

Credit Rating Agencies in Emerging Democracies

Guardians of Fiscal Discipline?

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Abstract

Credit rating agencies have drawn criticism for failing to anticipate and deter root causes of the 2008–2009 financial crisis in the United States. However, this paper presents evidence that credit rating agencies regularly anticipate and deter governments in emerging democracies from opportunistic borrowing and potential financial crises related to elections and the political budget cycle behavior they encourage. The paper considers a sample of 18 such countries holding 32 presidential elections from 1989 to 2004. The analysis

shows that credit rating agencies induced greater fiscal discipline during election periods when governments had incentives to borrow opportunistically for short-term electoral gain. Countries with higher credit rating agency sovereign ratings borrowed less than lower-rated countries in election periods, but borrowed more in non-election periods. Credit rating agencies promoted fiscal discipline during increasingly frequent election periods in emerging democracies.

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Credit rating agencies in emerging democracies: Guardians of fiscal discipline?

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Introduction

At first glance, credit rating agency (CRA) assessments of a borrower's capability and willingness to meet financial obligations may seem like little more than opinions released by private companies. But as White (2010) and others (e.g., Sinclair, 2005) have noted, industry conventions, national regulations and international agreements have elevated assessments of individual, corporate, municipal and sovereign creditworthiness by CRAs like Moody's Investors Service (Moody's), Standard and Poor's Financial Services (S&P) and Fitch Ratings (Fitch) from mere opinion to guiding principles, if not binding rules, on lending and investment decisions taken by banks, pension funds, finance ministries and central banks. Recognizing this, the US government increased regulation on CRAs in the past decade, first through the 2006 Agency Reform Act, and then through the 2010 Dodd-Frank Act. Passage of Dodd-Frank followed a financial crisis in the US with roots in subprime mortgages, often incorrectly classified by CRAs as safe investments.

Such failures are important to highlight, but so, too, are apparent CRA successes in disciplining borrowers to avert potential financial crises. One such instance may be CRA sovereign ratings (ratings) and government borrowing during election periods in what Brender and Drazen (2006) call "new democracies" of the developing world and we call "emerging democracies" to include developing countries with democratic governments having no recent precedents or reformed democratic governments following periods of non-democratic rule by the military or a single dominant party. Political budget cycle models since Nordhaus (1974) have analyzed government incentives to borrow opportunistically to enhance their prospects during election periods. Brender and Drazen (2005) and Shi and Svensson (2006) document the significance of such political budget cycle behavior in emerging democracies, which historically have also been more vulnerable to financial crises. If CRAs prompt fiscal discipline, then their ratings should curb government borrowing during election periods.

We find evidence consistent with such CRA effectiveness in econometric analyses of government borrowing and ratings for 18 emerging democracies holding 32 presidential elections during 1989-2004. Governments with higher (lower) ratings borrow less (more) during

election periods with opposite trends in non-election periods. Our findings are important not only because they highlight CRA effectiveness in transnational fiscal oversight. Our results turn the tables on political budget cycle research that has largely treated CRAs as passive observers and ratings as a mere responses to election-period fiscal manipulations (Block and Vaaler, 2004). Our study positions political budget cycle research in line with other work demonstrating how private often foreign-domiciled financial actors prompt governments to build solid credit histories, perhaps under threat of future credit freezes (e.g., Eaton and Gersovitz, 1981). Governments in emerging democracies have incentives to build that history during elections. Forbearance from opportunistic borrowing to stay in office is part of a larger relationship with CRAs that also facilitates more borrowing in non-election periods.

2. Empirical Methodology

2.1. Model Specification and Tests

To test our proposition that ratings curb opportunistic borrowing by governments during election periods, we define the following statistical model:

$$\begin{aligned}
 Budget\ Balance_{it} = & \alpha + \beta Budget\ Balance_{it-1} + \sum_{s=0}^{s=2} \gamma^s Rating_{it+1-s} + \sum_{m=0}^{m=2} \delta^m Election_{it+1-m} \\
 & + \sum_{u=0}^{u=2} \rho^u Rating * Election_{it+1-u} + \sum_{a=1}^{a=6} Country\ Controls_{it-1} + \sum_{b=1}^{b=17} Country\ Dummies_i \\
 & + \sum_{c=1}^{c=15} Year\ Dummies_t + \varepsilon_{it}
 \end{aligned} \quad (1)$$

In (1), the dependent variable, *Budget Balance*, is the central government budget balance as a percentage of GDP for country *i* in year *t*. A negative value of *Budget Balance* represents a fiscal deficit which the government finances by issuing debt or other means. We regress *Budget Balance* on: an intercept (α); a one-year lagged dependent variable (LDV), *Budget Balance*_{*it-1*} (β); lead, current-year and lagged values of country *i*'s average rating on January 1 of year *t*,

$Rating_{it+1}$, $Rating_{it}$ and $Rating_{it-1}$ (γ');¹ lead, current-year and lagged 0-1 dummies for an election in country i in year t , $Election_{it+1}$, $Election_{it}$ and $Election_{it-1}$ (δ'); three interaction terms combining ratings with election dummies, $Rating*Election_{it+1}$, $Rating*Election_{it}$ and $Rating*Election_{it-1}$ (ρ'); six additional lagged controls for country i in year t unemployment rate ($Unemployment_{it-1}$), inflation rate divided by 100 ($Inflation_{it-1}$), foreign reserves in months of imports ($Reserves_{it-1}$), currency crisis indicator, that is, a 0-1 dummy indicating a decrease in the value of the local currency by more than 10% against the US dollar ($Curr Crisis_{it-1}$), the average value of civil liberties and political rights ($Rights_{it-1}$), and the stability of the policy environment based on the number of individuals with power in government to veto policy changes ($Checks_{it-1}$) (φ'); country i dummies (μ); year t dummies (θ); and an error term (ε).

The *Election* terms should be negatively related to *Budget Balance* ($\delta' < 0$) indicating that the occurrence of elections prompts governments to borrow (and spend) opportunistically to garner voter support. The *Rating*Election* interaction terms should be positively related to *Budget Balance* ($\rho' > 0$) indicating that election-period borrowing is diminished with higher *Rating* and the fiscal discipline such CRA assessment entails. These test statistics are central to our research proposition that ratings curb political budget cycle behavior. *Ratings* terms capture non-election period effects on *Budget Balances* and should exhibit a negative sign indicating that higher ratings facilitate more borrowing in non-election periods ($\delta' < 0$). Lead, current-year and lagged effects let us probe for effects on *Budget Balance* across election and non-election periods broadly defined.

¹ Ratings are letter-based ordinal-level assessments of the capability and willingness of borrowers to meet their financial obligations. We convert this CRA scale to a 17-level numerical scale: AAA = 16 (highest rating/most creditworthy), AA+ = 15...B- = 1, C or lower = 0 (lowest rating/least creditworthy) (Block and Vaaler, 2004).

2.2. Data and Sampling

Data for variables in (1) come from different sources. *Budget Balance* data are from the World Bank. Time series end in 2004 when change in fiscal accounting methods and reporting was completed at the International Monetary Fund. Data for *Elections* are from the International Federation of Electoral Systems and from Block and Vaaler (2004). Election years are adjusted for government fiscal years consistent with Hanusch and Keefer (2011). *Ratings* data are from *Bloomberg*, and are measured annually as an average of up to three ratings published by Moody's, S&P and or Fitch (or CRAs merged into Fitch in the 1990s) on January 1. These raters dominate the industry, including sovereign rating segments, with the broadest country coverage, the most analysts and the largest market shares of ratings for individual bond issuances (White, 2010). Their ratings tend to move together with financial market players following them as a group. Data for other controls include the World Bank's World Development Indicators (*Employment, Inflation, Reserves, Curr Crisis*) and Database of Political Institutions (DPI) (Beck et al., 2004) (*Checks*), and Freedom House (*Rights*).

We sample from 18 prominent emerging democracies including: Argentina, Bolivia, Brazil, Bulgaria, Chile, Colombia, Ecuador, Indonesia, Mexico, Paraguay, Peru, Philippines, Poland, Russia, South Africa, South Korea, Uruguay, and Venezuela. They uniquely meet three sampling requirements. Starting in different years from 1989 and the fall of the Berlin Wall to 1998 and the fall of the Suharto regime in Indonesia, these countries have: 1) competitive presidential executive electoral systems that are new (e.g., Russia) or recently reformed (e.g., Brazil); 2) ratings from Moody's, S&P and or Fitch; and 3) comparable budget balance data for years when rated. Sampling from these 18 countries yields 141 country-year observations from 1989-2004 with as few as three (Ecuador) and as many as 14 (Brazil) observations per country. The election year dummy, $Election_{it}$, equals one for 32 of these 141 country-year observations.²

² Classification as a presidential system is based on the DPI's "SYSTEM" variable. A country must score a 0 or 1, meaning that it has a non-ceremonial chief executive elected directly by voters or specialized electors (0), or have a non-ceremonial chief executives chosen by the legislature but with substantial powers to avoid recall by that same

2.3. Estimation Strategy

We have a dynamic panel model with unit and time effects. We initially estimate (1) with fixed effects, but acknowledge significant (downward) bias in LDV estimates. We correct for this bias using a general method of moments (GMM) estimator that is also well-suited for persistent dependent variables (Arellano and Bond, 1991; Arellano and Bover, 1995; Blundell and Bond, 1998). This system GMM estimator generates plausibly exogenous instruments in lagged levels and differences in levels of the LDV and other right-hand side terms in (1) that may be endogenously determined (e.g., *Ratings*). We note the number of instruments generated and diagnostic tests commonly used to verify that GMM assumptions are met.

3. Results

3.1. Linear Trend Line Results

Figure 1 partitions the sample into election and non-election periods, plots current-year *Budget Balance* against lagged *Ratings* and fits linear trends to each sub-sample. The graph illustrates our research proposition. In non-election periods, there is a negative relationship between ratings budget balances. Higher-rated countries borrow more. But in election periods, the trend is reversed. Negative budget balances diminish and turn to slight budget surpluses for the highest-rated countries. These contrasting patterns persist when re-fitting trend lines at higher and lower rating values. The patterns are consistent with a trade-off governments may make between forbearance from opportunistic borrowing during elections and better access to credit for other non-opportunistic, welfare enhancing purposes.

legislature (1). Classification of electoral system competitiveness is based on the DPI's "EIEC" variable. A country must score 7 on a 1-7 scale (7 = most competitive). A country's first election in the 1989-2004 period must be within four elections of their first EIEC score of 7 consistent with notions of the new or recently reformed nature of its democracy. Additional detail on data sources and sampling strategies, including years when specific countries enter the sample, is available from the authors.

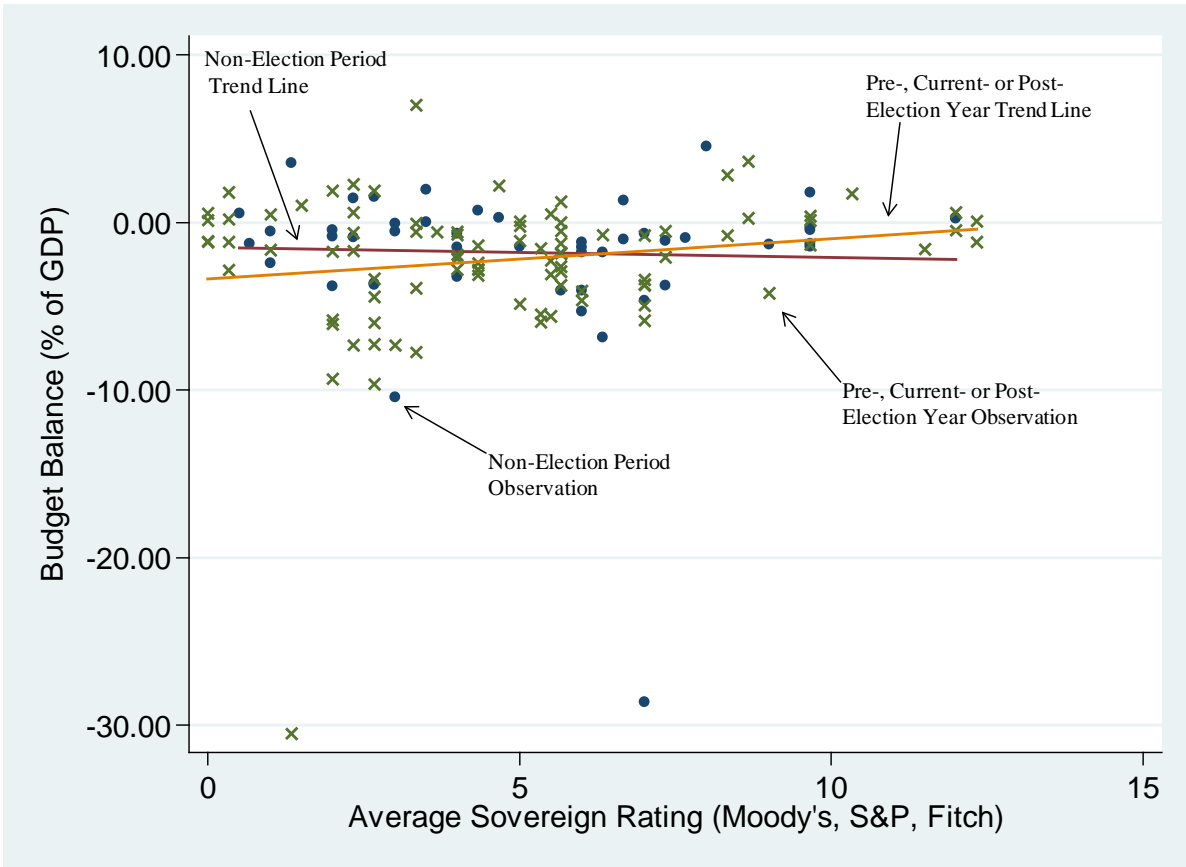


Figure 1. Results from analyses of linear trends for budget balances during election and non-election periods, 1989-2004

3.2. Regression Results

Regression results in Table 1 confirm trends observed in Figure 1. GMM estimation of current year election effects ($Election_{it}$) in Columns 3-9 is consistently negative and statistically significant, again documenting the link between election periods and fiscal expansion through government borrowing. But the interaction of this election dummy with current-year rating ($Rating * Election_{it}$) is positive and significant, indicating that governments with higher ratings borrow relatively less in election years –fiscal discipline in the face of opportunistic borrowing pressure. The current-year rating ($Rating_{it}$) is negative and significant, indicating that countries

with higher ratings borrow relatively more in non-election years –better access to credit given fiscal discipline in election years. We also observe evidence of lagged effects consistent with the notion of continued fiscal discipline in the year *after* an election ($Rating * Election_{it-1}$) but magnitudes and statistical significance levels are lower. These regression results prove robust to the inclusion of additional country controls, which enter step-wise to limit instrument count. Overall, the evidence points to a relationship between CRAs and governments in emerging democracies where higher ratings imply government alternation between fiscal discipline and relatively less borrowing in election and immediate post-election years, followed by relatively more borrowing in non-election years.

4. Conclusion

CRAs drew substantial and arguably justifiable criticism for failing to assess risk accurately and deter borrowing that helped bring on the US financial crisis of 2008-2009. But CRAs also matter outside the US where opportunistic election-period borrowing is a regular and predictable tendency that can also lead to financial crisis. CRAs appear to help blunt that tendency. To the extent that fiscal smoothing is good development policy, then CRAs play a positive role in emerging democracies around the world as private guardians of public fiscal discipline.

Table 1. Descriptive statistics, and fixed effects and dynamic panel system GMM regression results. Dependant variable: Annual budget balance as a percentage of GDP, 1989-2004^a

Descriptive Statistics and Estimators → Variables ↓	(1) Means (Std. Dev.)	(2) Fixed Effects	(3) System GMM	(4) System GMM	(5) System GMM	(6) System GMM	(7) System GMM	(8) System GMM	(9) System GMM
Constant		-0.392 (1.443)	2.584† (1.524)	3.266† (1.855)	1.378 (1.442)	4.885* (2.397)	2.167 (1.600)	1.859 (2.154)	2.053 (2.166)
<i>Budget Balance</i> _{<i>t</i>-1}	-2.061 (4.314)	0.703** (0.158)	0.912** (0.144)	0.916** (0.136)	0.896** (0.155)	0.813** (0.156)	0.925** (0.156)	0.895** (0.147)	0.910** (0.142)
<i>Rating</i> _{<i>t</i>-1}	4.937 (3.094)	1.244 (0.795)	0.973† (0.512)	0.930† (0.487)	1.079* (0.499)	1.047* (0.445)	1.013* (0.511)	0.988* (0.509)	0.969* (0.498)
<i>Rating</i> _{<i>t</i>}	4.989 (3.018)	-1.344* (0.674)	-1.645** (0.634)	-1.624** (0.639)	-1.634** (0.658)	-1.348** (0.478)	-1.630** (0.617)	-1.634** (0.621)	-1.644** (0.631)
<i>Rating</i> _{<i>t</i>-1}	5.099 (2.925)	0.184 (0.260)	0.011 (0.306)	-0.014 (0.277)	0.177 (0.257)	-0.291 (0.319)	0.012 (0.281)	-0.011 (0.280)	0.023 (0.301)
<i>Election</i> _{<i>t</i>-1}	0.241 (0.429)	-0.230 (0.976)	-0.261 (1.085)	-0.158 (0.877)	-0.461 (0.843)	0.040 (0.678)	-0.228 (1.103)	-0.342 (1.181)	-0.265 (1.028)
<i>Election</i> _{<i>t</i>}	0.227 (0.420)	-1.308 (1.302)	-2.536* (1.313)	-2.293* (1.126)	-2.614* (1.307)	-1.737† (0.993)	-2.712** (1.025)	-2.654* (1.156)	-2.552* (1.060)
<i>Election</i> _{<i>t</i>-1}	0.206 (0.406)	-0.041 (1.135)	-1.085 (0.998)	-0.928 (0.888)	-1.117 (0.976)	-0.971 (0.953)	-1.022 (0.994)	-1.063 (1.056)	-1.089 (0.961)
<i>Rating</i> * <i>Election</i> _{<i>t</i>-1}	1.154 (2.539)	0.009 (0.169)	0.090 (0.164)	0.073 (0.140)	0.093 (0.127)	0.013 (0.102)	0.087 (0.163)	0.098 (0.178)	0.093 (0.154)
<i>Rating</i> * <i>Election</i> _{<i>t</i>}	1.094 (2.516)	0.251 (0.230)	0.535* (0.226)	0.495* (0.225)	0.503* (0.251)	0.382* (0.196)	0.562* (0.218)	0.543* (0.230)	0.538** (0.218)
<i>Rating</i> * <i>Election</i> _{<i>t</i>-1}	1.041 (2.479)	0.067 (0.168)	0.297† (0.158)	0.274† (0.157)	0.277† (0.167)	0.263† (0.154)	0.288† (0.156)	0.299† (0.161)	0.298† (0.158)
<i>Unemployment</i> _{<i>t</i>-1}	9.912 (5.696)			-0.042 (0.076)					
<i>Inflation</i> _{<i>t</i>-1}	1.014 (4.129)				-0.032 (0.065)				
<i>Reserves</i> _{<i>t</i>-1}	5.164 (2.358)					-0.540* (0.233)			
<i>Curr Crisis</i> _{<i>t</i>-1}	0.191 (0.395)						0.810 (0.893)		
<i>Rights</i> _{<i>t</i>-1}	-2.770 (1.073)							-0.271 (0.518)	
<i>Checks</i> _{<i>t</i>-1}	3.567 (1.306)								0.136 (0.531)
<i>Country/Year Dummies</i>		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Instruments Generated			71	86	86	86	72	72	72
Hansen χ^2 Test			0.00	0.00	0.00	0.00	0.00	0.00	0.00
Arellano-Bond AR(2) Z Test			-1.52	-1.49	-1.59	-1.63†	-1.57	-1.52	-1.56
N	141	141	141	141	141	141	141	141	141
Wald χ^2 (R^2)		(0.749)	162.59**	207.56**	2077.83**	8406.03**	47.42**	658.10**	302.99**

^aSample means and standard deviations are reported in Column 1. Coefficient estimates and robust standard errors are reported in Columns 2-9. Lagged *Budget Balance*, all *Election*, all *Rating*, *Unemployment*, *Inflation* and *Reserves* terms are treated as endogenous while *Curr Crisis*, *Rights* and *Checks* are treated as exogenous in system GMM estimations in Columns 3-9. We do not report but obtain consistent results when treating *Curr Crisis*, *Rights* and *Checks* terms as endogenous. Significance: † p < 0.10, * p < 0.05, ** p < 0.01.

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