How and Why Credit Assessors “Get it Wrong” when Judging the Risk of Borrowers:
Past and Present Evidence at Home and Abroad

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Abstract

In this chapter, we question the quality of “objective” economic models of credit risk assessment commonly used to explain any number of lending decisions from local bank loans to global bond offerings. We elaborate on these points in two parts. In the first part, we summarize a decade of research on bias in credit risk and lending decisions using alternative behavioral and political decision-making models. We show how individual, organizational, and industry factors consistent with behavioral and political models explain statistically significant and practically substantial distortions in credit assessment in a variety of domestic and international contexts. The second part of this chapter presents recent research combining insights from both behavioral and political models of risk and decision making in an international context. We develop and test an integrated theoretical framework for understanding how two forms of rivalry shape credit risk assessments by firms active in developing countries (“DCs”). One form of rivalry relates to DC electoral politics and their impact on firms making assessments of DC sovereign government creditworthiness. The other relates to firm rivalry for market share in DC sovereign government ratings. We propose that both matter for assessing overall DC sovereign government creditworthiness during election years. We analyze 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) consistent with political models of credit risk, sovereign government ratings decrease during election years in DCs with left-wing incumbents; 2) but consistent with behavioral models of credit risk, this negative electoral rivalry effect on sovereign government ratings 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 in the political realm. We conclude with a summary of key findings and their implications for research, policy and practice related to prudential credit assessment. Now, more than ever, we need to understand how and why credit assessors “get it wrong” at home and abroad, and how we can nudge their behavior toward better assessments in the future.

Keywords: creditworthiness, risk, bias, rivalry
1. INTRODUCTION

Almost any lending transaction requires adroit credit assessment. Before making a loan, the neighborhood banker, mortgage wholesaler, international aid agency and sovereign bondholder all need to understand how likely a borrower is to default. Getting that credit assessment right means that sufficient capital flows at reasonable prices to small businesses in the neighborhood, to prime and sub-prime home-owners across the country, and to governments and businesses around the world. It enhances bank profitability, financial sector stability, and national as well as global economic growth and development.

On the surface, pin-point credit assessment ought to be easy at home and abroad. In the United States, for example, thousands of banks compete for hundreds of thousands of potential loan transactions annually. For U.S. and international lenders, there are secondary markets pricing and trading on a daily basis repackaged loans in the form of bonds worth billions of US dollars. There are global credit rating agencies, public regulators and other financial market experts regularly publishing detailed information about the creditworthiness of borrowing firms, governments, and even high net-worth individuals. It is not surprising that casual observers of financial markets as well as informed public policy-makers and academic researchers typically assume that this mix of market and expert information assures accurate credit assessment, or at least, deters any systematic bias.

More than a decade of individual and joint research has made us skeptics about such assurances. That research history has suggested to us how and why systematic bias in credit assessment may develop in individuals, organizations and industries. We think that theoretical models and empirical evidence from our research have implications for any number of current issues in credit assessment, including miscues in credit assessment contributing to the current “sub-prime” mortgage crisis in the U.S., as well as apparent bias in sovereign risk assessment in developing countries (DCs) since the late 1980s.

We elaborate on these points in two parts below. In the first part of this chapter, we summarize a decade of individual and joint research on credit risk and lending based on behavioral and political rather than “objective” economic models alone. As part of this summary, we show how individual,
organizational, and broader competitive, even institutional factors consistent with behavioral and political explanations of risk and decision-making can significantly and substantially distort credit assessment in a variety of contexts. These factors provide important guidance on how lenders can “get it wrong” in their assessments of borrowers, whether they be local borrowers coming to the neighborhood bank for a mortgage or sovereign governments coming to global capital markets with a bond to finance infrastructure investment.

In the second part of this chapter, we present current research combining insights from both behavioral and political models of risk and decision-making in an international context. We develop and test an integrated theoretical framework for understanding how two forms of rivalry shape risk assessments by firms active in DCs. One form of rivalry relates to DC electoral politics and their impact on firms making sovereign government credit assessments. The other relates to firm rivalry for market share in rating DC sovereign bond issuances. We propose that both matter for assessing the creditworthiness of DC sovereigns during election years. With a sample of 458 ratings of 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) consistent with political models of credit risk, agency ratings decrease during election years in DCs with left-wing incumbents; but 2) consistent with behavioral models of credit risk, 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 in the political realm.

We conclude this chapter with a summary of key findings and their implications for research, policy and practice related to prudential credit assessment. Now, more than ever, we need to understand how and why credit assessors can “get it wrong” at home and abroad, and how we can nudge their behavior toward better assessments benefiting all players in a financial system.
2. BEHAVIORAL AND POLITICAL FACTORS SHAPING CREDIT RISK

How do behavioral and political factors enter the credit risk assessments? How do they skew otherwise “objective” processes of risk assessment and lead decision-makers to “get it wrong” when considering a loan to homeowners and businesses across the street, or when considering a loan to DCs across the globe? In answering that question, we also summarize a decade of our own research addressing questions of risk and credit assessment by individuals, organizations and broader industry contexts where they each operate.

2.1. Past Research on Behavioral Factors Affecting Credit Risk

Behavioral decision research has discussed at great length how cognitive limitations cause decision makers to use heuristics in assessing decision situations and making choices (e.g., Kahneman & Tversky, 1979). Heuristics simplify decision making for individuals. They decrease the likelihood that individuals will be overwhelmed by decision complexity. But they can also lead to predictable biases in individual decision making. As we shall see below, research on managerial decision making in firms demonstrates that heuristics simplify but also increase the likelihood of introducing bias. The bulk of this research has been conducted in experimental settings where the decision making environment does not include organizational or competitive pressures. These omissions leave unanswered questions about how such pressures might matter in the “real world” (Schwartz, 1994). Rather than being in an isolated decision setting, decision makers responsible for assessing the risk of borrowers are situated in organizations, which, in turn, are situated in a broader industry environment. Factors at each of these levels are likely to influence decisions about how risky a potential borrower is and how much credit to extend. In a series of studies looking at risk-related decision making in organizational settings, we have directly examined how individual, organizational, and competitive factors interact to influence risk assessments made by experts. The findings of these studies are summarized in Table 1.

(Insert Table 1 Here)
Consider the role of decision making heuristics on individuals involved in a lending transaction. In studies of commercial lending decisions at Norwest (now Wells Fargo) Bank, McNamara and Bromiley (1997) found evidence of two specific decision making heuristics leading to biased risk assessments in lending officers. They found that the excitement associated with the industries led lending officers to underestimate the risk of those borrowers while overestimating the risk associated with borrowers whose industries were seen as less exciting. Lending officers described themselves as being conservative and as preferring more predictable “metal-bending” industries. Yet, in qualitative interviews, they fell prey to what Shiller (1984) might describe as a “fads and fashions” bias. They would offer overly positive risk assessments on loans to borrowers from exciting industries. This suggests that decision makers are vulnerable to biases related to psychological benefits. Individual lenders can get a thrill from being associated with exciting industries through a loan.

Individual decision makers exhibit another form of bias when they increase investment to failing courses of action. McNamara, Moon and Bromiley (2002) documented such escalation of commitment bias, particularly when organizational pressures to lend increased. With escalation of commitment to borrowers, lending officers underestimated their risk of failure. Again, decision makers can fall prey to biases related to psychological benefits. By not admitting a poor initial credit assessment, decision makers avoid cognitive and professional stresses. Policies designed to mitigate escalation of commitment bias can actually exacerbate the problem. Norwest Bank thought they could mitigate the effects of this bias by implementing policies that give lending officers greater discretion to gauge risk at the beginning of a loan’s life and less as the loan matured. More objective statistical assessments rather than lending officer intuition would confirm or reject the initial risk assessment over time. Supposedly, this policy would stop escalation of commitment by the lending officer. McNamara and his colleagues found, however, that such policies encouraged lenders to underestimate initial risk at the creation of the loan, thus leading to less oversight during the loan’s life. The bank escalated commitment in the form of additional debt financing, even as the quality of the loan deteriorated. These results confirmed previous work by Kirby and Davis (1998) and Staw, Barsade and Koput (1997).
Not just individual, but also organizational factors can lead to predictable biases in risk assessment. In yet another Norwest Bank study, McNamara and Bromiley (1999) found that organizational goals to grow a loan portfolio led decision makers to underestimate risk associated with new and larger borrowers. This bias occurred even when loan officers were not compensated for portfolio growth. They also found that organizational standardization of the decision process led decision makers to focus on a narrower range of quantitative decision criteria, ironically leading to an increased likelihood in error in risk assessment. This finding was confirmed in previous research by Sutcliffe and McNamara (2001). They concluded that standardization of decision making led to “blind-spots” in borrower evaluation.

Studies of the major credit rating agencies by McNamara and Vaaler (2000, 2004) uncovered other behavioral factors leading to bias, this time related to the industry in which the decision makers operated. Major credit rating agencies (agencies) assess the willingness and capability of borrowers to meet their financial obligations. Sovereign governments represent one important group of borrowers seeking agency ratings. When assessing the risk of DC sovereign governments in Latin America, Central and Eastern Europe, Africa and the Middle East and Asia, McNamara and Vaaler (2000) uncovered bias related to the industry positioning of a rater. Agencies with years of experience rating sovereign governments provided perceived less credit risk and published higher credit ratings than agencies new to such borrowers. This finding is consistent with incumbent agencies enjoying greater legitimacy. They have more latitude to offer favorable assessments without second-guessing by other industry players. With sovereign governments, industry positioning might have geographic dimensions and biases. Indeed, McNamara and Vaaler (2000) also found that agencies specializing in sovereign government ratings from a particular geographic region (e.g., Central and Eastern Europe) perceived lower credit risk and published higher ratings in that region compared to agencies lacking such regional specialization.

Yet another industry-level factor relates to bias in decision making by agencies assessing DC sovereign governments. Competition in the industry, particularly within individual national segments of the industry led to bias in credit assessment. Although agencies tout the objectivity of their risk assessments, competition for business with a particular sovereign government apparently changes such
assessments. Among agencies new to the industry, heightened rivalry with other agencies led to perceptions of less risk and higher published creditworthiness. When there is little or no rivalry for rating business, DC sovereigns received ratings indicative of greater credit risk. Industry competition, like industry incumbency and regional specialization, all appear to induce bias in decision making about credit risks.

Individuals, organizations and even industries operate in a broader institutional environment that occasionally experiences shocks. Consider, for example, the shock of financial crisis hitting much of Asia in 1997 and then Eastern Europe and Latin America in 1998. Did the shock of crisis induce bias? For agencies rating DC sovereign governments during that period, Vaaler and McNamara (2004) show that the answer is almost certainly yes. With the onset of crisis, agencies swiftly downgraded credit ratings for DC sovereign governments in Asian and, to a lesser extent, other geographic regions (Vaaler & McNamara, 2004). It is ironic that these supposedly objective agencies, so critical to the maintenance of orderly financial markets, apparently lost objectivity in a time of crisis. Some of the most dramatic downgrades came from incumbent agencies, agencies specializing in specific geographic regions, and agencies facing many rivals in a given market segment. Industry positioning factors that once prompted greater optimism among agencies during periods of growth and stability turned into factors prompting greater pessimism. Bias in decision making about credit risk can snap back and forth.

Together, these findings suggest that credit assessment and lending decisions can deviate significantly and substantially from objective assessments of risk for a myriad of behavioral factors at the individual, organization and industry level of analysis. Such factors can lead lenders to “get it wrong” when making a loan to a local business in the US or a DC sovereign government overseas. And expertise in credit assessment does not immunize decision makers against bias.

2.2. Past Research on Political Factors Affecting Credit Risk

A second set of political factors may also matter significantly and substantially in decisions about credit risk. In our research, political factors of interest derive from political business cycle (PBC) models
explaining links between electoral dynamics and economic policy distortions affecting overall country attractiveness for lending. Management research has only recently discovered PBC models developed 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, even if those policies require post-election contractions or defaults detrimental to long-term economic growth. Hibbs (1977) developed the first partisan PBC model based on alternative emphases in incumbent policies during election years: right-wing incumbents emphasized reduction of inflation at the expense of employment; left-wing incumbents emphasized reduction in unemployment at the expense of containing inflation. Others have since expanded that notion of partisan PBC differences in policies to right-wing preference for investor interests and left-wing preference for worker interests (e.g., Block & Vaaler, 2004). Evidence of opportunistic and partisan PBC effects in industrialized countries is mixed, but a recent stream of empirical work focusing on DCs indicates strong support for their importance in shaping credit and investment assessments by a range of private financial actors. These models and results highlight the importance of political factors shaping credit risk and lending decisions as summarized in Table 2.

(Insert Table 2 Here)

Block and Vaaler (2004) may have been the first to note how election-year politics can skew decision making about credit risk. After controlling for other factors influencing agency assessments of credit risk for DC sovereign governments, they found that election years led to credit downgrades. Similarly, bond values decreased after elections, also indicative of greater credit risk among DC sovereign governments. Trends in agency ratings and bond values were consistent with opportunistic PBC considerations linking elections to the prospect of expansionary economic policies designed by incumbents to obtain voter support even if such policies were also detrimental to post-election economic growth and sovereign government creditworthiness.
Vaaler, Schrage and Block (2005) built on Block and Vaaler’s (2004) insights about bond values and elections. They found that election effects on bond values had partisan dimensions. In the run-up to DC presidential elections during the 1990s, bonds issued by DC sovereign governments increased in value as the likelihood of a left-wing incumbent’s defeat by a more investor-friendly right-wing challenger increased. Bond values fell, however, as the likelihood of right-wing incumbent defeat increased. In a companion study, they also found that agency credit ratings for DC sovereign governments varied with the partisan outcome of DC presidential elections. (Vaaler, Schrage & Block, 2006). Credit upgrades followed more frequently when left-wing incumbents were likely to lose to right-wing challengers and vice versa.

Finally, Vaaler (2008) extended the domain of this research further with a PBC-motivated framework to explain the election-period behavior of multinational corporations (“MNCs”) taking decisions to invest, lend and actively manage large (+$500 Million) infrastructure projects in DCs. Analyses of 408 MNC projects worth $199 billion in 18 DCs holding 35 presidential elections from 1987-2000 are consistent with PBC framework considerations: MNCs perceive higher (lower) risk and announce fewer (more) projects to participate in as right-wing (left-wing) incumbents appear more likely to be replaced by left-wing (right-wing) challengers. The findings suggest that even “long-term” players taking hard-to-reverse decisions about project lending and investment exhibit sensitivity to changes in risk related to short-term political factors.

Brief review of these factors in political models of credit risk echo earlier points made about individual, organizational and industry factors familiar to behavioral models of credit risk. Both add significantly and substantially to objective economic models of risk assessment and decision-making about whether to loan, how much to loan and at what price. Like behavioral factors, political factors can lead credit assessors to change their assessment from what the fundamentals would otherwise suggest. If these political factors are not included, then “expert” credit assessors can once again “get it wrong” by over- or under-estimating the creditworthiness of borrowers.
3. COMBINING BEHAVIORAL AND POLITICAL FACTORS IN CREDIT RISK

With this past evidence as context, we present new evidence highlighting the importance of analyzing behavioral and political model factors individually and jointly in credit assessments. To demonstrate this point, we turn again to rating agencies and their assessments of DC sovereign government credit risk. Consistent with political models and evidence (Block & Vaaler, 2004; Vaaler et al., 2006), we investigate the impact of electoral rivalry among politicians on rating agency credit assessments. Consistent with behavioral models and evidence (McNamara & Vaaler, 2000; Vaaler & McNamara, 2004), we also investigate the impact of rivalry among the raters in a given DC market. Unique to this study, we also investigate the interactive impact of these two rivalry factors. We ask whether the negative impact on DC sovereign government credit ratings typically prompted by elections and PBC considerations are moderated by rivalry among the agencies themselves.

Our previous research on credit risk suggests alternative answers to that question. When economic trends such as consumer price inflation or economic growth fluctuate slightly or even moderately to increase overall country risk, then rivalry among firms may diminish perceived credit 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 the financial crisis of the late 1997-1998. 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 credit ratings, increasing rivalry for sovereign government rating business may diminish the impact of slight to moderate increases in risk, but magnify the impact of unexpected and substantial risk increases.

We examine support for these two alternative answers with a sample of 458 agency ratings for 18 DC sovereign governments holding 35 presidential elections from 1987-2000. Analytical results confirm and extend previous 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 orientation. Election years with left-wing incumbent parties in power see a decrease in agency credit ratings of the sovereign government 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 a framework explained below, 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 sovereign government 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 for rating business in DCs apparently negate underlying rating tendencies tied to elections and PBC incentives.

3.1. The Empirical Context of This Study

3.1.1. What Agencies Do. Brief explanation of the services provided by rating agencies provides helpful additional context to this study combining political and behavioral factors skewing credit risk assessment in DCs. Agencies provide advice and certify the creditworthiness of DC borrowers, including sovereign government borrowers, to foreign lenders. As Sinclair (1995), White (2001), Vaaler and McNamara (2004), Schwarcz (2008) and others have noted, agencies play a crucial role in helping lenders with capital determine the creditworthiness of borrowers seeking loans both before and after money changes hands. Agencies bridge informational gaps and help lenders clear the fog of asymmetric information that may surround a firm, government or individual seeking a loan. If informational gaps still exist after investigation of a prospective borrower, then agency ratings act as a certification of some base level of creditworthiness. 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. The stakeholders include banks, firms, funds and other individuals with capital to loan. These lenders are typically from Western Europe and North America.

The key information that agencies provide these market participants relates to the ability and willingness of borrowers to meet their financial obligations (S&P, 1997). That key information is summarized in ordinal letter-rankings, typically running from “AAA” (16), signifying the most creditworthy borrowers, to “AA+” (15), “AA” (14), “AA-” (13) and so forth, to “B-” (1) signifying rather risky borrowers. The ordinal scale may also expand to 17 levels with the inclusion of a “C” (0) rating. As Table 3 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 obligations in foreseeable future scenarios from “junk (non-investment grade)” borrowers unlikely to meet the same obligations. Cantor and Packer (1996), Larrian, Reisen and Von Maltzen (1997), Kaminsky and Schmukler (2001) and others demonstrate empirically that sovereign government bond values in secondary trading markets correlate closely with sovereign government ratings. If sovereign governments 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 3 Here)

3.1.2. Sovereign Rating Processes. Like other borrowers, governments seek ratings, in part, to give lenders a better idea of their creditworthiness, thereby easing capital market access. Many lenders, particularly U.S.-based institutional lenders, prefer rated organizations and securities to their unrated counterparts, especially when critical information regarding the creditworthiness of the borrower is less transparent, as with DCs. A sovereign government credit rating sets a “ceiling” on other sub-sovereign credit ratings 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 government 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.

Vaaler and McNamara (2004) provide a recent description of the rating process for sovereign governments. Ratings happen most often because potential borrowers request it. On occasions, however, agencies will publish an unsolicited rating. For example, it may be necessary to publish an unsolicited sovereign government credit rating to set a ceiling for other ratings solicited by sub-sovereign entities.

The initial sovereign government rating process can last several weeks or even months. A team of from three to seven analysts typically begins by reviewing a broad range of data on the sovereign government and its country both from the agency’s home office and in the field. Team members frequently interview government officials, business executives and other individuals for an overview of credit risk factors. A preliminary report on the sovereign borrower along with a prospective rating from the team is forwarded to a rating review committee back at the agency’s home office. There, the committee evaluates findings in the preliminary report and makes a recommendation on the final credit rating. At this stage in the process, agencies may invite the sovereign borrower’s participation, including presentations to the committee and related agency personnel. Once a prospective final rating has been agreed to in committee but before its publication, agencies may allow sovereign borrowers to “appeal” their decision and provide additional information and or analyses. When finally published, the credit rating is subject to regular reviews, usually on an annual or semi-annual basis. As Schwarcz (2008) suggests, initial rating and review process involve substantial quantitative analysis and multiple layers of review by seasoned experts. Yet, at their core, initial ratings and reviews are human processes weighted heavily on individual and group judgments.

3.1.3. Industry Structure and Conduct. These judgments lubricate the wheels of lending and investment, and have “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 many financial system stakeholders, but with special reliance on fees from borrowers in the sovereign rating business. Historically, lenders generated the bulk of fees for agencies through subscriptions to credit
rating information. In the 1960s, agencies began charging borrowers for the ratings they received. With DC sovereign and sub-sovereign borrowers, these charges can be substantial. Typically, initial DC sovereign government ratings are completed by agencies in connection with issuance of a sovereign government bond. Agencies compensate themselves for providing initial ratings through a fee based on a percentage of the face amount of the bond issuance. Sinclair (1995) reports that compensation can run as high as 2-3% of the face amount issued, and face amounts can exceed $500 million. Agencies also charge sovereign borrowers additional fees for subsequent financing transactions, and for periodic reviews of the ratings themselves. Agency ratings for sovereign governments and their bonds are not only sources of fee income on their own, but can also lead to related fees from sub-sovereign borrowers.

Regulatory factors matter in explaining the centrality of agencies in financial transactions linking lenders to DC borrowers. White (2001) identifies 40 agencies operating in 27 countries in 2000. Borrowers seeking access to U.S. 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, 2008).¹ U.S. institutional lenders, such as commercial banks, often mimic regulatory mandates with requirements of one or more sovereign ratings by NRSRO-designated agencies as a condition for making loans to sovereign and sub-sovereign borrowers. 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 certify their financial soundness (Crouhy, Galai & Mark, 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 government ratings 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 borrowers from DCs topped $800 billion (IMF, 2005).

¹ 12 US federal regulations promulgated between 1931 and 1994 require credit ratings by NRSROs. They are listed in Cantor & Packer (1994: 6). The Credit Rating Reform Act of 2006 reiterated such regulations and expanded on the rights and responsibilities that go with NRSRO status. For explanation of such rights and responsibilities see the US SEC 2008 Annual Report on NRSROs (SEC, 2008).
Dozens of agencies around the world provide rating services but only a few have NRSRO designation and actively pursue sovereign government ratings.\(^2\) Throughout the 1980s, there were only two NRSRO agencies active in the sovereign rating business: Moody’s Investors Services (“Moody’s”) and Standard and Poor’s Financial Services (“S&P”). By the mid-1990s, the number of NRSRO agencies actively pursuing sovereign government ratings business had risen to five: Moody’s and S&P as well as Duff Credit Rating (“DCR”), Thomson Bank Watch (“Thomson”) and Investment Bank Credit Analysis, which in December 1997 merged with Fitch Investors Service (“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. As of mid-2009, these three comprised more than 99% of all sovereign government ratings and bond issuances. Thus, public regulation has both stimulated market demand for and helped limit the market supply of agencies effectively competing for sovereign government ratings in DCs.

3.2. Relevant Rivalry Literature

If agencies are central to the capital allocation process in DCs, and if elections tend to decrease agency credit 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 sovereign government ratings (e.g., S&P, 1999) and other researchers routinely assume the same (e.g., Davidson, 1980). Schwarcz (2008) highlights decision-making systems and analytics meriting their expert status, though he also notes the inherent conflict of interest agencies face. Agencies are for-profit firms deriving substantial income from both lenders subscribing to ratings information and borrowers seeking ratings.

As discussed earlier, McNamara and Vaaler (2000) and Vaaler and McNamara (2004) documented sources of bias in sovereign government ratings that may be linked to such conflicts. McNamara and Vaaler (2000) theorized that increasing competition for business in a given national market segment

\(^2\) White (2001: 9) counts 37 prominent agencies outside the US as of 2000. On the other hand, by mid-2008, there were only seven NRSROs with outstanding credit reports on government, municipal and or sovereign securities: Moody’s, S&P, Fitch Investors Service (“Fitch”), Dominion Bond Rating Service, Japan Credit Rating Agency, LACE Financial, and Rating and Investment Information. Moody’s, S&P and Fitch comprised more than 99% of such reports (SEC, 2008: 38).
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 market segments. 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-sovereign borrowers 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 government with choices as to who will provide ratings 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 a sovereign government. Uncertainty associated with any one rating decreases as the overall number of agencies publishing ratings increases. As noted earlier, McNamara and Vaaler (2000) found support for such explanations 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, Fitch-IBCA 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-examined 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 might magnify rather than diminish a generalized decrease in sovereign government creditworthiness. Turbulence could undercut 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 may observe and learn from each other as more negative assessments are published. Feedback effects from multiple agencies downgrading the same sovereign government can accentuate industry-wide pessimism. Yet a second source of competitive bandwagons may lie in 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 a “leadership” role in interpreting risks during crisis-induced turbulence for financial system 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 national market segment increases and a “race to the bottom” ensues. Compared to national market segments with only one or two agencies seeking business, a generally negative shift in ratings will be accentuated when more rival agencies with more numerous negative referents are present. Compared to agencies in national market segments with few rivals, market segments with many rivals will see more dramatic negative shifts as agencies re-align themselves more closely with lender rather than borrower interests. Together this logic suggests a contingent moderating role for market rivalry in firm risk assessment. Increasing national 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 sovereign government creditworthiness are unexpected, severe, and typically, negative.

3.2. Theoretical Framework and Hypotheses

In this context, we can summarize our overall research proposition. Electoral and market rivalry have individual and interactive effects on firm (agency) credit risk assessments during DC election periods. These political and market rivalry effects sovereign government ratings are 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 sovereign government 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 credit 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 sovereign government ratings. Accordingly, we can predict that:

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

Alternatively, elections may prompt unexpected and severe changes in sovereign government 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 credit 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 ratings. Accordingly, we can predict that:
Hypothesis 2b (Magnifying Market Rivalry Risk Effects): Election period decreases in ratings (decreased sovereign government creditworthiness) will be magnified as the number of agencies rating a given DC increases.

3.3. Methods

3.3.1. Empirical Model. To investigate these predictions about DC sovereign government ratings, electoral rivalry and market rivalry among agencies, we first define the following empirical model:

\[
\text{Rating}_{rit} = \alpha_0 + \sum_{i=1}^{17} \gamma_i \text{Country}_{it} + \sum_{k=1}^{12} \lambda_k \text{Macro}_{it} + \sum_{t=1988}^{2000} \xi_t \text{Year}_{t} \\
+ \beta_1 \text{Election}_{it} + \beta_2 \text{Rinc}_{it} + \beta_3 \text{Election} \times \text{Rinc}_{it} \\
+ \beta_4 \text{Numriv}_{rit} + \beta_5 \text{Election} \times \text{Numriv}_{rit} + \beta_6 \text{Rinc} \times \text{Numriv}_{rit} \\
+ \beta_7 \text{Election} \times \text{Rinc} \times \text{Numriv}_{rit} + \mu_{rit}
\]  

(1)

In model (1) the dependent variable, Rating, is the 17-level agency rating\(^3\) 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 \(\eta_{1,12}\) are parameter estimates, include:

- **Current Account Balance** (\(\eta_1\)), measured as exports less imports divided by GDP, and expected to be positively related to Rating;

- **Per Capita Income** (\(\eta_2\)), 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** (\(\eta_3\)), measured as the average annual real GDP percentage growth rate, and expected to be positively related to Rating;

- **Inflation Rate** (\(\eta_4\)), measured as the average annual percentage of consumer price inflation, divided by 100, and expected to be negatively related to Rating;

- **Fiscal Balance** (\(\eta_5\)), measured as the average annual overall budget balance (receipts less expenditures) divided by GDP, and expected to be positively related to Rating;

---

\(^3\) We follow previous research and use the following scale to transform agency letter ratings (Rating) as follows: 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.
• External Debt ($\eta_6$), 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 ($\eta_7$), measured as the value of foreign reserves in months of imports, and expected to be positively related to Rating;

• Domestic Credit ($\eta_8$), 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 ($\eta_9$), 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 ($\eta_{10}$), measured as natural log of the mid-year country population, and expected to be positively related to Rating;

• Recent Default ($\eta_{11}$), 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 ($\eta_{12}$), 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 independent variables of central interest to our study. First, to investigate links between sovereign government ratings and electoral rivalry, we define the term Election ($\beta_1$), 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: $H_1$: $\beta_1 (\text{Election}) < 0$. While Hypothesis 1 predicts that election years will decrease sovereign government creditworthiness generally, we note that PBC literature highlights this effect where incumbent governments 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 ($\beta_2$), 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 lenders and investors rather than, say, worker interests. A third interaction term \( Election*Rinc (\beta_3) \) 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: \( H_1: \beta_1 (Election) < 0. \)

Next, to investigate differences in \( Rating \) linked to rivalry among agencies in specific national market segments, we define the term \( Numriv (\beta_4) \), which is a number from 1-4 based on the number of rival agencies publishing sovereign government ratings at the end of year \( t \) in country \( i \). We make no formal predictions about the impact of agency rivalry in non-election years. By interacting \( Numriv \) with \( Election \) and \( Rinc \) we define three additional terms \( Election*Numriv (\beta_5), Rinc*Numriv (\beta_6) \) and \( Election*Rinc*Numriv (\beta_7) \). When included in our empirical model, they permit us to partition agency rivalry effects on \( Rating \) and test support for Hypotheses 2a and 2b. Differences in rivalry effects on \( Rating \) when election years involve left-wing incumbents are captured by \( Election*Numriv (\beta_5) \). For right-wing incumbent election years, the same differences will be given by \( Election*Rinc*Numriv (\beta_7) \). If market rivalry diminishes risk perceptions related to elections and PBC-related economic policy considerations, then these two terms should be positively related to \( Rating \): \( H_2a: \beta_1 \beta_5 (Election*Numriv) > 0 \) and \( \beta_7 (Election*Rinc*Numriv) > 0. \)

3.3.2. Estimation Strategy. The dependent variable, \( Rating \), is ordinal in nature, thus we use for our multivariate analyses an ordered probit estimator (“oprobit”) available in Stata Version 9.0 (StataCorp. v.9.0, 2005). We also use Huber-White sandwich standard errors that are robust to heteroskedasticity, and cluster these standard errors based on which agency is publishing the sovereign government rating analyzed. The clustering strategy accounts for the possibility of non-independence in \( Rating \) observations published by the same agency.

In addition to ordered probit estimations, we use a non-parametric bivariate estimator. Locally weighted scatter-plot smoother (“Lowess”) estimation computes linear regressions around each
observation, $x_{rst}$, with neighborhood observations chosen within some sampling bandwidth and weighted by a tri-cubic function. Based on the estimated regression parameters, $y_{rst}$ values are computed. These $x_{rst}$, $y_{rst}$ 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 ($x_{rst}$) on Rating ($y_{rst}$) in election years when incumbents are right-wing or centrist versus when they are left-wing.

3.3.3. 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) for information on presidential elections held in DCs 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 DCs 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 lender-investor (right-wing and centrist) versus, say, 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 as incumbents. $Rinc$ equals 0 when incumbent governments are led by left-wing parties, which typically lack substantial commitment to lender-investor interests.

and note the sovereign government credit for long-term foreign denominated issuances on December 31 of each year from 1987-2000.

With these data sources 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 sovereign government ratings published by agencies from 1987-2000: Argentina, Bolivia, Brazil, Bulgaria, Chile, Colombia, Ecuador, Indonesia, South Korea, Mexico, Paraguay, Peru, Philippines, Poland, Russia, South Africa, Uruguay and Venezuela. Sampling begins in the first year that DCs have sovereign ratings published by one of the five agencies active in the sovereign government 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.

3.4. Results

3.4.1. Descriptive Statistics and Pair-Wise Correlations. Table 4 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 0 (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 sovereign government ratings can have quite substantial practical effects.

(Insert Table 4 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 (Right/Center Incumbent Party (Rinc) = 0.72). The dominance of more lender- and investor-friendly presidents 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, such as Venezuela’s Hugo Chavez and Bolivia’s Evo Morales.

Election-year ratings comprise about 21% of our sample (Election Year (Election) = 0.21) with more elections of the 35 elections in our sample involving right-wing and centrist incumbents (25) rather than left-wing incumbents (15). Even so, there is substantial variation and power in our sample from which to estimate distinct election-year effects on Rating. We have 69 ratings for right-wing and centrist election years and 23 ratings for left-wing elections. Finally, we note that agency rivalry is both substantial on average and substantially variant across DCs and years. On average, agencies face from 2-3 rivals in a given national market segment (Rivalry (Numriv) = 2.7) with as few as 0 as many as four rivals across several DCs and years, including election years.

The macroeconomic controls (Macro) 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, we also examine but do not report variance inflation factor statistics investigating the possibility of severe multi-collinearity. We find no such indications.

3.4.2. Regression and Hypothesis Test Results. Results from four ordered probit estimations are reported in Table 5. Column 1 reports results from estimation with country and year dummies, and macroeconomic controls (Macro) only. Country and year dummy coefficients are not central to our
analyses, and are not reported. We also do not report alternative estimations based on ordinary least squares ("OLS") regression.\textsuperscript{4} OLS results generally match the ordered probit results summarized below, and suggest that our control model in Column 1 provides substantial explanation of variation in Rating (Adj $R$-squared $= 0.82$). Of course, OLS estimation does not account for the ordered rather than integral nature of our dependent variable, Rating. In Columns 2-4 we use the ordered probit estimator and add right-hand side terms in steps to investigate additional electoral and market rivalry affects on Rating with appropriate partitioning for incumbent partisan orientation. Column 4 reports fully-partitioned results, and provides the primary basis for investigating Hypotheses 1-2.

(Insert Table 5 Here)

Column 1’s ordered probit estimation yield intuitive results. Nine of the 12 macroeconomic controls (Macro) exhibit the predicted sign, while seven of the nine are significant at the 1\% level. Sovereign government ratings are higher (more creditworthy) 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 lenders.

The only macroeconomic controls exhibiting significant but contrary signs relate to foreign reserves and (lack of) civil liberties. DC sovereign governments are less creditworthy (lower Rating) with the accumulation of foreign reserves and 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 government 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. The anomalous sign and significance disappears.\textsuperscript{5} 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.

\textsuperscript{4} These results are available from the authors.

\textsuperscript{5} These results are available from the authors.
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 2-3 report results from re-estimation after inclusion of an election year term (Column 2) and then election year and incumbent partisan orientation terms (Column 3). The election year dummy (\textit{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 government 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.

Column 3 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 versus left-wing incumbent election years. Left-wing incumbent election year effects are given by the election year dummy (\textit{Election}) while the difference in right-wing and centrist election year effects is given by an interaction term (\textit{Election} \* \textit{Rinc}). Left-wing incumbent election year effects are again negative (-0.47) and significant, this 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 \textit{Election} and \textit{Election} \* \textit{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. Together, these Column 3 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. This finding is consistent with the notion that presidential incumbents with a left-wing orientation may be more willing to resort to 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 sovereign government ratings published by agencies.

Column 4 presents fully-partitioned results. These results permit us to reconfirm evidence related to Hypothesis 1 and investigate moderating market rivalry effects predicted in alternative versions of Hypothesis 2. With the inclusion of agency rivalry as an individual term and in various interactions, key right-hand side terms take on slightly different meanings. The election year dummy (\textit{Election}) now captures left-wing incumbent election year effects on \textit{Rating} when an agency faces no competition from rivals in a national market segment. Consider an agency facing no competitive rivals in a national market segment. That same DC is holding an election involving a left-wing presidential incumbent. The impact on sovereign government ratings is negative (-1.25), significant at the 5% level, and practically substantial. Holding other right-hand side terms at their mean levels, sovereign government creditworthiness decreases by approximately one ordinal level. Given the grouping of so many sovereign government ratings around the junk versus investment grade cut-off (BBB- = 7 and BB+ = 6), such a decrease can have a substantial impact on capital availability. Corresponding right-wing and centrist election year 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 sovereign government ratings published by agencies.

In Column 4, the individual rivalry term (\textit{Numriv}) represents effects on \textit{Rating} during non-election years where there is a left-wing incumbent. The interaction with the right-wing and centrist dummy (\textit{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 on \textit{Rating}. The interaction of rivalry and election (\textit{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 \textit{Election} + \textit{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
national market segment will diminish any decrease in creditworthiness the sovereign government 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. Together, these results suggest partial support for alternative Hypothesis 2a and diminishing rather than magnifying effects related to market rivalry among agencies.

The bi-variate 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 sovereign government in an election year. A 0 value on the x-axis indicates that the agency is a monopolist. The y-axis measures the DC’s election year sovereign government rating, which ranges from 1 (“B-“) to 9 (“BBB+”). A dashed line (-) represents the Lowess trend line for sovereign government ratings in election years with right-wing and centrist incumbents. A dashed-dotted line (-.) represents the Lowess trend line for sovereign government 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 sovereign government creditworthiness related to electoral rivalry. 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 helps 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 among agencies during election years moderates negative effects on sovereign government 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)
4. CONCLUDING DISCUSSION

4.1. New Evidence from Our Study

The goal of our study was to understand how political and behavioral factors tied to rivalry might matter for credit risk assessment individually and jointly. We think there was substantial progress toward that goal theoretically and empirically. We used factors derived from political models to understand why firms active in DCs might perceive greater credit risk related to lending during election years when there are incentives to implement expansionary policies detrimental to the post-election economy. We used factors derived from behavioral models to understand how competitive dynamics among firms active in DCs might moderate risk perceptions tied to political considerations. We integrated this understanding into a single framework from which we derived and then tested two hypotheses about their individual and interactive effects on credit risk. Results from our analyses provide partial support for both hypotheses. Consistent with Hypothesis 1, we found statistically significant and practically substantial decreases in sovereign government creditworthiness during election years when less lender-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 and the moderating effects of agency rivalry during left-wing incumbent election years. Increasing rivalry could diminish if not fully negate any decrease in sovereign government creditworthiness.

4.2. Implications for Research, Practice and Public Policy

We think these results have important implications for research, practice and public policy concerned with credit risk assessment and bias. Our results refine and extend our understanding of electoral rivalry and credit risk for agencies, and we conjecture, other firms dealing with emerging DC political dynamics. Our results refine previous findings by Block and Vaaler (2004). Elections may not themselves lead to increasing risk due to PBC-related incentives. The combination of elections and partisan political factors apparently heightens credit risk perceptions. Yet, these perceptions do not develop in isolation from the
competitive market in which so many risk-assessing firms operate. Risk-assessing firms look not only to DC sovereign “fundamentals” like external debt or transient sovereign government risk effects like elections (with left-wing incumbents), but may also look at each other. In the context of temporarily heightened uncertainty, risk-assessing firms may watch and respond to their rivals. They may limit the “pass-through” of PBC-related risks as the number of rivals vying for business increases. This finding buttresses earlier results reported by McNamara and Vaaler (2000) and suggests that PBC-related risks are part of normal fluctuations in DC sovereign government risk profiles. The agencies we studied 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 credit assessors like agencies might nonetheless skew their risk assessments temporarily. Decreasing sovereign government creditworthiness during election years with left-wing incumbents may represent a well-considered judgment under uncertainty. During election years, such incumbents could imperil longer-term government finances to buy votes and retain office in the short term. On the other hand, it is arguably ill-considered, even venal, for an agency to moderate sovereign government credit risk assessments because rivals might replace them as raters on an upcoming bond issuance during the same election period. Managers looking to agencies for objective advice on credit risk during election years might do well to rely less on these “experts” and more on their own internal credit risk analysis.

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 government ratings are up for review and there is an election year. 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 government 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.

The last six years have seen the number of NRSRO agencies rating sovereign governments and bonds increase from three to seven. But the four new players currently account for less than 1% of all bond issuances in this segment. New players like Dominion Bond Rating, Japan Credit Rating Agency, LACE Financial, and Rating and Investment Information will need to grow substantially in this segment before sovereign and sub-sovereign borrowers might be able to play them off against the three incumbents, Moody’s, S&P and Fitch, for better ratings during election years.

4.3. Future Research on How and Why Credit Assessors Sometimes “Get It Wrong”

This final point invites further research on how behavioral and political model factors can affect prudential credit assessment individually and jointly. We examined the individual and interactive effects of both for only one type of firm, agencies, and one type of credit risk, sovereign government credit risk. This firm and credit risk assessment context fit our research interest and aims well. Agencies compete within well-defined industry boundaries and national market segments. They publish their credit risk assessments in a form that is easy to understand and compare. Previous research since Cantor and Packer (1996) has laid bare the objective determinants of such assessments. Yet, it may be premature to conclude that the trends we uncover regarding agencies and sovereign government ratings apply to other contexts where agencies operate.

On the other hand, recent testimony from senior executives leading the agencies suggests that a similar dynamic contributed to rating miscues in the run-up to the U.S. sub-prime mortgage meltdown starting in 2007. In October 2008, Moody’s CEO Raymond McDaniel explained to a U.S. House of Representatives committee that higher than warranted ratings on US mortgage-backed bonds and related instruments derived in part from competition with rival agencies for this lucrative business. “[I]ndustry
competition forces rating agencies to provide the lowest credit enhancement needed for the highest rating, which ‘can place the entire financial system at risk.’” (Independent, 2008). Future research on agencies and their “expert” credit assessments should follow up on this admission to examine broad sample evidence related to the proposition that competitive pressures among agencies in mortgage markets could lead to biases similar to those we observed in the sovereign government rating business.

Agencies are not the only future context for such study. Other firms and individuals in law, management consulting, accounting, banking and insurance provide risk assessment services important to the orderly functioning of financial markets. Future research should seek a broader understanding of their expertise and vulnerability to bias in decision making with special emphasis on bias that may be tied to competitive rivalry. These and other future avenues of research should give us a deeper understanding of how expert credit assessors sometimes get it wrong—spectacularly wrong—and how we might help them right the wrong through adroit education and public policy.
References


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## TABLE 2

**Summary of Political Model Research Findings**

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<tr>
<td>Block &amp; Vaaler (2004)</td>
<td>Sovereign credit ratings and sovereign bondholders in developing countries</td>
<td>Election years lead to increased sovereign risk in the form of decreased sovereign bond values and decreasing agency ratings.</td>
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<td>Vaaler, Schrage &amp; Block (2005)</td>
<td>Sovereign bondholders in developing countries</td>
<td>Election years resulting in a right-to-left (left-to-right) partisan swing in government lead to increased (decreased) sovereign risk in the form of lower (higher) sovereign bond value.</td>
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<td>Vaaler, Schrage &amp; Block (2006)</td>
<td>Sovereign credit ratings in developing countries</td>
<td>Election years resulting in a right-to-left (left-to-right) partisan swing in government lead to increased (decreased) sovereign risk in the form of decreasing (increasing) agency ratings.</td>
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<tr>
<td>Vaaler (2008)</td>
<td>Multinational corporation investment projects in developing countries</td>
<td>Election years resulting in a right-to-left (left-to-right) partisan swing in government lead to increased (decreased) sovereign risk in the form of decreasing (increasing) counts of new investment projects announced by foreign-based multinational corporations.</td>
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</table>
# TABLE 3

Agency Letter Ratings, Grades, Numerical Equivalents, and Interpretations

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<thead>
<tr>
<th>Moody's</th>
<th>S&amp;P and Other NRSROs</th>
<th>Grade</th>
<th>Numerical Equivalent on 0-16 Scale</th>
<th>Common Interpretation</th>
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<tr>
<td>Aaa</td>
<td>AAA</td>
<td>Investment</td>
<td>16</td>
<td>Extremely strong capacity to meet its financial commitments.</td>
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<td>Aa2</td>
<td>AA</td>
<td>Investment</td>
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<td>Very strong capacity to meet its financial commitments.</td>
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<tr>
<td>A2</td>
<td>A</td>
<td>Investment</td>
<td>11</td>
<td>Adequate capacity to meet its financial commitments.</td>
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<td>A-</td>
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<tr>
<td>Baa1</td>
<td>BBB+</td>
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<td>9</td>
<td>Less vulnerable than lower rated obligors but facing adverse conditions which could lead to obligor’s inadequate capacity to meet its financial commitments.</td>
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<td>Baa2</td>
<td>BBB</td>
<td>Investment</td>
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<td>Baa3</td>
<td>BBB-</td>
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<tr>
<td>Ba1</td>
<td>BB+</td>
<td>Speculative</td>
<td>6</td>
<td>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.</td>
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<td>BB</td>
<td>Speculative</td>
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<td>B2</td>
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<td>Currently vulnerable and dependent on favorable conditions to meet its financial commitments.</td>
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FIGURE 1
Integrative Theoretical Framework: Impact of Elections and Rivalry on Agency Ratings

**Hypothesis 1**
- Electoral Rivalry and Related PBC Economic Policy Manipulations
  - Market Rivalry Impact If Electoral Rivalry Effects Are Within Expected Range
  - Market Rivalry Impact If Electoral Rivalry Effects Are Outside Expected Range

**Hypothesis 2a**
- Market Rivalry Impact If Electoral Rivalry Effects Are Within Expected Range
  +

**Hypothesis 2b**
- Market Rivalry Impact If Electoral Rivalry Effects Are Outside Expected Range

Agency Ratings During Election Years
### TABLE 4
Descriptive Statistics and Pair-Wise Correlations

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<th>Variable</th>
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N = 458; if r ≥ 0.12, then p ≤ 0.01; if r ≥ 0.10, then p ≤ 0.05; if r ≥ 0.08, then p ≤ 0.10
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<th>Variable</th>
<th>(1) Controls Only</th>
<th>(2) With Election Variable</th>
<th>(3) With Election Broken Out by Incumbent Partisan Orientation</th>
<th>(4) With Rivalry and Rivalry/Election Interactions</th>
</tr>
</thead>
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<tr>
<td>Current Account Balance $\eta_1$</td>
<td>2.71 (1.89)</td>
<td>2.24 (1.91)</td>
<td>1.72 (1.42)</td>
<td>1.20 (1.85)</td>
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<tr>
<td>GDP Per Capita $\eta_2$</td>
<td>0.09 (0.15)</td>
<td>0.11 (0.15)</td>
<td>0.09 (0.13)</td>
<td>0.07 (0.10)</td>
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<td>GDP Growth Rate $\eta_3$</td>
<td>0.15** (0.03)</td>
<td>0.15** (0.03)</td>
<td>0.15** (0.03)</td>
<td>0.15** (0.03)</td>
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<tr>
<td>Inflation Rate $\eta_4$</td>
<td>-0.07** (0.02)</td>
<td>-0.07** (0.02)</td>
<td>-0.07** (0.02)</td>
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<td>Fiscal Balance $\eta_5$</td>
<td>0.06** (0.02)</td>
<td>0.06* (0.02)</td>
<td>0.07† (0.04)</td>
<td>0.06 (0.03)</td>
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<td>External Debt $\eta_6$</td>
<td>-3.63** (1.05)</td>
<td>-3.44** (1.07)</td>
<td>-3.72** (1.16)</td>
<td>-3.79** (1.26)</td>
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<td>Total Reserves $\eta_7$</td>
<td>-0.18** (0.05)</td>
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<td>-0.20** (0.05)</td>
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<td>0.03** (0.00)</td>
<td>0.03** (0.00)</td>
<td>0.03** (0.00)</td>
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<td>Contract Intensive Money $\eta_9$</td>
<td>7.69** (1.59)</td>
<td>7.80** (1.40)</td>
<td>8.80** (2.93)</td>
<td>10.03** (2.50)</td>
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<td>Population $\eta_{10}$</td>
<td>-1.00 (0.85)</td>
<td>-0.98 (0.83)</td>
<td>-1.02 (0.79)</td>
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<td>Recent Default $\eta_{11}$</td>
<td>-0.81** (0.16)</td>
<td>-0.80** (0.15)</td>
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<td>0.51** (0.07)</td>
<td>0.53** (0.07)</td>
<td>0.50** (0.04)</td>
<td>0.48** (0.06)</td>
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<tr>
<td>Election Year (Election) $\beta_1$</td>
<td>-0.27* (0.12)</td>
<td>-0.47** (0.17)</td>
<td>-1.25* (0.48)</td>
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<td>Right/Center Incumbent Party (Rinc) $\beta_2$</td>
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<td>-0.33 (0.42)</td>
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<td>Rivalry (Numriv) $\beta_4$</td>
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<td>Election* Rivalry (Election*Numriv) $\beta_5$</td>
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<td>Right/Center<em>Rivalry (Rinc</em>Numriv) $\beta_6$</td>
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** p ≤ 0.01, * p ≤ 0.05, † p ≤ 0.10

Note: Country (γ) and year (ξ) fixed effects included in all models but not reported in the table.
FIGURE 2

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

For Right-Wing/Center Incumbent Party Election Years

For Left-Wing Incumbent Party Election Years

Number of Rival Agencies Also Publishing Rating for Country in Election Year

Agency's Sovereign Rating for Country in Election Year