Do We Get the Best Candidates When We Need Them the Most?

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Abstract

Do the right candidates for office choose to run at the right time? I analyze a model of repeated elections in which politicians differ in the probability of being competent. Voters update their beliefs about the office holder's ability upon observing his performance in office. In each period, the country faces either a safe situation or a crisis. A crisis has two key features: it exacerbates the importance of the office holder's competence and, as a consequence, the informativeness of his performance. I show that electoral accountability has the perverse consequence of discouraging good candidates from running in times of crisis. Precisely when the voter would need him the most, the politician who is most likely to be competent chooses to stay out of the race in order preserve his electoral capital. In contrast with results in the existing literature, this adverse selection emerges even if running is costless and if office is more valuable than the outside option.

Introduction

A growing empirical literature highlights that the quality of political leaders has a critical impact on a country's performance (e.g. Jones and Olken 2005, Besley, Montalvo and Reynal-Querol, 2011). From a theoretical perspective, it then becomes essential to understand under which conditions high-quality politicians are willing to run for office in the first place. One question is particularly important to evaluate the effectiveness of democratic elections in improving voters' welfare: do the right candidates self-select at the right time? More specifically, are the most competent politicians willing to run for office during times of crisis, when competence matters the most?

The formal literature has so far placed little emphasis on this question. Most extant models of elections in fact take the pool of candidates as exogenous, focusing instead on voters' ability to identify good politicians to be (re)elected and bad ones to be thrown out. A small recent literature allows for endogenous candidate entry, thereby analysing the equilibrium supply of good politicians. However, these works typically consider a static setting, focusing on *whether* competent types self select into politics and highlighting the difficulty of attracting competent politicians if office rents are too low compared to private market salaries. Little attention is instead paid to *when* the right candidates are willing to run for office, if a longer planning horizon is considered.

In this paper, I adopt a very different perspective. I consider a world in which potential candidates are career politicians, for whom office is always more valuable than the outside option. As such, entering the race is always the statically optimal choice, irrespective of the candidate's expected ability and the conditions in the country. I show that this does not always hold true when we take into account politicians' dynamic incentives. Under some conditions, the best candidates are not willing to run for office during times of crisis. The politician who is most likely to solve the crisis also has the most to lose from failing. As such, precisely when the voter would need him the most, he chooses to stay out of the race in order to preserve his electoral capital for the future. In contrast, the potential candidate who is ex-ante less qualified for office is always willing to take the gamble, and run for office during challenging times. Thus, the voters gets the *wrong candidates* at the *wrong time*. Crucially, this adverse selection does not arise due to weak electoral incentives, as it is the case the extant literature. Quite the opposite, it emerges precisely as a perverse consequence of accountability.

I investigate this inefficiency by first introducing a baseline model with two time periods and an election in each. The players are two potential candidates and a representative voter. The potential candidates are career politicians that differ from each other in the probability of being competent, their underlying types being unknown to all players. The model is one of pure selection: the office holder's performance results in either a good or a bad governance outcome, with the probability of producing a good outcome a function of the incumbent's true type. Politicians are office motivated, and their (per-period) payoff from holding office is always higher than their outside option. In the baseline version of the model, this payoff consists of both monetary and ego-rents: while monetary rents are always accrued in the same measure, ego rents represent the legacy payoff that an office holder only enjoys when he delivers a good performance.

The crucial element of this framework is that in each period the country either experiences a crisis, or undergoes a period of 'business as usual'. A crisis (economic or otherwise) is an *exogenous* shock that has two key features: it amplifies the impact of the office holder's competence and, at the same time, the informativeness of his performance. In other words, precisely because competence matters the most during times of crisis, this is also when the governance outcome reveals most information about the office holder's ability.

Within this framework, consider the incentives a career politician faces. In the last period election, a politician must only evaluate the expected value of holding office today. This is always higher than the payoff from staying home, therefore all potential candidates are always willing to enter the race. Not so much in the first period. When politicians choose whether to run for office, they must consider both the expected payoff from being elected today, and how it influences the chances of being (re)elected tomorrow. Suppose that the country is hit by a crisis in the first period. This has two consequences. First, the value of holding office today is lower than the expected rents from being in office the second period: a crisis may not arise again tomorrow, therefore the probability that the office holder will be able to deliver a good performance and enjoy the associated legacy payoff is higher in the second term. Second, the office holder's performance will reveal information about his true ability, and therefore influence his future electoral prospects. In this sense, the first period office holder is taking a gamble. The lower the probability of being competent, the riskier this gamble.

Given the reasoning above, it may seem counter-intuitive that precisely the politician who is most likely to deliver a good performance would decide to stay out of the race during challenging times. However, while this politician has the highest chances of surviving a crisis, he also possesses valuable electoral capital. As a consequence, new information can only hurt his future electoral chances, and he experiences *fear of failure*. Under some conditions, he will therefore choose to stay out of the race when a crisis is likely to arise, in order to prevent further information about his true type from being revealed. In contrast, the worst (in expectation) potential candidate never has anything to lose from holding office in the first period. Indeed, holding office during times of crisis can only increase his future electoral chances, by allowing him to prove himself and thus overcome his disadvantage. As such, he always has incentives to *gamble on his own success*, and is willing to enter the race under both states of the world. Thus, under some conditions, only the worst candidate is willing to run for office during challenging times.

In a robustness section I analyse several variants of the model, relaxing some of the most restrictive assumptions imposed in the baseline set-up. I show that the inefficiency discussed above survives when we allow politicians to care (either directly or indirectly) about the governance outcomes even if out office. Similarly, the qualitative results mirror the findings of the baseline model even if we assume that politicians obtain a larger legacy payoff from solving a crisis than from delivering a good performance during periods of business as usual.

These robustness exercises show that, while the adverse selection documented in this paper can me more or less severe, it is unlikely that any democracy may be immune from it. The source of this inefficiency in fact lies precisely in the accountability relationship between the voters and their representatives. The problem that the voters face is that they cannot credibly commit to ignoring valuable information that may be generated about the incumbent. Precisely when competence matters the most, the office holder's performance reveals most information about his true ability. Paradoxically, the politician who is most likely to be competent also has the most to lose from information. Adverse selection - with regards to both *which* candidate is willing to run, and *when* - then emerges as a perverse consequence of electoral accountability.

While the baseline model assumes that voters are passive recipients of information, an extension investigates the consequences of allowing them to choose whether to invest in costly information acquisition in order to learn about the office holder's performance. Quite intuitively, when the cost of information is sufficiently large the voter can credibly commit to never paying attention to governance outcomes. This eliminates the candidates' dynamic incentives and, in turn, the adverse selection problem discussed above. However, if the cost of becoming informed takes an intermediate value, the opposite is true: the probability that the ex-ante most qualified candidate chooses to run for office in times of crisis is even lower than in the baseline model. This further highlights how the inefficiency documented in this paper may be extremely hard, if even possible, to escape.

Next, this paper investigates how the adverse selection effect documented above may influence the electoral impact of incumbency. In the setting considered here, incumbency status per se does not provide any advantage (or disadvantage) in terms of campaign resources or name recognition. Nonetheless, I show that an electoral effect of incumbency always emerges in times of crisis. Further, this effect may go in either direction: incumbents that run for re-election during turbulent times will experience either an electoral advantage or a disadvantage, depending on whether their party is expected to attract more or less talented candidates in the future.

Finally, I present an amended version of the model in which politicians live for an infinite number of periods, but only care about the material rents from office. The purpose of this extension is to isolate the impact that a crisis' informational value has on candidate entry. In fact, recall that in the baseline model crises also have an exogenous impact on the expected value of getting elected, since politicians care about their performance in office. When we restrict our attention to a world in which players live only for two time periods, both the information channel and the exogenous one are necessary to generate the results. In this extension I instead show that, if we consider a longer time horizon, the inefficiency documented in the baseline model survives when we shut down the exogenous channel. Even if the value of holding office is the same in all periods, a crisis *endogenously* influences politicians' expected utility from running, via the information channel. As a consequence, adverse selection continues to emerge in equilibrium.

Literature Review

This project contributes to the literature on the endogenous supply of good politicians (Caselli and Morelli 2004, Messner and Polborn 2004, Besley 2005, Dal Bo, Dal Bo and Di Tella 2006, Mattozzi and Merlo 2008, Fedele and Natticchioni 2013, Brollo 2013).[1] This literature has so far focused mainly on how an individual's outside option in the private market influences his decision to run for office. Political ability and private market salary are assumed to be correlated, therefore good politicians also have a higher opportunity cost of holding office. This potentially generates an adverse selection, whereby low ability individuals are more likely to enter politics.

As highlighted above, this paper adopts a completely different perspective. It considers a world in which potential candidates are career politicians, for whom the value of holding office is always higher than the expected payoff from the private market. Thus, rather than looking at the financial considerations that drive self-selection into politics, I focus on how politicians' dynamic electoral incentives influence the *timing* of their entry decision.

The crucial feature of this model is to allow exogenous shocks to the country's conditions to influence the *endogenous* opportunity cost of holding office. As such, this paper is in close conversation with a recent literature in formal theory, that highlights how events outside of the office holders' control may nonetheless impact their electoral fortunes, by altering the inferences voters draw upon observing their performance in office (see Ashworth, Bueno de Mesquita and Friedenberg, 2017 and 2018). These works complement the model presented here, since they take the pool of candidates as given and focus instead on how crises influence office holders' effort choice.

Finally, this model connects with several papers that analyse political actors' incentives to gamble, within the framework of a multi-armed bandit model (e.g. Strulovici 2009, Dewan and Hortala-Vallve 2018). In these works, agents must choose between a risky and a safe policy. The consequences of a risky choice inform voters and politicians about the underlying state of the world, or the office holder's true ability. In contrast, the outcome of a safe policy reveals no additional information. The crucial assumption is therefore that office holders are always free to *choose* to generate more or less information. In this paper, I instead assume that the informativeness of governance outcomes is determined*exogenously* by the 'riskiness' of the situation the country faces. Politicians cannot choose which arm of the bandit to pull, they can only choose whether to play.

[1] Other scholars analyse endogenous entry, but focus on settings in which potential candidates differ in motivations (see Callander 2008) or ideology (see Osborne and Slivinski 1996, Besley and Coate, 1997), rather than quality.

The Baseline Model

I study the endogenous supply of competent candidates by analysing a game of repeated elections with two time periods. At the beginning of the game, each party $P \in \{1, 2\}$ draws one potential candidate C^P from the pool of its members. Politicians differ in the probability of being competent. Specifically, each politician is one of two types, good or bad: $\theta_i \in \{G, B\}$ $\forall i \in \{C^1, C^2\}$. A politician's type is unknown to all players, including the politician himself. This reflects the assumption that political ability is more than the product of a pre-determined and identifiable skill-set. As such, it can never be verified ex-ante, but only discovered via experience. Players share common beliefs that politician C^P is a good type with probability q^P (formally, party P draws from a pool containing a proportion q_P of good types). I will assume that $q_1 > q_2$. I will therefore refer to C^1 as the ex-ante advantaged potential candidate, and to C^2 as the disadvantaged one.

At the beginning of each period, the two potential candidates simultaneously choose whether to run for office. If C^P chooses to stay out of the race, party P is unable to field a viable candidate and it resorts to a reserve candidate R^P, which is known to be a bad type with probability one (this assumption is without loss of generality). The existence of the reserve candidates R^1 and R^2 is imposed for purposes of presentation in order to avoid equilibria with uncontested elections, but otherwise has no effect on the results. Once the candidates are endogenously determined, a representative voter V chooses whom to elect.

In each period, the country either faces a normal situation, or it is hit by a negative shock: $\omega_t \in \{N, S\}$ $\forall t \in \{1, 2\}$. A shock is an *exogenous* crisis: it may represent a period of economic hardship, a war, or even a natural disaster. Without loss of generality, I assume that the state of the world ω_t realizes after the election has taken place. Players share common prior beliefs that $prob(\omega_t = S) = \bar{p}$, with ω_t i.i.d. in each period.[2] At the beginning of each period, players also observe a public signal indicating the likelihood of a crisis arising during the upcoming term. Formally, players observe a signal $\chi_t \in \{N, S\}$, accurate with probability $\psi > \frac{1}{2}$ ($prob(\chi_t = S|\omega_t = S) = prob(\chi_t = N|\omega_t = N) = \psi > \frac{1}{2}$).

The key feature of a shock is that it amplifies the effect of the office holder's type on his performance: competence matters the most during times of crisis. Specifically, in each period the

[2] In a robustness section, I relax this assumption and allow the probability of a crisis in the second period to be a function of the first period incumbent's performance.

office holder produces either a good or a bad governance outcome $o_t \in \{g, b\}$, $\forall t \in \{1, 2\}$. The governance outcome is a good one whenever a crisis does not arise, or if it arises but the office holder is able to solve it. Otherwise, the outcome is a bad one. The office holder's type determines the probability that he is able to solve a crisis. A good type always produces a good outcome under a negative shock, whereas a bad one does so with probability $\beta \in [0, 1]$:

- $prob(o_t = g|\omega_t = N, \theta_t = G) = prob(o_t = g|\omega_t = N, \theta_t = B) = 1$
- $prob(o_t = g|\omega_t = S, \theta_t = G) = 1$
- $prob(o_t = g|\omega_t = S, \theta_t = B) = \beta < 1$

This specific parametrization is adopted for simplicity, but is not necessary for the results. Notice that the parameter β can be interpreted as the complexity of the crisis, but also as the country's resiliency. For example, when a country can count on a competent bureaucratic apparatus, it is more likely to survive a negative shock even if an incompetent type is in office.

Arguably, there are substantive reasons to defend the assumption that competence matters the most in times of crisis. However, it is also important to highlight that, as long as we allow players to live for more than two periods, the key insight of the paper (i.e., the voter is less likely to get the best candidate precisely when she needs him the most) would continue to hold under the opposite assumption, that is if crises mute rather than amplifying the impact of the office holder's type. I will discuss this further in a separate section.

Finally, we must specify the players' payoffs. The voter cares about governance outcomes. She pays a cost $\lambda > 0$ in each period in which $o_t = b$, whereas the payoff from a good outcome $o_t = g$ is normalized to 0. Politicians are office motivated. The value of holding office has two components: monetary rents $K > 0$ and legacy payoffs $\gamma > 0$. While the monetary rents are always accrued by the office holder, the legacy payoffs are conditional on delivering a good performance.[3] γ may represent the 'warm glow feeling' politicians experience when they produce a good governance outcome, or (in a reduced-form) the instrumental value of a good performance. The aim of this paper is to investigate the impact of the *endogenous* opportunity cost of office, therefore I assume

[3] In a two-period setting the assumption that $\gamma > 0$ is necessary to obtain the results. In a separate section I consider a longer time horizon, and I show that the inefficiency documented in the baseline model survives even if the office holder's payoff is not a function of his performance.

that a politician's outside option is always lower than his per-period payoff from being in office. Politicians' utility when out of office is therefore normalized to 0. Finally, since this paper focuses on politicians' incentives and disincentives to *hold* office, I assume that running is costless. However, because I consider a deterministic election process, this assumption has no impact on the qualitative results other than avoiding equilibria with uncontested elections.

To sum up, the timing of the game is as follows:

1. Nature draws the potential candidates' types $\theta_{C^1}, \theta_{C^2} \in \{G, B\}$ and the first period state of the world $\omega_1 \in \{N, S\}$
2. The players observe a public signal $\chi_1 \in \{N, S\}$, accurate with probability ψ
3. C^1 and C^2 simultaneously choose whether to run. If party $P \in \{1, 2\}$ is unable to field a viable candidate it resorts to the reserve R^P.
4. The voter decides whom to elect
5. The first period state of the word ω_1 realizes
6. The fist period governance outcome $o_1 \in \{g, b\}$ realizes
7. The second period starts and nature draws $\omega_2 \in \{N, S\}$
8. The game proceeds as above

To avoid trivialities, I will exclude equilibria in weakly dominated strategies. Since running for office is costless, this implies that a politicians' entry decision is conditional on winning the election.

In concluding this section, let me highlight that this is a model of pure selection: the office holder's performance is determined by his true ability and the state of the world, and I do not allow politicians to invest in (costly) effort in order to improve their expected performance and electoral chances. The choice to abstract from this moral hazard problem is purely for presentation purposes and, as long as the governance outcome remains informative at all levels of effort, relaxing this assumption would not alter the main message of the paper.

Analysis

In this section I solve the two-period game and identify the conditions under which adverse selection emerges in equilibrium. Consider first the voter's electoral decision. The voter cares exclusively about governance outcomes. In each period, she therefore elects the candidate that is most likely to deliver a good performance. Straightforwardly, her first period electoral choice is simply a function of her prior beliefs over the candidates' ability. In contrast, the incumbent's performance informs the voter choice in the second period election. This paper builds on a key intuition: the inferences that voters draw upon observing the governance outcome are a function of the state of the world. Thus, the same outcome may convey different information under different environment conditions. In other words, crises have an informational value. Precisely because crises amplify the effect of competence on outcomes (i.e., for any outcome $o_t \in \{g, b\}$, $|prob(o_t|\omega_t = S, \theta_t = G) - prob(o_t|\omega_t = S, \theta_t = B)| > |prob(o_t|\omega_t = N, \theta_t = G) - prob(o_t|\omega_t = N, \theta_t = B)|$), they also increase the informativeness of the incumbent's performance. When the country is hit by a negative shock, the voter is therefore able to draw more precise inferences on the office holder's type. In particular, given the specific parametrization adopted here, both types are always able to deliver a good outcome under a normal state of the world, therefore the office holder's performance is completely uninformative. In contrast, an exogenous crisis provides the voter with a 'test' of the incumbent's political ability, and therefore an opportunity to learn. Denote as $\mu_i(I_i, \omega_1, o_1)$ the posterior probability that politician i is a good type, given his incumbency status $I_i \in \{I, \emptyset\}$, the first period outcome and state of the world. Recall that q_i is the prior probability that politician i is a good type. The following Lemma holds:

Lemma 1. *Suppose that $\omega_1 = N$. Then, the incumbent's performance reveals no information about his type, and the voter's posterior is always equal to her prior beliefs. Suppose instead that $\omega_1 = S$. Then, the voter always obtains new information: for all outcomes $o_1 \in \{g, b\}$ and all politicians $i \in \{C^1, C^2\}$, $\mu_i(I, S, o_1) \neq q_i$.*

This implies that even if a shock is fully exogenous, it may influence the incumbent's electoral chances. Indeed, the voter's decision in the second period may be different under different states of the world, even fixing the governance outcome. Both C^1 and C^2 would be ousted after producing a bad outcome and would be re-elected after producing a good outcome under a crisis.[4] However, a good performance during normal times always guarantees C^1's survival, but is never enough for the ex-ante disadvantaged C^2 to get re-elected.

With this in mind, let us now focus on the potential candidates' incentives. As highlighted above, the model considers a world in which potential candidates are career politicians, for whom the expected *per-period* value of holding office is always higher than the outside option ($K+\gamma[1-prob(\omega_t = S|\chi_t) + prob(\omega_t = S|\chi_t)(q_i + (1-q_i)\beta)] \geq K > 0$). Further, recall that I assume running to be costless. Absent any future electoral considerations, it is therefore straightforward to verify that both viable candidates C^1 and C^2 always have a dominant strategy to run for office in the second period. Excluding equilibria in weakly dominated strategies, the following holds:

Lemma 2. *In any equilibrium of the game, both viable candidates C^1 and C^2 choose to run for office in the second period.*

Not so much in the first period. When choosing whether to run or stay out of the race, politicians consider both the expected value of holding office today and, given Lemma 1, how it influences the probability of being elected tomorrow (i.e., the *endogenous* opportunity cost of office). Crucially, both are a function of the state of the world. The per-period expected value of office is always lower in times of crisis ($\omega_1 = S$), since a politician who turns out to be incompetent may be unable to deliver a good outcome and enjoy the associated legacy payoffs. Consider instead the opportunity cost of holding office in the first period. Under a normal state of the world ($\omega_1 = N$) the voter will obtain no new information upon observing the governance outcome (the voter's posterior on the incumbent's type is always equal to her prior). Therefore, holding office today does not influence the probability of being elected tomorrow. In contrast, if a crisis arises the incumbent's performance will reveal information about his true ability. The office holder then risks exposing himself as a bad type and losing the second period election.

Given the above reasoning, it follows straightforwardly that politicians have no reason to stay out of the race when $\chi_1 = N$. The public signal indicates that a crisis is unlikely to arise during the first term, more precisely that a crisis today is less likely than a crisis tomorrow (recall that, given the martingale property of beliefs, the expected posterior probability of a shock in the second period

[4] To avoid trivialities, I assume that $\mu_{C^2}(I, S, g) > q_1$, where $\mu_{C^2}(I_{C^2}, \omega_1, o_1)$ is the posterior probability that C^2 is a good type, given his incumbency status $I_{C^2} \in \{I, \emptyset\}$, the first period outcome and state of the world.

is always equal to the prior $\bar{p}$). As such, the expected rents from holding office today are higher than the expected value of office in the future. Then, irrespective of how this may influence their future electoral chances, both potential candidates always choose to enter the race when $\chi_1 = N$. Suppose instead that the public signal indicates that a crisis is likely to arise $\chi_1 = S$. Now, holding office in the future is in expectation more valuable. A potential candidate may therefore be worried that, if the crisis materializes, his performance in office would expose him as an incompetent type and hurt his electoral chances in the second period. Straightforwardly, this risk is higher the lower the probability of being a good type. This reasoning may lead us to conclude that positive selection emerges in equilibrium: the politician is most likely to be able to solve a crisis has the strongest incentives to run. Instead, the analysis shows that the opposite is true:

Proposition 1. *There exist unique $\underline{\psi}$, $\bar{q}_2$, $\bar{\beta}$ and $\bar{q}_1$ such that, if*

(i) The public signal is sufficiently accurate ($\psi > \underline{\psi}$)

(ii) C^2 is sufficiently unlikely to be a good type ($q_2 < \bar{q}_2$)

(iii) A bad type is sufficiently unlikely to deliver a good outcome under a crisis ($\beta < \bar{\beta}$)

(iv) C^1 is not sufficiently confident in his own ability ($q_1 < \bar{q}_1$)

Then, C^1 runs for office only when $\chi_1 = N$. When $\chi_1 = S$, Party 1 must resort to the reserve candidate R^1. If the conditions above are not satisfied, C^1 always enters the race in equilibrium. Instead, C^2 always chooses to run under both $\chi_1 = S$ and $\chi_1 = N$.

Proposition 1 presents a very stark inefficiency result: in equilibrium, the voter gets the wrong candidates at the wrong time. The ex-ante disadvantaged C^2, which has the lowest expected quality, is always willing to run for office. Instead, it is the politician who is most likely to be competent that sometimes chooses to stay out of the race. To make matters even worse, he does so precisely when the voter would need him the most: the country is very likely to experience a crisis (the public signal is negative and sufficiently informative), competence really matters in times of crisis ($\beta < \bar{\beta}$), and the alternative is really bad ($q_2 < \bar{q}_2$).

To understand this result, let us focus first on the strategic incentives faced by the disadvantaged C^2. Straightforwardly, C^2 would always lose the first period election if C^1 chooses to enter the race. Since running is costless, C^2 is indifferent between entering the race and staying out. Suppose instead that C^1 chooses to sit the first period election out. Now, C^2 must consider how holding office today would influence the probability of being elected tomorrow. Perhaps counter intuitively, holding office during times of crisis would always improve C^2's future electoral prospects, irrespective of how unlikely he is to be able to deliver a good governance outcome. C^2 will only win the second period election if the voter updates positively about his type, or negatively about C^1's ability. If C^1 stays out of the race in the first period, the voter will obtain no new information about his competence. As such, C^2 will always lose tomorrow's election if he chooses to stay home today. The only way to improve his future electoral prospects is to prove himself: prove able to deliver a good governance outcome even after being hit by a negative shock. In other words, the ex-ante disadvantaged politician never has anything to lose from holding office in times of crisis, since new information can only increase his future expected payoff. Running for office in the first period therefore always weakly increases both his immediate and future expected payoff. Thus, irrespective of how likely a crisis is to arise, and how unlikely he is to be able to solve it, C^2 always has incentives to *gamble on his own success*, and has a weakly dominant strategy to enter the race under both realizations of the public signal.[5]

The ex-ante advantaged C^1 faces very different incentives. He is more likely to be able to solve a crisis if it arises, and deliver a good governance outcome. He therefore has a higher expected payoff from holding office today, and a higher likelihood of being re-elected tomorrow. However, C^1 also has a valuable electoral capital that he does not want to waste. Indeed, information can only hurt his future electoral chances: if the voter learns nothing new, C^1 always wins for sure in the second period. As a consequence, he would want to prevent the voter from learning new information about his true ability so as to maximize future electoral chances. In other words, C^1 experiences *fear of failure*: he has incentives to avoid a gamble, even if it is likely to succeed. Therefore, when the public signal indicates that a crisis is likely to arise in the first period, C^1 faces a trade-off. If he chooses to stay out of the race, his immediate payoff decreases as he foregoes the rents from holding office today. However, if he chooses to run, he risks exposing himself as a low type and therefore wasting his electoral capital and losing tomorrow, when holding office is in expectation more valuable. The problem that he faces is that there is no safe strategy. If he chooses to run, he gambles on his own success. That is, on the probability of being able to deliver a good performance

[5]Notice that the same holds for the reserve candidates R^1 and R^2, who are therefore always willing to represent their respective party in the general election.

even under a crisis. If he chooses not to run, he gambles on his opponents failure. That is, on the probability that if a crisis arises C^2 will not be able to solve it and win re-election in the second period. C^1's equilibrium choice will therefore depend on the expected value of holding office today versus tomorrow, and on the relative riskiness of the two gambles. The equilibrium conditions are intuitive. When a crisis is very likely, C^2 is unlikely to reveal himself as a good type, and C^1 is not sufficiently confident in his own ability, he chooses to stay out of the race so as to preserve his electoral capital for the future.

In concluding this section it is important to emphasize that the nature of the inefficiency documented in Proposition 1 is very different from analogous results presented in the literature. Extant works highlight the difficulty of attracting good politicians if office rents are too low to compensate for their outside option in the private market. In other words, adverse selection emerges due to weak electoral incentives. Here, the opposite is true. In this model, running is costless and holding office is always more valuable than the outside option. The inefficiency documented above then emerges precisely as a perverse consequence of electoral accountability. The problem that the voter faces is that she can never credibly commit to ignoring valuable information that may be revealed about the incumbent. Precisely because competence matters the most in times of crisis, this is also when governance outcomes are most informative. The politician who is most likely to survive a crisis is also the one who has the most to lose, and is therefore unwilling to take the risk. As such, these results speak to an open debate in the literature: is voter competence is actually good for voters? Scholars have argued that a rational and more informed electorate may paradoxically induce office holders to exert less effort, or adopt worse policies (see Ashworth et al. 2014). This paper suggests that the problem may run even deeper: voters' inability to commit to ignoring information about the incumbent's performance may prevent them from attracting competent politicians to office in the first place.

Discussion and Robustness

For the purpose of simplifying the presentation and thus focusing on the key intuition underlying the results, the model analysed here considers a stylized environment with a binary state of the world and governance outcome, and imposes parameter values such that outcomes are only informative during periods of crisis. These are very stark assumptions, but are not necessary for the emergence of the inefficiency documented above. As highlighted by the discussion in the previous section, the key property of the model that underpins the results is that crises amplify the impact of the office holder's type *and*, at the same time, the informativeness of his performance.

Ashworth et al. (2017) show that this property holds more generally, even under a less stylized information environment. The authors look at a world in which, similarly to the model presented here, governance outcomes are the output of a production function that depends on the incumbent's type and two shocks: the observable disaster (i.e., the state of the world) and an unobservable idiosyncratic shock. Since they focus purely on the relationship between disasters and information, they do not allow for endogenous candidate entry. Indeed, in their model politicians are dummies, that do not take any strategic action. However, their results are extremely relevant for the purposes of this paper. In fact, their key finding is to show that irrespective of the specific functional form assumptions[6] 'governance outcomes are more informative (resp. less informative) following larger disasters, if disasters amplify (resp. mute) the effect of type' (2017, p. 12). In other words, exactly as in the stylized setting considered here, outcomes are most informative when competence matters the most. The implication of this result is that that the key inefficiency highlighted in Proposition 1 holds beyond the specific information environment considered in this paper.

A second simplification that I adopt in the baseline model is the assumption governance outcomes influence a politician's payoff only when in office. Intuitively, relaxing this assumption will mitigate the adverse selection documented above. However, as I show below, the inefficiency is never eliminated altogether. In the following paragraphs I introduce several variants of the baseline model and informally discuss the results' robustness. All the formal proofs are in Appendix B.

There are several ways in which the office holder's poor performance may negatively affect the other potential candidates' payoffs. First, we may argue that governance outcomes *directly* influence politicians' utility even when they are out of office. Suppose then that politicians, just like the voter, suffer a cost $-\lambda$ whenever a bad governance outcome is produced. Denote $\mathbb{I}_g$ a binary indicator taking value 1 when $o_t = g$, and 0 otherwise. A politician's per period payoff is then $R + \mathbb{I}_g\gamma - (1 - \mathbb{I}_g)\lambda$ when in office, and $-(1 - \mathbb{I}_g)\lambda$ otherwise. As in the baseline model, all politicians are always willing to run under $\chi_1 = N$. Similarly, C^2 has no reason to stay out of the race in times of crisis, since holding office always can only increase both his expected payoff today

[6]They only impose a strict monotonic likelihood ratio property for the distribution of the idiosyncratic shocks.

and his electoral chances tomorrow. Consider now the problem that the ex-ante advantaged C^1 faces. Straightforwardly, his incentives to run are higher than in the baseline model. If he chooses to stay out of the race, and free-ride on his opponent, he increases the risk of incurring the cost of of a poor governance outcome. We may be tempted to conclude that, for a sufficiently large λ, C^1 would always be willing to run when C^2 is very likely to be a bad type. Instead, as in the baseline model, the opposite is true. The qualitative results are in fact exactly as indicated in Proposition 1: C^1 chooses to stay out of the race precisely when his opponent is very likely to fail (i.e., q_2 and β sufficiently low). C^1 is willing to increase the risk of suffering the cost λ today, in order to maximise the probability of getting to office tomorrow, when a good performance is easier to deliver. Crucially, this holds for any value of λ. The other comparative statics go in the expected direction: as λ increases, C^1 is more likely to enter the race (in the sense of set inclusion).

Alternatively, just like in the baseline model, we may argue that politicians only care about their own performance in office. Nonetheless, governance outcomes may *indirectly* influence a politician's expected payoff, irrespective of his incumbency status. For example, a bad outcome in the first period may increase the probability of a crisis arising (again) in the second. To account for this possibility, assume that $prob(\omega_2 = S|o_1 = g) = \bar{p}$ and $prob(\omega_2 = S|o_1 = b) = \alpha\bar{p}$, where $\alpha \in (1, \frac{1}{\bar{p}})$. As above, free-riding now comes with a cost for C^1: a bad outcome today decreases the expected value of holding office tomorrow. This tends to increase C^1's incentives to run, but does not alter the conclusions from the baseline model: C^1 chooses to stay out of the race precisely when his opponent is most likely to deliver a poor performance. Importantly, this holds even if a bad outcome in the first period pushes the probability of a future crisis arbitrarily close to one (i.e., α is arbitrarily close to $\frac{1}{\bar{p}}$). A similar reasoning applies if we assume that crises are always exogenous (i.e., the probability that $\omega_2 = S$ is not a function of o_1), but a bad governance outcome decreases the country's future resiliency (β). In other words, the first-period office holder's poor performance reduces the probability that the country would survive a future shock if an incompetent type is in power.[7]

Finally, the baseline model assumes that the office holder always obtains the same payoff from a good performance, irrespective of the state of the world. However, we could argue that producing a

[7] Formally, $prob(o_2 = g|\omega_2 = S, \theta_I = B, o_1 = g) = \beta$ and $prob(o_2 = g|\omega_2 = S, \theta_I = B, o_1 = b) = \delta\beta$, where $\delta \in [0, 1]$. θ_I denotes the type of the second period office holder.

good governance outcome under a crisis is more valuable (in terms of legacy payoff) than performing well during normal times. Suppose then that the office holder's legacy payoff is $\nu(\omega_t)\gamma$, where $\nu(N) = 1$ and $\nu(S) > 1$. Straightforwardly, for a sufficiently large $\nu(S)$, C^1's expected overall payoff from entering the race in the first period is increasing in the probability of a crisis. Perhaps more surprisingly, the likelihood that he chooses to run (in the sense of set inclusion) never is. Recall that C^1 is always guaranteed re-election if he gets to office during normal times. Irrespective of how large is the legacy payoff from solving a crisis, increasing the probability of a shock can therefore only reduce the likelihood that C^1 stands for office in the first period. Thus, the assumption that office holders would obtain a larger legacy payoff in times of crisis alleviates the inefficiency documented above, but does not alter the quality of the results: the more the voter needs a competent politician in office, the less likely she is to get one.

This section has highlighted that the crucial inefficiency identified in Proposition 1 can be more or less severe, but it is unlikely that any democracy may be immune from it. Indeed, this inefficiency seems to lie at the very core of the accountability relationship between voters and politicians.

The Electoral Effect of Incumbency

The results in Proposition 1 indicate that exogenous crises influence the pool of candidates that are willing to run in equilibrium. In the baseline model, I consider an open seat election. However, if we think about an incumbent running for another term, a question emerges naturally: do exogenous shocks influence the incumbent's electoral chances? In particular, is the electoral effect of incumbency different under different states of the world? In this model, incumbents do not enjoy an exogenous advantage (or disadvantage) in terms of resources or name recognition. In what follows I will also fix the priors on the candidates' ability, so that there is no impact of incumbency status on voters' perception of political competence. I therefore focus exclusively on whether endogenous candidate entry generates an electoral effect of incumbency, and how this changes from times of crisis to periods of business as usual.

To analyse these questions, suppose that C^2 is the incumbent office holder at the beginning of the game (so that q_2 is the posterior probability that he is a good type, given the prior and his performance at t=0). Further, suppose that office holders face a term limit of two. Therefore, if C^2

is re-elected in the first period, he cannot run again in the second.[8] The replacement (potential) candidate for Party 2 is then drawn in the second period from a pool with a proportion q_r of good types.

To understand the electoral impact of incumbency, I compare the probability that C^2 wins the first period election in the baseline model (i.e., when the election is open seat) with his first period electoral performance under incumbency status. This is essentially equivalent to comparing C^1's incentives to run in the first period in the two cases. In order to generate continuous probabilities, I assume that q_1 is drawn at the beginning of the game from a uniform distribution on $[q_2, \mu_{C^2}(I, C, g)]$ (recall that I assume $q_1 < \mu_{C^2}(I, S, g)$).

The results show that no effect of incumbency emerges when the players observe a public signal indicating normal times. In contrast, depending on the expected quality of Party 2's replacement candidate, either an incumbency advantage or a disadvantage arises when $\chi_1 = S$. Additionally, irrespective of whether the effect of incumbency is positive or negative, it is always increasing in the signal's accuracy:

Proposition 2. *Incumbency status has no effect on C^2's electoral chances under $\chi_1 = N$. Suppose instead that $\chi_1 = S$. Then, C^2 experiences an incumbency disadvantage whenever $q_r > q_1$, and an advantage whenever $q_r < q_1$. In both cases, the effect of incumbency is increasing in the signal's accuracy ψ.*

The first result is straightforward. Irrespective of whether the election is an open seat one, C^1 is always willing to run for office under $\chi_1 = N$. Therefore, C^2 always loses the first period election with probability 1, and incumbency status has no effect on his electoral performance. Suppose instead that a negative signal $\chi_1 = S$ is observed at the beginning of the first period, indicating a crisis is likely to arise. First, let $q_r > q_1$. In this case, C^1 has no electoral capital to preserve for future elections. Indeed, in order to win the second period election he needs the voter to update positively about his type. Thus, C^1 has no reason to stay out of the race, and will always choose to run in equilibrium. This, in turn, generates an incumbency disadvantage: C^2 wins with strictly positive probability in the open seat election, but loses for sure when he runs as the incumbent office holder. This disadvantage increases in the signal's accuracy, since C^1's incentives to run in

[8] If no term limits are imposed, the politicians' incentives are exactly as in the baseline model, and incumbency status never has any effect on electoral performance.

the open seat election (conditional on $\chi_1 = S$) are weaker the higher the probability of a crisis arising.

Suppose instead that $q_r < q_1$: C^1 always wins the second period election if the voter receives no new information about his type. Here, incumbency status has a positive effect on C^2's electoral performance. To understand this result, consider the incentives C^1 faces in the open seat election. When he chooses not to run for office, C^1 gambles on his opponent's failure. Thus, he must take into account the risk that a crisis arises, and C^2 is actually able to solve it. Conversely, when C^1 must decide whether to run against a term limited incumbent, he does not need to worry about the office holder's expected performance. Indeed, if C^1 stays out of the race today, he always wins tomorrow's election. C^1's incentives to run are stronger in the open seat election, and C^2 experiences an incumbency advantage. Notice that the source of this incumbency advantage is exactly the reverse of the 'scare off' effect typically discussed in the literature (Cox ane Katz 1996, Levitt and Wolfram 1997). C^1 is more likely (in the sense of set inclusion) to stay out of the race precisely because he has nothing to fear from the (term limited) incumbent.

An analogous reasoning explains why this incumbency advantage is increasing in the signal's accuracy ψ. As ψ increases, so does the posterior probability that a crisis will occur in the first period. As a crisis becomes more likely, both C^1's expected payoff from holding office today and his probability of being re-elected tomorrow decrease. Thus, a increase in ψ always has a direct negative effect on C^1's incentives to run. However, in the open seat election an indirect effect also emerges. Recall that C^2 would be re-elected only upon producing a good governance outcome under a crisis. Thus, as ψ increases, staying out of the race becomes a riskier gamble for C^1. The direct effect dominates, therefore his incentives to run are always decreasing in ψ. However, due to the indirect effect the decrease is at a slower rate in the open seat election. As a consequence, C^2's incumbency advantage is increasing in the probability of a negative shock.

Rational Inattention and Candidates' Self Selection

The key result of this paper shows that voters' inability to commit to ignoring information may prevent them from attracting the most qualified politicians to office. So far, I have assumed that voters are passive recipients of information: they do not need to actively engage in order to learn about the office holder's performance. However, in real life obtaining and processing information is costly, whether in terms of resources or time and attention. Suppose then that we allow the voters to choose whether to invest in costly information acquisition or remain rationally inattentive. Would this allow them to solve their commitment problem and therefore create incentives for the 'best' candidate to run in equilibrium? In this section I address this question by amending the baseline model in order to allow the voters to choose whether to pay a cost L in order to learn about the governance outcome, or remain rationally ignorant. Formally, the new timing of the game is as follows (amendments to the baseline highlighted in italics):

1. Nature draws the potential candidates' types $\theta_{C^1}, \theta_{C^2} \in \{G, B\}$ and the first period state of the world $\omega_1 \in \{N, S\}$
2. The players observe a public signal $\chi_1 \in \{N, S\}$, accurate with probability ψ
3. C^1 and C^2 simultaneously choose whether to run. If party $P \in \{1, 2\}$ is unable to field a viable candidate it resorts to the reserve R^P.
4. The voter decides whom to elect
5. The first period state of the word ω_1 realizes, and is observed by all players
6. *The voter chooses whether to pay a cost* L *to learn about the governance outcome*
7. The fist period governance outcome $o_1 \in \{g, b\}$ realizes. *If and only if the voter invested in information acquisition, she observes the realization of* o_1
8. The second period starts and nature draws $\omega_2 \in \{N, S\}$
9. The game proceeds as above in stages 3-6 and the game ends

Notice that I am assuming that the voter chooses whether to invest after having observed the realization of the state of the world (ω_1). This assumption is without loss of generality: the results would be unchanged if I were to move the voter's to stage 4.

Our goal is to investigate the effects of rational inattention on candidates' entry choice in the first period. In order to do so, we must first of all characterize the voter's optimal investment decision. Trivially, the voter never chooses to pay the cost L during periods of business as usual. Recall in fact that governance outcomes are uninformative when $\omega_1 = S$, therefore learning about the incumbent's performance would not influence the voter's re-election choice nor her future payoff. Clearly, she has no reason to pay the cost L. Suppose instead that the country experiences a crisis ($\omega_1 = S$). Now, the voter has an opportunity to learn about the incumbent's ability. When choosing whether to invest in information acquisition, the voter therefore evaluates the (exogenous) cost against the benefit of improving the chances of making the correct retention decision. As the next lemma establishes, this will in turn depend on the identity of the incumbent office holder:

Lemma 3. *There exist unique $\underline{L}$ and $\overline{L}$ s.t. in any equilibrium of the game*

(i) If $L < \underline{L}$, then the voter always chooses to invest in information acquisition in the first period under $\chi_1 = S$, and never under $\chi_1 = N$

(ii) If $\underline{L} < L < \overline{L}$, then the voter chooses to invest in information acquisition if and only if C^1 is the first period incumbent and $\chi_1 = S$

(ii) If $L > \overline{L}$, then the voter never chooses to invest in information acquisition

The values of $\underline{L}$ and $\overline{L}$ are computed in the appendix, and are a function of the other parameters in the model (q_1, q_2, p, β). Lemma 3 indicates that the voter has stronger incentives to pay attention when the politician who is expected to perform better is in office. When the voter chooses not to invest in information acquisition, her optimal electoral choice in the second period is always the ex-ante advantaged C^1. This generates an asymmetry. When C^1 is in office, the risk that the voter faces when she does not obtain information is that of a Type II error: she may fail to oust C^1 even if he is a bad type. Conversely, when C^2 is in office the risk is that of a Type I error: outvoting the incumbent even if he was actually competent. Thus, conditional on information actually changing the voter's equilibrium choice, the cost of making a mistake is higher if the ex-ante most qualified candidate is in office. The voter therefore has stronger incentives to pay attention to C^1's performance.

Given Lemma 3, when now move one step back and look at the politicians' choices. When making their first period entry decision, potential candidates must in fact anticipate whether and when the voter will choose to invest in order to learn about the office holder's performance. It is easy to see that, exactly as in the baseline model, the ex-ante disadvantaged potential candidate C^2 always has a weakly dominant strategy to run for office, whether or not the voter will optimally choose to remain rationally inattentive. If C^1 also chooses to enter the race, C^2 is always going to lose and is therefore indifferent. If C^1 chooses to stay home, C^2's only chance to ever get to office is to run in the first period. Similarly, neither candidate has any reason to skip the race when the public signal indicates a crisis is unlikely. Consider instead the incentives that the ex-ante most qualified candidate C^1 faces under $\chi_1 = S$. First, let us focus on the case in which acquiring information is very costly for the voter:

Proposition 3. *Suppose that $L > \overline{L}$. Then, both potential candidates C^1 and C^2 always choose to enter the race in equilibrium.*

When the cost is sufficiently large that the voter never invests in information acquisition, her commitment problem is fully solved. This effectively neutralizes C^1's dynamic electoral concerns: C^1 will always win the second period election, irrespective of who is in office in period 1, the state of the world or the governance outcome. Straightforwardly, C^1 always chooses to enter the race in equilibrium, since he has nothing to lose. This conforms with our initial intuition that a commitment device giving voters the ability to credibly ignore information would alleviate, indeed completely solve in this case, the adverse selection problem. However, the opposite is true when the cost of acquiring information takes an intermediate value:

Proposition 4. *Suppose that $\underline{L} < L < \overline{L}$. Then, the probability (in the sense of set inclusion) that C^1 runs for office in the first period under $\chi_1 = S$ is lower than in the case in which $L = 0$ (baseline).*

This result stems directly from Lemma 3. The Lemma indicates that the voter has stronger incentives to invest in information acquisition when C^1 is in office. Thus, when the cost L lies in an intermediate range, the voter remains rationally inattentive if C^2 is the office holder but chooses to invest and learn about C^1's performance. This, in turn, reduces C^1's incentives to run. Notice in fact that in equilibrium C^2 can never be re-elected for a second term: the voter never invests to learn about his performance and therefore never updates her beliefs about his true ability. Thus (analogously to the case of a term limited incumbent discussed in the previous section), C^1 does not have to worry about his opponent proving himself: he always wins in the second period when he chooses to stay home in the first. Conversely, because the voter would always choose to invest to learn about C^1's performance, running for office during turbulent times is still a risky gamble for the most qualified candidate. Thus, while a very large cost of acquiring information allows a rationally inattentive electorate to solve its commitment problem, the problem and the resulting inefficiency are instead worsened when the cost takes an intermediate value.

Isolating the Information Channel

In the baseline model exogenous shocks influence politicians' expected utility from office via two channels: legacy (i.e., the expected value of holding office today) and information (i.e., the informativeness of the governance outcome, which in turn influences politician's future electoral chances). When we assume that politicians only live for two electoral cycles, both channels are necessary to generate the inefficiency documented in Proposition 1: if $\gamma = 0$ all potential candidates always choose to run for office in equilibrium. Since the value of holding office is the same in both periods, a politician would in fact never give up office today in order to increase his electoral chances tomorrow. Suppose instead that we allow players to consider a longer time horizon. Would adverse selection emerge in equilibrium even if we assume that exogenous crises influence politicians' expected utility only via the information channel (i.e., $\gamma = 0$)?

In what follows, I introduce an amended version of the model, in which politicians live for more than two periods, and the value from holding office is not a function of their performance (i.e., they are motivated solely by the material rents from office). I will show that, if politicians are sufficiently patient, the adverse selection documented in the baseline model continues to emerge in equilibrium.

The Infinite Horizon Model

Consider a game that lasts for infinitely many periods, $t \in \{1, 2, ..., \infty\}$. At the beginning of the game each party $P \in \{1, 2\}$ randomly draws a potential candidate from the pool of its members, containing a proportion q_P of good types. Let $1 > q_1 > q_2$. In each period, each potential candidate decides whether to run for office. The voter then makes her electoral decision. Office holders are subject to a two-terms limit. When an incumbent leaves office — whether because he hits the term limit, decides to stand down, or is outvoted — he cannot re-enter the pool of candidates. His party then draws a replacement (potential) candidate from the same pool. Notice that all politicians belonging to the same party are ex-ante identical.[9] This allows me to consider, in the equilibrium analysis, a generic potential candidate from Party 1 and a generic potential candidate from Party 2. As in the baseline model, when party P is unable to field a viable candidate it resorts to the reserve candidate R^P, that is known to be a bad type with certainty.

In each period the country experiences either a normal situation or a crisis, $\omega_t \in \{S, N\}$. Players share common prior beliefs that $prob(\omega_t = S) = \bar{p}$, with ω_t i.i.d. in each period. At the beginning of each period players observe public signal $\chi_t \in \{S, N\}$. For purposes of simplicity, I will assume that $prob(\chi_t = S|\omega_t = S) = prob(\chi_t = N|\omega_t = N) = 1 - \epsilon$, where ϵ takes an arbitrarily small value. In other words, the signal is (almost) perfectly informative. Notice that ϵ is assumed to be strictly larger than 0 to ensure that the voter is never indifferent between candidates of different expected quality. The production function for the governance outcomes is exactly as in the baseline model.

Politicians care exclusively about the material rents from office $K > 0$, and discount future payoffs by a common factor $\delta \in (0, 1)$. A politician's payoff when out of office is normalized to 0. The voter cares about governance outcomes, and I assume that she fully discounts the future (i.e., she maximises per-period payoff). This ensures that, in each period, the candidate who is most likely to be competent wins the election irrespective of incumbency status. This is not necessarily true in equilibrium with a forward looking voter. When choosing between a term limited incumbent and a challenger that is less likely to be competent but can run again in the following period, a forward looking voter would under some conditions elect the challenger. This is because the term limit would otherwise prevent her from efficiently using all the available information when making her electoral decision in the next period.

Finally, as in the two-period version, I assume that $\mu_{t,2}(I, S, g) > q_1$, where $\mu_{t,2}(I, \omega_{t-1}, o_{t-1})$ is the posterior probability that an incumbent from Party 2 is a good type given the previous period state of the world and governance outcome.

Analysis

The aim of this section is to verify that, under some conditions, the adverse selection documented in Proposition 1 continues to emerge in equilibrium. In this model, the problem that politicians face is

[9] There is a slight technical difficulty associated with the fact that the pool depletes over time. To bypass this problem, I assume that whenever a party draws a new potential candidate, another politician with the same true type is born into the pool.

to choose the right time to enter the electoral arena, so as to maximize the chances of remaining in office for two consecutive period. As such, (given $\delta < 1$) they may face a trade off between getting to office today, and waiting for a better time in order to maximize their re-election chances. [10]

Consider first a randomly drawn potential candidate from Party 1. This politician is ex-ante more likely be competent than any randomly drawn challenger from the other party. As such, he is always guaranteed re-election for a second term if he gets to office during normal times, when no new information is generated about his type. His incentives are therefore exactly as in the baseline model. He is always willing to run under $\omega_t = N$, but may decide to stay out of the race during periods of crisis in order to preserve his electoral capital and maximise the probability of getting to office when re-election is more likely. Straightforwardly, the higher the probability of being competent q_1, the stronger the incentives to run irrespective of the state of the world.

Interestingly, the opposite holds for a potential candidate from Party 2. As in the baseline model, this politician has incentives to gamble on his own success. Irrespective of how likely he is to fail, he is therefore always willing to run during times of crisis. Perhaps more surprisingly, if he is sufficiently likely to be a good type, a potential candidate from Party 2 may instead want to stay out of the race under normal times. Recall that governance outcomes are uninformative under $\omega_t = N$. Therefore, an incumbent from Party 2 would only be re-elected if his potential challenger decides to sit the election out. Conversely, a negative shock potentially allows the ex-ante disadvantaged incumbent to prove himself, thereby increasing the probability that he wins re-election even if the challenger decides to run. As such, politicians from Party 2 maximise the probability of being elected for two consecutive terms if they get to office during challenging times. This, in turn, generates incentives to stay out of the race during normal ones.[11] Interestingly, as mentioned above, these incentives are stronger the higher the probability of being competent. When q_2 is high, a randomly drawn politician from Party 2 that gets elected during challenging times is very likely to survive to a second term. The opportunity cost of getting to office during normal times is too high, and the politician would rather wait for a period of crisis.

The above discussion highlights that the incentives that arise in this model are similar to those emerging in the baseline. The next proposition establishes that the equilibrium results are as well:

[10] Recall that the two-term limit implies that all incumbents will always run for re-election.

[11] Recall that I assume that when an incumbent is ousted he can never re-enter the pool of candidates.

Proposition 5. *There exist unique $\widehat{q_2}$, $\widehat{\beta}$, and $\widehat{\delta}$ such that, if*

(i) A randomly drawn potential candidate from Party 2 is sufficiently likely to be a bad type

$0 \leq q_2 < \widehat{q_2}$

(ii) The probability that a bad type delivers a good outcome under a crisis is sufficiently low

$0 \leq \beta < \widehat{\beta}$

(iii) The politicians' discount factor is sufficiently high

$\widehat{\delta} < \delta < 1$

then, the game has an equilibrium in which any potential candidate drawn from Party 2 runs under both states of the world, whereas viable candidates drawn from Party 1 only run during normal times. During periods of crisis, Party 1 resorts to the reserve candidate R^1.

Notice that the qualitative conditions are in line with those in Proposition 1.[12] However, in contrast with the results of the baseline model, adverse selection can emerge in equilibrium *for any value of* q_1. For a sufficiently high discount factor, potential candidates from Party 1 choose to stay out of the race in times of crisis even if the probability of being competent is arbitrarily close to 1.

Proposition 3 shows that the adverse selection effect documented in the baseline model continues to emerge, even if we impose that exogenous shocks influence politicians' expected payoff from holding office solely via the information channel. This is especially relevant in light of the results in Ashworth et al. (2017). As discussed in the robustness section, the authors in fact show that governance outcomes are always more informative during periods in which the effect of competence is amplified. In other words, outcomes are more informative following a crisis whenever crises amplify the effect of type. If instead competence matters more during normal times, this is when the incumbent's performance reveals the most information. Given Proposition 3, this implies that the key inefficiency documented in this paper holds irrespective of whether we assume that competence is needed most in times of crisis or during periods of 'business as usual'. If crises mute the effect of the office holder's type rather than amplifying it, then the voter benefits the most from a competent politician during normal times. However, this is also when outcomes are most informative. As a consequence, the politician who is most likely to be competent experiences fear of failure and has

[12]It is important to highlight that, following from the discussion above, conditions (i) and (ii) are necessary both to ensure that politicians from Party 1 choose to stay out under $\omega_t = S$ *and* that politicians from Party 2 are willing to run under $\omega_t = N$.

incentives to stay out of the race, running for office only during periods of crisis. Again, the voter gets the wrong candidates at the wrong time.

Conclusion

Do the right candidates choose to run for office at the right time? I have addressed this question by analyzing a model of repeated elections, in which potential candidates are career politicians that differ in the probability of being a competent type. The key feature of the model is that, in each period, the country faces either a normal situation or a crisis. A crisis amplifies both the importance of the office holder's competence, and the informativeness of governance outcomes. I have shown that, in a world with these features, electoral accountability may have the perverse consequence of discouraging good candidates from running precisely when the voter needs them the most. The politician who is most likely to be competent has the most to lose from information. As a consequence, if a crisis is likely, he experiences fear of failure: under some conditions, he chooses to stay out of the race so as to preserve his electoral capital for the future. This result is extremely robust to altering the baseline model in several directions. The source of the inefficiency highlighted in this paper thus seem to lie at the very core of the accountability relationship between voters and democratically elected governors.

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Appendix A

Proposition 1: *There exist unique* $\underline{\psi}$, $\bar{q_2}$, $\bar{\beta}$ *and* $\bar{q_1}$ *such that, if*

(i) The public signal is sufficiently accurate ($\psi > \underline{\psi}$)

(ii) C^2 *is sufficiently unlikely to be a good type* ($q_2 < \bar{q_2}$)

(iii) A bad type is sufficiently unlikely to deliver a good outcome under a crisis ($\beta < \bar{\beta}$)

(iv) C^1 *is not sufficiently confident in his own ability* ($q_1 < \bar{q_1}$)

Then, C^1 *runs for office only when* $\chi_1 = N$*. When* $\chi_1 = S$*, Party 1 must resort to the reserve candidate* R^1*. If the conditions above are not satisfied,* C^1 *always enters the race in equilibrium. Instead,* C^2 *always chooses to run under both* $\chi_1 = S$ *and* $\chi_1 = N$*.*

Proof. In the main body I have provided the proof that both candidates always choose to enter the race under $\chi_1 = N$, and that C^2 is always willing to run even under $\chi_1 = S$. Consider instead C^1's incentives under $\chi_1 = S$. Let $p_1 = prob(\omega_1 = S|\chi_1 = S) = \frac{\psi\bar{p}}{\psi\bar{p}+(1-\psi)(1-\bar{p})}$. C^1's expected utility from running in the first period is:

$$K + q_1[2\gamma + K] + (1 - q_1)[1 - p_1(1 - \beta)][\gamma + K + \gamma(1 - \bar{p}(1 - \beta)] \tag{1}$$

C^1's expected utility from staying home instead is:

$$[K + \gamma(q_1 + (1 - q_1)(1 - \bar{p}(1 - \beta))][1 - p_1 + p_1(1 - q_2)(1 - \beta)] \tag{2}$$

Thus, C^1 chooses not to run in period 1 if and only if the following condition is satisfied:

$$\begin{aligned}&[K + \gamma(q_1 + (1 - q_1)(1 - \bar{p}(1 - \beta))][1 - p_1 + p_1(1 - q_2)(1 - \beta)] > \\ &K + q_1[2\gamma + K] + (1 - q_1)[1 - p_1(1 - \beta)][\gamma + K + \gamma(1 - \bar{p}(1 - \beta)]\end{aligned} \tag{3}$$

Which reduces to:

$$q_1 < 1 - \frac{(\gamma + K)(1 + q_2 p_1(1 - \beta) + \beta p_1)}{p_1(1 - \beta)[2\gamma + K - \gamma\bar{p}(1 - 2\beta - q_2(1 - \beta))]} = \overline{q_1} \tag{4}$$

Given $q_1 > q_2$, the above requires:

$$(1-q_2)p_1(1-\beta)(2\gamma+K-\gamma\bar{p}(1-2\beta-q_2(1-\beta)))-(\gamma+K)(1+q_2p_1(1-\beta)+\beta p_1)>0 \quad (5)$$

The condition establishes an upper bound $q_2 < \overline{q_2}$, and must always be satisfied at $q_2 = 0$. This requires:

$$p_1[(1-\beta)(2\gamma+K-\gamma\bar{p}(1-2\beta))-\beta(\gamma+K)]-\gamma-K>0 \quad (6)$$

This reduces to:

$$p_1 > \frac{\gamma+K}{(1-\beta)[2\gamma+K-\gamma\bar{p}(1-2\beta)]-\beta(\gamma+K)} = \underline{p_1} \quad (7)$$

Substituting $p_1 = \frac{\psi\bar{p}}{\psi\bar{p}+(1-\psi)(1-\bar{p})}$, the above establishes a lower bound $\psi > \underline{\psi}$ and must always be satisfied at $\psi = 1$. This requires:

$$\frac{\gamma+K}{(1-\beta)[2\gamma+K-\gamma\bar{p}(1-2\beta)]-\beta(\gamma+K)} < 1 \quad (8)$$

The above establishes an upper bound $\beta < \overline{\beta}$ (and it is always satisfied at $\beta = 0$). □

Proposition 2: *Incumbency status has no effect on C^2's electoral chances under $\chi_1 = N$. Suppose instead that $\chi_1 = S$. Then, C^2 experiences an incumbency disadvantage whenever $q_r > q_1$, and an advantage whenever $q_r < q_1$. In both cases, the effect of incumbency is increasing in the signal's accuracy ψ.*

Proof. The first point follows straightforwardly from the proof of Proposition 1, and so does the existence of an incumbency disadvantage under $q_r > q_1$. Suppose instead that $q_r < q_1$. C^1's utility from running in period 1 is exactly as in the baseline:

$$K+q_1[2\gamma+R]+(1-q_1)[1-p_1(1-\beta)][\gamma+K+\gamma(1-\bar{p}(1-\beta)] \quad (9)$$

Conversely, if C^1 chooses not to run he will always win the second period election. His expected utility is therefore:

$$K+\gamma(q_1+(1-q_1)(1-\bar{p}(1-\beta)) \quad (10)$$

Thus, C^1 chooses not to run in period 1 if and only if the following condition is satisfied:

$$K+\gamma(q_1+(1-q_1)(1-\bar{p}(1-\beta)) > K+q_1[2\gamma+K]+(1-q_1)[1-p_1(1-\beta)][\gamma+K+\gamma(1-\bar{p}(1-\beta)] \quad (11)$$

Which reduces to:

$$q_1 < 1 - \frac{(\gamma+K)}{p_1(1-\beta)[\gamma+K+\gamma(1-\bar{p}(1-\beta)]} \quad (12)$$

C^2's incumbency advantage is therefore:

$$1 - \frac{(\gamma+K)}{p_1(1-\beta)[\gamma+K+\gamma(1-\bar{p}(1-\beta)]} - \quad (13)$$
$$[1 - \frac{(\gamma+K)(1+q_2p_1(1-\beta)+\beta p_1)}{p_1(1-\beta)(2\gamma+K-\gamma\bar{p}(1-2\beta-q_2(1-\beta)))}] > 0$$

Substituting $p_1 = \frac{\psi\bar{p}}{\psi\bar{p}+(1-\psi)(1-\bar{p}}$, it is easy to verify that the advantage is increasing in ψ.

□

Lemma 3: *There exist unique $\underline{L}$ and $\overline{L}$ s.t. in any equilibrium of the game*

(i) If $L < \underline{L}$, then the voter always chooses to invest in information acquisition in the first period under $\chi_1 = S$, and never under $\chi_1 = N$

(ii) If $\underline{L} < L < \overline{L}$, then the voter chooses to invest in information acquisition if and only if C^1 is the first period incumbent and $\chi_1 = S$

(iii) If $L > \overline{L}$, then the voter never chooses to invest in information acquisition

Proof. Suppose first that C^1 is in office. Then, the voter's expected second period utility if she chooses to invest (under $\omega_1 = S$) is

$$-L - \lambda(1-q_1)\beta(1-\beta)\overline{p} - \lambda(1-q_1)(1-q_2)(1-\beta)^2\overline{p} \quad (14)$$

If instead she chooses not to invest, she will always re-elect C^1. Her expected second period utility is therefore

$$-\lambda(1-q_1)(1-\beta)\overline{p} \quad (15)$$

Thus, the voter chooses to invest in information acquisition to learn about C^1's performance if and only if:

$$L < \lambda(1-q_1)(1-\beta)^2 q_2 \bar{p} = \overline{L} \tag{16}$$

Suppose instead that C^2 is in office. The voter's expected second period utility if she chooses to invest is

$$-L - \lambda(1-q_2)\beta(1-beta)\bar{p} - \lambda(1-q_2)(1-q_1)(1-\beta)^2\bar{p} \tag{17}$$

If she chooses not to invest, she always replaces C^2 at the end of her first period, and her expected utility is

$$-\lambda(1-q_1)(1-\beta)\bar{p} \tag{18}$$

Thus, the voter chooses to invest in information acquisition to learn about C^1's performance if and only if:

$$L < \lambda(1-\beta)\bar{p}[q_2(1-q_1(1-\beta)) - q_1\beta] = \underline{L} \tag{19}$$

It is easy to see that $\underline{L} < \overline{L}$. This concludes the proof. □

Proposition 4:*Suppose that $\underline{L} < L < \overline{L}$. Then, the probability (in the sense of set inclusion) that C^1 runs for office in the first period under $\chi_1 = S$ is lower than in the case in which $L = 0$ (baseline).*

Proof. The proof proceeds exactly as in Proposition 2 and is therefore omitted. □

Proposition 5: *There exist unique $\widehat{q_2}$, $\widehat{\beta}$, and $\widehat{\delta}$ such that, if*

(i) A randomly drawn potential candidate from Party 2 is sufficiently likely to be a bad type $0 \leq q_2 < \widehat{q_2}$

(ii) The probability that a bad type delivers a good outcome under a crisis is sufficiently low $0 \leq \beta < \widehat{\beta}$

(iii) The politicians' discount factor is sufficiently high

$\widehat{\delta} < \delta < 1$

then, the game has an equilibrium in which any potential candidate drawn from Party 2 runs under both states of the world, whereas viable candidates drawn from Party 1 only run during normal times. During periods of crisis, Party 1 resorts to the reserve candidate R^1.

Proof. Denote as $U^e_P(H_t, \chi_t, e_t)$ the expected discounted payoff of a non-incumbent potential candidate from party $P \in \{1, 2\}$ if he chooses to enter the race at time t. $H_t \in \{1, 2\}$ indicates the identity of the potential candidate with the highest probability of being a good type. $e_t \in \{I, \emptyset\}$, where $e_t = \emptyset$ denotes that the race at time t is open seat and $e_t = I$ that the incumbent from the other party is running for re-election. $U^o_P(H_t, \chi_t, e_t)$ denotes the expected discounted payoff of a non-incumbent potential candidate from party P if he chooses to stay out of the race at time t.

As discussed in the main body, non-incumbent potential candidates from Party 1 are always willing to run under $\chi_t = N$, and non-incumbent potential candidates from Party 2 are always willing to run under $\chi_t = S$. Further, all incumbents are always willing to run for re-election.

Consider instead a potential candidate from Party 2 under $\chi_t = N$. In the conjectured equilibrium, he is always indifferent between running for office and staying home if the election is open seat, since he would lose with probability 1. Consider his entry decision when an incumbent from Party 1 is up for re-election, and performed poorly in the previous period. In the conjectured equilibrium, his expected discounted payoff is:

$$U^e_2(2, N, I) = K + \delta K \bar{p} \tag{20}$$

Since he would only win re-election for a second term if the public signal indicates a crisis and therefore the (new) potential candidate from Party 1 chooses to stay home.

His expected discounted payoff from a deviation would instead be:

$$\delta(\bar{p} U^e_2(1, S, \emptyset) + (1 - \bar{p}) U^e_2(1, N, \emptyset)) \tag{21}$$

Where

$$U^e_2(1, S, \emptyset) = K + \delta K[\bar{p} + (1 - \bar{p})(q_2 + (1 - q_2)\beta)] \tag{22}$$

And

$$U_2^e(1,N,\emptyset) = U_2^o(1,N,\emptyset) = \delta^2(\bar{p}U_2^e(1,S,\emptyset) + (1-\bar{p})U_2^e(1,N,\emptyset)) \tag{23}$$

Remember that the public signal is (almost) perfectly informative (since I assume $prob(\chi_t = S|\omega_t = S) = prob(\chi_t = N|\omega_t = N) = 1-\epsilon$), and I can therefore ignore the arbitrarily small probability that a crisis arises after a signal $\chi_t = N$.

Solving for $U_2^e(1,N,\emptyset)$ we obtain that the deviation is not profitable if and only if the following condition is satisfied:

$$K + \delta K\bar{p} > \delta K\bar{p}\frac{(1+\delta(\bar{p}+(1-\bar{p})(q_2+(1-q_2)\beta))}{1-\delta^2(1-\bar{p})} \tag{24}$$

Rearranging we obtain:

$$q_2 < \frac{1-\delta^2(\bar{p}^2+(1-\bar{p})(1+\delta\bar{p}))}{\delta^2\bar{p}(1-\bar{p})(1-\beta)} - \frac{\beta}{1-\beta} \tag{25}$$

Since, $q_2 > 0$ the above requires:

$$\beta < \frac{1-\delta^2(\bar{p}^2+(1-\bar{p})(1+\delta\bar{p}))}{\delta^2\bar{p}(1-\bar{p})} \tag{26}$$

Consider now a non-incumbent potential candidate from party 1 under $\chi_t = C$. Intuitively, his incentives to run are stronger when a term limited incumbent is up for re-election (as compared to an open seat election). As such, it is sufficient to show that the equilibrium is robust to a deviation in this case.

Considering the case in which $H_t = 1$, Party 1's potential candidate expected discounted payoff in the conjectured equilibrium is:

$$U_1^o(1,S,2) = \delta((1-\bar{p})U_1^e(1,N,\emptyset) + \bar{p}U_1^o(1,S,\emptyset)) \tag{27}$$

Where

$$U_1^e(1,N,\emptyset) = K(1+\delta) \tag{28}$$

And

$$U_1^o(1,C,\emptyset) = \delta[1-(q_2+(1-q_2)\beta)](\bar{p}U_1^o(1,C,2)+(1-\bar{p})U_1^e(1,N,2) \\ +\delta[q_2+(1-q_2)\beta)]\bar{p}(U_1^o(2,C,2)+(1-\bar{p})U_1^e(2,N,2)) \tag{29}$$

With $U_1^e(2,N,2) = U_1^o(2,N,2) = \delta(\bar{p}U_1^o(1,S,\emptyset)+(1-\bar{p})U_1^e(1,N,\emptyset))$ and $U_1^e(1,N,2) = U_1^e(1,N,\emptyset)$. His expected discounted payoff from a deviation is instead:

$$K + \delta K(q_1 + (1-q_1)\beta) \tag{30}$$

Solving for $U_1^o(1,S,\emptyset)$ and rearranging we obtain that the deviation is not profitable if and only if the following condition is satisfied:

$$(K+\delta K)\delta(1-\bar{p})\frac{(1-q_2)(1-\beta)+\delta(\bar{p}+(1-\bar{p})(q_2+(1-q_2)\beta)}{1-\delta^2\bar{p}[\bar{p}+(1-\bar{p})(q_2+(1-q_2)\beta)]} > K+\delta K(q_1+(1-q_1)\beta) \tag{31}$$

Rearranging we obtain:

$$q_2 < \frac{(1+\delta\bar{p})[\delta(1+\delta)(1-\bar{p})-(1-\delta\bar{p})(1+\delta(q_1+(1-q_1)\beta))]}{\delta(1-\bar{p})(1-\beta)[1-\delta^2(1-\bar{p}(1-q_1)(1-\beta))]} - \frac{\beta}{1-\beta} \tag{32}$$

This requires

$$\frac{(1+\delta\bar{p})[\delta(1+\delta)(1-\bar{p})-(1-\delta\bar{p})(1+\delta(q_1+(1-q_1)\beta))]}{\delta(1-\bar{p})(1-\beta)[1-\delta^2(1-\bar{p}(1-q_1)(1-\beta))]} - \frac{\beta}{1-\beta} > 0 \tag{33}$$

The above condition establishes an upper bound $\beta < \tilde{\beta}$. $\tilde{\beta} > 0$ requires

$$(1+\delta\bar{p})[\delta(1+\delta)(1-\bar{p})-(1-\delta\bar{p})(1+\delta q_1)] > 0 \tag{34}$$

The LHS is increasing in δ, fails at $\delta = 0$ and is always satisfied at $\delta = 1$. The condition therefore establishes a lower bound $\delta > \widehat{\delta}$

Thus, the conjectured equilibrium exists if and only if the following conditions are satisfied:

- $0 < q_2 < \widehat{q_2} = \min\{\frac{1-\delta^2(\bar{p}^2+(1-\bar{p})(1+\delta\bar{p}))}{\delta^2\bar{p}(1-\bar{p})(1-\beta)} - \frac{\beta}{1-\beta}, \frac{(1+\delta\bar{p})[\delta(1+\delta)(1-\bar{p})-(1-\delta\bar{p})(1+\delta(q_1+(1-q_1)\beta))]}{\delta(1-\bar{p})(1-\beta)[1-\delta^2(1-\bar{p}(1-q_1)(1-\beta))]} - \frac{\beta}{1-\beta}\}$
- $\beta < \widehat{\beta} = \min\{\tilde{\beta}, \frac{1-\delta^2(\bar{p}^2+(1-\bar{p})(1+\delta\bar{p}))}{\delta^2\bar{p}(1-\bar{p})}\}$
- $\delta > \widehat{\delta}$

$\square$

Appendix B: Robustness

In this section I formally analyse the variants of the baseline model introduced in the Discussion and Robustness section.

Governance outcomes directly influence politicians' payoffs

Consider an amended version of the baseline mode in which politicians' payoffs are as follows:

- $K + \mathbb{I}_g\gamma - (1 - \mathbb{I}_g)\lambda$ when in office
- $-(1 - \mathbb{I}_g)\lambda$ when not in office

Where $\mathbb{I}_g$ is a binary indicator taking value 1 if $o_t = g$ and 0 otherwise.

In equilibrium, C^1 chooses not to run in the first period if and only if the following condition is satisfied:

$$\begin{aligned} p_1(1-\beta)(1-q_2)(\gamma(1-(1-\beta)(1-q_1)\bar{p}) - (1-\beta)(1-q_1)\lambda\bar{p} - \lambda + K) \\ -p_1\beta(1-q_2)(1-\beta)\bar{p}\lambda \\ +(1-p_1)(\gamma(1-(1-\beta)(1-q_1)\bar{p}) - (1-\beta)(1-q_1)\lambda\bar{p} + K) > \\ K + q_1(2\gamma + K) \\ +(1-q_1)(1-(1-\beta)p_1)(\gamma(1-(1-\beta)\bar{p}) - (1-\beta)\lambda\bar{p} + \gamma + K) \\ -p_1(1-\beta)(1-q_1)((1-\beta)(1-q_2)\lambda\bar{p} + \lambda) \end{aligned} \tag{35}$$

This reduces to:

$$q_1 < 1 - \frac{(\gamma + K)(1 + q_2p_1(1-\beta) + \beta p_1) + \lambda(1-\beta)(1-q_2)p_1(1+\beta\bar{p})}{p_1(1-\beta)[2\gamma + K - \gamma\bar{p}(1-2\beta-q_2(1-\beta)) + \lambda(1+\bar{p}\beta)]} = \overline{q_1}_\lambda \tag{36}$$

Given $q_1 > q_2$, the above requires:

$$\begin{aligned} (1-q_2)p_1(1-\beta)[2\gamma + K - \gamma\bar{p}(1-2\beta-q_2(1-\beta)) + \lambda(1+\bar{p}\beta)] \\ -(\gamma + K)(1 + q_2p_1(1-\beta) + \beta p_1) - \lambda(1-\beta)(1-q_2)p_1(1+\beta\bar{p}) > 0 \end{aligned} \tag{37}$$

The LHS is decreasing in q_2, therefore the condition establishes an upper bound $q_2 < \overline{q_2}_\lambda$ and must be satisfied at $q_2 = 0$.

$$p_1(1-\beta)(2\gamma + K - \gamma\bar{p}(1-2\beta) + \lambda(1+\bar{p}\beta)) - [(\gamma+K)(1+\beta p_1) + \lambda p_1(1-\beta)(1+\beta\bar{p})] > 0 \quad (38)$$

The inequality can only be satisfied if the LHS is increasing in p_1. Substituting $p_1 = \frac{\psi\bar{p}}{\psi\bar{p}+(1-\psi)(1-\bar{p})}$, the above establishes a lower bound $\psi > \underline{\psi}_\lambda$ and must always be satisfied at $\psi = 1$:

$$(1-\beta)[2\gamma + K - \gamma\bar{p}(1-2\beta) + \lambda(1+\bar{p}\beta)] - [(\gamma+K)(1+\beta) + \lambda(1-\beta)(1+\beta\bar{p})] > 0 \qquad (39)$$

The above is concave in β, and always at $\beta = 0$, therefore the condition establishes an upper bound $\beta < \overline{\beta}_\lambda$.

A bad governance outcome increases the probability of a crisis arising in the future

Suppose that politicians only care about their own performance in office, and consider an amended version of the baseline model where the probability of a negative shock in the second period is a function of the first period governance outcome:

- $prob(\omega_2 = C | o_1 = g) = \bar{p}$
- $prob(\omega_2 = C | o_1 = b) = \alpha\bar{p}$, where $\alpha \in (1, \frac{1}{\bar{p}})$

C^1 will choose not to run in period 1 if and only if the following condition is satisfied:

$$\begin{aligned} &[K + \gamma(q_1 + (1-q_1)(1-\bar{p}(1-\beta))](1-p_1) \\ &+p_1(1-q_2)(1-\beta)][K + \gamma(q_1 + (1-q_1)(1-\alpha\bar{p}(1-\beta))] > \\ &K + q_1[2\gamma + K] + (1-q_1)[1-p_1(1-\beta)][\gamma + K + \gamma(1-\bar{p}(1-\beta)] \end{aligned} \qquad (40)$$

This reduces to:

$$q_1 < 1 - \frac{(\gamma+K)(1+q_2p_1(1-\beta)+\beta p_1)}{p_1(1-\beta)[2\gamma + K - \gamma\bar{p}(\alpha(1-q_2)(1-\beta)-\beta)]} = \overline{q_1}_\alpha \qquad (41)$$

Given $q_1 > q_2$, the above requires:

$$1 - q_2 - \frac{(\gamma + K)(1 + q_2 p_1(1-\beta) + \beta p_1)}{p_1(1-\beta)[2\gamma + K - \gamma\bar{p}(\alpha(1-q_2)(1-\beta) - \beta]} > 0 \tag{42}$$

Substituting $p_1 = \frac{\psi\bar{p}}{\psi\bar{p} + (1-\psi)(1-\bar{p})}$, the above establishes a lower bound $\psi > \underline{\psi}_\alpha$ and must always be satisfied at $\psi = 1$:

$$(1 - q_2)(1-\beta)[2\gamma + K - \gamma\bar{p}(\alpha(1-q_2)(1-\beta) - \beta)] - (\gamma + K)(1 + q_2(1-\beta) + \beta) > 0 \tag{43}$$

The LHS is decreasing in q_2, therefore it establishes an upper bound $q_2 < \overline{q_2}_\alpha$ and must always be satisfied at $\overline{q_2} = 0$:

$$(1-\beta)[2\gamma + K - \gamma\bar{p}(\alpha(1-q_2)(1-\beta) - \beta)] - (\gamma + K)(1 + \beta) > 0 \tag{44}$$

The LHS is concave in β and always satisfied at $\beta = 0$. Thus, it establishes an upper bound $\beta < \overline{\beta}_\alpha$.

A bad governance outcome decreases the country's future resiliency

Suppose that politicians only care about their own performance in office, and the probability of a crisis in the second period is exogenous. Consider an amended version of the baseline model in which the first period governance outcome influences the probability that $o_2 = g$ if the country experiences a crisis and the office holder is a bad type:

- $prob(o_2 = g | \omega_2 = C, \theta_{I_2} = B, o_1 = g) = \beta$
- $prob(o_2 = g | \omega_2 = C, \theta_{I_2} = B, o_1 = g) = \delta\beta$, where $\delta \in [0, 1]$

C^1 chooses not to run in the first period if and only if the following condition is satisfied:

$$\begin{aligned} p_1(1-q_2)(1-\beta)[K + \gamma[q_1 + (1-q_1)(1-\bar{p}(1-\delta\beta))] + \\ (1-p_1)[K + \gamma[q_1 + (1-q_1)(1-\bar{p}(1-\beta))]] > \\ K + q_1(2\gamma + K) + (1-q_1)(1-p_1(1-\beta))(K + \gamma(2-\bar{p}(1-\beta))) \end{aligned} \tag{45}$$

This reduces to:

$$q_1 < 1 - \frac{(\gamma + K)(1 + q_2 p_1(1-\beta) + \beta p_1)}{p_1(1-\beta)[2\gamma + K - \gamma\bar{p}(1 - \beta(1+\delta) - q_2(1-\beta))]} = \overline{q_1}_\delta \tag{46}$$

Given $q_1 > q_2$, this requires:

$$(1-q_2)p_1(1-\beta)[2\gamma + K - \gamma\bar{p}(1-\beta(1+\delta) - q_2(1-\beta))] - (\gamma+K)(1+q_2p_1(1-\beta)+\beta p_1) > 0 \tag{47}$$

The above establishes an upper bound $q_2 < \overline{q_2}_\delta$. Thus, the condition must be satisfied at $q_2 = 0$. This requires:

$$p_1(1-\beta)[2\gamma + K - \gamma\bar{p}(1-\beta(1+\delta)] - (\gamma+K)(1+\beta p_1) > 0 \tag{48}$$

Substituting $p_1 = \frac{\psi\bar{p}}{\psi\bar{p}+(1-\psi)(1-\bar{p})}$, the above establishes a lower bound $\psi > \underline{\psi}_\delta$ and must always be satisfied at $p_1 = 1$:

$$(1-\beta)[2\gamma + K - \gamma\bar{p}(1-\beta(1+\delta)] - (\gamma+K)(1+\beta) > 0 \tag{49}$$

The LHS is concave in β, and it is always satisfied at $\beta = 0$. The condition therefore establishes an upper bound $\beta < \overline{\beta}_\delta$.

State-dependent legacy payoffs

Consider an amended version of the baseline model in which an office holder's legacy payoff from a good performance is higher under $\omega_t = C$:

- K if $o_t = b$
- $K + \gamma$ if $o_t = g$ and $\omega_t = N$
- $K + \nu(\omega_t)\gamma$, where $\nu(S) > 1$ and $\nu(N) = 1$

C^1 chooses not to run in the first period if and only if the following condition is satisfied:

$$
\begin{aligned}
& [K+\gamma(1-\bar{p}+\nu(S)\bar{p}(q_1+(1-q_1)\beta))][1-p_1+p_1(1-q_2)(1-\beta)] > \\
K+q_1[K+\gamma(2+(p_1+\bar{p})(\nu(S)-1)] &+(1-q_1)[1-p_1][\gamma+K+\gamma(1-\bar{p}+\nu(S)\bar{p}\beta)] \\
& +(1-q_1)p_1\beta[\nu(S)\gamma+K+\gamma(1-\bar{p}+\nu(S)\bar{p}\beta)]
\end{aligned} \tag{50}
$$

This reduces to:

$$
q_1 < \frac{p_1((1-2\beta-q_2(1-\beta))(K+\gamma(1-\bar{p}(1-\beta\nu(S))))+\gamma(1-\beta\nu(S)))-(K+\gamma)}{p_1(1-\beta)(\gamma(1+\nu(S))+K-\gamma\bar{p}(1-2\nu(S)\beta-\nu(S)q_2(1-\beta))} = \overline{q_1}_\nu(S) \tag{51}
$$

Given $q_1 > q_2$, the above requires:

$$
\begin{aligned}
p_1[(1-2\beta-q_2(1-\beta))(K+\gamma(1-\bar{p}(1-\beta\nu(S))))+\gamma(1-\beta\nu(S))]-(K+\gamma) \\
-q_2[p_1(1-\beta)(\gamma(1+\nu(S))+K-\gamma\bar{p}(1-2\nu(S)\beta-\nu(S)q_2(1-\beta))] > 0
\end{aligned} \tag{52}
$$

The LHS is decreasing in q_2, therefore it establishes an upper bound $q_2 < \overline{q_2}_\nu$ and must always be satisfied at $q_2 = 0$:

$$
p_1((1-2\beta)(K+\gamma(1-\bar{p}(1-\beta\nu(S))))+\gamma(1-\beta\nu(S)))-(K+\gamma) > 0 \tag{53}
$$

Substituting $p_1 = \frac{\psi\bar{p}}{\psi\bar{p}+(1-\psi)(1-\bar{p})}$, the above establishes a lower bound $\psi > \underline{\psi}_\nu$ and must always be satisfied at $\psi = 1$:

$$
(1-2\beta)(K+\gamma(1-\bar{p}(1-\beta\nu))+\gamma(1-\beta\nu(S)))-(K+\gamma) > 0 \tag{54}
$$

The LHS is concave in β, and it is always satisfied at $\beta = 0$ The condition therefore establishes an upper bound $\beta < \overline{\beta}_\nu$.