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Populism, the Backlash against Ruling Politicians and the Possible Malfunctioning of Representative Democracy

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Abstract

The aim of this paper is to investigate the links between lack of trust in ruling politicians and the functioning of a representative democracy. Within a standard principal-agent model of democracy, we show how lack of trust by citizens as reflected by passive beliefs updating may lead to the malfunctioning of representative democracy. We highlight how *de facto* accountability crucially depends on out-of-equilibrium beliefs, and that this is indeed descriptive of a substantive feature of public opinion that affects the functioning of democracy. Specifically, we show that effective accountability needs more than simple retrospective voting, as it requires voters to believe in the existence of good politicians that always choose according to voters' interests, so that a deviation from bad policies can happen only because the leader is congruent. In this case, the unique equilibrium is an efficient one that maximizes voters' welfare. However, if, on the other hand, the citizens share an overall lack of trust in ruling elites, then there is another inefficient equilibrium, where even the congruent politician behaves badly because of the adverse but rational voters' behavior. This inefficient equilibrium does not depend on fake news or on distorted beliefs or, again, on voters' heterogenous preferences, since the voters' perfectly observe the quality of the policy implemented by the government, are fully rational and share the same interests. This result might contribute to explain the increasing negative perceptions on the working of democracy as due to a self-fulfilling equilibrium.

Does democracy work well or poorly?
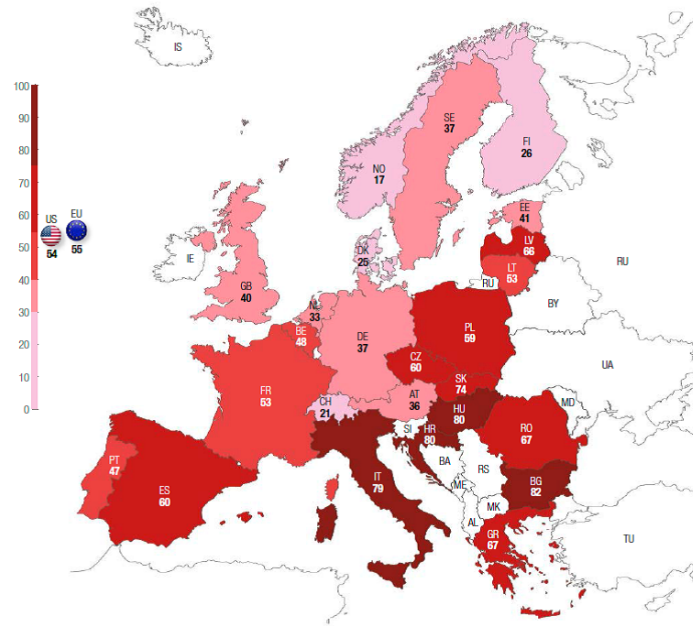(Responses: 'poorly' + 'very poorly')

Figure 1: Figure from Reynié (2017).

1   Introduction

European citizens display a disturbing high level of negative views on the functioning of democracy in their countries (see, e.g., Foa and Mounk 2017), as emphasized, e.g., by Figure 1.

Together with this attitude of the public opinion, populist voting is on the rise all around the world, in particular in European countries where the percentages of negative views on the functioning of democracies is maximum, as Figure 2 shows[1]

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[1] Figure from www.statista.com, source   Euronews, Survey period 2018, Euronews used the classification of populist parties developed by the University of Melbourne, that ranked parties on the extent to which they opposed the political class, financial institutions, immigrants or ethnic minorities; depended on the personality of a leader; and violated liberal democratic norms.
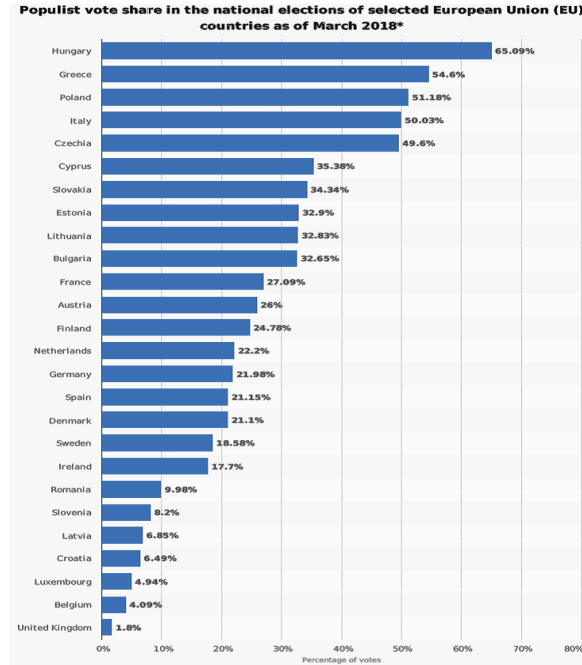
Figure 2: Figure from www.statista.com.

Finally, the literature on populism has detected anti-elite attitudes as one of its main characteristic, empirically declined as lack of trust in electoral institutions (see, e.g., Mudde and Katwasser 2017). Actually, empirical works have found a significant negative correlation between the probability of voting a populist party, as defined by Inglehart and Norris 2016, and trust in European or in national parliament, as shown in Figure 3.[2]

It is then natural to investigate whether these stylized facts are somehow related. This paper proposes a theoretical connection between these stylized facts, in that we prove that the lack of trust in elected leader may lead to an actual malfunctioning of representative democracy, and this in turn may ground a negative opinion on the working of democracy. More generally, this work highlights a possible link between skepticism in ruling politicians and the functioning of representative democracy, showing that the role of elections for keeping elected leaders accountable crucially relies on voters' view on unexpected policy choices, formally on out-of-equilibrium beliefs. Since in a representative democracy incumbent ruling politicians are re-elected or dismissed according to the citizens' evaluations of their work, this mechanism works according to the way the citizens evaluate the politicians' performances, thus it is likely

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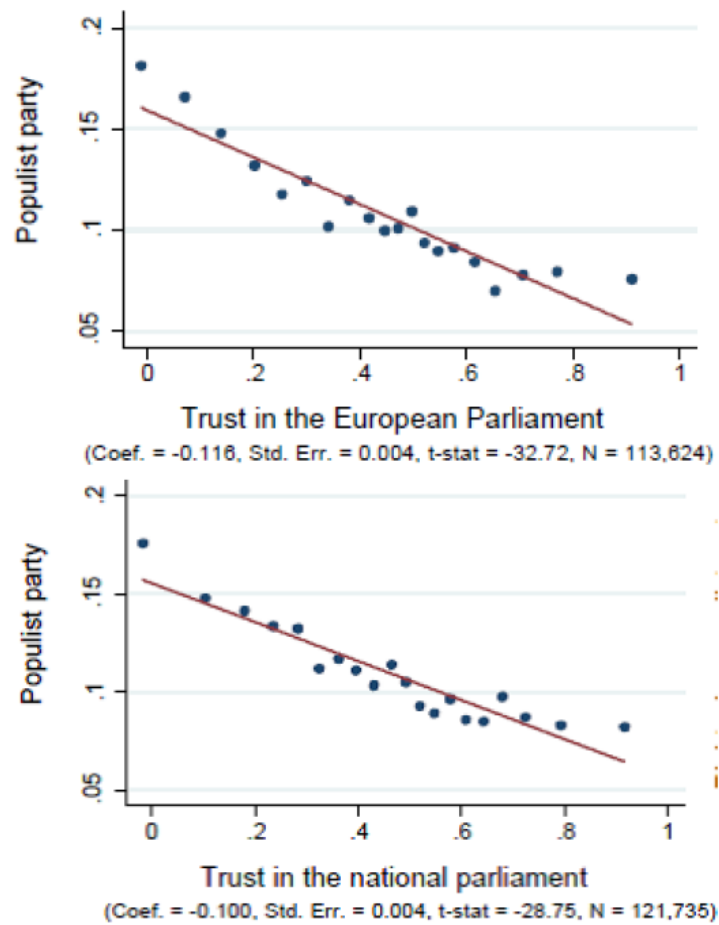[2]For a general empirical analysis see Algan *et al.* 2017, 309-82.

Figure 3: Figure from Dustmann et al. (2017).

to lead to different policy choices depending on how the citizens evaluate the government's performances. Therefore, it is natural to consider accountability crucial to evaluate the connections between skepticism in elected leaders and the functioning of representative democracies.

In this paper we show, within a standard principal-agent model of representative democracy,[3] that lack of trust in ruling politicians reflected in passive beliefs updating may lead to the malfunctioning of representative democracies. This result might contribute to explain the increasing negative perceptions on the working of democracy as due to a self-fulfilling equilibrium where lack of trust in ruling politicians lead to lack of trust in the representative democracy. This means that accountability as effective incentivation mechanism needs more than simple retrospective voting. It requires voters to believe that there are good politicians that will ever choose according to the voters' interests, so that a deviation from bad policies can happen only because the leader is congruent. If this is the case, the unique equilibrium is an efficient one that maximizes voters' welfare. If, on the other hand, citizens share an overall lack of trust in ruling political elites, then there exists another equilibrium, which is inefficient, where even the congruent politician behaves badly because of adverse but rational voters' behavior. This inefficient equilibrium does not depend on observability problems or on fake news, since the voters' perfectly observe the quality of the policy implemented by the government. It does not even depend on beliefs' distortion, since in a Perfect Bayesian Equilibrium beliefs are fully rational, neither it depends on heterogeneous voters' preferences, since citizens share the same objective. The ultimate reason for the emergence of this inefficient equilibrium is the voters' view that deviations from inefficient policies are not informative since politicians are all untrustworthy, even if they are congruent. This result provides a new explanation of elected politicians misgovernance. It also suggests the importance of distinguishing *de jure* accountability, i.e., the formal electoral rules that determines the appointment and the removal of rulers, from *de facto* accountability, i.e., accountability according to the players' equilibrium behavior. Using this terminology, this work shows that *de jure* accountability doesn't guarantee *de facto* accountability, unless we assume a significantly strong restrictions on voters' beliefs on the ruling politician's type.

The paper is organized as follows. Section 2 presents a simple stylized model of representative democracy with incomplete information, in which voters have a common interest in achieving some outcome; Section 3 discusses under which conditions we expect the political system to deliver it; Section 4 concludes. The Appendix contains the proofs and the analytical details.

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[3]See e.g. Ashworth 2005, Berganza 2000, Besley and Coate 1998 and 2003, Besley 2006, Carrillo and Mariotti 2001, Ferejohn 1986, Maskin and Tirole 2004, Persson and Tabellini 1997.

2 The Model

In order to investigate the effects of public opinion, and (lack of) trust in the elected government, we start from a simple and well established model of political agency (see Besley, 2006, ch. 3). Below, we summarize its main features. The model is a two-period political-agency model with incomplete information played by two protagonists: the elected leader and the voters, in which the leader is elected to make a single political decision. We summarize the key elements of the political game below.

Agents and state of the world. There are two players, the leader (L) (female) and the voters (V) (plural). In each period $t = 1, 2$ the leader is elected by the voters to make a single political decision, denoted by $e_t \in \{0, 1\}$. Voters' and leader's payoffs depend on the true state of nature $\theta_t \in \{0, 1\}$ which is only observed by the elected leader, where both states are equally likely.

Payoffs. Voters receive a public payoff of Δ if $e_t = \theta_t$ and zero otherwise, so that they want the policy to match the state of the world. Therefore, their per-period payoff is

$$U^V(e_t|\theta_t) = \begin{cases} \Delta & \text{if } e_t = \theta_t \\ 0 & \text{if } e_t \neq \theta_t \end{cases}$$

The leader, instead, can be one of two types, congruent or non-congruent, $T \in \{C, N\}$, with probability π of being congruent. Each type of leader receives a positive payoff E from holding office. The leader receives also a payoff from the implemented policy, which depends both on her type and on the state of the world. The congruent leader shares voters' objectives exactly, and therefore receives a benefit Δ when the policy matches the state of the world. Her per-period payoff is therefore:

$$U^C(e_t|\theta_t) = \begin{cases} \Delta + E & \text{if } e_t = \theta_t \\ E & \text{if } e_t \neq \theta_t. \end{cases}$$

The non-congruent leader, instead, receives a random private benefit $r_t \in [\Delta, R]$ from picking $e_t \neq \theta_t$, where $r_t \sim G(r_t)$, continuous, with $E(r_t) = \bar{r}$, and $R > \bar{r} + E$. Her per-period payoff is

$$U^N(e_t|\theta_t) = \begin{cases} \Delta + E & \text{if } e_t = \theta_t \\ r_t + E & \text{if } e_t \neq \theta_t \end{cases}$$

Finally, players' intertemporal payoffs are defined as follows

$$W^i = \mathbb{E}\left[U_1^i\right] + \mathbb{E}\left[U_2^i\right], \quad i \in \{C, N, V\}$$

i.e., without loss of generality, we assume the discount factor is one.

Note that the strategy of a leader of type T is denoted $e_t^T(\theta_t, r_t)$, as it may depend both on the state and on the realization of the private benefit.
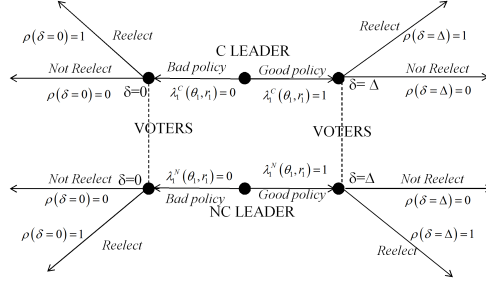
Timing. Timing is as follows.

Figure 4: The first stage game structure.

1. Nature determines (θ_1, r_1) and the type of the leader $T \in \{C, N\}$. These three random variables are stochastically independent and their realization is private information of the dictator.

2. Type T leader chooses a policy, and the payoffs for each player in period one are realized. The probability of choosing a period 1 efficient policy $e_1 = \theta_1$ is denoted by $\lambda_1^T : r_1 \longmapsto [0, 1]$.

3. The voters observe the realization of their payoff $\delta \in \{0, \Delta\}$, on the basis of this information decides whether to re-elect the incumbent leader. The probability of re-electing the leader is denoted by $\rho : \delta \longmapsto [0, 1]$

4. If the incumbent leader is ousted from power, a new leader will enter office and she will be congruent with a probability of π. Otherwise the incumbent leader is still in power.

5. The game enters the second period and nature determines (θ_2, r_2). Type T leader chooses a policy, and the payoffs for each player in period two are realized. The probability of choosing a period 2 efficient policy $e_2 = \theta_2$ is denoted by $\lambda_2^T : r_2 \longmapsto [0, 1]$.

The first-stage game structure is reported in Figure 4.

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3 Equilibrium analysis and the effect of out-of-equilibrium beliefs

We consider the Perfect Bayesian Equilibria of the political game.[4]

First, note that in the first period the leader's policy choice depends on her intertemporal payoff, which in turn depends on the probability of being re-elected, while in the second (final) period, both types of leader choose the policy according to their short term preferences because there is no more future. This implies that in period two a congruent incumbent chooses $e_2 = \theta_2$, while a non-congruent politician chooses $e_2 = 1 - \theta_2$. The second period is essentially a device which provides incentives for re-election.

3.1 Best Responses and Beliefs of the Voters

Working backward, we derive the conditions under which voters choose to re-elect the incumbent leader, that is, $\rho(\delta) = 1$ or to elect a challenger, that is, $\rho(\delta) = 0$.[5] This choice depends on their observation of $\delta \in \{0, \Delta\}$ which might provide some information about the type of the leader and thus on her future policy choices. Voters choose to re-elect the leader if and only if the expected continuation payoff from retaining the incumbent is greater than the expected continuation payoff from dismissing her.

Let $V^V(\rho(\delta) = 0)$ be the expected continuation payoff for the voters if they dismiss the incumbent. For any $\delta \in \{0, \Delta\}$, $V^V(\rho(\delta) = 0) = \pi\Delta$. As the type of the newly elected leader is unknown, and she is randomly selected from a pool with a fraction π of congruent politicians, she will produce Δ with probability π and 0 otherwise. Let $V^V(\rho(\delta) = 1)$ be the expected continuation payoff for the voters if they re-elect the incumbent leader. Clearly in this case the payoff does depend on the previous observation δ, since the leader has not been changed and δ might convey some information about the type of the leader. Therefore for any $\delta \in \{0, \Delta\}$, $V^V(\rho(\delta) = 1) = \mu(C|\delta)\Delta$ where $\mu(C|\delta)$ is the voter's posterior belief on the incumbent leader being congruent given that in the first period from the general interest policy he got a payoff $\delta \in \{0, \Delta\}$. Sequential rationality implies that after $\delta \in \{0, \Delta\}$ the voters will re-elect the incumbent leader if:

$$V^V(\rho(\delta) = 1) \geq V^V(\rho(\delta) = 0) \Leftrightarrow \mu(C|\delta)\Delta \geq \pi\Delta \Leftrightarrow \mu(C|\delta) \geq \pi.$$

Hence

$$\rho^{SR}(\delta) = \begin{cases} 0 & \text{if and only if } \mu(C|\delta) \leq \pi \\ 1 & \text{if and only if } \mu(C|\delta) \geq \pi \end{cases}$$

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[4] Detailed calculations and proofs are reported in the Appendix.

[5] The analysis of voters' beliefs and best responses is essentially as in Besley (2006). However, we report it in detail as it is a building block of our discussion of the effects of out-of-equilibrium beliefs.

As usual, $\mu(C|\delta)$ is derived using Bayes rule:

$$\mu(C|\delta) = \begin{cases} \frac{\pi \times \lambda_1^C(\theta_1, r_1)}{\pi \times \lambda_1^C(\theta_1, r_1) + (1-\pi) \times \lambda_1^N(\theta_1, r_1)} & \delta = \Delta \\ \frac{\pi \times \left[1 - \lambda_1^C(\theta_1, r_1)\right]}{\pi \times \left[1 - \lambda_1^C(\theta_1, r_1)\right] + (1-\pi) \times \left[1 - \lambda_1^N(\theta_1, r_1)\right]} & \delta = 0. \end{cases}$$

Voters' beliefs depend on the incumbent's equilibrium strategy profiles. However, as usual, there might be beliefs' indeterminacy out-of-the equilibrium path. Actually, when $\left(\lambda_1^C(\theta_1, r_1), \lambda_1^N(\theta_1, r_1)\right) = (0,0)$, then

$$\mu(C|\delta) = \begin{cases} \frac{0}{0} \in [0,1] & \text{if } \delta = \Delta \\ \pi & \text{if } \delta = 0; \end{cases}$$

similarly when $\left(\lambda_1^C(\theta_1, r_1), \lambda_1^N(\theta_1, r_1)\right) = (1,1)$, then

$$\mu(C|\delta) = \begin{cases} \pi & \text{if } \delta = \Delta \\ \frac{0}{0} \in [0,1] & \text{if } \delta = 0. \end{cases}$$

This indeterminacy can be solved in many different ways. The contribution of this paper is to highlight that deciding how to solving this indeterminacy, i.e., how to determine the out-of-equilibrium beliefs, is not a merely technical decision. First of all, it is a choice that affects the possible equilibrium outcomes. Moreover, the restrictions on out-of-equilibrium beliefs have different political economy interpretations. In the paper, we consider two alternative choices to determine these beliefs: either using a forward induction argument or using passive updating. In the next sections we discuss the possible intuitive justifications behind these two different ways.

3.2   Out-of-equilibrium Beliefs and Forward Induction

Forward induction (FI) is formalized as the assumption that any deviation towards efficiency must be due to the C type, while any deviation towards inefficiency must be due to the N type. Consequently when $\left(\lambda_1^C(\theta_1, r_1), \lambda_1^N(\theta_1, r_1)\right) = (0,0)$, we get

$$\mu(C|\delta) = \begin{cases} \frac{0}{0} \in [0,1] & \text{if } \delta = \Delta \\ \pi & \text{if } \delta = 0 \end{cases} \underset{\text{because of FI}}{=} \begin{cases} 1 & \text{if } \delta = \Delta \\ \pi & \text{if } \delta = 0; \end{cases}$$

hence

$$\rho^{SR}(\delta) = \begin{cases} 1 & \text{if } \delta = \Delta \\ \in [0,1] & \text{if } \delta = 0. \end{cases}$$

On the other hand, when $\left(\lambda_1^C(\theta_1, r_1), \lambda_1^N(\theta_1, r_1)\right) = (1,1)$, we get

$$\mu(C|\delta) = \begin{cases} \pi & \text{if } \delta = \Delta \\ \frac{0}{0} \in [0,1] & \text{if } \delta = 0 \end{cases} \underset{\text{because of FI}}{=} \begin{cases} \pi & \text{if } \delta = \Delta \\ 0 & \text{if } \delta = 0 \end{cases}$$

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hence

$$\rho(\delta) = \left\{ \begin{array}{ll} \in [0,1] & \text{if } \delta = \Delta \\ 0 & \text{if } \delta = 0. \end{array} \right.$$

This is an extreme form of forward induction, not implied for example by the intuitive criterion.[6] Applied to our model when $\left(\lambda_1^C(\theta_1, r_1), \lambda_1^N(\theta_1, r_1) \right) = (0,0)$, the intuitive criterion means that if the voters observe a deviation towards efficiency, then they should believe that the sender is of type C if both of the following conditions are true:

1. for any beliefs the deviation would result in type N being worse off if he had stuck to the equilibrium;

2. type C is better off by playing the deviation than by sticking to the equilibrium provided that by deviating type C could convince the voters that she is actually type C.

While condition 2 is satisfied for beliefs such that the voters would re-elect the incumbent politician, condition 1 is not satisfied since type N could increase his payoff being re-elected.

The vision behind this extreme form of forward induction is that voters believe that there are good politicians that will ever choose according to the voters' interests notwithstanding their probability of re-election, hence that a deviation from bad policies can happen only because the leader is congruent as well as deviation towards bad policy can happen only because the leader is non congruent. This means that deviation from the equilibrium path are extremely informative, since they lead to a very clear conclusion on the type of the ruling politician. In particular, this means that politicians can't do mistakes, so that the behavior of ruling politicians is extremely informative.

Proposition 1 *When the out-of-equilibrium beliefs' updating satisfies the **Forward Induction** criterion, then the accountability game for representative democratic regimes has a unique **efficient equilibrium** where elections work as an effective incentive devise: the congruent leader always chooses the good policy, while the non congruent leader chooses the good policy if her rent from bad policy is not high enough, and the voters re-elect the leader after a good policy and dismiss her after a bad policy outcome.[7]*

3.3 Out-of-equilibrium Beliefs and Passive Updating

Passive updating (PU) is formalized as the assumption that after any deviation from equilibrium, posterior are equal to prior. Thus, if $\left(\lambda_1^C(\theta_1, r_1), \lambda_1^N(\theta_1, r_1) \right) = (0,0)$, then

$$\mu(C|\delta) = \left\{ \begin{array}{ll} \frac{0}{0} \in [0,1] & \text{if } \delta = \Delta \\ \pi & \text{if } \delta = 0 \end{array} \right. \underset{\text{because of PU}}{=} \left\{ \begin{array}{ll} \pi & \text{if } \delta = \Delta \\ \pi & \text{if } \delta = 0 \end{array} \right.$$

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[6] Cho-Kreps 1997.

[7] The formal result is in the appendix as proposition 3.

because of passive updating, so that we get

$$\rho(\delta) = \begin{cases} \in [0,1] & \text{if } \delta = \Delta \\ \in [0,1] & \text{if } \delta = 0. \end{cases}$$

Similarly, if $\left(\lambda_1^C(\theta_1, r_1), \lambda_1^N(\theta_1, r_1) \right) = (1,1)$, then

$$\mu(C|\delta) = \begin{cases} \pi & \text{if } \delta = \Delta \\ \frac{0}{0} \in [0,1] & \text{if } \delta = 0 \end{cases} \underbrace{=}_{\text{because of PU}} \begin{cases} \pi & \text{if } \delta = \Delta \\ \pi & \text{if } \delta = 0 \end{cases}$$

again because of passive updating, so that

$$\rho(\delta) = \begin{cases} \in [0,1] & \text{if } \delta = \Delta \\ \in [0,1] & \text{if } \delta = 0. \end{cases}$$

This way of updating beliefs out-of-equilibrium means that voters believe that all deviations from the equilibrium choices are equally likely, hence they are not informative on the type of deviator.

The vision behind this rule is that voters view politicians' behavior on and out of equilibrium as non informative, in particular citizens do not believe that good policies are a signal of facing a congruent type since ruling politicians are "all the same". We believe that this case is important and interesting from a political economy point of view since there are historical periods, such as this, where public opinion shares an overall skepticism in ruling political elites, as testified e.g. by the data in Algan *et al.* 2017. An interesting example that illustrates this view is provided by Italy's 2018 national elections where Marco Minniti, then Italy's interior minister and widely recognized as one of the most effective member of the incumbent government, was soundly defeated in his parliamentary race by a candidate without a party. The winner was a man who had been kicked out of the anti-establishment populist Five-Star Movement because he admitted he'd broken a party rule and not tithed part of his salary back to the movement. This simple case exemplifies a situation where the voters were not interested in evaluating the behavior of the ruling politician, they just wish to change the incumbent politicians whatever his behavior, possibly because they do not believe that good policies are a signal of being congruent.

Proposition 2 *When the out-of-equilibrium beliefs' updating satisfies **passive updating,** then the accountability game for representative democratic regimes has two equilibria:*

1. *an **efficient equilibrium** where accountability works as an effective in-centive devise: the congruent leader always chooses the good policy, while the non congruent leader chooses the good policy if her rent from bad policy is not high enough, and the voters re-elect the leader after a good policy and dismiss her after a bad policy outcome;*

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2. a ***populist equilibrium*** *where voters do not believe that good policies are a signal of congruence, thus accountability doesn't work: both types of the leader would choose a bad policy because a good policy choice has an adverse effect on the probability of re-election, and the voters re-elect randomly both after a good policy and after a bad policy outcome.*[8]

3.4   Characteristics of the equilibria

The following corollaries shows that the properties of these two kind of equilibria are completely different.

Corollary 1 *In the **efficient equilibrium***

1. *the probability of efficient policies is increasing in the magnitude of the public good generated by good policies, in next period expected rent and in leader's payoff from holding office;*

2. *voters' beliefs of facing a congruent leader are decreasing in the magnitude of the public good generated by good policies, in next period expected rent and in leader's payoff from holding office;*

3. *the ex-ante probability of re-electing the incumbent leader is increasing in the magnitude of the public good generated by good policies, in next period expected rent, in leader's payoff from holding office and in the ex ante beliefs of facing a congruent leader;*

4. *the ex ante intertemporal voters' welfare is*

$$[\pi + (1 - \pi) G (\Delta + E (r) + E)] \Delta + [1 - G (\Delta + E (r) + E)] (1 - \pi) \pi \Delta + \pi \Delta.$$

Corollary 2 *In the **populist equilibrium***

1. *the magnitude of the public good generated by good policies, next period expected rent and the leader's payoff from holding office have no effect on the probability of efficient policies;*

2. *the magnitude of the public good generated by good policies, next period expected rent and the leader's payoff from holding office have no effect on voters' beliefs of facing a congruent leader;*

3. *the ex-ante probability of re-electing the incumbent leader has no clear cut relationship with the exogenous variables;*

4. *the ex ante intertemporal voters' welfare is*

$$\pi \Delta$$

which is strictly smaller than the ex ante intertemporal voters' welfare in the efficient equilibrium.

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[8]Actually the probabilities of re-election should satisfy the following restriction $[\rho^*(0) - \rho^*(\Delta)] \geq \frac{\Delta}{\Delta + E}$. The formal statement is in the appendix as proposition 4.

3.5 Comments

The basic accountability problem in a representative democracy is studied analyzing the possible Perfect Bayesian Equilibria of a principal-agent models between citizens and government, where the principals are the citizens and the agents are the politicians. The heart of these models is the responsibility of rulers as agents towards the citizens as principals. Whether and how accountability is achieved depends on the equilibria of the game. To this end, we distinguish between *de jure* and *de facto* accountability. The formal electoral rules that determine the appointment and the removal of rulers constitute *de jure* accountability rules. But they do not make any direct link between a ruler's performance and his/her reward or punishment. This depends on the players' equilibrium behavior and this determines the *de facto* accountability. The answer provided by our work is that election as a *de jure* accountability mechanism is not enough to provide *de facto* accountability, election to work effectively as an accoutanbilit mechanism also requires a significant restriction on voters' beliefs. If voters believe that there are good politicians that will ever choose according to the voters' interests, hence that a deviation from bad to good policies can happen only because the leader is congruent, then the leader's counterfactual behavior is informative and there is only the efficient equilibrium. If instead voters' believe that all deviations from equilibrium choices are equally likely, i.e. that the counterfactual leader's behavior is not informative, then there are multiple equilibria. In particular, the voters' view that politicians' congruent behavior is non informative generates a new inefficient equilibrium where the ex ante intertemporal voters' welfare is smaller w.r.t. to the welfare in the standard efficient equilibrium. An interesting point is that these voters' beliefs are rational because actually in equilibrium all politicians behave in the same inefficient way, as if they were all incompetent or dishonest. This equilibrium behavior implies that voters' choice is random, hence inducing random changes in elected governments. Hence, even if the voters' share the same interests and beliefs, because of their random choices there is an actual distribution of votes, part supporting the incumbent and part the challenging leader, a further characteristic that differentiates this populist equilibrium from the efficient one, where all the citizens vote to re-elect the leader if policies are good and to change the incumbent if policy is bad. Note that the basic model assumes that voters do have a common interest in achieving some outcome, hence our result that there is an equilibrium where representative democracy does not deliver the public good does not depend on voters' heterogeneity but on citizens rationally believing that rulers will not operate for the public good, a self-fulfilling expectations equilibrium. The introduction of an element of heterogeneity into voters' behavior because of citizens polarization does not actually change the qualitative results, as we show in the online appendix, so that our result is robust to this change. Finally, a crucial assumption to get our result is that politicians get a payoff from holding power, E, an assumption that provides a reason for the politicians to try to be re-elected.

4   Conclusion

In this paper, following the seminal works by Berganza (2000), Besley (2006), Ferejohn (1986), Morris (2001), Persson *et al.* 1997 and Smart and Sturm 2013, we work with explicit functional forms that are relatively easy to analyze. The model we present is the simplest possible setting where voters have an incentive to base their choices on the behavior of the elected politicians and in which politicians choose their strategies in anticipation of voters' choices. Some of the arguments developed in this paper might be generalized,[9] but we have chosen to obtain clear results in the context of a very simple model in order to aid the intuition about the reasons of possible malfunctioning of representative democracies.

The voters base their evaluations of politicians on their actual performance in office rather than on hypothetical promises they might make during a campaign, because actual performance might provide information on the actual type of the politician, whether she is competent and interested in the public good, whatever this is, or she is incompetent or dishonest. The interpretation of a leader's type can be quite broad. A non-congruent type can be an incompetent leader who finds it costly to adopt an efficient policy. Or she can be ideological, pursuing her ideological policy notwithstanding the actual situation. Or she might be dishonest, interested only in her own private rent. Whatever the interpretation, the role of the type is to provide an opportunity for the leader to credibly commit to a specific policy through her reputation. This allows us to model the idea that economic policies might be wrong not because of ignorance or of cultural or technological reasons, but because of political incentives. In particular, note that wrong policies might be chosen not because of the heterogeneity of voters' interests or of the difficulties of promoting choices that benefit all or most of the citizens. The point we wanted to check in this work is whether in representative democracies the electoral system works effectively as an incentive device to induce policies that citizens unanimously repute as good. The general idea is that voting might induce the politician to pursue the interests of the voters because the politicians desire to retain office, and this explain why all leader's types get a positive payoff from holding office. We have characterized the limits of the electoral control of elected leaders in a simple principle-agent model of representative democracy where the voters' problem is to motivate politicians to act according to the public interest. Our results show that effective incentivation needs more than simple retrospecting voting. If the public opinion share an overall lack of trust in political elites and thus believe that the leader's counterfactual behavior is not informative, then another equilibrium, beside the efficient one, is possible, a populist inefficient equilibrium where even the congruent politician behave badly because of the adverse but rational voters' behavior. We wish to stress that in the inefficient equilibrium also the politicians with the best intentions choose the inefficient policy because this will increase the likelihood of being re-elected given the rational but adverse

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[9]See the on line Appendix.

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random choice of the voters'. This result hence provide a new explanation for elected politicians misgovernance,[10] and it shows how luck of trust in ruling politicians may lead to luck of trust in representative democracy, contributing to explain the increasing negative perceptions on the working of democracy as due to a self-fulfilling equilibrium.

Of course, this paper does not provide an explanation for the emergence of public lack of trust in political elites,[11] it simply shows the consequences of this lack of trust once emerged. Similarly, we do not claim that the inefficient or the efficient equilibrium are more likely to be established, as usual with multiple equilibria we just emphasize a possibility, then it is up to the empirical analysis to establish which equilibrium is more likely to emerge and the reasons for this.

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[10] See Banerjee 1997 for a theory of government bureaucracies misgovernance and Besley - Coate 1998 on sources of inefficiency in representative democracies.

[11] For example Algan *et al* 2017 study the correlation between the Great depression and the change of public trust in ruling politicians.

References

[1] Algan, Yann, Sergei Guriev, Elias Papaioannou, and Evgenia Passari. "The European Trust Crisis and the Rise of Populism." Brookings Papers on Economic Activity, 2017, 309-82.

[2] Ashworth S. 2005. Reputational Dynamics and Political Careers. Journal of Law, Economics, & Organization, Vol. 21, No. 2, pp. 441-466.

[3] Banerjee A. V. 1997. A Theory of Misgovernance. The Quarterly Journal of Economics, vol. 12, N. 4, pp. 1289-1332.

[4] Berganza J. C., 2000. Two roles for elections: Disciplining the incumbent and selecting a competent candidate. Public Choice 105: 165-193.

[5] Besley T., and Coate S. 1998. Sources of Inefficiency in a Representative Democracy: A Dynamic Analysis. The American Economic Review, Vol. 88, No. 1, pp. 139-156.

[6] Besley T., and Coate S. 2003. Elected versus Appointed Regulators: Theory and Evidence. Journal of the European Economic Association, 1(5), pp. 1176–206.

[7] Besley T., 2006. Principled Agents? The Political Economy of Good Government. Oxford University Press.

[8] Carrillo, J. D., and Mariotti T. 2001. Electoral competition and politician turnover. European Economic Review 45, 1-25.

[9] Cho In-Koo and David M. Kreps 1997, Signaling Games and Stable Equilibria, The Quarterly Journal of Economics, Vol. 102, No. 2, pp. 179-221

[10] Dustmann Christian, Barry Eichengreen, Sebastian Otten, André Sapir, Guido Tabellini, Gylfi Zoega, Europe's Trust Deficit: Causes and Remedies, CEPR's Policy Portal, 2017.

[11] Ferejohn J., 1986. Incumbent performance and electoral control Public Choice 50: 5-25.

[12] Foa, Roberto Stefan, and Yascha Mounk. "The Signs of Deconsolidation." Journal of Democracy 1 (2017): 5-16.

[13] Inglehart, R. and P. Norris 2016, Trump, Brexit, and the Rise of Populism: Economic Have-Nots and Cultural Backlash", HKS Working Paper No. RWP16-026.

[14] Maskin E., and Tirole J., 2004. The Politician and the Judge: Accountability in Government. The American Economic Review VOL. 94 NO. 4, 1034-1054

[15] Morris, S., 2001 Political Correctness. Journal of Political Economy, 109(2), pp. 231–265.

[16] Mudde, C. and C. Rovira Kaltwesser 2017, Populism, Oxford: Oxford University Press.

[17] Persson, T. Roland, G. and Tabellini, G., 1997. Separation of Powers and Political Accountability." Quarterly Journal of Economics, 112(4), pp. 1163–1202.

[18] Reynié Dominique (ed) 2017. What Next For Democracy? An International Survey by the Fondation pour l'innovation politique.

[19] Smart M., and Sturm D. M., 2013, Term Limits and Electoral Accountability, W.P.

Appendix A: Proofs

A1: The Perfect Bayesian Equilibria of the Game with Forward Induction

Proposition 3 *When the out-of-equilibrium beliefs' updating satisfies a **Forward Induction** criterion, the accountability game for representative democratic regimes has a unique Perfect Bayesian Equilibrium where*

$$\lambda_1^C(\theta_1, r_1) = 1, \quad \lambda_1^N(\theta_1, r_1) = G(\Delta + E(r) + E)$$

$$\rho(\delta) = \begin{cases} 1 & \delta = \Delta \\ 0 & \delta = 0 \end{cases}$$

$$\mu(C|\delta) = \begin{cases} \frac{\pi}{\pi + (1-\pi)G(\Delta + E(r) + E)} > \pi & \delta = \Delta \\ 0 & \delta = 0 \end{cases}$$

$$\lambda_2^C(\theta_1, r_1) = 1, \quad \lambda_2^N(\theta_1, r_1) = 0.$$

Proof. The voters' sequential rationality implies that

$$\rho(\delta) = \begin{cases} 0 & \text{if and only if } \mu(C|\delta) \leq \pi \\ 1 & \text{if and only if } \mu(C|\delta) \geq \pi \end{cases} \tag{1}$$

where

$$\mu(C|\delta) = \begin{cases} \frac{\pi \times \lambda_1^C(\theta_1, r_1)}{\pi \times \lambda_1^C(\theta_1, r_1) + (1-\pi) \times \lambda_1^N(\theta_1, r_1)} & \delta = \Delta \\ \frac{\pi \times [1 - \lambda_1^C(\theta_1, r_1)]}{\pi \times [1 - \lambda_1^C(\theta_1, r_1)] + (1-\pi) \times [1 - \lambda_1^N(\theta_1, r_1)]} & \delta = 0. \end{cases}$$

To derive voters' beliefs and thus their sequentially rational action, we need to examine all the possible incumbent's strategy profiles. In this basic game, there are four possible leader's strategy profiles:

1. If $\left(\lambda_1^C(\theta_1, r_1), \lambda_1^N(\theta_1, r_1)\right) = (0, 0)$, then

$$\mu(C|\delta) = \begin{cases} \frac{0}{0} \in [0, 1] & \text{if } \delta = \Delta \\ \pi & \text{if } \delta = 0 \end{cases} = \begin{cases} 1 & \text{if } \delta = \Delta \\ \pi & \text{if } \delta = 0 \end{cases}$$

Hence, we get

$$\rho(\delta) = \begin{cases} 1 & \text{if } \delta = \Delta \\ \in [0, 1] & \text{if } \delta = 0 \end{cases}$$

which means that type C of the leader would deviate to $\lambda_1^C(\theta_1, r_1) = 1$, hence it can't be an equilibrium.

2. If $\left(\lambda_1^C(\theta_1, r_1), \lambda_1^N(\theta_1, r_1)\right) = (0, 1)$, then

$$\mu(C|\delta) = \begin{cases} 0 & \text{if } \delta = \Delta \\ 1 & \text{if } \delta = 0 \end{cases}$$

Hence, we get

$$\rho(\delta) = \begin{cases} 0 & \delta = \Delta \\ 1 & \delta = 0 \end{cases}$$

which means that type N of the leader would deviate to $\lambda_1^C(\theta_1, r_1) = 1$, hence it can't be an equilibrium.

3. If $\left(\lambda_1^C(\theta_1, r_1), \lambda_1^N(\theta_1, r_1)\right) = (1, 0)$, then

$$\mu(C|\delta) = \begin{cases} 1 & \text{if } \delta = \Delta \\ 0 & \text{if } \delta = 0 \end{cases}$$

Hence, we get

$$\rho(\delta) = \begin{cases} 1 & \delta = \Delta \\ 0 & \delta = 0 \end{cases}$$

Type N of the leader would not deviate if and only if

$$r_1 + E \geq \Delta + E + \mathbb{E}(r) + E$$

which has probability

$$1 - G(\Delta + \mathbb{E}(r) + E) \in (0, 1).$$

Hence

$$\mu(C|\delta) = \begin{cases} \dfrac{\pi \times \lambda_1^C(\theta_1, r_1)}{\pi \times \lambda_1^C(\theta_1, r_1) + (1-\pi) \times \lambda_1^N(\theta_1, r_1)} & \delta = \Delta \\[2ex] \dfrac{\pi \times \left[1 - \lambda_1^C(\theta_1, r_1)\right]}{\pi \times \left[1 - \lambda_1^C(\theta_1, r_1)\right] + (1-\pi) \times \left[1 - \lambda_1^N(\theta_1, r_1)\right]} & \delta = 0 \end{cases} =$$

$$= \begin{cases} \dfrac{\pi \times 1}{\pi \times 1 + (1-\pi) \times G(\Delta + E(r) + E)} > \pi & \delta = \Delta \\[2ex] \dfrac{\pi \times 0}{\pi \times 0 + (1-\pi) \times [1 - G(\Delta + E(r) + E)]} = 0 & \delta = 0 \end{cases}$$

and

$$\rho(\delta) = \begin{cases} 1 & \delta = \Delta \\ 0 & \delta = 0 \end{cases}$$

4. If $\left(\lambda_1^C(\theta_1, r_1), \lambda_1^N(\theta_1, r_1)\right) = (1, 1)$, then

$$\mu(C|\delta) = \begin{cases} \pi & \text{if } \delta = \Delta \\ \frac{0}{0} \in [0, 1] & \text{if } \delta = 0 \end{cases} = \begin{cases} \pi & \text{if } \delta = \Delta \\ 0 & \text{if } \delta = 0 \end{cases}$$

Hence, we get

$$\rho(\delta) = \begin{cases} \in [0, 1] & \text{if } \delta = \Delta \\ 0 & \text{if } \delta = 0 \end{cases}$$

this means that we might have a mixed strategy equilibrium. Suppose that voters re-elect the incumbent leader with probability $\widehat{\rho} \in [0, 1]$ when $\delta = \Delta$. Then type C of the leader would not deviate if and only if

$$E \leq \Delta + E + \widehat{\rho}(\Delta + E) + (1 - \widehat{\rho})0$$

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which is always satisfied; type N of the leader would not deviate if and only if

$$r_1 + E \leq \Delta + E + \widehat{\rho}\left[\mathbb{E}\left(r\right) + E\right] + (1 - \widehat{\rho})\,0$$

which has probability

$$G\left(\Delta + \widehat{\rho}\left[\mathbb{E}\left(r\right) + E\right]\right).$$

Then

$$\lambda_1^N\left(\theta_1, r_1\right) = G\left(\Delta + \widehat{\rho}\left[\mathbb{E}\left(r\right) + E\right]\right)$$

which implies

$$\mu(C|\delta) = \begin{cases} \frac{\pi \times \lambda_1^C(\theta_1, r_1)}{\pi \times \lambda_1^C(\theta_1, r_1) + (1-\pi) \times \lambda_1^N(\theta_1, r_1)} & \delta = \Delta \\ \frac{\pi \times \left[1 - \lambda_1^C(\theta_1, r_1)\right]}{\pi \times \left[1 - \lambda_1^C(\theta_1, r_1)\right] + (1-\pi) \times \left[1 - \lambda_1^N(\theta_1, r_1)\right]} & \delta = 0 \end{cases}$$

$$= \begin{cases} \frac{\pi \times 1}{\pi \times 1 + (1-\pi) \times G(\Delta + \widehat{\rho}[E(r)+E])} > \pi & \delta = \Delta \\ \frac{\pi \times 0}{\pi \times 0 + (1-\pi) \times [1 - G(\Delta + \widehat{\rho}[E(r)+E])]} = 0 & \delta = 0 \end{cases}$$

so that

$$\rho(\delta) = \begin{cases} 1 & \delta = \Delta \\ 0 & \delta = 0 \end{cases}$$

i.e., $\widehat{\rho} = 1$.

∎

Corollary 3 provides some comparative statics, and corollary 4 characterizes the ex-ante welfare.

Corollary 3 *In the unique Perfect Bayesian Equilibrium with beliefs satisfying the Forward Induction criterion*

$$\frac{\partial \lambda_1^N\left(\theta_1, r_1\right)}{\Delta} > 0, \quad \frac{\partial \lambda_1^N\left(\theta_1, r_1\right)}{E\left(r\right)} > 0, \quad \frac{\partial \lambda_1^N\left(\theta_1, r_1\right)}{E} > 0$$

$$\frac{\partial \mu(C|\Delta)}{\Delta} < 0, \quad \frac{\partial \mu(C|\Delta)}{E\left(r\right)} < 0, \quad \frac{\partial \mu(C|\Delta)}{E} < 0;$$

the ex-ante probability of re-electing the incumbent leader is

$$E\left[\rho(\delta)\right] = \pi + (1 - \pi)\,G\left(\Delta + E\left(r\right) + E\right)$$

so that

$$\frac{\partial E\left[\rho(\delta)\right]}{\Delta} > 0, \quad \frac{\partial E\left[\rho(\delta)\right]}{E\left(r\right)} > 0, \quad \frac{\partial E\left[\rho(\delta)\right]}{E} > 0, \quad \frac{\partial E\left[\rho(\delta)\right]}{\pi} > 0$$

Corollary 4 *In the unique Perfect Bayesian Equilibrium with beliefs satisfying the Forward Induction criterion, the ex-ante intertemporal voters' welfare is*

$$\left[\pi + (1 - \pi)\,G\left(\Delta + E\left(r\right) + E\right)\right]\Delta + \left[1 - G\left(\Delta + E\left(r\right) + E\right)\right](1 - \pi)\,\pi\Delta + \pi\Delta.$$

Proof The statement follows immediately from Proposition 3 (1): the ex-ante intertemporal welfare is

$$
\left[\pi\lambda_1^C\left(\theta_1,r_1\right)+(1-\pi)\lambda_1^N\left(\theta_1,r_1\right)\right]\Delta +
$$
$$
+\mathbb{P}\left(\delta;\lambda_1^C\left(\theta_1,r_1\right),\lambda_1^N\left(\theta_1,r_1\right)\right)\left\{\left[1-\rho(\delta)\right]\pi\Delta+\rho(\delta)\mu(C|\delta)\Delta\right\}
$$
$$
=\quad\left[\pi\lambda_1^C\left(\theta_1,r_1\right)+(1-\pi)\lambda_1^N\left(\theta_1,r_1\right)\right]\Delta
$$
$$
+\left[\pi+(1-\pi)G\left(\Delta+E\left(r\right)+E\right)\right]\left\{\left[1-\rho(\Delta)\right]\pi\Delta+\rho(\Delta)\mu(C|\Delta)\Delta\right\}
$$
$$
+(1-\pi)\left[1-G\left(\Delta+E\left(r\right)+E\right)\right]\left\{\left[1-\rho(0)\right]\pi\Delta+\rho(0)\mu(C|0)\Delta\right\}
$$
$$
=\quad\left[\pi+(1-\pi)G\left(\Delta+E\left(r\right)+E\right)\right]\Delta+\left[\pi+(1-\pi)G\left(\Delta+E\left(r\right)+E\right)\right]\mu(C|\delta)\Delta
$$
$$
+(1-\pi)\left[1-G\left(\Delta+E\left(r\right)+E\right)\right]\pi\Delta
$$
$$
=\quad\left[\pi+(1-\pi)G\left(\Delta+E\left(r\right)+E\right)\right]\left[1+\mu(C|\delta)\right]\Delta+\left[1-G\left(\Delta+E\left(r\right)+E\right)\right](1-\pi)\pi\Delta
$$
$$
=\quad\left[\pi+(1-\pi)G\left(\Delta+E\left(r\right)+E\right)\right]\left[1+\frac{\pi}{\pi+(1-\pi)G\left(\Delta+E\left(r\right)+E\right)}\right]\Delta
$$
$$
+\left[1-G\left(\Delta+E\left(r\right)+E\right)\right](1-\pi)\pi\Delta
$$
$$
=\quad\left[\pi+(1-\pi)G\left(\Delta+E\left(r\right)+E\right)\right]\Delta+\pi\Delta+\left[1-G\left(\Delta+E\left(r\right)+E\right)\right](1-\pi)\pi\Delta.
$$

∎

A2: The Perfect Bayesian Equilibria of the Model with Passive Updating

Proposition 4 *When the out-of-equilibrium beliefs' updating satisfies **passive updating** there are two Perfect Bayesian equilibria*

1. *an **efficient equilibrium** where accountability works as incentive devise and*
$$
\lambda_1^C\left(\theta_1,r_1\right)=1,\quad\lambda_1^N\left(\theta_1,r_1\right)=G\left(\Delta+E\left(r\right)+E\right)
$$
$$
\rho(\delta)=\left\{\begin{array}{ll}1 & \delta=\Delta\\0 & \delta=0\end{array}\right.
$$
$$
\mu(C|\delta)=\left\{\begin{array}{ll}\frac{\pi}{\pi+(1-\pi)G(\Delta+E(r)+E)}>\pi & \delta=\Delta\\0 & \delta=0\end{array}\right.
$$
$$
\lambda_2^C\left(\theta_1,r_1\right)=1,\quad\lambda_2^N\left(\theta_1,r_1\right)=0.
$$

2. *a **populist equilibrium** where voters do not believe that good policies are a signal of congruence, thus accountability doesn't work and even the good leader would choose a bad policy:*
$$
\lambda_1^C\left(\theta_1,r_1\right)=0,\quad\lambda_1^N\left(\theta_1,r_1\right)=0
$$
$$
\rho(\delta)=\left\{\begin{array}{ll}\rho^*(\Delta)\in[0,1] & \delta=\Delta\\\rho^*(0)\in[0,1] & \delta=0\end{array}\right.\quad\text{such that }\left[\rho^*(0)-\rho^*(\Delta)\right]\geq\frac{\Delta}{\Delta+E}
$$

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$$\mu(C|\delta) = \begin{cases} \pi & \delta = \Delta \\ \pi & \delta = 0 \end{cases}$$

$$\lambda_2^C(\theta_1, r_1) = 1, \quad \lambda_2^N(\theta_1, r_1) = 0.$$

Proof. The voters sequential rationality implies that

$$\rho(\delta) = \begin{cases} 0 & \text{if and only if } \mu(C|\delta) \leq \pi \\ 1 & \text{if and only if } \mu(C|\delta) \geq \pi \end{cases} \tag{2}$$

where

$$\mu(C|\delta) = \begin{cases} \frac{\pi \times \lambda_1^C(\theta_1, r_1)}{\pi \times \lambda_1^C(\theta_1, r_1) + (1-\pi) \times \lambda_1^N(\theta_1, r_1)} & \delta = \Delta \\ \frac{\pi \times [1 - \lambda_1^C(\theta_1, r_1)]}{\pi \times [1 - \lambda_1^C(\theta_1, r_1)] + (1-\pi) \times [1 - \lambda_1^N(\theta_1, r_1)]} & \delta = 0. \end{cases}$$

To derive voters' beliefs and thus their sequentially rational action, we need to examine all the possible incumbent's strategy profiles. In this basic game, there are four possible leader's strategy profiles:

1. If $\left(\lambda_1^C(\theta_1, r_1), \lambda_1^N(\theta_1, r_1) \right) = (0, 0)$, then

$$\mu(C|\delta) = \begin{cases} \frac{0}{0} \in [0,1] & \text{if } \delta = \Delta \\ \pi & \text{if } \delta = 0 \end{cases} = \begin{cases} \pi & \text{if } \delta = \Delta \\ \pi & \text{if } \delta = 0 \end{cases}$$

because of passive updating. Then, we get

$$\rho(\delta) = \begin{cases} \in [0,1] & \text{if } \delta = \Delta \\ \in [0,1] & \text{if } \delta = 0 \end{cases}$$

which means that with passive updating we might have a mixed strategy for the voters both when $\delta = \Delta$ and when $\delta = 0$. Let denote by

$$\rho^*(\Delta) \in [0,1] \quad \text{and } \rho^*(0) \in [0,1]$$

the voters' mixed behavioral strategies. Then type C and type N will not deviate if and only if

$$E + \rho^*(0)(\Delta + E) \geq \Delta + E + \rho^*(\Delta)(\Delta + E) \Leftrightarrow [\rho^*(0) - \rho^*(\Delta)] \geq \frac{\Delta}{\Delta + E} \in [0,1]$$

$$r_1 + E + \rho^*(0)[E(r) + E] \geq \Delta + E + \rho^*(\Delta)[E(r) + E]$$

which is always satisfied if $[\rho^*(0) - \rho^*(\Delta)] \geq \frac{\Delta}{\Delta + E}$.

2. If $\left(\lambda_1^C(\theta_1, r_1), \lambda_1^N(\theta_1, r_1) \right) = (0, 1)$, then

$$\mu(C|\delta) = \begin{cases} 0 & \text{if } \delta = \Delta \\ 1 & \text{if } \delta = 0 \end{cases}$$

Hence, we get

$$\rho(\delta) = \begin{cases} 0 & \delta = \Delta \\ 1 & \delta = 0 \end{cases}$$

which means that type N of the leader would deviate to $\lambda_1^C(\theta_1, r_1) = 1$, hence it can't be an equilibrium.

3. If $\left(\lambda_1^C(\theta_1, r_1), \lambda_1^N(\theta_1, r_1)\right) = (1, 0)$, then

$$\mu(C|\delta) = \begin{cases} 1 & \text{if } \delta = \Delta \\ 0 & \text{if } \delta = 0 \end{cases}$$

Hence, we get

$$\rho(\delta) = \begin{cases} 1 & \delta = \Delta \\ 0 & \delta = 0 \end{cases}$$

Type N of the leader would not deviate if and only if

$$r_1 + E \geq \Delta + E + E(r) + E$$

which has probability

$$1 - G\left(\Delta + E(r) + E\right) \in (0, 1).$$

Hence

$$\mu(C|\delta) = \begin{cases} \dfrac{\pi \times \lambda_1^C(\theta_1, r_1)}{\pi \times \lambda_1^C(\theta_1, r_1) + (1-\pi) \times \lambda_1^N(\theta_1, r_1)} & \delta = \Delta \\ \dfrac{\pi \times [1 - \lambda_1^C(\theta_1, r_1)]}{\pi \times [1 - \lambda_1^C(\theta_1, r_1)] + (1-\pi) \times [1 - \lambda_1^N(\theta_1, r_1)]} & \delta = 0 \end{cases} =$$

$$= \begin{cases} \dfrac{\pi \times 1}{\pi \times 1 + (1-\pi) \times G(\Delta + E(r) + E)} > \pi & \delta = \Delta \\ \dfrac{\pi \times 0}{\pi \times 0 + (1-\pi) \times [1 - G(\Delta + E(r) + E)]} = 0 & \delta = 0 \end{cases}$$

and

$$\rho(\delta) = \begin{cases} 1 & \delta = \Delta \\ 0 & \delta = 0 \end{cases}$$

4. If $\left(\lambda_1^C(\theta_1, r_1), \lambda_1^N(\theta_1, r_1)\right) = (1, 1)$, then

$$\mu(C|\delta) = \begin{cases} \pi & \text{if } \delta = \Delta \\ \frac{0}{0} \in [0, 1] & \text{if } \delta = 0 \end{cases} = \begin{cases} \pi & \text{if } \delta = \Delta \\ \pi & \text{if } \delta = 0 \end{cases}$$

again because of passive updating. Then, we get

$$\rho(\delta) = \begin{cases} \in [0, 1] & \text{if } \delta = \Delta \\ \in [0, 1] & \text{if } \delta = 0. \end{cases}$$

This means that with passive updating we might have a mixed strategy for the voters both when $\delta = \Delta$ and when $\delta = 0$. Let denote by

$$\rho^*(\Delta) \in [0, 1] \quad \text{and } \rho^*(0) \in [0, 1]$$

the voters' mixed behavioral strategy. Then type C and type N will not deviate if and only if

$$E + \rho^*(0)(\Delta + E) \leq \Delta + E + \rho^*(\Delta)(\Delta + E) \Leftrightarrow [\rho^*(\Delta) - \rho^*(0)] \geq -\frac{\Delta}{\Delta + E} \in [-1, 0]$$

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$$r_1 + E + \rho^*(0)\left[E(r) + E\right] \leq \Delta + E + \rho^*(\Delta)\left[E(r) + E\right] \Leftrightarrow r_1 \leq \Delta + \left[\rho^*(\Delta) - \rho^*(0)\right]\left[E(r) + E\right]$$

which has probability

$$G\left(\Delta + \left[\rho^*(\Delta) - \rho^*(0)\right]\left[E(r) + E\right]\right) > 0 \Leftrightarrow \left[\rho^*(\Delta) - \rho^*(0)\right] > 0$$

Then
$$\lambda_1^N(\theta_1, r_1) = G\left(\Delta + \left[\rho^*(\Delta) - \rho^*(0)\right]\left[E(r) + E\right]\right)$$

which implies

$$\mu(C|\delta) = \begin{cases} \dfrac{\pi \times \lambda_1^C(\theta_1, r_1)}{\pi \times \lambda_1^C(\theta_1, r_1) + (1-\pi) \times \lambda_1^N(\theta_1, r_1)} & \delta = \Delta \\ \dfrac{\pi \times \left[1 - \lambda_1^C(\theta_1, r_1)\right]}{\pi \times \left[1 - \lambda_1^C(\theta_1, r_1)\right] + (1-\pi) \times \left[1 - \lambda_1^N(\theta_1, r_1)\right]} & \delta = 0 \end{cases} =$$

$$= \begin{cases} \dfrac{\pi}{\pi + (1-\pi)G(\Delta + [\rho^*(\Delta) - \rho^*(0)][E(r) + E])} > \pi & \delta = \Delta \\ \dfrac{\pi \times 0}{\pi \times 0 + (1-\pi) \times [1 - G(\Delta + [\rho^*(\Delta) - \rho^*(0)][E(r) + E])]} = 0 & \delta = 0 \end{cases}$$

that implies

$$\rho^*(\delta) = \begin{cases} 1 & \delta = \Delta \\ 0 & \delta = 0 \end{cases}$$

■

Corollary 5 provides some comparative statics, and corollary 6 characterizes the ex-ante welfare of the populist equilibrium.

Corollary 5 *In the **populist equilibrium***

$$\frac{\partial \lambda_1^N(\theta_1, r_1)}{\partial \Delta} = \frac{\partial \lambda_1^N(\theta_1, r_1)}{\partial E(r)} = \frac{\partial \lambda_1^N(\theta_1, r_1)}{\partial E} = 0$$

$$\frac{\partial \mu(C|\Delta)}{\partial \Delta} = \frac{\partial \mu(C|\Delta)}{\partial E(r)} = \frac{\partial \mu(C|\Delta)}{\partial E} = 0;$$

the ex-ante probability of re-electing the incumbent leader is

$$E\left[\rho(\delta)\right] = \rho^*(0) \quad \text{such that} \quad \rho^*(0) \geq \rho^*(\Delta) + \frac{\Delta}{\Delta + E}$$

so that

$$\frac{\partial E\left[\rho(\delta)\right]}{\partial E(r)} \gtrless 0, \quad \frac{\partial E\left[\rho(\delta)\right]}{\partial \pi} \gtrless 0, \quad \frac{\partial E\left[\rho(\delta)\right]}{\partial \Delta} \gtrless 0, \quad \frac{\partial E\left[\rho(\delta)\right]}{\partial E} \gtrless 0$$

$$\text{as long as } \rho^*(0) \geq \rho^*(\Delta) + \frac{\Delta}{\Delta + E}.$$

Corollary 6 *The ex ante intertemporal voters' welfare in the populist equilibrium is*

$$\pi \Delta$$

which is strictly smaller than the ex ante intertemporal voters' welfare in the efficient equilibrium.

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Proof. The ex ante intertemporal voters' welfare is

$$\left[\pi\lambda_1^C\left(\theta_1,r_1\right)+\left(1-\pi\right)\lambda_1^N\left(\theta_1,r_1\right)\right]\Delta+\mathbb{P}\left(\delta;\lambda_1^C\left(\theta_1,r_1\right),\lambda_1^N\left(\theta_1,r_1\right)\right)\left\{\left[1-\rho(\delta)\right]\pi\Delta+\rho(\delta)\mu(C|\delta)\Delta\right\}=$$

$$=\left[\pi\lambda_1^C\left(\theta_1,r_1\right)+\left(1-\pi\right)\lambda_1^N\left(\theta_1,r_1\right)\right]\Delta+$$

$$+\mathbb{P}\left(\Delta;\lambda_1^C\left(\theta_1,r_1\right),\lambda_1^N\left(\theta_1,r_1\right)\right)\left\{\left[1-\rho(\Delta)\right]\pi\Delta+\rho(\Delta)\mu(C|\Delta)\Delta\right\}+$$
$$+\mathbb{P}\left(0;\lambda_1^C\left(\theta_1,r_1\right),\lambda_1^N\left(\theta_1,r_1\right)\right)\left\{\left[1-\rho(0)\right]\pi\Delta+\rho(0)\mu(C|0)\Delta\right\}$$

hence in the populist equilibrium is

$$\left[1-\rho^*(0)\right]\pi\Delta+\rho^*(0)\pi\Delta=\pi\Delta$$

which is strictly smaller than the ex ante intertemporal voters' welfare in the efficient equilibrium (corollary 2), i.e.

$$\left[\pi+\left(1-\pi\right)G\left(\Delta+E\left(r\right)+E\right)\right]\Delta+\left[1-G\left(\Delta+E\left(r\right)+E\right)\right]\left(1-\pi\right)\pi\Delta+\pi\Delta.$$

∎