ANTICIPATING INSTITUTIONAL POLICY RISK:
A Political Business Cycle Perspective

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ABSTRACT

International business (“IB”) research has paid scant attention to whether and how electoral politics and economic policies affect foreign investment risk assessment, particularly in developing countries where the last decade has seen both considerable foreign investment, and domestic progress toward democratization and electoral competitiveness. We respond with development and testing of a framework using partisan and opportunistic political business cycle (“PBC”) theory to predict investment risk perceived by investors holding sovereign bonds during 19 presidential elections in 12 developing countries from 1994-2000. Consistent with our framework, we find that bondholders perceive higher (lower) investment risk in the form of higher (lower) credit spreads on their sovereign bonds as right-wing (left-wing) political incumbents appear more likely to be replaced by left-wing (right-wing) challengers. For international business research, our findings illustrate the promise of PBC theory in explaining the election-period behavior of sovereign bondholders and, perhaps, other investors who also “vote” in developing country elections and can substantially influence the price and availability of capital there. For developing country investors and states, our findings highlight potential costs and benefits associated with democratization, and underscore the importance of state communication with investors during election-periods.

Keywords: elections; developing countries; risk; sovereign bonds; spreads.
RECOMMENDATION: WE CONTINUE TO RECOMMEND CLIENTS REDUCE EXPOSURE AHEAD OF THE ELECTION...The steady decline in Brazilian bond prices turned into panic selling last week. The sovereign spread (or risk premium) on Brazilian USD debt gapped out from 1250 basis points (bps) on Monday (June 17) to 1700 bps by the close on Friday (June 21). Brazilian spreads are now wider than during the country’s currency crisis in January 1999...Bond investors are clearly worried about the outcome of the presidential elections in October. Worker’s Party (PT) candidate Lula continues to lead in opinion pools...The widespread perception among market participants seems to be that a Lula presidency would put Brazil on a path towards defaulting on its external debt.

Excerpt from Credit Suisse Private Banking Newsletter to Investors, June 26, 2002 (CSPB, 2002)

This study empirically investigates whether and how private, often foreign-based investors react to risks associated with electoral politics and economic policies in developing countries. International business (“IB”) research has long recognized the importance of understanding the divergent interests of foreign investors and host states, and resulting risks investors perceive over time, particularly in developing country contexts (Vernon, 1971; Fagre and Wells, 1982; Kobrin, 1987; Minor, 1994; Wells and Gleason, 1995; Eden and Appel-Molot, 2002). The last decade of IB research has re-examined these interests with greater emphasis on understanding what strategic actions host states can take to reduce perceived risks and attract international investment (Lenway and Murtha, 1994; Murtha and Lenway, 1994), and what legal and political institutions (Murtha, 1993; Henisz, 2000; Dixit, 2003) may constrain such state actions.

Curiously, these IB research streams have paid scant attention to analysis of investor risk in the specific context of electoral politics and economic policies. For example, obsolescing bargains between investing multinational corporations and host states (Vernon, 1971) and reversals of broader policies inducing investment (Murtha, 1993) are not necessarily tied to state electoral dynamics. Indeed, many developing countries with substantial attention from IB researchers examining investor risk from the 1960s through much of the 1980s had dominant one-party leadership (e.g., Indonesia, Mexico, Soviet Bloc States) or military governments (e.g., Brazil, Nigeria, South Korea) without competitive electoral systems. In this context, it is not surprising that previous IB research has paid less attention to election-related risk assessment in developing countries, rarely going beyond case studies (e.g., Vernon and Wells, 1986; Wells, 1997, Wells and Gleason, 1995).
The late 1980s and 1990s saw the transformation of many developing countries into democracies with competitive electoral systems including parties from across the political spectrum. As Goldsmith (1995) notes, democratization was thought by many to promote greater political freedom and stability and, in turn, enhanced attractiveness for lending and investment purposes. But as the quote above suggests, elections so important to growth of democratic polities in developing countries may also generate a substantial increase in perceived risk among foreign investors. The Credit Suisse commercial bank linked increasing pre-election polling numbers for left-wing Brazilian presidential candidate Luís Inácio Lula da Silva (“Lula”) to an increased probability of his victory over the right-wing incumbent candidate later in 2002, and then to post-election default on Brazil’s foreign debt. Similarly, the Goldman Sachs investment bank used pre-election polling data to create a “Lulameter” tracking the negative relationship between Lula’s popularity and the value of the Brazilian real in currency markets during the 2002 campaign (Goldman, Sachs, 2002; Martinez and Santiso, 2003). These anecdotes suggest that commercial and investment banks outside Brazil as well as the foreign investors they represent and advise perceive greater risks when elections may lead to less “investor-friendly” left-wing economic policies.

As competitive elections and election-related risks become more common in the developing world, IB research should respond with theory and empirical tests tailored specifically to understanding whether and how risk perceptions and behaviors change among these IB actors.

That response might benefit from review of theory in the political economy field, particularly political business cycle (“PBC”) theory, to develop testable hypotheses about the impact of elections on investment risk in developing countries. Since the seminal work of Nordhaus (1975, 1989) and others (e.g., MacRae, 1977), PBC theory has been debated largely in the context of industrialized democracies and almost exclusively in the context of interactions among domestic political stakeholders, such as between elected incumbents and voters. These original models and their descendants (e.g., Rogoff, 1990) posited opportunistic politicians using expansionary fiscal, monetary and related policies during elections to boost their chances of retaining office, even if such policies have detrimental economic consequences.
in the post-election period. PBC models developed by Hibbs (1977, 1987) and others (e.g., Alesina, 
1987; 1988) also suggested that candidates champion economic policies for electoral purposes; however 
(unlike “opportunistic” incumbents), their policies differ markedly with right-wing candidates 
characteristically emphasizing lower inflation and the interests of investors, and left-wing candidates 
preferring lower unemployment and the interests of workers.

We propose that PBCs of either type may also have important implications for various non- 
voting, often foreign-based IB actors crucial to developing country investment and economic growth. 
Investors in developing country sovereign bonds are representative. Institutional and individual 
bondholders based largely in the US, Europe and Japan traded sovereign debt instruments of all types 
worth merely $90 billion in 1990 but almost $1.6 trillion in 2000 (EMTA, 2001). Their assessments of 
risk associated with continued investment in sovereign debt have a direct and increasingly influential 
impact on the cost and availability of capital in developing countries. Interestingly, PBC research to date 
has done little to examine whether these IB actors or others react to electoral politics and economic 
policies with changed investment risk assessment. Our study responds to this limitation in PBC research 
even as it responds to the IB research challenge by extending the application of PBC theory to election-
period behavior of such IB actors. We propose that their “votes” on investment risk associated with 
electoral politics and economic policies matter for developing countries, and that PBC theory promises 
new insight on this behavior relevant to both IB and political economy researchers.

To investigate this proposition, we focus on sovereign bondholders and develop a conceptual 
framework for understanding how risk assessments measured by the market-determined spreads 
bondholders demand may be shaped by both partisan and opportunistic PBC considerations. Using a 
country’s cost of debt to assess perceived investment risk follows other recent IB research. Lee (1993), 
for example, uses the cost and availability of developing country debt to explain the impact of political 
instability on perceived country creditworthiness. McNamara and Vaaler (2000, 2002) examine whether 
and how developing country sovereign risk-ratings published by major credit rating agencies are 
influenced by rivalry among the agencies themselves, noting that agency ratings are closely correlated
with the cost of developing country debt, and the attractiveness of countries for foreign direct investment. Most recently, Block and Vaaler (2004) compare pre- to post-election bond spreads from developing countries to show that bondholders anticipate opportunistic politicians, the prospect of pre-election spending sprees, and the deterioration of sovereign creditworthiness in the post-election period.

Use of bond spreads to gauge investment risk during elections in developing countries since the 1990s may have advantages compared to other indicators IB researchers might use, such as FDI or trade flows. First, like FDI and trade data, bond spreads data are available for a wide variety of developing countries since the 1990s, thus facilitating cross-sectional study of investment risks in those countries. Second, bond spreads data are available on a more frequent daily (rather than, say, monthly, quarterly or annual) basis, thus permitting more fine grained assessment of investment risk, say, during each day of an election campaign. Third, daily bond spreads provide direct measures of investment risk in the form of changing daily returns (yields), while most FDI, trade and other typical IB measures permit only indirect risk assessment in the form of changing FDI quantities or trade-flow composition. Research by Cantor and Packer (1996a; b) Larraín et al. (1997) and others (e.g., Min, 2000) demonstrates that bond spreads, in developing countries vary with capital and trade flows, and other macroeconomic factors more familiar to IB empirical research.

Using the bond spreads measure of investment risk, we derive a framework and test two hypotheses linking the partisan orientation of the incumbent facing election and her likelihood of re-election to trends in pre-election bond spreads demanded by investors. Linking pre-election bond spreads to the partisan orientation of the incumbent invokes partisan PBC considerations, while linking the same to likelihood of re-election invokes opportunistic PBC considerations. No previous study using PBC considerations has developed a conceptual framework predicting the simultaneous strength and direction of both effects, nor has any previous study then simultaneously tested for both effects, including Block and Vaaler (2004), who used opportunistic PBC considerations alone to explain changes in pre- versus post-election bond spreads.
Statistical analyses of daily bond spreads for sovereign bonds issued by 12 developing country sovereigns holding 19 presidential elections from 1994-2000 yield results consistent with our two hypotheses and the broader framework linking investment risk to both opportunistic and partisan PBC considerations. We find that bondholders in the run-up to elections perceive greater investment risk in the form of larger bond spreads as the likelihood of a right-wing incumbent being defeated by a left-wing challenger increases. We also observe that these investors perceive less investment risk in the form of smaller bond spreads as the likelihood of a left-wing incumbent being defeated by a right-wing challenger increases.

Overall, these results suggest that at least one group of IB actors, developing country sovereign bondholders, perceive investment risks associated with electoral politics and economic policies in a manner consistent with PBC considerations, particularly partisan PBC considerations. Where they perceive greater investment risk—for instance, where right-wing incumbents are likely to be defeated by left-wing challengers—developing countries seeking greater political openness may suffer in the form of temporarily more costly capital for economic growth and investment. Such investor reactions could also betray rather simplistic thinking about electoral politics and economic policies in developing countries. Because cost and availability of debt in developing countries closely tracks other flows linked to FDI, trade, and risk-rating services, support for PBC considerations in this study also promises a rich stream of follow-on research about how and why investment risk in developing countries for these other flows may be sensitive, perhaps overly sensitive, to electoral factors.

**RESEARCH BACKGROUND**

*Relevant IB Theory and Evidence*

IB research on investment risk associated with host state policies is often formulated in the context of Vernon’s (1971) bargaining hypothesis or, more recently, in the context of transaction cost arguments about policy uncertainty (Henisz, 2000; Dixit, 2003). These perspectives are relevant to electoral contexts. Vernon and Wells’ (1986) study of tension between private mining interests and state
policies after founding elections in Papua New Guinea in the late 1960s and early 1970s, and Wells’ (1997) case study of Enron’s Dabhol Project in India during state elections in the 1990s represent two applications of the bargaining hypothesis where electoral factors substantially influenced interactions between foreign investors and the host state.

Yet, the bargaining hypothesis and transaction cost perspectives may yield only limited insight on election-related investment risk. The bargaining hypothesis suggests that investors with substantially fixed assets in developing countries may be more vulnerable to opportunistic renegotiation of investment terms by political incumbents courting voter support. From a transaction cost perspective, elections may raise investment risk by increasing uncertainty about who will occupy legislative, executive and or judicial positions relevant to the continuation of current state policies influencing the investment climate. These IB perspectives, however, say little about the politician’s situation at election time, including her incentives to use economic policies to raise voter support, and or serve her partisan interests.

Relevant PBC Theory and Evidence

For a better understanding of election-related investment risks, we resort to PBC theory, which historically has been the province of researchers in macroeconomics and political science. In these fields, PBC theory is typically analyzed in terms of its opportunistic and partisan branches. Opportunistic PBC theory originated with Nordhaus (1975, 1989) and MacRae (1977) and was refined by others (e.g., Rogoff, 1990). They contended that pre-election economic policy choices were motivated by the general support they would generate from voters with largely homogenous preferences. Incumbents have incentives to engage in expansionary monetary and/or fiscal policies in the pre-election period intended to increase votes on election day, even though such policies may require post-election contractions. While early models (e.g., Nordhaus, 1975) assumed naïve voters with adaptive expectations, and thus, limited capabilities to anticipate incumbent policies during election periods, later models (e.g., Rogoff, 1990) assumed rational voters with ability to anticipate many instances of electioneering.
Traditional partisan PBC models originated with Hibbs (1977, 1987) and were refined by others (e.g., Alesina, 1987; 1988). They argued that politicians seeking election tended to adopt economic policies according to ideological preferences. According to traditional partisan PBC models, incumbents may still use economic policy to garner voter support, but their policy decisions are based on their partisan political orientation, which can lead to very different emphases. Partisan PBC research often articulates these differences in terms of a simple Phillips curve approach with left-wing post-election policies tending to favor employment at the expense of inflation, and with right-wing post-election policies favoring inflation at the expense of employment. Because voter preferences are assumed to be heterogeneous based on these types of partisan preferences, such policy differences can generate substantial differences in political support during election periods, substantial differences in employment, inflation and economic growth after elections, and substantial right-left partisan swings across several election periods. Again, earlier models (e.g., Hibbs, 1977) assumed that these policy differences could generate long-term macro-economic effects while more recent rational partisan models (Alesina, 1987) assumed that only unexpected partisan shifts in policy could have real effects, and then only temporarily.

While left-right partisan differences in policy preferences are most commonly articulated in terms of the inflation-employment tradeoff, they proxy for a more comprehensive range of right-wing policy preferences generally favoring the interests of the investors versus left-wing policies generally favoring the interests of workers. Hibbs (1977) for example, argued that the major supporters of right-wing parties are typically middle- and upper-class individuals with higher incomes and investment wealth, a considerable part of which is typically in nominally fixed assets. Left-wing supporters typically have lower incomes and wealth, aside from human capital tied closely to the employment relationship.1 Based on this distinction, it is easy to expand the list of partisan distinctions to a range of right-wing fiscal,...

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1 Descriptions of right- versus left-wing supporters in Hibbs (1977) and others (e.g., Berlemann and Markwardt, 2003) include a progressive tax system and, thus, the possibility that right-wing supporters with considerable assets of a nominally fixed value will suffer from faster progression through higher tax brackets as inflation increases. This description of right-wing supporters seems particularly well-suited to the empirical context of this study and also to agencies and their assessments of developing country economic policies for their impact on the interests of investors holding sovereign bonds with nominally fixed coupon amounts.
monetary and related policies, including but not limited to lower inflation, favoring investor interests, and a range of left-wing policies, including but not limited to higher employment, favoring worker interests.

Recent reviews of the PBC research by Drazen (2000), Franzese (2002) and Block and Vaaler (2004) chronicle a growing empirical literature, but with more growth in the opportunistic rather than partisan PBC branches, and with much more work in both branches in industrialized country rather than developing country contexts. While evidence supporting opportunistic PBCs in industrialized countries is, to date, mixed, empirical studies in developing countries consistently find support for the proposition that incumbents may employ expansionary monetary, fiscal and related policies during election periods to gain voter support on the final election day.² Schuknecht (1999), for example, finds evidence of electioneering in the form of expansionary fiscal policies during electoral campaigns for several developing countries with fixed exchange rate regimes from the 1970s to the early 1990s. Block (2002) also finds evidence of opportunistic behavior in the fiscal and monetary policies in a sample of African countries covering the 1980s and 1990s.

Aside from Leblang’s (2002) recent study, there is only sparse application of partisan PBC theory in non-industrialized democracies, and practically nothing applying to interactions between politicians and IB actors. Leblang examined the possibility that foreign currency traders might engage in “speculative attacks” on developing country currencies based on PBC considerations. Consistent with partisan PBC perspectives, he finds that the likelihood of speculative attacks during election periods is greater with left- rather than right-wing incumbents. The attacks are also more likely in the post- rather than pre-election period. Leblang’s results suggest that PBC perspectives may have relevance for more than just currency traders. Political trends in developing countries fostering democratization and PBCs on the one hand, and economic trends increasing investment risk among various IB actors on the other hand, no doubt implicate a much broader group, including the sovereign bondholders and bond spreads we analyze below.
EMPIRICAL SETTING, CONCEPTUAL FRAMEWORK AND HYPOTHESES

Empirical Setting

Brief explanation of institutional practices in the developing country sovereign bond market provides helpful context for developing a conceptual framework to predict changes in bondholder risk assessment linked to partisan and opportunistic PBC considerations. Origins of developing country sovereign bonds and bondholders were in the LDC debt crisis of the early 1980s and the emergence of so-called “Brady bonds” designed to securitize that debt, create secondary markets for it and lower the overall cost of borrowing to sovereigns and sub-sovereign individuals by reducing investor liquidity (though not basic default) risks. In addition to Brady bonds, developing country sovereign and sub-sovereign individuals in the 1990s issued new debt securities, often in overseas markets. For example, from 1994 to 2000, the stock of outstanding debt securities issued abroad for the Philippines rose from $2.1 to $14 billion. For Mexico, it rose from $24 to $58 billion. For Argentina, it rose from $13 to $76 billion (OECD, 2004). Annual trading volume in Brady and non-Brady Eurobonds issued by developing country sovereigns and sub-sovereigns topped $1.6 trillion or approximately $4.3 billion in daily trades. Broker-dealers, investment banks, governments, insurance companies, pension, hedge and mutual funds, and wealthy individuals comprise this secondary market, which is linked electronically and capable of connecting buyers and sellers, executing and clearing their trades in “round lots” of at least $2 million (EMTA, 2001).

Risks associated with investment in sovereign bonds are typically gauged by the market-determined spreads bondholders are able to command. Expressed either absolutely (e.g., in Larrian et al.,

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2 By “final election day” we mean the polling date or dates of the general election, or in the case of multiple electoral rounds, the polling date or dates of the run-off general election. For the remainder of this study, we use the terms “election day” to refer to this final general election day concept.

3 Trends in the stock of debt securities issued abroad roughly mirror trends in cumulative FDI flows into these countries over the same period. Cumulative FDI inflows to the Philippines from 1994-2000 were approximately $9.9 billion. Cumulative FDI inflows to Mexico from 1994-2000 were approximately $81.1 billion. Cumulative FDI inflows to Argentina from 1994-2000 were approximately $68.3 billion.
sovereign bond spreads vary with the likelihood of default by the sovereign issuer. Empirical studies by Cantor and Packer (1996a; 1996b) as well as numerous industry analyses (e.g., J.P. Morgan, 2000) indicate that both average levels and changes in day-to-day spreads for sovereign bonds from industrialized and developing countries are significantly and substantially correlated with major credit-rating agency (“agency”) assessments of sovereign default risk. Amadou (2002) also notes the strong relationship between bond spreads and default risk, particularly those issued by developing country sovereigns.

**Conceptual Framework**

With this institutional context, we develop a conceptual framework integrating both partisan and opportunistic PBC considerations into investor risks related to elections in developing countries. The framework rests on four basic assumptions. Consistent with our description of institutions and practices associated with developing country sovereign bonds and bondholders, we assume first that there is a well-functioning market for sovereign bonds from developing countries with astute institutional and individual bondholders revising on a daily basis their subjective expectations of risk that the issuing sovereign will default on its obligations. Second, we assume that primary vetting of candidates has concluded, and a general election campaign with competitors from right- and left-wing parties is in full-swing. Third, we draw on partisan PBC theory going back to Hibbs (1977) and running through Berlemann and Markwardt (2003), and assume that “investor-friendly” right-wing policy preferences favor bondholders, lower the risk of default, and lead to lower bond spreads; left-wing policy preferences do not favor bondholders, raise risk of default and lead to higher bond spreads. Fourth, we draw on opportunistic PBC theory to assume that incumbents are identical, regardless of party, in their motivation to retain office. Their incentives to use expansionary monetary, fiscal and or related policies as means to retain office are detrimental to post-election bondholder interests, raise the risk of default and lead to higher bond spreads.

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4 Lamy and Thomson (1988) suggest that relative spreads are a more stable risk measure than absolute spreads especially where the general level of interest rates fluctuates substantially. Consistent with this approach, we define spreads on a foreign sovereign bond relative to comparable US Treasuries: \( \frac{\text{Yield}_{\text{Foreign}} - \text{Yield}_{\text{U.S.}}}{\text{Yield}_{\text{U.S.}}} \).
Franzese (2002) and others suggest that opportunistic incentives may be modified by the incumbent’s likelihood of victory as election day approaches. Incumbents certain of victory will have fewer incentives to resort to opportunistic policies compared to incumbents with their backs against the wall. This assertion is in keeping with Schultz (1995), who shows that expectations of incumbent party victory in British parliamentary elections are negatively correlated with the likelihood of expansionary economic policies in the election run-up, as well as with Block et al. (2003), who make a similar point in the African context.

With these four assumptions, we define the framework in Table 1. The two columns define the partisan orientation of a right-wing or left-wing incumbent seeking to retain office in the general election. The three rows define different levels of bondholder expectation (”λ”) regarding the likelihood that a right-wing candidate will prevail on election day. This expectation ranges from $0 \leq \lambda \leq 1$, where $\lambda \approx 1$ indicates bondholder expectation of a right-wing candidate victory, $\lambda \approx 0$ indicates bondholder expectation of a right-wing defeat, and $\lambda \approx 0.5$ indicates closely balanced bondholder expectations. The resulting six cells in this $2 \times 3$ matrix represent the predicted effects that incumbent partisan orientation and incumbent re-election likelihood will have on bondholder risk as measured by increasing (+) spreads indicative of greater risk, or decreasing (-) spreads indicative of less risk.

There are two “base case” scenarios in Table 1. In the right-wing base case, a right-wing incumbent faces re-election and is expected to win ($\lambda \approx 1$). In this base case, there is likely to be no change bond spreads (0, 0) related either to partisan or opportunistic PBC considerations. From a partisan PBC perspective, current right-wing policies favorable to investors are likely to continue after the

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5 We thus integrate prior PBC theories, which in their original formulations make contradictory characterizations of incumbents (e.g., they are identical and non-ideological in opportunistic PBC theory, and have distinct policy preferences in partisan PBC theory).

6 Alternatively, one could conceive of a situation in which an incumbent, certain of defeat, would deem it futile to engage in pre-election spending sprees to buy votes. This scenario, however, contradicts both theoretical and empirical work on opportunistic political business cycles (for instance, Alesina (1997) and Schultz (1995). This remains an interesting question for future research, and the authors thank an anonymous referee for the suggestion.
election. From an opportunistic PBC perspective, the expectation of easy incumbent electoral victory eases bondholder concern about the possibility of pre-election spending sprees meant to buy votes at the expense of post-election investor interests. The left-wing incumbent base case of expected re-election ($\lambda \cong 0$) leads to a similarly null impact on bond spreads ($0, 0$). If bondholders expect a left-wing incumbent to win easily, then current economic policies less friendly to investors are expected to continue into the future. From an opportunistic PBC perspective, the expectation of easy incumbent electoral victory again eases bondholder concern about the possibility of pre-election spending sprees meant to buy votes at the expense of post-election investor interests.

The remaining four cells in Table 1 show how partisan and opportunistic PBC considerations can generate changes in bondholder risk assessment during elections. Pre-election bond spreads differ from the two base cases once bondholder expectations vary from certain incumbent re-election. With a right-wing incumbent, bondholders may have closely balanced expectations ($\lambda \cong 0.5$) or expect the right-wing incumbent’s defeat ($\lambda \cong 0$). These two alternatives to the base case lead to partisan and opportunistic PBC pressures to increase pre-election spreads relative to the right-wing base case ($+, +$). From a partisan PBC perspective, the prospect of a partisan shift from right-wing investor-friendly economic policies to left-wing policies will prompt an increase in pre-election spreads. From an opportunistic PBC perspective the prospect of victory by the challenger will prompt the (right-wing) incumbent to engage in electioneering spending sprees meant to buy votes and stave off electoral defeat, a prospect that also troubles bondholders and increases pre-election bond spreads.

With left-wing incumbents, pre-election bond spreads do not differ from the base case with any à priori determinism. When bondholder expectations of left-wing incumbent victory are closely balanced ($\lambda \cong 0.5$) or if easy ouster by a right-wing challenger is expected ($\lambda \cong 1$), then PBC effects on pre-election bond spreads are both negative and positive ($-, +$) compared to the base case. From a partisan PBC perspective, the prospect of a partisan switch to investor-friendly right-wing policies eases bondholder concerns and lowers spreads. From an opportunistic PBC perspective, however, the prospect of defeat by
a (right-wing) challenger prompts the (left-wing) incumbent to engage in electioneering spending sprees to “buy” votes, a prospect that again troubles bondholders and increases spreads.

Note that for right-wing incumbents, our framework suggests that partisan and opportunistic PBC considerations are mutually reinforcing. For left-wing incumbents, however, these two PBC considerations work in opposition to one another. Where, in the case of right-wing incumbents the pair of PBC considerations are both positive (+, +), we can predict a positive trend in bond spreads compared to the base case of certain right-wing re-election. Where, in the case of left-wing incumbents the pair of PBC considerations are negative for partisan but positive for opportunistic effects (-, +), the overall outcome is ambiguous, à priori. Compared to the base case of certain left-wing incumbent retention, the overall change in spreads, if any, will depend empirically on whether bondholder decisions are systematically dominated by partisan (-) or opportunistic (+) PBC considerations.

**Hypotheses**

For right-wing incumbents, our conceptual framework predicts a clear link between bondholder expectations of election-day victory and pre-election spreads on developing country sovereign bonds. Compared to the base case of certain right-wing incumbent retention, both partisan and opportunistic PBC considerations generate mutually reinforcing and increasingly positive changes in bondholder spreads:

H1: Given a right-wing incumbent, pre-election bond spreads compared to the base case will be positive and increasing as the likelihood of re-election decreases.

For left-wing incumbents, our conceptual framework predicts contradicting partisan and opportunistic effects on pre-election spread as we move from the base case of certain left-wing incumbent victory to mixed bondholder expectations or even certainty of victory by the right-wing challenger. Increasing likelihood of a partisan switch from left- to right-wing investor-friendly economic policies engenders a decrease in the spread while the increasing likelihood of an incumbent resorting to opportunistic interventions to stave off defeat engenders an increase in spreads. We, therefore, have no à priori basis for determining that either partisan or opportunistic PBC effects will systematically dominate the other. Accordingly, Hypothesis 2 can be restated in alternative terms. If partisan PBC effects
predominate, then we expect pre-election bond spreads to deviate negatively from the base case as the likelihood of incumbent re-election decreases:

H2a: Given a left-wing incumbent, pre-election bond spreads compared to the base case will be negative and decreasing as the likelihood of re-election decreases.

On the other hand, if opportunistic PBC effects predominate, then we expect pre-election bond spreads to deviate positively from the base case as the likelihood of incumbent re-election decreases:

H2b: Given a left-wing incumbent, pre-election bond spreads compared to the base case will be positive and increasing as the likelihood of re-election decreases.

**METHODOLOGY**

**Spreads Model and Hypothesis Tests**

To test these two hypotheses, we define the following regression equation:

\[
\text{Spread}_{cte} = \beta_0 + \beta_1 \text{Day}_{te} + \beta_2 \text{GovRbegin}_{cte} + \beta_3 (\text{Day} \times \text{GovRbegin})_{cte} + \beta_4 (\text{Day} \times \lambda D)_{cte} \\
+ \beta_5 (\text{Day} \times \text{GovRbegin} \times \lambda D)_{cte} + C \alpha + u_{cte}
\]

**Dependent variable.** The dependent variable, \(\text{Spread}_{cte}\), is the market-determined credit-spread relative to a comparable US Treasury security on day \(t\) of election event \(e\) for a sovereign bond issued by developing country \(c\). This relative measure of spreads follows Lamy and Thomas (1988) and others (e.g., Cantor & Packer, 1996a, b) and permits a more parsimonious model specification.\(^7\) Bond spreads in the run-up to election day are assumed to incorporate investment risks associated with elections and provide the basis for testing our hypotheses using PBC considerations.

**Control variables.** \(C\) is a vector of additional control variables, including country and year dummies, (log) bond face amount, years to bond maturity, a dummy to distinguish fixed versus floating rate bonds, a dummy to distinguish countries with investment grade ratings for their sovereign bonds, the J.P. Morgan Emerging-Market Bond Index Global ("EMBI") for the relevant day, and a dummy variable

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\(^7\) Other researchers estimate absolute spreads (e.g., Larrain et al., 1997), which then requires the addition of a right-hand side control, usually measured as the daily observed yield on actual or synthetic US Treasuries of similar maturity.
to distinguish countries that experienced financial crises in the previous year. The rationale for each of
these controls follows below.

The US dollar face amount of the bond proxies for bond liquidity. Bonds with a larger face
amount have greater liquidity and pose less risk to investors. Thus, we expect bond face amount to have a
negative effect on spread. The number of years left before a bond reaches maturity is one dimension of
investor risk, as longer maturity bonds expose investors to greater risk from adverse changes in interest
rates. We, therefore, expect time to maturity to have a positive effect on spread. Third, if a bond’s
coupon rate is “floating” (1) rather than fixed (0), then the coupon rate adjusts periodically -- often
annually or semi-annually -- to changes in a benchmark rate, typically the London Interbank Offered Rate
(“LIBOR”). Floating rate bonds are, therefore, less risky to investors and are expected to be negatively
related to spread.

We also observe the long-term foreign currency denominated sovereign credit rating on
December 31 of the year prior to an election to see whether the rating was “investment grade” or non-
investment “junk grade.” We use sovereign ratings published by a leading credit rating agency, Moody’s
Investor Services. Previous empirical research (e.g., Cantor and Packer, 1996a; 1996b) shows that these
ratings are significantly related to both sovereign bond spreads and to several macro-economic and related
factors important to the government’s ability and willingness to honor ongoing obligations to
bondholders: GDP per capita, GDP growth, inflation, fiscal balance, trade balance, external debt and
previous default history. Sovereigns with investment grade ratings enjoy more favorable macroeconomic
and related conditions, and are considered to have a lower background risk of default. Accordingly,
investors should perceive less risk in holding their bonds during elections, which should have a negative
effect on spreads. We include the daily observation on the EMBI index (a value index based on returns
for bonds issued by 27 different developing countries) (J.P. Morgan, 1999) because higher daily values of

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8 Moody’s Investor Service and other major credit rating agencies (e.g., Standard & Poor’s Rating Services) typically use 17
ordinal levels to assess the risk of default by sovereigns: Aaa = 16; Aa1 = 15; Aa2 = 14; Aa3 = 13; A1 = 12; A2 = 11; A3 = 10;
Baa1 = 9; Baa2 = 8; Baa3 = 7; Ba1 = 6; Ba2 = 5; Ba3 = 4; B1 = 3; B2 = 2; B3 = 1; and C = 0. Ratings below Baa3 are
the EMBI indicate greater overall confidence in the creditworthiness of developing countries generally, and thus, lower bond spreads. We also control for recent past financial crises, which may also changed perceived risks among bondholders. In the midst of some crisis, spreads are expected to increase. In the aftermath of crisis, as we measure such phenomena, temporarily heightened bondholder risk may have decreased leading to lower spreads.\footnote{A financial crisis is defined using a measure developed by Frankel and Rose (1996) who define one type of financial crisis in a country—a currency crisis—as a depreciation of 20% or more in the nominal exchange rate of a country’s currency against the US dollar in a given year. Where there are consecutive years of such depreciation, they impose the additional condition that each additional consecutive year of depreciation be at least 10% more than the previous year’s depreciation.}

**Variables of central interest.** Our hypotheses test for pre-election bond spread trends consistent with partisan and opportunistic PBC considerations and the conceptual framework in Table 1. Accordingly, the central variables of interest in our regression equation track pre-election spread observations with terms accounting for incumbent partisan orientation and bondholder expectations of right-wing victory on election day. $\text{Day}_t$ is a numeric counter for each day $t$ in a 90-day span comprising the 90 trading days before the election date. As a check on the robustness of our results, we also re-estimate the equation with a 60-day window. We choose these two pre-election windows primarily because they approximate the time-length of general election campaigns when voters and others are more likely to pay attention to the candidates and their platforms and form expectations of likely outcomes on election day. The $\text{GovRbegin}_{13}$ term is a 0-1 indicator distinguishing right-wing (1) pre-election incumbent government partisan orientation from left-wing (0).

$\lambda D$ is a dummy variable accounting for bondholders’ expectation of a right-wing victory. It takes values corresponding roughly to the values of $\lambda$ in Table 1 where right-wing incumbent victory is either expected ($\lambda \approx 1$), uncertain due to closely balanced expectations ($\lambda \approx 0.5$) or is not expected ($\lambda \approx 0$). In practice, bondholder pre-election expectations are unlikely to be at either extreme value, but will tend toward them except in a very close race. Following that idea, we permit $\lambda D$ to take one of three values in the equation: $\lambda D^{hi} = 1$ where bondholders expect a right-wing candidate victory; $\lambda D^{lo} = -1$ where

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\footnote{A financial crisis is defined using a measure developed by Frankel and Rose (1996) who define one type of financial crisis in a country—a currency crisis—as a depreciation of 20% or more in the nominal exchange rate of a country’s currency against the US dollar in a given year. Where there are consecutive years of such depreciation, they impose the additional condition that each additional consecutive year of depreciation be at least 10% more than the previous year’s depreciation.}
bondholders expect the right-wing candidate to lose; and \( \lambda D^{med} = 0 \) where bondholder expectations are closely balanced in the “close call” election.\(^{10}\)

Ideally, we would measure these bondholder expectations, \( \lambda D \), with data from reliable pre-election polls of bondholders for country \( c \) on pre-election day \( t \) of year \( y \). Unfortunately, no such data exist. A second approach would review data from reliable pre-election polls of likely voters whom bondholders are watching. Again, reliable pre-election polling data in developing countries are not widely available on a comparable basis. Indeed, aside from Shultz’ (1995) analysis of UK elections, we know of only one other published academic study on PBCs using pre-election polling data, Alesina et al.’s (1997) study of partisan preferences, electoral expectations and unemployment in the US.\(^{11}\)

An alternative to using pre-election polling data is using actual final election results retrospectively. Table 2 summarizes the two different approaches we take to measuring \( \lambda D \) based on actual final election results. A critical, but we think reasonable, assumption in using the actual election-day voting results to measure \( \lambda D \) is that the actual election-day results correspond with pre-election bondholder views. Put another way, our assumption is that pre-election bondholder views are not systematically upset by actual election-day results. The example of bondholder reactions to Lula’s increase in popularity approximately three months prior to Brazilian presidential elections in October-November 2002 illustrates our point. Substantial increase in spreads on Brazilian sovereign debt in mid-June 2002 coincided with a substantial increase in Lula’s pre-election polling numbers, and foretold victory by substantial margins over right-wing competitors in October-November elections (Martinez and Santiso, 2003).

\(^{10}\) This specification of the expectations dummy imposes symmetry on the magnitude of positive and negative effects resulting from elections. This approach is consistent with previous PBC empirical research (Alesina, et al., 1997). As an additional check, we implement an F-test comparing our spreads model with this symmetry restriction to an alternative spreads model without this restriction, i.e., separate dummies for high and low expectations of right-wing victory. At any commonly acceptable significance levels, we fail to reject the null hypothesis of symmetry in the restricted model, a result consistent with our more parsimonious model choice.

\(^{11}\) A recent working paper by Berlemann and Markwardt (2003) illustrates, again, the paucity of comparable pre-election polling data. They find cross-country polling data based on comparable sampling procedures, polling questions and statistical analyses for post-World War II elections in only six OECD countries.
Yet, the evolution of bondholders’ expectations regarding the end result of a given election period remains unknown. One possibility is that bondholders form their expectations at the beginning of the election period and hold to those expectations throughout. Alternatively, bondholders may condition their expectations on the incumbent party and gradually converge towards their final expectation as the election nears.

To account for both possibilities we first construct a “constant” $\lambda D$ by noting the election-day victor, the victor’s partisan orientation, and the victor’s final margin of victory for each election in our sample. The victory margin was defined as the difference in percentage points between the winning and second-place (runner-up) candidates. Thus, a right-wing victor winning by a substantial margin on election day results in a $\lambda D$ value of 1 ($\lambda D_{hi}$), while a left-wing victor by substantial margin on election day results in a $\lambda D$ value of -1 ($\lambda D_{lo}$). We classify an election as a close call resulting in a $\lambda D$ value of 0 ($\lambda D_{mod}$) where, regardless of the victor and the victor’s partisan orientation, the victory margin was less than 3%.

*** Insert Table 2 Approximately Here ***

As illustrated in Table 2, our alternative “convergent” $\lambda D$ takes an initial value based on the incumbent party and final expectation regarding the victorious party, and then converges linearly over time towards 1, 0, or -1 as described above. We posit that bondholders’ expectations are initially anchored closer to their final values when they expect no change in party. For instance, when bondholders expect the retention of a right-wing incumbent, $\lambda D$ begins at 0.75 90 (or 60) days prior to the election and converges to 1. Conversely, when bondholders expect a left-wing contender to prevail over a right-wing incumbent, $\lambda D$ begins at -0.5 and converges to -1. Faced with a close call for a right-wing incumbent, $\lambda D$ begins at 0.25 and converges to 0. This structure is symmetrically opposite for left-wing incumbents. Thus, we allow bondholders to condition the evolution of their expectations on both the incumbent and the expected victor. These expectations must converge over a longer range when bondholders expect a change of party, as there is a presumption in favor of the incumbent.
Using the $Day_t$, $GovRbegin_{cy}$ and $\lambda D$ terms individually and as interactions, we can estimate pre-election bond spread slopes for six different scenarios corresponding to the scenarios described in our conceptual framework. We describe these slopes based on a constant $\lambda D$:

- $\frac{\partial \text{Spread}}{\partial \text{Day}}_{GovRbegin_{AD} = 0, \lambda D = 1} = \beta_1 - \beta_4$  \hspace{1cm} (Left - Wing " Base Case " (Left , $\lambda D^{in}$))
- $\frac{\partial \text{Spread}}{\partial \text{Day}}_{GovRbegin_{AD} = 0, \lambda D = 0} = \beta_1$  \hspace{1cm} (Left - Wing " Close - Call " (Left , $\lambda D^{med}$))
- $\frac{\partial \text{Spread}}{\partial \text{Day}}_{GovRbegin_{AD} = 0, \lambda D = -1} = \beta_1 + \beta_4$  \hspace{1cm} (Left - Wing " Switch " (Left , $\lambda D^{hi}$))
- $\frac{\partial \text{Spread}}{\partial \text{Day}}_{GovRbegin_{AD} = 1, \lambda D = 0} = \beta_1 + \beta_3 + \beta_4 + \beta_5$  \hspace{1cm} (Right - Wing " Base Case " (Right , $\lambda D^{hi}$))
- $\frac{\partial \text{Spread}}{\partial \text{Day}}_{GovRbegin_{AD} = -1, \lambda D = 0} = \beta_1 + \beta_3$  \hspace{1cm} (Right - Wing " Close - Call " (Right , $\lambda D^{med}$))
- $\frac{\partial \text{Spread}}{\partial \text{Day}}_{GovRbegin_{AD} = -1, \lambda D = -1} = \beta_1 + \beta_3 - \beta_4 - \beta_5$  \hspace{1cm} (Right - Wing " Switch " (Right , $\lambda D^{lo}$))

Slopes for these six scenarios provide the basis for testing Hypotheses 1 and 2. In the case of Hypothesis 1, we predict that both partisan and opportunistic PBC considerations will increase bondholder risk, and consequently spreads, as the likelihood of right-wing incumbent re-election decreases. The 90-day or 60-day slopes in pre-election bond spreads for the base case of a right-wing incumbent likely to win on election day will be lower than slopes for a close call, which will be lower than slopes for a likely left-wing victory. In terms of the three right-wing incumbent scenarios above, this prediction reduces to:

$H1: \beta_4 + \beta_5 < 0^{12}$

Hypothesis 2 concerns bondholder risk and spreads in the run-up to elections with left-wing incumbents. This case leads to conflicting partisan and opportunistic PBC considerations. If, as Hypothesis 2a predicts, partisan PBC effects are dominant, then increasing bondholder expectations of right-wing victory on election day should decrease bondholder risk, and consequently, spreads. The 90-
day or 60-day slopes in pre-election bond spreads for the base case of a left-wing incumbent likely to win on election day will be higher than slopes for a close call, which will be higher than slopes for a likely right-wing victory. In terms of the three left-wing incumbent scenarios above, this prediction reduces to:

H2a: \( \beta_i < 0 \)

Hypothesis 2b predicts that opportunistic PBC considerations will dominate. If so, then bondholder risk, and consequently spreads, will increase as the likelihood of victory for a left-wing incumbent decreases—they are more likely to engage in pre-election spending sprees useful in rallying voter support but detrimental to the post-election economy. The 90-day or 60-day slopes in pre-election bond spreads for the base case of a left-wing incumbent likely to win on election day will be lower than slopes for a close call, which will be lower than slopes for a likely right-wing victory. In terms of the three left-wing incumbent scenarios above, this prediction reduces to:

H2b: \( \beta_i > 0 \)

Data Sources and Sampling

To test these hypotheses we collect several types of data. First, we collect data on presidential elections held during the 1987-2000 period using the World Bank’s Database of Political Institutions (“DPI”) (version 3, described in Beck et al. 2001), a database providing comprehensive information through 1997 on election dates, electoral systems including their competitiveness, and candidate partisan orientation. Where the DPI database proved to be incomplete for certain elections held between 1998 and 2000, we turn to two alternative sources: The International Foundation for Election Systems (“IFES”) (2003); and the on-line version of the Political Reference Almanac 2002-2003 edition (“Polisci.com”) (2003). Election-related information from these alternative sources is sampled using the same criteria as the DPI unless otherwise noted below. From the DPI, IFES and Polisci.com databases, we extract dates of presidential elections where direct popular votes or indirect votes of legislators or specialized electors

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12 H1 above is the reduced form of the following inequality: \( \beta_1 + \beta_4 + \beta_3 < \beta_1 + \beta_4 - \beta_3 \).

13 H2a above is the reduced form of the following inequality: \( \beta_1 - \beta_4 < \beta_1 < \beta_1 + \beta_4 \), while H2b is the reduced form of the opposite inequality: \( \beta_1 - \beta_4 > \beta_1 > \beta_1 + \beta_4 \).
chose chief executives judged to exert substantial executive governmental power rather than mere state ceremonial duties as presidential heads of state tend to have in parliamentary systems.

Our decision to exclude non-presidential systems, most notably, parliamentary electoral systems, follows from data observation and estimation issues. Elections in countries with presidential systems tend to follow fixed schedules. By contrast, executives in parliamentary systems often have substantial discretion in choosing the date of their re-election within an existing term in office. This distinction can lead to endogeneity problems in empirical models of PBC effects. The DPI database also includes assessments of executive electoral competitiveness as measured by the extent of multi-party competition. The measure ranges from 1 (least competitive executive electoral systems) to 7 (most competitive executive electoral systems). All of the presidential elections in our sample score 6 or 7 on this scale, indicating that they are “real” elections. DPI classifications of competitive elections in 1997 were judged to continue through 2000.

Our empirical analysis relies on identification of the partisan (left- versus right-wing) orientation of electoral candidates, particularly incumbent (government) candidates. The DPI, IFES and Polisci.com databases provide information on the partisan orientation of candidates, including characterization of their parties as left-wing, right-wing, or centrist-oriented. Beck et al. (2001) explain the decision rules used for these DPI categorizations. Two types of classification criteria are used. First, they examine the content of party names. Second, they refer to judgments by academic and professional commentators. In terms of content, parties are defined as “right-wing” based on whether terms such as “conservative” or “Christian democratic” are included in their names. A “left-wing” definition follows from party names with terms such as “communist” or “Marxist” or “socialist” or “social democratic.” Failing a clear indication based on content, academic and professional commentator judgments are used. The “centrist” classification follows from no clear criteria based on party-name, thus academic and professional judgment is the primary source. Centrist parties advocate the strengthening of private enterprise but also support some redistributive role for government.
We apply the same criteria to ascertain preliminary classifications for post-1997 elections not covered by DPI. Noting the increased subjectivity associated with the centrist classification, as well as the similarities of central propositions in economic policy between centrist and right-wing governments, we collapse centrist parties into the right-wing classification; thus, our final classifications are limited to two: left-wing and right-wing (including centrist). The possibility that these centrist governments might also combine with our left-wing classification is discussed in our results section below.¹⁴ The DPI, IFES and Polisci.com sources also provide final election results used to construct $\lambda D$. These data are summarized in Table 3.

** Insert Table 3 Approximately Here **

Using Bloomberg International (2003) on-line data sources, we collect EMBI, sovereign risk-rating and exchange rate (crisis) data, as well as data on bond yields for large-size, dollar-denominated bonds issued by developing country sovereigns in foreign markets and or trading there from 1994-2000. Where possible, we choose Brady bonds with the longest trading history available to us for each sovereign in our sample. Key data on the bonds included in our sample are summarized in Table 4. We also note the comparable US Treasury bond yield, either actual or synthetic from a constructed yield curve. With these data sources, we calculate the spread for each sovereign bond relative to comparable US Treasury bonds during the 60 and 90 days before a presidential election. We choose these two periods of observation to approximate the length of the general (post-primary) campaigns in sampled countries. The resulting 60-day (90-day) sample comprises a balanced panel of 1,140 (1,710) daily bond spread observations for 19 elections held in 12 countries from 1994-2000.

** Insert Table 4 Approximately Here **

Estimation Strategy

¹⁴ Parties are placed in a fourth classification as “other” if both name-based and commentator-based criteria cannot clearly classify them into left-wing, right-wing, or centrist. Where an incumbent party in our sample is classified as “other” by the DPI—and there were only three such instances—we consulted IFES and Polisci.com for additional information on which to make a judgment of left- versus right-wing party orientation.
Our estimation strategy follows from the non-standard structure of our data set. As noted above, we have 1,140 daily observations spread evenly across 19 separate 60-day election events (and 1,710 observations when we extend the election events to 90 days). There is serial correlation within each election event (though no \textit{a priori} reason to assume that the persistence of the error terms are identical across elections). In addition, the data generating process is such that while the data are clearly independent \textit{across} election events, they are just as clearly not independent \textit{within} election events. If uncorrected, this problem results in inappropriately narrow confidence intervals, suggesting statistical significance where there may be none. We are able to address these problems simultaneously through our use of a panel general estimating equation ("GEE") estimator (Hardin and Hilbe, 1995). This estimator applies the appropriate clustering of non-independent observations to produce correct standard errors (that are also robust to heteroskedasticity across election events), and also allows us to impose first- through ninth-order autoregressive processes that vary in parameterization across election events.

An additional estimation issue concerns the probable influence of outlier bond spread observations resulting from unknown idiosyncratic short-duration events, which could confound estimation of broader trends in the sample. Emerging-market bond spreads exhibit a mean reversion tendency similar to mean reversion tendencies in other indexes of country credit quality (Erb \textit{et al.}, 1995; Gendreau and Heckman, 2001). Nevertheless, spreads are vulnerable to short-duration deviations following unexpected shocks—financial crises or natural disasters—and the uncertainty among investors they briefly generate. These shocks can lead to brief but sharp widening in spreads. One common approach to dealing with such spread observations econometrically is to exclude them all, but such exclusion criterion is necessarily \textit{ad hoc} and implies a loss of information. A preferable approach is to include all but the most extreme outliers, but to "down-weight" those retained. A three-step robust regression approach described by Rousseeuw and Leroy (1987) and used by Hamilton (1991) to write the current version of the \textit{rreg} procedure in \textit{Stata} (2003) accomplishes this. This procedure combines an examination for gross outliers using Cook’s (1977) \textit{D} influence values from initial OLS estimation,
followed by an iterative process of weighting remaining observations using approaches suggested by Huber (1964) and Beaton and Tukey (1974). The resulting observation weights are used in our GEEs.\footnote{We also checked for the stationarity of bond spread observations for the 12 different bond series from which sample was drawn. Using Dickey-Fuller (1979) and Phillips-Perron (1988) tests, we were able to reject the null hypothesis of non-stationarity for five of 12 bond series at the 1\% level, for eight of 12 bond series at the 5\% level, and for 10 of 12 bond series at approximately the 10\% level. We could not reject the null hypothesis for the Polish PDIB series and the Russian IV series bonds at commonly acceptable levels of significance. Results excluding these last two bonds are consistent in signs and significance with those reported below, and are available from the authors.}

**RESULTS**

Tables 5-7 present weighted GEE results related to our two hypotheses about partisan and opportunistic PBC considerations shaping election-period bond spreads in developing countries. Table 5 reports descriptive statistics of the 90-day sample and point estimates from 60- and 90-day weighted GEE estimations using constant and convergent $\lambda D$ measures. Table 6 draws on the results in Table 5 to construct slope estimates corresponding to each of the six possible outcomes suggested by our conceptual framework predicting the impact of partisan and opportunistic PBC considerations on bond spreads with right- and left-wing incumbents. Table 7 uses the slope estimates in Table 6 to test formally for support of Hypotheses 1 and or 2.

\[**** ~ \text{Insert Table 5 Approximately Here} ~ ****\]

*Weighted GEE Results*

We first note in Table 5’s results the sign and significance for our six explicit controls. Consistent with our intuition, bond spreads tend to be lower for developing country sovereign bonds with larger face amounts, shorter maturities, floating rate coupons, sovereign issuers with investment grade ratings, trading when investor confidence in emerging-market creditworthiness is higher, and trading in the aftermath of a financial crisis. Turning next to our variables of central interest, we see that the coefficients on $Day_t$, $GovRbegin_{ij}$, and $\lambda D$ terms exhibit consistent signs and significance across all columns. While providing only limited insight on their own, these coefficients yield interesting insights viewed together in Table 6. Results there suggest a clear hierarchy of investment risk among bondholders linked to expectations of incumbent re-election for both right- and left-wing incumbents. Against the
base case of likely right-wing incumbent re-election (Right, $\lambda D^{hi}$), we see increasing pre-election spreads indicating greater investment risk as bondholder expectations shift to a close call (Right, $\lambda D^{med}$) or to an expected left-wing victory (Right, $\lambda D^{lo}$) on election day. This hierarchy is consistent with our conceptual framework in Table 1, where for right-wing incumbents, both partisan and opportunistic PBC considerations trend positively as the prospects of incumbent re-election dim. This observed hierarchy in Table 6 is confirmed in the results from formal testing of Hypothesis 1 in Table 7. The predicted negative sign is consistent across all four specifications. Significance is at the 1% level with the exception of Column 5 where the sign on the test statistic using the 90-day sample and convergent $\lambda D$ is significant only at the 10% level.

***Insert Tables 5 and 6 Approximately Here ****

What about the magnitude of these hierarchical differences? As we answer this question, recall that we made no specific prediction about the sign and significance for our two base case scenarios. In that context, we review the point estimates for the 60- and 90-day samples analyzed with the constant $\lambda D$ measure (Columns 2-3). With 60- and 90-day pre-election windows, the base case bond spread slopes for right-wing incumbents are negative and significant at the 1% level. The 60-day (90-day) base case slope of -0.00172 (-0.00139) for right-wing incumbents likely to be re-elected (Right, $\lambda D^{hi}$) is cut in half to -0.00090 (-0.00067) when right-wing re-election expectations becomes a close call (Right, $\lambda D^{med}$). The significant negative trend in pre-election spreads disappears when bondholder expectations shift from close call to likely right-wing incumbent defeat by a left-wing challenger (Right, $\lambda D^{lo}$).

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16 Indeed, slopes for pre-election spreads in five of six possible cases in Table 3 exhibit negative point estimates of varying magnitude. This generally negative trend in the run-up to polling is consistent with the downward sloping trend in pre-election slopes Block and Vaaler (2004) observed. They connected this trend to a larger pre-election spreads “bubble” phenomenon extending over a six-month period: From approximately 180 to 90 days before elections, spreads on several developing country sovereign bonds increased, only to decrease substantially in the final run-up to polling. The resulting “bubble” was interpreted as a temporary risk premium on developing country debt associated with rising and then declining uncertainty about electoral outcomes and the extent of opportunistic behavior by incumbents. Recurring negative trends here, however, have a different interpretation given our framework: As uncertainty regarding electoral outcomes are resolved in the final run-up to polling, steeper or shallower (or, in one case slightly positive) spreads slopes reflect bondholder consideration of both opportunistic and partisan effects.
We also find a clear hierarchy of slopes in pre-election bond spreads corresponding to left-wing incumbents with differing electoral expectations. The hierarchy of slopes against the base case of expected left-wing re-election ($\lambda D_{lo}^{re}$) is increasingly negative, which suggests support for Hypothesis 2a and the dominance of partisan over opportunistic PBC considerations. A flat 60-day (90-day) base case slope shifts to a negative slope of -0.02006 (-0.01070), significant at the 1% level, when left-wing re-election expectations go from likely to a close call ($\lambda D_{med}^{re}$). That negative slope roughly doubles to -0.04037 (-0.02169), significant at the 1% level, when bondholder expectations of left-wing incumbent re-election fall from close call to unlikely ($\lambda D_{hi}^{re}$). In this context, it comes as no surprise that a formal test for hierarchy in Table 7 yields the negative sign predicted by Hypothesis 2a and significant at the 1% level.

Robustness Tests

These results prove surprisingly robust to several reasonable model variations. Specifically, we test our model against changes in: 1) election window; 2) the dynamics of bondholder expectations; 3) additional control variables; 4) redefinition of a “close call” election; and 5) changes in our treatment of centrist-oriented governments. We further re-estimate our model using an unweighted GEE estimator and an alternative estimator known as “least absolute deviation” or “median” regression (Buchinsky, 1998).

Results reported in Tables 5-7 are consistent in terms of signs and significance across different specifications of the pre-election period (60 or 90 days) and different specifications of bondholder expectations (constant or convergent $\lambda D$) over the pre-election period. Though not reported here, results are also consistent across model specifications that include additional macroeconomic controls, such as recent GDP growth rates or levels of external debt. Similarly, they are consistent when we re-define a “close call” election as victory margins less than 5% or even 10% rather than 3%.

Ignoring the influence of outliers and estimating an unweighted GEE yields results with consistent signs, though lower statistical significance due to outliers and the larger standard errors they generate.
However, unweighted estimation using median regression – an alternative approach that is robust to outliers – produces results that are consistent in sign and significance with our weighted GEE results.\textsuperscript{17}

Our test results no longer exhibit consistent signs and significance when centrist parties are re-specified as part of the left- rather than right-wing classification. To explain this deviation from the overall trend in results, consider first our earlier point that the centrist party definition used by Beck \textit{et al.} (2001) shows closer correspondence with their right-wing rather than left-wing party definitions. If parties labeled as centrist share with the right-wing some commitment to investor (bondholder) interests distinct from the left-wing, then re-aggregation of the centrist parties into the left-wing amounts to a misclassification, that could lead to the different signs and significance we observe.

A second explanation begins by noting that Table 3 lists only \textit{three} centrist parties involved in four of the 19 elections represented in our sample. With only three centrist parties, it is quite possible that their actual positioning on the left-right political spectrum could be collectively biased toward the center-right rather than true center. Again, misclassification of such parties into a left-wing bloc could lead to anomalous results. Closer review of at least one centrist party in our sample supports this second explanation. The centrist Lakas-NUCD party unsuccessfully sought to retain the Philippines presidency in 1998. Their presidential nominee was Jose de Venecia only because constitutional term limitations barred the Lakas-NUCD party leader and incumbent president, Fidel V. Ramos, from seeking re-election. Ramos was a former General and Chief of Staff of the Philippines Army. His 1992-1998 administration saw a marked reduction in inflation, and economic policies promoting industry privatization, deregulation and foreign investment (Dyck \textit{et al.},

\textsuperscript{17} Specifically, median regression fits medians to a linear function of covariates (in contrast to OLS, which fits means). This estimator, “…is potentially attractive for the same reason that the median may be a better measure of location than the mean” (Buchinsky, 1998: 89). The median estimator of $\theta$ solves $\min N^{-1} \sum_{i=1}^{N} |y_i - m(x_i, \theta)|$, where $m(x_i, \theta)$ is the conditional median of $y$ given $x$. Median estimates include all observations without explicit weighting, yet median estimates are not sensitive to dependent variable outliers. We still prefer weighted GEE approach to median regression approach because of flexibility. Median regression does not provide the flexibility to deal with other panel data estimation adjustments related to clustering, cross-sectional heteroskedasticity, and serial correlation. The weighted GEE does, and thus, remains our preferred estimator for our data.
1996; Hedland and Sidel, 2001). Such characteristics almost certainly place this centrist party more easily in the center-right than true center or center-left positions of the political spectrum.

These two explanations prompted us to implement yet another re-estimation in which we control separately for centrist parties. Centrist parties now constitute a separate grouping so that we might control for any distinct pre-election bond spread trends they might generate relative to left- or now more sharply-defined right-wing trends. The issue of centrist party aggregation is now irrelevant. This re-estimation again yields results consistent in sign and significance levels with those reported in Tables 5-7. In sum, our results prove robust to disaggregation and separate control of centrist parties or to aggregation of centrist parties with the right-wing.18

Illustrative Results

Practical implications of the trends we observe in pre-election spreads more generally are illustrated concretely through two case examples drawn from our sample. Figure 1 graphs the relative spreads and absolute yields for Argentine sovereign bonds 180 days before and after the May 15, 1995 presidential election. Carlos Menem was re-elected to office by a large margin at the final poll, which in terms of Table 7, Column 3 implies a right-wing “base case” scenario (Right, $\lambda D_\text{hi}$). Relative bond spreads and absolute yields during the 90 days before elections exhibit a negative trend, which is consistent with the negative slope we also predict. Interestingly, though, our predicted negative slope is less pronounced than the actual slope illustrated in Figure 1. Our results using a 90-sample and a constant $\lambda D$ measure predict a decrease of approximately 171 basis points in the final 90 days prior to election, while actual yields came down by 550 basis points in the last 90 days.19 Given the Argentine FRB Series bond with a face amount of $8.467 billion, a 171 basis points decrease in the coupon rate would save approximately $145 million in annual interest expense.

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18 Results from these alternative model specifications and estimations are available from the authors.
19 90 days before the election, the yield on Argentina’s series FRB sovereign bond maturing in March 2003 stood at 22.16% while US Treasuries of comparable maturity yielded 7.41%, implying a relative spread of approximately 1.99. Based on the weighted GEE analysis using a 90-day pre-election window (Table 3, Column 2), we predict for elections with a right-wing incumbent and a high constant likelihood of re-election ($\lambda D^\text{hi}$) a slope coefficient of $-0.00139 (\beta_1 + \beta_2 + \beta_3)$. Over a 90 day period, relative spreads are predicted to decrease by approximately $-0.1251 (-0.00139 * 90 = -0.1251)$. This implies a decrease in
Contrast the Argentine case of right-wing incumbency and the expectation of re-election with the case of Polish presidential elections on October 8, 2000. Figure 2 graphs relative spreads and absolute domestic yields on Polish government sovereign bonds during this period are presented in Figure 2. This election saw the left-wing government of Aleksander Kwasniewski being re-elected to office by a large margin.\(^{20}\) In terms of Table 7, Column 3, this implies the left-wing “base case” scenario (Left, \(\lambda D^{b}\)). Our results using a 90-sample and a constant \(\lambda D\) measure predict no significant trends, thus implying flat pre-election bond spreads. Actual results illustrated in Figure 2 generally resemble the flat trend our model suggests. But closer examination of the daily yields indicates a very slight increase in the pre-election yields on the Polish series FRB sovereign bond. In the 90-day pre-election period bond spreads increase by only 30 basis points.\(^{21}\) Even so, we also note that small changes can have large implications. Given the Polish PDIB series bond with a face amount of $2.674 billion, a 30 basis point decrease in the coupon rate implies annual savings of $8.02 million in interest expense. These examples again confirm that bondholder expectations and perceived risks are partially explained by PBC considerations, that these considerations may have substantial economic implications for issuing countries and private investors, but that these considerations do not provide an exhaustive explanation of bond spread dynamics during election periods.

**DISCUSSION AND CONCLUSION**

**Key Findings**

We set out to understand how investment risk in developing countries may be related to electoral politics and economic policies largely ignored by IB researchers to date. In expanding the purview of relative spreads from 1.99 to 1.76 or a decrease in the yield on the Argentine sovereign bond from 22.16\% to 20.45\%, assuming no change in the relevant US Treasury yield.

\(^{20}\) Interestingly, spreads on the Polish bond are lower on average than the Argentine bond even though the Polish government is left-wing and the Argentine government is right-wing, and both are expected to be re-elected. This oddity reminds us that credit risk is a function of many different factors including but not limited to PBC considerations.

\(^{21}\) See previous footnote. 90 days prior to the 2000 presidential election, Poland’s Series PDIB sovereign bond, maturing in December 2017, yielded 8.18\% while yields on U.S. Treasuries of comparable maturity stood at 6.20\%. On election day, the yield on this Polish sovereign bond had increased to 8.48\%. 
PBC theory to include IB actors, we specifically allow them to be cognizant of incentives for economic (mis)behavior related both to distinct left- versus right-wing partisan orientations and to incumbent opportunism that is non-partisan in nature. We find clear support for hypotheses related to bondholders and the risk premia they demand for holding sovereign debt from developing countries during election periods. Bondholder risk perceptions are conditional on the partisan orientation of the incumbent government and the likelihood of its success on election-day. Bond spreads (and the implied risk perception they represent) decline faster during pre-election periods when a right-wing incumbent is likely to be re-elected compared to when expectations are closely balanced or to when ouster from office is likely. Pre-election bond spreads for sovereigns with left-wing governments also exhibit a hierarchy conditioned on the likelihood of victory on election-day. The final run-up to voting sees increasingly steep declines in bond spreads as the likelihood of left-wing incumbent re-election falls. In terms of our conceptual framework, this result evidences an apparent dominance of partisan over opportunistic PBC considerations for bondholders.

**Implications, Limitations and Future Research**

These findings raise several broader questions about elections and their economic implications for developing countries. As our examples from Argentina and Poland illustrate, even small changes in spreads during elections can imply substantial change in the cost of external debt for developing countries. If incumbent political leaders in developing countries are prone to creating PBCs -- as a growing literature suggests they are -- and if IB actors such as bondholders are aware of that potential, then elections in these nascent democracies have the potential for much greater national cost or benefit than IB research has previously noted.

This conclusion is also a call for future empirical research examining the election-period behaviors of other IB actors with “votes” that count for developing country investment and growth. Uhlmann’s (2002) study of bank lending to developing countries from 1985 to 1999 represents one response to this call. His findings suggest that there may also be “political banking cycles” where bankers
concerned with incumbent opportunism cut back on lending, particularly to non-governmental borrowers, prior to national executive elections.

Other future research might examine flows and the composition of FDI and portfolio flows during elections where partisan and/or opportunistic PBC factors change investment risk perceptions. Yet another stream could examine the propensity of MNCs to use different FDI modes (e.g., wholly-owned subsidiary, joint venture) to enter or expand in developing country markets in response to PBC considerations. MNC subsidiary managers may also choose between local and overseas sources of capital during election periods. IB work dating from Jacque and Lorange (1984) has modeled this choice in developing countries based largely on expected changes in local inflation. If PBC factors also have a substantial impact on inflation expectations, then MNC subsidiary management choices about where, when and how much capital to source during election periods may also be explained with greater clarity under PBC lenses.

The partisan PBC lens seems particularly promising. Sovereign bondholder risk perceptions evince a keen awareness of ideological distinctions between left- and right-wing candidates. This finding contradicts a “conventional wisdom” about the domestic political effects of economic internationalization in the 1980s and 1990s. As Garrett (1995) notes, greater exposure to trade and capital mobility has not necessarily resulted in the complete convergence of economic policies pursued by democratizing and developing countries. Sovereign bondholders would appear to endorse this view when they demand higher spreads in anticipation of left-wing electoral victories and post-election economic policies. Future PBC research might examine whether and how such economic policy distinctions and related risk perceptions have increased, decreased or remained relatively stable since the 1990s.

To the extent that risk perceptions are explained by PBC factors, these perceptions may be merely “presumptive” and, at times, rebutted with sustained policies contrary to right- and left-wing political stereotypes. Brazil and its election of the left-wing Lula as president in November 2002 are again illustrative. Increasing bondholder spreads in the run-up to his election did not anticipate what the Economist (2004) later reported as a “credibility shock” following Lula’s election. In 2003, his new
Government announced and then achieved targets on fiscal and trade balances and other macroeconomic indicators more conservative that those suggested by the IMF. The result has been a precipitous drop in the relative spread on Brazilian sovereign debt since Lula’s election. This reversal from pre-election trends suggests to us interesting future research on the means by which developing country state actors, including political candidates, communicate credibly with IB actors either to rebut or sustain their presumptive risk concerns. Such follow-on work would complement previous IB research streams on the credibility of developing country state strategies for inducing investment (Lenway and Murtha, 1994; Murtha and Lenway, 1994).

We showed that investment risk in developing countries was related to electoral politics and economic policies largely ignored by IB researchers. Yet, it would be mistake to conclude that PBC theory provides on its own a comprehensive response to questions about investment risk during elections in developing countries. It may be more constructive to consider PBC theory as an important complement to existing IB perspectives. Work on the bargaining hypothesis in developing countries will benefit from more explicit modeling of host government vulnerability to demands of domestic voting blocs. Work on transaction costs and policy uncertainty will benefit from more explicit modeling of the likelihood of host government partisan shifts over time. There and elsewhere, PBC theory promises greater theoretical rigor and richness for IB researchers investigating investment risk in countries dealing with political democratization and economic development.
REFERENCES


TABLE 1
Predicted Directions of Pre-Election Changes in Pre-Election Sovereign Bond Spreads Relative to Comparable US Treasuries Based on Partisan and Opportunistic PBC Considerations

<table>
<thead>
<tr>
<th>Incumbent Partisan Orientation → Bondholder Electoral Expectation ↓</th>
<th>Right-Wing Orientation</th>
<th>Left-Wing Orientation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right-Wing Expected to Win ($\lambda \cong 1$)</td>
<td>(0,0)</td>
<td>(-,+ )</td>
</tr>
<tr>
<td></td>
<td>Right-Wing Base Case.</td>
<td>Compared to Left-Wing Base Case and Right-Wing Close Call Case.</td>
</tr>
<tr>
<td>Closely Balanced Expectations ($\lambda \cong 0.5$)</td>
<td>(+,+ )</td>
<td>(-,+ )</td>
</tr>
<tr>
<td></td>
<td>Compared to Right-Wing Base Case.</td>
<td>Compared to Left-Wing Base Case.</td>
</tr>
<tr>
<td>Left-Wing Expected to Win ($\lambda \cong 0$)</td>
<td>(+,+ )</td>
<td>(0,0)</td>
</tr>
<tr>
<td></td>
<td>Compared to Right-Wing Base Case and Right-Wing Close Call Case.</td>
<td>Left-Wing Base Case.</td>
</tr>
</tbody>
</table>

Predicted direction of change in spread based on PBC considerations: (Partisan, Opportunistic).
### TABLE 2

Sovereign Bondholder Pre-Election Expectations ($\lambda D$): Static and Convergent Variable Measurement

<table>
<thead>
<tr>
<th>Incumbent Partisan Orientation → Bondholder Electoral Expectation ↓</th>
<th>Right-Wing Orientation</th>
<th>Left-Wing Orientation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Right-Wing Expected to Win ($\lambda D^{Hi}$)</strong></td>
<td><strong>Constant $\lambda D^{Hi}$</strong></td>
<td><strong>Constant $\lambda D^{Hi}$</strong></td>
</tr>
<tr>
<td></td>
<td>Takes value of 1 from day -90 (-60) to election day (0).</td>
<td>Takes value of 1 from day -90 (-60) to election day (0).</td>
</tr>
<tr>
<td></td>
<td><strong>Convergent $\lambda D^{Hi}$</strong></td>
<td><strong>Convergent $\lambda D^{Hi}$</strong></td>
</tr>
<tr>
<td></td>
<td>Takes value of 0.75 on day -90 (-60) before election, and then increases linearly to 1 on election day (0).</td>
<td>Takes value of 0.50 on day -90 (-60) before election, and then increases linearly to 1 on election day (0).</td>
</tr>
<tr>
<td><strong>Closely Balanced Expectations ($\lambda D^{med}$)</strong></td>
<td><strong>Constant $\lambda D^{med}$</strong></td>
<td><strong>Constant $\lambda D^{med}$</strong></td>
</tr>
<tr>
<td></td>
<td>Takes value of 0 from day -90 (-60) to election day (0).</td>
<td>Takes value of 0 from day -90 (-60) to election day (0).</td>
</tr>
<tr>
<td></td>
<td><strong>Convergent $\lambda D^{med}$</strong></td>
<td><strong>Convergent $\lambda D^{med}$</strong></td>
</tr>
<tr>
<td></td>
<td>Takes value of 0.25 on day -90 (-60) before election, and then decreases linearly to 0 on election day (0).</td>
<td>Takes value of -0.25 on day -90 (-60) before election, and then increases linearly to 0 on election day (0).</td>
</tr>
<tr>
<td><strong>Left-Wing Expected to Win ($\lambda D^{Lo}$)</strong></td>
<td><strong>Constant $\lambda D^{Lo}$</strong></td>
<td><strong>Constant $\lambda D^{Lo}$</strong></td>
</tr>
<tr>
<td></td>
<td>Takes value of -1 from day -90 (-60) to election day (0).</td>
<td>Takes value of -1 from day -90 (-60) to election day (0).</td>
</tr>
<tr>
<td></td>
<td><strong>Convergent $\lambda D^{Lo}$</strong></td>
<td><strong>Convergent $\lambda D^{Lo}$</strong></td>
</tr>
<tr>
<td></td>
<td>Takes value of -0.50 on day -90 (-60) before election, and then decreases linearly to -1 on election day (0)</td>
<td>Takes value of -0.75 on day -90 (-60) before election, and then decreases linearly to -1 on election day (0)</td>
</tr>
</tbody>
</table>
## TABLE 3

### Developing Country Election Data, 1994-2000

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>5/14/95</td>
<td>17,939,156</td>
<td>Peronist Party (R)</td>
<td>Peronist Party (R)</td>
<td>Carlos Saul Menem</td>
<td>47.49%</td>
<td>19.66%</td>
<td>Front for a Country in Solidarity</td>
<td>Jose Octavio Bordón</td>
<td>27.83%</td>
</tr>
<tr>
<td>Argentina</td>
<td>10/24/99</td>
<td>19,415,960</td>
<td>Peronist Party (R)</td>
<td>Union Civica Radical (C)</td>
<td>Fernando de la Rua</td>
<td>48.50%</td>
<td>10.41%</td>
<td>Peronist Party</td>
<td>Eduardo Duhalde</td>
<td>38.09%</td>
</tr>
<tr>
<td>Brazil</td>
<td>10/3/94</td>
<td>77,971,676</td>
<td>Independent (R)</td>
<td>PSDB (R)</td>
<td>Fernando Henrique Cardoso</td>
<td>54.28%</td>
<td>27.24%</td>
<td>Workers’ Party</td>
<td>Luis Inácio Lula da Silva</td>
<td>27.00%</td>
</tr>
<tr>
<td>Brazil</td>
<td>10/4/98</td>
<td>83,296,067</td>
<td>Independent (R)</td>
<td>PSDB (R)</td>
<td>Fernando Henrique Cardoso</td>
<td>53.06%</td>
<td>21.35%</td>
<td>Workers’ Party</td>
<td>Luis Inácio Lula da Silva</td>
<td>31.71%</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>11/4/96</td>
<td>4,215,145</td>
<td>Independent (L)</td>
<td>United Democratic Forces (R)</td>
<td>Petar Stoyanov</td>
<td>59.73%</td>
<td>19.46%</td>
<td>Coalition &quot;Together for Bulgaria&quot;</td>
<td>Ivan Marazov</td>
<td>40.27%</td>
</tr>
<tr>
<td>Chile</td>
<td>1/16/00</td>
<td>7,316,310</td>
<td>Party for Democracy (R)</td>
<td>Party for Democracy (R)</td>
<td>Ricardo Lagos</td>
<td>51.31%</td>
<td>2.62%</td>
<td>Alliance for Chile</td>
<td>Joaquin Lavin</td>
<td>48.69%</td>
</tr>
<tr>
<td>Colombia</td>
<td>6/19/94</td>
<td>7,427,742</td>
<td>Liberal Party (C)</td>
<td>Liberal Party (C)</td>
<td>Ernesto Samper</td>
<td>50.26%</td>
<td>2.11%</td>
<td>Andrés Presidencia-Social Conservative Party</td>
<td>Andrés Pastrana</td>
<td>48.15%</td>
</tr>
<tr>
<td>Colombia</td>
<td>6/21/98</td>
<td>11,244,288</td>
<td>Liberal Party (C)</td>
<td>Great Alliance for Change (R)</td>
<td>Andrés Pastrana</td>
<td>50.39%</td>
<td>9.86%</td>
<td>Liberal Party</td>
<td>Horacio Serpa</td>
<td>46.53%</td>
</tr>
<tr>
<td>Mexico</td>
<td>8/21/94</td>
<td>35,545,831</td>
<td>PRI (L)</td>
<td>PRI (L)</td>
<td>Ernesto Zedillo</td>
<td>50.34%</td>
<td>3.76%</td>
<td>PAN</td>
<td>Diego Fernandez</td>
<td>46.58%</td>
</tr>
<tr>
<td>Mexico</td>
<td>7/2/00</td>
<td>37,603,923</td>
<td>PRI (L)</td>
<td>PAN (R)</td>
<td>Vicente Fox Quesada</td>
<td>50.18%</td>
<td>23.49%</td>
<td>PRI</td>
<td>Francisco Labastida</td>
<td>26.69%</td>
</tr>
<tr>
<td>Peru</td>
<td>5/28/00</td>
<td>11,800,310</td>
<td>Change 90 (R)</td>
<td>Change 90 (R)</td>
<td>Alberto Fujimori</td>
<td>43.43%</td>
<td>6.55%</td>
<td>Peru Possible</td>
<td>Alberto Toledo</td>
<td>36.88%</td>
</tr>
<tr>
<td>Philippines</td>
<td>5/11/98</td>
<td>10,722,295</td>
<td>Lakas-NUCD (C)</td>
<td>LAMMP (L)</td>
<td>Joseph Marcelo Ejercito Estrada</td>
<td>74.33%</td>
<td>48.66%</td>
<td>Lakas-NUCD</td>
<td>Jose de Venecia</td>
<td>25.67%</td>
</tr>
<tr>
<td>Poland</td>
<td>11/19/95</td>
<td>18,203,218</td>
<td>Solidarity (L)</td>
<td>SLD (L)</td>
<td>Aleksander Kwasniewski</td>
<td>51.72%</td>
<td>9.44%</td>
<td>Solidarity</td>
<td>Lech Walesa</td>
<td>48.28%</td>
</tr>
<tr>
<td>Poland</td>
<td>10/8/00</td>
<td>17,789,231</td>
<td>Solidarity (L)</td>
<td>SLD (L)</td>
<td>Aleksander Kwasniewski</td>
<td>53.00%</td>
<td>36.60%</td>
<td>Independent</td>
<td>Andrzej Olechowski</td>
<td>17.30%</td>
</tr>
<tr>
<td>Russia</td>
<td>7/3/96</td>
<td>74,815,898</td>
<td>Independent (R)</td>
<td>Independent (R)</td>
<td>Boris Yeltsin</td>
<td>53.70%</td>
<td>13.29%</td>
<td>KPRF</td>
<td>Gennadii A. Zyuganov</td>
<td>40.41%</td>
</tr>
<tr>
<td>Russia</td>
<td>3/26/00</td>
<td>75,070,776</td>
<td>Independent (R)</td>
<td>Independent (R)</td>
<td>Vladimir Putin</td>
<td>53.44%</td>
<td>23.95%</td>
<td>KPRF</td>
<td>Gennadii A. Zyuganov</td>
<td>29.49%</td>
</tr>
<tr>
<td>Uruguay</td>
<td>11/23/99</td>
<td>2,206,112</td>
<td>Colorado Party (R)</td>
<td>Colorado Party (R)</td>
<td>Jorge Batlle</td>
<td>51.59%</td>
<td>7.52%</td>
<td>Progressive Encounter</td>
<td>Tabre Vazquez</td>
<td>44.07%</td>
</tr>
<tr>
<td>Venezuela</td>
<td>12/6/98</td>
<td>6,988,291</td>
<td>National Convergence (R)</td>
<td>Movement for the Fifth Republic (L)</td>
<td>Hugo Chavez</td>
<td>56.20%</td>
<td>16.23%</td>
<td>PRVZL</td>
<td>Henrique Salas</td>
<td>39.97%</td>
</tr>
<tr>
<td>Venezuela</td>
<td>7/30/00</td>
<td>11,681,645</td>
<td>Movement for the Fifth Republic (L)</td>
<td>Movement for the Fifth Republic (L)</td>
<td>Hugo Chavez</td>
<td>56.93%</td>
<td>21.18%</td>
<td>Independent</td>
<td>Francisco Arias Cardenas</td>
<td>35.75%</td>
</tr>
</tbody>
</table>
### TABLE 4
Representative Developing Country Sovereign Bonds, 1994-2000

<table>
<thead>
<tr>
<th>Developing Country</th>
<th>Bond Series</th>
<th>Bond Issuer</th>
<th>Bond Issue Date</th>
<th>Bond Maturity Date</th>
<th>Bond Issue Face Amount (in US$ 000's)</th>
<th>Bond Coupon</th>
<th>Foreign Exchange Listing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>Series FRB</td>
<td>Republic of Argentina</td>
<td>3/31/1993</td>
<td>3/29/2005</td>
<td>$8,466,548</td>
<td>LIBOR + 0.8725%</td>
<td>Dusseldorf</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>Series A</td>
<td>Bulgaria</td>
<td>7/28/1994</td>
<td>7/28/2024</td>
<td>$1,685,595</td>
<td>LIBOR + 0.8725%</td>
<td>Luxembourg</td>
</tr>
<tr>
<td>Chile</td>
<td>None</td>
<td>Republic of Chile</td>
<td>4/28/1999</td>
<td>4/28/2009</td>
<td>$500,000</td>
<td>6.875%</td>
<td>Luxembourg</td>
</tr>
<tr>
<td>Mexico</td>
<td>Series A</td>
<td>United Mexican States</td>
<td>3/28/1990</td>
<td>12/31/2019</td>
<td>$6,211,456</td>
<td>6.25%</td>
<td>Luxembourg</td>
</tr>
<tr>
<td>Peru</td>
<td>Series B</td>
<td>Republic of Peru</td>
<td>3/7/97</td>
<td>3/7/2007</td>
<td>$1,150,331</td>
<td>LIBOR + 0.8125%</td>
<td>Luxembourg</td>
</tr>
<tr>
<td>Philippines</td>
<td>Series B</td>
<td>Republic of Philippines</td>
<td>12/1/1992</td>
<td>12/1/2017</td>
<td>$1,740,600</td>
<td>6.50%</td>
<td>Luxembourg</td>
</tr>
<tr>
<td>Poland</td>
<td>Series PDIB</td>
<td>Republic of Poland</td>
<td>10/27/1994</td>
<td>10/27/2014</td>
<td>$2,673,600</td>
<td>6%</td>
<td>Luxembourg</td>
</tr>
<tr>
<td>Russia</td>
<td>Series IV</td>
<td>Ministry of Finance, Russia</td>
<td>5/14/1993</td>
<td>5/14/2003</td>
<td>$3,462,000</td>
<td>3%</td>
<td>No Foreign Exchange Listing, US OTC</td>
</tr>
<tr>
<td>Uruguay</td>
<td>Series B$</td>
<td>Banco Central del Uruguay</td>
<td>2/19/1991</td>
<td>2/19/2007</td>
<td>$447,600</td>
<td>LIBOR + 0.875%</td>
<td>Luxembourg</td>
</tr>
<tr>
<td>Venezuela</td>
<td>Series DL</td>
<td>Republic of Venezuela</td>
<td>12/18/1990</td>
<td>12/18/2007</td>
<td>$5,153,173</td>
<td>LIBOR + 0.875%</td>
<td>Luxembourg</td>
</tr>
</tbody>
</table>

*US OTC means that the bond is traded in the US “over the counter” by US brokers/market makers.
TABLE 5

Weighted GEE Results: Sovereign Bond Spreads Relative to Comparable US Treasuries 60 and 90 Days Before Election, 1994–2000

<table>
<thead>
<tr>
<th>Period before Election</th>
<th>90 Days</th>
<th>60 Days</th>
<th>90 Days</th>
<th>60 Days</th>
<th>90 Days</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>60 Days</td>
<td>Constant</td>
<td>60 Days</td>
<td>Constant</td>
</tr>
<tr>
<td></td>
<td>(Std.Dev.)</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
</tr>
<tr>
<td>Constant [α₀]</td>
<td>0.00243</td>
<td>0.00307</td>
<td>0.00986</td>
<td>0.03387**</td>
<td>0.0079</td>
</tr>
<tr>
<td>(0.00467)</td>
<td>(0.00725)</td>
<td>(0.00631)</td>
<td>(0.00079)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Log(Face Amount) [α₁]</td>
<td>7.7383</td>
<td>-0.22631***</td>
<td>-0.19984***</td>
<td>-0.19592***</td>
<td>-0.10849***</td>
</tr>
<tr>
<td>(1.1200)</td>
<td>(0.01531)</td>
<td>(0.02145)</td>
<td>(0.01925)</td>
<td>(0.04157)</td>
<td></td>
</tr>
<tr>
<td>Time to Maturity [α₂]</td>
<td>13.5263</td>
<td>0.23479***</td>
<td>0.22151***</td>
<td>0.22457***</td>
<td>0.19904***</td>
</tr>
<tr>
<td>(7.0086)</td>
<td>(0.00741)</td>
<td>(0.01604)</td>
<td>(0.00947)</td>
<td>(0.02104)</td>
<td></td>
</tr>
<tr>
<td>Floating Rate [α₃]</td>
<td>0.3684</td>
<td>-3.62355***</td>
<td>-3.82913***</td>
<td>-3.57577***</td>
<td>-2.57767***</td>
</tr>
<tr>
<td>(0.4825)</td>
<td>(0.05744)</td>
<td>(0.08456)</td>
<td>(0.07382)</td>
<td>(0.16496)</td>
<td></td>
</tr>
<tr>
<td>Investment Grade [α₄]</td>
<td>0.2105</td>
<td>-1.17460***</td>
<td>-1.13570***</td>
<td>-1.10581***</td>
<td>-0.38712***</td>
</tr>
<tr>
<td>(0.4078)</td>
<td>(0.05835)</td>
<td>(0.08150)</td>
<td>(0.07324)</td>
<td>(0.15675)</td>
<td></td>
</tr>
<tr>
<td>EMBI [α₅]</td>
<td>140.3268</td>
<td>-0.00280***</td>
<td>-0.00228***</td>
<td>-0.00345***</td>
<td>-0.00946***</td>
</tr>
<tr>
<td>(40.5616)</td>
<td>(0.00032)</td>
<td>(0.00033)</td>
<td>(0.00038)</td>
<td>(0.00053)</td>
<td></td>
</tr>
<tr>
<td>Crisis [α₆]</td>
<td>0.0526</td>
<td>-0.71602***</td>
<td>-0.80752***</td>
<td>-0.68250***</td>
<td>-0.16792***</td>
</tr>
<tr>
<td>(0.2233)</td>
<td>(0.02666)</td>
<td>(0.03872)</td>
<td>(0.03387)</td>
<td>(0.07554)</td>
<td></td>
</tr>
<tr>
<td>Day [β₁]</td>
<td>45.5000</td>
<td>-0.02006***</td>
<td>-0.01700***</td>
<td>-0.01368***</td>
<td>-0.00701***</td>
</tr>
<tr>
<td>(25.9868)</td>
<td>(0.00050)</td>
<td>(0.00041)</td>
<td>(0.00050)</td>
<td>(0.00079)</td>
<td></td>
</tr>
<tr>
<td>GovRbegin [β₂]</td>
<td>0.6842</td>
<td>5.86620***</td>
<td>5.88052***</td>
<td>5.70569***</td>
<td>5.08358***</td>
</tr>
<tr>
<td>(0.4645)</td>
<td>(0.06450)</td>
<td>(0.08804)</td>
<td>(0.08709)</td>
<td>(0.17002)</td>
<td></td>
</tr>
<tr>
<td>Day * GovRbegin [β₃]</td>
<td>-31.1316</td>
<td>0.01916***</td>
<td>0.01003***</td>
<td>0.01273***</td>
<td>0.00716***</td>
</tr>
<tr>
<td>(30.1601)</td>
<td>(0.00056)</td>
<td>(0.00046)</td>
<td>(0.00060)</td>
<td>(0.00097)</td>
<td></td>
</tr>
<tr>
<td>Day * λD [β₄]</td>
<td>-7.1842</td>
<td>-0.02231***</td>
<td>-0.01709***</td>
<td>-0.02186***</td>
<td>-0.01682***</td>
</tr>
<tr>
<td>(49.0510)</td>
<td>(0.00043)</td>
<td>(0.00031)</td>
<td>(0.00064)</td>
<td>(0.00117)</td>
<td></td>
</tr>
<tr>
<td>Day * GovRbegin * λD [β₅]</td>
<td>-19.1579</td>
<td>0.01948***</td>
<td>0.01027***</td>
<td>0.02059***</td>
<td>0.01497***</td>
</tr>
<tr>
<td>(32.8350)</td>
<td>(0.00045)</td>
<td>(0.00035)</td>
<td>(0.00072)</td>
<td>(0.00141)</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>1710</td>
<td>1140</td>
<td>1710</td>
<td>1140</td>
<td>1710</td>
</tr>
<tr>
<td>Wald χ²</td>
<td>691,886.69***</td>
<td>486,357.72***</td>
<td>461,654.62***</td>
<td>143,249.12***</td>
<td></td>
</tr>
</tbody>
</table>

Table 5 reports results from weighted GEEs of pre-election daily sovereign bond spreads relative to comparable US Treasuries using several macroeconomic and financial controls and variables related to previous empirical research on opportunistic and partisan PBCs. Column 1 presents means and standard deviations for the 90-day sample of bond spreads from 12 developing countries holding 19 presidential elections from 1994-2000. Columns 2-5 present results from weighted GEE on 60- and 90-day samples of bond spreads. GEE results include semi-robust standard errors (in parentheses) to control for heteroskedasticity across election cross-sections as well as individualized adjustment for first through ninth order autocorrelation (AR9) in each time-series of pre-election bond spreads. Country and year dummies also included but not reported. These additional results are available from authors. Countries (elections) in sample include Argentina (1995, 1999), Brazil (1994, 1998), Bulgaria (1996), Chile (2000), Colombia (1994, 1998), Mexico (1994, 2000), Peru (2000), Philippines (1998), Poland (1995, 2000), Russia (1996, 2000), Uruguay (1999), Venezuela (1998, 2000). Columns 2-3 present results from weighted GEE estimation using constant bondholder election expectations for the 60- and 90-day pre-election periods. Columns 4-5 present results from weighted GEE estimation using convergent bondholder election expectations across for the 60- and 90-day pre-election periods. Measurement of constant and convergent bondholder expectations is summarized in Table 2 above.

* significant at 10%; ** significant at 5%; *** significant at 1%.
**Table 6**

Linear Combinations: Sovereign Bond Spreads Relative to Comparable US Treasuries 60 and 90 Days Before Election, 1994–2000

<table>
<thead>
<tr>
<th>Period before Election →</th>
<th>60 Days Weighted GEE Constant $\lambda D$</th>
<th>90 Days Weighted GEE Constant $\lambda D$</th>
<th>60 Days Weighted GEE Convergent $\lambda D$</th>
<th>90 Days Weighted GEE Convergent $\lambda D$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient or Linear Combination of Coefficients ↓</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
</tr>
<tr>
<td>Left-Wing “Base Case” Scenario: Left-Wing Incumbent Expected to Win by Bondholders (Left, $\lambda D^{\text{lo}}$)</td>
<td>$[\beta_1 - \beta_4]$</td>
<td>0.00026 (0.00027)</td>
<td>0.00029 (0.00026)</td>
<td>0.00780*** (0.00042)</td>
</tr>
<tr>
<td>Left-Wing “Close-Call” Scenario: Left-Wing Incumbent and Closely Balanced Bondholder Expectations (Left, $\lambda D^{\text{med}}$)</td>
<td>$[\beta_1]$</td>
<td>-0.02006*** (0.00050)</td>
<td>-0.01070*** (0.00041)</td>
<td>-0.01368*** (0.00050)</td>
</tr>
<tr>
<td>Left-Wing “Switch” Scenario: Left-Wing Incumbent Expected to Lose by Bondholders (Left, $\lambda D^{\text{hi}}$)</td>
<td>$[\beta_1 + \beta_3]$</td>
<td>-0.04037*** (0.00090)</td>
<td>-0.02169*** (0.00068)</td>
<td>-0.03536*** (0.00107)</td>
</tr>
<tr>
<td>Right-Wing “Base Case” Scenario: Right-Wing Incumbent Expected to Win by Bondholders (Right, $\lambda D^{\text{hi}}$)</td>
<td>$[\beta_1 + \beta_3 + \beta_4 + \beta_5]$</td>
<td>-0.00172*** (0.00017)</td>
<td>-0.00139*** (0.00018)</td>
<td>-0.00209*** (0.00033)</td>
</tr>
<tr>
<td>Right-Wing “Close-Call” Scenario: Right-Wing Incumbent and Closely Balanced Bondholder Expectations (Right, $\lambda D^{\text{med}}$)</td>
<td>$[\beta_1 + \beta_3]$</td>
<td>-0.00090*** (0.00020)</td>
<td>-0.00067*** (0.00018)</td>
<td>-0.00095*** (0.00028)</td>
</tr>
<tr>
<td>Right-Wing “Switch” Scenario: Left-Wing Incumbent Expected to Lose by Bondholders (Right, $\lambda D^{\text{lo}}$)</td>
<td>$[\beta_1 + \beta_3 - \beta_4 - \beta_5]$</td>
<td>-0.00066 (0.00038)</td>
<td>0.00005 (0.00034)</td>
<td>0.00018 (0.00071)</td>
</tr>
</tbody>
</table>

Table 6 reports results from calculation of linear combinations of coefficients estimated in Table 5 above and corresponding to six different electoral expectation scenarios facing bondholders. Robust standard errors in parentheses in Columns 2-5.

* significant at 10%; ** significant at 5%; *** significant at 1%.
## TABLE 7

**Hypothesis Tests: Sovereign Bond Spreads Relative to Comparable US Treasuries 60 and 90 Days Before Election, 1994–2000**

<table>
<thead>
<tr>
<th>Hypothesis ↓</th>
<th>Period Before Election →</th>
<th>Hypothesis Test</th>
<th>60 Days Weighted GEE Constant $\lambda D$ (2)</th>
<th>90 Days Weighted GEE Constant $\lambda D$ (3)</th>
<th>60 Days Weighted GEE Convergent $\lambda D$ (4)</th>
<th>90 Days Weighted GEE Convergent $\lambda D$ (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1: Increasingly Positive Pre-election Spreads for Elections with Right-Wing Incumbents as Likelihood of Incumbent Victory Decreases ($\lambda D^h &lt; \lambda D^{med} &lt; \lambda D^l$)</td>
<td>$\beta_4 + \beta_5 &lt; 0$</td>
<td>-0.00083*** (0.00021)</td>
<td>-0.00072*** (0.00020)</td>
<td>-0.00113*** (0.00047)</td>
<td>-0.00185* (0.00100)</td>
<td></td>
</tr>
<tr>
<td>H2a: Increasingly Negative Pre-election Spreads for Elections with Left-Wing Incumbents as Likelihood of Incumbent Victory Decreases ($\lambda D^l &gt; \lambda D^{med} &gt; \lambda D^h$)</td>
<td>$\beta_4 &lt; 0$</td>
<td>-0.02031*** (0.00043)</td>
<td>-0.01099*** (0.00031)</td>
<td>-0.02168*** (0.00064)</td>
<td>-0.01682*** (0.00117)</td>
<td></td>
</tr>
<tr>
<td>H2b: Increasingly Positive Pre-election Spreads for Elections with Left-Wing Incumbents as Likelihood of Incumbent Victory Decreases ($\lambda D^l &lt; \lambda D^{med} &lt; \lambda D^h$)</td>
<td>$\beta_4 &gt; 0$</td>
<td>-0.00083*** (0.00021)</td>
<td>-0.00072*** (0.00020)</td>
<td>-0.00113*** (0.00047)</td>
<td>-0.00185* (0.00100)</td>
<td></td>
</tr>
</tbody>
</table>

Table 7 reports test results for Hypotheses 1 and 2 based on the six linear combinations of coefficients or coefficient estimate reported in Table 6 above. Robust standard errors in parentheses in Columns 2-5.

* significant at 10%; ** significant at 5%; *** significant at 1%.
Figure 1

Argentina Presidential Election May 14, 1995: Sovereign Bond Yields and Relative Spreads

- Domestic Yield, Argentina (Left Y-Axis)
- Relative Spreads (Right Y-Axis)
- Predicted Slope of Relative Spreads

- Argentina: Right, λ, D High
- Slope: -0.00139
- p-value < 0.01

Election Day

90 days
Figure 2

Poland Presidential Election October 8, 2000: Sovereign Bond Yields and Relative Spreads

- Domestic Yield, Poland (Left Y-Axis)
- Relative Spreads (Right Y-Axis)
- Predicted Slope of Relative Spreads

Election Day

Poland: Left, 3D Low
Slope: 0.00029
p-value > 0.10

90 days