



Executive Constraints as Robust Control

**Timothy Besley
Hannes Mueller**

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Timothy Besley
LSE and CIFAR

Hannes Mueller
IAE (CSIC), MOVE and Barcelona GSE

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Abstract

This paper looks at the case for executive constraints in a world of imperfect electoral accountability and policy risk. It develops a model in which policy can be subject to judicial oversight by an imperfectly informed judiciary. Limiting discretion can be good for reducing risk but can worsen incentives creating a non-trivial trade-off for voters. We argue that this is always resolved in favor of executive constraints when looking at the worst case scenario meaning that executive constraints are best justified as a form of robust control.

Keywords: political institutions, robust control, checks and balances, elections, executive constraints, uncertainty

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"When the American people allow themselves to be intoxicated by their passions, or abandon themselves to the impetus of their ideas, jurists make them feel an almost invisible brake that moderates and stops them." Alexis de Tocqueville (1835, page 309)

1 Introduction

At the heart of government is a principal-agent problem in which citizens depend on policy-makers to act in good faith. In crafting arrangements to solve this agency problem, constitution designers have to face up to a trade-off between commitment and flexibility.¹ If policy makers are too constrained then they will miss good opportunities to make improvements, while if they are constrained too little, they expose citizens to the risks associated with bad policies. There are two main institutional arrangements that have evolved to solve this trade-off: selecting and controlling policy-makers via periodic elections and ex post controls via executive constraints such as legislative oversight and an independent judiciary. Together these form the two main pillars of democracy.

To be effective, such institutional arrangements have to hold over a range of circumstances many that are difficult to anticipate at the outset; such as the risks associated with nuclear weapons or global warming. Constitutional arrangements also have to be designed with realistic views of human nature. As James Madison famously put it: "If angels were to govern men, neither external nor internal controls on government would be necessary." This means that arrangements have to work when politicians are self-interested and/or misguided and voters may have little information or are subject to whims.

These issues have been brought into sharp relief by recent electoral experiences in which politicians broadly categorized as populist have been elected to power apparently on a wave of anger by voters who feel left out from the benefits of growth. In some quarters, this has fuelled a form of democratic pessimism.² However, such views are not new. As long ago as 380 BCE, Plato in *The Republic* expressed deep pessimism about the capacities of rank and file citizens for self-government and the need for oversight by what have since been referred to as "Platonic Guardians". The clearest modern reincarnation of this is having independent judges who can oversee the behavior of elected officials and *in extremis* strike down or amend laws and executive orders which violate certain principles.³ For example, the *Conseil Constitutionnel* in France played a key role in preventing the nationalization of industry and financial institutions in France in 1981 (see Stone Sweet, 2002).

If either politicians were perfectly publicly spirited and/or elections controlled any misbehavior, then further constraints on power would be unnecessary and could even be detri-

¹Constitutional design could also be an evolutionary process in which "successful" institutions survive longer and spread.

²This has parallels with more recent literature which has questioned voter competence fuelled in part by behavioural models becoming increasingly popular; see, for example, Ashworth and Buena de Mesquita (2014) and Glaeser Ponzetto (2017).

³See Helmke and Rosenbluth (2009) for a comprehensive review of the literature on judicial independence.

mental. Taking off from this observation, we develop a theoretical framework to show that there is indeed a robust case for additional constraints on power motivated by pessimism about the quality of the political class selected for office and the operation of the electoral process due to a low capacity for voters to do their job in disciplining poor performance. This motivates the idea that effective constitutions are designed with this kind of worst-case scenario in mind. It also squares with the empirical observation that polities with strong executive constraints seem to suffer fewer downside shocks.

While many governments have mastered the art of running free and fair elections, building effective constraints on power has proven more challenging. Often, checks and balances seem more like a nuisance which prevents energetic and decisive policy making. The message of this paper is that the judicious use of unelected power can be justified even when there are open and free elections. We make precise what we mean by poorly performing elections and show that voters will want to resort to additional checks and balances based on taking a cautious approach. This finding has relevance for the many countries today which either have weak constraints or those which are dismantling those that are already in place.

The paper builds a model of political agency where elections influence policy outcomes through selection and incentives. We introduce two key parameters which summarize the performance of elections and show how these influence the quality of policy. We then introduce the idea that policy is overseen by a non-elected judiciary with the voters' interests at heart.⁴ To make the analysis non-trivial, we suppose that the judiciary has more limited information than the executive. However, it has access to more information than voters about the likelihood that policies are misguided. Some of the time, it can reign in the executive when it would have made a policy error. However, this comes at a price since, by reducing discretion, it worsens incentives for good policy. This creates a non-trivial trade-off for voters and we show that executive constraints are favored by voters when elections work poorly and when the downside risks associated with bad policy are large enough.

The paper is related to a large literature on the link between institutions and economic performance. We know from a range of research that a robust empirical relationship between democracy and income has been elusive.⁵ However, a number of papers have pointed out that democracies seem to have less volatility on their economic performance rates compared to non-democracies; see, for example, Acemoglu et al (2003), Almeida and Ferraira, (2002), Besley and Kudamatsu (2009), Besley and Mueller (2018), Moborak (2005), and Weede (1996).⁶

The paper is also related to a large literature on solving political agency problems which

⁴This is an important difference to other models of executive constraints as in Aghion et al (2004), for example. The case of an independent unelected judiciary is clearest. However, similar considerations would also apply to the case for legislative oversight of the executive provided that electoral incentives for legislatures are different from those of the executive. Some of the arguments put forward here even apply within the executive where powerful technocrats, like in the central bank, have been insulated from political influence.

⁵See, for example, Acemoglu et al (2018), Barro (1996), Papaioannou and Siourounis (2008), Persson and Tabellini (2009) and Przeworski and Limongi (1993) for different takes on the evidence.

⁶Overbye (1996) discusses some possible theoretical underpinnings for this based on the predictability of policies.

was initiated by Barro (1973) and Ferejohn (1986). The literature, which is reviewed in Besley (2006) is now extensive. The empirical relevance of such models in looking at selection and incentives in politics has been confirmed, for example, by Finan and Ferraz (2008) and Avis et al (2017). The idea that adding suitably designed checks and balances can improve the solution of agency problems picks up on ideas in the literature on organization design in politics and economics such as Persson et al (1997), Sah and Stiglitz (1986) and Tsebelis (2002).

An emerging literature in macro-economics has argued that policies should be designed with robustness in mind as suggested in Hansen and Sargent (2001).⁷ This parallels a sizeable literature in engineering and systems biology which argues that a modular structure with built-in redundancy and diversity can make the system more robust.⁸ Our approach reflects this insight by arguing that one policy-making module (the judiciary) with a different objective can sometimes improve policy outcomes by making another (the executive) redundant.

The remainder of the paper is organized as follows. In the next section, we lay out the model. We then consider whether it makes a compelling case for adopting executive constraints. Section four considers some implications of the model for policy debates.

2 The Model

This paper adapts a model where there is asymmetric information between voters and the leader on the state of the world and stochastic opportunities for rent-seeking. We add to this the possibility of a (partially informed) judiciary or legislature deciding whether to grant discretion or impose a status quo policy which can be better or worse than the discretionary outcome.

Set-up Time is infinite and is denoted by $t = 1, 2, \dots$. In each period, an incumbent policy maker faces a policy challenge and must pick from among three possible actions $e_t \in \{0, 1, d\}$. There is an unobserved state of the world $s_t \in \{0, 1\}$ and the payoff to voters is:

$$u_t = \begin{cases} \Delta_H & \text{if } e_t = s_t \\ \Delta_0 & \text{if } e_t = d \\ -\Delta_L & \text{if } e_t \in \{0, 1\} \cap e_t \neq s_t. \end{cases}$$

where $\Delta_H > \Delta_0 > -\Delta_L$. Observe that action d which stands for “default” has a payoff which is state independent and could be thought of as inaction, i.e. not reacting to the state. To compact notation let $\delta(z) = z\Delta_H - (1 - z)\Delta_L$. We will work throughout with the normalization that $\Delta_0 = 0$ so that $\delta(z) < \Delta_0$ if $z < \Delta_L / (\Delta_L + \Delta_H)$. All agents discount

⁷See Barlevy (2011) for a review of the robustness literature in macro-economics.

⁸For reviews see Kitano (2004) and Csete and Doyle (2002). See Csete and Doyle (2011) for a discussion of the involved trade-offs.

future payoffs with the same discount factor β .

Policy Makers There are two types of policy makers. *Faithful* policy makers always choose $e_t = s_t$ and a fraction π of policy makers is of this type. The remaining fraction of policy makers are *opportunistic* and can be tempted to pick $e_t \neq s_t$ because they can earn a rent from doing so. This rent-seeking opportunity is drawn each period on $[0, R]$ with distribution function $G(r_t)$. All incumbents also get an ego rent of E for staying in office.

Executive Constraints We model executive constraints as a module, in the engineering language, which can curtail incumbent discretion. We will refer to this body as the judiciary. In the absence of a judicial oversight, the incumbent can choose any of three actions: $e_t \in \{0, 1, d\}$.

The two key assumptions that make the judiciary a check on the executive are (i) that this branch of government cannot propose new policies but can veto policy and instead implement a default outcome which can be better than what is proposed by the executive and (ii) that they do not have a stake in bad policy if it is proposed, i.e. the judiciary faithfully serves voter interests.⁹

We assume that the judiciary has beliefs $\Pi_t \in [0, 1]$ regarding the type of the incumbent and observes r_t but not s_t . After observing r_t , the judiciary decides whether to impose executive constraints, $X_t \in \{0, 1\}$. If $X_t = 1$, then the judiciary imposes the default action d while if $X_t = 0$, the incumbent has the flexibility to choose $e_t \in \{0, 1, d\}$. We will describe equilibrium behavior by a function $\xi(r_t) : [0, R] \rightarrow [0, 1]$ which denotes the probability of setting $X_t = 1$ conditional on realization r_t .¹⁰

Voters Voters observe a signal of e_t before making a decision whether to retain the incumbent or not. We want to allow for the possibility that voters are not fully rational and/or find it costly to replace the incumbent. We suppose that they retain the incumbent with probability ϕ_H if the outcome is Δ_H , and retain the incumbent with probability ϕ_L if the outcome is $-\Delta_L$ and with probability ϕ_0 when the incumbent or judiciary choose inaction and generate Δ_0 . We assume that voters always set $\phi_0 = 1$, i.e. retain incumbents who do not reveal anything about their type. The rational Bayesian voting strategy for informed voters in the equilibrium we will be $\phi_H = 1$ and $\phi_L = 0$.

We model the extent of voter (in)competence in a simple way, by introducing a single parameter γ as the probability that a voter observes Δ_H when $e = s$ and the probability that the voter observes Δ_L when $e \neq s$. Then if she chooses to re-appoint an incumbent whom she believes has chosen $e = s$, then $\phi_H = \gamma$ and $\phi_L = 1 - \gamma$. So if $\gamma < 1$, then voters make errors and retain opportunists and fail to reward faithful politicians. When $\gamma = 1/2$,

⁹The latter could be relaxed to some extent as long as judges are less subject to rent seeking compared to politicians.

¹⁰In principle, this can be time dependent although we will characterize a stationary strategy below.

voters are incompetent, simply randomizing between not electing and re-electing with equal probability. In this case, as we shall see below, there can be no reward from choosing $e = s$.

Timing Within each period t , the timing is as follows:

1. An incumbent is in place who is faithful with probability Π_t .
2. Nature determines $\{s_t, r_t\}$
3. If there are executive constraints, the judiciary chooses the probability of imposing them denoted by $\xi \in [0, 1]$.
4. If constraints are imposed, $X_t = 1$, then $e_t = d$
5. If $X_t = 0$ or executive constraints are not in place then the incumbent chooses $e_t \in \{0, 1, d\}$
6. Citizens choose whether to retain the existing incumbent or pick a new one from the pool (who is faithful with probability π).

We will look for a stationary perfect Bayesian equilibrium of the game in which incumbent policy makers and the judiciary optimize. If there are executive constraints in place, then the judiciary can condition their equilibrium strategy on r_t . We denote the optimal stationary strategy of the judiciary by $\hat{\xi}(r_t)$.

Two key features of the model capture core elements of the real-world constitutional role of checks on executive power. The judiciary can observe r_t and, if this is high, may be able to prevent a damaging policy choice. This gives them a key role in enhancing the robustness of the political system by blocking a proposed law or policy action. Although we have modelled a specific protocol for doing this, there is a more general core idea; the motivation of the judiciary and the executive are not fully correlated since they have diverse information and objectives.

3 Analysis

Incumbent Behavior We assume that opportunistic incumbents act rationally. Institutions work by affecting the behavior of opportunistic incumbents; faithful incumbents are assumed to do the right thing anyway. How an incumbent behaves will depend on the amount of discretion that she is granted. We will consider an equilibrium with the following property. There is a cutoff level $\hat{r} \in [0, R]$ such that (i) for $r \leq \hat{r}$, then the incumbent is given full discretion, $\xi = 0$ (ii) for $r > \hat{r}$, then executive constraints are applied (if they are available) with probability ξ . In what follows we therefore let ξ refer to the probability of constraints conditional on $r > \hat{r}$ where $\xi = 0$ for all $r \leq \hat{r}$.

We now characterize the value function which governs incumbent behavior in a stationary equilibrium assuming that opportunistic incumbents choose a threshold \hat{r} above which they

choose to take the wrong action if they are granted discretion. Ignoring the time subscript, the opportunistic incumbent's value function from holding office is given by

$$V(\hat{r}; \gamma, \xi) = E + (1 - \xi) \int_{\hat{r}}^R rdG(r) + [(1 - G(\hat{r})) ((1 - \xi)(1 - \gamma) + \xi) + G(\hat{r})\gamma] \beta V(\hat{r}; \gamma, \xi)$$

where $\int_{\hat{r}}^R rdG(r)$ are expected rents when constraint is not imposed and $(1 - \xi)(1 - \gamma) + \xi$ is the likelihood that the incumbent remains in power conditional on $r > \hat{r}$. In a stationary equilibrium the threshold satisfies:¹¹

$$\hat{r} + (1 - \gamma) \beta V(\hat{r}; \gamma, \xi) = \gamma \beta V(\hat{r}; \gamma, \xi).$$

Using these two equations, we can solve for the critical threshold above which the incumbent will choose the policy which generates $-\Delta_L$ which is given by:

$$\hat{r}(\gamma, \xi) = \frac{[2\gamma - 1] \beta \left(E + (1 - \xi) \int_{\hat{r}}^R rdG(r) \right)}{1 - \beta \left([(1 - G(\hat{r})) ((1 - \xi)(1 - \gamma) + \xi) + G(\hat{r})\gamma] \right)}. \quad (1)$$

And the ex ante probability of an opportunistic incumbent generating Δ_H is $\lambda(\gamma, \xi) = G(\hat{r}(\gamma, \xi))$. Note that $\lambda(\gamma, \xi) = 0$ when $\gamma = \frac{1}{2}$. If voters fail to provide incentives, the opportunistic incumbent will never forego rents. An increase in the office motivation E increases $\lambda(\gamma, \xi)$ and we have $\lambda(\gamma, 1) \rightarrow 0$ as $E \rightarrow 0$. This is like a classic efficiency wage argument.

In addition, $\lambda(\gamma, \xi)$ is decreasing in ξ , i.e. less discretion means a lower probability that an opportunistic incumbent chooses to generate $-\Delta_L$. Note, that this effect will be particularly important when $\int_{\hat{r}}^R rdG(r)$ is large. Moreover, low values of E compared to $\int_{\hat{r}}^R rdG(r)$ will lead to large differences of $\lambda(\gamma, 0) - \lambda(\gamma, 1)$. Put differently, checks and balances harm the performance of the executive less when rents are low relative to the office holding motive.

The Behavior of the Judiciary Suppose now that there is the possibility of judicial oversight of policy making. The judiciary can always impose a payoff of 0 for voters by imposing $e_t = d$. However, given that it observes r , it makes sense only to remove discretion from the incumbent if the outcome will be $-\Delta_L$. This means that voters get a payoff of zero with probability $1 - \lambda(\gamma, 1)$ and Δ_H with probability $\lambda(\gamma, 1)$ but never $-\Delta_L$.

The behavior of the judiciary is then characterized in:

¹¹We assume that the judiciary optimally pursues the same strategy with any incumbent following any history. In particular, it does not react to observing Δ_L when this has not been observed by voters.

Proposition 1 *Suppose that executive constraints are in place and let*

$$\hat{\pi}(\lambda, \gamma) = \frac{\Delta_L}{\Delta_H \frac{1-\beta\gamma\lambda}{1-\beta\gamma} + \Delta_L} \in (0, 1).$$

There are three ranges of π :

1. *for $\pi < \hat{\pi}(\lambda(\gamma, 1), \gamma)$ then $\hat{\xi}(r) = 1$ for $r > \hat{r}$ and $\hat{\xi}(r) = 0$ otherwise,*
2. *for $\pi \in [\hat{\pi}(\lambda(\gamma, 1), \gamma), \hat{\pi}(\lambda(\gamma, 0), \gamma)]$ then $\hat{\xi}$ solves $\hat{\pi}(\lambda(\gamma, \hat{\xi}), \gamma) = \pi$ for $r > \hat{r}$ and $\hat{\xi}(r) = 0$ otherwise, and*
3. *for $\pi > \hat{\pi}(\lambda(\gamma, 0), \gamma)$ then $\hat{\xi}(r) = 0$ for all $r \in [0, R]$.*

Proof. For an arbitrary choice of cutoff \hat{r} , let $\lambda = G(\hat{r})$. Define

$$\hat{W}(\lambda) = \frac{\lambda\Delta_H}{1-\beta} \tag{2}$$

and define:

$$\begin{aligned} W^0(z) &= \max\{z, 0\} \\ W^1(z) &= \frac{\Delta_H + \beta(1-\gamma)z}{1-\beta\gamma}. \end{aligned} \tag{3}$$

The expected payoff with $\xi = 0$ is:

$$U(z, b) = \delta(b) + b\beta(\gamma W^1(z) + (1-\gamma)z) + (1-b)\beta((1-\gamma)W^0(z) + \gamma z).$$

Suppose that

$$X_t = \begin{cases} 0 & \text{if } r_t \leq \hat{r} \\ 1 & \text{if } r_t \in (\hat{r}, R]. \end{cases}$$

To show when this is optimal suppose that $r_t \leq \hat{r}$. Deviating to $X_t = 1$, payoff $\beta\hat{W}(\lambda) > 0$ $\Delta_H + \beta\hat{W}(\lambda)$ which is the payoff with $X_t = 0$. Now suppose that $r_t > \hat{r}$. If $X_t = 0$, voters receive $U(\hat{W}(\lambda), \pi)$ compared to $\beta\hat{W}(\lambda)$ if $X_t = 1$. We require that

$$\beta\hat{W}(\lambda) \geq U(\hat{W}(\lambda), \pi)$$

which using (3) and (2) we get

$$\pi \leq \hat{\pi}(\lambda, \gamma) = \frac{\Delta_L}{\Delta_H \frac{1-\beta\gamma\lambda}{1-\beta\gamma} + \Delta_L}.$$

Suppose now that $X_t = 0$ for all $r_t \in [0, R]$, $\xi = 0$. The value for voters is defined by the recursion:

$$\tilde{W}(\lambda, b) = (1-\lambda)U(\tilde{W}(\lambda, b), b) + \lambda[\Delta_H + \beta\tilde{W}(\lambda, b)]. \tag{4}$$

Plugging in from (3) and rearranging yields

$$\tilde{W}(\lambda, b) = \frac{\Delta_H \left(\frac{b(1-\lambda)}{1-\beta\gamma} + \lambda \right) - (1-\lambda)(1-b)\Delta_L}{1-\lambda\beta - (1-\lambda)\beta \left(b \left(\frac{1-\gamma}{1-\beta\gamma} \right) + (1-b) \right)}. \quad (5)$$

Suppose that $r_t \leq \hat{r}$, then $X_t = 0$ is always optimal since a deviation to $X_t = 1$ yields $\beta\tilde{W}(\lambda, b)$ while with $X_t = 0$, the payoff is $\Delta_H + \beta\tilde{W}(\lambda, b)$. Suppose that $r_t > \hat{r}$. For $X_t = 0$ to be optimal we need that

$$\beta\tilde{W}(\lambda, b) \leq U(\tilde{W}(\lambda, b), b). \quad (6)$$

Using (4) implies that this holds only if

$$\tilde{W}(\lambda, b) \geq \hat{W}(\lambda).$$

This is true only if $b \geq \hat{\pi}(\lambda, \gamma)$. Moreover, $\tilde{W}(\lambda, b) > 0$ for all $b \geq \hat{\pi}(\lambda, \gamma)$ because $\tilde{W}(\lambda, b) \geq \hat{W}(\lambda) \geq 0$. Now if $b \in [\hat{\pi}(\lambda(\gamma, 1), \gamma), \hat{\pi}(\lambda(\gamma, 0), \gamma)]$ then

$$\tilde{W}(\lambda(\gamma, \hat{\xi}(b)), b) = \hat{W}(\lambda(\gamma, \hat{\xi}(b)))$$

with $\lambda(\gamma, \hat{\xi}(b)) \in [\lambda(\gamma, 1), \lambda(\gamma, 0)]$. ■

This result makes clear how the ability of the political system to select faithful politicians affects whether executive constraints are used. In case 1, selection works poorly and it is optimal for the judiciary to constrain any incumbent when they think that discretion will be used badly, i.e. when $r > \hat{r}$. In case 3, when selection works well, then even if there are executive constraints, it is still optimal for the judiciary to continue to grant discretion to politicians despite $r > \hat{r}$. In the middle case, the judiciary optimal uses a mixed strategy since they are indifferent between imposing and not imposing constraints given γ .

It is interesting to look at how the critical threshold $\hat{\pi}(\lambda, \gamma)$ depends on various parameters. It is clear that $\frac{\partial \hat{\pi}(\lambda, \gamma)}{\partial \Delta_L} > 0$ and $\frac{\partial \hat{\pi}(\lambda, \gamma)}{\partial \Delta_H} < 0$. These say that if the cost of poor policy-making is larger then the judiciary will constrain discretion for a wider range of π and if the payoff from good policy making increases, then the range of π for which discretion is curtailed is smaller.

It is also easy to see that $\frac{\partial \hat{\pi}(\lambda, \gamma)}{\partial \lambda} > 0$ which implies that constraints get imposed for a larger range of π if $\lambda(\gamma, 1)$ is larger, i.e. performance is better with executive constraints. In case 1 the critical value of π increases with $\lambda(\gamma, 1)$. The better elections work, the less will constraints actually be used and the less they harm incentives. This generates some complementarity between executive constraints and electoral accountability. When it comes to dependence on γ , the overall finding is ambiguous. Even though $\hat{\pi}(\lambda, \gamma)$ is decreasing in γ , the dependence of λ on γ means that the effect overall is not clear.

4 Implications

We now draw out implications of the framework for how executive constraints affect the quality of policy-making and voters' payoffs. This will also allow us to explore what the model has to say about the empirical link between having strong executive constraints and observables.

4.1 The Quality of Policy-Making

The experiences of countries such as China, Singapore or South Korea suggest that countries can grow for lengthy periods of time with few constraints on executive authority. It also seems unlikely that the explanation for such cases is that elections work well. It is more plausible to argue that such countries have found ways of disciplining incumbents in the absence of elections. Besley and Kudamatsu (2009) argue that selection and incentives are in such cases in the hands of a selectorate who play the role of voters in the model developed above. For example, in the case of China, it is the communist party that plays the role of disciplining and selecting members of the executive. Hence, either π or γ could be high in such cases resulting in $\lambda(\gamma, 0)$ being high.

Such examples highlight the potential advantages of the absence of constraints. The comparative statics of our model also capture these advantages.¹² First, we have $\lambda(\gamma, 0) \geq \lambda(\gamma, 1)$ for all values of γ . This is the effect that the imposition of executive constraints in the future has on the potential for rent extraction. As opportunistic incumbents are motivated by rent extraction this has a negative impact on their behavior.¹³ Second, this effect is amplified by having a more competent use of elections. When elections work poorly, $\gamma = \frac{1}{2}$, then $\lambda(\gamma, 0) = \lambda(\gamma, 1) = 0$. As γ increases, the gap between $\lambda(\gamma, 0)$ and $\lambda(\gamma, 1)$ increases. Thus, the uninhibited extraction of rents without constraints ensures better behavior when re-election incentives are sharper. Third, this effect is particularly important if office holding incentives, E , are low.

However, there is a downside risk to weak executive constraints. If executive constraints are always used, i.e. when $\pi \leq \hat{\pi}(\lambda(\gamma, 1), \gamma)$, then this eliminates $-\Delta_L$ in the model. However, the risk of realizing $-\Delta_L$ remains real in the absence of executive constraints. This observation squares with the empirical finding that a range of detrimental outcomes is limited under executive constraints. Table 1 shows eight possible measures of poor outcomes which are attributable in part to poor policy and which are often associated with state fragility: large falls in GDP, decreases in life expectancy, increases in child mortality, having a civil conflict break out in a country, an outflow of refugees, or the start of opposition purges by the government. While the model is stylized and is not specific about the interpretation of $-\Delta_L$, these are the kinds of outcomes which we have in mind. They are also fairly rare events in the data.

In all cases, Table 1 shows that failures are more common with weak executive constraints.

¹²We also illustrate these in a simulation which we discuss in the online appendix.

¹³This is the opposite effect found for non-permissive norms in Bidner and Francois (2018).

The start of a civil war, for example, is more than five times more likely under weak executive constraints. The last two columns of Table 1 show two t-statistics. The first t-statistics indicate that all mean differences are highly significant at 99.9%. The final column in Table 1 reports the t-statistic of the coefficient on weak executive constraints in a linear regression that includes the (ln of) GDP per capita as a control variable and most negative outcomes remain significantly more common in countries with weak executive constraints.¹⁴ Thus, countries with weak executive constraints produce more bad policy outcomes.¹⁵

4.2 Voter Payoffs

One by-product of the model's simplicity is the fact that we can get an exact expression for voters' equilibrium payoffs.¹⁶ This allows us to explore when voters would demand executive constraints in the model from an ex ante point of view.

Without executive constraints, the ex ante payoff of voters is

$$\tilde{W}^0(\pi, \gamma) = \frac{(1 - \lambda(\gamma, 0)) \left[\pi \frac{\Delta_H}{1 - \beta\gamma} - (1 - \pi) \Delta_L \right] + \lambda(\gamma, 0) \Delta_H}{1 - \beta \left[(1 - \lambda(\gamma, 0)) \left(\pi \left(\frac{1 - \gamma}{1 - \beta\gamma} \right) + (1 - \pi) \right) + \lambda(\gamma, 0) \right]},$$

while with executive constraints it is

$$\tilde{W}^1(\pi, \gamma) = \begin{cases} \frac{(1 - \lambda(\gamma, 0)) \left[\pi \frac{\Delta_H}{1 - \beta\gamma} - (1 - \pi) \Delta_L \right] + \lambda(\gamma, 0) \Delta_H}{1 - \beta \left[(1 - \lambda(\gamma, 0)) \left(\pi \left(\frac{1 - \gamma}{1 - \beta\gamma} \right) + (1 - \pi) \right) + \lambda(\gamma, 0) \right]} & \text{if } \pi \geq \hat{\pi}(\lambda(\gamma, 0), \gamma) \\ \frac{(1 - \lambda(\gamma, \hat{\xi})) (1 - \hat{\xi}) \left[\pi \frac{\Delta_H}{1 - \beta\gamma} - (1 - \pi) \Delta_L \right] + \lambda(\gamma, \hat{\xi}) \Delta_H}{1 - \beta \left[(1 - \lambda(\gamma, \hat{\xi})) (1 - \hat{\xi}) \left(\pi \left(\frac{1 - \gamma}{1 - \beta\gamma} \right) + (1 - \pi) \right) + \hat{\xi} + (1 - \lambda(\gamma, \hat{\xi})) \hat{\xi} \right]} & \text{if } \pi \in [\hat{\pi}(\lambda(\gamma, 1), \gamma), \hat{\pi}(\lambda(\gamma, 0), \gamma)] \\ \frac{\lambda(\gamma, 1) \Delta_H}{1 - \beta} & \text{if } \pi < \hat{\pi}(\lambda(\gamma, 1), \gamma) \end{cases}$$

It is clear that for $\pi \geq \hat{\pi}(\lambda(\gamma, 0), \gamma)$, then voter payoff is the same with and without executive constraints as they are never used. So the main issue is what happens when π is sufficiently low, i.e. if selection does not work well.

There is no guarantee that the payoff is higher in general with executive constraints for all $\{\pi, \gamma\}$. This is illustrated in Figure 1 which illustrates the typical comparative statics of the model.¹⁷ The area below the dashed line shows the parameters values for which strong executive constraints increase the payoff of voters. This area shrinks as γ increases, i.e. as

¹⁴We show in the Online Appendix that for the majority of these negative outcomes this is even true if we control for the region of the country or a proxy of functioning elections. It also holds if we chose an entirely different measure of executive constraints and functioning elections from the V-Dem dataset.

¹⁵Of course, the factors underlying these crises differ greatly across countries and we do not claim that looking at correlations in the data can pin down a causal relationship between executive constraints and failure.

¹⁶The exact computation is given in the Appendix. Our computation looks at subjective payoffs of voters assuming that opportunistic types cannot be distinguished from good types if no information is available to voters.

¹⁷We also illustrate these in a simulation which we discuss in the Online Appendix.

voters are able to use elections to give sharper incentives and λ increases. The solid line gives $\hat{\pi}(\lambda(\gamma, 1), \gamma)$. Below this line executive constraints are used by the judiciary if they are available but in a way that lowers ex ante voter payoffs. So it would be better not to have executive constraints available.

This is because, although the intervention of the judiciary can reduce discipline for incumbents, this comes at the price of worsening incentives for opportunists, i.e., lowering λ . Thus, it is possible that there is a range of $\{\pi, \gamma\}$ such that even though executive constraints are optimally applied ex post, they are not optimal ex ante. Executive constraints are used by the judiciary if they are available but in a way that lowers ex ante voter payoffs. So it would be better not to have executive constraints available.

Any kind of general comparison of voter payoffs with and without executive constraints will therefore likely be ambiguous. However, there are two interesting cases which can be interpreted as worst-case scenarios where the case for executive constraints emerges unambiguously from the model.¹⁸

4.3 Robust Choice of Institutions

To motivate an approach based on the worst case, suppose that there is Knightean uncertainty about the policy making environment, particularly the capacity of elections to select and discipline incumbents and the dangers society must face. This seems entirely reasonable given that constitution rules may need to apply over a range of circumstances where probabilistic judgements seem arbitrary. For such contexts, Gilboa and Schmeidler (1989) have recommended a maxmin approach.

The first worst case scenario for elections is where π is low and γ is close to one half which implies that $\lambda(\gamma, \xi) \rightarrow 0$ for all $\xi \in [0, 1]$. Specifically, we have:

Proposition 2 *Suppose that $\pi \leq \hat{\pi}(\lambda(\gamma, 1))$, then as $\gamma \rightarrow 1/2$ and for any $\Delta_L > 0$, voters will choose executive constraints.*

Proof. This follows by observing that as $\gamma \rightarrow 1/2$, we have

$$\tilde{W}^0\left(\pi, \frac{1}{2}\right) = \frac{\left[\pi \frac{\Delta_H}{1-\beta/2} - (1-\pi)\Delta_L\right]}{1-\beta\left[\left(\pi\left(\frac{1}{2-\beta}\right) + (1-\pi)\right)\right]} < 0 = \tilde{W}^1(\pi, 0)$$

for $\pi \leq \hat{\pi}(\gamma, 0)$. ■

This result makes intuitive sense since these are cases where elections are performing poorly – failing to select good politicians and with voters lacking the capacity to reward good behavior. Then the only hope is to use some kind of oversight such as a judicial process or

¹⁸Both of these worst case scenario arguments do not depend on the judiciary being perfect in what it does. The key assumption is that the judiciary cannot impose a worse outcome than allowing discretion when $r > \hat{r}$ and acts in the interest of voters sufficiently often.

legislative action to restrain opportunistic incumbents. Hence executive constraints are not designed for situations in which elections work well but operate as a fail-safe when selection and incentives work poorly.

The second worst case scenario is when the cost of policy mistakes is large:

Proposition 3 *For large enough Δ_L , voters will choose executive constraints.*

Proof. This follows by observing that as $\Delta_L \rightarrow \infty$, then $\hat{\pi}(\lambda(\gamma, 1), \gamma) \rightarrow 1$, so that

$$\tilde{W}^1(\pi, \gamma) = \frac{\lambda(\gamma, 1) \Delta_H}{1 - \beta} > 0 > \frac{(1 - \lambda(\gamma, 0)) \left[\pi \frac{\Delta_H}{1 - \beta \gamma} - (1 - \pi) \Delta_L \right] + \lambda(\gamma, 0) \Delta_H}{1 - \beta \left[(1 - \lambda(\gamma, 0)) \left(\pi \left(\frac{1 - \gamma}{1 - \beta \gamma} \right) + (1 - \pi) \right) + \lambda(\gamma, 0) \right]} = \tilde{W}^0(\pi, \gamma).$$

■

Any time that $\hat{\xi} > 0$, executive constraints have a value in avoiding $-\Delta_L$ being realized. Moreover, for large enough Δ_L then $\hat{\pi}(\lambda(\gamma, \xi))$ gets close to one so that executive constraints will be applied almost for sure using the logic of Proposition 1.¹⁹ This rhymes well with the findings in Table 1 and allows us to think about constraints on executive power as inducing a form of redundancy that increases the robustness of the system, in the language of the engineering literature. In this view, robustness is maintaining a desired system characteristic (avoiding Δ_L) despite fluctuations in the behavior of the systems' components (π and γ) and/or its environment (r).²⁰

The model does provide some insight into why some countries may rationally not choose executive constraints if they have optimistic priors about π and γ and/or do not regard bad policy as being particularly damaging, $-\Delta_L$.²¹ In line with this finding, a focus on the upside opportunities is indeed an important part of the classic argument for the benefits from unconstrained policy actions. Arguments for the dismantling of executive constraints stress the role of the developmental state which can generate higher growth with an unconstrained leader as in the case of China or Singapore. The parameters $\{\pi, \gamma\}$ determine the likelihood that the political system avoids bad outcomes in this context. But history is full of examples in which unchecked executive power led to disaster.

Of course, another explanation is that the political class has a strong vested interest in maintaining low constraints. There is then a conflict of interest between elites and citizens which would have to be resolved as in the kinds of models of political change studied by Acemoglu and Robinson (2006) or Besley and Persson (2018). Adopting executive constraints would also be a redundant move if the judiciary is not publicly spirited and/or does not act independently of political incentives.²²

¹⁹For a similar argument regarding economic agents see Bidder and Dew-Becker (2016).

²⁰For a detailed description with striking analogies see Kitano (2004) and Csete and Doyle (2002).

²¹See Acemoglu et al (2013) and Forteza and Pereyra (2018) for related arguments.

²²Note however, that both of the Propositions above would hold if executive constraints are imposed only some of the time when $r > \hat{r}$.

5 Concluding Comments

This paper has argued that executive constraints should be viewed as a response to two forms of pessimism about elections: (i) failure to select politicians who are faithful servants of the voters and (ii) failure by voters to use elections to create incentives for good policy. These failures are particularly costly, when there is a large downside to bad policy. Putting more power in the hands of unelected officials such as judges can then play an important role in increasing voters' payoffs from policy. This way of looking at the case for executive constraints is consistent with the finding that there appears to be less detrimental economic performance across the board in countries with strong executive constraints.

The findings of the paper are poignant in view of increasing concerns about the consequences of political representation of populist politicians with agendas that respond to narrow interests. This serves as a reminder that, although elections are an integral part of democracy, they have to work within a system of constraints. Since such constraints can create missed opportunities for effective use of policy-discretion, they are best motivated by considering the worst-case scenario.

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A Voter Payoffs

With executive constraints, the voters' ex ante payoff is:

$$\tilde{W}(\lambda, b, \xi) = (1 - \lambda)(1 - \xi) U\left(\tilde{W}(\lambda, b, \xi), b\right) + \lambda \left[\Delta_H + \beta \tilde{W}(\lambda, b, \xi)\right] + (1 - \lambda) \xi \beta \tilde{W}(\lambda, b, \xi)$$

or

$$\begin{aligned} \tilde{W}(\lambda, b, \xi) &= (1 - \lambda)(1 - \xi) \left(\delta(b) + \beta b \left(\gamma \frac{\Delta_H + \beta(1 - \gamma) \tilde{W}(\lambda, b)}{1 - \beta\gamma} + (1 - \gamma) \tilde{W}(\lambda, b) \right) \right) \\ &\quad + (1 - \lambda)(1 - \xi)(1 - b) \beta \tilde{W}(\lambda, b) \\ &\quad + \lambda \left[\Delta_H + \beta \tilde{W}(\lambda, b) \right] + (1 - \lambda) \xi \beta \tilde{W}(\lambda, b) \end{aligned}$$

which yields:

$$\tilde{W}(\lambda, b, \xi) = \frac{(1 - \lambda)(1 - \xi) \left[b \frac{\Delta_H}{1 - \beta\gamma} - (1 - b) \Delta_L \right] + \lambda \Delta_H}{1 - \beta \left[(1 - \lambda)(1 - \xi) \left(b \left(\frac{1 - \gamma}{1 - \beta\gamma} \right) + (1 - b) \right) + \lambda + (1 - \lambda) \xi \right]}.$$

With $\xi = 1$ we obtain:

$$\tilde{W}(\lambda, b, 1) = \frac{\lambda \Delta_H}{1 - \beta}.$$

The payoff without executive constraints is

$$\tilde{W}(\lambda, b) = (1 - \lambda) U\left(\tilde{W}(\lambda, b), b\right) + \lambda \left[\Delta_H + \beta \tilde{W}(\lambda, b)\right]$$

or

$$\begin{aligned} \tilde{W}(\lambda, b) &= (1 - \lambda) \delta(b) + (1 - \lambda) b \beta \left(\gamma W^1\left(\tilde{W}(\lambda, b)\right) + (1 - \gamma) \tilde{W}(\lambda, b) \right) \\ &\quad + (1 - \lambda)(1 - b) \beta \left((1 - \gamma) W^0\left(\tilde{W}(\lambda, b)\right) + \gamma \tilde{W}(\lambda, b) \right) \\ &\quad + \lambda \left[\Delta_H + \beta \tilde{W}(\lambda, b) \right]. \end{aligned}$$

We have

$$\begin{aligned} W^1\left(\tilde{W}(\lambda, b)\right) &= \frac{\Delta_H + \beta(1 - \gamma) \tilde{W}(\lambda, b)}{1 - \beta\gamma} \\ W^0\left(\tilde{W}(\lambda, b)\right) &= \tilde{W}(\lambda, b) \end{aligned}$$

so that

$$\begin{aligned}\tilde{W}(\lambda, b) &= (1 - \lambda) \left(\delta(b) + b\beta \left(\gamma \frac{\Delta_H + \beta(1 - \gamma)\tilde{W}(\lambda, b)}{1 - \beta\gamma} + (1 - \gamma)\tilde{W}(\lambda, b) \right) \right) \\ &\quad + (1 - \lambda)(1 - b)\beta\tilde{W}(\lambda, b) \\ &\quad + \lambda(\Delta_H + \beta\tilde{W}(\lambda, b)).\end{aligned}$$

Gathering terms

$$\begin{aligned}&\tilde{W}(\lambda, b) \left(1 - \beta \left((1 - \lambda)b \left(\frac{1 - \gamma}{1 - \beta\gamma} \right) + (1 - \lambda)(1 - b) + \lambda \right) \right) \\ &= (1 - \lambda) \left(b\Delta_H - (1 - b)\Delta_L + b\beta\gamma \frac{\Delta_H}{1 - \beta\gamma} \right) + \lambda(\Delta_H).\end{aligned}$$

and solving for $\tilde{W}(\lambda, b)$ yields:

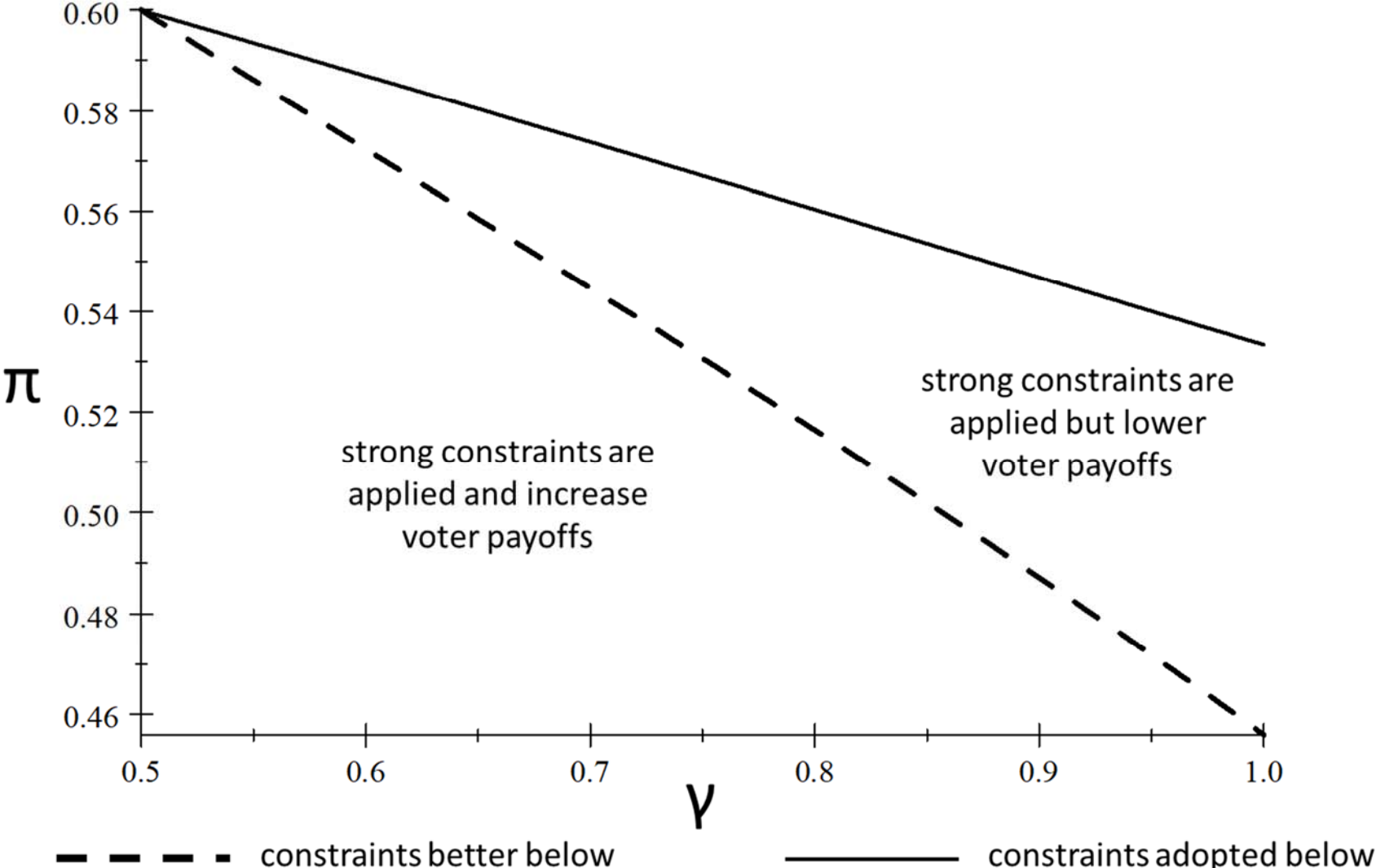
$$\tilde{W}(\lambda, b) = \frac{\Delta_H \left(\lambda + (1 - \lambda) \frac{b}{1 - \beta\gamma} \right) - \Delta_L ((1 - \lambda)(1 - b))}{1 - \beta \left((1 - \lambda) \left(b \left(\frac{1 - \gamma}{1 - \beta\gamma} \right) + (1 - b) \right) + \lambda \right)}.$$

Table 1: Bad Outcomes and Executive Constraints

	weak executive constraints		strong executive constraints		t-test	t-test*
	obs	mean	obs	mean		
10% drop in GDP per capita	4170	3.86%	1979	1.11%	7.23	4.41
20% drop in GDP per capita	4410	1.52%	2017	0.40%	4.85	2.92
fall in life expectancy	5656	1.45%	2222	0.50%	4.38	1.08
increase in child mortality	5102	1.22%	2145	0.47%	3.52	1.72
start of armed conflict	6095	3.20%	2417	1.03%	7.09	2.62
start of civil war	6627	1.39%	2611	0.27%	6.37	2.93
start of refugee outflow	4976	2.07%	2397	0.42%	6.86	2.54
start of purge	4924	6.15%	2225	1.71%	10.13	4.47

Notes: "t-stat" reports the t-test on a difference in means. "t-test*" reports the t-test on the coefficient of regression of the respective variable on weak executive constraints controlling for $\ln(\text{GDP per capita})$. "10% drop in GDP per capita" is a drop in GDP per capita of more than 10 percent in the past 5 years. "20% drop in GDP per capita" is a drop in GDP per capita of more than 20 percent in the past 5 years. "fall in life expectancy" is a fall by more than half a year within a 5-year period. "increase in child mortality" is an increase from one year to the next. "armed conflict" is defined by more than 25 battle related deaths within a year. "civil war" are more than 0.08 battle related deaths per 1000 population in a year. "refugee outflow" is a year in which the country generates refugees. "purge" is an episode with purges. The table categorizes episodes of bad outcomes with the political institution in place in the year before the start of the episode. "strong executive constraints" are years of $xconst=7$ before the start of the respective episode. "weak executive constraints" are years of $xconst<7$ before the start of the respective episode. Data on executive constraints is from PolityIV. Data on GDP, population, child mortality and life expectancy is from the World Bank. Data on armed conflict and civil war is generated from UCDP/PRIO data on battle-related deaths presented in Pettersson and Eck (2018). Data on refugees is from the UNHCR. Data on Purges is from the Cross-National Time-Series Data Archive by Banks and Kenneth (2017).

Figure 1: Adoption of Constraints and Voter Payoff



Note: Figure captures typical comparative statics of the model. The solid line reports the values of π below which the judiciary starts to always impose constraints when rents are high (Proposition 1). The dashed line gives the values of π at which voter payoffs are the same with constraints and without.

Online Appendix

A Discussion of Simulations

A.1 Set-Up

Our simulations assume that rents, r , are distributed uniformly between 0 and $R = 2$. This implies that

$$G(r) = 1 - \frac{R-r}{R} = \frac{r}{2}$$

and that

$$\int_{\hat{r}}^R r dG(r) = \frac{\frac{1}{2}(R^2 - \hat{r}^2)}{R} = \frac{1}{4}(4 - \hat{r}^2)$$

The general formulas for the rent cutoffs \hat{r} with and without executive constraints are

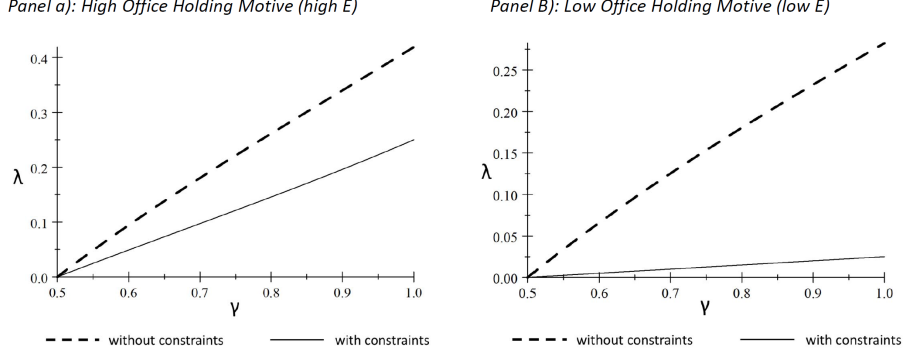
$$\begin{aligned} r_1 &= \frac{(2\gamma - 1)\beta E}{1 - \beta \left(\left(1 - \frac{r_1}{R}\right) + \frac{r_1}{R}\gamma \right)} \\ r_0 &= \frac{(2\gamma - 1)\beta \left(E + \frac{\frac{1}{2}(R^2 - r_0^2)}{R} \right)}{1 - \beta \left(\left(1 - \frac{r_0}{R}\right) (1 - \gamma) + \frac{r_0}{R}\gamma \right)} \end{aligned}$$

and we assume $\beta = 0.5$ to derive formulas for these cutoffs.

For our other calculations we then fix either $E = 0.5$ or $E = 0.05$ or $\gamma = 0.75$. Finally, for the payoff, we assume $\Delta_H = 1$ and $\Delta_L = 2$ so that all $\pi < \frac{2}{3}$ we have $\delta(\pi) < 0$.

Figure A1 illustrates the comparative statics discussed in the main text. It plots equilibrium values of $\lambda(\gamma, 0)$ (dashed line) and $\lambda(\gamma, 1)$ (solid line) for varying γ and E . Four comparative statics are clear from the graphs. First, we have $\lambda(\gamma, 0) \geq \lambda(\gamma, 1)$ for all values of γ . Second, this effect is amplified by having a more competent use of elections. When elections work poorly, $\gamma = \frac{1}{2}$, then $\lambda(\gamma, 0) = \lambda(\gamma, 1) = 0$. As γ increases, the gap between $\lambda(\gamma, 0)$ and $\lambda(\gamma, 1)$ increases. Third, as can be seen in the difference between Panel a) and Panel b) this effect is particularly important if office holding incentives, E , are low.

Figure A1: Probability of Opportunistic Behaviour as γ Varies



Note: λ is the probability that an opportunistic incumbent produces Δ_H . γ is the likelihood that the electorate rewards Δ_H with re-election. Assumptions and parameter values for the simulations are in Appendix D. The dashed line represents the likelihood that an opportunistic incumbent will produce Δ_H in an equilibrium in which executive constraints are imposed whenever an opportunistic incumbent would produce Δ_L . The solid line represents the likelihood that an opportunistic incumbent will produce Δ_H in an equilibrium in which executive constraints are never imposed. “high E” means that office holding motive is strong. The assumed parameter values for “high E” and “low E” are given in the appendix.

A.2 Discussion of Complementarity

The model reveals that executive constraints can be complementary to the functioning of elections but it can also be a substitute. It will depend on whether institutional variation is driven by differences in γ or differences in E relative to rents r . To see this, note first that the payoff without constraints is rising in π but $\tilde{W}(\lambda, b, 1)$ is not so we get a threshold of π below which executive constraints are preferred.

Figure 2 in the text shows a typical situation in which γ varies. The area below the dashed line shows the parameters values for which strong executive constraints increase the voters’ payoffs. This area is shrinking with rising γ and we know from Figure 1a (which used the same parameter values) that this is also a situation of rising λ . The solid line depicts the value of $\hat{\pi}$. For $\gamma \rightarrow \frac{1}{2}$ executive constraints increase voter welfare if $\pi < \hat{\pi}$ and so there is no decline in payoffs from the availability of executive constraints. However, as $\gamma \rightarrow 1$ we get that there are intermediate values of π for which executive constraints do not increase the payoff of voters but are adopted. The availability of executive constraints has a higher potential of decreasing voter payoffs as γ grows. In this sense well-functioning elections and executive constraints are substitutes.

The broad patterns in Figure 2 generalize. To show this we first calculate the level of π from which on the full constraints increase the payoff of voters for $\gamma \rightarrow \frac{1}{2}$. We then show that this level is always equal to $\hat{\pi}$. There is indifference between the two regimes for $\gamma \rightarrow \frac{1}{2}$ if

$$0 - \frac{\Delta_H \left(\frac{b}{1-\beta\gamma} \right) - \Delta_L (1-b)}{1 - \beta \left(b \left(\frac{1-\gamma}{1-\beta\gamma} \right) + (1-b) \right)} = 0$$

which happens when

$$\Delta_H \frac{b}{1-\beta\gamma} = \Delta_L (1-b)$$

which is exactly at $b = \hat{\pi}$. Note that we need to assume that $b < \frac{\Delta_L}{\Delta_H + \Delta_L}$ and it is easy to

show that

$$\hat{\pi} = \frac{\Delta_L}{\Delta_L + \frac{\Delta_H}{1-\beta\gamma}} < \frac{\Delta_L}{\Delta_H + \Delta_L}$$

so that for $\gamma \rightarrow \frac{1}{2}$ the constraint $b < \frac{\Delta_L}{\Delta_H + \Delta_L}$ is not relevant.

If instead elections work well because voters are informed ($\gamma \rightarrow 1$) so that

$$\tilde{W}(\lambda, b, \xi = 0) = \frac{(1 - \lambda) \left(b \frac{\Delta_H}{1-\beta} - (1 - b) \Delta_L \right) + \lambda \Delta_H}{1 - \beta \left((1 - \lambda) (1 - b) + \lambda \right)}$$

and inserting $b = \hat{\pi}(\lambda = 0, \gamma = 1) = \frac{\Delta_L}{\Delta_H \frac{1}{1-\beta} + \Delta_L}$ in the formula above we get

$$\tilde{W}(\lambda, \hat{\pi}(0, 1), 0) = \frac{(1 - \lambda) \left(\frac{\Delta_L}{\Delta_H \frac{1}{1-\beta} + \Delta_L} \frac{\Delta_H}{1-\beta} - \left(1 - \frac{\Delta_L}{\Delta_H \frac{1}{1-\beta} + \Delta_L} \right) \Delta_L \right) + \lambda \Delta_H}{1 - \beta \left((1 - \lambda) \left(1 - \frac{\Delta_L}{\Delta_H \frac{1}{1-\beta} + \Delta_L} \right) + \lambda \right)}$$

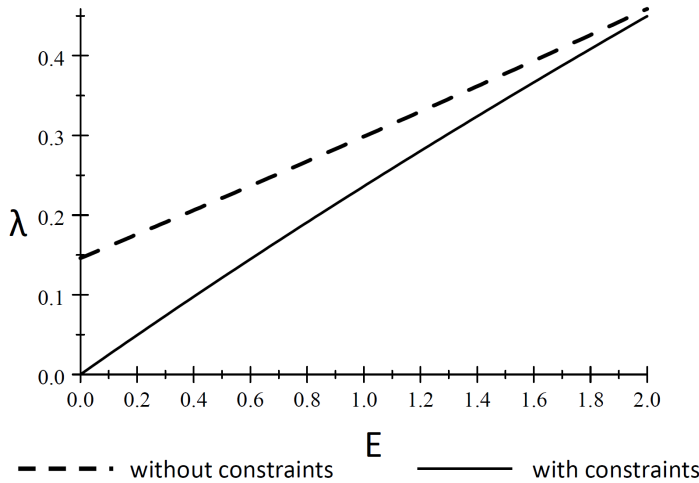
and simplified

$$\lambda(1, 0) \frac{\Delta_H}{1 - \beta} \frac{\Delta_H + \Delta_L (1 - \beta)}{\Delta_H + \Delta_L (1 - \beta \lambda(1, 0))} > 0.$$

as long as $\lambda(1, 0) > 0$ which is always the case. With constraints we can have situations where voter payoffs are lower than this. The easiest way to show this is to assume $E = 0$ so that $\lambda(\gamma, 1) = 0$ and $\tilde{W}(\lambda, b, \xi = 1) = 0$. This means there is a set of parameters for $\gamma \rightarrow 1$ for which constraints are adopted because $\pi < \hat{\pi}$ but reduce voter payoffs.

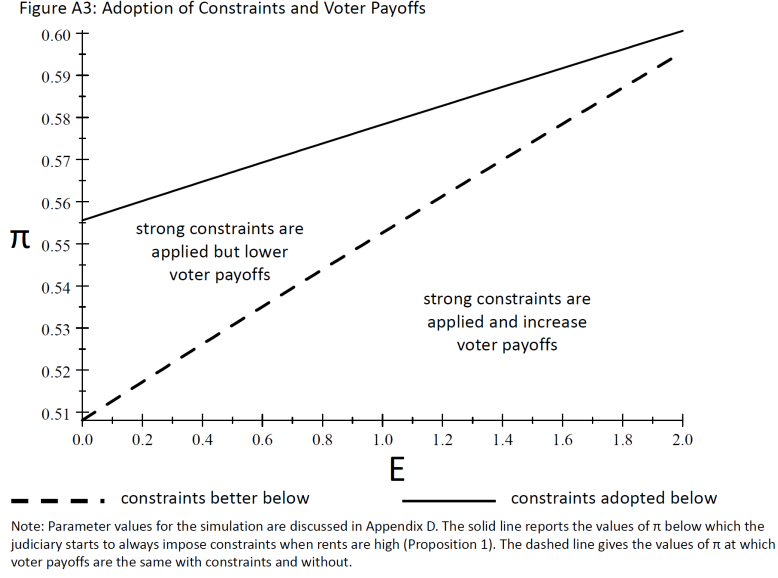
Figure A2 fixes γ and varies E (otherwise we assume the same values as in Figures A1). The dashed line shows the equilibrium value of λ without constraints, $\lambda(\gamma, 0)$. The values of λ are increasing in E and we have $\lambda(\gamma, 0) > \lambda(\gamma, 1)$, however, now we see that for increasing E the performance of the electoral systems converge.

Figure A2: Probability of Opportunistic Behavior by Executive with Varying Office Holding Motive



Note: λ is the probability that an opportunistic incumbent produces Δ_H . γ is the likelihood that the electorate rewards Δ_H with re-election. Assumptions and parameter values for the simulations are in Appendix D. Definitions are as in Figure 1.

Figure A3 shows the equivalent picture to Figure 1. The area below the dashed line shows the parameters values for which strong executive constraints improve voter payoffs. This area now increases as E increases and we know from Figure A2 of rising λ . The accountability through elections and the range for which executive constraints would be preferred by voters are increasing together. For varying E , well-functioning elections and executive constraints are complements.



B Comparing Voter Payoffs

As $\pi \rightarrow 0$,

$$\tilde{W}(\lambda, 0, \gamma, 1) = \frac{\lambda(\gamma, 1) \Delta_H}{1 - \beta}$$

with

$$\tilde{W}(\lambda, \pi, \gamma, 0) = \frac{\lambda(\gamma, 0) \Delta_H - (1 - \lambda(\gamma, 0)) \Delta_L}{1 - \beta}$$

whose sign is ambiguous and depends on the trade-off between discretion and incentives. Note, that in this case executive constraints are always adopted. Executive constraints increase welfare if

$$\frac{\lambda(\gamma, 0) - \lambda(\gamma, 1)}{1 - \lambda(\gamma, 0)} < \frac{\Delta_L}{\Delta_H}$$

but Δ_L needs only to be very small to satisfy $\delta(0) < 0$ and $\lambda(\gamma, 1) = 0$ is possible. Thus welfare can be lower with executive constraints.

C Robustness and Constraints in the Data

C.1 Data and Definitions

In order to understand the robustness properties of political institutions we want to understand whether episodes of bad policy (draws of $-\Delta_L$ in the model) are less likely under strong executive constraints. Since bad payoffs are not well-defined, we focus on eight possible measures of bad outcomes listed in Table 1.

The first measures are defined using GDP per capita numbers from the World Bank. A "10% in GDP per capita" is defined as a drop in GDP per capita of more than 10 percent within 5 years. A "20% drop in GDP per capita" is defined as a drop in GDP per capita of more than 20 percent within 5 years. The same pattern holds for other cutoffs.

We use child mortality and life expectancy data also from the World Bank. Both of these are typically improving, especially child mortality, so that we define a bad outcome through two dummy variables: "fall in life expectancy" is a fall by more than half a year within a 5-year period and "increase in child mortality" is any increase from one year to the next.

In addition, we use data from UCDP/PRIO on battle related deaths to define violence (See Pettersson and Eck (2018)). We define a dummy "start of armed conflict" as the beginning of an episode with more than 25 battle related deaths within a year and "start of civil war" as an episode with more than 0.08 battle related deaths per 1000 population in a year.

We use UNHCR data and sum the number of refugees that have left the country. We then define the "start of refugee outflow" is the first year in which the country generates refugees.

Data on purges is from the Cross-National Time-Series Data Archive by Banks and Kenneth (2017). We define the "start of purge" as the start of an episode with purges.

Our main definition of "strong executive constraints" comes from the Polity IV data. We define a year of $x_{const}=7$ as strong executive constraints. However, to make sure that our results are robust, we also use the V-Dem dataset by Coppedge et al. (2016) this dataset offers two measures of constraints:

1) The judicial constraints on the executive index ($v2x_jucon$). This is an index built out of several subindexes which measures "To what extent does the executive respect the constitution and comply with court rulings, and to what extent is the judiciary able to act in an independent fashion?" and it measures constraints on an interval between 0 (low) to 1 (high). The subindexes are compliance with judiciary, compliance with high court, high court independence and lower court independence.

2) The legislative constraints on the executive index ($v2xlg_legcon$). This is an index built out of several subindexes which measures "To what extent are the legislature and government agencies e.g., comptroller general, general prosecutor, or ombudsman capable of questioning, investigating, and exercising oversight over the executive?" and it measures constraints on an interval between 0 (low) to 1 (high). The subindexes are indicators for legislature questions officials in practice, executive oversight, legislature investigates in practice, and legislature opposition parties.

We used this data in three ways. We used the max between 1) and 2) and defined a year as under strong executive constraints if the score was higher than 0.8. Alternatively

we defined strong constraints as a year with $v2x_jucon > 0.8$ or $v2xlg_legcon > 0.8$. We only report the results for the max but they are very similar for the other two different definitions.

We also propose a measure of functioning elections through $xropen = 4$ in the Polity IV data and the clean elections index $v2xel_frefair > 0.8$ in the V-Dem data.

Summary statistics, conditioning on the availability of measures of strong executive constraints, are in Table A1. We produce summary statistics for both the Polity IV data and the V-Dem data. As can be seen in the summary statistics on our measures of strong executive constraints both have similar means.

Table A1: Summary Statistics

<i>Panel A: Polity IV Data</i>					
Variable	Obs	Mean	Std. Dev.	Min	Max
strong executive constraints	9,661	0.273	0.446	0	1
open executive recruitment	9,661	0.774	0.418	0	1
10% drop in GDP per capita	6,149	0.030	0.170	0	1
20% drop in GDP per capita	6,427	0.012	0.107	0	1
fall in life expectancy	7,878	0.012	0.108	0	1
increase in child mortality	7,247	0.010	0.099	0	1
start of armed conflict	8,512	0.026	0.159	0	1
start of civil war	9,238	0.011	0.103	0	1
start of refugee outflow	7,373	0.015	0.123	0	1
start of purge	7,149	0.048	0.213	0	1

<i>Panel B: Vdem Data</i>					
Variable	Obs	Mean	Std. Dev.	Min	Max
strong executive constraints	11,005	0.2999	0.4582	0	1
open executive recruitment	10,987	0.2335	0.4231	0	1
10% drop in GDP per capita	6,455	0.0293	0.1686	0	1
20% drop in GDP per capita	6,743	0.0107	0.1028	0	1
fall in life expectancy	8,121	0.0094	0.0963	0	1
increase in child mortality	7,539	0.0092	0.0952	0	1
start of armed conflict	9,318	0.0247	0.1552	0	1
start of civil war	10,058	0.0106	0.1026	0	1
start of refugee outflow	7,604	0.0155	0.1236	0	1
start of purge	7,436	0.0465	0.2106	0	1

Notes: Both samples are restricted by the availability of data on strong executive constraints. Strong executive constraints are defined as $xconst = 7$ in the polity data and by $\max(v2x_jucon, v2xlg_legcon) > 0.8$ in the Vdem data.

C.2 Role of Strong Executive Constraints

Table A2 shows the equivalent to Table 1 for our definition of strong executive constraints using the V-Dem dataset.

Table A2: System Failures and Political Institutions (V-Dem)

	weak executive constraints		strong executive constraints		t-test	t-test*
	obs	mean	obs	mean		
10% drop in GDP per capita	4140	3.91%	2315	1.17%	7.32	4.80
20% drop in GDP per capita	4388	1.53%	2355	0.21%	6.32	4.77
fall in life expectancy	5499	1.04%	2622	0.72%	1.45	0.21
increase in child mortality	5072	1.01%	2467	0.73%	1.25	0.18
start of armed conflict	6397	3.24%	2921	0.79%	8.90	3.70
start of civil war	6933	1.43%	3125	0.26%	6.94	2.38
start of refugee outflow	4784	2.30%	2820	0.28%	8.44	3.57
start of purge	4907	6.36%	2529	1.34%	12.03	5.83

Notes: "t-stat" reports the t-test on a difference in means. "t-test*" reports the t-test on the coefficient of regression of the respective variable on weak executive constraints controlling for $\ln(\text{GDP per capita})$. "10% drop in GDP per capita" is a drop in GDP per capita of more than 10 percent in the past 5 years. "20% drop in GDP per capita" is a drop in GDP per capita of more than 20 percent in the past 5 years. "fall in life expectancy" is a fall by more than half a year within a 5-year period. "increase in child mortality" is an increase from one year to the next. "armed conflict" is defined by more than 25 battle related deaths within a year. "civil war" are more than 0.08 battle related deaths per 1000 population in a year. "refugee outflow" is a year in which the country generates refugees. "purge" is an episode with purges. "strong executive constraints" are years with $v2x_jucon > 0.8$ or $v2xlg_legcon > 0.8$ in the V-Dem dataset.

Table A3 shows various tests using an increasing number of controls. It displays the t-statistics on the coefficient of strong executive constraints in the year before the onset of

failures. The column names are the controls included in these regressions. Results become slightly weaker with the inclusion of controls but most t-statistics remain positive and many are larger than 2. This is particularly striking for subregion fixed effects as these are dummies for 22 subregions like "Northern Africa" or "Southern Europe". This is striking as failures are rare events so that significant differences requires a very strong pattern. However, the, perhaps, most interesting finding is that results are robust to controlling for functioning elections which we define as explained above.

Table A3: Robustness to More Controls

	Polity IV Data					V-Dem Data				
	no controls	ln(GDPpc)	ln(GDPpc) & elections	year FE and subregion FE	ln(GDPpc), elections, FES	no controls	ln(GDPpc)	ln(GDPpc) & elections	year FE and subregion FE	ln(GDPpc), elections, FES
10% drop in GDP per capita	7.23	4.41	4.22	2.05	2.23	7.32	4.80	3.73	2.62	2.26
20% drop in GDP per capita	4.85	2.92	2.69	1.25	1.53	6.32	4.77	3.97	3.89	3.22
fall in life expectancy	4.38	1.08	1.09	4.82	1.57	1.45	0.21	-0.73	2.16	-0.14
increase in child mortality	3.52	1.72	1.57	2.19	1.66	1.25	0.18	0.25	-0.19	0.94
start of armed conflict	7.09	2.62	2.21	2.30	1.37	8.90	3.70	3.21	4.36	1.16
start of civil war	6.37	2.93	0.49	2.59	-0.45	6.94	2.38	2.98	2.77	0.38
start of refugee outflow	6.86	2.54	2.06	3.71	2.04	8.44	3.57	2.74	5.61	2.49
start of purge	10.13	4.47	4.31	6.66	4.97	12.03	5.83	3.89	8.28	4.28

Note: Table reports t-stats on the regression coefficient of the start of the episode where we code all consecutive years as missings. All independent variables are lagged by one year to prevent obvious reverse causality problems. "10% drop in GDP per capita" is a drop in GDP per capita of more than 10 percent in the past 5 years. "20% drop in GDP per capita" is a drop in GDP per capita of more than 20 percent in the past 5 years. "fall in life expectancy" is a fall by more than half a year within a 5-year period. "increase in child mortality" is an increase from one year to the next. "armed conflict" is defined by more than 25 battle related deaths within a year. "civil war" are more than 0.08 battle related deaths per 1000 population in a year. "refugee outflow" is a year in which the country generates refugees. "purge" is an episode with purges.

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