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Abstract

We investigate the political power of credit rating agencies by building a theoretical model that illustrates how heterogeneous voters change their political preferences after receiving credit signals which infer the quality of their governments. We empirically test this hypothesis using a rich dataset of daily sovereign ratings, outlook and watch signals assigned by S&P, Moody's and Fitch to EU countries from 2000 to 2017, along with a unique dataset measuring public support for governments. We find that negative rating signals lead to a significant decrease in government support, therefore influencing the electoral prospects of political parties. Both sociotropic and egocentric voters' preferences are affected by sovereign ratings. Our results are confirmed across a battery of robustness tests and various modelling approaches, including fixed effects and difference in differences models and propensity score matching. Our findings offer wide-ranging implications for policy makers, political parties, governments, and the rating industry.

Keywords: Sovereign Credit Ratings; Opinion Poll; Voting Behaviour.

JEL classification: G15; G24; G28.

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1. Introduction

The 2010-12 European debt crisis had a profound impact on European countries, leading to economic downturns, political instability, and a rise in right-wing extremism and populism (Funke et al., 2016).[1] A series of sovereign rating downgrades of several European countries during the crisis has raised questions about the political power of credit rating agencies (CRAs). Sovereign ratings are informative signals about the economic, financial, and political health of a country; hence they might affect voters' perception of the government. This raises the question of whether there are significant changes in opinion polls following sovereign rating signals. We offer both theoretical and empirical analyses of the role of CRAs in shaping citizens' views about the incumbent government and quantifying the extent of CRAs' political power.

By exploiting sovereign ratings' informational and signalling roles in the economy and financial markets, we examine CRAs' effect on voters' preferences in a novel way. We investigate whether CRAs have gained a strong influence, beyond their impact on financial markets and national economies, to the point of being able to influence preferences for incumbent politicians and affect the country's political stability. To the best of our knowledge, the only study to provide evidence on the political power of CRAs is by Cunha et al. (2022). They empirically investigate the impact of US municipal bond rating changes on the likelihood of politicians' re-election and find that CRAs influence gubernatorial and mayoral elections in the US. In comparison, we offer both theoretical and empirical analyses, focusing on longitudinal polling data for 27 EU countries (rather than a single country). Our unique, high-frequency polling results facilitate the estimation of immediate changes in government support across time, rather than on electoral outcomes only, in response to credit signals, offering crucial information to politicians and market participants about voters' perceptions.

Prior studies in economic voting are based on the 'responsibility' hypothesis which suggests that citizens hold their government responsible for the state of the national economy and financial markets (Lewis-Beck and Stegmaier, 2019). During periods of economic downturn, citizens are more likely to acquire news about the economy and may use this information to penalize

[1] For examples, extreme far-right parties (such as *Golden Dawn* in Greece and *Front National* in France), and populist or openly Eurosceptic parties (such as *Podemos* in Spain, *Five Star Movement* in Italy, *True Finns* in Finland, *The UK Independence Party* in the United Kingdom (UK), and *The Alternative for Germany* in Germany) have had major electoral successes in recent elections (Funke et al., 2016).

incumbents for their perceived failures in managing the economy. Information on the state of the economy is abundant as a result of enhanced media coverage (Marinova and Anduiza, 2020). CRAs are increasingly seen as a source of information about the economy by both the media and the public (Cawley, 2016). The media tends to critically reflect on the role of CRAs in financial markets and their influence on the economy, which can help to reproduce the perceived legitimacy, authority, and relevance of CRAs. Many online articles and newspapers are reporting on credit rating signals, so that citizens can use them as a key source of information to evaluate the country's economic and financial performance and its government's quality.

Following negative credit rating actions caused by the countries' declining economy and unstable financial markets, citizens are likely to blame their government and alter their political support ('sociotropic voting'). This is because voters hold the government accountable for these changes since the government has the power to influence the economy and financial markets through various policy instruments. At the individual level, CRAs can affect voters' preferences via their impact on voters' personal financial situation ('egocentric voting'). Sovereign rating signals have a significant market impact, thereby affecting the wealth of voters who own stocks and bonds.

We build an innovative theoretical model that illustrates how a strong signal about the state of the economy can switch independent voters' opinion from one political party to another. We assume that a strong signal, such as a sovereign credit signal which usually receives considerable attention from the media and public, can affect voters' preferences. We also distinguish between sociotropic and egocentric voting as mechanisms that affect changes in public preferences over political parties. To empirically investigate our hypothesis, we use a dataset of daily ratings, outlook and watch signals assigned to 27 EU countries by S&P, Moody's and Fitch during the period September 2000 to July 2017, along with a unique, hand-collected dataset of polling results. Polls closely track changes in voters' preferences in response to rating events, which helps to reduce reverse causality and omitted variable bias. To further minimize any potential endogeneity concerns, we employ fixed-effects model (FEM), difference-in-differences (DD) regression analysis, and propensity score matching (PSM) approach.

The results of FEM estimations reveal a significant relationship between sovereign ratings and government support, indicating that when the level of sovereign rating increases (decreases),

citizens reward (punish) the party in office. The results of the DD and PSM show an asymmetric effect of sovereign credit actions. Negative credit signals cause a decrease in government support by approximately 3.2% within 30 days after the credit actions (as suggested by PSM estimations), while positive events have muted impact on the country's government support. This is consistent with prior studies that have found that negative rating events significantly influence the rated country's financial markets, while the reaction is insignificant in the case of positive rating events (e.g. Afonso et al., 2012). Our findings add to the literature on the impact of sovereign ratings (e.g. Adelino and Ferreira, 2016), by highlighting the political impact of sovereign ratings beyond their economic and market effects. Further, the empirical results support the theoretical model's prediction that individuals' preferences can change due to egocentric and sociotropic reasons linked to the private utility and social component of the overall utility following sovereign credit signals. The findings are confirmed across different economic and political conditions (the 2008-2012 global financial crisis and non-crisis periods), across different countries, but highlighting a stronger impact in non-GIIPS compared to GIIPS countries, and across a battery of robustness tests.

This paper contributes to the literature in multiple aspects. First, one key innovation of this study is the unique dataset of polling results which are hand-collected from publicly available polling datasets and online articles. While previous studies (e.g. Kelly et al., 2016) focus on opinion polls on or around the elections and for a single country, our dataset allows us to examine voters' preferences over time and at a multi-country level with diverse political systems. The findings confirm the link between voter's preferences and the conditions of financial markets and economies, as well as the governments' fiscal policies (e.g. Fauvelle-Aymar and Stegmaier, 2013; Hanusch and Vaaler, 2013; Cunha et al., 2022). The innovative theoretical model and empirical results show that short-term shocks to the economy and financial markets, and negative sovereign credit events in particular, have a significant impact on the public support for the government, which can lead to political instability. The findings also support the economic voting theory, which states that when economic conditions are bad (good), voters punish (reward) the government (Lewis-Beck and Stegmaier, 2019). Finally, the results highlight the political power of CRAs beyond their influence on national economies and financial markets.

Our findings have several implications. First, we highlight the effect of sovereign ratings on the way voters perceive the incumbent government, which can assist citizens in their voting

decisions. CRAs' negative credit actions are considered as strong signals which can shift voters' preferences and potentially alter the electoral prospects of the incumbents. This could increase the likelihood of early elections or lead to changes in the prime minister, president or the cabinet. Hence, CRAs can have important consequences on political outcomes. Political instability, measured by frequent changes of the government and the cabinet, can have distortive effects on fiscal policies and government borrowing, playing an important role behind economic crises. In order to maintain a high level of support and increase the likelihood of being re-elected, incumbents need to implement fiscal policies that stabilise the performance of national economies and financial markets to ensure the assignment of high sovereign credit ratings by CRAs. However, austerity measures that might boost future credit ratings can worsen the economic conditions in the short term and would not be well received by the public.

Further, this paper shows that CRAs can act as a disciplinary force to limit the actions of incumbents in substantially increasing the weight of public debt, as citizens perceive the quality of government via the country's sovereign rating level. Finally, this study sheds light on the underlying mechanisms behind political uncertainty and the public support/opposition for the government, by presenting a new effect for sovereign credit signals. Regulators and policymakers should also be aware of the influence of CRAs on political preferences and political instability. While the recent regulatory reforms of CRAs in Europe and the US have focused on the quality of ratings and their effects on the financial markets, it is also necessary to consider their political power.

The remainder of the paper is organised as follows. Section 2 formulates the model and provides the hypothesis of the study, Section 3 describes the dataset, Section 4 presents empirical modelling approaches, Section 5 discusses the results, and Section 6 concludes.

2. A model of credit ratings and government support

To explain the mechanisms behind the information updating process and aggregation that transform a credit action into a variation in political support, we build a simple signalling model with individual preferences and heterogenous voters. In the model, voters are interested in a political platform of taxation, government spending and government debt to maximise their utility. Individuals receive and interpret signals about the state of nature, which can produce a switch in

favour or against the *status quo* (incumbent party). Following Bhattacharya (2013), we assume that: (i) constituents have heterogeneous preferences, (ii) a new signal can generate a switch in both directions, and (iii) *Strong Preference Monotonicity* (SPM) applies, implying that the probability of switching is higher on one side for each signal. When polling, voters show sincere preferences based on a Beta distributed set of beliefs about the status quo, which are Bayesian updated after every signal. Individuals are heterogeneous for their abilities and preferences for government debt.

Individual utility

Overall utility of individual *i* is a quasi-linear function depending on consumption *c*, expected return on investment E(*I*), work effort *e*, government spending *G*, and public debt D:

$$U_{it} = \frac{{c_{it}}^{(1-\rho)} E(I(r))_{it}^{\rho}}{(1-\rho)^{(1-\rho)}\rho^{\rho}} - \frac{e_{it}^2}{2\beta} + G_t - \partial_i E(D_t(r_t)) \quad (1)$$

$$\text{s.t.} \qquad w_{it} = c_{it} + E(I_{it}(r_t))$$

Where sharing parameter $0<\rho<1$, r is interest rate, β is a parameter representing the disutility of effort.

Parameter ∂, which is Beta distributed, represents the importance that each voter attributes to government debt.

Individuals maximise private utility under the constraint that total wealth *w* is given by the sum of consumption and returns to investment. For simplicity, we assume that firms are owned by individuals and income is dependent on effort:

$$w_{it} = (1-\tau_t)[H_{it}e_{it} + E(I_{it-1}(r_t))] \quad (2)$$

Where H_{it} are individual abilities and τ is the flat tax rate. From Eq. (1) and Eq. (2), optimal effort is:

$$e_{it} = (1-\tau_t)H_{it}\beta \quad (3)$$

Government spending is given by the sum of tax revenues and deficit *d*. Individuals then support the political platform that maximises their overall utility:

$$U_{it} = (1-\tau_t)^2[H_{it}\beta + E(I_{it-1}(r_t))] - \frac{(1-\tau_t)^2{H_{it}}^2}{2\beta} + d_t + \tau_t(1-\tau_t)^2 \sum \left\{[H_{it}\beta + E(I_{it-1}(r_t))] - \frac{{H_{it}}^2}{2\beta}\right\} - \partial_i E(D_t(r_t)) \quad (4)$$

For simplicity, we restrict the model to two parties. At this point, individuals would support (*P)*: the party in office, which represents the status quo (*Q*), or the alternative minority party (*M*). The two parties promote the overlapping platforms but are assumed to have (unknown) different

capabilities in reaching the targets. From Eq. (4) we can see that individuals can calculate the tax rate that maximises their consumption, but face uncertainty when forming expectations for government debt and returns on investment, which affect government spending. We assume that interest rate *r* depends on the size of government spending G_t (as in Missale et al. (2002)), sovereign rating $CR,$[2] and an economic shock ε :

$$r_t = E[r_{1t}(G_t) + r_{2t}(CR_t) + \varepsilon_t] \quad (5)$$

Parameter ∂_i implies that constituents have different sensitivities to the utility components: sociotropic voters will be concerned with the realization of $E(D(r_t))$ and the overall utility, while an egocentric voter will be mostly concerned with the realization of $E(I_{it}r_t)$ and her private utility. For simplicity, we assume two possible states of the world $S \in (A, B)$: A (D,G,I) implies, low government debt and less volatile returns on investment, while B(D,G,I) is the opposite. This implies that individuals care about financial assets and that those are dependent partially on government's policies (similarly to Aney et al. (2016) and Perotti and von Thadden (2006)).

Voters do not know *S*, but hold prior beliefs and know the prior probability of the state of the world being A: $$Pr(A) = \alpha \in (0,1) \quad (6)$$

With *Pr(B)=1-A.* A decrease in credit rating will signal individuals that the state of the world is more likely to be B, and vice versa.

We normalize the number of individuals *n* who participate to the poll to 1 and assume that a fixed proportion will be composed of partisan constituents n_p, and a fixed proportion will be composed of independent voters $n_i = 1 - n_p$.[3] Partisan constituents will express a preference for the party they support regardless of signals. In contrast, independent constituents can be one of two types $x \in (h, l)$: *h*(*l*) who support party *Q* in the state of the world *A* (*B*), and party *M* in the state of the world *B* (*A*). Thus, we allow the possibility that some individuals will regard sovereign credit signals as dependent of the government actions, while others might consider the rating signals

[2] Sovereign debt ratings are influenced by government spending and shocks to the economy (see for example, Afonso et al. (2012), Jackowicz et al., (2020)). In Eq. (5), we use a simple linear function as we abstract from modelling how CRAs assign ratings, as we focus on a partial equilibrium about voters' preferences formation and the role of sovereign rating changes in providing such signals.

[3] Assuming that there are fixed proportions of partisan and non-partisan voters is common in the political economy literature, see for example, Bouton and Castanheira (2012), Bhattacharya (2013) and Oliveros (2013). Assuming that there are no partisan voters at all would not change the overall results.

dependent on the opposition party actions. We assume that voters, considering the government responsible for CRA actions, are more common voters than the others $1>Pr(h)=H> Pr(l)=L>0$.

Beliefs and signals

Constituents update their beliefs following new information. In each moment, a constituent has a Poisson distributed probability of receiving a signal $s_t \in (a, b)$ about the state of the world. The independent probabilities N of *n* constituents receiving a signal during each day are given by:

$$\Pr(N_a = n_a) = e^{-\lambda_1} \frac{{\lambda_1}^{N_a}}{N_a!} \tag{7}$$

$$\Pr(N_b = n_b) = e^{-\lambda_1} \frac{{\lambda_1}^{N_b}}{N_b!} \tag{8}$$

Where λ_1 is the mean and variance of the distribution. We assume that receiving information is costless for each constituent, and that signals have heterogeneous informativeness. The probability of receiving a signal *a(b)* if the state of the world is *A(B)* is:

$$q_a = Pr(a|A) \tag{9}$$

$$q_b = Pr(b|B) \tag{10}$$

Beliefs are shaped in time and are updated discretely; constituents have somewhat persistent beliefs and their idea on the state of the world does not change instantly. Conditional on receiving a signal $s_{it} = a$, the belief that the state of world is *A* which is updated according to the Bayesian rule:

$$\varphi_{ait}(a) = \frac{\varphi_{ait-1} q_a}{\varphi_{ait-1} q_a + (1-\varphi_{ait-1})(1-q_a)} \tag{11}$$

With $\varphi_{bit} = 1 - \varphi_{ait}$. Signals are overall informative, with signal informativeness $(q_a, q_b) \in (\frac{1}{2}, 1)$, and their quality is commonly known. However, their informativeness varies according to the extent of the change in the state of the world. If there is a strong shock towards A(B), then the quality of the signal q_a (q_b) increases.

We assume that most signals have a relatively low quality, while few events, such as sovereign rating changes, provide stronger signals. The quality of signals is drawn from a bounded Pareto distribution between $\frac{1}{2}$ and 1. The probability that the quality q_a associated with signal s_a is higher than Q_a is equal to:

$$\Pr(q_a \geq Q_a) = \frac{\lambda_2 \left(\frac{1}{2}\right)^{\lambda_2} {Q_a}^{-\lambda_2 - 1}}{1 - \left(\frac{1}{2}\right)^{\lambda_2}} \tag{12}$$

Where λ_2 represents the shape of the distribution. For each individual receiving a signal, it is necessary to consider the quality of the signal q_s, and the direction of the switch.

A sovereign credit rating change *CR* should be considered a strong signal: it receives more media coverage and attention compared to the daily parliament and government activities and can therefore shape constituents' preferences much faster. Eq. (11) implies that the stronger the quality of the signal, the quicker is the updating of public beliefs and the possible switch of preferences between *Q* and *M*. Finally, given that signals are heterogeneous, we also allow for constituents to have private information.

Switching over alternatives

The realized utility, a constituent receives from the minority party *M*, is given by $U_{mi} = \{U_{mi}(A), U_{mi}(B)\}$, while the realized utility received by majority party Q is $U_{qi} = \{U_{qi}(A), U_{qi}(B)\}$. Following Bhattacharya (2013), voters prefer party *M* if they believe that and $U_{mi}(A) > 0$ and $U_{mi}(B) < 0$. In this case, their belief will be $\varphi_{iat} > \mu_{im}$, where μ_{im} is:

$$\mu_{im} \equiv \frac{U_{mi}(A)}{U_{mi}(A) - U_{mi}(B)} \tag{13}$$

And vice versa for constituents who believe that $U_{mi}(A) < 0$, and $U_{mi}(B) > 0$. Thus, a voter will switch her preference towards *M* or *Q* according to her cut off value μ_{ip} and her beliefs about the state of the world (φ_{ist}). Combining Eq. (12) and Eq. (13), assuming she receives a positive credit rating signal *CR* and she believes that $U_{mi}(A) > 0$, a voter will switch from party *Q* to party *M* if:

$$q_{CR} > q^*_{itCR} = \frac{U_{mi}(A)(1-\varphi_{CRit-1})}{U_{mi}(A)(1-\varphi_{CRit-1}) - U_{mi}(B)\varphi_{CRit-1}} \tag{14}$$

With q^*_{itCR} representing the threshold value for q_{CR} necessary for the constituent *i* to switch in period *t*. Eq. (14) implies that the smaller q^*_{itCR}, (i) the stronger the previous belief φ_{ait-1}, (ii) the bigger $U_{mi}(A)$, the utility received by having party *M* in charge when the state of the world is *A*, and (iii) the smaller $U_{mi}(B)$, the absolute value of the utility received by having party *M* in charge when the state of the world is *B*. Vice versa for a negative credit rating signal.

Expression of preferences in polling

Independent voters will follow the strategy:

$$\sigma_i : [0,1] \times \{h, l\} \times \{a, b\} \times \left[\frac{1}{2}, 1\right] \rightarrow \{Q, M\} \tag{15}$$

Which specifies the behaviour for each independent constituent belonging to group $x \in (h, l)$, who receives a signal $s_{it} \in (a, b)$ with signal informativeness $(q_a, q_b) = \left[\frac{1}{2}, 1\right]$. Using Eq. (7), Eq. (8), Eq. (14), and Eq. (15), we obtain that the probability of switching support from party *Q* to party *M* when belonging to type *l* depends on the probability of receiving a signal s_a, the quality of the signal q_a and the personal threshold:

$$\Pr(M_t|Q_{t-1}, l) = \left(e^{-\lambda_1}\frac{{\lambda_1}^{Na}}{N_a!}\right)\frac{N_a}{N}\frac{\lambda_2\left(\frac{1}{2}\right)^{\lambda_2}\left(\frac{U_{mi}(A)(1-\varphi_{ait-1})}{U_{mi}(A)(1-\varphi_{ait-1})-U_{mi}(B)\varphi_{ait-1}}\right)^{-\lambda_2-1}}{1-\left(\frac{1}{2}\right)^{\lambda_2}} \quad (16)$$

Which is equal to $\Pr(Q_t|M_{t-1}, h)$.

The probability of switching support from party *Q* to party *M* when belonging to type *h* depends on the probability of receiving a signal s_b, the quality of the signal q_b and the personal threshold:

$$\Pr(M_t|Q_{t-1}, h) = \left(e^{-\lambda_1}\frac{{\lambda_1}^{N_b}}{N_b!}\right)\frac{N_b}{N}\frac{\lambda_2\left(\frac{1}{2}\right)^{\lambda_2}\left(\frac{U_{mi}(B)(1-\varphi_{bit-1})}{U_{mi}(B)(1-\varphi_{bit-1})-U_{mi}(A)\varphi_{bit-1}}\right)^{-\lambda_2-1}}{1-\left(\frac{1}{2}\right)^{\lambda_2}} \quad (17)$$

Which is equal to $\Pr(Q_t|M_{t-1}, l)$.

If the constituent does not receive a signal, her probability of switching is 0. In this simple setup, constituents do not express their preferences strategically but follow their belief about the state of the world.

The impact of sovereign credit rating signals

Eq. (16) and Eq. (17) imply that the probability of change in support for the governing party Q is not necessarily the same if the voters receive a positive or negative credit rating signals *CR*. As the empirical analysis' results show (see Section 5.2), the signal received from a decrease (increase) in sovereign ratings has a higher (lower) probability of changing support for *h* type voters from *Q(M)* to *M(Q)*. The opposite is true for voters *l*. Thus, we focus on negative sovereign signal. Eq. (14) and Eq. (17) lead to:

Lemma 1: *A negative sovereign credit rating signal ($CR\_$) will decrease support for the majority party.*

Proof: Assuming that a negative sovereign credit rating signal decreases returns on investment and increases debt, we obtain that the difference between initial utility and the utility following a negative sovereign rating signal, as:

$$U_{it} - U_{it}(CR\_) = (1+\tau_t)(1-\tau_t)^2\left[E\left(I_{it}(r_t)\right) - E\left(I_{itCR\_}(r_t)\right)\right] - \partial_i\left[E(D(r_t) - E(D_{CR\_}(r_t)\right] > 0 \quad (18)$$

Assuming for simplicity that the informativeness of a negative credit rating signal approaches 1, thus being higher than the personal threshold for most individuals, using Eq. (17) and assumptions over *h* and *l*, we obtain that:

$$h\Pr(M_t|Q_{t-1}, h, CR\_) > lPr(Q_t|M_{t-1}, l, CR\_) > 0 \quad (19)$$

It should be noticed that Eq. (16) and Eq. (17) imply that not all voters will change their preference following a credit rating signal. Even assuming that the strength of the signal approaches 1, the probability of changing political preferences will depend on the voter receiving the signal, and her type (partisan, independent *h*, independent *l*).

Corollary 1: *The size of the decrease in support for party Q following a negative sovereign credit signal depends on the proportion of sociotropic and egocentric voters.*

Eq. (18) implies that the difference between the U_{it} and $U_{it}(CR\_)$ increase with the size of parameter ∂_i. If a voter does not care about the overall level of public debt, the utility proportion of her change in support will only depend on the change in the expected value of her investments. On the other hand, if the value of ∂_i approaches 1, the difference between the two utilities will strongly depend on the difference between the expected public debt. Thus, the overall shape of the distribution of ∂ will affect the proportion of voters switching their preference from *Q* to *M* following a negative sovereign rating signal.

We show this with a simulation in Fig. 1. We assume an overall population measure of 1, assume that tax rate is 30% and calculate the average change of the (deflated) public debt (+11.1%) and the average change in the (deflated) household financial assets (-1.8%) following a negative sovereign rating signal. We then show results for the difference in the utilities before and after a negative signal, for different Beta distributions of ∂, symmetric and asymmetric, including the exceptional case in which both distribution parameters are equal to 1, which is equivalent to a uniform distribution. While the change in utility is always negative, the magnitude of such change is bigger for individuals that care about government debt per se (sociotropic constituents).

The theoretical model's prediction and hypothesis

Overall, the model, and in particular Eq. (16) to Eq. (19), predicts that:

i) Since sovereign credit rating actions are perceived as signals that the state of world has changed, some voters will switch their political preferences.

ii) The signal strength is likely to vary between sovereign rating upgrades and downgrades, therefore it is plausible that only one type of credit rating signal is strong enough to change political preferences.

iii) Independent voters are more likely blame the party in office compared to the minority party following a negative sovereign credit signal.

iv) Individuals' preferences will change because of egocentric reasons, linked to their private utility in the form of returns to investment.

v) Individuals' preferences will also change because of sociotropic reasons, linked to the social component of the overall utility, dependent on the size of government debt.

These lead to the key hypothesis of our study:

H1: *Sovereign credit signals have a significant impact on the rated-country's government support.*

Based on the economic voting theory (Lewis-Beck and Stegmaier, 2019), a higher (lower) level of sovereign rating is expected to increase (reduce) the support for the party in office, since citizens may endorse (blame) the government for such increase (decrease) in the level of sovereign ratings. Sovereign ratings are signals that might affect simultaneously both sociotropic and egocentric economic voting preferences. At the national level, sovereign ratings are indicators of the economic, financial, and political health of the country. If voters are sociotropic, their political decision will depend on whether the economy is improving or deteriorating while the party is in the office. The government has powerful policy instruments to affect the economy, and the level of sovereign ratings is one of the indicators of economic performance. Sanders (2000) argues that although voters may not know about economic conditions precisely, they are aware of how macroeconomic changes could affect them, which influence their voting preferences. Sovereign ratings also use public information and additional information provided by the country's authorities that is not available in other public sources. Hence, voters can rely on sovereign ratings to signal the state of economic, financial, and political stability of the country.

At the individual level, sovereign rating news, which has a significant impact on financial markets, could affect the wealth of voters. Stocks are one of the components of personal wealth, hence improving stock markets will be beneficial for those who own stocks, while declining stock markets have the opposite effect. The same logic applies for bondholders and other market participants. Voters' personal wealth could shape their attitudes towards support/oppose the political parties (Nadeau et al., 2010), rendering citizens sensitive to changes in financial markets. Citizens who hold financial assets are more likely to be exposed to the rating news and may have experienced a direct increase (decrease) in wealth due to the appreciation (depreciation) of their holdings. Citizens reward (punish) the government for the good (bad) performance of financial markets, given the government's power to drive financial markets and influence businesses using policy and regulation systems.

Regardless of whether voters are sociotropic or egocentric, when engaging in rewarding or punishing the incumbent, it is plausible that voters would respond to sovereign credit actions by changing their political preferences. While it is not feasible for this study to separate sociotropic and egocentric voting without individual level survey data, we explore the potential mechanisms at the country level by using country financial market participation rates. These are measured by *Household financial assets*, which reflects personal wealth, thus helping to differentiate between these effects (for more details, see Section 5.1).

3. Data description

3.1. Polling data

Opinion polls are carried out by various organisations and polling firms to gauge voting intentions. Despite the differences in the wording of survey questions between pollsters, most pre-election opinion polls ask how citizens would vote "if the election were held today" (Jennings and Wlezien, 2018). Polls therefore infer current voters' preferences which determine the political support and the likely winner of forthcoming elections. Polls seem to provide more signalling effect than votes at elections (Nannestad and Paldam, 1994), yet most of prior studies on political preferences focus on vote shares instead of polling results, which makes them unsuited to fully capture the immediate shock in government support. This increases the possibility of threats to identification, such as omitted variable bias and reverse causality. Previous studies which have

examined pre-election political support mostly use single-country data (e.g. Fauvelle-Aymar and Stegmaier, 2013). Given the importance of pre-election periods' polls and the limitations encountered by previous studies, we hand-built a comprehensive polling dataset for EU countries from 2000 to 2017. This polling dataset unifies the support for political parties outside elections at multi-country level with diverse political characteristics, not only around elections.[4]

Polls are often requested and reported by newspapers, TV programmes and the government. Hence, polling data is hand-collected from online articles and publicly available polling datasets whenever available for each country as long as they report the date that the survey's fieldwork had taken place or the publication date and the agency that performed the polling. Table A.1 in the Appendix provides a list of pollsters from which polling data are obtained for each country. As most polls are conducted over multiple days, we date each poll by the survey end-date. The fieldwork date is not always available and in those cases a careful procedure is taken to calibrate the date following Jennings and Wlezien (2013), whereby the date of publication of the poll in the online articles is used as the survey end-date.

To the best of our knowledge**,** there is no theory to guide on the most appropriate way to combine the raw polling data which are not always conducted daily and are obtained from different pollsters. Following Acker et al. (2018), we combine polling data for the measures of government support for the incumbent party over 1 day, 7 days, 14 days, and 30 days.[5] For days when more than one poll is recorded, polling results are pooled together to a single poll of polls by taking the average polls estimate (Jennings and Wlezien, 2018). Measuring the average of polling results over short windows controls for any information contamination problem. With the use of individual survey, averaging estimates across multiple concurrent surveys by different pollsters helps in reducing two types of error: random variations and systematic sources of errors (Pasek, 2015).[6] If individual surveys vary in the form of sampling error and systematic error, then incorporating

[4] Some prior studies use betting markets data to measure political support in the US (e.g. Goodell et al., 2020). Only five European countries (France, Germany, Ireland, Netherlands, and the UK) have betting data which is only available for current and upcoming elections. Furthermore, betting markets do not provide data across time (often starting months before Election Day) (Snowberg et al., 2007). Therefore, this study focuses on polling data.

[5] This method of aggregating data involves a trade-off between precision and robustness. A smaller time window gives more precise information but reduces the sample size, thus reducing robustness. A longer time window increases robustness by increasing the sample size but reduces precision.

[6] Random variations, such as sampling error, are incurred when the sample may differ from the population of interest, while systematic sources of errors consist of coverage errors, method biases and response biases, causing the misestimation of a parameter of interest (Pasek, 2015).

across polls tend to limit random error and discount any single uncommon bias respectively. Prior studies on election analysis find that aggregating data across surveys can produce more accurate estimates (Berinsky et al., 2011). Furthermore, different countries have different polling firms, hence instead of cherry picking, aggregating polls across pollsters provides an advantage when survey consumers are not aware of which polls can be trusted.

Only polling results for the leading party during their time in office are used. The leading party is defined as the party of the president in presidential democracies (e.g. Cyprus) and that of the prime minister or the chancellor for parliamentary democracies which have coalition governments (e.g. UK, Germany). In countries using a semi-presidential system combining parliamentary and presidential democracy, whereby a prime minister and a president coexist (e.g. France), the party of the leader who exerts more power over executive is considered the incumbent (similar to Julio and Yook, 2012). Exit polls are excluded from the data sample. The dataset is an unbalanced panel of polling results for 27 EU countries from 2000 to 2017 (excluding Luxembourg for which there are no data available), with a total of 16,094 hand-collected observations. [7]

Descriptive statistics of the polling data are presented in Table. Columns B and C provide the start and end dates of the dataset for each country, which are not the same as is subject to the availability of polling data. Column D shows that Germany, Netherlands, Italy, and UK have the highest number of observations. There are three countries with less than 20 observations: Cyprus, Latvia, and Lithuania.[8] Column E of Table presents the mean of polling results, indicating the average support for the government of each country during the sample period. None of the European countries has more than 50.0% support on average for the party in office. The mean varies from 14.5% (Lithuania) to 49.7% (Malta). There are eight countries with more than 30.0% support for the government, and six countries with less than 20.0% support for the government.

[7] In the wake of the 2016 US presidential election and Brexit referendum, the performance of the polling industry has come under scrutiny. Indeed, polling firms failed to predict these recent political events and prompted widespread debate on the performance of polls. However, Jennings and Wlezien (2018) find no evidence to support the claims of a crisis in the accuracy of polling using a sample of 351 general elections in 45 countries from 1942 to 2017. Analysing polls from 200 days before election day, they show that poll errors measured by the absolute difference between polls and actual votes decline over the election timeline. This suggests that polls become more reflective of the eventual electoral outcome.

[8] Eq. (20) is estimated for the following sub-samples: (i) all countries excluding Germany and Netherlands, which have the largest numbers of polls and a smaller number of credit signals, (ii) Excluding countries with lower numbers of polls (Belgium, Cyprus, Latvia, Lithuania and Malta), (iii) Excluding countries with no credit events (Cyprus, Denmark, Lithuania and Sweden). The results are consistent (see Table A.14 in the Appendix). See also Section 5.3 for further robustness tests to control for the number of observations in each country. In DD and PSM estimations, countries with lower or no sovereign credit events are important for forming the control group.

3.2. Sovereign credit ratings

The dataset of sovereign ratings is obtained from the three largest CRAs: S&P, Moody's, and Fitch. The initial sample includes daily observations of long-term foreign-currency ratings, outlook and watch signals for EU countries from September 21, 2000 to July 28, 2017. A 52-point comprehensive credit rating scale (CCR) is used, as follows: AAA/Aaa = 52, AA+/Aa1 = 49, AA/Aa2 = 46… CCC+/Caa1, CCC/Caa2, CCC-/Caa3 = 4, CC/Ca, C, SD, RD, D = 1. For positive watch (outlook) we add +2 (+1), and for negative watch (outlook) we subtract 2 (1), (Sy, 2004). Watch and outlook status are designed to signal market participants of changing economic and political conditions, rating reviews and possible future rating changes (Binici and Hutchison, 2018), and hence are more timely and informative than actual rating changes.

After matching polling data with sovereign ratings data, the total number of daily rating observations by each CRA that have polling data available within 30 days of the rating event is 71,810.[9] Fig. 2 presents the distribution of daily ratings across different rating levels. The majority of the ratings belong to the investment grade ratings, with the average rating by each CRA being 41 ('AA-/Aa3'). **Error! Reference source not found.** summarises the daily credit events by each CRA. S&P (Moody's) assigns the highest (lowest) number of signals. S&P is more active than the other CRAs in assigning watch actions. S&P placed EU countries on a watch for possible downgrade most frequently among the CRAs and surpasses the other two CRAs in assigning outlook signals. Moody's tends to adjust its ratings by multiple notches more frequently than the other CRAs (Rows 12 and 23). This pattern indicates that S&P focuses more on short-term accuracy, while Moody's on rating stability, confirming the difference in rating practices among CRAs.

Fig. 3 shows the distribution of rating signals. Positive signals outweigh negative signals until 2008 due to the accession of some countries to the European Union from 2000 to 2008, resulting in an increase in confidence in their economies. The number of negative signals increases dramatically from 2008 to 2013. Such downgrade pressure was driven by weakening public finance and economic growth, along with excessive long-term government debt in some countries (e.g. Greece, Italy, Ireland, Portugal, and Spain (GIIPS)) during the European debt crisis. The weak

[9] In the empirical analysis, polling results are aggregated by taking the average of polls in different time window [0; 1], [0; 7], [0; 14], and [0; 30] days with 0 is the rating event date.

upward trend of positive events since 2014 is due to the efforts in structural adjustment and institutional reforms which significantly improved the economies of EU countries.

Fig. A1 in the Appendix illustrates the opinion polls alongside the credit events for countries in our sample. The Figure shows that polling results are available across time which facilitates the calculation of changes in government supports within short time windows after rating events.

3.3. Control variables

In the empirical analysis (Section 4), we included a set of *Control* variables (see Table A.2 in the Appendix for variables' definitions and summary statistics).[10] Macroeconomic variables (*Inflation, GDP per capita growth, Unemployment growth, Government gross debt, External balance, Fiscal balance*) are added to account for the mitigating effect of economic outcomes on government support. It is expected that good (bad) economic conditions increase (decrease) government support (Lewis-Beck and Stegmaier, 2019). *Household financial assets* variable is the natural logarithm of annual ratio of household financial assets to GDP.[11] It controls for the public finance, and comprises the households' holding of deposits, equity and investment fund shares, and assets held with life insurance companies and pension funds. It is considered given that egocentric voters make voting decision based on the level of their personal wealth (Nadeau et al., 2010). *FOIA* controls for the government's quality of information disclosure (Vleugels, 2011), hence affecting voters' perception about the performance of the government. *Honeymoon* and *Independent party* are considered to control for political factors. The government time in office (*Honeymoon*) can influence government support since the incumbent is not responsible for the economic conditions that prevail during the first few months in office (Fauvelle-Aymar and Stegmaier, 2013). Voters' intention also depends on the ideology of the incumbent (Veiga and Veiga, 2004). Thus, when the government is led by an independent candidate (*Independent party*), the government support may decrease as there is higher uncertainty around the ideology or policies of the incumbent.

[10] Our *Controls* variables are selected based on the literature, while considering concerns about collinearity, and employing various fixed effects to minimise the omitted variable problem.
[11] We also used *Household debt* instead of *Household financial assets* variable, and results are consistent (see Table A.12 in the appendix).

4. Methodology

4.1. Fixed effects model (FEM)

To examine Hypothesis H_1, whether sovereign credit ratings affect government support, the following benchmark FEM is estimated:

$$Govsup_{it+s} = \alpha + \beta Rating_{it} + \delta_j \sum_{j=1}^{n} Controls_{it} + \xi Co_i + \gamma Year_t + \lambda CRA_{it} + \varepsilon_{it} \quad (20)$$

$Govsup_{it+s}$ is the level of support for the incumbent party of country i over the time windows $(t + s)$. Following Acker et al. (2018), $Govsup_{it+s}$ is calculated by taking the average of polling results for the incumbent party within different time windows *s* [0; 1], [0; 7], [0; 14] and [0; 30], where rating events are observed on date t = 0 (for more details, see Section 3.1).

$Rating_{it}$ is the sovereign credit rating of country i on date t based on 52-point CCR scale (see Section 2.2).[12] Sovereign rating is expected to positively affect government support.

$Controls_{it}$ is a set of independent variables that influence government support as suggested by the literature (see Section 3.3 for details and Table A.2 in the Appendix for variables' definitions).

Co_i and $Year_t$ are country and year fixed effect (FE) respectively. While country FE control for unobserved country characteristics, year FE capture the economywide conditions such as general shocks. Eq. (20) is also estimated using Co_i and $Year_t$ FE, as well as interacted term of Co_i*$Year_t$ FE. Co_i*$Year_t$ FE could account for the impact of all observed time-varying country characteristics and unobserved time-varying country characteristics on $Govsup_{it}$. Macroeconomics factors are excluded when Eq. (20) is estimated using Co_i*$Year_t$ FE, because they become collinear with the FE control since the identification of macroeconomic conditions derives entirely from the interactions (Jiménez et al., 2012). For estimation using pooled sample of all CRAs, CRA FE is included. Finally, ε_{it} is the error term. We use clustered standard errors at country-year level (e.g. Petersen (2009)).[13]

In addition, to examine the impact of negative versus positive credit events on voters' preferences, we estimate the following FEM regression:

$$Govsup_{it+s} = \alpha + \beta Rating\ Event_{it} + \delta_j \sum_{j=1}^{n} Controls_{it} + \xi Co_i + \gamma Year_t + \lambda CRA_{it} + \varepsilon_{it} \quad (21)$$

[12] We estimate Eq. (20) using ratings based on 18-notch rating scale (i.e. outlook and watch signals are not considered). Further, we estimate Eq. (20) using a logit-type transformation of rating scale, that accounts for non-linearity in rating scale. The results for these robustness tests are consistent and available on request.

[13] Eq. (20) is also estimated using robust Huber-White standard errors, clustered standard error at country level and wild bootstrap standard errors, and results are consistent (see Tables A.5, A.6, A.7, and A.8 in the Appendix).

Rating Event is either *Negative Rating Events* or *Positive Rating Events. Negative Rating Events* is a dummy variable that is equal to 1 if country *i* experienced a rating downgrade and/or negative outlook or watch signal at time *t*, and 0 otherwise. *Positive Rating Events* is a dummy variable that is equal to 1 if country *i* experienced a rating upgrade and/or positive outlook or watch signal at time *t*, 0 otherwise.

Methods used to investigate the link between sovereign ratings and polling results may suffer from endogeneity problems, including reverse causality. However, such reverse direction of causality is highly implausible in this setting as changes in polling results in the short time-periods used in this study cannot induce CRAs to change their sovereign ratings, given the through-the-cycle rating philosophy applied by CRAs, whereby CRAs only consider permanent changes in an issuer's financial health (Kiff et al., 2013). Another possible concern is the omitted variables bias, which is minimized in the current setup as the time frame between the change in rating and polling is small. To further reduce the unobserved variable bias, a FEM is employed. Finally, we take further steps by employing DD regression analysis as well as PSM method to deal with confounding variables as explained in Section 4.2 and Section 4.3.

4.2. Difference-in-Difference (DD) regression

To minimize any potential endogeneity concern, we estimate the following DD regression for negative rating events by all CRAs,[14] following Dai et al. (2020) and Closset et al. (2023):

$$Govsup_{i,T+1} = \alpha + \beta NegEvent_{i,T} + \delta_j \sum_{j=1}^{n} Controls_{it} + \xi Co_i + \gamma Year_t + \lambda CRA_{it} + \varepsilon_{it} \quad (22)$$

The treatment is the negative credit event. The treated countries are those that experience a negative event at time *T* (the bi-weekly event period) and had not experienced other credit events within the last three months. The control group includes the treated countries before the credit events and all remaining countries. *NegEvent* is a time-variant treatment indicator variable that takes value of one for the treatment group, and zero for the control group. $Govsup_{i,T+1}$ is the bi-weekly level of government support of country i at time *T+1*.

[14] In DD analysis, we focus on negative credit events, given the muted impact of positive credit events suggested by the findings of Eq. (21) and PSM approach (see Section 5). We employ the pooled sample of all CRAs given the smaller number of rating events by each CRA.

The use of multi-period DD model (Eq. 22) is similar to the estimation using the weighted two-way fixed effects (TWFE), which might suffer from negative weighting and identification problems (e.g. Sun and Abraham, 2021; Borusyak and Jaravel, 2022). Therefore, an innovative transparent imputation estimator approach is employed, following Borusyak and Jaravel (2022), as robustness test. We assume that the treated countries are those that experience a negative rating event at time *T* and had not experienced other credit events within the last three months, hence there are no within-unit spillovers from the previous treatment period to the future untreated periods. As such, the imputation estimator is applicable for our setting whereby the treatment switching on and off for the same unit over time. We follow three steps to conduct the imputation estimation.

Firstly, we estimate Eq. (22) for non-treated potential outcomes ($Govsup_{i,T+1}$) using the control group including never-treated or not-yet-treated observations by using the ordinary least squares (OLS) with TWFE. Given that the treatment is absent for the control group in this step, the expected outcome of Eq. (22) is $\delta_j + \xi + \gamma + \lambda$ since $NegEvent_{i,T} = 0$ (whereby δ_j , ξ, γ and λ are the coefficients of *Controls*, country, year and CRA FE respectively). Secondly, we impute the untreated outcomes $\hat{\delta}_j$, $\hat{\xi}$, $\hat{\gamma}$ and $\hat{\lambda}$ for treated observations. We obtain the estimate $\hat{\beta}_{i,T}$ of the treatment effect, as the difference between actual and imputed outcomes, for each treated observation of country *i* at time *T*, as follows:

$$\hat{\beta}_{i,T} = Govsup_{i,T+1} - \hat{\delta}_j - \hat{\xi} - \hat{\gamma} - \hat{\lambda} \tag{23}$$

Finally, we calculate the weighted average treatment-effect estimate $\hat{\beta}_w$:

$$\hat{\beta}_w = \frac{1}{N} \sum_{i \in N} \hat{\beta}_{i,T} \tag{24}$$

Where $\hat{\beta}_w$is the weighted average of $\hat{\beta}_{i,T}$, N is the number of treated observations.[15]

Further, we examine how the effect of sovereign negative credit events on the government support may change over time, and explore whether the parallel trends' assumption holds, following Closset et al. (2023) and Dai (2020), as follows:

$$Govsup_{i,T+1} = \alpha + \beta\, NegEvent_{i,T} + \upsilon\, Before^{-x} + \Omega\, After^{+x} + \delta_j \sum_{j=1}^{n} Controls_{it} + \xi Co_i + \gamma Year_t + \lambda CRA_{it} + \varepsilon_{it} \tag{25}$$

[15] Due to insufficient effective sample size whereby the coefficients of some post- and pre-treatment periods are suppressed to zero, Eq. (24) is more robustly estimated with $\hat{\beta}_w$ only.

$Before^{-x}$ is a vector of dummy variables that takes value one in three (*x)* bi-weekly pre-treatment periods, and zero otherwise. $After^{+x}$ is a vector of dummy variables equal to one in three bi-weekly post treatment periods and zero otherwise. We expect the coefficient of $Before^{-x}$ to be insignificant if the outcome variable (government support) is similar for both treatment and control countries during the pre-treatment period, indicating the parallel trends' assumption holds.

4.3. Propensity score matching (PSM)

We examine the causal effect of credit rating changes ($Ratchg_{it}$) on the support for the incumbent party in country i over the time window $t+s$ ($Govsup_{it+s}$). Each country i has two potential mutually exclusive outcomes: $Govsup^1_{it+s}$ is the polling result for the incumbent party at time $t+s$, $s \geq 0$, following sovereign credit action at time t (treatment group); while $Govsup^0_{it+s}$ is the polling result for the incumbent party at time $t+s$, $s \geq 0$, if country i had no rating change at time t (control group). $Ratchg_{it}$ is the indicator of treatment, which is set to 1 if country i has experienced a credit action at time t, and 0 otherwise. Countries in the control group must not have had experienced sovereign credit actions within a six-month window around each credit event's days by any CRAs to mitigate rating contamination (Ferreira and Gama, 2007). $Ratchg_{it}$ is defined based on 52-point CCR scale (Section 3).

The causal effect of credit rating change for country i at time $t+s$ is defined as:

$$Govsup^1_{it+s} - Govsup^0_{it+s} \tag{26}$$

Following Girma and Görg (2007), the average treatment effect on the treated (ATT) country is therefore defined as:

$$E(Govsup^1_{it+s} - Govsup^0_{it+s} | Ratchg_{it} = 1) = E(Govsup^1_{it+s} | Ratchg_{it} = 1) - E(Govsup^0_{it+s} | Ratchg_{it} = 1) \tag{27}$$

The term $E(Govsup^0_{it+s} | Ratchg_{it} = 1)$, which represents the average outcome that the rated country would have experienced, had they not experienced a credit rating signal, is not observed. Following Angrist and Pischke (2008), we assume that the outcomes of the control group are equal to what the treated outcomes would have been, had they not been treated after controlling for a set of observable characteristics X_{it} (defined later in this section and Section 5.2). Therefore,

$$E(Govsup^0_{it+s} | X_{it}, Ratchg_{it} = 0) = E(Govsup^0_{it+s} | X_{it}, Ratchg_{it} = 1) \tag{28}$$

Where the term $E(GovSup^{0}_{it+s}|X_{it}, RatChg_{it} = 0)$ is the average outcome of the control group after controlling for X_{it}.

Hence, as can be seen from Eq. (25) and Eq. (26), ATT is calculated as follows:

$$E(Govsup^{1}_{it+s}|X_{it}, Ratchg_{it} = 1) - E(Govsup^{0}_{it+s}|X_{it}, Ratchg_{it} = 0) \quad (29)$$

In the absence of experimental data, the selection of valid control group is an important feature. One way to tackle this issue is to apply a matching method, where each treated country is paired to a country from the control group. The match is based on a set of macroeconomics and political factors enabling the analysis to produce unbiased estimates of the treatment effect on government support. In particular, we apply the PSM model, which is derived by the pioneering work of Rosenbaum and Rubin (1983). The Propensity Score (PS) is the probability of receiving the treatment conditioning on the observed characteristics. In our setting, the probability that country i has experienced a sovereign credit action at time t is estimated using a probit model (Narayanan and Uzmanoglu, 2018).

$$P(Ratchg_{it} = 1) = F(X_{it-1}) \quad (30)$$

Following Caliendo and Kopeinig (2008), only covariates that affect simultaneously the treatment status (*Ratchg*) and the outcome variable (*Govsup*), while at the same time they are not being affected by sovereign credit actions, are included. Only variables fixed over time or measured before the event date are employed.[16] The analysis starts with a model containing a set of ten variables included in vector X_{it-1}, then modifies the PS by adding or dropping other variables until achieving satisfied balance set based on the results of matching quality test. The pre-treatment economic and political variables include *GDP per capita*, *Inflation, Honeymoon, Type of government, Fiscal balance, Government consumption, FOIA, Corruption, Government effectiveness,* and *Rule of law* (see Table A.17 in the Appendix). The selection of these pre-treatment variables is based on CRAs' sovereign rating methodology as well as prior empirical and theoretical studies which reveal that government support and sovereign credit ratings are determined by macroeconomic and political factors (e.g. Block and Vaaler, 2004; Fauvelle-Aymar and Stegmaier, 2013; Hanusch and Vaaler, 2013; Almeida et al., 2017; Vu et al., 2017, S&P, 2017; Moody's, 2019; Fitch, 2020), while ensuring that the covariates are simultaneously correlated with

[16] Almeida et al. (2017) employ pre-treatment variables a year prior to the sovereign rating downgrade, while Xia (2014) matches firms based on their pre-treated characteristics in one-quarter prior to the treatment period.

both treatment and the potential outcomes. The number of pre-treatment variables included in our analysis is in line with prior literature on the impact of credit ratings on financial markets. For example, Almeida et al. (2017) employ matching approach with 12 pre-treatment variables and Xia (2014) employs 14 pre-treatment variables.[17]

After calculating the PS measuring the probability of credit events for each country, countries with similar PS on the same event date *t* are matched using one-to-one Nearest Neighbour matching (NNM) with replacement, which implies that the average quality of matching will increase while the bias will decrease (Xia, 2014; Caliendo and Kopeinig, 2008).[18] In order to avoid NNM pairing countries that are not showing close enough characteristics, we impose caliper matching (set at 1% following Chen et al. (2019)), so that treated countries will be matched with countries from the control group that lie within the caliper and closest in terms of the PS.

To check matching quality, it is necessary to compare the mean of pre-treatment variables before and after matching to find if any differences remain after conditioning on the PS. Following Stuart and Rubin (2007), we impose for the absolute standardized bias of each covariate to be less than 25%. Following Xia (2014), a threshold of 10% for the mean of absolute standardized bias of all covariates is required. After matching, all covariates should be balanced, hence the t-test should not be significant. Also, Pseudo-R^2 should be fairly low, and a likelihood ratio test on the joint significance of all regressors is expected to be rejected, indicating no systematic differences in the distributions of covariates between both groups after matching (Caliendo and Kopeinig, 2008).

5. Empirical results

5.1. The effect of sovereign credit ratings on government support

We estimate Eq. (20), where the dependent variable is "$Govsup_{it+s}$", the average polling results for the incumbent party of country i within different time windows $s$and rating is observed on date $t = 0$. Panel A, Panel B and Panel C of Table 3 (Table A.3 in the Appendix) present the

[17] To avoid the common support issue caused by over-parameterised PSM suggested by Bryson et al. (2002), we conduct two robustness tests, whereby we employ PSM using two pre-treatment variables only: (i) *GDP per capita growth* and *Inflation*, and (ii) *GDP per capita growth* and *Corruption*. Robust results are obtained (See Tables A.18 and A.19 in the Appendix).

[18] Using more than one NNM involves a trade-off between variance and bias, with variance reducing as a result of using more information to construct the counterfactual for each participant, while bias increases as a result of an average poorer matches (Caliendo and Kopeinig, 2008). Matching with replacement allows an untreated individual to be used more than once as a match.

results of Eq. (20) for S&P, Moody's, and Fitch respectively for [0; 1] and [0; 30] ([0; 7] and [0; 14]) time windows. Rating coefficients are positive across CRAs and for different time windows, and mostly statistically significant at 1% level. For S&P and Moody's, Rating coefficient varies between 0.002 and 0.004, implying an average change in government support between 0.6% and 1.2% for a one-notch rating change, while for Fitch it varies between 0.003 and 0.005, implying a change in government support between 0.9% and 1.5% for a one-notch rating change.[19] The results are consistent when using interacted or separate country and year FE. The estimation using pooled sample of all CRAs are consistent (Table A.4 in the Appendix). The positive sign implies that when the level of sovereign rating increases (decreases), the public support for the government increases (decreases). Countries with higher sovereign ratings have lower credit risk, easier and cheaper access to financing and better economic conditions. Hence, a higher level of sovereign credit ratings has important effects on the economic conditions and is rewarded by voters. Our findings are consistent with the economic voting theory, which indicates that voters reward (punish) the incumbents when the economy improves (declines) (Lewis-Beck and Stegmaier, 2019). The results also support the view that citizens are sensitive to changes in financial markets (Fauvelle-Aymar and Stegmaier, 2013) and CRAs' rating actions (Cunha et al., 2022).

With regards to control variables, the results show that *FOIA* has a significant positive impact on government support across time windows implying that the higher the quality of the government's information disclosure, the higher the public support for the government. Political factors have a significant effect on the public support of the government. Consistent with previous studies (Veiga and Veiga, 2004), being in the honeymoon period and being led by an independent candidate have respectively a positive and negative statistically significant effect on the support for the government. Voter intentions depend on the ideology of the incumbent. Independent candidates tend to be non-partisan politicians, so they may have ideologies or support policies which are different from those of the major political parties in the country, thus reducing public support.

To examine the country-level heterogeneity and explore the mechanism behind the changes in *Govsup* (particularly in relation to egocentric and sociotropic public voting), we interacted the *Household financial assets* variable with the *Rating* variable using the pooled sample of all CRAs. The results, reported in Table 4, show that the coefficient of *Household financial assets* is positive

[19] One rating notch is equal to three CCR points (see Section 3).

and significant, implying that higher (lower) household investment in financial assets is associated with more (less) government support. The results also confirm the significant and positive effects of sovereign ratings on government supports. The coefficient of *Household financial assets*Rating* is significant across all estimations. To interpret the results, we produce Fig. 4 for the marginal predictions of the effect of *Rating* and *Household financial assets* on *Govsup* for [0, 30] time window.[20] We compute the slope for *Govsup* while holding the value of *Rating* and *Household financial assets* constant at different levels.

Fig. 4 reveals that when a country is rated below B-(B3) and the natural log of household financial assets is below 3.8% of GDP, the support for the government declines by 5%. It indicates that when a country has a near to default rating level, citizens in countries with lower level of ownership in financial assets decrease their support for the government. In contrast, citizens who own more financial assets increase their support for the government. The asymmetric effect might be driven by the level of risk aversion and the mechanism behind the voting behaviour, whereby the former is more likely to be driven by sociotropic reasons (focusing on the national economy) and the latter is driven by egocentric reasons (focusing on the personal wealth). In countries with sovereign ratings of B-(B3) to BBB+(Baa1), citizens increase their support for the government at any level of household financial assets' ownership. For example, when the natural log of household financial assets is at 5.5% of GDP, the government support increases by 30% in countries with BBB+(Baa1) sovereign ratings, and by 25% in countries with BBB(Baa2) sovereign ratings. Further, in countries rated above A+(A1), the positive effect of ratings on the government support increases when the level of household financial assets decreases. For example, in countries with AA+(Aa1) sovereign ratings, the government support increases by 30% (40%) when the natural log of household financial assets is at 5.5% (4%) of GDP. Overall, we observe an increasing trend in the government supports when countries are rated above B-(B3) at any given value of household financial assets. This finding is consistent with the sociotropic hypothesis which shows a higher support for government when the country enjoys good economic conditions. Our empirical findings are in-line with the theoretical model's prediction (see Section 2) that individuals' preferences will

[20] The figures for estimations using [0, 1], [0, 7] and [0, 14] time windows show similar patterns (See Fig. A2 in the Appendix). Tables A.9, A.10 and A.11 in the Appendix report consistent results of Interacted *Rating*Household financial assets* for S&P, Moody's and Fitch.

change due to egocentric and sociotropic reasons linked to the private utility and social component of the overall utility following sovereign credit signals.

5.2. The asymmetric effect of rating signals

We estimate FEM, Eq. (21), for negative and positive credit events separately, using the pooled sample of all CRAs, and present the results in Table 5. The coefficients of *Negative Rating Events* are negative and significant across all time windows, indicating a decline in government supports following negative rating events. On the other hand, the impact of positive credit signals on government support is not statistically significant, which is in-line with the findings of prior literature (e.g. Afonso et al., 2012) and the predictions of our theoretical model (see Section 2) that the responses to CRAs' positive credit signals are usually muted. A possible driver for this could be the smaller number of positive events compared to negative ones (see Table 2). Unlike negative signals, positive rating changes are usually anticipated by market participants (Ferreira and Gama, 2007). While the event country might release pre-event information of the imminent upgrade, issuers tend to avoid information leaks of negative credit news. Consistent with the findings of prior studies for financial markets (e.g. Afonso et al., 2012), our results suggest that rating events have asymmetric effects on government supports. When the economy declines, information on the state of the economy, signalled through negative credit news, is abundant because of media effects. Marinova and Anduiza (2020) argue that citizens have incentives to acquire such information to punish incumbents for their failures in managing the economy.

5.2.1. DD and PSM results

First, to verify the validity of our DD research design, we examine whether the parallel trends' assumption holds following Bellucci et al. (2023) and Closset et al. (2023). This is a key assumption of the DD approach, which assumes the common trends in the outcomes for treated and control groups in the pre-treatment period. In our estimations, this implies that countries which experienced negative credit events exhibit similar trends as non-treated countries in the pre-treatment period. Fig. 5 shows the changes in the mean of government support in three bi-weekly pre-treatment and post-treatment periods around the bi-weekly negative credit event's period. The vertical line indicates the time of the treatment. Fig. 5 reveals that the treated and control groups have common

trends during the pre-treatment period, while in the post-treatment period, these groups show diverging trends. This implies that there is no violation of the parallel trends' assumption.

The results of DD model, Eq. (22), reported in Panel A of Table 6, show that the coefficient of the *NegEvent* is negative and significant, indicating that government supports decline by 1.6% following a negative credit signal compared to before or to countries which have not experienced negative credit events. As robustness test, a transparent imputation estimator is employed following Borusyak and Jaravel (2022) (see Section 4.2). The results of Eq. (24), reported in Panel B of Table 6, are consistent ($\hat{\beta}_w$ is -1.6% and significant at 1% level).

Importantly, the results of Eq. (25), reported in Panel C of Table 6, show that the coefficients of $Before^{-x}$ are all insignificant, suggesting no evidence of a decline in government support prior to negative credit events. This indicates that treatment and control countries behave similarly before the treatment and that negative credit events are un-anticipated. The coefficient of *NegEvent* is negative and significant, consistent with the results of the FEM (Eq. (21)), the static DD (Eq. (22)) and the DD using imputation estimator (Eq. (24)). We also plot the estimation coefficients of Eq. (25) and their p-value in Fig. 6 to explore the assumption of parallel trends prior to negative credit events. We do not observe significant changes in government support within three pre-treatment periods. Overall, this analysis confirms that the common assumption of parallel trends holds in the pre-treatment period, while emphasising the decline in government support following negative credit events.

In the analysis of PSM, the average treatment effect on the treated country's government support is estimated for [0;30] time window where the credit signal is observed on date t = 0 (see Eq. (30) and Section 4.3).[21] The results using negative rating events by all CRAs pooled together are reported in Table 7, and for S&P, Moody's, and Fitch separately, are reported in Table 8.[22]

In Panel A of Table 7, the vector of pre-treatment variables consists of eight variables since *Type of government* and *Government consumption* are dropped to satisfy the balancing tests for each covariate and overall covariates. All t-tests on differences in the covariate means for both

[21] Unlike the FEM, in this case using a time window of less than 30 days would reduce drastically the number of matched countries and sovereign credit events and would affect robustness. The polling data is aggregated by taking the average polling results within 30 days.

[22] The same PSM procedure is employed to estimate the impact of positive credit signals on government support, but we find neither significant nor consistent results of ATT across CRAs and all CRAs pooled together. This is consistent with the results of previous literature and the results of Eq. (21) and Eq. (22).

groups are not significant at 10% level after matching, indicating that covariates are balanced in both groups after matching. Panel B shows that the absolute standardized bias falls significantly, and the overall bias is 7.7%. The value of Pseudo-R^2 from estimating the PS on the matched samples is 0.02, implying that there are no systematic differences in the distributions of covariates between the two groups. The result of the likelihood ratio test is statistically significant before matching but not significant after matching. Panel C reports the result of ATT, under the conditions that 150 out of 187 events are matched. The remaining 37 events are outside the support area and therefore are excluded from the sample. ATT is statistically significant, implying that a negative credit signal results in a decline of government support by 3.2% in treated countries compared to matched countries.

The results of ATT are robust when using ratings by each CRA separately (see Table 8), even though the smaller number of credit events slightly decreases the statistical precision. The number of pre-treatment variables used in estimations varies across CRAs. This is not surprising given that CRAs form their opinions on the sovereign creditworthiness based not only on common factors but also on different qualitative and quantitative factors with different weights (S&P, 2017; Moody's, 2019; Fitch, 2020). In the case of S&P, the set of pre-treatment variables includes the entire set of ten variables and 71 out of 78 negative events are matched. Negative signals by S&P are associated with 3.3% decreases in government supports in treated countries compared to matched countries (Panel A). For Moody's, seven pre-treatment variables are employed, with all 53 negative events are matched. A negative credit signal by Moody's leads to a decrease in government support by 3.1% (Panel B). For Fitch, nine pre-treatment variables are included, with 60 out of 61 events are matched. Fitch's negative signals result in a 3.1% decrease in government supports (Panel C).[23]

Importantly, the literature has highlighted changes in support for the government comparable to the ones in our results. For example, Fauvelle-Aymar and Stegmaier (2013) find that the support for the President decreases by 2.30% as a result of a one-point increase in the CPI index, while the support increases by 0.21% when the NYSE stock market index increases by one point. Looking at the USA election results, Autor et al. (2020) find that an interquartile range increase in Chinese import competition causes an increase in the voting share of the republican presidential

[23] The balance tests after the PSM provide satisfactory results after dropping three variables (*Fiscal balance*, *Government consumption* and *Rule of law*) for Moody's and one variable (*Fiscal balance*) for Fitch.

candidate by 0.91% between 2000 and 2008 and 0.99% between 2009 and 2016. In general, relatively small changes in government support are considered important by the media coverage. For example, the media gave relevance to a 0.6% increase in support for the incumbent party 'New Democracy' in Greece in October 2022, with Protothema (2022) stating 'the gap is widening'.[24] Larsen and Fazekas (2020) argue that most media coverage report very small changes in polls as stories about changes in political reactions and their implications. The news coverage on how parties and politicians stand in the polls is decisive for voters' perception.

5.3. Robustness tests

We conduct an event study, for robustness test, whereby we measure the difference between the impact of sovereign credit events on $Govsup_{it+s}$ (the level of support for the incumbent party of country i over the time windows $(t + s)$) before and after the credit event, using a sample of polled negative events and positive events by all CRAs. The results (Table A.13 in the Appendix) show that negative credit events result in a statistically significant decline in government supports after than before the credit events in [-14, 14], [-30, 30], [-60, 60], [-90, 90] and [-180, 180] time windows. The difference of the mean impact of positive events on government supports is positive, but not statistically significant, in most event windows, indicating a muted increase in governments supports after sovereign credit events. This is consistent with prior literature and the results of Eq. (21) that the responses to CRAs' positive credit signals are muted given that positive credit signals are usually anticipated by market participants.

We also investigate whether the impact of sovereign negative credit signals on voters' preferences varies during different economic and political conditions and across different countries and time periods. We estimate Eq. (21) for the following sub-samples: (i) The global financial crisis and the sovereign debt crisis periods of 2008 – 2012 (Panel A), (ii) The non-crisis period, which is the sample period excluding 2008-2012 (Panel B), (iii) GIIPS countries (Panel C), (iv) Core countries (Panel D), which are the core Eurozone economies (Austria, Belgium, Finland, France, Germany, and Netherlands), and (v) Non-GIIPS countries (Panel E). We also estimate Eq. (21) using 'probability weights' to control for the number of observations in each country (Panel F).

[24] In Finland, the headline of Helsinki Times (2022) on 18th August was 'Support for Finns Party jumps by more than a percentage point' (1.3%), while reporting support for the right-wing opposition party declined by 0.9%.

This ensures that our results are not influenced by the unbalanced numbers of polls and credit rating signals across countries (see Table 1 and Fig. A1).[25]

The results, reported in Table 9, are robust, implying a decline in government support following negative sovereign credit signals, even though the smaller number of credit events slightly decreases the statistical precision in some cases. The impact is more pronounced for non-GIIPS countries compared to GIIPS countries, while it is consistent and robust across all other sub-samples' estimations. GIIPS countries have experienced a long-lasting debt crisis with a series of negative rating events. Therefore, the reaction of GIIPS citizens to CRAs' signals might be weaker than the response of citizens in non-GIIPS countries which are characterised by more stable economies and have experienced a lower number of credit signals.[26]

We conducted a battery of robustness tests and report the results of Eq. (21) in Table 10 (and the results of Eq. (20) in Table A.15 in the Appendix). First, to address possible non-linearity in rating scales, a dummy variable is added (*Rating_grade*), which takes the value of 1 if the sovereign rating is at investment grade and 0 otherwise and is also interacted with *Rating* and *Negative Rating Event*. Second, additional variables are added to control for different political factors, including the number of opposition parties (*Op_parties*), a dummy variable indicating whether the government is a coalition (*Coalition*), and a dummy variable for the incumbent's ideology (e.g. left, centre left, centre, centre right, and right wing party) (*Ideology*). Third, in countries with parliamentary democracies that have coalition governments, we measure the government supports as the sum of supports for all parties in a coalition. Fourth, we use polling dataset without campaign periods.[27] The results are consistent and confirm the significant effects of sovereign ratings and negative credit signals on government supports. Finally, we estimate Eq. (21) with interacted variable of *Household financial assets*Negative Rating Events*, and the results, reported in Table A.16 in the Appendix, show that following negative credit signals, citizens who

[25] The 'probability weights' controls for potential sampling bias due to unbalance dataset since it employs the proportion of the inverse probability of selection, whereby the probability of selection equals to the proportion of the observations' number of each country to the observations' number of the total sample.
[26] Table A.14 in the Appendix report the results of sub-sample analysis based on Eq. (20) (i.e. *Rating* levels). In all estimations, consistent results are obtained, with the coefficient of *Rating* being positive and significant.
[27] Polling results during campaign periods are removed from polling dataset. The campaign period is defined as a month prior to election days. By doing so, the effect of electoral campaign on polling results is eliminated. Prior studies show that voters learn from media campaign about election issues and candidates (Druckman, 2004). This also eliminates any potential election-related changes in sovereign ratings (which has been highlighted in developing countries (Block and Vaaler, 2004)).

own less (more) financial assets decrease (increase) their support for the government, which are consistent with the prediction of the theoretical model.

5.4. Discussion

Overall, the empirical results of the FEM, DD and PSM confirm the predictions of our theoretical model. We show that sovereign ratings have a significant effect on government support beyond the effects of other macroeconomics and political factors which are commonly used to explain election outcomes. The impact of positive and negative signals is asymmetric, with the former not being statistically significant while the latter influence preferences over the incumbent government. We also show that both sociotropic and egocentric voters' preferences are affected by credit signals. Our findings are confirmed across a battery of robustness tests.

Sovereign ratings are used in the political discourse as a proxy for economic conditions and the public are increasingly showing interests in credit rating news. [28] The incumbents may use positive credit events as a selling point with voters as a positive signal about the strength of the economy and the quality of their fiscal policies (Cunha et al., 2022). Credit rating information also appear widely on print and online media channels (e.g. newspapers, television, social media platforms),[29] hence citizens can easily acquire rating information (Cawley, 2016), and thus generating signals that are strong enough to influence public opinions. Our sample covers European countries which have experienced a series of sovereign rating downgrades during the sovereign debt crisis, which became headlines of media (e.g. Financial Times, The Guardian, The Economist, Reuters). In the Economic and Monetary Committee in 2012, Mr Leonardo Domenici, a Member of the European Parliament claimed that CRAs "have gained too much influence, to the point of being able to influence the political agenda." The literature also provides evidence of CRAs' impact on government economic and financial policies. For example, Hanusch and Vaaler (2013) show that CRAs could prompt a stronger fiscal discipline during election periods, where governments may reduce their borrowings for short-term electoral gain.

[28] For example, Donald Trump mentioned the AAA credit rating of the State of Indiana bonds, as a way to prove the performance of the vice president candidate in his interview on CBS television on July 17, 2016. Also, Cunha et al. (2022) find an increase in searches for the term "credit rating" in some US states using Google Trends for the period around political campaigns from 2006 to 2012.

[29] Section A1 in the Appendix shows examples of political discourses and sovereign credit rating news on online articles and local newspapers in European countries.

Sovereign credit ratings can also have an indirect impact on government support. Negative credit events are associated with increased interest rates and net capital outflows (Chen et al., 2016), which hamper economic growth and personal wealth, as shown via the theoretical model. While the direct effect of ratings through citizens' perceptions should have an immediate impact on public support, changes in local economic conditions due to fiscal policy adjustments take time to materialise and affect public support with a lag. However, expectations about the future expansionary fiscal policy may affect government support immediately. If voters are forward looking and update their opinion about the incumbent's management abilities, then the anticipated reduction in economic growth could decrease government support.

Although citizens may not be completely informed about the specifics of the economic conditions of their country, they may be aware of the important effect of macroeconomic changes (Sanders, 2000). As predicted by our theoretical model, in absence of perfect information, sovereign credit ratings can be used as signals for the state of the economy. Our findings show that sovereign ratings can assist citizens in perceiving the political quality of incumbents, even if the rating actions are outside of the government's control. This could be because the average citizen might be unable to separate political skills from external factors (Cunha et al., 2022).

If sociotropic voting is in play, citizens could use the sovereign ratings as a measure of national economic health and signals of the incumbent's ability to stabilise the economy. If egocentric voting is in play, citizens are concerned about the performance of their stocks and bonds following sovereign rating signals. They may endorse (blame) the government for the good (bad) performance of financial markets since the government holds responsibility in driving financial markets and influence businesses using policy and regulation tools. Across 27 European countries, the volume of financial assets of households has an upward trend during the sample period from 2000 to 2017, despite the period of crises of 2008-2012 (OECD, 2016; Eurostat, 2021). According to OECD's (2016) report, from 2008 to 2014, the proportion of debt securities held by households were low in European countries. Despite the crises, equity remained the predominant portfolio asset held by households in most countries (e.g. Estonia (53%), Finland (36%), Sweden (35%), Hungary (28%)) in 2014. The overall effect of rating events on government support should be strengthened in the case of higher rates of stock or bond ownership, which can be translated into more attention to sovereign credit news and the other way around. They are more likely to experience a direct

increase (decrease) in their wealth due to the appreciation (depreciation) of their investment portfolios following credit rating signals. The differences in the effects for stockholders and bondholders could be the object of future research, subject to data availability.

6. Conclusions

This paper examines the political power of CRAs and their effect on voters' preferences. We build a theoretical model which shows that a strong signal, such as a credit rating signal, can sway independent voters' preferences. Negative sovereign credit actions are perceived as a strong signal about the financial and economic conditions of the country and the creditworthiness of its government. This can induce independent voters to switch their support against the incumbent government. Moreover, the model predicts that credit rating actions affect both egocentric and sociotropic voters, given their impact on personal wealth (the former) and general economic conditions (the latter).

We test our hypothesis using a unique dataset of opinion polls for EU countries, along with daily sovereign credit signals by Moody's, S&P and Fitch, during September 2000 to July 2017. Our rich polling data is hand-collected from publicly available polling datasets and different online articles. This dataset unifies polling data for 27 European countries with diverse political characteristics (rather than a single country employed in previous literature) outside of election periods. In comparison with prior studies, which usually focused on government support at elections (vote shares), our results are less likely to suffer from the endogeneity bias caused by unobservable variables and reverse causality given that short-period polling results are used. Opinion polls also reflect voters' perception and hence they are crucial to the incumbent, opposition parties and financial market participants.

The empirical results confirm the theoretical model's predictions and show that sovereign rating levels and negative credit signals influence the level of support for the government. Sovereign credit ratings convey information about the quality of the incumbent government and alter voters' preferences, and therefore may affect the country's political stability. Overall, our paper highlights that negative sovereign credit signals represent a new mechanism that can explain rational opposition to the government. Regulators and policymakers should consider the political power of CRAs when debating the regulatory reforms of the rating industry.

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Table 1 - Descriptive statistics of polling results for the incumbent party

A	B	C	D	E	F	G	H	I
Country	**Start date**	**End date**	**Obs.**	**Mean**	**Std Dev**	**Min**	**Max**	**No. of sovereign credit events**
Austria	12/07/2006	27/07/2017	320	0.262	0.033	0.190	0.410	6
Belgium	28/03/2010	27/06/2017	34	0.211	0.050	0.100	0.310	3
Bulgaria	15/02/2013	22/03/2017	52	0.242	0.055	0.135	0.340	1
Croatia	04/07/2008	25/07/2017	133	0.264	0.049	0.080	0.353	14
Cyprus	17/07/2015	13/05/2016	14	0.326	0.035	0.220	0.370	0
Czech	17/02/2001	26/07/2017	265	0.180	0.043	0.052	0.350	5
Denmark	20/01/2010	06/07/2017	789	0.213	0.029	0.151	0.288	0
Estonia	31/07/2006	28/07/2017	143	0.288	0.060	0.180	0.450	25
Finland	31/01/2006	18/07/2017	147	0.205	0.021	0.143	0.247	10
France	22/03/2007	21/04/2017	537	0.174	0.103	0.040	0.550	6
Germany	21/09/2000	28/07/2017	3390	0.354	0.045	0.230	0.450	4
Greece	21/11/2009	05/07/2017	450	0.211	0.059	0.070	0.427	36
Hungary	17/11/2009	25/07/2017	209	0.452	0.074	0.170	0.600	11
Ireland	31/03/2008	21/07/2017	169	0.253	0.049	0.120	0.440	27
Italy	25/06/2008	28/07/2017	1987	0.294	0.067	0.119	0.450	18
Latvia	03/03/2015	24/04/2017	11	0.153	0.058	0.054	0.230	1
Lithuania	01/03/2012	10/09/2016	17	0.145	0.064	0.072	0.243	0
Malta	01/01/2015	25/05/2017	20	0.497	0.041	0.401	0.561	2
Netherlands	10/06/2010	14/03/2017	2469	0.178	0.032	0.100	0.267	9
Poland	15/10/2000	28/07/2017	796	0.271	0.103	0.020	0.500	19
Portugal	31/10/2001	11/06/2017	341	0.365	0.056	0.202	0.520	30
Romania	27/06/2008	14/03/2017	50	0.351	0.108	0.144	0.620	2
Slovakia	16/01/2011	19/06/2017	47	0.264	0.075	0.060	0.407	4
Slovenia	30/09/2000	21/07/2017	328	0.147	0.089	0.016	0.417	42
Spain	21/10/2000	18/07/2017	1200	0.361	0.063	0.186	0.470	38
Sweden	06/10/2010	19/07/2017	377	0.272	0.036	0.185	0.368	0
UK	30/01/2003	19/07/2017	1799	0.347	0.045	0.210	0.500	13

This table presents descriptive statistics of polling results for the incumbent party of 27 EU countries for the period from 21st September 2000 to 28th July 2017 (Columns B-H). There is no data available for Luxembourg in the sample period. Column (I) presents the number of sovereign credit events by S&P, Moody's, and Fitch, whereby polling data is available within 30 days after the credit rating event. See Section 5.3 and Footnote #8 (in Section 3.1) about robustness test to control for lower numbers of sovereign credit events, lower and larger numbers of polls in the empirical analysis.

Table 2 - Descriptive statistics of rating events

		S&P	Moody's	Fitch	All CRAs
1	Solo Rating Upgrades	22	10	13	45
2	Solo Positive Watch Actions	1	2	1	4
3	Solo Positive Outlook Actions	31	20	18	68
4	Combined Events of Rating Upgrades and Positive Watch	0	1	0	1
5	Combined Events of Rating Upgrades and Positive Outlook	2	4	1	7
6	Negative Watch to Negative Outlook Signal	5	2	1	8
7	All Rating Upgrades (Row 1+4+5)	24	15	14	53
8	**Total Positive Events (Row 2+3+6+7)**	61	39	34	133
9	- Of which by 1-Point Positive Actions (% Row 8)	59.02%	64.10%	52.94%	58.65%
10	- Of which by 2-Point Positive Actions (% Row 8)	14.75%	7.69%	20.59%	14.29%
11	- Of which by 3-Point Positive Actions (% Row 8)	21.31%	10.26%	20.59%	18.05%
12	- Of which by > 3-Point Positive Actions (% Row 8)	4.92%	17.95%	5.88%	9.02%
13	Solo Rating Downgrades	12	6	12	30
14	Solo Negative Watch Actions	17	9	7	32
15	Solo Negative Outlook Actions	21	15	18	52
16	Combined Events of Rating Downgrades and Negative Watch	6	4	3	12
17	Combined Events of Rating Downgrades and Negative Outlook	22	19	21	61
18	All Rating Downgrades (Row 13+16+17)	40	29	36	103
19	**Total Negative Events (Row 14+15+18)**	78	53	61	187
20	- Of which by 1-Point Negative Actions (% Row 19)	39.74%	35.85%	39.34%	38.50%
21	- Of which by 2-Point Negative Actions (% Row 19)	26.92%	22.64%	14.75%	21.93%
22	- Of which by 3-Point Negative Actions (% Row 19)	16.67%	11.32%	18.03%	16.04%
23	- Of which by > 3-Point Negative Actions (% Row 19)	16.67%	30.19%	27.87%	23.53%
24	**Total Sovereign Credit Rating Signals (Row 8+19)**	139	92	95	320

This table presents descriptive statistics of ratings actions by S&P, Moody's, Fitch, and all CRAs pooled together that have polling data available within 30 days after the rating action for EU countries from 2000 to 2017.
Note: the total number of rating events of all CRAs pooled together is slightly lower than the total number of rating events by S&P, Moody's, and Fitch, due to multiple actions by CRAs on the same day.

Table 3 - FEM results using S&P, Moody's, and Fitch ratings separately

	Panel A- S&P				Panel B- Moody's				Panel C- Fitch			
TIME WINDOW	**[0;1]**		**[0; 30]**		**[0;1]**		**[0;30]**		**[0; 1]**		**[0;30]**	
	(1)	**(2)**	**(1)**	**(2)**	**(1)**	**(2)**	**(1)**	**(2)**	**(1)**	**(2)**	**(1)**	**(2)**
Rating	0.002**	0.003**	0.002***	0.004***	0.003***	0.003***	0.003***	0.003**	0.003***	0.005***	0.003***	0.005***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Inflation	-0.180		0.583*		-0.256		0.530		-0.261		0.560	
	(0.407)		(0.345)		(0.397)		(0.336)		(0.407)		(0.344)	
GDP per capita growth	-0.067		0.102		-0.095		0.068		-0.083		0.087	
	(0.158)		(0.153)		(0.160)		(0.151)		(0.160)		(0.152)	
Unemployment growth	0.023		0.012		0.020		0.008		0.018		0.009	
	(0.028)		(0.036)		(0.027)		(0.035)		(0.027)		(0.036)	
Government gross debt	0.036		0.009		0.036		0.010		0.040		0.013	
	(0.032)		(0.033)		(0.029)		(0.031)		(0.032)		(0.033)	
External balance	-0.002*		-0.001		-0.002**		-0.001		-0.002**		-0.001	
	(0.001)		(0.001)		(0.001)		(0.001)		(0.001)		(0.001)	
Fiscal balance	0.005***		0.002		0.005***		0.001		0.005***		0.002	
	(0.002)		(0.002)		(0.001)		(0.002)		(0.002)		(0.002)	
Household financial assets	0.019		0.008		0.004		-0.003		0.002		0.001	
	(0.064)		(0.057)		(0.061)		(0.055)		(0.062)		(0.056)	
FOIA	0.024**	0.108***	0.018**	0.077***	0.021**	0.091***	0.018***	0.056***	0.021**	0.107***	0.017**	0.073***
	(0.009)	(0.008)	(0.007)	(0.006)	(0.009)	(0.001)	(0.007)	(0.001)	(0.009)	(0.004)	(0.007)	(0.003)
Honeymoon	0.029***	0.032***	0.033***	0.032***	0.030***	0.032***	0.033***	0.032***	0.031***	0.033***	0.034***	0.033***
	(0.010)	(0.011)	(0.007)	(0.007)	(0.010)	(0.011)	(0.007)	(0.007)	(0.010)	(0.011)	(0.007)	(0.007)
Independent party	-0.117***	-0.058***	-0.081***	-0.041**	-0.112***	-0.054***	-0.080***	-0.042**	-0.115***	-0.059***	-0.081***	-0.042**
	(0.019)	(0.008)	(0.025)	(0.016)	(0.020)	(0.009)	(0.025)	(0.016)	(0.019)	(0.009)	(0.025)	(0.017)
Constant	-0.135	-0.237***	0.020	-0.124*	-0.084	-0.164***	0.032	0.022	-0.108	-0.313***	0.004	-0.153***
	(0.352)	(0.089)	(0.322)	(0.074)	(0.338)	(0.046)	(0.312)	(0.053)	(0.347)	(0.060)	(0.319)	(0.048)
Observations	13,596	13,596	71,810	71,810	13,596	13,596	71,810	71,810	13,596	13,596	71,810	71,810
R-squared	0.764	0.909	0.695	0.908	0.770	0.910	0.703	0.908	0.768	0.910	0.699	0.909
Country FE	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO
Year FE	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO
Country X Year FE	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES

The table presents the coefficient estimates of Eq. (20) using a sample of European countries rated by S&P in Panel A, Moody's in panel B and Fitch in Panel C during September 2000 – July 2017. $Govsup_{it+s}$, the dependent variable, is the level of support for government of country i aggregated by taking the average of polling results for the incumbent party over the time window (t+s) ([0; 1] and [0; 30]) where the rating is on date $t = 0$ (See Table A.3 in the Appendix for the results for [0; 7] and [0; 14] time windows). *Rating* presents sovereign credit rating of country i on date t using 52-point rating scale. Control variables are defined in Table A.2 in the Appendix. For each time window, FE are captured by a full set of both country and year dummies presented in the first column, then by the interaction term of country and year dummies in the second column. Macroeconomics factors are excluded from the regression when employing the interacted dummy variable of country and year. Clustered standard errors at country-year are reported in parentheses. ***, **, and * indicate significance at the 1%, 5% and 10% respectively.

Table 4 – FEM- Interacted *Rating* and *Household financial assets* - Pooled sample of all CRAs

TIME WINDOW	[0;1]	[0;7]	[0;14]	[0;30]
	(1)	(2)	(3)	(4)
Rating	0.029***	0.024***	0.022***	0.020***
	(0.009)	(0.007)	(0.007)	(0.007)
Household financial assets	0.189**	0.168*	0.154*	0.120
	(0.092)	(0.085)	(0.082)	(0.080)
Rating X Household financial assets	-0.005***	-0.004***	-0.004***	-0.003**
	(0.002)	(0.001)	(0.001)	(0.001)
Inflation	-0.016	0.326	0.481	0.620*
	(0.384)	(0.377)	(0.357)	(0.335)
GDP per capita growth	-0.200	-0.031	0.024	0.036
	(0.164)	(0.135)	(0.134)	(0.144)
Unemployment growth	0.013	0.000	0.004	0.013
	(0.027)	(0.029)	(0.032)	(0.035)
Government gross debt	0.033	0.009	0.006	0.009
	(0.030)	(0.030)	(0.031)	(0.031)
External balance	-0.002**	-0.001	-0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)
Fiscal balance	0.005***	0.003*	0.002	0.001
	(0.001)	(0.001)	(0.002)	(0.002)
FOIA	0.018*	0.018**	0.018**	0.017**
	(0.009)	(0.007)	(0.007)	(0.007)
Honeymoon	0.029***	0.034***	0.036***	0.034***
	(0.009)	(0.008)	(0.008)	(0.007)
Independent party	-0.110***	-0.093***	-0.085***	-0.080***
	(0.019)	(0.023)	(0.025)	(0.025)
Constant	-1.021**	-0.826*	-0.742*	-0.571
	(0.474)	(0.444)	(0.429)	(0.415)
Observations	40,788	121,767	164,733	215,430
R-squared	0.772	0.724	0.712	0.702
CRA FE	YES	YES	YES	YES
Country FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Country X Year FE	NO	NO	NO	NO

The table presents the coefficient estimates of Eq. (20), adding the interaction of *Rating* * *Household financial assets*. A sample of European countries rated by all CRAs pooled together during September 2000 – July 2017 is used. $Govsup_{it+s}$, the dependent variable, is the level of support for government of country i aggregated by taking the average of polling results for the incumbent party over the time window (t+s) ([0; 1], [0; 7], [0; 14], and [0; 30]) where the rating is on date $t = 0$. *Rating* presents sovereign credit rating of country i on date t using 52-point rating scale. Control variables are defined in Table A.2 in the Appendix. FE are captured by a full set of CRA, country, and year dummies. Clustered standard errors at country-year are reported in parentheses. ***, **, and * indicate significance at the 1%, 5% and 10% respectively.

Table 5 - FEM - Eq. (21) results of negative and positive events– Pooled sample of all CRAs

TIME WINDOW	[0;1]	[0;7]	[0;14]	[0;30]
	(1)	(2)	(3)	(4)
Panel A				
Negative Rating Events	-0.023**	-0.012*	-0.014**	-0.012*
	(0.011)	(0.006)	(0.007)	(0.006)
Observations	40,768	121,706	164,627	215,284
Panel B				
Positive Rating Events	0.007	0.000	-0.010	-0.008
	(0.008)	(0.006)	(0.008)	(0.006)
Observations	40,752	121,663	164,588	215,237
Controls	YES	YES	YES	YES
CRA FE	YES	YES	YES	YES
Country FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

The table presents the coefficient estimates of Eq. (21) using a sample of European countries rated by all CRAs during September 2000 – July 2017. $Govsup_{it+s}$, the dependent variable, is the level of support for government of country i aggregated by taking the average of polling results for the incumbent party over the time window (t+s) ([0; 1], [0; 7], [0; 14], and [0; 30]) where the rating event is on date $t = 0$. In Panel A (B), *Negative Rating Events* (*Positive Rating Events*) is a dummy variable that is equal to 1 if country i experienced a rating downgrade (upgrade) and/or negative (positive) outlook or watch signal at time t, and 0 otherwise. Control variables' results are not reported in the table for brevity and available on request (see Table A.2 in the Appendix for definitions). FE are captured by a full set of CRA, country, and year dummies. Clustered standard errors at country-year are reported in parentheses. ***, **, and * indicate significance at the 1%, 5% and 10% respectively.

Table 6 - Difference in Difference (DD) – Negative events – Pooled sample of all CRAs

Panel A DD - Eq. (22)		Panel B Imputation Estimator – Eq. (24)		Panel C Parallel trend test - Eq. (25)	
NegEvent	-0.016**	$\hat{\beta}_w$	-0.016***	NegEvent	-0.017**
	(0.007)		(0.005)		(0.007)
				Before (-3)	-0.009
					(0.007)
				Before (-2)	-0.003
					(0.007)
				Before (-1)	-0.010
					(0.007)
				After (+1)	-0.009
					(0.007)
				After (+2)	-0.012
					(0.008)
				After (+3)	-0.001
					(0.006)
Constant	-0.131			Constant	-0.130
	(0.322)				(0.321)
Observations	11,624	Observations	11,417	Observations	11,624
R-squared	0.697			R-squared	0.698
Controls	YES	Controls	YES	Controls	YES
CRA FE	YES	CRAs FE	YES	CRAs FE	YES
Country FE	YES	Country FE	YES	Country FE	YES
Year FE	YES	Year FE	YES	Year FE	YES

Panel A and Panel B present the results of DD model (Eq. (22)) and the imputation estimator (Eq. (24)) respectively. Panel C presents the results of Eq. (25). A sample of European countries rated by all CRAs during September 2000 – July 2017 is used. The dependent variable is $Govsup_{i,T+1}$, which is the bi-weekly level of government support of country *i* at time *T+1*. *NegEvent* represents the treatment (negative credit event) that equals to one for the treatment group, and zero for the control group at time *T*. $\hat{\beta}_w$ is the weighted average of treatment effects $\hat{\beta}_{i,T}$ (which is the treatment effect for each treated observation of country i at the bi-weekly treatment period T (as Eq. (24)). $Before^{-x}$ is a vector of dummy variables equal to one in three bi-weekly pre-treatmsent periods, and zero otherwise. $After^{+x}$ is a vector of dummy variables equal to one in three bi-weekly post-treatment periods and zero otherwise. See Table A.2 in the Appendix for Control variables' definitions. FE are captured by a full set of CRA, country and year dummies. Clustered standard errors at country-year are reported in parentheses. ***, **, and * indicate significance at the 1%, 5% and 10% respectively.

Table 7 – PSM Results - Negative rating events - Pooled sample of all CRAs

Panel A:	**Covariate balance test between the treated and the matched sample**						
Variable	Sample	Mean		%bias	%reduct |bias|	t-test	
		Treated	Controls			T	p>|t|
GDP per capita	Unmatched	5773.80	6695.00	-33.10		-4.03	0.00
	Matched	5722.00	5531.30	6.90	79.30	0.59	0.55
Inflation	Unmatched	95.91	93.04	40.40		4.78	0.00
	Matched	95.49	95.36	1.90	95.30	0.20	0.84
Honeymoon	Unmatched	0.14	0.06	27.50		4.75	0.00
	Matched	0.09	0.05	13.50	50.90	1.33	0.19
Fiscal balance	Unmatched	-0.07	-0.02	-84.70		-16.31	0.00
	Matched	-0.05	-0.04	-7.80	90.80	-1.00	0.32
FOIA	Unmatched	4.19	4.00	10.90		1.45	0.15
	Matched	4.07	4.17	-5.70	47.60	-0.58	0.56
Corruption	Unmatched	0.90	1.33	-59.70		-7.81	0.00
	Matched	0.96	1.02	-8.60	85.60	-0.75	0.45
Government effectiveness	Unmatched	1.01	1.33	-64.50		-8.12	0.00
	Matched	1.04	1.09	-9.40	85.40	-0.79	0.43
Rule of law	Unmatched	1.07	1.35	-52.60		-7.07	0.00
	Matched	1.08	1.12	-8.20	84.50	-0.67	0.51
Panel B:	**Overall covariance balance test**						
Sample	Pseudo R^2	LR chi^2	p>chi^2	Mean Bias			
Unmatched	0.11	261.85	0.00	46.70			
Matched	0.02	8.39	0.40	7.70			
Panel C:	**ATT**						
	Treated	Controls	Difference	S.E.	T-stat		
Unmatched	0.267	0.286	-0.018	0.007	-2.74***		
ATT	0.263	0.295	-0.032	0.012	-2.73***		
	No. of obs.		Total				
	Off support	On support					
Untreated	0	39,633	39,633				
Treated	37	150	187				
Total	37	39,783	39,820				

The table presents results of three balancing tests performed directly after the PSM and ATT for negative credit events, based on 52-point CCR rating scale, by all CRAs pooled together. Panel A presents the balance test results for the treated and the matched sample on all the covariates (see Table A.17 in the Appendix for pre-treatment variables' definition). Panel B presents the overall covariates balance tests results. Panel C reports the average treatment effect on the treated country's government support by ATT 30 days after negative rating events. Caliper does not exceed 1% in absolute value. ***, **, and * indicate significance at the 1%, 5% and 10% respectively.

Table 8 - PSM results - Negative rating events - S&P, Moody's and Fitch

Panel A: S&P's ATT					
	Treated	Controls	Difference	S.E.	T-stat
Unmatched	0.271	0.286	-0.015	0.010	-1.40
ATT	0.272	0.306	-0.033	0.018	-1.80*
	No. of obs.		Total		
	Off support	On support			
Untreated	0	39,633	39,633		
Treated	7	71	78		
Total	7	39,704	39,711		
Panel B: Moody's ATT					
	Treated	Controls	Difference	S.E.	T-stat
Unmatched	0.277	0.287	-0.010	0.013	-0.80
ATT	0.277	0.308	-0.031	0.018	-1.69*
	No. of obs.		Total		
	Off support	On support			
Untreated	0	40,281	40,281		
Treated	0	53	53		
Total	0	40,334	40,334		
Panel C: Fitch ATT					
	Treated	Controls	Difference	S.E.	T-stat
Unmatched	0.258	0.286	-0.028	0.012	-2.39***
ATT	0.260	0.291	-0.031	0.018	-1.74*
	No. of obs.		Total		
	Off support	On support			
Untreated	0	39,724	39,724		
Treated	1	60	61		
Total	1	39,784	39,785		

The table presents results of ATT (the average treatment effect) on the treated country's government support 30 days after negative rating events, based on 52-point CCR rating scale, by S&P in Panel A, Moody's in Panel B and Fitch in Panel C. The results of balance test for the treated and the matched sample on all the covariates, and the overall covariates balance tests results are not reported for brevity and available on request. Caliper does not exceed 1% in absolute value. ***, **, and * indicate significance at the 1%, 5% and 10% respectively.

Table 9. FEM – Sub-sample analysis - Negative rating events - pooled sample of all CRAs

	Panel A. Crisis period (2008-2012)				Panel B. Non-crisis period (Sample period excluding 2008-2012)				Panel C. GIIPS			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
	[0;1]	[0;7]	[0;14]	[0;30]	[0;1]	[0;7]	[0;14]	[0;30]	[0;1]	[0;7]	[0;14]	[0;30]
Negative Rating Events	-0.023***	-0.008	-0.009	-0.011*	-0.010	-0.013*	-0.016**	-0.008	-0.016*	-0.003	-0.003	-0.002
	(0.008)	(0.006)	(0.006)	(0.006)	(0.019)	(0.008)	(0.007)	(0.007)	(0.009)	(0.006)	(0.007)	(0.006)
Observations	13,234	37,851	51,534	69,618	27,534	83,855	113,093	145,666	9,453	33,100	45,294	56,515
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
CRA FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
	Panel D. CORE				**Panel E. Non-GIIPS**				**Panel F. Probability weighted**			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
	[0;1]	[0;7]	[0;14]	[0;30]	[0;1]	[0;7]	[0;14]	[0;30]	[0;1]	[0;7]	[0;14]	[0;30]
Negative Rating Events	-0.006	-0.010*	-0.009*	-0.008	-0.029	-0.025**	-0.030***	-0.021***	-0.079***	-0.019*	-0.019**	-0.016**
	(0.008)	(0.006)	(0.005)	(0.007)	(0.019)	(0.010)	(0.009)	(0.008)	(0.015)	(0.010)	(0.009)	(0.008)
Observations	17,869	35,715	41,777	50,819	31,315	88,606	119,333	158,769	40,768	121,706	164,627	215,284
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
CRA FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

The table presents the coefficient estimates of Eq. (21) using different sub-samples during September 2000 – July 2017, including (i) The global financial crisis and the sovereign debt crisis period of 2008 – 2012 (Panel A), (ii) The non-crisis period, which is the sample period excluding 2008-2012 (Panel B), (iii) GIIPS countries (Panel C), (iv) Core countries (Panel D), which are the core Eurozone economies (Austria, Belgium, Finland, France, Germany, and Netherlands), (v) Non-GIIPS countries (See Panel E), estimation with 'probability weights' (Panel F). $Govsup_{it+s}$, the dependent variable, is the level of support for government of country i aggregated by taking the average of polling results for the incumbent party over the time window (t+s) ([0; 1], [0; 7], [0; 14], and [0; 30]) where the negative rating event is on date $t = 0$. *Negative Rating Events* is a dummy variable that is equal to 1 if country i experienced a rating downgrade and/or negative outlook or watch signal at time t, and 0 otherwise. See Table A.2 in the Appendix for Control variables' definitions. FE are captured by a full set of CRA, country and year dummies. Clustered standard errors at country-year are reported in parentheses. ***, **, and * indicate significance at the 1%, 5% and 10% respectively.

Table 10. Robustness tests - Negative rating events - Pooled sample of all CRAs

	Panel A. Rating grade				**Panel B. Adding *Op_parties***				**Panel C. Adding *Coalition***			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
	[0;1]	[0;7]	[0;14]	[0;30]	[0;1]	[0;7]	[0;14]	[0;30]	[0;1]	[0;7]	[0;14]	[0;30]
Negative Rating Events	-0.022**	-0.012*	-0.014**	-0.012*	-0.023**	-0.012*	-0.013*	-0.011*	-0.024**	-0.014**	-0.015**	-0.013**
	(0.010)	(0.006)	(0.007)	(0.006)	(0.011)	(0.006)	(0.007)	(0.006)	(0.011)	(0.006)	(0.007)	(0.006)
Observations	40,768	121,706	164,627	215,284	40,768	121,706	164,627	215,284	40,768	121,706	164,627	215,284
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
CRAs FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
	Panel D. Adding *Ideology*				**Panel E. Coalition support measurement**				**Panel F. Without campaign period**			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
	[0;1]	[0;7]	[0;14]	[0;30]	[0;1]	[0;7]	[0;14]	[0;30]	[0;1]	[0;7]	[0;14]	[0;30]
Negative Rating Events	-0.026***	-0.013**	-0.011*	-0.008	-0.033***	-0.011	-0.015**	-0.012	-0.016	-0.010*	-0.013*	-0.011
	(0.010)	(0.006)	(0.007)	(0.006)	(0.011)	(0.007)	(0.008)	(0.007)	(0.011)	(0.006)	(0.007)	(0.007)
Observations	40,768	121,706	164,627	215,284	37,770	111,470	149,576	191,628	38,751	117,356	159,602	209,392
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
CRAs FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

The table presents the coefficient estimates of Eq. (21) using different set-ups during September 2000 – July 2017, including (i) Adding a dummy variable (*Rating_grade*) which takes value 1 if the sovereign rating is at investment grade and 0 otherwise (Panel A), (ii) Adding control variable which is the number of opposition parties (*Op_parties*) (Panel B), (iii) Adding a dummy variable indicating whether the government is a coalition (*Coalition*) (Panel C), (iv) Adding a dummy variable for the incumbent's ideology (*Ideology*) (Panel D), (v) estimation with government supports as the sum of supports for all parties in a coalition (Panel E), (vi) estimation without election campaign period (a month prior to election days) (Panel F). $Govsup_{it+s}$, the dependent variable, is the level of support for government of country i aggregated by taking the average of polling results for the incumbent party over the time window (t+s) ([0; 1], [0; 7], [0; 14], and [0; 30]) where the negative rating event is on date $t = 0$. *Negative Rating Events* is a dummy variable that is equal to 1 if country i experienced a rating downgrade and/or negative outlook or watch signal at time t, and 0 otherwise. See Table A.2 in the Appendix for Control variables' definitions. FE are captured by a full set of CRA, country and year dummies. Clustered standard errors at country-year are reported in parentheses. ***, **, and * indicate significance at the 1%, 5% and 10% respectively.

Fig. 1 – Voters' utilities following a negative credit signal

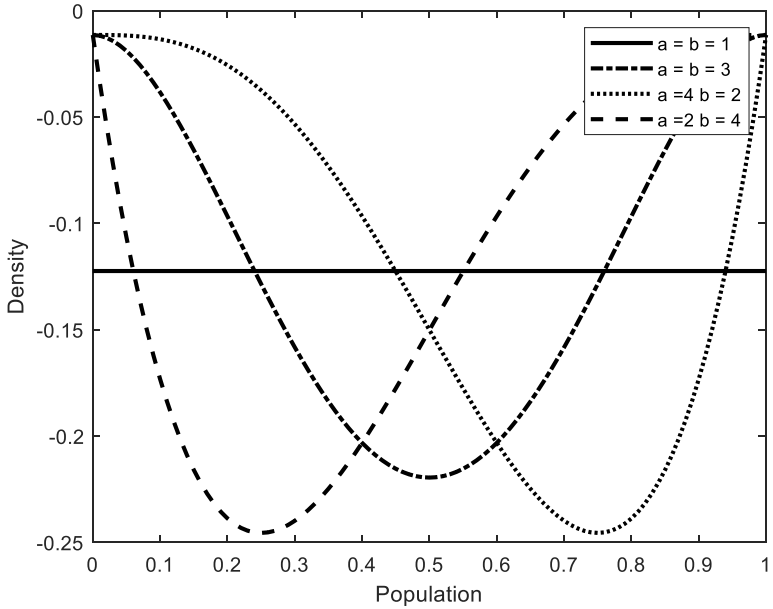
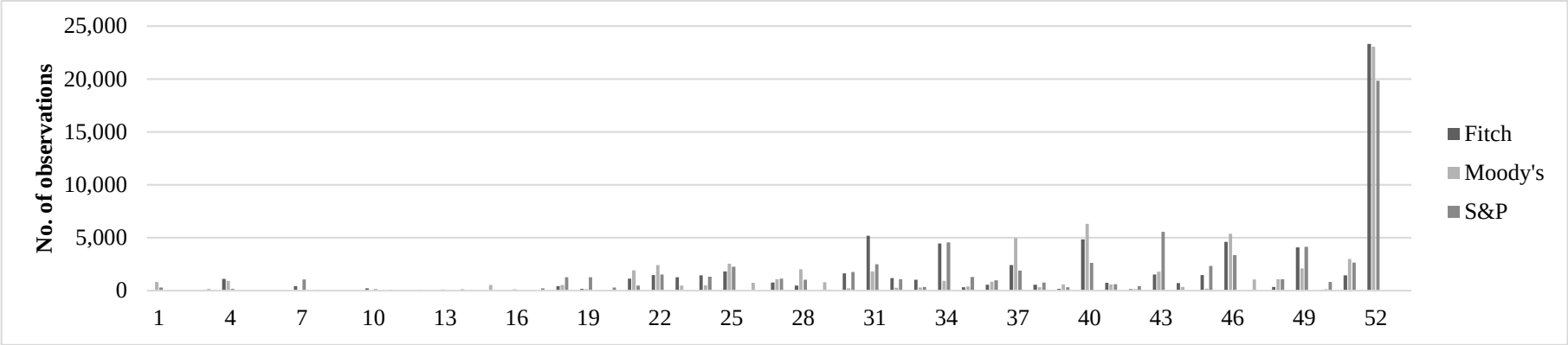


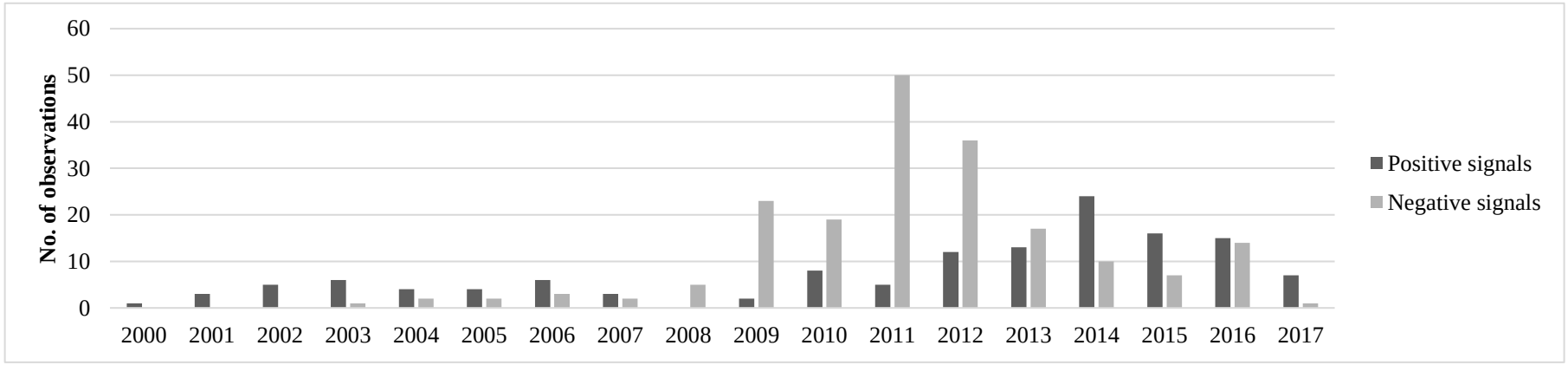
Figure 1 shows the density function of the utility in the population following a negative signal, for different Beta distributions of ∂ as indicated in the legend.

Fig. 2 - Distribution of daily sovereign ratings



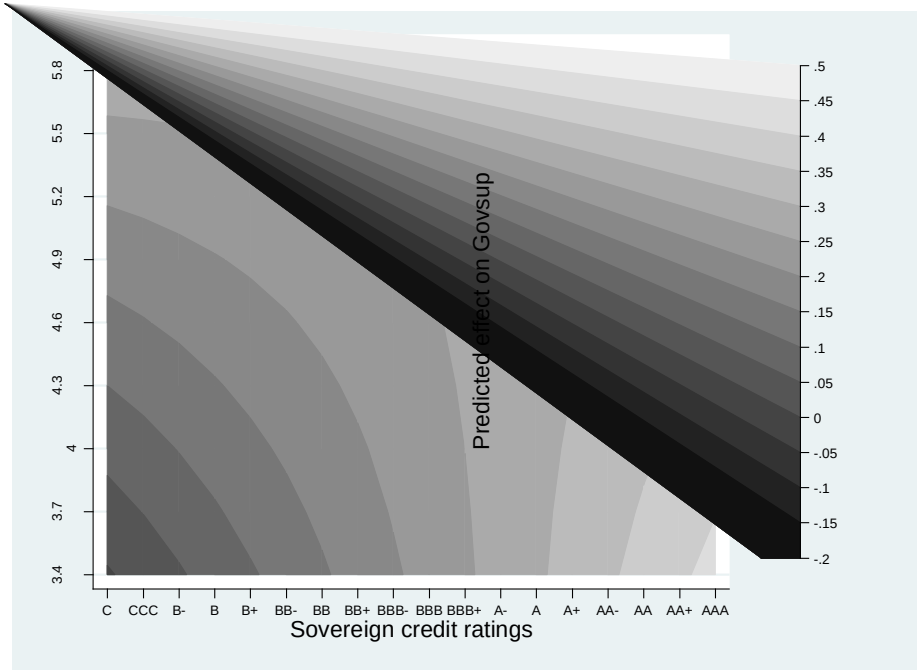
The figure presents the distribution of daily sovereign ratings of European countries based on 52-point rating scale after matching with polling data from 2000 to 2017.

Fig. 3 - Distribution of negative and positive rating signals



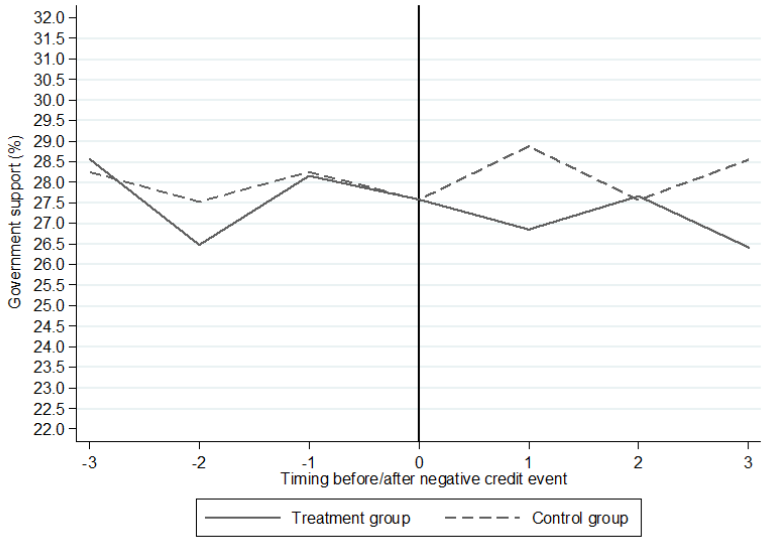
The figure presents the distribution of negative and positive signals based on 52-point scale (including actual rating changes and outlook/watch changes) that have polling data available within 30 days after the rating action for European countries from 2000 to 2017.

Fig. 4. Marginal predictions of government support



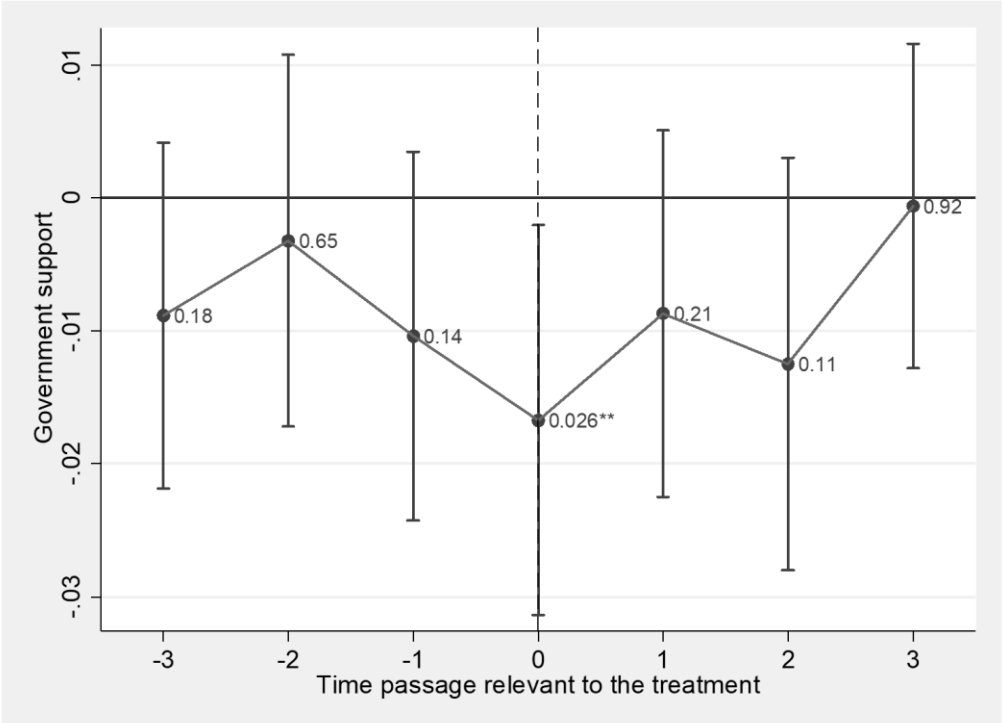
This Figure shows the Marginal predictions (slope) of *Govsup* for [0, 30] time window while holding the value of *Rating* and *Household financial assets* constant at different levels (See Table 4). A sample of all CRAs pooled together is used.

Fig. 5. Parallel trend



This figure shows changes in mean government support around negative sovereign credit event's period (treatment) using a sample of pooled CRAs. The sample includes European countries during September 2000 – July 2017. The treated countries are those that experience a negative event and had not experienced other credit events within the last three months. The control group includes the treated countries before the credit events as well as all remaining countries, and they are matched with the treated countries on the same treatment period. Treatment time is donated by the vertical line. 1 (-1), 2 (-2) and 3 (-3) donate the bi-weekly post-(pre-) treatment periods.

Fig. 6- Eq. (25): testing the parallel trends assumption



The graphs plot coefficient estimates along with their p-values of Eq. (25). The dependent variable is the bi-weekly level of government support of country *i*. The treatment is the negative credit event. Treatment time is donated by the vertical dashed line. 1 (-1), 2 (-2) and 3 (-3) donate the bi-weekly post-(pre-) treatment periods.

On-line Appendix

Table A.1- List of pollsters

Country	Period		Pollsters
Austria	12/07/2006	27/07/2017	Fessel-GfK; AKonsult/Mein Bezirk; Gallup; GfK; Hajek/ATV; Humaninstitut; IGF; IFES; IMAS; Karmasin; Market; Matzka; meinungsraum; OGM; ÖSTERREICH-Gallup; Profil-OGM; Research Affairs; Spectra; Unique Research.
Belgium	28/03/2010	27/06/2017	AQ Rate; Dedicated; De Standaard; Dimarso Het Laatste Nieuws; La Libre Belgique; l'Avenir; Le Soir; Standaard; TNS Media; Ipsos; iVox.
Bulgaria	15/02/2013	22/03/2017	AFIS; Alpha Research; CAM; Estat; Exacta; Focus; Gallup; Institute of Mordern Politics; MBMD; Mediana; Skala; Sova Haris; Trend.
Croatia	04/07/2008	25/07/2017	CRO Demoskop; GfK; IPSOS PULS; Mediana Fides; Polling Organisation; Promocija plus.
Cyprus	17/07/2015	13/05/2016	Cypronetwork; GPO; IMR; Kathimerini; PMR & C; Symmetron/Marc.
Czech	17/02/2001	26/07/2017	CVVM; Focus; Factum Invenio; Medea Research; Median; Protextl ppm factum; Phoenix Research; Sanep; SC&C; STEM; Student; TNS Asia; TNS Factum; TNS Kantar.
Denmark	20/01/2010	06/07/2017	Berlingske; Capacent; DR; Epinion; Gallup; Greens; Megafon; Norstat; Ramboll; Voxmeter; Wilke; Yougov.
Estonia	31/07/2006	28/07/2017	TNS Emor; Turu-uuringute AS.
Finland	31/01/2006	18/07/2017	Kantar TNS; Taloustutkimus; Tietoykkönen; TNS Gallup.
France	22/03/2007	21/04/2017	BVA; CSA; Elabe; Future Thinking; Harris; Ifop; Ipsos; LH2; Kantar; Le Terrain; Odoxa; Opinionway; Sofres; TNS.
Germany	21/09/2000	28/07/2017	Allensbach; Civey; Emnid; FGW; Forsa; Forschungsgruppe Wahlen; GMS; Infratest dimap; INSA; Ipsos; Trend Research; YouGov.
Greece	21/11/2009	05/07/2017	Alco; AUEB-STAT; Bridging Europe; Data RC; E-voice; Focus; Global Link; GPO; Interview; Kapa; Marc; Metrisi; Metron Analysis; MRB; Pamak; Patrisnews; Prorata; Pulse RC; Rass; Tothepoint; Vcitizens.
Hungary	17/11/2009	25/07/2017	Forsense; Gallup; Ipsos; Iranytu; Median; Nezopont; Publicus; Republikcon; Szazadveg; Tarki; ZRi.
Ireland	31/03/2008	21/07/2017	B&A; Ipsos; Millward Brown; RedC; OI; TNS.
Italy	25/06/2008	28/07/2017	AnalisiPolitica; Bidimedia; CISE; Coesis; Crespi; Datamedia; Datamonitor; Demopolis; DemosΠ Digis; EMG; EULAB; Epoke; Euromedia; Gfk Eurisko; GPG; GPS; IBS; Index; IPR; Ipsos; ISPO; Ixe; Lorien; Pareto; Piepoli; Politicalink; Quorum; SceneriPolitici; Snipcon; SWG; Tecne; TP.
Latvia	03/03/2015	24/04/2017	SKDS; Latvijas Fakti.
Lithuania	01/03/2012	10/09/2016	Spinter tyrimai; Vilmorus.
Malta	01/01/2015	25/05/2017	MaltaIndepednt; Malta Survey; MaltaToday; Xarabank.
Netherlands	10/06/2010	14/03/2017	De Stemming; TNS NIPO; Ipsos; Peil; I&O; Peilingwijzer.
Poland	15/10/2000	28/07/2017	Arianda; CBOS; Dobra Opinia; Demoskop; Estymator; ewybory.eu; Gfk; Homo Homini; IBRis; Ipsos; Kantar; Marcin Palade; Millward; OBW; PAS-P; PBBOUS; PBS; Pentor; PGB; Pollster; Pracownia; Pressmix; PPSP; SMG; TNS; TNS Poland; WAW.

Table A.1- Continued

Country	Period		Pollsters
Portugal	31/10/2001	11/06/2017	Aximage; Enrequipa; Eurosondagem; Euroteste; Intercampus; IPOM; Lusofona; Marktest; Pitagorica; UCP; Universidade Católica.
Romania	27/06/2008	14/03/2017	Avangarde; ARP; BCS; CCSB; CCSCC; CSCI; CSOP CIADO; CURS; SOCIOPOL; IMAS; INSCOP; INSOMAR; IRES; TNS.
Slovakia	16/01/2011	19/06/2017	AKO; Polis; Focus; MVK.
Slovenia	30/09/2000	21/07/2017	CRJM; Delo; Espicentre; Finance; FUDS; IFIMES; Interstat; Mediana; Ninamedia; Parsifal; Radio; RM plus; Slovenian Beat; Slovenski; UvRG; Valicon; Vecer.
Spain	21/10/2000	18/07/2017	A+M; Advice Strategic; Append; ASEP; CEMOP; Celeste-tel; CIS; Deimos Statistics; Demoscopia y Servicios; DYM; Encuestamos; Estudio; GAD3; Gesop; GETS; GIPEyop; HM-AI; IBES; IMOP; Iberconsulta; Ikerfel; Invymark; Ipsos; JJD; JM&A; Metra Seis; Metroscopia; My world; NC report; Netquest; Noxa; Obradoiro de Socioloxia; Opina Podemos; Redondo&Asociados; Sigma Dos; Simple Logica; Sondaxe; SociaMetrica; Sociología Consultores; SyM Consulting; tabula; TNS Demoscopia; Vox.
Sweden	06/10/2010	19/07/2017	APO; Demoskop; Inzio; Ipsos; Novus; Sentio; SCB; Sifo; SKOP; YouGov; United Minds; Synovate.
UK	30/01/2003	19/07/2017	Angus Reid; Ashcroft; BMG; BPIX; Communicate; ComRes; GfK; Harris; ICM; Ipsos; Marketing Science; Kantar; Opinium; ORB; Panelbase; Populus; Survation; TNS BMRB; Yougov.

This Table provides a list of pollsters from which polling data are obtained for each country in our sample of 27 EU countries for the period from 21st September 2000 to 28th July 2017. There is no data available for Luxembourg in the sample period.

Table A.2 - Control variables - FEM

Variables	Expected sign	Definition (Source)	Mean	Std. dev.
Inflation	+/-	Yearly inflation, consumer prices in year t-1 (World Bank).	0.020	0.020
GDP per capita growth	+	Yearly GDP per capita growth in year t-1 (World Bank).	0.012	0.036
Unemployment growth	+/-	Yearly unemployment growth in year t-1 (World Bank)	0.029	0.196
Government gross debt	+/-	Yearly natural logarithm of general government gross debt at time t-1 (% of GDP) (IMF).	3.819	0.253
External Balance	+/-	Yearly external balance on goods and services at time t-1 (% of GDP) (World Bank)	5.477	3.468
Fiscal balance	+	Yearly government deficit/ surplus at time t-1 (% of GDP) (Eurostat & World Bank)	-3.435	3.622
Household financial assets	+/-	Yearly natural logarithm of household financial assets at time t-1 (% of GDP) (Eurostat)	5.033	0.440
FOIA	+	Yearly proxy of the government's quality of information disclosure in year t-1. (FOIA is defined based on the data obtained from the report named "Overview of all FOI laws" in Vleugels (2011)).	3.989	1.795
Honeymoon	+	Time in office at time t. A dummy variable equals to 1 in the quarter when a new president/ prime minister first sitting in the office, and 0 otherwise (Multiple sources, including: https://www.parlament.gv.at/WWER/PAD_02941/index.shtml , https://www.gov.uk/government/ministers/prime-minister, https://www.government.se/government-of-sweden/prime-ministers-office/stefan-lofven/cv-stefan-lofven/ , etc).	0.072	0.258
Independent party	-	A dummy variable equals to 1 if the government is led by independent candidate and 0 otherwise at time t (Multiple sources, including: https://www.britannica.com/biography/Mario-Monti and https://howlingpixel.com/i-en/Tihomir_Orešković, etc.).	0.028	0.166

This table provides the definitions of the *Control* variables used in FEM (Eq. (20) and Eq. (21)) and DD analysis (Eq. (22), Eq. (24) and Eq. (25)), their summary statistics and the source of the data.

Table A.3 - FEM results using S&P, Moody's and Fitch ratings separately – [0, 7] and [0, 14] time windows

	Panel A- S&P				Panel B- Moody's				Panel C- Fitch			
TIME WINDOW	**[0;7]**		**[0; 14]**		**[0;7]**		**[0;14]**		**[0; 7]**		**[0;14]**	
	(1)	**(2)**	**(1)**	**(2)**	**(1)**	**(2)**	**(1)**	**(2)**	**(1)**	**(2)**	**(1)**	**(2)**
Rating	0.002***	0.004***	0.002***	0.004***	0.003***	0.003**	0.003***	0.003**	0.003***	0.005***	0.003***	0.005***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Inflation	0.250		0.430		0.192		0.373		0.210		0.396	
	(0.394)		(0.370)		(0.378)		(0.357)		(0.392)		(0.369)	
GDP per capita growth	0.057		0.099		0.024		0.065		0.046		0.087	
	(0.138)		(0.141)		(0.139)		(0.141)		(0.140)		(0.142)	
Unemployment growth	0.001		0.003		-0.001		-0.000		-0.002		-0.000	
	(0.030)		(0.033)		(0.029)		(0.032)		(0.030)		(0.033)	
Government gross debt	0.010		0.007		0.011		0.008		0.014		0.010	
	(0.032)		(0.034)		(0.029)		(0.031)		(0.032)		(0.033)	
External balance	-0.001		-0.001		-0.001		-0.001		-0.001		-0.001	
	(0.001)		(0.001)		(0.001)		(0.001)		(0.001)		(0.001)	
Fiscal balance	0.003**		0.002		0.003*		0.002		0.003*		0.002	
	(0.002)		(0.002)		(0.001)		(0.002)		(0.002)		(0.002)	
Household financial assets	0.031		0.029		0.019		0.017		0.023		0.022	
	(0.059)		(0.058)		(0.057)		(0.055)		(0.058)		(0.057)	
FOIA	0.021***	0.083***	0.019***	0.078***	0.019***	0.062***	0.019***	0.057***	0.019**	0.079***	0.018**	0.074***
	(0.008)	(0.006)	(0.007)	(0.006)	(0.007)	(0.001)	(0.007)	(0.001)	(0.008)	(0.003)	(0.007)	(0.003)
Honeymoon	0.034***	0.033***	0.035***	0.034***	0.035***	0.033***	0.035***	0.034***	0.035***	0.033***	0.036***	0.035***
	(0.008)	(0.009)	(0.008)	(0.008)	(0.008)	(0.009)	(0.008)	(0.008)	(0.008)	(0.009)	(0.008)	(0.008)
Independent party	-0.097***	-0.051***	-0.088***	-0.048***	-0.094***	-0.051***	-0.086***	-0.048***	-0.096***	-0.051***	-0.087***	-0.048***
	(0.023)	(0.014)	(0.025)	(0.015)	(0.023)	(0.015)	(0.024)	(0.016)	(0.023)	(0.015)	(0.024)	(0.016)
Constant	-0.113	-0.152**	-0.091	-0.136*	-0.090	-0.006	-0.069	0.016	-0.119	-0.186***	-0.101	-0.166***
	(0.330)	(0.075)	(0.327)	(0.074)	(0.321)	(0.058)	(0.318)	(0.056)	(0.327)	(0.047)	(0.324)	(0.046)
Observations	40,589	40,589	54,911	54,911	40,589	40,589	54,911	54,911	40,589	40,589	54,911	54,911
R-squared	0.715	0.905	0.704	0.905	0.724	0.904	0.713	0.905	0.720	0.906	0.709	0.906
Country FE	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO
Year FE	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO
Country X Year FE	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES

The table presents the coefficient estimates of Eq. (20) using a sample of European countries rated by S&P in Panel A, Moody's in panel B and Fitch in Panel C during September 2000 – July 2017. $Govsup_{it+s}$, the dependent variable, is the level of support for government of country i aggregated by taking the average of polling results for the incumbent party over the time window (t+s) ([0; 7] and [0; 14]) where the rating is on date $t = 0$ (See Table 3 for the results in [0; 1] and [0; 30] time windows). *Rating* presents sovereign credit rating of country i on date t using 52-point rating scale. Control variables are defined in Table A.2 in the Appendix. FE are captured by a full set of both country and year dummies presented in the first column, then by the interaction term of country and year dummies in the second column. Macroeconomics factors are excluded from the regression when employing the interacted dummy variable of country and year. Clustered standard errors at country-year are reported in parentheses. ***, **, and * indicate significance at the 1%, 5% and 10% respectively.

Table A.4 - FEM results using pooled sample of all CRAs

TIME WINDOW	[0;1]		[0;7]		[0;14]		[0;30]	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Rating	0.002***	0.001***	0.002***	0.001***	0.002***	0.001***	0.002***	0.001***
	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Inflation	-0.219		0.226		0.410		0.563*	
	(0.403)		(0.388)		(0.365)		(0.341)	
GDP per capita growth	-0.079		0.046		0.087		0.086	
	(0.158)		(0.138)		(0.140)		(0.150)	
Unemployment growth	0.021		-0.001		0.001		0.009	
	(0.027)		(0.030)		(0.033)		(0.036)	
Government gross debt	0.037		0.011		0.008		0.011	
	(0.031)		(0.031)		(0.033)		(0.032)	
External balance	-0.002*		-0.001		-0.001		-0.001	
	(0.001)		(0.001)		(0.001)		(0.001)	
Fiscal balance	0.005***		0.003**		0.002		0.002	
	(0.002)		(0.002)		(0.002)		(0.002)	
Household financial assets	0.011		0.027		0.025		0.003	
	(0.062)		(0.058)		(0.056)		(0.056)	
FOIA	0.023**	0.093***	0.020***	0.064***	0.019***	0.059***	0.018**	0.058***
	(0.009)	(0.002)	(0.008)	(0.002)	(0.007)	(0.002)	(0.007)	(0.002)
Honeymoon	0.030***	0.032***	0.035***	0.033***	0.036***	0.034***	0.033***	0.032***
	(0.010)	(0.011)	(0.008)	(0.009)	(0.008)	(0.009)	(0.007)	(0.007)
Independent party	-0.115***	-0.059***	-0.096***	-0.053***	-0.087***	-0.050***	-0.081***	-0.044***
	(0.019)	(0.009)	(0.023)	(0.015)	(0.025)	(0.016)	(0.025)	(0.017)
Constant	-0.113	-0.088***	-0.110	0.047	-0.088	0.071**	0.020	0.077**
	(0.347)	(0.029)	(0.326)	(0.032)	(0.322)	(0.032)	(0.317)	(0.030)
Observations	40,788	40,788	121,767	121,767	164,733	164,733	215,430	215,430
R-squared	0.766	0.909	0.718	0.904	0.708	0.904	0.698	0.907
CRA FE	YES	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	NO	YES	NO	YES	NO	YES	NO
Year FE	YES	NO	YES	NO	YES	NO	YES	NO
Country X Year FE	NO	YES	NO	YES	NO	YES	NO	YES

The table presents the coefficient estimates of Eq. (20) using a sample of European countries rated by all CRAs pooled together during September 2000 – July 2017. $Govsup_{it+s}$, the dependent variable, is the level of support for government of country i aggregated by taking the average of polling results for the incumbent party over the time window (t+s) ([0; 1], [0; 7], [0; 14], and [0; 30]) where the rating is on date $t = 0$. *Rating* presents sovereign credit rating of country i on date t using 52-point rating scale. *Control* variables are defined in Table A.2 in the Appendix. FE are captured by a full set of CRA, country and year dummies presented in the first column, then by the interaction term of country and year dummies in the second column. Macroeconomics factors are excluded from the regression when employing the interacted dummy variable of country and year. Clustered standard errors at country-year are reported in parentheses. ***, **, and * indicate significance at the 1%, 5% and 10% respectively.

Table A.5 - FEM – Various standard errors – Pooled sample of all CRAs

	Panel A. Clustered at country level				Panel B. Huber White				Panel C. Bootstrap			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
TIME WINDOW	[0;1]	[0;7]	[0;14]	[0;30]	[0;1]	[0;7]	[0;14]	[0;30]	[0;1]	[0;7]	[0;14]	[0;30]
Rating	0.002**	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Inflation	-0.219	0.226	0.410	0.563	-0.219***	0.226***	0.410***	0.563***	-0.219***	0.226***	0.410***	0.563***
	(0.554)	(0.525)	(0.493)	(0.459)	(0.052)	(0.024)	(0.019)	(0.015)	(0.056)	(0.022)	(0.017)	(0.013)
GDP per capita growth	-0.079	0.046	0.087	0.086	-0.079***	0.046***	0.087***	0.086***	-0.079***	0.046***	0.087***	0.086***
	(0.159)	(0.135)	(0.135)	(0.141)	(0.020)	(0.009)	(0.007)	(0.007)	(0.016)	(0.010)	(0.006)	(0.006)
Unemployment growth	0.021	-0.001	0.001	0.009	0.021***	-0.001	0.001	0.009***	0.021***	-0.001	0.001	0.009***
	(0.023)	(0.029)	(0.035)	(0.040)	(0.003)	(0.002)	(0.002)	(0.001)	(0.003)	(0.002)	(0.002)	(0.001)
Government gross debt	0.037	0.011	0.008	0.011	0.037***	0.011***	0.008***	0.011***	0.037***	0.011***	0.008***	0.011***
	(0.031)	(0.028)	(0.027)	(0.025)	(0.003)	(0.002)	(0.002)	(0.001)	(0.003)	(0.002)	(0.002)	(0.001)
External balance	-0.002*	-0.001	-0.001	-0.001	-0.002***	-0.001***	-0.001***	-0.001***	-0.002***	-0.001***	-0.001***	-0.001***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Fiscal balance	0.005**	0.003	0.002	0.002	0.005***	0.003***	0.002***	0.002***	0.005***	0.003***	0.002***	0.002***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Household financial assets	0.011	0.027	0.025	0.003	0.011	0.027***	0.025***	0.003	0.011*	0.027***	0.025***	0.003
	(0.068)	(0.069)	(0.072)	(0.080)	(0.008)	(0.004)	(0.003)	(0.003)	(0.006)	(0.004)	(0.003)	(0.002)
FOIA	0.023**	0.020**	0.019**	0.018**	0.023***	0.020***	0.019***	0.018***	0.023***	0.020***	0.019***	0.018***
	(0.011)	(0.008)	(0.008)	(0.008)	(0.001)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)
Honeymoon	0.030**	0.035***	0.036***	0.033***	0.030***	0.035***	0.036***	0.033***	0.030***	0.035***	0.036***	0.033***
	(0.012)	(0.010)	(0.009)	(0.008)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Independent party	-0.115***	-0.096***	-0.087***	-0.081**	-0.115***	-0.096***	-0.087***	-0.081***	-0.115***	-0.096***	-0.087***	-0.081***
	(0.016)	(0.025)	(0.030)	(0.032)	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)	(0.001)	(0.001)
Constant	-0.113	-0.110	-0.088	0.020	-0.113**	-0.110***	-0.088***	0.020	-0.113***	-0.110***	-0.088***	0.020
	(0.400)	(0.378)	(0.390)	(0.442)	(0.044)	(0.021)	(0.018)	(0.015)	(0.036)	(0.021)	(0.015)	(0.016)
Observations	40,788	121,767	164,733	215,430	40,788	121,767	164,733	215,430	40,788	121,767	164,733	215,430
R-squared	0.766	0.718	0.708	0.698	0.766	0.718	0.708	0.698	0.766	0.718	0.708	0.698
CRA FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Country X Year FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

The table presents the coefficient estimates of Eq. (20) using a sample of European countries rated by all CRAs pooled together during September 2000 – July 2017. $Govsup_{it+s}$, the dependent variable, is the level of support for government of country i aggregated by taking the average of polling results for the incumbent party over the time window (t+s) ([0; 1], [0; 7], [0; 14], and [0; 30]) where the rating is on date $t = 0$. *Rating* presents sovereign credit rating of country i on date t using 52-point rating scale rated by all CRAs pooled together. Control variables are defined in Table A.2 in the Appendix. FE are captured by a full set of CRA, country, and year dummies presented. Different types of standard errors are employed and reported in parentheses: (i) clustered standard errors at country level (Panel A), Huber White robust standard errors (Panel B), wild bootstrap standard errors (Panel C). ***, **, and * indicate significance at the 1%, 5% and 10% respectively.

Table A.6- FEM – Various standard errors – S&P

	Panel A- Clustered at country level				Panel B- Huber White				Panel C- Bootstrap			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
TIME WINDOW	[0;1]	[0;7]	[0;14]	[0;30]	[0;1]	[0;7]	[0;14]	[0;30]	[0;1]	[0;7]	[0;14]	[0;30]
Rating	0.002*	0.002**	0.002**	0.002**	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Inflation	-0.180	0.250	0.430	0.583	-0.180**	0.250***	0.430***	0.583***	-0.180*	0.250***	0.430***	0.583***
	(0.570)	(0.551)	(0.515)	(0.474)	(0.090)	(0.042)	(0.032)	(0.026)	(0.105)	(0.048)	(0.030)	(0.031)
GDP per capita growth	-0.067	0.057	0.099	0.102	-0.067*	0.057***	0.099***	0.102***	-0.067*	0.057***	0.099***	0.102***
	(0.164)	(0.144)	(0.145)	(0.152)	(0.035)	(0.016)	(0.013)	(0.011)	(0.035)	(0.018)	(0.011)	(0.011)
Unemployment growth	0.023	0.001	0.003	0.012	0.023***	0.001	0.003	0.012***	0.023***	0.001	0.003	0.012***
	(0.024)	(0.029)	(0.035)	(0.040)	(0.006)	(0.003)	(0.003)	(0.002)	(0.005)	(0.003)	(0.003)	(0.002)
Government gross debt	0.036	0.010	0.007	0.009	0.036***	0.010***	0.007**	0.009***	0.036***	0.010***	0.007**	0.009***
	(0.032)	(0.029)	(0.028)	(0.025)	(0.006)	(0.003)	(0.003)	(0.003)	(0.005)	(0.003)	(0.003)	(0.002)
External balance	-0.002*	-0.001	-0.001	-0.001	-0.002***	-0.001***	-0.001***	-0.001***	-0.002***	-0.001***	-0.001***	-0.001***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Fiscal balance	0.005**	0.003	0.002	0.002	0.005***	0.003***	0.002***	0.002***	0.005***	0.003***	0.002***	0.002***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Household financial assets	0.019	0.031	0.029	0.008	0.019	0.031***	0.029***	0.008*	0.019	0.031***	0.029***	0.008
	(0.070)	(0.073)	(0.076)	(0.084)	(0.014)	(0.007)	(0.005)	(0.005)	(0.014)	(0.006)	(0.005)	(0.005)
FOIA	0.024**	0.021**	0.019**	0.018**	0.024***	0.021***	0.019***	0.018***	0.024***	0.021***	0.019***	0.018***
	(0.011)	(0.008)	(0.008)	(0.008)	(0.002)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)
Honeymoon	0.029**	0.034***	0.035***	0.033***	0.029***	0.034***	0.035***	0.033***	0.029***	0.034***	0.035***	0.033***
	(0.012)	(0.010)	(0.009)	(0.008)	(0.002)	(0.001)	(0.001)	(0.001)	(0.003)	(0.001)	(0.001)	(0.001)
Independent party	-0.117***	-0.097***	-0.088***	-0.081**	-0.117***	-0.097***	-0.088***	-0.081***	-0.117***	-0.097***	-0.088***	-0.081***
	(0.016)	(0.026)	(0.030)	(0.032)	(0.004)	(0.003)	(0.002)	(0.002)	(0.003)	(0.002)	(0.003)	(0.003)
Constant	-0.135	-0.113	-0.091	0.020	-0.135*	-0.113***	-0.091***	0.020	-0.135*	-0.113***	-0.091***	0.020
	(0.410)	(0.391)	(0.405)	(0.454)	(0.077)	(0.037)	(0.031)	(0.027)	(0.081)	(0.036)	(0.031)	(0.026)
Observations	13,596	40,589	54,911	71,810	13,596	40,589	54,911	71,810	13,596	40,589	54,911	71,810
R-squared	0.764	0.715	0.704	0.695	0.764	0.715	0.704	0.695	0.764	0.715	0.704	0.695
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Country X Year FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

The table presents the coefficient estimates of Eq. (20) using a sample of European countries rated by S&P during September 2000 – July 2017. $Govsup_{it+s}$, the dependent variable, is the level of support for government of country i aggregated by taking the average of polling results for the incumbent party over the time window (t+s) ([0; 1], [0; 7], [0; 14], and [0; 30]) where the rating is on date $t = 0$. *Rating* presents sovereign credit rating of country i on date t using 52-point rating scale rated by S&P. Control variables are defined in Table A.2 in the Appendix. FE are captured by a full set of both country and year dummies. Different types of standard errors are employed and reported in parentheses: (i) clustered standard errors at country level (Panel A), Huber White robust standard errors (Panel B), wild bootstrap standard errors (Panel C). ***, **, and * indicate significance at the 1%, 5% and 10% respectively.

Table A.7- FEM – Various Standard errors – Moody's

	Panel A- Clustered at country level				Panel B- Huber White				Panel C- Bootstrap			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
TIME WINDOW	[0;1]	[0;7]	[0;14]	[0;30]	[0;1]	[0;7]	[0;14]	[0;30]	[0;1]	[0;7]	[0;14]	[0;30]
Rating	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Inflation	-0.256	0.192	0.373	0.530	-0.256***	0.192***	0.373***	0.530***	-0.256***	0.192***	0.373***	0.530***
	(0.533)	(0.492)	(0.464)	(0.439)	(0.088)	(0.041)	(0.032)	(0.025)	(0.083)	(0.037)	(0.037)	(0.026)
GDP per capita growth	-0.095	0.024	0.065	0.068	-0.095***	0.024	0.065***	0.068***	-0.095**	0.024	0.065***	0.068***
	(0.151)	(0.126)	(0.125)	(0.131)	(0.035)	(0.016)	(0.013)	(0.011)	(0.038)	(0.017)	(0.014)	(0.010)
Unemployment growth	0.020	-0.001	-0.000	0.008	0.020***	-0.001	-0.000	0.008***	0.020***	-0.001	-0.000	0.008***
	(0.024)	(0.029)	(0.035)	(0.040)	(0.006)	(0.003)	(0.003)	(0.002)	(0.006)	(0.003)	(0.003)	(0.002)
Government gross debt	0.036	0.011	0.008	0.010	0.036***	0.011***	0.008***	0.010***	0.036***	0.011***	0.008***	0.010***
	(0.028)	(0.026)	(0.025)	(0.023)	(0.005)	(0.003)	(0.003)	(0.002)	(0.005)	(0.004)	(0.003)	(0.002)
External balance	-0.002*	-0.001	-0.001	-0.001	-0.002***	-0.001***	-0.001***	-0.001***	-0.002***	-0.001***	-0.001***	-0.001***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Fiscal balance	0.005**	0.003	0.002	0.001	0.005***	0.003***	0.002***	0.001***	0.005***	0.003***	0.002***	0.001***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Household financial assets	0.004	0.019	0.017	-0.003	0.004	0.019***	0.017***	-0.003	0.004	0.019***	0.017***	-0.003
	(0.067)	(0.065)	(0.068)	(0.077)	(0.013)	(0.006)	(0.005)	(0.004)	(0.015)	(0.005)	(0.005)	(0.005)
FOIA	0.021*	0.019**	0.019**	0.018**	0.021***	0.019***	0.019***	0.018***	0.021***	0.019***	0.019***	0.018***
	(0.011)	(0.008)	(0.008)	(0.007)	(0.002)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)
Honeymoon	0.030**	0.035***	0.035***	0.033***	0.030***	0.035***	0.035***	0.033***	0.030***	0.035***	0.035***	0.033***
	(0.012)	(0.010)	(0.009)	(0.008)	(0.002)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)
Independent party	-0.112***	-0.094***	-0.086***	-0.080**	-0.112***	-0.094***	-0.086***	-0.080***	-0.112***	-0.094***	-0.086***	-0.080***
	(0.016)	(0.025)	(0.029)	(0.031)	(0.004)	(0.003)	(0.002)	(0.002)	(0.003)	(0.003)	(0.002)	(0.002)
Constant	-0.084	-0.090	-0.069	0.032	-0.084	-0.090**	-0.069**	0.032	-0.084	-0.090***	-0.069**	0.032
	(0.390)	(0.358)	(0.371)	(0.424)	(0.076)	(0.037)	(0.030)	(0.026)	(0.094)	(0.032)	(0.029)	(0.031)
Observations	13,596	40,589	54,911	71,810	13,596	40,589	54,911	71,810	13,596	40,589	54,911	71,810
R-squared	0.770	0.724	0.713	0.703	0.770	0.724	0.713	0.703	0.770	0.724	0.713	0.703
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Country X Year FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

The table presents the coefficient estimates of Eq. (20) using a sample of European countries rated by Moody's during September 2000 – July 2017. $Govsup_{it+s}$, the dependent variable, is the level of support for government of country i aggregated by taking the average of polling results for the incumbent party over the time window (t+s) ([0; 1], [0; 7], [0; 14], and [0; 30]) where the rating is on date $t = 0$. *Rating* presents sovereign credit rating of country i on date t using 52-point rating scale rated by Moody's. Control variables are defined in Table A.2 in the Appendix. FE are captured by a full set of both country and year dummies presented. Different types of standard errors are employed and reported in parentheses: (i) clustered standard errors at country level (Panel A), Huber White robust standard errors (Panel B), wild bootstrap standard errors (Panel C). ***, **, and * indicate significance at the 1%, 5% and 10% respectively.

Table A.8- FEM – Various standard errors – Fitch

	Panel A - Clustered at country level				Panel B- Huber White				Panel C- Bootstrap			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
TIME WINDOW	[0;1]	[0;7]	[0;14]	[0;30]	[0;1]	[0;7]	[0;14]	[0;30]	[0;1]	[0;7]	[0;14]	[0;30]
Rating	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Inflation	-0.261	0.210	0.396	0.560	-0.261***	0.210***	0.396***	0.560***	-0.261***	0.210***	0.396***	0.560***
	(0.564)	(0.529)	(0.496)	(0.460)	(0.090)	(0.042)	(0.032)	(0.026)	(0.090)	(0.046)	(0.028)	(0.025)
GDP per capita growth	-0.083	0.046	0.087	0.087	-0.083**	0.046***	0.087***	0.087***	-0.083*	0.046***	0.087***	0.087***
	(0.161)	(0.135)	(0.134)	(0.140)	(0.035)	(0.016)	(0.013)	(0.011)	(0.044)	(0.015)	(0.012)	(0.009)
Unemployment growth	0.018	-0.002	-0.000	0.009	0.018***	-0.002	-0.000	0.009***	0.018***	-0.002	-0.000	0.009***
	(0.023)	(0.030)	(0.035)	(0.041)	(0.006)	(0.003)	(0.003)	(0.002)	(0.006)	(0.003)	(0.002)	(0.002)
Government gross debt	0.040	0.014	0.010	0.013	0.040***	0.014***	0.010***	0.013***	0.040***	0.014***	0.010***	0.013***
	(0.032)	(0.028)	(0.028)	(0.025)	(0.006)	(0.003)	(0.003)	(0.002)	(0.005)	(0.003)	(0.002)	(0.002)
External balance	-0.002*	-0.001	-0.001	-0.001	-0.002***	-0.001***	-0.001***	-0.001***	-0.002***	-0.001***	-0.001***	-0.001***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Fiscal balance	0.005**	0.003	0.002	0.002	0.005***	0.003***	0.002***	0.002***	0.005***	0.003***	0.002***	0.002***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Household financial assets	0.002	0.023	0.022	0.001	0.002	0.023***	0.022***	0.001	0.002	0.023***	0.022***	0.001
	(0.066)	(0.068)	(0.071)	(0.079)	(0.014)	(0.006)	(0.005)	(0.004)	(0.015)	(0.007)	(0.005)	(0.005)
FOIA	0.021*	0.019**	0.018**	0.017**	0.021***	0.019***	0.018***	0.017***	0.021***	0.019***	0.018***	0.017***
	(0.010)	(0.008)	(0.008)	(0.008)	(0.002)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)
Honeymoon	0.031**	0.035***	0.036***	0.034***	0.031***	0.035***	0.036***	0.034***	0.031***	0.035***	0.036***	0.034***
	(0.012)	(0.010)	(0.009)	(0.008)	(0.002)	(0.001)	(0.001)	(0.001)	(0.003)	(0.001)	(0.001)	(0.001)
Independent party	-0.115***	-0.096***	-0.087***	-0.081**	-0.115***	-0.096***	-0.087***	-0.081***	-0.115***	-0.096***	-0.087***	-0.081***
	(0.016)	(0.025)	(0.029)	(0.032)	(0.004)	(0.003)	(0.002)	(0.002)	(0.004)	(0.003)	(0.002)	(0.002)
Constant	-0.108	-0.119	-0.101	0.004	-0.108	-0.119***	-0.101***	0.004	-0.108	-0.119***	-0.101***	0.004
	(0.399)	(0.379)	(0.394)	(0.445)	(0.077)	(0.037)	(0.031)	(0.026)	(0.078)	(0.040)	(0.027)	(0.028)
Observations	13,596	40,589	54,911	71,810	13,596	40,589	54,911	71,810	13,596	40,589	54,911	71,810
R-squared	0.768	0.720	0.709	0.699	0.768	0.720	0.709	0.699	0.768	0.720	0.709	0.699
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Country X Year FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

The table presents the coefficient estimates of Eq. (20) using a sample of European countries rated by Fitch during September 2000 – July 2017. $Govsup_{it+s}$, the dependent variable, is the level of support for government of country i aggregated by taking the average of polling results for the incumbent party over the time window (t+s) ([0; 1], [0; 7], [0; 14], and [0; 30]) where the rating is on date $t = 0$. *Rating* presents sovereign credit rating of country i on date t using 52-point rating scale rated by Fitch. Control variables are defined in Table A.2 in the Appendix. FE are captured by a full set of both country and year dummies. Different types of standard errors are employed and reported in parentheses: (i) clustered standard errors at country level (Panel A), Huber White robust standard errors (Panel B), wild bootstrap standard errors (Panel C), ***, **, and * indicate significance at the 1%, 5% and 10% respectively.

Table A.9 – FEM - Interacted *Rating* and *Household financial assets* - S&P

TIME WINDOW	[0;1]	[0;7]	[0;14]	[0;30]
	(1)	(2)	(3)	(4)
Rating	0.030***	0.024**	0.022**	0.019*
	(0.010)	(0.010)	(0.009)	(0.010)
Household financial assets	0.200**	0.168*	0.152*	0.112
	(0.096)	(0.090)	(0.087)	(0.087)
RatingX Household financial assets	-0.005***	-0.004**	-0.004**	-0.003*
	(0.002)	(0.002)	(0.002)	(0.002)
Inflation	0.013	0.347	0.504	0.642*
	(0.406)	(0.401)	(0.377)	(0.351)
GDP per capita growth	-0.198	-0.019	0.039	0.055
	(0.164)	(0.136)	(0.137)	(0.148)
Unemployment growth	0.012	0.001	0.005	0.015
	(0.028)	(0.030)	(0.033)	(0.036)
Government gross debt	0.029	0.005	0.003	0.007
	(0.031)	(0.031)	(0.033)	(0.032)
External balance	-0.002*	-0.001	-0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)
Fiscal balance	0.005***	0.003*	0.002	0.001
	(0.002)	(0.001)	(0.002)	(0.002)
FOIA	0.018*	0.018**	0.017**	0.016**
	(0.010)	(0.008)	(0.007)	(0.007)
Honeymoon	0.028***	0.034***	0.035***	0.033***
	(0.009)	(0.008)	(0.008)	(0.007)
Independent party	-0.109***	-0.093***	-0.085***	-0.079***
	(0.019)	(0.024)	(0.025)	(0.026)
Constant	-1.048**	-0.800*	-0.708	-0.508
	(0.494)	(0.466)	(0.458)	(0.457)
Observations	13,596	40,589	54,911	71,810
R-squared	0.769	0.719	0.708	0.697
Country FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Country X Year FE	NO	NO	NO	NO

The table presents the coefficient estimates of Eq. (20) using a sample of European countries rated by S&P during September 2000 – July 2017. $Govsup_{it+s}$, the dependent variable, is the level of support for government of country *i* aggregated by taking the average of polling results for the incumbent party over the time window (t+s) ([0; 1], [0; 7], [0; 14], and [0; 30]) where the rating is on date $t = 0$. *Rating* presents sovereign credit rating of country i on date t using 52-point rating scale rated by S&P. Control variables are defined in in Table A.2 in the Appendix. We interact *Rating* and *Household financial assets.* FE are captured by a full set of both country and year dummies. Clustered standard errors at country-year are reported in parentheses. ***, **, and * indicate significance at the 1%, 5% and 10% respectively.

Table A.10 – FEM - Interacted *Rating* and *Household financial assets* – Moody's

TIME WINDOW	[0;1]	[0;7]	[0;14]	[0;30]
	(1)	(2)	(3)	(4)
Rating	0.031***	0.028***	0.026***	0.023***
	(0.009)	(0.008)	(0.008)	(0.007)
Household financial assets	0.202**	0.182**	0.166*	0.136*
	(0.097)	(0.090)	(0.086)	(0.081)
RatingX Household financial assets	-0.006***	-0.005***	-0.004***	-0.004***
	(0.002)	(0.002)	(0.002)	(0.001)
Inflation	-0.026	0.300	0.447	0.582*
	(0.359)	(0.349)	(0.334)	(0.319)
GDP per capita growth	-0.244	-0.074	-0.014	0.001
	(0.174)	(0.139)	(0.135)	(0.143)
Unemployment growth	0.013	0.001	0.004	0.012
	(0.027)	(0.027)	(0.030)	(0.033)
Government gross debt	0.036	0.011	0.008	0.009
	(0.029)	(0.027)	(0.029)	(0.029)
External balance	-0.002**	-0.001	-0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)
Fiscal balance	0.004***	0.002*	0.002	0.001
	(0.001)	(0.001)	(0.001)	(0.002)
FOIA	0.017*	0.018**	0.018***	0.018***
	(0.009)	(0.007)	(0.007)	(0.007)
Honeymoon	0.030***	0.034***	0.036***	0.034***
	(0.010)	(0.008)	(0.008)	(0.007)
Independent party	-0.108***	-0.092***	-0.085***	-0.080***
	(0.019)	(0.023)	(0.024)	(0.025)
Constant	-1.113**	-0.924*	-0.832*	-0.675
	(0.502)	(0.472)	(0.453)	(0.426)
Observations	13,596	40,589	54,911	71,810
R-squared	0.777	0.732	0.720	0.709
Country FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Country X Year FE	NO	NO	NO	NO

The table presents the coefficient estimates of Eq. (20) using a sample of European countries rated by Moody's during September 2000 – July 2017. $Govsup_{it+s}$, the dependent variable, is the level of support for government of country i aggregated by taking the average of polling results for the incumbent party over the time window (t+s) ([0; 1], [0; 7], [0; 14], and [0; 30]) where the rating is on date $t = 0$. *Rating* presents sovereign credit rating of country i on date t using 52-point rating scale rated by Moody's. Control variables are defined in Table A.2 in the Appendix. We interact *Rating* and *Household financial assets.* FE are captured by a full set of both country and year dummies. Clustered standard errors at country-year are reported in parentheses. ***, **, and * indicate significance at the 1%, 5% and 10% respectively.

Table A.11 – FEM - Interacted *Rating* and *Household financial assets* – Fitch

TIME WINDOW	[0;1]	[0;7]	[0;14]	[0;30]
	(1)	(2)	(3)	(4)
Rating	0.037***	0.034***	0.032***	0.029***
	(0.011)	(0.010)	(0.009)	(0.009)
Household financial assets	0.231**	0.221**	0.207**	0.169*
	(0.104)	(0.094)	(0.090)	(0.089)
RatingX Household financial assets	-0.007***	-0.006***	-0.006***	-0.005***
	(0.002)	(0.002)	(0.002)	(0.002)
Inflation	0.005	0.343	0.497	0.645*
	(0.395)	(0.387)	(0.366)	(0.344)
GDP per capita growth	-0.231	-0.061	-0.005	0.008
	(0.172)	(0.139)	(0.137)	(0.144)
Unemployment growth	0.008	-0.003	0.002	0.013
	(0.028)	(0.030)	(0.033)	(0.036)
Government gross debt	0.036	0.011	0.009	0.012
	(0.030)	(0.029)	(0.031)	(0.030)
External balance	-0.002**	-0.001	-0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)
Fiscal balance	0.004***	0.002*	0.002	0.001
	(0.001)	(0.001)	(0.002)	(0.002)
FOIA	0.014	0.015**	0.015**	0.015**
	(0.009)	(0.007)	(0.007)	(0.007)
Honeymoon	0.030***	0.035***	0.036***	0.034***
	(0.009)	(0.008)	(0.008)	(0.007)
Independent party	-0.109***	-0.093***	-0.085***	-0.080***
	(0.019)	(0.023)	(0.025)	(0.025)
Constant	-1.276**	-1.122**	-1.040**	-0.846*
	(0.535)	(0.488)	(0.471)	(0.461)
Observations	13,596	40,589	54,911	71,810
R-squared	0.775	0.727	0.716	0.705
Country FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Country X Year FE	NO	NO	NO	NO

The table presents the coefficient estimates of Eq. (20) using a sample of European countries rated by Fitch during September 2000 – July 2017. $Govsup_{it+s}$, the dependent variable, is the level of support for government of country i aggregated by taking the average of polling results for the incumbent party over the time window (t+s) ([0; 1], [0; 7], [0; 14], and [0; 30]) where the rating is on date $t = 0$. *Rating* presents sovereign credit rating of country i on date t using 52-point rating scale rated by Fitch. Control variables are defined in Table A.2 in the Appendix. We interact *Rating* and *Household financial assets.* FE are captured by a full set of both country and year dummies. Clustered standard errors at country-year are reported in parentheses. ***, **, and * indicate significance at the 1%, 5% and 10% respectively.

Table A.12 – FEM Using *Household debt*– Pooled sample of all CRAs

TIME WINDOW	[0;1]	[0;7]	[0;14]	[0;30]
	(1)	(2)	(3)	(4)
Rating	0.002***	0.002***	0.002***	0.002***
	(0.001)	(0.001)	(0.000)	(0.000)
Inflation	-0.304	0.182	0.385	0.593*
	(0.418)	(0.400)	(0.371)	(0.338)
GDP per capita growth	-0.118	0.038	0.100	0.141
	(0.156)	(0.132)	(0.132)	(0.136)
Unemployment growth	0.021	-0.005	-0.004	0.006
	(0.029)	(0.032)	(0.034)	(0.037)
Government gross debt	0.037	0.010	0.008	0.011
	(0.031)	(0.031)	(0.033)	(0.033)
External balance	-0.002**	-0.001	-0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)
Fiscal balance	0.005***	0.003**	0.003	0.002
	(0.002)	(0.002)	(0.002)	(0.002)
Household debt	-0.000	0.000	0.000	0.001
	(0.001)	(0.001)	(0.001)	(0.001)
FOIA	0.022**	0.020***	0.019***	0.019***
	(0.009)	(0.008)	(0.007)	(0.007)
Honeymoon	0.030***	0.035***	0.036***	0.034***
	(0.010)	(0.008)	(0.008)	(0.007)
Independent party	-0.115***	-0.096***	-0.088***	-0.081***
	(0.019)	(0.023)	(0.025)	(0.025)
Constant	-0.042	0.018	0.019	0.007
	(0.142)	(0.141)	(0.148)	(0.149)
Observations	40,788	121,767	164,733	215,430
R-squared	0.767	0.719	0.708	0.699
Country FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Country X Year FE	NO	NO	NO	NO

The table presents the coefficient estimates of Eq. (20) using a sample of European countries rated by all CRAs pooled together during September 2000 – July 2017. $Govsup_{it+s}$, the dependent variable, is the level of support for government of country i aggregated by taking the average of polling results for the incumbent party over the time window (t+s) ([0; 1], [0; 7], [0; 14], and [0; 30]) where the rating is on date $t = 0$. *Rating* presents sovereign credit rating of country i on date t using 52-point rating scale. Control variables are defined in Table A.2 in the Appendix. FE are captured by a full set of CRAs, country, and year dummies. Clustered standard errors at country-year are reported in parentheses. ***, **, and * indicate significance at the 1%, 5% and 10% respectively.

Table A.13 – Event study - Pooled sample of all CRAs

Time window	No. of obs	Mean Govsup AFTER Rating event on date t = 0	Mean Govsup BEFORE Rating event on date t = 0	Difference of mean Govsup AFTER - BEFORE Rating event on date t = 0
Panel A. Negative rating events				
[-1;1]	16	0.2486	0.2553	-0.0067
[-7;7]	67	0.2790	0.2796	-0.0006
[-14;14]	107	0.2825	0.2883	-0.0058**
[-30; 30]	169	0.2651	0.2708	-0.0057***
[-60;60]	184	0.2652	0.2720	-0.0068***
[-90;90]	185	0.2640	0.2702	-0.0062**
[-180;180]	186	0.2621	0.2730	-0.0109***
Panel B. Positive rating events				
[-1;1]	8	0.2335	0.2288	0.0047
[-7;7]	32	0.2822	0.2756	0.0066
[-14;14]	67	0.2581	0.2617	-0.0036
[-30; 30]	119	0.2687	0.2678	0.0009
[-60;60]	128	0.2720	0.2701	0.0018
[-90;90]	129	0.2711	0.2688	0.0023
[-180;180]	131	0.2708	0.2696	0.0012

This Table presents the difference of the average *Govsup* before and after credit rating events, separately for negative rating events (Panel A) and positive rating events (Panel B) using European countries rated by Moody's, S&P and Fitch during September 2000 – July 2017. We calculate the mean *Govsup* before and after rating events within the following time windows: [-1; 1], [-7; 7], [-14; 14], [-30; 30], [-60; 60], [-90; 90], and [-180; 180], where the rating event is on date 0. T-test is used to examine whether the difference of mean *Govsup* before and after rating events are significantly different from zero. ***, **, and * indicate significance at the 1%, 5%, and 10 % level respectively.

Table A.14 - FEM – Eq. (20)- Sub-sample analysis

		(1) [0;1]	(2) [0;7]	(3) [0;14]	(4) [0;30]	(1) [0;1]	(2) [0;7]	(3) [0;14]	(4) [0;30]	(1) [0;1]	(2) [0;7]	(3) [0;14]	(4) [0;30]
		Panel A. Crisis period (2008-2012)				**Panel B. Non-crisis period (Sample period excluding 2008-2012)**				**Panel C. GIIPS**			
Pooled CRAs	Rating	0.003***	0.002***	0.002***	0.002**	0.002***	0.003***	0.003***	0.002***	0.002**	0.002*	0.002*	0.002**
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
S&P	Rating	0.004***	0.004***	0.003***	0.003***	0.001	0.002**	0.002**	0.002**	0.004***	0.004***	0.004***	0.004***
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Moody	Rating	0.003***	0.002**	0.002**	0.002**	0.004***	0.004***	0.004***	0.003***	0.003***	0.003***	0.003***	0.003***
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Fitch	Rating	0.003**	0.003***	0.003***	0.003***	0.003***	0.004***	0.003***	0.003***	0.004***	0.004***	0.004***	0.004***
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
	Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
	Country & Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
		Panel D. CORE				**Panel E. Non-GIIPS**				**Panel F. Probability weighted**			
Pooled CRAs	Rating	0.011***	0.010***	0.010***	0.010***	0.004***	0.004***	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***
		(0.003)	(0.003)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
S&P	Rating	0.014***	0.015***	0.015***	0.015***	0.007***	0.005**	0.004**	0.004**	0.002***	0.003***	0.003***	0.003***
		(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)
Moody	Rating	0.019***	0.015***	0.014***	0.014***	0.007***	0.006***	0.006***	0.005***	0.003***	0.003***	0.003***	0.003***
		(0.004)	(0.004)	(0.004)	(0.004)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Fitch	Rating	0.022***	0.017***	0.016***	0.016***	0.007***	0.005***	0.004***	0.004**	0.003***	0.003***	0.003***	0.003***
		(0.003)	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)
	Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
	Country & Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
		Panel G. Excluding Germany and Netherlands				**Panel H. Excluding countries with low poll observations**				**Panel I. Excluding countries with no sovereign credit events**			
Pooled CRAs	Rating	0.001**	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***	0.003***	0.003***	0.002***
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
S&P	Rating	0.001	0.002***	0.002***	0.002***	0.002**	0.002***	0.002***	0.002***	0.002**	0.002***	0.002***	0.002***
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Moody	Rating	0.002**	0.002***	0.002***	0.002***	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Fitch	Rating	0.002***	0.002***	0.002***	0.002***	0.003***	0.003***	0.003***	0.002***	0.003***	0.003***	0.003***	0.003***
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
	Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
	Country & Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

The table presents the coefficient estimates of Eq. (20) using different sub-samples during Sep 2000-July 2017. $Govsup_{it+s}$, the dependent variable, is the level of support for government of country i aggregated by taking the average of polling results for the incumbent party over the time window (t+s) ([0; 1], [0; 7], [0; 14], and [0; 30]) where the rating is on date $t = 0$. *Rating* presents sovereign rating of country i on date t using 52-point rating scale. See Table A.2 in the Appendix for Control variables' definitions. FE are captured by a full set of country and year dummies. For pooled sample of all CRAs, a set of CRA dummies is added. Clustered standard errors at country-year are reported in parentheses. ***, **, and * indicate significance at the 1%, 5% and 10% respectively.

Table A.15 - Robustness tests –Eq. (20)- *Rating* levels - Pooled sample of all CRAs

	Panel A. Rating grade				**Panel B. Adding *Op_parties***				**Panel C. Adding *Coalition***			
	(1)	(2)	(1)	(1)	(1)	(1)	(1)	(2)	(1)	(2)	(3)	(4)
	[0;1]	[0;7]	[0;1]	[0;1]	[0;1]	[0;1]	[0;1]	[0;7]	[0;1]	[0;7]	[0;14]	[0;30]
Rating	0.002***	0.002***	0.003***	0.002***	0.002***	0.003***	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)
Observations	40,788	121,767	164,733	215,430	40,788	121,767	164,733	215,430	40,788	121,767	164,733	215,430
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
CRA FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
	Panel D. Adding *Ideology*				**Panel E. Coalition support measurement**				**Panel F. Without campaign period**			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
	[0;1]	[0;7]	[0;14]	[0;30]	[0;1]	[0;7]	[0;14]	[0;30]	[0;1]	[0;7]	[0;14]	[0;30]
Rating	0.002***	0.003***	0.002***	0.002***	0.002*	0.002**	0.002**	0.002**	0.002***	0.002***	0.002***	0.002***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)
Observations	40,788	121,767	164,733	215,430	37,788	111,519	149,664	191,745	38,769	117,414	159,702	209,532
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
CRA FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

The table presents the coefficient estimates of Eq. (20) using different set-ups during September 2000 – July 2017, including (i) Adding a dummy variable (*Rating_grade*) which takes value 1 if the sovereign rating is at investment grade and 0 otherwise (Panel A), (ii) Adding control variable which is the number of opposition parties (*Op_parties*) (Panel B), (iii) Adding a dummy variable indicating whether the government is a coalition (*Coalition*) (Panel C), (iv) Adding a dummy variable for the incumbent's ideology (*Ideology*) (Panel D), (v) estimation with government supports as the sum of supports for all parties in a coalition (Panel E), (vi) estimation without election campaign period (a month prior to election days) (Panel F). $Govsup_{it+s}$, the dependent variable, is the level of support for government of country i aggregated by taking the average of polling results for the incumbent party over the time window (t+s) ([0; 1], [0; 7], [0; 14], and [0; 30]) where the rating is on date $t = 0$. *Rating* presents sovereign rating of country i on date t using 52-point rating scale. See Table A.2 in the Appendix for Control variables' definitions. FE are captured by a full set of CRA, country and year dummies. Clustered standard errors at country-year are reported in parentheses. ***, **, and * indicate significance at the 1%, 5% and 10% respectively.

Table A.16 – FEM- Interacted *Negative rating events*Household financial assets* - Pooled sample of all CRAs

TIME WINDOW	[0;1]	[0;7]	[0;14]	[0;30]
	(1)	(2)	(3)	(4)
Negative Rating Events	-0.344**	-0.206**	-0.205**	-0.131*
	(0.140)	(0.092)	(0.085)	(0.074)
Household financial assets	0.049	0.061	0.058	0.035
	(0.063)	(0.058)	(0.056)	(0.055)
Negative Rating Events	0.064**	0.039**	0.039**	0.024*
X Household financial assets	(0.026)	(0.018)	(0.016)	(0.014)
Inflation	-0.075	0.344	0.506	0.628*
	(0.410)	(0.394)	(0.370)	(0.345)
GDP per capita growth	-0.012	0.105	0.139	0.134
	(0.161)	(0.139)	(0.140)	(0.151)
Unemployment growth	0.022	0.002	0.003	0.011
	(0.029)	(0.030)	(0.032)	(0.035)
Government gross debt	0.030	0.008	0.006	0.008
	(0.030)	(0.030)	(0.031)	(0.031)
External balance	-0.001	-0.001	-0.000	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)
Fiscal balance	0.006***	0.005***	0.004**	0.003
	(0.002)	(0.002)	(0.002)	(0.002)
FOIA	0.029***	0.027***	0.024***	0.021***
	(0.010)	(0.008)	(0.007)	(0.007)
Honeymoon	0.027***	0.034***	0.035***	0.033***
	(0.010)	(0.008)	(0.008)	(0.007)
Independent party	-0.118***	-0.099***	-0.091***	-0.083***
	(0.018)	(0.023)	(0.024)	(0.025)
Constant	-0.186	-0.165	-0.140	-0.028
	(0.355)	(0.330)	(0.324)	(0.319)
Observations	40,768	121,706	164,627	215,284
R-squared	0.760	0.708	0.697	0.688
CRA FE	YES	YES	YES	YES
Country FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Country X Year FE	NO	NO	NO	NO

The table presents the coefficient estimates of Eq. (21), adding the interaction of *Negative Rating Events * Household financial assets*. A sample of European countries rated by all CRAs pooled together during September 2000 – July 2017 is used. $Govsup_{it+s}$, the dependent variable, is the level of support for government of country i aggregated by taking the average of polling results for the incumbent party over the time window (t+s) ([0; 1], [0; 7], [0; 14], and [0; 30]) where the negative rating event is on date $t = 0$. *Negative Rating Events* is a dummy variable that is equal to 1 if country i experienced a rating downgrade and/or negative outlook or watch signal at time t, and 0 otherwise. Control variables are defined in Table A.2 in the Appendix. FE are captured by a full set of CRA, country, and year dummies. Clustered standard errors at country-year are reported in parentheses. ***, **, and * indicate significance at the 1%, 5% and 10% respectively.

Table A.17- PSM: Pre-treatment variables

Variables	**Definition (Source)**
GDP per capita	Quarterly GDP per capita in quarter t-1 (Eurostat)
Inflation	Quarterly harmonized consumer price index (HCPI) where 2015=100, in quarter t-1 (Eurostat).
Honeymoon	Time in office at time t. A dummy variable equals to 1 in the quarter when a new president/ prime minister first sitting in the office, and 0 otherwise (Multiple sources).
Type of government	A dummy variable for different type of government at time t (e.g. left/centre left/ centre/ centre right/ right wing party) (Multiple sources).
Fiscal balance	Quarterly fiscal balance as a percentage of GDP in quarter t-1 (ECB).
Government consumption	Quarterly government consumption as percentage of GDP in quarter t-1 (ECB).
FOIA	Yearly proxy of the government's quality of information disclosure in year t-1. (FOIA is defined based on the data obtained from the report named "Overview of all FOI laws" in Vleugels (2011)).
Corruption	Yearly corruption score in year t-1 (Worldwide Governance Indicator, World Bank).
Government effectiveness	Yearly government effectiveness score in year t-1 (Worldwide Governance Indicator, World Bank).
Rule of law	Yearly rule of law score in year t-1 (Worldwide Governance Indicator, World Bank).

This table provides the list of pre-treatment variables used in PSM analysis.

Table A.18 – PSM – Negative rating events by all CRAs

Pre-treatment variables: GDP per capita growth and Inflation

Panel A:	**Covariate balance test between the treated and the matched sample**						
Variable	Sample	Mean		%bias	%reduct |bias|	t-test	
		Treated	Control			T	p>|t|
GDP per capita growth	Unmatched	-0.005	0.009	-20.90		-3.05	0.002
	Matched	-0.005	-0.007	3.00	85.7	0.31	0.759
Inflation	Unmatched	95.806	92.875	41.00		4.88	0.000
	Matched	95.806	95.436	5.20	87.4	0.68	0.497
Panel B:	**Overall covariance balance test**						
Sample	Pseudo R^2	LR chi^2	$p>chi^2$	Mean Bias			
Unmatched	0.015	36.12	0.000	31			
Matched	0.001	0.57	0.753	4.1			
Panel C:	**ATT**						
	Treated	Controls	Difference	S.E.	T-stat		
Unmatched	0.268	0.287	-0.020	0.007	-2.91***		
ATT	0.268	0.290	-0.022	0.010	-2.25***		
	No. of obs.		Total				
	Off support	On support					
Untreated	0	40,190	40,190				
Treated	0	187	187				
Total	0	40,377	40,377				

The table presents results of three balancing tests performed directly after the PSM and ATT for negative credit events, based on 52-point CCR rating scale, by all CRAs pooled together. Panel A presents the balance test results for the treated and the matched sample on all the covariates. Panel B presents the overall covariates balance tests results. Panel C reports the average treatment effect on the treated country's government support by ATT 30 days after negative rating events. Caliper does not exceed 1% in absolute value. ***, **, and * indicate significance at the 1%, 5% and 10% respectively.

Table A.19 – PSM – Negative rating events by all CRAs

Pre-treatment variables: GDP per capita growth and Corruption

Panel A:	**Covariate balance test between the treated and the matched sample**						
Variable	Sample	Mean		%bias	%reduct |bias|	t-test	
		Treated	Control			T	p>|t|
GDP per capita growth	Unmatched	-0.005	0.009	-20.9		-3.05	0.002
	Matched	-0.005	-0.000	-7.2	65.5	-0.70	0.487
Corruption	Unmatched	0.905	1.346	-61.3		-8.06	0.000
	Matched	0.905	1.012	-14.9	75.8	-1.45	0.147
Panel B:	**Overall covariance balance test**						
Sample	Pseudo R^2	LR chi^2	$p>chi^2$	Mean Bias			
Unmatched	0.030	73.27	0.000	41.1			
Matched	0.005	2.68	0.262	11.0			
Panel C:	**ATT**						
	Treated	Controls	Difference	S.E.	T-stat		
Unmatched	0.268	0.287	-0.020	0.007	-2.91***		
ATT	0.268	0.294	-0.027	0.011	-2.51***		
	No. of obs.		Total				
	Off support	On support					
Untreated	0	40190	40,190				
Treated	0	187	187				
Total	0	40377	40,377				

The table presents results of three balancing tests performed directly after the PSM and ATT for negative credit events, based on 52-point CCR rating scale, by all CRAs pooled together. Panel A presents the balance test results for the treated and the matched sample on all the covariates. Panel B presents the overall covariates balance tests results. Panel C reports the average treatment effect on the treated country's government support by ATT 30 days after negative rating events. Caliper does not exceed 1% in absolute value. ***, **, and * indicate significance at the 1%, 5% and 10% respectively.

Fig. A.1. Polling results versus CRA credit events

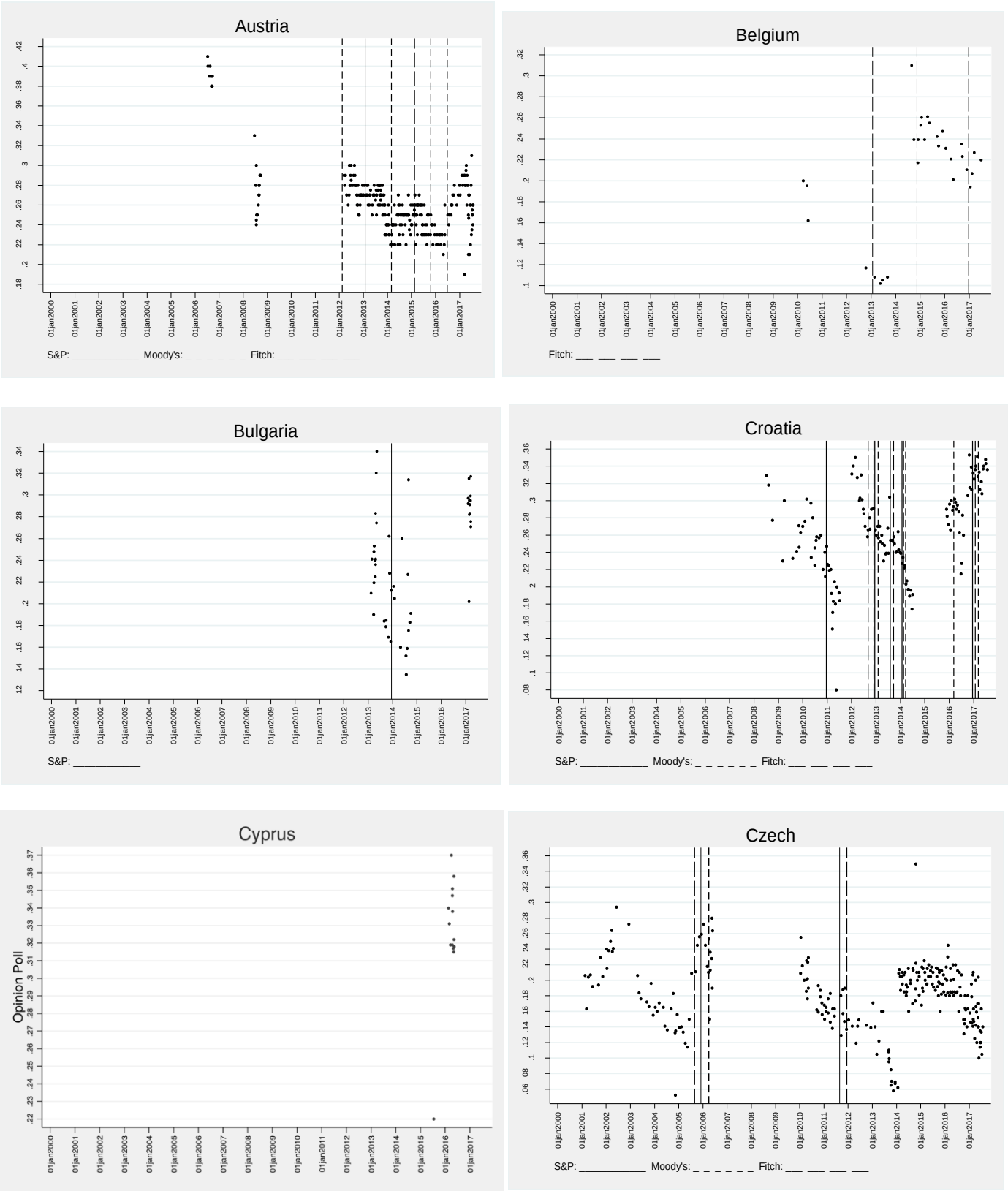
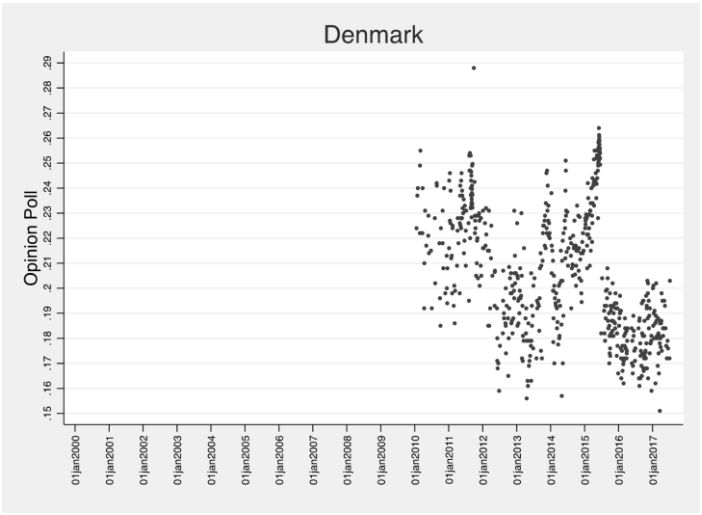
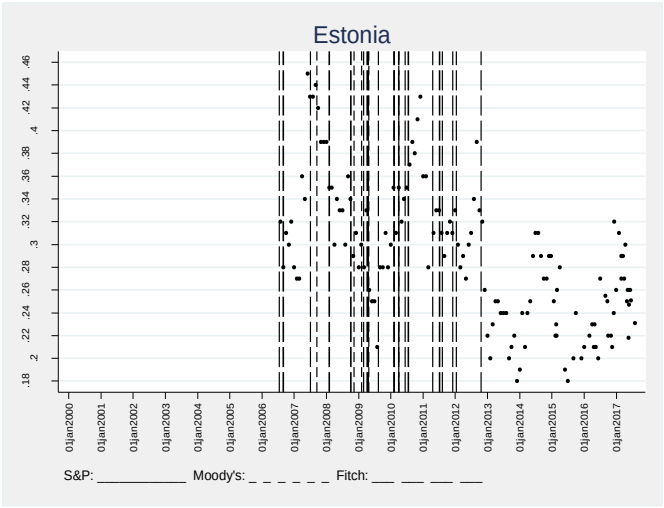
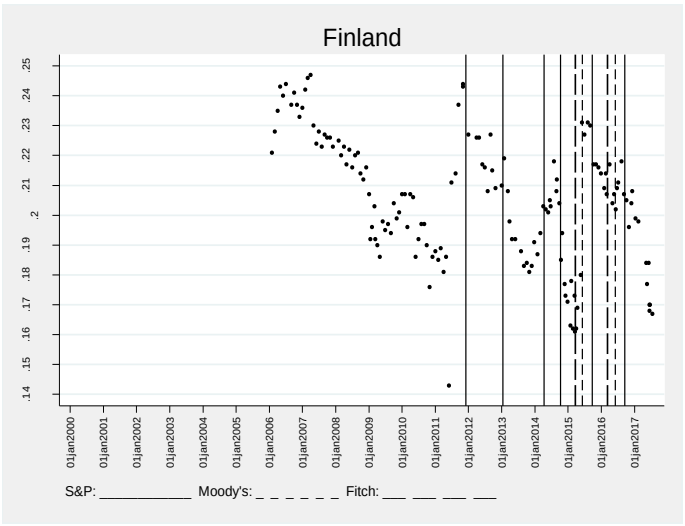
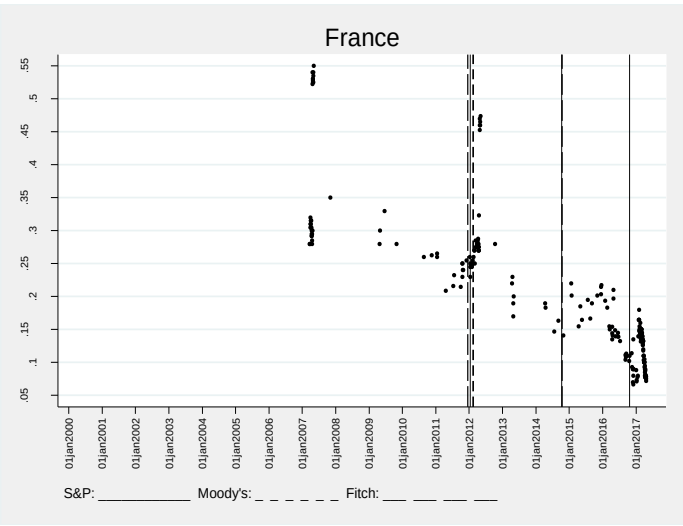


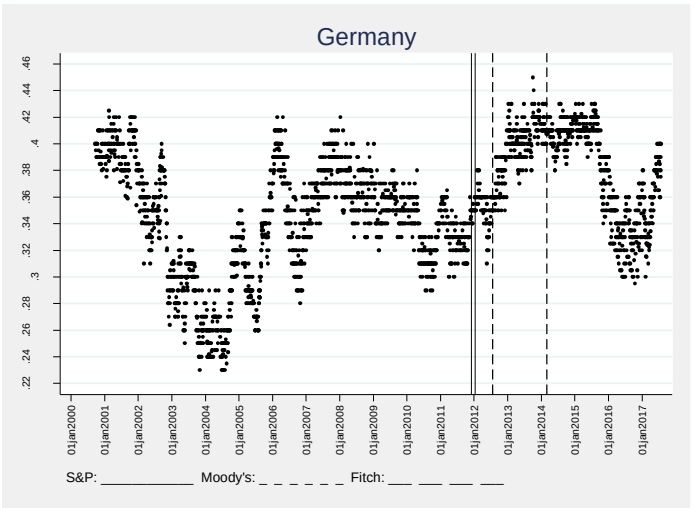
Fig. A.1. Continued











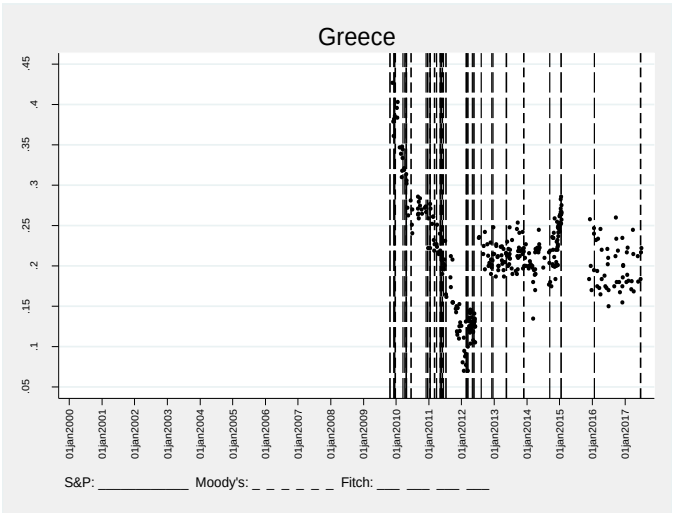
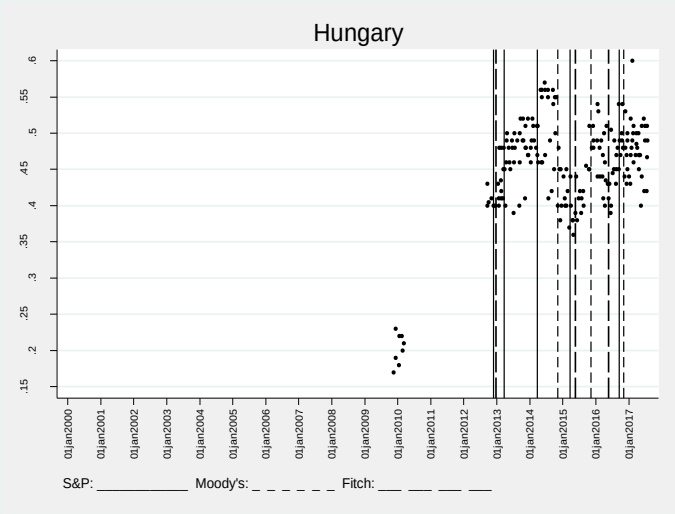
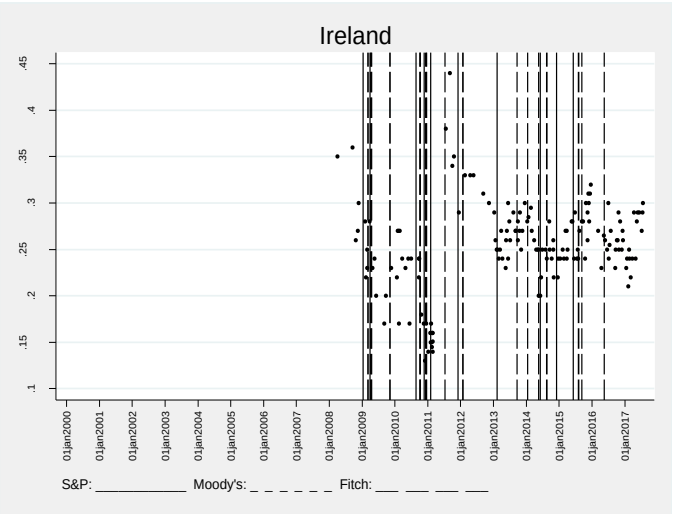
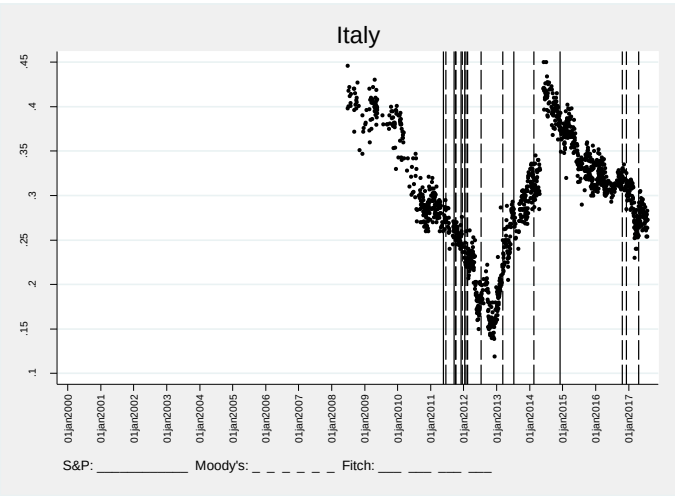
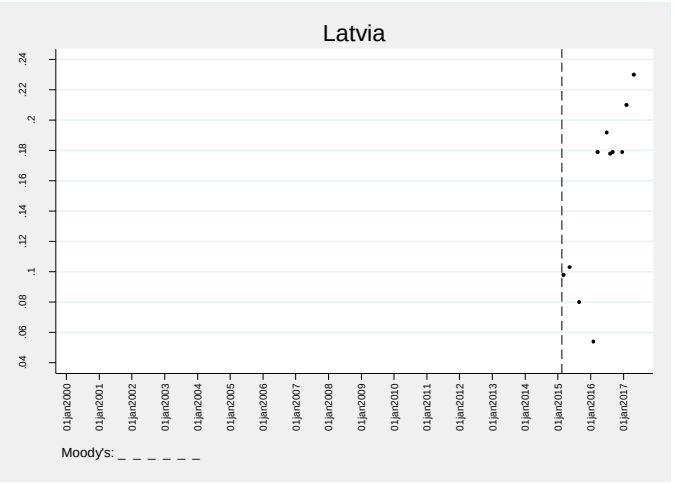


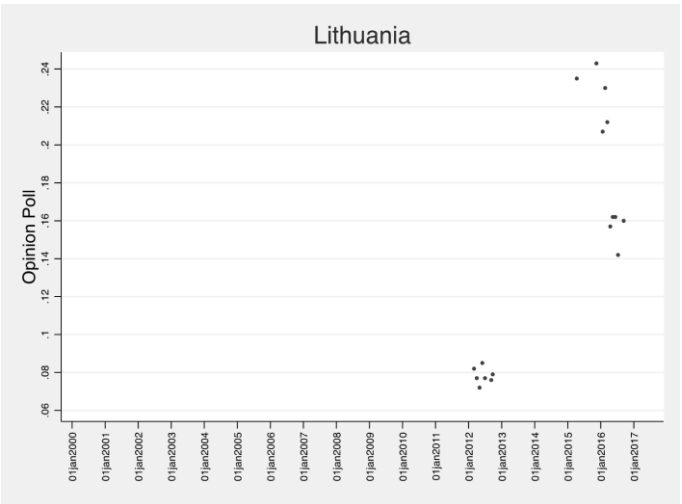
Fig. A.1. Continued











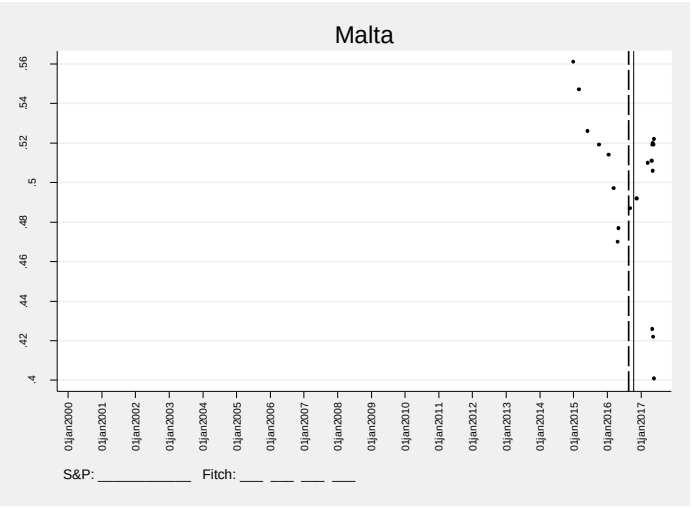


Fig. A.1. Continued

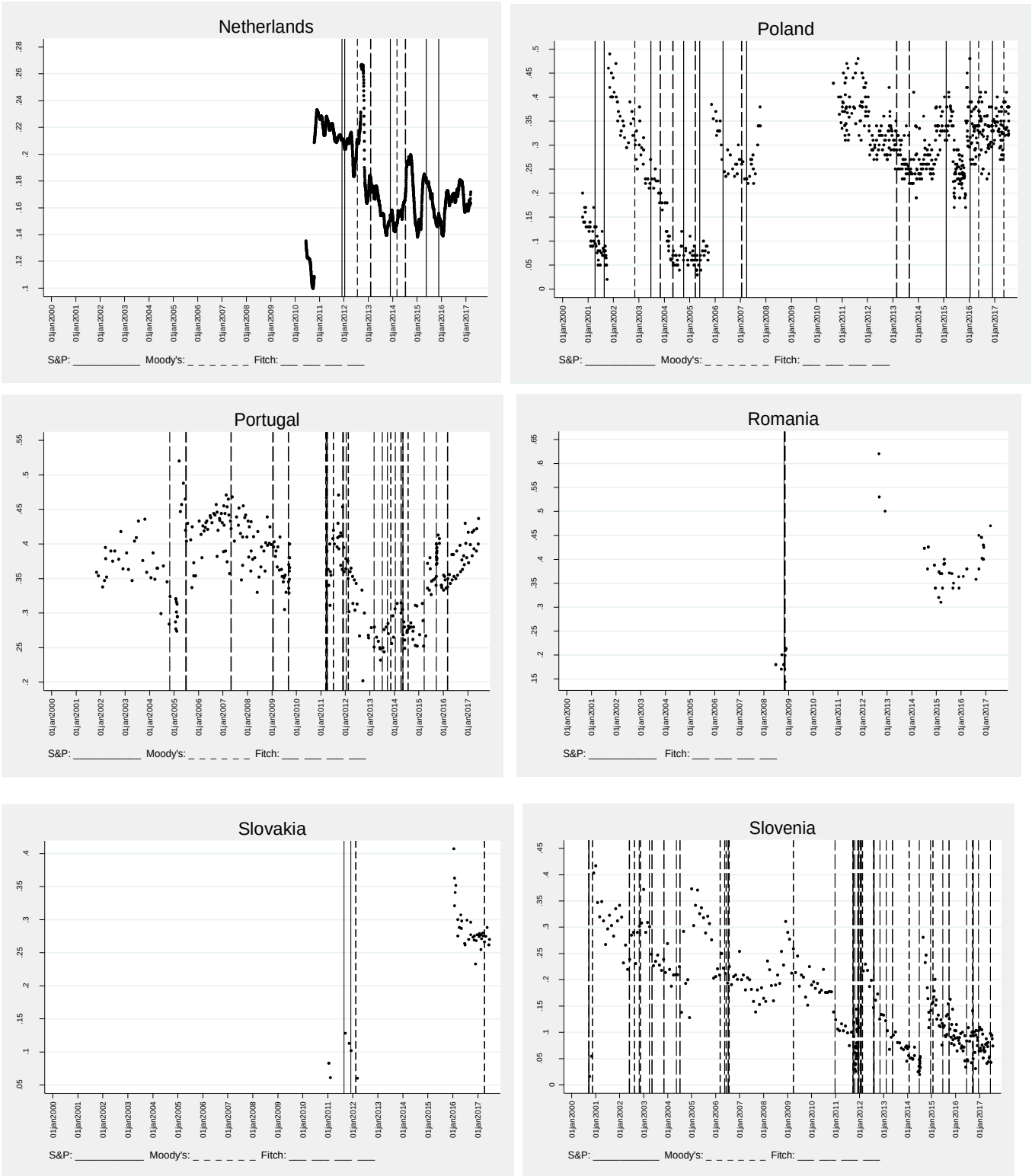
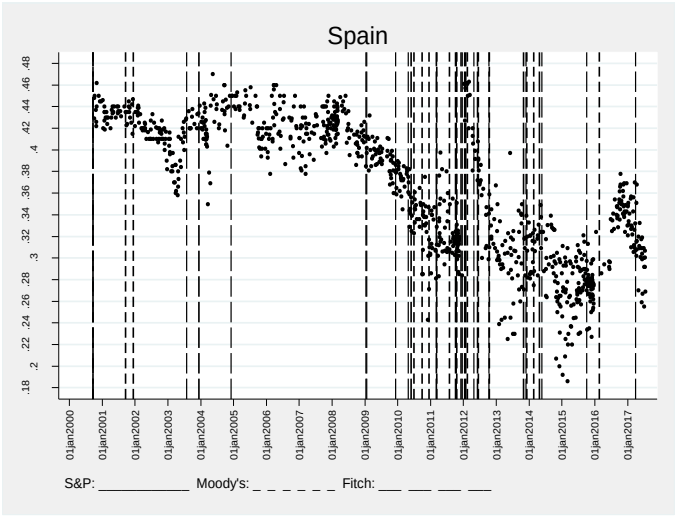
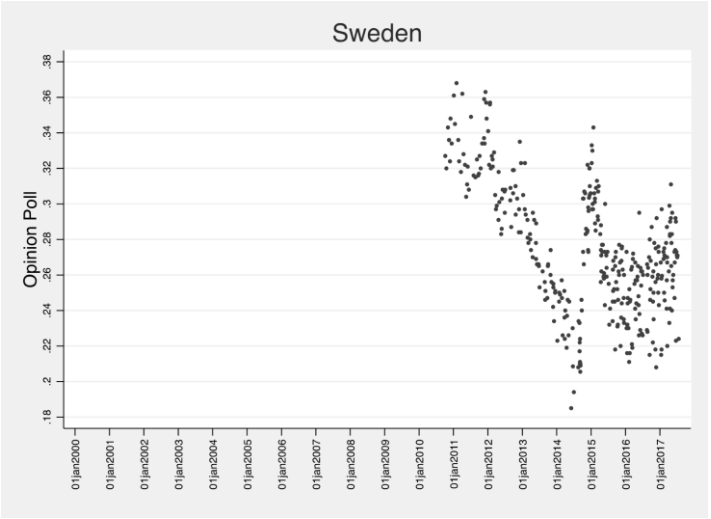
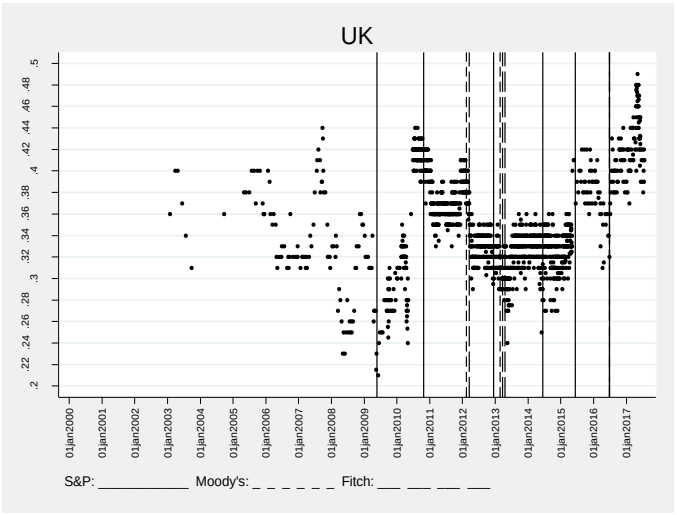


Fig. A.1. Continued



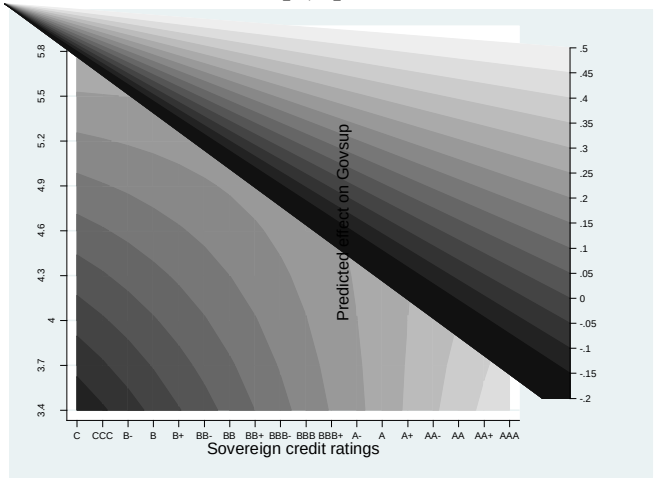




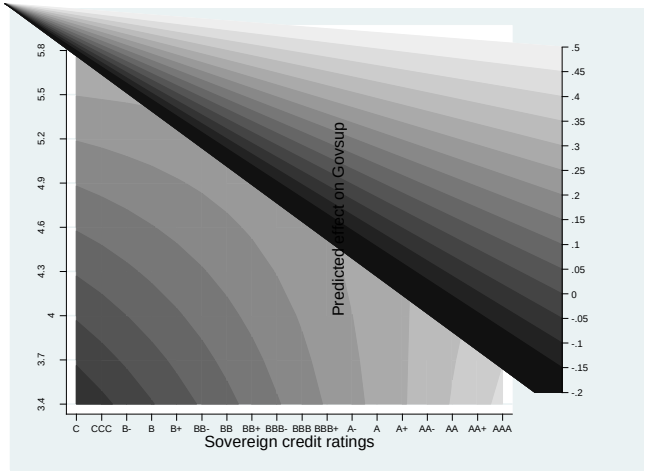
This figure presents the distribution of opinion polls along with the sovereign credit rating events by Moody's, S&P and Fitch for each country from 2000 to 2017.

Fig. A.2 - Marginal predictions of *Govsup* – Pooled sample of all CRAs- [0;1], [0;7] and [0;14] time windows

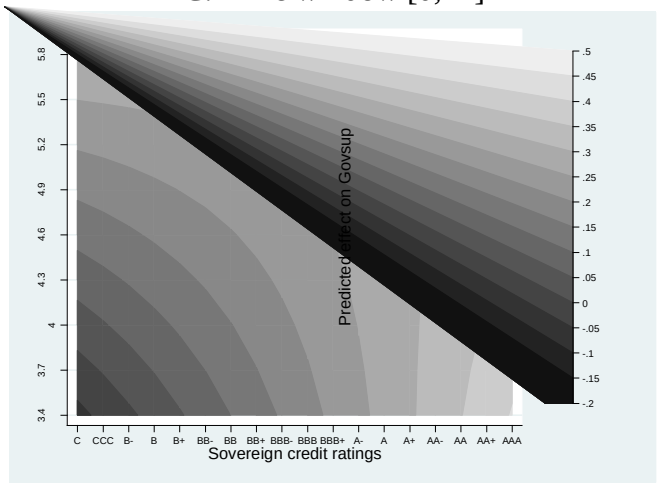
A. Time window [0;1]



B. Time window [0;7]



C. Time window [0;14]



This Figure shows the Marginal predictions (slope) of *Govsup* for [0;1], [0;7] and [0;14] time windows while holding the value of *Rating* and *Household financial assets* constant at different levels (See Table 4). A sample of all CRAs pooled together is used.

Section A1. Quotes from politicians touting credit ratings

- **Greece**

After S&P upgraded Greece's sovereign credit rating by one notch (from 'BB-' to 'BB') and maintained a positive outlook on April 23, 2021, Finance Minister Christos Staikouras commented that "this is the second time an international rating agency has upgraded the country's rating amid the health crisis and the conditions of high uncertainty that has created on global level… Without a doubt this is an exceptionally important and positive development for the Greek economy, attributed to the planning and implementation of correct policies in the economic field and generally to the efficiency of government policy, as well as a series of reform initiatives."[30]

- **Italy**

In response to the positive change in Italy's sovereign credit rating outlook by S&P (from negative to stable outlook) on October 23, 2020, Italian Economy Minister Roberto Gualtieri said that it was "an encouragement to continue on a path that safeguards our economy and at the same time guarantees a strong prospect of relaunching growth."[31]

- **Ireland**

Responded to the upgrade of Ireland's long-term sovereign credit rating by Standard & Poor's to AA- (from A+) with a stable outlook on November 29, 2019, NTMA Chief Executive, Conor O'Kelly said "Today's upgrade continues the upward trend in Ireland's sovereign ratings that has been evident for some time. In making its decision, S&P referenced Ireland's strong fiscal outcomes and vigorous economic growth. In addition, S&P noted the very long dated average maturity of Ireland's debt (10 years) post the smoothening and lengthening strategy of recent years. Our new AA- rating will increase the pool of potential buyers of Irish Government bonds, which will be positive for demand and further enhancing our ability to diversify our investor base." Minister for Finance and Public Expenditure and Reform, Paschal Donohoe claimed that "This upgrade reflects the next stage in the journey we, in Ireland, have been on for the last decade or so. Last year we ran a budgetary surplus for the first time since 2007 and a further improvement is in the pipeline for this year. The policies being implemented by the Government are paying dividends and our objective is to create a virtuous circle in which prudent management of the public finances reduces debt service costs."[32]

- **Portugal**

S&P upgraded the Portuguese credit rating from stable to positive outlook on September 13, 2019, Finance Minister Mario Centeno said "The government intends to reach a balanced budget next year and to maintain the downward trend in the weight of public debt in GDP, in order to strengthen the resilience of public accounts and the Portuguese economy."[33]

- **UK**

Moody's downgraded UK's rating to Aa2 from Aa1 on September 22, 2017 due to the government's fiscal consolidation plans increasingly in question and the debt burden expected to continue to rise. In response, the treasury chief secretary, Peter Dowd, said the downgrading was a "hammer blow" to the government's economic credibility. "For the second time under the Tories the UK's credit rating has been downgraded, and on this occasion citing their lack of faith in the chancellor to meet his own spending targets as a result of unfunded spending commitments such as the deal with the DUP," he said. The Liberal Democrat leader, Sir Vince Cable, said "The warning that Moody's have issued by downgrading the credit rating is that the economy will be weaker once the transitional deal comes to an end. All May has done is simply delay the economic pain caused by an extreme Brexit."[34]

[30] https://greekcitytimes.com/2021/04/24/greece-closer-to-investment-grade-with-ratings-upgrade-says-sp/
[31] https://www.reuters.com/article/italy-ratings-sp-idINL4N2HE4CA
[32] https://www.ntma.ie/news/ntma-welcomes-s-p-upgrade-of-irelands-sovereign-credit-rating-1
[33] https://bizinportugal.com/sp-upgrades-portuguese-public-debt-rating-to-positive/
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