Hybrid Electoral Systems:
Strategic Replacements and Popular Support

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Abstract

In recent decades, many non-democratic countries introduced local elections in the light of public pressure. However, fear of competition encouraged some non-democratic federal governments to incorporate centralized appointments into the electoral system. Using a game-theoretic model, I describe a previously unexamined procedure that combines appointments and elections. I show that this hybrid institution, currently employed in a number of authoritarian regimes, has counterintuitive implications for the voter's behavior and the government's conduct. In particular, I demonstrate that this institution encourages the population to sincerely support pro-regime incumbents.

Introduction

In recent decades, many non-democratic countries introduced local elections. Some in response to pressure from their populations' protests or in pursuit of international legitimacy (Levitsky & Way 2002); some to co-opt elites (Magaloni 2006, Boix & Svolik 2013); others to estimate the level of social discontent (Miller 2015, Gandhi 2008, Martinez-Bravo et al. 2011) or to promote popularity (Rozenas 2016, Egorov & Sonin 2014) or the strength of their regime (Magaloni 2006, Simpser 2013, Little et al. 2012, Little et al. 2015, Przeworski 2009).

Democratic and fair elections are always praised as they grant the population a *formal* right to hold policymakers accountable. Elections allow voters to punish politicians for performing poorly (Ferejohn 1986, Manin 1997), help improve the selection of higher type politicians to office, or do both (Fearon 1999, Ashworth et al. 2017, Martinez-Bravo et al. 2017). By contrast, non-democratic appointment systems are criticized since central governments' interventions effectively do away with officials' accountability to voters and create perverse incentives for local office-holders (Malesky & Schuler 2010), and can aggravate the competence-loyalty trade-off (Egorov & Sonin 2011, Harasymiw 1984).

However, the above dichotomy is not exhaustive: Among non-democratic governments' routine tools are various "hybrid" procedures that combine elections and appointments. In this paper, I study the normative properties of a system that grants the central government full discretion to replace elected local incumbents and fill vacancies until the forthcoming election. I demonstrate that this "hybrid" institution, although allows for accountability to voters, also incentivizes the population to *sincerely* endorse pro-regime (government co-partisan) officials as the government's preference for appointing such officials grows. In addition, I argue that the interventions by the government restrained by the forthcoming elections can benefit voters and study how clarity of information and electoral transparency affect the government's conduct.

Though the properties of the institution that I study are new to the literature, similar procedures are standard in many non-democratic countries. For instance, per federal legislation in Russia president has the authority to oust elected governors[1] and the discretion to choose her temporary replacement. In Turkey, the Interior Ministry can replace mayors and appoint trustees (*kayyum*) as temporary office-holders until the forthcoming elections. In Venezuela, where the central government frequently ousts district mayors, the government-controlled Municipal Council (*Concejo Municipal*) can appoint an interim office-holder to fill vacancies until the next election.

Indeed, non-democratic governments frequently use these powers and replace elected office-holders. Between 2014 and 2019, the Turkish Interior Ministry ousted 99 mayors – many on terrorism and corruption charges – and appointed temporary replacements. In Russia, massive gubernatorial replacements occur every year, with the central government forcing the governors to resign and pres-

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[1]In Russia, a *governor* is the highest official figure in a subject (territory, region, autonomous region, city) of the Russian Federation. Each governor heads the executive branch in the subject.

ident filling vacancies with temporary appointees. In 2017, to take an example, 21 out of 85 governors resigned,[2] 11 presidential appointees to replace them competed in the special "snap" elections in the same year, and the rest participated in the elections a year later. Importantly for the formal analysis in this paper, the desire to force political opponents out of office did not drive waves of reshuffles: the majority of the replaced governors belonged to the government party.

The remainder of the paper proceeds as follows. I start with a baseline model where I assume that the information available to the voter and the government regarding local officials' qualifications is symmetric, the election is fair, and the replacements are costless. I study the implications of the government's bias and information clarity on voter welfare and the government's conduct. I demonstrate that as the government's bias increases so do the voter's incentives to sincerely support pro-regime candidates. I, then, relax baseline assumptions and show that information asymmetry, electoral unfairness, and high replacement costs not only worsen the voter's utility but also aggravate the voter's incentives to ex-ante embrace pro-regime officials.

Literature Review

This paper connects with several literatures that study weakening of the formal institution of elections.

First, this paper proposes a new explanation of popular support for non-democratic regimes. The most common and promising explanations of this phenomenon include: (i) Control of information: either low political awareness in the population (Geddes & Zaller 1989) or strict government control over the media and educational system (Kennedy 2009); (ii) Electoral unfairness: non-democratic governments can resort to violence to either deter opposition candidates (Levitsky & Way 2010) or opposition voters. In this paper, I contribute to this literature and demonstrate that even when information is symmetric and elections are fair, the voter might sincerely favor pro-regime candidates conditional on the (potential) forthcoming government's interventions.

Second, in this paper I show that under certain conditions the voter will favor the government's interventions as it improves electoral selection. Substantively, I demonstrate that the voter *can* benefit from lower formal electoral accountability. Among many papers that study electoral accountability, some acknowledge potential welfare improving effect of lower accountability: Ashworth & Bueno de Mesquita 2014, Snyder Jr & Strömberg 2010, Canes-Wrone et al. 2001, Ferraz & Finan 2011 demonstrate that higher voter's awareness of the officials' conduct create perverse incentives to office-holders and might worsen electoral selection; Ashworth et al. 2017 and Landa & Le Bihan 2018 show that more demanding retention decisions can result in lower voter welfare; finally, Gordon et al. 2007 and Gordon & Huber 2007 show that although low

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[2]Then head of the Udmurt Republic, Alexander Solovyov, was expelled "in connection with a loss of trust."

barriers to entry an electoral race boosts the competition, they might worsen the electoral selection, as they distort voters' incentives to become politically informed and encourage the incumbent to conceal her type.

Third, although there is a vast literature that studies the implications of constitutional differences, existing work juxtaposes the elected officials to the appointed ones and does not examine aftermath of the hybrid institutions. Klein et al. (1997) and Besley & Coate (2003), for example, demonstrate that elected regulators and commissioners tend to be more pro-consumer than appointed ones. Bohn & Inman (1996) explore heterogeneity in behavior of the elected and appointed judges in the state court and show that the former's harshness tends to strongly correlate with their constituents' political ideology. Hanssen (1999) shows that judicial independence results in lower predictability of the judicial decision making and, as a result, more litigation in state courts. In this paper I examine institution that combines elements of electoral and appointment systems and study its impact on voter welfare.

Finally, this paper contributes to the literature on the implications of cabinet reshufflings. While this literature usually reports welfare improving effect of cabinet reshufflings, as they mitigate the severity of moral hazard and adverse selection problems (Dewan & Myatt (2010), Huber & Martinez-Gallardo (2008), Indridason & Kam (2008)), this paper examines heterogeneity in the reshuffling's implications.

The Baseline model

My baseline model is a two-period game between a central government (it) and a representative voter (she). There is also a pool of *potential* local officials (each he). Among them: a current office-holder (the incumbent, I), a temporary official selected by the government (the appointee, A), and the official to compete with either incumbent or, if the incumbent is replaced, the appointee in the forthcoming election (the challenger, C). Every potential candidate in the election has a political party affiliation; he either belongs to the opposition or is the central government's co-partisan. I assume that in every election a co-partisan runs against an opposition candidate. Every potential official is a non-strategic technocrat of qualification θ. Qualifications of all potential local officials are independent draws from a normal distribution, $\theta \sim \mathcal{N}(0,1)$.

The co-partisanship of every local office-holder is known. However, the government and the voter do not know the *qualifications* of the local officials. Instead, the voter and the government can observe a signal s about competence θ of a local official who takes office. I refer to this signal as the official's performance. I assume that every signal s is a sum of the official's qualifications and some random shock ε: $s = \theta + \varepsilon$. Random shocks ε are also independent draws from a normal distribution $\varepsilon \sim \mathcal{N}(0, 1/q)$; therefore, s is an unbiased signal of the official's competence.

Variable $q \in \mathcal{R}^+$ determines how much the government and the voter learn about the local official's qualifications from the signal they observe. This vari-

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able allows for broad interpretation. For instance, value q can stand for a degree of media transparency: The government's suppression of media freedom can make both the government and the voter less aware of the legislator's incompetence (Egorov et al. 2009 , Besley & Prat 2006). Alternatively, the variable q can indicate the local official's impact on policy outcomes. If the federal law imposes hard budget constraints and tightly controls resource allocation, the information value of the officials' performance may be limited.

To account for the potential difference in information available to the voter about the elected incumbent's type and the selected appointee's qualification, I assume that the voter always observes the incumbent's performance, but learns about the appointee's performance with probability $p \in [0.5, 1]$.[3] With complementary probability, she observes nothing.

The sequence of events is as follows.

Timing:

1. Nature determines the random shocks (ε_I, ε_A, $\varepsilon_C, \varepsilon_E$) and the qualifications of all (potential) local officials: the incumbent (θ_I), the appointee (θ_A), and the challenger (θ_C).
2. The government and the voter observe $s_I = \theta_I + \varepsilon_I$. The government decides whether to retain the incumbent ($R = 1$) or replace him ($R = 0$).
4. If the government replaces the incumbent, with probability p the voter sees a signal about the selected appointee's qualification: $s_A^V = \theta_A + \varepsilon_A$. With complementary probability the voter observes no signal: $s_A^V = \varnothing$.
5. The voter either elects the challenger ($\beta = 1$) or votes for the current local office-holder (the incumbent or the appointee; $\beta = 0$).[4]
6. The elected local official produces a policy: $s_E = \theta_E + \varepsilon_E$, where $\theta_E \in \{\theta_C, \theta_I, \theta_A\}$ is the qualification of the elected legislator.

Payoffs:

The voter values the policy outcome that the elected candidate implements. The voter's utility is as follows:

$$U_V(N|s_I, s_A^V) = \beta \times \theta_C + (1 - \beta)(R \times \theta_I + (1 - R)\theta_A) + \varepsilon_E. \qquad (1)$$

The government values the policy outcome: the local official's inferior performance may result in lower citizen satisfaction, which can trigger popular discontent. The government also benefits if a *co-partisan* assumes local office: Local co-partisans help the central government mobilize electoral support (Hale 2003), deter potential challengers of the regime (Bueno De Mesquita et al. 2002), to commit electoral fraud, if needed (Magaloni 2010) and convince the public of the government's competence (Guriev & Treisman 2015). The government's

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[3]See Appendix C for $p \in [0, 1]$.

[4]The voter's strategy can be contingent on the incumbent's partisanship. See Appendix C.

utility is:

$$U_G(R) =$$
$$C(\theta_C + \varepsilon_C) + (1 - C)(R(\theta_I + \varepsilon_I) + (1 - R)(\theta_A + \varepsilon_A)) \qquad (2)$$
$$+ B \times \mathbf{1}\{\text{Loyal Official}\},$$

where value B stands for a *co-partisanship benefit*. It captures how much the government values partisanship of the elected official over the population satisfaction.

In what follows, I refer to the official as *high-performing* if the signal about his qualification that the voter and the government observe (s) exceeds the average qualification of the candidates in the pool. If the signal is worse than the average qualification of the candidates in the pool, I refer to the official as *low-performing.*

Equilibrium

The Voter

The voter acts last and decides whether to elect the challenger or vote for the incumbent or the appointee. The baseline model is a game of incomplete symmetric information, and the government's actions do not affect the voter's information set. The voter makes her decision based on the signals (s_I and s_A^V) she observes.

If she learns the office-holder's performance, she returns him to office if and only if the official's expected qualification exceeds the average of the candidates' pool. Because s_j is an unbiased signal of the official's qualification, the voter follows a cut-off strategy and elects the challenger if and only if the current office-holder is low-performing ($s_j < 0$, where $j \in \{I, A\}$). Conditional on the voter's lack of information about the appointee's performance ($s_A^V = \varnothing$), the voter is indifferent between returning the appointee to office and ousting him.[5]

Remark 1.

1. *In all equilibria, the voter returns high-performing office-holders to office and replaces low-performing office-holders.*

The Government

The government observes the incumbent's performance s_I, but not the incumbent's qualification θ_I. The government decides whether to replace the incumbent and, if so, selects either a co-partisan appointee or an opposition appointee. The government's strategy depends on a signal about the incumbent's type (s_I), a co-partisanship benefit (B), and the party affiliation of the incumbent (the incumbent can be either a co-partisan or can belong to the opposition).

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[5]The voter's indifference gives rise to multiple sequential equilibria. This paper analyses the class of equilibria. For formal equilibrium selection criteria see online appendix. Importantly, the voter's actions do not affect the predictions of the model (Fearon 1999).

Unbiased Government

Let us first assume that the government does not receive a co-partisanship benefit (B). In what follows, I denote such a government as *unbiased* since its utility coincides with the voter's utility. The unbiased government does not value a co-partisan candidate's victory, maximizing the expected winner's qualification. The unbiased government is indifferent between the co-partisan appointee and the opposition. It replaces the incumbent if and only if:

$$p \times (Pr[s_A \geq 0]E[\theta_A|s_A \geq 0] + Pr[s_A < 0]E[\theta_C])$$
$$> \mathbf{1}[s_I \geq 0] \times E[\theta_I|s_I] + \mathbf{1}[s_I < 0] \times E[\theta_C]. \tag{3}$$

The left side of inequality (4) shows the government's expected utility if it decides to replace the incumbent with the appointee. Notice, that the government does not observe the appointee's qualification prior to the replacement. Instead, the government relies on the voter to oust the low-performing appointee. The right side of inequality (4) shows the government's expected utility if it retains the incumbent. The government decides whether to retain the incumbent after it observes the incumbent's performance, and the government knows that the voter will oust the low-performing incumbent.

The government's strategy is a function that specifies its action for each possible signal s_I. If the government is unbiased, its strategy satisfies the *monotonicity* property in equilibrium (see Appendix A): if the government retains some incumbent, it also keeps every incumbent who performs better than him. If the government replaces some incumbent, it also replaces every official who performs worse than him. In equilibrium, the unbiased government follows an interior switching strategy around some *performance threshold*. It retains the incumbents who perform better than this threshold and replaces those who perform worse than this threshold with its appointee. In the following proposition, I first establish the threshold and then study its comparative statics (see Appendix A for proof).

Proposition 1.

1. *In equilibrium, the unbiased government retains the incumbent if and only if the official's performance exceeds a performance threshold*

$$s^* \equiv p \times \sqrt{\frac{1 + 1/q}{2\pi}}; \tag{4}$$

2. *The performance threshold the government sets is decreasing in clarity of information, q.*

Several important features of the performance threshold (s^*) deserve additional attention. First, the unbiased government never retains low-performing incumbents (s^* is non-negative). Suppose an incumbent performs worse than the average candidate in the pool. In this case, the government improves the candidates' pool when it replaces this low-performing officeholder with the appointee.

Second, the quality of information q has a two-fold impact on the government's strategy. On one hand, better information (higher q) helps the government to draw more precise inferences about the incumbent's type from his performance. In Figure 1, the dashed line depicts the posterior distribution of the incumbent's qualification after the government observes his performance. The solid line shows the posterior for the numerically identical but more informative signal. These two curves illustrate that the government's expected utility from retaining *high-performing* incumbents increases in clarity of information, other things being equal. On the other hand, as transparency grows (higher q), a chance that the voter will mistakenly return to office an appointee who is, in fact, unqualified ($\theta_A < 0$) decreases. As a result, the government's utility from *replacing* the incumbent increases in the clarity of information.

Higher clarity of information both encourages the government to retain high-performing incumbents and encourages it to replace them. However, as every replacement might result in the appointment of an unqualified official, the former effect of information always prevails. The performance threshold that the government sets decreases in the clarity of information, as illustrated by the dashed line in Figure 2.
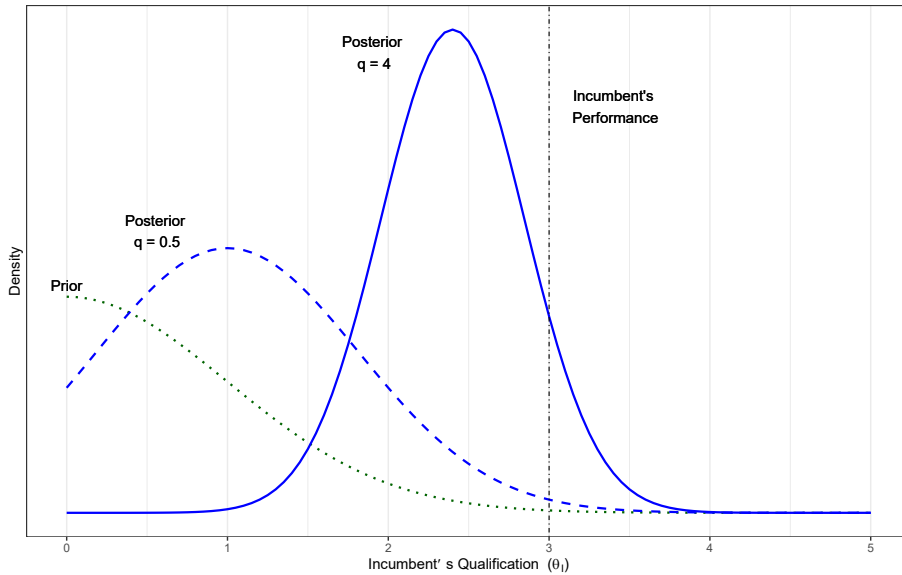

Figure 1: Posterior distribution of the incumbent's qualification following the signal $s_I = 3$, assuming $p = 1$. The dotted line represents the prior distribution of the incumbent's qualification. The dash-dotted vertical line indicates the signal s_I. The dashed line illustrates the posterior if the clarity of information is $q = 0.5$. The solid line shows the posterior if the clarity is $q = 4$.

In like manner to the second effect of better information, the performance threshold s^* increases in p, probability that the voter will observe some signal

about the appointee's type. The higher p is, the more the government can rely on the voter to oust low-performing candidates in the election if it were to replace the incumbent. As a result, higher p encourages the government to replace the incumbent.

Finally, when clarity of information is absolute (q tends to infinity), the government knows that the competence (θ_I) of any high-performing ($s_I > 0$) incumbent exceeds average qualifications in the pool of candidates. Therefore, every high-performing incumbent will, in expectation, produce better policy outcomes than any other official in the candidate pool. Despite this, one may notice that the government replaces some high-performing and, thus evidently qualified incumbents with its appointees in equilibrium. Numerically, as q tends toward infinity, the performance threshold s^* converges to a positive value. Although this stringency may seem counterintuitive, the government strategy improves the expected winner's qualification. There is a high probability that the appointee will outperform the current official if the latter's performance is sufficiently low, while the forthcoming election mitigates risks associated with this replacement.

Biased Government. Co-partisan Incumbent

The biased government first decides whether to replace the incumbent. If it replaces the incumbent, the government also determines the appointee's partisanship: it might select either a co-partisan or a member of the opposition. Although the government values partisanship, the following is true regardless of the incumbent's party affiliation:

Remark 2. *The biased government always selects the co-partisan appointee (see Appendix B).*

The government replaces a co-partisan with the appointee if and only if:

$$
p \times (Pr[s_A \geq 0](E[\theta_A|s_A \geq 0] + B) + Pr[s_A < 0]E[\theta_C]) + (1 - p) \times \beta \times B
$$
$$
> \mathbf{1}[s_I \geq 0] \times (E[\theta_I|s_I] + B) + \mathbf{1}[s_I < 0] \times E[\theta_C].
$$
$$(5)$$

Inequality (5) mirrors inequality (4), yet, the government gains a co-partisanship benefit (B) when it retains the high-performing incumbent, appoints the high-performing appointee, or when the voter does not observe the appointed official's performance.

When the incumbent is co-partisan, the biased government's optimal strategy satisfies the monotonicity property mentioned above: The biased government's expected utility from retaining the official is weakly increasing in the incumbent's qualification. If the incumbent is a co-partisan, the government follows a switching strategy and retains the office-holder if and only if the signal it observes exceeds some performance threshold.

Proposition 2.

1. *In equilibrium, the government retains the loyal incumbent if and only if performance of the latter exceeds a performance threshold*

$$s^L \equiv \max\{0, p\sqrt{\frac{1+1/q}{2\pi}} + B \times (1+1/q) \times (p/2 + (1-p) \times \beta) - B \times (1+1/q)\}.$$
(6)

2. *If the incumbent is loyal, the biased government sets the performance threshold that decreases in the government's bias and non-monotonically depends on the clarity of information.*

The first part of Proposition 2 establishes the biased government's strategy. Notice that the government that values partisanship never retains low-performing incumbents (s^L is non-negative). Although the biased government can tolerate low-qualification for a chance to have a co-partisan in office, this trade-off is unfeasible as the voter always ousts low-performing incumbents.

The biased government obtains higher utility when the co-partisan official wins the election. Therefore, the government sets a lower performance threshold for pro-regime officials (see Figure 2) and, on average, replaces fewer co-partisan incumbents than would the unbiased government (see Appendix B). The dashed line in Figure 3, shows how many incumbents the unbiased government replaces on average depending on the official's qualification (θ_I). Other things being equal, the biased government always removes fewer office-holders; the solid line, which represents a share of the loyal incumbents replaced by the biased government, lies below the dashed one.

The second part of Proposition 2 examines the comparative static of the biased government's strategy. The effect of the government's bias and the value β_L on the performance threshold is obvious. The higher the co-partisanship benefit, the less willing the government to trade co-partisanship benefits for a chance of better policies. The solid arrow in Figure 2 shows how the threshold changes if the bias (B) decreases.

The impact of information on the performance threshold is two-fold. Better information (i) improves the government's inferences about the incumbent's type and (ii) alters the partisanship's relative value. As in the case with the unbiased government, the first effect lowers the performance threshold (s^L) as the government's confidence in the high-performing incumbent's qualification grows. At the same time, better information also lowers the relative value of the partisanship and, thus, increases the opportunity cost of retaining the co-partisan. When the quality of information is low, the latter effect overrides the former. As clarity of information improves, the former effect begins to prevail. In Figure 2, the solid line represents the performance threshold that the biased government sets for the incumbent.
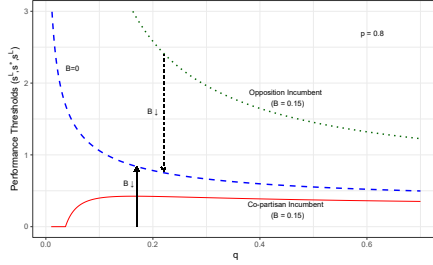
Figure 2: The dotted line indicates the performance threshold that the unbiased government sets. The solid line shows the performance threshold that the biased government ($B = 0.15$, $\beta = 1$) sets for the co-partisan incumbent. The dotted line represents the threshold for the opposition incumbent. The solid arrow shows how the threshold for the co-partisan changes as B decreases. The dashed arrow demonstrates how the threshold for the opposition changes as the bias decreases.
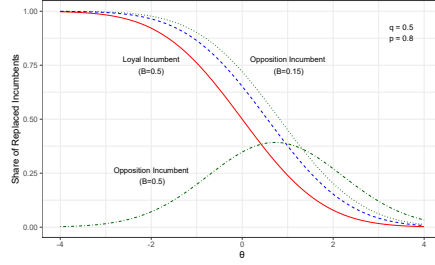
Figure 3: The dashed line shows the share of the incumbents whom the unbiased government replaces depending on the officials' true qualification. The solid line shows the share of the co-partisan incumbents replaced by the biased government ($B = 0.5$, $\beta = 1$). Dash-dotted lines represent the share of the opposition incumbent replaced by the biased government ($B = 0.5$ and $B = 0.15$, $\beta = 1$).

Biased Government. Opposition Incumbent

Let us now assume that the incumbent belongs to the opposition. If the government replaces the incumbent, it appoints the co-partisan official (see Remark 2). The government replaces the opposition incumbent if and only if:

$$
\begin{aligned}
p \times (Pr[s_A \geq 0](E[\theta_A|s_A \geq 0] + B) + Pr[s_A < 0]E[\theta_C]) + (1-p) \times \beta \times B \\
> \mathbf{1}[s_I \geq 0] \times E[\theta_I|s_I] + \mathbf{1}[s_I < 0] \times (E[\theta_C] + B).
\end{aligned}
\tag{7}
$$

Notice that the opposition incumbent's electoral defeat implies the co-partisan candidate's victory. It allows the government to employ the election to its advantage: as the voter ousts the low-performing incumbent in the election, the government can strategically retain the low-performing opposition to guarantee the co-partisan candidate's victory. Therefore, the sufficiently biased government's strategy no longer satisfies the monotonicity property.

Lemma 1.

1. *If a co-partisanship benefit B is below a threshold*

$$
B^* \equiv p \times \frac{1}{\sqrt{2\pi}} \frac{1}{\sqrt{1 + 1/q}} \frac{1}{1 - p/2 - (1-p) \times \beta},
$$

the optimal strategy of the government satisfies the monotonicity property (see Appendix B);

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2. *If a co-partisanship benefit B exceeds the threshold B^*, the government always retains the low-performing incumbent, and the government's strategy does not satisfy the monotonicity property.*

I summarize the optimal strategy of the government with the opposition incumbent in the following proposition:

Proposition 3.

1. *If a co-partisanship benefit B is below the threshold B^*, the government retains the opposition incumbent if and only if performance of the latter exceeds a performance threshold*

$$s^O \equiv p \times \sqrt{\frac{1+1/q}{2\pi}} + B \times (1+1/q) \times (p/2 + (1-p) \times \beta); \qquad (8)$$

2. *If a co-partisanship benefit B exceeds the threshold B^*, the government retains the opposition incumbent if and only if the latter is either low-performing or his performance exceeds the threshold s^O.*

If the incumbent belongs to the opposition, every replacement may result in the loyalist's electoral victory, encouraging the government to replace high-performing incumbents. As a result, the biased government sets a higher performance threshold than the unbiased one for the high-performing opposition incumbent. In Figure 2, the dotted line representing the performance threshold for the opposition incumbent lies above the dashed line showing the threshold that the unbiased government sets.

However, the government's inclination to replace the opposition does not necessarily translate into an ex-ante higher rate of the opposition incumbent's dismissal. When the government is highly biased ($B > B^*$), it utilizes the forthcoming election to guarantee the co-partisan candidate's victory. As a result, it replaces fewer incumbents on average than the government with the co-partisan incumbent (see Appendix B) at the expense of retaining a disproportionately high number of low-type opposition officials. Figure 3 demonstrates that the share of those replaced by the highly biased government ($B > B^*$) low-qualified ($\theta_I < 0$) co-partisan incumbent (the solid line) exceeds the share of the replaced low-qualified opposition incumbents.

I study comparative statics of the proposed class of equilibria in the next proposition:

Proposition 4.

1. *The performance threshold s^O is decreasing in clarity of information and increasing in a co-partisanship benefit;*

2. *The biased government is more likely to strategically retain low-performing incumbents as clarity of information deteriorates.*

If the incumbent belongs to the opposition, higher transparency improves the government's inferences and increases the partisanship's opportunity cost. Both encourage the government to retain the incumbent, and the performance threshold decreases in transparency. In Figure 2, the dotted line representing the opposition incumbent's performance threshold decreases in clarity of information. In contrast, higher co-partisanship benefit encourages the government to replace the high-performing opposition incumbent, and the performance threshold increases in a co-partisanship benefit. In Figure 2, the dotted arrow demonstrates how the threshold shifts if the bias declines.

The second part of Proposition 4 studies the impact of transparency on the government's decision to retain the low-performing incumbent. When the incumbent belongs to the opposition, the government's ability to draw better inferences about his type is redundant – the low-performing incumbent will not win the election. Nevertheless, the higher the clarity of information, the lower a chance that, after the government replaces the incumbent, the voter elects a high-performing ($s_A > 0$) but low-type ($\theta_A < 0$) appointee. Accordingly, higher transparency encourages the government to avoid strategic retention – the co-partisanship benefit's threshold (B^*) increases in information clarity.

Replacement Institution and Voter Welfare

Every regime must constantly balance the interests of the people and those of the rulers: Although the latter may help the regime to "obtain principality," revolutionary threats by the former can quickly undermine the state's authority (Machiavelli 2008, Bueno de Mesquita & Smith 2010). Within the current model context, a co-partisanship benefit (B) already exogenously captures the balance of power between the people's will and co-partisans' interests: Other things being equal, the higher the value of B, the less the policy outcomes and population's satisfaction should be of concern to the government.

Yet, the overall effect of the introduced hybrid institution on voter welfare remains out of interest. In this section I ask whether the voter would forbid the biased government's interventions in favor of non-interference if empowered to do so. I demonstrate that, under certain conditions, the government's interference can be welfare improving.

Notice that I am referring to *ex-ante* (before the voter learns the incumbent's performance) welfare improvements. If the voter were to forbid the government's intervention after observing the policy outcome, she would favor the government's interventions if and only if the government were unbiased, as, in this case, the government's interests coincide with those of the voter. From the ex-post perspective, the biased government's actions are always suboptimal for the voter: While the government values partisanship, it is tempted to improve a co-partisan candidate's electoral chances. As a result, upon seeing the incumbent's performance, the voter frequently favors the response opposite to the one the biased government adopts. In contrast, from the *ex-ante* perspective, even the biased government's interventions can benefit the voter.

When the incumbent is co-partisan, the voter always prefers the government's interventions to the lack thereof, regardless of the government's bias (see Appendix C). In Figure 4, the solid curve representing the ex-ante voter's expected utility with the co-partisan incumbent and the biased government's interventions lies above the dashed horizontal line that shows the expected utility subject to non-interference. Intuitively, when the incumbent is co-partisan, the government's interventions are always beneficial as the forthcoming election and the value of the official's good performance restrain the biased government from behavior that can harm the voter.

If the incumbent belongs to the opposition, the biased government, first, excessively replaces high-performing officials, and second, can strategically retain low-performing incumbents. Both actions pull the voter's utility away from the first-best outcome. In Figure 4, the solid line that demonstrates the voter's utility with the opposition incumbent and the biased government's interventions decreases in the government's bias while the downward arrow indicates the impact of the strategic retentions on the voter's utility. When the incumbent belongs to the opposition and the government's bias is sufficiently high, the voter ex-ante prefers non-interference to the government's interventions.

Proposition 5.

1. *If the incumbent is co-partisan, the voter (ex-ante) always prefers the biased governmental intervention to non-interference.*

2. *If the incumbent belongs to the opposition, the voter prefers the biased governmental interventions to non-interference if an only if the government's bias is sufficiently low $(B < B'(\beta, p))$.*

Incumbent's Partisanship and Voter Welfare

Next, let us assume that the replacement institution is inevitable. In this section, I consider a bigger game where the voter can decide whether to elect a co-partisan candidate or an opposition candidate to take an open seat in the election. Once the voter makes her choice, this candidate becomes an incumbent, and the baseline model timing repeats. From the perspective of this bigger game, the voter's decision results in one of two separate subgames: the one with an opposition incumbent and the one with a co-partisan incumbent. Both of these subgames were analyzed above.

The government's replacements supplement the candidates' pool with new, potentially highly qualified officials, while the lack thereof results in stagnation. Because of that, the voter, other things being equal, should prefer excessive replacements to insufficient replacements and, following this intuition, should favor opposition candidates over co-partisans in the open seat election. In Figure 4, the dashed curve that represents the voter's expected utility with excessive replacements lies above the dashed line that show the voter's utility with insufficient replacements. In the next proposition I summarize conditions under which

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the voter, instead, sincerely favors the co-partisan candidate over the opposition candidate in the open seat election (see Appendix C for proofs).

Proposition 6.

1. *When the government is sufficiently biased to strategically retain low-performing opposition, the voter ex-ante favors the co-partisan incumbents.*

2. *When the government does not strategically retain low-performing opposition incumbents, the voter ex-ante favors the co-partisan incumbent if an only if probability of the voter's learning of the appointee's performance is sufficiently low $(p < p'(\beta))$.*

Two factors can divert the voter from supporting the opposition in the open seat election. First, when the voter elects the opposition to become the incumbent, the government can employ the forthcoming election to ensure the co-partisan's victory (see Figure 4). When the government is sufficiently biased, the benefits of excessive replacements over insufficient replacements cannot override a disadvantage produced by an inferior pool of competitors.

Second, when the government does not strategically retain low-performing opposition, the threshold set by the government for the incumbents increase in probability of the voter's learning,[6] regardless of the incumbent's partisanship. Therefore, a lower probability of the voter's learning drives the government strategy regarding the opposition further away from the optimal replacement rate. In Figure 5, black arrows indicate the direction of the impact of information on the voter's utility. For sufficiently low p, the voter favors the co-partisan candidate over the opposition in the open seat election.

To summarize, when the voter is unlikely to learn the appointee's performance or when the government's bias is high, the voter should elect the co-partisan candidate in the open seat election unless she exogenously prefers opposition officials to co-partisan ones. This observation provides an additional explanation for the popular support of non-democratic regimes: the replacement institution itself provokes the voter to ex-ante embrace the co-partisan candidates.
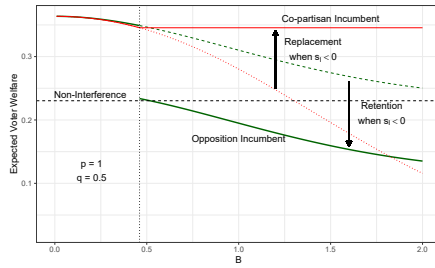
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[6]For $B < \min\{B^*(\beta_O), B^*(\beta_L)\}$.

Figure 4: The solid curve below (green) represents expected voter welfare with the opposition incumbent and the government that strategically retains low-performing opposition. The dashed curve (green) indicates expected voter welfare when the voter cannot affect the incumbent's electoral perspectives. the government can retain low-performing incumbents. The solid curve above (red) shows expected voter welfare with the co-partisan incumbent. The dotted curve (red) indicates expected voter welfare when the voter cannot affect the incumbent's electoral perspectives. The dashed line represents expected voter utility in the case of non-interference. The vertical dotted line demonstrates the partisanship benefit threshold above which the biased government retains low-performing opposition incumbents. $\beta = 1$.
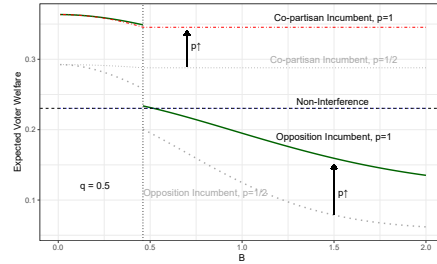
Figure 5: Dotted curves indicate the expected voter's utility when probability of voter's learning of the appointee's performance $p = 1/2$. The solid curve shows the voter's utility with the opposition incumbent. The dash-dotted curve demonstrates the voter's utility with the co-partisan incumbent. $\beta = 1$.

Extensions

In the following section I relax assumptions of the baseline model and introduce three extensions to it. I allow for (i) electoral unfairness; (ii) information asymmetry; and (iii) costly replacements. I demonstrate that the main results of the paper hold, and that the introduced extensions aggravate the voter's incentives to ex-ante support pro-regime candidates. For tractability of results, in what follows I assume that the voter always return the appointee she learns nothing about to office. For instance, one can assume that every current local authority reaps the benefits of better name recognition and favorable television ratings (Prior 2006, Kahn & Kenney 1999, Kahn & Kenney 1997).

Unfair Elections

In non-democratic countries, elections are seldom fair and rarely pursue a selection of qualified officials. Instead, as I mentioned before, non-democratic governments can employ elections to estimate popular support, promote the regime's popularity, persuade international community in the legitimacy of the regime or for co-option of opposition. Given the above, I relax the assumption

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of electoral integrity and estimate a contribution of fair elections to population welfare.

Let us assume that if the voter casts a ballot against a *co-partisan* candidate, the latter nevertheless wins the election with probability α. With complementary probability $(1 - \alpha)$, the co-partisan loses. In particular, when $\alpha = 0$, the election is fair, the co-partisan office-holder wins the race if his performance exceeds the average; the co-partisan challenger wins the election if the office-holder's performance is below average. On the contrary, if $\alpha = 1$, the voter's preferences cannot change the course of the career of the co-partisan authority. In what follows, I denote α as electoral unfairness. Examples of electoral unfairness may involve partial media coverage of competing candidates, candidates' exclusion from the ballot, voter oppression, malicious design of the ballot papers, lack of a secret ballot, fraudulent vote counts, biasedness of the electoral management body, and many others (Robie 2014, Enikolopov et al. 2011, Wilson 2006, Hartlyn et al. 2008, Rose & Mishler 2009, Wilson 2006).

Notice that electoral unfairness (α) does not affect the voter's optimal strategy: She consistently tries to oust low-performing officials. It also does not mitigate the government's incentives to select co-partisan appointees (see Appendix D). However, the biased government adapts its replacement strategy to changed circumstances.

Cognizant that a low-performing co-partisan may hold onto power, the government replaces fewer high-performing co-partisan incumbents. The replacement of a high-performing co-partisan never improves the government's chances to promote co-partisan candidates: High-performing co-partisans always win the election. Instead, the higher the electoral unfairness, the lower the co-partisan benefit contribution into the government's utility following the replacement. At the same time, the higher the electoral unfairness, the higher the *low-performing* appointee's chances are to win the election. Both deter the government from replacing high-performing co-partisans.

When the incumbent belongs to the opposition, the co-partisan benefit's impact and performance component's impact are no longer co-aligned as they were with the co-partisan incumbent. Higher electoral unfairness increases *co-partisan* challenger's and appointee's chances to win the election. However, while it affects all the challengers, higher electoral unfairness only affects some appointees, which discourages the government from replacing the opposition. At the same time, higher electoral unfairness deprives the high-performing opposition incumbent's electoral chances that encourages the government to replace opposition incumbents.

Although the government replaces fewer co-partisan incumbents in the presence of electoral unfairness, the sufficiently biased government replaces more opposition incumbents than co-partisan incumbents in equilibrium (see Appendix D).

Higher electoral unfairness lowers the voter's utility (see Appendix D). First, it directly improves the electoral chances of the low-performing co-partisan candidate. Electoral unfairness also decreases the high-performing *opposition* incumbent's chances to be re-elected. Second, electoral unfairness indirectly

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harms the voter by affecting the government's actions. Electoral unfairness further discourages the government from welfare improving replacements of the high-performing co-partisans.

Finally, electoral unfairness aggravates the voter's incentives to ex-ante vote for the co-partisan incumbent. Notice that higher electoral unfairness never affects the low-performing incumbent's chances to win the election: The voter does not re-elect the low-performing opposition incumbent, and the government does not retain the low-performing co-partisan incumbent. Electoral unfairness evenly affects the voter's utility following the incumbent's replacement regardless of his partisanship: It increases the probability of returning the low-performing appointee to office. However, electoral unfairness decreases the high-performing opposition incumbent's electoral chances. It further discourages the voter from supporting the opposition who is unlikely to win the forthcoming election (see Appendix D). Figure 6 shows that the difference between the voter's welfare vis-a-vis the co-partisan and opposition increases in electoral unfairness α.
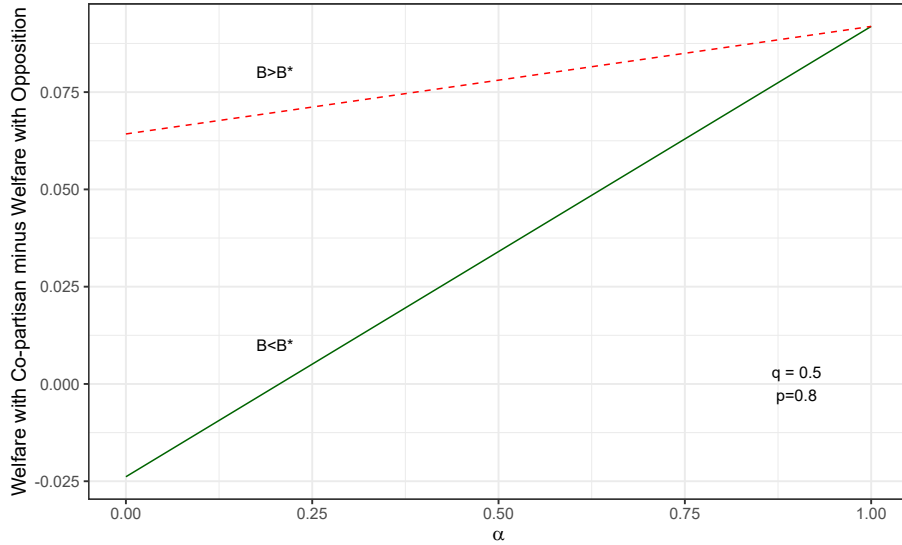

Figure 6: The solid curve represents the difference in the expected voter's utility with the co-partisan and the opposition incumbent when the government's bias is below the bias threshold B^*. The dashed curve shows the difference for the government that strategically retains low-performing opposition incumbents ($B > B^*$).

The following proposition summarizes the main results of this section:

Proposition 7. *Higher electoral unfairness:*

encourages the government to replace fewer high-performing co-partisan incumbents.Higher electoral unfairness lowers the voter's utility. Higher

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electoral unfairness further aggravates the voter's incentives to ex-ante support co-partisan candidates.

Costly Replacements

Let us assume that every replacement costs the government c, where c is non-negative. This cost might arise from selecting an appointee or persuading a current official to leave office. Alternatively, one can interpret c as a possible adverse population reaction to the replacement per se. For instance, in 2020, the Russian government arrested and replaced the governor of Khabarovsk Kra, which later sparked protests by the region's population.[7]

The cost of making replacements does not affect the voter's strategy. She returns the official to office if and only if he is high-performing. Neither does it vary the government's choice of the appointee's partisanship: the government always selects a co-partisan. The replacement cost only affects the government's strategy. Higher costs directly discourage the government from replacing office-holders.

Initially, it seems that the replacement cost should improve voter welfare. It shields high-performing opposition incumbents from unnecessary replacements driven by the government's wish to install a co-partisan. For opposition incumbents, the government sets a performance threshold:

$$s_c^O \equiv \max\{0, p\frac{\sqrt{1+1/q}}{\sqrt{2\pi}} + (2-p)\frac{1+1/q}{2}B - c(1+1/q)\}.$$

A higher replacement cost lowers the government's performance threshold for opposition incumbents (see Appendix E) and positively contribute to the while the cost is below a threshold c^*:

$$c^* \equiv \begin{cases} (1-\frac{p}{2})B, \text{ if } B < \frac{p}{\sqrt{2\pi}}\frac{1}{\sqrt{1+1/q}}, \\ c^O, \text{ Otherwise}, \end{cases} \tag{9}$$

the voter's utility with the opposition incumbent is increasing in the replacement cost c.

However, first, a higher cost simultaneously discourages welfare improving replacements of co-partisan incumbents. For co-partisan incumbents, the government sets a performance threshold:

$$s_c^L \equiv \max\{0, p(\frac{\sqrt{1+1/q}}{\sqrt{2\pi}} - \frac{1+1/q}{2}B) - c(1+1/q)\}.$$

The threshold s_c^L decreases in the cost of replacements, driving the government's strategy further away from the optimal rate of replacements. Second, the replacement cost deepens the government's incentives to retain the low-performing opposition incumbent strategically (see Appendix E). The government retains

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[7]New Protests in Russia's Far East After Governor Replaced; The New York Times

the low-performing opposition when the co-partisan benefit is above a threshold B_c^*:

$$B_c^* \equiv \frac{\sqrt{2/\pi}}{\sqrt{1+1/q}} - \frac{2c}{p}$$

that exceeds the threshold B_c^*. The government, being subject to the replacement cost, retains more low-performing opposition incumbents.

Additionally, when the replacement cost exceeds a threshold c^L (see Appendix E):

$$c^L \equiv p \frac{1}{\sqrt{2\pi}} \frac{1}{\sqrt{1+1/q}} + (1 - \frac{p}{2})B,$$

the government always retains incumbents regardless of their partisanship and performance, even when an incumbent is low-performing and will be ousted in the forthcoming election.

The next proposition summarizes the statements above:

Proposition 8.

1. *When the incumbent belongs to the opposition, voter utility increases in the cost of replacements for $c < c^*$.*

2. *When the incumbent is co-partisan, the voter's utility weakly decreases in replacement cost.*

3. *A threshold above which the government retains low-performing opposition incumbents strategically (B_c^*) decreases in the cost of the replacements.*

Finally, a sufficiently high replacement cost aggravates the voter's incentives to ex-ante support the co-partisan and encourages the government to retain fewer co-partisans than opposition incumbents (see Appendix E):

Proposition 9.

1. *If the replacement cost is sufficiently high $c > c^O$, the voter ex-ante weakly prefers the co-partisan incumbent to the opposition incumbent.*

2. *If the replacement cost is sufficiently high $c > c^O$, the government replaces fewer opposition incumbents than co-partisan incumbents.*

Asymmetric Information

In the baseline model, the government and the voter do not differ in the information they possess. They make inferences about the candidates' qualifications based on commonly known priors. Once the candidate assumes office, the government and the voter rely on the same observed signals to evaluate his competence. This assumption of information symmetricity is very restrictive. The government may know more than the voter on many occasions. The government can observe the candidates' past performance in different administration
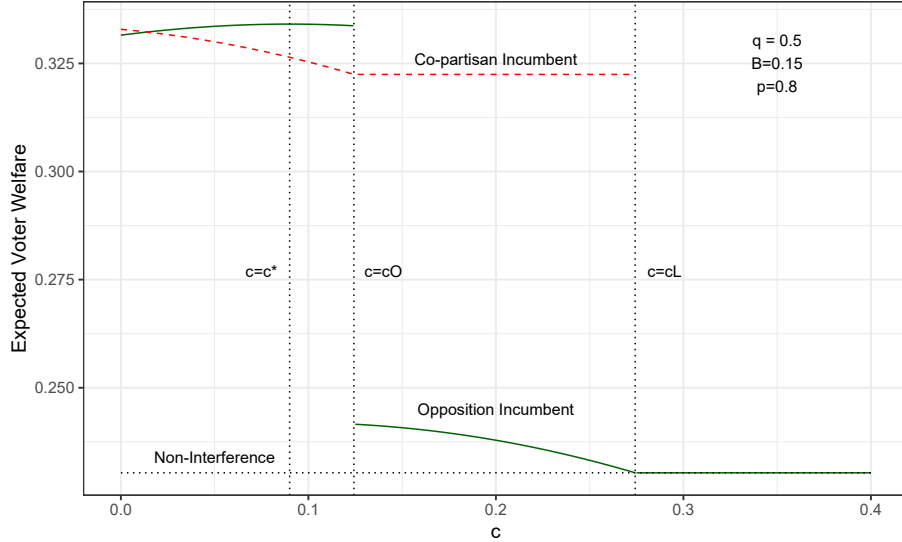
Figure 7: The solid curve represents the voter's expected utility with the opposition incumbent. The dashed curve shows the voter's utility with the co-partisan incumbent. Vertical dashed lines show the thresholds c^*, c^O and c^L. The horizontal dotted line represents the expected voter's utility in the case of non-interference. The voter's utility is increasing in c for $c \in [0, c^*]$. The voter's utility with the co-partisan incumbent exceeds the voter's utility with the opposition incumbent for $c \in [c^O, c^L]$.

jobs (Buckley et al. 2014). Simultaneously, the voter may lack the competence to evaluate the officials' qualifications (Healy & Malhotra 2009, Huber et al. 2012). Also, she may lack access to credible information due to the candidates' poor communication efforts (Prato & Wolton 2016, Hafer & Landa 2007, Landa & Meirowitz 2009) or to political propaganda and censorship (Morozov 2011, Allcott & Gentzkow 2017, Enikolopov et al. 2011, King et al. 2013, King et al. 2014).

To account for that, in the following section, I relax the assumption of information symmetry. Instead, I allow the government (but not the voter) to observe the appointee's performance (s_A) before making a replacement. As in the baseline model, I assume that after the appointee takes office, the voter observes a signal about his type with probability p ($s_A^V = s_A$) and does not learn the appointee's performance with complementary probability ($s_A^V = \varnothing$). For tractability, in this section I assume that the government always selects the co-partisan appointee and, thus, the voter does not update her information based on the appointee's partisanship.

The voter acts last. When the incumbent is replaced but the voter does not observe his performance ($s_A^V = \varnothing$), she must update based on the fact of the replacement and the observed incumbent's performance to draw inferences about the appointee's qualification. Otherwise, the voter returns the current

office-holder if and only if he is high-performing. Notice that because the government and the voter receive the same signal about the incumbent's type, the voter does not update her beliefs upon lack of a replacement; likewise, if the voter observes the appointed official's performance, she returns only the high-performing appointees to office.

The government knows the voter's strategy and acts accordingly. Figures (8) and (9) depict the government's strategy depending on the incumbent's partisanship and observed appointee's and incumbent's performances. See Appendix F for full characterization of equilibria.
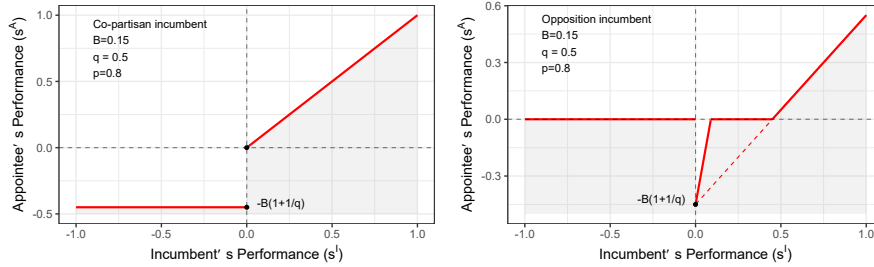

Figure 8: The government replaces the co-partisan incumbent if the appointee's performance exceeds a threshold depicted by the solid line.

Figure 9: The government replaces the opposition incumbent if the appointee's performance exceeds a threshold depicted by the solid line.

The information asymmetry runs parallel to two main results of the paper. First, the sufficiently biased government replaces more co-partisan incumbents than opposition incumbents even in the presence of newly available information. Second, the voter can ex-ante prefer the pro-regime incumbent to the opposition one (see Appendix F).

Conclusion

This paper examines an institution that combines federal appointments and elections. I show that in the presence of this hybrid procedure, high government bias toward co-partisan local officials promotes sincere voter support of co-partisan candidates even if the election is fair and the information available to the government and the voter is symmetric. This is because, first, the forthcoming elections differently affect the government's actions depending on the incumbent's partisanship. When the incumbent belongs to the opposition, the government's bias encourages it to replace opposition incumbents even though it might result in a worse-performing local official in office. If instead the incumbent is co-partisan, the government is inclined to retain the incumbent even when a replacement can improve an authority's expected qualification. I demonstrate that the forthcoming election effectively constrains the biased gov-

ernment, not allowing it to retain co-partisan candidate. However, the election *cannot* affect the government's conduct concerning the opposition incumbent.

Second, when the incumbent belongs to the opposition, the government might strategically employ the forthcoming elections to ensure the co-partisan candidate's victory. Once the government deliberately retains the low-performing opposition, the voter is forced to support the pro-regime candidate. Aware of these two effects, the voter will ex-ante sincerely favor pro-regime incumbents.

I also show that even if the voter is empowered to forbid the government's interventions, it will do so if only if (i) the government is sufficiently biased, (ii) the incumbent belongs to the opposition, and (iii) the probability of the voter's learning about the appointee's qualification is sufficiently low. Otherwise, the government's interventions improve voter welfare.

I demonstrate that the clarity of information non-monotonically affects the government's decision to replace a co-partisan incumbent, as information clarity alternates the relative value of partisanship to the biased government. I show that the biased government replaces fewer opposition incumbents than co-partisans in equilibrium, as it might strategically retain low-performing opposition to ensure co-partisan candidates' victories.

Finally, I relax the baseline model's assumptions and allow for information asymmetry, electoral unfairness, and introduce costly replacements. I demonstrate that these modifications lower voter welfare and aggravate voter support of pro-regime incumbents.

Appendices

A   Unbiased Government

First, let us show that the optimal behavior of the government satisfies monotonicity property. The unbiased government replaces the incumbent if and only if:

$$
\begin{aligned}
p \times (Pr[s_A \geq 0]E[\theta_A|s_A \geq 0] + Pr[s_A < 0]E[\theta_C]) + (1-p) \times \beta \times E[\theta_A] \\
> \mathbf{1}[s_I \geq 0] \times E[\theta_I|s_I] + \mathbf{1}[s_I < 0] \times E[\theta_C].
\end{aligned}
\tag{10}
$$

The right-hand side of the equation is increasing in s_I. Therefore, if the government retains the incumbent who produces policy s_I, it should also retain every official who performs better.

The unbiased government acts after it observes the incumbent's performance which doubles as a signal of his qualification (s_I). The government knows that the population votes for the incumbent in the election if and only if his performance exceeds the average ($s_I \geq 0$). Therefore, if the government chooses

$R = 1$, it expects utility:

$$E[U_{B=0}(R = 1|s_I)] = \mathbf{1}[s_I \geq 0] \times E[\theta_I|s_I]$$

$$= \mathbf{1}[s_I \geq 0] \times \int_{-\infty}^{\infty} x \frac{f_{\theta_I, \varepsilon_I}(x, s_I - x)}{f_{\theta_I + \varepsilon_I}(s_I)} dx$$

$$= \mathbf{1}[s_I \geq 0] \frac{1}{1 + 1/q} \times s_I.$$

At the same time, if the unbiased government decides to replace the incumbent with the appointee, it cannot predict how well the latter will perform. With some probability the lowperformance of the appointee will lead to the election of the challenger. The expected utility of the government which decides to replace the incumbent with the appointee ($R = 0$):

$$E[U_{B=0}(R = 0|s_I)] = p \times (Pr[s_A \geq 0]E[\theta_A|s_A \geq 0] + Pr[s_A < 0]E[\theta_C])$$

$$= p \times Pr[s_A \geq 0] \times \int_{-\infty}^{\infty} \int_{0-y}^{\infty} x f_{\theta_A, \varepsilon_A}(x, y) dx dy / Pr[\theta_A + \epsilon_A \geq 0] + 0$$

$$= p \times \frac{1}{2} \times \int_{-\infty}^{\infty} \int_{-y}^{\infty} x \frac{1}{2\pi\sigma_{\theta_A}\sigma_{\varepsilon_A}} e^{-\frac{(x - \mu_{\theta_A})^2}{2\sigma_{\theta_A}^2} - \frac{(y - \mu_{\varepsilon_A})^2}{2\sigma_{\varepsilon_A}^2}} dx dy \times 2$$

$$= p \times \frac{1}{2} \frac{2}{\sqrt{2\pi}} \frac{1}{\sqrt{1 + 1/q}}.$$

The government retains the incumbent if and only if it observes a signal that exceeds a threshold:

$$s^* \equiv p \times \frac{\sqrt{1 + 1/q}}{\sqrt{2\pi}}.$$

B Biased Government

B.1 Appointee's Partisanship

First, let us prove that the biased government always appoints a co-partisan official. If the government appoints an opposition, it gets utility:

$$E[U_B(\text{Replace Incumbent, Opposition Appointee})]$$
$$= p \times (Pr[s_A \geq 0]E[\theta_A|s_A \geq 0] + Pr[s_A < 0](E[\theta_C] + B)).$$

When the government appoints a co-partisan official, it receives utility:

$$E[U_B(\text{Replace Incumbent, Co-partisan Appointee})]$$
$$= p \times (Pr[s_A \geq 0](E[\theta_A|s_A \geq 0] + B) + Pr[s_A < 0]E[\theta_C]) + (1 - p) \times \beta \times B.$$

The latter weakly exceeds the former therefore, other things being equal, the government always appoints a co-partisan.[8]

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[8]When the voter chooses $\beta = 0$, the government is indifferent between the co-partisan appointee and the opposition appointee. To guarantee uniqueness, I refine the set of equilibria using trembling hand refinement.

B.2 Performance Threshold for the Co-partisan Incumbent

$$p \times (Pr[s_A \geq 0](E[\theta_A|s_A \geq 0] + B) + Pr[s_A < 0]E[\theta_C]) + (1-p) \times \beta \times B$$
$$> \mathbf{1}[s_I \geq 0] \times (E[\theta_I|s_I] + B) + \mathbf{1}[s_I < 0] \times E[\theta_C]. \tag{11}$$

Therefore, the government retains the co-partisan incumbent if his performance exceeds the threshold:

$$s^L \equiv \max\{0, p\sqrt{\frac{1+1/q}{2\pi}} - B \times (1+1/q) \times (1 - p/2 - \beta \times (1-p))\}. \tag{12}$$

B.3 Share of the Replaced Co-partisan Incumbents

Now, let us prove that the biased government replaces less co-partisan incumbent, than the unbiased one would:

$$Pr[R = 0|B = 0] = Pr[s_I < s^*] = \Phi(\frac{s^*}{\sqrt{1+1/q}}) \tag{13}$$

$$Pr[R = 0|\text{Co-partisan Incumbent}, B] = Pr[s_I < s^L] = \Phi(\frac{s^L}{\sqrt{1+1/q}}) \tag{14}$$

Because s^* exceeds s^L, the biased government replaces fewer co-partisan incumbents than the unbiased one would.

B.4 Low-performing Opposition

The biased government strategically retains the low-performing opposition incumbent if and only if:

$$p \times (Pr[s_A \geq 0](E[\theta_A|s_A \geq 0] + B) + Pr[s_A < 0]E[\theta_C]) + (1-p) \times \beta \times B$$
$$\leq E[\theta_C] + B. \tag{15}$$

$$\Updownarrow$$

$$p \times \frac{1}{\sqrt{2\pi}} \frac{1}{\sqrt{1+1/q}} \leq B \times (1 - p/2 - (1-p) \times \beta). \tag{16}$$

$$\Updownarrow$$

$$B \geq p \times \frac{1}{\sqrt{2\pi}} \frac{1}{\sqrt{1+1/q}} \frac{1}{1 - p/2 - (1-p) \times \beta}. \tag{17}$$

Sufficiently biased government strategically retains low-performing opposition, the government's strategy does not satisfy the monotonicity property.

B.5 Share of Replaced Opposition Incumbents

When the government is highly biased $(B > B^*)$, expected probability of the opposition incumbent to be replaced is equal to:

$$Pr[R = 0|\text{Opposition Incumbent}, B > B^*] = Pr[s_I < s^L, s_I \geq 0]$$

$$= \Phi(\frac{s^O}{\sqrt{1 + 1/q}}) - 1/2 \qquad (18)$$

For bias B above the threshold B^*, the share of replaced co-partisans is constant and equates to $\Phi(0) = \frac{1}{2}$: The sufficiently biased government only replaces low-performing co-partisans. At the same time, the share of replaced opposition incumbents $(P[R = 0|\text{Opposition Incumbent}, B > B^*])$ is increasing in B. As B goes to infinity, $P[R = 0|\text{Opposition Incumbent}, B > B^*]$ converges to $1/2$. Therefore, for any given set of parameters, if the government is sufficiently biased $(B > B^*)$, it replaces more co-partisan incumbents than opposition incumbents.

C Voter Welfare

C.1 The Unbiased Government's Interventions VS Non-interference: Opposition Incumbent

To begin with, let us estimate the expected voter welfare in the case of non-interference. The voter re-elect the incumbent if and only if the latter performs above average qualification of the candidates in the pool. The voter's expected utility:

$$E[U_V|\text{Non-interference}] = Pr[s_I \leq 0]E[\theta_C] + Pr[s_I \geq 0]E[\theta_I|s_I \geq 0]$$

$$= \frac{1}{\sqrt{2\pi}}\frac{1}{\sqrt{1 + 1/q}}. \qquad (19)$$

Now, let us assume that the government can intervene and replace incumbents. If the government is unbiased, it retains those official whose performance exceeds the performance threshold s^*, where s^*:

$$s^* = p \times \sqrt{\frac{1 + 1/q}{2\pi}}.$$

The expected utility of the voter:

$$E[U_V|\text{Unbiased Government}] = Pr[s_I \leq s^*] \times p \times \left(Pr[s_A \leq 0]E[\theta_C]\right.$$

$$+ Pr[s_A > 0]E[\theta_A|s_A > 0]\big) + Pr[s_I \leq s^*](1 - p)E[\theta_A] + Pr[s_I > s^*]E[s_I|s_I > s^*]$$

$$= \left(\Phi(\frac{s^*}{\sqrt{1 + 1/q}}) \times p + \phi(\frac{s^*}{\sqrt{1 + 1/q}}) \times \sqrt{2\pi}\right)\frac{1}{\sqrt{2\pi}}\frac{1}{\sqrt{1 + 1/q}},$$

$$(20)$$

where $\Phi(\cdot)$ denotes CDF of standard normal distribution, $\phi(\cdot)$ denotes PDF of standard normal distribution.

Equation (25) increases in p:

$$E[U_V|\text{Unbiased Government}]'_p = \left(\frac{e^{-(p/\sqrt{2\pi})^2/2}}{\sqrt{2\pi}}\frac{p}{\sqrt{2\pi}}\right.$$

$$\left.+\Phi\left(\frac{s^*}{\sqrt{1+1/q}}\right) - \frac{e^{-(p/\sqrt{2\pi})^2/2}}{\sqrt{2\pi}}\frac{p}{2\pi}\sqrt{2\pi}\right)\frac{1}{\sqrt{2\pi}}\frac{1}{\sqrt{1+1/q}} > 0 \tag{21}$$

When p is minimal (p=0), equation (25) equates to equation (24):

$$E[U_V|\text{Unbiased Government}, p=0] = \frac{1}{\sqrt{2\pi}}\frac{1}{\sqrt{1+1/q}} \tag{22}$$
$$= E[U_V|\text{Non-interference}].$$

The voter always benefits from the unbiased government's intervention.

C.2 The Government's Interventions VS Non-interference: Opposition Incumbent

Let the government benefit from partisanship of the local officials. If the incumbent is co-partisan, the latter retains all office-holders whose performance exceeds the performance threshold s^L. The expected utility of the voter:

$$E[U_V|\text{Co-partisan}] = Pr[s_I \leq s^L] \times p \times \left(Pr[s_A \leq 0]E[\theta_C]\right.$$
$$\left.+Pr[s_A > 0]E[\theta_A|s_A > 0]\right) + Pr[s_I > s^L]E[s_I|s_I > s^L]$$
$$= \left(\Phi\left(\frac{s^L}{\sqrt{1+1/q}}\right) \times p + \phi\left(\frac{s^L}{\sqrt{1+1/q}}\right) \times \sqrt{2\pi}\right)\frac{1}{\sqrt{2\pi}}\frac{1}{\sqrt{1+1/q}}. \tag{23}$$

If $B > B^*$, then $s^L = 0$ and:

$$E[U_V|\text{Co-partisan}] = (p/2 + 1)\frac{1}{\sqrt{2\pi}}\frac{1}{\sqrt{1+1/q}} \geq E[U_V|\text{Non-interference}].$$

When, instead, $B \leq B^*$, $E[U_V|\text{Co-partisan}]$ increases in β:

$$E[U_V|\text{Co-partisan}]'_\beta$$
$$= \left(p \times \phi\left(\frac{s^L}{\sqrt{1+1/q}}\right) \times (s^L)'_\beta\right.$$
$$-\sqrt{2\pi} \times \phi\left(\frac{s^L}{\sqrt{1+1/q}}\right) \times \frac{s^L}{\sqrt{1+1/q}} \times (s^L)'_\beta\right)\frac{1}{\sqrt{2\pi}}\frac{1}{\sqrt{1+1/q}}$$
$$= \left(p - p + B\frac{(1-\beta(1-p)-p/2)p}{1-p/2}\sqrt{1+1/q}\right)\phi\left(\frac{s^L}{\sqrt{1+1/q}}\right) \times (s^L)'_\beta\frac{1}{\sqrt{2\pi}}\frac{1}{\sqrt{1+1/q}} \geq 0.$$
$$\tag{24}$$

Therefore, it reaches its minimum at $\beta = 0$. $E[U_V|\text{Co-partisan}, \ \beta = 0]$ increases in p for every B:

$$E[U_V|\text{Co-partisan}]'_p$$

$$= \left(\Phi\left(\frac{s^L}{\sqrt{1+1/q}}\right) + p \times \phi\left(\frac{s^L}{\sqrt{1+1/q}}\right)(s^L)'_p \right) \tag{25}$$

$$-\sqrt{2\pi} \times \phi\left(\frac{s^L}{\sqrt{1+1/q}}\right) \times \frac{s^L}{\sqrt{1+1/q}} \times (s^L)'_p) \frac{1}{\sqrt{2\pi}} \frac{1}{\sqrt{1+1/q}} \geq 0,$$

where $(s^L)'_p = B \times (1+1/q)/2 > 0$. When p is minimal (p=0), equation (28) coincides with equation (24) and as p increases, so does expected utility of the voter from the biased government's interventions. Therefore, the voter always benefits from the biased government's interventions if the incumbent is co-partisan.

C.3 The Government's Interventions VS Non-interference: Opposition Incumbent

When the incumbent belongs to the opposition, the government values co-partisanship, the the co-partisanship bias is moderate ($B \leq B^*$), the government retains the incumbent if and only if his performance exceeds the performance threshold s^O.

The expected utility of the voter:

$$E[U_V|\text{Opposition}, B \leq B^*] = Pr[s_I \leq s^O] \times p \times \left(Pr[s_A \leq 0]E[\theta_C] \right.$$
$$\left. +Pr[s_A > 0]E[\theta_A|s_A > 0] \right) + Pr[s_I > s^O]E[s_I|s_I > s^O] \tag{26}$$
$$= \left(\Phi\left(\frac{s^O}{\sqrt{1+1/q}}\right) \times p + \phi\left(\frac{s^O}{\sqrt{1+1/q}}\right) \times \sqrt{2\pi}\right)\frac{1}{\sqrt{2\pi}}\frac{1}{\sqrt{1+1/q}}.$$

Because:

$$p - \sqrt{2\pi}\frac{s^O}{\sqrt{1+1/q}} < 0,$$

the expected utility of the voter with the opposition incumbent decreases in β (see equation 24) and reaches its minimum at $\beta = 1$, $B = B^*$. When $B = B^*$:

$$E[U_V|\text{Opposition}, B = B^*, \beta = 1]$$

$$= \left(\Phi(\sqrt{2/\pi}) \times p + \phi(\sqrt{2/\pi}) \times \sqrt{2\pi}\right)\frac{1}{\sqrt{2\pi}}\frac{1}{\sqrt{1+1/q}}, \tag{27}$$

and the government's interventions benefit the voter if:

$$p \geq p^* \equiv \frac{1 - \sqrt{2\pi}\phi(\sqrt{2/\pi})}{\Phi(\sqrt{2/\pi})} \approx 0.34.$$

28

Therefore, when $p \in [1/2, 1]$, the government's interventions when $B < B^*$ and the incumbent belongs to the opposition always benefit the voter.[9]

When $B > B^*$, the government strategically retains the low-performing incumbent. The voter's utility:

$$E[U_V|\text{Opposition}, B \geq B^*] = Pr[0 < s_I \leq s^O] \times p \times \left(Pr[s_A \leq 0]E[\theta_C]\right.$$
$$\left. +Pr[s_A > 0]E[\theta_A|s_A > 0]\right) + Pr[s_I > s^O]E[s_I|s_I > s^O] \quad (28)$$
$$= \left(\Phi(\frac{s^O}{\sqrt{1 + 1/q}}) \times p + \phi(\frac{s^O}{\sqrt{1 + 1/q}}) \times \sqrt{2\pi} - p/2\right)\frac{1}{\sqrt{2\pi}}\frac{1}{\sqrt{1 + 1/q}}.$$

$E[U_V|\text{Opposition}, B \geq B^*]$ decreases in β and B. For every β equation (28) reaches minimum when B goes to infinity:

$$\lim_{B \to \infty} E[U_V|\text{Opposition}, B \geq B^*] = p/2 \times \frac{1}{\sqrt{2\pi}}\frac{1}{\sqrt{1 + 1/q}} \quad (29)$$
$$< E[U_V|\text{Non-interference}].$$

Equation (28) reaches maximum when B goes to B^* and β goes to 0:

$$\lim_{B \to \infty} E[U_V|\text{Opposition}, \lim_{B \to B^{*+}} B, \beta = 0] = \left(\Phi(\frac{p/\sqrt{2\pi}}{1 - p/2}) \times p\right.$$
$$\left. +\phi(\frac{p/\sqrt{2\pi}}{1 - p/2}) \times \sqrt{2\pi} - p/2\right)\frac{1}{\sqrt{2\pi}}\frac{1}{\sqrt{1 + 1/q}}. \quad (30)$$

For $p = 1$,[10] equation 30 exceeds equation 19. As voter's utility with the opposition incumbent decreases in B, for every β and p there exists a unique threshold $B'(\beta, p)$ s.t. the voter favors non-interference over the government's interventions if and only if $B \geq B'(\beta, p)$:

$$B'(\beta, p) \equiv E[U_V|\text{Opposition}, B \geq B^*]^{-1}(1).$$

C.4 Co-partisan Incumbent or Opposition Incumbent

Let us now compare the voter's utility with the opposition incumbent with the voter's utility with the co-partisan incumbent. They coincide when $B = 0$ and both decrease in B. Notice that the voter's strategy might be contingent on the incumbent's partisanship. Let's denote probability that the voter returns the appointee she learns nothing about when the incumbent is co-partisan as β_L and as β_O when the incumbent belongs to the opposition: $\beta = (\beta_O, \beta_L)$. B^* increases in β. When $\beta_L \leq \beta_O$, $B^*(\beta_L) \leq B^*(\beta_O)$.

$$E[U_V|\text{Co-partisan}, \lim_{B \to B^*(\beta_O)^-} B] = \left(p/2 + 1\right)\frac{1}{\sqrt{2\pi}}\frac{1}{\sqrt{1 + 1/q}}. \quad (31)$$

---

[9]When $p \in [0, 1]$, for every β there exists $p(\beta)$ s.t. the government's interventions benefit the voter for all B iff $p \geq p(\beta)$.

[10]For all $p \in [0, 1]$.

$$E[U_V|\text{Opposition}, \lim_{B \to B^*(\beta_O)^-} B]$$

$$= \big(\Phi(\frac{p/\sqrt{2\pi}}{1 - p/2 - (1-p)\beta_O}) \times p \qquad (32)$$

$$+ \phi(\frac{p/\sqrt{2\pi}}{1 - p/2 - (1-p)\beta_O}) \times \sqrt{2\pi}\big) \frac{1}{\sqrt{2\pi}} \frac{1}{\sqrt{1 + 1/q}}.$$

Let us denote:

$$\Gamma(p) \equiv \Phi(\frac{p/\sqrt{2\pi}}{1 - p/2 - (1-p)\beta}) \times p + \phi(\frac{p/\sqrt{2\pi}}{1 - p/2 - (1-p)\beta}) \times \sqrt{2\pi} - p/2.$$

For every β s.t. $\beta_L \leq \beta_O$, there exists a unique threshold $p'(\beta)$ s.t. for every $p > p'(\beta)$ and every $B < B^*(\beta_O)$ the expected utility of the voter with biased government with the co-partisan incumbent is lower than the expected utility with the opposition incumbent, where $p'(\beta) = \Gamma^{-1}(1)$.

When $\beta_L > \beta_O$:

$$E[U_V|\text{Co-partisan}, \lim_{B \to B^*(\beta_O)^-} B] = \big(\Phi(\frac{(1-p)(\beta_L - \beta_O)p/\sqrt{2\pi}}{1 - p/2 - (1-p)\beta_O}) \times p$$
$$+ \phi(\frac{(1-p)(\beta_L - \beta_O)p/\sqrt{2\pi}}{1 - p/2 - (1-p)\beta_O}) \times \sqrt{2\pi}\big) \frac{1}{\sqrt{2\pi}} \frac{1}{\sqrt{1 + 1/q}}. \qquad (33)$$

Because $(\Phi(x) \times p + \phi(x) \times \sqrt{2\pi})$ decreases in x for all $x > p/\sqrt{2\pi}$, it always exceeds $E[U_V|\text{Opposition}, \lim_{B \to B^*(\beta_O)^-} B]$. Therefore, if $\beta_L > \beta_O$, the voter always prefers the co-partisan incumbent to the opposition incumbent.

Second, let us compare the voter utility with the opposition incumbent and with the co-partisan incumbent. For equation (28) reaches maximum at $\beta = 0$ as B goes to B^{*+}:

$$E[U_V|\text{Opposition}, \lim_{B \to B^{*+}} B]$$

$$= \big(\Phi(\frac{p/\sqrt{2\pi}}{1 - p/2}) \times p + \phi(\frac{p/\sqrt{2\pi}}{1 - p/2}) \times \sqrt{2\pi} - p/2\big) \frac{1}{\sqrt{2\pi}} \frac{1}{\sqrt{1 + 1/q}}. \qquad (34)$$

For $B > B^*$, the voter's utility with the co-partisan incumbent (23) equates to:

$$E[U_V|\text{Co-partisan}, B > B^*] = \big(\Phi(0) \times p + \phi(0) \times \sqrt{2\pi}\big) \frac{1}{\sqrt{2\pi}} \frac{1}{\sqrt{1 + 1/q}}$$

$$= \big(p/2 + 1\big) \frac{1}{\sqrt{2\pi}} \frac{1}{\sqrt{1 + 1/q}}. \qquad (35)$$

When $p = 0$, equation 34 equates to 35. Because:

$$\frac{\partial(E[U_V|\text{Opposition},\ \lim_{B\to B^{*+}} B] - E[U_V|\text{Co-partisan}, B > B^*])}{\partial p}$$

$$= (\Phi(\frac{p/\sqrt{2\pi}}{1 - p/2}) - 1 - \phi(\frac{p/\sqrt{2\pi}}{1 - p/2})\frac{\sqrt{2/\pi} \times 2p^2}{(2 - p)^3})\frac{1}{\sqrt{2\pi}}\frac{1}{\sqrt{1 + 1/q}} < 0. \tag{36}$$

Equation 35 exceeds equation 34. The voter always favors the co-partisan incumbent when the government is sufficiently biased.

D   Unfair Election

D.1   The Appointee's Partisanship

If the government decides to replace the incumbent and selects the appointee who belongs to the opposition, the government get utility:

$$p\big(Pr[s_A \geq 0](1 - \alpha)E[\theta_A|s_A \geq 0] + Pr[s_A \geq 0]\alpha(E[\theta_C] + B)$$
$$+ Pr[s_A < 0](E[\theta_C] + B)\big) + (1 - p)E[\theta_A]. \tag{37}$$

If, instead, the government selects the co-partisan appointee, it gets:

$$p\big(Pr[s_A \geq 0](E[\theta_A|s_A \geq 0] + B) + Pr[s_A < 0]\alpha(E[\theta_A|s_A < 0] + B)$$
$$+ Pr[s_A < 0](1 - \alpha)E[\theta_C]\big) + (1 - p)(E[\theta_A] + B). \tag{38}$$

The co-partisan benefit encourages the government to always select the co-partisan appointee.

D.2   Performance Thresholds

The government replaces the co-partisan incumbent if and only if:

$$p\big(Pr[s_A \geq 0](E[\theta_A|s_A \geq 0] + B) + \alpha \times Pr[s_A < 0](E[\theta_A|s_A < 0] + B)$$
$$+ Pr[s_A < 0](1 - \alpha)E[\theta_C]\big) + (1 - p)(E[\theta_A] + B)$$
$$> \mathbf{1}[s_I \geq 0](E[\theta_I|s_I] + B) + \alpha \times \mathbf{1}[s_I < 0]E[\theta_I|s_I]$$
$$+ \mathbf{1}[s_I < 0](1 - \alpha)E[\theta_C]. \tag{39}$$

The government retains the co-partisan incumbent if his performance exceeds a threshold:

$$s_\alpha^L \equiv \max\{0, (1 - \alpha) \times p \times (\sqrt{\frac{1 + 1/q}{2\pi}} - \frac{1 + 1/q}{2}B\}. \tag{40}$$

If the election is unfair, the government replaces *fewer* high-performing co-partisan incumbents than with the fair elections ($s^L \geq s_\alpha^L$).

If the incumbent belongs to the opposition, the government replaces him if and only if:

$$
\begin{aligned}
p\big(Pr[s_A \geq 0](E[\theta_A | s_A \geq 0] + B) &+ \alpha \times Pr[s_A < 0](E[\theta_A | s_A < 0] + B) \\
+ Pr[s_A < 0](1-\alpha)E[\theta_C]\big) &+ (1-p)(E[\theta_A] + B) \\
> \alpha \times \mathbf{1}[s_I \geq 0](E[\theta_C] + B) &+ (1-\alpha)\mathbf{1}[s_I \geq 0]E[\theta_I | s_I] \\
&+ \mathbf{1}[s_I < 0](E[\theta_C] + B).
\end{aligned}
\tag{41}
$$

The government retains the high-performing opposition incumbent if and only if his performance exceeds the threshold s^O, and also retains the low-performing opposition when a co-partisanship benefit B exceeds the threshold B^*.

D.3   Share of the Replaced Incumbents

Let us compare probability of the opposition and the co-partisan incumbent to remain in office:

$$
\begin{aligned}
Pr[R = 1 | \text{Co-partisan}] &= Pr[s_I \geq s_\alpha^L] \\
&= \int_{s_\alpha^L}^{\infty} f_{s_I}(x)dx = 1 - \Phi\Big(\frac{s_\alpha^L}{\sqrt{1+1/q}}\Big) \\
= 1 - \Phi\Big(\max\{0, (1-\alpha) \times p \times (\frac{1}{\sqrt{2\pi}} &- \frac{\sqrt{1+1/q}}{2}B)\}\Big)
\end{aligned}
\tag{42}
$$

$$
\begin{aligned}
Pr[R = 1 | \text{Opposition}] \\
= Pr[s_I \geq s^O] + Pr[s_I < 0] \times \mathbf{1}[B \geq B^*] \times 1 \\
= 1 - \Phi\Big(\frac{s^O}{\sqrt{1+1/q}}\Big) + 0.5 \times \mathbf{1}[B \geq B^*] \\
= 1 - \Phi\Big(\frac{1}{\sqrt{2\pi}} + \frac{\sqrt{1+1/q}}{2}B\Big) + 0.5 \times \mathbf{1}[B \geq B^*]
\end{aligned}
\tag{43}
$$

When the co-partisanship benefit is sufficiently big, $Pr[R = 0 | \text{Opposition}]$ exceeds $Pr[R = 0 | \text{Co-partisan}]$. The government on average replaces more co-partisans than the opposition incumbents.

D.4 Voter Welfare

If the incumbent belongs to the opposition, the voter expected welfare is:

$$
\begin{aligned}
E[U_V^\alpha|\text{Opposition}, B < B^*] = {} & Pr[s_I \geq s^O] \times \alpha \times E[\theta_C] \\
& + Pr[s_I \geq s^O](1-\alpha)E[\theta_I|s_I \geq s^O] \\
& + Pr[s_I < s^O] \times p \times (Pr[s_A \geq 0]E[\theta_A|s_A \geq 0] \\
& + Pr[s_A < 0] \times \alpha \times E[\theta_A|s_A < 0] + Pr[s_A < 0](1-\alpha)E[\theta_C]) \\
& + Pr[s_I < s^O](1-p)E[\theta_A] \\
= {} & Pr[s_I \geq s^O](1-\alpha)E[\theta_I|s_I \geq s^O] \\
& + Pr[s_I < s^O] \times p \times (Pr[s_A \geq 0]E[\theta_A|s_A \geq 0] \\
& + Pr[s_A < 0] \times \alpha \times E[\theta_A|s_A < 0]).
\end{aligned}
\tag{44}
$$

$$
\begin{aligned}
E[U_V^\alpha|\text{Opposition}, B \geq B^*] = {} & Pr[s_I \geq s^O](1-\alpha)E[\theta_I|s_I \geq s^O] \\
& + Pr[0 \leq s_I < s^O] \times p \times (Pr[s_A \geq 0]E[\theta_A|s_A \geq 0] \\
& + Pr[s_A < 0] \times \alpha \times E[\theta_A|s_A < 0]) + Pr[s_I < 0]E[\theta_A].
\end{aligned}
\tag{45}
$$

When the incumbent is co-partisan, the voter's utility is:

$$
\begin{aligned}
E[U_V^\alpha|\text{Co-partisan}] = {} & Pr[s_I \geq s_\alpha^L]E[\theta_I|s_U \geq s^L] \\
& + Pr[s_I < s_\alpha^L] \times p \times (Pr[s_A \geq 0]E[\theta_A|s_A \geq 0] \\
& + Pr[s_A < 0] \times \alpha \times E[\theta_A|s_A < 0] \\
& + (1-\alpha)E[\theta_C]) + Pr[s_I < s^L](1-p)E[\theta_A] \\
= {} & Pr[s_I \geq s_\alpha^L]E[\theta_I|s_U \geq s_\alpha^L] \\
& + Pr[s_I < s_\alpha^L] \times p \times (Pr[s_A \geq 0]E[\theta_A|s_A \geq 0] \\
& + Pr[s_A < 0] \times \alpha \times E[\theta_A|s_A < 0]).
\end{aligned}
\tag{46}
$$

Parameter α increases electoral chances of low-performing co-partisans, decreases chances of high-performing opposition, and decreases the government's threshold s_α^L. The higher electoral unfairness, the lower the voter's utility.

D.5 Ex-ante Choice between the Co-partisan and the Opposition.

Let us first assume that the government is sufficiently biased $(B > B^*)$. Then, the government retains the co-partisan incumbent if and only if he is high-performing and strategically retains the low-performing opposition. The difference between the voter's utility with the co-partisan incumbent and the opposition incumbent will be:

$$E[U_V^\alpha|\text{Co-partisan}, B \geq B^*] - E[U_V^\alpha|\text{Opposition}, B \geq B^*]$$
$$= Pr[s_I \geq 0]E[\theta_I|s_I \geq 0]$$
$$+Pr[s_I < 0] \times p \times (Pr[s_A \geq 0]E[\theta_A|s_A \geq 0]$$
$$+Pr[s_A < 0] \times \alpha \times E[\theta_A|s_A < 0]) \qquad (47)$$
$$-Pr[s_I \geq s^O](1-\alpha)E[\theta_I|s_I \geq s^O]$$
$$-Pr[0 \leq s_I < s^O] \times p \times (Pr[s_A \geq 0]E[\theta_A|s_A \geq 0]$$
$$+Pr[s_A < 0] \times \alpha \times E[\theta_A|s_A < 0]).$$

$$\frac{\partial E[U_V^\alpha|\text{Co-partisan}, B \geq B^*] - E[U_V^\alpha|\text{Opposition}, B \geq B^*]}{\partial \alpha}$$
$$= Pr[s_I < 0] \times p \times Pr[s_A < 0]E[\theta_A|s_A < 0] + Pr[s_I \geq s^O]E[\theta_I|s_I \geq s^O]$$
$$-Pr[0 \leq s_I < s^O] \times p \times Pr[s_A < 0]E[\theta_A|s_A < 0])$$
$$= -\frac{p}{2}\frac{1}{\sqrt{2\pi}\sqrt{1+1/q}} + \frac{\phi(\frac{s^O}{\sqrt{1+1/q}})}{\sqrt{1+1/q}} + p(\Phi(\frac{s^O}{\sqrt{1+1/q}}) - \frac{1}{2})\frac{1}{\sqrt{2\pi}\sqrt{1+1/q}}$$
$$= \frac{1}{\sqrt{2\pi}}\frac{1}{\sqrt{1+1/q}}(\sqrt{2\pi} \times \phi(\frac{s^O}{\sqrt{1+1/q}}) + p \times \Phi(\frac{s^O}{\sqrt{1+1/q}}) - p).$$
$$(48)$$

For tractability, let's assume that $p = 1$. The voter always observes the appointee's qualification. I denote as $F(\cdot)$ the following function:

$$F(x) \equiv \phi(x)\sqrt{2\pi} + \Phi(x).$$

Notice that $F(x)$ decreases in x for x above $\frac{1}{\sqrt{2\pi}}$. For x above $\frac{1}{\sqrt{2\pi}}$ function $F(x)$ achieves a minimum of 1 when x goes to infinity.

Now, let us consider the case when $B < B^*$.

$$E[U_V^\alpha|\text{Co-partisan}, B < B^*] - E[U_V^\alpha|\text{Opposition}, B < B^*]$$
$$= Pr[s_I \geq s_\alpha^L]E[\theta_I|s_I \geq s_\alpha^L]$$
$$+Pr[s_I < s_\alpha^L](Pr[s_A \geq 0]E[\theta_A|s_A \geq 0]$$
$$+Pr[s_A < 0] \times \alpha \times E[\theta_A|s_A < 0]) \qquad (49)$$
$$-Pr[s_I \geq s^O](1-\alpha)E[\theta_I|s_I \geq s^O]$$
$$-Pr[s_I < s^O](Pr[s_A \geq 0]E[\theta_A|s_A \geq 0]$$
$$+Pr[s_A < 0] \times \alpha \times E[\theta_A|s_A < 0]).$$

$$\frac{\partial E[U_V^\alpha|\text{Co-partisan, } B < B^*] - E[U_V^\alpha|\text{Opposition, } B < B^*]}{\partial \alpha}$$

$$= \frac{1}{\sqrt{1+1/q}}(-\frac{s_\alpha^L}{\sqrt{1+1/q}}\phi(\frac{s_\alpha^L}{\sqrt{1+1/q}})\frac{s_\alpha^{L\prime}}{\sqrt{1+1/q}}$$

$$+\phi(\frac{s_\alpha^L}{\sqrt{1+1/q}})\frac{s_\alpha^{L\prime}}{\sqrt{1+1/q}}(1-\alpha)\phi(0) - \Phi(\frac{s_\alpha^L}{\sqrt{1+1/q}})\phi(0)$$

$$+\phi(\frac{s^O}{\sqrt{1+1/q}}) + \Phi(\frac{s^O}{\sqrt{1+1/q}})\phi(0))$$

$$= \frac{1}{\sqrt{1+1/q}}(\phi(\frac{s_\alpha^L}{\sqrt{1+1/q}})\frac{s_\alpha^{L\prime}}{\sqrt{1+1/q}}((1-\alpha)\phi(0) - \frac{s_\alpha^L}{\sqrt{1+1/q}})$$

$$-\Phi(\frac{s_\alpha^L}{\sqrt{1+1/q}})\phi(0)$$

$$+\phi(\frac{s^O}{\sqrt{1+1/q}}) + \Phi(\frac{s^O}{\sqrt{1+1/q}})\phi(0))$$

$$= \frac{1}{\sqrt{1+1/q}}(\phi(\frac{s^O}{\sqrt{1+1/q}})$$

$$-\phi(\frac{s_\alpha^L}{\sqrt{1+1/q}})(\frac{(s_\alpha^L)^2}{(1-\alpha)(1+1/q)} - \frac{s_\alpha^L}{\sqrt{2\pi}\sqrt{1+1/q}})$$

$$+(\Phi(\frac{s^O}{\sqrt{1+1/q}}) - \Phi(\frac{s_\alpha^L}{\sqrt{1+1/q}}))\phi(0)) > 0.$$

(50)

Both derivatives are always positive. The difference between the voter's utility with the co-partisan incumbent and the opposition incumbent increases in α. The electoral unfairness further encourages the voter to support the co-partisans.

E   Costly Replacements

E.1   Non-Interference

The biased government replaces the co-partisan incumbent if and only if:

$$p \times Pr[s_A \geq 0](E[\theta_A|s_A \geq 0] + B) + (1-p) \times B - c$$
$$> \mathbf{1}[s_I \geq 0](E[\theta_I|s_I] + B).$$

(51)

If replaces the opposition incumbent if and only if:

$$p \times (Pr[s_A \geq 0](E[\theta_A|s_A \geq 0] + B)) + (1-p) \times B - c$$
$$> \mathbf{1}[s_I \geq 0] \times E[\theta_I|s_I] + \mathbf{1}[s_I < 0] \times B.$$

(52)

Notice that when

$$p \times Pr[s_A \geq 0](E[\theta_A|s_A \geq 0] + B) + (1-p) \times B - c < 0, \qquad (53)$$

the government always retains the incumbent regardless of his performance and partisanship. Therefore, the government always retains the current office-holder when the cost of replacements exceeds a threshold:

$$c^L \equiv p\frac{1}{\sqrt{2\pi}}\frac{1}{\sqrt{1+1/q}} + (1 - \frac{p}{2})B.$$

E.2 Opposition Incumbent

When $c < c^L$, the government retains the high-performing opposition incumbent if and only if his performance exceeds a threshold:

$$s_c^O \equiv \max\{0, p\frac{\sqrt{1+1/q}}{\sqrt{2\pi}} + (2-p)\frac{1+1/q}{2}B - c(1+1/q)\}.$$

If the cost c exceeds a threshold:

$$c^O \equiv p\frac{1}{\sqrt{2\pi}}\frac{1}{\sqrt{1+1/q}} - \frac{p}{2}B,$$

the government also retains all *low-performing* incumbents. When the cost c is above the threshold c^L, the government retains *all* the incumbents. Figure (10) depicts the government's strategy when the incumbent belongs to opposition.
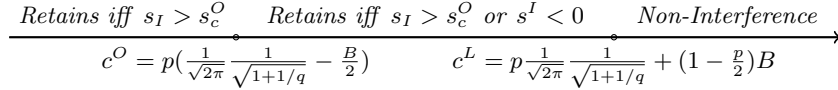

Figure 10: The biased government's optimal strategy with the opposition incumbent.

E.3 Co-partisan Incumbent

The government replaces the co-partisan incumbent if and only if his performance exceeds a threshold:

$$s_c^L \equiv \max\{0, p(\frac{\sqrt{1+1/q}}{\sqrt{2\pi}} - \frac{1+1/q}{2}B) - c(1+1/q)\}.$$

Figure 11 depicts the optimal government's strategy depending on the cost of replacement if the incumbent is co-partisan.
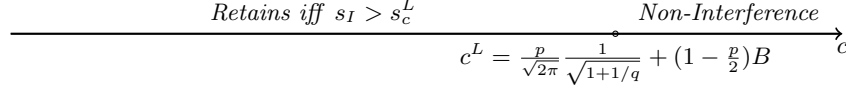
$$\text{Retains iff } s_I > s_c^L \qquad\qquad\qquad \text{Non-Interference}$$

$$c^L = \frac{p}{\sqrt{2\pi}}\frac{1}{\sqrt{1+1/q}} + (1-\frac{p}{2})B \qquad\qquad c$$

Figure 11: The biased government's optimal strategy with the loyal incumbent.

E.4 Voter Welfare

When $c \in [0, c^O]$, the voter receives utility:

$$E[U_V | c < c^O] = \begin{cases} \left(\phi(\frac{s_c^L}{\sqrt{1+1/q}})\sqrt{2\pi} \right. \\ \left. \quad + p \times \Phi(\frac{s_c^L}{\sqrt{1+1/q}})\right)\frac{1}{\sqrt{2\pi}}\frac{1}{\sqrt{1+1/q}}, & \text{Co-partisan,} \\ \left(\phi(\frac{s_c^O}{\sqrt{1+1/q}})\sqrt{2\pi} \right. \\ \left. \quad + p \times \Phi(\frac{s_c^O}{\sqrt{1+1/q}})\right)\frac{1}{\sqrt{2\pi}}\frac{1}{\sqrt{1+1/q}}, & \text{Opposition.} \end{cases} \tag{54}$$

The voter's utility with the co-partisan incumbent always decreases in c, the voter's utility with the opposition increases in c for c below the threshold c^*:

$$c^* \equiv \begin{cases} (1-\frac{p}{2})B, \text{ if } B < \frac{p}{\sqrt{2\pi}}\frac{1}{\sqrt{1+1/q}}, \\ c^O, \text{ Otherwise.} \end{cases} \tag{55}$$

Therefore, for $c \in [0, c^O]$ the voter always prefers the opposition incumbent to the co-partisan incumbent if and only if:

$$\phi(\frac{s^O}{\sqrt{1+1/q}})\sqrt{2\pi} + p \times \Phi(\frac{s^O}{\sqrt{1+1/q}}) \geq \phi(\frac{s^L}{\sqrt{1+1/q}})\sqrt{2\pi} + p \times \Phi(\frac{s^L}{\sqrt{1+1/q}}).$$

If the cost $c \in [c^O, c^L]$, the government begins to strategically retain low-performing opposition, and, simultaneously, it only replaces low-performing co-partisan incumbents.

$$E[U_V | c > c^O, c < c^L] = \begin{cases} (1+\frac{p}{2})\frac{1}{\sqrt{2\pi}}\frac{1}{\sqrt{1+1/q}}, & \text{Co-partisan incumbent,} \\ \left(\phi(\frac{s_c^O}{\sqrt{1+1/q}})\sqrt{2\pi} \right. \\ \left. \quad + p \times \Phi(\frac{s_c^O}{\sqrt{1+1/q}}) - \frac{p}{2}\right)\frac{1}{\sqrt{2\pi}}\frac{1}{\sqrt{1+1/q}}, & \text{Opposition.} \end{cases} \tag{56}$$

The voter's utility with the co-partisan incumbent for $c \in [c^O, c^L]$ does not depend on the replacement cost. The voter's utility with the opposition incumbent increases in c for c below the threshold $\max\{c^O, (1-\frac{p}{2})B\}$ and decreases in c otherwise. Therefore, the voter's utility with the opposition incumbent reaches its maximum at point $\max\{c^O, (1-\frac{p}{2})B\}$. Because:

$$1 + p > e^{-p^2/4\pi} + p \times \Phi(\frac{p}{\sqrt{2\pi}}),$$

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for $c \in [c^O, c^L]$, the voter ex-ante prefers the co-partisan incumbent to the opposition incumbent.

Finally, when the cost c exceeds c^L, the voter gets utility:

$$E[U_V | c > c^L] = \frac{1}{\sqrt{2\pi}} \frac{1}{\sqrt{1 + 1/q}},$$

regardless of the cost and the incumbent's partisanship.

E.5 Share of Replaced Opposition Incumbent and Co-partisan Incumbent

Let us demonstrate that with the costly replacements, the government retains fewer co-partisans than opposition incumbents.

$$Pr[R = 1 | \text{Co-partisan}] = \mathbf{1}[c < c^L] \times Pr[s_I \geq s_c^L] + \mathbf{1}[c \geq c^L]$$

$$= \mathbf{1}[c < c^L](1 - \Phi\left(\max\{0, p(\frac{\sqrt{1 + 1/q}}{\sqrt{2\pi}} - \frac{1 + 1/q}{2}B) - c(1 + 1/q)\}\right)) \quad (57)$$

$$+ \mathbf{1}[c \geq c^L].$$

$$Pr[R = 1 | \text{Opposition}]$$

$$= \mathbf{1}[c < c^L](Pr[s_I \geq s^O] + Pr[s_I < 0] \times \mathbf{1}[B \geq B_c^*] \times 1) + \mathbf{1}[c \geq c^L]$$

$$= \mathbf{1}[c < c^L](1 - \Phi(\max\{0, p\frac{\sqrt{1 + 1/q}}{\sqrt{2\pi}} + (2 - p)\frac{1 + 1/q}{2}B - c(1 + 1/q)\}) \quad (58)$$

$$+ 0.5 \times \mathbf{1}[B \geq B_c^*]) + \mathbf{1}[c \geq c^L].$$

Notice that the share of replaced co-partisans ($Pr[R = 1 | \text{Co-partisan}]$) weakly increases in B while the share of replaced opposition incumbents ($Pr[R = 1 | \text{Opposition}]$) weakly decreases in B for $B \in [0, B_c^*]$ and for $B \in [B_c^*, \infty]$. Because at point $B = 0$, the government replaces equal number of the co-partisans and opposition incumbents, for $B \in [0, B_c^*]$ or, alternatively, for $c \in [0, c^O]$, the government retains fewer opposition than co-partisans.

When $c \in [c^O, c^L]$ the government's bias B exceeds B_c^*, and the share of replaced co-partisans ($Pr[R = 1 | \text{Co-partisan}]$) becomes constant:

$$Pr[R = 1 | \text{Co-partisan}, c \in [c^O, c^L]] = 1 - \Phi(0) = 1/2.$$

At the same time, for $c \in [c^O, c^L]$, the share of replaced opposition incumbents ($Pr[R = 1 | \text{Opposition}, c \in [c^O, c^L]]$) decreases in B. When B goes to infinity, $Pr[R = 0 | \text{Opposition}]$ converges to:

$$Pr[R = 1 | \text{Opposition}, B \to \infty, c \in [c^O, c^L]] = 1 - \Phi(\infty) + 1/2 = 1/2.$$

Notice that it equates to $Pr[R = 1 | \text{Co-partisan}, c \in [c^O, c^L]]$. Therefore, when cost of the replacement is sufficiently high $c \in [c^O, c^L]$ the biased government replaces fewer opposition incumbents than co-partisans.

Finally, when $c \geq c^L$ the government never intervenes and, trivially, the share of retained opposition incumbents equates to the share of retained co-partisans.

F   Asymmetric Information

F.1   Strategies of the Government and the Voter

Let us denote as $\beta(s_I)$ probability that: the voter returns the appointee to office when the *incumbent*'s performance was s_I, the incumbent was replaced ($R = 1$), and the voter does not observe the *appointee*'s performance ($s_A^V = \varnothing$). This probability depends on the incumbent's party affiliation. The voter knows that the government replaces the loyal incumbent if and only if:

$$\big(p \times \mathbf{1}[s_A \geq 0] + (1-p)\beta_L(s_I)\big) \times (E[\theta_A|s_A] + B)$$
$$> \mathbf{1}[s_I \geq 0] \times (E[\theta_I|s_I] + B). \tag{59}$$

If the incumbent belongs to the opposition, the government replaces the incumbent if and only if:

$$\big(p \times \mathbf{1}[s_A \geq 0] + (1-p)\beta_O(s_I)\big) \times (E[\theta_A|s_A] + B)$$
$$> \mathbf{1}[s_I \geq 0]E[\theta_I|s_I] + \mathbf{1}[s_I < 0]B. \tag{60}$$

For every s_I, the left-hand side of equations (59) and (60) is increasing in s_A. Therefore, for any given s_I the government follows a cut-off strategy and replaces the incumbents who perform below a threshold $s_A^{L*}(s_I)$ if the official is loyal and $s_A^{O*}(s_I)$ if he belongs to the opposition. Knowing that, the voter returns the appointee to office if and only if:

$$E[\theta_A|s_A > s_A^*(s_I)] = \frac{\int_{-\infty}^{\infty} \int_{s_A^*(s_I)}^{\infty} x f_{\theta_A, \varepsilon_A}(x, y) dx dy}{P[\theta_A + \varepsilon_A > s_A^*(s_I)]} > 0 = E[\theta_C]. \tag{61}$$

The left-hand side of inequality (61) exceeds the right-hand side; therefore, the voter always returns the appointee to office if she does not observe the appointee's performance, regardless of the incumbent's partisanship ($\beta(s_I) = 1$).

Now we can characterize all equilibria. If the incumbent is co-partisan and high-performing ($s_I \geq 0$), the government replaces him with the appointee if and only if, the appointee's performance exceeds the incumbent's performance $s_A \geq s_I$. If the loyal incumbent is low-performing ($s_I < 0$), the government replaces him with the appointee if and only if $s_A > -B(1 + 1/q)$.

When the incumbent belongs to the opposition, if both the incumbent and the appointee are high-performing ($s_A > 0$, $s_I > 0$), the government replaces the appointee with the incumbent if and only if $s_A > s_I - B(1 + 1/q)$. If the incumbent is high-performing while the appointee is low-performing ($s_A < 0$, $s_I > 0$), the government replaces the incumbent if $s_A > s_I/(1-p) - B(1+1/q)$. If the incumbent is low-performing ($s_I < 0$), the government replaces him with the appointee if and only if the latter is high-performing $s_A > 0$.

To estimate whether the sufficiently biased government replaces more loyalists than the opposition, I first calculate probability that the co-partisan incumbent is replaced:

$$Pr[R=1|L] = Pr[s_I \geq 0]Pr[s_A \geq s_I|s_I \geq 0] + Pr[s_I < 0]Pr[s_A \geq -\frac{B}{1+1/q}]$$

$$= \frac{1}{2}\int_0^{+\infty}\int_y^{\infty} f_{s_I,s_A}(x,y)dxdy/0.5 + \frac{1}{2}\int_{\frac{-B}{1+1/q}}^{\infty} f_{s_A}(x)dx$$

$$= \frac{1}{8} + \frac{1+2\Phi(-\frac{B}{(1+1/q)^{3/2}})}{4}. \tag{62}$$

The government replaces the opposition incumbent with probability:

$$Pr[R=1|O] = Pr[s_I \geq 0]Pr[s_A \geq 0]Pr[s_A \geq s_I - \frac{B}{1+1/q}|s_I \geq 0, s_A \geq 0]$$

$$+Pr[s_I \geq 0]Pr[s_A < 0]Pr[s_A \geq s_I(1-p) - \frac{B}{1+1/q}|s_I \geq 0, s_A < 0]$$

$$+Pr[s_I < 0]Pr[s_A \geq 0]$$

$$= \frac{1}{4}\left(\int_0^{\frac{B}{1+1/q}}\int_0^{\infty} f_{s_I,s_A}(x,y)dxdy + \int_{\frac{B}{1+1/q}}^{\infty}\int_{y-\frac{B}{1+1/q}}^{\infty} f_{s_I,s_A}(x,y)dxdy\right)/\frac{1}{4}$$

$$+\int_0^{\frac{B}{(1-p)(1+1/q)}}\int_{y(1-p)-\frac{B}{1+1/q}}^{0} f_{s_A,s_I}(x,y)dxdy + \frac{1}{4} \tag{63}$$

The comparison of equations 62 and 63 can be reduced to comparison of the following two equations:

$$\int_{\frac{B}{1+1/q}}^{\infty}\int_{y-\frac{B}{1+1/q}}^{\infty} f_{s_I,s_A}(x,y)dxdy + \int_0^{\frac{B}{(1-p)(1+1/q)}}\int_{y(1-p)-\frac{B}{1+1/q}}^{0} f_{s_I,s_A}(x,y)dxdy, \tag{64}$$

$$\int_0^{\infty}\int_y^{\infty} f_{s_I,s_A}(x,y)dxdy = \frac{1}{8}. \tag{65}$$

As B tends to infinity, equation 64 converges to $\frac{1}{4}$, while equation 65 remains constant. Therefore, the sufficiently biased government replaces more co-partisans than the opposition.

Finally, let us show that if the government is sufficiently biased, the voter ex-ante prefers the co-partisan incumbent. The ex-ante expected voter's utility if the incumbent is co-partisan as B converges to infinity:

$$E[U_V|L] = Pr[s_I \geq 0]Pr[s_A \geq s_I|s_I \geq 0]E[\theta_A|s_A \geq s_I, s_I \geq 0]$$

$$+Pr[s_I \geq 0]Pr[s_A < s_I|s_I \geq 0]E[\theta_I|s_I \geq 0, s_A < s_I]$$

$$+Pr[s_I < 0]Pr[s_A \geq -\infty](p \times Pr[s_A \geq 0]E[\theta_A|s_A \geq 0] + (1-p)E[\theta_A|s_A \geq -\infty]). \tag{66}$$

The ex-ante expected voter's utility if the incumbent belongs to the opposition:

$$E[U_V|O] = Pr[s_I \geq 0]Pr[s_A \geq 0]Pr[s_A \geq -\infty|s_A \geq 0]E[\theta_A|s_A \geq 0]$$
$$+Pr[s_I \geq 0]Pr[s_A < 0]Pr[s_A \geq -\infty|s_A < 0](p \times E[\theta_C] + (1-p)E[\theta_A|s_A < 0])$$
$$+Pr[s_I < 0]Pr[s_A \geq 0]E[\theta_A|s_A \geq 0] + Pr[s_I < 0]Pr[s_A < 0]E[\theta_C].$$
(67)

Notice first that $E[\theta_A|s_A \geq 0] = -E[\theta_A|s_A < 0]$. Therefore, the comparison of equations 66 and 67 is equivalent to the comparison of the following two equations:

$$Pr[s_I \geq 0]Pr[s_A \geq s_I|s_I \geq 0]E[\theta_A|s_A \geq s_I, s_I \geq 0]$$
$$+Pr[s_I \geq 0]Pr[s_A < s_I|s_I \geq 0]E[\theta_A|s_A < s_I, s_I \geq 0]$$
(68)

and:

$$Pr[s_I < 0]Pr[s_A \geq 0]E[\theta_I|s_A \geq 0],$$
(69)

where:

$$Pr[s_A \geq s_I|s_I \geq 0] = \int_0^{+\infty} \int_y^{+\infty} f_{s_I,s_A}(x,y)dxdy/(0.5) = 1/4.$$

Due to symmetricity $E[\theta_A|s_A \geq s_I, s_I \geq 0] > E[\theta_A|s_A \geq 0]$ and $E[\theta_I|s_I < s_A, s_I \geq 0] > E[\theta_A|s_A \geq 0]$. As a result, the ex-ante voter's utility with the loyal incumbent exceeds one with the opposition incumbent.

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