

SOVEREIGN CREDIT RATINGS, ECONOMIC INFORMATION AND EXECUTIVE APPROVAL*

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Abstract

Voters aim to assess leaders' economic policy competence. They rely on heuristics that are reliable and low-cost. We theorize that citizens use sovereign credit ratings for this purpose: they punish incumbents when ratings decline and reward them when ratings improve. Moreover, citizens' response to ratings is heightened when they otherwise lack economic information, are less well-informed, or the economic environment is volatile. We test these hypotheses using an “unexpected event during survey design” (UESD) for 33 countries; we identify a causal effect of ratings changes on citizens surveyed immediately following a change, as compared to those surveyed before. We supplement these findings with quarterly data on executive approval for 70 countries over 25 years. Again, we find a robust decline in support for incumbents following downgrades. As predicted, this decline is more pronounced for less economically-sophisticated citizens, in settings with low economic policy transparency, and during periods of monetary volatility.

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Voters seek low cost, reliable and simplified information about their leader’s economic policy competence. Sovereign credit ratings agencies (CRAs) assess governments’ creditworthiness based on macroeconomic and other conditions. We show that citizens punish incumbents when credit ratings decline, as well as reward them when ratings improve. Moreover, citizens’ response to ratings agencies’ information is heightened when they otherwise lack economic information, are less well informed, or the economic environment is volatile.

Using an “unexpected event during survey design” (UESD), we identify a causal effect of ratings changes on the attitudes of citizens who happen to be surveyed immediately following a change, compared to just before. A broader quarterly dataset on executive approval for seventy countries over twenty-five years offers further observational evidence for a robust decline in support for incumbents following downgrades, especially for citizens with less economic sophistication, in settings with low economic policy transparency, and during periods of monetary instability.

Retrospective voting theory and evidence establish that voters respond to local and national economic conditions when determining their candidate preferences. Poor conditions may lead voters to seek alternatives to incumbents. Voters, however, may be less than perfectly informed about how closely their local or individual experience maps to national conditions, or how much responsibility the incumbent bears for economic outcomes. Hence mass publics use sovereign credit ratings changes to assess governments’ economic policy competence. Ratings changes are associated, all else equal, with shifts in mass approval of the executive.

Sovereign credit ratings agencies (including Fitch, Moody’s and Standard and Poor’s) offer assessments of governments’ ability and willingness to repay their debts. These assessments are based on sovereign borrowers’ macroeconomic characteristics as well as on institutional features such as regime type and political events including the electoral cycle (Beaulieu, Cox, and Saiegh 2012, Biglaiser and Staats 2012, Vaaler, Schrage, and Block

2006). Institutional investors use these assessments as part of their asset allocation process, most notably distinguishing between investment-grade and non-investment grade sovereign bonds. Credit ratings also play a role in financial regulation; for instance, the Basel III rules for calculating internationally active banks' risk exposure are based on sovereign ratings. While credit ratings agencies endeavor to be forward looking, credit ratings changes often affirm, rather than generate, shifts in financial market outcomes. That is, by the time a ratings agency has changed its ratings outlook or its ratings score, investors have already re-priced sovereign risk, factoring in both the macroeconomic conditions and the potential effect of the downgrade on access to finance (DiGiuseppe and Shea 2016).

Nevertheless, governments express worries about ratings agency assessments, sometimes refraining from activities that might result in downgrades, and often investing significant effort in the relationships with ratings agencies, in the hopes of influencing their assessments. Numerous sovereigns in Africa have accused the ratings agencies as being biased against African sovereigns, arguing that their ratings are lower than macroeconomic conditions suggest (UNDP 2023).¹ Our theory suggests another reason why sovereigns, beyond access to capital, seek to avoid ratings downgrades: because they reduce public support for incumbents.

To explore a stronger causal case for ratings changes and political support, we make use of an unexpected event – the ratings change – that occurs during the period a survey is in the field (an “unexpected event during survey design”, or UESD). We identified 57 surveys from 38 distinct countries whose start and end dates bracket the dates of ratings changes, and we can identify individual respondents surveyed before and after the ratings change. We find that ratings changes – particularly ratings downgrades – strongly affect individual attitudes. These effects are heightened when respondents face greater difficulty

¹In 2024, the former chief ratings officer of Standard & Poor's countered that recent data offer no evidence for such a bias. See Moritz Kraemer, “Africa Criticism of Credit Ratings is a Red Herring,” Financial Times, January 19, 2024. <https://www.ft.com/content/b87c0f83-0fdb-4386-bbea-49e9a00a4231>

extracting information about the leaders' competence. The effect of credit ratings changes is larger when the respondent's education level is lower, and under conditions of heightened variability of the exchange rate.

We supplement these more localized estimates of the effect of ratings changes by drawing on a new quarterly dataset of executive approval, where we find that ratings adjustments are correlated with changes in aggregate executive approval across 70 countries between 1990 and 2021. The results from these analyses provide support for our core expectations: even once we account for the macroeconomic and institutional factors that might contribute to ratings changes, ratings shifts are significantly associated with levels of government approval. The effect is stronger for downgrades than for upgrades, although the results for upgrades remain statistically significant in our panel analyses.

We also find evidence of heterogeneous effects. The effect of a downgrade on declines in political support for the executive is greater in nontransparent polities, suggesting that CRA adjustments play a crucial heuristic or information shortcut for voters in information-scarce environments. Furthermore, the effect of ratings changes is amplified in settings in which voters are less able to make inferences about fundamental economic conditions due to heightened exchange rate variability.

Mass Politics and Credit Ratings

It is through the ballot box that citizens in democratic states hold elected officials accountable for their policies and performance ([Besley 2006](#), [Fiorina 1981](#)). Citizens penalize poor performance by policymakers at elections, and seek to choose leaders who display competence, enhance the public welfare, and exercise power absent corruption and mismanagement ([Ferejohn 1986](#), [Fearon 1999](#)). This retrospective voting model, often called “the economic vote” – the association between economic performance and election outcomes – is well established

in developed ([Duch and Stevenson 2008](#)) and developing ([Lewis-Beck and Stegmaier 2000](#)) countries. James Carville’s assertion during the 1992 US presidential campaign remains the most succinct statement of this view: “It’s the economy, stupid.”

The retrospective voting model presumes that voters take all available information into account when making their vote choices, which includes the state of the macro-economy, such as growth and unemployment rates, as well as the state of financial markets ([Lewis-Beck and Stegmaier 2009](#)) and fiscal policies ([Drazen 2000](#), [Cunha, Ferreira, and Silva 2022](#)). Critics of the retrospective voting model suggest that it demands that voters be well-informed, cognitively unbiased, and able to rationally incorporate this information into their decision calculus ([Anderson 2007](#)). Voters, after all, have incomplete information about the state of the entire economy, or about the policy choices actually made by leaders. Acquiring that information can be costly, and the opportunity cost of doing so may exceed the value of that effort. Voters are understood to use information shortcuts when making decisions. [Kahneman, Slovic, and Tversky \(1982\)](#) have shown that people frequently make (often important) decisions based on heuristics, and on average do very well doing so. Public signals cheaply available include aggregate economic conditions, via the media, or even personal experience, especially the more recent performance of government ([Healy and Lenz 2014](#)).²

Voters, while possibly information constrained, will optimally seek reliable high information sources at low cost, especially those that emanate from non-governmental sources. The media, traditional and new alike, report on policy and economic outcomes and are available as heuristics to individuals as proxies for government performance. International institutions such as the International Monetary Fund and The World Bank report on economic aggregates, Transparency International on corruption perceptions, the World Trade Organization

²[Healy and Malhotra \(2013\)](#) offer a review of other cognitive biases that might matter for the economic vote, such as mistaking local for aggregate conditions, making use of recent rather than longer-term conditions, the effect of emotion and mood, and misattributing blame to leaders when the sources are external or beyond their control.

(and regional trade institutions) on compliance with international commitments to lower tariffs ([Rosendorff 2005](#)).

Private external actors, especially those in the financial sector, also can be an important source of information for mass publics. For economically sophisticated voters or for those holding investment portfolios ([Curtis, Jupille, and Leblang 2014](#), [Margalit and Shayo 2021](#)), the use of market actions as a signal of government competence is materially rational. For publics in developing countries more broadly, maintaining the confidence of international investors, credit ratings agencies and IFI officials can be key to maintaining access to credit and to avoiding financial and economic crises.

The information environment also matters. The value of these information shortcuts to voters when making their voting decisions will be higher when the general information environment is poor. If little information is domestically available, perhaps because government is not forthcoming with respect to economic data, or the media is censored or biased, voters will rely more heavily on these externally sourced heuristics. The cost of acquiring information domestically is much higher in these polities, and the rational, information constrained voter will place even greater weight on these reliable, relatively cheaper information sources.

Crucially, then, for citizens to hold incumbents accountable for economic performance, they must solve two distinct informational challenges: (1) citizens must be aware of the state of the economy, and (2) they must be able to attribute these economic outcomes to some government action.³ We argue below that public signals from external organizations (including credit ratings agencies) may help citizens solve both of these issues.

Sovereign credit rating adjustments are a particularly informative signal of government performance ([Nguyen, Alsakka, and Mantovan 2023](#)). A single dimension summarizes macroeconomic fundamentals and perceived creditworthiness and administrative capacity. Ratings

³See [Alcañiz and Hellwig \(2011\)](#) and [Campello and Zucco \(2020\)](#) on the challenges voters in developing countries face regarding attributing responsibility to government policies versus to exogenous shocks and international markets.

changes affect (and reflect) a country’s cost of capital (for sovereigns directly and for private firms indirectly); ratings changes also can shift the country’s capacity to refinance and service its existing debt. These matter to individuals via two related channels. At the economy-wide sociotropic level, a decline in the credit rating is reasonably interpreted as relevant information about the ability of the state to make crucial investments in infrastructure and public goods, to generate future economic growth (Cunha, Ferreira, and Silva 2022, Nguyen, Alsakka, and Mantovan 2023). If voters learn that a state is more at risk of a debt crisis, or may have to negotiate a debt restructuring, they may revise their expectations concerning potential spending cuts and austerity measures. Bayesian, sociotropic voters will reduce assessments of the competence of their leaders, leading to declines in political support. At the individual level, egotropic concerns also will drive reductions of political support of incumbents experiencing ratings downgrades.⁴ Individuals who care about their own ability to borrow may expect to face higher interest rates, and to expect heightened labor market risk as the economy struggles to grow (Curtis, Jupille, and Leblang 2014).

The effect of ratings changes on perceptions of incumbent performance will be greater in less clear information environments. When governments are known to make economic information available, where it is freely circulated via media and other sources, voters will need to rely less on information shortcuts: they will already be better informed. We therefore expect that transparency will mitigate the effect of ratings changes on political attitudes, while opacity will intensify it. Similarly, we expect informational signals about government competence from international actors will be of greater consequence for individuals who are otherwise lacking in a clear understanding of how the economy operates; for less “financially sophisticated” actors, informational heuristics exert greater influence on their perceptions of incumbent economic effectiveness. Finally, in environments in which assessment of the state

⁴Local conditions are also relevant for voters’ attitudes, lying somewhere between the ego- and sociotropic models. See for instance Bisbee (2018), Broz, Frieden, and Weymouth (2021).

of the economy is more difficult – such as during periods of heightened monetary instability – we similarly expect the international signal to be more important in shaping economic accountability of government.

Sovereign Credit Ratings Agencies and Outcomes

Credit ratings agencies provide assessments of national governments, sub-national governments and corporate entities. Their methodologies combine objective as well as subjective criteria to generate an overall assessment of creditworthiness. The three largest agencies – Moody’s, Standard and Poor’s and Fitch Ratings – rate sovereigns that request (and pay) to be rated, as well as sovereigns for which there is “market interest.” As of 2024, Fitch rated 117 sovereigns, Standard and Poor’s rated 137 and Moody’s rated 142. These three agencies tend to agree on ratings for the highest and lowest rated borrowers ([Mosley 2003](#), [Brooks, Cunha, and Mosley 2015](#)); differences in ratings are more common among sovereigns in intermediate ranges. Ratings changes are somewhat rare – although not unheard of – for top-rated issuers, but more common for countries with lower credit quality.

Sovereign ratings outcomes often correlate with the cost of capital: higher-rated borrowers generally are able to borrow on better terms. In an early study, [Cantor and Packer \(1996\)](#) find that ratings are associated significantly with spreads on sovereign bonds, and that ratings appear to matter over and above macroeconomic fundamentals and default history. More recent analyses suggest that, along with global financial factors, credit ratings are key determinants of spreads for developing countries ([Özmen and Doğanay Yaşar 2016](#)). Rating categories – especially “investment grade” versus “non-investment grade” – are used by professional investors to evaluate the creditworthiness of emerging and frontier market countries. [Brooks, Cunha, and Mosley \(2015\)](#) find that these categorizations are important predictors, over and above country-specific and global factors, of country risk premia.

Financial market responses to ratings changes, however, vary over time and across groups of countries: ratings changes had a greater impact during the Eurozone crisis (relative to prior periods), and especially for countries that experienced sovereign debt pressures. Other studies suggest that sovereign ratings outcomes may largely affirm market movements that are already underway, or that only a small subset of ratings outcomes and changes matter for market access. Like other work highlighting the role of global factors (e.g., [Ballard-Rosa, Mosley, and Wellhausen 2021](#), [Rey 2016](#)), [González-Rozada and Yeyati \(2008\)](#) find that sovereign ratings largely reflect – rather than lead to – changes in spreads. [Broto and Molina \(2016\)](#) suggest that sovereign ratings agencies respond more slowly (in terms of upgrades) to improvements in fundamentals rather than to deterioration in economic outcomes. [Jaramillo and Tejada \(2011\)](#) suggest that the most important credit ratings changes are those from non-investment grade to investment-grade (for instance, in the Standard & Poor’s scale, from BB+ to BBB-).

Despite debate about their capacity to anticipate, rather than to follow, macroeconomic and political changes in rated countries, ratings agencies play an important role in the sovereign finance system. Governments that want to access private capital markets have incentives to maintain good relationships with ratings agencies, and to adjust their policies in ways that are consistent with ratings agencies’ frameworks. At the extreme, ratings agencies could influence governments’ capacity to implement their preferred policies ([Mosley 2003](#)). For instance, during the COVID-19 pandemic, some sovereigns cited the fear of rating agency downgrades as a key reason for not taking advantage of the temporary suspension of servicing of debts to official bilateral creditors under the terms of the G20’s Debt Service Suspension Initiative.⁵

More generally, ratings agencies may be viewed as a form of private sector governance:

⁵However, [Lang, Mihalyi, and Presbitero \(2023\)](#) find no evidence that sovereigns that took advantage of the DSSI faced higher borrowing costs, relative to countries that did not.

their processes and determinants directly influence the functioning of the global financial system (Mosley 2009).⁶ Some worry that ratings agency practices are largely unregulated while also exhibiting biases against certain types of governments or countries (Sinclair 2005, 2021). For instance, Barta and Johnston (2023) argue that, because ratings agencies expect that some center-left economic policies leave sovereign borrowers more vulnerable to unforeseen shocks, ratings agencies preemptively give lower ratings to center-left governments – even if they do not ultimately pursue such policies. Slapnik and Lončarski (2023) consider how “subjective” factors, as expressed in ratings agency statements, affect rating outcomes. They also find that ratings agencies based in the United States give better ratings to countries that are geo-strategically close to the United States.⁷

We explore another channel – in addition to affecting the cost of capital – through which credit ratings agencies can influence governments’ survival in office. We focus on the use of credit rating actions – upgrades and downgrades – by voters as a means of assessing their governments’ economic policy competence. In work closest to this paper, Cunha, Ferreira, and Silva (2022) explores the effects of ratings adjustments on municipal bonds in the US, finding that downgrades result in electoral declines for the incumbent. Most similar to our theoretical framework, Nguyen, Alsakka, and Mantovan (2023) offer a formal model that captures several of the elements we describe here. They model the choice for a voter between the incumbent and an alternative, with a voter who cares both about their individual consumption and the aggregate level of the debt. They use aggregated opinion poll data for 27 EU countries to test their hypotheses. They find that national-level support for the incumbent declines with rating downgrades; there is little effect of upward changes in ratings on aggregate opinion.

⁶For further discussion of the ways that beliefs by actors at international financial institutions may affect domestic political outcomes, see, e.g., Nelson (2014).

⁷Also see De Moor et al. (2018) and Fuchs and Gehring (2017). Of course, it may be that countries close to the United States are more likely to be bailed out by the International Monetary Fund or by the United States in case of distress, so this “bias” may be rational.

Modeling Credit Ratings as a Public Signal

Following workhorse models on economic voting, we assume that voters prefer political leaders with greater economic competence.⁸ However, we depart from the assumption of perfect information; instead, let the leader's competence θ be unknown *ex ante*. Competence is drawn from a common normally distributed prior $N(\mu, \frac{1}{\delta})$, with mean μ and precision δ . Each individual i has their own experience and knowledge of the economy, which generates their private information on leader competence, s_i . This information is drawn from a normal distribution $N(\theta, \frac{1}{\sigma})$ centered on the true competence, θ . The precision of this information is designated σ . Crucially for our purposes, σ can capture any source of variation in citizen capacity to assess the state of the economy absent an additional signal from international actors.

There may be multiple interpretations of this variation in precision of private economic information. For instance, this could be a result of *economic sophistication*, such that citizens that are more attentive to financial news, or have a better understanding of how the economy operates, may already possess expectations of incumbent economic competence that are much closer to the truth (on average). Alternately, one could imagine that the ability of voters to assess economic competence could also be a function of the macroeconomic environment: for example, during periods of greater economic volatility, it may be more difficult for voters on average to assess whether the government is intervening appropriately in the economy. Finally, such uncertainty in economic evaluation could be a product of the information environment itself: in countries where less economic reporting is provided, citizens may have a harder time assessing the state of the national economy. Below, we exploit several such

⁸Here, we assume a simplistic voter utility such that citizen well-being is increasing directly in (expected) economic competence; for instance, $u_i(\theta) = E(\theta)$. We assume therefore that voters are more likely to re-elect a given candidate when they expect higher utility from that candidate remaining in power, which gives us the standard expectation that support for elected officials will be tied to expectations over incumbents' economic performance.

potential sources of variance in the precision of economic beliefs to assess heterogeneity in the effect of credit ratings changes on popular support for incumbents.

In addition to their own private information about the economy, we also assume that each individual receives the (same) credit rating signal: all individuals receive credit rating signal $r \sim N(\theta, \frac{1}{\rho})$, where ρ is the precision of the credit rating signal. We assume that all signals are conditionally independent (conditional on θ).⁹ By Bayes' rule, individuals then update their beliefs about the leader's competence, such that expectations over government economic performance are given by:

$$E[\theta|s_i, r] = \frac{\delta\mu + \sigma s_i + \rho r}{\delta + \sigma + \rho} \quad (1)$$

Each individual's posterior expectation of the leader's competence is a precision-weighted average of her own signal, the credit ratings agency's signal, and the common prior μ .

Consider now a change in the credit rating r . Each individual's beliefs move with the change:

$$\frac{\partial E[\theta|s_i, r]}{\partial r} = \frac{\rho}{\delta + \sigma + \rho} > 0$$

That is, individuals' beliefs about the competence of the leader will increase with an increase in the credit rating (when r rises) and decline with a fall in the credit rating (when r declines). This generates our first hypothesis, linking international economic information provision to voter assessment of incumbents:

Hypothesis 1. *Citizens' approval of incumbent executives declines with credit ratings downgrades (and improves with upgrades).*

Crucially for our purposes, this decline will be greater for individuals with less precise

⁹If the individual's signal and that of the credit rating is positively correlated (and hence not independent), with a correlation coefficient of $\omega > 0$, then a sufficient condition for $\frac{\partial^2 E[\theta|s_i, r]}{\partial \sigma \partial r} < 0$ is $\omega < \frac{\sqrt{\rho}}{\sqrt{\sigma}} < \frac{1}{\omega}$.

private information (those with lower σ):

$$\frac{\partial^2 E[\theta|s_i, r]}{\partial \sigma \partial r} = -\frac{\rho}{(\delta + \sigma + \rho)^2} < 0$$

As mentioned above, one potential individual-level source of variation in σ is an individual's degree of financial sophistication: while more economically literate citizens may already possess a reasonably accurate sense of the government's stewardship of the economy, citizens lacking in such understanding likely generate less precision in their assessment of competence. Interpreted in this way, this suggests that poorly informed and less sophisticated individuals adjust their beliefs by more after a signal from the credit ratings agency.

Hypothesis 2. *The effect of a change in credit ratings on executive approval is larger for less educated individuals, and those in less information-rich environments.*

In the same way that low information environments make it more difficult for individuals to extract relevant information about leader competence, periods of increased economic volatility render information extraction more challenging. An alternative interpretation of σ is the degree of noise any individual faces when attempting to update. Generally speaking, we may expect that many citizens do not pay close attention to macroeconomic indicators. However, there is one important signal of economic conditions that virtually all citizens experience directly, even without being exposed to media information or to government reporting: the price signal ([Frieden 2016](#), [Schiumerini and Steinberg 2020](#), [Quinn, Sattler, and Weymouth 2023](#)). As has been made evident recently by the experiences of multiple countries with inflation surges following the COVID crisis, citizens can easily absorb signals about the state of the economy when prices at the grocery store or gas pump are changing dramatically ([Stantcheva 2024](#)). Yet, while citizens are able to observe prices directly, the precision with which this signal allows citizens to evaluate government performance may depend on how stable or volatile prices are.

In particular, we expect that during periods of heightened monetary instability (that is, when the variation in prices is higher), it may be more difficult to assess government economic performance directly. Different individuals surveyed at different times – even within the same survey window – will have different experiences with price and exchange rate fluctuations, which may affect the ease with which citizens can assess economic conditions. The same exercise, $\frac{\partial^2 E[\theta|s_i, r]}{\partial \sigma \partial r} < 0$ implies that, when individuals experience more economic volatility, a credit ratings change will have a greater effect on their perceptions of leaders’ competence.

Hypothesis 3. *The effect of credit ratings changes on executive approval is larger in countries facing higher price and exchange rate volatility.*

Information Transmission Mechanism

We are interested in understanding how information about credit rating events affects executive approval. Yet, as discussed above, if many citizens do not pay close attention to economic indicators, how do they learn about a rating change by an international financial agency? It seems unlikely that most individuals seek out such information directly. Instead, we argue that domestic political actors, particularly members of the opposition, play a central role in publicizing and interpreting these signals. Opposition candidates have strong incentives to highlight downgrades as evidence of the incumbent’s poor economic management, often using the language of economic credibility and competence. While citizens may discount partisan criticism, they are more likely to view assessments by “neutral” international actors as credible indicators of government performance. In this sense, when opposition figures amplify ratings agency statements, they act as both transmitters and interpreters of international information.

Evidence from several countries illustrates this process. In Türkiye, Republican People’s Party (CHP) presidential candidate Muharrem İnce mocked the government’s selective re-

sponse to rating agencies in 2018, saying: “They give Türkiye a rating. When they give it a good rating, they say, ‘I got it.’ When they get a bad rating, they say, ‘These are foreign conspirators’,” before going on to describe the debt accumulated under President Erdoğan ([Demirören News Agency 2018](#)). In Namibia, opposition MP Nico Smit responded to a Fitch downgrade in 2017 by arguing that “we are not credible and we are not reliable [...] you cannot lie to international agencies like the International Monetary Fund and Fitch” ([Tilhage 2017](#)). In Nigeria, opposition presidential candidate Peter Obi called a Moody’s downgrade in 2023 “a wake-up call on the need for fundamental change and a new approach to formulating and implementing our nation’s economic policy” ([Olatunji 2023](#)). And in Brazil, opposition senator Ronaldo Caiado took the floor in Congress on the day of a downgrade in 2016 to warn that it would “lead to higher unemployment and reduced international investment” ([Pordeus Leon 2016](#)).¹⁰

A contrasting pattern can be seen in Sri Lanka, where government officials sought to deflect the reputational costs of a downgrade. Following a Fitch downgrade decision in late 2021, the Central Bank of Sri Lanka released an official statement “strongly disputing the hurried rating action” and emphasizing that the downgrade “does not accurately reflect Sri Lanka’s resilience or commitment to meeting its obligations” ([Central Bank of Sri Lanka 2021](#)). Such responses illustrate how incumbents attempt to reframe unfavorable assessments by casting doubt on the objectivity or relevance of international agencies.

These also examples demonstrate that domestic political actors help mediate the transmission of rating events. While opposition figures publicize and politicize downgrades to question incumbent competence, governments sometimes seek to neutralize their impact by disputing the agencies’ credibility. This politicization transforms an external financial market assessment into a domestically salient signal of performance, helping explain why rating changes affect executive approval even in information-poor environments, providing a

¹⁰The articles were translated using *Google Translate*.

plausible mechanism linking international information shocks to shifts in domestic political support.

Empirical Analyses

Unexpected event during survey design (UESD) results

We expect citizens to respond to a rating downgrade with a decrease in executive approval and to an upgrade with an increase in executive approval. While we document below strong evidence for such a correlation using cross-national panel data on executive approval, we cannot of course demonstrate a causal effect with these observational data. Indeed, as we discuss further below, there may be reasonable concern that, following a credit rating change, a country may experience macro-economic changes (such as higher cost of capital and falling growth after a downgrade) that also could affect executive approval. While we have little reason to suspect that these changes would have differential consequences particularly as a function of the informational environment, we cannot rule out such concerns in our cross-national analysis below.

We therefore begin with an empirical analysis leveraging the fact that the exact date of a credit rating change is unlikely to be known *ex ante* by policy makers and market participants, and so we can take the date of such an announcement to be *as-if-at-random* with respect to the domestic environment in a country. Importantly, we leverage this assumption that the precise timing of a ratings change is, in effect, *exogenous* to local conditions in a given country to make use of the “unexpected event during survey design” (UESD) to estimate the effect of ratings changes on popular support ([Muñoz, Falcó-Gimeno, and Hernández 2020](#)).

More precisely, after compiling data on the dates of ratings changes by either Moody’s, Standard and Poor’s, or Fitch, we identify numerous nationally-representative surveys that were in the field in a country that would experience a rating change. To do this, we consulted

the Gallup World Polls survey archive. Gallup has fielded approximately 2,500 public opinion polls across a host of countries globally from 2005-2024.¹¹ From this set, we identified 57 surveys from 38 countries that were in the field at the time in which a credit rating change took place.¹²

Our dependent variable is a measure of *executive approval*. The Gallup World Poll asks respondents “Do you approve or disapprove of the way [leader] is handling [his/her] job as [leader title]?” Respondents can select that they either “approve” of the leader, “disapprove” of the leader, or that they “don’t know.” In results reported below, we rescale this outcome such that approval corresponds to a value of 1, disapproval corresponds to a value of 0, and respondents who selected that they did not know are coded as 0.5.¹³

Our main independent variables of interest are whether a credit rating *upgrade* or *downgrade* took place in a country during the period of survey enumeration. As we know the date when the rating change took place, along with the date in which a given survey respondent in a given country was interviewed, we combine this information to construct a sample of pre- and post-treated respondents, by country. We identify all survey respondents interviewed on a date after a credit rating change was announced as potentially treated with such information; as above, given expectations that ratings upgrades and downgrades will have opposite effects on public opinion, we construct two separate treatment indicators for respondents who were surveyed after either a ratings upgrade or downgrade took place. We also limit our analysis to only compare respondents that were within a narrow temporal window of the ratings change announcement, in order to strengthen our assumption that

¹¹The microdata from Gallup World Poll are available upon request directly from the Gallup organization; they are not publicly posted or available. Authors wishing to access the individual-level data used in this portion of the analysis may request the individual survey files from Gallup for the years and countries listed.

¹²Table A.1 in the Appendix shows a summary of the survey data with respect to countries and years that are in our sample. Note that five of these countries (Bahrain, China, Jordan, Saudi Arabia, and Vietnam) did not have public opinion data on leader support; we drop these surveys from our analysis.

¹³Our primary results are unchanged if we instead drop respondents who selected “don’t know;” here, we keep them to preserve as much data as possible.

treated and untreated units are otherwise similar. In particular, we estimate the difference between respondents surveyed within either a five-day or a two-day window of the ratings change announcement. We estimate the following empirical specification:

$$Exec. approval_{ic} = \beta_1 Downgrade_c + \beta_2 Post_i + \beta_3 Downgrade_c \times Post_i + \mu_c + \epsilon_{ic} \quad (2)$$

where our core estimand of interest is the difference in citizen i 's support for an incumbent in country c in the few days immediately following the announcement of a credit rating downgrade, which we expect to be negative in sign ($\beta_3 < 0$). As is standard in event study designs, we begin by estimating these differences using ordinary least squares with the inclusion of country fixed effects (μ_c), and then demonstrate the robustness of our results to a host of alternative estimation approaches below.¹⁴

As reported in Table 1, we recover strong evidence that citizens surveyed in the immediate aftermath of a ratings downgrade have significantly lower support for the leader of their country. Column 1 reports the results focused on a 5-day window around the ratings change announcement, while Column 2 reports results focused on a 2-day window; in both cases, the negative and statistically significant coefficient on the *Rating downgrade* $\times$ *Post* measure indicates that respondents in countries where a downgrade has just taken place experience a 5 to 7 percentage point drop in their support for the incumbent. We also note, as might be expected, that popular support for incumbents is indeed lower on average in countries that will experience a downgrade (as indicated by the coefficient on *Credit rating downgrade*); however, this decline in popular support increases substantially following the announcement of the credit downgrade. We take this as initial support for our hypothesis that credit ratings downgrades may serve to discredit incumbent politicians in the eyes of their domestic

¹⁴In this baseline specification, we do not introduce any additional control variables, but as we document in Appendix Table B.1, our results are unchanged if we also add a vector of individual-level demographic covariates. In order to better match survey respondents to the broader population, we employ sampling weights provided by Gallup World Polls in our analyses.

Table 1: Credit ratings downgrades and executive approval (OLS estimates)

VARIABLES	(1) Exec. approval (5 day window)	(2) Exec. approval (2 day window)
Credit rating downgrade	-0.078*** (0.021)	-0.138*** (0.032)
Post announcement	0.013 (0.015)	0.021 (0.021)
Rating downgrade $\times$ Post	-0.052** (0.021)	-0.068** (0.031)
Country FE	✓	✓
Observations	12,803	6,297
R-squared	0.111	0.121

Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

constituents.

Matching analysis

Recent work on best practices for the “unexpected event during survey design” (UESD) framework notes that, particularly with large country-level surveys, implementation of surveys is often clustered in particular geographic regions (Muñoz, Falcó-Gimeno, and Hernández 2020). For instance, survey administrators may start in urban areas of the country which are easier to reach, and gradually spread their implementation to more remote regions. While such implementation strategies may achieve national representativeness of the population by the survey end date, this implies that whether or not survey respondents take the survey before or after an unexpected event may not be completely uncorrelated with certain respondent characteristics. Besides region of residence, Muñoz, Falcó-Gimeno, and Hernández (2020) also suggest that, if certain demographic groups (such as the elderly or women working at home) are more likely to be home during initial survey attempts, then these groups may also be more likely to have been sampled prior to the event. Given work suggesting that urban citizens may have systematically different views over incumbent governments

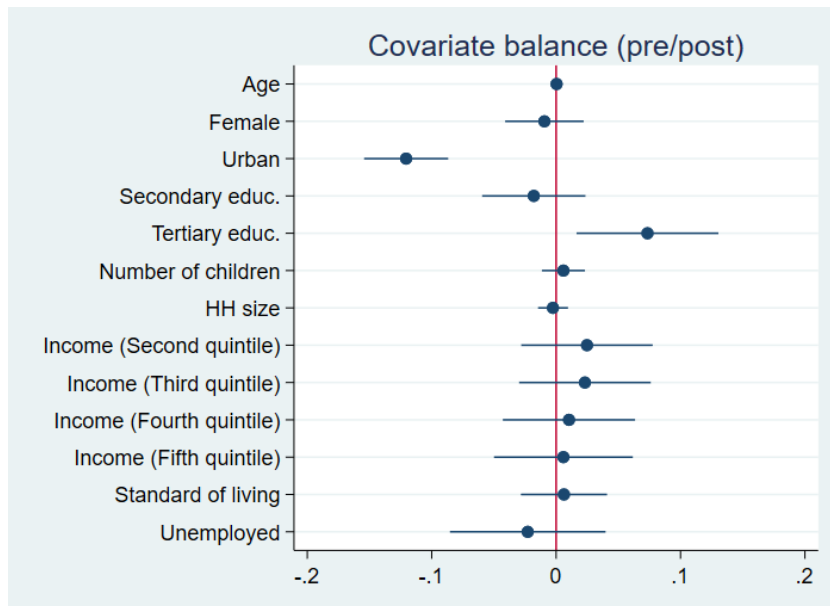
(e.g., [Ballard-Rosa, Carnegie, and Schonfeld 2023](#)), this introduces the possibility that any result we attribute to timing around an event may instead be a function of region, gender, age, or education status.

We report in Figure 1 our covariate balance across survey respondents based on whether they were surveyed before or after the announcement of a ratings change. To begin, we note that the traditional form of “omitted variable bias” that is likely a concern for much of our analysis is that there may be some underlying economic fundamental that both drives a ratings change as well as public opinion; in our data, we find little evidence of imbalance in terms of individual economic well-being—either in terms of their reported income, standard of living, or employment status—which gives us greater confidence that our identification strategy is working to remove this standard form of bias. However, while we do not detect evidence of imbalance in survey respondents by either age or gender, we do find (in support of the concerns raised by [Muñoz, Falcó-Gimeno, and Hernández \(2020\)](#)) that urban residence and tertiary education both exhibit some imbalance between our pre- and post-treatment samples. While we note that this is different from the standard concern over differing economic conditions that motivates our use of the USED approach here, it is important for us to be able to address concerns over imbalance in our citizen samples.

To alleviate this concern, we follow the recommended best practice in [Muñoz, Falcó-Gimeno, and Hernández \(2020\)](#), who suggest the use of matching methods along potential dimensions of imbalance in survey implementation to help correct for this possible violation of our assumption that individuals in the pre- and post-treatment groups are otherwise identical. We use entropy balancing ([Hainmueller 2012](#)) to generate survey weights that balance our pre- and post-treated samples across age, gender, education, and urban residence.¹⁵ As

¹⁵Entropy balancing requires researchers to specify the number of statistical moments over which the weights should achieve balance; in results presented below, we select balance on two moments (across sample mean and standard deviation); our results are largely unchanged if we instead select one or three statistical moments. Results available upon request.

Figure 1: Covariate balance for survey respondents surveyed before or after rating change announcement.



reported in Appendix Table B.3, our weighted samples after entropy balancing demonstrate virtually perfect balance across age, gender, education, and urban residence.

When we re-estimate our primary results using entropy balancing, we find significant evidence that credit downgrades are associated with a decline in executive approval, as documented in Table 2. Note that, as entropy balancing requires samples to be balanced across a binary treatment measure, we here restrict our sample to only those countries that experienced a credit rating downgrade, and so we balance our covariates across respondents from the same country according to whether they were surveyed immediately before or after the rating change announcement.¹⁶ Column 1 finds that respondents surveyed within a 5-day window of a downgrade have executive approval that is approximately 3 percentage points lower ($p < 0.05$); Column 2 similarly documents an approximately 4 percentage point decline

¹⁶That is, we do not estimate an interaction term here, as all included respondents are in countries where a downgrade takes place. However, we find very similar results if we instead include all surveys and perform the same estimation as in Table 1, with entropy balance defined over all respondents surveyed pre/post announcement. See Appendix Table C.1.

Table 2: Credit ratings downgrades and executive approval (entropy balance results, only downgrade countries)

VARIABLES	(1) Exec. approval (5 day window)	(2) Exec. approval (2 day window)
Post downgrade announcement	-0.030** (0.012)	-0.037** (0.019)
Country FE	✓	✓
Observations	6,905	3,196
R-squared	0.112	0.120

Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

in popular support for incumbents within a 2-day window. We take these results as strong evidence that this effect is indeed causal in nature.

We now evaluate our conditional hypotheses.¹⁷ Recall that, according to H2, we expect the effect of credit ratings changes to be most pronounced for individuals that are constrained in their ability to receive and extract the relevant signals from a noisy information environment. Following a host of work in international political economy that takes citizen education as a proxy for economic sophistication (Tomz 2002, Curtis, Jupille, and Leblang 2014), we argue that the negative effect of credit rating downgrades on political support will be most pronounced among the least formally educated respondents. To assess this expectation, we introduce an interaction between our *post-announcement* treatment measure and a dummy for survey respondents who have *low education*.¹⁸

As reported in Column 1 of Table 3, we find strong support for our expectation that the effect of ratings downgrades is strongest for less educated individuals: the coefficient on the interaction between *Post announcement* $\times$ *Low Education* is negative and statistically significant ($p < .05$), suggesting that the decline in popular support for incumbents immedi-

¹⁷For ease of interpretation, these conditional results are estimated using OLS, but as we report in Appendix Table C.2, we continue to find very similar results using the entropy balancing strategy described above.

¹⁸As education is not distributed at random throughout the population, in these conditional results we also introduce demographic controls for respondent age, gender, household income, and urbanity.

ately following a rating downgrade is approximately 7 percentage points larger among less educated citizens.¹⁹

Table 3: Credit rating downgrades, citizen information, and executive approval

VARIABLES	(1) Exec. approval (5 day window)	(2) Exec. approval (5 day window)
Post downgrade	-0.015 (0.017)	-0.061** (0.024)
Low education	0.003 (0.026)	
Post $\times$ Low educ.	-0.069** (0.032)	
σ_{XR} (past 5 days, logged)		0.006 (0.005)
Post $\times \sigma_{XR}$		-0.017*** (0.006)
Demog. controls	✓	✓
Country FE	✓	✓
Observations	6,905	3,550
R-squared	0.115	0.168

Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

We next investigate whether the effect of ratings downgrades is more pronounced when the information environment is noisier, and where individuals might have more difficulty attributing observed variability in economic conditions to the government (H3). While we lack a source of daily CPI data that would allow us to evaluate the direct effect of changing domestic prices, we are able to capture a close proxy for prices using the variability in a country’s exchange rate (relative to the US dollar) at a daily level.²⁰ Drawing on these daily exchange rate data, we construct (for all respondents) the *standard deviation in exchange rates* (σ_{XR}) over the past 5 days as a localized measure of the uncertainty in monetary conditions.²¹ We include this measure of exchange rate volatility – as well as its interaction

¹⁹Complete output reported in Appendix Table B.2.

²⁰Exchange rate data from Refinitiv.

²¹Visual inspection of these data indicated that they were log-normally distributed, and so we transform

with our credit rating downgrade treatment – to assess whether ratings downgrades have more pronounced effects on executive support in environments in which citizens are facing greater uncertainty.

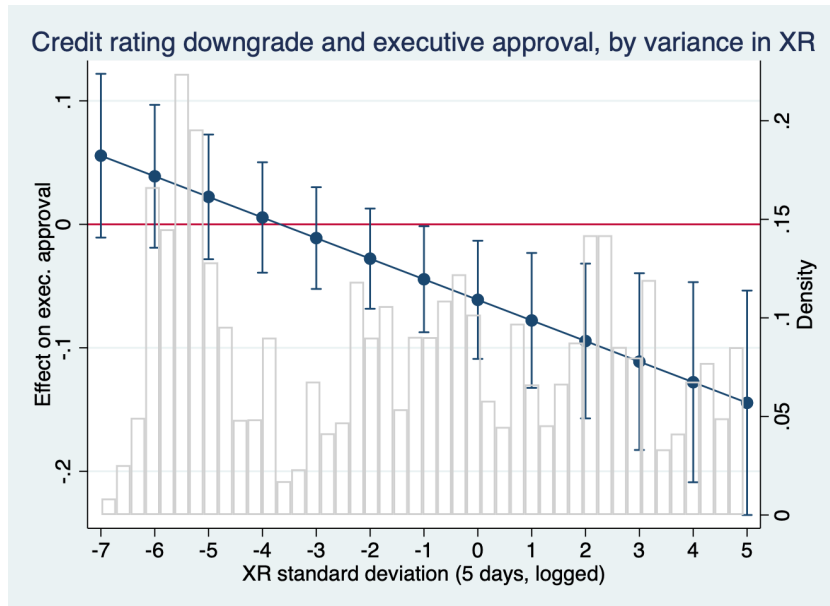
As reported in Column 2 of Table 3, we find strong support for our expectation that ratings downgrades have larger effects on popular support for the incumbent when citizens face prevailing economic variability: the negative and statistically significant interaction term highlights that, in cases where recent currency volatility has been more pronounced, the result is a significantly larger decrease in public support for current political leaders. To help visualize this effect, we plot the marginal effect of a credit rating downgrade on executive support, conditional on the 5-day standard deviation in exchange rates, in Figure 2. Interestingly, this figure documents that – consistent with H3 – citizens are much more likely to disfavor incumbents when monetary conditions are unstable (as captured by the larger negative effects for countries experiencing greater currency variability); in contrast, in cases where the currency is largely stable, we detect no evidence that downgrades are associated with a significant decline in support for incumbents.

Finally, we turn briefly to estimates of the effect of credit ratings upgrades. In contrast to our strongly significant findings of an effect of credit ratings downgrades on popular support for incumbents, when we instead estimate the difference in approval for incumbents in a narrow window around the announcement of a credit rating upgrade, we find little evidence of a systematic uptick in political popularity. As reported in Columns 1 and 2 of Table 4, while we do observe a positive coefficient on the *post announcement* measure, the effect size of 1 to 2 percentage points is much more modest, and in neither case is it statistically significant at conventional levels.²² These findings align with established claims regarding individuals’ aversion to losses, as well as voters’ tendency to punish incumbents for economic

this measure by taking the log of σ_{XR} .

²²Complete output presented in Appendix Table C.3.

Figure 2: Effect of credit rating change on executive approval, conditional on standard deviation in exchange rates (past 5 days).



decline but reward them little for economic growth (Tversky and Kahneman 1991, Pacek and Radcliff 1995, Alesina et al. 2024).²³ However, we do find (in both OLS models and in entropy balancing models) evidence that upgrades in the face of more exchange rate volatility are associated with a significant increase in executive approval. As the “economic signal” becomes more variable, upgrades improve executive approval.

Robustness and Extensions

We performed several additional falsification exercises with these data. First, while we document above that we do not observe significant imbalance in personal economic conditions across our pre/post subsamples, given the possibility of bias in our estimates due to such an imbalance, we re-estimate our entropy balancing approach but now explicitly balance over personal economic conditions. As reported in Appendix Table C.4, this does not apprecia-

²³This also is consistent with findings in Nguyen, Alsakka, and Mantovan (2023).

Table 4: Credit ratings upgrades and executive approval

VARIABLES	(1) Exec. appr. (5-d)	(2) Exec. appr. (2-d)	(3) Exec. appr. (5-d)	(4) Exec. appr. (5-d)
Post upgrade announcement	0.015 (0.015)	0.025 (0.021)	0.017 (0.017)	0.027 (0.024)
Low education			0.009 (0.027)	
Post $\times$ Low educ.			-0.021 (0.033)	
σ_{XR} (past 5 days, logged)				-0.018* (0.010)
Post $\times \sigma_{XR}$				0.014*** (0.005)
Demog. controls			✓	✓
Country FE	✓	✓	✓	✓
Observations	5,913	3,117	5,830	3,420
R-squared	0.111	0.121	0.119	0.142

Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

bly affect our main results. Next, while we have followed the recommended best practice suggested by [Muñoz, Falcó-Gimeno, and Hernández \(2020\)](#) in employing entropy balance, this is of course not the only matching-type estimator that exists. In Appendix Table C.5, we document that our primary results hold when instead estimated using propensity score matching.

We additionally estimated a series of placebo regressions to assess the validity of our main claims. The first set of placebo regressions involve replacing our key dependent variable of interest (support for the sitting executive) with other outcomes over which we do not expect to observe significant change in citizen views as the result of the ratings change. More precisely, we have little reason to think that announcement of a ratings change should affect citizen views of foreign countries (here, the United States), nor do we expect citizens to change their personal internet usage around a ratings change; in addition, we also add a question on citizens' trust in the financial system to see whether ratings downgrades might alternately affect this item. However, as reported in Appendix Table C.6, we find no evidence that citizen views on any of these questions exhibit differential levels of support prior to as

compared with following a ratings change.

Our second set of placebo regressions involves constructing a placebo timing of the ratings announcement. Here, we create placebo treatment timings that are equal to either one week prior to the actual announcement, or one week following the actual announcement, and estimate whether citizen views over the executive change noticeably around these placebo treatments.²⁴ As reported in Appendix Table C.7, we find no evidence that citizen views differ systematically around these alternative (false) dates.

Finally, while we report results above regarding the greater sensitivity of citizen views to ratings change announcements in the presence of exchange rate volatility, it might be the case that this could arise if ratings announcements induced significant variation in the exchange rate, which would violate our assumption that the economic environments for citizens in the narrow window around the ratings change are otherwise identical. To further substantiate this assumption, we report in Appendix Table C.8 the lack of any robust evidence that exchange rate valuations differ systematically in the days leading up to a ratings change, as opposed to the days following the change, which again further bolsters our confidence in our identification strategy using the UESD design. All told, these robustness results strengthen the causal nature of the relationship we identify, linking international information provision regarding government economic competence to citizen support for the executive, particularly in cases of less informational certainty *ex ante*.²⁵

Cross-national results

We have identified a significant effect of credit ratings changes on support for incumbent politicians in the immediate aftermath of a ratings change announcement. We believe that this design provides us with strong internal validity for our primary estimates of interest.

²⁴Where we similarly only focus on a narrow range of days around these false treatments.

²⁵As documented in Appendix D, we have also replicated all our core results on an alternative source of survey data, drawing on several regional “barometer” surveys.

However, it is of course the case that these results are drawn from a set of ratings changes across a sample of 33 countries in which Gallup World Poll timing aligned with ratings changes. We therefore supplement these results by drawing on newly available data on approval of executive politicians from the Executive Approval Project’s (EAP) Dataset Version 3.0.²⁶ As described in the project’s documentation, the EAP 3.0 dataset “represents the most comprehensive, publicly available collection of time-series indicators of public support for political executives in the world.” The project draws on existing public opinion surveys from (in its largest format) 113 countries to construct a measure of executive approval (as operationalized through the notion of “public mood” originally described in [Stimson \(2018\)](#)), beginning as early as 1980 in some instances, and continuing through 2021. The EAP project constructs measures of public approval and disapproval of a sitting executive at three distinct temporal units: the annual level (113 countries), the quarterly level (70 countries), and the monthly level (36 countries).

For our purposes, there exists a tension between the temporal granularity of the EAP data and the breadth of country coverage. The monthly data on executive approval would allow us to mostly plausibly estimate the effect of a credit ratings change on popular support for a sitting government, without assuming that other macro-level factors in the country would have changed much in the intervening time period. However, the sample of countries in the monthly sample is not broadly representative of borrowing countries globally: instead, of the 30 countries in the dataset, all but two come from Europe or Latin America. Given long-standing expectations about differential treatment of wealthy OECD countries, as against low- or middle-income states, by creditors ([Mosley 2003](#)), this sample may be one where we might be least likely to observe credit downgrades, and where states’ reliance on international credit may be dampened, thereby limiting our ability to detect an effect.

At the opposite extreme, the EAP’s annual dataset covers a wide swath of countries

²⁶<http://www.executiveapproval.org/download/>

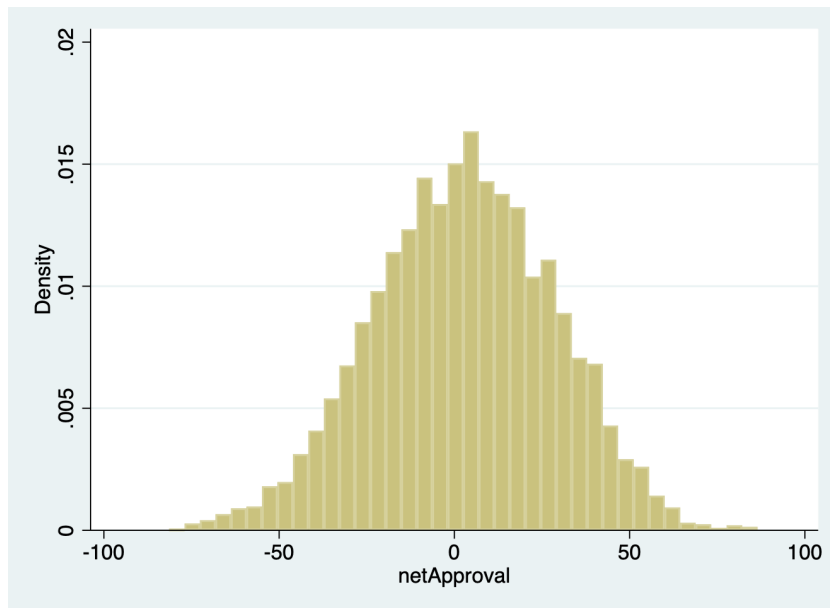
from all major regions of the world; however, a reasonable worry for our approach is that, when credit ratings change, there may be a number of other macro-economic effects of such changes in an intervening year that could also affect popular support for government, thereby complicating our efforts to identify the effect of the downgrade itself as an informational signal to voters.

Given these tradeoffs between sample composition and the standard *ceteris paribus* assumption of “all else equal” in our treatment estimation, we make use of the EAP’s quarterly dataset. In our view, this strikes a balance between a sample that is globally representative and a temporal unit with more limited concerns about treatment contamination: of the 70 countries covered here, there exist multiple from South Asia (including India and Pakistan), Africa (including Nigeria), and East Asia (including Japan, South Korea, and Taiwan), in addition to a wide range of countries from Latin America, as well as coverage across Western, Central, and Eastern Europe. We view this broader geographic coverage as important to assessing the impact of credit rating changes on popular support in contexts where this is likely to occur.

For our baseline analysis, we construct a measure of net executive approval ($NetApproval_{ct}$) which calculates the difference between the EAP’s smoothed estimate of executive approval and executive disapproval in country c in quarter t . Each of these measures can take a value between 0 and 100; our net approval measure therefore theoretically varies between -100 (in a case where executive approval equals zero and disapproval equals 100) and 100 (in a case where executive approval equals 100 and disapproval equals 0). As reported in Figure 3, this measure is centered almost exactly at zero (mean of 2.6), with an observed range of -81.4 (occurring in Moldova in the third quarter of 2016) to 86.5 (occurring in El Salvador in the first quarter of 2021).

Our primary independent variable of interest is an instance of a change in a country’s credit rating, by one of the three major credit ratings agencies (Moody’s, Fitch, or Standard

Figure 3: Empirical distribution of net executive approval. Source: EAP version 3.0, quarterly dataset.



& Poor's). To construct this measure, we consulted the official websites for each credit rating agency, which contain information on credit scores by date for all rated countries. These data also include the dates of any ratings changes; we construct a measure of a country's quarterly credit rating over time to match our temporal unit for public opinion from EAP.

More precisely, we construct four potential measures of an effect of a rating change. The first is a simple dummy for a time period in which a country experienced *any rating change* (regardless of direction) by any rating agency; note that, given our theoretical expectations of opposite effects on public opinion from downgrades versus upgrades, we do not expect that this measure is likely to correlate systematically with executive approval. We next construct dummy measures of any *credit downgrade* or *credit upgrade*, with the expectation that downgrades ought to lead to decreases in executive approval, whereas upgrades should have the opposite effect. Finally, we construct a continuous measure of the *average rating change* experienced by a country in a given time period, based on the number of steps in a

credit rating a country moved; this measure ranges in value from -10 to +8. We find that countries in our sample experienced credit ratings changes in approximately 12% of quarters in our dataset, with these split almost evenly between instances of downgrades (about 6 percent of cases) and upgrades (almost 7 percent of cases).

Of course, credit ratings changes do not happen in an economic vacuum, so we also introduce a set of control variables to account for the possibility that any correlation we observe between ratings changes and political approval is spurious due to omitted variable bias. More specifically, we control for a measure of a country’s *GDP per capita*, *GDP growth*, *average external debt (% GDP)*, *trade (% GDP)*, *oil rents (% GDP)*, and *FDI inflows (% GDP)*.²⁷ In addition, given longstanding belief in the possibility that democratic and non-democratic states are treated differentially by international credit markets (Schultz and Weingast 2003, Beaulieu, Cox, and Saiegh 2012, Ballard-Rosa, Mosley, and Wellhausen 2021), we also introduce a measure of a country’s *electoral democracy index*.²⁸ Using these data, we first estimate the (unconditional) relationship between changes in credit ratings and popular approval of executive politicians as follows:

$$NetApproval_{ct} = \beta RatingsChange_{ct-1} + \gamma X_{ct-1} + \mu_c + f(t) + \epsilon_{ct} \quad (3)$$

where X_{ct-1} represents the vector of control variables identified above, with measures lagged by one time period to avoid simultaneity bias. μ_c represents country fixed effects, and $f(t)$ represents a functional form capturing temporal dynamics in the data; below, we report results where we operationalize $f(t)$ through quarter fixed effects; we find very similar results if we instead employ polynomials in time. Finally, we cluster our errors ϵ_{ct} by country to account for potential auto-correlation in our panel data.

Of course, while we expect credit ratings to affect political support in general, a core

²⁷All data from the World Bank’s WDI dataset.

²⁸Data from VDem.

contention of this paper is that such information effects are likely to be more pronounced in environments in which citizens otherwise lack clear signals of government economic performance. We therefore expect that the effect of credit ratings changes should be heightened in countries with low levels of economic reporting, which we capture using the *HRV index* developed by [Hollyer, Rosendorff, and Vreeland \(2011\)](#).

We also anticipate that, in economic environments characterized by high volatility in monetary conditions, voters' assessments of the state of the economy also will be more variable; per our H3 above, we expect that the effect of a ratings change on executive approval will be more pronounced in such instance. To assess this possibility, we collect data on average quarterly exchange rate value (per USD);²⁹ as above, we assume that there is reasonable pass-through from international currency prices to domestic prices such that citizens can observe the consequences of such volatility.³⁰ Making use of this exchange rate data, we construct a measure $\sigma_{c,XR}$ which is the standard deviation of exchange rate values over the past year.³¹

Baseline results

As reported in Table 5, we find effects on executive approval of both forms of credit ratings changes: ratings downgrades are associated with a decrease in executive approval of approximately 6.5 percentage points ($p < 0.01$), whereas credit upgrades are associated with an increase in executive approval of approximately 3 percentage points ($p < 0.01$). Beyond this, we also detect strongly significant evidence that executive approval is higher in countries experiencing economic growth, and note that the effect on ratings changes exists after

²⁹Exchange rate data from Refinitiv.

³⁰Alternately, in many countries, particularly in the developing world, citizens pay attention to exchange rates directly; see, e.g., [Frieden \(2016\)](#), [Schiumerini and Steinberg \(2020\)](#), [Quinn, Sattler, and Weymouth \(2023\)](#).

³¹That is, we construct the variance in exchange rates as $\sigma_{c,XR}^2 = \frac{1}{4} \sum_{t-4}^t (XR_{ct} - \mu_c)^2$, where XR_{ct} is the exchange rate value (in USD) for country c in time t ; $\sigma_{c,XR}$ is simply the square root of this estimated variance. Visual inspection of these data indicated that they were log-normally distributed, and so we take the log of this measure to better approximate normality assumptions.

controlling for economic performance directly.³²

Table 5: Credit ratings and executive approval

VARIABLES	(1) Net approv.	(2) Net approv.	(3) Net approv.	(4) Net approv.
Any rating change	-0.996 (0.905)			
Any downgrade		-6.584*** (1.583)		
Any upgrade			3.334*** (1.046)	
Average rating change				2.534*** (0.879)
GDP per capita (current US\$)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
GDP growth (annual %)	1.540*** (0.353)	1.474*** (0.342)	1.518*** (0.351)	1.504*** (0.345)
External debt (% GDP)	-0.058 (0.073)	-0.056 (0.072)	-0.062 (0.073)	-0.060 (0.072)
Trade (% of GDP)	0.017 (0.086)	0.015 (0.085)	0.017 (0.085)	0.016 (0.085)
Oil rents (% of GDP)	1.296 (0.790)	1.237 (0.798)	1.232 (0.784)	1.245 (0.793)
Foreign direct investment, net inflows (% of GDP)	-0.199 (0.129)	-0.195 (0.130)	-0.214 (0.130)	-0.204 (0.129)
Electoral democracy index	-41.865 (25.641)	-42.190 (25.472)	-42.155 (25.735)	-41.719 (25.536)
Country FE	✓	✓	✓	✓
Time FE	✓	✓	✓	✓
Observations	4,436	4,436	4,436	4,436
R-squared	0.109	0.114	0.110	0.112
Number of countries	60	60	60	60

Robust standard errors clustered by country in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Information environment results

Having documented a robust unconditional relationship between credit rating changes and executive approval, we now turn to evaluation of our heterogeneous effect hypotheses regarding the informational environment. As reported in column 1 of Table 6, when we interact

³²As shown in Appendix Table C.9, we also document that our results are unchanged if we introduce a broader set of controls for economic crisis conditions more specifically.

our measure of credit ratings changes with the HRV index of economic transparency, we find (consistent with H2) that the association between credit downgrades and improved support for executive incumbents is most pronounced for countries with low levels of economic transparency, as visualized in Figure 4.³³ Similarly, we find (consistent with H3) that credit ratings downgrades are associated with significantly larger declines in popular approval for sitting governments when they occur during periods of heightened exchange rate variability (Column 2), which we visualize in Figure 5.³⁴

Interestingly, in contrast to our somewhat mixed results for credit ratings upgrades in the UESD analysis, here we find strong results when considering upgrades (Table 7).³⁵ Upgrades in the presence of transparency have a smaller effect on incumbent popularity than if the polity is opaque, and upgrades in the presence of heightened volatility increase the support for the incumbent; the upgrade helps individuals correctly attribute economic conditions when the economic environment is noisy.

Conclusion

Voters make inferences about the competence of their leaders based on their perceptions about how the economy is performing. These inferences require information that is timely, credible, easy to understand, and cheap to acquire. Sovereign credit ratings downgrades and upgrades serve these functions: they occur when external parties observe significant changes in economic and financial risk, and they receive widespread attention from local media outlets and from incumbents (especially in the case of upgrades) and opposition politicians (especially in instances of downgrades).

Mass publics' approval of incumbents responds to changes in these credit ratings across

³³Complete output reported in Appendix Table C.10.

³⁴We also document in Appendix Table C.9 that we find similar increased effects of credit ratings downgrades in the presence of an inflation crisis.

³⁵Complete output reported in Appendix Table C.11.

Table 6: Ratings downgrades, information environment, and executive approval

VARIABLES	(1) Net approv.	(2) Net approv.
Downgrade	-13.575*** (3.357)	-8.127*** (1.868)
HRV	-1.793* (0.969)	
Downgrade $\times$ HRV	1.824* (0.936)	
σ_{XR} (past 4 quarters, logged)		0.680 (0.698)
Downgrade $\times$ σ_{XR}		-0.493** (0.227)
Controls	✓	✓
Country FE	✓	✓
Time FE	✓	✓
Observations	4,458	4,248
R-squared	0.131	0.125
Number of countries	60	59

Robust standard errors clustered by country in parentheses.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

a wide variety of (largely democratic) countries. Our UESD results offer strong, causal links between downgrades and declines in incumbent support in 33 countries; the cross-national results, while less well-identified, offer additional support for the effect of downgrades on incumbent approval, and some evidence that upgrades are associated with greater support for the executive, in 70 countries. These results are amplified when the informational environment is noisier or less transparent. In the UESD analysis, we find the effect of downgrades is stronger when the respondent is less educated, and when the exchange rate is highly variable; in the observational study, the effects of both downgrades and upgrades are larger in non-transparent and high exchange rate volatility environments.

Our findings suggest that ratings agencies – already criticized for exercising authority in the global economy, with little transparency or regulation ([Barta and Johnston 2023](#), [Sinclair](#)

Figure 4: Effect of credit rating downgrade on executive approval, conditional on government transparency in economic reporting.

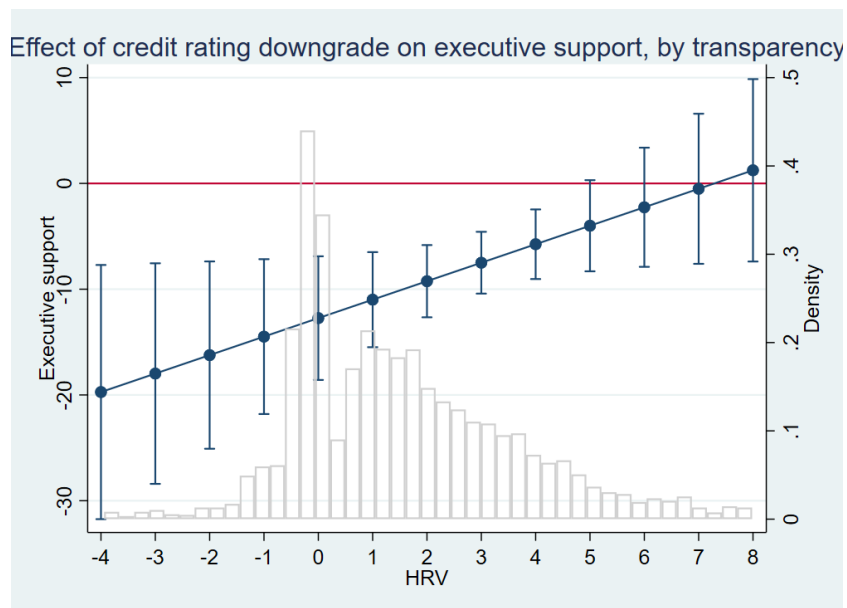


Figure 5: Effect of credit rating downgrade on executive approval, conditional on exchange rate volatility.

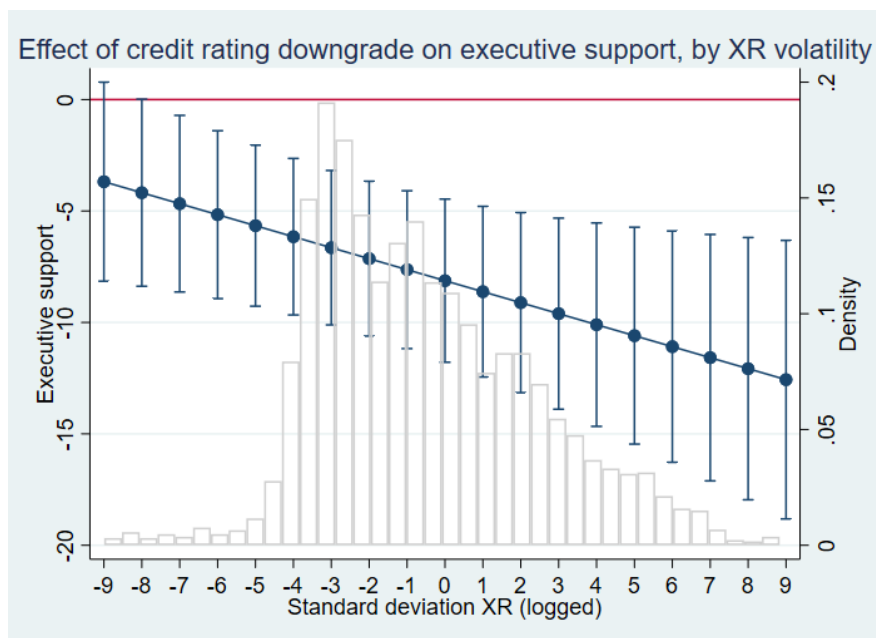


Table 7: Ratings upgrades, information environment, and executive approval

VARIABLES	(1) Net approv.	(2) Net approv.
Upgrade	11.456*** (2.649)	7.039*** (1.537)
HRV	-0.816 (0.954)	
Upgrade $\times$ HRV	-1.293** (0.583)	
σ_{XR} (past 4 quarters, logged)		0.438 (0.673)
Upgrade $\times$ σ_{XR}		0.774** (0.292)
Controls	✓	✓
Country FE	✓	✓
Time FE	✓	✓
Observations	4,458	4,248
R-squared	0.132	0.128
Number of countries	60	59
Robust standard errors clustered by country in parentheses		
*** p<0.01, ** p<0.05, * p<0.1		

2005, 2021) – also can affect political outcomes, altering the probability of governments’ survival in office. What is especially noteworthy about this dynamic is that it can occur even at times when governments are not seeking to access international capital markets. Shifts in ratings affect the cost of credit only when a government seeks to roll over existing debt or to issue new debt on private markets. Shifts in public opinion, however, might happen at any point in the credit cycle.

These findings offer an explanation for why incumbents actively seek to avoid downgrades for reasons associated with political survival, above and beyond the economic fundamentals regarding credit worthiness, or the potential effects on the cost of capital. Credit ratings adjustments help voters assign responsibility for poor performance to incumbents, help make knowledge about conditions more commonly held (and political action more likely), and con-

firm suspicions about incumbent competence. Political reaction to commonly held, reliable, and simple heuristics about leaders leads to shifts in attitudes that incumbents would, in the case of downgrades, prefer to avoid.

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Appendices

A Data Summary (for Inclusion in Print)

Table A.1: Gallup World Poll Survey Country List

Country	Year
Argentina	2010
Bulgaria	2019, 2020
Chile	2012, 2018, 2019, 2020, 2022
Colombia	2013
Croatia	2014
Cyprus	2017, 2018
Dominican Republic	2017
Ecuador	2010, 2014, 2015, 2017, 2018, 2020, 2023
El Salvador	2022, 2023
Finland	2016
France	2024
Greece	2010, 2018, 2019
Hungary	2016
Japan	2012, 2015
Kazakhstan	2008
Latvia	2018
Malta	2017
Montenegro	2016
Mozambique	2015
Namibia	2019
New Zealand	2011
Nigeria	2012, 2016
Pakistan	2022
Paraguay	2010
Portugal	2017
Serbia	2019
Slovenia	2013
South Africa	2014, 2020
South Korea	2015
Sri Lanka	2021
Uruguay	2008
Venezuela	2017
Zambia	2015, 2018

B Additional Results (Online Only)

Table B.1: Credit ratings downgrades and executive approval (OLS estimates)

VARIABLES	(1) Exec. approval (5 day window)	(2) Exec. approval (2 day window)
Credit rating downgrade	-0.084*** (0.021)	-0.146*** (0.032)
Post announcement	0.011 (0.015)	0.019 (0.021)
Downgrade $\times$ Post	-0.048** (0.021)	-0.063** (0.031)
Age	0.001*** (0.000)	0.002*** (0.000)
Female	-0.011 (0.010)	-0.003 (0.014)
Low educ.	-0.021 (0.013)	-0.046** (0.018)
Urban	-0.019* (0.011)	-0.027* (0.016)
Per Capita Income Quintiles (Second 20%)	0.024 (0.017)	0.010 (0.023)
Per Capita Income Quintiles (Middle 20%)	0.036** (0.017)	0.014 (0.023)
Per Capita Income Quintiles (Fourth 20%)	-0.002 (0.016)	-0.026 (0.023)
Per Capita Income Quintiles (Richest 20%)	0.020 (0.016)	0.007 (0.023)
Country FE	✓	✓
Observations	12,735	6,271
R-squared	0.115	0.127

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table B.2: Credit ratings downgrades, citizen information, and executive approval (OLS)

VARIABLES	(1) Exec. approval (5 day window)	(2) Exec. approval (5 day window)
Post downgrade	-0.015 (0.017)	-0.061** (0.024)
Low education	0.003 (0.026)	
Post $\times$ Low educ.	-0.069** (0.032)	
σ_{XR} (past 5 days, logged)		0.006 (0.005)
Post $\times \sigma_{XR}$		-0.017*** (0.006)
Age	0.001*** (0.000)	0.001** (0.001)
Female	-0.015 (0.014)	0.007 (0.019)
Urban	-0.016 (0.015)	0.001 (0.021)
Per Capita Income Quintiles (Second 20%)	0.021 (0.023)	0.028 (0.030)
Per Capita Income Quintiles (Middle 20%)	0.046** (0.023)	0.110*** (0.030)
Per Capita Income Quintiles (Fourth 20%)	0.018 (0.022)	0.042 (0.030)
Per Capita Income Quintiles (Richest 20%)	0.023 (0.022)	0.050* (0.030)
Country FE	✓	✓
Observations	6,905	3,550
R-squared	0.115	0.168

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table B.3: Summary Statistics by Treatment Group (after entropy balancing)

	Treat		Control	
	Mean	Variance	Mean	Variance
Age	42.74	329.2	42.75	329.3
Female	0.56	0.25	0.56	0.25
Secondary education	0.61	0.24	0.61	0.24
Tertiary education	0.15	0.13	0.15	0.13
Urban	0.38	0.24	0.38	0.24

C Robustness results (Online Only)

Table C.1: Entropy balance results, using full sample of country surveys

VARIABLES	(1) Exec. approval (5 day window)
Credit rating downgrade	-0.104*** (0.018)
Post	0.006 (0.013)
Downgrade $\times$ Post	-0.037** (0.018)
Country FE	✓
Observations	12,735
R-squared	0.111

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Table C.2: Heterogeneous treatment effects (Entropy balancing)

VARIABLES	(1) Exec. approval (5 day window)	(2) Exec. approval (5 day window)
Post	-0.017 (0.014)	-0.001 (0.017)
Low Educ.	0.054*** (0.020)	
Post $\times$ Low Educ.	-0.057** (0.027)	
σ_{XR} (past 5 days, logged)		0.000 (0.000)
Post $\times$ σ_{XR}		-0.287** (0.133)
Country FE	✓	✓
Observations	6,905	3,540
R-squared	0.112	0.164

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Table C.3: Credit ratings upgrades and executive approval

VARIABLES	(1) Exec. appr. (5-d)	(2) Exec. appr. (2-d)	(3) Exec. appr. (5-d)	(4) Exec. appr. (5-d)
Post upgrade announcement	0.015 (0.015)	0.025 (0.021)	0.017 (0.017)	0.027 (0.024)
Low education			0.009 (0.027)	
Post $\times$ Low educ.			-0.021 (0.033)	
σ_{XR} (past 5 days, logged)				-0.018* (0.010)
Post $\times \sigma_{XR}$				0.014*** (0.005)
Age			0.002*** (0.000)	0.002*** (0.001)
Female			-0.005 (0.015)	0.028 (0.019)
Urban			-0.027* (0.016)	-0.012 (0.021)
Per Capita Income Quintiles (Second 20%)			0.028 (0.025)	0.013 (0.033)
Per Capita Income Quintiles (Middle 20%)			0.022 (0.024)	0.027 (0.032)
Per Capita Income Quintiles (Fourth 20%)			-0.029 (0.024)	-0.006 (0.031)
Per Capita Income Quintiles (Richest 20%)			0.017 (0.024)	0.007 (0.031)
Country FE	✓	✓	✓	✓
Observations	5,913	3,117	5,830	3,420
R-squared	0.111	0.121	0.119	0.142

Robust standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Table C.4: Entropy balance over personal economic conditions.

VARIABLES	(1) Exec. approval (5-day window)	(2) Exec. approval (2-day window)
Post downgrade announcement	-0.026** (0.013)	-0.037* (0.019)
Country FE	✓	✓
Observations	6,474	3,093
R-squared	0.114	0.126

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table C.5: Propensity score matching

VARIABLES	(1) Exec. approval (5-day window)	(2) Exec. approval (2-day window)
Post downgrade announcement	-0.040*** (0.013)	-0.068*** (0.021)
Observations	6,905	3,196

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table C.6: Placebo outcomes

VARIABLES	(1) Disapprove of US	(2) Confidence in financial system	(3) Used internet in past week
Post downgrade announcement	-0.005 (0.010)	-0.002 (0.011)	-0.005 (0.011)
Country FE	✓	✓	
Observations	7,754	7,823	2,812
R-squared	0.104	0.154	0.044

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table C.7: Placebo Timing

VARIABLES	(1) Exec. approval (5-day window)	(2) Exec. approval (5-day window)
Credit rating downgrade	-0.182*** (0.034)	-0.122** (0.053)
Placebo downgrade announcement (1 week later)	0.061** (0.028)	
Downgrade · Placebo announcement (1 week later)	-0.027 (0.035)	
Placebo downgrade announcement (1 week prior)		-0.015 (0.025)
Downgrade · Placebo announcement (1 week prior)		0.001 (0.035)
Country FE	✓	✓
Observations	12,082	10,896
R-squared	0.123	0.140

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table C.8: Exchange rate value and credit rating downgrades

VARIABLES	(1) XR value	(2) XR value	(3) XR value
Post announcement	-3.470 (2.475)	-0.140 (0.295)	-1.255 (1.001)
Credit rating downgrade		47.708 (40.209)	46.734 (39.876)
Downgrade $\times$ Post announcement			2.282 (1.706)
Country FE	✓	✓	✓
Observations	8,907	8,907	8,907
R-squared	0.995	0.995	0.995

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table C.9: Ratings changes, monetary crisis, and executive support

VARIABLES	(1) Net approv.	(2) Net approv.
Credit rating downgrade	-6.256*** (1.878)	-3.927* (2.080)
Inflation crisis	-3.009 (3.525)	-0.889 (3.762)
Downgrade $\times$ Inflation crisis		-11.093** (4.438)
Currency Crises	8.028 (5.055)	9.307* (4.786)
Debt Crises	-3.524 (4.781)	-3.934 (4.721)
Banking Crises	-6.497** (2.966)	-6.511** (2.932)
GDP per capita (current US\$)	0.000 (0.000)	0.000 (0.000)
GDP growth (annual %)	1.597*** (0.349)	1.596*** (0.342)
External debt (% of GDP)	-0.067 (0.063)	-0.073 (0.062)
Trade (% of GDP)	0.002 (0.080)	-0.000 (0.080)
Oil rents (% of GDP)	1.948*** (0.582)	1.838*** (0.583)
Foreign direct investment, net inflows (% of GDP)	-0.255** (0.125)	-0.235* (0.125)
Electoral democracy index	-59.371** (23.207)	-59.140** (23.019)
Country FE	✓	✓
Time FE	✓	✓
Observations	4,263	4,263
R-squared	0.167	0.172
Number of countries	59	59

Robust standard errors clustered by country in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table C.10: Ratings downgrades, information environment, and executive approval

VARIABLES	(1) Net approv.	(2) Net approv.
Downgrade	-13.575*** (3.357)	-8.127*** (1.868)
HRV	-1.793* (0.969)	
Downgrade $\times$ HRV	1.824* (0.936)	
σ_{XR} (past 4 quarters, logged)		0.680 (0.698)
Downgrade $\times$ σ_{XR}		-0.493** (0.227)
GDP per capita (current US\$)	0.000 (0.000)	0.000 (0.000)
GDP growth (annual %)	1.327*** (0.334)	1.451*** (0.330)
External debt (% GDP)	-0.056 (0.068)	-0.038 (0.064)
Trade (% of GDP)	0.028 (0.084)	0.014 (0.084)
Oil rents (% of GDP)	1.170 (0.794)	1.357 (0.942)
Foreign direct investment, net inflows (% of GDP)	-0.195 (0.129)	-0.169 (0.137)
Electoral democracy index	-36.214 (25.951)	-39.271 (25.133)
Country FE	✓	✓
Time FE	✓	✓
Observations	4,458	4,248
R-squared	0.131	0.125
Number of countries	60	59

Robust standard errors clustered by country in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Table C.11: Ratings upgrades, information environment, and executive approval

VARIABLES	(1) Net approv.	(2) Net approv.
Upgrade	11.456*** (2.649)	7.039*** (1.537)
HRV	-0.816 (0.954)	
Upgrade $\times$ HRV	-1.293** (0.583)	
σ_{XR} (past 4 quarters, logged)		0.438 (0.673)
Upgrade $\times$ σ_{XR}		0.774** (0.292)
GDP per capita (current US\$)	0.000 (0.000)	0.000 (0.000)
GDP growth (annual %)	1.278*** (0.335)	1.374*** (0.330)
External debt (% GDP)	-0.074 (0.070)	-0.056 (0.065)
Trade (% of GDP)	0.020 (0.082)	0.031 (0.080)
Oil rents (% of GDP)	1.093 (0.785)	1.634* (0.893)
Foreign direct investment, net inflows (% of GDP)	-0.237* (0.134)	-0.201 (0.138)
Electoral democracy index	-35.733 (26.254)	-37.596 (25.264)
Country FE	✓	✓
Time FE	✓	✓
Observations	4,458	4,248
R-squared	0.132	0.128
Number of countries	60	59

Robust standard errors clustered by country in parentheses

*** p<0.01, ** p<0.05, * p<0.1

D UESD with Barometers surveys (Online Only)

After compiling our data on the dates of ratings changes, we were able to identify existing country-level surveys that were in the field in a country that would experience a rating change. To do this, we tapped surveys (taken between 2001 and 2021) globally from the *Afrobarometer* (2012, 2015), the *Arab Barometer* (2021a, 2021b), the *Asian Barometer* (2001, 2007), the *Comparative Study of National Elections (CSES)* (2023), the *Americas Barometer* *LAPOP* (2014, 2017, 2021) and the *Latinobarometer* (2010, 2011, 2015, 2016, 2017). Table D.3 shows a summary of the survey data with respective countries and survey waves used.

Our dependent variable is a measure of *executive approval*, more specifically of approval of either the government or the head of state. Table D.4 shows the exact question wording of each of the surveys. The responses were re-scaled to range from 0 to 1 in order to ensure comparability across different survey waves, where higher values refer to higher approval.

Employing this approach, we find significant evidence that credit downgrades are associated with a decline in executive approval, as documented in Table D.1. Column 1 finds that respondents surveyed immediately following a credit downgrade decrease their approval of the executive by approximately 2 percentage points ($p < 0.01$). Turning instead to the effect of upgrades as shown in Table D.2, we find in Column 1 that respondents surveyed immediately following an upgrade increase their approval of the sitting executive by approximately 1.5 percentage points ($p < 0.01$). We take these results as strong evidence that this effect is indeed causal in nature.³⁶

We now evaluate our conditional hypotheses. Recall that, according to H2, we expect the effect of credit ratings changes to be most pronounced for citizens that are otherwise lacking information about the state of the economy. While we do not have a direct measure

³⁶Of course, this relies on the assumption that we have accounted for all sources of potential imbalance between pre- and post-treatment groups that might also be systematically associated with executive approval. We have attempted to account for any source of systematic imbalance identified by prior work, and so find this assumption plausible, but cannot prove this is true.

Table D.1: *UESD Results (Credit downgrades)* This table reports results from application of entropy balance to our survey data, matching pre- and post-treatment categories according to age, gender, education, and urban residence. Column 2 adds an interaction between ratings downgrades and a measure of individual attention to the news. Column 3 adds an interaction between ratings downgrades and a measure of the % change in a country's exchange rate in the past 5 days.

VARIABLES	(1) Exec. approval	(2) Exec. approval	(3) Exec. approval
Credit rating downgrade	-0.019*** (0.006)	-0.138*** (0.018)	-0.032*** (0.006)
Attention to the news		-0.126*** (0.011)	
Downgrade $\times$ News attn.		0.065*** (0.021)	
Δ XR (5 day % change)			-1.013*** (0.284)
Downgrade $\times$ Δ XR			-1.347*** (0.432)
Observations	23,684	19,321	22,426
R-squared	0.001	0.033	0.004
Standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

of this information, we suggest that one common channel for respondents to receive such information is regular consumption of news media. Usefully for our purposes, virtually all of the surveys we draw upon for our sample include a question regarding respondent attention to the news. While exact language varies somewhat, each question captures the extent to which respondents pay attention to news media; as above, we standardize these responses across surveys by coding the highest level of news attention as 1, and the lowest level of news attention as 0. To assess whether the effect of a credit rating downgrade varies according to citizen news consumption, we introduce this measure of news attention directly along with an interaction between this and our primary treatment measure of a credit rating downgrade. As reported in Column 2 of Table D.1, we find strong support for our

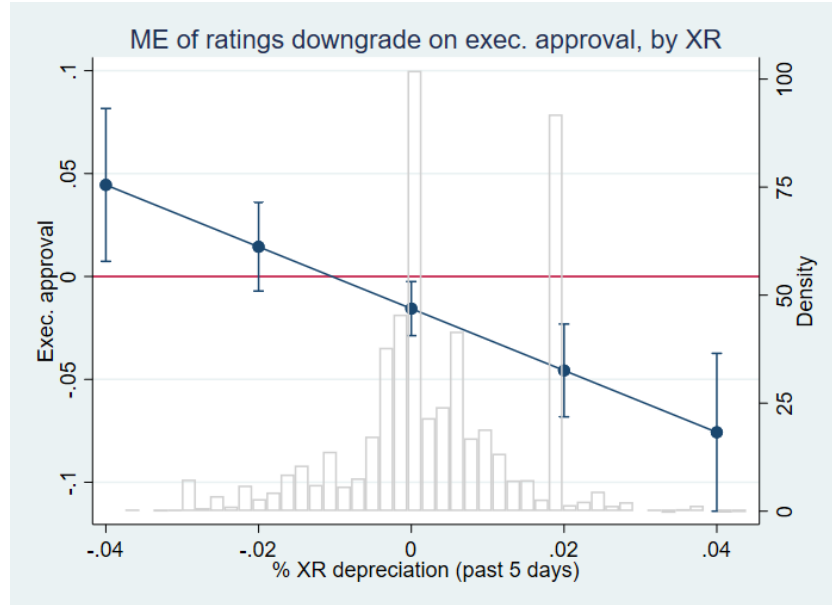
expectation that the effect of ratings downgrades is strongest for citizens otherwise lacking in information: the coefficient on credit rating downgrade (which captures the effect of a ratings downgrade on those citizens at the lowest level of news attention) is highly statistically significant ($p < .001$), and is approximately seven times larger in absolute magnitude than unconditional effect estimated in Column 1. In addition, as expected by H2, we find that, as citizens become more well informed, the size of the effect of a ratings downgrade diminishes in magnitude, as captured by the positive and statistically significant interaction coefficient. To help visualize these effects, we plot the marginal effect of a credit rating downgrade, as conditioned by respondent media consumption, in Figure D.2.

We next investigate whether the effect of ratings downgrades is more pronounced when it provides a signal of attribution to the government for ongoing poor monetary conditions (H3). While we lack a source of daily CPI data that would allow us to evaluate the direct effect of changing domestic prices, we are able to capture a close proxy of domestic prices by relying on information from international exchange markets to construct measures of changes in a country’s exchange rate (relative to the US dollar) at a daily level.³⁷ Drawing on these daily exchange rate data, we construct a measure of very recent movements in the exchange rate to capture situations in which monetary policy is likely to be most visible to citizens; more precisely, we construct (for all respondents) the *% change in exchange rate* over the past 5 days as a localized measure of monetary conditions. Note that, as these data are measured in (local currency / USD), an increase in the value of this measure corresponds to a situation in which the domestic currency is weakening, relative to the dollar. We then include this measure of currency depreciation – as well as its interaction with our credit rating downgrade treatment – to assess whether ratings downgrades have more pronounced effects on executive support in environments in which we expect citizens to be more aware of poor economic conditions. As reported in Column 3 of Table D.1, we find strong support for our

³⁷Exchange rate data from Refinitiv.

expectation that ratings downgrades have larger effects on popular support for the incumbent when citizens are more aware of prevailing economic trouble: the negative and statistically significant interaction term highlights that, in cases where recent currency depreciation has been more pronounced, the result is a significantly larger decrease in public support for current political leaders.³⁸ To help visualize this effect, we plot the marginal effect of a credit rating downgrade on executive support, conditional on recent exchange rate changes, in Figure D.1. Interestingly, this figure documents that – consistent with H3 – citizens are much more likely to disfavor incumbents when monetary conditions are worsening (as captured by the larger negative effects for countries experiencing greater devaluation); in contrast, in cases where the currency has actually appreciated (corresponding to negative values for our change in XR measure), we detect no evidence that downgrades are associated with a significant decline in popular support for incumbents.

Figure D.1: Effect of credit rating change on executive approval, conditional on change in exchange rates (past 5 days).



³⁸We also note, in passing, that the measure of currency depreciation is associated with significant decline in executive support, even when no downgrade is present.

Turning to heterogeneous effects for credit ratings upgrades, we continue to find evidence that the effect of ratings changes appears much more pronounced for individuals with less prior information. As reported in Column 2 of Table D.2, we identify a very large and significant effect of ratings upgrades on the those citizens who pay the least amount of attention to the news, but also highlight that this effect diminishes in magnitude for more informed respondents, providing further support for our informational mechanism (H2). When we instead introduce our measure of localized changes to the exchange rate in Column 3, we do find evidence suggesting that these effects are more pronounced in environments with greater monetary change; however, we note that the direction of this effect is opposite to the one we would have expected: we find that citizens appear more likely to increase their support for incumbents following a ratings change following a larger devaluation of the currency. Having noted this empirical discrepancy with our core theoretical predictions, we nonetheless highlight that, for ratings downgrades, we uncover consistent support for each of our main hypotheses, and also find support for two of our three main hypotheses for the effects of ratings upgrades. Having identified strong support for a localized effect of ratings changes, we now turn to our secondary empirical approach.

Figure D.2: Effect of credit rating change on executive approval, conditional on individual attention to news.

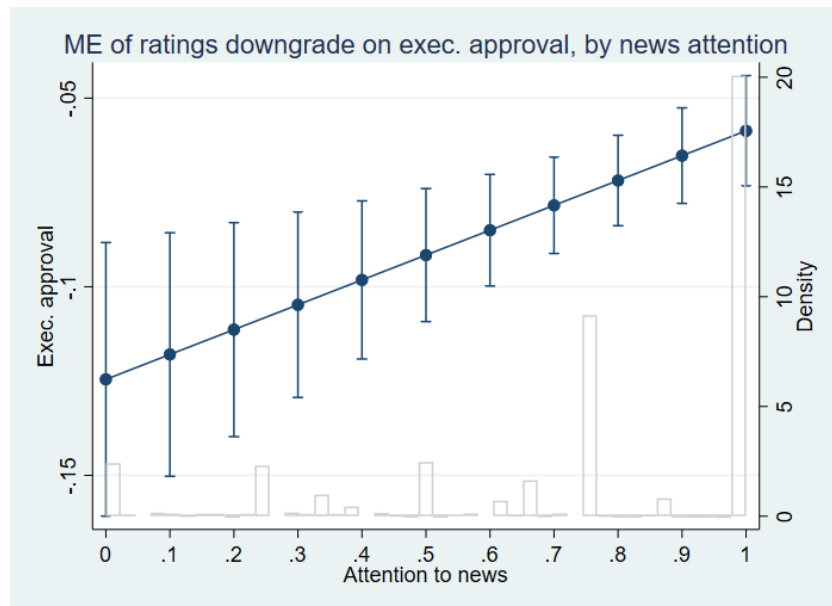


Table D.2: *UESD Results (Credit upgrades)* This table reports results from application of entropy balance to our survey data, matching pre- and post-treatment categories according to age, gender, education, and urban residence. Column 2 adds an interaction between ratings upgrades and measure of individual attention to the news. Column 3 adds an interaction between ratings upgrades and a measure of the % change in a country's exchange rate over the past 5 days.

VARIABLES	(1) Exec. approval	(2) Exec. approval	(3) Exec. approval
Credit rating upgrade	0.015*** (0.006)	0.106*** (0.015)	0.002 (0.006)
Attention to news		-0.009 (0.010)	
Upgrade $\times$ News		-0.080*** (0.019)	
Δ XR (5 day % change)			-1.990*** (0.241)
Upgrade $\times$ Δ XR			4.562*** (0.523)
Observations	23,684	19,321	22,426
R-squared	0.000	0.011	0.005

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table D.3: Barometers Survey Data Sources

Survey	Wave / Year	Country
Afrobarometer	Round 5, 2012	Nigeria
Afrobarometer	Round 6, 2015	Mozambique
Arab Barometer	Wave 6, Part 3, 2021	Tunisia
Arab Barometer	Wave 7, 2021	Morocco
Asian Barometer	Wave 1, 2001	Taiwan
Asian Barometer	Wave 2, 2007	Hong Kong
CSES	Module 5, 2015, 2018	Greece, Türkiye
Lapop	2014	Brazil, Mexico, Paraguay, Venezuela
Lapop	2016	Dominican Republic
Lapop	2017	Argentina
Lapop	2021	Chile
Latinobarometer	2011	Uruguay
Latinobarometer	2015	Paraguay
Latinobarometer	2016	Honduras
Latinobarometer	2017	Ecuador, Honduras

Table D.4: Question Wording

Survey	Question Wording
Afrobarometer	Do you approve or disapprove of the way that the following people have performed their jobs over the past twelve months, or haven't you heard enough about them to say? A. President - Strongly disapprove to strongly approve on a 4-pt scale.
Arab Barometer	How satisfied are you with the following? 1. The government's performance overall in our country. - Completely dissatisfied to completely satisfied on 4pt scale.
Asian Barometer	How satisfied or dissatisfied are you with the current government? - Not at all satisfied to very satisfied on a 4-pt scale.
CSES	Now thinking about the performance of the government in general, how good or bad a job do you think the government did over the past years? Has it done a very good job? A good job? A bad job? A very bad job? - Very bad job to very good job on 4-pt scale.
Lapop	Speaking in general of the current administration, how would you rate the job performance of President [name of current president]? - Very bad to very good on a 5-pt scale.
Latinobarometer	Do you approve or disapprove the government led by President [name of current president]? - Disapprove to approve on 3-pt scale.