Who Runs When?

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Abstract

When are good politicians willing to run for office? I analyze a dynamic model of elections in which voters learn about politicians' competence by observing governance outcomes. In each period, the country faces either a crisis or business as usual. 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 needs him the most, the politician who is most likely to be competent chooses to stay out of the race to 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.

James Madison, father of the US constitution, believed that democratic elections serve primarily the purpose of allowing citizens to select good political leaders: 'the aim of every political Constitution is, or ought to be, first to obtain for rulers men who possess most virtue to discern (...) the common good of society' (Federalist Papers 57). A similar view was held by V.O. Key (1956, p. 10), who argued that 'the nature of the workings of government depends ultimately on the men who run it' (see also Fearon, 1999). Indeed, a growing empirical literature highlights that the competence of political leaders has a critical impact on a country's performance (e.g. Jones and Olken 2005, Besley, Montalvo and Reynal-Querol, 2011).

The health of a democratic system thus depends crucially on the answer to two questions. First, can voters identify good politicians to be (re)elected and bad ones to be thrown out? Secondly, are high quality politicians willing to run for office in the first place? Attempts to answer the first question abound in the the formal theoretical literature. Much less attention has instead been devoted to the second. This crucial question is what this paper addresses. In particular, while the small literature on endogenous candidate entry typically focuses on *static* settings and asks *whether* competent types self-select into politics, I consider a longer planning horizon and investigate *when* good candidates are willing to run for office. I thus present a *dynamic* model of elections, and analyze how the environment conditions (i.e., whether the country is experiencing a moment of crisis or a period of 'business as usual') influence the endogenous supply of good political candidates.

I show that, in a world in which governance outcomes reveal information about the incumbent's competence, a crucial inefficiency emerges in equilibrium: the quality of the pool of candidates is lower in periods when the country most needs a competent leader. When the country experiences a period of crisis, the office-holder's ability is put to the test. Forward-looking politicians thus consider both the value of holding office today, and how this would influence their electoral chances in the future. The potential candidate who is most likely to deliver a good performance is also the one that has the most to lose from failing (since he initially enjoys a reputation advantage). Under some conditions, he will then choose to stay out of the race during times of crisis in order to protect his electoral capital for the future. In contrast, the potential candidate who is ex-ante less qualified for office, and therefore has lowest reputation, is always willing to take the gamble and run for office during challenging times. Thus, voters get the *wrong candidate* at the *wrong time*. Crucially, this result holds true even if in the model running is costless, and holding office is more valuable than the

outside option (i.e., entering the race would always be the statically optimal choice for all potential candidates). Indeed, this adverse selection does not arise due to weak electoral incentives, as is the case the extant literature. Quite the opposite, it emerges precisely as a perverse consequence of accountability. The contribution of this paper is therefore twofold. First, it highlights how the rational 'calculus of candidacy' (Rohde 1979) goes beyond a simple comparison of the *exogenous* cost of running and the expected rents from office, and instead includes *endogenous* costs of holding office that arise when we consider career politicians' dynamic electoral incentives. Secondly, it identifies a perverse consequence of electoral accountability that had been previously overlooked.

I investigate this inefficiency by first introducing a baseline model with two time periods and an election in each. In each period, the pool of candidates is determined endogenously. Potential candidates are career politicians: 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 enjoys only when he delivers a good performance. 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 and the state of the world. Potential candidates' true types, representing their political ability or competence, are unknown to both the voter and the politicians themselves. Politicians differ in their reputation, which is the probability of being a competent type. Intuitively, we can think about this probability as representing a measure of the politician's (expected) quality. Finally, the state of the world represents the environment conditions in the country. In each period, the country either experiences a crisis, or its conditions are '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. A crisis provides the voter with a 'test' of the office-holder's competence: precisely because competence matters the most during times of crisis, this is also when the governance outcome reveals most information about the incumbent's ability.

Within this framework, consider the incentives that a career politician faces. In the last-period election, a politician need 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 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 payoff from being elected in the second period. A crisis may not arise again tomorrow, and the country may go back to 'business as usual'. The likelihood of being able to deliver a good performance and enjoy the associated legacy payoff is therefore higher in the second period. Second, a crisis has an information value: it puts the office-holder to the test, thus allowing the voters to learn about his true competence. In this perspective, holding office during times of crisis is a gamble: the incumbent risks exposing himself as an incompetent type, thereby damaging his future electoral chances. Straightforwardly, the lower the probability of being competent, the riskier the 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: if the voter learns nothing new, this politician will still have an electoral advantage in the future. The best potential candidate therefore experiences *fear of failure*: he has incentives to prevent the voter from obtaining new information about his true ability, and will often be unwilling to take the gamble. Under some conditions, he will therefore choose to stay out of the race during times of crisis in order to protect his electoral capital. 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 improve his reputation. As such, he has incentives to *gamble for resurrection*, and is always 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. Adverse selection then emerges in equilibrium precisely when the country is experiencing a crisis, and the voter would most need a competent politician in office.

In a robustness section I analyze 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 if politicians have some private information about their ability, and therefore entering the

race potentially sends a positive signal to the electorate. Similarly, adverse selection emerges during times of crisis even if politicians face uncertainty about the identity of their future potential challenger, and therefore always have incentives to take a gamble in order to improve their reputation. Further, the qualitative results mirror the findings of the baseline model if we modify the politicians' objective function, and assume that they care about the governance outcomes even if out of office or that they obtain larger legacy ego rents from solving a crisis than from delivering a good performance during periods of business as usual. Finally, we can consider a crisis' long shadow by allowing a poor outcome today to increase the probability of a crisis arising again tomorrow. Again, this does not alter the qualitative conclusions of the baseline model.

In the last section of the paper, 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. In the baseline model, crises influence politicians' expected utility from office via two channels. An *exogenous* channel, via legacy payoffs (politicians care about their performance in office) and an *endogenous* one, via information (crises increase governance outcomes' informativeness). When we restrict our attention to a world in which politicians live only for two time periods, both these channels 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 (that is, if politicians do not obtain ego rents from delivering a good performance). Further, if politicians are fully patient this inefficiency result is unconditional: the best candidate is *never* willing to run during times of crisis, even if the probability of being competent is arbitrarily close to one. The results of this extension are especially important, as they imply that the inefficiency identified in this paper would survive in a world in which crises mute, rather than amplify, the impact of the office-holder's competence.

When taken together, the paper's results show that the adverse selection uncovered in the model can be more or less severe, but it is unlikely that any democracy may be immune from it. The source of this inefficiency lies precisely at the core of the accountability relationship between the voters and their representatives. The problem is that voters 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.

Literature Review

This project contributes to the small but burgeoning 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 builds around the intuition that 'potential candidates for political office will be influenced in their decision whether to enter the competition—as in any other profession—by financial considerations' (Messner and Polborn 2004, p. 2423). Extant works therefore focus on *static* settings, asking *whether* good politicians are willing to enter the race and investigating 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 running for office. This potentially generates an adverse selection, whereby low-ability individuals are more likely to enter politics.

My paper complements this literature by expanding the 'calculus of candidacy' (Rodhe 1979) to incorporate politicians' *dynamic* electoral incentives, and asking *when* (rather than whether) good candidates are going to enter the race. The key intuition is that when politicians choose whether to run for office today, they also consider how this influences their electoral prospects in the future. Thus, even when running is costless and holding office is more valuable than the outside option (so that running would always be *statically* optimal), potential candidates face the strategic choice of when to enter the electoral arena. In this perspective, the paper is most closely related to Banks and Kiewiet (1989). To the best of my knowledge, theirs is the only other formal theoretical work to investigate the timing of potential candidates' entry choice. Yet, the two papers focus on very different issues. Substantively, my paper analyzes how the environment conditions in the country— i.e., whether the country is experiencing a moment of crisis or a period of business as usual—influence the pool of candidates that self-select in equilibrium. In contrast, Banks and

[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.

Kiewiet (1989) ask whether open seat elections may attract a different set of candidates than races featuring an incumbent office-holder. From a more technical standpoint, in Banks and Kiewiet (1989) candidates can only run once. This generates an opportunity cost of *running* for office (even for politicians who have no outside option in the private market). A relatively strong candidate may therefore choose not to run against an incumbent today if the chances of winning in the next open-seat election are sufficiently higher. This is in sharp contrast with the model presented here, where *holding* office (rather than simply running for office) has a potential opportunity cost, therefore even a sure winner may sometimes be unwilling to run. In my paper, the cost of holding office is rooted in information. Potential candidates with forward-looking electoral ambitions anticipate that the voters would look at their performance to update their beliefs about their competence, which will inform their electoral choices in the future. This is a well-known dynamics in political economy, but my paper is the first one to analyze how it influences the endogenous supply of competent candidates.

This work is also 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 (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 exogenous crises influence office-holders' effort choices.

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.

The Baseline Model

The baseline model introduces a dynamic game with two time periods and an election in each. 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 [2] differ in the probability of being competent. Specifically, each politician (C_1 and C_2) is one of two types, good or bad: $\theta_i \in \{G, B\}$. 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 specific 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). Within this framework, q_P can be interpreted as representing candidate C_P's reputation or political capital. Intuitively, q_P also captures a measure of C_P's expected quality. 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. While this baseline set-up features symmetric uncertainty, in a robustness section I will discuss (and formally investigate) how the results generalize to a model in which politicians have some private information about their type.

At the beginning of each period, the two potential candidates C_1 and C_2 simultaneously choose whether to run for office. We can think about C_P as representing party P's 'champion'. The party will always be able to find a candidate to put on the ballot. However, if C_P is unwilling to run, its party will have to settle for a fallback option. For simplicity, I consider the extreme case in which if C_P chooses not to run the party resorts to the reserve candidate R_P, which is known to be a bad type with probability one. This assumption is without much loss of generality: all that matters is that R_P has lower reputation than C_P. Generally speaking, the existence of the reserve candidates R_1 and R_2 is imposed merely for aesthetic purposes, in order to avoid equilibria with uncontested elections, but it has no effect on the key insights of the paper. Once the candidates are endogenously determined, a representative voter V chooses whom to elect.

In each period $t \in \{1, 2\}$, the country either faces a normal situation, or it experiences a negative shock: $\omega_t \in \{N, S\}$. A shock is an *exogenous* crisis: it may represent a period of economic hardship, a war or a natural disaster. Players share common prior beliefs that $prob(\omega_t = S) = \bar{p}$, with ω_t

[2] In the paper I will use the terms politician and potential candidate as synonyms.

i.i.d. in each period. At the beginning of each period, players also observe a public signal indicating the likelihood of a crisis arising during the upcoming term. This captures the intuition that, in the run-up to an election, potential candidates have the elements to evaluate the probability that whoever gets to office next will have to deal with managing a crisis or its consequences, or rather enjoy a period of 'business as usual'. Formally, players observe a signal $\chi_t \in \{N, S\}$, accurate with probability $\psi > \frac{1}{2}$: $prob(\chi_t = S|\omega_t = S) = prob(\chi_t = N|\omega_t = N) = \psi > \frac{1}{2}$. After the election has taken place, the state of the world realizes and is publicly observed. This assumption is imposed for purposes of presentation, to ensure that even in the simple set-up presented here (i.e., as discussed in the next paragraph, a set-up where competence matters *only* in times of crisis) the voter always has a preference for the candidate with the best reputation. The model could be easily amended to accommodate the possibility that ω_t is observed *before* the election.

The key feature of an exogenous 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 $t \in \{1, 2\}$ the office-holder produces either a good or a bad governance outcome $o_t \in \{g, b\}$. 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 his ability to solve a crisis. In particular, I assume that a good type always produces a good outcome under a negative shock, whereas a bad one never does so. In short

- $prob(o_t = g|\omega_t = N, \theta_t = B) = prob(o_t = g|\omega_t = N, \theta_t = G) = 1$,
- $prob(o_t = g|\omega_t = S, \theta_t = B) = 0$ and
- $prob(o_t = g|\omega_t = S, \theta_t = G) = 1$.

This specific parametrization is adopted for simplicity. What is required to ensure that crises amplify the effect of competence (and thus to sustain the substantive results of the paper) is simply that $prob(o_t = g|\omega_t = S, \theta_t = G) - prob(o_t = g|\omega_t = S, \theta_t = B) > prob(o_t = g|\omega_t = N, \theta_t = G) - prob(o_t = g|\omega_t = N, \theta_t = B)$.

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. 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 (above and beyond the immediate electoral success). In a two-period setting the assumption that $\gamma > 0$ is necessary for any selection effect to emerge in equilibrium. 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 (i.e., $\gamma = 0$). The aim of this paper is to investigate the impact of the *endogenous* opportunity cost of office, therefore I assume 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 consider a setting in which running is costless. Notice that, because I model 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 public signal $\chi_1 \in \{N, S\}$, accurate with probability ψ;
3. C_1 and C_2 simultaneously choose whether to run;
4. The voter decides whom to elect;
5. The first-period state of the word ω_1 realizes and is publicly observed;
6. The fist period governance outcome $o_1 \in \{g, b\}$ realizes ad is publicly observed;
7. The second period starts and nature draws $\omega_2 \in \{N, S\}$;
8. The game proceeds as above.

To avoid trivialities, I exclude equilibria in weakly dominated strategies. Since running for office is costless, this implies that a politician's entry decision is conditional on winning the election (this essentially amounts to an indifference breaking rule).

In concluding this section, let me highlight that this is a model of pure selection: the governance outcome is determined by the office-holder's true ability and the state of the world, and I do not allow politicians to invest in (costly) effort 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 order to solve this game, it is useful to begin by considering the voter's electoral decision. The voter cares exclusively about governance outcomes. In each period, she therefore elects the candidate who 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' abilities. In contrast, the voter's choice in the second period election is informed by the incumbent's performance. 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 environments. In other words, crises have an informational value. Precisely because crises amplify the effect of competence on outcomes, they also increase the informativeness of the incumbent's performance.[3]

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 $\mu_i(\omega_1, o_1)$ the posterior probability that incumbent i is a good type, given the first period governance 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:

[3]The notion of informativeness adopted here is analogous to Blackwell's (1954): for any two experiments E and E', E' is more informative when the posterior distribution induced by E is a mean-preserving spread of the posterior distribution induced by E'. Here, the experiment 'holding office in times of crisis' is more informative than the experiment 'holding office during normal times'.

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 any outcome $o_1 \in \{g, b\}$, $\mu_i(S, o_1) \neq q_i$. In particular, $\mu_i(S, g) = 1$ and $\mu_i(S, b) = 0$.*

This implies that even if a shock is fully exogenous, that is its occurrence is outside the incumbent's control, it may influence his 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. 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 ($K + \gamma[1 - prob(\omega_t = S|\chi_t) + prob(\omega_t = S|\chi_t)q_i] \geq K > 0$). 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. *Both potential candidates C_1 and C_2 always 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 will 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 equals her prior). Therefore, holding office today does not influence the probability of being elected tomorrow. In contrast, a crisis is a test: if the country experiences a

negative shock, the incumbent's performance will reveal 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, a crisis today is less likely than a crisis tomorrow.[4] 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 the public signal indicates that a crisis is unlikely.

Suppose instead that the public signal indicates that the probability of a crisis is higher than usual ($\chi_1 = S$). 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. One might naively conclude that positive selection emerges in equilibrium, so that the politician who is most likely to solve a crisis has the strongest incentives to run. Instead, the analysis shows that the opposite is true:

Proposition 1. *There exist unique* $\underline{\psi}$, $\bar{q}_2(\psi)$ *and* $\bar{q}_1(\psi, q_2)$ *s.t. in equilibrium*

- C_1 *chooses to stay out of the race* $\iff$ $\chi_1 = S$, $\psi > \underline{\psi}$, $q_2 < \bar{q}_2$ *and* $q_1 < \bar{q}_1$

In contrast, C_2 *always chooses to run under both* $\chi_1 = S$ *and* $\chi_1 = N$.

Proposition 1 presents a stark inefficiency result: in equilibrium, the voter sometimes gets the wrong candidate at the wrong time. The ex-ante disadvantaged C_2, who has the lowest reputation and expected quality, is always willing to run for office. Instead, the politician who is most likely to be competent sometimes chooses to stay out of the race. To make matters even worse, he does so precisely when the voter needs him the most: the country is very likely to experience a crisis (the public signal is negative and sufficiently informative), and the other candidate has a very low reputation.

[4]Recall that, given the martingale property of beliefs, the expected posterior probability of a shock in the second period is always equal to the prior $\bar{p}$.

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 win the second-period election only if he improves his relative reputation, that is 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 not receive 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 by delivering a good governance outcome after being hit by a negative shock. In other words, the politician with the lowest reputation never has anything to lose from holding office in times of crisis, because new information can only increase his future electoral chances. 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 for his resurrection*, and has a weakly dominant strategy to enter the race under both realizations of the public signal.

The advantaged potential candidate C_1 faces 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 protect his electoral capital and maximize his 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 even under a crisis. If he chooses not to run, he gambles on his opponent's 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 if C_1 is not sufficiently confident in his own ability, he chooses to stay out of the race in order to preserve his reputation.

In concluding this section it is important to emphasize that the nature of the inefficiency documented in Proposition 1 is very different from seemingly similar 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 emerges precisely as a perverse consequence of electoral accountability. The voter cannot 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 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 run for office in the first place.

Discussion and Robustness

In the previous section I analyzed the most stylized set-up that illustrates the strategic incentives underlying the core inefficiency documented in this paper. While the simplicity of the model is

helpful in presenting the results and clarifying the intuition behind them, it comes at the cost of imposing stark assumptions. In this section I briefly discuss how the conclusions of Proposition 1 generalize if we relax some of these assumptions, in particular with regards to (i) the information structure, (ii) the pool of potential candidates being fixed across periods or (iii) the impact of a poor governance outcome in the first period.

Information Structure

To streamline presentation and focus on the key intuition underlying the results, I have considered a stylized environment with a binary state of the world and governance outcome, and imposed parameter values such that outcomes are only informative during periods of crisis. These stark assumptions 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, similar to the model presented here, governance outcomes are the output of a production function that has as inputs 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. Their key contribution shows that, irrespective of the specific functional form assumptions[5], 'governance outcomes are more (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. An implication is that the key inefficiency highlighted in Proposition 1 holds beyond the specific information environment considered in this paper.

A second simplification imposed in the baseline model is symmetric uncertainty. In other words, politicians have no private information about their own underlying ability. This assumption allows me to abstract from the signalling problem that would emerge in an asymmetric information model,

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

and thus focus on the 'gambling' aspect of the candidates' choices. On a substantive level, it may be argued that political candidates can never be ex-ante sure that they will have the skills and ability to successfully manage a crisis. However, it also seems plausible that politicians may have some private information about their previous accomplishments or failures. Even if this private information falls short of being perfect (i.e., politicians still face some uncertainty about their own type), it would still generate an asymmetry vis-a-vis the voters. In this setting, running for office during times of crisis may then indicate to the electorate that the politician observed a positive signal of his ability. While this may change potential candidates' strategic considerations, I can show that the results of Proposition 1 generalize to such an asymmetric information setting. Suppose that each politician observes a private signal of his own ability $\phi_i \in \{l, h\}$, accurate with probability $p_\phi < 1$. Denote $\widehat{\mu}_i(\phi_i)$ the (interim) posterior probability that candidate i is a good type, as a function of his private information. The following holds:

Proposition 2. *There exist $\underline{\psi}$, $\bar{q}_2(\psi)$ and $\bar{q}_1(\psi, q_2)$ s.t. if $\psi > \underline{\psi}$, $q_2 < \bar{q}_2$ and $\widehat{\mu}_1(h) < \bar{q}_1$, then the game has a Perfect Bayesian equilibrium in which*

- *Regardless of the private signal ϕ_1, C_1 stays out of the race under $\chi_1 = S$ and runs under $\chi_1 = N$*
- *Regardless of the private signal ϕ_2, C_2 always runs under both $\chi_1 = S$ and $\chi_1 = N$*

The above conditions are identical to Proposition 1. The intuition is straightforward. When the country experiences a period of crisis, the governance outcome is fully informative of the office-holder's type. As a consequence, a bad performance in office would damage a politician's reputation beyond any positive signaling value that being willing to run might have. The strategic problem facing the potential candidates is therefore essentially equivalent to the baseline model: the gambling aspect dominates the signalling one. Consider C_1's incentives when the public signal indicates times of crisis ($\chi_1 = S$). By entering the race (and thus deviating from the conjectured strategy), he would signal to the voter that he observed private information $\phi_1 = h$.[6] This would increase the voter's interim posterior on his ability. However, if a crisis does not materialize, this is electorally irrelevant: C_1 would be re-elected for sure even if voters had not updated on the basis of his

[6]These out of equilibrium beliefs would be the only ones to survive the usual refinements.

entry choice. Similarly, if a crisis does materialize, the governance outcome will fully determine the voter's electoral choice. Thus, C_1's strategic problem is equivalent to the one emerging in the baseline model.[7] Then, it is straightforward to see that the conditions identified in Proposition 1 still apply in this amended version of the game, with the caveat that these conditions place bounds on the politician's interim posterior rather than on the priors.

Uncertainty Over Future Challenger

The baseline model assumes that the pool of potential candidates is fixed across periods. A crucial consequence of this assumption is that the 'best' potential candidate can never benefit from information, whether in expectation or ex-post. C_1 already enjoys a reputation advantage vis-a-vis his future opponent, and due to the coarse nature of elections he can never gain from further increasing his lead. Thus, information either strictly damages C_1's second-period electoral performance, or it has no impact at all. Suppose instead that candidates face uncertainty over their future potential challengers. Here, even if a politician enjoys an advantage against today's opponent, he may have incentives to boost his reputation in case his future challenger turns out to be tougher to beat. This, in turn, may increase his willingness to take risks and run for office during times of crisis. Would this be enough to eliminate the adverse selection documented in the baseline model?

In this section I analyze the simplest model that allows me to answer this question. Suppose that in the first period C_1 must choose whether to run against a term-limited incumbent C_2. Whoever is elected (or re-elected) in the first period, Party 2 will select a *new* potential candidate in the second period. Formally, Party 2's second-period candidate is drawn from a pool with a proportion q_c of good types. q_c is unknown at the beginning of the game: it realizes and is publicly observed only in the second period. C_1's prior beliefs are that $q_c \sim U[\underline{q}, \overline{q}]$. To avoid trivialities, let $\underline{q} < q_1 < \overline{q}$.

The next Proposition shows that, in this setting, a double inefficiency arises. First, as in the baseline, C_1 is not always willing to run for office during times of crisis. And second, in contrast with the baseline, the likelihood that he enters the race (in the sense of set inclusion) is *decreasing* in the probability that he is a good type:

[7] Notice that this does not require that governance outcomes are fully informative during crises. It simply requires outcomes to be sufficiently *more* informative than politicians' private signals.

Proposition 3. *There exists a unique* $\tilde{q_1}(\psi, \overline{q}, \gamma)$ *s.t.* C_1 *chooses to enter the race under* $\chi_1 = S$ *iff* $q_1 < \tilde{q_1}$. *When* $\chi_1 = N$, C_1 *always chooses to run for office.*

Although C_1 has a higher reputation than his first-period opponent (C_2), he can no longer count on retaining a certain electoral advantage in the future if the voter learns nothing new (i.e., q_c may turn out to be higher than q_1). Thus, even if he does not need to worry about C_2 delivering a good performance, C_1 faces contrasting incentives. On one hand, he still has valuable electoral capital (since $q_1 > \underline{q}$) that he does not want to waste. On the other hand, anticipating hat he may face a future challenger with a higher reputation, he has an incentive to prove himself in the first period so as to further increase his political capital and future electoral chances. Proposition 3 shows that reputation building incentives are not always strong enough to induce C_1 to run during times of crisis. Perhaps surprisingly, he will be willing to take the gamble only when he is sufficiently *unlikely* to be competent (in the Appendix I show that there exist parameter values under which the condition in Proposition 3 is binding, i.e. $\tilde{q_1} < \overline{q}$). How do we understand this result? As q_1 increases, C_1 is more likely to survive a crisis. This obviously increases his incentives to run for office, exactly as in the baseline model. However, once we consider the uncertainty over future challengers, a second effect emerges: as q_1 increases so does C_1's electoral capital, which he would risk losing if put to a test during a crisis. This decreases his incentives to enter the race. Although these two effects push in opposite directions, the analysis reveals that the negative effect always dominates.

Impact of Bad Outcomes

In the baseline model, I assume that governance outcomes influence a politician's payoff only when in office. Intuitively, relaxing this assumption will mitigate the adverse selection. 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. Formal proofs are in Appendix B.

There are different 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. Let $\mathbb{I}_g$ be 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. Consider the problem that 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 C_1 will 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. Recall that the only reason why C_1 may choose to stay home in the first period is to avoid a crisis and preserve his future electoral chances. Thus, it is only when crisis is very likely and his opponent has low chances of solving it that C_1 may choose to stay out of the race, even if this increases the risk of suffering the cost 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 we may argue that, even if politicians not care about the governance outcome when they are not in office themselves (as in the baseline model), the incumbent's performance *indirectly* influences the other potential candidates' expected payoff. For example, a bad outcome in the first period may have a long-run impact on the country, and increase the probability of a crisis arising again in the future. 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. And as above, 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 $\frac{1}{\bar{p}}$). The intuition is straightforward. Conditioning on the event that a crisis (and thus potentially a bad outcome) emerges today, the expected value of holding office in the second period will always be strictly higher than in the first. This is true no matter how likely it is that a poor governance outcome today will translate in a new crisis tomorrow (since this probability is bounded away from one). Thus, the strategic problem faced by the candidates is analogous to the baseline model.

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 good governance outcome under a crisis is more valuable (in terms of legacy) 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 the legacy payoff from solving a crisis is, 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.

Isolating the Information Channel

In the baseline model exogenous shocks influence politicians' expected utility from office via two channels: legacy payoffs (exogenous static channel) and information (endogenous dynamic channel). When we assume that politicians only live for two electoral cycles, both channels are necessary to generate the inefficiency documented in Proposition 1. Indeed, if politicians do not obtain any ego rents from delivering a good performance (i.e., 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. Can we isolate the impact of the information channel? Would the inefficiency highlighted in the baseline model continue to emerge if politicians do not care about their legacy, and thus exogenous crises influence their expected utility only via information?

The Infinite Horizon Model

In order to address the above question, I consider an amended version of the baseline 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. As in the baseline, I assume that $1 > q_1 > q_2 > 0$. In each period, each potential candidate decides whether to run for office. Office-holders are subject to a two-terms limit. When an incumbent leaves office — whether because he hits the term limit 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.[8] This allows me to consider, in the equilibrium analysis, a generic potential candidate from Party 1 and a generic potential candidate from Party 2.

For simplicity, I assume that the public signal $\chi \in \{N, S\}$ indicating the likelihood of a crisis in the upcoming period is (almost) perfectly informative. Formally, $prob(\chi_t = S|\omega_t = S) = prob(\chi_t = N|\omega_t = N) = 1 - \epsilon$, where ϵ takes an arbitrarily small value. 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.

In contrast with the baseline model, politicians care exclusively about the material rents from office $K > 0$ (that is, $\gamma = 0$ and therefore the expected per-period value of holding office is always the same). Their future payoffs are discounted by a common factor $\delta \in [0, 1]$. The voter instead 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 with the highest reputation 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.

[8] 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.

In what follows I will restrict my attention to Markov strategies. Here, a player's Markov strategy maps in each period t the public signal χ_t and the 'kind' of election (whether it is open seat and, if not, the identity of the incumbent) into a probability distribution over entry decisions.

Analysis

In this model, the value of being in office is the same in each period, regardless of the governance outcome. Further, as in the baseline, this value is always higher than the outside option (normalized to 0). Why, then, would a potential candidate ever choose to stay out of the race? To understand this, notice that a politician who wins office for a first term and then is outvoted loses his political capital and any future electoral prospects. Thus, the strategic problem for potential candidates is to choose the right time to enter the electoral arena, so as to maximize the chances of remaining in office for two consecutive terms. In order to understand the candidates' strategic incentives, it is useful to begin by analyzing the benchmark case in which politicians are fully patient. The following proposition identifies the game's unique equilibrium under the assumption that $\delta = 1$:

Proposition 4. *Suppose politicians are fully patient ($\delta = 1$). Then, for all $0 < q_2 < q_1 < 1$ the game has a unique equilibrium:*

- *Potential candidates from Party 1 always choose to enter the race under $\chi_t = N$ and stay out under $\chi_t = S$*
- *Potential candidates from Party 2 always choose to enter the race under $\chi_t = S$ and stay out under $\chi_t = N$*

Proposition 4 presents a stark result: when politicians are fully patient, the voter will *always* get the wrong candidate at the wrong time. The best candidate is *never* willing to run in times of crisis, even if he almost sure to be a competent type.

Consider first a randomly drawn potential candidate from Party 1. This politician faces very similar incentives to those emerging in the baseline model. Recall that whenever an office-holder is outvoted or hits a term limit, his party draws a new potential candidate. Thus, whenever a new incumbent runs for re-election his potential challenger is always going to be a new draw from the

other party.[9] A potential candidate from Party 1 is ex-ante more likely be competent than any randomly drawn challenger. As such, he enjoys a reputation advantage and 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. If he gets to office during times of crisis he instead risks being ousted if he fails to deliver a good performance. Further, $\delta = 1$ guarantees that politicians are perfectly patient: they pay no cost for waiting for a 'better time' to run. Even if the probability of being competent is arbitrarily close to one, potential candidates from Party 1 will therefore always choose to stay home during times of crisis (i.e., when $\chi_t = S$), and wait for a better time to enter the race.

Interestingly, the opposite holds for a potential candidate from Party 2. 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 chance of being elected for two consecutive terms if they get to office during challenging times, even if the probability of being competent is close to zero. This, in turn, generates incentives to stay out of the race during normal ones.

Let us now consider the case that $\delta < 1$. When politicians are impatient they face a trade-off. As above, they want to time their entry in the electoral arena so as to maximize the probability of staying in power for two consecutive terms. However, in contrast with the case of $\delta = 1$, they also want to win office as soon as possible. The next Proposition shows that, under some conditions, candidates' *dynamic* incentives still dominate:

Proposition 5. *For all $\delta \in (0,1)$ there exist unique $\widehat{q_2}(\delta) > 0$ and $\widehat{q_1}(\delta) < 1$ such that:*

- $q_1 < \widehat{q_1}(\delta) \iff$ *potential candidates from from Party 1 have strictly dominant strategy to run under $\chi_t = N$ and stay home under $\chi_t = S$*
- $q_2 > \widehat{q_2}(\delta) \iff$ *potential candidates from from Party 2 have strictly dominant strategy to run under $\chi_t = S$ and stay home under $\chi_t = N$*

[9] Suppose a politician from Party 1 is in power at time t. At the end of time t he runs for re-election and is outvoted, and a politician from Party 2 is therefore in power at time $t+1$. Party 1 draws a new potential candidate that (if self-selected) runs against the incumbent in the election at the end of $t+1$.

The first point is straightforward: as q_1 decreases, the probability of a Party 1 politician being able to survive a crisis goes down. When this probability is sufficiently small, the politician will not take the risk. The second result seems more puzzling: the disadvantaged politicians from Party 2 will choose to stay home during normal times if they are too likely to be competent. To understand this result recall that when q_2 is high, a randomly drawn politician from Party 2 elected during a crisis is very likely to survive to a second term. The opportunity cost of winning office during normal times is too high, and the politician would rather wait for a period of crisis.

The results of this section show that the inefficiency documented in the baseline model continues to emerge, even if we impose that exogenous crises influence politicians' expected payoff from holding office solely via information. 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 Propositions 4 and 5, 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 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 who 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, he experiences fear of failure. When a crisis is likely (under some conditions) he chooses to stay out of the race 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.

I conclude with a brief discussion of potential avenues for future research. This paper has focused on a world in which voters care exclusively about politicians' competence. The natural next step in this research agenda is to integrate within this framework the ideological dimension of voters' and politicians' preferences. A relevant question is if (and when) ideology mitigates or exacerbates the inefficiency documented in this paper, and what is the overall effect on voters' welfare. I speculate that there are two main channels through which ideology may influence the adverse selection problem. From the demand side, as ideological polarization between politicians increases, the competence dimension becomes less relevant for electoral outcomes. In other words, ideological polarization may allow voters to credibly commit to ignoring (at least in part) information that governance outcomes reveal about the office holder. This may, in turn, mitigate the adverse selection problem highlighted in this paper, with ambiguous implications for voters' welfare. On the supply side, we may argue that a crisis alters the set of policies that can be feasibly implemented by the office holder. For example, a crisis may expand this set by lowering resistance against economic reforms, or may contract it by imposing stricter budget constraints. This would, in turn, alter ideologically motivated politicians' expected utility from being in office during challenging times, with increased polarization either mitigating or worsening the inefficiency highlighted in this paper. A formalization of these intuitions would help clarify the conditions under which increased ideological polarization may improve voters' overall welfare, and identify scenarios in which the impact would instead be harmful.

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Appendix A

Proposition 1

Proof. It follows straightforwardly from the reasoning in the main body that both candidates always choose to enter under $\chi_1 = N$, and that C_2 is always willing to run under $\chi_1 = S$. Consider instead C_1's incentives under $\chi_1 = S$. Denote $p_1 = prob(\omega_1 = S|\chi_1 = S) = \frac{\psi\bar{p}}{\psi\bar{p}+(1-\psi)(1-\bar{p})}$. C_1's expected utility from running in the first period is:

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

C_1's expected utility from staying home instead is:

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

Thus, C_1 chooses not to run in period 1 if and only if the following condition is satisfied:

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

which reduces to:

$$q_1 < 1 - \frac{(\gamma + K)(1 + q_2p_1)}{p_1[2\gamma + K - \gamma\bar{p}(1 - q_2)]} = \overline{q_1}. \tag{4}$$

Given $q_1 > q_2$, the above requires:

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

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

$$p_1(2\gamma + K - \gamma\bar{p}) - \gamma - K > 0, \tag{6}$$

which reduces to:

$$p_1 > \frac{\gamma + K}{[2\gamma + K - \gamma\bar{p}]} = \underline{p_1}. \tag{7}$$

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:

$$\frac{\gamma + K}{[2\gamma + K - \gamma\bar{p}]} < 1, \tag{8}$$

which is always satisfied.

□

Proposition 2

Proof. To complete the characterization of the equilibrium we need to define the voter's beliefs. On the equilibrium path the beliefs are defined by Bayes' rule. Off the equilibrium path, I assume that a deviation to staying home is interpreted as a signal that the politician observed $\phi_i = l$ (as it would be under D1/D2/Universal divinity refinements). Similarly, a deviation to running is interpreted as a signal that the politician observed $\phi_i = h$. We can now proceed to prove the existence of the equilibrium conjectured in Proposition 2. First, notice that C_1 has no profitable deviation under $\chi_1 = N$. Exactly as in the baseline model, the value of holding office is in expectation higher today than tomorrow. Second, it is straightforward to see that, given the voter's beliefs following a deviation, C_2 can never strictly gain from deviating from the conjectured strategy. Finally, consider C_1's problem under $\chi_1 = S$. Conditional on his opponent strategy, his expected payoff from staying out of the race (as a function of his private signal) is

$$[(1 - p_1) + p_1(1 - q_2)][K + \gamma(1 - \bar{p} + \bar{p}\mu_1(\phi_1))]. \tag{9}$$

His payoff from a deviation is

$$K + \mu_1(\phi_1)(2\gamma + K) + (1 - \mu_1(\phi_1))(1 - p_1)(\gamma + K + \gamma(1 - \bar{p})). \tag{10}$$

Thus, the conjectured equilibrium exists if and only if the following condition is guaranteed under both $\mu_1(h)$ and $\mu_1(l)$:

$$K + \mu_1(\phi_1)(2\gamma + K) + (1 - \mu_1(\phi_1))(1 - p_1)(\gamma + K + \gamma(1 - \bar{p})) > \\ [(1 - p_1) + p_1(1 - q_2)][K + \gamma(1 - \bar{p} + \bar{p}\mu_1(\phi_1))]. \tag{11}$$

Notice that the above is equivalent to condition (3), with the exception of $\mu_1(\phi_1)$ replacing q_1. Straightforwardly, the equilibrium conditions are therefore the same as in Proposition 1, with the upper bound $\overline{q}_1$ binding for $\mu_1(h)$.

□

Proposition 3.

Proof. As in the baseline model, C_1 has no reason to stay out of the race under $\chi_1 = N$. Suppose instead that $\chi_1 = S$. C_1's expected payoff from entering the race in the first period is

$$K + p_1 q_1(K + 2\gamma) + (1 - p_1)\{\gamma + [K + \gamma(q_1 + (1 - q_1)(1 - \bar{p}))](\frac{q_1 - \underline{q}}{\overline{q} - \underline{q}})\}. \tag{12}$$

C_1's expected payoff from staying out of the race is

$$[K + \gamma(q_1 + (1 - q_1)(1 - \bar{p})](\frac{q_1 - \underline{q}}{\overline{q} - \underline{q}}). \tag{13}$$

Thus, C_1 chooses to enter the race if and only if

$$K+p_1q_1(K+2\gamma)+(1-p_1)\{\gamma+[K+\gamma(q_1+(1-q_1)(1-\bar{p}))](\frac{q_1-\underline{q}}{\overline{q}-\underline{q}})\}-[K+\gamma(q_1+(1-q_1)(1-\bar{p}))](\frac{q_1-\underline{q}}{\overline{q}-\underline{q}}) > 0. \tag{14}$$

The LHS is concave in q_1. The condition is always satisfied at the lower bound $q_1 = \underline{q}$, so the above establishes an upper bound $q_1 < \tilde{q_1}$. Finally, notice that the condition is binding, i.e. $\tilde{q_1} < \overline{q}$, as long as $\overline{q}$ sufficiently small, p_1 is sufficiently large and γ sufficiently large. □

Proposition 4

Proof. Since $\delta = 1$, politicians are fully patient. Furthermore, since the politicians are infinitely lived, regardless of the strategy played by the opponent, the probability of getting to office once

over the course of the game is 1 for each player. In addition, recall that when an incumbent is outvoted he cannot re-enter the pool of candidates. As such, each potential candidate's strategic problem simply amounts to identifying the entry choice that maximizes the probability of being in office for two consecutive terms. It is straightforward to see that these strategies coincide with the ones identified in Proposition 4. For each politician from Party 1, the probability of being re-elected after getting to office under $\chi_t = N$ is 1 (recall that an incumbent is always pitted against a new draw from the opposing party). The probability of being re-elected after serving a first term during a crisis is strictly less than 1.[10] Thus, potential candidates from party 1 have a strictly dominant strategy to run under $\chi_t = N$ and stay home otherwise. Consider instead potential candidates from Party 2. An incumbent from Party 2 that gets to office during normal times will only be able to get re-elected if his potential challenger decides to stay out of the race. In contrast, the probability of being re-elected after a crisis is strictly positive even in a contested election. Potential candidates from party 2 therefore have a strictly dominant strategy to run under $\chi_t = S$ and stay home otherwise. □

Proposition 5

Proof. Consider first a randomly drawn politician from Party 2. Straightforwardly, any strategy prescribing potential candidates from Party 2 to stay home under $\chi_t = S$ is strictly dominated. Consider instead the politician's strategy under $\chi_t = N$. Suppose the politician follows the strategy to stay home under $\chi_1 = N$ and run otherwise. Then we can write his expected discounted payoff in any subgame s.t. $\chi_t = N$ as

$$0 + \delta V_2(\delta, q_2).$$

Two things are worth noticing. (i) $V_2(\delta, q_2)$ is increasing in q_2. The prescribed strategy would imply that a politician from Party 2 will only get to office under times of crisis. The ex-ante probability of being re-elected after serving a first term during times of crisis is increasing in the probability of being competent, therefore $V_2(\delta, q_2)$ is increasing in q_2 (ii) $V_2(\delta, q_2)$ is increasing in δ: the more patient the politician is, the higher his future expected payoff (fixing his opponents' strategies).

[10]Notice that the strategy 'never run' is clearly strictly dominated for all potential candidates, therefore the probability of an incumbent facing no challenger at the end of the first period in office is always strictly less than one.

Suppose instead that the politician chooses to enter the race. Then, we can write his expected payoff (conditional on winning the election) as

$$K + \delta K p(unopposed),$$

where $p(unopposed)$ is the probability of running unopposed, which will obviously depend on the strategy adopted by potential candidates from Party 1. Recall in fact that an incumbent from Party 2 who served a first term during a period of business as usual will never win against a randomly drawn challenger from Party 2. Thus, this incumbent will only be re-elected if the other party is unable to field a viable candidate.

Thus, necessary and sufficient condition to ensure that the strategy described in Proposition 7 is strictly dominant is:

$$\delta V_2(\delta, q_2) - K - \delta K p(unopposed) > 0,$$

which can be rewritten as

$$V_2(\delta, q_2) - \frac{K}{\delta} - K p(unopposed) > 0.$$

Recall that $V_2(\delta, q_2)$ is increasing in both q_2 and δ. Straightforwardly, fixing $p(unopposed)$ (that is, fixing the other players' strategies), the LHS is increasing in q_2 and increasing in δ. Thus, the above condition establishes a lower bound $q_2 > \widehat{q_2}(\delta)$ where $\widehat{q_2}(\delta)$ is decreasing in δ. Is is straightforward to see that $\widehat{q_2}(0) = 1$: a completely impatient politician would never choose to skip an election. Further, Proposition 6 establishes that $\widehat{q_2}(1) = 0$. Thus, for all $\delta \in (0, 1)$, $\widehat{q_2}(\delta) \in (0, 1)$.

Consider now a randomly drawn politician from Party 1. Straightforwardly, any strategy prescribing potential candidates from Party 1 to stay home under $\chi_t = N$ is strictly dominated. Consider instead the politician's strategy under $\chi_t = S$. Suppose the politician follows the strategy to stay home under $\chi_1 = S$ and run otherwise. Then we can write his expected discounted payoff in any subgame s.t. $\chi_t = S$ as

$$0 + \delta V_1(\delta).$$

Notice that (i) $V_1(\delta)$ is not a function of q_1. If a randomly drawn politician from Party 1 only chooses to run during normal times, his probability of being re-elected for a second term after

getting to office is not a function of q_1 (indeed, it is always 1).[11] As such, his expected discounted payoff from the prescribed strategy is independent of q_1. (ii) $V_1(\delta)$ is increasing in δ: the more patient the politician is, the higher his future expected payoff (fixing his opponents' strategies).

Suppose instead that the politician chooses to enter the race. Then, we can write his expected payoff (conditional on winning the election) as

$$K + \delta K(q_1 + (1 - q_1)p(unopposed),$$

where $p(unopposed)$ is the probability of running unopposed, which will obviously depend on the strategy adopted by potential candidates from Party 2.

Thus, necessary and sufficient condition to ensure that the prescribed strategy is strictly dominant is

$$\delta V_1(\delta) - K - \delta K(q_1 + (1 - q_1)p(unopposed)) > 0,$$

which can be rewritten as

$$V_1(\delta) - \frac{K}{\delta} - K(q_1 + (1 - q_1)p(unopposed)) > 0.$$

Recall that $V_1(\delta)$ is not a function of q_1, but is increasing in δ. Straightforwardly, fixing $p(unopposed)$ (that is, fixing the other players' strategies), the LHS is decreasing in q_1 and increasing in δ. Thus, the above condition establishes an upper bound $q_1 < \widehat{q_1}(\delta)$ where $\widehat{q_1}(\delta)$ is increasing in δ. Is is straightforward to see that $\widehat{q_1}(0) = 0$: a completely impatient politician would never choose to skip an election. Further, Proposition 6 establishes that $\widehat{q_1}(1) = 1$. This concludes the proof of Proposition 7. □

Appendix B: Robustness

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

[11] Recall that I am assuming that $prob(\omega_t = N|\chi_t = N) = 1 - \epsilon$, where ϵ takes an arbitrarily small value.

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:

$$\begin{aligned} p_1(1-q_2)(\gamma(1-(1-q_1)\bar{p}) - (1-q_1)\lambda\bar{p} - \lambda + K) \\ +(1-p_1)(\gamma(1-(1-q_1)\bar{p}) - (1-q_1)\lambda\bar{p} + K) > \\ K + q_1(2\gamma + K) \\ +(1-q_1)(1-p_1)(\gamma(1-\bar{p}) - \lambda\bar{p} + \gamma + K) \\ -p_1(1-q_1)((1-q_2)\lambda\bar{p} + \lambda). \end{aligned} \tag{15}$$

This reduces to:

$$q_1 < 1 - \frac{(\gamma + K)(1 + q_2p_1 + p_1) + \lambda(1-q_2)p_1}{p_1[2\gamma + K - \gamma\bar{p}(1-q_2) + \lambda]} = \overline{q_1}_\lambda. \tag{16}$$

Given $q_1 > q_2$, the above requires:

$$\begin{aligned} (1-q_2)p_1[2\gamma + K - \gamma\bar{p}(1-q_2) + \lambda] \\ -(\gamma + K)(1 + q_2p_1) - \lambda(1-q_2)p_1 > 0. \end{aligned} \tag{17}$$

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 $q_2 = 0$:

$$p_1(2\gamma + K - \gamma\bar{p} + \lambda) - [(\gamma + K) + \lambda p_1] > 0. \tag{18}$$

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 $\psi = 1$:

$$[2\gamma + K - \gamma\bar{p} + \lambda] - [(\gamma + K) + \lambda] > 0, \tag{19}$$

which is always satisfied.

A bad outcome today increases the probability of a crisis tomorrow

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:

$$\begin{aligned} [K + \gamma(q_1 + (1-q_1)(1-\bar{p}))](1-p_1) \\ +p_1(1-q_2)[K + \gamma(q_1 + (1-q_1)(1-\alpha\bar{p})] > \\ K + q_1[2\gamma + K] + (1-q_1)(1-p_1)[\gamma + K + \gamma(1-\bar{p})], \end{aligned} \tag{20}$$

which reduces to:

$$q_1 < 1 - \frac{(\gamma + K)(1 + q_2 p_1)}{p_1[2\gamma + K - \gamma\bar{p}(\alpha(1-q_2))]} = \overline{q_1}_{\alpha}. \tag{21}$$

Given $q_1 > q_2$, the above requires:

$$1 - q_2 - \frac{(\gamma + K)(1 + q_2 p_1)}{p_1(1-\beta)[2\gamma + K - \gamma\bar{p}\alpha(1-q_2)]} > 0. \tag{22}$$

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 $\psi = 1$:

$$(1-q_2)[2\gamma + K - \gamma\bar{p}(\alpha(1-q_2))] - (\gamma + K)(1 + q_2) > 0. \tag{23}$$

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 $\overline{q_2} = 0$:

$$2\gamma + K - \gamma\bar{p}\alpha - (\gamma + K) > 0, \tag{24}$$

which is always satisfied.

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 $o_t = b$
- $K + \nu(\omega_t)\gamma$ if $o_t = g$, 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:

$$\begin{aligned} &[K + \gamma(1 - \bar{p} + \nu(S)\bar{p}q_1)][1 - p_1 + p_1(1 - q_2)] > \\ K + q_1[K + \gamma(2 + (p_1 + \bar{p})(\nu(S) - 1)] + (1 - q_1)[1 - p_1][\gamma + K + \gamma(1 - \bar{p})], \end{aligned} \tag{25}$$

which reduces to:

$$q_1 < \frac{p_1[(1 - q_2)(K + \gamma(1 - \bar{p})) + \gamma] - (K + \gamma)}{p_1[\gamma(1 + \nu(S)) + K - \gamma\bar{p}(1 - \nu(S)q_2]} = \overline{q_1}_\nu(S). \tag{26}$$

Given $q_1 > q_2$, the above requires:

$$\begin{aligned} &p_1[(1 - q_2)(K + \gamma(1 - \bar{p})) + \gamma] - (K + \gamma) \\ -q_2 p_1[(\gamma(1 + \nu(S)) + K - \gamma\bar{p}(1 - \nu(S)q_2)] > 0. \end{aligned} \tag{27}$$

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 $q_2 = 0$:

$$p_1((K + \gamma(1 - \bar{p})) + \gamma) - (K + \gamma) > 0. \tag{28}$$

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 $\psi = 1$:

$$(K + \gamma(1 - \bar{p}) + \gamma) - (K + \gamma) > 0, \tag{29}$$

which is always satisfied.