the subset of available data as a robustness check. For interpretation purposes, in

¹³In the following, we often omit the distinction between US corporate and EM bond yields, because the channels of interest are similar. We stress the potential differences when necessary. Interestingly, Wooldridge and Domanski (2003) suggest that “Specialised investors such as hedge funds and mutual funds focusing on emerging markets accounted for the bulk of portfolio inflows in the early to mid-1990s. In more recent years, investors who traditionally invested in highly rated debt issued in mature markets have increased their presence [in emerging markets securities].”

¹⁴See, for example, Ammer and Cai (2011); Longstaff, J. Pan, et al. (2007); Zhu (2006); Jun Pan and Singleton (2008); Remolona, Scatigna, and Eliza Wu (2007), and Cossin and Hricko (2001)).

¹⁵See Hund and Lesmond (2008), Martell (2007), Longstaff, J. Pan, et al. (2007) and Jun Pan and Singleton (2008) .

¹⁶See D. Duffie (1999), whose reasoning is based on corporate bonds.

¹⁷It is also the reason why we do not consider foreign local currency debt. We note that an increasing share of foreign investors hold local currency debt (Wenxin Du et al. (2013)) which is less responsive to global risk aversion and also less correlated across countries.

¹⁸For corporations, Zhu (2006) shows that CDS and bond prices are cointegrated and parity holds in the long run (see also Blanco and Brennan (2005))

¹⁹In addition, the explanatory power of default probabilities is increasing as a country’s credit quality worsens – which implies that considering emerging market countries means that the default probability is a larger part of the EMBI movement.

²⁰When the underlying asset on which the CDS was based is not necessarily the one that has to be delivered to the CDS’ owner.

²¹JP Morgan have five levels of liquidity for bonds based on the bid-offer spread and the number of quotes by designated brokers. A bond must be in the three most liquid categories to be included in the EMBI, with additional restrictions if it is in the third category.

addition to the CDS data, we considered an aggregate index for stock market data, the Morgan Stanley Capital Index (MSCI).

We consider only dollar-denominated outcomes to exclude exchange rate variation²². Hund and Lesmond (2008) mention that \$6.5tn of emerging market debt was traded in 2006, and half of it was denominated in non-local currency. Because the share of local currency debt has steadily increased over time (Wenxin Du et al. (2013)), one can think of this fraction as a lower bound on the share of debt we consider.

Auto-correlation It should be clear that these dependent variables exhibit a high degree of autocorrelation, hence we use their growth rates (which in the case of the stock market index translates into the canonical event-study dependent variable, the return). Kamin and Kleist (1999) similarly find that Brady bond spreads and treasury rates are non-stationary in levels but stationary in differences. Eventually, we compute the stripped spread growth on one particular business day as the difference between the stripped spreads on this day and the one on the previous business day, divided by the latter. We do the same when considering sovereign CDS prices and the MSCI. This consideration is important for the interpretation of the results. We mainly present results on the estimation of *daily* abnormal returns on the growth of stripped spreads, the growth of sovereign CDS prices and stock market returns. To compute the underlying level of stripped spreads over a certain period of days, for instance, one has then to compound the daily abnormal returns, and compute standard errors via the Delta Method applied to the standard errors obtained on the growth rates.

2.1.2 A model of country spreads

We now describe and justify the variables we use to model bond and market returns, and CDS prices, in our estimation window. This model will provide the benchmark to which the variables of interest are compared to around the event, to test their abnormal behavior. There are two important criteria by which we select the independent variables. First, they must explain the variation in the markets of interest. Second, they should not be impacted by the country-specific shock.

The debate over the surge of capital inflows to emerging markets in the nineties can help us think about these issues. Fernandez-Arias (1996) frames the debate in terms of pull and push factors: the question is to understand whether the flows are linked to lenders' behavior ('push')²³ or to borrowers' conditions ('pull'). If the latter are important, then a relevant model predicting bond returns in normal times will not be powerful, and the event study will be hard to conduct. If the push factors matter and the countries we consider are small (and thus have no direct impact on these variables), the model in the estimation window can have explanatory power even when containing only exogenous variables. Fernandez-Arias (1996) finds that the push factors are more likely to influence the new flows, while Codogno, Favero, and Missale (2003) and Geyer, Kossmeier, and Pichler (2004) find in the case of the Euro-area that country-specific factors are negligible next to a single factor linked to global risk.

The behavior of investors in dollar-denominated markets linked to emerging countries is thus likely to be closely linked to global economic conditions. These variables would satisfy the exogeneity requirement since the political environment in the emerging countries we consider are unlikely to have an impact on global conditions. Moreover, these variables are likely to explain a substantial part of

²²See for example Broner, Lorenzoni, and Schmukler (2007) or Hund and Lesmond (2008)).

²³See for example G. a. Calvo (2002)).

the variation in our dependent variables. We review the literature in the following to choose which variables to include in our model of stripped spreads.

Global variables account for most of the variation in sovereign spreads. One of the most striking findings in the literature on the determinants of sovereign bond spreads is that much of the variation can be explained by “global” variables unrelated to the country of interest²⁴. For instance, several authors have underlined the substantial link between the US monetary policy, US interest rates, and investment inflows to emerging markets (G. Calvo, Leiderman, and C. Reinhart (1993), Punam Chuhan, Claessens, and Mamingi (1998), Arora and Cerisola (2001), Fernandez-Arias (1996)). This reflects a larger trend.

Some of the literature considered constructed variables (via, for instance, principal component analysis) representing non-country specific factors and find that international variables explain a substantial part of emerging markets’ interest rates (Diazweigel and Gemmill (2006), McGuire and Schrijvers (2003), Mauro, Sussman, and Yafeh (2002), Remolona, Scatigna, and E. Wu (2008)). Ferrucci (2003), Codogno, Favero, and Missale (2003) (for Eurozone countries) find that “external” or “world” factors are more relevant to yield spreads than country-specific or liquidity variables. Geert Bekaert and C. R. Harvey (1997), Punam Chuhan, Claessens, and Mamingi (1998) find a similar result on emerging markets’ stock markets. Andritzky, Bannister, and Tamirisa (2007) show that bond spreads react more to rating announcements and movements in the US interest rates as opposed to domestic shocks. Uribe and Yue (2006) and Eichengreen and Mody (1998) find that US spreads with country spread innovations account for 85% of the variation in country spreads. Following Fernandez-Arias (1996)’s conclusion, Broner, Lorenzoni, and Schmukler (2007) suggest that the behavior of the term premia and the evolution of exposure to different debt maturities show that bond flows cannot be explained by the debtor’s supply decisions so that push factors matter more for capital inflows.

This discussion shows that considering non-country specific explanations for domestic market indices is relevant: global (and exogenous) factors have explanatory power. We thus proceed now to select the global variables for our estimation window²⁵. To understand why “global” variables matter, we can consider several channels and link them to previous literature on the determinants of bond and CDS spreads. We found it useful to divide the variables into four broad categories. First, some variables have a mechanical influence on bond spreads through *arbitrage* by internationally diversified investors. Second, factors linked to *global growth* are important for investors’ global sentiment. Likewise, global factors proxying investors’ *risk aversion* and the overall market volatility will change the valuation of a given risk, and thus affect bond prices: the variation in international markets can affect investment strategies (Borri and Verdelhan (2011)).²⁶ Finally, because we are dealing with emerging markets that are usually strong commodity importers or exporters, we considered *commodity indices*. Some variables like US interest rates could be put in different categories, but we classify the variables as follows.

Arbitrage variables. The most studied global factor impacting sovereign spreads are US interest rates. There is a theoretical basis. First, the safe rate has a direct positive, and more than proportional, impact

²⁴A voice of dissent among all the evidence described below is Min (1998) who finds low explanatory power for external shocks on EM country spreads.

²⁵We exclude macroeconomic variables, which are sticky at a daily frequency. We refer to papers such as Edwards (1984), Min (1998), Eichengreen and Mody (1998), and Catao and Kapur (2006) as reference for the impact of those variables on long-term liquidity and solvency.

²⁶Hund and Lesmond (2008) report that “Conversations with emerging market bond dealers and hedge fund managers confirms that it is not uncommon for them to hedge their risk in US equity markets, most usually the liquid S&P500 futures market, but occasionally in the more volatile NASDAQ market”.

on a risky rate via a simple arbitrage condition (e.g. Longstaff and Schwartz (1995), Westphalen (2001), Collin-Dufresne, Goldstein, and Martin (2001))²⁷.

If we assume that corporate and emerging market bonds are used as substitutes, the link between the Treasury market and the EM bond markets is reinforced. The effect of US rates on bond spreads is not clearly understood, with different effects and different levels of significance found by different authors²⁸ (e.g. Cline and Barnes (1997), Diazweigel and Gemmill (2006), Kamin and Kleist (1999), Catao and Kapur (2006), Eichengreen and Mody (1998), Cossin and Hricko (2001), McGuire and Schrijvers (2003), Garcia-Herrero and Ortiz (2006)).

Several authors (e.g. V. Reinhart and Sack (2002) and other similar essays in Bank For International Settlements (2002)) have shown that the Treasury rates are not the best indicators of the risk-free rate because of “[t]axation treatment, repo specials, scarcity premia” (Blanco and Brennan (2005)). They usually argue that one should instead use swap rates²⁹ (Zhu (2006) or Houweling and Vorst (2005)). We also consider the LIBOR, which is a benchmark for the cost of borrowing between banks³⁰.

Risk aversion and volatility variables. Recent literature has put great focus on variables proxying for the risk-aversion of investors. Typically we proxy volatility with the Chicago Board Options Exchange Market Volatility Index [VIX]. The VIX measures market volatility by considering the price of options – which directly depends on the probability of an asset to fall below or above a certain price in a fixed future period. Typically, one finds that greater volatility is associated with higher spreads.³¹ Some authors have used US corporate bond indices to measure risk-aversion with the same findings.³² Others use the difference between Treasuries and swap rates, and AAA-rated corporate bonds and Treasuries.³³ Finally, Borri and Verdelhan (2011) also use the TED spread, which is the difference between the interest rate on interbank loans and the short-term U.S. sovereign interest rate. Various authors have built their own indices of risk and also found a significant positive impact of risk aversion on bond spreads (Baek, Bandopadhyaya, and Du (2005), Garcia-Herrero and Ortiz (2006)).

Growth variables. Higher international interest rates suggest a period of global growth, and a steeper US yield curve, i.e. the difference between long-term and short-term US interest rates, points to higher future short term interest rates and thus reveal expectations of growth³⁴. Indeed, researchers who have found confusing results on the relation between US short- and long-term interest rates argue for the use of the yield curve (Ferrucci (2003)), and have generally found a significant, negative impact of the

²⁷If \bar{r} is the safe (U.S.) rate and r_i is the risky rate for country i which default with probability p_d , perfect arbitrage implies $1 + \bar{r} = (1 - p_d)(1 + r_i)$, so that $\frac{\partial r_i}{\partial \bar{r}} = \frac{1}{1 - p_d}$

²⁸A tentative reconciliation of these results is offered by Uribe and Yue (2006) who find that innovations in the short-term US interest rate can explain 20% of the variation in emerging market spreads at quarterly frequencies. After a positive shock to the US short rate, emerging market spreads initially fall (the interest rate increases less than the US interest rate) and then overshoot.

²⁹The swap rate is the fixed rate paid in an interest rate swap.

³⁰D. D. Duffie, Pedersen, and Singleton (2001) provide some evidence that the Russian spread is affected by the Libor, and Libor’s variance, although the results are not strongly significant.

³¹See for example, Remolona, Scatigna, and Eliza Wu (2007), Remolona, Scatigna, and E. Wu (2008), McGuire and Schrijvers (2003), Garcia-Herrero and Ortiz (2006).

³²See McGuire and Schrijvers (2003) and Borri and Verdelhan (2011) who use US BBB-rated corporations; and McGuire and Schrijvers (2003), Garcia-Herrero and Ortiz (2006), Wooldridge and Domanski (2003), and Ferrucci (2003) who use the high-yield spread over treasuries or spreads in bond yields of corporations with different ratings.

³³See for example, Favero, Pagano, and Thadden (2009), Codogno, Favero, and Missale (2003), and Geyer, Kossmeier, and Pichler (2004).

³⁴See also Cossin and Hricko (2001), CR Harvey (1989), A. Estrella and Hardouvelis (1991), Arturo Estrella and Mishkin (1997), and Bernard and Gerlach (1998).

curve on spreads³⁵. Global conditions can also be proxied by the S&P500 index and other global market aggregates. The literature is quite unanimous on the negative, significant effect of global market indices on bond spreads³⁶. Importantly, Hund and Lesmond, 2008 justify the use of the S&P500 by the fact that usually, the marginal trader in the markets we consider are US based pension and hedge funds, because of the use of dollar-denominated instruments.

Commodity indices. We follow Hilscher and Nosbusch (2010) by also adding the Commodity Research Bureau commodity index, since most of the emerging markets we are interested in are important players in global commodity markets. The index aggregates the prices of future deliveries of a (variable) set of commodities³⁷. The literature finds that commodity prices and EMBI spreads are strongly negatively-correlated (-0.66). Similarly, various authors have underlined the importance of the terms of trade (of which commodities are an important factor in the countries of interest) on bond spreads, e.g. Min (1998) finds an elasticity of 1.02, Catao and Kapur (2006) find a significant impact on sovereign risk. Commodity prices can be considered as proxy for current and expected future current accounts, which impacts the ability of a country to finance spending through the accumulation of external debt, and will thus also have an effect on the bond and CDS returns. Other authors have used specific commodity prices in country-specific studies of bond spreads³⁸.

Conclusion. Thus, the number of factors that one could use in the estimation window of our event study is large. We decided to use standard, although still contested, methods of model selection to include the most relevant variables in our estimation. We considered the EMBI Global Composite (EMBI-GC), an aggregation of all the EMBI indices for all emerging countries, and regressed it on the variables mentioned above over a period of 3000 days. Following Groemping (2006), we computed various importance metrics for each variable, for instance the R^2 contribution averaged over the different regressors orderings, the contribution when a variable is included first or last, the product of the standardized coefficient and the correlation between the EMBI-GC and the variable. Finally, we computed bootstrap confidence intervals for those indicators of relative importance³⁹. The various selection methods yielded similar results, and we eventually chose to include in our model the following:

- The most relevant growth variable is the yield curve, defined as the difference between the 10-year Treasury bond and the 3-month T-bill rates;
 - the most relevant risk-aversion and volatility variables are, consistently, the high yield spread (High yield corporate bonds minus 10-year treasuries, the VIX, the BBB-AAA spread and the TED spread);
 - the most relevant arbitrage variables are the long term US rate, the swap rate, and the S&P futures;
- and

³⁵See Martell (2007), Westphalen (2001), Diazweigel and Gemmill (2006), and McGuire and Schrijvers (2003). Cossin and Hricko (2001) find an insignificant correlation.

³⁶Garcia-Herrero and Ortiz (2006) find that US growth has a negative, although insignificant impact on spreads. Diazweigel and Gemmill (2006) and Ferrucci (2003) use the S&P500; Westphalen (2001) the MSCI world index; and McGuire and Schrijvers (2003) the S&P500, Nasdaq, and FTSE.

³⁷Mendoza (1995), Mendoza (1997) provides explanations on possible channels: the volatility in the terms of trade impacts growth (though the impact might be positive) in the long-run and causes increases in spreads at the business cycle frequency.

³⁸D. D. Duffie, Pedersen, and Singleton (2001) use Brent oil and Russian bond spreads; while Diazweigel and Gemmill (2006) also use oil prices in their study of Latin American countries. McGuire and Schrijvers (2003) find a negative, but statistically insignificant, correlation between the price of oil and EM spreads.

³⁹The R program is available from the authors upon request.

- we include the New York Fed commodity index.

Since we use the rate of growth of the stripped spreads, MSCI and CDS prices as dependent variables, we consider the growth rates of the determinants of bond and stock prices in our regression. We compute the growth rate of those variables in the same way: it is the difference between the value of the variable on a specific business day relative to the same value in the previous business day.

2.1.3 Data

EMBI. The main data series we are looking at is the country-level Emerging Market Bond Index Global, a daily⁴⁰ index of emerging market bonds produced by JP Morgan dating back to December 31st 1993. It aggregates Borri and Verdelhan (2011) “U.S.-dollar-denominated Brady bonds, Eurobonds, traded loans, and local market debt instruments issued by sovereign and quasi-sovereign entities.” Importantly for the analysis of this paper, the instruments included in the index have to have a high face-value (higher than US\$500mn), and a maturity of at least 2.5 years (Borri and Verdelhan (2011)).

JP Morgan provides several variables linked to the EMBI. The main variable that is computed is the “total return”, which captures the entire benefit or loss of holding one particular instrument. We decided to focus on the stripped spread — the traditional measure of sovereign credit risk. As we mentioned before, the stripped yield is the yield of the instrument stripped of any effect from the potential payment of collateral. The stripped spread is this yield over a matching Treasury yield. The stripping is aimed at measuring specifically the issuer’s risk⁴¹.

Given the selection criteria for integration in the index, the EMBI is not available for all countries from the start of the index in December 1993. Table 1 displays the starting date of the EMBI stripped spread series for the countries in our sample. For all countries, the series is available to the present day.

Other dependent variables. We use several other dependent variables that differ in their availability. As we have noted, CDS are another indicator of country risk. However, they have only been available since December 2002, and not for all countries. Eventually, we use the CDS prices at three different maturities for Brazil, Colombia, Kazakhstan and Venezuela: 1-year, 5-year and 10-year instruments⁴². Table 2 displays the starting date of the CDS index series for the countries in our sample. For all countries, the series is available to the present day.

We then turn to private market data. First, we use the MSCI indices, which are equity indices targeted towards emerging markets⁴³. As with the EMBI, the MSCI can be decomposed by countries since it is based on specific securities. Table 3 displays the starting date of the MSCI index series for the countries in our sample. For all countries, the series is available to the present day, except for Venezuela that has been excluded from the index since January 1st, 2008. The analysis of the impact of each event on the MSCI is then based on the MSCI return, in the same spirit as traditional event studies based on company returns.

⁴⁰ Although only available on business days.

⁴¹ Simply put, consider the price p of an asset yielding certain cashflows over some period of time. The stripped spread SS_t of an instrument yielding a cashflow CF_t and with a zero-coupon rate R_t is given by $p = \sum_t \frac{CF_t}{(1+R_t+SS_t)^t}$. The blended spread is $R_t + SS_t$. See Kim (2004) for reference, for instance.

⁴² The 5-year CDS is the most liquid CDS contract in the sovereign market.

⁴³ MSCI classifies some of the countries in our sample as emerging, and others as frontier markets depending on the period.

Independent variables We collected data on treasury yields, VIX, BBB and AAA corporate bond yields, the TED spread, the 5-year swap rate, S&P futures, and the New York Fed commodity index via Thomson Datastream, Bloomberg, and Global Financial Data. These are available over the entire period covered in our sample.

2.2 Term limit events

This paper considers investors' perception of specific "term limit events" such as the extension of constitutional term limits or referenda to that end. The next step of our study consists in defining the events where we think the subjective probability of a term limits change in the minds of investors might have occurred. For determining our initial prospective set of events we used multiple manual searches over *Factiva* and *Lexis Nexis* for "term limits" as well as closely inspected the timelines of news presented on the website of the International Foundation for Electoral Systems (IFES) in addition to surveys of the literature such as Ginsburg (2010). We are restricted, in our analysis, by the availability of data, most notably of our main outcome variable of interest. Because we need data before the event to make our forecasts, data availability on the stripped spreads impacts our choice of events. We list the events we consider initially in Table 5⁴⁴.

We classify the term limit events in different categories⁴⁵ to see whether investors react more strongly to certain types of event. The events we are primarily interested in involve the process by which a leader attempts to secure for him or herself a longer period in control than previously anticipated by investors. This process might involve, for example, a general referendum by which an electorate chooses the constitution to be amended. Important events in this process — which change investors' perceptions about the probability of the leader being successful in this attempt — thus will include, for example: the announcement of the proposed constitutional changes, and the release of results of the vote on the proposed constitutional change. We are also interested in cases where other actors move to restrict the attempts of a leader to increase his term (for example, a court might find these efforts to be unconstitutional). We define these as "restriction events".

We study a total of 101 events. Tables 6 to 8 presents various decompositions of those events. In Table 6, we display the number of events by country. The country for which we have the most events is Colombia, with a total of 37. This is due to the fact that we consider both Alvaro Uribe's campaign for a second (starting in 2003) and for a third term (starting in 2008). Furthermore, Colombian administrative law requires a number of procedural steps through the legislative assembly in order to amend the constitution to permit additional executive terms. Table 7 displays the number of *restriction* (where the executive's stay in power is somehow constrained) as opposed to *extension* events (whereby it is lengthened). It is important to note that we have about one third of our events as restriction events, while two thirds are extensions. Table 8 displays the number of events by the event's initiator. We used four different categories of initiator, including the three traditional branches (Executive, Legislative, and Judiciary) to which we add a fourth branch, Public, which reflects the incidence of important polls and referenda. Finally, when we were not able to classify events in a particular category, we classified them as "Others". As one can see, we end up with 12 events instigated by the judiciary branch (mostly, Constitutional Courts), 28 by the executive branch itself, and 43 from the legislature.

⁴⁴Table 5 displays a description column featuring either our own summary or a quotation from one of the articles discussing the event. A document containing detailed references is available from the authors upon request.

⁴⁵Baturo (2010) suggests a general classification of how a ruler might seek to extend his term in office, our classification is more specific to the events in our sample

2.3 Event Study

2.3.1 Estimation and event windows

The estimation window is the time frame that we use to estimate the relation between the outcome variable of interest (here, the bond yield) and the explanatory variables. Choosing the estimation window length presents a trade off. A longer period will be more powerful and precise. But it might underweight the more recent data — the estimation would be outdated. There might also be time-varying heterogeneity in the parameters. Corrado (2011) recommends 250 days (the approximate number of trading days in the year) and we follow his example. We stop the estimation window 10 business day before the event.

Another detail is important. Because of the nature of our events and the fact that they often appear in a cluster of “term-limit” events, we use the same estimation window for events taking place in the same cluster. Namely, if an event happens less than a year after another event in the same country, we use the same estimation window prior to the first event. Therefore, our estimation is based on a year before the first event in the series and includes event windows of 10 days before and after each event.

For future reference, let us denote C as an indicator for a “cluster of events”, and denote $E_C = \{events \in C\}$ as the set of events that use the same estimation window.

2.3.2 Regression

Our event study is based on a simple linear regression framework, with some important details. We regress the relative difference in the variable of interest, e.g. the stripped spreads or the CDS price, from one business day to the next⁴⁶ on the relevant, exogenous variables, and a dummy variable to capture the impact of the event(s)⁴⁷. Hence, if s_t is the stripped spread on date t , the dependent variable we consider at date t is $y_t = \frac{s_t - s_{t-1}}{s_{t-1}}$. For $k \in \{-X, \dots, X\}$ defined below, we run the regression for each cluster of events C :

$$y_{Ct} = \alpha_C + \beta X_{Ct} + \sum_{i \in E_C} \gamma_{C,i}(k) \mathbf{1}(t \in I(k)) + \epsilon_{Ct}$$

where X_{Ct} is the set of independent variables, and k corresponds to the number of days before or after the event, and $I(k)$ is the set of dates on which we compute the cumulative abnormal return. Namely, if an event is dated at $t = 0$ ⁴⁸.

- if $k \geq 0$, $\mathbf{1}(t \in I(k)) = 1$ iff $t \in \{0, \dots, k\}$
- if $k < 0$, $\mathbf{1}(t \in I(k)) = 1$ iff $t \in \{k, \dots, -1\}$

Finally, to test our hypothesis on restrictions versus extension events, the dummies are preceded by a minus in case of restrictions. This means that our hypothesis is that the γ 's should be positive in the case that the dependent variable is the stripped spread: a restriction event should decrease the idiosyncratic risk and thus the stripped spread, while an extension should have the opposite effect.

The coefficients of interest are the $\gamma(k)$'s for all k , and represent the cumulative abnormal return over $|k|$ days. When $k \geq 0$, the coefficient represents the daily abnormal return on the variable of interest after the event. If $k < 0$, the coefficient represents the same quantity before the event. We exclude the event

⁴⁶EMBI, MSCI and CDS prices are not available for week-end days.

⁴⁷In a recent paper, D. Sandler and R. Sandler (2012) use simulations to show that “Allowing multiple event-time dummies to be turned on at once generally produces unbiased estimates.”

⁴⁸Note the abuse of notation given that we have multiple events in a row.

day from the negative k 's since we want to use those quantities as “placebos” against the post-event abnormal returns. To assess the significance of this daily abnormal return, we compute robust standard errors for $\gamma(k)$. For each cluster of events C , we compute $\hat{\gamma}_C = \frac{1}{\#C} \sum_{i \in E_C} \hat{\gamma}_{i,C}$ with the corresponding variance. To aggregate at a higher level, we assume that the γ coefficients are independent across clusters of events.

3 Results

This section describes the main result on stripped spreads, and the importance of the distinction between restriction and extension events. We then proceed to analyze this result using the other dependent variables for which we have data. We check the validity of our results by performing a placebo analysis which entails a non-parametric robustness check substituting the actual event dates with random ones.

Looking over all events, we see clearly that investors react to news about term limits. Our analysis finds that a loosening or tightening of restrictions on the number of terms a leader can serve has different reactions. Our main finding is that investors view ‘tightenings’ more favorably than ‘extensions’ since restrictions on an executive’s term is generally (though not always) interpreted as a indicator of institutional strength — through confirming an institutional separation of powers, and matching more closely with “Western-style” institutions — and hence improves investor confidence (see for example, Martinez and Santiso (2003) for a discussion of emerging markets as a ‘confidence game’).

3.1 Effect on country spreads

Figure 1 shows the daily abnormal growth of the stripped spread over a certain event window around an event, when we aggregate the abnormal returns coefficients over all our events. In the figure, the event takes place at time 0; on the right, the values are the daily abnormal returns when the event window is between 0 and $x > 0$ days after the event, while on the left of the event, the daily abnormal return is computed over a window excluding the event, between $-x > 0$ and the day before the event. The numbers are daily abnormal return, so that the overall impact of the level variable (here, the stripped spread) is a compounding of those numbers.

In the regression, the dummy was signed negatively for restriction events and positively for extension events. Given this specification, we expect a positive and significant abnormal return around and after the event, since greater confidence of investors should be reflected in an abnormally negative stripped spread (growth). Figure 1 suggests that a change in term limits has the expected impact on stripped spreads on the day of the event, but that the effect dies down afterwards, although becoming nearly significant when the event window is extended to 10 days after the event. Specifically, the abnormal return generated by the shock is significant the day before the event, and at the day of the event or a two-day window including the event day and the following business day. The first result tells us that there might be some anticipation by the market, and that the anticipation is correct in the sense that the direction of the abnormality is the same as the post-event abnormality. The second result shows that on the event day, one term limit event leads to an abnormal return of half a percentage point (the daily abnormal return on the day of the event is .65 in percentage points, it is .58 the day before, and .42 over a two day window including the day of the event and the following day, see Table 9).

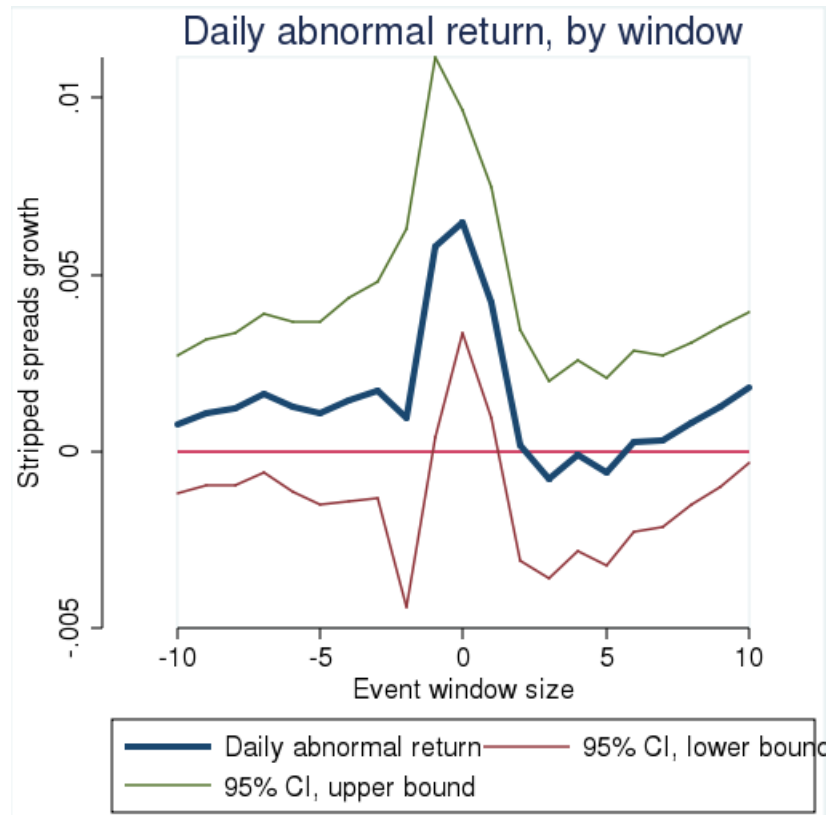


Figure 1: Daily abnormal return for different event windows. The figure shows the daily abnormal slope of the stripped spread between the day of the event and x days after the event (if $x > 0$), or between x and the day before the event, if $x < 0$. The 95% confidence interval under the normality assumption is displayed. The model is estimated over the year preceding the event window. Events occurring in rapid succession use the same estimation window.

3.1.1 Restrictions vs Extensions.

The result illustrated in Figure 1 can be divided between extension and restriction events. We consider restrictions and extensions separately in Figures 2 and 3 respectively. Restrictions of term limits are associated with a significantly higher response of stripped spreads compared to extensions (recall, we sign these negatively since we are expecting risk spreads to fall). As shown in Figure 2 and in Table 9, the impact is six times greater on the day of the event: the shock generates abnormal returns on stripped spreads of 2 percentage points. To understand the magnitude of this effect, we note that the standard deviation of the country EMBI indices is around 3 percentage points. We can also see that although the daily abnormal return is insignificant when the event window is extended to 5 days after the event, the extension of the event window farther out shows a significant, persistent impact of half a percentage point as reflected in Table 9. On the contrary, the daily abnormal return after extension events is insignificant at the 5% level irrespective of the length of the event window and at the 10% level except for the day before and after the event. The only impact we can clearly see is a significant increase in the variance of the daily abnormal return, that also weakens quickly. Finally, one other difference we observe between extensions and restrictions is that there is potentially stronger anticipation of the event before extensions with a higher abnormal return.

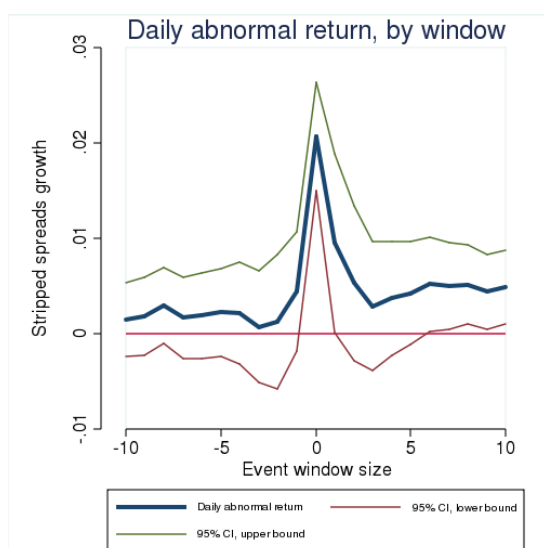


Figure 2: Daily abnormal return for different event windows, for restriction events only. A restriction event is coded as negative.

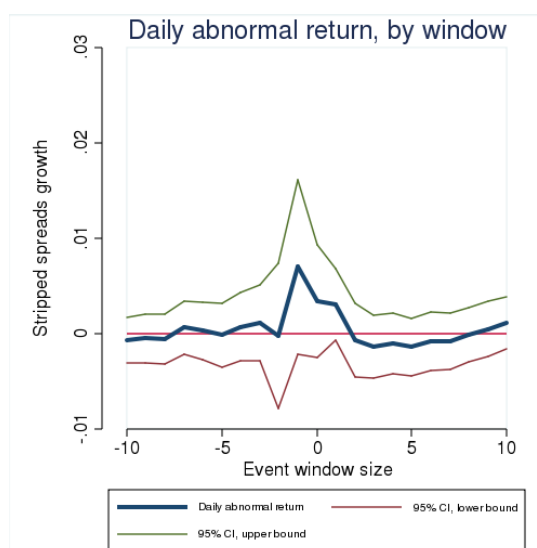


Figure 3: Daily abnormal return for different event windows, for extensions events only. An extension event is coded as positive.

The stripped spreads are not greatly responsive to information indicating that the president is likely to serve another term — suggesting that this possibility was perhaps not wholly unexpected. One interpretation that suggests itself is that emerging economies live with a permanent *institutional drag* on growth: investors are unsurprised when they extend executive terms, but when these are restricted, investors take note. The potential impact on GDP and investment from the positive shock to spreads and thus the highest cost of borrowing is the imputed price of this institutional drag, which we might call ‘the curse of low expectations’.

To have a better grasp of the potential implications of this result, we decided to run a hypothetical investment exercise. Consider an agent investing \$100 in an asset which returns the EMBI stripped

spread of a country experiencing the event, the day before the event. How much is this investment worth after the event? To compute this, we use the value of the daily abnormal return we found in the event study, and compound this to find the abnormal total return over a certain period. We also consider a similar exercise in the time before the event. When we consider an event window before the event, we compute the return of a \$100 investment made at the date of the event and look *backwards* from there. For instance, we look at the value of this investment held for three days with the daily abnormal return given by our estimate of the abnormal return in the event window (-3, -1) ⁴⁹.

We display the results, along with confidence intervals generated via the Delta Method, in Figures 4 and 5, and the exact numbers are displayed in Table 10. The first two graphs show the value of this investment when considering all events and the extension events. First, it is clear that before the event, the abnormal returns are insignificant, which gives us confidence in our identification. More interestingly, the value of the investment over any given window after the event is statistically indistinguishable from the value of the original investment. However, Figure 5 shows that the same investment just before a restriction event⁵⁰ generates a significant, positive return of investment of 5 percentage points. This result shows that the spread, at least over a short period of time after the event, rises by 5 percentage points. In Uribe and Yue (2006), the authors find that the impact of a temporary 1 percentage point shock in the country spread leads to two quarters of decreasing output and investment ⁵¹, with short-term multiplier of respectively .2 and .6. Our 5 percentage point shock is at the daily level, and Uribe and Yue (2006) is at the quarterly level, but the persistence of the significant increase in the stripped spread 10 days after the event suggests to us that the events will lead to a significant quarterly shock on the country spread. Although we cannot quantify the estimates directly (in the absence of a structural model), it is likely that the restriction events thus have a substantial impact on a country’s economy relative to its potential level.

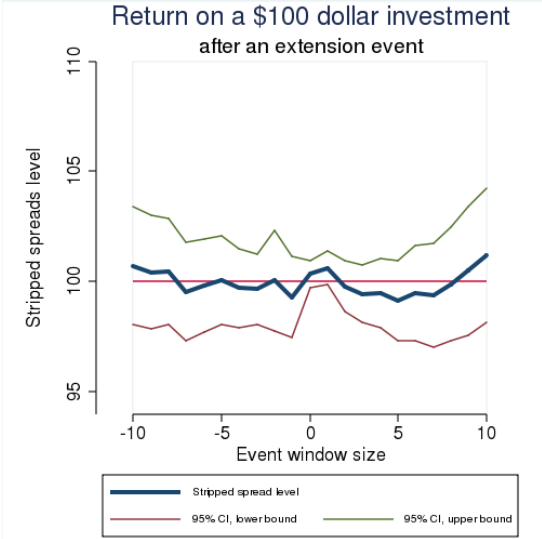


Figure 4: Value of \$100 investment in asset returning the stripped spread, before and after the event - extension events

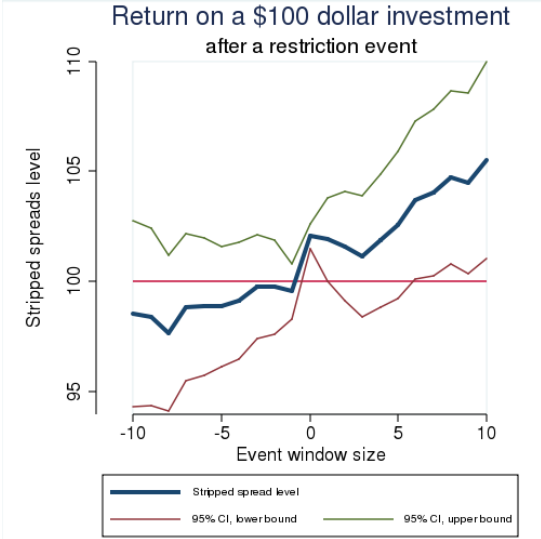


Figure 5: Value of \$100 investment in asset returning the stripped spread, before and after the event - restriction events

⁴⁹Therefore, we also put a minus sign in front of the return, since we are looking backwards.
⁵⁰Note that we consider, in the case of restrictions, an investor who short-sells the asset yielding the stripped spread – the spread actually falls.
⁵¹Those numbers are all deviations from trend.

3.1.2 No sensitivity to parametric specification

To test the robustness of our main results, we performed a placebo exercise which provides us with a non-parametric test for our initial estimate.

We compute, for each *country · event*, a random date, and substitute this date for the actual, original event date. We then perform exactly the same analysis as we did on the actual table of events. We run 100 such simulated events, and compute the daily abnormal return over the same event windows we considered in the main analysis, over the entire set of data and separately for restrictions and extensions. We then look at the share of estimates from those simulations that are below our estimate on the actual set of events. This share can then be interpreted as $1 - p$ where p is comparable to a p-value. This robustness check is useful in two ways. First, it seems less prone to the correlation problems we encounter when using another EMBI variable as dependent variable. Second, and more importantly, this test does not make any assumption on the distribution of our estimate. Therefore, it is a more rigorous assessment of the actual statistical significance of our results.

The results are presented in Table 11. The first column shows the share of estimates below our actual value when we aggregate all events, while the next two columns divide extension and restrictions. As we find in the general analysis, the daily abnormal return appears insignificant in extension events irrespectively of the length and direction of the event window. On the contrary, the restriction events appear significant at the 2% level starting at the day of the event. The daily abnormal returns are then significant at the 10% level only when considering a period of 5 days after the event, but are significant at the 5% level again after 5 days. When considering the aggregate set of events, one can see that the effect of the event is significant at standard levels only one day before to one day after the event. Importantly, we can see that this test also shows that the abnormal returns before the events are statistically insignificant.

These findings make us confident that our main result is significant: there is a difference in market response to extension and restriction events, and restriction events have a significant, negative impact on spreads (i.e., it lowers the country-specific risk priced by investors), while extensions do not move markets much.

3.2 CDS prices and private markets

The evolution of bond spreads around the events suggests not only that the term limit events have an impact on investors' perceptions of country risk, but also that this reaction is asymmetric relative to the direction of the term limit change. In order to better understand this result, we proceed to consider the reaction of other markets. We start by looking at sovereign CDS prices, available for a smaller set of events but more comparable to sovereign spreads. We then consider the behavior of private markets in the form of indices for the broader country equities market.

CDS prices confirm the stripped spread results. We first consider the change in prices of sovereign CDS. As a disclaimer, we remind the reader that the CDS data is only available for a subset of countries after 2003. Bearing this in mind, the headline results for the CDS indices confirm the result on stripped spreads. The cost of insuring against default on a representative country's bonds falls sharply, at least for shorter maturities, following restriction events. Although the sovereign CDS are not available for all events, we can still divide the subset of events for which we have data into restrictions and extensions; moreover, the CDS market allows us to discriminate between various maturities.

The response of CDS prices to the events are displayed in Table 12. The short-term CDS respond significantly at the time of the event, with a daily abnormal return of 3 percentage points in the price of 1-year CDS and 2 percentage points for the 5-year CDS⁵². Importantly, there is no significant impact on the price change for the 10-year CDS. The result here suggests that investors feel that the change in the term limit legislation is going to have an impact in the short-run, but that the long-run country-risk is not significantly affected.

Again, the impacts are stronger when one considers restriction events. The restriction events suggest a strong response of 6 percentage points in a window of 2 days around the event for the 1-year CDS, which is more than three times the change generated by extension events. In the longer run, the restrictions appear to have a persistent effect on this short-term CDS, although the significance is only at the 10% level 10 days after the event. In the long term, the restriction events decrease the price of insurance against default by a percentage point every day, which sums up to a cumulative abnormal return of 10% for this instrument.

When one looks at the 5-year CDS market, the effect of term-limit restrictions somewhat differs; the short-term impact is larger while the long-term impact is muted. We attribute the stronger short-run response to the fact that the 5-year CDS market is the most liquid CDS market, while the longer-term response is weaker because investors appear to consider that the effect of the event on long-term country risk is more uncertain than in the short-term. Restriction events yield an event-day impact of 14 percentage points and a 2-day abnormal return of 7 percentage points. However, the effect appears to be short-lived compared to the 1-year CDS market, which could, again, be linked to the difference in liquidity. In the long run, the abnormal returns on long-term CDS instruments are insignificant, although they appear higher than in the period before the event⁵³. Finally, the effect of extension events is also insignificant, either in the short or long-run for both the 5-year and 10-year CDS.

This, importantly, confirms the result we found for sovereign stripped spreads in that there is a clear asymmetry between restriction and extension events. Moreover, the distinction by CDS maturity also potentially suggests that the reaction of investors is more muted when looking at the impact of the events further out.

Private sector data does not respond similarly to the sovereign variables. Thus far, we have only investigated the response of the sovereign dependent variables. We can compare these to the effects on private sector financial markets by examining the evolution of the MSCI. The study of private markets can help us identify the main result: the movement we observe in country spreads is due to a change in beliefs specific to a certain asset class which contains mostly sovereign risk, while the private market assets which are not directly connected to sovereign risk should not be affected substantially⁵⁴.

We do not see a strong response of the relevant stock markets to term-limit events, but we observe an interesting symmetry and contrast in Figures 6 and 7 compared to the change in spreads.

Strikingly, the positive effect of restriction events is almost zero, except on the day of the event

⁵²It is important to note that the 5-year CDS is the most commonly traded CDS contract. Dividing the contracts by maturities means that we do not control for the heterogeneity in the liquidity at different maturities.

⁵³We do not report the results of the 10-year CDS which are insignificant in both cases.

⁵⁴It is also important to note that EMBI and MSCI are not completely independent. Andrade (2009), for instance, develops an asset-pricing model for emerging countries' stock and bond spreads which shows that country-risk is priced in stocks because a negative shock to the default probability is more likely to occur in a period of global recession and provides evidence that sovereign bond spreads are positively correlated with stock market returns' variance. Erb et al., in a series of papers⁵⁵ show that 30% of the variation in returns can be explained by countries' credit ratings. Other important references in this literature include Punom Chuhan, 1994, Nishiotis (2004), Carrieri, Errunza, and Majerbi (2009), Carrieri, Errunza, and Hogan (2007), G. Bekaert et al. (2011)

where the effect is an order of magnitude lower than the effect on stripped spreads, and insignificant at less than half a percentage point. The effect disappears almost right away. We also see that extension events seem to generate *positive* abnormal returns, so that both types of events yield a similar effect. However, the consequences of extensions appear stronger, at around .4 percentage point on the day of the event to a persistent daily .2 percentage point 10 days after the event, which translates to a 2% cumulative abnormal return over this period. The latter result is in line with the fact that the bigger companies included in the MSCI are more closely linked to the executive power. We do not want to over-explain the pattern, but one possibility is that in terms of restrictions, the improvement in institutions is potentially weakened by the fact that politically connected firms are set to potentially lose some of their attractiveness (Khwaja and Mian (2005)).

3.3 Country-specific findings

We now briefly explore a few individual country case studies to demonstrate that our aggregate results hide considerable heterogeneity. Again, we explore the distinction between “restriction events” and “extension events” throughout, since we consider it fundamental. The countries we consider are Brazil, Colombia and Venezuela — in decreasing order of institutional strength as measured by the World Governance Indicators.

Brazil. It is noteworthy that when it comes to Brazil the results relating to restrictions and extensions are flipped. In Cardoso’s case, it appears that in aggregate, measures taken to limit his potential second term were seen negatively by the market while the news pointing favorably to a second term were seen positively (the stripped spread fell). Moreover, it appears that the abnormal returns on stripped spreads were permanent, with a daily abnormal return of half a percentage point in both cases. To make the case even clearer, we display the extension event for Brazil in Figure 10. But this should not surprise us too much. As noted in the introduction, market sentiment appears to have been very favorable towards the notion of a second term for the center-right Cardoso. As Dow Jones reported “The Sao Paulo Stock Exchange opened lower Thursday, with investors upset about delays in President Fernando Henrique Cardoso’s prospects for re-election. A half hour after opening, the exchange fell 294 points [...] ‘The problem with re-election is the most important factor going on in the market,’ said a stock analyst.”⁵⁶ In this case, Cardoso’s apparent commitment towards changes favored by foreign investors meant that returns rose when his return became more likely (and the reverse in the opposite circumstance). At the very least then, investors view of *institutions* has to be conditioned on the state of the country at the particular time.

Colombia. An interesting contrast is comparing the campaign for a *second* term for Cardoso, with that of a *third* term for another popular center-right President, Alvaro Uribe of Colombia. In the case of Uribe we find results similar to the headline findings. Even though business appears to have favored Uribe, the signal of the separation of (at least) executive and judicial powers appears to have won out over narrow interests (this view was shared by both domestic and foreign investors) — as Reuters reported “Colombian business loves President Alvaro Uribe’s policies, but the country’s top industrial group says the U.S.-backed leader should spend his time cutting the deficit rather than seeking a third

⁵⁶Dow Jones International News, “Brazil Stocks Open Lower; Concerns About Re-Election”, 10 October 1996.

term”⁵⁷. Similarly, Reuters reported a month earlier that “Wall Street bankers and economists are among the strongest admirers of Colombia’s conservative President Alvaro Uribe, but many of them oppose the idea of him running for a third term in 2010”⁵⁸).

We display similar Figures as above to contrast the Brazilian (Figure 8 — Cardoso) and Colombian (9 — Uribe) cases. The Colombia case features an opposite impact of term-limit events on the stripped spreads to that of Brazil as illustrated by the restriction event for Colombia in Figure 11. This shows a similar result to Cardoso’s extension, with a permanent, significant daily abnormal return.

Venezuela. Finally, we consider the weakly institutionalized Venezuela. The results are generally in line with our headline findings. News associated with potential restraints on the terms of the executive (in this case Hugo Chavez) were associated with tightening of stripped spreads. See for example the graph for 2 December 2007 when voters somewhat surprisingly voted against Chavez’s proposal to lift his term limits (although as we can see from Figure 12 this effect was somewhat short lived, as it quickly became apparent that he would consider this simply a short-term setback). When a month later, on 13 January 2008 he announced that he was resuming his quest to remove limits on the terms he could serve as president, spreads shifted higher (see Figure 13), though statistically significantly only on the day of the event — according to our model.

3.4 The event types

An obvious question is whether the reaction is linked to the term limit *institution* itself or new information about the *type* of the leader in charge. It will be hard to make definitive statements for want of power, but distinguishing between events initiated by the leader involved and events involving the parliament or the courts might help us unpack this. In cases where the president announces a desire for an extended term s/he is revealing something about his or her type, whereas if the parliament or a court moves to extend or limit terms that tells investors something about the strength of the constitutional separation of powers.

We have found that markets react to a change in the political institutions — namely, that country-risk is perceived as significantly lower after a restriction event, while it is perceived as higher, albeit insignificantly, after extensions. We now ask how these effects vary depending on the governmental branch instigating the move. We group our events into four categories, depending on the ‘initiator’ of the event — the executive, legislature, judiciary, or public:

- *Executive* events include events such as **presidential announcements**. For example, we consider various statements made by leaders such as Alvaro Uribe, Fernando Lula or Hugo Chavez denying or showing interest in an extension of term limits;
- *Legislature* actions include those taken typically by a **parliamentary chamber**. As an example, in April 1997, the Brazilian Senate approved a re-election bill for Fernando Cardoso;
- *Judiciary* events include, for example, cases of **Constitutional Court decisions**. For instance, the Constitutional Court in Colombia ultimately denied Alvaro Uribe’s bid for a third term in February 2010; and

⁵⁷Reuters News, 2008, “INTERVIEW-Colombian business says no to Uribe re-election” 8 July 2008

⁵⁸Reuters News, “Economists vote no on 3rd term for Colombian Uribe”, 28 March 2008

- *Public* actions generally refer to public announcements of opinion polls results, or the outcome of **Referenda** on executive term limits.

We find some interesting results. In Figures 14 to 16, we provide graphs for the events we classified as generated by the executive, legislative, or judiciary branch respectively⁵⁹. The numbers are displayed in Table 14.

Our analysis suggests that overall, *actions taken by the executive branch have a stronger, more permanent impact* than actions taken by the other two branches. The judiciary actions suggest an impact of the event although power limits its significance, while legislative actions show no evidence of shocks to stripped spreads. Interestingly, an event instigated by the executive yields a one percentage point abnormal return immediately and stabilizes at half a percentage point thereafter. A similar trend can be seen when considering the judiciary, although the abnormal return fails to be persistently significant at the 5% level (which is likely due to having fewer judiciary events). This variation in the results suggest that, indeed, investors do take some view on the leader currently in power when reacting to the specific change of institutions. However, distinguishing restrictions and extensions lead us to nuance that assertion.

Extensions and restrictions. We divide again the events between restrictions and extensions. The number of events in each category is shown in Table 15. When we consider the judicial events most particularly, we observe a stark difference. Figures 17 and 18 show the daily abnormal return in restriction versus extension events respectively. We see that when the judiciary takes an action linked to an extension of executive term limits, we cannot find any impact on the stripped spreads. However, an action restricting executive term limits has a strong, permanent impact on the stripped spreads of around 2 percentage points per day initially, moving down to half a percentage point per day permanently over 10 days. We interpret this result as suggesting the importance of evidence for the separation of powers in a country's institution in the eyes of investors⁶⁰. For instance, it came as a surprise that the Colombian Constitutional Court struck down Uribe's path to a third term on February 27th, 2010 thus ending for good the campaign for the Colombian leader's reform of the constitution. What is important here is that the decision of the judiciary has an impact when it is more likely to be in disagreement with the executive branch, while investors do not seem to react when the separation of powers is not tested.

Events linked to the executive branch itself also reveal an interesting contrast, as shown in Figures 19 and 20⁶¹. We observe that the restrictions have a significant, large, and immediate impact of 3 percentage points on the stripped spread growth. This effect dies down over time but remains around one percentage point *daily* 10 days after the event. The effect of extension events appear to be three to four times smaller and barely significant. The effect of restriction events instigated by the executive also appears to have an effect that is two to three times as large as when taken by the other branches. This suggests that investors tend to see those changes as potentially more credible. The difference at the event day suggests, on the other hand, the fact that investors are more surprised by an executive action than by a legislative or judiciary action. This is intuitive since the executive generally initiates the sequence of procedural steps required to permit him or her to serve another term. Hence the executive events tend to contain more information. Finally, we do not report the figures for the legislative branch

⁵⁹When disaggregating by type of events, we obviously lose sample size — three categories are the ones for which we have the most events.

⁶⁰In an unrelated way, one might think of Egypt or Pakistan where the judiciary and the executive are often fiercely opposed.

⁶¹It may appear somewhat puzzling that the abnormal return is significant 10 days before the event in the case of restriction events, but we view this as simply an effect of the sample size. The abnormal return is also insignificant the week before the event.

because the abnormal returns are insignificant at the 5% level. However, for the sake of completeness, restriction events yield daily abnormal returns of half a percentage point over an event window of 10 days after the event, and those returns are significant at the 10% level.

In conclusion, we derive from this partial analysis that *institutions do matter*, as evidenced by the difference between restrictions and extensions when looking at actions led by the judiciary: only when the judiciary takes a decision that goes counter to the executive (assuming the executive always want to increase his term) is there a strong impact.

4 Interpretations

We wish to unpack our finding that our restrictions significantly lower country risk spreads, while the effect of extensions is to raise risk, but not significantly. We now examine variation on the dimension of institutional quality, and then note some points about the implementation of term limits changes.

Institutional quality. We note also a possible link between our work and that of Daron Acemoglu et al. (2008) on the “seesaw effect” — they note that reforms may not be effective in weakly institutionalized settings since reforms on one dimension does not do anything to change the underlying political economy and end up being undone along another dimension. They consider Central Bank reforms (looking at effects on inflation) and find that reforms are most effective where constraints are *intermediate*. Reform has instead modest effects where institutions are already strong or very weak. This might be the reason, for example, for why we do not find effects of term limit extensions — the countries where these occur may be already on average be too weakly institutionalized. Now, the set of emerging market countries with traded EMBI instruments is already limited, so we do not see a great number of weakly institutionalized countries — only Nigeria and Venezuela would fall into that category (The others would all be classed as ‘Medium’ in the years including term-limit events). In order to analyze the link between institutions and the investors’ response to the events, we consider the Worldwide Governance Indicators (WGI, see Kaufmann, Kraay, and Mastruzzi (2010)) provided by the World Bank. The WGI are a set of six indicators aggregating 30 data sources and providing information on dimensions such as “Voice and Accountability”, “Government Effectiveness” or “Political Stability”. We compute an aggregate of those 6 dimensions using the first dimension of a principal component analysis, given that those indicators are highly correlated. This yields a rough measure of the institutional quality for each *country · year* that we used as estimation windows. We then plot the value of this first component against the average absolute value of the cumulative abnormal return over all events corresponding to an estimation window , and against the average actual values when dividing by restrictions and extensions.

The results are fairly striking, as displayed in Figure 21. Contra Daron Acemoglu et al. (2008), the short-run percentage change is larger in the more weakly institutionalized settings.⁶² When we drill down to restrictions against extensions, as shown in Figures 22 and 23, the result appears again: restrictions have a stronger negative impact on spreads when the institutions are weaker. On the other hand extensions have a stronger positive impact on spreads when the institutions are weak. We don’t want to lean too heavily on this findings for want of power, but they underline how important conditioning the effect on institutional strength can be. We test the significance of the relation between the world

⁶²Though, we recognize that in order to even have traded EMBI country indices, it must be the case that the country is already somewhat well institutionalized.

governance indices and the *country · year* average abnormal return at the day of the event. To do this, we simply regress the average abnormal return on the value of one of the six components of the WGI separately for extensions and restrictions (Table 16). While we do not find significant effects for our restriction events, extensions do differ significantly at the 5% level according to 4 out of 6 of our institutional quality measures when we bootstrap the standard errors with 1000 replications or use robust standard errors, while only the coefficient on “Voice and Accountability”(V&A) remains significant at this level when we cluster by country. Overall, it appears that the magnitude of the responses is bigger the weaker the country’s institutional quality. To give some sense of the magnitude of this effect, consider that in 2010, Brazil scored at .5 in the V&A measure while Nigeria and Venezuela scored around -.8. The correlation we have found would imply a difference of 5 percentage points in the event-day abnormal return between these countries, which is more than 1.5 standard deviations of the EMBI indices. Interestingly, we can link the significance of the V&A variable to the importance of patronage and clientelism at the electoral level ⁶³. Extending term limits where accountability is high, the vote is fair, and the franchise is extensive is less likely to have a strong impact on the perpetuation of power and the potential for extraction by a single leader.

We also find that part of the reason for why we find a lack of statistical significance of the extension events appears to be in part driven by the cases of Argentina (under Menem) and Brazil (under Cardoso). In both those cases we have countries with relatively high scores on the WGI in the event years, in addition to high Unified Democracy Scores (Pemstein, Meserve, and Melton (2010)). Moreover, the two presidents were at the time viewed in fairly favorable light by financial market participants. In both these cases, we can perhaps surmise that the reasons for the extensions were understood by investors and perceived as credible. Hence extension events were associated with slightly reduced country risk and tighter spreads. In contrast, the problem for weakly institutionalized countries is a lack of credibility (what we called earlier, the “curse of low expectations”). If Venezuela or Nigeria says that what is really best for the country is another term for the executive, it’s less credible (to investors) perhaps that the leader really intends various reforms.

When we drop Argentina and Brazil from our set of events, we indeed observe a stronger impact of the events on the stripped spreads compared to the study on all events, as can be seen in Figure 24 for extensions, and Figure 25 for restrictions. We nonetheless have a stronger impact for restrictions compared to extensions. Interestingly, when we looked at longer windows after the event, it appears that the effects of both sets of events are significant and persistent when dropping these two countries.

Finally, our findings also relate to those of Emmanuel Frot and Santiso (2010) who find that a decrease in the quality of democracy lowers equity flows, but do not find improvements with democratic transitions; we find that investors reward a “reform” involving new restrictions on executive stay. We do not find a response to a “deterioration” in the sense of more power for the executive. However, as we have noted, depending on the circumstances of the country, extension events might be perceived as institutional continuity (e.g. Brazilian or Argentine cases) or institutional deterioration, in their terminology. Our results can therefore be partially reconciled with their findings, that are admittedly based on a more general indicator of institution at a lower frequency.

More component events, smaller individual effects. A further consideration is that extensions typically require a large number of procedural steps, so one might think that an individual “extension event” may not contain much new information. Thus perhaps investors think that term limits have the

⁶³see Shefter (1977), Carey and Shugart (1995) or Baland and J. a. Robinson (2008) among many others

same implications for default probabilities in the extension case, but we simply can not measure it as well since the individual ‘events’ are less significant. We try to explore this by repeating our analysis on the *initial observation* of each cluster of events on the basis that it might be the most newsworthy, but are left with similar conclusions.

5 Conclusions

Our analysis has provided us with a robust finding that markets respond to news about term limits, and in particular markets react so as to lower the default premium on dollar-denominated sovereign debt when that country introduces restrictions on executive term limits. On the other hand, we do not find a persistent effect of extension events on spreads although there is a potential effect at the day of the event.

We interpret the fall in spreads after restrictions as indicating that investors update their beliefs about the relevant country in the sense that they reduce the subjective probability of default. The asymmetry between the two types of event leads us to believe that some emerging countries live under a form of institutional drag: the interest rate on sovereign debt is high because investors believe that weak institutions are permanent, as evidenced by the weaker reaction to extension events. The asymmetry cannot be explained fully by the fact that extensions require more procedural moves than restrictions, as we observe a similar asymmetry when we focus on the first events in the series of procedural changes.

The impact of institutions is validated by the differential effect we observe when considering the institutional source of the term limits move. A move by the executive branch has a stronger effect than actions taken by the legislative or the judicial branch. However, it appears that restrictions instigated by the judiciary branch, where it is more likely that the judiciary is then in conflict with the executive’s will, have a significant and permanent impact leading to a cumulative abnormal (negative) return of 5% on stripped spreads after 10 days. We analyze further the potential link between the market reactions and a country’s institutionalization level by comparing the abnormal returns to some governance indicators, and find some weak evidence that investors react more strongly in weakly institutionalized countries. We also find that the asymmetric absolute response between restrictions and extensions is somewhat reduced when we drop the two countries with the highest quality institutions at the time of their events.

This tentative evidence suggests various further avenues of research. First, we suggest that in order to understand the impact of a change in executive term limits, one might want to consider the status quo ante: the effect differs depending on the institutional quality of a country. T. Besley and A. Case (1995) and Timothy Besley and Anne Case (2003) consider American states, which are a more homogeneous set of regions in highly institutionalized settings. Both J. Johnson and Crain (2004) and Chiara Dalle Nogare and Ricciuti (2011) extend the study to countries at various levels of development, and find contradictory results. Our results suggest that investors will usually reward constraints on the executive, which can potentially reduce the cost of borrowing and thus reduce the budget deficit. This would imply that stricter term limits, in those countries, would be correlated with a better fiscal situation, which would corroborate some of the findings by Chiara Dalle Nogare and Ricciuti (2011)⁶⁴. The channel we uncover here is important: if one is interested in the impact of term limits on fiscal policies, one cannot abstract from the impact it has on the cost of borrowing, which might bias the results.

⁶⁴In a previous version of their paper C. Dalle Nogare et al. (2008) actually found that term limits in new democracies were negatively linked to the deficit even if government expenditures were increasing.

Second, we argue that these institutional shocks are important for the macroeconomic performance of emerging markets through country spreads. As we have noted, Uribe and Yue (2006) find a substantial multiplier of country spreads of .2 relative to GDP and .6 relative to investment after two quarters. We provided here tentative evidence that institutional shocks such as restrictions of term limits have a *persistent* impact on stripped spreads, with a decrease of five percentage points in the stripped spread after 10 days. A stronger identification of institutional shocks could lead to better estimates of the institutional drag experienced by countries with political institutions considered risky by investors.

Finally, we believe that a potential avenue of progress for such studies is indeed in identifying such events in a better way, including by measuring the level of investor anticipation. Earlier drafts of this paper included measures of expectations using textual analysis⁶⁵, but the results were noisy. We firmly believe however, that a promising trend of research in understanding the impact of institutional changes is having some measure for market surprise from text. Once solutions to this problem emerge from computational linguistics, the study of the political economy of debt markets will become even richer.

⁶⁵We counted the number of articles about 'term limits' for each country-event, where an article was measured as 'about term limits' if close enough, in the sense of a *tfidf* measure, to a reference document.

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A Figures

Figure 6: Daily abnormal return for different event windows for extension events- MSCI

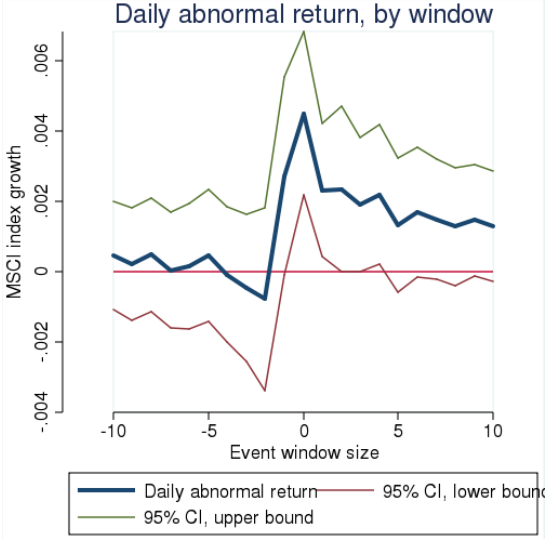


Figure 7: Daily abnormal return for different event windows for restriction events - MSCI

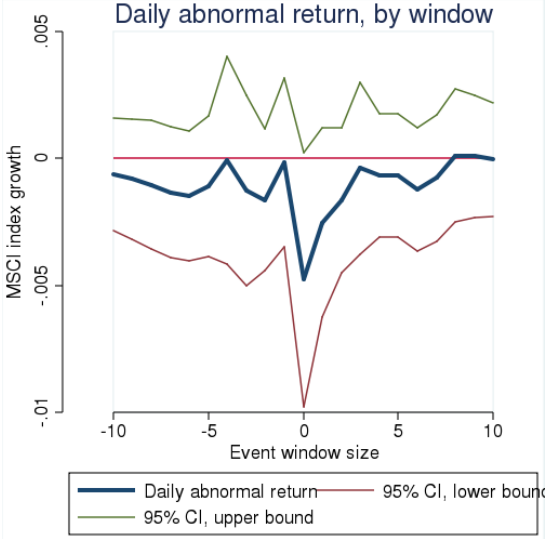


Figure 8: Daily abnormal return for different event windows for Cardoso's second term

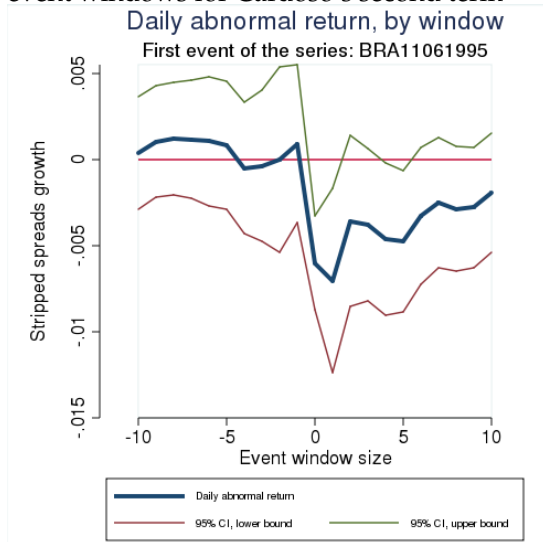


Figure 9: Daily abnormal return for different event windows for Uribe's third term

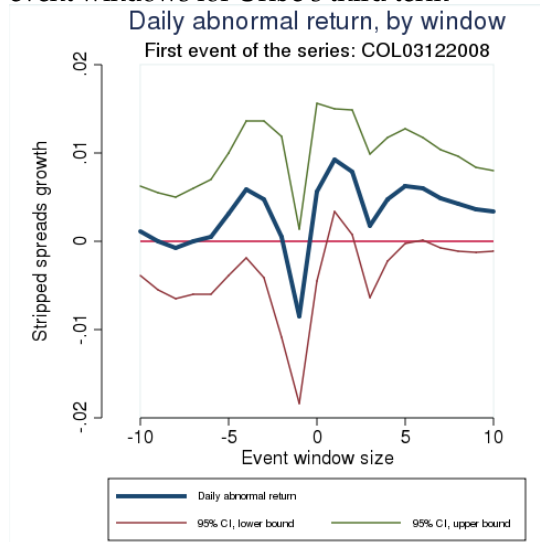


Figure 10: Daily abnormal return for different event windows for Cardoso's second term – extension events

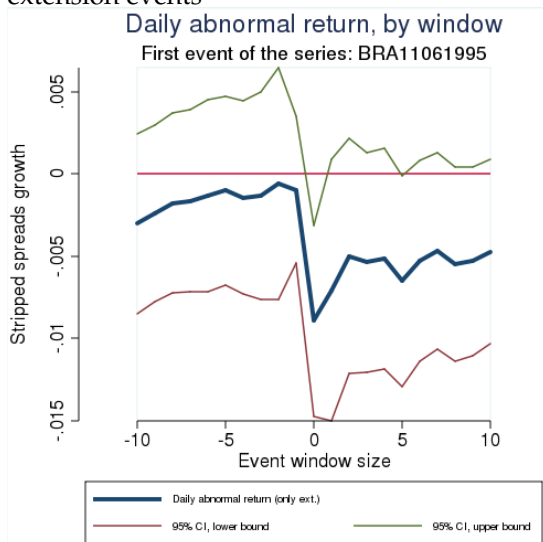


Figure 11: Daily abnormal return for different event windows for Uribe's third term – restriction events

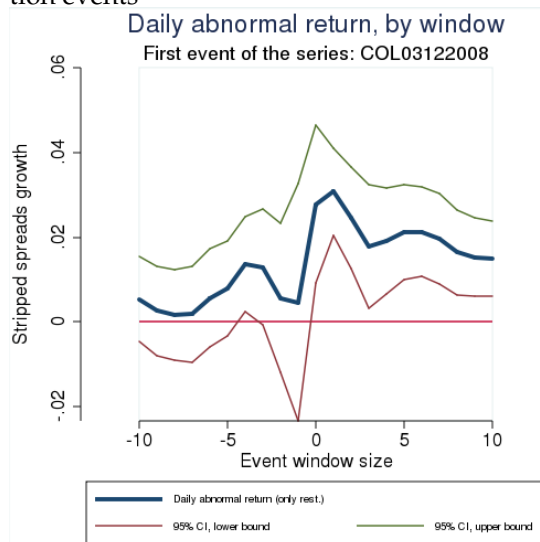


Figure 12: Daily abnormal return, Venezuela December 2nd, 2007

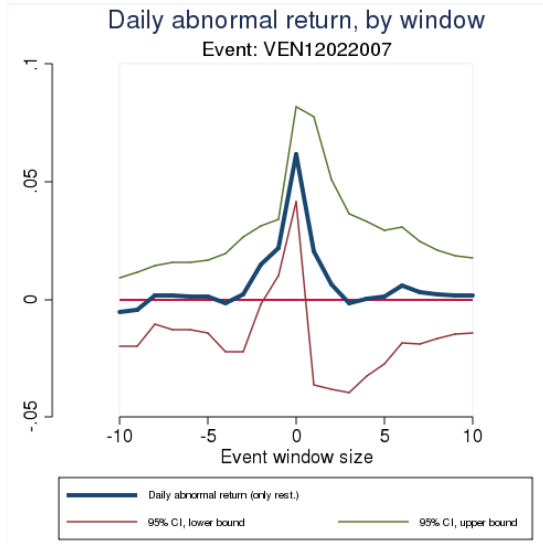


Figure 13: Daily abnormal return, Venezuela January 13th, 2008

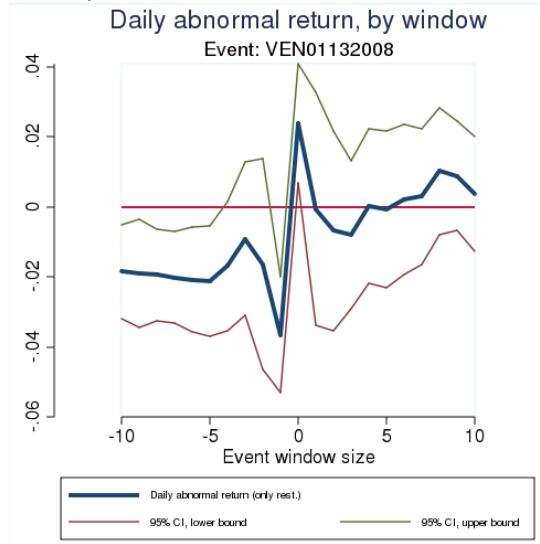


Figure 14: Daily abnormal return for different event windows, generated by executive branch

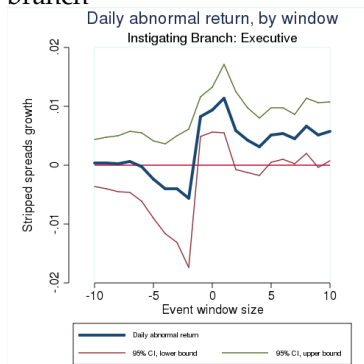


Figure 15: Daily abnormal return for different event windows, generated by legislative branch

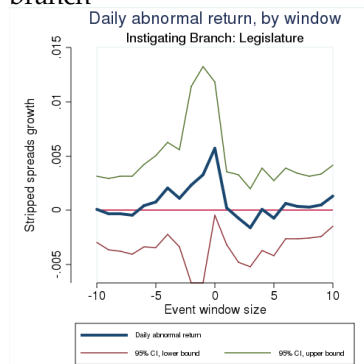


Figure 16: Daily abnormal return for different event windows, generated by judiciary branch

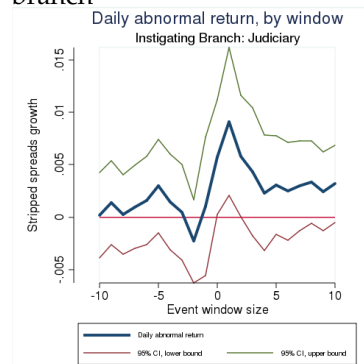


Figure 17: Daily abnormal return for different event windows judicial restriction events

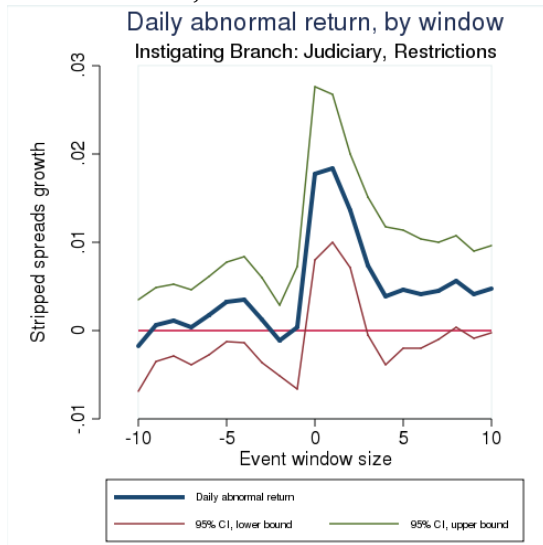


Figure 18: Daily abnormal return for different event windows for judicial extension events

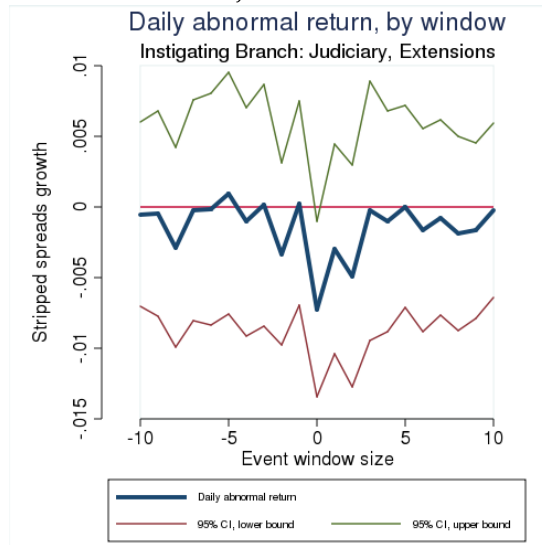


Figure 19: Daily abnormal return for different event windows for Executive restriction events

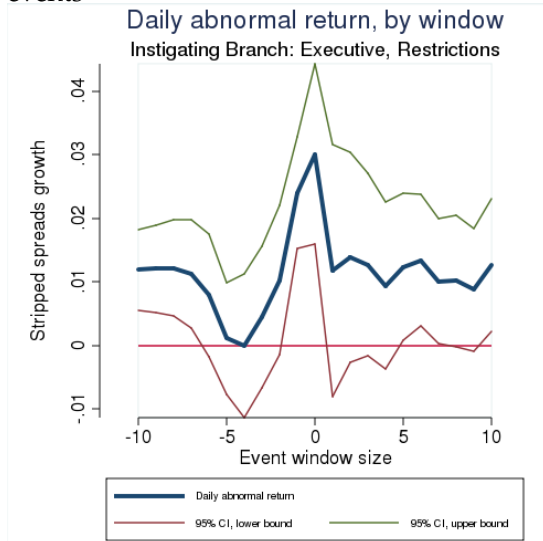


Figure 20: Daily abnormal return for different event windows for Executive extension events

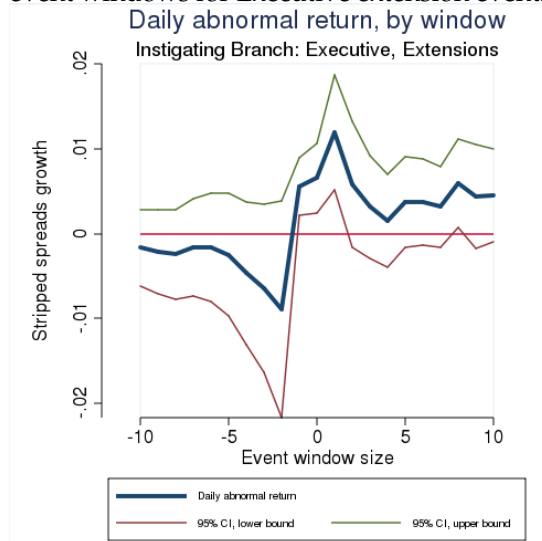


Figure 21: Average absolute daily abnormal return after events, against institutionalization measured by an aggregate of 6 World Governance Indicators

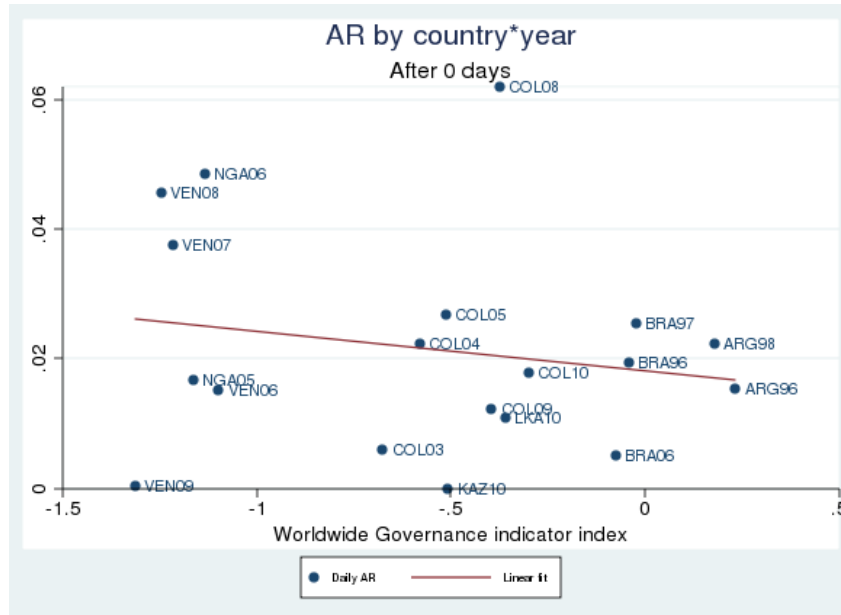


Figure 22: Average daily abnormal return after extensions, against institutionalization measured by an aggregate of 6 World Governance Indicators

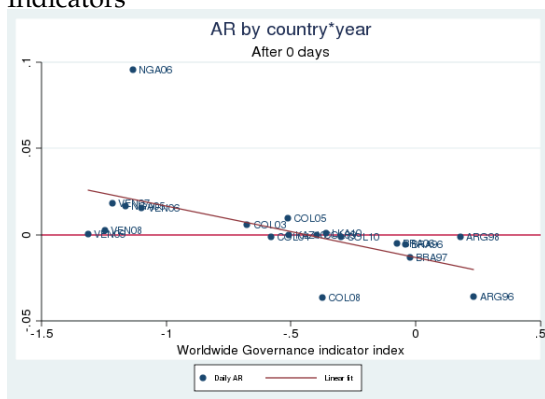


Figure 23: Average daily abnormal return after restrictions, against institutionalization measured by an aggregate of 6 World Governance Indicators

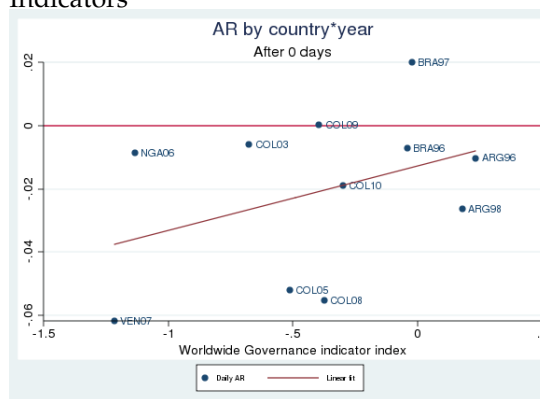


Figure 24: Daily abnormal return after extensions for different event windows, without Argentina and Brazil.

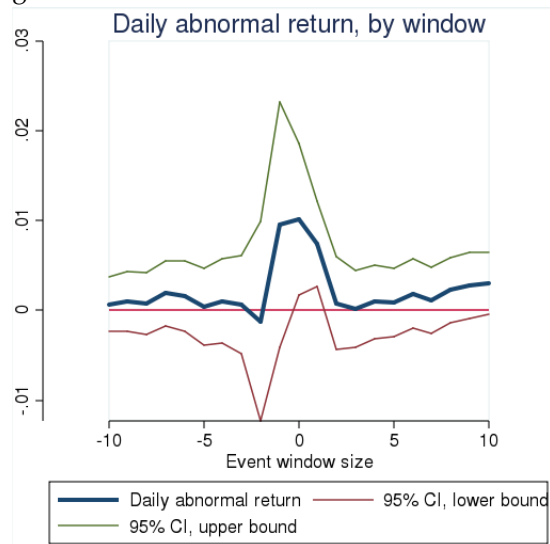
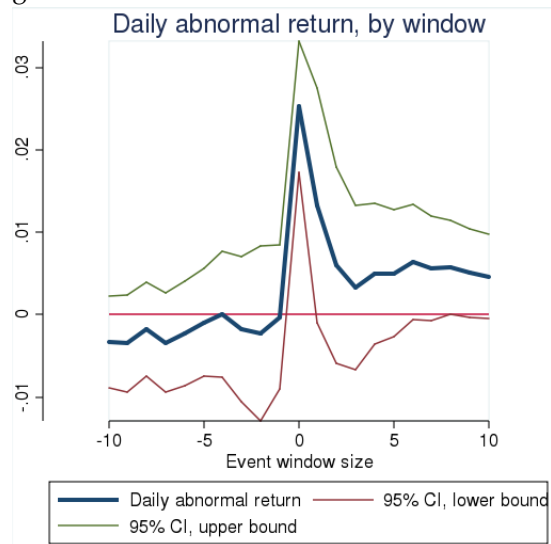


Figure 25: Daily abnormal return after restrictions for different event windows, without Argentina and Brazil.



B Tables

Table 1: Starting date for sovereign stripped spread data in sample countries

Country	EMBIG stripped spread
Argentina	December 31st 1993
Brazil	April 29th 1994
Colombia	February 28th 1997
Kazakhstan	June, 29th 2007
Nigeria	December 31st 1993
Sri Lanka	November 30th 2007
Venezuela	December 31st 1993

Table 2: Starting date for sovereign CDS data in sample countries

Country	CDS 5-year	CDS 1-year	CDS 10-year
Brazil	January 1st 2004	May 3rd 2004	May 3rd 2004
Colombia	January 5th 2004	June 1st 2004	June 1st 2004
Kazakhstan	August 18th 2005	October 3rd 2005	October 3rd 2005
Venezuela	May, 10th 2004	June 1st 2004	June 1st 2004

Table 3: Starting date for MSCI data in sample countries

Country	MSCI
Argentina	December 31st 1987
Brazil	December 31st 1987
Colombia	December 31st 1992
Kazakhstan	November 30th 2005
Nigeria	May 31st 2002
Sri Lanka	December 31st 1992
Venezuela	December 31st 1992

Table 4: Starting date for Markit corporate CDS data in sample countries

Country	Corporate CDS
Brazil	October 16th 2001
Colombia	January 27th 2003
Venezuela	January 27th 2003

Table 5: Sample of events. An event is given by a country and a date. We display here whether the event is considered an extension (1) or restriction (-1).

Country	Date	Ext. or Rest.	Description
ARG	10291995	1	La Nacion reports that the Peronist government plans a plebiscite for 1997 to seek a third term for Menem
ARG	11201995	-1	Menem said Monday that there is absolutely no chance of him running for a third consecutive term in office in 1999
ARG	01151996	-1	Mr Menem sought to dispel rumours that he would try to amend the constitution again so as to allow him a third presidential term.
ARG	02191996	-1	Menem, speaking at a news conference Sunday, also said he would discourage anyone from promoting him for a third consecutive term
ARG	04191996	-1	Argentine President Carlos Menem on Friday dismissed speculation that he plans to defy the constitution
ARG	07041996	-1	President Carlos Menem in his weekly closed cabinet meeting Thursday said he would not seek to amend the constitution again to enable his reelection to a third term, newspapers reported
ARG	09071996	1	Editorial states that supporters of Pres Carlos Menem are seeking loopholes that will permit him to run for third term
ARG	02051998	-1	69% of Argentines surveyed said they oppose allowing President Carlos Menem to seek a third straight term, while less than 10% would vote for him
ARG	03191998	1	The National Electoral Tribunal ruled that a group of Menem supporters from his home province of La Rioja had the right to take their case against a constitutional ban on a third consecutive Menem term to the Supreme Court.
ARG	05041998	1	Five deputies from Argentina's ruling Peronist Party on Monday presented a bill in congress which would change the constitution so President Carlos Menem can run for a third term in 1999
ARG	05161998	1	Menem makes his will clear
ARG	06011998	-1	An election tribunal has ruled that a third term for President Carlos Menem would be unconstitutional
ARG	06091998	1	14 Justicialist Party [PJ] deputies submitted a bill declaring the need to amend Article 90 of the constitution, that is the clause that prevents Menem from standing for president for a third consecutive term in 1999

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Table 5 – continued from previous page

Country	Date	Ext. or Rest.	Description
ARG	07151998	1	Carlos Menem announced publicly for the first time late Wednesday that he wants to run again in 1999
ARG	07211998	-1	Ending months of speculation, President Carlos Menem on Tuesday renounced his intention to seek a third straight term
BRA	11061995	1	A first-term lawmaker in the lower house, Jose Mendonca Filho, has sponsored a new re-election amendment
BRA	04091996	1	I dont know if in two to three years I will have the energy. But would not it be democratic to compete? To compete is always a good thing, Cardoso was widely quoted as saying at a news conference in Buenos Aires on Tuesday.
BRA	04171996	-1	The government felt cold feet Brazil's government has temporarily shelved plans to push a bill to open the way for Fernando Henrique Cardoso to become the countrys first re-elected president
BRA	07161996	1	What has been common knowledge in Brazilian political circles is now official: President Fernando Henrique Cardoso has said that he would accept his re-election.
BRA	09081996	-1	Only 38 percent of deputies and 44 percent of senators backed the idea of rewriting the constitution to allow current holders of elected office to stand for reelection
BRA	09151996	-1	The Datafolha poll in the Folha de Sao Paulo newspaper found that 62 percent of people questioned in 12 cities were against re-election of the president.
BRA	10201996	-1	An overwhelming majority of Brazilian congressmen support the idea of re-election, but not for current president Fernando Henrique Cardoso
BRA	10271996	1	Nearly two-thirds of Brazilians favour rewriting the Constitution to allow re-election, but only 51 percent say President Fernando Henrique Cardoso should have a chance at a second term
BRA	12111996	1	President Fernando Henrique Cardosos hopes of re-election got a boost on Wednesday when a poll found 60 percent of Brazilians backed his running for a second term, with 36 percent against.
BRA	01151997	1	A Chamber of Deputies committee approved 19 to 11 Wednesday a constitutional amendment that would allow President Fernando Henrique Cardoso to run again
BRA	01281997	1	The Brazilian Congress has voted in favor of a bill allowing direct presidential re-election
BRA	02251997	1	Brazil's Chamber of Deputies gave a second approval on Tuesday to a constitutional amendment that would allow President Fernando Henrique Cardoso to run for re-election
BRA	03251997	1	Brazilians would re-elect President Fernando Henrique Cardoso by a wide margin if an election were held now, a survey released Tuesday shows.
BRA	04151997	1	A commission in Brazil's Senate (the Constitution and Justice Committee) approved a bill which would allow President Fernando Henrique Cardoso to run for a second term next year,

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Table 5 – continued from previous page

Country	Date	Ext. or Rest.	Description
BRA	05131997	-1	Brazil was rocked by a fresh corruption scandal Tuesday when a newspaper alleged five congressmen took bribes to vote in favor of a bill allowing President Fernando Henrique Cardoso to stand for re-election
BRA	05141997	1	The Brazilian Senates Justice and Constitution Committee Wednesday approved a constitutional amendment allowing for the re-election of the president of the republic
BRA	05211997	1	President Fernando Henrique Cardosos bid to become Brazil's first re-elected leader received a major boost on Wednesday when the senate approved a bill allowing him to run again...The margin was way above expectations
BRA	06041997	1	Brazil's Senate gave its second and final approval to a bill allowing President Fernando Henrique Cardoso to run for re-election next year
BRA	08022006	1	Brazilian Senate committee on Wednesday voted in favor of a measure that would eliminate immediate presidential re-election
COL	09032003	1	A proposal that would allow Colombia's President Alvaro Uribe to run for reelection in 2006 has passed the first of eight legislative hurdles
COL	10292003	-1	Colombia's Upper House has punished President Alvaro Uribe for the apparent referendum failure by throwing out the bill designed to allow the leader to stand for a second term
COL	01212004	1	La embajadora de Colombia en Espana, Noem Sann, reabri este mircoles en Bogot la polemica sobre la reeleccien del presidente Alvaro Uribe o la prorroga de su mandato mediante un referendo, temas que originaron un candente debate el ano pasado y el fracaso de un proyecto en el Congreso.
COL	01302004	1	A majority of Colombians believe anti-rebel champion President Alvaro Uribe should be re-elected despite a constitutional clause that bans presidents to run again for office
COL	03192004	1	A bill to allow Colombian President Alvaro Uribes re-election for a second term has begun to be discussed
COL	04142004	1	Colombian President Alvaro Uribes administration declared its support on Wednesday for a bill that could let[him]run for a second term in 2006
COL	04182004	1	Most Colombians would vote to re-elect President Alvaro Uribe if Congress approves a bill to allow presidents to seek a second term
COL	04272004	1	A bill that would allow Colombian President Alvaro Uribe to stand for re-election in 2006 passed its first legislative hurdle
COL	05142004	1	A bill that would allow Colombian President Alvaro Uribe to stand for re-election in 2006 passed its first legislative hurdle
COL	06032004	1	A congressional commission narrowly approved late on Thursday a bill that aims to allow popular President Alvaro Uribe to stand for a second term in 2006
COL	06172004	1	Colombian legislators have voted in favour of allowing Colombian presidents to stand for a second term in office.

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Table 5 – continued from previous page

Country	Date	Ext. or Rest.	Description
COL	08192004	1	A bill that would allow popular Colombian President Alvaro Uribe to stand for reelection in 2006 passed another legislative hurdle
COL	09082004	1	Colombia's Senate late Wednesday approved a bill that would make it possible for President Alvaro Uribe to run for a second term in 2006.
COL	09292004	1	President Alvaro Uribe signaled Wednesday that if Colombians favor amending the constitution to allow the president to serve consecutive terms, he would go along with the initiative.
COL	10202004	1	The Lower House Constitutional Committee voted by a significant margin to allow the measure, which now has just one of the eight necessary votes left to pass.
COL	11302004	1	The bid to bring back presidential re-election, this time for consecutive terms, has passed the eight required votes in the national Congress.
COL	07022005	-1	Inspector General Edgardo Maya late Friday turned into the court a 138-page document recommending it reject a bill lawmakers passed in December to amend the Constitution so current or former presidents could seek a second, four-year term
COL	08202005	1	Colombian judges are leaning toward allowing popular President Alvaro Uribe to run for a second four-year term in next years election, a newspaper reported on Saturday.
COL	09072005	-1	Colombian President Alvaro Uribe's re-election hopes took a blow on Wednesday when a top legal authority cited faults in the law establishing the rules under which he would run for a second term next year
COL	10192005	1	Colombia's Constitutional Court has upheld an amendment to the country's constitution that allows its president, Alvaro Uribe, to stand for re-election
COL	11112005	1	Colombia's highest court is expected to endorse a election law Friday that would clear the way for President Alvaro Uribe to run for reelection next year
COL	03122008	1	A Colombian political party allied with President Alvaro Uribe, 55, has submitted to the election authority a petition with about 260,000 signatures
COL	10292008	-1	The surprise failure this week of a bill in Colombia's Congress aimed at allowing President Alvaro Uribe a third term revealed fractures in his coalition
COL	11262008	1	a congressional committee approved a bill aimed at allowing him to run for a third term in 2014.
COL	12172008	-1	Colombia's lower house of Congress on Wednesday passed a bill that would prevent President Alvaro Uribe from running for re-election in 2010
COL	04162009	1	a Senate committee approved a bill late on Wednesday aimed at clearing the way for a 2010 campaign
COL	05192009	1	Colombia's Senate Tuesday approved the holding of a referendum to allow President Alvaro Uribe to seek a third consecutive term in 2010
COL	06192009	1	The final vote on a bill aimed at letting popular Colombian President Alvaro Uribe seek a third term next year was postponed on Friday, decreasing chances it will pass in time to allow him to run.

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Table 5 – continued from previous page

Country	Date	Ext. or Rest.	Description
COL	08182009	1	Colombian President Alvaro Uribe stepped closer to re-election on Tuesday when a congressional committee approved a bill aimed at allowing him to run for a third term
COL	09022009	1	Colombian lawmakers passed a bill on Tuesday aimed at allowing President Alvaro Uribe to seek a third consecutive term
COL	11132009	-1	Colombia's top electoral body ruled late Thursday that millions of signatures endorsing a referendum on Colombian President Alvaro Uribe's second re-election bid are invalid
COL	01122010	1	Colombian Attorney General Alejandro Ordóñez has asked the Constitutional Court to approve a referendum on whether President Alvaro Uribe can run later this year for a third term
COL	01202010	1	Colombian President Alvaro Uribe on Wednesday ceased broadcast of his weekly town-hall meetings in the strongest signal yet that he wants to run for a third term in May's election
COL	01302010	1	Nearly half of Colombian voters said they would vote for President Alvaro Uribe in the next presidential election, scheduled for May, if he is allowed to run
COL	02042010	-1	A member of Colombia's Constitutional Court released a report opposing a referendum to allow President Alvaro Uribe to seek a third term
COL	02192010	-1	Colombian President Alvaro Uribe has hinted that he may not run for a third term
COL	02262010	-1	Colombia's Constitutional Court has rejected the holding of a referendum to allow President Alvaro Uribe a bid for a third term
KAZ	12272010	1	Kazakh authorities endorsed on Monday a campaign to hold a referendum on extending veteran leader Nursultan Nazarbayev's presidency until 2020
KAZ	01142011	1	Kazakhstan's parliament approved a referendum to extend President Nursultan Nazarbayev's term for a third decade
KAZ	01312011	-1	Reuters reported, Kazakhstan's constitutional council on Monday rejected a referendum to extend President Nursultan Nazarbayev's rule for a third decade until 2020. The US was pleased. Reuters has a good summary of what happened: On Monday (January 31st), Nazarbayev supported the Constitutional Council's ruling that such a referendum would be unconstitutional and called an early election to be held later this year. His current term had been due to expire at the end of 2012.
LKA	05032010	1	Sri Lanka has had a relatively disastrous history of changes wrought by constitution, and there is already talk from inside the president's party that he would change it to allow himself a third term in office
LKA	07012010	1	The president's ruling alliance has 144 seats in the 225-member parliament, just six shy of the two-thirds majority he needs to change the constitution. He has now made clear he aims to change the charter to allow himself a third term and do away with the problem-plagued preferential voting system.

Continued on next page

Table 5 – continued from previous page

Country	Date	Ext. or Rest.	Description
LKA	08302010	1	Sri Lanka's cabinet on Monday backed constitutional amendments including one that would allow President Mahinda Rajapaksa to contest a third term, if approved by a parliament in which he has the necessary votes. Reuters suggested that this was a positive thing from the point of view of investors: Sri Lanka's cabinet on Monday backed constitutional amendments including one that may allow President Mahinda Rajapaksa to rule the country for a third term after 2017. Investors believe such amendments could lead to stable politics for at least the next 10 years and lead to a stable economy, an analyst said on condition of anonymity
LKA	09082010	1	Sri Lanka's parliament...passed a constitutional amendment that grants President Mahinda Rajapaksa even more unchecked power
NGA	11162005	1	A leading Nigerian business association wants lawmakers to amend the country's constitution so that President Olusegun Obasanjo can stay in office beyond 2007, its president said on Wednesday
NGA	12232005	1	Nigerian President Olusegun Obasanjo has side-stepped a question on whether he intends to try for a third term in 2007 elections, raising what was already a national obsession to a new level of frenzied speculation.
NGA	01172006	-1	Nigeria's Senate will not back President Olusegun Obasanjo to seek a third term in office in 2007, the chambers president said on Tuesday.
NGA	03062006	1	Nigerian lawmakers began discussing amendments to the constitution on Monday which could allow President Olusegun Obasanjo to extend his hold on power
NGA	05012006	-1	Nigeria's influential trade union movement on Monday rejected a divisive campaign by the ruling party to change the constitution and allow President Olusegun Obasanjo to seek a third term in 2007
NGA	05022006	1	the amendment passed a first hurdle in parliament on Tuesday but opponents said the vote showed the Nigerian president was unlikely to get enough support to amend the constitution.
NGA	05112006	-1	A bill to change Nigeria's constitution to allow President Olusegun Obasanjo to seek a third term in elections next year headed for defeat after more than a third of senators opposed the amendment on Thursday
NGA	05162006	-1	Nigerian senators on Tuesday threw out a bill to amend the constitution, defeating a campaign by supporters of President Olusegun Obasanjo
VEN	02192006	1	Venezuelan President Hugo Chavez said on Sunday he may seek to lift constitutionally mandated presidential term limits if opposition parties boycott the upcoming December presidential elections
VEN	05062006	1	he could seek a referendum to allow him to run for more than one re-election if the opposition boycotts upcoming presidential elections. Chavez made the remark late Friday, saying if the opposition pulls out of the Dec. 3 vote
VEN	05242006	1	Venezuelan President Hugo Chavez said that if opposition parties boycott Decembers presidential election, he would call for a referendum on ending limits on re-elections.

Continued on next page

Table 5 – continued from previous page

Country	Date	Ext. or Rest.	Description
VEN	09012006	1	Venezuela's President Hugo Chavez on Friday said he would hold a popular referendum to ask Venezuelans whether they want to end term limits and allow him to run again after Decembers election
VEN	07122007	1	President Hugo Chavez will soon introduce a bill to end term limits
VEN	07222007	1	A proposed Venezuelan constitutional reform that would eliminate term limits will only apply to the presidency and not to governors and mayors, President Hugo Chavez said on Sunday. This report came after a series of report of a conflict between Chavez and Catholic leaders on the constitutional reforms, starting in early July
VEN	08152007	1	President Hugo Chavez called for radical changes to Venezuela's constitution Wednesday night, proposing reforms that would eliminate current limits on his re-election and extend presidential terms
VEN	08212007	1	Venezuela's Congress on Tuesday gave preliminary approval to President Hugo Chavez's proposed constitutional reform
VEN	11022007	1	Congress passed President Hugo Chavez's proposal to scrap presidential term limits on Friday in a package of constitutional changes that Venezuelans are likely to approve in a December referendum
VEN	12022007	-1	Venezuelans voted Sunday to reject President Hugo Chavez's constitutional reform proposal, marking the first electoral defeat in the presidents nine years in office.
VEN	01132008	1	President Hugo Chavez said he was resuming his quest for the removal of presidential term limits
VEN	11242008	1	Venezuelan President Hugo Chavez opened the door Monday to scrapping presidential term limits
VEN	11302008	1	Venezuelan President Hugo Chavez on Sunday urged supporters to work on a constitutional reform that would let him stay in office as long he keeps winning elections, a year after voters narrowly rejected this same proposal in a referendum.
VEN	01052009	1	A majority of Venezuelans plan to vote against President Hugo Chavez's proposal to change the constitution
VEN	02152009	1	Venezuela's President Hugo Chavez won a referendum vote on Sunday that lets him stay in power for as long as he keeps beating his rivals in elections

Table 6: Number of events by country

Country	Frequency
Argentina	15
Brazil	19
Colombia	37
Kazakhstan	3
Sri Lanka	4
Nigeria	8
Venezuela	15

Table 7: Number of events, restrictions and extensions

Term limit impact:	Frequency
Restrictions	28
Extensions	73

Table 8: Number of events, by the branch linked to the change in executive term limits

Branch	Frequency
Executive	28
Judiciary	12
Legislature	43
Public	11
other	7

Table 9: Daily abnormal returns, in percentage points, by event window size – A negative number x correspond to a window between $-x$ days and -1 day before the event, a positive number x is a window between the event day and x day after the event.

Event window limit	Extension	Restrictions	All events
-10	-.07 (.12)	.15 (.2)	.07 (.1)
-9	-.05 (.13)	.18 (.21)	.11 (.11)
-8	-.06 (.14)	.29* (.2)	.12 (.11)
-7	.07 (.14)	.16 (.22)	.16* (.11)
-6	.03 (.15)	.19 (.23)	.13 (.12)
-5	-.01 (.17)	.23 (.24)	.11 (.13)
-4	.07 (.18)	.22 (.27)	.15 (.15)
-3	.11 (.2)	.07 (.3)	.17 (.16)
-2	-.03 (.39)	.12 (.36)	.09 (.27)
-1	.7* (.47)	.44* (.32)	.58** (.27)
0	.34 (.3)	2.07*** (.29)	.65*** (.16)
1	.31* (.19)	.95** (.48)	.42*** (.17)
2	-.07 (.2)	.53 (.42)	.02 (.17)
3	-.14 (.17)	.29 (.35)	-.08 (.14)
4	-.1 (.16)	.37 (.3)	-.01 (.14)
5	-.14 (.16)	.42* (.28)	-.06 (.14)
6	-.08 (.16)	.52** (.25)	.03 (.13)
7	-.08 (.15)	.5** (.23)	.03 (.12)
8	-.01 (.15)	.51*** (.21)	.08 (.12)
9	.05 (.15)	.44** (.2)	.13 (.12)
10	.11 (.14)	.49*** (.2)	.18** (.11)

Coefficients and standard errors. ***, ** and * significance at 1, 5 and 10% levels, respectively

Table 10: Value of \$100 investment on both sides of the event. If the event window limit is negative, we considered the value of an investment of \$100 at the day of the event, looking backwards until the corresponding day before the event. If the event window limit is positive, we considered the value of an investment of \$100 the day before the event, looking forwards until the corresponding day after the event. The variance has been computed via the delta-method.

Event window limit	Restrictions	Extensions	All
-10	98.6	100.7	99.26
-9	98.4	100.4	99.02
-8	97.7*	100.5	99.05
-7	98.9	99.5	98.87
-6	98.9	99.8	99.25
-5	98.9	100.1	99.47
-4	99.1	99.7	99.42
-3	99.8	99.7	99.48
-2	99.8	100.1	99.81
-1	99.6	99.3	99.42
0	102.1***	100.3	100.65***
1	101.9**	100.6*	100.84***
2	101.6	99.8	100.05
3	101.2	99.4	99.68
4	101.9	99.5	99.94
5	102.6*	99.1	99.65
6	103.7**	99.5	100.2
7	104**	99.4	100.23
8	104.7***	99.9	100.72
9	104.5**	100.5	101.26
10	105.5***	101.2	102.02**

Coefficients and standard errors. ***, ** and * significance (compared to \$100) at 1, 5 and 10% levels, respectively

Table 11: Share of daily AR estimates from 100 simulations below the estimate on the actual table of event. These numbers can be interpreted as similar to (1 minus) p-value. Dates are created at random and the analysis is performed on the new set of virtual events. The daily abnormal return is computed for each event window size considered in the initial analysis.

Event window limit	all	extensions	restrictions
-10	0.723	0.465	0.673
-9	0.842	0.485	0.713
-8	0.822	0.564	0.782
-7	0.822	0.723	0.653
-6	0.782	0.663	0.693
-5	0.842	0.683	0.752
-4	0.861	0.733	0.792
-3	0.842	0.693	0.673
-2	0.683	0.574	0.634
-1	0.921*	0.891	0.782
0	0.921*	0.772	0.98**
1	0.98**	0.713	0.98**
2	0.703	0.376	0.941
3	0.505	0.396	0.901
4	0.673	0.436	0.941*
5	0.525	0.406	0.921*
6	0.752	0.495	0.98**
7	0.743	0.426	0.97**
8	0.871	0.515	0.98**
9	0.891	0.614	0.98**
10	0.941*	0.693	0.98**

***, ** and * significance at 1, 5 and 10% levels, respectively

Table 12: CDS Daily abnormal returns, in percentage points, by event window size – A negative number x correspond to a window between $-x$ days and -1 day before the event, a positive number x is a window between the event day and x day after the event. The return on CDS corresponds to the daily change in CDS prices. The sample of countries is reduced compared to the stripped spreads sample.

Event window limit	1-year CDS			5-year CDS			10-year CDS		
	Extensions	Restrictions	All	Extensions	Restrictions	All	Extensions	Restrictions	All
-10	-.06 (.46)	.04 (.71)	-.09 (.43)	.05 (.47)	-.41 (1.36)	.04 (.35)	.13 (.21)	-.38 (.4)	.1 (.19)
-9	.21 (.48)	-.1 (.76)	.15 (.45)	.03 (.33)	-.02 (1.15)	.07 (.27)	.17 (.22)	-.37 (.43)	.12 (.2)
-8	-.11 (.48)	.33 (.86)	-.11 (.46)	.21 (.44)	-.86 (1.41)	.17 (.35)	.21 (.28)	-.06 (.58)	.18 (.24)
-7	-.31 (.51)	-.03 (.94)	-.33 (.49)	.27 (.64)	-.44 (1.75)	.26 (.49)	.17 (.27)	.11 (.57)	.16 (.25)
-6	-.47 (.56)	.26 (.96)	-.45 (.54)	.63 (.83)	-.49 (2.27)	.54 (.59)	.09 (.26)	.23 (.55)	.11 (.25)
-5	.39 (.53)	-.59 (1.01)	.29 (.49)	-.1 (.9)	-.15 (2.38)	-.02 (.66)	.26 (.28)	.63 (.63)	.3 (.26)
-4	.09 (.53)	.34 (1.04)	.11 (.52)	.26 (.39)	.35 (1.33)	.31 (.37)	.4 (.33)	.13 (1)	.37 (.34)
-3	.05 (.7)	-.6 (1.18)	-.08 (.63)	.35 (.39)	.76 (1.22)	.42 (.35)	.31 (.34)	.56 (.64)	.28 (.32)
-2	-.81 (.81)	.79 (1.13)	-.77 (.79)	.42 (.43)	2.71** (1.47)	.85** (.38)	.6* (.42)	-.11 (.84)	.56* (.4)
-1	-1.69*** (.41)	.07 (1.16)	-1.67*** (.39)	.64** (.28)	-.38 (1.31)	.46* (.3)	.06 (.19)	.34 (.74)	.14 (.21)
0	2.59*** (.46)	8.05*** (1.48)	3.07*** (.41)	.38 (.35)	13.57*** (1.92)	2.01*** (.29)	-.05 (.22)	7.77*** (.77)	.58*** (.21)
1	1.23* (.92)	6.27*** (1.33)	1.64** (.9)	-.05 (.41)	6.51*** (2.44)	.72** (.39)	.08 (.44)	5.29*** (1.75)	.5 (.43)
2	-.61 (.74)	.36 (1.7)	-.59 (.71)	.01 (.37)	2.79* (2.06)	.27 (.35)	-.13 (.36)	2.55* (1.63)	.08 (.35)
3	.33 (.74)	.58 (1.42)	.41 (.73)	-.49* (.35)	1.75 (1.76)	-.29 (.33)	-.18 (.35)	2.13* (1.47)	0 (.33)
4	-.49 (.71)	2.35** (1.13)	-.15 (.7)	-.69** (.35)	1.97** (1.1)	-.43* (.32)	-.27 (.29)	1.8** (.88)	-.09 (.27)
5	-.31 (.7)	.91 (1.18)	-.17 (.68)	-.73** (.34)	1.66** (.97)	-.48* (.31)	-.41* (.31)	.05 (1.72)	-.35 (.32)
6	-.05 (.62)	1.09 (1.03)	.07 (.6)	-.17 (.32)	.73 (.91)	-.06 (.27)	.04 (.3)	.43 (1.66)	.07 (.3)
7	-.15 (.56)	1.25* (.92)	0 (.53)	-.17 (.35)	.39 (.91)	-.06 (.3)	.02 (.33)	.55 (1.57)	.07 (.31)
8	.11 (.52)	1.45** (.77)	.28 (.49)	.13 (.34)	.24 (.85)	.2 (.29)	.13 (.26)	.79 (1.37)	.2 (.26)
9	.15 (.47)	1.15* (.72)	.29 (.45)	-.25 (.4)	1.11 (.99)	-.05 (.32)	0 (.25)	.89 (1.25)	.1 (.25)
10	.31 (.42)	1* (.68)	.43 (.4)	.13 (.3)	.31 (.77)	.24 (.26)	.22 (.24)	.5 (1.17)	.27 (.24)

Coefficients and standard errors. ***, ** and * significance at 1, 5 and 10% levels, respectively

Table 13: MSCI and corporate CDS daily abnormal returns, in percentage points, by event window size – A negative number x correspond to a window between $-x$ days and -1 day before the event, a positive number x is a window between the event day and x day after the event. The return on the MSCI corresponds to the daily change in the index. The return on the corporate CDS corresponds to the daily change in the 5-year corporate CDS price index.

Event window limit	MSCI			Corporate CDS		
	Extensions	Restrictions	All	Extensions	Restrictions	All
-10	.07 (.08)	-.02 (.1)	-.01 (.06)	.12 (.21)	-.23 (.44)	.09 (.2)
-9	.04 (.08)	-.02 (.11)	-.02 (.06)	.3* (.22)	-.48 (.46)	.22 (.2)
-8	.07 (.08)	-.03 (.12)	0 (.06)	.31* (.23)	-.29 (.45)	.24 (.22)
-7	.03 (.09)	-.05 (.12)	-.01 (.06)	.47** (.23)	-.33 (.52)	.37** (.23)
-6	.05 (.09)	-.06 (.12)	.01 (.06)	.36* (.24)	-.18 (.53)	.31* (.23)
-5	.08 (.1)	-.02 (.13)	.04 (.07)	.57** (.25)	-.1 (.57)	.52** (.24)
-4	.04 (.11)	.08 (.19)	.01 (.07)	.57** (.26)	.13 (.66)	.54** (.25)
-3	.01 (.12)	-.03 (.17)	-.02 (.08)	.74*** (.3)	0 (.73)	.68** (.3)
-2	-.02 (.16)	-.1 (.13)	-.09 (.09)	.69** (.31)	.35 (.65)	.66** (.3)
-1	.15 (.13)	.03 (.15)	.13* (.09)	.79*** (.18)	.45 (.56)	.73*** (.18)
0	.24** (.11)	-.41** (.23)	.22*** (.07)	.31** (.19)	6.02*** (.99)	.9*** (.19)
1	.08 (.09)	-.23* (.17)	.13** (.07)	.27 (.31)	2.74** (1.35)	.55** (.31)
2	.14 (.12)	-.12 (.13)	.21** (.1)	-.27 (.28)	1.71* (1.08)	-.02 (.27)
3	.15* (.11)	-.02 (.16)	.17*** (.07)	-.52** (.26)	1.55** (.87)	-.27 (.24)
4	.17** (.1)	-.05 (.11)	.19*** (.08)	-.39* (.26)	1.42** (.75)	-.19 (.25)
5	.1 (.1)	-.05 (.11)	.12* (.08)	-.43* (.27)	1.15** (.69)	-.27 (.26)
6	.13* (.09)	-.1 (.11)	.13** (.07)	-.2 (.25)	1.2** (.61)	-.06 (.24)
7	.09 (.09)	-.06 (.11)	.12** (.07)	-.18 (.24)	1.15** (.51)	-.04 (.23)
8	.06 (.08)	.02 (.12)	.11** (.07)	-.07 (.23)	1.23*** (.45)	.08 (.22)
9	.08 (.08)	.03 (.11)	.13** (.06)	-.02 (.22)	1.07*** (.41)	.12 (.21)
10	.07 (.08)	.03 (.1)	.13** (.06)	.07 (.22)	1.05*** (.4)	.2 (.2)

Coefficients and standard errors. ***, ** and * significance at 1, 5 and 10% levels, respectively

Table 14: Daily abnormal returns depending on the source branch for the executive term limits change, in percentage points, by event window – A negative number x correspond to a window between $-x$ days and -1 day before the event, a positive number x is a window between the event day and x day after the event.

Event window limit	Executive			Legislative			Judiciary		
	Extensions	Restrictions	All	Extensions	Restrictions	All	Extensions	Restrictions	All
-10	-.17 (.23)	1.19*** (.33)	.04 (.2)	.03 (.16)	-.47 (.47)	.01 (.16)	-.05 (.33)	-.17 (.27)	.02 (.21)
-9	-.22 (.25)	1.21*** (.35)	.04 (.22)	-.02 (.17)	-.62 (.51)	-.03 (.17)	-.04 (.37)	.07 (.21)	.14 (.2)
-8	-.25 (.27)	1.22*** (.39)	.03 (.24)	-.03 (.18)	-.61 (.54)	-.03 (.18)	-.29 (.36)	.12 (.21)	.03 (.19)
-7	-.16 (.29)	1.13*** (.44)	.06 (.26)	.02 (.19)	-.79* (.58)	-.05 (.18)	-.02 (.4)	.04 (.22)	.1 (.2)
-6	-.16 (.33)	.79* (.49)	-.02 (.3)	.07 (.2)	-.36 (.6)	.04 (.19)	-.01 (.42)	.17 (.23)	.16 (.22)
-5	-.25 (.37)	.11 (.45)	-.24 (.33)	.04 (.23)	-.25 (.65)	.08 (.22)	.1 (.44)	.33* (.23)	.3* (.23)
-4	-.47 (.43)	-.01 (.58)	-.4 (.39)	.16 (.23)	.05 (.73)	.21 (.22)	-.1 (.41)	.35* (.25)	.15 (.23)
-3	-.64 (.5)	.45 (.57)	-.4 (.46)	.1 (.29)	-.14 (.91)	.11 (.23)	.02 (.44)	.12 (.25)	.05 (.23)
-2	-.89* (.66)	1.03** (.6)	-.56 (.6)	.23 (.81)	-.43 (1.34)	.24 (.46)	-.33 (.33)	-.11 (.2)	-.23 (.2)
-1	-.55*** (.17)	2.4*** (.45)	.83*** (.17)	.93 (1.15)	.1 (1.05)	.33 (.51)	.03 (.37)	.03 (.36)	.1 (.34)
0	.65*** (.21)	3.01*** (.72)	.95*** (.2)	1.01* (.77)	1.25* (.78)	.57** (.31)	-.72** (.32)	1.78*** (.5)	.57** (.28)
1	1.2*** (.34)	1.18 (1.01)	1.14*** (.3)	.05 (.22)	.68 (.6)	.02 (.17)	-.29 (.38)	1.84*** (.43)	.91*** (.36)
2	.58* (.38)	1.38* (.84)	.59** (.34)	-.09 (.2)	.55 (.66)	-.08 (.21)	-.49 (.4)	1.36*** (.33)	.58** (.3)
3	.32 (.31)	1.27** (.73)	.43* (.28)	-.17 (.19)	.34 (.59)	-.16 (.18)	-.02 (.47)	.74** (.4)	.43* (.31)
4	.15 (.28)	.94* (.67)	.32 (.25)	.01 (.21)	.55 (.51)	.01 (.19)	-.1 (.4)	.4 (.4)	.23 (.28)
5	.37* (.27)	1.23** (.59)	.51** (.24)	-.1 (.19)	.7* (.48)	-.07 (.18)	.01 (.36)	.47* (.34)	.31* (.24)
6	.38* (.26)	1.34*** (.53)	.54*** (.23)	.12 (.21)	.62* (.45)	.06 (.17)	-.16 (.37)	.42* (.32)	.25 (.24)
7	.32* (.24)	1.01** (.5)	.45** (.21)	.06 (.19)	.61* (.42)	.04 (.16)	-.07 (.35)	.46* (.28)	.3* (.22)
8	.59** (.27)	1.01** (.53)	.67*** (.24)	.02 (.18)	.52* (.37)	.03 (.14)	-.18 (.35)	.56** (.27)	.34** (.2)
9	.44* (.31)	.87** (.49)	.51** (.28)	.05 (.18)	.47* (.35)	.05 (.15)	-.17 (.32)	.41* (.25)	.25* (.19)
10	.45* (.28)	1.26*** (.53)	.58** (.25)	.13 (.17)	.52* (.34)	.13 (.14)	-.02 (.32)	.47** (.25)	.32** (.19)

Coefficients and standard errors. ***, ** and * significance at 1, 5 and 10% levels, respectively

Table 15: Number of events by type and term limit impact

Type	Extension (1), Restriction (-1)	Frequency
Executive	-1	7
	1	21
Judiciary	-1	7
	1	5
Legislature	-1	10
	1	33

Table 16: Regression coefficient between WGIs and event-day abnormal return. ***, ** and * significance at 1, 5 and 10% levels, respectively

WGI	Extensions			Restrictions		
	Correlation	Standard error	Significance	Correlation	Standard error	Significance
Political Stability and Absence of Violence	-0.011	0.008		0.008	0.0091	
Government Effectiveness	-0.032	0.014	**	0.0134	0.0221	
Regulatory Quality	-0.019	0.009	**	0.0155	0.0161	
Rule of law	-0.023	0.01	**	0.0211	0.017	
Control of Corruption	-0.03	0.015	*	0.0217	0.0355	
Voice and Accountability	-0.025	0.011	**	0.0329	0.022	