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Credit Ratings and Fiscal Responsibility

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Abstract

We build on our findings from an earlier analysis (Hanusch and Vaaler 2013), adding to the evidence base for the notion that credit rating agencies contribute to fiscal sustainability. To do so, we focus on election periods when political pressures for fiscal expansions are heightened. The literature on political budget cycles documents the tendency for budget deficits to increase in election years as governments attempt to appear economically competent by strategically providing additional publicly financed goods or services, or by cutting taxes. A rating downgrade, however, signals the opposite of competence as it implies an increase in the probability of sovereign default. Since credit ratings are widely observed—by financial markets as well as voters—they in effect serve as a disciplining device for fiscal policy not to submit to short-term spending pressures, thus keeping it responsible. We find that: 1) governments going into an election year immediately after a rating downgrade are 27 percentage points more likely to lose at the polls; and 2) governments going into an election year with a negative rating outlook (indicating a higher likelihood of a near-term downgrade) run smaller budget deficits compared to cases with positive or stable outlooks. Ratings act like fiscal rules disciplining governments when they are more vulnerable to political pressures on the budget—as opposed to fiscal policies supporting longer-term economic growth and development objectives.

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Credit Ratings and Fiscal Responsibility

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Introduction

In this study, we investigate whether and how private, for profit credit rating agencies (CRAs) influence the fiscal policy of national governments. Fiscal policy is a key instrument for national authorities to provide key public services to the population and support a well-functioning macroeconomy. Countercyclical fiscal policy is an important tool for governments to mediate the impact of adverse economic shocks to firms and households. In countries with a pegged exchange rate—where monetary policy is geared toward maintaining the peg—fiscal policy is the most important policy tool to enhance national welfare. Efficient fiscal policy balances the need of providing public goods and services that feature prominently in the national welfare function (including priorities as diverse as roads, national defense, unemployment insurance, or targeted transfers for the poor) with financing it with taxes that are imposed at the individual level on producers and consumers. Inefficient fiscal policy entails spending or taxation decisions that depart from the national welfare function. This is likely to result in lower economic performance, especially when the taxes financing inefficient fiscal policy are distortionary. In this paper we argue that CRAs have assumed, perhaps inadvertently, a role in keeping fiscal policy responsible by publicly grading the sustainability of a government's fiscal policy.

To evaluate this proposition, we focus on times when incentives to pursue inefficient fiscal policy are heightened: election years. Research reaching back at least as far back as Nordhaus (1975) and Rogoff and Siebert (1988), running through Drazen and Eslava (2010) and others (e.g., Hanusch 2012a,b or Bernhard, et el. 2015) has theoretically modeled and empirically documented evidence of so-called "political budget cycles", where governments have incentives to run larger budget deficits during election periods. Perhaps with the exception of Rogoff (1990), the academic literature on political budget cycles maintains that governments pursue expansionary fiscal policy (increase spending or raise taxes) with a short-term view toward winning elections, rather than maximizing the longer-term national welfare function. Most recently, Hanusch and Keefer (2014) demonstrate that inefficient expenditure for outright vote buying is especially pronounced in countries where parties have not managed to organize around programmatic platforms, thus forcing governments to provide election gifts to strategic constituencies.

Curtailed spending, increased taxation, and other contractionary fiscal policies typically follow this election-induced fiscal expansion. In developing democracies, post-election periods may also bring

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increased likelihood of speculative attacks on local currencies (Leblang, 2002), decreased foreign investment (Vaaler, 2008), decreased foreign lending (Bernhard et al., 2015) and higher-priced credit on foreign lending (Block and Vaaler, 2004). Together, such pre- and post-election fiscal dynamics can slow long-term economic growth and poverty reduction processes, and raise the likelihood of economic crises leading to costly re-scheduling or outright default on payment of government (sovereign) debt (Hatchondo and Martinez, 2010).

CRAs like Moody's Investor Services (Moody's), Standard and Poor's Credit Rating (S&P), and Fitch Credit Rating (Fitch) profit from publishing standardized letter-grade ordinal rankings (e.g., AAA) indicating the likelihood that sovereign governments will meet their financial obligations to lenders, particularly foreign banks and bondholders. Such ratings summarize CRAs' assessments of government fidelity to creditor interests prioritizing complete and timely payment of interest and principle under loan agreement terms. In a broader sense, such ratings represent public "grades" on the sustainability of fiscal policy.

Their grades matter for governments required by U.S. and international regulation to obtain ratings to place debt with institutional investors (White, 2010). Their grades matter for banks and bondholders that use ratings to price credit and set country lending limits (Bernhard et al., 2015; Cantor and Packer, 1997; Larraín, Reisen, and von Maltzen Pacheco, 1997). Their grades matter for prominent media figures, who describe CRAs as financial "superpowers" (Friedman, 1996) and politicians, who connect electoral success with success in maintaining a favorable rating (*Guardian*, 2012).

But perhaps ratings do more than merely grade the quality of fiscal policy. Perhaps inadvertently, ratings also influence it. Our intuition follows from recent research (Hanusch and Vaaler, 2013) analyzing panel data on ratings, elections and budget deficits for 18 developing democracies from 1990-2004 and documenting a positive relationship between election-year ratings and deficits: higher ratings meant smaller budget deficits, sometimes even surpluses during elections. We build on that study by investigating how and why ratings decrease those election-year budget deficits.

The underlying intuition is simple. CRAs grow more concerned about governments' ability to fulfill their financial obligations in the longer run—make timely interest and principal payments on sovereign liabilities—when fiscal policy becomes more expansionary, especially if it is for short-term political reasons. CRAs then reflect what they interpret as a deterioration in fiscal sustainability by downgrading a country's creditworthiness. Such changes affect the cost of financing future fiscal deficits as financial markets re-price in the risk of default, which, as we show, is closely correlated with the credit ratings. When CRAs decrease ratings there is also likely to be a more immediate electoral effect. Previous research demonstrates that voters are more likely to hold governments accountable for election-induced fiscal expansions when they have better access to information on the national budget (Alt and Lassen 2006, Shi and Svensson 2006). Arguably CRAs, too, provide such information. Indeed, we demonstrate that governments are more likely to lose an election if they are downgraded by at least one major CRA.

In this context, ratings function like other fiscal rules limiting the magnitude of political budget cycles (Rose 2009). CRAs assess sovereign bonds with their ordinal rating levels running from the those meeting the most demanding fiscal rule to less demanding rules represented by descending ordinal letter grades (AAA, AA-, AA, A+, A, A-, BBB+, BBB, BBB-, BB+, BB, BB-. B+, B, B-, C and lower). Governments prefer to ascend rather than descend these ordinal ranks. With each letter grade increase, governments commit to decreasing inefficient expenditure to garner votes during election periods. Ratings may not have the force of law that other constraints on sovereign borrowing do when enshrined in regulatory, legislative or even constitutional provisions. But ratings can act like soft constraints initially imposed and periodically revised by CRAs with similarly negative implications for governments undermining fiscal sustainability for short-term gain.

We analyze evidence related to this intuition in a sample of 111 presidential and parliamentary elections held in up to 63 developing and developed democracies from 2002 to 2011. The evidence helps us test two hypotheses: 1) that governments suffering recent downgrades going into election periods are more likely to lose at the polls; and 2) that governments facing a heightened threat of downgrade, evidenced by rating with a negative outlook going into election periods, borrow less. Section 2 reports empirical methods used to test these two hypotheses. Section 3 reports analytical results indicating support for both hypotheses. Section 4 concludes with a discussion of key results and their implications for research and policy on the disciplinary impact of ratings on fiscal policy.

Analytical Model Terms, Data Sources, Sampling and Estimation Strategies

a. CRA Downgrade and Government Turnover Analysis (GTA)

All model terms used in our analyses are listed in Table 1. This table also includes information on measurement, data sources and descriptive statistics. To test whether downgrades render governments more vulnerable to electoral turnover, we first define our dependent variable, *Government Turnover*, as a 0-1 dummy taking the value of 1 if the largest incumbent party is not re-elected and 0 otherwise. We source data for this dependent variable from the World Bank's Database of Political Institutions (DPI) (Beck et al., 2001), which identifies the largest incumbent party in parliamentary systems and the incumbent party or largest executive coalition party in a presidential system.

The main independent variable in all government turnover analyses (GTA in Table 1), *Downgrade*, is also a 0-1 dummy, this time taking the value of 1 if, in the year prior to the election year, the incumbent government had been downgraded at least one ordinal rating level by a least one of three CRAs: Moody's, Fitch, and S&P. We also include a 1-year lagged value of *Downgrade* to compare and contrast with immediate prior-year effects. We source data for these independent variables from Bloomberg International, which lists the history of CRA sovereign "ceiling" ratings for long-term foreign currency-denominated financial obligations incurred by countries around the world. Table 2 below lists the ordinal letter-grade ratings for all three CRAs along with their common interpretation regarding sovereign creditworthiness. We convert those letter-grade ordinal ratings to 0-16 numerical ratings for analytical convenience.

We sample ratings only from these three CRAs. We previously noted that CRAs derive their importance in sovereign borrowing in part because of regulatory requirements in the US and elsewhere (e.g., the United Kingdom) requiring ratings to place debt offerings with institutional investors such as mutual and pension funds. At least 12 US federal regulations promulgated between 1931 and 1994 require borrowers, sovereign or otherwise, to seek ratings from CRAs deemed by the US Securities Exchange Commission to be Nationally Recognized Statistical Rating Organizations (NRSROs). Additional regulatory reform in the wake of the 2007-2008 financial crisis arguably increased the financial regulatory role of CRAs despite their apparent failure to anticipate the crisis and mitigate its negative economic effects. These regulations and the broader history of CRAs in US and international financial regulation are discussed in Cantor and Packer (1997) and White (2010).

TABLE 1: Variable names, measures, predicted impacts, data source and descriptive statistics

Variable Category	Variable Name	Variable Measurement	Predicted Variable Impact on Dependent Variable (+, -)	Variable Source and Descriptive Statistics
Dependent Variables	*Primary Budget Balance*	General government revenue minus expenditure, excluding interest payments, as a percentage of GDP.	Government turnover analysis (GTA): Governments running more positive primary budget balance in election years are less likely to turn over after election (-); Budget balance analyses (BBA): Dependent variable.	IMF WEO Mean GTA: -0.35 Std Dev GTA: 4.13 Mean BBA: -0.37 Std Dev BBA: 4.20
	Overall Budget Balance	General government revenue minus expenditure as a percentage of GDP.	Same as for *Primary Budget Balance*.	IMF WEO Mean GTA: -2.36 Std Dev GTA: 4.68 Mean BBA: -2.24 Std Dev BBA: 4.53
	Government Turnover	0-1 indicator taking the value of 1 when the government loses an election, otherwise 0.	GTA: Dependent variable.	DPI Mean GTA: 0.52 Std Dev GTA: 0.50
Control Variables	*Unified Government*	0-1 indicator taking the value of 1 when the dominant party in the legislature is the incumbent government's;, 0 otherwise.	GTA: Ambiguous –governments aligned with legislature run more negative budget balances in election periods thus increasing turnover likelihood (+), but have more control over electoral process thus decreasing turnover likelihood (-); BBA: Governments aligned with legislature run more negative budget balances (-).	DPI Mean GTA: 0.24 Std Dev GTA: 0.43 Mean BBA: 0.31 Std Dev BBA: 0.46
	Parliamentary System	0-1 indicating taking the value of 1 when the country system is parliamentary (not presidential).	GTA: Parliamentary system governments have more control over electoral processes decreasing turnover likelihood (-); BBA: Parliamentary system governments run more negative budget balances (-).	DPI Mean GTA: 0.70 Std Dev GTA: 0.46 Mean BBA: 0.66 Std Dev BBA: 0.47
	GDP Growth	Annual percentage growth of GDP adjusted for inflation.	GTA: Governments in countries with faster economic growth have lower turnover likelihood (-); BBA: Governments in countries with faster economic growth run less negative budget balances (+).	WDI Mean GTA: 3.14 Std Dev GTA: 3.33 Mean BBA: 3.08 Std Dev BBA: 3.51
	Ln GDP Per Capita	Natural log of GDP per capita	GTA: Governments in countries with larger per capita GDP have lower turnover likelihood (-); BBA: Governments in countries with larger per capita GDP run less negative budget balances (+).	WDI Mean GTA: 9.58 Std Dev GTA: 0.99 Mean BBA: 9.45 Std Dev BBA: 1.06
	Public Debt	Stock of direct government fixed-term contractual obligations to others outstanding on a particular date, usually the beginning of the country's fiscal year, as a percentage of GDP.	GTA: Governments in countries with larger Public Debt have higher turnover likelihood (+); BBA: Governments in countries with larger Public Debt run more negative budget balances (-).	WDI Mean GTA: 50.11 Std Dev GTA: 28.22 Mean BBA: 49.18 Std Dev BBA: 29.11
Main Variables	*Rating*	Average of up to three ceiling ratings of sovereign creditworthiness for long-term foreign currency denominated debt (from Moody's, S&P and Fitch), stated on a 0-16 scale (See Table 2).	GTA: Governments in countries with higher credit rating have lower turnover likelihood (-); BBA: Governments in countries with higher credit rating run less (more) negative budget balances in election years (+) (non-election years (-))..	Bloomberg Mean GTA: 10.92 Std Dev GTA: 4.66 Mean BBA: 10.44 Std Dev BBA: 4.77
	Downgrade *Stable* *Upgrade*	0-1 indicator taking the value of 1 when a rating decreases (D), remains the same (S) or increases (U) compared to the previous year.	GTA: Upgrades and stable ratings have negative effect on turnover (-). Downgrades have a positive effect on government turnover (+).	Bloomberg Mean GTA: 0.09 (D); 0.63 (S); 0.28 (U) Std Dev GTA: 0.29 (D); 0.45 (S); 0.48 (U)
	Election Year	0-1 indicator taking the value of 1 when it is an election year.	BBA: Governments borrow more in election years (-).	DPI Mean BBA 0.25 Std Dev BBA: 0.43
	Election Positive *Election Stable* *Election Negative*	Three separate 0-1 indicators taking the value of 1 when it is election year and the rating has a positive (*Election Positive*), stable (*Election Stable*) or negative (*Election Negative*) watch or outlook.	BBA: Governments with positive and stable ratings borrow more in election years (-); governments with negative ratings do not borrow more than usual in election years (+).	Bloomberg and DPI Mean BBA: 0.04 (EP); 0.17 (ES); 0.05 (EN) Std Dev BBA: 0.20 (EP); 0.37 (ES); 0.21 (EN)

TABLE 2: Credit ratings, numerical equivalents and interpretations

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

CRA watch/outlook (within rating level) and interpretation

Positive Outlook:	Potential upgrade in next two years
Stable Outlook:	Neither potential upgrade nor downgrade in next two years
Negative Outlook:	Potential downgrade in next two years

Moody's, S&P and Fitch are three original NRSRO CRAs active in the sovereign rating business. Even after post-crisis regulatory reforms in the 2010s, reforms that mandated the introduction of new CRAs with NRSRO status, Moody's, S&P and Fitch still dominate as the only three CRAs with global ratings coverage of sovereign and sub-sovereign (e.g., corporate) borrowers. Since the late 1990s, these three have comprised about 95% of the global market for ratings work, and not withstanding their apparent miscues in 2007-2008, continue to enjoy a reputation for high-quality assessments of creditworthiness on which investors around the world rely (CFR, 2015; White, 2010). For these reasons, we limit our sampling to ratings from these three CRAs.

We sample only from ratings based on foreign-currency denominated obligations because they are the dominant public financing instruments in many countries, particularly in the developing world. They are more popular for foreign institutional investors, and thus find more coverage among financial analysts and the media. We code *Downgrade* as a 1 even if only one of the three CRAs downgrade a government without others immediately following, as in the case of S&P's downgrade of the US in August 2011. Even a downgrade by one of the three CRAs can generate substantial financial market or broader popular response. During the 2012 US presidential election campaign, Republican critics of US President Barack Obama referred to him derisively as "President Downgrade" (e.g., Mittromneycentral.com, 2011). It is also possible

that a downgrade by one CRA might conflict with an upgrade by another, though we find no such instances in our sample. In the longer term, ratings by the three CRAs show substantial convergence around a single ordinal level (White, 2010).

Other controls include *GDP Growth,* which is the annual percentage growth rate in gross domestic product (GDP). Consistent with the literature on economic voting (e.g., Duch and Stevenson 2008), faster economic growth increases the likelihood of re-election. *Ln GDP Per Capita* is the natural log of GDP per capita. Wealthier countries are less likely to turn out incumbents. These data are sourced from the World Bank's World Development Indicators (WDI). We also control for *Government Debt*, which is the total value of the general government's fiscal liabilities stated as a percentage of GDP (the general government includes the central government as well as additional public entities, such as state governments). More indebted countries are more likely to turn out incumbents. Public debt data are sources from the International Monetary Fund's (IMF's) World Economic Outlook (WEO).

Overall Budget Balance and *Primary Budget Balance*—which in this part of the analysis are independent variables but serve as our dependent variables in the second part of the analysis—are the sum of all general government revenues less expenditures stated as a percentage of GDP. A negative budget balance corresponds to a fiscal deficit. *Primary Budget Balance* strips out expenditures related to interest payments on national debt and better represents current government fiscal policies—although the public is likely to observe the somewhat less technical *Overall Budget Balance*, which is why we prefer it in this part of the analysis. Consistent with models and evidence related to political budget cycles noted earlier, more negative budget balances increase the likelihood of government turnover. We source data for these terms from the IMF's WEO.

We also include two other political controls, both sourced from the DPI. *Unified Government* is a 0-1 indicator taking the value of 1 when legislative branches are led by the same party as the incumbent. Control of both legislative and executive branches makes election-period borrowing easier, which is positively related to government turnover but is also controlled for with our budget balance terms. Aside from this, unified government also benefits incumbents by giving it greater ease in, for example, implementing electoral policies (e.g., voting age, place, manner, media access) beneficial to re-election prospects. We predict that *Unified Government* is negatively related to government turnover.

Parliamentary System is also a 0-1 indicator taking the value of 1 when the country's head of state lacks substantial power to appoint the government ministers, lacks veto power over policy initiatives those ministers might pass through the legislature, and or lacks substantial independent power over government ministries such as, for example, foreign affairs. Of course, parliamentary systems also often permit the executive to choose the election date—call a snap election, for example—while presidential systems more often have fixed election dates. We bring no prior expectation regarding how this control will enter our model of government turnover. Parliamentary System controls for any differences in the likelihood of government turnover related to these contrasts in power allocation. We check for and exclude from our sample any apparent snap elections –as identified either by the governments themselves or by outside observers like the International Foundation for Electoral Systems (IFES).

We sample only election years since we are interested in the effect of downgrades on electoral turnover. We require that elections be competitive. The DPI ranks executive elections on a 1 (not competitive) to 7 (competitive) scale. A score of 7 requires a multi-party system where at least one party contending in but not winning the election still polls at least 25% of the vote. We sample only from elections for countries with executive electoral systems ranked as a 7. We also adjust the election year for fiscal years when they do not coincide with the calendar year (Hanusch and Keefer, 2014). After screening our data based on these sampling and data availability requirements, we have a sample of 109 election-year observations from 53

countries observed from 2002-2011.[4]

We estimate effects of *Downgrade* on *Government Turnover* with the following model:

$$Government\,Turnover_{it} = \alpha_0 + \beta_1 Downgrade_{it} + \beta_2 Downgrade_{it-1} + \sum_{j=1}^{j=m} \psi_j Controls_{it,t-1} + \mu_{it} \quad (1)$$

Government Turnover in election-year *t* for country *i* is explained by *Downgrade*, various controls described above, intercept (α) and error (μ) terms. Since *Government Turnover* is a 0-1 indicator, we use a probit estimator with robust standard errors clustered on countries. Time-varying macro-economic controls (*GDP Growth, Ln GDP Per Capita, Public Debt, Primary Budget Balance, Overall Budget Balance*) are measured as two-year moving averages (*t*, *t*-1) to capture practical issues about when information relevant to voter decision-making is available. Voters can refer to some mix of both last-year and current-year actual or forecast macroeconomic dynamics. The theorized impact of *Unified Government* on voter outcomes permits assumption of an exclusively current-year (*t*) effect. The legislature and executive can implement (presumably advantageous) electoral policies in the election year.

Our hypothesis that rating downgrade increases the likelihood of electoral turnover will be supported if $\beta_1 > 0$ or $\beta_2 > 0$. We seek confirmation of any support for our hypothesis by replacing the downgrade terms with two alternatives indicating increased CRA regard for sovereign creditworthiness with a recent rating upgrade (*Upgrade*) or steady CRA regard with a stable rating (*Stable*). We expect these alternatives not to increase the likelihood of electoral turnover.

b. Rating Outlook and Budget Balance Analyses (BBA)

Table 1 again lists model terms used to analyze election-year variation in budget balances. For these analyses, our primary dependent variable, *Primary Budget Balance* and then *Overall Budget Balance* as a robustness check. We choose the *Primary Budget Balance* as our key independent variable in this part of the analysis for the following reasons. First, it is likely better at approximating current policy decisions. Interest payments for past borrowing are non-discretionary and reflect past fiscal policies that the incumbent government may not have influenced. Focusing on the primary budget balances reduces one source of reverse causality in statistical estimations as high interest payments for past borrowing might also affect CRAs' assessment of national solvency leading to a rating downgrade for reasons aside from current fiscal policy decisions.

Our three main independent variables for explaining variation in budget balances are *Rating, Election Year* and several rating "outlook" terms. *Rating* is the 2-year moving average of a country's long-term foreign currency-denominated credit rating on January 1 of current year and past year. Ratings summarize in ordinal letter-grade form CRA assessments of the ability and willingness of governments to meet their financial obligations. They summarize the impact of many macro-economic and political factors related this ability and willingness (Cantor and Packer, 1997) including those we noted in our description of the government turnover model. As Table 2 illustrates, higher ratings indicate greater creditworthiness and access to capital for borrowing. Thus, we expect that *Rating* will be negatively related to *Primary Budget*

[4] Those 53 countries include: Argentina, Armenia, Australia, Austria, Bahamas, Belgium, Brazil, Bulgaria, Canada, Cape Verde, Chile, Costa Rica, Cyprus, Czech Republic, Denmark, Dominican Republic, Estonia, Finland, France, Germany, Greece, Grenada, Hungary, Iceland, India, Ireland, Israel, Italy, Latvia, Lithuania, Malaysia, New Zealand, Norway, Panama, Peru, Philippines, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Suriname, Sweden, Thailand, Trinidad and Tobago, Ukraine, UK, USA, Uruguay, and Venezuela.

Balance. *Election Year* is a 0-1 indicator taking the value of 1 in years when there is a national executive election. Consistent with theories on political budget cycles, we expect that *Election* will be negatively related to *Primary Budget Balance*. We source data on *Rating* from Bloomberg and data on *Election Year* from the DPI and IFES.

CRAs often give borrowing governments and the broader public notice when potentially changing ratings upward or downward. Notice could be that the rating is more amenable to change in the very short term, as short as over the next 6-8 weeks. Ratings are then on "watch" for upgrade or (more often) downgrade. Notice could also be that the rating is more amenable to change over a longer time horizon, over the next 1-2 years. Ratings then carry an "outlook" of a positive (for upgrade) or negative (for downgrade) category (Fitch, 2014).

With this in mind, we create three 0-1 indicators that take the value of 1 in election years when the rating is on negative watch or has a negative outlook (*Election Negative*), when the rating is on positive watch or has a positive outlook (*Election Positive*), when the rating is neither on watch or has no outlook (*Election Stable*). Consistent with our hypothesis that governments will borrow less when CRAs indicate increased willingness to downgrade in during an election period, we expect that *Election Negative* will be positively related to *Primary Budget Balance*. By contrast, we expect that *Election Stable* and *Election Positive* will be negatively related to *Primary Budget Balance*. When we interact these election-year outlook dummies with Rating (*Election Negative x Rating, Election Stable x Rating, Election Positive x Rating*), these three terms capture effects on *Primary Budget Balance* at very low rating levels while the interaction terms indicate how those effects are magnified or diminished with increasing election-year creditworthiness. We source these data from Bloomberg.

We again include several controls that might also affect budget balances including (expected effect): *GDP Growth* (+), *Ln Per Capita GDP* (+), *Public Debt* (-), *Unified Government* (-) and *Parliamentary System* (-).[5] Table 1 again elaborates on their measurement, including the 2-year moving average measurement of the macro-economic controls, and their descriptive statistics in our budget balance analyses. We also include a lagged dependent variable, *Primary Budget Balance*$_{t-1}$, to account for the dynamics in our panel dataset.

For these analyses, we sample from a slightly larger number of countries and can include observations from both election and non-election years. We have 460 country-year observations from 63 countries holding 111 elections from 2002-2011.[6] We initially estimate effects of elections, ratings and rating outlooks on budget balances with the following model:

$$\begin{aligned} Budget\ Balance_{it} &= \alpha_0 + \beta_0 Budget\ Balance_{it-1} + \beta_1 Rating_{it,t-1} \\ &+ \beta_2 Election\ \ Year_{it} + \sum_{j=1}^{j=m} \psi_j Controls_{it,t-1} + \delta' + \phi' + \mu_{it} \end{aligned} \qquad (2)$$

Budget Balance in year *t* for country *i* is first explained with a 1-year lagged value of *Budget Balance* and then *Rating*, *Election Year*, various controls (*Controls*) described above, country (δ') and year (ϕ')fixed

[5] The inclusion of the *Unified Government* variable follows the logic laid out in Hanusch 2012 (a, b).

[6] Those 63 countries include: Argentina, Armenia, Australia, Austria, Bahamas, Belgium, Botswana, Brazil, Bulgaria, Canada, Cape Verde, Chile, Costa Rica, Croatia, Cyprus, Czech Republic, Denmark, Dominican Republic, Estonia, Finland, France, Germany, Greece, Grenada, Guatemala, Honduras, Hungary, Iceland, India, Ireland, Israel, Italy, Japan, Kenya, Latvia, Lesotho, Lithuania, Malaysia, New Zealand, Nigeria, Norway, Panama, Peru, Philippines, Poland, Portugal, Romania, Russia, Slovakia, Slovenia, South Africa, Spain, Suriname, Sweden, Thailand, Trinidad and Tobago, Turkey, Ukraine, UK, USA, Uruguay, and Venezuela.

effects, an intercept (α) and error (μ) terms. We use *Primary Budget Balance* as our primary dependent variable because it is a better measure of current fiscal policy. *Overall Budget Balance* is our alternative measure; it includes expenditures for interest on past budget deficits stripped out of the *Primary Budget Balance* number. We expect that both ratings and elections prompt more public borrowing, thus $\beta_1 < 0$ and $\beta_2 < 0$.

We then re-specify (2) to account for election year rating outlooks so that we can test our hypothesis that a negative outlook decreases public borrowing in election years lest CRAs downgrade sovereign debt undercutting claims of good economic stewardship on the campaign trail, and perhaps, raising the cost of borrowing. Estimated effects of elections, ratings and rating outlooks on budget balances follows from this revised model:

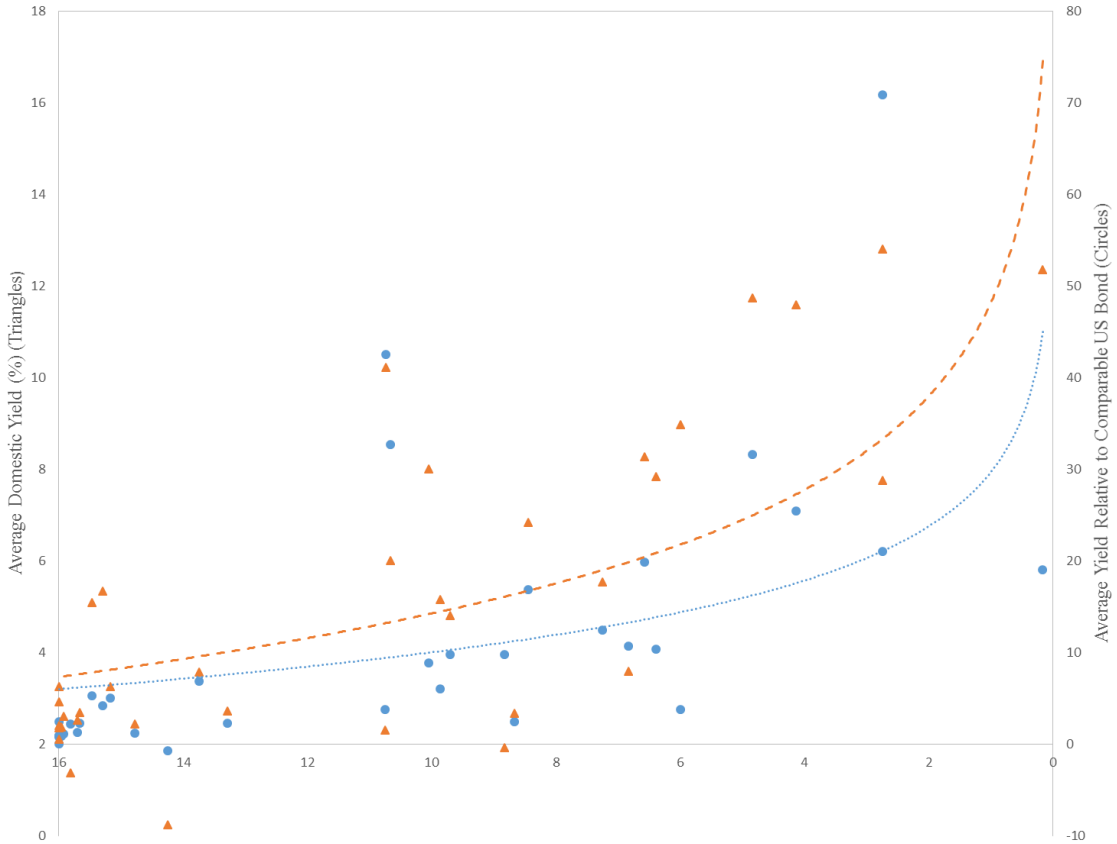
$$\begin{aligned} &Budget\ Balance_{it} = \alpha_0 + \beta_0 Budget\ Balance_{it-1} + \beta_1 Rating_{it,t-1} \\ &+ \beta_{2A} Election\quad Positive_{it} + \beta_{3A} Election\quad Stable_{it} + \beta_{4A} Election\quad Negative_{it} \\ &+ \sum_{j=1}^{j=m} \psi_j Controls_{it,t-1} + \delta' + \phi' + \mu_{it} \end{aligned} \qquad (3)$$

Our hypothesis will be supported if $\beta_{3A} > \beta_{1A}$ or $\beta_{3A} > \beta_{2A}$, which would indicate that election-year borrowing by governments is decreases with a negative outlook compared to when its rating is either stable or has a positive outlook. Given our expectation of increased borrowing in an election year, our hypothesis will also find support if $\beta_{3A} > 0$, that is, public borrowing is decreased (not increased) when CRAs have indicated a heightened willingness to downgrade with a negative outlook.

We then re-specify (2) again, this time to account for any election-year outlook effects on public borrowing that may be conditioned by the ordinal level of sovereign creditworthiness. It may be that heightened willingness to downgrade national debt has a magnified affect when, for example, sovereign ratings are at the highest level, AAA (16). During the French presidential election campaign of 2011-2012, incumbent French President Nicholas Sarkozy correctly predicted that losing this top rating would lead to his ouster on election day: "If France loses its AAA, I'm dead" (Guardian, 2012). It could also be that the outlook effect on election-year borrowing is stronger at the lower end of the rating scale near the cut-off between investment and non-investment "junk" ratings (BBB- = 7 and BB+ = 6). Figure 1 below plots and then derives a curvilinear trend line on ratings and sovereign bond yields absolutely and relative to comparable US bonds for 1-year bonds offered by 37 countries in our sample from 2001-2011.[7] The negative relationship between rating and yield is more pronounced below than above the investment-junk grade rating cutoff:

[7] Those 37 countries include: Argentina, Australia, Austria, Belgium, Brazil, Bulgaria, Canada, Chile, Colombia, Croatia, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, India, Ireland, Italy, Japan, Kenya, Latvia, Lithuania, New Zealand, Norway, Poland, Portugal, Romania, Russia, Spain, Sweden, Thailand, Turkey, Ukraine, UK, and USA.

FIGURE 1: Average annual credit rating and bond yield on 1-year sovereign bonds, 2001-2011



To probe for these effects, we define the following revised model:

$$\begin{aligned} &Budget\ Balance_{it} = \alpha_0 + \beta_0 Budget\ Balance_{it-1} + \beta_1 Rating_{it,t-1} \\ &+ \beta_{2A} Election\ \ Positive_{it} + \beta_{3A} Election\ \ Stable_{it} + \beta_{4A} Election\ \ Negative_{it} \\ &+ \beta_{5A} Election\ \ Positive * Rating_{it} + \beta_{6A} Election\ \ Stable * Rating_{it} \\ &+ \beta_{7A} Election\ \ Negative * Rating + \sum_{j=1}^{j=m} \psi_j Controls_{it,t-1} + \delta' + \phi' + \mu_{it} \end{aligned} \qquad (4)$$

Now, the election-year rating outlook dummies capture public borrowing effects when rating levels are near the investment-non-investment grade cut-off at the lower end of the rating scale; their associated interaction terms capture changes in effects as the rating level increases indicative of greater sovereign creditworthiness. Again, we look for whether governments reverse an election-year tendency to borrow more ($\beta_{3A} < 0$) or that election-year borrowing with that negative outlook is decreased compared to borrowing in election years with stable or positive rating outlook ($\beta_{3A} > \beta_{1A}$ or $\beta_{3A} > \beta_{2A}$).

We have panel data, so we initially estimate (2) with panel fixed effects regression. We then re-estimate (2-4) with a dynamic panel generalized method of moments (GMM) with robust standard errors based on Arellano and Bover (1995) and Blundell and Bond (1998), and implemented with a Stata add-on program written by Roodman (2006). Estimating lagged dependent variable effects in a panel estimation with fixed country effects can lead to downwardly biased estimates where the time series is limited, that is, less than approximately 30 time periods. Our panel GMM estimator corrects for this so-called Nickell (1981) bias,

by first-differencing the equation to eliminate fixed country effects and then generating instruments in the form of lagged differences and levels of the lagged dependent as well as other right-hand side terms deemed to be endogenously determined. This "system-and-difference" GMM estimator is more appropriate than a "difference" GMM estimator (Arellano and Bond, 1991) given the broad cross-sectional -63 countries- but relatively short within-panel time series –about 7 observations per country on average. For all panel GMM estimations, we test for both the exogeneity of instruments as a group generated and for the presence of higher (than first-order) autoregressive processes that might otherwise bias estimates.

Results

a. Descriptive Statistics and Preliminary Analysis

Table 1 reports means and standard deviations for our government turnover analysis (GTA) and budget balance analysis (BBA) samples, which exhibit close comparability. The means for *Rating* in the GTA sample (10.92) and BBA sample (10.44) both lie between A- and A in Table 2, while *Primary Budget Balance* means and standard deviations in the GTA (-0.35 and 4.13) and BBA (-0.37, 4.20) samples are nearly identical. At first glance, CRA ratings and budgeting dynamics they may influence generally show few differences in election years covered by the GTA sample versus the broader ranged BBA sample comprising both election- and non-election years.

Other descriptive statistics for each sample convey helpful preliminary insight related to our two hypotheses. Regarding the GTA sample, we first note the distribution of recently downgraded versus recently upgraded or stable ratings going into an election year. Downgrades are relatively rare, only 9% of our 109 election-year observations. Compare this to 63% with stable ratings and 28% with recent upgrades going into an election year. These descriptive statistics follow a broader long-term trend of increasing sovereign creditworthiness and, perhaps, rating optimism among CRAs. In the BBA sample, about one third of the election-year observations have outlooks attached to them and the split between negative (18%) and positive (15%) is close.

Another interesting property of our BBA sample is illustrated in Figures 2a-b, which plot election-year observations with a negative outlook against log of GDP per capita (Figure 1a) and average rating (Figure 1b). Outlooks in both figures as well as others using other control variables suggest that outlooks are well distributed across dimensions commonly associated with a country's level of development and financial solvency. These preliminary analyses assure against detection of spurious relationships between election-year rating outlook and budget balance effects. This assurance is particularly valuable in our final set of analyses where we interact election-year outlooks with rating levels in (4).

A final preliminary analysis provides initial insight on our hypothesis regarding the budget balance impact of outlooks in election years. Figure 3's bar chart compares year-to-year changes in *Primary Budget Balance* for the 111 election years in our BBA sample.

The contrast is clear and in line with our hypothesis that governments with negative (non-negative) outlooks run less (more) negative budget balances in election years. Governments with "non-negative" rating outlooks can borrow for political purposes with less threat of downgrade and ouster at the polls.

FIGURE 2a-b: Negative outlook (1) versus non-negative outlook (2) election-year observations grouped by GDP per capita and average CRA rating, 2002-2011

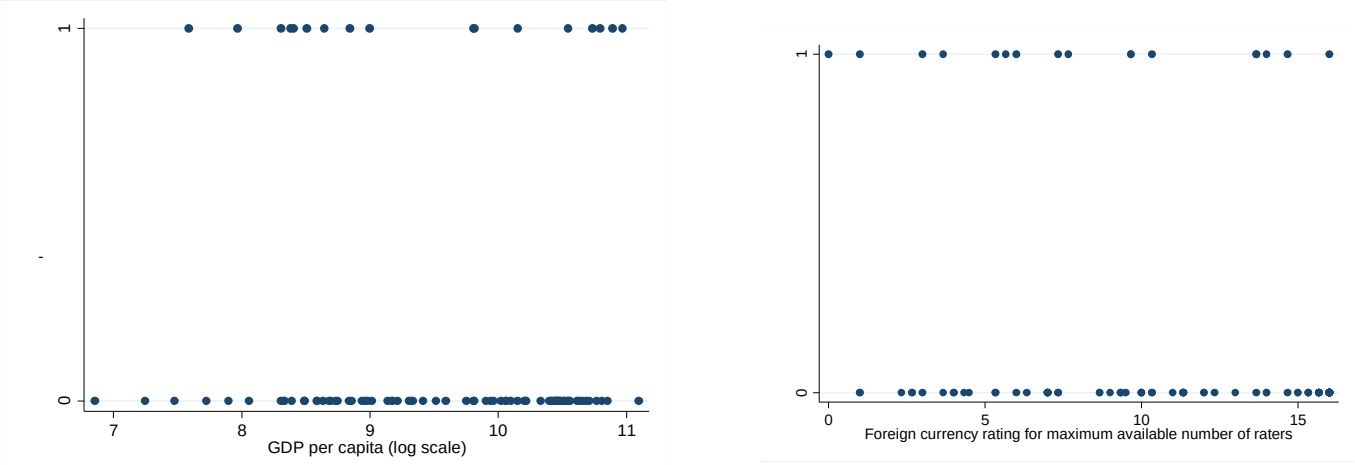
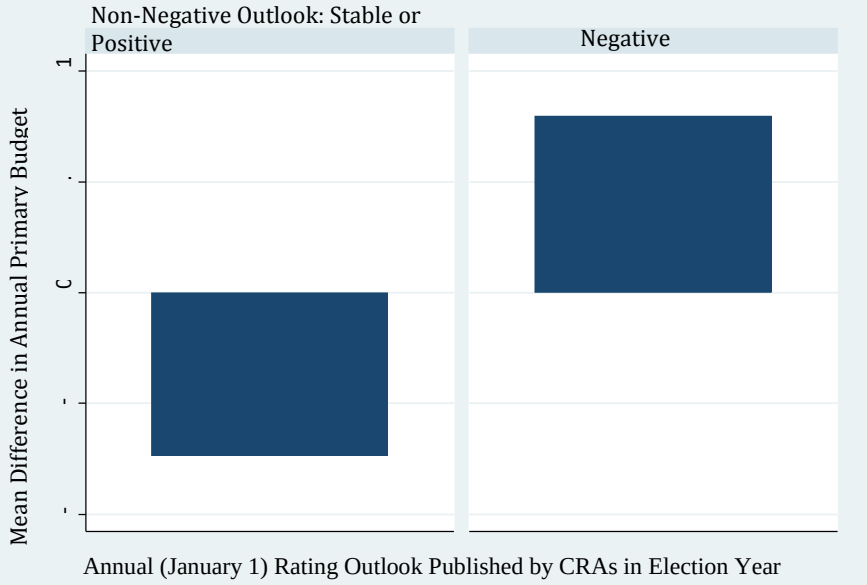


FIGURE 3: Change in the primary budget balance in election years under negative versus non negative rating outlook, 2002-2011



b. Regression Results: Government Turnover Analysis

Table 3 reports results from cross-sectional probit regression of *Government Turnover* on different combinations of control and main variables listed in Table 1. Recall here that our hypothesis is that recent CRA downgrades undermine governments' attempts to signal good economic stewardship to voters in election years and thus increase the likelihood that the government will be turned out of office that year. Column 1 presents results from probit regression with control variables only and *Primary Budget Balance* as the budget balance control. Recall that we made no prediction regarding how the electoral system would affect the likelihood of electoral turnover. For the other five controls, coefficient estimates in Column 1 exhibited the predicted sign at commonly-accepted levels of statistical significance ($p < 0.10$) in four instances. Governments in richer countries experiencing unified government are also less likely to be turned out of office that year. Moreover, government turnover is less likely in countries with less public debt and lower fiscal deficits, a notion supporting the idea that sound fiscal stewardship is rewarded by voters (a result mirroring the findings of Brender and Drazen (2008)).

Columns 2-3 add *Downgrade* (and $Downgrade_{it-1}$) to equation (1) with Column 3's results based on the substitution of *Overall Budget Balance* for *Primary Budget Balance.* Results support our hypothesis that a recent downgrade imperils the government's re-election. In Column 2 (0.767, $p < 0.10$) and Column 3 (0.817, $p < 0.10$) *Downgrade* enters with the expected positive sign at commonly-accepted levels of statistical significance. Note that this effect applies separately from other fiscal controls, suggestive of the interpretative power of "opinions" CRAs offer on fiscal sustainability to the general public through their ratings.

In Column 4, we estimate marginal effects of a 1-unit change in all terms of equation (1) based on Column 2 results. Here it is helpful to recall that the mean for *Government Turnover* is 0.52, meaning that governments lose office on in election years about 52% of the time for our 53 countries from 2002-2011. A recent downgrade increases that likelihood by 27 percentage points (0.270, $p < 0.10$) holding other variables in equation (1) at their mean levels. This increase is substantial, although it is important to note that it is estimated with only a handful (10) of actual downgrades in the sample, indicating that downgrades are relatively rare events.[8]

Columns 5-6 implement the same estimations of equation (1) but in Column 5 after switching in *Stable* and in Column 6 after switching in *Upgrade* for the *Downgrade* term. The negative sign and significance of the *Stable* term in Column 5 (-0.465, $p < 0.10$) suggests that governments with stable ratings are somewhat more likely to be re-elected. Going into the election campaign with a recent upgrade has no significant effect on re-election. These contrasts indicate additional support for our hypothesis that CRAs can "punish" governments through downgrades that would undercut claims of good stewardship signaled by electorally-motivated expansionary fiscal policy.

[8] We also find some evidence suggesting that rating changes for countries with investment grade ratings have a particularly pronounced effect on election results. However, the number of downgrades in our sample is too small for any authoritative inferences on the effect of rating downgrades differentiated by investment/junk grade.

TABLE 3: Regression results: Downgrade effects on government turnover, 2002-2011

Estimator→	(1) Probit	(2) Probit	(3) Probit	(4) Probit Marginal Effects (Model 3)	(5) Probit	(6) Probit
Dependent Variable→ *Independent Variable*↓	Government Turnover	Government Turnover	Government Turnover	Government Turnover	Government Turnover	Government Turnover
			Control Variables			
Constant (α)	2.708†	3.147†	3.158*		3.050*	2.510
	(1.595)	(1.554)	(1.585)		(1.554)	(1.621)
GDP Growth (ψ_1)	0.042	0.065	0.060	0.023	0.050	0.028
	(0.048)	(0.055)	(0.055)	(0.019)	(0.046)	(0.050)
Ln GDP Per Capital (ψ_2)	-0.360*	-0.429**	-0.429**	-0.151**	-0.400**	-0.349*
	(0.164)	(0.161)	(0.164)	(0.052)	(0.159)	(0.166)
Public Debt (ψ_3)	0.007†	0.009*	0.007†	0.003**	0.008*	0.007†
	(0.004)	(0.004)	(0.004)	(0.001)	(0.004)	(0.004)
Primary Budget Balance (ψ_{4A})	-0.052†	-0.050†		-0.018†	-0.055†	-0.059†
	(0.029)	(0.030)		(0.010)	(0.031)	(0.032)
Overall Budget Balance (ψ_{4B})			-0.035			
			(0.029)			
Unified Government (ψ_5)	-0.511*	-0.531*	-0.519*	-0.186*	-0.514*	-0.542*
	(0.252)	(0.258)	(0.258)	(0.087)	(0.249)	(0.253)
Parliamentary System (ψ_6)	0.624*	0.735**	0.790**	0.258**	0.822**	0.662*
	(0.273)	(0.274)	(0.270)	(0.093)	(0.270)	(0.277)
			Main Variables			
Downgrade (β_1)		0.767†	0.817†	0.270†		
		(0.438)	(0.439)	(0.150)		
$Downgrade_{it-1}$ (β_2)		-0.549	-0.547	-0.193		
		(0.433)	(0.433)	(0.149)		
Stable (β_{1A})					-0.465†	
					(0.259)	
$Stable_{it-1}$ (β_{2A})					0.237	
					(0.276)	
Upgrade (β_{1B})						0.282
						(0.283)
$Upgrade_{it-1}$ (β_{2B})						0.143
						(0.334)
			Other Information			
Number of Observations	109	109	109	109	109	109
Number of Countries	53	53	53	53	53	53
Pseudo-R^2	0.086	0.108	0.103	N/A	0.104	0.094

** p<0.01, ** p<0.05, † p<0.10 Robust standard errors in parentheses.

c. Regression Results: Outlook and Budget Balance Analysis

Table 4 reports results from panel fixed effects estimation (Column 1) and then dynamic panel GMM estimation (Columns 2-6) of budget balances in and out of election years with different ratings and rating outlooks. Recall here that our hypothesis is that, in election years, ratings with a negative outlook indicate heightened likelihood of a downgrade by CRAs that will prompt governments to run smaller fiscal deficits (i.e., less negative budget balances). In Table 4, the dependent variable in Columns 1-4 is *Primary Budget Balance* while in Columns 5-6 it is *Overall Budget Balance*. We use a lagged dependent variable in all estimations along with control variables used in our previous government turnover analyses.

Columns 1-2 report basic results from estimation of equation (2), which includes lagged dependent variables, controls, *Rating* and *Election Year* terms. Initially, our aim is to probe for political budget cycles and confirm the appropriateness of our panel GMM estimation strategy. With panel fixed effects regression in Column 1, we find that the lagged dependent variable is positive, lies between 0 and 1, and is significant at commonly-accepted levels (0.486, $p < 0.01$). Last year's *Primary Budget Balance* explains approximately half of the variation in the current year's *Primary Budget Balance*. Again, we have no prediction regarding the sign on the electoral system indicator (*Parliamentary System*), but observe expected signs on three of the four other control variables. None is significant at commonly-accepted levels of statistical significance, which is not unusual in a lagged dependent variable setting with country and year fixed effects included (though not reported).

In Column 1, *Rating* (-0.557, $p < 0.10$) and *Election Year* (-0.392, $p < 0.05$) enter with the expected negative signs. These results follow Hanusch and Vaaler (2013), who also show that higher ratings are associated with stronger solvency indicators, likely the consequence of more prudent fiscal stewardship. Accordingly, larger deficits can be sustained without threatening national solvency. Moreover, lower borrowing costs associated with higher ratings reduce the relative cost of deficit-spending. In election years, governments with higher ratings borrow less, which may follow from a fear of downgrade or other motivations to remain fiscally responsible, even when facing the possibility of ouster by voters. Results in Column 1 are consistent with such interpretations and explain more than 62% of the variation in budget balances in doing so.

Column 2 re-estimates equation (2) with the dynamic panel GMM procedure. The jump in the estimate of the lagged value of the *Primary Budget Balance* from 0.486 to 0.689 ($p < 0.01$) means that downward bias is being adjusted up as expected with the dynamic panel GMM procedure. Now all four controls for which we have predicted signs exhibit those signs though not at commonly-accepted levels of significance. *Rating* again enters with the predicted negative sign but now only at the 12% level of significance. *Election Year* again enters negatively and significantly (-0.366, $p < 0.10$), documenting the existence of political budget cycles in our sample. Other dynamic panel GMM diagnostic data follow expectations. We do not reject the null hypothesis of second or higher order autocorrelation based on the Arellano-Bond test statistic (0.73), nor do we reject the null hypothesis that the 79 instruments we generate are exogenous as a group based on the Hansen test statistic (0.87). Consistent with our hypothesis, we next investigate whether and how the pre-electoral fiscal policy effects we detect differ under positive, stable and negative outlooks.

Dynamic panel GMM results in Columns 3-4 yield important insight regarding that investigation. In Column 3, we replace Election Year with the three election outcome variables highlighted in equation (3). *Election Negative* takes the value of 1 when it is an election year and the sovereign credit rating has a negative outlook indicating a higher likelihood of near-term downgrade. As

expected, *Election Negative* enters with a positive sign (0.201) but is not significant at commonly-accepted levels. By contrast, both *Election Stable* (-0.524, $p < 0.05$) and *Election Positive* (-0.495) are negative with Election Stable's estimate significant at the 5% level. Governments with stable ratings going into an election do borrow significantly more than in non-election years.

One way to demonstrate support for our hypothesis about election-year borrowing and rating outlook is by direct examination of the sign and significance of the *Election Negative* coefficient. Based on this test, we cannot conclude significant support in Column 3. We also cannot conclude support in Column 3 based on an alternative test that compares the coefficient estimate for *Election Negative* with that for *Election Stable* and *Election Positive*. Results from those comparisons are given in Table 4. Neither the *Election Negative-Election Stable* (0.41) nor the *Election Negative-Election Positive* comparison test statistics are statistically significant at commonly-accepted levels.

To investigate these differences further, we partition election outlook effects by rating level consistent with equation (4). Now, *Election Negative*, *Election Stable* and *Election Positive* terms capture effects on *Primary Budget Balance* of differing outlooks when the underlying rating is very low, meaning in the non-investment "junk" range (i.e., less than BBB-). At these low ratings, we can again tease out whether there are statistically significant differences between negative outlooks in election years compared to positive or stable outlooks. Table 5 demonstrates that at these low rating levels, the differences are significant. Governments borrow less when they are on negative rating watch. This result holds for our samples using both the *Primary Budget Balance* and the *Overall Budget Balance*

TABLE 4: Regression results: Outlook effects on election-year budget balances, 2002-2011

Estimator→	(1) Panel Fixed Effects	(2) Panel Sys-Diff-GMM	(3) Panel Sys-Diff-GMM	(4) Panel Sys-Diff-GMM	(5) Panel Sys-Diff-GMM	(6) Panel Sys-Diff-GMM
Dependent Variable→ *Variables*↓	Primary Budget Balance	Primary Budget Balance	Primary Budget Balance	Primary Budget Balance	Overall Budget Balance	Overall Budget Balance
	Control Variables					
Constant (α)	-18.319	-33.599	-31.264†	-18.874	-31.264†	-22.388
	(24.437)	(23.766)	(18.084)	(13.914)	(18.084)	(14.068)
Lagged Budget Balance (Y_{it-1})	0.486**	0.689**	0.696**	0.687**	0.630**	0.631**
	(0.067)	(0.093)	(0.073)	(0.064)	(0.103)	(0.083)
GDP Growth (ψ_1)	0.068	0.041	0.053	0.061	0.134†	0.134*
	(0.049)	(0.083)	(0.074)	(0.073)	(0.078)	(0.064)
Ln GDP Per Capita (ψ_2)	2.592	5.060	3.704	2.918	4.507†	3.242
	(2.681)	(3.404)	(2.515)	(2.056)	(2.680)	(2.100)
Public Debt (ψ_3)	-0.021	-0.045	-0.027	-0.018	-0.050	-0.036
	(0.034)	(0.045)	(0.033)	(0.028)	(0.039)	(0.031)
Unified Government (ψ_4)	0.072	-0.670	-0.589	-0.630	-0.459	-0.495
	(0.399)	(0.684)	(0.538)	(0.447)	(0.623)	(0.468)
Parliamentary System (ψ_5)	(country-	-0.485	-0.339	-0.190	-0.440	-0.224
	invariant)	(1.058)	(0.771)	(0.610)	(0.875)	(0.633)
	Main Variables					
Rating (β_1)	-0.557†	-0.986	-0.739	-0.615	-0.811	-0.592
	(0.287)	(0.656)	(0.473)	(0.408)	(0.517)	(0.426)
Election Year (β_2)	-0.392*	-0.366†				
	(0.201)	(0.202)				
Election Positive (β_{2A})			-0.495	-2.416**	-0.638	-2.435**
			(0.443)	(0.834)	(0.436)	(0.790)
Election Stable (β_{3A})			-0.524*	-1.893†	-0.560*	-1,941†
			(0.244)	(1.088)	(0.249)	(1.106)
Election Negative (β_{4A})			0.201	1.290	0.286	2.297
			(0.847)	(1.080)	(0.897)	(2.049)
*Election Positive * Rating* (β_{5A})				0.253**		0.250**
				(0.095)		(0.088)
*Election Stable * Rating* (β_{6A})				0.112		0.114
				(0.079)		(0.075)
*Election Negative * Rating* (β_{7A})				-0.138		-0.246
				(0.098)		(0.172)
	Other Information					
Number of Observations	440	440	440	440	440	440
Number of Countries	63	63	63	63	63	63
Wald χ^2 (Overall R^2)	(0.62)	708.93**	906.85**	1144.11**	622.77**	949.22**
AR1		-2.62**	-2.56**	-2.62***	-2.70**	-2.77**
AR2		0.73	0.81	0.98	0.91	1.11
Hansen test (p-value)		0.87	1.00	1.00	1.00	1.00
Number of instruments		79	117	155	117	155

** p<0.01, ** p<0.05, † p<0.10 Robust standard errors in parentheses. Country and time (year) effects not reported but available from the authors.

TABLE 5: Statistical significance of difference between election outlook dummies

Table 4 Column	Positive vs Stable	Stable vs Negative	Positive vs Negative
(3)	0.96	0.41	0.47
(4)	0.71	0.03*	0.00**
(5)	0.89	0.35	0.39
(6)	0.70	0.06†	0.02*

** p<0.01, * p<0.05, † p<0.10. Presents p-values from t-tests of whether 0-1 election dummies from Table 4 are significantly different from each other.

Conclusion

We set out in this study to understand whether and how CRAs and their ratings might influence rather than merely reflect election-year fiscal policy. We found broad-sample evidence of that influence. Downgrades going into election years increase the likelihood that governments will lose at the polls from 52 to nearly 80%. Heightening the threat of a downgrade with a negative outlook appended to ratings going into an election year means that governments with low ratings borrow no more in than out of election years. Ratings and the CRAs that publish them can significantly and substantially affect fiscal policy behavior and electoral prospects. Ratings act like other rules that constrain tendencies for pre-electoral fiscal expansions and provide fiscal discipline to governments.

Our findings matter for research on political budget cycles. With the exception of Hanusch and Vaaler (2013), researchers have either ignored CRAs as relevant players in election-year fiscal policy or treated them as mere observers of respondents to fiscal policy decisions (e.g., Block and Vaaler, 2004). Our study suggests that credit ratings may play an important role in diminishing incentives to engage in fiscal expansions, which in election years are often inefficient and motivated by short-term political considerations. Future research should incorporate such influence, particularly where that research includes developing democracies with lower ratings or even no ratings, if the government has evinced interest in greater financial openness.

Our results hold important lessons for policy. For one, given the importance of macro-fiscal stability for economic development, including poverty reduction or boosting shared prosperity, CRAs rating sovereigns provide a valuable public service. Packaging information on the quality of fiscal policy in simple and easily understood language, such as letter grade ordinal rankings, strengthens citizens' ability to hold governments accountable. Since citizens have an interest in sustainable public finances, it is eventually the implicit threat of their punishment at the polls that underlies the effect credit ratings have on the fiscal policy stance. In this sense, CRAs strengthen the democratic oversight mechanism, ensuring that fiscal policy serves the overall national interest.

In addition, credit ratings have certain advantages over more stringent fiscal rules, such as legal ceilings, on the budget deficit. In some circumstances, fiscal expansions are sound economics, for

example in recessions. In these cases, strict legal fiscal ceilings can be overly constraining and reduce national welfare. Our study suggests that credit ratings also share characteristics of fiscal rules yet they are more flexible. The fact that CRA's evaluate the sustainability of the fiscal policy stance, not merely the size of the budget deficit, can mean that they may be less constraining when appropriate. For example, in cases where a fiscal expansion averts a dramatic drop in growth, the credit rating may remain unchanged, depending on the trade-off between higher public debt and stronger economic growth.

Today, most countries have a credit rating from at least one CRA. In our sample, in 2011, 54% of countries had ratings from all three major CRAs; 29% had two ratings, 13% had one rating, and only 4%, had no rating. All countries without ratings are developing nations, many of them located in Sub-Saharan Africa. The pairwise correlation between Gross National Income per capita (in constant US dollar terms) and our main rating variable is 0.75. Our results suggest that the disciplining effect of rating outlooks is particularly pronounced for countries with lower ratings, which tend to be poor. Hence, the countries that are least likely to have a credit rating are also the ones that are arguably most likely to benefit from them. One policy recommendation emerging from our research would be for those countries currently without any CRA ratings to obtain at least one.

Our insights assume that CRAs make accurate assessments of sovereign willingness and ability to meet financial obligations. But at least among the three dominant CRAs we studied, the last two decades have seen many instances where their collective over-optimism or inaction about ratings left investors and others vulnerable to substantial losses: Mexico during the Tequila Crisis of the mid-1990s; Thailand, Indonesia and South Korea during the Asian Financial Crisis of the last 1990s; Argentina in 2001. Their collective failure prior to the global financial crisis and recession of the late 2000s is only the latest instance. This highlights the importance of instituting and enforcing strong regulatory standards for CRA work, including standards for reducing the scope for moral hazard where governments pay for the ratings they receive.

Finally, industry regulation to assure better rating quality and industry liberalization to assure more rating choice should enhance the accuracy of the ratings. This is crucial to ensure that the fiscal disciplining effect of CRAs is based on a solid assessment of the underlying solvency conditions. Yet CRAs need not necessarily be private for-profit agencies. International Financial Institutions (IFIs), such as the IMF and World Bank, already conduct debt sustainability analyses for their client countries. Given our findings, a case may be made to translate the findings of these analyses into grading systems more closely comparable to CRA credit ratings. This would increase the variety—and thus potentially the quality—of available credit ratings and also reduce the scope for moral hazard given that that IFIs are non-profit organizations. This could further contribute to macro-fiscal stability, especially in less developed countries, strengthening the conditions for economic development, poverty reduction, and boosting shared prosperity.

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