

# Sovereign Debts and Political Changes: the Case of South America

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This version: December 31, 2010

## I. Introduction

During the period from 1824-2001, Brazil's and Argentina's debts were either in default or under restructuring process 25% of the time, Venezuela's and Colombia's almost 40% of the time, and Mexico's almost half of the time since independence (Reinhart and Al., 2003). The decision of a state to default on its debt is a serious but not unusual matter. In recent history, some of the most well-known defaults or restructuring processes have included Argentina (2002), Ecuador (1999), Mexico (1982) and Russia (1998). As recently as December 2008, Rafael Correa, the president of Ecuador, decided to default to the extent of 40% of its external debt. He considered this debt to be illegitimate, as it was contracted by earlier rogue regimes. It was the third time in fourteen years that Ecuador has declared itself in default.

It is generally recognized that there are two different types of default and, therefore, two main types of reasons for a country to default on its debt.

The first kind of default is economic failure, which is involuntary and usually due to dilapidated public finances related to the aggregated macro-economic context- illiquidity and/or insolvency.

The second type of default is political, as it is in no way induced directly by economic conditions, but by the will of government to create a sharp political break with the previous regime. It generally entails what is called debt repudiation. Alongside the concept of debt repudiation, likewise based on a self-proclaimed character of illegitimacy, emerged the notion of odious debt. This concept is even more relevant: as the debate about a possible cancellation of the developing countries' debt is expanding, odious debt has come to encompass hostile debts, war debts, and debts against the interests of the population.

As for this latter type of default, willingness to pay depends on the trade-off between costs of defaulting or maintaining debt service.<sup>1</sup> The costs of default are mainly loss of access to international capital markets - complete or partial through an increase of servicing rates -, potential commercial sanctions and output costs.

It is therefore crucial in the investor's perspective - or government adviser's - to assess countries' ability and willingness to honor their debt.

As for the ability to pay, insolvency depends on the stock of debt relative to its ability to pay, measured for example by GDP, exports, or government revenues.

As for the willingness to service the debt, it is much less trivial to assess. Among many factors considered, measures of macroeconomic policy stability reflect policy credibility and predictability and thus influence investors' risk attitudes towards a country and their perceptions of the country's willingness to pay. Institutional and political factors affect policy credibility, as well as a government's willingness to pursue policies consistent with a sustainable debt path. Political regime change may lead to the emergence of a political party less committed to service the debt; thus, the nearing of election may trigger investors' flight and increase the likelihood of a crisis. (IMF Working Paper, 2005).

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<sup>1</sup> See Obstfeld and Rogoff (1996) for a more detailed discussion of willingness to pay and the costs of default. Note also that, in general, some variables—such as macroperformance measures and measures of the level and volatility of macropolicies-proxy at the same time for both the ability and willingness to pay.

The impact of political changes on sovereign debt policies has not, however, been studied in depth. This shortcoming is all the more paradoxical in that the very nature of sovereign debts makes them, by definition, particularly close to political power. Indeed, it has become clear that, in terms of sovereign debts, interaction between political and economic spheres is of crucial importance. In his book *"Political Control of the Economy"* (1980), Tufte argues that politicians shape national economic policy for electoral purposes by increasing transfer payments immediately prior to the election and that these policies are rewarded by voters producing a two-year economic cycle in which economic indicators fluctuate with the occurrence of national elections. Later, Bussiere and Mudler (1999) showed that the inclusion of political variables in economic models improves the explanatory power of regressions. Therefore, the economic and political variables should be combined in order to portray the most accurate possible picture of the economy. Leblang and Satyanath (2005) went even further, arguing that the inclusion of political variables improves the models aimed at predicting potential financial crises, especially in emerging countries. Bernhard and Leblang (2007) went in the same direction, demonstrating empirically that economic and political forecasts are inextricably linked to one another, and that we cannot therefore make the assumption of exogeneity of one of the two.

In this particular research field, prior literature has concentrated itself on the manner and timing of political factors affecting bond prices. In 2005, Mitchener and Weidenmier have investigated the impact of the Roosevelt Corollary<sup>2</sup> on weekly sovereign debt prices. They found a clear link between the significant abnormal returns on sovereign debt issued by countries under the U.S. "sphere of influence" and the announcement and execution of the policy. Indeed, bondholders believed that increased intervention and policing by the United States would increase political and financial stability in the region, as they expected a greater involvement of the United States in resolving debt disputes. Within a different geographical and time window, Oosterlinck and Landon-Lane (2006) have studied the price evolution of a Tsarist Bond from 1915 to 1919 following the Soviet repudiation of all bonds issued by the Tsarist government. In light of historical events, they argued that bond prices reflected events that eventually never occurred and were therefore subject to a "Peso Problem."

In another type of research, Mosley (2003) has interviewed international investors operating on the bond market about the relative importance they give to economic and political factors in their investment decisions. The author concludes that investors consider a wider range of factors when evaluating bonds issued by developing countries, partly because of the increased risk of default. In particular, Mosley demonstrates the growing importance attached to the government's ability to repay foreign debt, the choice of monetary and fiscal policies, and the expected changes in government composition.

Moreover, in view of the mixed social appraisal of two decades of economic and political liberalization in South America, the political landscape has recently taken an important turn with the upsurge of the leftist parties that had been long absent from power until the last ten years. South American populations have become economically and politically disillusioned by the broken promises of the IMF, the World Bank, and the Inter-American Development Bank after their suggested reforms did not lead to the desired effects. In addition, in order to maintain a balanced budget and to protect their reputation on the financial markets,

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<sup>2</sup> In 1904, President Roosevelt announced that, not only were European powers not welcome in the Americas, but that the U.S. had the right to intervene in the affairs of Central American and Caribbean countries that were unstable and did not pay their debts.

governments have largely ignored their fundamental missions, such as education and health. Therefore, having long been led by centrist governments leaning toward the political right-wing, Latin America is currently swinging farther to the left, with the first major step represented by the election of Hugo Chavez as President of Venezuela in 1998. This shift leftward is further confirmed by the election of Ricardo Lagos in Chile in 2000 (since then the right-wing has returned to power in 2010 through the election of Pinera), Lula da Silva in Brazil (2002), followed by Nestor Kirchner (2003) in Argentina, Tabaré Vazquez in Uruguay (2004), Evo Morales in Bolivia (2005), Rafael Correa (2006) in Ecuador and Alan Garcia (2006) in Peru. Finally, Paraguay and El Salvador joined their ranks with the election of Fernando Lugo in April 2008 and Mauricio Funes in 2009, respectively.

Our study will take place in this context of political upheaval. In this paper, the impact of political changes on sovereign bond yields and therefore investigating investors' assessment of current political turns in South America will be analyzed. In order to determine the existence of a political impact, it is indeed interesting to use market data as, according to the efficient market hypothesis, the sovereign bond pricing mechanism should capture any relevant political impact. In this particular geographical context, this study stands as a preliminary investigation of market reaction in regards of political changes. Through an Event Study framework, our results will be compared to prior literature in order to refine our analysis. It must also be stressed that the choice of emerging economies for study represents a challenge, since we will compare our results to prior research that has traditionally focused on European countries and the United States.

The plan of this paper is the following. Section II contains a review of the literature intended to select the events (political changes) that will be considered in the Event Study. In section III, the Event Study methodology is reviewed, and more particularly the rationale behind the non-parametric tests that will be used. Section IV describes the dataset consisting in two distinct parts. On the first hand, the market data that will be incorporated in the econometrical model considered. On the second hand, building a genuine database listing chronologically all political events in question - in Section II-, based on the archives of the weekly *The Economist*. That will lead us to the results of the Event Study in Section V. Those results will be discussed in Section VI, followed by the conclusions and a potential further research agenda.

## **II. The Event Identification<sup>3</sup> - Literature Review**

In this section, the choice of political events studied in this paper will be explained and discussed in the light of prior literature.

### **II.1 Nationwide elections (presidential & legislative), coups and changes in government coalitions**

These event categories encompass all elections or political changes affecting the country as a whole in terms of political power. Although in larger countries as Brazil, regional elections

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<sup>3</sup> See Appendices B and C.

may be crucial in terms of economic development and even political stability, they are excluded, as they cannot directly affect foreign debt policy, and more precisely the decision of defaulting.

In the South American context, changes in government coalitions may reveal a particular importance as it is customary in some of these countries for senators and deputies to change their political affiliation along the presidential mandate, easily reversing a legislative majority (minority) and therefore affecting the actual power of the incumbent executive<sup>4</sup>.

This kind of event is obviously of interest, as it will define the country's future political orientation and will possibly stand as a turning point in terms of macroeconomic policies and debt management. As introduced in a previous section, one motivating factor behind debt repudiation is the desire to create a sharp break with previous political regimes. It is not the political change in itself that raises most interest, but any change in terms of political affiliation. This is the reason why we distinguish a right-wing government from a leftist government and concentrate on the power transfer direction (status quo, right-right, left-left, right-left and left-right). Moreover, the attitude of the new executive toward the financial world will influence the priority given to debt repayment and the commitment to stable and investor-friendly macroeconomic policies; presumably, it is also linked to political affiliation, although literature has discussed the relevance of traditional affiliations in a geographical sample such as South America (cfr *infra*).

The stock of debt is indeed one of the few legacies between successive governments, giving them the opportunity to eventually use this debt for strategic purposes in order to influence future macroeconomic policies. Two theoretical models developed by Alesina and Tabellini (1990) and Persson and Svensson (1989) have attempted to illustrate this debt strategy.

However, both models agree on the fact that the strategic use of public deficits or surpluses will be the more important, as the disagreement between government policies is marked. That is one of the reasons why we have classified political affiliation – according to *The Economist* – in several categories, indicating the importance of political change when elections occur.

Besides, defeat probabilities will also play a role. Pettersson-Lindbom (2001) suggests through an empirical study that right-wing governments do appear to accumulate debt according to their probability of electoral defeat, unlike left-wing governments who seem to seek to reduce their debts in the same situation. The author has attempted to quantify these patterns and argues that a right-wing government increases its debt level by 15%, while a left-wing government reduces its debt level by 11%, when it is convinced of being replaced by the opposition in the upcoming elections. The empirical results seem therefore validating the model proposed by Persson and Svensson (1989).

Literature has traditionally discussed the role played by political affiliation in such context. Downs (1957) was the first to contribute to the literature by suggesting a theory still widely accepted in the academic field. He argues that within a system governed by two distinct political parties, a perfect political convergence should be observed (median voter theorem).

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<sup>4</sup> cf. Pre-Event D in Peru (7.24.2000): Twelve parliamentarians elected by the opposition decide to join Mr Fujimori's government allowing him to achieve the majority in Congress. This sudden change of allegiance gives rise to rumours of alleged corruption (See Appendix A).

Nordhaus (1975) widely contributed to the research, proposing his business political cycle. He argues that political leaders whatever their affiliation – opportunistic assumption – over-stimulate the economy before the polls, and then impose a period of post-electoral recession to reduce inflation.

The second assumption relies on the principle that political leaders are as motivated by power as by ideological objectives representative of their political affiliation. Wittman (1977,1983), Calvert (1985) and Alesina (1988) show that in such a context, the median voter theorem no longer applies, and that the various political parties actually follow distinct policies when they govern.

Empirical research seems to validate the ideological version of this model. Most notably, Hibbs (1977) showed in an empirical study, focusing on time series of the United States and twelve industrial nations, that governments generally pursue macroeconomic policies according to the best interest of their electoral bases. Therefore, left-wing governments – the socialist parties in Europe and the Democratic Party in the United States – show greater concern for employment and promote expansionary policies, while right-wing governments – European conservative parties and the Republican Party in the United States – focus on maintaining inflation. As a consequence, there is a business cycle tied to the political cycle, albeit a fundamentally different one from that proposed by Nordhaus in his opportunistic model.

Although the empirical validation of the ideological assumption seems to be the best fit, the traditional literature has generally concerned itself with empirical studies focusing on Western Europe and the United States. However, the generalization of these results to less industrialized economies is our primary concern, and studies have shown that developing countries tend to foster the opportunistic politico-economic model version (Schuknecht (1996), Svensson and Shi (2003), and Block (2002)). Moreover, Block and Vaaler (2004) also argue that the traditional boundary between the left-wing and right-wing political parties, which prevails in industrialized countries, is not as strong in developing countries, where elections more often center around certain charismatic personalities and specific recent economic conditions.

Regarding Latin American countries, Remmer (1998) studied eight of them between 1980 and 1991 and tried to reproduce empirical evidence that had been obtained from the study of industrialized countries. He concludes that there are three different patterns: the absence of political cycle, the business political cycle predicted by Nordhaus and, finally, a counter-cyclical pattern.

In the first case, the absence of any specific pattern is generally linked to an interference of domestic institutions, such as a depoliticized and independent Central Bank (Uruguay and Colombia).

The two other patterns reflect the fact that when economic policies are politicized, election outcomes indeed affect macroeconomic performances. Although Nordhaus' political cycles do exist in some countries, it is nonetheless the counter-cyclical pattern that is the most common – pre-electoral macroeconomic imbalance followed by a post-electoral economic stabilization. This pattern is actually generally linked to post-electoral new IMF partnerships leading to a different interpretation of the elections, which are not anymore threats to political stability, but rather a catalyst for political reform and responsible macroeconomic behaviour. Finally, it is important to understand that both cyclical and counter-cyclical schemes are not antithetical, but rather closely linked. Over the long run, both schemes together create a new cycle, one

balanced between an orthodox policy (following an economic dump that left little place for macroeconomic policy makers) and unorthodox policy (made possible by prior economic stabilization). This cycle will eventually be broken once the depoliticization of macroeconomic institutions is achieved.

As sovereign bond returns will be examined in regards to several political changes, we need to consider and discuss the incorporation of political information to security prices and more particularly to bond prices.

Following the work of Hibbs, many researchers have studied the link between asset prices traded in markets and political changes. Robert (1994) and Herron and al. (1999) show that the reponse of American stocks to the outcome of the 1992 presidential election was consistent with this theory. Gärtner and Wellershoff (1995) go further, and providing evidence of electoral cycles on American stock markets. Lamb and al. (1997) argue, that New York markets have historically higher return when Congress is in recess.

Herron (2000), meanwhile, considers asset prices traded on British markets during the 1992 elections. He argues that asset price at a given time depends on investors' expectations regarding future economic and political conditions. Herron insists, however, that the link between asset prices and political conditions is not particularly significant if the election results are fully anticipated. Fowler (2006) contributes to the debate, arguing that along with the electoral uncertainty, uncertainty about future economic policies also plays a role in the financial asset prices. In addition, the nature of government itself may also be of interest; major or conflictual legislative changes are less likely to occur when the government is fragmented (Bowling and Fergusson (2001), Coleman (1999), Edwards and al. (1997)). These results are consistent with the literature regarding veto players, which suggests that the possibility of a policy change decreases as the number of groups with institutional veto increases. Finally, under the ideological assumption, Hay et al. (2000) argue that as inflation affects real rate of returns, financial markets immediately react to information about changes that may affect the political composition of government.

Several authors have investigated the influence of political events on determining bond prices and spreads evolution as political stability may play a role in risk premium definition.

Pantzalis and al. (2000) find abnormal returns before elections and attribute these results to uncertainty. Block and Vaaler (2004) and Vaaler et al. (2005) offer an interpretation based on business political cycles.

Freeman et al. (2000) show how political events influence expectations on bond markets. Assuming Hibbs' ideological pattern, news in favour of left-wing political parties increases inflation expectations and therefore nominal interest rates. In contrast, the prospect of a right-wing political parties victory leads to lower nominal interest rates.

Fowler (2001) argues that during elections, increased inflation variance – and therefore increased risk – leads investors to turn away from the bond market and towards any other asset providing the same performance for a lower risk. This lowered demand will affect bond prices in a negative way, resulting in higher expected returns, *ceteris paribus*.

Finally, Block and Vaaler (2003) further confirm these results by demonstrating that because of the increased risk of bonds at election time, the rating agencies will revise their assessment of the financial soundness of the concerned countries downward. They argue that countries

should not issue bonds during the six months preceding the elections in order to avoid paying an additional risk premium.

## **II.2 Changes in Finance Ministers and Central Bank Governors**

In 2003, Santiso wrote that a basic rule about the trust game played on international financial markets is to remain extremely careful when appointing a new government official. For investors, the ones of greatest concern are the Minister of Economy and Finance and the Governor of the Central Bank. According to Moser (2006), a change in the Finance Minister may be significant as far as the future economic policies and the willingness of a country to honour – or repudiate – its obligations are concerned. Ganapolsky and Schmulker (2001) have investigated the reaction of capital markets to the news regarding economic policies during the Tequila Effect in Argentina. They discovered the existence of a negative short-term impact on bond prices when well-known Finance Minister Domingo Cavallo, the father of the Argentinian currency board, was replaced. Nogues and Greandes (2001) have found further evidence of this “Cavallo effect” through the examination of bond spreads.

In his research, Moser attempted to examine if financial markets are sensitive to political instability caused by the appointment or resignation of key officials such as the Finance or Economy Ministers. He based his empirical study on twelve Latin American countries over a time span of more than ten years (1992-2005). He argues that such changes in government composition may affect investors’ expectations through two channels. First, signals regarding future tax policy directly influence the primary surplus. In addition, the financial press often predicts the outcome of an IMF adjustment program based on the political strength and capacity of the finance minister in charge. A new finance minister may therefore send a signal affecting investors’ expectations in terms of fiscal austerity and the government’s willingness to repay its debts. Second, a change of finance minister may lead to new growth prospects due to uncertainty regarding future economic policies, which may in turn affects bond spreads. The author empirically validates his claim by showing increased spreads the day of the announcement and suggests that the average level of spreads is significantly higher following the political change – compared to the previous situation. Finally, spreads seem to trend upward during the forty days leading to the political event, and to stabilize thereafter.

## **II.3 Official announcements regarding debt and IMF programs**

Finally, we have considered as a significant event any announcement, through various channels, that was linked to the political factor, directly or indirectly, and which could affect bond yields.

Announcement of default or early repayment can be, on the one hand, seen as refining the alleged political affiliation or, on the other hand, seen as a political change in terms of debt management. We may be reminded of the case of Lula, a former trade unionist affiliated with the leftist party. Lula claimed before being elected that he would default on Brazilian debt as soon as he came to power. Once in office, he conducted stable orthodox economic policies that gained investors' favour.

IMF adjustment programs may indirectly affect bond yields by restricting the government's room to maneuver. Literature has investigated the signals sent by governments when concluding an IMF partnership. According to Dreher (2003), IMF programs are more likely to be suspended prior to elections. Indeed, most governments fear an electoral defeat after the conclusion of an agreement with the IMF prior to elections, because of voters' fear of the austerity measures a lack of IMF funding might necessitate. Therefore, politicians tend to postpone the conclusion of such agreements until after elections.

However, Killick (1995) argues that empirical evidence supports the assumption that IMF programs help government to retain power in the majority of cases. Nelson (1992) provides further evidence that, despite the fact that current governments are likely to postpone structural reforms, those who have actually undertaken adjustment programs do not necessarily face electoral losses. We are therefore confronted with a puzzle: on the one hand, few agreements are concluded with the IMF before elections. On the other hand, governments who decide to undertake structural reforms do not seem to lose their electoral support. The model proposed by Dreher (2004) attempts to provide an explanation: if economic performance is bad, both competent and incompetent governments will turn to the IMF. Since voters cannot interpret the IMF involvement as evidence of incompetence, they will re-elect the government. However, if economic performance is average, competent governments will not seek IMF support and will then signal their ability to lead the country by borrowing on capital market. They will be therefore re-elected. The incompetent governments, meanwhile, will seek IMF support and lose the elections. Empirical validation of the model shows that governments that conclude an agreement with the IMF in the twelve months preceding the elections generally increase their probability of re-election. The probability of re-election decreases with GDP growth. The probability of electoral defeat is also higher when other countries in the same geographic area are experiencing better economic growth. Finally, re-election is also positively influenced by the absolute level of GDP growth and negatively influenced by the degree of democracy.

### **III. Model and Estimation Framework**

This section is based on Corrado (1989), Cowan (1992), Mac Kinlay (1997), and Serra (2002).

#### **III.1 Event Study Methodology**

To investigate how political changes affect bond yields, our model uses an event study approach. Event studies examine the effect of a given event (or set of events) on the value of an asset (or set of assets) during a particular period of time. The aim is to compare the performance of an asset during a period of relative stability prior to the event (the estimation window) to a period encompassing the event (the event window). If asset returns are different within the event window – if the returns are higher or lower than expected based on the estimation window – then the event is said to have an effect on the asset considered. Central to the study approach is therefore the measurement of an abnormal return, in our case an abnormal bonds yield.

We may consider three steps in conducting an event study. First, we need to define the event of interest and identify the period over which the bond yield involved in this event will be examined – the event window. Then, we need to specify a "benchmark" model for normal bond yield behaviour. Last but not least, we need to measure and analyse the abnormal returns supposedly induced by political changes.

### **III.2 The Event Identification**

In order to assess the impact of political changes on sovereign bond yields, South America will be the field considered. Our sample will then be restricted to four countries: Brazil, Chile, Peru and Venezuela. The choice of these specific countries has mainly been constrained by data availability.

As far as political changes are concerned, the events considered are those within a 10-year time window (01.01.1999 - 31.12.2009), except for Chile that will be considered on a longer timespan in order to avoid breaking a political cycle. This particular time framework has been chosen in regard of the political turn that has been achieving in South America. The political landscape has indeed recently taken an important turn with the upsurge of the leftist parties that had been long absent from power until the last ten years. After having long been led by centrist governments leaning toward the political right-wing, Latin America is currently swinging farther to the left, with the first major step represented by the election of Hugo Chavez as President of Venezuela in 1998. This shift leftward is further confirmed by the election of Ricardo Lagos in Chile in 2000 (since then the right-wing has returned to power in 2010 through the election of Pinera), Lula da Silva in Brazil (2002), followed by Nestor Kirchner (2003) in Argentina, Tabaré Vazquez in Uruguay (2004), Evo Morales in Bolivia (2005), Rafael Correa (2006) in Ecuador and Alan Garcia (2006) in Peru. Finally, Paraguay and El Salvador joined their ranks with the election of Fernando Lugo in April 2008 and Mauricio Funes in 2009, respectively.

By political changes, we mean:

- Nationwide elections (presidential - 1st and 2nd rounds, and legislative)
- Coups
- Changes in government coalitions
- Changes in Finance Ministers and Central Bank Governors
- Official announcements regarding debt (default, repudiation, IMF loans)

As a preliminary empirical study and in order to neutrally assess the potential political impact, no greater weight has been given to any particular event category.

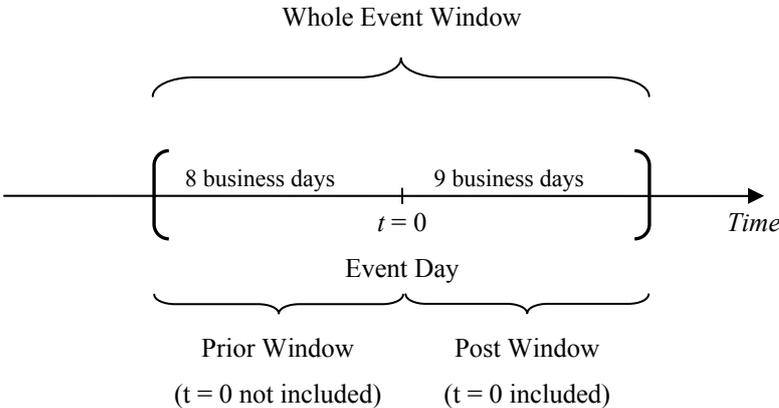
This methodological choice – taking every single political change into consideration without giving special weight to any category – has consequences in framing the event study, particularly regarding the definition of the event windows. Indeed, in such an unstable political context as in South American countries, and considering such a broad definition of political change, a great number of events are taken into consideration. Therefore, in order to preserve the causality link, to conduct cross-sectional analysis and to maintain the assumption that the events are neither serially nor cross-sectionally correlated, we need to define event windows without overlapping in time. Therefore we chose to consider short event windows. It may however be argued that in regard of the traditional market efficiency hypothesis and the

high frequency of political changes, the direct effect of a precise unexpected<sup>5</sup> political change on bond yields should be quite immediate.

Four event windows have been therefore defined in order to capture yield effects before and after the political change:

- the Event day considers only the precise date of the event – or the next business day.
- the Pre-event window consists of the two weeks ( 8 business days) prior to the event (excluding the actual Event day). The period prior to the event may indeed be of interest because the market may acquire information about the election outcome before its actual results, for example through official polls. Moreover, in observing the usual pre-election political campaign, investors may be able to refine their expectations about future macroeconomic policies.
- the Post-event window considers the two weeks (9 business days) after the event (including the actual Event day). This window captures the yield effects that occur after the market closure on the event day. In a context where authoritarian regimes are common it may take some time for international observers to confirm the officials results and such a post-event window may therefore be of interest. Furthermore, it is usually during the first days of the mandate that the new incumbent will reinforce or moderate the promises and announcements he made during the political campaigning or will express his desire to reassure financial markets.
- the Event window as a whole considers both the two weeks before (8 business days) and after (9 business days) after the event (including the Event day).

**Figure 1. Event Windows**




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<sup>5</sup> As the expected political changes are supposed to be gradually incorporated in the bond prices and therefore not triggering any abnormal return.

### III.3 Modeling Normal Returns

Appraisal of the event's impact requires a measure of the abnormal return. In our case, the abnormal return is the actual ex post yield of the sovereign bond over the event window minus the normal return of bond over the event window. The normal return is defined as the expected return without conditioning on the event taking place. For country  $i$  and event date  $t_0$  the abnormal return is:

$$AR_{it} = R_{it_0} - E(R_{it_0} | X_{t_0})$$

Where  $AR_{it}$ ,  $R_{it_0}$  and  $E(R_{it_0} | X_{t_0})$  are the abnormal, actual, and normal returns respectively for time period  $t_0$ .  $X_{t_0}$  is the conditioning information for the normal return model.

It is customary to consider two possibilities of modeling the normal return: the constant mean return model where  $X_{t_0}$  is a constant, and the market model where  $X_{t_0}$  is the market return. The constant mean return model, which is a statistical model<sup>6</sup>, as the name implies, assumes that the mean return of a given security is constant through time. The market model assumes a stable linear relation between the market return and the security return.

As for the Constant Mean Return Model, it has a major drawback, since it fails to consider market wide price movements from the benchmark return, therefore detecting abnormal returns which may not be caused by political changes but rather by global shocks.

Therefore, results should be interpreted with caution, because of the introduction of a bias into the causality link between political changes and abnormal returns, rejecting the null hypothesis too often.

However, a third category considers economic models that rely on assumptions concerning investors' behaviour and that are not solely based on statistical assumptions.

It has been therefore opted for the Economic Models, which actually might be casted as restrictions on the statistical models to provide more constrained normal return models. Two common economic models that provide restrictions are the Capital Asset Pricing Model (CAPM) and the Arbitrage Pricing Theory (APT). Given the significant limitations of the CAPM in pricing stocks and bonds<sup>7</sup>, we have opted for the more generalized APT form.

#### ***Economic Model - Arbitrage Pricing Theory (APT)***

The Arbitrage Pricing Theory extends the CAPM to a more general linear setting (Ross 1976). The notion of arbitrage - the simultaneous purchase and sale of essentially similar assets in different market and at different prices - is an integral component of efficient markets. In APT, the return on an asset is determined by a number of "risk factors" that are common to all assets within a same class plus a component specific to the asset. Factor models of asset prices state that the return on an asset can be expressed as a function of a limited number of factors.

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<sup>6</sup> Follows from statistical assumptions concerning the behaviour of asset returns and does not depend on any economic arguments.

<sup>7</sup> Roll (1977).

The multiple factors form can be written as:

$$R_t = \alpha + \beta_1 X_{1t} + \beta_2 X_{2t} + \dots + \beta_k X_{kt} + \varepsilon$$

Where  $R_t$  is the rate of return on an asset (or portfolio), the  $X_{kt}$ s are a set of factors explaining  $R_t$ , and  $\varepsilon_t$  is the asset specific return. In this model, the  $\beta$ 's capture the sensitivity of the variables to the return and is often referred to as a "factor loading".

In order to identify the appropriate factors to include in our empirical model, a prior model specification has been used, presented by Forbes and Chinn in 2004. In this article, the authors argue that returns could be affected in two ways: first, through cross-country linkages, because shocks to one country are transmitted to other countries. Second, global shocks, such as changes in global stock markets, the world interest rate, oil price, other commodity prices, or global risk aversion (gold price) could affect returns. Returns could also be affected by sectoral shocks that simultaneously affect all countries that produce in or have exposure to the given sector. Finally, on the recommendation of Bernhard and Leblang (2004), we have decided to include the return on the domestic stock market as an additional factor.

For each country  $i$ , bond returns ( $R_{it}$ ) at each time  $t$  can be expressed as:

$$R_{it} = \alpha_i + \delta_i R_{domestic\ stocks, it} + \beta_i R_{US\ bonds, it} + \phi_{1,i} R_{oil, t} + \phi_{2,i} R_{gold, t} + \phi_{3,i} R_{commodity, t} + \sum_{s=1}^S \gamma_i^s f_t^s + \varepsilon_{it}$$

with  $E(\varepsilon_{it}) = 0$  and  $E(\varepsilon_{it}^2) = \sigma_i^2$ .

The  $R_{US\ bonds, it}$  is the return on the US bond market as the only cross-country factor whose shocks may spillover to nearby economies. According to Forbes and Chinn (2004), only the United States has a major influence on bond returns regarding the Americas. Brazil may have been considered as a larger regional economy, but considering Brazil as a global factor would have driven Brazil out of the sample of interest. It has been therefore decided to only take into consideration the U.S. bond return as a cross-country factor.

The  $R_{oil, t}$ ,  $R_{gold, t}$  and  $R_{commodity, t}$  are the return on the oil, the gold and the commodity markets, respectively. Gold price is considered as a global factor in order to capture any changes in global risk aversion.

The  $f_t^s$  are the  $S$  sectoral factors (equity performance of emerging markets on the Energy, Materials, Industrials, Consumer Discretionary, Consumer Staples, Health Care, Financials, IT, Telecommunication Services and Utilities sectors) but given the high correlation among the sectors, the sectoral factor in the APT model has been calculated as the first and second component of the dollar total return index of each sector listed<sup>8</sup>.

The coefficients  $\beta_i^c$ ,  $\phi_i^g$  and  $\gamma_i^s$  are the country-specific factor loadings for the cross-country, global, and sectoral factors, respectively;  $R_{domestic\ stocks, i}$  is the return on the domestic stock market;  $\alpha_i$  is the country-specific effect; and  $\varepsilon_{it}$  is a normally distributed error term,

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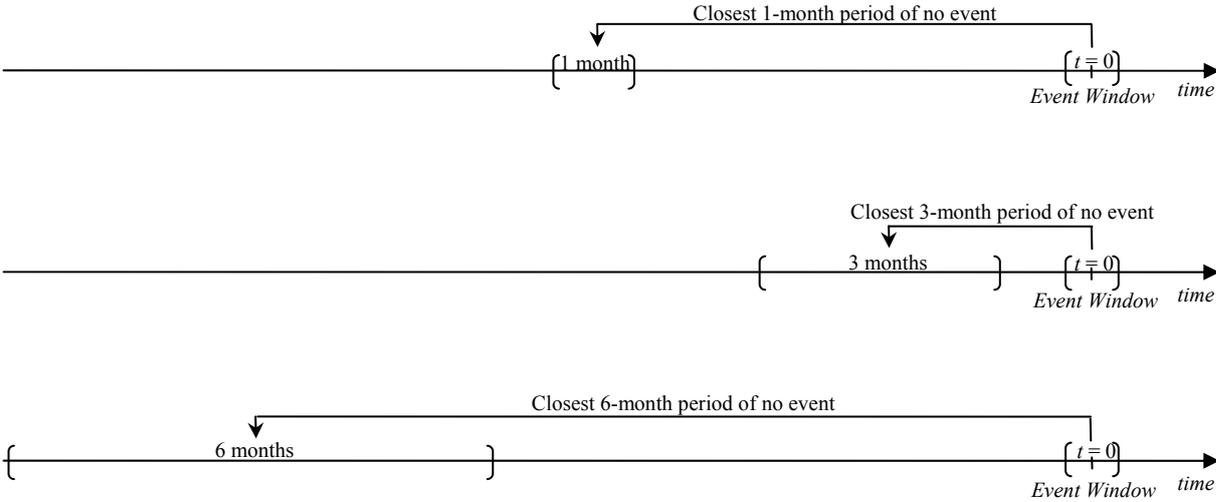
<sup>8</sup> See Appendices D and E for the correlation matrix and the Principal Component Analysis.

with errors not necessarily independent across countries. Factor loadings are therefore assumed to be constant for each country, but can vary across countries.

In summary, the APT model represents a potential improvement over the constant mean return model. By removing the portion of the return that is related to variation on the market's return, the variance of the abnormal return is reduced. This in turn can lead to increased ability to detect event effects. Given the selection of a normal performance model, the estimation window needs to be defined. If we reconsider the event study definition presented above, we may point out that the estimation window definition implies the choice of periods of relative stability prior to the event. In our study, the notion of stability is clearly linked to the concept of political stability, which in this context can simply be defined as periods of time during which no political event has occurred.

Three kinds of estimation windows have been defined: 1 month, 3 months and 6 months of domestic political stability. Each event window will be therefore confronted to the normal returns estimated in the closest prior estimation window of each kind.<sup>9</sup> As for the first event window, the closest post estimation window of each kind will be taken into consideration.

**Figure 2. Estimation Windows**



**III.4 Abnormal returns analysis**

In analysing abnormal returns, it is conventional to label the event date as time  $t=0$ , defining therefore the prior event window between  $t = \{-8;-1\}$  and the post event window between  $t = \{0;9\}$ . Hence, from now on  $AR_{i,0}$  denotes the abnormal return on the event day and,  $AR_{i,t}$

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<sup>9</sup> In Chile and Peru, no 3-month estimation windows are considered as political stability periods generally lasted more longer, falling therefore in the 6-month category.

denotes the abnormal return  $t$  periods after the event for the country  $i$ . As our main interest is cross-sectional analysis, if there is more than one event relating to one country's time series, they will be treated as if they concern separate countries.

In order to refine the causality link between yield movements and political changes, information will be averaged over a number of similar events ( $N$ ) - event categories have been defined in an earlier section. *Average Abnormal Returns (AAR)* in period  $t$  will be therefore computed:

$$AAR_t = \frac{1}{N} \sum_{i=1}^N AR_{it}$$

Large deviations of the average abnormal returns from zero indicate abnormal performance. Because these abnormal returns are all centered around one particular event, the average should reflect the effect of that particular kind of events. All other information, unrelated to the event, should be cancel out on average.

When either event dates are not precisely defined or in the case where information incorporation may evolve over time, it is interesting to study yield variations over longer periods surrounding the events, that is the reason of the prior and post event windows that have been defined previously. The usual way to study performance over longer intervals is by means of cumulative abnormal returns, where the abnormal returns are aggregated (*Cumulative Abnormal Returns (CAR)*) from the start of the event period,  $t_1$ , up to time  $t_2$ , as follows:

$$CAR_i = AR_{i,t_1} + \dots + AR_{i,t_2} = \sum_{t=t_1}^{t=t_2} AR_{it}$$

Again, the CARs are aggregated in a cross-sectional framework ( $N$  similar events in order to improve the assessment of the causality link), to obtain *Cumulative Average Abnormal Returns (CAAR)*:

$$CAAR = \frac{1}{N} \sum_{i=1}^N CAR_i = \sum_{t=t_1}^{t=t_2} AAR_t$$

### III.4.1 Testing Abnormal Returns<sup>10</sup>

The testing procedure is designed to answer the question whether the computed abnormal returns are significantly different from zero at a certain, a priori specified, significance level - in this study, 1%, 5% and 10% confidence levels will be considered.

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<sup>10</sup> See Appendix F for a description of the Corrado Test.

The (bilateral) Hypothesis Test is therefore defined as:

$$\left\{ \begin{array}{l} H_0 : E(AR_{it}) = 0 \\ H_1 : E(AR_{it}) \neq 0 \end{array} \right.$$

and in the case of testing Cumulative Abnormal Returns:

$$\left\{ \begin{array}{l} H_0 : E(CAR_{it}) = 0 \\ H_1 : E(CAR_{it}) \neq 0 \end{array} \right.$$

However, the assumption that all abnormal returns are identically distributed is usually too strong, especially in regards of the supposed cross-sectional homoskedasticity ( $\sigma_i^2 = \sigma^2$ ) which is not likely to be true as some sovereign bonds are more volatile than others which may reduce the power of the test. Moreover, it is assumed that the variance of the returns is constant through estimation and event windows, supposing therefore the absence of event-induced variance. Such an assumption is generally too strong, generating too large t-test statistics and rejecting the null hypothesis too often.

Besides these traditional strong assumptions, these t-tests invoke the Central Limit Theorem to assume that the distribution under the null hypothesis is standard normal. Very small cross-sections will be however considered in this study as various sub samples are taken into consideration and depend on the countries' political history. Especially when using daily data, the underlying abnormal returns present very fat tails. Using the Central Limit Theorem may be therefore very poor in such small cross-sections, generating too small critical values of the normal distribution, rejecting the null hypothesis too often. As a result, the t-tests are invalid, even asymptotically<sup>11</sup>.

To address this issue, non-parametric tests can be used as they remain valid under very general distributional assumptions regarding the abnormal returns. Non-parametric tests may also be more robust to outliers and other data imperfections.

In this study, a non-parametric rank test will be considered (i.e. Corrado Test (1989)) as, compared to a usual sign test, it takes the magnitude of the abnormal returns into consideration. The test proposed by Corrado (1989) is a non-parametric way to account for the magnitude of an abnormal return, but without the traditional distributional assumptions assumed in the t-test method.

Implementing the Corrado Test involves transforming each sovereign bond's time series of abnormal returns – according to the Economic APT Model – in ranks ( $K_i$ ) over the combined period that includes the estimation and the event window ( $T_i = (-t_{estimation}; 0; +t_{event})$ ). Let  $K_{it}$  denotes the rank if the abnormal return  $A_{it}$  in the country  $i$ 's time series such as:

$$K_{it} = rank(AR_{it})$$

$$AR_{it_1} > AR_{it_2} \Rightarrow K_{it_1} > K_{it_2}$$

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<sup>11</sup> See Appendix K.

The test then compares the ranks in the Event window considered for each political change, with the expected average rank under the null hypothesis of no abnormal returns ( $\bar{K}_i = 0.5 + \frac{T_i}{2}$ ).

The ranking procedure transforms the distribution of security excess returns into a uniform distribution across the possible rank values regardless of any asymmetry in the original distribution.

This test statistic follow approximately a normal distribution in large samples although in comparison with the usual t-tests, the convergence to the normal distribution of the average of the rank may be faster than the averages of the returns. It is therefore expected that the Corrado test gives better results in small cross-sections. Choosing a non-parametric method in testing the abnormal returns enable us to mitigate the non-normality issue of bond yields. As for the remaining issues - cross-sectional non correlation and homoskedasticity, event-induced variance -, they will be adressed as followed: the cross-sectional non correlation and homoskedasticity are solved through the choice of not overlapping event windows and the use of ranks, respectively. As for the event-induced variance, an additional test - the squared rank test - will be conducted in order to evaluate the magnitude of the problem.

### III.4.2 Squared Rank Test<sup>12</sup>

This non-parametric test compares, as in the F-test, the variance of the event window against the variance in the estimation window.

The (unilateral) hypothesis test is therefore defined as:

$$\left\{ \begin{array}{l} H_0: \text{var (Event Window)} \leq \text{var (Estimation Window)} \\ H_1: \text{var (Event Window)} > \text{var (Estimation Window)} \end{array} \right.$$

Before testing the induced-variance, the Squared Rank Test involves computing the absolute value of abnormal return for the estimation and event windows, for each event. Then the two periods are combined and the absolute errors are ranked.

Under the null hypothesis of no variance shift, this statistic is tabulated (Conover, 1984). If the number of days in estimation is greater than  $10^{13}$ , this statistic can be approximated to the unit normal<sup>14</sup>

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<sup>12</sup> See Appendix F for a description of the Squared Rank Test.

<sup>13</sup> This is always the case in this study as the shortest estimation window lasts 1 month.

<sup>14</sup> Critical value  $q_p = \frac{T(T+1)(2T+1)}{6} + x_p \sqrt{\frac{LT(T+1)(2T+1)(8T+11)}{180}}$  where  $x_p$  is the critical value of the unit normal distribution. T and L are, respectively, the number of weeks in the estimation and event windows considered.

## IV. Data

### IV.1.1 Factor Model and Abnormal Returns

All of our individual data series were based on different original sources that had been incorporated into Datastream, which was our major source of information.

Concerning the bond returns, we used the dollar daily redemption yield<sup>15</sup> of long-term sovereign bonds traded on the international market – guaranteeing liquidity. We have considered a unique bond per country, as data availability was a major issue.

As for a Factor Model, the cross-country factors, global factors, and sectoral factors have been defined allowing for different sources, especially because of our necessity for daily data:

The cross-country factor is redemption yield for the large countries whose shocks may spillover to nearby economies, factor which is limited to the United States in our study.

The three global factors are: daily oil price, gold price and commodity price. Oil price is the current price per barrel in U.S. dollars for Brent oil, and Gold price is the current price of gold bullion per ounce in U.S. dollars, on the London Bullion Market. Commodity price is the U.S. dollar daily total return Dow-Jones-UBS Spot commodity index, based on a large basket of commodities traded on US exchanges with the exception of aluminum, nickel and zinc, traded on the London Metal Exchange (LME).

As for sectoral factors, the Morgan Stanley Capital International on the Emerging Markets (MSCI-EM) daily total return indices have been used. The MSCI Emerging Markets Index is a free float-adjusted market capitalization index that is designed to measure equity market performance of emerging markets. As of June 2009, the MSCI -EM Index consisted in 22 emerging market country indices<sup>16</sup>. The sectoral form of the index has been considered, which is based on the MSCI/S&P Global Industrial Classification Standard defining the following ten sectors: Energy, Materials, Industrials, Consumer Discretionary, Consumer Staples, Health Care, Financials, IT, Telecommunication Services and Utilities.

Eventually, the daily returns on the domestic equity markets used, depended on the country considered and mainly on data availability. As for Brazil, the U.S. dollar total return index on the Bovespa has been used, for Peru and Venezuela respectively, the dollar total return on the Bank of New York Mellon (BNY) Peru and on the Bank of New York Mellon (BNY) Venezuela indexes. Finally, the performance on the Chilean stock market has been measured through the Dow Jones Total Stock Market (DJTM) dollar total return index.

All factors were calculated as returns for the relevant price<sup>17</sup>.

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<sup>15</sup> Redemption Yield: Internal Rate of Return (IRR) earned by an investor who buys the bond today at the market price, assuming that the bond will be held until maturity, and that all coupon and principal payments will be made on schedule.

<sup>16</sup> Brazil, Chile, China, Colombia, Czech Republic, Egypt, Hungary, India, Indoneisa, Israel, Korea, Malyasia, Mexico, Morroco, Peu, Philipines, Poland, Russia, South Africa, Taiwan, Thailand and Turkey.

<sup>17</sup> Return =  $\ln(P_t) - \ln(P_{t-1})$

### **IV.1.2 Political History**

The political history of the studied countries has been traced back through the archives of the weekly review "The Economist"<sup>18</sup>. As some events of minor importance pass unnoticed in the light of world news, the political history of each country has been completed through local archives electronically available<sup>19</sup>. Furthermore, as when conducting an event study, a precise definition of event dates is of prime importance, *Reuters* archives have in some cases been consulted to refine information.

In order to conduct cross-sectional analysis - measuring abnormal returns for a particular kind of event wherever it occurs - and to empirically confront our results to prior literature, it has been necessary to classify the events listed in relation with their political implications. The political affiliation definitions are those of *The Economist*. Moreover, the "expected" versus "non expected" aspect of a particular political change also relies on the information provided by the journalists of *The Economist*.

In regard of the investors' available information issue, it may be argued that the choice of *The Economist* is justified, as it is one of the most popular financial review targeting investors and other persons belonging to the financial sphere. It is however interesting to insist on the fact that our results largely depend on this specific choice and represent foreign investors' perception. Choosing to rely solely on local press would have probably led us to different results as government control of the local media and "taste" for political scandals are not an unusual habit in South American countries, modifying the alleged ideological affiliation of political candidates or even the importance and specific timing of a political event as they have been defined in this paper.

### **IV.1.3 Shape of the sovereign bond yields per country<sup>20</sup>**

Before considering in the next section any abnormal returns computed according an Event Study Methodology, the bond redemption yields will be briefly graphically analyzed in the light of political events in order to get a preliminary impression of the impact of political events on bond returns.

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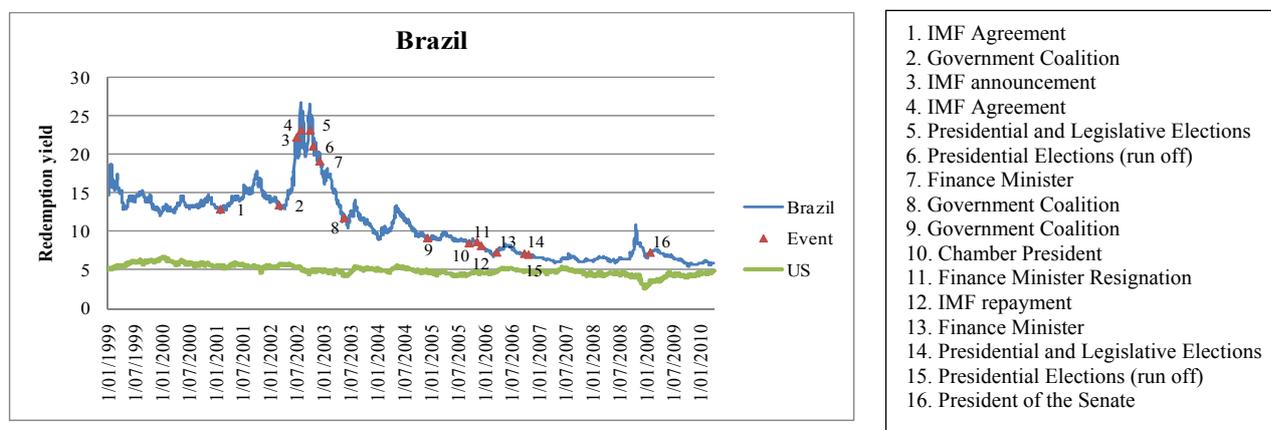
<sup>18</sup> See Appendix A.

<sup>19</sup> See Appendix L.

<sup>20</sup> See Appendix K for general statistics concerning yield distributions.

### IV.1.3.1 Brazil

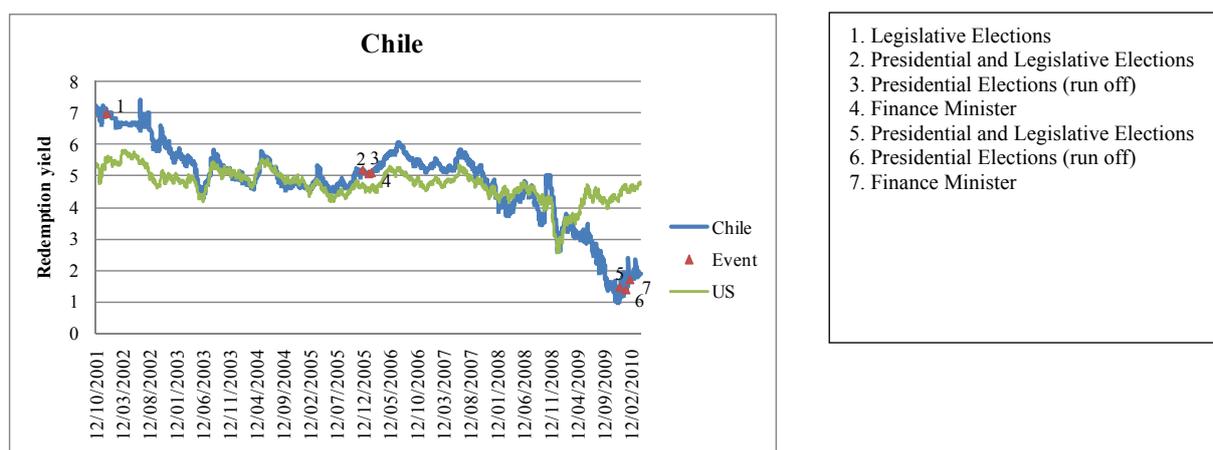
Figure 3. Brazil redemption yield



In the Brazilian case, political events do not seem to create clear breaks on bond yield except in 2002 when President Lula got in power. The accession of Lula to presidency (events 5 and 6) is indeed part of the recent left-wing political turn in South America. Although expected, Lula's victory was at that time associated with a possible sharp break with previous economic policies as Lula – a former trade-unionist - was standing as a left-wing candidate willing to default on the Brazilian debt. Subsequently, Lula moderated his political position and proved to be a conscientious president, reassuring financial investors that clearly diminished the risk premium of Brazil. His reelection in 2006 (events 14 and 15) was considered as a sign of stability.

### IV.1.3.2 Chile

Figure 4. Chile redemption yield

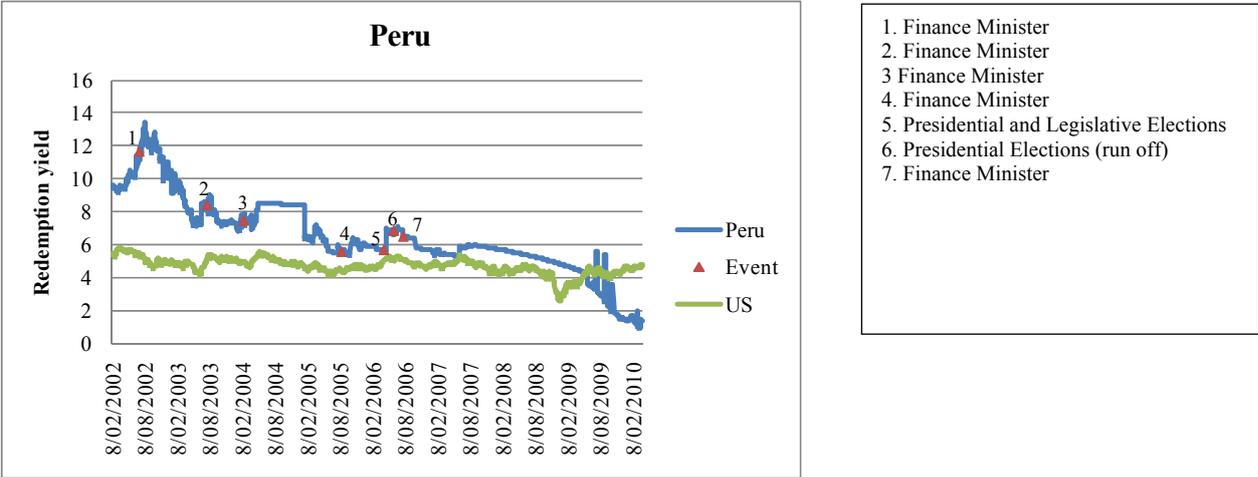


At first sight, political events do not seem to create clear yield breaks on the sovereign bond issued by Chile. However, the beginning and the end of the event window considered, reflect important turns in the Chilean political history. On one hand, the month of January 2000 saw the arrival in power - for the first time since the overthrow of Allende in the coup orchestrated by Pinochet in 1973 - a president from the Socialist Party, Ricardo Lagos. Although businessmen backed his opponents during the campaign, Ricardo Lagos pleased the financial markets by pursuing orthodox macroeconomic policies and nominating former director of the

IMF as Minister of Finance. On the other hand, this very January 2010, Sebastian Pinera just won the presidential elections in behalf of the Conservative Alianza enabling the heirs of Pinochet to return to power for the first time since 1990.

**IV.1.3.3 Peru**

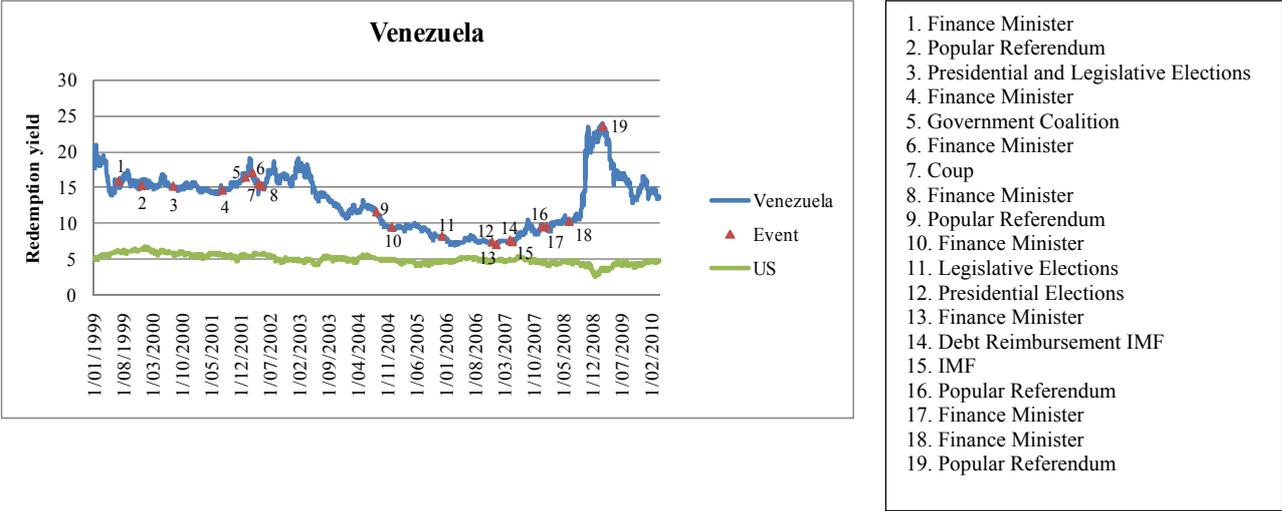
**Figure 5. Peru redemption yield**



As to Peru, we don't observe any particular shift due to political events, even in regard of the arrival of Alan Garcia to power (event 6) who is from a moderate left-wing political party. We do however note a liquidity problem of the bond, which was unfortunately the unique bond available to conduct the Event Study.

**IV.1.3.4 Venezuela**

**Figure 6. Venezuela redemption yield**



Finally, the Venezuelan bond does not seem to show any shift in regards of political events. A rise in bond yield may however be attributed to the last popular referendum results, enabling the current leftist president Hugo Chavez, who was supposed to leave power at the latest in 2013, to run for elections as long as he wants to.

## V. Results

### V.1 Squared Rank Test: Variance Induced

Considering a potential Event-variance induced, the squared rank test concludes that the Corrado test seems well specified regarding the 3-month and 6-month Estimation Windows<sup>21</sup>.

However, in analyzing the Abnormal Returns, the one-month Estimation Window is best ignored, as the squared-rank test is significant at a 1% confidence level for all results, detecting therefore a likely event-induced variance problem. A further investigation of the impact of political changes on the second-order moment would be interesting even if it may be argued that sovereign bond prices already reflect the uncertainty around political events in such a close estimation window (1-month before the event).

### V.2 Economic APT Model<sup>22</sup>

In this section, Cumulative Average Abnormal Returns are presented. As already explained in the Methodology section, a cross sectional analysis has been privileged. Therefore, the **Average** - of all identified events of a same type - **Cumulative** - sum of all the abnormal returns within the whole event window- **Abnormal Returns** are graphically represented and analyzed. It is the redemption yields that are here considered, and therefore the abnormal returns computed according to the Event Study Methodology are actually Abnormal Yields.

The charts represent therefore the evolution of the Cumulative Average Abnormal Yields (CAAR) day after day. For example, the CAAR on day 5 is the sum of Average Abnormal Yields (AAR) observed on day 1,2,3,4 and 5.

Moreover, it may be useful to remind that the yield interpretation is somehow counter-intuitive as it is the opposite of a bond price analysis. An increase of the Abnormal Yields observed reflects an increased perceived risk and therefore a decreased bond price. On the contrary, a decrease in the Abnormal Yields reflects a situation where perceived risk is lowered and therefore a higher pricing of the sovereign bond.

Finally, all the sub-categories (i.e. Expected, Non-Expected, Presidential, Legislative, Coup, Gov. Coalition, Finance Minister, IMF Agreement, Others, Transfer Left-Right, Transfer Right-Left, Status Quo, President Left, President Center, Majority in Congress)<sup>23</sup> represent the sub-samples analyzed in the cross-sectional analysis. It is not therefore the country factor that matters but the specific kind of the political event considered. The Cumulative Averaged Abnormal Yields (CAAR) are averaged across all the events of a same type (sub-samples) and summed over the event window.

As for our Economic form (APT) of the Event Study, few results appear to be significant across all the Estimation Windows considered.

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<sup>21</sup> See Appendix I.

<sup>22</sup> See Appendices G and H for the cumulative (average) abnormal return matrices and figures.

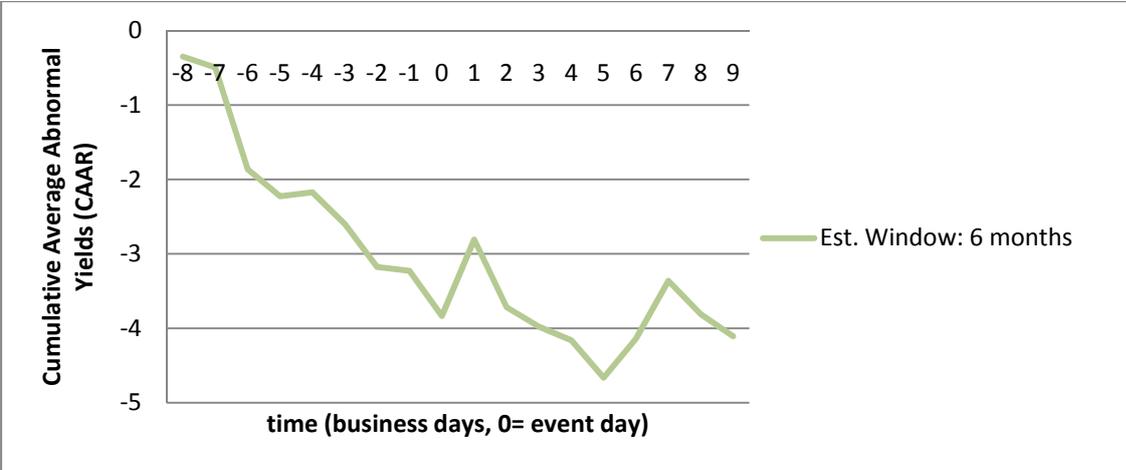
<sup>23</sup> cfr table 1 and Section I for the definition of the political events.

Sole the presidential elections operating a political transfer between the right-wing and the left-wing are significant at, at least, a confidence level of 5% and for almost all the estimation windows taken into consideration.

The sign of the abnormal yield experienced and the significance of the event windows depend on the political transfer way:

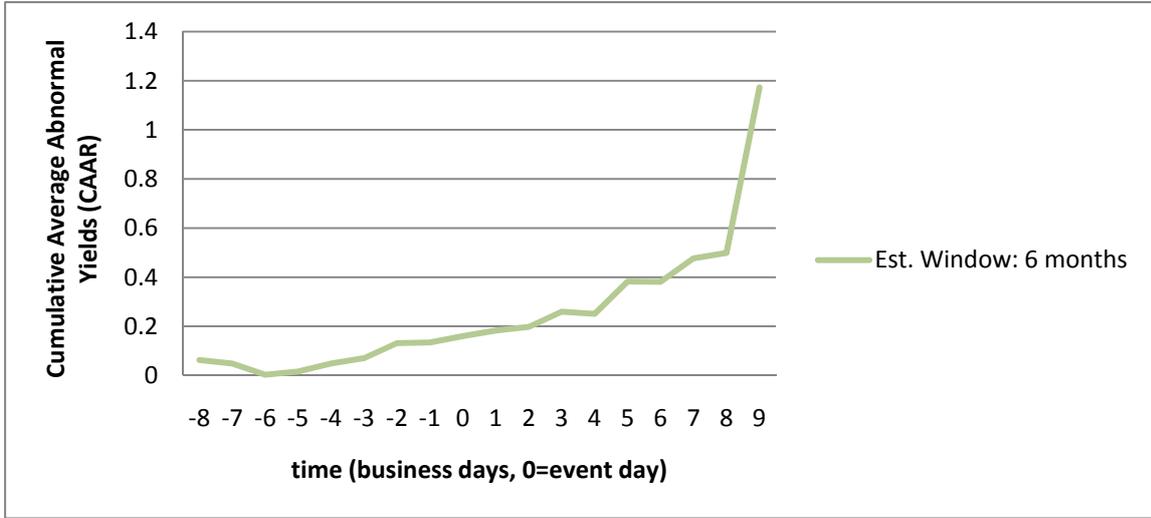
- Transfer from the political right-wing to the political left-wing: only the prior event window (event excluded) presents significant negative abnormal yields. The event day and the event window considered as a whole, present significant abnormal yields of the same sign.

**Figure 7. Political Transfer Right-Left**



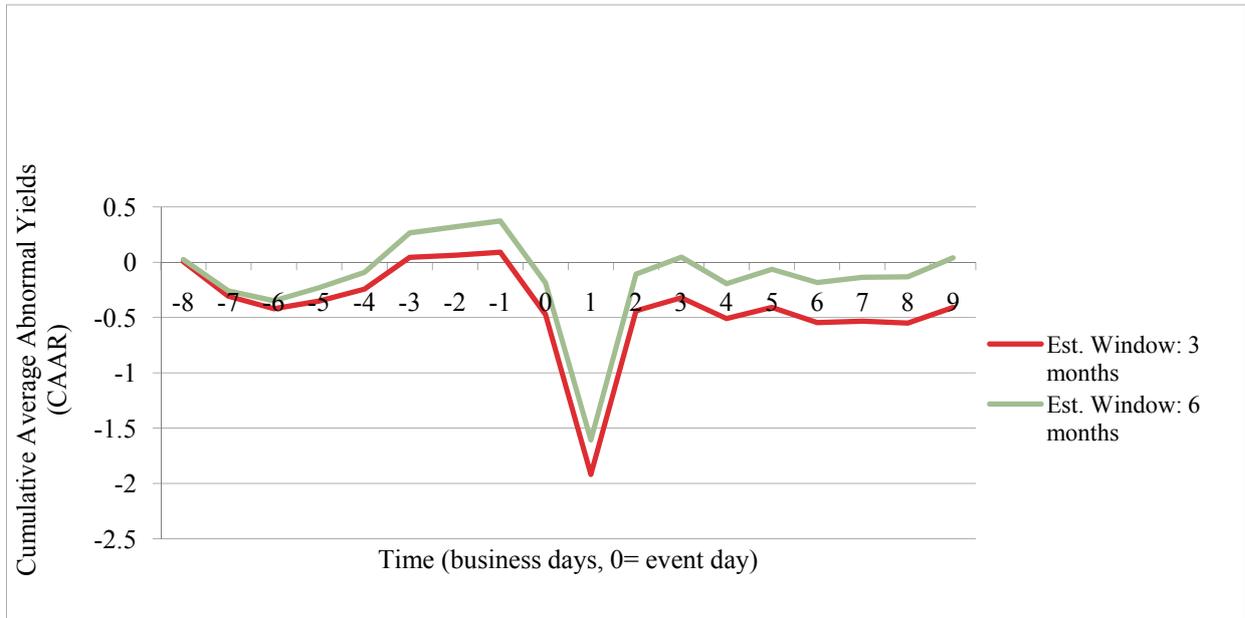
- Transfer from the political left-wing to the political right-wing: only the post event window (event included) presents significant positive abnormal yields. The same sign prevails within the event window as a whole.

**Figure 8. Political Transfer Left-Right**



Considering the Event day, a few more results appear significant if the 6-month estimation window is considered: a political status quo on the first hand, and the Venezuelan coup, Finance Minister changes, IMF announcements, political transfers from the right-wing to the left-wing and a leftist president on the second hand, at a confidence level of 5% and 10% respectively.

The graph relative to the Venezuelan coup is particularly significant, showing a clear impact on the Event Day: Venezuelan Coup



The country factor and the nature of the events in terms of expected versus non-expected do not seem to matter.

**Table 1. Corrado Test Results**

Event Window	Events	Estimation Window	
		3months	6mons
Event Day	Expected	-1.116	-1.342
	Non Expected	-0.173	0.143
	Presidential	-0.43	-0.642
	Legislative	0.459	1.135
	Coup	-1.67*	-1.697*
	Gov. Coalition	-0.567	0.042
	Finance Minister	-0.724	-1.77*
	IMF	0.797	1.882*
	Others	-0.363	-0.135
	Left-Right	n/a	1.135
	Right-Left	n/a	-1.674*
	Status Quo	-1.051	-2.552**
	Pres. Left	-1.051	-1.854*
	Pres. Centre	n/a	-1.547
	Majority in Congress	-1.316	-1.544
	Brazil	-0.275	-0.074
	Chile	n/a	0.064
	Peru	n/a	-1.55
	Venezuela	-0.497	-0.077

Prior Event Window	Expected	0.369	0.545
	Non Expected	-0.314	-0.274
	Presidential	1.148	0.115
	Legislative	0.885	0.761
	Coup	0.664	1.39
	Gov. Coalition	0.183	-0.057
	Finance Minister	-0.393	0.501
	IMF	-0.994	-0.78
	Others	-0.675	-0.901
	Left-Right	n/a	1.316
	Right-Left	n/a	-3.004***
	Status Quo	1.668*	0.972
	Pres. Left	1.668*	0.639
	Pres. Centre	n/a	-0.28
	Majority in Congress	1.318	1.442
	Brazil	0.208	-0.668
	Chile	n/a	1.436
	Peru	n/a	0.325
	Venezuela	-0.212	0.006

\*\*\*, \*\*, \* = statistically significant resp. at the 1%, 5%, 10% levels.

		Estimation Window	
Event Window	Events	3months	6mons
<b>Post Event Window</b>	Expected	-1.052	-1.277
	Non Expected	0.265	-0.062
	Presidential	-0.037	-0.445
	Legislative	1.175	-0.4
	Coup	-0.277	0.215
	Gov. Coalition	1.194	0.593
	Finance Minister	-0.365	-0.553
	IMF	-0.657	-1.174
	Others	-1.58	-1.098
	Left-Right	n/a	3.101***
	Right-Left	n/a	-1.702*
	Status Quo	-0.988	-1.296
	Pres. Left	-0.988	-1.268
	Pres. Centre	n/a	0.319
	Majority in Congress	-0.534	-1.347
	Brazil	0.958	-0.403
	Chile	n/a	0.356
Peru	n/a	0.337	
Venezuela	-0.936	-1.084	

<b>Whole Window</b>	Expected	-0.538	-0.589
	Non Expected	-0.012	-0.229
	Presidential	0.738	-0.255
	Legislative	1.466	0.21
	Coup	0.236	1.087
	Gov. Coalition	1.012	0.404
	Finance Minister	-0.534	-0.078
	IMF	-1.152	-1.395
	Others	-1.627	-1.419
	Left-Right	n/a	3.189***
	Right-Left	n/a	-3.272***
	Status Quo	0.375	-0.318
	Pres. Left	0.375	-0.519
	Pres. Centre	n/a	0.051
	Majority in Congress	0.481	-0.043
	Brazil	0.853	-0.746
	Chile	n/a	1.223
Peru	n/a	0.468	
Venezuela	-0.839	-0.804	

\*\*\*, \*\*, \* = statistically significant resp. at the 1%, 5%, 10% levels.

## VI. Discussion and Conclusion

In the light of the squared rank test results, the non-parametric Corrado test is an appropriate test of whether the abnormal return's expectation is significantly different from zero, in regard of the 3-month and 6-month Estimation Windows. As the 1-month estimation Window seems prone to event-induced variance, it will be ignored, as the Corrado Test would be ill specified and would reject the nul hypothesis too often.

As for the the model used, the R square of the regressions is critical, as the predicted values will determine the abnormal aspect of the returns. The percentage of the yield variance explained by our Factor Model varies depending on countries and estimation window lengths, with better estimations for Brazil and longer windows. On average, 20% of the yield variance is explained by the model although, it does not seem to fit the Peruvian case well with R square capping at 10%. Details will be found in Appendix J.

As far as our Economic Model is concerned, political changes do not seem to impact sovereign bond yields in a general way, as only a few results are significant. Those results do, however, highlight the predominance of presidential elections and more precisely, the transfer of political affiliations involved by the poll results.

Considering a transfer in favour of the leftist political parties (from right to left), the bond yield presents significant negative abnormal returns within the prior and post Event Windows as compared to the 6-month Estimation Window.

On the other hand, a change in power from the left-wing to the right-wing presents significant positive abnormal returns, with a greater impact on the post Event Window. The signs of those abnormal performances seem validated when considering the whole Event Window. When compared to prior literature, these results are counter-intuitive; sovereign yields are supposed to increase when leftist political parties access to power because their ideology is favourable to inflationist economic policies, especially in the South American context. Leftist parties generally desire to create a sharp break with previous market friendly regimes.

It may, however, be argued that beside the political ideology, the personality of the new leader in power or the country's political history may matter in terms of investors' expectations.

If the Right-Left transfer of power is considered, it must be noted that it is directly linked to the expected access to power of the Brazilian president Lula da Silva in 2002. A perceived risk reduction in the period surrounding the election may be attributed to the fact that the new president moderated his political ambitions as soon as he got to power, although he threatened, the whole political campaign through, to default on the country's debt and pursue leftist economic policies.

As for the opposite political transfer, it is due to the election of Sebastian Pinera in 2010, who will take over Ms. Bachelet's popular political mandate and will shift Chilean political orientation towards rightist policies, for the first time since General Augusto Pinochet was overthrown in the nineties. Therefore, these elections standas a major turn in an otherwise stable political Chilean landscape, where the same center-left coalition had prevailed during the last twenty years. Moreover, aside from the political break, which endangers Chile's reputation as the most stable country in the area, Pinera aspires to promote economic growth, which could undermine fiscal balance. Such a politico-historical context may explain the yield

increase on the Chilean sovereign bond yield, justified by a deviation from comfortable political stability equilibrium.

Beside those major results when considering the economic form of the model, several significant results are noted on the precise Event Day:

On the first hand, as argued in the results' section, the Venezuelan coup presents significant negative abnormal returns as compared to both estimation windows (the one-month window has been dropped because of an event-induced variance problem). As clearly demonstrated in the graph, the sovereign yield suddenly dropped the day that president Hugo Chavez was overthrown, returning to normal when Chavez eventually recovered his position. Such a result is probably explained by the explicit investors' aversion to Chavez's unstable and market unfriendly regime.

Moreover, changes in the Ministers of Finance seem to be associated with a yield reduction on the financial markets. Such a conclusion validates the prior literature, which grants an important role to some of the key persons in charge, especially in emerging countries. Indeed, although abnormal returns linked to presidential elections are not significant per se (that can partly be explained by the expected aspect of the presidential elections considered), the new Finance Minister nomination seems to send a reassuring signal to the financial sphere. Indeed, the eventual nomination is usually unexpected according to the press, but sends a clear signal to investors in terms of future economic policies through the previous functions of the Minister and his curriculum vitae.

Eventually, presidential elections leading to a political status quo present negative abnormal returns on the Event Day, which validates prior literature noting political immobilism in terms of perceived risk by the investors.

Finally, it may be noted that the country factor does not seem to matter that much, as all countries present significant abnormal returns, although Brazil appears to be most sensitive to political changes, unlike Peru, least responsive.

In conclusion, in the light of our empirical results, it may be argued that sovereign bond markets do react to political changes in the South American context even though the definition of significant political events remains unclear although it seems that bond yields react significantly only to presidential changes.

It would therefore be relevant to investigate the combination of political events with various structural features that may affect investors' expectations such as the institutional context, the number of veto players, the independence degree of the central bank in order to identify potential systematic patterns.

Finally, what seems clearly specific to South America is the importance of political leaders, beyond their political affiliation, as human beings carrying a personal history, symbols and a certain degree of charisma. It is indeed familiar to read in the press that two opposite political streams have emerged in the current South American context, the Lula's against the Chavez's and maybe "who is a friend to who" is the only thing that matters.

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## Appendix A. Political History

### BRAZIL

- Event 1  
02.03.2001  
(not expected)
- Officially because of the country's excellent result, and because of the problems encountered by Brasil in its market environment, Horst Kohler, chairman of the IMF, announces a new loan of 15 billion \$ to Brasil.  
Unofficially, the IMF seems to have ceased supporting Argentina (Argentina's monetary failure being unavoidable) and is trying to save Brasil.
- Event 2  
03.10.2002  
(not expected)
- The PLF (centre right) is forced to leave de governmental coalition because of a financial scandal involving one of it's candidates (Roseana Sarney); it will thus be difficult, indeed impossible, for Mr Cardoso (centre-right) to obtain the vote of new laws, notably referring to financial transactions taxation.
- Event 3  
07.07-13.2002  
(not expected)
- Because the left-wing will probably win the next election, the investors are beginning to fear a possible debt default.  
In a similar instance involving Korea in 1997, the IMF was willing to consider a loan of 57 billion \$, providing all candidates running for presidential election commit themselves to pay the debt.  
The same proposition is offered to Brasil, with the agreement of its Minister of Finance.  
Mr Lula da Silva and Mr Gomez both reject it.  
Indeed, in spite of his recent political evolution toward a centrist policy, Mr Lula objects that any international agreement needs to be approved by the President, Mr Cardoso; while Mr Gomez (leftist) considers that proposition As a swap of a short-term debt for a long-term bond loan.
- Event 4  
08.07.2002  
(not expected)
- A new loan of 30 billion \$ is consented by the IMF, spread over 15 months.  
The importance of such a loan is unexpected, meant to balance the currency and the national debt, as are its conditions, notably without any explicit commitment of the candidates running for presidency, about their future economic policy.
- Event 5  
10.06.2002  
(expected)
- First poll for presidential election.  
The coalition between Mr Luis Lula de Silva's PT and a small conservative party (PL) wins the election with 46.4% of votes, followed by Mr Jose Serra (PSDB & PMDB, centre-right) with 23.3%.  
The second poll will be held on October 27<sup>th</sup>.  
Legislative elections (not expected):  
Senate: PMDB wins 10 seats and detains thus 19 seats, PLF (*Partido do Frente Liberal*) wins 14 and detains 19 seats, and PSDB wins 8 and detains 11.  
PT does not obtain the most important representation in the Senate, and could try to form a coalition with one or more of Cardoso's; however, as PSDB and PMDB were preparing to be in the opposition, and not to collaborate with the Government, they aren't likely to prove themselves as serious opponents to Lula's administration, taking into account the many friends he has in both parties.  
Chamber of Representatives: PT wins 91 seats, PLF 84, PMDB 75 and PSDB 70; PT obtains thus the largest representation in the Chamber of Representatives.  
In the case of a coalition with one ore more of Mr Cardoso's, Mr Lula could potentially head a parliamentary majority of 309 seats, and of 48 seats in the Senate, which would allow him the necessary votes in order to make constitutional amendments.

Whatever the case, the administration will be restricted by a centrist parliament.

- Event 6  
10.27.2002  
(expected) Mr Lula da Silva wins the election with 61.4% votes (centre-left coalition although Mr Lula himself is left-wing) against Mr Serra's 38.5% (centre-right).  
Mr Lula heads a coalition of 7 parties, amongst which the PT, the PSDB (social-democrat), the PLF (centre-right), and the PPB (progressive), meaning 127 seats in Parliament and 16 in Senate, against 74 and 19 respectively for the PMBD; the majority of 2/3ds necessary to adopt constitutional amendments is thus not obtained.
- Event 7  
12.12.2002  
(expected) Antonio Palocci is appointed Minister of Finance; his claimed goals are inflation control, maintaining a budgetary surplus, all the while aiming toward progressive changes concerning tax reforms, social security and retirement pensions.
- Event 8  
05.27.2003  
(not expected) The PMBD, the third most important party in parliament joins the coalition; this alliance gives President Lula a sufficient majority (3/5ths) to allow him to vote amendments to the Constitution.  
In return, Mr da Silva promises to give a governmental department to the PMBD when the cabinet reshuffle will take lace next December; PMBD will also detain a dozen less important posts.
- Event 9  
12.12.2004  
(not expected) The PMBD, the second largest party of the coalition, decides to leave it, thus weakening President Lula, as it holds 22 of the 88 seats in Senate and 77 of the 513 in Parliament. However, because of internal disagreements in the PMBD, most of its senators and representatives are likely to follow, for the time being, President Lula's motions.  
Moreover, negotiations are being held in order to set up a third power in the Parliament, and oppose as well President Lula as the Social-Democrats. The latter would grow in strength in case PMBD joins. Another possible member of such new power is the PSP, which left the coalition along with the PMBD.  
Those political upheavals may impede President Lula with regard to social security reformation.
- Event 10  
09.21-28.2005  
(not expected) Severino Cavalcanti, chairman of Parliament, resigns because he faces charges of corruption.  
The choice of a new chairman of Parliament will be of the utmost importance for President Lula, as he is in charge of the legislative agenda, but also because he is the one to detain the power to destitute the President; President Lula's party is actually shaken by rumours of corruption, but no proof of President Lula's guilt has yet been discovered. The President's destitution is nevertheless possible in case the Chairman of Parliament is a member of PTL, President Lula's fieriest opponent.
- Event 11  
9.14.2005  
(not expected) Facing a charge of corruption, the Minister of Finance, Palocci, resigns; President Lula declines his resignation, and asks Mr Palocci to justify himself before the Senate.
- Event 12  
12.13.2005  
(not expected) The Minister of Finance announces the anticipated payment of Brasil's forthcoming two years debt to the IMF.  
Such decision is justified in terms of financial gain with regards to interest; a political reason plays also a role in the latter decision: President Lula, still surrounded by rumours of corruption hopes thus to satisfy left-wing supporters, as well as to reassure Brasil's foreign investors, retaining his chances of winning a second presidential election.

- Event 13  
03.27.2006  
(expected)
- After months of investigations into charges of corruption, Mr Palocci finally resigns. The financial markets hoped that Murilo Portugal, Palocci's deputy would be appointed, to guarantee the same orthodox economic policy, but Guido Mantega is the chosen one, who states he will pursue the same policies, but some doubt his true intentions. Mr Mantega is one of Lula's economic consultants since 1993 and is known as having criticised Mr Palocci's harsh policies, especially with regard to his anti-inflationist policy, responsible of the little economic growth, and to the objective of maintaining primary surplus, which restricts public investments.
- Event 14  
10.1.2006  
(expected)
- First poll for presidential election.  
Mr Lula da Silva wins with 46.6% votes (left-wing coalition with PT, PCdeB and PRB) against Mr Geraldo Jose Alckmin (centre-left PSBD) in coalition with PLF (41.6%).  
The second poll will be held on October 29<sup>th</sup>.  
Legislative elections:  
Chamber of representatives: 89 seats to the PMDB, 83 to the PT, 66 to the PSDB, 65 to the PLF.  
Senate (27 out of 81 seats): 6 seats to the PFL, 5 to the PSDB, 4 to the PMDB, 3 to the PTB and 2 to the PT.
- Event 15  
10.29.2006  
(expected)
- Second poll for presidential election.  
Mr Lula is elected with 60.8% of votes, against 39.1 for Mr Alckmin.  
Most of the PMDB parliamentarians back Mr Lula; the problem lies within the Senate, equally divided between supporters of and opponents to Mr Lula.  
President Lula declares the number of members of the PT holding posts in his government (only 16 out of 19 will remain, against a total of 34 posts).  
Eight of the most important political parties are expected to join the coalition (with a total of 14), giving Mr Lula a strong majority in Parliament, a less comfortable one in Senate.
- Event 16  
02.02.2009  
(non expected)
- Sen. Jose Sarney, a former president of Brazil and leader of the Brazilian Democratic Movement Party (PMDB), is elected president of the Senate, defeating PT candidate Sen. Tiao Viana by 49 to 32 votes.

## CHILE

### *Prior events*

- Pre-Event A  
01.16.2000  
(not expected)
- Second poll for presidential election.  
Ricardo Lagos (centre-left) wins the election with 51.3% of votes, against 48.6 in favour of Joaquin Lavin (right-wing).  
The centre-left coalition (La Concertacion), headed by Mr. Lagos, will lead the country for the third time, but the two last presidents, Mr Aylwin and Mr Frei, belonged to the Christian Democrat Party (center); Mr Lagos is thus the first socialist president to be elected since Allende, destituted by General Pinochet's military coup.  
Mr Lagos states he will try to conciliate social protection measures and liberal reforms; businessmen seem to believe him even though backing his opponents during the campaign.  
Mr Lagos declares he will endeavour to achieve Chile's full adhesion to the Mercosur, thus confirming his belief in market liberalization.
- Pre-Event B  
03.11.2000  
(not expected)
- Mr Lagos confirms his engagement to maintain Chile's traditionally tentative macro-economic policy.  
The nomination of Mr Nicolas Eyzaguirre, former director of the IMF as Minister of Finance, pleases the financial markets.

### **Considered events**

- Event 1  
12.16.2001  
(expected)
- Legislative Elections:  
Chamber of Representatives: President Lagos' coalition (centre-left) wins with 47.9% against 44% for *L'Alianza por Chile* (right-wing), representing 61 seats for *La Concertacion* against 56 for *l'Alianza por Chile*.  
Senate (half of seats): 51.3% for *La Concertacion* against 44% for *l'Alianza*. This results in a perfect equilibrium between right- and left-wing coalition senators and shouldn't impede Mr Lagos' office as most problems rise within the Senate, for the time being well-balanced.
- Event 2  
12.11.2005  
(expected)
- First poll for presidential election.  
Mrs Michelle Bachelet (centre-left) wins the first poll with 45.9% of votes against 25.4 % to Sebastian Pinera and 23.2 to Joaquin Lavin (both right-wing).  
Legislative Elections:  
Chamber of Representatives: the centre-left coalition of Mrs Bachelet wins with 47.4% (65 out of the 120 seats) against *l'Alianza* with 35.4% (54 seats).  
Senate (half of seats): 51.3% (11 seats) for *La Concertacion* against 34.3% (8 seats) for *L'Alianza*.  
Taking into account the 2001 election *La Concertacion* totals now 21 of the 38 seats, while *l'Alianza* detains 18 seats.
- Event 3  
01.15.2006  
(expected)
- Mrs Bachelet wins the second poll for presidential election with 53.5% of votes against 46.5% for Mr Pinera. This is thus the fourth consecutive victory for the centre-left *La Concertacion*; as her predecessor, Mr Lagos, Mrs Bachelet belongs to the Socialist Party. Her goal will be to lessen social inequalities through better education, less unemployment, and social reforms regarding the pensions scheme, while maintaining economic growth through orthodox and market-friendly economic policies.  
Sequel to constitutional amendments, her mandate will only have a four-year duration;

on the other hand, she will detain the majority as well in the Senate as in the Chamber of Representatives, all the most since Pinochet's legacy of nine life-long senators has been abolished.

Of course, she will need to learn to negotiate with the different parties within her coalition.

Event 4  
01.30.2006  
(not expected)

Aiming to widen her policy, Michelle Bachelet nominates Mr Andres Velasco as Minister of Finance; he teaches economics in Harvard University and is known as a liberal technocrat.

Event 5  
12.13.2009  
(expected)

On December 13th, Mr Pinera, for the Conservative Alianza, with 44% of the vote entered a run-off election on January 17th with a 14-point lead that will be hard to overcome for his rival, Eduardo Frei, a Christian Democrat from the ruling centre-left Concertacion coalition

A hyperachiever who pilots his own helicopter, Mr Pinera has a Harvard doctorate in economics and is one of Chile's richest businessmen. He says he would retain many of the Concertacion's social and economic policies.

Mr Pinera's victory is not certain. The right has not own a presidential election in Chile since 1958, but he is well placed to achieve it. Both he and Mr Frei must fight for the votes of Mr Enriquez-Ominami, who says he will remain neutral.

Whoever wins will have to work with an almost evenly divided Congress - in both houses independents will hold the balance of power. Although a victory for Mr Pinera would mark a powerful symbolic break with the past 20 years, its practical import might be limited.

With the Alianza, the heirs of Pinochet would return to power.

Event 6  
01.17.2010  
(expected)

Sebastian Pinera, a wealthy businessman and economist, won 51,6% of the vote for the conservative opposition, narrowly defeating the Concertacion's Eduardo Frei. But Mr Pinera was elected with fewer votes (just 43% of the electorate) than any president since 1990. Many of the Concertacion's voters simply stayed at home.

So Chile has not moved radically to the right, it has tired of the Concertacion. That is partly a tribute to the coalition's achievements.

Mr Pinera is a former senator for the National Renewal party, the smaller and more liberal of the right-of-centre parties. He would like to move his coalition to the centre, shedding not only is lingering ties to the dictatorship but also the extreme social conservatism of his coalition partner, the Independent Democratic Union. Indeed he called for his defeated opponents to join what he want to be a government of national unity.

He says he will keep the social policies of the Concertacion while raising economic growth to 6% a year, a rate Chile managed in the 1990s but which is harder now that it is richer.

He will have to govern without a majority in an almost evenly split Congress. But he will have powerful support in the media, most of which were hostile to the Concertacion.

One big change may come in Chile's relations in Latin America. Michelle Bachelet, the outgoing president, was close to Brazil's president, Luiz Inacio Lula da Silva. Mr Pinera is friendly with Colombia's conservative leader, Alvaro Uribe.

Event 7  
02.09.2010  
(expected) Chilean president-elect Sebastian Pinera names a cabinet of business leaders and academics with economist Felipe Larrain as finance minister tasked with luring investment through tax breaks and subsidies.

## **PERU**

### ***Prior events***

- Pre-Event A  
10.10.1999  
(unexpected) The Peruvian President, Mr Alberto Fujimori (right-wing) nominates Alberto Bustamante Belaunde as Prime Minister, while Efrain Goldenberg becomes Minister of Finance.
- Pre-Event B  
4.9-12.2000  
(unexpected) First poll for Presidential Elections  
An obvious lack of transparency over the vote-counting yields numerous complaints, mostly from the opposition, in regard of the validity of the election.  
The US as well as the European governments publicly declare they hope a second poll will be held; the USA threaten to otherwise take measures such as putting a hold to the IMF's support to Peru as well as stopping their own financial support (albeit aimed against narco-traffic).  
Legislative elections:  
The votes give 52 seats to Mr Fujimori's coalition against 29 to Mr Toledo.  
Three days after the presidential election, the official results are of 49.8% of votes to Mr Fujimori, against 40.2 to Mr Toledo.  
Lacking an absolute majority a second poll will be held on May 28<sup>th</sup>.
- Pre-Event C  
5.28.2000  
(expected) Mr Fujimori wins the second poll with 51% votes, against 17 to Mr Toledo.  
Such result was expected as Mr Toledo had declined to take part in the second poll, as although his name still appeared on ballot papers; he encouraged the citizens to spoil the ballot papers in order to denounce the fraud. Actually because of lack of transparency regarding the organization of the second poll, (for instance, unequal media coverage, electronic systems inefficiency...) Mr Toledo, as well as the USA, had asked for a delayed second poll, which had not been granted by the electoral bureau.  
Mr Toledo has, since, been known to denounce the fraud, backed by most latin-American countries and by the USA, who have objected the election, without, however, taking any retaliatory measures.  
Peru doesn't risk local sanctions but the USA may withhold their bilateral aid and impede new loans from International Financial Institutions, which would not necessarily entail a stopping of debt payment, but would affect the investors' confidence, already upset by the political uncertainty.  
One option considered is the replacement of President Fujimori by his Vice-President, Francisco Tuleda.
- Pre-Event D  
7.24.2000  
(unexpected) Twelve parliamentarians elected by the opposition decide to join Mr Fujimori's government allowing him to achieve the majority in Congress.  
This sudden change of allegiance gives rise to rumours of alleged corruption.
- Pre-Event E  
8.29.2000  
(unexpected) Mr Fujimori appoints Mr Federico Salas Guevara, one of his moderate opponents, as Prime Minister, and Mr Bolona, Minister of Finance; the latter, a liberal, is the one who initiated the financial reforms of 1991.1992, permitting Peru's economic recovery.  
Fujimori's strange selection of cabinet members, including liberal as well as populist personalities, enhances the investors' uncertainties in regard to Peru's future

policies.

Furthermore, the president, who makes himself known as a liberal, has slowed down the country's privatization process, without giving the slightest indication as far as the economic policy of his third term.

Pre-Event F  
9.16.2000  
(unexpected)

Taking the opportunity of a television broadcast, President Fujimori declares he wants elections to be held as soon as possible, and announces he will not run for president.

The population is sceptical greeting this announcement, as Mr Fulimori rejects the principle of a transitional administration, thus keeping his own presidential term of office until 2001 July 28<sup>th</sup>; furthermore, he seems to imply he will run for president in 2006.

Pre-Event G  
11.21.2000  
(unexpected)

Following Fujimori's teletype resignation letter from Japan, the Congress votes the "permanent moral incapacity" of the president to carry out his office.

As both Vice-Presidents also resign, the Congress elects its spokesman, Valentin Paniagua, as keeper of the presidency; Mr Paniagua is a member of "Accion Popular" a small centre-left party which detains only 3 seats in Congress.

He is commissioned to organize elections in April 2001.

Mr Paniagua appoints Javier Perez de Cuellar, former United Nations General Secretary, and Fujimori's opponent in the 1995 presidential elections, as Prime Minister; Mr Javier Silva Ruete becomes Minister of Finance and will pursue his predecessor's policy.

The newly designated Minister of Finance must face an important fiscal deficit and declares Peru will service its debt all the while negotiating long-term loans; new sovereign bonds issue is possible.

Pre-Event H  
4.8.2001  
(expected)

First poll for presidential election.

Unsurprisingly, Alejandro Toledo achieves 36.5% of votes, unexpectedly followed by the leftist Alan Garcia (25.7%) and by Lourdes Flores (center-right 24.3%).

The second poll will oppose Mr Toledo and Mr Garcia.

Legislative elections:

Unsurprisingly again, no-one achieves a majority in Congress (Mr Toledo's "Peru Posible" gains 26.3% of votes, Mr Garcia's "Partido Aprista Peruano", 19.7%, Mrs Flores' "Unidad Nacional", 13.8%)

Pre-Event I  
6.3.2001  
(unexpected)

Alejandro Toledo is the winner of the second poll, with 45.7% of votes, closely followed by his opponent, Alan Garcia (40.6%); Mr Toledo does not detain a majority of seats in Congress (45 over 120), but is willing to create a political Alliance; Garcia's "APRA" detains 28 seats.

Pre-Event J  
7.28.2001  
(unexpected)

Alejandro Toledo is inaugurated as head of state; he appoints Robert Danino, a lawyer in office, Prime Minister, and Pedro Pablo Kuczynski, an investment banker, in favour of privatization and market liberalization, while insisting on social issues, Minister of Economics and Finance; the latter states he will pursue market-friendly policies, on a human level.

Mr Toledo, still not endowed with a majority in Congress, faces difficulties building a coalition that would grant him one.

### *Considered events*

Event 1  
7.12.2002  
(unexpected)

Following violent demonstrations in June, against an electrical plant privatization, located in Arequipa, Peru's second most important city, Alejandro Toledo responds by a radical transformation of his ministerial cabinet.

Luis Solari, head of "Peru Posible" and former Health Minister, becomes Prime Minister, and Javier Silva Ruete, who briefly held that same charge during the

transitional government prior to Toledo's election, is appointed Minister of Finance in place of Mr Kuczynski. Although the latter is considered by investors as the fiscal austerity keeper, they do also appreciate Mr Silva as trustworthy.

Still lacking a majority in Congress, Mr Toledo hopes to conclude a political alliance with APRA, his fieriest opponent, as Mr Allan Wagner, his newly appointed Minister of Foreign Affairs, is close to Alan Garcia, APRA's head.

- Event 2  
7.25.2003  
(unexpected) Mr Jaime Quijandria replaces Javier Silva Ruete as Minister of Finance.
- Event 3  
2.15.2004  
(unexpected) Mr Pedro Pablo Kuczynski is reinstalled as Minister of Finance.
- Event 4  
8.16.2005  
(unexpected) The Peruvian President appoints Pedro Pablo Kuczynski , until then Minister of Finance, as Prime Minister: Mr Kuczynski, an experienced liberal reformer, prides himself on having fostered the economic growth and having improved the public expenditures balance.  
Mr Kuczynski chooses his Deputy, Mr Fernando Zavala as Minister of Finance.
- Event 5  
8.9.2006  
(expected) First poll for presidential election.  
The winner of the election is the leftist Mr Ollanta Humala (Union por el Peru) with 30.6% of votes, followed by Mr Alan Garcia, former center-left president, belonging to Partido Aprista Peruano, and whose administration was disastrous because of hyperinflation and of debt default, with 24.3%, and, finally by Lourdes Flores (Unidad nacional, center-right) with 23.8%.  
A second poll will oppose Mr Humala and Mr Garcia.  
Legislative elections:  
Mr Ollanta Humala's Union por el Peru harvests 45 seats, while Alan Garcia's Partido Aprista Peruano detains 36 and Unidad Nacional 17; whoever wins the second poll will not enjoy a majority in Congress.
- Event 6  
6.4.2006  
(expected) Mr Alan Garcia is the winner of the second poll and is elected president with 52.6% of votes against 47.3% to his opponent.
- Event 7  
7.28.2006  
(unexpected) In his inaugural speech, Mr Garcia expresses his will to belong to a moderate left-wing political block, wanting to fight poverty all the while pursuing responsible economic policies.  
The Peruvian president appoints Mr Luis Varranza, orthodox economist, former banker and parliamentarian, as Minister of Finance; the latter will pursue his predecessor's fiscal goal and is considered trustworthy by the IMF and the World Bank; both institutions are already committed to loan several billion \$ to Peru.  
Mr Garcia's position in Congress remains weak as he detains a minority of seats (36) while his opponent, Mr Humala, detains 42 seats; the president states his own party (APRA) will only play a limited role in the government, leaving vast room to other political groups.

## VENEZUELA

- Event 1  
6.30.1999  
(expected)      Resignation of the Minister of Finances, Maritza Izaguirre, who wants to resume her task within the Interamerican Development Bank; Mr Jose Rojas is called into office as substitute.
- Event 2  
12.19.1999  
(expected)      Popular approval of the new Constitution by 71.7% of votes (the majority was required and has been met).  
The new Constitution includes reinforcement of civil and human rights, and new requirements regarding the selection and appointment of judges. It provides extending the presidential mandate to six years, mandate which is once renewable.  
The Senate is dissolved in order to institutionalize a unicameral Parliament, while previously the Constitution provided a bicameral Congress, composed of the Senate (52 seats) and the Parliament (207 seats).  
Finally, the Constitution calls for the creation of a fourth branch of popular power, emphasises the involvement of the State in the economy and prohibits the privatization of national oil resources.
- Event 3  
7.30.2000  
(expected)      Presidential election:  
Overwhelming victory of President Chavez (left-wing, belonging to Movimiento Quinta Republica), and, moreover, of his coalition, with 60.3% of votes, against 37.5% to Mr Arias Cardenas.  
As provided in the Constitution, Mr Chavez is elected president for a six-year term.  
Legislative election:  
Momentous success for Mr Chavez' party, which wins 76 seats in the new constitutional unicameral Congress. If also considering his allies, Mr Chavez heads a majority of 3/5ths, guaranteeing him the vote of specific laws, which will enable him to govern by decree, without any consultation of the opposition.
- Event 4  
7.24.2001  
(unexpected)      Taking the opportunity of a cabinet reshuffle, Mr Chavez appoints Mr Nelson Merentes head of the Ministry of Finances instead of Mr Jose Rojas.
- Event 5  
1.5.2002  
(unexpected)      The opposition unites around dissident members of the MVR Party (the president's own party), thus weakening President Chavez' coalition.  
The President cannot count on a qualified majority any more and is thus unable to obtain the vote of constitutional amendments.
- Event 6  
2.27.2002  
(anticipated)      President Chavez ousts Mr Nelson Merentes and appoints General Francisco Uson as Minister of Finances; the newly appointed Minister, who carries a degree in *Operations Research and National Resource Strategy* obtained in the USA, has formerly been in charge of Budget and National Defence.  
Mr Uson is the fourth Minister of Finances to take office since the accession of Hugo Chavez to the presidency of Venezuela; the only minister still in charge since then is Jorge Giordani, Minister of Planning.
- Event 7  
4.11-18.2002  
(unexpected)      In four days of incredible chaos, the President is overthrown, then retrieves the power.  
In fact, the coup aiming to overthrow President Chavez is soon replaced by an alternate plan, headed by a group of fanatic businessmen, whose leader, Mr Pedro Carmona Estanga, decrees the immediate dissolution of the National Assembly and the Supreme Court, and publicly tears into pieces the Constitution that had been approved by popular referendum in 1999.

Unexpectedly, Mr Chavez who previously didn't seem to enjoy the Army's support, is backed by the military and reinstated as President two days later; actually great number of Chavez' supporters ranked among the army officers.

The lack of precaution of the conservatives must also be taken into account: an attack by surprise, by a single army division, backed by the presidential guard, will suffice to put an end to Mr Carmona's very short span of power.

Although denying any preliminary knowledge of a military coup against Mr Chavez, the USA do not condemn it, in opposition to every single Latino American country. It must be expected that following the abortion of the political coup, the USA will engage in an economic struggle against Mr Chavez' government, beginning by the restriction of financial loans to Venezuela.

Such political uncertainty is also the cause of the resignation of General Francisco Uson, Minister of Finances, replaced by Mr Jesus Bermudez.

Event 8  
5.6.2002  
(expected)

Another cabinet reshuffle leads Mr Tobias Nobrega to the head of the Ministry of Finances, in place of Mr Bermudez, and M Felipe Perez is appointed Minister of Planning, by President Chavez, in replacement of Mr Giordani.

Event 9  
8.16.2004  
(unexpected)

Following a mid-term presidential mandate referendum that had been demanded by the opposition, asking whether the citizens were willing to keep Mr Chavez in power the Electoral Council announces that 59.2% of the votes are in favour of President Chavez' maintaining of power, against 40.7 in favour of his resignation.

In spite of the opposition's protests regarding alleged electoral frauds the international observers and the foreign governments (including the USA) are quick to ratify the vote.

Event 10  
12.5.2004  
(unexpected)

Unexpected and improbable appointment of Nelson Merentes as Minister of Finances, without any comment from President Chavez, following the resignation of Mr Tobias Nobrega.

Event 11  
12.4.2005  
(unexpected)

Legislative elections:  
Because of a last-minute boycott of the elections by the opposition, only 25% of the population expresses its vote. The boycott has been decided because of Mr Chavez' political control over the National Electoral Council and following an audit fraud with regard to the vote organisation.

This leads to an overwhelming victory of Mr Chavez' supporters within the National Assembly, who now hold 114 over 167 seats as far as Mr Chavez' own party, while the remaining seats are held by his political allies. Formerly, the National Assembly was the last remaining institution where the opposition still detained some influence, as it held 79 over 165 seats before the election.

Such results imply the lack of any control over President Chavez, enabling him to make any amendment to the Constitution he may wish.

In spite of a very low turnout of the election, because of the boycott, it remains that Mr Chavez enjoys a high popularity among the population, bordering up to 50%, which no other leader within the opposition may equal.

Event 12  
12.6.2006  
(expected)

Presidential election  
Momentous election of Mr Chavez (left-wing MQR) with 62.8% of votes, against Manuel Rosales (Un Nuevo Tiempo, center-left) with 36.9%.

Analysing such unprecedented victory, Mr Chavez states he is encouraged to sustain and broaden his Socialist Bolivarian Revolution. Moreover, he will organize another referendum in 2010, aiming to abolish the constitutional article which impedes him to run for a third presidential term.

While declaring, on the one hand, that he would not make any drastic changes regarding his social and economic policies, he states in a press conference he is sincerely convinced that a democracy cannot thrive under capitalistic conditions.

It must be emphasised that, to date, President Chavez' power is unlimited, as he now detains a vast majority in all State Institutions.

- Event 13  
1.4.2007  
(unexpected) President Chavez appoints Rodrigo Cabezas, a true advocate of the Socialist Revolution, as Minister of Finances.
- Event 14  
4.13.2007  
(unexpected) President Chavez declares Venezuela's debt, which amounted to \$ 3 billion in 1998, to have been entirely repaid.
- Event 15  
4.30.2007  
(unexpected) President Chavez announces Venezuela will retire from the IMF, the World Bank, and perhaps also from the American States Organisation, as these are dominated by North America, namely by the USA, which Mr Chavez considers as his fieriest enemy. If done as said, Venezuela will join the very private group of countries which do not adhere to those institutions, namely Cuba and North Korea.  
Up to July 2008, Venezuela still has not retired.
- Event 16  
12.2.2007  
(unexpected) A referendum is held to approve the constitutional amendments, to formalize President Chavez' Socialist Revolution of the XXIst century, to extend the presidential term up to 7 years, with unlimited renewal of the presidential mandate.  
Furthermore, the latest constitutional reforms provides full disposition of reserve currency for the President, as well as his permission for any land expropriation.  
As the turnout is very low, President Chavez is vetoed, facing a small official majority of "no's" (1.4%). President Chavez will thus constitutionally be excluded from presidential power in 2013.
- Event 17  
1.4.2008  
(unexpected) Rafael Isea, a former lieutenant without any practical economic expertise, is appointed Minister of Finances by President Chavez; chances are few that he will reinstate market-friendly policies.  
Mr Haimal El Troudi is in charge of the Ministry of Planning and his predecessor is appointed at the head of the Central Planification.
- Event 18  
06.15.2008  
(unexpected) Ali Rodriguez Araque is designated to replace Rafael Isea as finance minister.  
He will take office on June 17.
- Event 19  
02.15.2009  
(expected) On February 15th, after a blitzkrieg campaign involving the brazen state use of state resources, the president finally got the answer he wanted. Some 55% of a high turnout of voters said yes to a referendum question so convoluted as to be barely intelligible. The constitution will now be amended to permit elected officials at all levels to stand for the same post as often as they like. So Chavez will no longer automatically have to leave office in January 2013, after 14 years in power. But will Venezuelans want to elect him again? Paradoxically, the opinion polls that accurately forecast the result also showed a slim majority against the indefinite re-election of the president.

**Appendix B. Event Overview chronologically by country**

			Expected	Non expected	L-R	R-L	Status quo	Pres. L.	Pres. C	Pres. D	Congress Majority
<b>BRAZIL</b>											
1	02.03.2001	IMF agreement		x							
2	03.10.2002	Coal. Gov.		x							
3	07.07.2002	IMF announcement		x							
4	08.07.2002	IMF agreement		x							
5	10.06.2002	Pres. & leg. Elections	x								
6	10.27.2002	Pres. Elect 2nd round	x			x			x		
7	12.12.2002	Finance Minister	x								
8	05.27.2003	Coal. Gov.		x							x
9	12.12.2004	Coal. Gov.		x							
10	09.21.2005	Chambre President		x							
11	11.14.2005	Finance Minister resignation		x							
12	12.13.2005	IMF repayment		x							
13	03.27.2006	Finance Minister	x								
14	10.01.2006	Pres. & leg. Elections	x								
15	10.29.2006	Pres. Elect 2nd round	x				x	x			x
16	02.02.2009	Senate President		x							
<b>CHILE</b>											
1	12.16.2001	Legislative Elections	x								
2	12.12.2005	Pres. & leg. Elections	x								x
3	01.15.2006	Pres. Elect 2nd round	x				x		x		x
4	01.30.2006	Finance Minister		x							
5	12.13.2009	Pres. & leg. Elections	x								
6	01.17.2010	Pres. Elect 2nd round	x			x			x		
7	02.09.2010	Finance Minister	x								
<b>PERU</b>											
1	07.12.2002	Finance Minister		x							
2	07.25.2003	Finance Minister		x							
3	02.15.2004	Finance Minister		x							
4	08.16.2005	Finance Minister		x							
5	04.09.2006	Pres. & leg. Elections	x								
6	06.04.2006	Pres. Elect 2nd round	x				x		x		
7	07.28.2006	Finance Minister		x							

			Expected	Non expected	L-R	R-L	Status quo	Pres. L.	Pres. C	Pres. D	Congress Majority
<b>VENEZUELA</b>											
1	06.30.1999	Finance Minister	x								
2	12.15.1999	Popular Referendum	x								
3	07.30.2000	Pres. & leg. Elections	x				x	x			x
4	07.24.2001	Finance Minister		x							
5	01.05.2002	Coal. Gov.		x							
6	02.27.2002	Finance Minister	x								
7	04.11.2002	Coup		x							
8	05.06.2002	Finance Minister	x								
9	08.16.2004	Popular Referendum		x							
10	12.05.2004	Finance Minister		x							
11	12.04.2005	Legislative Elections		x							
12	12.03.2006	Presidential Elections	x				x	x			x
13	01.04.2007	Finance Minister		x							
14	04.13.2007	Debt Reimbursment IMF		x							
15	04.30.2007	IMF		x							
16	12.02.2007	Popular Referendum		x							
17	01.04.2008	Finance Minister		x							
18	06.15.2008	Finance Minister		x							
19	02.15.2009	Popular Referendum	x								

**Appendix C. Event Overview by category**

			Expected	Non expected	L-R	R-L	Status quo	Pres. L.	Pres. C	Pres. D	Congress Majority
<b>Presidential Elections</b>											
	12.3.2006	Venezuela	x				x	x			x
	10.6.2002	Brazil	x								
	10.1.2006	Brazil	x								
	12.11.2005	Chile	x								x
	12.13.2009	Chile	x								
	4.9.2006	Peru	x								
	7.30.2000	Venezuela	x				x	x			x
	10.27.2002	Brazil	x			x			x		
	10.29.2006	Brazil	x				x	x			x
	1.15.2006	Chile	x				x		x		x
	1.17.2010	Chile	x		x				x		
	6.4.2006	Peru	x				x		x		
<b>Legislative Elections</b>											
	12.16.2001	Chile	x								
	12.4.2005	Venezuela		x							
<b>Coup</b>											
	4.11.2002	Venezuela		x							
<b>Coal. Gov.</b>											
	3.10.2002	Brazil		x							
	5.27.2003	Brazil		x							x
	12.12.2004	Brazil		x							
	1.5.2002	Venezuela		x							
	9.21.2005	Brazil		x							
	2.2.2009	Brazil		x							

			Expected	Non expected	L-R	R-L	Status quo	Pres. L.	Pres. C	Pres. D	Congress Majority
<b>Finance Ministers</b>											
	12.12.2002	Brazil	x								
	3.27.2006	Brazil	x								
	1.30.2006	Chile		x							
	2.9.2010	Chile	x								
	7.12.2002	Peru		x							
	7.25.2003	Peru		x							
	2.15.2004	Peru		x							
	8.16.2005	Peru		x							
	7.28.2006	Peru		x							
	6.30.1999	Venezuela	x								
	7.24.2001	Venezuela		x							
	2.27.2002	Venezuela	x								
	5.6.2002	Venezuela	x								
	12.5.2004	Venezuela		x							
	1.4.2007	Venezuela		x							
	1.4.2008	Venezuela		x							
	6.15.2008	Venezuela		x							
	11.14.2005	Brazil		x							
<b>IMF</b>											
	2.3.2001	Brazil		x							
	7.7.2002	Brazil		x							
	8.7.2002	Brazil		x							
	12.13.2005	Brazil		x							
	4.13.2007	Venezuela		x							
	4.30.2007	Venezuela		x							
<b>Others</b>											
Popular Referendum	12.15.1999	Venezuela	x								
Popular Referendum	8.16.2004	Venezuela		x							
Popular Referendum	12.2.2007	Venezuela		x							
Popular Referendum	2.15.2009	Venezuela	x								

## Appendix D. Correlation Matrix

	Energy	Materials	Industrials	Cons. Discr.	Cons. Staples	Health Care	Financials	IT	Telecom	Utilities
Energy	1.00									
Materials	0.77	1.00								
Industrials	0.56	0.85	1.00							
Consumer Discretionary	0.67	0.71	0.76	1.00						
Consumer Staples	0.69	0.75	0.76	0.74	1.00					
Health Care	0.23	0.27	0.23	0.39	0.49	1.00				
Financials	0.79	0.82	0.71	0.75	0.75	0.23	1.00			
IT	0.70	0.72	0.73	0.66	0.74	0.20	0.65	1.00		
Telecommunication Services	0.57	0.65	0.65	0.77	0.63	0.33	0.70	0.55	1.00	
Utilities	0.72	0.58	0.47	0.68	0.65	0.31	0.82	0.54	0.72	1.00

## Appendix E. Principal Component Analysis

Number of observations = 2957  
 Number of components = 10  
 Trace = 11  
 Rho = 1

Component	Eigenvalues	Differences	Proportion	Cumulative
Component1	7.38	6.36	0.67	0.67
Component2	1.02	0.07	0.09	0.76
Component3	0.95	0.42	0.09	0.85
Component4	0.53	0.19	0.05	0.90
Component5	0.33	0.06	0.03	0.93
Component6	0.27	0.05	0.02	0.95
Component7	0.21	0.06	0.02	0.97
Component8	0.15	0.05	0.01	0.99
Component9	0.10	0.04	0.01	0.99
Component10	0.06	0.06	0.01	1.00
Component11	0.00	.	0.00	1.00

## Appendix F. Corrado Test and Squared Rank Test

### *Corrado test*

For the Event Day ( $t=0$ ) and  $N$  events (cross-section analysis), the test statistic for the null hypothesis is:

$$T_0 = \frac{\frac{1}{N} \sum_{i=1}^N (K_{i0} - \bar{K}_i)}{S(K)}$$

Where the standard deviation  $S(K)$  is calculated using the combined period including the estimation and the event window:

$$S(K) = \sqrt{\frac{1}{T_i} \sum_{-t}^{+t} \left( \frac{1}{N} \sum_{i=1}^N (K_{it} - \bar{K}_i) \right)^2}$$

With multi-days event windows, the rank statistic is:

$$T = \frac{\sum_t \frac{1}{N} \sum_{i=1}^N (K_{it} - \bar{K}_i)}{\sqrt{\sum_t S^2(K)}}$$

### *Squared rank test*

The test statistic for the event period is defined as:

$$Q_i = \sum_{l=1}^L (r_{il})^2$$

Where  $l$  refers to event window's business days and  $r_i$  is the rank of the absolute value of abnormal returns. Under the null hypothesis of no variance shift, this statistic is tabulated (Conover, 1984). If the number of days in estimation is greater than  $10^{24}$ , this statistic can be approximated to the unit normal:

$$\text{Critical value } q_p = \frac{T(T+1)(2T+1)}{6} + x_p \sqrt{\frac{LT(T+1)(2T+1)(8T+11)}{180}}$$

where  $x_p$  is the critical value of the unit normal distribution.  $T$  and  $L$  are, respectively, the number of weeks in the estimation and event windows considered.

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<sup>24</sup> This is always the case in this study as the shortest estimation window lasts 1 month.

## Appendix G. Cumulative Abnormal Returns Matrix

B = Brazil, C = Chile, P = Peru, V = Venezuela.

EVENTS	Event Windows	Estimation Windows		
		1-month	3-month	6-month
<b>B5 Pres. &amp; leg. Elections</b>	Event Day	-0.06	n/a	0.23
	Prior	-2.81	n/a	-2.16
	Post	-0.38	n/a	0.18
	whole	-3.19	n/a	-1.98
<b>B6 Pres. Elect 2nd round</b>	Event Day	-0.56	n/a	-0.61
	Prior	-3.56	n/a	-3.23
	Post	-0.92	n/a	-0.88
	whole	-4.48	n/a	-4.11
<b>B14 Pres. &amp; leg. Elections</b>	Event Day	0.04	0.03	0.04
	Prior	0.18	0.05	-0.14
	Post	0.29	0.22	0.22
	whole	0.47	0.27	0.08
<b>B15 Pres. Elect 2nd round</b>	Event Day	0.01	-0.02	-0.12
	Prior	0.17	0.08	0.00
	Post	0.26	0.14	0.02
	whole	0.43	0.22	0.03
<b>C2 Pres. &amp; leg. Elections</b>	Event Day	-0.13	n/a	0.02
	Prior	-0.19	n/a	0.11
	Post	0.38	n/a	0.00
	whole	0.19	n/a	0.11
<b>C3 Pres. Elect 2nd round</b>	Event Day	-0.01	n/a	-0.01
	Prior	0.05	n/a	0.08
	Post	0.02	n/a	0.05
	whole	0.06	n/a	0.13
<b>C5 Pres. &amp; leg. Elections</b>	Event Day	0.11	n/a	0.10
	Prior	0.28	n/a	0.26
	Post	-0.17	n/a	-0.19
	whole	0.12	n/a	0.07
<b>C6 Pres. Elect 2nd round</b>	Event Day	0.05	n/a	0.03
	Prior	0.64	n/a	0.13
	Post	2.11	n/a	1.04
	whole	2.75	n/a	1.17
<b>P5 Pres. &amp; leg. Elections</b>	Event Day	n/a	n/a	-0.05
	Prior	n/a	n/a	-0.05
	Post	n/a	n/a	-0.13
	whole	n/a	n/a	-0.18

<b>P6 Pres. Elect 2nd round</b>	Event Day	-0.10	n/a	-0.07
	Prior	-0.43	n/a	-0.04
	Post	-0.71	n/a	-0.28
	whole	-1.14	n/a	-0.32
<b>V3 Pres. &amp; leg. Elections</b>	Event Day	n/a	-0.03	-0.09
	Prior	n/a	0.31	0.04
	Post	n/a	-0.42	-0.23
	whole	n/a	-0.12	-0.18
<b>V12 Presidential Elections</b>	Event Day	0.08	0.00	-0.02
	Prior	0.18	0.25	0.05
	Post	0.53	-0.10	-0.26
	whole	0.71	0.14	-0.21

EVENTS	Event Windows	Estimation Windows		
		1-month	3-month	6-month
<b>C1 Legislative Elections</b>	Event Day	-0.07	n/a	n/a
	Prior	0.09	n/a	n/a
	Post	0.06	n/a	n/a
	whole	0.15	n/a	n/a
<b>V11 Legislative Elections</b>	Event Day	0.09	0.03	0.05
	Prior	0.54	0.18	0.10
	Post	0.12	0.31	-0.01
	whole	0.67	0.50	0.08

EVENTS	Event Windows	Estimation Windows		
		1-month	3-month	6-month
<b>B2 Coal. Gov.</b>	Event Day	n/a	n/a	-0.11
	Prior	n/a	n/a	-0.16
	Post	n/a	n/a	-0.22
	whole	n/a	n/a	-0.39
<b>B8 Coal. Gov.</b>	Event Day	-0.25	-0.12	-0.08
	Prior	0.02	-0.02	0.23
	Post	-0.98	0.33	-0.45
	whole	-0.96	0.31	-0.22
<b>B9 Coal. Gov.</b>	Event Day	0.19	0.01	-0.05
	Prior	-0.77	-0.27	-0.30
	Post	-0.63	-0.04	-0.27
	whole	-1.39	-0.31	-0.57
<b>B10 Chambre President</b>	Event Day	-0.20	0.12	0.04
	Prior	-0.55	0.08	-0.05
	Post	-0.59	0.15	0.03
	whole	-1.13	0.23	-0.02

<b>B16 Senate President</b>	Event Day	-0.01	-0.05	0.01
	Prior	0.34	0.21	0.05
	Post	0.51	0.29	0.29
	whole	0.85	0.50	0.34
<b>V5 Coal. Gov.</b>	Event Day	n/a	-0.01	0.04
	Prior	n/a	-0.35	-0.33
	Post	n/a	0.17	0.59
	whole	n/a	-0.18	0.26

EVENTS	Event Windows	Estimation Windows		
		1-month	3-month	6-month
<b>B7 Finance Minister</b>	Event Day	-0.61	n/a	-0.53
	Prior	-1.11	n/a	-0.25
	Post	-3.49	n/a	-1.81
	whole	-4.60	n/a	-2.06
<b>B11 Finance Minister resignation</b>	Event Day	0.09	-0.07	0.02
	Prior	-0.21	0.05	0.03
	Post	-0.47	-0.13	-0.20
	whole	-0.68	-0.07	-0.17
<b>B13 Finance Minister</b>	Event Day	0.07	-0.04	-0.03
	Prior	0.24	-0.06	0.02
	Post	0.81	0.42	0.49
	whole	1.05	0.37	0.51
<b>C4 Finance Minister</b>	Event Day	-0.01	n/a	-0.01
	Prior	0.00	n/a	0.07
	Post	0.05	n/a	0.10
	whole	0.06	n/a	0.17
<b>C7 Finance Minister</b>	Event Day	-0.12	n/a	-0.05
	Prior	0.42	n/a	-0.04
	Post	-0.17	n/a	0.00
	whole	0.24	n/a	-0.04
<b>P1 Finance Minister</b>	Event Day	n/a	n/a	-0.19
	Prior	n/a	n/a	1.30
	Post	n/a	n/a	-0.01
	whole	n/a	n/a	1.29
<b>P2 Finance Minister</b>	Event Day	n/a	n/a	0.07
	Prior	n/a	n/a	0.02
	Post	n/a	n/a	0.76
	whole	n/a	n/a	0.78
<b>P3 Finance Minister</b>	Event Day	n/a	n/a	-0.02
	Prior	n/a	n/a	-0.02
	Post	n/a	n/a	0.21
	whole	n/a	n/a	0.19

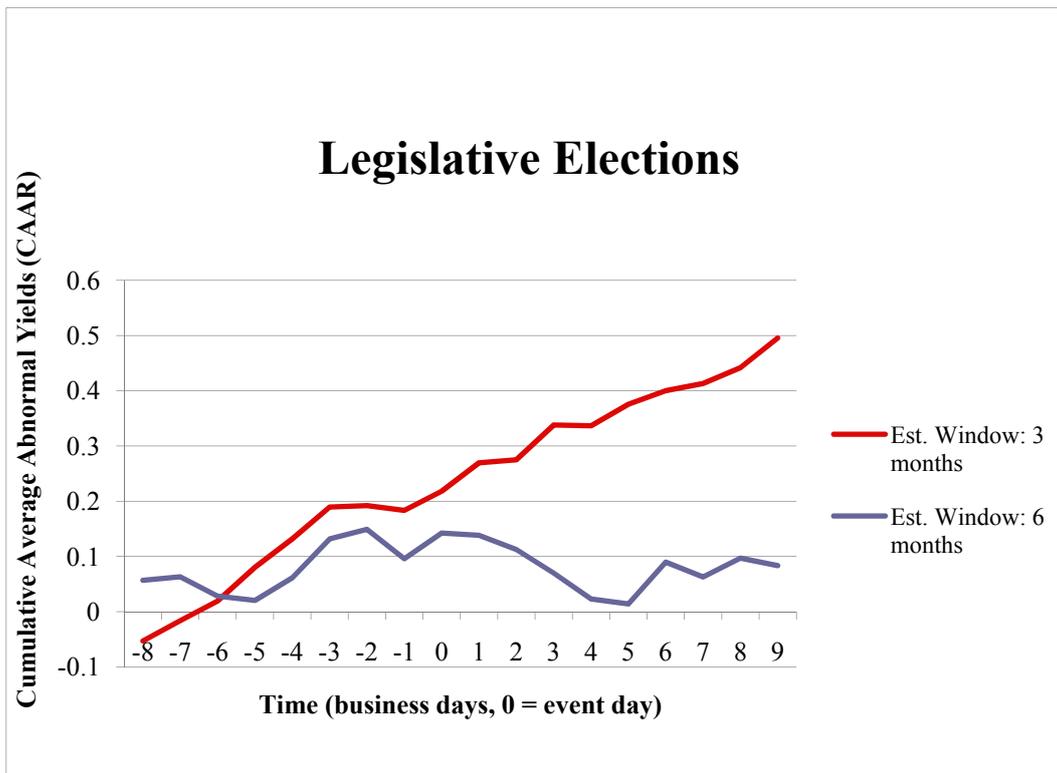
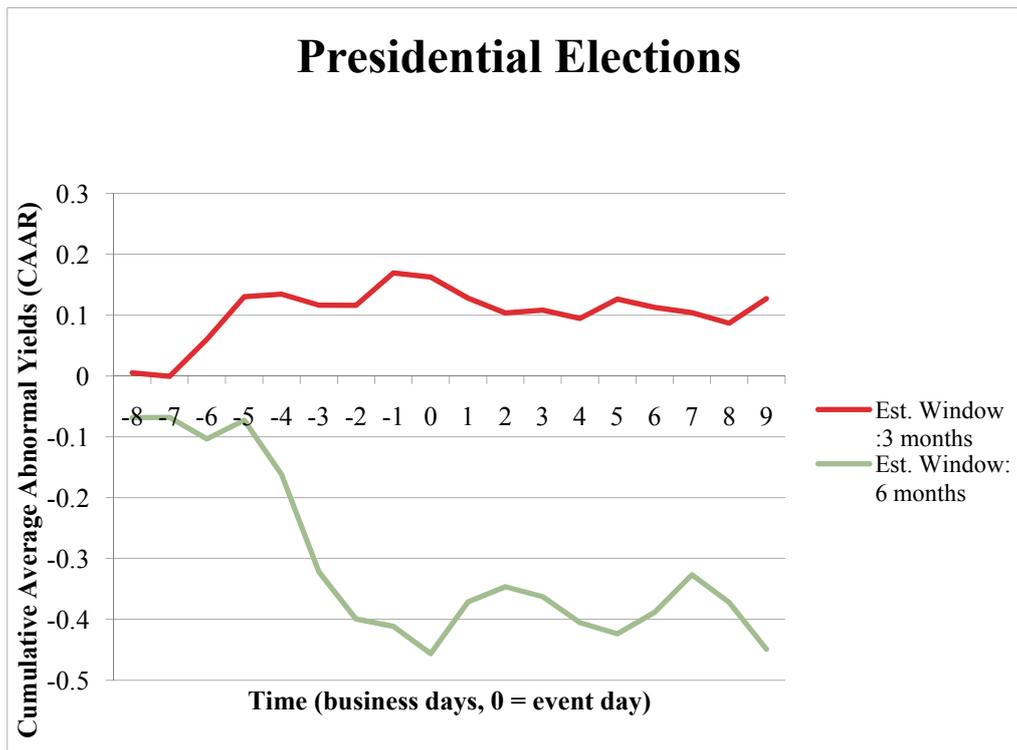
<b>P4 Finance Minister</b>	Event Day	n/a	n/a	-0.12
	Prior	n/a	n/a	-0.19
	Post	n/a	n/a	-0.06
	whole	n/a	n/a	-0.25
<b>P7 Finance Minister</b>	Event Day	0.03	n/a	-0.01
	Prior	-0.40	n/a	-0.22
	Post	0.01	n/a	-0.01
	whole	-0.39	n/a	-0.22
<b>V1 Finance Minister</b>	Event Day	n/a	-0.21	n/a
	Prior	n/a	0.36	n/a
	Post	n/a	-0.20	n/a
	whole	n/a	0.16	n/a
<b>V4 Finance Minister</b>	Event Day	n/a	-0.03	0.01
	Prior	n/a	-0.15	-0.10
	Post	n/a	0.08	0.33
	whole	n/a	-0.08	0.23
<b>V6 Finance Minister</b>	Event Day	-0.37	-0.08	-0.15
	Prior	-1.28	0.05	0.38
	Post	-0.73	-1.03	-1.02
	whole	-2.01	-0.97	-0.64
<b>V8 Finance Minister</b>	Event Day	-0.16	-0.06	0.01
	Prior	-0.58	-0.28	-0.01
	Post	0.22	-0.19	0.00
	whole	-0.36	-0.47	0.00
<b>V10 Finance Minister</b>	Event Day	-0.04	0.13	0.13
	Prior	0.55	0.11	0.44
	Post	0.04	0.37	-0.28
	whole	0.59	0.48	0.16
<b>V13 Finance Minister</b>	Event Day	-0.10	0.08	-0.03
	Prior	0.33	0.20	0.00
	Post	0.24	0.58	0.26
	whole	0.58	0.77	0.25
<b>V17 Finance Minister</b>	Event Day	-0.09	-0.09	-0.15
	Prior	0.00	-0.12	-0.04
	Post	-0.41	-0.62	-1.02
	whole	-0.41	-0.74	-1.06
<b>V18 Finance Minister</b>	Event Day	0.00	-0.01	0.13
	Prior	-0.26	-0.36	-0.58
	Post	0.31	0.08	0.08
	whole	0.06	-0.28	-0.50

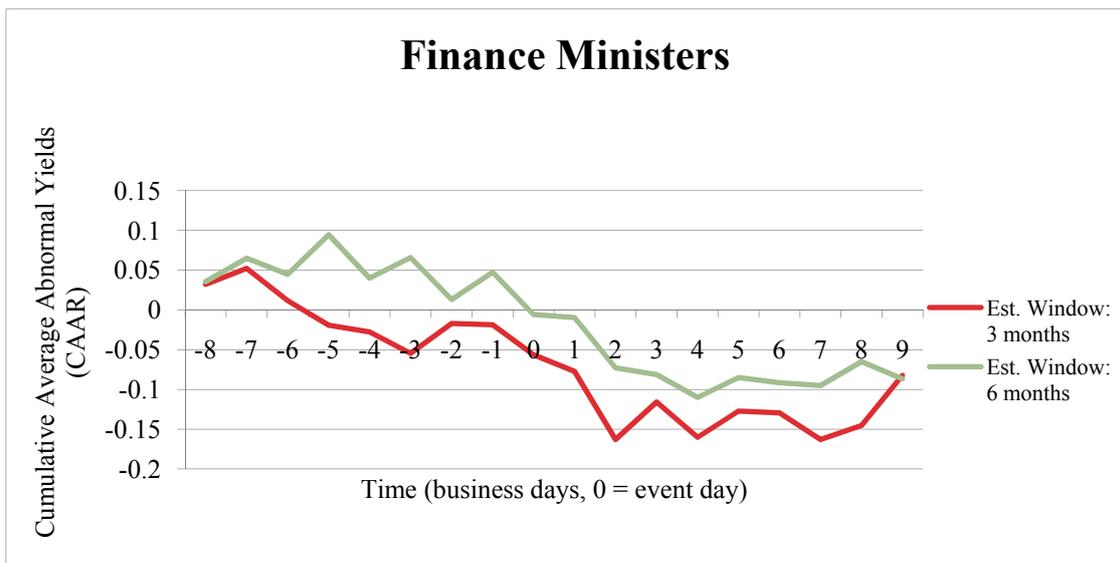
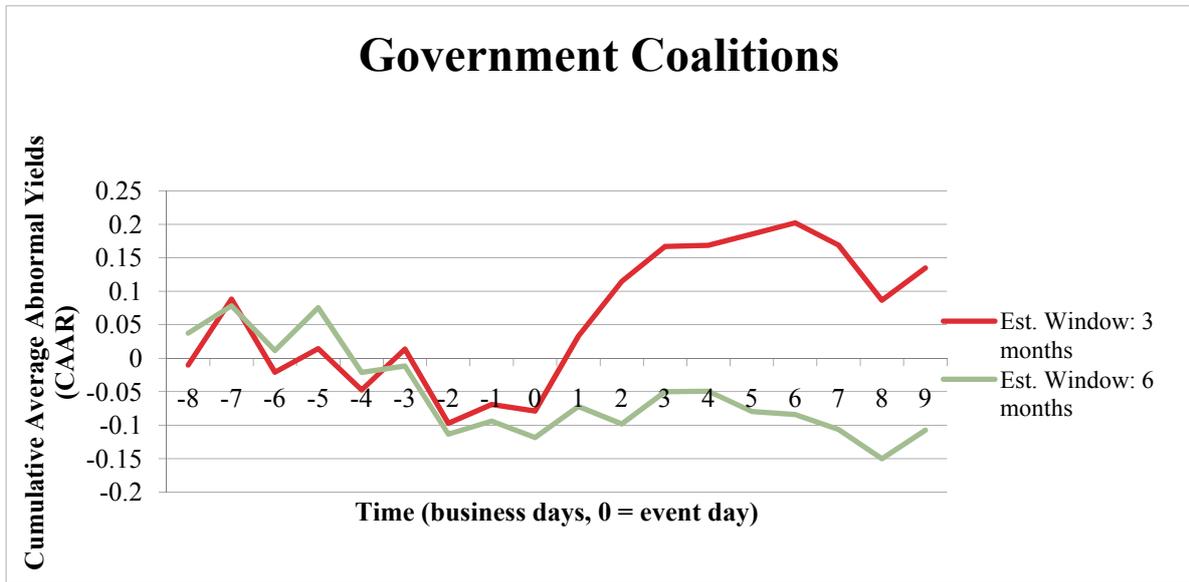
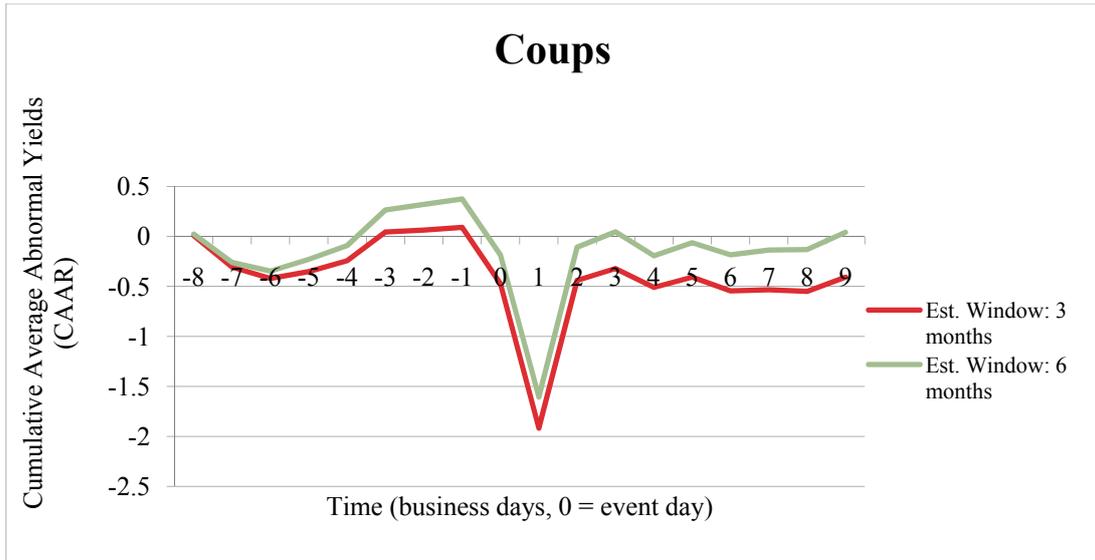
EVENTS	Event Windows	Estimation Windows		
		1-month	3-month	6-month
<b>B1 IMF agreement</b>	Event Day	n/a	n/a	0.13
	Prior	n/a	n/a	-0.08
	Post	n/a	n/a	0.00
	whole	n/a	n/a	-0.08
<b>B3 IMF announcement</b>	Event Day	0.61	n/a	0.55
	Prior	1.06	n/a	1.43
	Post	-3.09	n/a	-2.02
	whole	-2.03	n/a	-0.59
<b>B4 IMF agreement</b>	Event Day	-1.69	n/a	-1.76
	Prior	2.36	n/a	3.25
	Post	-2.24	n/a	-2.02
	whole	0.12	n/a	1.23
<b>B12 IMF repayment</b>	Event Day	-0.11	0.10	0.11
	Prior	-0.73	-0.23	-0.32
	Post	-0.82	-0.28	-0.08
	whole	-1.55	-0.52	-0.39
<b>V14 Debt Reimbursement IMF</b>	Event Day	0.11	0.03	0.06
	Prior	0.66	-0.01	0.12
	Post	0.17	-0.25	-0.10
	whole	0.83	-0.26	0.01
<b>V15 IMF</b>	Event Day	-0.14	-0.01	0.03
	Prior	0.02	-0.23	-0.16
	Post	0.78	0.25	0.37
	whole	0.80	0.03	0.20

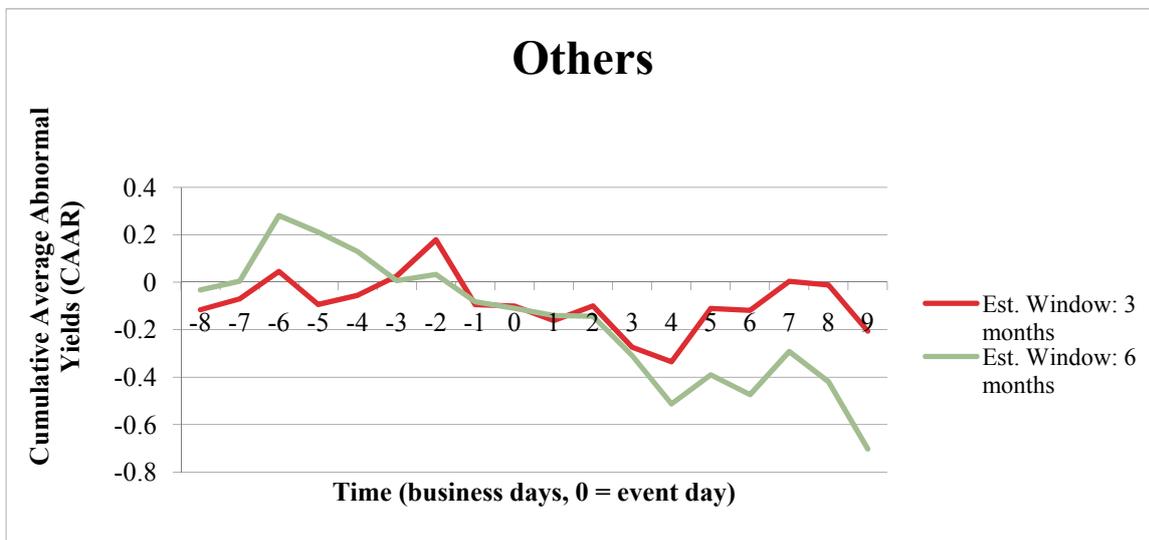
EVENTS	Event Windows	Estimation Windows		
		1-month	3-month	6-month
<b>V7 Coup</b>	Event Day	-0.64	-0.56	-0.56
	Prior	0.36	0.09	0.37
	Post	-0.22	-0.50	-0.33
	whole	0.14	-0.41	0.04

EVENTS	Event Windows	Estimation Windows		
		1-month	3-month	6-month
<b>V2 Popular Referendum</b>	Event Day	n/a	0.08	n/a
	Prior	n/a	-0.56	n/a
	Post	n/a	1.02	n/a
	whole	n/a	0.46	n/a
<b>V9 Popular Referendum</b>	Event Day	0.04	0.10	0.15
	Prior	-0.48	-0.45	-0.76
	Post	-0.12	-0.47	-0.14
	whole	-0.60	-0.92	-0.90
<b>V16 Popular Referendum</b>	Event Day	-0.04	-0.12	-0.14
	Prior	0.34	0.14	-0.07
	Post	-0.09	-0.16	-0.10
	whole	0.25	-0.02	-0.18
<b>V19 Popular Referendum</b>	Event Day	-0.06	-0.08	-0.09
	Prior	0.53	0.50	0.58
	Post	-0.34	-0.64	-1.87
	whole	0.19	-0.14	-1.28

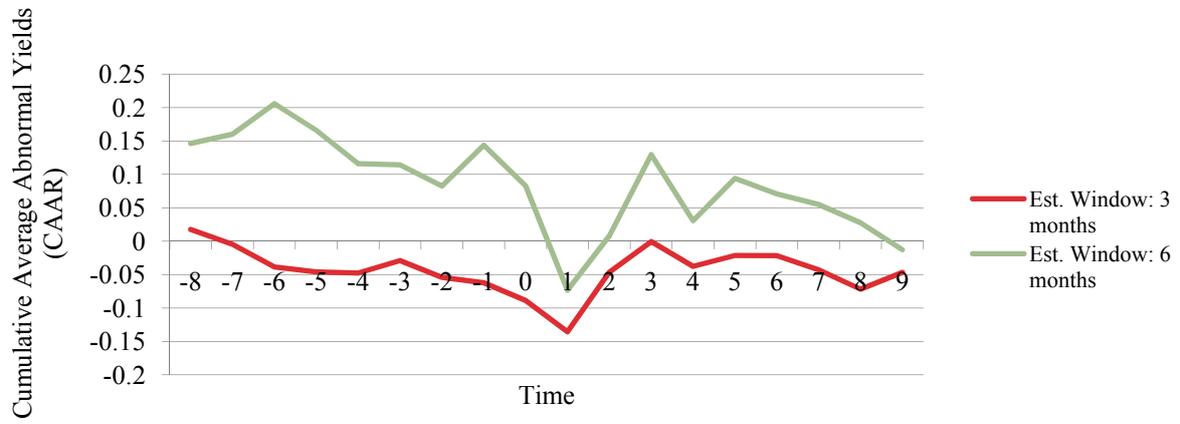
**Appendix H. Cumulative Average Abnormal Returns Figures**



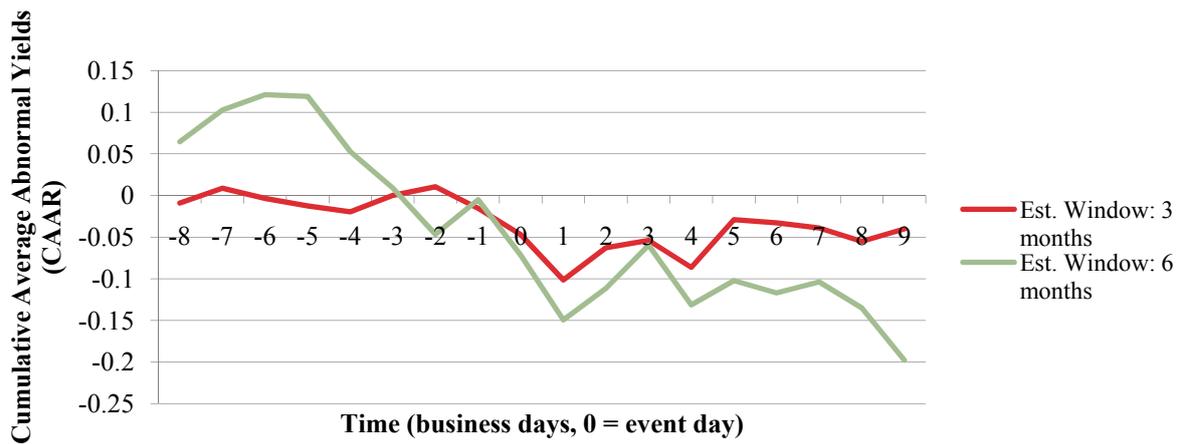




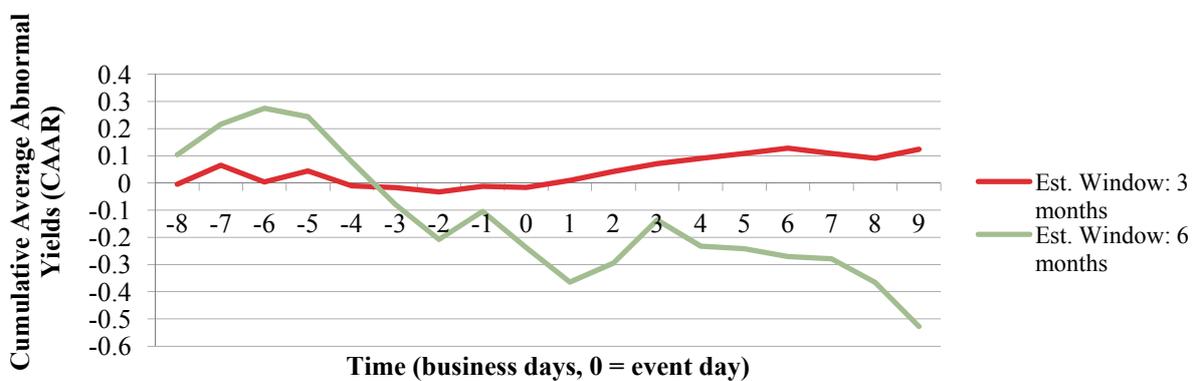
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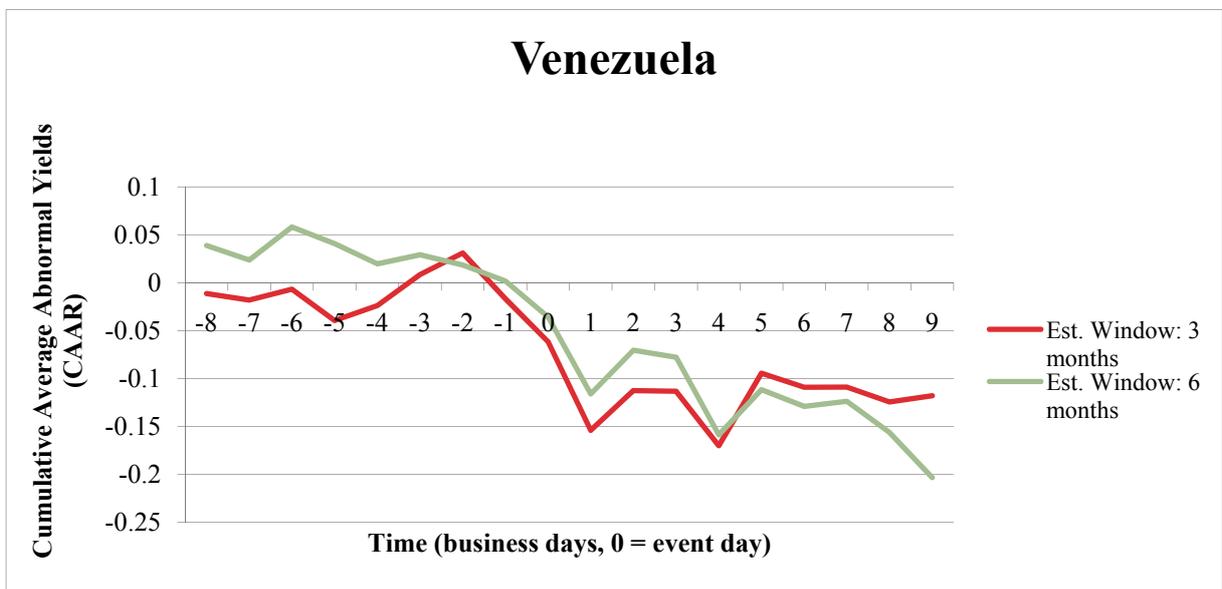
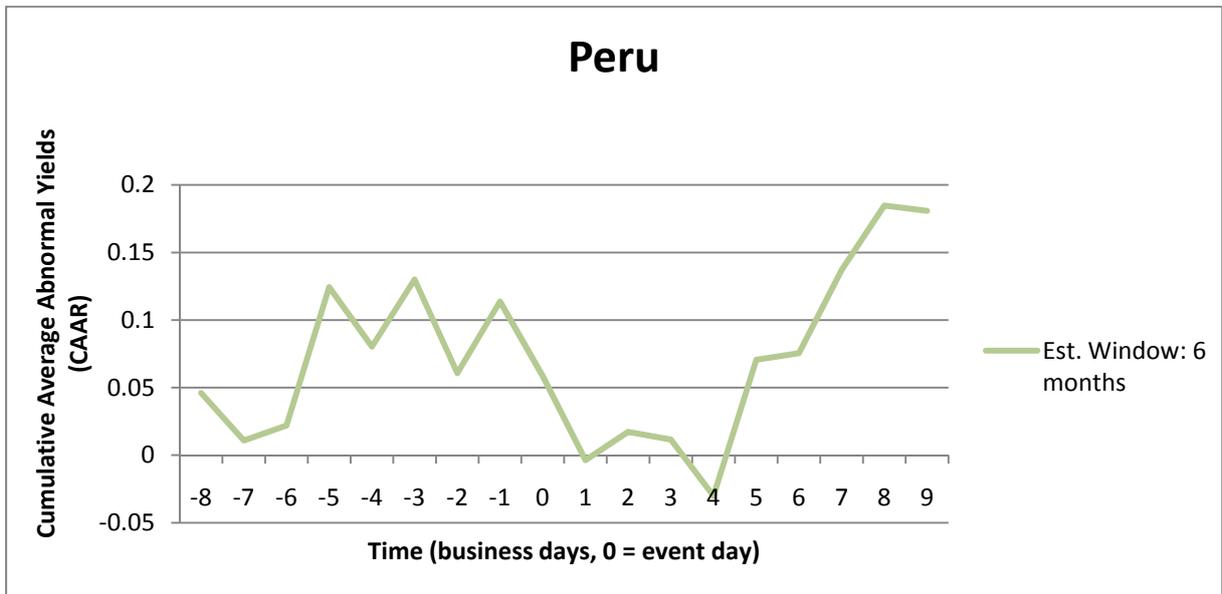
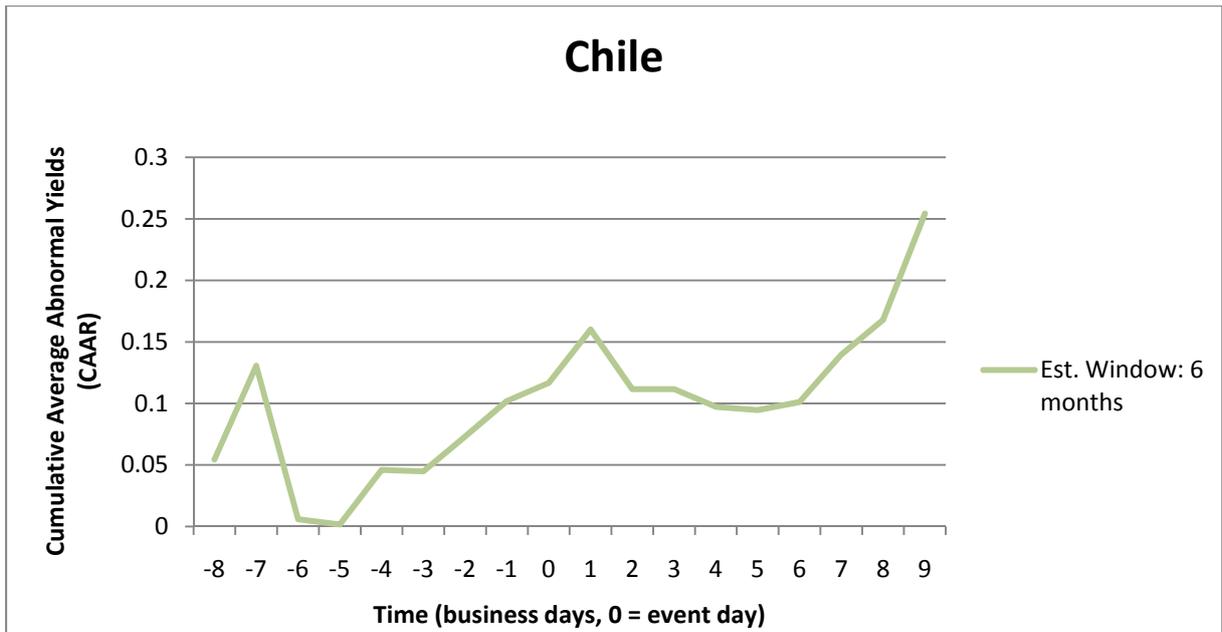


### All countries

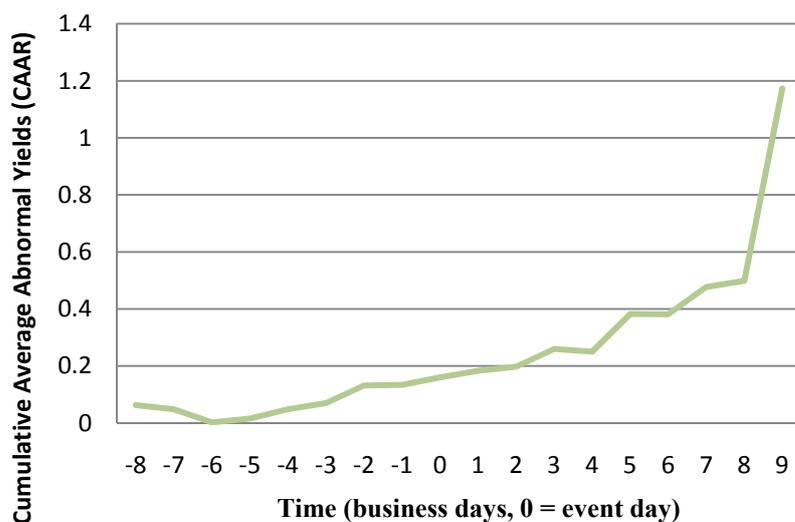


### Brazil

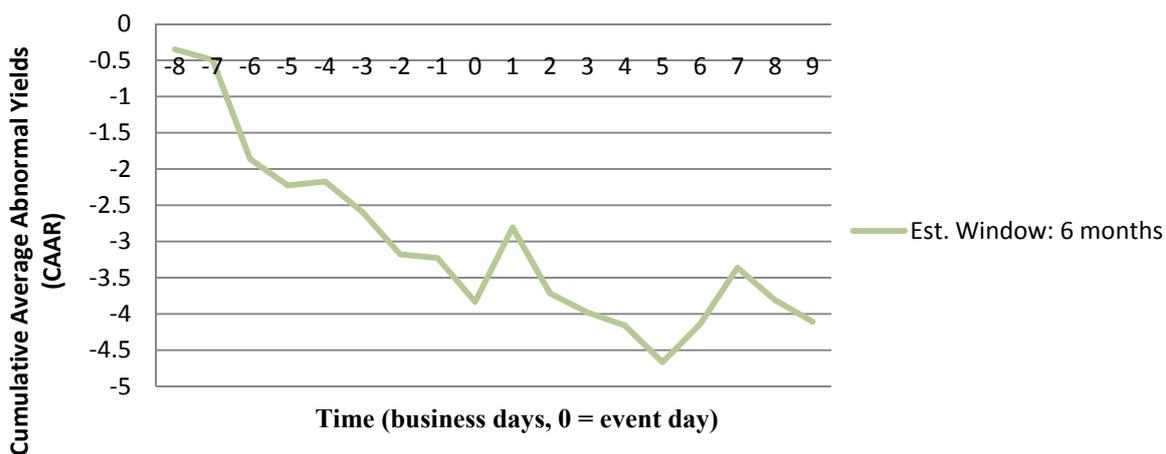




### Political Transfer: Left-Right



### Political Transfer: Right-Left



**Appendix I. Squared Rank Test Results**

<b>ESTIMATION WINDOW: 1 MONTH</b>				
<b>Events</b>	<b>Event Day</b>	<b>Prior Event Window</b>	<b>Post Event Window</b>	<b>Whole Window</b>
<b>B3</b>	1024	6720***	9334***	16054***
<b>B4</b>	1156	7575***	9186***	16761***
<b>B5</b>	121	9088***	6499***	15587***
<b>B6</b>	1156	6267***	10100***	16367***
<b>B7</b>	1225	7144***	8272***	15416***
<b>B8</b>	841	5684***	8625***	14309***
<b>B9</b>	961	6884***	4841***	11725***
<b>B10</b>	1156	3841*	5180***	9021***
<b>B11</b>	625	2880	5477***	8357***
<b>B12</b>	529	4399***	5423***	9822***
<b>B13</b>	784	4185**	9348***	13533***
<b>B14</b>	784	3957*	6049***	10006***
<b>B15</b>	169	4214**	4733***	8947***
<b>B16</b>	121	6603***	5818***	12421***
<b>C1</b>	961	5392***	4240**	9632***
<b>C2</b>	1156	4071**	8053***	12124***
<b>C3</b>	81	5600***	4305**	9905***
<b>C4</b>	169	3236	7101***	10337***
<b>C5</b>	900	7915***	8530***	16445***
<b>C6</b>	169	3608	6970***	10578***
<b>C7</b>	529	7555***	3311	10866***
<b>P6</b>	1156	3713	5289***	9002***
<b>P7</b>	625	3361	4705***	8066***
<b>V6</b>	961	7356***	8374***	15730***
<b>V7</b>	1369	6460***	7705***	14165***
<b>V8</b>	1156	6137***	7855***	13992***
<b>V9</b>	196	7585***	5160***	12745***
<b>V10</b>	361	5731***	6059***	11790***
<b>V11</b>	784	6009***	5996***	12005***
<b>V12</b>	529	5688***	7953***	13641***
<b>V13</b>	961	4339***	7694***	12033***
<b>V14</b>	961	5203***	7494***	12697***
<b>V15</b>	1089	4134**	9031***	13165***
<b>V16</b>	169	8303***	7522***	15825***
<b>V17</b>	1225	1463	9474***	10937***
<b>V18</b>	4	8384***	4366***	12750***
<b>V19</b>	529	7028***	8330***	15358***

<b>ESTIMATION WINDOW: 3 MONTHS</b>				
<b>Events</b>	<b>Event Day</b>	<b>Prior Event Window</b>	<b>Post Event Window</b>	<b>Whole Window</b>
<b>B8</b>	1849	17898	22308	40206
<b>B9</b>	36	16098	3654	19752
<b>B10</b>	2304	2403	10065	12468
<b>B11</b>	900	6666	5329	11995
<b>B12</b>	1225	3738	12327	16065
<b>B13</b>	144	6845	11201	18046
<b>B14</b>	1296	11650	16143	27793
<b>B15</b>	1225	11539	10569	22108
<b>B16</b>	2500	26729	28843	55572
<b>V1</b>	2809	17118	27622	44740
<b>V2</b>	729	31043	22152	53195
<b>V3</b>	256	9908	13349	23257
<b>V4</b>	225	20619	7418	28037
<b>V5</b>	169	16538	27906	44444
<b>V6</b>	2916	29370	29790	59160
<b>V7</b>	6561	23113	42450	65563
<b>V8</b>	2025	24021	25285	49306
<b>V9</b>	3721	26769	22925	49694
<b>V10</b>	6084	11681	19411	31092
<b>V11</b>	1089	13615	12142	25757
<b>V12</b>	4	15132	5038	20170
<b>V13</b>	3721	8696	24892	33588
<b>V14</b>	3025	11212	37592	48804
<b>V15</b>	529	27061	30016	57077
<b>V16</b>	5929	35844	37134	72978
<b>V17</b>	6084	9075	44068	53143
<b>V18</b>	36	34470	12029	46499
<b>V19</b>	2704	34488	44988	79476

<b>ESTIMATION WINDOW: 6 MONTHS</b>				
<b>Events</b>	<b>Event Day</b>	<b>Prior Event Window</b>	<b>Post Event Window</b>	<b>Whole Window</b>
<b>B1</b>	13225	108219	87797	196016
<b>B2</b>	7225	47172	74277	121449
<b>B3</b>	20164	134687	141055	275742
<b>B4</b>	21025	153580	185373	338953
<b>B5</b>	14161	154640	126760	281400
<b>B6</b>	20449	106250	182281	288531
<b>B7</b>	20449	117803	107137	224940
<b>B8</b>	3844	98916	82849	181765
<b>B9</b>	2401	42710	29753	72463
<b>B10</b>	5776	9988	76398	86386
<b>B11</b>	484	65438	38332	103770
<b>B12</b>	17424	40993	89392	130385
<b>B13</b>	1600	52251	78325	130576
<b>B14</b>	5476	21375	72123	93498
<b>B15</b>	18225	31325	45514	76839
<b>B16</b>	2704	120156	125572	245728
<b>C2</b>	12769	106658	108071	214729
<b>C3</b>	10609	92849	66581	159430
<b>C4</b>	5625	53252	90613	143865
<b>C5</b>	18496	153055	159024	312079
<b>C6</b>	10404	85811	117068	202879
<b>C7</b>	16641	108324	120667	228991
<b>P1</b>	12544	66972	80960	147932
<b>P2</b>	4900	19427	90508	109935
<b>P3</b>	3249	74722	86712	161434
<b>P4</b>	18225	115175	133386	248561
<b>P5</b>	14641	46896	81501	128397
<b>P6</b>	16900	69056	116148	185204
<b>P7</b>	576	88376	45658	134034
<b>V3</b>	6084	32294	30377	62671
<b>V4</b>	225	113232	80581	193813
<b>V5</b>	3600	60780	125178	185958
<b>V6</b>	18496	79085	92990	172075
<b>V7</b>	21316	96733	156968	253701
<b>V8</b>	625	86741	68830	155571
<b>V9</b>	10404	62951	46207	109158
<b>V10</b>	8464	25557	76355	101912
<b>V11</b>	9025	55939	62194	118133
<b>V12</b>	5329	50264	78085	128349
<b>V13</b>	9025	19171	115312	134483
<b>V14</b>	15376	53818	100783	154601
<b>V15</b>	7225	79950	95255	175205
<b>V16</b>	12996	79554	98535	178089
<b>V17</b>	13924	14005	115037	129042
<b>V18</b>	12996	58758	81354	140112
<b>V19</b>	1225	46400	92475	138875

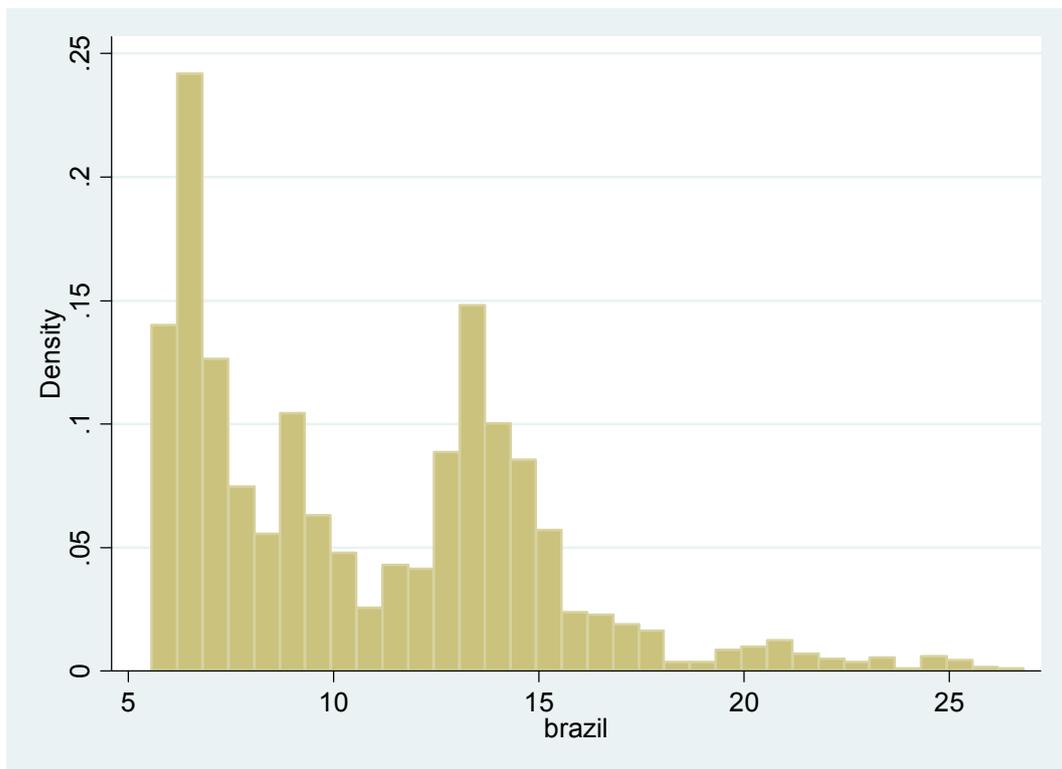
**Appendix J. R-Squared statistics of the regressions**

<b>Country</b>	<b>Estimation Window</b>	<b>R-squared</b>
<b>Brazil</b>	1-month Estimation Window #1	0.2684
	1-month Estimation Window #2	0.1218
	3-month Estimation Window #1	0.4493
	3-month Estimation Window #2	0.3004
	3-month Estimation Window #3	0.5211
	6-month Estimation Window #1	0.0654
	6-month Estimation Window #2	0.0767
	6-month Estimation Window #3	0.4053
	6-month Estimation Window #4	0.262
<b>Chile</b>	1-month Estimation Window #1	0.3489
	1-month Estimation Window #2	0.2677
	1-month Estimation Window #3	0.2349
	6-month Estimation Window #1	0.0119
	6-month Estimation Window #2	0.3471
<b>Peru</b>	1-month Estimation Window #1	0.0136
	1-month Estimation Window #2	0.0822
	6-month Estimation Window #1	0.101
	6-month Estimation Window #2	0
	6-month Estimation Window #3	0
	6-month Estimation Window #4	0.0607
<b>Venezuela</b>	1-month Estimation Window #1	0.104
	1-month Estimation Window #2	0.7121
	1-month Estimation Window #3	0
	3-month Estimation Window #1	0.0836
	3-month Estimation Window #2	0.1018
	3-month Estimation Window #3	0.1194
	3-month Estimation Window #4	0.245
	3-month Estimation Window #5	0.0513
	6-month Estimation Window #1	0.0109
	6-month Estimation Window #2	0.1105
	6-month Estimation Window #3	0.1032
	6-month Estimation Window #4	0.2985
	6-month Estimation Window #5	0.2783
	6-month Estimation Window #6	0.3454
6-month Estimation Window #7	0.1614	

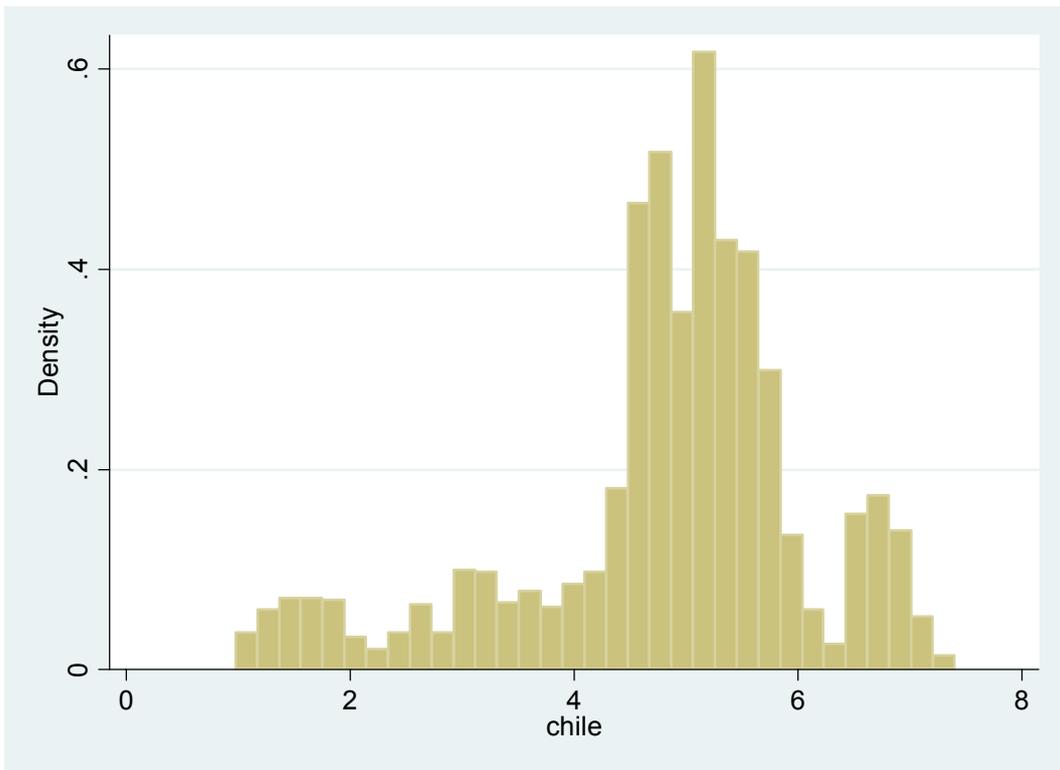
## Appendix K. Yield distributions

Return	Skewness	Kurtosis	Jarque Bera (prob.)
Brazil	0.8	3.4	343 (0.000)
Chile	-0.9	3.9	396 (0.000)
Peru	0.2	3.5	36 (0.000)
Venezuela	0.2	2.4	65 (0.000)

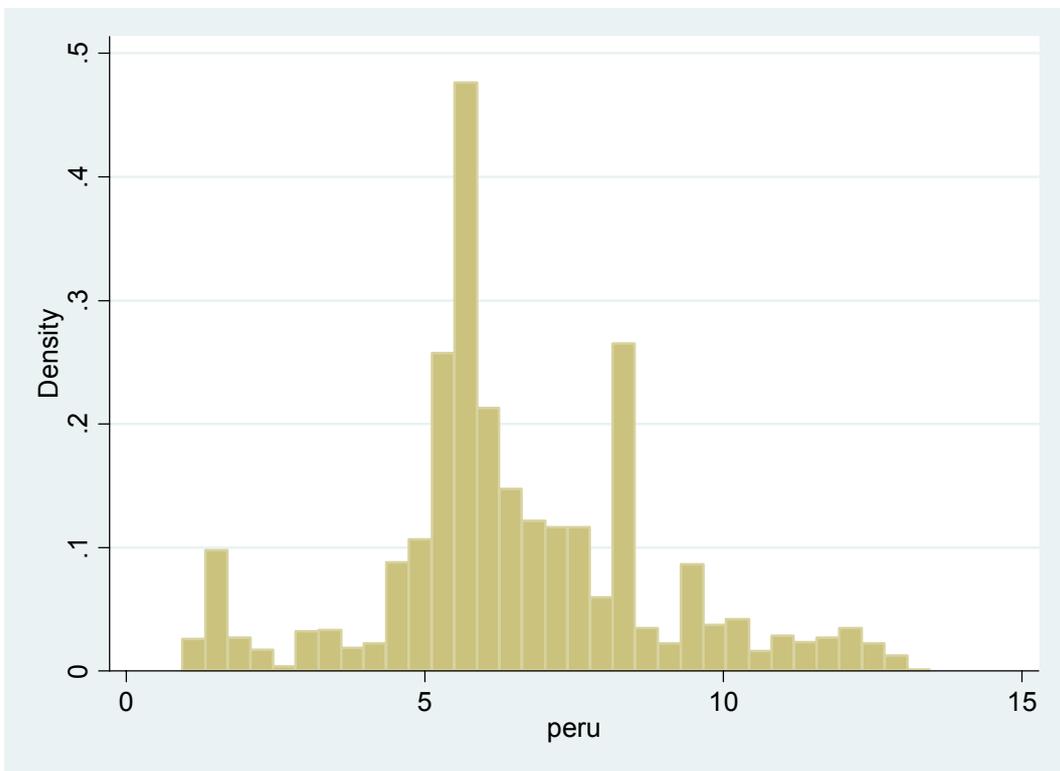
**Brazil yield histogram**



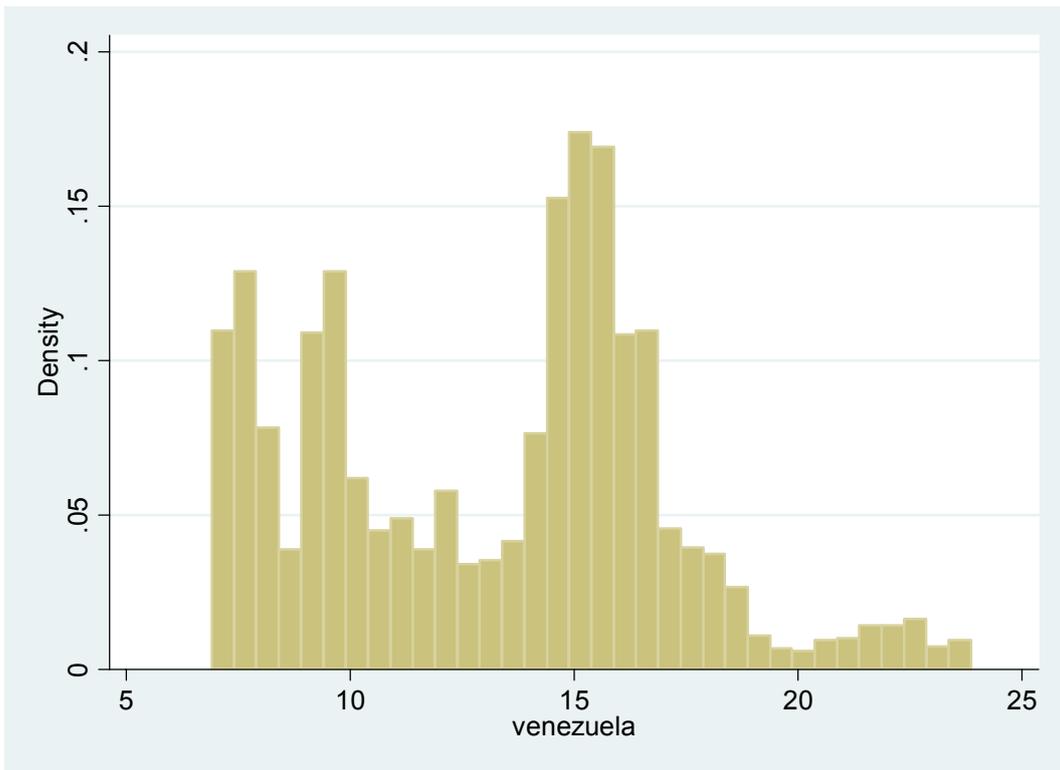
**Chile yield histogram**



**Peru yield histogram**



Venezuela yield histogram



## Appendix L. Archives of The Economist and local press

### *Archives of The Economist*

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