Political Institutions and Pricing of Bonds on the International Markets

I Introduction

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Recently economists started to pay more attention to the effects of political institutions on economic policy decision-making. Early pioneers were Sachs and Roubini (1989) who looked at the impact of divided governments on fiscal policy and Grilli, Masciandaro, and Tabellini (1991) who investigated the relationship between public finance and political regimes. More recently, Rodrik (1999a) related the propensity of a society to react constructively to economic crises to the institutions of conflict management and Persson and Tabellini (2001) investigated whether the size of the government and ability of the government to quickly react to income shocks depend on the political regime. The renewal of the interest in political economics even led to two recent textbook treatments - Drazen (2000) and Persson and Tabellini (2000) - which summarize impressive amount of political economics literature generated since the late 1980's.

Separately, the field of international finance saw several recent empirical contributions to the understanding of the working of the international bond markets. Motivated by the vivid debate about how to fix the flaws of the international financial system, Eichengreen and Mody (1998, 2000a,b) focused their attention on empirically gauging the impact of inclusion of collective action clauses in the bond contracts on the interest spread and thus on the costs at which emerging market countries can tap the markets. Importantly, in their research program, Eichengreeen and Mody (1998, 2000a,b) suggested an empirical specification which avoids econometric problems that plagued previous empirical work.

This paper attempts to marry the two above mentioned strands of literature - that strand of political economics which focuses on the effects of political institutions on economic policy decision-making and that strand of international finance which attempts to understand the working of the international bond markets. Given the fact that a lot of ink was spilled on describing the existing international financial system, analyzing the causes of its occasional failures and prescribing remedies, it is surprising that, to date (and to the author's best of knowledge), there has been very little attempt to systematically study the role that political institutions play in investment decisions of investors. Since

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politics play a crucial role in shaping countries' economic policies, which, in turn, are critical for the value of country's financial instruments and hence for decisions of investors, without the knowledge of the structure of the relationship (between politics and investment decisions) our understanding of the working of the existing international financial system is incomplete. It is this inadequacy of the current literature on the subject matter that this study purports to help redressing.

It does so by estimating how investors perceive political institutions when they price bonds at the time when they are first introduced on the market. Political reality is complex and multidimensional; there are many political institutions that shape the political and economic environments. This study looks closely at four dimensions of the political system: a political regime, a coalition nature of the executive branch, a location of the executive on the left-right political spectrum, and formal checks and balances.

The picture that emerges from this paper's empirical investigation can be summarized in the following way. During the period of 1991-7, for both low- and high-credit countries, investors required lower spreads if presidential rather the parliamentary regimes were in place. Investors preferred unified government in low-credit and divided government in high-credit countries. In high-credit countries, bonds command lower spreads if right-wing chief executives are in control, while in the low-credit countries left-wing chief executives are associated with lower costs of capital raised on the bond markets. In neither asset class do bond spreads vary systematically along the checks and balances axis.

The rest of the paper is organized as follows. The next section reviews the literature on the effect of four dimensions of the political system on the economic policy and derives implication for bond prices. The section III reviews empirical literature on international bond markets, while the section IV explains data and methodology. Results of the empirical investigation are summarized in the section IV. The section VI concludes.

II Political institutions: Implications for Economic Policy and Bond Prices

A) Political regime

Politics is a game where interests of various constituencies are played out and what results is a certain allocation of power (and economic and ego rents that come with it). Not all political regimes are alike in how they allocate power among various branches of the government. Although there are also intermediate cases, the existing regimes can be classified into two main groups: presidential and

parliamentary [2]. Two defining aspects of the regimes are how the powers are separated and how they are maintained. In the presidential system, there is usually a strict separation of powers among executive, legislative, and judiciary branches of the government. Both the legislature and the chief executive are elected by the popular vote. The chief executive forms the cabinet without much interference from the parliament and does not need its support to remain in the office. On the other hand, in a typical parliamentary regime, only the legislature is elected by the popular vote. The prime minister and the cabinet must be approved by the legislature and the executive needs a continuous confidence of the legislature to remain in power.

Grilli, Masciandaro, and Tabellini (1991) were the first to look at the relationship between public finance and a political regime. They classify political regimes into three types: presidential, majoritarian parliamentary and representational parliamentary.[3] Using data on 18 OECD countries spanning 1950-89 they find that the degree of fiscal profligacy varies along the axis denoting a proportionality of the political regime; the fiscal discipline is much more lax in a representational system than in a majoritarian one. The countries with the presidential regime tend to have the lowest budget deficits and debt levels. Grilli et al. (1991) further show evidence for the claim that "one feature of representational democracies that seems responsible for the lack of fiscal discipline is short government durability". The obvious caveat is that their study uses data only on the most developed democracies and hence its results may not necessarily hold for the less developed ones; countries on which this paper focuses.

The effect of the political regime on economic policy outcomes has been recently investigated by Persson and Tabellini (2001a,b). Using a panel on 61 democracies from 1960 onwards they find that the size of the government is smaller in the presidential systems than in the parliamentary ones. Rather surprisingly, they also find that governments in the presidential systems are less responsive to income shocks compared to governments in the parliamentary regimes. Also, only the presidential regimes delay fiscal adjustment until after elections. The latter two findings are unexpected and have no backing in the theory of policy, as of yet. They also go against conventional wisdom that in the presidential regimes the executive branch is relatively strong and is thus capable of making swift decisions, when a need arises.

There seem to be several effects of the nature of the political regime on policy-making taking place. In the presidential regime there is no need for the executive to maintain confidence of the

[2] For a detailed analysis of variants of the two main types of regimes see Shugart and Carey (1992)
[3] Following Bingham Powel they classify the system as majoritarian if there are less than five representatives in a district and representational if there are more than five.

legislature, which frees it hands both to act swiftly and to adopt unpopular measures without a fear that the government would be forced to resign by a vote of non-confidence. This notwithstanding, investors should welcome this aspect of the presidential system if they are concerned that there is a significant risk that a country will be exposed to a crisis which demands quick and unpopular executive measures to maintain or win confidence of investors.

On the less positive note, one of the most significant features of presidential systems is that it entails rather strict separation of powers. There are at least three unfavorable effects of the presidential systems that are important for our analysis. First, because the presidential systems feature separate popular elections for the chief executive and for the parliament, it often happens that the resulting allocation of power is such that the executive and the parliament are controlled by different political groups. To the extent that the two branches need to co-operate in forming policy, this hinders effective policy -making. Second, a possibility of the so-called "Linzian nightmare", as Ackerman (2000) calls it, cannot be excluded, especially if the presidential system is combined with a proportional electoral rule which gives rise to the fractionalized legislature[4]. In such situation it might be particularly difficult for the president to find a common ground with legislators. The Linzian nightmare then refers to the scenario in which a president, frustrated by his inability to work with the intransigent parliament, installs himself as a supreme ruler and violently cracks down on any opposition discontent. This has serious negative implications not only for the maintenance of basic democratic freedoms, but also, perhaps more importantly from the investors' viewpoint, for the predictability of the legal and economic frameworks.

Third, as Moe and Caldwell (1994) and Ackerman (2000) argue, separation of powers à la US breeds a politicized bureaucracy overly encumbered by formal externally imposed rules and regulations that hinder its effective performance and undermine democratic accountability.

Thus, compared to a bureaucracy in a parliamentary regime, the one in the presidential system will likely be less efficient in implementing policies and legal frameworks decided by high-level executives or enacted by the legislature. To the extent that this has implications for the quality of the resulting economic policy and of the prevailing legal rules of the game, investors will discount it into bond prices.

All in all, a strong and independent chief executive in the presidential regime can prove a definite asset for a country which needs to gain confidence of investors by showing its ability to

[4] For the related criticism of the presidential regimes from which Ackerman derives the concept of Linzian nightmare see Linz (1994). Further good references to the works that compare merits of presidential and parliamentary regimes are Stepan and Skach (1993), Mainwaring (1993), Lijphart (1994) and Sartori (1994),

decidedly deal with economic crises. On the other hand, there are features of the presidential regime which are not conducive to formation of policies that require co-operation of the executive and legislature, increase the risk of unpredictability of the rules of the game, and are detrimental to the quality of implemented policies and legal rules. How investors perceive the importance of these aspects is ultimately an empirical matter; the section 5 of this paper will shed light on the issue.

B) Coalition governments

Only in some cases will the allocation of political power resulting from elections be such that the executive branch of the government is controlled by one party only. This is more likely to happen when a country has a majoritarian electoral rule – a rule according to which only one legislator is elected in a district and which thus penalizes small parties – than in the case when mapping of votes to seats in a legislature is governed by a proportional rule. In fact, only rarely do we see a single-party government in countries with proportional electoral rules.

Given a high incidence of proportional representation political systems in the contemporary world, it is not surprising that the coalition governments have been a focus on political scientists for some time. As Drazen (2000, ch 3) in his succinct summary of coalition theories and Laver and Schofield (1990, ch1) in their book on multiparty governments argue, two traditions of analyzing coalitions developed: game-theoretic and European politics approaches. The seminal book of the former tradition is Riker's *Theory of Political Coalitions* (1962). This school uses tools of game-theory to illuminate the process of coalition formation. On the other hand, the European politics school tries to build an inductive theory of coalition formation from the rich empirical evidence that the universe of European politics offers. Although this approach occasionally suffers from methodological deficiencies, it provides researchers with many insights into how coalitions form in the real world. Finally, Laver and Schofield (1991) attempt to bridge the gap between the two schools.

Although political scientists concerned themselves with the coalition business for a long time, the literature on how the nature of the coalition government affects economic outcomes is much scanter. The first to scratch the surface of this very important topic were Sachs and Roubini (1989) who, in their search for origins of high fiscal deficit in industrialized countries, analyzed the relationship between institutional arrangements in OECD countries and budgetary outcomes. They draw attention to the role of political conflict in economic policy making putting forth, and testing, a hypothesis that divided governments - one of its manifestations being existence of coalition-based rather than single-party governments - are associated with higher budget deficits. Their suggested rationalization is that with power being dispersed across parties who have distinctive interests,

multiparty governments are less likely to reduce budget deficits due to the co-ordination problem. Sachs and Roubini (1989) operationalize the concept of divided government by constructing an index of political cohesion designed to capture the extent of dispersion of power across parties or branches of government. The augmented version of their index is used also in this paper (CHECKS).

Relatedly, Alesina and Drazen (1991) analyze the causes of delays in stabilizations when countries follow unsustainable and, in the final count, very costly fiscal trajectories. They argue that the reason for seemingly irrational behavior of governments who keep delaying stabilizations is a political stalemate when socioeconomic groups with conflicting interests represented in the government play a "war of attrition". Only after some groups concede can the stabilization be enacted. Their model implies that more conflicting the objectives represented in the government, the longer the government stays inactive. Given that heterogeneity of interests is much more likely if many parties are represented in the government than within a single-party composing the government, it follows that stabilizations should await longer if a coalition rather than single-party government rules. Consequently, fractionalized coalition governments result in large budget deficits and increasing debt.

In a recent paper Goodheart (2001) investigates the relationship between coalition governments and rational partisan cycles. The tested hypothesis is that a more polarized government (relative to the country's centrist platform) enacts policies which result in larger swings in economic growth and unemployment. Since coalition governments tend to be, on average, less polarized, i.e. more centrist, they should exert stabilizing influence on macro-economic policy. This is indeed what she finds using data on 17 developed countries covering 1973-92 time period.

Summing the implications of the above arguments up, there are at least two reasons why investors will have a dislike for coalition governments. First, naturally, a decision-making process in a coalition government is much more complex than it is in a single-party government. Hence, when there is a sudden need to decide on a policy – for example in case there is an economic crisis and quick and tough measures need to be taken – the likelihood that the policy will be adopted quickly is arguably lower in the case a coalition government is in power. Theoretical backing of this argument comes best from Alesina and Drazen's (1991) model. As several cases of erupted financial crises and ensuing contagion effects from the 1990's demonstrate, the probability that a country may face sudden crises is non-trivial in the case of emerging market countries. Hence if investors follow and take seriously the politics of borrowing countries, they will take this "inaction effect" into account when pricing bonds issued by emerging market countries.

Second, with many actors of differing political colors trying to slice the pie of economic rents and to exercise their egos, there bound to more intra-governmental conflicts in the case of a coalition

government than there are in the case of a single-party government. Hence, it seems reasonable to conclude that coalition governments are likely to be more unstable than single-party ones. Although Laver and Schofield (1991) disagree with a simplistic statement that "coalitions are unstable", they quote evidence that suggests that there is a substantial element of truth to the notion that a more fractionalized coalition is more unstable than the unified one. Since on-going conflicts and high probability of breaking down of the government do not conduce to sound economic management, investors will discount this "uncertainty effect" into bond prices.[5]

On the positive note, arguably, exercising a control on each other is a necessary part of coalition actors' continual attempting to shift the center of power gravity and the allocation of rents to their favor. This disciplines the cabinet members, often compels indolent ones into an action, and smoothes the edges of potentially unreasonably radical plans any single party would like to adopt. Relatedly (to the last point), Drazen (2000, Ch7, p 295) mentions "…coalition governments are more moderate than the single party governments which characterize majoritarian electoral system, so that sharp policy changes are far less likely. This implies less of a partisan cycle." As mentioned above, this claim has empirical backing in Goodheart's (2001) paper. This effect should have a positive impact on economic, and other, policy-making and thus be welcome by investors making lending decisions. Bond prices should reflect this. Whether on net investors look positively upon the fractionalized government or not will thus depend on which effects – inaction and uncertainty on one hand or moderation and discipline on the other – dominate.

C) Location on the Political Spectrum

Political scientists, commentators as well as mass public have traditionally simplified the analysis of the political competition by locating parties along one dimension in the policy space. Most often, the political competition was organized along the left-right axis. Typically the left was associated with a working class, while the right with middle and upper classes. Also, the left was deemed to prefer more interventional government while the right was thought to be more hands-off oriented. However, Inglehart and Klingemann (1976) argue that programmatic meaning of the left-right conflict varies over time and across cultures.

On a surface, establishing the link between the political color of the ruling party and adopted economic policy is relatively straightforward. We would expect right-wing governments to adopt

[5] Grilli, Masciandaro and Tabellini (1991) find that higher the frequency of government changes, the higher budget deficits. Naturally, investors dislike high budget deficits and their macro-disequilibrating consequences and will discount this into bond prices.

tighter monetary and fiscal policies and push for a low level of regulations in the economy. This is because the right-wing parties tend to pursue interests of capital-owners who, by and large, benefit from the stable economy unencumbered by excessive regulations. To the extent that investors fancy these policies, as they largely do, they should prefer right- to left-wing governments However, when a country is hit hard by an economic crisis it is quite possible that the interests of capital owners are not be best served by orthodox economic policies. Rather, capitalists might lobby for trade protection or increase in subsidies i.e. policies which are detrimental to the economic efficiency and which investors hardly enthuse about. Hence, in the data, one should expect right-wing executives to be associated with lower spreads only in normal times; in the crisis situation things might get more complicated.

D) Institutions of Checks and Balances

The crucial importance of property rights for sound functioning of the markets, and for economic development more generally, is well recognized (North, 1981). The property rights need not only be clearly defined but also predictably enforced. In the contemporary world it is the sovereign who has a monopoly on coercion and thus on enforcement of property rights. However, what prevents the state from altering the rights to extract economic rents and benefit its constituents? The incentive to build reputation of a fair ruler - which is necessary to promote economic growth so that pie of which a slice the ruler grabs gets bigger - is generally not sufficient to prevent the ruler from occasional reneging on existing property rights, as North and Weingast (1989) argue. Rather, North and Weingast theorize and on the example of 17th century England illustrate, political institutions emerge to constraint the ruler. They are to fill the gap that inadequacy of reputation mechanisms leaves open. With incentive to keep reputation in place and political institutions filling the gap, commitment of the sovereign to uphold property rights can be credible. What structure these institutions, or checks and balances, take in a particular country will influence the degree of security of property rights, and hence the level economic development and consequently asset prices.

In general, we would expect that the political systems with more developed formal checks and balances enable more effectively the government to commit to uphold property rights and to conduct economic policy conducive to wealth creation and consequently asset appreciation. To the extent investors scrutinize countries' checks and balances, bond prices should incorporate this information.

III Bond research : Review of the literature

As Eichengreen and Mody (1998) argue, until recently the international finance literature did not pay much attention to pricing of developing-country bonds. Given the predominance of bank-lending in the 1980's, the literature has largely focused on trying to identify determinants of risk for bank loans. However, the institutional characteristics of bond and bank-loan markets and legal status of the two instruments differ and there is thus no reason to expect that determinants of the risk premium will be the same.

The first systematic study analyzing bond spreads (known to the author) was performed by Edwards (1986). He uses data on primary spreads of bonds issued by 13 less developed countries floated between 1976 and 1980. His study finds that bond spreads depend positively on debt/GNP ratio, a finding in line with the theory. Second, and as expected, the level of investment is negatively related to spreads; investors require a lower premium if the issuer is from the country that spends a high fraction of its national product on investment than for a country which invests little. Third, a coefficient on maturity has a negative sign implying negatively sloped yield curve, a somewhat puzzling result. Importantly, he finds that differences exist between pricing of bank loan and bonds – an expected result given that institutional characteristics of the two markets and legal status of the two instruments differ.[6]

A study by Eichengreen and Mody (1998) reviews the scant empirical literature on bond markets that has arisen in the first half of the 1990's pointing at many of its methodological deficiencies. Importantly, unlike other papers, Eichengreen and Mody (1998) specify a sample selection model à la Heckman (1979); they model both determination of bond spreads and decision to come to the market thus tackling the problem of selection bias that has plagued previous empirical work. Because empirical approach of this study and of subsequent papers by the authors to a large extent motivates and is employed in this paper, the results of the study are summarized here in more detail.

Using data on primary spreads for about a thousand bonds issued by 37 emerging market countries during 1991-1996, Eichengreen and Mody (1998) find that most coefficients in their regressions have intuitive signs. The large-volume issues command lower spreads; this is because of the economies of scale in marketing and distribution and of higher liquidity of large issues. Private placement dummy is positive indicating that, due to less stringent information requirements on "the private placement market", investors ask for a premium if issues are private placed. A dummy on Israel, whose bonds are guaranteed by the U.S. government, is negative while dummy on Latin America is positive suggesting that, all else equal, investors consider bonds from that region riskier

[6] Bond spreads are moderately more sensitive to changes in debt output ratio than loan spreads. More importantly, pricing of bonds is markedly less sensitive to changes in the investment ratio than pricing of loans is.

than those from other regions. A coefficient on maturity is also positive – the yield curve is thus estimated to be well-behaved. Debt-to-GNP and debt service-to-exports ratios are positively related to bond spreads; naturally investors are wary of bonds issued by borrowers from countries which are highly indebted and whose export performance is low relative to debt service. A dummy taking one if the country had to reschedule its debt in the past quarter is also included and its coefficient is positive. Last but not least, Eichengreen and Mody (1998) construct a measure of political risk, albeit a rather crude one. They strip the effect of economic variables used in the regression from the credit rating from the Institutional Investor and employ this residual in the model; the coefficient is highly significant and has the expected sign. *It is this measure of political risk that this study tries to supplant by introducing political institutions.* Coefficients on other variables included in the authors' spread regression – GDP growth, U.S. treasury rate and dummies for the type of issues - are not significant.

IV Data and Methodology

This paper attempts to marry two strands of literature – those of political economy and international finance – and thus also employs major databases from both fields. For the data on bond spreads and issue and issuer characteristics a database employed in series of papers by Eichengreen and Mody (1998,2000a,b) is used. Data on political variables come from a newly assembled Database of Political Institutions (DPI) compiled by the World Bank researchers Beck, Clarke, Groff, Keefer and Walsh (2001).

The bond database draws data from *Capital Bondware* and is augmented for the early 1990's by the data from the International Monetary Fund's Emerging Markets Group. It covers 2913 bonds issued by issuers from 55 emerging market countries during 1991-2000. However, the database has economic data on 78 emerging market countries; as explained below the fact that a country did not issue a bond does not mean it has not contemplated such an issue. Hence the data on countries which eventually did not borrow on the markets are used in the analysis.

This paper follows methodology used in the series of papers by Eichengreen and Mody (1998, 2000a,b). Unlike previous studies, these authors model explicitly both decision of investors to enter the market and the resulting spread. The spread equation takes the following linear form

$$Log(spread) = bX + u_1$$

where X is a matrix of explanatory variables. It can be partitioned into four submatrices $\lfloor X_1, X_2, X_3, X_4 \rfloor$, where X_1 contains bond characteristics (maturity, amount, type of placement, currency of denomination, whether the coupon is fixed or floating, the governing law), X_2 global economic conditions (US treasury rate, yield curve), X_3 issuer characteristics (type of borrower, sector, or region of the issuer), and X_4 country characteristics (credit rating residual, external debt to GNP, growth rate of GDP, standard deviation of export growth, reserves to short –term debt, short-term to total debt, domestic credit to GDP and whether the country concluded debt restructuring agreement in the previous quarter). The spread use in this equation is a launch bond yield minus the risk-free rate in the respective currency.

Spreads are observed only when the issuer decides to tap the market. The decision to enter the market is made when a latent variable β exceeds some cut-off value $\bar{\beta}$ defined by:

$$\bar{\beta} = gX' + u_2$$

where X' is a matrix of variables which bear on investors' decision to come to the market. If the assumption is made that u_1 and u_2 are bivariate normal and have standard deviations s_1 and s_2 and covariance is $s_{12}^2 / s_1 s_2$, this is the Heckman's sample selection model. It can be estimated either by maximum likelihood or by Heckman's two-step procedure.

Naturally, the original *Capital Bondware* database contains information only on issuers that made a decision to come to the market. To estimate the decision-to-enter-market part of the model we need observations when decision was made not to enter the market. In order to generate these observations, a decision dummy was coded zero for each quarter, a country, and a type of borrower when each of the three types of borrowers – sovereign, public and private – did not tap the market, and one otherwise. A vector of global economic and country characteristics for the relevant quarter was assigned to each observation.

This paper is extends the work of Eichengreen and Mody (1998, 2000a,b) by replacing the credit rating residual – the authors' suggested proxy for political risk – with variables capturing four dimensions of the political system: the political regime, the coalition nature of the executive, the location of the executive on the left-right political spectrum, and formal checks and balances. Formally,

$$Log(spread) = b\,X + c\,P + u_1$$

where P stands for political variables. The tested null hypothesis is:

$$H_0 : c = 0$$

Six political variables relevant for this paper come from DPI. First, we code countries as having presidential or parliamentary regimes. For countries in which the single chief executive is elected by the popular vote the variable PRESID takes a value of one. If there are both prime minister and president elected by the popular vote, PRESID still takes a value of one under one of the following two conditions. Either the president can veto legislation and his veto can be overridden only by the legislature' s supermajority or the president lacks the veto power but can appoint and dismiss cabinet members and dissolve the assembly. In all other cases PRESID takes a value of zero, i.e. the system is classified as parliamentary.

Second, to gauge the degree to which the allocation of political power resulting from the most recent elections leads to divided government three variables are used. In order to measure fractionalization of the executive branch - the most interesting variable from the viewpoint of the reviewed theory - we use variable GOVFRAC. This variable is bounded between 0 and 1; it measures the probability that a random draw of two cabinet members will result in a situation when the two are from different parties. When GOVFRAC takes zero, we are dealing with a one-party executive; the higher the number, the more fractionalized the executive is. Since there is some mapping between legislative and executive fractionalization we also use TOTFRAC, which measures fractionalization of the legislature. It is defined analogously to GOVRAC. Finally, and relatedly (to the issue of divided government), we ask a question whether the party of the chief executive also controls the legislature. If this is indeed the case, EXECTR takes a value of one, otherwise it is coded zero.

Third, in order to evaluate whether bond spreads vary systematically along the left-right political axis we used a proxy for the location of the party of the chief executive. Invoking spatial mapping of the left-right cleavage, COLOR was coded in the following way. It takes a value of zero if the party of the chief executive is left-wing, 1 if it is centrist, and 2 if it is right-wing.

Finally, to measure extensiveness of the checks and balances we use CHECKS. This is a variable that Beck et al.(2001) designed to refine the empirical measure of political cohesion employed by Roubini and Sachs (1989). Beck et al.(2001) construct this variable such that it counts a number of

veto players in a political system. It adjusts this number for whether the players are independent of each other, for their party affiliations, and the electoral rules. Unfortunately, this measure is not a pure proxy for the existence of formal checks and balances in the political system. It combines both the allocation of power resulting from the most recent elections with formal structure of the political system in place. This needs to be kept in mind when interpreting regression results. Also, one ought to note that there is some overlap in the concepts of divided or coalition government on one hand and institutions of checks and balances on the other. Divided government strengthens the institutions of checks and balances. Political systems with strong formal institutions of checks and balances will likely tend to produce divided governments. To disentangle the two concepts, this paper refers to coalition or divided government when it talks about the division of power following the most recent elections. It refers to checks and balances when it talks about formal arrangements in a political system that constrain political decision- making. As mentioned above, it appears that CHECKS is a noisy signal of these formal institutions of checks and balances.

The intersection of the bond database used by Eichengreen and Mody (1998,2000a,b) and Database of Political Institutions limits our empirical investigation to 78 countries and the time period of 1991-1997. Besides issue and issuer characteristics for each launched issue, we have quarterly observations on global economic conditions and country characteristics. To augment the latter category, we include in them six political variables from the DPI on which annual data are available. The total sample thus contains 8,148 observations of which 2,363 are uncensored and 5,785 are censored.

Table 1. shows a correlation matrix of the six political variables this study is concerned with. The inspection of the table reveals, not surprisingly given that there is supposed to exist some mapping between fractionalization of executive and legislature, that GOVFRAC and TOTFRAC have a relatively high correlation coefficient 0.62. The correlation between EXCTR and GOVFRAC is –0.56 and between the former and TOTFRAC is –0.47. That these three variables are correlated is not unexpected as all three are supposed to measure the extent of division of political power resulting from the most recent elections. The cross-correlations among other variables are no larger than 0.24 in absolute value. To the first approximation, it appears that calculated correlations do not contradict the assumption that our six empirical proxies capture the four dimensions of the political system and that there is a value added in looking at all six of them.

Table 1. Cross-correlations of political variables

	PRESID	GOVFRAC	TOTFRAC	EXCTR	COLOR	CHECKS
PRESID	1.00					
GOVFRAC	-0.07	1.00				
TOTFRAC	0.11	0.62	1.00			
EXCTR	0.13	-0.56	-0.47	1.00		
COLOR	0.23	0.21	0.54	-0.24	1.00	
CHECKS	-0.06	-0.05	-0.01	0.17	0.03	1.00

V Empirical Results

Credit rating residual as a measure of political risk

A starting point of the empirical section of the paper is the estimation of the sample selection model à la Eichengreen and Mody (2000a,b) but for the time period this study is concerned with, 1991-97. Following the authors' specification credit rating residual is included in the regression to proxy for the political risk. To obtain credit rating residual, credit ratings are regressed on external debt to GNP, growth rate of GDP, restructuring dummy, reserves to short-term debt, standard deviation of export growth plus each of these variables interacted a dummy for Latin America. Fitted values are obtained. Credit rating residuals are a difference between the actual and predicted values of credit rating.

Work of Eichengreen and Mody (2000a,b) suggests that investors discriminate among bonds according to the law that governs the respective bond contracts. The main reason, as Eichengreen and Mody argue, is that bonds registered under UK law contain collective action clauses while bonds registered under other jurisdictions typically do not. Hence they make a strong case for including a proxy for the governing law in spread regressions. However, endogeneity of the governing laws cannot be ruled out; it is plausible that factors that influence bond spread have an effect on the choice of governing law. To avoid the endogeneity bias, modified instrumental variables method is used, as in Eichengreen and Mody (2000a,b). Trinomial logit is used to determine the choice of governing law and fitted probability, rather than indicator variable for the law choice, is then used in the regression.[7]

Having done the groundwork, we estimate the basic specification with credit rating residual proxying political risk. Most estimated coefficients, which are significant at conventional significance levels, have intuitively plausible signs. The coefficient on the volume of the issue is significant at 10% level. A high volume reduces the required spread – this suggests the presence of economies of scale in marketing and distribution of the issue and the preference of investors for larger issuer due to the enhanced liquidity. The coefficients on the U.S. interest rate and yield curve are positive and

[7] Fundamental variables that are later used in the sample selection model are used as regressors.

significant. An increase in the U.S interest rates raises the yield on the emerging-country bond more than one-to-one. The credit rating residual is highly significant and has the expected sign. Issuers from countries which carried out debt restructuring in the previous quarter saw their spread increased. The external debt to GNP ratio is also highly significant; a rise in the ratio increases the spread. Issuers from countries that grow fast and whose export fluctuates little are able to tap the market at a lower cost than issuers from countries with a sluggish economic growth or a highly variable export growth. High ratio of short-term to total debt also is associated with high spreads; naturally investors require compensation for holding bonds issued by borrowers from countries where the composition of the external debt is tilted towards the unstable short-term debt. A high domestic credit relative to GDP is also associated with lower spreads. Latin American issuers are penalized – they have to offer investors higher spreads than issuers from other regions. Investors who buy fixed-rate bonds are compensated by being offered a higher spread than the one they would be offered if they bought floating-rate issues. Issuers belonging to the infrastructure sector are able to raise money at a lower cost than issuers from all other sectors. Finally, in this regression specification, bonds governed by other than U.S. laws carry lower spreads, but coefficient on neither of the two law dummies is significant.

Regarding the decision-to-float part of the model, all variables included in the regression were significant at 5% significance level. Tightening of the credit conditions in the U.S. reduced the probability of floating. A higher credit rating residual makes it more likely for an issuer to come to the market. Issuers from countries with a high external debt or with a high share of short-term debt in the total debt are less likely to tap the market. So are issuers from countries with a low economic growth and highly variable exports. Countries with a high ratio of reserves to short-term debt are less likely to borrow. Given that these borrowers pay lowers spreads than those with low reserve/short-term debt ratio one can interpret this as the supply effect; these issuers are in strong liquidity position and thus have weaker tendency to offer bonds to investors. Similarly, but in the opposite direction, the fact Latin American issuers are more likely to enter the market than others while paying higher spreads indicates higher tendency of Latin American borrowers to supply bonds. A higher supply, ceteris paribus, reduces price of bonds driving up the spreads. Similar reasoning applies to non-sovereign issuers with the caveat that dummies for the type of borrower are not significant in the spread equation. Table 2 contains regression results.

Table 2. Regression results with credit rating residual (the whole sample)

	Maximum likelihood		Two-step Heckman	
	Coefficient	z-value	Coefficient	z-value
Spread Equation				
Log Amount	-0.04	-1.69	-0.06	-1.98
Maturity	0.00	0.37	0.00	0.53
Private placement	0.02	0.53	0.04	1.11
Log of 10 year Treasury Rate	0.87	4.52	0.26	0.93
Log (10year-1year) Treasury Rate	0.13	3.90	0.03	0.60
Credit Rating Residual	-0.05	-22.91	-0.04	-13.52
Restructuring dummy	0.16	4.16	0.18	3.77
External Debt/GNP	1.89	15.12	1.34	7.97
Growth rate of GDP	-11.06	-5.37	-7.15	-2.66
Standard Deviation of Export Growth	2.36	11.67	1.67	5.60
Short-term Debt/ Total Debt	1.16	5.63	0.14	0.51
Reserves/Short-term Debt	0.02	1.14	-0.06	-2.39
Domestic Credit/GDP	-0.04	-2.22	0.00	0.06
Public Borrower	0.12	1.08	0.19	1.44
Private Borrower	0.12	1.05	0.38	2.55
Latin America	0.10	2.15	0.28	3.76
Yen Issue	-0.13	-1.21	-0.08	-0.46
DM Issue	-0.03	-0.17	0.08	0.32
Other Currency Issue	-0.04	-0.50	-0.02	-0.19
Fixed Rate Issue	0.33	4.77	0.39	4.36
Manufacturing Sector	0.17	3.01	0.14	2.07
Financial Service Sector	0.01	0.13	-0.05	-0.86
Other Services	0.30	4.29	0.27	3.25
Government Entities	0.31	2.81	0.38	2.77
UK Governing Law	-0.14	-0.97	-0.03	-0.17
Other Governing Law	-0.17	-0.77	-0.34	-1.01
Constant	2.39	5.13	3.84	6.17
Selection Equation				
Log of 10 year Treasury Rate	-1.59	-7.83	-1.82	-8.71
Log (10year-1year| Treasury Rate	-0.39	-11.40	-0.40	-11.08
Credit Rating Residual	0.03	15.69	0.03	14.64
External Debt/GNP	-1.48	-12.33	-1.67	-13.34
Growth rate of GDP	9.04	5.25	8.99	5.13
Standard Deviation of Export Growth	-2.55	-13.55	-2.58	-13.27
Short-term Debt/ Total Debt	-2.15	-12.93	-2.44	-14.21
Reserves/Short-term Debt	-0.22	-13.13	-0.27	-14.91
Domestic Credit/GDP	0.04	1.88	0.03	1.36
Public Borrower	0.13	2.44	0.10	1.80
Private Borrower	0.62	12.46	0.65	12.74
Latin America	0.31	8.79	0.23	3.87
Reserves/Import	0.19	8.87	0.29	11.73
Constant	4.52	11.04	5.14	12.18
Number of Censored Observations	4062.00		4062.00	
Number of Uncensored Observations	1925.00		1925.00	

Eichengreen and Mody (2000a,b) point at the possible heterogeneity of the sample that contains so many emerging market countries. There are clearly huge differences in the level of economic and institutional development in such a wide range of countries. It seems entirely plausible that investors may apply different criteria when pricing bonds issued by borrowers from, say, Ethiopia than when pricing bonds from the Czech Republic. Therefore, Eichengreen and Mody (2000a,b) suggest to split the sample according to the credit rating and estimate the model for sub-samples. This paper follows this suggestion; countries were split into two groups. In the first are bonds issued by borrowers from countries with credit rating in the range 0-50, in the second bonds issued by borrowers with credit rating in the range of 50-100. Most, but not all, of the results hold qualitatively, though there are often substantial differences in the sensitivity of the bond spreads to changes in characteristics in the two credit classes. Perhaps the most interesting qualitative difference is in the impact of world credit conditions on spreads. While the increase in U.S. interest rates and in the yield curve increases spreads i.e. rates at which emerging market borrowers raise money increase more than one-for-one in the low-credit group it reduced spreads at which high-credit issuers borrow. Also interestingly, high-credit Latin American issuers pay lower spreads than other issuers from the same credit class; it appears that issuers from this region tend to be of the top credit quality in that class.

Measures of political institutions as proxies for political risk

The main objective of this study is to find out whether data covering 1991-7 suggest that investors have been taking into account political institutions in their pricing decisions. The six political variables supplant in turn the credit rating residual. Table. 3 lists the coefficients, z-value and level of significance on the six political variables in the spread equation when the model is fitted to the whole sample.

Tab. 3 Coefficients on political variables in the spread equation (the whole sample)

Whole Sample	**Presid**	**Govfrac**	**Totfrac**	**Exctr**	**Color**	**Checks1**
Log-likelihood						
Coefficient	-0.62	0.04	-0.77	-0.10	-0.12	-0.02
z-value	-11.99	0.61	-7.50	-2.60	-5.05	-1.32
significance	1%	nonsign.	1%	1%	1%	nonsign.
Heckman Two-Step						
Coefficient	-0.63	0.05	-0.73	-0.10	-0.13	-0.02
z-value	-11.11	0.70	-5.58	-2.01	-3.55	-1.10
significance	1%	nonsign.	1%	5%	1%	nonsign.

First, results obtained by the method of maximum likelihood and by the Heckman two-step procedure do not differ too much. They suggest that investors prefer presidential to parliamentary political regimes. It appears that investors value the ability of the executive to act swiftly without worrying too much about the loss of confidence in the legislature discounting the drawbacks of the separation of powers, the risk of emergence of autocracy and negatives of the politically impaired bureaucracy that are typical for the presidential regimes. Second, when the model is fitted to the whole sample the variable measuring the fractionalization of the government enters the spread equation with a positive sign (suggesting that higher fractionalization is associated with higher spreads) but it is insignificant. The situation is different when we include the measure of legislative fractionalization. TOTFRAC is highly significant and its coefficient has a negative sign; it appears that, on average in the whole sample of countries, investors require a lower risk premium when the legislature is fractionalized. On the other hand, markets appreciate when the chief executive and the legislature are controlled by the same party; a coefficient on EXCTR is negative and highly significant. Third, investors feel more comfortable when the party of the chief executive is right-wing rather than left-wing. Finally, our, possibly noisy, measure of institutions of checks and balance has a negative sign suggesting that more checks and balances are associated with lower spreads, but it is insignificant.

As was suggested above, the sample of 78 emerging market countries raises the issue of its heterogeneity. It seems very plausible that interactions of politics and economics depends on where countries find themselves on the institutional (and economic) development continuum. To the extent that the latter is tightly related to the credit quality of issuers, the way politics and economics intermingle will wary along the credit co-ordinate. To rectify the heterogeneity problem and to gain deeper insight into pricing decisions of investors, the whole sample was split in the same way as before into the two groups according to the credit quality.

Table. 4 Coefficients on political variables in the spread equation (credit rating 0-50)

Credit Rating 0-50	**Presid**	**Govfrac**	**Totfrac**	**Exctr**	**Color**	**Checks1**
Maximum Likelihood						
Coefficient	-0.22	0.05	0.39	-0.15	0.05	0.02
z-value	-3.23	0.78	2.93	-4.47	2.04	0.91
significance	1%	nonsign.	1%	1%	1%	nonsign.
Heckman Two-Step						
Coefficient	-0.24	0.1	0.54	-0.16	0.1	0.01
z-value	-2.97	1.4	3.33	-4.09	3.19	0.53
significance	1%	nonsign.	1%	1%	1%	nonsign.

Table. 5 Coefficients on political variables in the spread equation (credit rating 50-100)

Credit Rating 50-100	**Presid**	**Govfrac**	**Totfrac**	**Exctr**	**Color**	**Checks1**
Maximum Likelihood						
Coefficient	-1.13	0.6	-1.11	0.53	-0.33	0
z-value	-7.91	-3.84	-7.02	I.00	-4.32	-0.07
significance	1%	1%	1%	1%	1%	nonsign.
Heckman Two-Step						
Coefficient	-0.78	-0.92	-1.06	0.61	-0.35	-0.01
z-value	-2.59	-3.22	-4.94	3.69	-3.96	-0.22
significance	1%	1%	1%	1%	1%	nonsign.

Tables 4-5 list coefficients, z-value and level of significance on the six political variables in the spread equations. The previous result that investors prefer presidential to parliamentary systems holds in both samples. However, these regressions significantly augment the story on how the coalition nature of the government influences pricing decisions of investors. In the low-credit group, GOVFRAC has a positive sign but is insignificant. However, TOTFRAC is highly significant and has a positive sign suggesting that higher fractionalization of the legislature leads to higher spreads. In a similar vein, a highly significant and negative coefficient on EXCTR suggests that investors require a higher risk premium in case the chief executive and the legislature are not controlled by the same party. It thus appears that in the case of low-credit countries investors are willing to pay a premium for bonds issued by borrowers from countries where the government is not divided. In terms of our theory described above, the inaction and uncertainty effects dominate the moderation and discipline effects. This is quite intuitive – the low-credit countries are much more likely to find themselves in economic crises which require a swift action. This is something a unified government is much more likely to deliver than a divided one.

The picture painted by the regressions on the data from high-credit countries is quite the opposite to the one above. Coefficients on all three measures of the divided government are significant and their signs are opposite to those obtained in the regression on low-credit country data. This suggests that, in this asset class, on all three counts, the moderation and discipline effects dominates the inaction and uncertainty effects. As already implied, high-credit countries are less likely to face crises that require quick measures. Investors thus rather pay a premium for bonds issued by borrowers from countries where the potential government excesses are moderated by the fact that the government is divided.

Results on the effect of the location of the chief executive's political party on the political spectrum are also interesting. Investors prefer right-wing chief executives in the high-credit countries and left-wing ones in the low-credit countries. The latter, only seemingly paradoxical, result is in fact

consistent with the view that, in crisis situations, the interests of capital owners are not best served by orthodox economic policies. Rather, right-wing parties representing interests of the capital might push for trade protection and increased subsidies – policies on which investors do not look favorably.

Last, similarly as for the whole sample, the coefficients on checks and balances are not significant.. One explanation is that our measure of checks and balances might be a noisy signal for the formal institutions of checks and balances. The second is simply that formal institutions of checks and balances in emerging markets are underdeveloped and investors largely ignore them.

To summarize, when we control for heterogeneity of the sample, the following picture emerges. During the period of 1991-7, for both low- and high-credit countries investors required lower spreads if presidential rather than the parliamentary regimes were in place. Investors preferred unified governments in low-credit and divided governments in high-credit countries. In the latter countries, bonds command lower spreads if right-wing chief executives are in control, while in the former left-wing chief executives are associated with lower costs of capital raised on the bond markets. In neither asset class do bond spreads vary systematically along the checks and balances axis.

VI Conclusion

This paper estimates how investors perceive political institutions when they price bonds at the time when they are first introduced on the market. Political reality is complex and multidimensional; there are many political institutions that shape the political and economic environments. This study looked closely at four dimensions of the political system: the political regime, the coalition nature of the executive branch, the location of the executive on the left-right political spectrum, and formal checks and balances.

The picture that emerges can be summarized as follows. During the period of 1991-7, for both low- and high-credit countries, investors required lower spreads if presidential rather than parliamentary regimes were in place. It appears that investors value the ability of the executive to act swiftly without worrying too much about the loss of confidence in the legislature discounting the drawbacks of the separation of powers, the risk of emergence of autocracy and negatives of the politically impaired bureaucracy that are typical for the presidential regimes.

Investors preferred unified governments in low-credit and divided governments in high-credit countries. This can be rationalized by realizing that the low-credit countries are more likely to experience an economic crisis during which a government that delivers a swift action is particularly valuable. A divided government is unlikely to do so.

In high-credit countries, bonds command lower spreads if right-wing chief executives are in control, while in the low-credit countries left-wing chief executives are associated with lower costs of capital raised on the bond markets. This is consistent with the view that constituencies of right-wing parties push for orthodox policies only in good times.

Last, in neither asset class do bond spreads vary systematically along the checks and balances axis. Either, our measure of checks and balances is a noisy signal for the formal institutions of checks and balances or simply formal institutions of checks and balances in emerging markets are underdeveloped and investors largely ignore them.

These results should not be read without recognizing important caveats. Due to the data limitations, this study cover only period of 1991-7; it hence neglects some important events that took place after 1997. In particular, it would be interesting to see how investors reacted to various political environments during the Russian and Brazilian crises. Secondly, the international bond market is a quickly evolving one where structural relationships are unlikely to be time-invariant for too long. In the today's fast moving world there is tremendous amount of technological innovations both in the finance industry and in the whole economy which likely influence the structure of risk and cash-flow profiles of securities (and hence their fundamental values). Learning of investors about how the international financial system works – which itself is evolving rapidly - and their acting upon it likely renders many relationships between bond prices and bond issue and issuer characteristics time-varying. For at least these reasons, the results of this paper should be taken with qualifications until extensions across time find the reported results robust. These limitations notwithstanding, this paper provides systematic evidence that political institutions have been important in determining bond prices on the international markets during the most of the 1990's.

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