Political Institutions and Pricing of Bonds on International Markets

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I Introduction

Recently economists have started to pay more attention to the effects of political institutions on economic policy decision-making. Early pioneers were Roubini and Sachs (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 government's size and ability to react quickly to income shocks depend on the political regime. The renewal of interest in political economics even led to two recent textbook treatments – Drazen (2000) and Persson and Tabellini (2000) – which summarize an impressive amount of political economics literature generated since the late 1980s.

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 the inclusion of collective action clauses in 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, Eichengreen 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 has been 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 best of the author's knowledge), there have been very few attempts to systematically study the role that political institutions play in investors' investment decisions. Since politics play a crucial role in shaping a country's economic policies, which, in turn, are critical for the value of a country's financial instruments and hence for investors' decisions, our understanding of the working of the existing international financial system is incomplete without knowledge of the structure of the relationship between politics and investment decisions. It is this inadequacy of the current literature on the subject matter that this study purports to help redress.

It does so by estimating how investors perceive political institutions when they price bonds at the time these bonds 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: 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 from this paper's empirical investigation can be summarized in the following way. During the period of 1991 to 1997, for both low- and high-credit countries,[1] investors required lower spreads if presidential rather than 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-of-center chief executives are in control, while in the low-credit countries left-of-center 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 the four dimensions of the political system on economic policy and derives implications for bond prices. Section 3 reviews the empirical literature on international bond markets, while section 4 explains data and methodology. Results of the empirical investigation are summarized in section 5. Section 6 concludes.

2 Political Institutions: Implications for Economic Policy and Bond Prices

2.1 Political Regime

Politics is a game where the interests of various constituencies are played out, and what results is a certain allocation of power (and the 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 the executive, legislative and judiciary branches of government. Both the legislature and the chief executive are elected by popular vote. The chief executive forms the cabinet without much interference from parliament and does not need its support to remain in office. On the other hand, in a typical parliamentary regime, only the legislature is elected by popular vote. The prime minister and the cabinet must be approved by the legislature, and the executive needs the 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 political regimes. They classify political regimes into three types: presidential, majoritarian parliamentary and representational parliamentary.[3] Using data on 18 OECD countries spanning 1950 to

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1   As will be described later in the text, low-credit countries are those whose Institutional Investor credit rating value is less than 50. The countries referred to as high-credit have a credit rating higher than 50. The higher the credit rating, the more creditworthy the country is.

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 as representational if there are more than five.

1989, they find that the degree of fiscal profligacy varies along the axis denoting a proportionality of the political regime; fiscal discipline is much laxer in a representational system than in a majoritarian one. Countries with a 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 democracies, on which this paper focuses.

The effect of the political regime on economic policy outcomes has recently been 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 presidential systems than in parliamentary ones. Rather surprisingly, they also find that governments in presidential systems are less responsive to income shocks compared to governments in parliamentary regimes. Also, only presidential regimes delay fiscal adjustment until after elections. The latter two findings are unexpected and have no backing in the theory of policy as yet. They also go against the conventional wisdom that in presidential regimes the executive branch is relatively strong and is thus capable of making swift decisions when the need arises.

Several effects of the nature of the political regime on policymaking seem to be taking place. In a presidential regime there is no need for the executive to maintain the confidence of the legislature, which frees its hands both to act swiftly and to adopt unpopular measures without fear that the government would be forced to resign by a vote of nonconfidence. Obviously, the previous statement needs to be qualified, since even though the executive can take any unpopular measure, all decisions will be calibrated against its effects on the prospects of being reelected. 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 the confidence of investors.

On a less positive note, one of the most significant features of presidential systems is that they entail a rather strict separation of powers. At least three unfavorable effects of presidential systems are important for our analysis. First, because presidential systems feature separate popular elections for the chief executive and for parliament, it often happens that the resulting allocation of power is such that the executive and parliament are controlled by different political groups. To the extent that the two branches need to cooperate in forming policy, this hinders effective policymaking. Second, the 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 a fractionalized legislature.[1]) In such a 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,

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

frustrated by his inability to work with the intransigent parliament, installs himself as a supreme ruler and violently cracks down on any opposition discontent. Such a scenario 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, Moe and Caldwell (1994) and Ackerman (2000) argue that a U.S.-style separation of powers 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 the bureaucracy in a parliamentary regime, the bureaucracy in a presidential system is likely to 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 a presidential regime can prove to be a definite asset for a country which needs to gain the confidence of investors by showing its ability to deal decisively with economic crises. On the other hand, a presidential regime has features which are not conducive to the formation of policies that require the cooperation of the executive and the 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; section 5 of this paper will shed light on the issue.

2.2 Coalition Governments

Only in some cases will the allocation of political power resulting from elections be such that the executive branch of 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 in which the mapping of votes to seats in a legislature is governed by proportional rule. In fact, only rarely do we see a single-party government in countries with proportional electoral rules.

Given the high incidence of political systems with proportional representation in the contemporary world, it is not surprising that coalition governments have been a focus of political scientists for some time. As Drazen (2000, chapter 3) in his succinct summary of coalition theories and Laver and Schofield (1990, chapter 1) in their book on multiparty governments argue, two traditions of analyzing coalitions developed: the game-theoretic and the European politics approaches. The seminal book of the former tradition is Riker's "The Theory of Political Coalitions" (1962). This school uses the 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 have 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 Roubini and Sachs (1989), who, in their search for the origins of the high fiscal deficit in industrialized countries, analyzed the relationship between institutional arrangements in OECD countries and budgetary outcomes. They drew attention to the role of political conflict in economic policymaking, putting forth, and testing, a hypothesis that divided governments – one of its manifestations being the 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 which have distinctive interests, multiparty governments are less likely to reduce budget deficits due to the coordination problem. Roubini and Sachs (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 stabilization when countries follow unsustainable and, in the final count, very costly fiscal trajectories. They argue that the reason for seemingly irrational behavior of governments that keep delaying stabilization is a political stalemate when socioeconomic groups with conflicting interests represented in government play a "war of attrition." Only after some groups concede can the stabilization be enacted. Their model implies that the more conflicting the objectives represented in government, the longer the government stays inactive. Given that the heterogeneity of interests is much more likely if many parties are represented in a government than within a single party composing the government, it follows that stabilization should take 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 a stabilizing influence on macroeconomic policy. This is indeed what the author finds using data on 17 developed countries covering the 1973 to 1992 time period.

Summing up the implications of the above arguments, 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 case a coalition government is in power. Theoretical backing of this argument is best found in Alesina and Drazen's (1991) model. As several cases of erupted financial crises and the ensuing contagion effects which occurred in the 1990s demonstrate, the probability that a

country may face sudden crises is nontrivial 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 extract ego rents, there are bound to be more intragovernmental conflicts in the case of a coalition government than 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 the 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 a unified one. Since ongoing conflicts and the high probability of a government breakdown are not conducive to sound economic management, investors will discount this "uncertainty effect" into bond prices.[1])

On a positive note, arguably, exercising control over each other is a necessary part of coalition actors' continual attempt to shift the center of power gravity and the allocation of rents to their favor. This disciplines the cabinet members, often compels indolent members into action, and smoothes the edges of potentially unreasonably radical plans any single party may want to adopt. Relatedly (with reference to the last point), Drazen (2000, chapter 7, page 295) mentions that "… coalition governments are more moderate than the single party governments which characterize a 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, policymaking and should thus be welcomed by investors making lending decisions. Bond prices should reflect this. Whether net investors look positively on the fractionalized government or not will thus depend on which effects – inaction and uncertainty on the one hand or moderation and discipline on the other – dominate.

2.3 Location on the Political Spectrum

Political scientists, commentators as well as the general public have traditionally simplified the analysis of political competition by locating parties along one dimension in the policy space. Most often, political competition was organized along the left-right axis. Typically, the left was associated with the working class, the right with the 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.

On the surface, establishing the link between the political color of the ruling party and the adopted economic policy is relatively straightforward. We would expect right-of-center governments to adopt tighter monetary and fiscal policies and push for a low level of regulation in the economy. This is because the right-of-center parties tend to pursue the interests of capital owners,

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

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

2.4 Institutions of Checks and Balances

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

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

3   Bond Research: A Review of the Literature

As Eichengreen and Mody (1998) argue, until recently the international finance literature has not paid much attention to the pricing of developing country bonds. Given the predominance of bank lending in the 1980s, 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 the legal status of the two instruments differ, and there is thus no reason to expect that the 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), who uses data on the primary spreads of bonds

issued by 13 less developed countries floated between 1976 and 1980. His study finds that bond spreads depend positively on the debt-to-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 from a country which invests little. Third, a coefficient on maturity has a negative sign, implying a negatively sloped yield curve, a somewhat puzzling result. Importantly, he finds that differences exist between the pricing of bank loans and bonds – an expected result given that the institutional characteristics of the two markets and the legal status of the two instruments differ.[1])

A study by Eichengreen and Mody (1998) reviews the scant empirical literature on bond markets that arose in the first half of the 1990s, pointing out many of its methodological deficiencies. Importantly, unlike other authors, Eichengreen and Mody (1998) specify a sample selection model à la Heckman (1979); they model both the determination of bond spreads and the decision to come to the market, thus tackling the problem of selection bias that plagued previous empirical work. Because the 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 the 1991 to 1996 period, 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 because of the higher liquidity of large issues. The 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 privately placed. The dummy for Israel, whose bonds are guaranteed by the U.S. government, is negative while the dummy for Latin America is positive, suggesting that, all else being equal, investors consider bonds from that region riskier than those from other regions. A coefficient on maturity is also positive – the yield curve is thus estimated to be well behaved. The 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 1 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, the U.S. treasury rate and dummies for the type of issue – are not significant.

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

4 Data and Methodology

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

The bond data base draws data from *Capital Bondware* and is augmented for the early 1990s by the data from the International Monetary Fund's Emerging Markets Group. It covers 2,913 bonds issued by issuers from 55 emerging market countries during the 1991 to 2000 period. 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 the methodology used in the series of papers by Eichengreen and Mody (1998, 2000a,b). Unlike authors of previous studies, these authors model explicitly both the 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 contains global economic conditions (U.S. treasury rate, yield curve), X_3 contains 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 a debt restructuring agreement in the previous quarter). The spread used 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 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* data base 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 of when the decision was made not to enter the market. In order to generate these observations, a decision dummy was coded 0 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 1 otherwise. A vector of global economic and country characteristics for the relevant quarter was assigned to each observation.

This paper 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 political spectrum, and formal checks and balances. Formally,

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

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

$$H_0 : c = 0$$

Six political variables relevant for this paper come from the DPI. First, we code countries as having presidential or parliamentary regimes. For countries in which the single chief executive is elected by popular vote, the variable PRESID takes a value of 1. If both the prime minister and the president are elected by popular vote, PRESID still takes a value of 1 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 veto power but can appoint and dismiss cabinet members and dissolve the assembly. In all other cases PRESID takes a value of 0, 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 the fractionalization of the executive branch – the most interesting variable from the viewpoint of the reviewed theory – we use the 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 in which the two are from different parties. When GOVFRAC takes 0, 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 the fractionalization of the legislature. It is defined analogously to GOVFRAC. Finally, and relatedly (to the issue of divided government), we ask the question whether the party of the chief executive also controls the legislature. If this is indeed the case, EXECTR takes a value of 1, otherwise it is coded 0.

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 0 if the party of the chief executive is left of center, 1 if it is centrist, and 2 if it is right of center.

Finally, to measure the 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 for 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 the formal structure of the political system in place. This needs to be kept in mind when interpreting the regression results. Also, one ought to note that there is some overlap in the concepts of divided or coalition government on the 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 data base used by Eichengreen and Mody (1998, 2000a,b) and the Database of Political Institutions limits our empirical investigation to 78 countries and the time period of 1991 to 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, 2,363 of which are uncensored and 5,785 of which 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 the fractionalization of the executive and the legislature, that GOVFRAC and TOTFRAC have a relatively high correlation coefficient of 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

5 Empirical Results

5.1 The Credit Rating Residual as a Measure of Political Risk

The 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 to 1997. Following the authors' specification, the credit rating residual is included in the regression to proxy for political risk. To obtain the credit rating residual, credit ratings are regressed on external debt to GNP, the growth rate of GDP, the restructuring dummy, reserves to short-term debt, the standard deviation of export growth, and on each of these variables is interacted with a dummy for Latin America. Fitted values are obtained. The credit rating residuals are the differences between the actual and predicted credit rating values.

The 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 spreads have an effect on the choice of governing law. To avoid the endogeneity bias, the 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 an indicator variable for the law choice is then used in the regression.[1])

Having done the groundwork, we estimate the basic specification, with the 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 the 10% level. A high volume reduces the required spread – this suggests the presence of economies of scale in marketing and in distribution of the issue and the preference of investors for a larger issuer due to the enhanced liquidity. The coefficients on the U.S. interest rate and yield curve are positive and 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 increase. 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 exports fluctuate little are able to tap the market at a lower cost than issuers from countries with sluggish economic growth or highly variable export growth. A 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 external debt is tilted towards unstable short-term debt. 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

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1   *Fundamental variables that are later used in the sample selection model are used as regressors.*

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 laws other than U.S. laws carry lower spreads, but the 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 the 5% level. A tightening of U.S. credit conditions 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 high external debt or with a high share of short-term debt in total debt are less likely to tap the market. So are issuers from countries with 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

Table 2

Regression Results with the Credit Rating Residual (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 (10-year − 1-year) 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
Deutsche mark 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 (10-year − 1-year) 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/imports	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	

lower spreads than those with a low ratio of reserves to short-term debt, one can interpret this as the supply effect; these issuers are in a strong liquidity position and thus have a weaker tendency to offer bonds to investors. Similarly, but in the opposite direction, the fact that Latin American issuers are more likely to enter the market than others while paying higher spreads indicates a higher tendency of Latin American borrowers to supply bonds. A higher supply, ceteris paribus, reduces the price of bonds, driving up spreads. A similar reasoning applies to nonsovereign issuers with the caveat that dummies for the type of borrower are not significant in the spread equation. Table 2 contains the regression results.

Eichengreen and Mody (2000a,b) point out 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 subsamples. This paper follows this suggestion; countries were split into two groups. In the first are bonds issued by borrowers from countries with a credit rating in the range of 0 to 50, in the second, bonds issued by borrowers with a credit rating in the range of 50 to 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 rise in U.S. interest rates and in the yield curve increases spreads, i.e. rates at which emerging market borrowers raise money, more than one-for-one in the low-credit group, it reduces spreads at which high-credit issuers borrow. Moreover, it is also interesting that 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.

5.2 Measures of Political Institutions as Proxies for Political Risk

The main objective of this study is to find out whether data covering the 1991 to 1997 period suggest that investors have been taking into account political institutions in their pricing decisions. The six political variables in turn supplant the credit rating residual. Table 3 lists the coefficients, z-value and level of signifi-

Table 3

Coefficients on Political Variables in the Spread Equation

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%	non-significant	1%	1%	1%	non-significant
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%	non-significant	1%	5%	1%	non-significant

cance of the six political variables in the spread equation when the model is fitted to the whole sample.

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 the emergence of autocracy, and negative effects of the politically impaired bureaucracy that are typical of 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 of center rather than left of center. Finally, our, possibly noisy, measure of institutions of checks and balances has a negative sign, suggesting that more checks and balances are associated with lower spreads, but the measure 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 depend on where countries find themselves on the institutional (and economic) development continuum. To the extent that the latter is closely related to the credit quality of issuers, the way politics and economics intermingle will vary along the credit coordinate. To rectify the heterogeneity problem and to gain a deeper insight into pricing decisions of investors, the whole sample was split in the same way as before into the groups according to credit quality.

Tables 4 and 5 list the 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

Table 4

Coefficients on Political Variables in the Spread Equation

	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%	non-significant	1%	1%	1%	non-significant
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%	non-significant	1%	1%	1%	nonsignificant

Table 5

Coefficients on Political Variables in the Spread Equation						
	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	4.63	−4.32	−0.07
Significance	1%	1%	1%	1%	1%	non-significant
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%	non-significant

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 – low-credit countries are much more likely to find themselves in economic crises which require swift action, and swift action 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 of the one above. Coefficients on all three measures of the divided government are significant and their signs are opposite 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 dominate 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 potential government excesses are moderated by the fact that the government is divided.

The results of the calculation on the effect of the location of the chief executive's political party on the political spectrum are also interesting. Investors prefer right-of-center chief executives in the high-credit countries and left-of-center 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-of-center parties representing the interests of capital owners might push for trade protection and increased subsidies – policies on which investors do not look favorably.

Last, in a similar fashion 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 that investors largely ignore them.

To summarize, when we control for heterogeneity of the sample, the following picture emerges. During the period of 1991 to 1997, for both low- and high-credit countries investors required lower spreads if presidential rather than 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-of-center chief executives are in control, while in the former, left-of-center 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.

6 Conclusion

This paper estimates how investors perceive political institutions when they price bonds at the time 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 political spectrum, and formal checks and balances.

The picture that emerges can be summarized as follows. During the 1991 to 1997 period 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 of presidential regimes.

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

In high-credit countries, bonds command lower spreads if right-of-center chief executives are in control, while in low-credit countries left-of-center chief executives are associated with lower costs of capital raised on the bond markets. This is consistent with the view that constituencies of right-of-center 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 formal institutions of checks and balances in emerging markets are simply underdeveloped, and investors largely ignore them.

These results should not be read without recognizing important caveats. Due to the data limitations, this study covers only the period of 1991 to 1997; hence, it 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. Second, the international bond market is a quickly evolving one where structural relationships are unlikely to be time-invariant for too long. In today's fast-moving world

there is a tremendous amount of technological innovation both in the financial industry and in the whole economy, which is likely to influence the structure of securities' risk and cash-flow profiles (and hence their fundamental values). Investors' comprehension of how the international financial system – which itself is evolving rapidly – works and their acting upon this knowledge is likely to render 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 most of the 1990s.

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