Electoral and Market Rivalry in Developing Country Sovereign Risk Assessment *

Working Paper: Comments Welcome
This Draft: March 3, 2009

Paul M. Vaaler
Department of Strategic Management & Organization
Carlson School of Management
University of Minnesota
3-424 CarlSMgmt
321 19th Avenue South
Minneapolis, MN 55455
Tel (612) 625-4951
Fax (612) 626-1316
vaal0001@umn.edu

&

Gerry McNamara
Department of Management
Broad School of Management
The Michigan State University
N475 North Business Complex
East Lansing, MI 48824
439 N. Business Complex
Tel (517) 432-5527
Fax (517)-432-1111
Email mcnamara@bus.msu.edu

*Please contact Paul M. Vaaler regarding this paper.

Electoral and Market Rivalry in Developing-Country Sovereign Risk Assessment *

Abstract

We develop and test an integrated theoretical framework for understanding how two forms of rivalry –one related to electoral politics firms observe and the other related to market competition in which these same firms participate— shape risk assessments by firms active in developing countries ("DCs"). Political business cycle ("PBC") theory suggests that incumbent politicians, particularly incumbent politicians with a left-wing orientation, have incentives to implement expansionary economic policies during election years even if such policies impair sovereign government finances and creditworthiness afterwards. Electoral rivalry and the PBC-related economic policies it prompts increases risk to firms, but strategy research suggests that this increase will be moderated due to rivalry among firms in the same DC market segment. We test hypotheses derived from this integrative theoretical framework with a sample of 458 ratings of sovereign government creditworthiness published by five major credit rating agencies for 18 DCs holding 35 presidential elections from 1987-2000. We find that: 1) agency ratings decrease during election years in DCs with left-wing incumbents; but 2) this electoral rivalry effect on risk diminishes as the number of agencies vying for DC rating business increases. Market rivalry among agencies and, perhaps, other firms doing business in DCs can negate risk effects related to electoral rivalry among politicians.

Keywords: sovereign risk, rivalry, elections, political business cycles

This study investigates whether and how two types of rivalry shape firm perceptions of investment risk important to the pricing and allocation of capital in developing countries ("DCs"). Recent research in international business (Vaaler, Schrage and Block, 2005) and political economy (Block and Vaaler, 2004) outlines theoretically and documents empirically that electoral rivalry in democratizing DCs can lead to brief but substantial increase in the cost and decrease in the availability of foreign capital for investment and economic development. This evidence is consistent with political business cycle ("PBC") theory positing that incumbents facing re-election, particularly incumbents from parties with left-wing partisan orientations, have incentives to engage in expansionary economic policies even though such policies are often detrimental to post-election economic growth and stability (Nordhaus, 1975; Rogoff, 1990; Leblang, 2002). Foreign firms respond to the possibility of this PBC-style behavior with perceptions of greater risk and, and consequently, greater reluctance to lend and invest in the run-up to and aftermath of elections. In the case of major credit rating agencies such as Moody's Investor Services and Standard and Poor's Rating Services ("agencies"), perceptions of greater country risk due to PBC considerations translate into lower ratings of sovereign government creditworthiness ("ratings") during election years.

While important, these PBC effects on firm risk and investment decisions ignore the competitive context of such decisions. Foreign firms doing business in DCs during election periods may be the only supplier of some product or service, or they may be one of many firms competing to provide the same. Recent strategy research has developed the theoretical basis and documented evidence consistent with the proposition that foreign firm positioning within an DC market segment generally, and the level of rivalry within that market segment in particular can moderate firm risk assessments significantly and substantially (McNamara and Vaaler, 2000; Vaaler and McNamara, 2004). The moderating effect of rivalry on foreign firm perceptions of country risk assessment is contingent. When economic trends such as consumer price inflation or economic growth fluctuate slightly or even moderately to increase country risk, then rivalry among firms diminishes perceived risk (McNamara and Vaaler, 2000). On the other hand, firm rivalry for business in DC market segments can

magnify perceived risk when economic trends fluctuate substantially and unexpectedly such as occurred in many DCs during financial crises in the late 1990s. Rivalry among firms moderates the impact of changes in country risk profiles by diminishing (magnifying) the impact when changes follow from antecedent fluctuation within (outside) expected ranges. In the case of agencies and ratings, increasing rivalry for sovereign rating business diminishes the impact of slight to moderate increases in sovereign risk, but magnifies the impact of unexpected and substantial fluctuations in economic factors affecting sovereign government creditworthiness.

In this study, we integrate these PBC and strategy perspectives on rivalry in the context of agencies in DCs where the last two decades have seen both considerable competition for rating business and considerable progress toward democratization and multi-party electoral competitiveness. With this integrative approach, our study promises at least two contributions to management research and practice. First, we develop a framework for understanding change in DC risk during election years grounded in PBC theory emphasizing incumbent expansionary economic policies and grounded in strategy theory emphasizing the importance of market structure and rivalry as a risk moderator. To our knowledge, no previous management research has theorized about conditions when firm positioning within a market either diminishes or magnifies more fundamental changes in the risk profile linked to political dynamics. Our framework yields contingent predictions about the individual and interactive effects of DC electoral politics and market rivalry on firm risk assessment. If occasional electoral rivalry and related economic policy manipulations lead to slight or even moderate change in risk profiles, then moderating effects of firm rivalry may diminish PBC-related risk altogether. On the other hand, if electoral rivalry and related economic policy manipulations prompt unexpectedly large changes in risk profiles, then the moderating effects of firm rivalry may magnify such risks.

Our study promises a second empirical research contribution by testing two hypotheses derived from the theoretical framework with a sample of 458 agency ratings for 18 DCs holding 35 presidential elections from 1987-2000. Consistent with our first hypothesis, analytical results confirm and extend previous PBC research documenting that agency ratings in DCs decrease significantly and substantially during election years, particularly when the incumbent party fighting for re-election has a less investor-friendly left-wing rather than more investor friendly right-wing and or centrist orientation. Election years with left-wing

incumbent parties decrease agency ratings by at least one ordinal level on a 17-point scale. Given our sample of agency ratings, a one-level decrease in creditworthiness (one-level increase in likelihood of sovereign government default on financial obligations to foreign lenders and investors) can move agency ratings for certain DCs with left-wing incumbents from "investment" to "junk" status, thus increasing the cost and decreasing the availability of capital substantially. Consistent with a second hypothesis derived from our framework, we document support for moderation that diminishes the impact of such left-incumbent election-year effects as the number of agencies vying for rating business increases. In an industry with as many as five agencies competing for DC rating business from 1987-2000, it takes entry by only two rivals to render insignificant the election-year decrease in creditworthiness an agency might otherwise impose. Low to moderate increases in agency rivalry in DC markets apparently negate underlying rating tendencies tied to elections and PBC-related economic policies.

To make these points in greater detail, we divide the remainder of this study into five additional sections. In the second section immediately below, we review relevant PBC and strategy literature and describe the industry context of agencies active in the DC sovereign rating business. Next, we propose our integrative theoretical framework on risk and rivalry, and derive from it two hypotheses. One hypothesis relates to electoral rival and PBC-related considerations, and predicts agency decreases in creditworthiness during election years. A second hypothesis is stated in alternative terms and relates to the moderating effects on risk linked to agency rivalry within DC market segments during election periods. Increasing rivalry either diminishes or magnifies election-year decreases in creditworthiness. We next describe models, measures, data, sampling and estimation techniques use to investigate empirical support for these two hypotheses.

We then report results from descriptive, multivariate and bivariate non-parametric analyses, which together indicate support for both hypotheses derived from our framework. Consistent with PBC theory, election years are associated with statistically significant and, at times, practically substantial decreases in DC sovereign creditworthiness, particularly in the case of elections involving left-wing incumbent politicians. Consistent with strategy and organization theoretical insights, this left-wing election decrease in sovereign creditworthiness is diminished as rivalry among agencies making such risk assessments increases.

Market rivalry among firms assessing risk can negate altogether temporarily heightened risk due to institutionally programmed political rivalry in the form of elections. We conclude this study with discussion of key findings and implications for research, practice and public policy, notation of study limitations, and suggestions for future research on risk assessment by firms active in DCs undergoing political and economic modernization.

RESEARCH BACKGROUND

The theoretical grounding for this study comes from two sources: PBC research linking elections, electoral rivalry and electoral economic policy manipulations to changes in country attractiveness for investment by foreign firms; and strategy research linking firm organizational structure and market positioning to changes in risk associated with strategic decisions to lend and invest, and to escalate such commitments. PBC research linked to risk and investment behavior by foreign firms is new to management audience, though recent studies appearing in management journals (*e.g.,* Vaaler, Schrage and Block, 2005; Vaaler, 2008) suggests growing relevance, particularly in a DC research context. Strategy research on organizational and market factors shaping risk has a longer history, though non-experimental studies appearing in management journals go back little more than a decade (*e.g*., McNamara and Bromiley, 1997, 1999; McNamara, McNamara and Vaaler, 2000; Moon and Bromiley, 2002; Vaaler and McNamara, 2004). We briefly review these two research streams, and link them to the industry context of our study: agencies rating DC sovereigns, and vying for rating business during election years in the 1980s and 1990s.

PBC Literature

Management research has only recently discovered PBC theoretical perspectives pioneered by Nordhaus (1975) and Hibbs (1977), and updated by Rogoff (1990), Alesina (1987) and others (*e.g*., Alesina, Roubini and Cohen, 1997). Starting with Nordhaus (1975), opportunistic PBC models suggested that incumbent government politicians have incentives to implement expansionary economic policies calculated to increase voter support in an election year. Evidence of PBCs in industrialized countries is mixed, but a recent stream of empirical work focusing on DCs and summarized in Block and Vaaler (2004) and Vaaler (2008) suggests

that the onset of election periods is correlated with expansionary fiscal and monetary policies. Their implementation serve incumbent aims of temporarily stimulating economic growth and employment, feigning good economic stewardship, and garnering votes from the domestic electorate, even if such policies are contrary to concurrent economic reform programs, deplete government financial resources or force post-election economic contraction, hyper-inflation or default on financial obligations to domestic and foreign lenders. In this stream of PBC empirical research Ames (1987) documented increased government expenditures and Remmer (1993) higher inflation in Latin American countries during election periods in 1970s and 1980s. Block (2002) found increased growth in money supply across sub-Saharan African countries during election years since the 1960s, and Schuknecht (1996, 1999, 2000) documented growing budget deficits in DCs during election periods since the 1970s. Given the evolution of many DCs from military dictatorships, one-party or socialist states toward democracies with multiple parties and competitive electoral systems, such opportunistic economic policies and outcomes will become more frequent and thus, more important to foreign firms and individuals active in DCs.

Until the 2000s, this PBC research was virtually unknown to management researchers, even though it has important implications for risk and investment behavior by foreign firms active in DCs. More often, research on political risk ignored the electoral context of, say, shifting bargaining power between investing MNCs and DC host governments (Kobrin, 1979; 1987) or institutional factors rendering the DC investment policy environment more or less stable for foreign investors (Henisz, 2000; Henisz and Delios, 2001). PBC insights are changing the political risk research in management to account for how host country-MNC bargaining dynamics, broader investment policy environment and other risk-related factors might change during election periods. Block and Vaaler (2004) showed that agencies decreased DC sovereign creditworthiness and that foreign investors demanded higher returns on DC sovereign bonds during and immediately after elections in the 1980s and 1990s. Both results are consistent with opportunistic PBC considerations that DC governments are less able and or willing to meet financial obligations to foreign investors during election periods. Leblang (2002) added partisan dimensions to this research stream when he documented that foreign currency traders

were more likely to launch speculative attacks on DC currencies during election periods in the 1980s and 1990s, particularly where they involved left-wing incumbent politicians.

Leblang's findings suggest that left-wing politicians are willing to resort to expansionary economic policies to increase growth and employment sooner than right-wing and centrist counterparts who may be more concerned with containing inflation and preserving the value of fixed value assets such as cash or bonds. Partisan PBC models going back to Hibbs (1977) and running through Alesina (1987) and Alesina, Roubini and Cohen (1997) have also highlighted important differences in left-wing economic policies that tend to emphasize growth and employment at the expense of inflation versus more cautious, investor-friendly right-wing and centrist policies promoting growth with less inflationary pressures but also less job-creation. Along these lines, Vaaler (2008) documents significantly fewer (more) MNC investment projects announced during election years in DCs where left-wing incumbents are likely (unlikely) to be re-elected. Similarly, Santiso (2003), Martinez and Santiso (2003) and Blommestein and Santiso (2007) describe substantial domestic bond market turbulence and foreign exchange swings during election years in Latin America in the 1990s and 2000s. During the 2002 presidential election in Brazil, the Goldman Sachs investment banking firm touted a "Lula Meter" product correlating the pre-election polling numbers for left-wing presidential candidate Luis Ignacio Lula da Silva with changes in the value of Brazilian currency against the US dollar. As Lula's polling numbers rose, Brazilian currency value against the US dollar fell (Martinez and Santiso, 2003). Together, these PBC models and evidence suggest that left-wing politicians can roil financial markets during election years.

Industry Context

These PBC findings have special importance for agencies, which provide advice to and certify the creditworthiness of DC borrowers, including sovereign government borrowers, to foreign investors. As Sinclair (1995), White (2001) and others have noted, agencies play a crucial role in helping those with capital determine the creditworthiness of individuals seeking capital both before and after money changes hands. Agencies fill informational gaps and help investors clear the fog of asymmetric information that may

surround a potential recipient firm, government or individual. They also help clarify their creditworthiness of potential investors. Agencies are what Sharma (1997) calls professional organization intermediaries with obligations for the orderly and efficient functioning of transactional institutions extending to a network of stakeholders: banks, firms, funds and individuals with capital and typically from Western Europe and North America as well as banks, firms, funds, individuals and governments in DCs seeking capital.

The key information agencies provide these market participants relate to the ability and willingness of borrowers to meet their financial obligations (S&P, 1997). Those assessments are summarized in ordinal letter-rankings, typically running from "AAA" (16), signifying the most creditworthy individuals, to "AA+" (15), "AA"(14), "AA-" (13) and so forth, to "B-" (1) signifying rather risky credit. The ordinal scale may also expand to 17 levels with the inclusion of a "C" (0) rating. As Table 1 shows, a key cut-off in these ordinal rankings is between BBB- (7) and BB+ (6). This cut-off distinguishes "investment grade" borrowers with a substantial capability and willingness to meet its obligations in various foreseeable environments from "junk (non-investment grade)" borrowers. Cantor and Packer (1996), Larrian, Reisen and Von Maltzen (1997) and Kaminsky and Schmukler (2001) demonstrate empirically that market-determined credit spreads on publicly traded sovereign debt correlate closely with sovereign ratings. If sovereigns fail to obtain a minimum investment grade rating (BBB- = 7), they may find access to institutional investors severely limited as many mutual funds and pension funds, for example, have covenants limiting their investment in junk securities.

(Insert Table 1 Here)

Like other borrowers, governments seek ratings, in part, to give lenders a better idea of their creditworthiness, thereby easing capital market access. Many lenders and investors, particularly US-based institutions, prefer rated organizations and securities to their un-rated counterparts, especially when critical information regarding the creditworthiness of the borrower or issuer is less transparent as with DCs. The sovereign rating sets a "ceiling" on the eventual sub-sovereign rating under the theory that no organization can be more creditworthy than the sovereign government where the organization is domiciled. Thus, when Block and Vaaler (2004) demonstrate that sovereign ratings fall during election years, the temporary

decrease in creditworthiness and thus capital availability has implications not only for DC governments but also for the broader population of DC firms and individuals beneath the ceiling.

The information agencies provide these market participants lubricates the wheels of lending and investment, and has "public good" attributes similar to market information provided by public regulatory bodies in other contexts. Not surprisingly then, agencies are compensated for their work by all of the financial system stakeholders, but with special reliance on fees from borrowers in the sovereign rating business. Historically, lenders and investors generated the bulk of fees for agencies through subscriptions to ratings information provided by the agencies. Since the 1960s, agencies have charged borrowers for the ratings they receive. With DC sovereign governments and other sub-sovereign borrowers, these charges can be substantial. Typically, initial DC sovereign ratings are completed by agencies in connection with issuance of sovereign debt. Agencies compensate themselves for providing initial ratings through a fee based on a percentage of the face amount of the initial issuances. Sinclair (1995) reports that compensation could run as high as 2-3% of the face amount issued, and face amounts can exceed $500 million. Agencies also charge borrowers additional fees for subsequent financing transactions, and for periodic reviews of the ratings themselves. Agency ratings for sovereigns are not only a source of fee income on its own, but are also a source of related fees from sub-sovereign issuers, which agencies can more accurately and efficiently rate after assessment of broader risk factors at the sovereign level.

Regulatory factors also matter in explaining the centrality of agencies in financial transactions linking investors around the world to DCs. Borrowers seeking access to US institutional lenders and investors generally require ratings from one or two agencies designated as Nationally Recognized Statistical Rating Organizations ("NRSROs") by the US Securities and Exchange Commission (SEC, 1994).[1] US institutional lenders, such as commercial banks, often mimic this approach with requirements of one or more sovereign ratings by NRSRO-designated agencies as a condition for making loans to sovereign and sub-sovereign individuals. International regulatory regimes overseeing the capital adequacy of commercial banks and related financial institutions have, since the 1990s, mandated the use of ratings from NRSRO agencies to

[1] 12 US federal regulations promulgated between 1931 and 1994 require credit ratings by NRSROs. They are listed in Cantor & Packer (1994: 6).

certify their financial soundness (Crouhy *et al*., 2001). Market demand for specialized ratings and agencies has been reinforced by national and international regulatory demand. Recent increases in the size of this DC market since the 1980s make their advice more important than ever. In this context, it is not surprising that the number of DC sovereign risk ratings from agencies jumped from only 12 in 1987 to 60 at the end of 2004. Also by 2004, annual financing (loans, bonds and equity) issued by governmental and private individuals from DCs topped $800 billion (IMF, 2005).

Dozens of agencies around the world provide rating services but only a few have NRSRO designation.[2] Throughout the 1980s, there were only two NRSRO agencies active in the sovereign rating business: Moody's and S&P. By the mid-1990s, the number of NRSRO agencies actively pursuing sovereign rating business had risen to five: Moody's and S&P as well as DCR, Thomson and IBCA, which, in December 1997 merged with Fitch Investor Services to become Fitch-IBCA. By the end of 2000, Fitch-IBCA had absorbed both Thomson and DCR leaving only three NRSRO agencies active in this business: Moody's, S&P and Fitch.[3] Thus, regulation has both stimulated market demand for and limits the market supply of agencies publishing sovereign ratings and vying for rating business in DCs.

Rivalry Literature

If agencies are central to the capital allocation process in DCs, and if elections tend to decrease agency ratings and capital availability, then how might varying levels of market rivalry in DC market segments moderate this electoral rivalry effect? At first glance, agency rivalry should be irrelevant. Agencies tout the comprehensiveness and objectivity of their DC ratings (*e.g*., S&P, 1999) and other researchers routinely assume the same (*e.g*., Davidson, 1980). They purport to be what Sharma (1997) calls "expert" firms providing clients with non-resident knowledge-intensive services from a disinterested perspective in specialized, often regulated domains such as medicine law, accounting, finance and

[2] White (2001: 9) counts 37 prominent agencies outside the US as of 2000.

[3] Since at least the late 1990s, US regulators have considered the addition of new agencies with NRSRO designation in order to stimulate more competition among agencies providing ratings in different industry segments. From 2000-2006, there were only three NRSROs competing for sovereign rating business: Moody's, S&P and Fitch. As of 2008, there were six NRSRO agencies qualified to rate government securities, which is generally a pre-requisite to rating sovereigns and competing for sovereign bond business. These six NRSROs are: Moody's, S&P and Fitch as well as Canada-based DBRS Ltd, which became an NRSRO in 2003 and entered the sovereign rating business in 2006, and Japan-based Japan Credit Rating Agency Ltd. and Rating and Investment Information, Inc., which became NRSROs and started competing for sovereign credit rating business in 2007. For more on NRSRO designation and the role of credit rating agencies in financial transactions generally, see the 2003 US SEC "Concept Release" (US SEC, 2003). For more on current NRSROS see the 2007 US SEC "Press Release" (US SEC, 2007).

management. The practical reality for agencies as well as many other expert organizations is that they are for-profit firms deriving substantial income from successfully bidding for rating business from the same DC borrowing sovereign governments they rate and re-rate periodically. In this context, risk assessments by these experts and others are vulnerable to distortion based on considerations other than sovereign risk fundamentals.

Strategy and organization research streams running over little more than a decade have developed theory and evidence related to such distortions in risk assessment. McNamara and Bromiley (1997, 1999) may have been first to examine factors distorting risk assessments in non-experimental contexts. They drew on behavioral decision-making perspectives (*e.g*., March, 1988) to explain why US commercial bank officers might underplay risks associated with loans, especially when individual and organizational incentives to build market share are strong. McNamara, Moon and Bromiley (2002) extend this research to show how similar incentives might skew risks related to increasing existing loan commitments.

McNamara and Vaaler (2000) and Vaaler and McNamara (2004) extend this behavioral foundation for understanding how risk assessment becomes skewed to the international domain of agency ratings in DCs. They also extend this foundation for understanding distortions in risk assessment tied to classic strategy considerations related to market rivalry. McNamara and Vaaler (2000) theorize that increasing competition for business in a given market segment diminishes the impact of increased risk, particularly when competing firms are seeking to build market share. Agencies face varying degrees of rivalry in particular national markets. The number of firms operating in a given national market segment is a fundamental structural characteristic influencing the bargaining power of firms (Porter, 1980) as well as the ability of firms to collude (Fershtman and Muller, 1986). This, in turn, influences the strategic conduct and performance of individual firms in the market. In stable environments, a lone agency operating as a monopolist may be able to interpret information about the sovereign and sub-sovereigns in a national market less favorably with little fear of losing business to others. As additional agencies enter, however, the former monopolist may be constrained from fully-adjusting ratings downward in response to negative credit developments. Such adjustment might displease a sovereign with choices as to who will provide ratings services in a future bond

issuance. An alternative learning perspective (Fiol and Lyles, 1985; Lyles, 1995) suggests that publication of ratings by multiple agencies engenders the development of common professional referents (Sharma, 1997) legitimating decision-making criteria, routines and final assessments for all agencies rating the sovereign. Uncertainty associated with any one rating decreases as the overall number of agencies publishing ratings increases. McNamara and Vaaler (2000) find partial support for their prediction in a sample of DC agency ratings from the 1980s and early 1990s, a period when sovereign ratings exhibited gradual increase with little fluctuation. Agencies new to the sovereign rating business in the 1990s –DCR, IBCA, Fitch and Thomson-- tended to publish even higher ratings indicative of greater creditworthiness as the total number of agencies publishing ratings and vying for business increased. Incumbent agencies like Moody's and S&P did not.

Vaaler and McNamara (2004) re-examine the link between DC market segment rivalry and agency ratings in the context of financial crises afflicting many DCs from 1997-1998. In the context of crisis-induced turbulence, more rivalry among agencies tends to magnify rather than diminish a generalized decrease in sovereign creditworthiness. Turbulence undercuts standard decision-making procedures, criteria and assumptions across the industry and prompts an industry-wide pessimism. When such a shift commences, the level of rivalry among agencies in a given market can exacerbate negative effects through competitive "bandwagon" pressures (Abrahamson & Rosenkopf, 1993). Agencies will be increasingly pressured to react to rival agency assessments. Just as agencies learn from their rivals' positive ratings during stability, they will seek to make sense of risk factors during turbulence by observing each other as they publish more negative assessments. Feedback effects from multiple agencies downgrading the same sovereign can accentuate industry-wide pessimism. Yet a second source of competitive bandwagons is the threat of market pre-emption by rivals. Agencies experience additional pressure to accentuate negative ratings trends in order to prevent any outlying rival from assuming the "leadership" role in interpreting risks during crisis-induced turbulence for industry stakeholders.

Such sources of competitive bandwagons suggest that negative shifts in ratings during crisis-induced turbulence will be greater as the number of agencies active in a particular sovereign market increases and a "race to the bottom" ensues. Compared to sovereign markets with only one or two agencies seeking

business, the negative shift of agencies more generally will be accentuated in the presence of higher agency rivalry and the more numerous negative referents rivalry generates. Compared to agencies in sovereign markets with few rivals, high rivalry markets will induce more dramatic shifts in stakeholder salience from sovereign borrowers to investors and regulators from which, competing agencies are seeking new legitimacy. Together these findings suggest a contingent moderating role for market rivalry in firm risk assessment. Increasing DC market segment rivalry diminishes the impact of changes in creditworthiness during periods of industry-wide stability and growth, but magnifies the impact where changes in creditworthiness are unexpected, severe, and typically, negative.

THEORETICAL FRAMEWORK AND HYPOTHESES

In this context, we can summarize our overall research proposition as follows: Electoral and market rivalry have individual and interactive effects on firm (agency) risk assessments during DC election periods. The predicted impact of these political and market rivalry effects is summarized graphically in Figure 1.

(Insert Figure 1 Here)

Regarding electoral rivalry, PBC theory suggests that DC political incumbents, particularly left-wing political incumbents, are likely to implement expansionary economic policies calculated to garner votes, but detrimental to lending and investment afterwards. Pre-election expansionary policies increase post-election budget deficits, inflation and or risk of default on foreign financial obligations. Consistent with these previous findings, we expect that:

> *Hypothesis 1 (Electoral Rivalry Risk Effects): Election periods in DCs will be associated with decreased agency ratings (decreased creditworthiness).*

Research in strategy and organization theory suggests that decision-making in heightened uncertainty is distorted by factors in the competitive environment where firms operate. Market rivalry is one such factor. Elections represent institutionally planned periods of heightened uncertainty, thus permitting examination of rivalry as a moderating effect. The moderating impact of market rivalry is contingent on whether the change in underlying risk is within expected fluctuations (low to moderate change) or outside expected ranges as in the case of financial crises. We have no definitive guidance on how to categorize elections in this contingent

theoretical framework. On the one hand, elections constitute institutionally planned periods of heightened uncertainty regarding the longevity of existing economic policies and the possibility of temporary policy manipulations related to electioneering. If these changes are within the expected range of fluctuation for agencies then the moderating impact of market rivalry is likely to diminish PBC-related electoral effects on agency ratings. Accordingly, we can predict that:

> *Hypothesis 2a (Diminishing Market Rivalry Risk Effects): Election period decreases in ratings (decreased creditworthiness) will be diminished as the number of agencies rating a given DC increases.*

Alternatively, elections may prompt unexpected and severe changes in sovereign risk profiles, particularly in DCs where democratic processes such as multi-party elections are still rather novel practices for domestic voters, politicians and foreign firms. If changes in risk related to elections and the PBC-related incentives they unleash are outside the expected range of fluctuation for agencies then the moderating impact of market rivalry is likely to magnify the severe and typically negative effects on agency ratings. Accordingly, we can predict that:

> *Hypothesis 2b (Magnifying Market Rivalry Risk Effects): Election period decreases in ratings (decreased creditworthiness) will be magnified as the number of agencies rating a given DC increases.*

METHODS

Empirical Model

To investigate these predictions about DC agency ratings, electoral rivalry and market rivalry, we first define the following empirical model:

$$\begin{aligned} Rating_{rit} &= \alpha_0 + \sum_{i=1}^{i=17} \gamma_i Country + \sum_{k=1}^{k=12} \lambda Macro_{it} + \sum_{t=1988}^{2000} \xi_t Year_t \\ &+ \beta_1 Election_{it} + \beta_2 Rinc_{it} + \beta_3 Election * Rinc_{it} \\ &+ \beta_4 Numriv_{rit} + \beta_5 Election * Numriv_{rit} + \beta_6 Rinc * Numriv_{rit} \\ &+ \beta_7 Election * Rinc * Numriv_{rit} + \mu_{rit} \end{aligned} \quad (1)$$

In model (1) the dependent variable, *Rating*, is the 17-level agency rating (16 = AAA, 15 = AA+, AA = 14, AA- = 13, A+ = 12, A = 11, A- = 10, BBB+ = 9, BBB = 8, BBB- = 7, BB+ = 6, BB = 5, BB- = 4, B+ = 3, B = 2, B- = 1, C = 0) published by agency *r* for country *i* on December 31 of each year *t* from 1987-2000.

On the right-hand side of (1) we first include dummy variables to control for unobserved and possibly idiosyncratic effects related to the *Country* and *Year* of *Rating*. As additional controls, we include 12 macroeconomic variables (2-year current and previous year moving averages), *Macro*, for each country *i* and year *t (*averaged with year *t-1)* in our sample. The 12 control variables, for which $\eta_{1\text{-}12}$ are parameter estimates, include:

- *Current Account Balance* (η_1), measured as exports less imports divided by GDP, and expected to be positively related to *Rating*;
- *Per Capita Income* (η_2), measured as average GDP in constant (1995) thousands of US dollars divided by the average mid-year country population, and expected to be positively related to *Rating*;
- *GDP Growth Rate* (η_3), measured as the average annual real GDP percentage growth rate, and expected to be positively related to *Rating*;
- *Inflation Rate* (η_4), measured as the average annual percentage of consumer price inflation, divided by 100, and expected to be negatively related to *Rating*;
- *Fiscal Balance* (η_5),, measured as the average annual overall budget balance (receipts less expenditures) divided by GDP, and expected to be positively related to *Rating*;
- *External Debt* (η_6), measured as the sum of public, publicly guaranteed, and private non-guaranteed long-term debt, use of IMF credit, and short-term debt divided by GDP, and expected to be negatively related to *Rating*;
- *Total Reserves* (η_7), measured as value of foreign reserves in months of imports, and expected to be positively related to *Rating*;
- *Domestic Credit* (η_8), measured as the value of all credit provided by the banking sector to various sectors on a gross basis (except for credit to the central government, which is net) divided by GDP, multiplied by 100 and expected to be positively related to *Rating*;
- *Contract Intensive Money* (η_9), measured as the share of country basic money supply (M2) held by all country banks (indicating protection of contract and property rights), and expected to be positively related to *Rating;*
- *Population* (η_{10}), measured as natural log of the mid-year country population, and expected to be positively related to *Rating*;
- *Recent Default* (η_{11}), a 0-1 dummy (1 if in default, 0 otherwise) indicating whether the country sovereign has defaulted on its foreign-currency denominated debt (excluding bank debt) in the last five years, and expected to be negatively related to *Rating*;
- *Lack of Civil Liberties* (η_{12}), measured as 1-7 integral measure where 1 = strong civil liberties and 7 = weak civil liberties, and expected to be negatively related to *Rating*.

Cantor and Packer (1996), McNamara and Vaaler (2000), Vaaler and McNamara (2004) and Vaaler *et al.* (2006) use such *Macro* controls to model "objective" country characteristics that agencies (*e.g.*, S&P, 1999-2004) tout as the basis for their DC ratings.

After these *Macro* controls, we add the independent variables of central interest to our study. First, to investigate links between agency ratings and electoral rivalry, we define the term *Election* (β_1), which is a 0-1 indicator equaling 1 if there was an election in year *t* and 0 if there is no election in year *t*. *Election* is expected to be negatively related to *Rating*: H_1: β_1 (*Election*) < 0. While Hypothesis 1 predicts that election years will decrease creditworthiness generally, we note that PBC literature highlights this effect where incumbents facing re-election have left-wing partisan orientations. Left-wing incumbents are less reluctant to resort to electioneering through expansive economic policies than right-wing and centrist incumbents facing re-election. Accordingly, we also define the term *Rinc* (β_2), which is a 0-1 indicator equaling 1 if the partisan orientation of the incumbent in year t is either *not* left-wing (*i.e.*, right-wing or centrist). Though not formally hypothesized, *Rinc* is expected to be positively related to *Rating* as right-wing and centrist incumbents are more likely to champion economic policies friendly to investor rather than worker interests. A third interaction term *Election*Rinc* (β_3) captures differences in election-year effects on *Rating* for right-wing incumbent elections. When added to the empirical model, *Election* on its own becomes a test of left-wing incumbent elections and their PBC effects on *Rating*. Thus, a test of partial support for Hypothesis 1 in a fully-partitioned model is: H_1: β_1 (*Election*) < 0.

Next, to investigate differences in *Rating* linked to rivalry among agencies in specific DC market segments, we define the term *Numriv* (β_4), which is a number from 1-4 based on the number of rival agencies publishing ratings at the end of year *t* in country *i*. By interacting *Numriv* with *Election* and *Rinc* we define three additional terms *Election*Numriv* (β_5), *Rinc*Numriv* (β_6) and *Election*Rinc*Numriv* (β_7). When included in our empirical model, they permit us to partition agency rivalry effects and test support for Hypotheses 2a and 2b. Differences in rivalry effects on *Rating* when election years involve left-wing incumbents are captured by *Election*Numriv* (β_5). For right-wing incumbent election years the same differences will be given by *Election*Rinc*Numriv* (β_5). If market rivalry diminishes risk perceptions related

to elections and PBC-related economic policy considerations then these two terms should be positively related to *Rating*: H2a: β_5 (*Election*Numriv*) > 0 and β_7 (*Election*Rinc*Numriv*) > 0.

Estimation Strategy

Stata Version 10 (StataCorp, 2007) provides all estimators used in this study. We rely on two multivariate estimators. First, we use a generalized least squares ("GLS") estimator with Huber-White sandwich standard errors that are robust to heteroskedasticity and clustered on the agency publishing the rating. A clustering strategy accounts for the possibility of non-independence in *Rating* observations published by the same agency. Second, we use an ordered probit estimator because the dependent variable, *Rating*, is an ordinal ranking. Previous research on sovereign risk ratings using linear (Vaaler and McNamara, 2004) and non-linear probit estimators (Vaaler *et al*., 2006) suggests that both yield similar results.

In addition to these multivariate estimators, we use a non-parametric bivariate estimator. A locally weighted scatter-plot smoother ("Lowess") estimator computes linear regressions around each observation, x_{it}, with neighborhood observations chosen within some sampling bandwidth and weighted by a tri-cubic function. Based on the estimated regression parameters, y_{it} values are computed. These x_{it}, y_{it} combinations are then connected yielding a Lowess curve. A higher bandwidth results in a smoother Lowess curve. We use a 90% sampling bandwidth to present Lowess estimation of agency rivalry effects (x_{it}) on *Rating* (y_{it}) in election years when incumbents are right-wing or centrist versus when they are left-wing.

Data and Sampling

Our data come from several sources. We use data from the World Bank's Database of Political Institutions ("DPI") Version 4 (Beck, Clarke, Groff, Keefer and Walsh, 2001; DPI, 2005) and data from the International Foundation for Election Systems ("IFES") (IFES, 2006) to collect information on presidential elections held in developing countries with competitive electoral systems from 1987-2000. We sample only from presidential electoral systems with fixed election dates to avoid issues of endogeneity in election-timing possible with parliamentary systems. We sample only from countries with competitive presidential systems, meaning that they score a six or seven on a DPI scale of 1-7 for competitiveness. The DPI sets criteria for incumbent and challenger partisan orientation with left-wing, centrist, right-wing and other classifications based primarily on

content analysis of party titles and secondarily on content analysis of party platforms and historical commitments to investor (right-wing and centrist) versus worker (left-wing) interests. Following these criteria, we aggregate electoral incumbents and challengers from right-wing and centrist party orientations into a single right-wing bloc. Our measure of incumbent partisan orientation, Rinc, equals 1 when we have right-wing or centrist parties. *Rinc* is 0 when we have left-wing parties lacking substantial commitment to investor interests.

We also collect annual data on economic indicators of sovereign creditworthiness, the *Macro* controls in our empirical model from the World Bank World Development Indicators ("WDI") (World Bank, 2008) and agency sources (S&P, 1999; 2000) (*Recent Default*) and Freedom House (2008) (political and civil rights). For information on agency activity and ratings in various DCs we use Bloomberg International (2006) on-line sources to collect data on DC agencies and their ratings on December 31 annually from 1987-2000.

With these data and sampling rules, we identify 18 countries with competitive presidential electoral systems, fixed election dates, parties with discernible incumbent partisan distinctions, and sufficient information on agency activity and ratings from 1987-2000: Argentina, Bolivia, Brazil, Bulgaria, Chile, Colombia, Ecuador, Indonesia, South Korea, Mexico, Paraguay, Peru, Philippines, Poland, Russia, South Africa, Uruguay and Venezuela. Country sampling thus begins in the first year that countries have sovereign ratings published by one of the five agencies active in the sovereign credit rating business from 1987-2000. This results in 458 *Rating* observations from five agencies active in 18 DCs with competitive electoral systems and holding 35 presidential elections from 1987-2000.

RESULTS

Descriptive Statistics and Pair-Wise Correlations

Table 2 presents descriptive statistics and pair-wise correlations for key variables in our empirical model. The mean value of the dependent variable *Rating* is 5.40 with a standard deviation of 2.85, a minimum value of zero (*e.g.*, Moody's rating for Russia in default at the end of 1998), and maximum value of 11 (Moody's rating for South Korea at the end of 1988). On average, agencies give DCs in the 1980s and 1990s ratings of 5.4 ("BB"), slightly below the investment grade cut-off of 7 ("BBB-"). The standard deviation of 2.85, however, tells us that a substantial percentage of the ratings in our sample are located even closer to this

cut-off. 85 of the 458 ratings in our sample equal 6 (BB+) just below the cut-off while 58 of the 458 ratings equal 7 (BBB-) the lowest investment grade rating. Small changes in creditworthiness related to electoral and or market rivalry can have practical effects on the availability of capital for all of the DCs in our sample. Small changes for DCs on the cusp of junk and investment grade ratings can have quite substantial practical effects.

(Insert Table 2 Here)

We also note descriptive properties for incumbent partisan orientation, elections and rivalry in our sample. 72% of DC incumbent presidential parties are either right-wing or centrist. The dominance of more investor-friendly executives in the 1980s and 1990s follows in part from the popularity of DC economic policies consistent with the so-called Washington Consensus emphasizing economic privatization, industry deregulation and trade liberalization. Since the late 1990s, these same policies have come under closer scrutiny and criticism by a rising number of left-wing presidents like Venezuela's Hugo Chavez, and Bolivia's Evo Morales. Election year ratings comprise about 21% of our sample with 25 of the 35 elections in our sample involving right-wing and centrist incumbents and 10 involving left-wing incumbents.[4] We have 69 ratings for right-wing and centrist incumbent election years and 23 ratings for left-wing incumbent elections. On average, agencies face from two to four rivals in a given DC market segments with from zero to four rivals across several countries, years and elections. Thus, we have substantial power and variance for estimation of effects related to both electoral and market rivalry.

The macroeconomic controls present a DC profile in the 1980s and 1990s consistent with most expectations. They have mid-range per capita incomes ($3970) with higher (compared to industrialized countries) inflation rates (82%), and external debt (44%) and fiscal deficits (1.67%) as percentages of GDP. 10% of the observations come from countries that were recently in default of their financial obligations to sovereign bondholders. Civil liberties are middling, about 3 on a 1-7 scale. Aside from interaction terms, pair-wise correlations reveal no extremely high correspondence among right-hand side terms of the empirical model. Thus, severe multi-collinearity affecting estimation precision is unlikely. In the case of interactions,

[4] The sampled countries (election years): Argentina (89, 95, 99), Bolivia (97), Brazil (89, 94, 98), Chile (93, 99), Colombia (94, 98), Ecuador (96), Indonesia (99), Korea (92, 97), Paraguay (98), Peru (95, 00), Philippines (98), Russia (96, 00), South Africa (94) Uruguay (94, 99) and Venezuela (98) in the right-wing and centrist incumbent election category; and Bulgaria (96), Ecuador (98) Mexico (94, 00), Poland (95, 00), South Africa (99), Venezuela (88, 93, 00) in the left-wing incumbent election category.

we also examine (but do not report) variance inflation factor diagnostic statistics investigating the possibility of severe multi-collinearity and find no such indications.

Regression and Hypothesis Test Results

Results from four GLS and four ordered probit estimations are reported in Table 3. Columns 1-2 report results from GLS and ordered probit estimations with country and year dummies and macroeconomic controls (*Macro*) only. Columns 3-4 report GLS and ordered probit results after adding an election year dummy (*Election*). Columns 5-6 then add to the equation a right-wing or centrist incumbent dummy (*Rinc*) which permits partitioning of election year effects on agency ratings by the partisan orientation of the incumbent. Columns 7-8 present results from estimation of the full equation and permit direct tests of Hypotheses 1-2. These results include agency rivalry effects (*Numriv*) on agency ratings during non-election years and during election years with incumbents of differing partisan orientation. Since they are not central to our analyses, country and year dummy coefficients are not reported.[5] The pseudo R^2 for all ordered probit estimations is 0.36 while the R^2 for all GLS estimations is 0.83. They indicate that our equations are well-specified, explain substantial variation in our dependent variable, *Rating*, and provide a fair multivariate analytical grounding for our tests about the impact of political and market rivalry on risk assessment.

(Insert Table 3 Here)

We focus our report on results from ordered probit estimations in Columns 2, 4, 6 and 8 with occasional reference to associated GLS results in Columns 1, 3, 5 and 7. Column 2's ordered probit estimation of the base equation yield intuitive results. Nine of the 12 macroeconomic controls exhibit the predicted sign, while seven of the nine are significant at the 1% level. Ratings are higher when DCs have faster economic growth, lower inflation, budget surpluses, less external debt, larger domestic credit markets, greater willingness by the public to place funds in local banks, and a recent history of meeting financial obligations to foreign investors.

The only controls exhibiting significant but contrary signs relate to foreign reserves and (lack of) civil liberties. DC sovereign creditworthiness is *lower* (not higher) with the accumulation of foreign reserves and

[5] These results are available on request.

with stronger civil liberties. These anomalies suggest different explanations. We measure foreign reserves in terms of how many months of imported goods and services they will buy. Given the sovereign rating focus on strength to meet foreign financial obligations it might be more appropriate to standardize foreign reserves by the level of external debt. We re-estimate but do not report an alternative ordered probit estimation with foreign reserves re-measured along such lines.[6] The anomalous sign and significance disappears. Regarding the impact of (lack of) civil liberties on *Rating*, we find it interesting that greater legal and political protection of DC citizens does not result in agencies assessing greater strength in their government to meet foreign financial obligations. As Goldsmith (1994) noted, many scholars and policy commentators thought political and legal reforms in the 1990s would engender both stronger democracies with greater respect for civil liberties and more open markets with greater respect for investor rights. The anomalous sign and significance for (lack of) civil liberties suggests that democratization and marketization in DCs and around the world may not be as highly correlated as many thought in the early 1990s.

Columns 4 and 6 report results from re-estimation after inclusion of an election year term (Column 4) and then election year and incumbent partisan orientation terms (Column 6). The election year dummy (*Election*) enters with a negative sign (-0.27) that is significant at the 5% level. A logical inference from this result would be that, consistent with Hypothesis 1, election years and the PBC-related policy manipulations they engender decrease DC sovereign creditworthiness generally. This inference would also be consistent with Block and Vaaler (2004) who observed a decrease of approximately one rating level during election years in a similar sample of DCs from the 1980s and 1990s. GLS estimates in Column 3 yield similar insights with negative election year effects (-0.32) significant at the 10% level.

Column 6 results suggest that this inference merits re-examination and reformulation. Here, we partition election-year effects into effects related to right-wing and centrist incumbent election years and left-wing incumbent election years. Left-wing incumbent election year effects are given by the election year dummy (*Election*) while the difference in right-wing and centrist election year effects is given by an interaction term (*Election*Rinc*). Left-wing incumbent election year effects are again negative (-0.47) and significant, this

[6] These results are available on request.

time at the 1% level. The difference in effects for right-wing and centrist election years is positive (0.29) and significant at the 5% level. The linear combination of *Election* and *Election*Rinc* ($\beta_1 + \beta_3$) gives us the net effects for right-wing and centrist election years. The linear combination sums to -0.24 but it is not significant at commonly accepted levels. Similarly in GLS estimates reported in Column 5, we see that left-wing incumbent elections (Election) are negative and significant (-.49) at the 10% level and that the linear combination capturing right-wing and centrist election year effects ($\beta_1 + \beta_3$) sums to -0.13 but is not significant at commonly accepted levels. Together, these Columns 6 and 7 results convey that election year effects decreasing agency assessments of DC sovereign creditworthiness are significant but only in the case of elections with left-wing incumbents who may be more willing to engage in economic policy manipulations than more investor-friendly right-wing and centrist counterparts. Thus, we find partial support for Hypothesis 1 and the impact of electoral rivalry and PBC-related considerations on firm risk assessments.

Columns 7 and 8 presents results after ordered probit estimation of the fully-specified equation with fully-partitioned political and market rivalry effects on agency ratings. These results permit us to reconfirm evidence related to Hypothesis 1 and the direct impact of political rivalry on risk assessment and investigate moderating market rivalry effects on risk assessment predicted in alternative versions of Hypothesis 2. With the inclusion of rivalry as an individual term and in various interactions, key right-hand side terms take on slightly different meanings. The election year dummy (*Election*) now captures left-wing incumbent election year effects on *Rating* when an agency faces no competition from rival agencies in the DC market segment. When an agency faces no competitive rivals in a DC market segment and when that same DC is holding an election involving a left-wing presidential incumbent, the impact on agency sovereign ratings is negative (-1.25), significant at the 5% level and practically substantial. Holding other right-hand side terms at their mean levels, DC sovereign creditworthiness decreases by one ordinal level. Given the grouping of so many ratings around the junk versus investment grade cut-off, such a decrease can have a substantial impact on capital availability. Corresponding right-wing and centrist effects under monopoly or increasingly competitive market contexts are not significantly different from zero. Again, these results indicate partial support for Hypothesis 1 and the contingent importance of electoral rivalry on firm risk.

In Column 8, the individual rivalry term (*Numriv*) represents effects on *Rating* during non-election years where there is a left-wing incumbent. The interaction with the right-wing and centrist dummy (*Rinc*Numriv*) captures differences in non-election year effects when a right-wing and centrist president is in place. Neither term is significantly different from zero. By contrast, agency rivalry during election years with left-wing incumbent presidents exhibits positive and significant differences. The interaction of rivalry and election (*Election*Numriv*) yields a coefficient estimate of 0.33 significant at the 5% level. Holding other right-hand side terms at their means and then changing agency rivalry level from 0 to 2 yields a linear combination of *Election* + *Election*Numriv* ($\beta_1 + \beta_4$) that is not significantly different from zero. The logical inference from this simulation is that addition of two or more rivals to a DC market segment will negate the decrease in creditworthiness it would otherwise suffer in an election year with a left-wing incumbent. We find no such rivalry effects on *Rating* in the case of elections with right-wing incumbents. GLS estimates in Column 7 again yield similar results: Election years with a less investor-friendly left-wing incumbent no rivalry among agencies (*Election*) lead to a decrease of almost 1.5 rating levels (-1.43) significant at the 10% level. Increasing levels of rivalry diminish this left-wing election year effect. When three or four rivals are present, the negative impact of electoral rivalry disappears. Together, these results suggest partial support for alternative Hypothesis 2a and diminishing rather than magnifying effects related to market rivalry.

Bivariate and non-parametric Lowess analysis in Figure 2 provides further evidence of partial support for Hypothesis 2a. The x-axis in Figure 2 measures the number of rival agencies publishing ratings for a country in an election year. A 0 value indicates that agency is a monopolist. The y-axis measures the country's election year sovereign rating, ranging from 1 ("B-") to 9 ("BBB+"). A dashed line (-) represents the Lowess trend line for agency ratings in election years with right-wing and centrist incumbents. A dashed-dotted line (-·) represents the Lowess trend line for agency ratings in election years with left-wing incumbents. Both lines increase as we move from 0 to 2, consistent with a positive election-year rivalry effect diminishing the decrease on creditworthiness related to electoral rivalry and PBC-related economic policy manipulations. Then the partisan trend lines diverge. The left-wing incumbent election-year trend line continues to increase, though at a lower rate as agency rivalry increases from 2 to 4. The right-wing and

centrist trend line decreases over the same range. This inverted U rather than positive linear trend line help us understand why agency rivalry effects after multivariate ordered probit estimation are *not* significant for right-wing and centrist incumbent elections but are significant at commonly accepted levels for left-wing incumbents, consistent with Hypothesis 2a. Again, market rivalry during election years moderates decreasing effects on DC sovereign creditworthiness, at least in the case of left-wing incumbent elections. Rivalry in this context diminishes electoral rivalry effects, no matter the level of market rivalry. Indeed, agency rivalry may also matter in election years with right-wing and centrist incumbents, but if so, then the diminishing effects are limited.

(Insert Figure 2 Here)

Robustness Analyses

These bivariate and multivariate results exhibit substantial robustness to reasonable changes in equation specification, estimation and sub-sampling. Though not reported here, we obtain results consistent with those reported in Columns 7 and 8 of Table 3 when: 1) rivalry as a simple count is replaced with an alternative competitive "intensity" measure based on number of competing firms and the size of the market;[7] 2) the scheme of individual and interaction effects are based on election year (*Election*), incumbent partisan orientation (*Rinc*) and agency rivalry level (*Numriv*) is replaced with a series of dummies based on alternative election-year scenarios with right-wing or centrist versus left-wing incumbent orientation and low versus high agency rivalry;[8] 3) re-estimation with ordered logit; and 4) sub-sampling that excludes observations after 1997, 1998 and 1999.[9] On the other hand, we note the sensitivity of our results to alternative sampling approaches. Most importantly, we note that extension of our sampling period beyond 2000 to 2001-2005 leads to election-

[7] This strategy follows Ang (2009) who divides market size by the number of competing firms and then takes the natural log to obtain a measure of (less) intensity. We take the GDP of country *i* in year *t* as a proxy for the size of the market. We divide that market size value by the number of agencies publishing ratings in year *t*. We take the natural log of this result and multiply this result by -1 so that a larger number indicates more competitive intensity. These results are available on request.

[8] This strategy follows Vaaler (2008), employs a similar dummy regression scheme to the assess the election-year investment behavior of foreign project investors in DCs. We define four 0-1 dummies corresponding to four election scenarios: 1) left-wing incumbent elections with 0-1 rival agencies; 2) left-wing incumbent elections with 2-4 rival agencies; 3) right-wing incumbent elections with 0-1 agencies; and 4) right-wing incumbent elections with 2-4 rival agencies. These results are available on request.

[9] Sub-sampling that excludes observations earlier than 1998 severely constrains variance in different election-year scenarios.

year rivalry effects that are no longer significant at commonly accepted levels of significance. We speculate that this change in results may follow from completion in December 2000 of consolidation trends within the business begun in the mid-1990s. From 2001-2006 only three (not six) agencies competed for sovereign rating business in DCs: Moody's, S&P and Fitch. Consolidation and multi-market contact among these three might temper many of the rivalry-related trends we observed from 1987-2000. Interestingly, the last two years have seen the entry of three new agencies vying for DC sovereign rating business: Canada's Dominion Bond Rating Services; Japan-Based Japan Credit Rating Agency Ltd.; and Japan-Based Rating and Investment Information, Inc (US SEC, 2007). Their entry may herald the return of rivalry effects on agency ratings absent from our analyses after 2000.

CONCLUDING DISCUSSION

Summary of Central Results

The goal of our study was to understand how two types of rivalry might matter for firm risk assessment. We think there was substantial progress toward that goal theoretically and empirically. We used PBC theory to understand why firms active in DCs might perceive greater risk related to lending and investment during election years when incentives to implement expansionary economic policies detrimental to post-election environments. We used perspectives on market rivalry from strategy and organizational theory to understand competitive dynamics among firms active in DCs might diminish or moderate risk perceptions tied to PBC considerations. We integrated this understanding into a single framework from which we derived and then tested two hypotheses about the individual and interactive effects on risk of both types of rivalry. Results from our analyses provide partial support for both hypotheses. Consistent with Hypothesis 1, we found statistically significant and practically substantial decrease in DC sovereign creditworthiness during election years when less investor-friendly left-wing incumbents face re-election and have incentives to electioneer with spending sprees to be paid for after re-election with contractionary policies and or higher inflation and financial instability. We also found partial support for Hypothesis 2a the moderating effects of agency rivalry during left-wing incumbent election years. Increasing rivalry could diminish, even fully negate the decrease in creditworthiness.

Implications for Research and Practice

We think these results have important implications for management research, practice and public policy. Our results refine and extend our understanding of electoral rivalry and risk for agencies, and we conjecture, other firms dealing with emerging DC political dynamics. Our results refine previous findings by Block and Vaaler (2004), who found that election years were associated with increased likelihood of credit downgrades. Elections may not themselves lead to increasing risk due to PBC-related incentives. The combination of elections *and* partisan political factors apparently heightens risk perceptions among foreign firms. In this regard, our work adds to a growing stream of PBC research in economics, management, political science and related social sciences all grappling with the nature of opportunistic and partisan economic policies and their impact on investment and growth. Our findings linked to electoral rivalry and agency ratings may also prompt more debate, particularly in political science, regarding the existence of an economic "democratic advantage" among DCs. Archer, Biglaiser and DeRouen (2007), for example, found that DCs with democratic regimes were not significantly more creditworthy among agencies than non-democratic DCs. Our findings build on this by suggesting that at least one distinct institutional factor associated with democracies, elections with competitive parties of differing partisan orientations, can prompt a negative reaction from agencies consistent with PBC considerations. There may yet be a longer-run democratic advantage to document in future empirical research on DC economic growth and investment. So far, however, that evidence is elusive while short-term democratic disadvantages are apparent, at least in the sovereign risk calculus of agencies.

Implications go beyond research and practice related to DC politics and international capital market players. That is because we showed that sovereign risk ratings may not develop in isolation from the competitive market in which so many sovereign risk-assessing firms operate. Our findings are consistent with the proposition that agencies look not only to DC sovereign "fundamentals" like external debt or transient DC sovereign risk effects like elections (with left-wing incumbents), but also to each other. In the context of temporarily heightened uncertainty, agencies may watch and respond to their rivals. They may limit the "pass-through" of PBC-related risks as we increase the number of rival agencies vying for rating

business from sovereign governments and sub-sovereign firms and individuals. This finding buttresses earlier results reported by McNamara and Vaaler (2000) and suggests that PBC-related risks are part of expected fluctuations in DC risk profiles. Agencies behave consistent with the view that elections and the PBC-related policy manipulations they engender are a normal part of doing business in DCs, at least since the late 1980s.

For managers, our findings reveal interesting insights about how and why expert risk-assessment firms like agencies might nonetheless skew their risk assessments temporarily. Decreasing creditworthiness during election years with left-wing incumbents may well represent a well-considered judgment under uncertainty that such incumbents will imperil government finances in the medium term just to buy votes and retain office in the short term. On the other hand, it is arguably ill-considered, even venal to moderate such assessments because rival agencies might steal an upcoming sovereign bond issue or rate a sub-sovereign bank during the same election period. Managers looking to agencies for objective advice on DC risk during election years might do well to rely less on these "experts" and more on their own internal risk assessment expertise. Vaaler and McNamara (2004) concluded that firms lending and investing in DCs ought to rely less on agency risk assessments during periods of crisis-induced turbulence because they tended to be unduly pessimistic, especially where agency rivalry for DC rating business was fierce. This time, we warn firms active in DCs to put less weight on agency ratings during institutionally-induced electoral uncertainties and the potential for unduly optimistic ratings when agency rivalry is high.

We think our results have relevance for public policy. Consider a DC finance minister mulling over these trends and thinking about how best to present government finances to agencies when sovereign ratings are up for review and there is an election looming. If the finance minister serves a left-wing government such as in Poland, Mexico, Venezuela and other DCs in the 1990s, then the finance minister may have new policy options to consider. Of course, government finances could be improved and sovereign creditworthiness upgraded if the finance minister, say, cut budget deficits or external debt. Yet, such austerity measures are rarely popular with citizens, particularly during an election year. As an alternative, the finance minister may decide that a little more competition for the next sovereign bond issue could also

increase the likelihood of an upgrade (or avoidance of a downgrade) during that same election year. Government initiative to encourage new ratings from agencies during election years would be consistent with the trends we observed, and could present DC governments with novel alternatives to austerity measures unpopular with the voting public.

Limitations and Future Research

We think our study has many strengths. It also has weaknesses. We have discussed several advantages associated with doing a study of rivalry and risk assessment in the context of agency ratings and DC democracies since the late 1980s. On the other hand, our findings may apply to this agency context only. Future research should address whether and how other expert risk assessors respond to the twin effects of electoral and market rivalry in DC settings. At least one other expert group seems promising: equity analysts forecasting returns for a growing number of DC-domiciled firms. As with agencies rating the credit profile of DC sovereigns, equity analysts forecasting DC-domiciled firm returns are making an assessment of the firm's overall investment attractiveness. They make these assessments for firms and for their potential investors. At any one time, there are often multiple analysts making such assessments. And research in finance and economics suggests that the number of such analysts and broader market trends matter individually and interactively for individual analyst forecasts (*e.g.*, Hong, Kubik and Solomon, 2000). Future research should broaden the scope of inquiry to see how analysts and other experts such as lawyers, accountants and consultants, respond to DC electoral risks and to each other.

We think future research can and must be more avowedly interdisciplinary to be effective. Our study highlights the value of using a strategic management perspective to think about electoral phenomena that, until recently, had been the research province of economists and political scientists. Our study also highlights the importance of using PBC theoretical insights developed in economics and political science to think contingently and interactively about how firm rivalry might affect firm risk assessment at times when such assessments may be more important because the times are environment is more prone to change. Management scholars such as Henisz and Zelner (2003) and Vaaler (2008) have advanced this point and encouraged more paper presentations and journal submissions in international relations and political

economy academic meetings and journals. It is unclear who from economics and political science may come forward to advocate for greater interest in strategic management perspectives. Whoever does will almost certainly find an eager audience ready to read and learn from their research published in top-tier strategic management and international business journals.

References

Abrahamson E, Rosenkopf L. 1993. Institutional and competitive bandwagons: Using mathematical modeling as a tool to explore innovation diffusion. *Academy of Management Review* **18**: 487-517.

Alesina A. 1987. Macroeconomic policy in a two-party system as a repeated game. *Quarterly Journal of Economics* **102**: 651-78.

Ames B. 1987. *Political survival: Politicians and public policy in Latin America*. Berkeley, CA: University of California Press

Ang S. 2008. Competitive intensity and collaboration: Impact on firm growth across technological environments. *Strategic Management Journal* **29**: 1057-1075.

Archer C, Biglaiser G, DeRouen K. 2007. Sovereign bonds and the democratic advantage: Does regime type affect credit rating agency ratings in the developint world? *International Organization* **61**: 341-365.

Beck T, Clarke G, Groff A, Keefer P. and Walsh P.2001. New tools and new tests in comparative political economy: The database of political institutions. *World Bank Economic Review* **15**: 165-76.

Block S. 2002.Political business cycles, democratization, and economic reform: The case of Africa. *Journal of Development Economics* **67**: 205-228.

Block S, Vaaler P. 2004. The price of democracy: Sovereign risk ratings, bond spreads and political business cycles in developing countries. *Journal of International Money and Finance* **23**: 917-946.

Blommestein H, Santiso, J. 2007. New strategies for emerging domestic sovereign bond markets in the global financial landscape. *Global Economy Journal* **7**(2): 1-55.

Bloomberg. 2008. Bloomberg on-line data services. New York, NY: Bloomberg International.

Cantor R, Packer, F. 1996. Determinants and impacts of sovereign credit ratings. *Federal Reserve Bank of New York Economic Policy Review* **19**: 37-53.

Crouhy M, Galai D, Mark R. 2001. The new capital adequacy framework and the need for consistent risk measures for financial institutions. In L. Jacque and P. Vaaler (eds.), *Financial Institutions and the Welfare of Nations*. Norwell, MA: Kluwer Academic Publishers 61-86.

Davidson W. 1980. The location of foreign direct investment activity: Country characteristics and experience effects. *Journal of International Business Studies* **11**, Fall: 9-22.

DPI. 2005. *Database of political institutions* (version 4)**.** Washington, DC: World Bank

Fershtman C, Muller, E. 1986. Capital investments and price agreements in semi-collusive markets. *Rand Journal of Economics* **17**: 214-226.

Fiol M, Lyles, M. 1985. Organizational learning. *Academy of Management Review* **10**: 803-813.

Freedom House. 2006. Country Rankings of Political Rights and Civil Liberties. New York, NY: Freedom House.

Goldsmith A. 1994. Political freedom and the business climate: Outlook for development in newly democratizing states. *Social Science Quarterly* **75**: 115-124.

Henisz W. 2000. The institutional environment for multinational investment. *The Journal of Law, Economics and Organization* **16**: 334-364.

Heinisz W, Delios A. 2001. Uncertainty, imitation, and plant location: Japanese multinational corporations, 1990-1996. *Administrative Science Quarterly* **46**: 443-475.

Heinisz W, Zelner B. 2003. The strategic organization of political risks and opportunities. *Strategic Organization* **4**: 451-460.

Hibbs D. 1977. Political parties and macroeconomic policy. *American Political Science Review* **71**: 467-87.

Hong H, Kubik J, Solomon A. 2000. Security analysts' career concerns and herding of earnings forecasts. *Rand Journal of Economics* **31**: 121-144.

IFES. 2006. *Election guide*. International Foundation for Election Systems. Washington, DC: IFES.

IMF. 2005. Emerging market financing. *Quarterly Report on Developments and Prospects*. August 15 Issue. Washington, DC: International Monetary Fund.

Kaminsky G, Schmukler S. 2001. Emerging market instability: Do sovereign ratings affect country risk and stock returns? *World Bank Economic Review* **16**: 171-195.

Kobrin S. 1979. Political risk: A review and reconsideration. *Journal of International Business Studies* **10**: 67-80.

Kobrin S. 1987. Testing the bargaining hypothesis in the manufacturing sector in developing countries. *International Organization* **41**: 609-638.

Larrian G, Reisen H, von Maltzen, J. 1997. Emerging market risk and sovereign credit ratings. OECD Development Centre Technical Papers No. 124. Paris: Organization for Economic Cooperation and Development.

Leblang D. 2002. The Political Economy of Speculative Attacks in the Developing World. *International Studies Quarterly* **46**: 69-91.

Lyles M. 1995. The impact of organizational learning on joint venture formations. *International Business Review* **3**: 459-467.

March J. 1988. *Decisions and organizations*. New York, NY: Basil Blackwell.

Martinez J, Santiso J. 2003. Financial markets and politics: The confidence game in Latin American emerging countries. *International Political Science Review* **24**: 363-395.

McNamara G, Bromiley P. 1997. Decision making in an organizational settting: Cognitive and organizational influences on risk assessment in commercial lending. *Academy of Management Journal* **40**: 1063-1088.

McNamara G, Bromiley P. 1999. Risk and return in organizational decision making. *Academy of Management Journal* **42**: 330-339.

McNamara G, Moon H, Bromiley P. 2002. Banking on commitment: Intended and unintended consequences of an organization's attempt to attenuate escalation of commitment. *Academy of Management Journal* **45**: 443-452.

McNamara G, Vaaler P. 2000. Competitive positioning and rivalry in emerging market risk assessment. *Journal of International Business Studies* **31**: 337-347.

Nordhaus W. 1975. The political business cycle. *Review of Economic Studies* **42**: 169-90.

Porter M. 1980. *Competitive strategy*. New York, NY: Free Press.

Remmer K. 1993. The political economy of elections in Latin America. *American Political Science Review* **87**: 393-407.

S&P. 1999-2000. *Standard & poor's ratings services credit week* (Various Issues).

Santiso J. 2003. *The political economy of emerging markets: Actors, institutions and financial crises in Latin America*. New York, NY: MacMillan.

Schuknecht L. 1996. Political business cycles and fiscal policies in developing countries. *Kyklos* **49**: 155-170.

Schuknecht L. 1999. Fiscal policy cycles and exchange rate regime in developing countries. *European Journal of Political Economy* **15**: 569-580.

Schuknecht L. 2000. Fiscal policy cycles and public expenditure in developing countries. *Public Choice* **102**: 113-128.

Sharma A. 1997. Professional as agent: Knowledge asymmetry in agency exchange. *Academy of Management Review* **22**: 758-798.

Sinclair T. 1995. *Guarding the gates of capital: Credit rating processes and the global political economy.* Unpublished doctoral dissertation. North York, Ontario, Canada: York University.

StataCorp. 2007. *Stata statistical software: Release 10.0*. College Station, TX: Stata Corporation.

US SEC. 2003. Concept release: Rating agencies and the use of credit ratings under the federal securities laws. US Securities and Exchange Commission [Release Nos. 33-8236; 34-47972; IC-26066; File No. S7-12-03] RIN 3235-AH28. June 4. Washington, DC: Securities and Exchange Commission. Available electronically on February 28, 2009 at: http://www.sec.gov/rules/concept/33-8236.htm.

US SEC. 2007. Seven credit rating agencies register with SEC as nationally recognized statistical rating organizations. [Release No. 2007-199] September 27. Washington, DC: Securities and Exchange Commission. Available electronically on February 28, 2009 at: http://www.sec.gov/news/press/2007/2007-199.htm.

Vaaler P. 2008. How do mncs vote in developing country elections? *Academy of Management Journal* **51**: 21-44

Vaaler P, Schrage B, Block S. 2005. Counting the investor vote: Political business cycle effects on sovereign bond spreads in developing countries. *Journal of International Business Studies* **36**: 62-88.

Vaaler P, Schrage B, Block S. 2006. Elections, opportunism, partisanship and sovereign ratings in developing countries. *Review of Development Economics* **10**: 154-170.

Vaaler P, McNamara G. 2004. Crisis and competition in expert organizational decision making: Credit-rating agencies and their response to turbulence in emerging economies. *Organization Science* **15**: 687-703.

White L. 2001. The credit rating industry: An industrial organization analysis. Paper Presented at World Bank Group Conference on The Role of Credit Reporting Systems in the International Economy, March 1-2, Washington, DC: World Bank.

World Bank. 2006. World Development Indicators. Washington, DC: World Bank.

TABLE 1

Agency Letter Ratings, Grades, Numerical Equivalents, and Interpretations

Moody's	S&P and Other NRSROs	Grade	Numerical Equivalent on 0-16 Scale	Common Interpretation
Aaa	AAA	Investment	16	Extremely strong capacity to meet its financial commitments.
Aa1	AA+		15	
Aa2	AA	Investment	14	Very strong capacity to meet its financial commitments.
Aa3	AA-		13	
A1	A+		12	
A2	A	Investment	11	Adequate capacity to meet its financial commitments.
A3	A-		10	
Baa1	BBB+		9	
Baa2	BBB	Investment	8	Less vulnerable than lower rated obligors but facing adverse conditions which could lead to obligor's inadequate capacity to meet its financial commitments.
Baa3	BBB-		7	
Ba1	BB+	Speculative (Junk)	6	More vulnerable than the obligors rated above. Obligor currently has the capacity to meet its financial commitments but adverse conditions will likely impair this capacity.
Ba2	BB		5	
Ba3	BB-		4	
B1	B+		3	
B2	B	Speculative (Junk)	2	Currently vulnerable and dependent on favorable conditions to meet its financial commitments.
B3	B-		1	
C	C		0	

FIGURE 1

Integrative Theoretical Framework: Impact of Elections and Rivalry on Agency Ratings

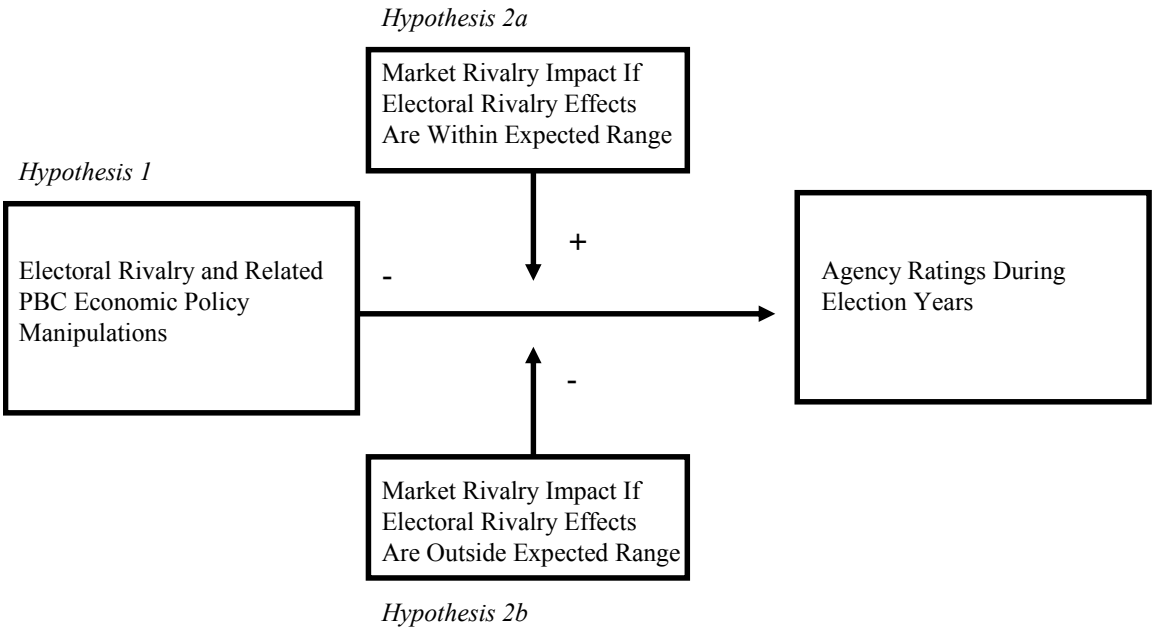

TABLE 2

Descriptive Statistics and Pair-wise Correlations

Variable	Mean	Std. Dev.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Agency Rating	5.40	2.85																			
2. Current Account Balance	-0.18	0.04	-.05																		
3. GDP Per Capita	3.97	2.52	.41	.02																	
4. GDP Growth Rate	3.33	3.36	.54	-.21	.24																
5. Inflation Rate	0.82	3.11	-.25	.12	-.08	-.12															
6. Fiscal Balance	-1.67	2.76	.34	.04	.14	.33	-.31														
7. External Debt	0.44	0.22	-.51	.14	-.58	-.41	-.01	.12													
8. Total Reserves	5.17	2.45	-.11	.00	-.06	-.00	.08	-.05	.15												
9. Domestic Credit	42.60	26.49	.34	.10	.10	.10	.06	-.14	.32	-.34											
10. Contract Intensive Money	0.89	0.05	.22	.16	.06	.05	-.03	-.14	-.16	-.02	.62										
11. Population	17.38	1.06	-.10	.08	-.11	.02	.16	-.21	-.01	-.26	.13	.13									
12. Recent Default	0.10	0.30	-.32	.18	-.10	-.14	.09	-.00	.12	.23	-.20	-.18	-.20								
13. Lack of Civil Liberties	3.12	0.96	-.23	-.01	-.39	-.00	.03	-.07	.19	-.09	-.26	-.13	.56	.00							
14. Election Year	0.21	0.41	-.09	-.08	.06	-.14	.08	-.13	.00	.00	-.01	.02	.01	-.00	-.03						
15. Right/Center Incumbent Party	0.72	0.45	.00	-.07	.13	.06	.12	.02	.06	.32	-.09	-.09	-.14	.00	.14	-.02					
16. Rivalry	2.70	1.24	.14	-.05	.27	-.08	-.18	.03	-.16	.08	.12	.20	.16	-.16	-.12	-.00	-.04				
17. Election*Right/Center	0.15	0.35	-.10	-.05	.09	-.14	.12	-.14	.03	.08	-.03	.00	.01	-.01	.01	.81	.26	.07			
18. Right/Center*Rivalry	1.95	1.61	.08	-.07	.28	-.00	-.04	.05	.02	.41	-.05	.05	-.05	-.10	.02	.04	.75	.53	.26		
19. Election*Rivalry	0.57	1.25	-.09	-.04	.13	-.18	.04	-.10	-.01	.01	.04	.04	.08	.01	-.01	.89	.04	.21	.79	.20	
20. Election*Right/Center*Rivalry	0.43	1.15	-.11	-.03	.14	-.18	.07	-.12	.05	.08	-.03	.02	.05	.01	.02	.74	.23	.23	.91	.36	.88

N = 458; if $r \geq |0.12|$, then $p \leq 0.01$; if $r \geq |0.10|$, then $p \leq 0.05$; if $r \geq |0.08|$, then $p \leq 0.10$

TABLE 3

Regression Analysis Results: Impact of Electoral and Market Rivalry on Agency Ratings

Estimators → / Variables ↓	(1) GLS	(2) Ordered Probit	(3) GLS	(4) Ordered Probit	(5) GLS	(6) Ordered Probit	(7) GLS	(8) Ordered Probit
Constant (α)	5.65 (14.53)		4.25 (14.46)		4.53 (12.67)		4.17 (12.87)	
Current Account Balance (η_1)	0.76 (2.77)	2.71 (1.89)	0.20 (2.74)	2.24 (1.91)	-0.32 (2.43)	1.72 (1.42)	-1.05 (2.59)	1.20 (1.85)
GDP Per Capita (η_2)	0.09 (0.17)	0.09 (0.15)	0.11 (0.17)	0.11 (0.15)	0.09 (0.14)	0.09 (0.13)	0.07 (0.10)	0.07 (0.10)
GDP Growth Rate (η_3)	0.17** (0.02)	0.15** (0.03)	0.17** (0.02)	0.15** (0.03)	0.17** (0.03)	0.15** (0.03)	0.17 (0.03)	0.15** (0.03)
Inflation Rate (η_4)	-0.07* (0.02)	-0.07** (0.02)	-0.07* (0.02)	-0.07** (0.02)	-0.07* (0.02)	-0.07** (0.02)	-0.06* (0.02)	-0.06** (0.02)
Fiscal Balance (η_5)	0.05 (0.03)	0.06** (0.02)	0.04 (0.03)	0.06* (0.02)	0.05 (0.04)	0.07† (0.04)	0.04 (0.04)	0.06 (0.03)
External Debt (η_6)	-2.75† (1.05)	-3.63** (1.05)	-2.46† (1.05)	-3.44** (1.07)	-2.68† (1.18)	-3.72** (1.16)	-2.71 (1.38)	-3.79** (1.26)
Total Reserves (η_7)	-0.21† (0.08)	-0.18** (0.05)	-0.23* (0.08)	-0.20** (0.05)	-0.23* (0.08)	-0.20** (0.05)	-0.25† (0.10)	-0.22** (0.07)
Domestic Credit (η_8)	0.03** (0.00)	0.03** (0.00)	0.03** (0.00)	0.03** (0.00)	0.03** (0.00)	0.03** (0.00)	0.03** (0.00)	0.03** (0.00)
Contract Intensive Money (η_9)	8.73** (1.38)	7.69** (1.59)	8.82** (1.22)	7.80** (1.40)	9.70* (2.85)	8.80** (2.93)	11.23** (2.50)	10.03** (2.50)
Population (η_{10})	-0.51 (0.90)	-1.00 (0.85)	-0.45 (0.88)	-0.98 (0.83)	-0.48 (0.81)	-1.02 (0.79)	-0.50 (0.77)	-1.06 (0.78)
Recent Default (η_{11})	-0.81** (0.15)	-0.81** (0.16)	-0.78 (0.14)	-0.80** (0.15)	-0.74* (0.27)	-0.76** (0.26)	-0.71 (0.19)	-0.75** (0.19)
Lack of Civil Liberties (η_{12})	0.75** (0.11)	0.51** (0.07)	0.77** (0.11)	0.53** (0.07)	0.74** (0.79)	0.50** (0.04)	0.72** (0.11)	0.48** (0.06)
Election Year (*Election*) (β_1)			-0.32† (0.14)	-0.27* (0.12)	-0.49† (0.21)	-0.47** (0.17)	-1.43† (0.55)	-1.25* (0.48)
Right/Center Incumbent Party (*Rinc*) (β_2)					-0.30 (0.53)	-0.33 (0.42)	-0.57 (0.56)	-0.50 (0.40)
Election*Right/Center (*Election*Rinc*) (β_3)					0.25 (0.17)	0.29* (0.13)	1.37 (0.92)	1.13 (0.75)
Rivalry (*Numriv*) (β_4)							-0.00 (0.10)	0.02 (0.10)
Election* Rivalry (*Election*Numriv*) (β_5)							0.39† (0.19)	0.33* (0.16)
Right/Center*Rivalry (*Rinc*Numriv*) (β_6)							0.05 (0.10)	0.02 (0.08)
Election*Right/Center*Rivalry (*Election*Rinc*Numriv*) (β_7)							-0.45 (0.32)	-0.35 (0.26)
N	458	458	458	458	458	458	458	458
R^2 (Pseudo R^2)	0.83	(0.36)	0.83	(0.36)	0.83	(0.36)		(0.36)

** p ≤ 0.01, * p ≤ 0.05, † p ≤ 0.10

All estimations include robust standard errors clustered on agency. Country (γ) and year (ξ) fixed effects included in all estimations but not reported. These results are available on request.

FIGURE 2

Lowess Results: Impact of Electoral and Market Rivalry on Agency Ratings