

Political Accountability Through Elections and Checks and Balances

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Abstract

Separation of powers with checks and balances (SP) is usually regarded as a key institution that complements elections in the control of elected officials. The vast majority of the literature has focused on elections, and while some studies have analyzed SP, we know very little about the interaction of the two institutions. We introduce SP in a model of electoral accountability with both moral hazard and adverse selection. We add governance concerns by assuming that citizens care about a positional issue (reform) in addition to a valence issue (rent extraction). We find that, in our model, when elections discipline (select) but do not select (discipline) politicians, SP improves selection (discipline). However, the improvement SP brings in one dimension —discipline or selection— tends to be associated with a deterioration in the other dimension. Only when the reform is a first order concern for citizens causing that elections do not work well in any of the dimensions, SP only has positive effects. Additionally, SP generally decreases the probability of reform. Thus, as our model highlights, it is not always the case that the introduction of SP contributes to a better control of politicians. The net effect depends on how citizens value discipline, selection, and reform.

Keywords: Political agency, Separation of powers, checks and balances.

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1 Introduction

Elected officials, who are assumed to act in favor of the public interest, may deviate in pursuit of their private benefit. This confronts citizens with a political agency problem: they need to control the politicians to whom they delegate the decision power. Modern representative democracies have two

main institutions to deal with the tradeoff between delegation and control: elections and separation of powers with checks and balances.

The literature on political agency has mostly focused on elections as the main institution voters have to control elected officials (see Ashworth 2012; Besley 2005; Persson and Tabellini 2000, for surveys). However, it has long been known that elections are an imperfect mechanism. Classic writers were well aware of this limitation when they advocated for separation of powers and checks and balances as complementary accountability mechanisms (Locke, Montesquieu, Tocqueville, the Federalist Papers). Modern literature has only recently incorporated both electoral accountability (EA) and separation of powers (SP) in formal models of political agency (Persson, Roland, et al. 1997, 2000; Stephenson and Nzelibe 2010). These models of EA and SP focus on moral hazard abstracting from selection issues, though. In this paper, we present a model of EA and SP in the presence of both moral hazard and adverse selection to analyze the interplay of these two institutions.¹

The control of government —be it through EA or SP— is likely to impact on policy outcomes other than rent extraction. Citizens and politicians concern for these policy outcomes are likely to intervene in the working of these mechanisms of control. For example, many citizens might be willing to reelect a dishonest incumbent if they strongly prefer the policies pursued by the incumbent over those supported by the opposition. These partisan preferences would undermine the effectiveness of elections to discipline and select politicians. In turn, SP may not only impact on the incumbent ability and incentives to extract rents but also on his ability to carry on his policy agenda.² With these considerations in mind, we incorporate governance concerns in our model and analyze how these concerns may impact on the working of EA and SP.

One of the main messages of the paper is that the complementarity between elections and SP cannot be given for granted, because the introduction of SP may deteriorate the effectiveness of elections and block reforms. It is not always the case that the introduction of SP contributes to a better control of politicians. The overall effect of SP depends on the role that elections are playing in the society without SP, and how voters value political discipline versus political selection, and the policy reform. As we discuss below, there are scenarios in which the introduction of SP is detrimental for voters, either weakening the incumbents incentives to discipline or citizens ability to identify dishonest incumbents and vote them out. Also, the introduction of SP may reduce the ability to implement reforms.

We model governance concerns assuming that citizens care not only about rent extraction —or more generally, about a valence issue—, but also about a positional issue. For simplicity we identify the positional issue with a binary policy choice ($p_t \in \{0, 1\}$) that can be interpreted as reform, if the current

¹Tim Besley and Hannes Mueller are currently working on a model of EA and SP that also incorporates moral hazard and adverse selection (Besley and Mueller 2018).

²Case studies evidence suggests that these considerations are often of first order importance in real life episodes of weakening of checks and balances (Carrión 2006; Forteza and Pereyra 2016; O'Donnell 1994; Rose-Ackerman et al. 2011).

is different from the previous period policy ($p_t \neq p_{t-1}$), vs status quo, if the current is equal to the previous period policy ($p_t = p_{t-1}$). There are three groups of citizens. While two of them have strong preferences for policies 0 and 1, the third group prefers the policy that matches the state of nature ($p_t = s_t$), which is random and adopts two values ($s_t \in \{0, 1\}$).

Politicians are citizens and belong to one of two political parties. These parties are controlled by politicians with strong preferences, who always implement policies 0 or 1, irrespective of the circumstances (i.e. no matter the realization of s_t). Parties policy preferences are common knowledge. In each party, there are honest politicians who dislike rent extraction, and dishonest politicians who like it. Citizens do not directly observe honesty, but they imperfectly observe whether politicians extracted rents. We model this imperfect observation of rents assuming that there are observable and unobservable rents. Honest politicians never extract rents and dishonest politicians do it if the circumstances are appropriate. EA and SP are the institutions that shape politicians options and incentives.

We first study a model with only one branch (the executive) and elections, and then we incorporate SP. Separation of powers is modeled as a government with two branches, the executive and the legislature, and a decision procedure that requires the participation of both branches. If the two branches are controlled by different parties —divided government— there is neither extraction of observable rents nor reform. Only if one party controls both branches —unified government— and the two incumbents are dishonest, there is extraction of observable rents. Moreover, only if the party that wants a policy change controls the government —a unified reformist government— will reform take place. In this setting, SP works not only when the incumbent can be reelected, but also in his last term when electoral incentives are no longer in place. SP also works in many circumstances —represented by configurations of parameter values in the model— in which EA fails to discipline the incumbent. But neither EA nor SP are effective mechanisms to restraint the extraction of unobservable rents in our model, so both are imperfect mechanisms of control.

The main effects of the introduction of SP are as follows. In the *second period*, SP always reduces the extraction of observable rents, but also political activism. With SP voters choose a divided government for the second period. This eliminates the extraction of observables rents, and the possibility to change the policy implemented in the first period.

The effects of introducing SP on the *first period* outcomes are more complex and depend on the effectiveness of elections in the absence of SP. *Consider first the case when elections fully discipline politicians* (dishonest politicians abstain from extracting rents to be reelected) and thus fail in terms of selection. When potential observable rents are small, the introduction of SP does not deteriorate discipline. Thus, it only has a positive effect via the reduction of observable rents in the second period. For intermediate rents, SP deteriorates the discipline as it makes less attractive the option of reelection. Indeed, with SP there is no chance to extract observable rents in the second period. Also, there

is no risk for the incumbent that the implemented policy in the second period is the one he dislikes. However, less discipline implies more selection, and then less non-observables rents in the second period. When selection is more important than discipline for voters, SP becomes more attractive. Finally, with large rents, voters block both rent extraction and reform in both periods. If voters care about the implementation of a policy reform more than about rent extraction, SP may have negative effects.

Assume now that *elections fully select politicians* in the absence of SP. In this scenario, SP deteriorates selection: the probability that a dishonest first period incumbent is detected is lower with than without SP. Therefore, there is more extraction of unobservable rents with than without SP. If these rents are large, as it is likely the case in weak institutional environments, SP may not be desirable. The counterpart of elections effectiveness at selecting politicians is their failure at inducing discipline. Not surprisingly, SP improves discipline in this case. If rents are not too large, voters choose in the first period a unified government under SP that implements the reform. In the second period, voters choose a divided government and the policy is not modified. Without SP, there is a positive probability of a policy reversal in the second period. Therefore, SP improves welfare if the reform is expected to be beneficial. If instead rents are sufficiently large, there is no reform with SP, whereas without SP there is reform in the first period, which is preserved in the second period with some positive probability.

When voters care almost exclusively about the implemented policy, so they will elect and reelect a reformist (or conservative) independently of the extraction of rents, elections are not effective either at disciplining or selecting politicians. In this scenario, the introduction of SP is always beneficial for voters, as it brings discipline or selection, at the same time that allows to implement and keep a reform.

After this introduction, the paper proceeds as follows. We present a review of the related literature in the next section. Section 3 contains a description of the setting and some auxiliary results. We solve two games, one representing the working of institutions without separation of powers and the other one with separation of powers. In sections 4 and 5, we solve these two games, identifying their perfect Bayesian equilibria (PBE). In section 6 we compare the policy outcomes in equilibrium with and without SP. The paper ends with a few concluding remarks in section 7. We present the proofs of the propositions in the Appendix.

2 Related literature

The role of separation of powers and checks and balances as an accountability mechanism in democracies has long been recognized in the literature. The wave of democratization that took place in many developing countries in the eighties and nineties also highlighted the importance of these institutions as a complement of elections. Mainwaring and Welna (2003) and O'Donnell (1994, 1998), for example, argue that failures in the separation of powers and checks and balances greatly contributed to the

weakness of several of these new democracies.³

However, formal political agency theory did not incorporate CB until the seminal papers of Persson, Roland, et al. (1997, 2000). They embedded CB in moral hazard models of electoral accountability with retrospective voting on the lines of Austen-Smith and Banks (1989), Barro (1973), and Ferejohn (1986) (see Persson and Tabellini 2000, for a complete survey of models of political agency with retrospective voting). Stephenson and Nzelibe (2010) extend the model to include ‘Opt-in Checks’, i.e. an institutional arrangement in which the president can seek congressional authorization or act unilaterally. This relatively simple framework allowed the authors to make significant progress in our understanding of the interaction between EA and CB. Nevertheless, the pure moral hazard model has limitations for the analysis of situations in which the heterogeneity among politicians plays a prominent role in voters decisions. Furthermore, the equilibria in those models may not be robust to the introduction of heterogeneity (Besley 2005; Fearon 1999). Therefore, recent electoral accountability models that combine moral hazard and adverse selection provide a better basis to study the impact of CB on political agency. It seems fair to say that this line of research remains relatively underdeveloped today (Ashworth 2012).

In our model, SP impacts citizens welfare in two ways that are not present in Persson, Roland, et al. (1997, 2000) model: (i) a deterioration of political selection and (ii) a reduction in government ability to advance reforms. Because SP makes more difficult the extraction of observable rents by dishonest politicians, voters cannot fully separate honest from dishonest politicians. This may not matter if SP totally curb rent extraction, but it matters if there are unobservable rents. Due to this effect, SP becomes less attractive the larger the amount of unobservable rents.

The second way is related to the reduction of governance. In order to capture this effect, we assume that the reform is possible only if there is an agreement between the executive and the legislature. Otherwise, the status quo policy prevails. This modeling strategy allows us to analyze in a simple way the trade-off between the increase in control and the reduction of governance involved in the SP. Voters may not favor SP that makes more difficult or even impedes reforms that they deem beneficial. Notice however that reduced policy activism is not necessarily negative from the point of view of citizens, since it may prevent non-beneficial reforms from being adopted.⁴

Persson, Roland, et al. (1997, 2000) and Stephenson and Nzelibe (2010) treat CB as an exogenously given institution. Acemoglu et al. (2013), Aghion et al. (2004), and Forteza and Pereyra (2016) endogenize CB introducing a vote on CB, but they do not analyze electoral accountability.⁵ Aghion et al. (2004) endogenize CB introducing an initial vote over the number of citizens that is needed to ex-post

³For a critical assessment of this view see Moreno et al. (2003), who argue that CB fail when vertical accountability fails. For some empirical evidence that may feed the skeptical view on the power of CB see Hidalgo et al. (2016).

⁴Besley and Mueller (2017) show that stricter constraints on the executive are associated with less volatile investment.

⁵Robinson and Torvik (2016) argue that in developing countries, unlike in the US, presidential regimes lack checks on the executive, so the real choice is between parliamentary and unchecked presidential regimes. They then model the choice between these two regimes.

block the ruling politician’s action (be it a reform or expropriation). Their model does not have elections. Acemoglu et al. (2013) also endogenize CB through an initial vote, in this case between two discrete options. There are elections in their model, but they play no role in providing incentives to politicians. Forteza and Pereyra (2016) also present a model in which citizens vote over granting the executive special powers (thus weakening CB), but have no elections. Clearly, none of these models are designed to analyze the interaction between CB and electoral accountability.

It is commonly accepted that CB play at least two different roles, one related to the control of public officials and the other one with the protection of minorities. In its former role, CB are one of the two pillars of political accountability. They provide the “horizontal accountability” that complements the vertical accountability provided by elections.⁶ The latter role of CB consists of protecting the minorities against the “tyranny of the majority”.⁷ While these two roles are intertwined in the real world, they can analytically be separated in order to better understand how CB impact on these two different fronts. In the present paper, we focus on the agency dimension of the separation of powers and checks and balances.

We borrow the modeling of CB from Persson, Roland, et al. (1997, 2000), but unlike them we use a second generation electoral accountability model à la Besley (2005) that allows us to analyze the effect of CB on both the incentives that the incumbent politician faces and the selection of politicians.

At the center of our analysis lies the tradeoff between governance and control in democracies. In this regard, our paper is close to Aghion et al. (2004). It is also inspired in the political science literature that analyzes hyper-presidentialism and the arising of strongmen politics as responses to the belief that excessive checks on the executive have caused political gridlocks (Carrión 2006; Fukuyama 2017; Howell and Moe 2016; Kenney 2000; O’Donnell 1994; Rose-Ackerman et al. 2011).⁸

In our model, the legislature is the other branch of government that checks on the executive, and it is also an elected body. But executives are usually checked also by the judiciary. Arguably, if the control is in the judicial hands, public opinion concern for the reduced ability of the government to act due to the checks on the executive, which is at the center of our analysis, is likely to be exacerbated by

⁶The term “horizontal accountability” was introduced by O’Donnell (1998) and is not free of controversies. In particular, Moreno et al. (2003) argue that there is no accountability between two elected branches of government and rather talk about “horizontal exchange”. Mainwaring and Welna (2003) use the term “intrastate accountability”. Besley and Mueller (2018) talk about “internal” and “external” control, to refer to the control by another branch of government and citizens, respectively.

⁷This was one of the main concerns of classical advocates of the separation of powers and CB (Locke, Montesquieu, Madison, Tocqueville) and is also present in modern papers like Aghion et al. (2004, specially section IV), Buchanan (1975), Buchanan and Tullock (1962), Hayek (1960), and Maskin and Tirole (2004).

⁸Stephenson and Nzelibe (2010) however present a model in which “adding a congressional veto does not change the ex ante probability of policy change.” Using a retrospective voting logic, they argue that the direct negative effect of CB on the probability of policy change will be compensated by an indirect effect arising from citizens’ change of their reelection strategy. Knowing the new institution reduces the likelihood of policy changes, citizens accommodate their reelection strategy to undo this effect. This “surprising result”, as Stephenson and Nzelibe put it, does not arise in models that incorporate political selection, like ours, since a retrospective voting strategy would not be credible in the presence of adverse selection (see however Snyder and Ting (2008) for a model that combines retrospective voting and selection).

the non-elected nature of the controlling body.⁹

3 The setting

Consider a model of a democracy with two periods, $t = 1, 2$, in which citizens care about a position and a valence policy issue. Policy regarding the position issue can take two values $p_t \in \{0, 1\}$. Citizens preferences regarding this policy depend on the state of nature, which is uncertain and takes two values $s_t \in \{0, 1\}$. Citizen i bliss point regarding this issue is $s_t + \delta_i$, with $\delta_i \in \mathbb{R}$. Deviations of the policy from the bliss point cause utility losses proportional to the expected square deviations. Citizens utility is linear in the valence issue. For concreteness, we identify this issue with rent extraction. There are two types of rents, observable r_t and unobservable ρ_t rents, and each can take two values, zero and a positive value: $r_t \in \{0, \bar{r}\}$ and $\rho_t \in \{0, \bar{\rho}\}$. Citizen i expected utility is:

$$\begin{aligned} V_i &= v_{i,1} + \beta v_{i,2} \\ v_{i,t} &= -a\mathbb{E}_s [(p_t - s_t - \delta_i)^2] - r_t - \rho_t ; t \in \{1, 2\}, \end{aligned} \tag{1}$$

where $\beta \in [0, 1]$ is a discount factor, and $a > 0$ is a parameter that captures the weigh of the position relative to the valence issue.

Depending on their preferences regarding the position issue, citizens can be classified in three different groups: A citizens, with $\delta_A = -1$, moderate or swing citizens, with $\delta_M = 0$, and B citizens, with $\delta_B = 1$. Note that while A and B citizens prefer policies $p_t = 0$ and $p_t = 1$, respectively, no matter the state of nature, moderate citizens policy preference depends on the state of nature.¹⁰ We assume that A and B citizens together represent less than 1/2 of voters, so moderate citizens are decisive.

There is a government that can be organized in one or two bodies. In the former case, we say there is no separation of powers and this unique body chooses policies p_t , r_t and ρ_t by its own. In the latter case, there is separation of powers between the executive (X) and the legislature (L).

With separation of powers, the executive proposes $\tilde{p}_{X,t} \in \{0, 1\}$, $\tilde{r}_{X,t} \in \{0, \bar{r}\}$ and $\tilde{\rho}_{X,t} \in \{0, \bar{\rho}\}$ and the legislature proposes $\tilde{p}_{L,t} \in \{0, 1\}$ and $\tilde{r}_{L,t} \in \{0, \bar{r}\}$. The outcome is determined by a system of checks and balances between the executive and the legislature. The institutions work as follows. A policy p_t is implemented if the two branches of government agree on it. In case of disagreement, the status quo policy prevails. Therefore, unified government implies that there is no policy change. The effectiveness of the system in controlling rents depends on whether the government is divided or unified. With a divided government politicians cannot extract observable rents: $r_t = 0$. In the presence of a unified government, politicians extract observable rents only when both the executive and the legislature agree on that, in

⁹This concern, that has been labeled as the ‘‘countermajoritarian difficulty’’, is at the center of the debate about judicial review (see Almedares and Le Bihan 2015, and the references therein).

¹⁰Individuals with $\delta_i < -\frac{1}{2}$ and $\delta_i > \frac{1}{2}$ prefer $p_t = 0$ and $p_t = 1$, respectively, rather than the alternative, no matter the state of nature. We chose $\delta_A = -1$ and $\delta_B = 1$ to simplify computations.

which case each branch receives $\frac{\bar{r}}{2}$ rents. The system is not totally effective in controlling rents though, because the executive can extract unobservable rents even with divided government. Furthermore, the executive determines the amount of unobservable rents by its own. Thus, the outcome is determined as follows:¹¹

$$\begin{aligned}
1. p_t &= \begin{cases} \tilde{p}_{X,t} & \text{if } \tilde{p}_{X,t} = \tilde{p}_{L,t} \\ p_{t-1} & \text{if } \tilde{p}_{X,t} \neq \tilde{p}_{L,t} \end{cases} \\
2. r_{j,t} &= \begin{cases} \frac{\bar{r}}{2} & \text{if there is a unified government and } \tilde{r}_{X,t} = \tilde{r}_{L,t} = \bar{r} \\ 0 & \text{otherwise} \end{cases}, \\
3. \rho_t &= \tilde{\rho}_{X,t}
\end{aligned} \tag{2}$$

for $j \in \{X, L\}$.

Politicians are citizens so their preferences when they are out of office are described by equation (1). When they are in office, politicians enjoy “ego rents” —they value being in office per se— and some politicians —the dishonest ones— derive utility from extracting monetary rents. Politician j expected utility is:

$$\begin{aligned}
U_j &= u_{j,1} + \beta u_{j,2} \\
u_{j,t} &= \begin{cases} -a\mathbb{E}_s [(p_t - s_t - \delta_j)^2] + b_j(r_{X,t} + \rho_t) - r_{L,t} + E & , \text{ if } j \text{ in } X \text{ office in } t \\ -a\mathbb{E}_s [(p_t - s_t - \delta_j)^2] + b_j r_{L,t} - (r_{X,t} + \rho_t) + E & , \text{ if } j \text{ in } L \text{ office in } t \\ -a\mathbb{E}_s [(p_t - s_t - \delta_j)^2] - (r_{X,t} + r_{L,t} + \rho_t) & , \text{ if } j \text{ is out of office in } t \end{cases}
\end{aligned} \tag{3}$$

where $E > 0$ are the “ego rents”, and $b_j = b_D > 1$, if the politician is dishonest, and $b_j = -1$, if the politician is honest. If there is no separation of powers, there is no legislature so the corresponding row in equation (3) does not apply and there are no legislature’s rents.

There are two political parties, A and B , controlled by citizens with policy preferences $\delta_A = -1$ and $\delta_B = 1$, respectively. Because of the bipartisan political system, only four type of citizens can be political candidates: $j \in \{HA, DA, HB, DB\}$, where HA stands for “honest” from party A , DA for “dishonest” from party A , HB for “honest” from party B , and DB for “dishonest” from party B . As indicated above, these four types differ in the values of the parameters δ_j and b_j : $\delta_{HA} = \delta_{DA} = -1$, $\delta_{HB} = \delta_{DB} = 1$, $b_{HA} = b_{HB} = -1$ and $b_{DA} = b_{DB} = b_D > 1$. The unconditional probability that a politician is honest is q_H , and it is the same in both parties.

The timing is as follows:

¹¹For the sake of brevity, we will refer to an institutional arrangement like this as separation of powers, but it should be clear that we are always referring to separation of powers with checks and balances (see Persson, Roland, et al. 1997, for a thorough discussion of the key role of checks and balances in the presence of separation of powers).

1. Nature chooses:
 - (a) Period zero policy: $p_0 = 0$.¹²
 - (b) One candidate for each office from each political party. It does it at random, and the probability that a candidate is honest is q_H , the same for both parties and offices, and independent of other candidates.
2. At the beginning of period 1, voters elect one politician for each branch of government from the pool of candidates. They observe candidates' policy preference parameter δ_j but ignore whether they are honest, i.e. they ignore their preference parameter b_j .
3. Nature chooses period 1 state of nature s_1 . With probability q , $s_1 = 1$.
4. The executive proposes $\tilde{p}_{X,1}$, $\tilde{r}_{X,1}$ and $\tilde{\rho}_1$. He observes previous Nature's moves, including period 1 state of nature.
5. The legislature proposes $\tilde{p}_{L,1}$ and $\tilde{r}_{L,1}$. He observes the same as the executive plus the executive's move.
6. The first period outcomes are determined according to the institutional rules (2).
7. Nature chooses candidates to run as challengers for the executive and the legislature from the party that is not in office in the corresponding branch of government. Each of them is honest with probability q_H .
8. At the beginning of period 2, citizens vote again. They can reelect the incumbent or vote for the challengers. At the election time, citizens observe (i) s_1 , (ii) $\tilde{p}_{X,1}, \tilde{p}_{L,1}$, (iii) $\tilde{r}_{X,1}, \tilde{r}_{L,1}$ and (iv) whether the incumbents and challengers belong to party A or B, i.e. they observe δ_j , but do not observe (i) $\tilde{\rho}_1$ and (ii) whether the incumbents and the challengers are honest or dishonest, i.e. b_j .
9. Nature chooses period 2 state of nature s_2 .
10. The executive proposes $\tilde{p}_{X,2}$, $\tilde{r}_{X,2}$, and $\tilde{\rho}_2$. He observes previous Nature's moves, including period 2 state of nature.
11. The legislature proposes $\tilde{p}_{L,2}$ and $\tilde{r}_{L,2}$. He observes the same as the executive plus the executive's move.
12. The second period outcomes are determined according to the institutional rules (2). The game ends and payoffs are computed.

¹²For concreteness, we assume $p_0 = 0$. The analysis is symmetric if $p_0 = 1$.

4 No Separation of Powers

This is an incomplete information game because citizens do not observe whether politicians are honest or dishonest. Hence we study perfect Bayesian equilibria (PBE). We proceed by backward induction and we will also use the Cho and Kreps intuitive criterion to rule out some implausible equilibria.

We first consider the second and last period of the model, after the second election, where only the executive plays. The solution is straightforward: honest politician does not extract rents, dishonest one does it, and a conservative (reformist) politician implements $p_2 = 0$ ($p_2 = 1$).

In a second step, we find all the equilibria of the two subgames that begin after the first period executive is elected.¹³ One subgame begins when the executive is reformist, and the other when he is conservative. The executive has to choose the policy and the level of extracted rents, and voters choose between the incumbent and the challenger. In each subgame, there are FOUR three and only three equilibria. In the the fist equilibrium neither honest nor dishonest politicians extract rents. Voters cannot distinguish between these two types of politicians, so there is **discipline without political selection** in this equilibrium. In the second equilibrium, a dishonest politician extracts rents, so voters can separate honest from dishonest politicians and re-elect only the first ones. Then, there is **political selection without discipline** in this second equilibrium. In third equilibrium, citizens base their vote on the positional issue (the implemented policy), leaving aside the valence issue of rent extraction. Therefore, in this equilibrium there is **neither political selection nor discipline**.

In a third and final step, we study the whole game, that is, the game that begins with the election of the first executive. Voters have to choose between a conservative or reformist executive, knowing that one of the previous equilibria will be played. As before, the three types of equilibria arise here. In particular, we show that there are six and only six equilibrium outcomes: discipline without political selection with a reformist (conservative) executive, political selection without discipline with a reformist (conservative) executive, and neither political selection nor discipline with a reformist (conservative) executive. We compute voters' expected utility at each of these six outcomes.

4.1 Equilibria in the subgames after the first election

Policy choices in the second period are straightforward:

$$\begin{aligned}
 p_2 = 0, r_2 = 0, \rho_2 = 0, & \quad \text{if } j = HC \\
 p_2 = 0, r_2 = \bar{r}, \rho_2 = \bar{\rho}, & \quad \text{if } j = DC \\
 p_2 = 1, r_2 = 0, \rho_2 = 0, & \quad \text{if } j = HR \\
 p_2 = 1, r_2 = \bar{r}, \rho_2 = \bar{\rho}, & \quad \text{if } j = DR
 \end{aligned}$$

¹³Voters choose a conservative or a reformist candidate in the first election. They do not know whether the candidates are honest or dishonest, but since politicians have no previous moves we can think the problem as if Nature chose the incumbent's honesty after the election. Hence, two subgames start immediately after the first election.

using a vector with three components, where the first two represent observable rents extracted by the honest and dishonest politician, respectively, and the third one represents the strategy of voters.

Notice that we have not represented the decisions over non-observable rents and the policy p_1 in the extensive form, but we do consider the politicians optimal decisions in these dimensions and their effects on payoffs in the formal propositions that follow. We omitted the decision over non-observable rents in the extensive form because in our setting a dishonest politician will always extract and a honest politician will never extract non-observable rents. Similarly, politicians in our model are either conservative or reformist. Moreover, voters observe the bias of the incumbent politician so there is no reason for the politician to implement a policy different from his preferred one. The conservative will always implement $p_1 = 0$ and the reformist $p_1 = 1$. The following remarks establish these points more formally.

Remark 1. *Strategies of the honest politician that involve choosing $\bar{\rho}$ and of the dishonest politician that involve choosing $\rho = 0$ are dominated.*

Remark 2. *Strategies of the conservative politician that involve choosing $p_1 = 1$ and of the reformist politician that involve choosing $p_1 = 0$ are dominated.*

Remark 3. *At equilibrium, first period choices are:*

$$\begin{aligned} p_1 = 0, \rho_1 = 0, & \quad \text{if } j = HC \\ p_1 = 0, \rho_1 = \bar{\rho}, & \quad \text{if } j = DC \\ p_1 = 1, \rho_1 = 0, & \quad \text{if } j = HR \\ p_1 = 1, \rho_1 = \bar{\rho}, & \quad \text{if } j = DR \end{aligned}$$

Let $\Delta v(j, r)$ be voters expected utility gains from **not** reelecting an incumbent belonging to party $j \in \{C, R\}$ who chose rents $r_1 \in \{0, \bar{r}\}$ in the first period. Let $\Delta u(j)$ be a dishonest politician j 's expected utility gains from extracting observable rents in the first period $r_1 = \bar{r}$.¹⁴

In the next proposition we study a pooling equilibrium in which neither the honest nor the dishonest incumbent extracts observable rents in the first period, so they discipline. Voters cannot distinguish so there is no political selection.

Proposition 1. *Discipline, but no political selection.*

1. *Suppose the reformist candidate wins the first election. The strategy profile $(0, 0, RN)$ and citizens beliefs $\text{Prob}(H|r_1 = 0, R) = q_H$ and $P(H|\bar{r}, R) \leq q_H$ conform a PBE of the subgame that begins*

¹⁴While $\Delta v(j, r)$ and $\Delta u(j)$ will adopt different expressions in different equilibria, we chose not to explicitly indicate the equilibria to simplify notation. Readers should thus keep in mind that these expressions are context specific.

after the election iff:

$$\Delta v(R, 0) = a(1 - 2q) \leq 0, \quad (4)$$

$$\Delta v(R, \bar{r}) = a(1 - 2q) + (q_H - P(H|\bar{r}, R))(\bar{r} + \bar{\rho}) \geq 0, \text{ and} \quad (5)$$

$$\Delta u(R) = \bar{r} - \beta[a(2q + 1) + (b_D + 1 - q_H)(\bar{r} + \bar{\rho}) + E] \leq 0. \quad (6)$$

2. Suppose the conservative candidate wins the first election. The strategy profile $(0, 0, RN)$ and citizens beliefs $\text{Prob}(H|r_1 = 0, C) = q_H$ and $P(H|\bar{r}, C) \leq q_H$ conform a PBE of the subgame that begins after the election iff:

$$\Delta v(C, 0) = a(2q - 1) \leq 0, \quad (7)$$

$$\Delta v(C, \bar{r}) = a(2q - 1) + (q_H - P(H|\bar{r}, C))(\bar{r} + \bar{\rho}) \geq 0, \text{ and} \quad (8)$$

$$\Delta u(C) = \bar{r} - \beta[a(3 - 2q) + (b_D + 1 - q_H)(\bar{r} + \bar{\rho}) + E] \leq 0. \quad (9)$$

Moreover, these are the only equilibria in which both types of politicians play the same action in terms of rent extraction. We call them the pooling equilibria.¹⁵

In these equilibria, both honest and dishonest politicians abstain from extracting observable rents in the first period. Voters reelect if observable rents are zero and vote for the challenger otherwise. Voters cannot separate honest from dishonest politicians, because both types do the same. Hence, electoral accountability (EA) disciplines dishonest politicians, but fails to select honest ones, because voters cannot separate honest from dishonest politicians.

Dishonest politicians expected net gains from extracting rents in the first period are not positive in this equilibrium (inequalities (6) and (9)). They do not extract rents because they value benefits from reelection more than current rents. There are four gains from being reelected: (i) setting the preferred policy, (ii) extracting rents, (iii) not suffering rent extraction as a citizen, and (iv) enjoying the “ego rents” in the second period. The expected utility gains from setting the desired policy in the second period are $a(2q + 1)$ and $a(3 - 2q)$ for reformist and conservative politicians, respectively. The expected rent gains from being reelected are $(b_D + 1 - q_H)(\bar{r} + \bar{\rho})$. The dishonest incumbent obtains utility $b_D(\bar{r} + \bar{\rho})$ from the rents he extracts, and $(1 - q_H)(\bar{r} + \bar{\rho})$ from the rents he avoids to pay as a citizen in the second period thanks to reelection.¹⁶

In this equilibrium, voters reelect the incumbent if, and only if, he did not extract observable rents. The implicit threat in this strategy is credible because voters expected net gains from voting for the

¹⁵Although the profile (\bar{r}, \bar{r}, NR) is a PBE for some values of the parameters, as we show in Proposition 4, it does not survive the intuitive criterion of Cho and Kreps (1987).

¹⁶In this equilibrium, the dishonest politician abstains from extracting observable rents, no matter the amount of these rents, if $1 \leq \beta(2 - q_H)$. But this condition is quite special and depends on the simplifying assumption that observable rents are non stochastic and are the same in both periods.

challenger are not positive if the incumbent did not extract rents (inequalities (4) and (7)) and not negative if he did (inequalities (5) and (8)).

A vote for the challenger impacts on second period policy p_2 and rents $(r_2 + \rho_2)$, so voters net gains from voting for the challenger have two components. If the first period incumbent is reformist, a vote for the challenger implies that policy $p_2 = 0$ rather than $p_2 = 1$ will be implemented and voters expected net policy gains are $a(1 - 2q)$. If the first period incumbent is conservative, a vote for the challenger implies that policy $p_2 = 1$ rather than $p_2 = 0$ will be implemented and voters expected net gains are $a(2q - 1)$. In turn, voters' net gains from voting for the challenger due to lower expected rents in the second period are $(q_H - P(H|r_1, j))(\bar{r} + \bar{\rho})$, where q_H is the probability that the challenger is honest and $P(H|r_1, j)$ is the probability that the incumbent is honest, conditional on having chosen r_1 in the first period. In this pooling equilibrium, voters' belief about the incumbent's honesty, conditional on having observed no rents, is the same as the unconditional probability that the challenger is honest $Prob(H|r_1 = 0, j) = q_H$. Therefore, if the incumbent extracted no rents, voters expected net gains from voting for the challenger depend only on the policy change (inequalities (4) and (7)). In this equilibrium, voters have no "solid" basis to update their belief about the incumbent's honesty after observing positive rents.¹⁷ We simply note that only if $Prob(H|\bar{r}, j) < q_H$ can the threat of not reelecting an incumbent who extracted rents be credible.¹⁸

In the following proposition we study an equilibrium in which dishonest politicians extract observable rents in the first period—they do not discipline—, and voters do not reelect an incumbent who extracted rents—there is political selection—.

Proposition 2. *No discipline and political selection.*

1. *Suppose the reformist candidate wins the first election. The strategy profile $(0, \bar{r}, RN)$ and citizens beliefs $Prob(H|r_1 = 0, R) = 1$ and $P(H|\bar{r}, R) = 0$ conform a PBE of the subgame that begins after the election iff:*

$$\Delta v(R, 0) = a(1 - 2q) + (q_H - 1)(\bar{r} + \bar{\rho}) \leq 0, \quad (10)$$

$$\Delta v(R, \bar{r}) = a(1 - 2q) + q_H(\bar{r} + \bar{\rho}) \geq 0, \text{ and} \quad (11)$$

$$\Delta u(R) = \bar{r} - \beta[a(2q + 1) + (b_D + 1 - q_H)(\bar{r} + \bar{\rho}) + E] \geq 0. \quad (12)$$

2. *Suppose the conservative candidate wins the first election. The strategy profile $(0, \bar{r}, RN)$ and citizens beliefs $Prob(H|r_1 = 0, C) = 1$ and $P(H|\bar{r}, C) = 0$ conform a PBE of the subgame that*

¹⁷By no "solid" basis we mean that voters cannot use Bayes to update their beliefs because $r_1 = \bar{r}$ is out of the equilibrium path.

¹⁸This necessary condition follows from inequalities (4) and (5), if the first period incumbent is reformist, and (7) and (8), if he is conservative.

begins after the election iff:

$$\Delta v(C, 0) = a(2q - 1) + (q_H - 1)(\bar{r} + \bar{\rho}) \leq 0, \quad (13)$$

$$\Delta v(C, \bar{r}) = a(2q - 1) + q_H(\bar{r} + \bar{\rho}) \geq 0, \text{ and} \quad (14)$$

$$\Delta u(C) = \bar{r} - \beta[a(3 - 2q) + (2 - q_H)(\bar{r} + \bar{\rho}) + E] \geq 0. \quad (15)$$

In these equilibria, dishonest politicians expected net gains from extracting rents in the first period are not negative (inequalities (12) and (15)). Even when voters do not reelect them after extracting rents, they do it because they value first period rents more than second period benefits from being reelected.

Voters reelect the incumbent if, and only if, he did not extract observable rents. The implicit threat in this strategy is credible because voters expected net gains from voting for the challenger are not positive if the incumbent did not extract rents (inequalities (10) and (13)) and not negative if he did (inequalities (11) and (14)). As before, voters' net gains from voting for the challenger due to lower expected rents in the second period are $(q_H - P(H|r_1, j))(\bar{r} + \bar{\rho})$, but in this separating equilibrium, unlike in the previous pooling equilibrium, $P(H|r_1 = 0, j) = 1$ and $P(H|r_1 = \bar{r}, j) = 0$.

Proposition 3 presents the case of equilibria in which elections fail to both discipline and select out dishonest politicians.

Proposition 3. *Neither discipline nor political selection.*

1. *Suppose the reformist candidate wins the first election. The strategy profile $(0, \bar{r}, NN)$ and citizens beliefs $\text{Prob}(H|r_1 = 0, R) = 1$ and $P(H|\bar{r}, R) = 0$ conform a PBE of the subgame that begins after the election iff:*

$$\Delta v(R, 0) = a(1 - 2q) + (q_H - 1)(\bar{r} + \bar{\rho}) \geq 0, \quad (16)$$

2. *Suppose the conservative candidate wins the first election. The strategy profile $(0, \bar{r}, NN)$ and citizens beliefs $\text{Prob}(H|r_1 = 0, C) = 1$ and $P(H|\bar{r}, C) = 0$ conform a PBE of the subgame that begins after the election iff:*

$$\Delta v(C, 0) = a(2q - 1) + (q_H - 1)(\bar{r} + \bar{\rho}) \geq 0. \quad (17)$$

3. *Suppose the reformist candidate wins the first election. The strategy profile $(0, \bar{r}, RR)$ and citizens beliefs $\text{Prob}(H|r_1 = 0, R) = 1$ and $P(H|\bar{r}, R) = 0$ conform a PBE of the subgame that begins after the election iff:*

$$\Delta v(R, \bar{r}) = a(1 - 2q) + q_H(\bar{r} + \bar{\rho}) \leq 0, \quad (18)$$

4. Suppose the conservative candidate wins the first election. The strategy profile $(0, \bar{r}, RR)$ and citizens beliefs $Prob(H|r_1 = 0, C) = 1$ and $P(H|\bar{r}, C) = 0$ conform a PBE of the subgame that begins after the election iff:

$$\Delta v(C, \bar{r}) = a(2q - 1) + q_H(\bar{r} + \bar{\rho}) \leq 0. \quad (19)$$

In the equilibria presented in proposition 3, voters either never or always reelect regardless of rent extraction. Therefore, there is no political selection, even when dishonest incumbents reveal their type. Politicians have no incentives to discipline because their reelection prospects do not hinge on their behavior.

Voters never reelect in the first equilibrium in proposition 3 because their expected gains from voting for the challenger are not negative even if the incumbent extracted no rents, which in this equilibrium means that he revealed he is honest ($Prob(H|0, j) = 1$). Conversely, voters always reelect in the second equilibrium because their expected gains from voting for the challenger are not positive even if the incumbent extracted rents, revealing he is dishonest ($Prob(H|\bar{r}, j) = 0$).

Our results in proposition 3 depart from more standard electoral accountability models in which voters do not reelect if, and only if, they conclude that the incumbent is more likely to be dissonant than the challenger. The reason for this departure that weakens electoral accountability is that in these equilibria citizens base their vote on the positional issue, putting little weight on the valence issue of rent extraction. This result is not entirely new, however, and is reminiscent of retrospective probabilistic voting models in which random ideological preferences for candidates undermine electoral accountability (Persson and Tabellini 2000; Polo 1998) and, more closely, of Besley's model of electoral accountability with polarization (Besley 2005).

The following two propositions establish that the four equilibria identified in propositions 1 to 3 exhaust the possibilities in these subgames.

Proposition 4. *The profile (\bar{r}, \bar{r}, NR) is a PBE that does not survive the intuitive criterion of Cho and Kreps (1987)*

Proposition 5. *The subgames that begin after the first election have no other equilibria than those described in propositions 1, 2, 3 and 4.*

While we have identified several equilibria, there is no multiplicity of pure strategies equilibria in the subgames that follow the first election. We found different equilibria for different sets of parameter values, but we show in proposition 6 that, for each set of parameter values, there is one and only one equilibrium that survives the intuitive criterion.

Proposition 6. *The equilibria identified in propositions 1, 2, and 3 are unique.*

4.2 Equilibria in the whole game

A strategy profile of the complete game includes voters' choice in the first election and the strategy profiles of the ensuing subgames. Let $V_A \in \{R, C\}$ denote decisive voters choice in the first election and σ_R and σ_C be strategy profiles of the subgames that follow the election of a reformist and a conservative politician in the first election, respectively. Then a strategy profile of the game is a vector $(V_A, \sigma_R, \sigma_C)$. For example, $(R, 00RN, 0\bar{r}RN)$ is a strategy profile in which (i) voters choose a reformist politician in the first election (R), (ii) in the subgame that begins after voters elect a reformist politician in the first election both the honest and dishonest incumbents extract no rents (00) and voters reelect if rents are zero and do not reelect otherwise (RN), and (iii) in the subgame that begins after voters elect a conservative politician the honest incumbent extracts no rents, the dishonest one extracts \bar{r} and voters reelect if rents are zero and do not reelect otherwise.

The electoral accountability game presents three type of equilibria. There are pooling equilibria in which the second term election disciplines politicians but fails to select out dishonest incumbents. There are separating equilibria in which the election fails to discipline politicians but works well in terms of selection. There are also separating equilibria such that the second term election fails to both discipline and select good politicians. In each type there are equilibria in which a reform is implemented and equilibria in which the status quo prevails. This is not a case of multiple equilibria for a given set of parameter values, but of different equilibria for different configurations of parameters.

Proposition 7. *Discipline and no selection.*

1. *The strategy profile $(R, 00RN, 0\bar{r}NN)$, and beliefs $Prob(H|0, R) = q_H$ and $Prob(H|\bar{r}, R) \leq q_H$, with a reformist, and $Prob(H|0, C) = 1$ and $Prob(H|\bar{r}, C) = 0$, with a conservative in office in the first period, conform a PBE of the electoral accountability game iff:*

$$a(2q - 1) \in [(1 - q_H)(\bar{r} + \bar{\rho}), (q_H - Prob(H|\bar{r}, R))(\bar{r} + \bar{\rho})] , \text{ and} \quad (20)$$

$$\bar{r}[1 - \beta(2 - q_H)] \leq \beta[a(2q + 1) + (2 - q_H)\bar{\rho} + E]. \quad (21)$$

2. *The strategy profile $(C, 0\bar{r}NN, 00RN)$, and beliefs $Prob(H|0, R) = 1$ and $Prob(H|\bar{r}, R) = 0$, with a reformist, and $Prob(H|0, C) = q_H$ and $Prob(H|\bar{r}, C) \leq q_H$, with a conservative in office in the first period, conform a PBE of the electoral accountability game iff:*

$$a(1 - 2q) \in [(1 - q_H)(\bar{r} + \bar{\rho}), (q_H - Prob(H|\bar{r}, R))(\bar{r} + \bar{\rho})] , \text{ and} \quad (22)$$

$$\bar{r}[1 - \beta(2 - q_H)] \leq \beta[a(3 - 2q) + (2 - q_H)\bar{\rho} + E]. \quad (23)$$

3. *The strategy profile $(R, 00RN, 0\bar{r}RN)$, and beliefs $Prob(H|0, R) = q_H$ and $Prob(H|\bar{r}, R) \leq q_H$, with a reformist, and $Prob(H|0, C) = 1$ and $Prob(H|\bar{r}, C) = 0$, with a conservative in office in*

the first period, conform a PBE of the electoral accountability game iff:

$$a(2q - 1) \in [0, \min\{1 - q_H, q_H - \text{Prob}(H|\bar{r}, R)\}(\bar{r} + \bar{\rho})], \quad (24)$$

$$\bar{r}[1 - \beta(2 - q_H)] \in [\beta[a(3 - 2q) + (2 - q_H)\bar{\rho} + E], \beta[a(2q + 1) + (2 - q_H)\bar{\rho} + E]], \text{ and} \quad (25)$$

$$0 \leq a(2q - 1) + (1 - q_H)\bar{r} + \beta[q_H a(2q - 1) - (1 - q_H)q_H(\bar{r} + \bar{\rho})]. \quad (26)$$

4. The strategy profile $(C, 0\bar{r}RN, 00RN)$, and beliefs $\text{Prob}(H|0, R) = 1$ and $\text{Prob}(H|\bar{r}, R) = 0$, with a reformist, and $\text{Prob}(H|0, C) = q_H$ and $\text{Prob}(H|\bar{r}, C) \leq q_H$, with a conservative in office in the first period, conform a PBE of the electoral accountability game iff:

$$a(1 - 2q) \in [0, \min\{1 - q_H, q_H - \text{Prob}(H|\bar{r}, R)\}(\bar{r} + \bar{\rho})], \quad (27)$$

$$\bar{r}[1 - \beta(2 - q_H)] \in [\beta[a(2q + 1) + (2 - q_H)\bar{\rho} + E], \beta[a(3 - 2q) + (2 - q_H)\bar{\rho} + E]], \text{ and} \quad (28)$$

$$0 \leq a(1 - 2q) + (1 - q_H)\bar{r} + \beta[q_H a(1 - 2q) - (1 - q_H)q_H(\bar{r} + \bar{\rho})]. \quad (29)$$

In all these equilibria the strategy profile that is played after the first election is $(00RN)$, i.e. the winner of the first election does not extract rents and voters reelect if, and only if, the incumbent did not extract rents. The discipline device is the threat of not reelecting the incumbent if, and only if, he extracted rents. Dishonest politicians discipline under this threat because the first period utility gains from rents are smaller than the expected utility losses from not being reelected (conditions (6) and (9), if the incumbent is reformist and conservative respectively). Voters do not reelect an incumbent who extracted rents —the “if” part of the threat— because their expected net gains of reelecting an incumbent who extracted rents are lower than or equal to zero (conditions (5) and (8)). Voters reelect an incumbent who did not extract rents —the “only if” part of voters’ threat— because their expected net gains of reelecting an incumbent who did not extract rents are larger than or equal to zero. Since in this equilibria voters learn nothing about the incumbent’s honesty after observing that he did not extract rents, their expected net gains of reelecting depend only on the probability that the policy favored by each party is more or less likely to match the state of nature (conditions (4) and (7)).

Voters choice in the first election depends not only on the expected outcome with the winner but also with the loser. Voters anticipate that if they voted for the other party —the one that turns out to be the loser— the strategy profiles played on equilibrium after the first election would be $(0\bar{r}NN)$ or $(0\bar{r}RN)$, depending on parameter values. They thus compute the expected utility with each option and make their decision.

Proposition 8. *No discipline and political selection.*

1. The strategy profile $(R, 0\bar{r}RN, 00RN)$, and beliefs $\text{Prob}(H|0, R) = 1$ and $\text{Prob}(H|\bar{r}, R) = 0$, with a reformist, and $\text{Prob}(H|0, C) = q_H$ and $\text{Prob}(H|\bar{r}, C) \leq q_H$, with a conservative in office in the

first period, conform a PBE of the electoral accountability game iff:

$$a(1 - 2q) \in [0, \min\{1 - q_H, q_H - \text{Prob}(H|\bar{r}, R)\}(\bar{r} + \bar{\rho})], \quad (30)$$

$$\bar{r}[1 - \beta(2 - q_H)] \in [\beta[a(2q + 1) + (2 - q_H)\bar{\rho} + E], \beta[a(3 - 2q) + (2 - q_H)\bar{\rho} + E]], \text{ and} \quad (31)$$

$$0 \geq a(1 - 2q) + (1 - q_H)\bar{r} + \beta[q_H a(1 - 2q) - (1 - q_H)q_H(\bar{r} + \bar{\rho})]. \quad (32)$$

2. The strategy profile $(C, 00RN, 0\bar{r}RN)$, and beliefs $\text{Prob}(H|0, R) = q_H$ and $\text{Prob}(H|\bar{r}, R) \leq q_H$, with a reformist, and $\text{Prob}(H|0, C) = 1$ and $\text{Prob}(H|\bar{r}, C) = 0$, with a conservative in office in the first period, conform a PBE of the electoral accountability game iff:

$$a(2q - 1) \in [0, \min\{1 - q_H, q_H - \text{Prob}(H|\bar{r}, R)\}(\bar{r} + \bar{\rho})], \quad (33)$$

$$\bar{r}[1 - \beta(2 - q_H)] \in [\beta[a(3 - 2q) + (2 - q_H)\bar{\rho} + E], \beta[a(2q + 1) + (2 - q_H)\bar{\rho} + E]], \text{ and} \quad (34)$$

$$0 \geq a(2q - 1) + (1 - q_H)\bar{r} + \beta[q_H a(2q - 1) - (1 - q_H)q_H(\bar{r} + \bar{\rho})]. \quad (35)$$

3. The strategy profile $(R, 0\bar{r}RN, 0\bar{r}NN)$, and beliefs $\text{Prob}(H|0, R) = 1$ and $\text{Prob}(H|\bar{r}, R) = 0$, with a reformist, and $\text{Prob}(H|0, C) = 1$ and $\text{Prob}(H|\bar{r}, C) = 0$, with a conservative in office in the first period, conform a PBE of the electoral accountability game iff:

$$a(2q - 1) \in [(1 - q_H)(\bar{r} + \bar{\rho}), q_H(\bar{r} + \bar{\rho})], \quad (36)$$

$$\bar{r}[1 - \beta(2 - q_H)] \geq \beta[a(2q + 1) + (2 - q_H)\bar{\rho} + E]. \quad (37)$$

4. The strategy profile $(C, 0\bar{r}NN, 0\bar{r}RN)$, and beliefs $\text{Prob}(H|0, R) = 1$ and $\text{Prob}(H|\bar{r}, R) = 0$, with a reformist, and $\text{Prob}(H|0, C) = 1$ and $\text{Prob}(H|\bar{r}, C) = 0$, with a conservative in office in the first period, conform a PBE of the electoral accountability game iff:

$$a(1 - 2q) \in [(1 - q_H)(\bar{r} + \bar{\rho}), q_H(\bar{r} + \bar{\rho})], \text{ and} \quad (38)$$

$$\bar{r}[1 - \beta(2 - q_H)] \geq \beta[a(3 - 2q) + (2 - q_H)\bar{\rho} + E]. \quad (39)$$

5. The strategy profile $(R, 0\bar{r}RN, 0\bar{r}RN)$, and beliefs $\text{Prob}(H|0, R) = 1$ and $\text{Prob}(H|\bar{r}, R) = 0$, with a reformist, and $\text{Prob}(H|0, C) = 1$ and $\text{Prob}(H|\bar{r}, C) = 0$, with a conservative in office in the first period, conform a PBE of the electoral accountability game iff:

$$a(2q - 1) \in [-\min\{q_H, 1 - q_H\}(\bar{r} + \bar{\rho}), \min\{q_H, 1 - q_H\}(\bar{r} + \bar{\rho})], \quad (40)$$

$$\bar{r}[1 - \beta(2 - q_H)] \geq \beta[a(2q + 1) + (2 - q_H)\bar{\rho} + E], \text{ and} \quad (41)$$

$$a(2q - 1) \geq 0. \quad (42)$$

6. The strategy profile $(C, 0\bar{r}RN, 0\bar{r}RN)$, and beliefs $\text{Prob}(H|0, R) = 1$ and $\text{Prob}(H|\bar{r}, R) = 0$, with a reformist, and $\text{Prob}(H|0, C) = 1$ and $\text{Prob}(H|\bar{r}, C) = 0$, with a conservative in office in the first

period, conform a PBE of the electoral accountability game iff:

$$a(1 - 2q) \in [-\min\{q_H, 1 - q_H\}(\bar{r} + \bar{\rho}), \min\{q_H, 1 - q_H\}(\bar{r} + \bar{\rho})], \quad (43)$$

$$\bar{r}[1 - \beta(2 - q_H)] \geq \beta[a(2q + 1) + (2 - q_H)\bar{\rho} + E], \text{ and} \quad (44)$$

$$a(1 - 2q) \geq 0. \quad (45)$$

In all these equilibria the strategy profile that is played after the first election is $(0\bar{r}RN)$, i.e. the winner of the first election extracts rents if he is dishonest and voters reelect the incumbent if, and only if, he did not extract rents. Even though the voters threat is credible ((10) and (13) hold), the first period incumbent does not discipline because first period rents are too tempting compared to the expected gains from being reelected ((11) and (14)). The fact that dishonest incumbents reveal their type and are not reelected means that, in these equilibria, voters select dishonest politicians out.

In the strategy profiles $(R, 0\bar{r}RN, 00RN)$ and $(C, 00RN, 0\bar{r}RN)$ one candidate is disciplined and the other not, and yet voters elect the candidate that is not disciplined. The winner is reformist if voters expected gains from reform outweigh their expected losses from rent extraction. Conversely, the winner is conservative if voters expected gains from the status quo policy outweigh their expected losses from rent extraction. In these cases, the positional issue is weakening electoral accountability.

Voters face no tradeoff in the strategy profiles $(R, 0\bar{r}RN, 0\bar{r}NN)$ and $(C, 0\bar{r}NN, 0\bar{r}RN)$. They know that neither the reformist nor the conservative candidates will be disciplined, so the choice between the two candidates hinges entirely on the positional issue. The reformist candidate provides a better matching of policies with the state of nature in the first and the conservative in the second case.

In the strategy profiles $(R, 0\bar{r}RN, 0\bar{r}RN)$ and $(C, 0\bar{r}RN, 0\bar{r}RN)$, no candidate is disciplined, so voters base their choice on the positional issue. If the probability that the state of nature is 1 is $q \geq 1/2$ the reformist wins, because the policy he implements ($p_1 = 1$) turns out to be the preferred one most of the time. Otherwise the conservative candidate wins.

Proposition 9. *Neither discipline nor political selection.*

1. *The strategy profile $(R, 0\bar{r}RR, 0\bar{r}NN)$, and beliefs $Prob(H|0, R) = 1$ and $Prob(H|\bar{r}, R) = 0$, with a reformist, and $Prob(H|0, C) = 1$ and $Prob(H|\bar{r}, C) = 0$, with a conservative in office in the first period, conform a PBE of the electoral accountability game iff:*

$$a(2q - 1) \geq \max\{1 - q_H, q_H\}(\bar{r} + \bar{\rho}), \quad (46)$$

2. *The strategy profile $(C, 0\bar{r}NN, 0\bar{r}RR)$, and beliefs $Prob(H|0, R) = 1$ and $Prob(H|\bar{r}, R) = 0$, with a reformist, and $Prob(H|0, C) = 1$ and $Prob(H|\bar{r}, C) = 0$, with a conservative in office in the first period, conform a PBE of the electoral accountability game iff:*

$$a(1 - 2q) \geq \max\{1 - q_H, q_H\}(\bar{r} + \bar{\rho}), \quad (47)$$

3. The strategy profile $(R, 0\bar{r}RR, 0\bar{r}RN)$, and beliefs $Prob(H|0, R) = 1$ and $Prob(H|\bar{r}, R) = 0$, with a reformist, and $Prob(H|0, C) = 1$ and $Prob(H|\bar{r}, C) = 0$, with a conservative in office in the first period, conform a PBE of the electoral accountability game iff:

$$a(2q - 1) \in [q_H(\bar{r} + \bar{\rho}), (1 - q_H)(\bar{r} + \bar{\rho})], \text{ and} \quad (48)$$

$$\bar{r}[1 - \beta(2 - q_H)] \geq \beta[a(3 - 2q) + (2 - q_H)\bar{\rho} + E]. \quad (49)$$

4. The strategy profile $(C, 0\bar{r}RN, 0\bar{r}RR)$, and beliefs $Prob(H|0, R) = 1$ and $Prob(H|\bar{r}, R) = 0$, with a reformist, and $Prob(H|0, C) = 1$ and $Prob(H|\bar{r}, C) = 0$, with a conservative in office in the first period, conform a PBE of the electoral accountability game iff:

$$a(1 - 2q) \in [q_H(\bar{r} + \bar{\rho}), (1 - q_H)(\bar{r} + \bar{\rho})], \text{ and} \quad (50)$$

$$\bar{r}[1 - \beta(2 - q_H)] \geq \beta[a(1 - 2q) + (2 - q_H)\bar{\rho} + E]. \quad (51)$$

In all these equilibria the strategy profile that is played after the first election is $(0\bar{r}RR)$, i.e. the winner of the first election extracts rents if he is dishonest and voters reelect the incumbent regardless of rent extraction. Voters do not credibly threat politicians with not reelecting an incumbent who reveals as dishonest, so dishonest politicians have no incentives to discipline. Voters have a sufficiently strong preference for the policy p of a particular candidate so that they vote for this candidate in both elections even if in the first period he extracted rents. Because voters always reelect, there is no political selection in this equilibria even when the type of the first period incumbent is revealed.

The strategy profiles that would be played if the candidate that loses were elected also fail to discipline dishonest politicians, so voters base their choice on the positional issue. In the strategy profiles $(R, 0\bar{r}RR, 0\bar{r}NN)$ and $(C, 0\bar{r}NN, 0\bar{r}RR)$, voters would never reelect one of the candidates because they strongly disagree with the policy this candidate implements. For the same reason, this candidate cannot win the first election. In the strategy profiles $(R, 0\bar{r}RR, 0\bar{r}RN)$ and $(C, 0\bar{r}RN, 0\bar{r}RR)$, voters disagreement with the loser is not so strong and they would reelect him if he proved honest, but their agreement with the winner is even stronger.

The following proposition establishes that the equilibria described above exhaust the possibilities.

Proposition 10. *There are no other equilibria than those described in propositions 7 to 9.*

5 Separation of powers

With separation of powers, voters can choose different parties for the executive and the legislative offices to control rent extraction. Nevertheless, if potential observable rents are sufficiently small, electoral accountability works well and voters do not need to appeal to a divided government in the first period

to discipline the incumbent politicians. With small rents, voters can elect a unified government in the first period and yet there will be no extraction of observable rents. In the second period, voters appeal to a divided government to control rents. The swing voter will prefer a party B unified government if he benefits from the reform ($q \geq 1/2$), and will be indifferent between a party A unified and a divided government otherwise. Proposition 11 formalizes these results.

Proposition 11. *Small rents and no reform dilemma.*

Suppose that

$$\bar{r} \leq r^* \equiv \frac{2\beta}{b_D - 1} [\bar{\rho}(1 - q_H + b_D) + E]. \quad (52)$$

Then,

1. if $q \geq 1/2$, there is a PBE in which voters elect a party B unified government in the first period and reelect the executive but not the legislature in the second period, so that a reform is implemented in period 1, i.e. $p_0 \neq p_1 = p_2 = 1$. There are no observable rents in equilibrium $r_1 = r_2 = 0$ and, with probability $1 - q_H$, the executive extracts unobservable rents in both periods $\rho_1 = \rho_2 = \bar{\rho}$.
2. If $q \leq 1/2$, there is a PBE in which voters are indifferent between electing a party A unified government in the first period and a divided government (AB or BA) in the second period and electing a divided government in both periods (AB or BA). There is no reform, i.e. $p_0 = p_1 = p_2 = 0$, and there are no observable rents in equilibrium $r_1 = r_2 = 0$ and, with probability $1 - q_H$, the executive extracts unobservable rents in both periods $\rho_1 = \rho_2 = \bar{\rho}$.

Inequality (52) is required for a dishonest first period incumbent in the executive office to abstain from extracting rents. First period gains from rent extraction are $(b_D - 1)\bar{r}/2$. With separation of powers, the executive has to share rents with the legislature and, for simplicity, we assumed they distribute rents evenly so each get $\bar{r}/2$. The executive values his own rents $b_D\bar{r}/2$ and the legislature rents $-\bar{r}/2$. The incumbent executive can choose not to extract rents in order to be reelected. The dishonest executive expected second period utility if he is reelected is $\beta[\bar{\rho}(1 - q_H + b_D) + E]$. He obtains $b_D\bar{\rho}$ from the unobservable rents he will extract in the second period. He also gains from not having to pay the rents that, with probability $1 - q_H$, the challenger would have extracted if he had been elected. The utility of being reelected includes of course the second period ego rents E .

Note that the expected second period gains from reelection do not involve terms in \bar{r} and a . Electoral accountability does no longer work as an incentive device in the last term in office, so voters choose a divided government to block the extraction of observable rents. With a divided government there are neither observable rents ($r_2 = 0$) nor reform in the second period ($p_2 = p_1$).

If $q \geq 1/2$, voters choose a unified party B government in order to get the reform passed in the first period ($p_1 = 1 \neq p_0$). Electoral accountability works well, so there will be no extraction of observable

rents in the first period in equilibrium even if both branches of government are occupied by dishonest politicians belonging to the same party. In the second period, the preferred policy continues being $p = 1$, but voters no longer need a unified government to keep this policy in place, because this is now the status quo policy so even with a divided government this policy will be implemented. Besides, the divided government has the advantage of blocking the extraction of observable rents even in the last term when electoral accountability fails.

If $q \leq 1/2$, there are several equilibria with basically the same outcomes: no reform, no extraction of observable rents and extraction of unobservable rents with probability $(1 - q_H)$ in both periods. Voters can obtain these outcomes electing a party A unified government in the first period and a divided government in the second or choosing a divided government from the first period.

In the equilibria presented in proposition 11 citizens are not able to separate honest from dishonest politicians, so political selection does not work. It is because incentives work correctly that honest and dishonest first period incumbents are indistinguishable for voters. This is the well known tradeoff between incentives and selection in electoral accountability.

In these equilibria voters face no tradeoff regarding delegation and control. They can get the reform passed choosing a unified government in the first period, and yet have dishonest politicians disciplined through electoral accountability.

If potential observable rents are large enough ($\bar{r} \geq r^*$), electoral accountability does not provide sufficient incentives for the incumbents to abstain from extracting rents. Hence, with this level of potential rents, there will be extraction of observable rents if voters choose a unified government and the incumbent politicians turn out to be dishonest. Nevertheless, voters will prefer a unified government if rents are not too large ($\bar{r} \leq r^{**}$). There are two reasons for this choice. First, the extraction of observable rents that comes with a unified government with this intermediate level of rents allows citizens to identify a dishonest incumbent and do not reelect him. So the quality of the second period incumbent is improved. Second, if $q \geq 1/2$, voters will benefit from a reform that only a party B unified government will provide. Proposition 12 formalizes these results.

Proposition 12. *Intermediate rents and unified government.*

If $q \geq 1/2$ and

$$\begin{aligned} \bar{r} &\in [r^*, r^{**}] & (53) \\ r^{**} &\equiv \beta \bar{\rho} q_H + \frac{(1 + \beta)a(2q - 1)}{(1 - q_H)^2}, \end{aligned}$$

then there is a PBE in which citizens choose in the first election a party B unified government so the policy is $p_1 = 1$. In the first period, politicians extract observable rents \bar{r} with probability $(1 - q_H)^2$ and unobservable rents $\bar{\rho}$ with probability $(1 - q_H)$. Voters choose a divided government in the second

election, reelecting the president iff he proposed no rents. There is no reform $p_2 = p_1$ and politicians do not extract observable rents in this period: $r_2 = 0$. The executive extracts unobservable rents \bar{p} in the second period with probability $(1 - q_H)q_H + (1 - q_H)^3$.

The condition $\bar{r} \geq r^*$ in (53) is the converse of inequality (52). It says that the expected gains from reelection are not strong enough to induce dishonest incumbents to abstain from extracting observable rents. So the first period incumbents extract observable rents if they are both dishonest politicians and belong to the same party.

The condition $\bar{r} \leq r^{**}$ in (53) is needed for voters to be willing to choose a unified government despite of the risk that dishonest politicians extract rents. In order to interpret this condition, it is convenient to reorganize it as follows:

$$(1 - q_H)^2 \bar{r} \leq \beta(1 - q_H)^2 q_H \bar{p} + (1 + \beta)a(2q - 1) \quad (54)$$

The left hand side of this inequality represents voters expected losses associated to choosing a unified government rather than a divided government. With this choice, voters suffer losses \bar{r} if both incumbents turn out to be dishonest, something that occurs with probability $(1 - q_H)^2$. Voters could avoid these losses choosing a divided government in the first election. The right hand side of inequality (54) represents the expected gains from choosing a unified rather than a divided government. There are two type of gains: improved selection and policy reform.

Better selection. In these unified government equilibria, dishonest politicians extract rents and reveal their type if both incumbents are dishonest, something that occurs with probability $(1 - q_H)^2$. After observing that the incumbents extracted rents, voters choose the challenger for the executive office. There is a probability q_H that he is honest, so voters expected gains from better selection associated to a unified government are $\beta(1 - q_H)^2 q_H \bar{p}$. Note that there are no gains in terms of second period observable rents from choosing a unified first period government because voters control these rents anyway by choosing a divided second period government.

Policy reform. The benefits from reform arise if $q \geq 1/2$ and voters choose a party B unified government in the first period. The policy is $p_1 = 1 \neq p_0$. Expected per period gains are $-aq$ with policy $p = 0$ and $-a(1 - q)$ with policy $p = 1$. Hence, expected gains from moving from $p_0 = 0$ to $p_1 = 1$ are $a(2q - 1)$. Of course, if $q < 1/2$, voters choose a party A unified government so there is no policy change and the second term in the right hand side of inequality (54) becomes zero.

The equilibria described in proposition 12 do not exist if $r^{**} < r^*$. In this case, the level of rents needed to separate honest from dishonest first period incumbents is so high that voters will not be willing to elect a unified government in the first period election. Indeed, dishonest politicians reveal their type only if there is a unified government and $\bar{r} \geq r^*$, but voters do not elect a unified government with this level of observable rents since $\bar{r} \geq r^{**}$.

If rents are sufficiently large ($\bar{r} \geq r^*$ and $\bar{r} \geq r^{**}$), voters choose a divided government. This choice eliminates observable rents, but undermines political selection and blocks reform. Proposition 13 formalizes these results.

Proposition 13. *Large rents, divided government and no reform.*

Suppose that

$$\bar{r} \geq \max \{r^*, r^{**}\}. \tag{55}$$

Then, there is a PBE in which voters elect a divided government in both periods. There is no policy reform and no extraction of observable rents. The executive extracts unobservable rents with probability $1 - q_H$ in both periods.

In the equilibrium presented in proposition 13, electoral accountability fails to discipline dishonest politicians because $\bar{r} \geq r^*$. In turn, voters are not willing to choose a unified government and run the risk that the incumbents extract observable rents in the first period because $\bar{r} \geq r^{**}$.

If $q \geq 1/2$ voters face a tradeoff between delegation and control. They benefit from the policy reform, but to get the reform passed voters must delegate power in one party, choosing a party B unified government, and this opens the door to rent extraction, so they lose control. Under the conditions of the equilibrium in proposition 13, voters decide not to delegate power and keep control. They sacrifice reform to avoid rent extraction.

6 Discussion

Separation of powers constitutes a potentially powerful complement to elections in the control of governments. Our model highlights several channels through which SP may contribute to a better control of politicians in office, but it also shows that SP can sometimes backfire.

The introduction of SP affects the discipline and the selection of politicians. First, with SP there are two agencies that have to agree on the implemented policy and rent extraction, and this gives voters an additional tool to control politicians (the election of a divided government). This characteristic impacts on the extraction of observable rents and the second period implemented policy (remarks 4, 5, and 6). Second, SP modifies the incentives of politicians to discipline, and thought this, it changes how effective elections are to discipline and select politicians. We formally state these results, and then we discuss the effects of SP for each type of equilibria.

SP reduces observable rents in the second period. Without SP, a dishonest incumbent extracts observable rents in the last term in office. In turn, with SP, voters choose divided governments in the second election and hence observable rents are zero. By the same reason, SP implies no reform in the second period. We have the following remark:

Remark 4. *The introduction of SP eliminates the extraction of observable rents in the second period. Moreover, there is no reform in the second period with SP ($p_2 = p_1$).*

SP has more subtle direct and indirect effects on rent extraction in the first period. The **direct** effect reduces the probability that rents are extracted. With SP there needs to be an agreement between the two branches of government to extract observable rents, something that is not needed without SP. Indeed, with SP even with a unified government and in a semi-separating equilibrium in which elections fail to discipline the incumbent, there will be extraction of observable rents in the first period only if both the executive and the legislature are dishonest, something that in our model happens with probability $(1 - q_H)^2$. Without SP the executive extracts rents in a separating equilibrium if he is dishonest, which happens with probability $(1 - q_H)$.¹⁹ In particular, there is no extraction of observable rents if voters choose a divided government so the direct effect of SP on the extraction of observable rents is maximum in this case.

Remark 5. *The probability of discipline²⁰ is higher with than without SP, whenever there is extraction of observable rents in both cases.*

When there is political selection with and without SP, SP implies less selection. The following remark is equivalent to Remark 5 but considering selection.

Remark 6. *The probability of selection²¹ is lower with than without SP, whenever there is political selection in both cases.*

SP also impacts on the effectiveness of elections to discipline first period incumbents with two **indirect** effects. On the one hand, with SP reelection is less luring because voters block rents and reform in the second period by choosing a divided government. The first period incumbent anticipates that he will not be able to extract rents if he is reelected. Also he anticipates that there is no risk that voters choose an opposition party unified government, so that policy will not change. As a result, the introduction of SP reduces the incentives to discipline by making reelection less attractive. On the other hand, SP may increase the incentives by reducing the rents that the incumbent can extract in the first period. Indeed, SP decreases the temptation to extract rents by forcing the executive to share rents with the legislature. Additionally, the extraction of rents by the legislative represents a disutility for the executive.²² We formalize this result in the following proposition.

¹⁹Stephenson and Nzelibe (2010) make a similar point.

²⁰We define the probability of discipline as the probability with which there is rent extraction in the first period

²¹We define the probability of selection as the probability with which the second period executive is dishonest.

²²The executive's utility gains from the extraction of rents is $b_D \bar{r}$ when there is no SP and $(b_D - 1)\bar{r}/2 < b_D \bar{r}$ when there is SP. This difference can be seen, for example in conditions (21) and (52), without and with SP respectively.

Proposition 14. *Let \tilde{r} denote the threshold above which a dishonest executive extracts rents in the first period. Then, the introduction of SP has the following two effects on the effectiveness of elections to discipline the incumbent:*

1. *It decreases \tilde{r} by blocking a reform and rent extraction in the second period, so it implies less discipline.*
2. *It increases \tilde{r} by forcing the executive to share rents with the legislative, so it implies more discipline.*

As the two effects have opposite sign, the introduction of SP may increase or decrease discipline.

Proof. Without SP a dishonest and reformist executive does not extract rents if \bar{r} is such that:

$$b_D \bar{r} \leq \beta[a(2q + 1) + \bar{\rho}(b_D + 1 - q_H) + E] + \beta \bar{r}(b_D + 1 - q_H).$$

With SP a dishonest executive does not extract rents if:

$$b_D \bar{r} \leq 2\beta[\bar{\rho}(b_D + 1 - q_H) + E] + \bar{r}.$$

The introduction of SP eliminates $\beta a(2q + 1)$ and $\beta \bar{r}(b_D + 1 - q_H)$, and introduces a new effect represented by the factor 2 and \bar{r} . □

As we analyzed in Section 4, elections do not bring discipline and selection at the same time. Indeed, when elections work well as a discipline (selection) device, they fail in terms of political selection (discipline). Additionally, when voters give a high weight to the implemented policy, elections may fail in both dimensions. Therefore, three type of equilibria arise without SP: full discipline and no selection equilibria (Proposition 7), full selection and no discipline equilibria (Proposition 8), and neither discipline nor selection (Proposition 9). As we discuss below, the effects of separation of powers depends on the role that elections are playing with SP.

We organize the discussion considering each type of the equilibria separately, and we look at the effects in terms of main three outcomes: Discipline (observable rents), Selection (unobservable rents), and reform.

6.1 Full discipline and no selection without SP.

Discipline. In these equilibria, elections without SP discipline dishonest politicians, and then SP cannot contribute to this dimension in the first period. SP may even deteriorate discipline if the equilibrium described in Proposition 12 arises. In this case, dishonest politicians extract rents in the first period

with positive probability something that is possible as SP reduces the reward to discipline via the first channel of Proposition 14. Thus, SP implies expected utility gains of $-(1 - q_H)^2 \bar{r}$ when the semiseparating equilibrium is played.

Selection. Elections fail in terms of selection in these equilibria. Thus, the introduction of SP will not worsen selection in general, and will increase it in some cases. Indeed, when the equilibrium played with SP includes some selection (Proposition 12), voters expected utility gains are $\beta \bar{p}(1 - q_H)^2 q_H$.²³

Reform. The outcome in the second period is the same under the two regimes: no reform. With SP, reform is possible only if voters choose a unified government and they never do it in the last term (Remark 4). Without SP there is no reform either as elections fully discipline the first period incumbent and then he is always reelected.

In the *first term* the *probability of reform in the first term is lower with than without SP*. Although there can be reform with and without SP, if voters choose a conservative candidate without SP, they will not choose a reformist unified government with SP. The following proposition states this result formally.

Proposition 15. *When elections without SP fully discipline politicians, and voters choose a conservative candidate for the first period, they elect a divided or an unified A government for the first period, but not a unified B government.*

Proof. A necessary condition for voters to choose a A candidate for the first period is $q \leq \frac{1}{2}$ (Equilibria 2 and 4 of Proposition 7). Under this condition, voters choose an unified A government (Proposition 11, (2)), or a divided government (Proposition 13).

□

6.2 No discipline and selection without SP.

Discipline. The model unambiguously predicts that SP reduces the extraction of observable rents in the first period if elections fail to discipline the incumbent in the absence of SP, i.e. when parameter values are such that any of the equilibria described in propositions 8 and 9 exist. The mechanisms at work depend on the equilibrium that arises with SP. In the small rents equilibria (Proposition 11), SP improves the effectiveness of elections to discipline the incumbent (effect (2) in Proposition 14). In the intermediate rents equilibria (Proposition 12), SP does not improve the ability of elections to discipline the incumbent, but it nevertheless reduces the probability of rent extraction because it forces the executive and the legislature to agree on rent extraction. It is enough to have a honest incumbent in any of the two offices to block rent extraction in this institutional setting (the direct effect mentioned earlier). Finally, in the high rents equilibria (Proposition 13), SP eliminates rents because voters choose a divided government (this is also the direct effect mentioned earlier).

²³Note that with probability $(1 - q_H)^2 q_H$ elections select an honest politician for the second period.

Selection. When elections without SP are effective at selecting politicians, SP can only deteriorate political selection. The effect is maximum when the equilibria that arise with SP do not select at all. These are the cases of the “small rents” and “large rents” equilibria presented in propositions 11 and 13, respectively. In the “small rents” equilibria, voters choose a unified government, but elections fully discipline politicians and selection fails. In the “large rents” equilibria, voters choose a divided government to control rents, so there is no selection. In the “intermediate rents” equilibria, there is political selection with SP. However, the probability that voters identify a dishonest incumbent is lower in this equilibria than in the no-SP equilibria with political selection. Indeed, while in the SP “intermediate rents” equilibria the incumbent extracts rents if both the executive and the legislature are dishonest, in the no-SP equilibria with political selection the incumbent extracts rents if he is dishonest.

Reform. For the same reasons discussed before, the probability of reform in the second period is lower than or equal to with than without SP. But in the first period, when elections select politicians without SP, the probability of reform may be larger, equal or lower with than without SP. The reasons why SP may reduce the probability of reform are the same as in the previous equilibria. SP reduces the probability of reform if, for example, voters choose a reformist candidate without SP and a divided government with SP.

What is rather surprising is that SP may increase the probability of reform. It occurs when, in the first election, voters choose a conservative politician if there is no SP and a reformist-party unified government if there is SP. With SP voters choose a reformist unified government only if the probability that the reform is beneficial is larger than or equal to $\frac{1}{2}$. Without SP, voters may choose a conservative politician, even when the reform is beneficial, if by doing so they can improve selection. This is exactly what happens in the second equilibrium in Proposition 8. For this equilibrium to exist, unobservable rents must be sufficiently large so that citizens are willing to lose a beneficial reform and to choose a candidate who does not discipline, in order to identify dishonest incumbents.

6.3 Neither discipline nor selection without SP.

Discipline. The effects of SP on the extraction of observable rents is the same as in the previous equilibria with no discipline: SP reduces the extraction of observable rents in both periods.

Selection. Because elections fail to select politicians in these no-SP equilibria (Proposition 9), unobservable rents in the second period are lower than or equal to with than without SP. Elections also fail to select politicians with SP if in the first election voters choose a unified government and politicians fully discipline (Proposition 11) or voters choose a divided government (Proposition 13). But if voters choose in the first election a unified government and politicians reveal their type (proposition 12), then SP improves selection and thus reduces the extraction of unobservable rents in the second period.

Reform. Elections fail to select in these equilibria because voters always reelect and hence there is no

reform in the second period. The reasons are pretty much the same as in the no-SP equilibria with full discipline (Proposition 15).

Remark 7. *When elections fail to select and discipline politicians, SP implies more discipline and more selection but at the expense of less reform.*

7 Concluding Remarks

We present a model of political agency with elections and separation of powers. We solve first the model only with elections and then incorporate the separation of powers. We analyze the impact of adding separation of powers comparing the equilibrium outcomes in these two institutional settings.

In our model, citizens and politicians care about two dimensions of policy: rents extracted by politicians and reform. All citizens dislike rent extraction, but have different preferences regarding reform. Politicians are diverse in both dimensions: some are honest, some are not, some prefer reform and some do not. There are two political parties with different preferences regarding reform. In each party, there are honest and dishonest politicians. Voters do not observe politicians honesty, so there is adverse selection and moral hazard. In this rich environment, we study the interaction between electoral accountability and separation of powers with checks and balances.

We show that, depending on parameter values, SP can have different effects on rent extraction and reform, but there are a few common effects. First, SP reduces the extraction of rents that can be observed by citizens in the last term. While electoral accountability cannot discipline politicians in the last term in office, SP can do it. Hence, in this period, SP unambiguously reduces the extraction of observable rents. Second, SP reduces political activism in the last term. Without SP, voters may change the political party in the executive office if they learn the president is corrupt. In this case, policies will change. With SP, voters block the extraction of observable rents in the second period choosing a divided government, so that the status quo policy prevails.

We argue that SP can have diverse effects on first period outcomes and the extraction of unobservable rents in the second period, depending on the effectiveness of elections in the society without SP. If, without SP, elections fully discipline but do not select (pooling equilibrium), the introduction of SP cannot reduce rent extraction in the first period and can even increase it because SP may weaken electoral incentives. When SP induces more rent extraction in the first period, it facilitates political selection and hence reduces the extraction of unobservable rents in the second period. With full discipline without SP, political activism in the first period is lower with than without SP. Depending on parameter values, voters may elect a reformist candidate without SP and a divided government with SP, so that there is reform without but not with SP. But there is no set of parameter values such that voters choose

a conservative party without SP and a unified reformist government with SP.²⁴

If, without SP, elections do not discipline but select, the introduction of SP reduces the extraction of observable rents in the first period, but increases the extraction of unobservable rents in the second period. Intuitively, SP reinforces control in the first period, but for the same reason it weakens selection. The probability of reform in the first period decreases with SP if voters appeal to a divided government to control rents. But it can increase if voters choose a conservative government without SP and a unified reformist government with SP.²⁵

Finally, if elections neither discipline nor select when there is no SP, the introduction of SP can improve both discipline and selection. So SP can reduce first period observable rents and second period unobservable rents. The probability of reform in the first period decreases with SP.

Our model makes few definite predictions on final outcomes, but it does provide a systematic analysis of the mechanisms at work, and guidance on when and why some mechanisms are more important than others.

Bibliography

- Acemoglu, Daron, James Robinson, and Ragnar Torvik (2013). “Why Do Voters Dismantle Checks and Balances?” In: *Review of Economic Studies* 80.3, pp. 845–875.
- Aghion, Philippe, Alberto Alesina, and Francesco Trebbi (2004). “Endogenous Political Institutions”. In: *Quarterly Journal of Economics* 119.2, pp. 565–611.
- Almendares, Nicholas and Patrick Le Bihan (2015). “Increasing Leverage: Judicial Review as a Democracy-Enhancing Institution”. In: *Quarterly Journal of Political Science* 10, pp. 357–390.
- Ashworth, Scott (2012). “Electoral Accountability: Recent Theoretical and Empirical Work”. In: *Annual Review of Political Science* 15, pp. 183–201.
- Austen-Smith, David and James Banks (1989). “Electoral accountability and incumbency”. In: *Models of Strategic Choice in Politics*. Ed. by P. C. Ordeshook. University of Michigan Press.
- Barro, Robert (1973). “The Control of Politicians: An Economic Model”. In: *Public Choice* 14, pp. 19–42.
- Besley, Timothy (2005). *Principled Agents? The Political Economy of Good Government*. Oxford University Press.
- Besley, Timothy and Hannes Mueller (2017). “Institutions, Volatility and Investment”. In: *Journal of the European Economic Association*.
- (2018). *The Political Economy of Robust Control*.
- Buchanan, James (1975). *The Limits of Liberty; Between Anarchy and the Leviathan*. The University of Chicago Press.
- Buchanan, James and Gordon Tullock (1962). *The Calculus of Consent*. University of Michigan Press.
- Carrión, Julio F., ed. (2006). *The Fujimori legacy : the rise of electoral authoritarianism in Peru*. The Pennsylvania State University.

²⁴With no SP and **full discipline**, voters choose a conservative politician in the first election only if the probability that the reform is beneficial is lower than or equal to one half. With SP, only if this probability is larger than or equal to one half will voters choose a unified reformist government. So, save for the limiting case $q = 1/2$, there is no possibility of status quo without and reform with SP.

²⁵If there is political selection in the absence of SP, citizens may vote for a conservative politician even if the probability that the reform is beneficial is larger than one half. This occurs when elections are more effective at selecting conservative than reformist incumbents. But with this probability, in the presence of SP, they vote for a unified reformist government. Hence, the equilibrium policies may be the status quo without and the reform with SP.

- Cho, In-Koo and David Kreps (1987). “Signaling games and stable equilibria”. In: *Quarterly Journal of Economics* 102.2, pp. 179–222.
- Fearon, James D. (1999). “Electoral Accountability and the Control of Politicians: Selecting Good Types versus Sanctioning Poor Performance”. In: *Democracy, Accountability, and Representation*. Ed. by Adam Przeworski, Susane C. Stokes, and Bernard Manin. New York: Cambridge University Press.
- Ferejohn, John (1986). “Incumbent Performance and Electoral Control”. In: *Public Choice* 50, pp. 5–25.
- Forteza, Alvaro and Juan Sebastián Pereyra (2016). *The trade-off between reforms and checks and balances*. dECON-FCS-UDELAR.
- Fukuyama, Francis (2017). “Is America Strong Enough for Trump? The case against panic.” In: *Politico Magazine*.
- Hayek, Friedrich A. (1960). *The Constitution of Liberty*. The University of Chicago Press.
- Hidalgo, F. Daniel, Júlio Canello, and Renato Lima-de-Oliveira (2016). “Can Politicians Police Themselves? Natural Experimental Evidence from Brazil’s Audit Courts”. In: *Comparative Political Studies*.
- Howell, William G. and Terry M. Moe (2016). *Relic: How Our Constitution Undermines Effective Government, and Why We Need a More Powerful Presidency*. Basic Books.
- Kenney, Charles D. (2000). *Reflections on Horizontal Accountability: Democratic Legitimacy, Majority Parties and Democratic Stability in Latin America*.
- Mainwaring, Scott and Christopher Welna (2003). *Democratic Accountability in Latin America*. Oxford University Press.
- Maskin, Eric and Jean Tirole (2004). “The Politician and the Judge: Accountability in Government”. In: *American Economic Review* 94.4, pp. 1034–1054.
- Moreno, Erika, Brian F. Crisp, and Matthew Soberg Shugart (2003). “The Accountability Deficit in Latin America”. In: *Democratic Accountability in Latin America*. Ed. by Scott Mainwaring and Christopher Welna. Oxford University Press, pp. 79–131.
- O’Donnell, Guillermo (1994). “Delegative Democracies”. In: *Journal of Democracy* 5.1, pp. 55–69.
- (1998). “Horizontal Accountability in New Democracies”. In: *Journal of Democracy* 9.3, pp. 112–126.
- Persson, Torsten, Gerard Roland, and Guido Tabellini (1997). “Separation of Powers and Political Accountability”. In: *Quarterly Journal of Economics* 112.4, pp. 1163–1202.
- (2000). “Comparative Politics and Public Finance”. In: *Journal of Political Economy* 108.6, pp. 1121–1161.
- Persson, Torsten and Guido Tabellini (2000). *Political Economics. Explaining Economic Policy*. MIT Press.
- Polo, Michele (1998). *Electoral competition and political rents*. Working Papers 144. IGIER (Innocenzo Gasparini Institute for Economic Research), Bocconi University. URL: <http://EconPapers.repec.org/RePEc:igi:igiierp:144>.
- Robinson, James and Ragnar Torvik (2016). “Endogenous Presidentialism”. In: *Journal of the European Economic Association* 14.4, pp. 907–942.
- Rose-Ackerman, Susan, Diane A. Desierto, and Natalia Volosin (2011). *Hyper-Presidentialism: Separation of Powers without Checks and Balances in Argentina and the Philippines*. Yale Law School.
- Snyder, James M. Jr. and Michael M. Ting (2008). “Interest groups and the electoral control of politicians”. In: *Journal of Public Economics* 92, pp. 482–500.
- Stephenson, Matthew C. and Jide O. Nzelibe (2010). “Political Accountability Under Alternative Institutional Regimes”. In: *Journal of Theoretical Politics* 22, pp. 139–167.

8 Appendix

8.1 No separation of powers

8.1.1 Equilibria in the subgames that begin after the first election

The extensive form of the subgames

We now present the extensive form of the subgames played after Nature chooses $s_1 = 0$ and voters choose a reformist first period incumbent (Figure 2), $s_1 = 1$ and a reformist incumbent (Figure 3), $s_1 = 0$ and a conservative incumbent (Figure 4), and $s_1 = 0$ and a reformist incumbent (Figure 5).

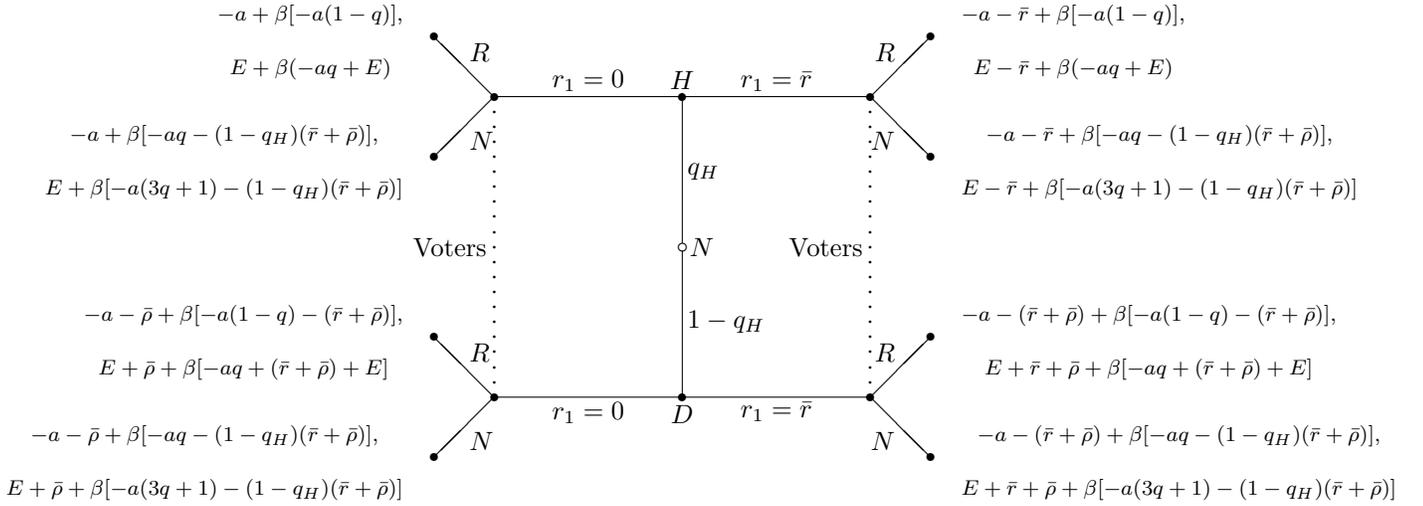


Figure 2: The extensive form game with $s_1 = 0$ and a reformist incumbent. At each node the first expression represents voters' payoffs and the second the executive's payoffs.

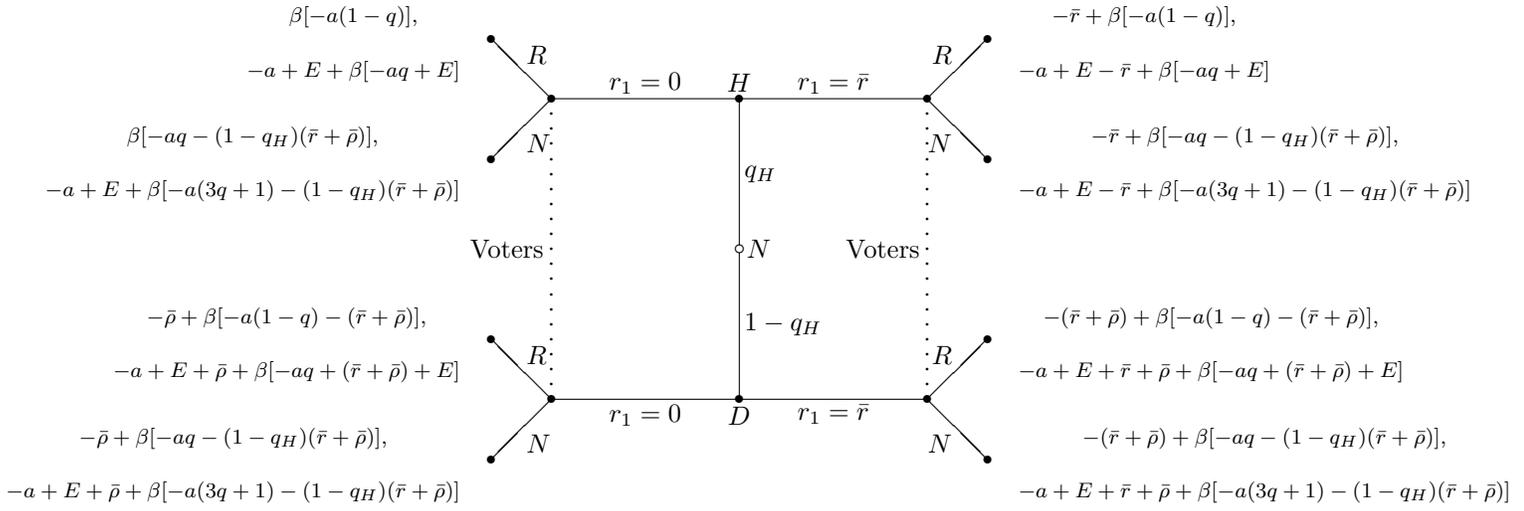


Figure 3: The extensive form game with $s_1 = 1$ and a reformist incumbent. At each node the first expression represents voters' payoffs and the second the executive's payoffs.

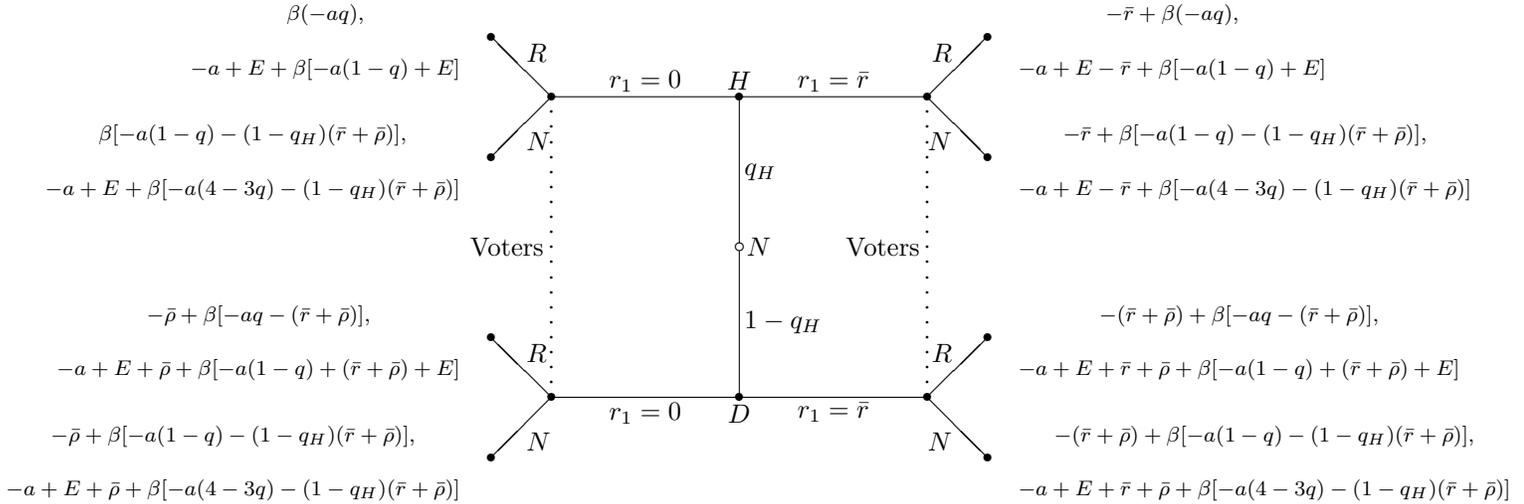


Figure 4: The extensive form game with $s_1 = 0$ and a conservative incumbent. At each node the first expression represents voters' payoffs and the second the executive's payoffs.

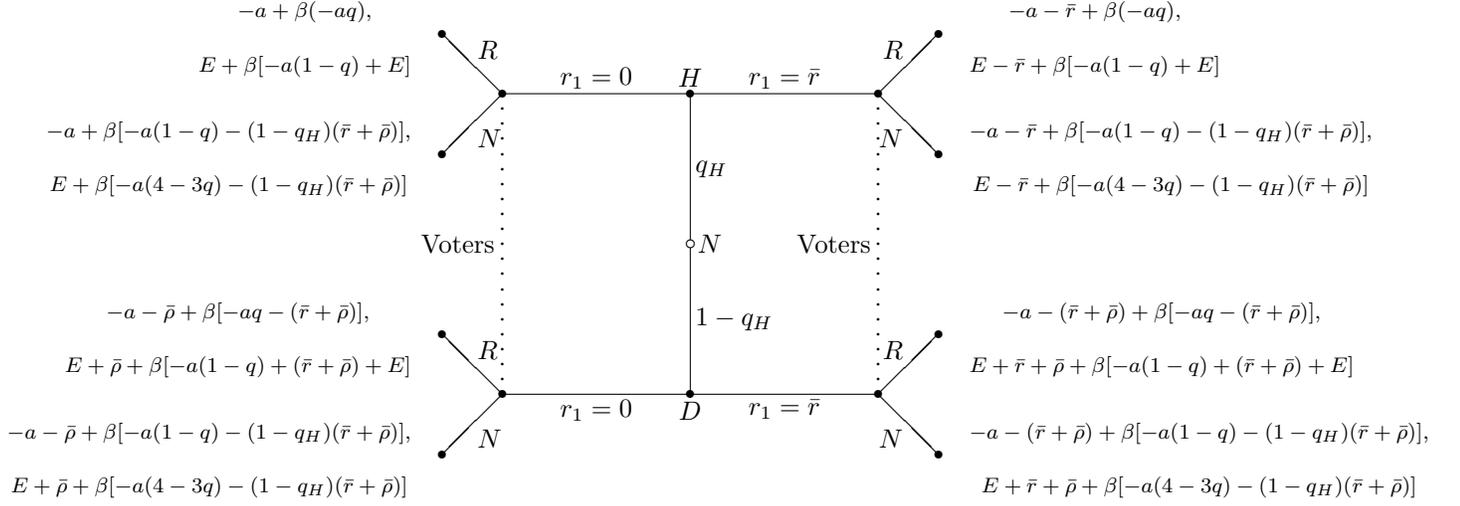


Figure 5: The extensive form game with $s_1 = 1$ and a conservative incumbent. At each node the first expression represents voters' payoffs and the second the executive's payoffs.

The equilibria

Proof of proposition 1. We find the conditions under which the profile $(0, 0, RN)$ is an equilibrium when the executive is reformist and conservative.

Voters do not learn in this equilibrium, so $P(H|r_1 = 0) = q_H$.

Voters gains from deviating after the incumbent chose $r_1 = 0$ —i.e. from voting for the challenger despite of the “good behavior” of the incumbent— are $\beta a(1 - 2q)$ when the incumbent is reformist, and $\beta a(2q - 1)$ when the incumbent is conservative, irrespective of whether the initial state is 0 or 1. Therefore, voters do not deviate in this information set iff:

$$\begin{aligned} q &\geq \frac{1}{2} \quad \text{and the incumbent is reformist} \\ q &\leq \frac{1}{2} \quad \text{and the incumbent is conservative} \end{aligned} \tag{56}$$

Voters gains from deviating after the incumbent chose $r_1 = \bar{r}$ —i.e. from reelecting the incumbent despite of his “bad behavior”— are

$$\begin{aligned} \beta[a(2q - 1) + (P(H|\bar{r}) - q_H)(\bar{r} + \bar{\rho})] \quad &\text{and the incumbent is reformist} \\ \beta[-a(2q - 1) + (P(H|\bar{r}) - q_H)(\bar{r} + \bar{\rho})] \quad &\text{and the incumbent is conservative} \end{aligned}$$

and hence voters do not deviate in this information set iff conditions (5) and (8) in the proposition hold.

The honest incumbent gains from deviating to $r_1 = \bar{r}$ are:

$$\begin{aligned} -\bar{r} - \beta(a(2q + 1) + E + (1 - q_H)(\bar{r} + \bar{\rho})) \quad &\text{and the incumbent is reformist} \\ -\bar{r} - \beta(a(3 - 2q) + E + (1 - q_H)(\bar{r} + \bar{\rho})) \quad &\text{and the incumbent is conservative} \end{aligned}$$

These gains are negative for any admissible set of parameter values.

The dishonest incumbent gains from deviating to $r_1 = \bar{r}$ are:

$$\begin{aligned} \bar{r} + \beta[-a(2q+1) - (2 - q_H)(\bar{r} + \bar{\rho}) - E] & \text{ and the incumbent is reformist} \\ \bar{r} + \beta[-a(3-2q) - (2 - q_H)(\bar{r} + \bar{\rho}) - E] & \text{ and the incumbent is conservative} \end{aligned} \quad (57)$$

Imposing no positive gains, we get conditions (6) and (9) in the proposition. \square

Proof of Proposition 2. In these equilibria, voters update beliefs as follows: $Prob(H|\bar{r}) = 0$ y $Prob(H|0) = 1$.

We find the conditions under which the profile $(0, \bar{r}, RN)$ is an equilibrium when the executive is reformist and conservative.

Voters do not deviate in the information set $r_1 = 0$ iff:

$$\begin{aligned} \beta[-a(2q-1) - (1 - q_H)(\bar{r} + \bar{\rho})] \leq 0 & \text{ and the incumbent is reformist} \\ \beta[a(2q-1) - (1 - q_H)(\bar{r} + \bar{\rho})] \leq 0 & \text{ and the incumbent is conservative} \end{aligned} \quad (58)$$

Voters do not deviate in the information set $r_1 = \bar{r}$ iff:

$$\begin{aligned} \beta[a(2q-1) - q_H(\bar{r} + \bar{\rho})] \leq 0 & \text{ and the incumbent is reformist} \\ \beta[-a(2q-1) - q_H(\bar{r} + \bar{\rho})] \leq 0 & \text{ and the incumbent is conservative} \end{aligned} \quad (59)$$

Reorganizing inequalities (58) and (59), we obtain conditions (10) and (13) in the proposition.

The honest incumbent has no incentives to deviate in this equilibrium. If he chooses his preferred first period action, $r_1 = 0$, he is reelected, and if he deviates choosing $r_1 = \bar{r}$ he not only obtains a lower utility in the first period but also in the second because he is not reelected.

The dishonest incumbent does not deviate from $r_1 = \bar{r}$ iff:

$$\begin{aligned} -\bar{r} + \beta[a(2q+1) + (2 - q_H)(\bar{r} + \bar{\rho}) + E] \leq 0 & \text{ and the incumbent is reformist} \\ -\bar{r} + \beta[a(3-2q) + (2 - q_H)(\bar{r} + \bar{\rho}) + E] \leq 0 & \text{ and the incumbent is conservative} \end{aligned}$$

Reorganizing these inequalities, we obtain conditions (11) and (14) in the proposition. \square

Proof of Proposition 3. We consider two strategy profiles, corresponding to two PBE:

1. $(0, \bar{r}, NN)$

Voters do not deviate in the information set $r_1 = 0$ iff:

$$\begin{aligned} \beta[a(2q-1) + (1 - q_H)(\bar{r} + \bar{\rho})] \leq 0 & \text{ and the incumbent is reformist} \\ \beta[-a(2q-1) + (1 - q_H)(\bar{r} + \bar{\rho})] \leq 0 & \text{ and the incumbent is conservative} \end{aligned} \quad (60)$$

Voters do not deviate in the information set $r_1 = \bar{r}$ iff:

$$\begin{aligned} \beta[a(2q-1) - q_H(\bar{r} + \bar{\rho})] \leq 0 & \quad \text{and the incumbent is reformist} \\ \beta[-a(2q-1) - q_H(\bar{r} + \bar{\rho})] \leq 0 & \quad \text{and the incumbent is conservative} \end{aligned}$$

The no deviating conditions are stronger in $r_1 = 0$ than in $r_1 = \bar{r}$, so if voters resist the temptation to reelect an incumbent who did not extract rents they will also resist the temptation to reelect an incumbent who did it. Reorganizing inequalities (60), we get conditions (16) and (17) in the proposition.

The incumbent has no incentives to deviate because voters choose the same action regardless of the incumbent's choice so they choose their preferred action: zero rents if honest, and positive rents if dishonest.

2. $(0, \bar{r}, RR)$

Voters do not deviate in the information set $r_1 = 0$ iff:

$$\begin{aligned} \beta[-a(2q-1) - (1 - q_H)(\bar{r} + \bar{\rho})] \leq 0 & \quad \text{and the incumbent is reformist} \\ \beta[-a(2q-1) + q_H(\bar{r} + \bar{\rho})] \leq 0 & \quad \text{and the incumbent is conservative} \end{aligned}$$

Voters do not deviate in the information set $r_1 = \bar{r}$ iff:

$$\begin{aligned} \beta[a(2q-1) - (1 - q_H)(\bar{r} + \bar{\rho})] \leq 0 & \quad \text{and the incumbent is reformist} \\ \beta[a(2q-1) + q_H(\bar{r} + \bar{\rho})] \leq 0 & \quad \text{and the incumbent is conservative} \end{aligned} \tag{61}$$

The no deviating conditions are stronger in $r_1 = \bar{r}$ than in $r_1 = 0$. Reorganizing inequalities (61), we get conditions (18) and (19) in the proposition.

The incumbent has no incentives to deviate in this equilibrium for the same reasons as in the previous one.

□

Proof of Proposition 4. Let's consider the case where the incumbent is reformist and $s_1 = 0$, as the other three cases are similar.

We first prove that the profile is a PBE, and then apply the intuitive criterion to discard it.

Let analyze the incentives of each player. Voters, under that profile, get the following payoffs:

$$q_H[-a - \bar{r} - a\beta(1 - q)] + (1 - q_H)[-a - (\bar{r} + \bar{\rho}) + \beta[-a(1 - q) - (\bar{r} + \bar{\rho})]],$$

which must be higher than:

$$q_H[-a - \bar{r} + \beta[-aq - (1 - q_H)(\bar{r} + \bar{\rho})]] + (1 - q_H)[-a - (\bar{r} + \bar{\rho}) + \beta[-aq - (1 - q_H)(\bar{r} + \bar{\rho})]].$$

This is equivalent to: $q \geq \frac{1}{2}$.

For the honest type, its payoffs in this profile are:

$$E - \bar{r} + \beta[-aq + E],$$

which must be higher than:

$$E + \beta[-a(3q + 1) - (1 - q_H)(\bar{r} + \bar{\rho})].$$

Which is equivalent to:

$$(1 - \beta(1 - q_H))\bar{r} \leq \beta[a(2q + 1) + E + (1 - q_H)]$$

For the dishonest, there is no condition that must be fulfilled as its payoffs are:

$$E + \bar{r} + \bar{\rho} + \beta[-aq + (\bar{r} + \bar{\rho}) + E],$$

which are higher than the payoffs from deviating:

$$E + \bar{\rho} + \beta[-a(3q + 1) - (1 - q_H)(\bar{r} + \bar{\rho})].$$

The out-of-the-equilibrium beliefs, $P(H|r = 0)$, should be such that:

$$P(H|r = 0)[-a + \beta[-aq - (1 - q_H)(\bar{r} + \bar{\rho})]] + (1 - P(H|r = 0))[-a - \bar{\rho} + \beta[-aq - (1 - q_H)(\bar{r} + \bar{\rho})]] \geq$$

$$P(H|r = 0)[-a - a\beta(1 - q)] + (1 - P(H|r = 0))[-a - \bar{\rho} + \beta[-a(1 - q) - (\bar{r} + \bar{\rho})]]$$

This condition is equivalent to:

$$P(H|r = 0) - q_H \leq -\frac{a(2q - 1)}{\bar{r} + \bar{\rho}}.$$

From the analysis, we conclude that the profile (\bar{r}, \bar{r}, N, R) is a PBE. However, as we show next, this equilibrium does not survive the intuitive criterion of Cho and Kreps.

In this equilibrium, $q \geq \frac{1}{2}$, so the last condition implies that at equilibrium $P(H|r = 0) < q_H$, or equivalently, $P(D|r = 0) > 1 - q_H$. Thus, in this equilibrium, after observing a deviation to $r = 0$, voters update the probability that the incumbent is dishonest upwards. However, voters know that the dishonest type gets maximum payoffs playing the equilibrium strategy, i.e. extracting rents. A deviation to $r = 0$ will never increase its payoffs. Voters also know that the honest type could increase its payoffs by deviating to $r = 0$ if voters chose R after observing $r = 0$. \square

Proof of Proposition 5. Consider the case of a reformist incumbent and $s_1 = 0$.

1. In the profile $(0, 0, RR)$ the dishonest type has an incentive to deviate by extracting rents. Indeed, by following the strategy it gets:

$$E + \bar{\rho} + \beta[-aq + (\bar{r} + \bar{\rho}) + E],$$

which is lower than the payoffs from extracting rents:

$$E + \bar{r} + \bar{\rho} + \beta[-aq + (\bar{r} + \bar{\rho}) + E],$$

2. In the profile $(0, 0, NN)$ the dishonest type has an incentive to deviate by extracting rents. Indeed, by following the strategy it gets:

$$E + \bar{\rho} + \beta[-a(3q + 1) - (1 - q_H)(\bar{r} + \bar{\rho})],$$

which is lower than the payoffs from extracting rents:

$$E + \bar{r} + \bar{\rho} + \beta[-a(3q + 1) - (1 - q_H)(\bar{r} + \bar{\rho})]$$

3. In the profile $(0, 0, NR)$ the dishonest type has an incentive to deviate by extracting rents. Indeed, by following the strategy it gets:

$$E + \bar{\rho} + \beta[-a(3q + 1) - (1 - q_H)(\bar{r} + \bar{\rho})],$$

which is lower than the payoffs from extracting rents:

$$E + \bar{r} + \bar{\rho} + \beta[-aq + (\bar{r} + \bar{\rho}) + E]$$

4. Let's consider the profile $(0, \bar{r}, NR)$.

After observing $r = 0$ voters do not deviate if:

$$-a + \beta[-aq - (1 - q_H)(\bar{r} + \bar{\rho})] \geq -a + \beta[-a(1 - q)],$$

which is equivalent to:

$$q \leq \frac{1}{2} - \frac{(1 - q_H)(\bar{r} + \bar{\rho})}{2a}$$

After observing $r = \bar{r}$ voters do not deviate if:

$$-a - (\bar{r} + \bar{\rho}) + \beta[-a(1 - q) - (\bar{r} + \bar{\rho})] \geq -a - (\bar{r} + \bar{\rho}) + \beta[-aq - (1 - q_H)(\bar{r} + \bar{\rho})],$$

which is equivalent to:

$$q \geq \frac{1}{2} + \frac{q_H(\bar{r} + \bar{\rho})}{2a}$$

But, clearly, the two last conditions cannot hold simultaneously.

5. Consider the four profiles where the honest extracts rents, and the dishonest does not: $(\bar{r}, 0, \cdot)$. In order to be a PBE, at any of these profiles voters do not reelect after $r = 0$. Otherwise, the honest type has incentive to deviate by choosing $r = 0$. But, if voters choose N after $r = 0$, the dishonest type can increase its payoffs by playing $r = \bar{r}$. Thus, there is no equilibrium where the honest extracts rents, and the dishonest does not.
6. Consider the four profiles where both types extract rents. Voters must not reelect under these profiles after observing $r = 0$, otherwise the honest deviates by not extracting rents because in that case it obtains the maximum payoffs. Moreover, if voters do not reelect after observing rents, the honest has also incentives to deviate. Thus, only the profile (\bar{r}, \bar{r}, N, R) can be a PBE, which can rule out by proposition 4.

The other three cases, reformist incumbent and $s_1 = 1$, conservative incumbent and $s_1 = 0$, and conservative incumbent and $s_1 = 1$, are similar. □

Proof of Proposition 6. Suppose the first period incumbent is reformist. Inequalities (6) and (11) cannot hold simultaneously (save for the limiting case of equality) so the strategy profiles $(00RN)$ and $(0\bar{r}RN)$ cannot be both equilibria for the same set of parameter values. Also inequalities (16), (18) and (10) are mutually exclusive, so the strategy profiles $(0\bar{r}NN)$, $(0\bar{r}RN)$ and $(0\bar{r}RN)$ cannot hold as equilibria for the same set of parameter values. Inequalities (4) and (16) cannot hold simultaneously, so the strategy profiles $(00RN)$ and $(0\bar{r}NN)$ cannot be both equilibria for the same set of parameter values. Finally, inequalities (5) and (18) cannot hold at the same time, so the strategy profiles $(00RN)$ and $(0\bar{r}RR)$ cannot be both equilibria for the same set of parameter values. Similar arguments hold for the case of a conservative first period incumbent. □

Proof of proposition 7. We will use the following notation. Let σ_R, σ_C be a strategy profile in the subgames that follow a negative vote on CB, and Nature's choice of a reformist and a conservative first-period incumbent, respectively. We say that $\sigma = (\sigma_R, \sigma_C)$ is an equilibrium if σ_R and σ_C are equilibrium profiles when the first-period incumbent is a reformist and conservative, respectively.

1. We will prove that:

$\sigma_2^* = (\sigma_R, \sigma_C) = ((0, 0, RN), (0, \bar{r}, NN))$ is an equilibrium if the following conditions hold:

$$q_H \geq \frac{1 + P(H|\bar{r})}{2},$$

$$q \in \left[\frac{1}{2} + \frac{(1 - q_H)(\bar{r} + \bar{\rho})}{2a}, \frac{1}{2} + \frac{(q_H - P(H|\bar{r}))(\bar{r} + \bar{\rho})}{2a} \right],$$

and,

$$\bar{r}[1 - \beta(2 - q_H)] \leq \beta[a(2 + |1 - 2q|) + (2 - q_H)\bar{\rho} + E].$$

where $P(H|\bar{r})$ are voters' out the equilibrium beliefs when the executive is reformist.

Proof. (a) Conditions.

For the strategy $(0, 0, RN)$ to hold at equilibrium when the executive is reformist, the following conditions should hold:

$$q \in \left[\frac{1}{2}, \frac{1}{2} + \frac{q_H - P(H|\bar{r})}{2a}(\bar{r} + \bar{\rho}) \right], \quad (62)$$

$$\bar{r}[1 + \beta(q_H - 2)] \leq \beta[a(2q + 1) + (2 - q_H)\bar{\rho} + E]. \quad (63)$$

For the conservative, the strategy $(0, \bar{r}, NN)$ is an equilibrium if:

$$q \geq \frac{1}{2} + \frac{(1 - q_H)(\bar{r} + \bar{\rho})}{2a}. \quad (64)$$

Thus, we need that:

$$\frac{1}{2} + \frac{(1 - q_H)(\bar{r} + \bar{\rho})}{2a} \leq \frac{1}{2} + \frac{q_H - P(H|\bar{r})}{2a}(\bar{r} + \bar{\rho}),$$

which is equivalent to:

$$q_H \geq \frac{1 + P(H|\bar{r})}{2}.$$

Note that (64) implies that $q \geq 1/2$ which in turn implies that inequality (63) can be written as

$$\bar{r}[1 - \beta(2 - q_H)] \leq \beta[a(2 + |1 - 2q|) + (2 - q_H)\bar{\rho} + E]$$

which is the presentation given in the proposition because it is convenient to compare with other equilibria.

(b) Voters choice in the first election. Voters expected utility with a reformist and a conservative politician in office in the first period is:

- Reformist. Decisive voters' expected utility if they vote for a reformist politician for office in the first period is:

$$-a(1 - q)(1 + \beta) - (1 - q_H)(\bar{\rho} + \beta(\bar{r} + \bar{\rho}))$$

- Conservative. Decisive voters' expected utility if they vote for a conservative politician for office in the first period is:

$$\beta[-a(1-q) - (1-q_H)(\bar{r} + \bar{\rho})] - (1-q_H)(\bar{r} + \bar{\rho}) - aq$$

Therefore, voters prefer a reformist politician for office in the first period iff:

$$a(2q-1) + (1-q_H)\bar{r} \geq 0 \tag{65}$$

We know that $q \geq 1/2$ in this case so the above condition is fulfilled and voters prefer a reformist politician in office in the first period.

□

2. We will prove that $\sigma_7^* = (\sigma_R, \sigma_C) = ((0, \bar{r}, NN), (0, 0, RN))$ is an equilibrium if the following conditions hold:

$$q_H \geq \frac{1 + P(H|\bar{r})}{2},$$

$$q \in \left[\frac{1}{2} - \frac{(q_H - P(H|\bar{r}))(\bar{r} + \bar{\rho})}{2a}, \frac{1}{2} - \frac{(1 - q_H)(\bar{r} + \bar{\rho})}{2a} \right],$$

and,

$$\bar{r}[1 - \beta(2 - q_H)] \leq \beta[a(2 + |1 - 2q|) + (2 - q_H)\bar{\rho} + E].$$

where $P(H|\bar{r})$ are voters' out the equilibrium beliefs when the executive is conservative.

Proof. (a) Conditions. The proof is similar to the one of Proposition 3.

- (b) Voters choice in the first election. Voters expected utility with a reformist and a conservative politician in office in the first period is:

- Reformist. With this politician in office, $p_1 = 1$. The first period incumbent is never reelected in this equilibrium so $p_2 = 0$. Hence, $E[r_1] = E[r_2] = (1 - q_H)\bar{r}$, and $E[\rho_1] = E[\rho_2] = (1 - q_H)\bar{\rho}$. So decisive voters' expected utility if they vote for a reformist politician for office in the first period is:

$$-a(1-q) - (1-q_H)(\bar{r} + \bar{\rho}) + \beta[-aq - (1-q_H)(\bar{r} + \bar{\rho})]$$

- Conservative. With this politician in office, $p_1 = 0$. There is no extraction of observable rents in the first period in this equilibrium $r_1 = 0$ and the first period incumbent is reelected, so $p_2 = 0$. In the second period, the incumbent extracts observable rents with probability $(1 - q_H)$, so $E[r_2] = (1 - q_H)\bar{r}$. In turn, $E[\rho_1] = E[\rho_2] = (1 - q_H)\bar{\rho}$. So decisive voters' expected utility if they vote for a conservative politician for office in the first period is:

$$-aq - (1 - q_H)\bar{\rho} + \beta[-aq - (1 - q_H)(\bar{r} + \bar{\rho})]$$

Therefore, voters prefer a conservative politician for office in the first period iff

$$-a(2q - 1) + (1 - q_H)\bar{r} \geq 0 \quad (66)$$

This inequality is fulfilled since inequality (9) implies that $q \leq \frac{1}{2}$.

□

3. We will prove that $\sigma_3^* = (\sigma_R, \sigma_C) = ((0, 0, RN), (0, \bar{r}, RN))$ is an equilibrium if the following conditions hold:

$$\beta[a(2 - |1 - 2q|) + (2 - q_H)\bar{\rho} + E] \leq \bar{r}[1 - \beta(2 - q_H)] \leq \beta[a(2 + |1 - 2q|) + (2 - q_H)\bar{\rho} + E].$$

$$q_H \geq \frac{1 + P(H|\bar{r})}{2} \text{ and } , q \in \left[\frac{1}{2}, \frac{1}{2} + \frac{(1 - q_H)(\bar{r} + \bar{\rho})}{2a} \right], \text{ or}$$

$$q_H \leq \frac{1 + P(H|\bar{r})}{2} \text{ and } , q \in \left[\frac{1}{2}, \frac{1}{2} + \frac{(q_H - P(H|\bar{r}))(\bar{r} + \bar{\rho})}{2a} \right].$$

where $P(H|\bar{r})$ are voters' out the equilibrium beliefs when the executive is reformist.

Proof. (a) Conditions.

When the executive is conservative, the first condition is:

$$q \in \left[\frac{1}{2} - \frac{q_H(\bar{r} + \bar{\rho})}{2a}, \frac{1}{2} + \frac{(1 - q_H)(\bar{r} + \bar{\rho})}{2a} \right].$$

Notice that:

$$\frac{1}{2} + \frac{(q_H - P(H|\bar{r}))(\bar{r} + \bar{\rho})}{2a} \geq \frac{1}{2} + \frac{(1 - q_H)(\bar{r} + \bar{\rho})}{2a},$$

iff:

$$q_H \geq \frac{1 + P(H|\bar{r})}{2}.$$

Thus, under the previous condition, q should be such that:

$$q \in \left[\frac{1}{2}, \frac{1}{2} + \frac{(1 - q_H)(\bar{r} + \bar{\rho})}{2a} \right].$$

When $q_H \leq \frac{1+P(H|\bar{r})}{2}$, the condition for q is:

$$q \in \left[\frac{1}{2}, \frac{1}{2} + \frac{(q_H - P(H|\bar{r}))(\bar{r} + \bar{\rho})}{2a} \right].$$

Consider now the second condition in the equilibrium $(0, \bar{r}, RN)$:

$$\bar{r}[1 - \beta(2 - q_H)] \geq \beta[a(3 - 2q) + (2 - q_H)\bar{\rho} + E].$$

Given that $q \geq \frac{1}{2}$ in the case we are analyzing, the right hand side of the last inequality is lower than or equal to $\beta[a(2q + 1) + (2 - q_H)\bar{\rho} + E]$.

(b) Voters choice in the first election. Voters expected utility with a reformist and a conservative politician in office in the first period is:

- Reformist. With this politician in office, $p_1 = 1$. The elected politician abstains from extracting observable rents in this equilibrium, $r_1 = 0$ and is reelected so $p_2 = 1$. Therefore, $E[r_1] = 0$, $E[r_2] = (1 - q_H)\bar{r}$, $E[\rho_1] = (1 - q_H)\bar{\rho}$, and $E[\rho_2] = (1 - q_H)\bar{\rho}$. So decisive voters' expected utility if they vote for a reformist politician for office in the first period is:

$$-a(1 - q) - (1 - q_H)\bar{\rho} + \beta[-a(1 - q) - (1 - q_H)(\bar{r} + \bar{\rho})]$$

- Conservative. With this politician in office, $p_1 = 0$. With probability q_H , the elected politician is honest, $r_1 = 0$ and is reelected so $p_2 = 0$. With probability $(1 - q_H)$ the politician is dishonest and, in this equilibrium, extracts rents in the first period $r_1 = \bar{r}$ and is not reelected so $p_2 = 1$. Therefore, $E[r_1] = (1 - q_H)\bar{r}$, $E[r_2] = (1 - q_H)^2\bar{r}$, $E[\rho_1] = (1 - q_H)\bar{\rho}$, and $E[\rho_2] = (1 - q_H)^2\bar{\rho}$. So decisive voters' expected utility if they vote for a conservative politician for office in the first period is:

$$-aq - (1 - q_H)(\bar{r} + \bar{\rho}) + \beta[-a(q_Hq + (1 - q_H)(1 - q)) - (1 - q_H)^2(\bar{r} + \bar{\rho})]$$

Therefore, voters prefer a reformist politician for office in the first period iff:

$$q \geq \frac{1}{2} - \frac{(1 - q_H)\bar{r} - \beta(1 - q_H)q_H(\bar{r} + \bar{\rho})}{2a(1 + \beta q_H)}$$

□

4. We will prove that $\sigma_8^* = (\sigma_R, \sigma_C) = ((0, \bar{r}, RN), (0, 0, RN))$ is an equilibrium if the following conditions hold:

$$\beta[a(2 - |1 - 2q|) + (2 - q_H)\bar{\rho} + E] \leq \bar{r}[1 - \beta(2 - q_H)] \leq \beta[a(2 + |1 - 2q|) + (2 - q_H)\bar{\rho} + E].$$

$$q_H \geq \frac{1 + P(H|\bar{r})}{2} \text{ and } , q \in \left[\frac{1}{2} - \frac{(1 - q_H)(\bar{r} + \bar{\rho})}{2a}, \frac{1}{2} \right], \quad \text{or}$$

$$q_H \leq \frac{1 + P(H|\bar{r})}{2} \text{ and } , q \in \left[\frac{1}{2} - \frac{(q_H - P(H|\bar{r}))(\bar{r} + \bar{\rho})}{2a}, \frac{1}{2} \right].$$

where $P(H|\bar{r})$ are voters' out the equilibrium beliefs when the executive is conservative.

Proof. (a) Conditions. The proof is similar to the one of Proposition 4.

(b) Voters choice in the first election. Voters expected utility with a reformist and a conservative politician in office in the first period is:

- Reformist. With this politician in office, $p_1 = 1$. The first period incumbent chooses $r_1 = \bar{r}$ is not reelected and $p_2 = 0$ with probability $(1 - q_H)$. Hence, $E[r_1] = (1 - q_H)\bar{r}$, $E[r_2] = (1 - q_H)^2\bar{r}$, $E[\rho_1] = (1 - q_H)\bar{\rho}$, and $E[\rho_2] = (1 - q_H)^2\bar{\rho}$. So decisive voters' expected utility if they vote for a reformist politician for office in the first period is:

$$-a(1 - q) - (1 - q_H)(\bar{r} + \bar{\rho}) + \beta[-a(q_H(1 - q) + (1 - q_H)q) - (1 - q_H)^2(\bar{r} + \bar{\rho})]$$

- Conservative. With this politician in office, $p_1 = 0$. There is no extraction of observable rents in the first period in this equilibrium $r_1 = 0$ and the first period incumbent is reelected, so $p_2 = 0$. In the second period, the incumbent extracts observable rents with probability $(1 - q_H)$, so $E[r_2] = (1 - q_H)\bar{r}$. In turn, $E[\rho_1] = E[\rho_2] = (1 - q_H)\bar{\rho}$. So decisive voters' expected utility if they vote for a conservative politician for office in the first period is:

$$-aq - (1 - q_H)\bar{\rho} + \beta[-aq - (1 - q_H)(\bar{r} + \bar{\rho})]$$

Therefore, voters prefer a conservative politician for office in the first period iff

$$q \leq \frac{1}{2} + \frac{(1 - q_H)\bar{r} - \beta(1 - q_H)q_H(\bar{r} + \bar{\rho})}{2a(1 + \beta q_H)}$$

□

□

Proof of Proposition 8. 1. The proof is the same as in Proposition 7 (4).

2. The proof is the same as in Proposition 7 (3).
3. We will prove that $\sigma_{10}^* = (\sigma_R, \sigma_C) = ((0, \bar{r}, RN), (0, \bar{r}, NN))$ is an equilibrium if the following conditions hold:

$$q_H \geq \frac{1}{2}, q \in \left[\frac{1}{2} + \frac{(1 - q_H)(\bar{r} + \bar{\rho})}{2a}, \frac{1}{2} + \frac{q_H(\bar{r} + \bar{\rho})}{2a} \right],$$

and,

$$\bar{r}[1 - \beta(2 - q_H)] \geq \beta[a(2 + |1 - 2q|) + (2 - q_H)\bar{\rho} + E].$$

Proof. (a) Conditions.

The two conditions that must hold are:

$$q \leq \frac{1}{2} - \frac{(1 - q_H)(\bar{r} + \bar{\rho})}{2a},$$

and,

$$q \in \left[\frac{1}{2} - \frac{q_H(\bar{r} + \bar{\rho})}{2a}, \frac{1}{2} + \frac{(1 - q_H)(\bar{r} + \bar{\rho})}{2a} \right].$$

Notice that:

$$\frac{1}{2} - \frac{(1 - q_H)(\bar{r} + \bar{\rho})}{2a} \geq \frac{1}{2} - \frac{q_H(\bar{r} + \bar{\rho})}{2a},$$

iff $q_H \geq \frac{1}{2}$.

- (b) Voters choice in the first election. Voters expected utility with a reformist and a conservative politician in office in the first period is:

- Reformist. With this politician in office, $p_1 = 1$. With probability q_H the first period incumbent extracts no rents and is reelected so $p_2 = 1$. Hence, $E[r_1] = (1 - q_H)\bar{r}$, $E[r_2] = (1 - q_H)^2\bar{r}$, $E[\rho_1] = (1 - q_H)\bar{\rho}$, and $E[\rho_2] = (1 - q_H)^2\bar{\rho}$. So decisive voters' expected utility if they vote for a reformist politician for office in the first period is:

$$-a(1 - q) - (1 - q_H)(\bar{r} + \bar{\rho}) + \beta[-a(q_H(1 - q) + (1 - q_H)q) - (1 - q_H)^2(\bar{r} + \bar{\rho})]$$

- Conservative. With this politician in office, $p_1 = 0$. There is no reelection in this equilibrium so $p_2 = 1$. In turn, $E[r_1] = E[r_2] = (1 - q_H)\bar{r}$, and $E[\rho_1] = E[\rho_2] = (1 - q_H)\bar{\rho}$. So decisive voters' expected utility if they vote for a conservative politician for office in the first period is:

$$-aq - (1 - q_H)(\bar{r} + \bar{\rho}) + \beta[-a(1 - q) - (1 - q_H)(\bar{r} + \bar{\rho})]$$

Therefore, voters prefer a reformist politician for office in the first period iff $q \geq \frac{1}{2} - \frac{\beta(1-q_H)q_H(\bar{r}+\bar{\rho})}{2a[1-\beta(1-q_H)]}$. This condition holds since $q \geq \frac{1}{2} + \frac{(1-q_H)(\bar{r}+\bar{\rho})}{2a} \geq \frac{1}{2}$.

□

4. $\sigma_5^* = (\sigma_R, \sigma_C) = ((0, \bar{r}, NN), (0, \bar{r}, RN))$ is an equilibrium if the following conditions hold:

$$q_H \geq \frac{1}{2}, q \in \left[\frac{1}{2} - \frac{q_H(\bar{r} + \bar{\rho})}{2a}, \frac{1}{2} - \frac{(1 - q_H)(\bar{r} + \bar{\rho})}{2a} \right],$$

and,

$$\bar{r}[1 - \beta(2 - q_H)] \geq \beta[a(2 + |1 - 2q|) + (2 - q_H)\bar{\rho} + E].$$

Proof. (a) Conditions.

The two conditions that must hold are:

$$q \leq \frac{1}{2} - \frac{(1 - q_H)(\bar{r} + \bar{\rho})}{2a},$$

and,

$$q \in \left[\frac{1}{2} - \frac{q_H(\bar{r} + \bar{\rho})}{2a}, \frac{1}{2} + \frac{(1 - q_H)(\bar{r} + \bar{\rho})}{2a} \right].$$

Notice that:

$$\frac{1}{2} - \frac{(1 - q_H)(\bar{r} + \bar{\rho})}{2a} \geq \frac{1}{2} - \frac{q_H(\bar{r} + \bar{\rho})}{2a},$$

iff $q_H \geq \frac{1}{2}$.

(b) Voters choice in the first election. Voters expected utility with a reformist and a conservative politician in office in the first period is:

- Reformist. With this politician in office, $p_1 = 1$. There is no reelection in this equilibrium, so $p_2 = 0$. Hence, $E[r_1] = E[r_2] = (1 - q_H)\bar{r}$, and $E[\rho_1] = E[\rho_2] = (1 - q_H)\bar{\rho}$. So decisive voters' expected utility if they vote for a reformist politician for office in the first period is:

$$-a(1 - q) - (1 - q_H)(\bar{r} + \bar{\rho}) + \beta[-aq - (1 - q_H)(\bar{r} + \bar{\rho})]$$

- Conservative. With this politician in office, $p_1 = 0$. With probability q_H the first period incumbent is honest, extracts no rents $r_1 = 0$ and is reelected so $p_2 = 0$. With probability $(1 - q_H)$ the incumbent is dishonest, extracts rents $r_1 = \bar{r}$ and is not reelected so $p_2 = 1$. Hence, $E[r_1] = (1 - q_H)\bar{r}$, $E[r_2] = (1 - q_H)\bar{r}$, $E[\rho_1] = (1 - q_H)\bar{\rho}$ and $E[\rho_2] = (1 - q_H)^2\bar{\rho}$. So decisive voters' expected utility if they vote for a conservative politician for office in the first period is:

$$-aq - (1 - q_H)(\bar{r} + \bar{\rho}) + \beta[-a(q_Hq + (1 - q_H)(1 - q)) - (1 - q_H)^2(\bar{r} + \bar{\rho})]$$

Therefore, voters prefer a conservative politician for office in the first period iff

$$q \leq \frac{1}{2} + \frac{\beta(1 - q_H)q_H(\bar{r} + \bar{\rho})}{2a[1 - \beta(1 - q_H)]} \quad (67)$$

But (7) implies that $q < \frac{1}{2}$ and $\beta(1 - q_H) < 1$, so inequality (67) is fulfilled.

□

5. We will prove that $\sigma_1^* = (\sigma_R, \sigma_C) = ((0, \bar{r}, RN), (0, \bar{r}, RN))$ is an equilibrium if the following conditions hold:

$$q \in \left[\frac{1}{2} - \frac{(\frac{1}{2} - |\frac{1}{2} - q_H|)(\bar{r} + \bar{\rho})}{2a}, \frac{1}{2} + \frac{(\frac{1}{2} - |\frac{1}{2} - q_H|)(\bar{r} + \bar{\rho})}{2a} \right],$$

$$\bar{r}[1 - \beta(2 - q_H)] \geq \beta[a(2 + |1 - 2q|) + (2 - q_H)\bar{\rho} + E].$$

Proof. (a) Conditions.

The strategy $(0, \bar{r}, NR)$ is an equilibrium for the reformist and the conservative if these conditions are fulfilled at the same time:

$$q \in \left[\frac{1}{2} - \frac{(1 - q_H)(\bar{r} + \bar{\rho})}{2a}, \frac{1}{2} + \frac{q_H(\bar{r} + \bar{\rho})}{2a} \right], \quad \bar{r}[1 - \beta(2 - q_H)] \geq \beta[a(2q + 1) + (2 - q_H)\bar{\rho} + E],$$

$$q \in \left[\frac{1}{2} - \frac{q_H(\bar{r} + \bar{\rho})}{2a}, \frac{1}{2} + \frac{(1 - q_H)(\bar{r} + \bar{\rho})}{2a} \right], \quad \bar{r}[1 - \beta(2 - q_H)] \geq \beta[a(3 - 2q) + (2 - q_H)\bar{\rho} + E].$$

Let's analyze first the condition on q . Note that:

$$\frac{1}{2} - \frac{(1 - q_H)(\bar{r} + \bar{\rho})}{2a} \leq \frac{1}{2} - \frac{q_H(\bar{r} + \bar{\rho})}{2a} \quad \text{iff } q_H \leq \frac{1}{2},$$

and

$$\frac{1}{2} + \frac{q_H(\bar{r} + \bar{\rho})}{2a} \leq \frac{1}{2} + \frac{(1 - q_H)(\bar{r} + \bar{\rho})}{2a} \quad \text{iff } q_H \leq \frac{1}{2}.$$

Then, when $q_H \leq \frac{1}{2}$, the condition on q is:

$$q \in \left[\frac{1}{2} - \frac{q_H(\bar{r} + \bar{\rho})}{2a}, \frac{1}{2} + \frac{q_H(\bar{r} + \bar{\rho})}{2a} \right]$$

When $q_H \geq \frac{1}{2}$, the condition on q is:

$$q \in \left[\frac{1}{2} - \frac{(1 - q_H)(\bar{r} + \bar{\rho})}{2a}, \frac{1}{2} + \frac{(1 - q_H)(\bar{r} + \bar{\rho})}{2a} \right]$$

Consider now the conditions on \bar{r} , and notice that:

$$\beta[a(2q + 1) + (2 - q_H)\bar{\rho} + E] \geq \beta[a(3 - 2q) + (2 - q_H)\bar{\rho} + E] \text{ iff } q \geq \frac{1}{2}.$$

Combining the previous conditions, we get the following conditions:

$$q_H \leq \frac{1}{2}, q \in \left[\frac{1}{2} - \frac{q_H(\bar{r} + \bar{\rho})}{2a}, \frac{1}{2} \right], \bar{r}[1 - \beta(2 - q_H)] \geq \beta[a(3 - 2q) + (2 - q_H)\bar{\rho} + E] \text{ or,}$$

$$q_H \leq \frac{1}{2}, q \in \left[\frac{1}{2}, \frac{1}{2} + \frac{q_H(\bar{r} + \bar{\rho})}{2a} \right], \bar{r}[1 - \beta(2 - q_H)] \geq \beta[a(2q + 1) + (2 - q_H)\bar{\rho} + E] \text{ or,}$$

$$q_H \geq \frac{1}{2}, q \in \left[\frac{1}{2} - \frac{(1 - q_H)(\bar{r} + \bar{\rho})}{2a}, \frac{1}{2} \right], \bar{r}[1 - \beta(2 - q_H)] \geq \beta[a(3 - 2q) + (2 - q_H)\bar{\rho} + E] \text{ or,}$$

$$q_H \geq \frac{1}{2}, q \in \left[\frac{1}{2}, \frac{1}{2} + \frac{(1 - q_H)(\bar{r} + \bar{\rho})}{2a} \right], \bar{r}[1 - \beta(2 - q_H)] \geq \beta[a(2q + 1) + (2 - q_H)\bar{\rho} + E].$$

(b) Voters choice in the first election. Voters expected utility with a reformist and a conservative politician in office in the first period is:

- Reformist. With this politician in office, $p_1 = 1$. With probability q_H the first period incumbent extracts no rents and is reelected so $p_2 = 1$. Hence, $E[r_1] = (1 - q_H)\bar{r}$, $E[r_2] = (1 - q_H)^2\bar{r}$, $E[\rho_1] = (1 - q_H)\bar{\rho}$, and $E[\rho_2] = (1 - q_H)^2\bar{\rho}$. So decisive voters' expected utility if they vote for a reformist politician for office in the first period is:

$$-a(1 - q) - (1 - q_H)(\bar{r} + \bar{\rho}) + \beta[-a(q_H(1 - q) + (1 - q_H)q) - (1 - q_H)^2(\bar{r} + \bar{\rho})]$$

- Conservative. With this politician in office, $p_1 = 0$. The first period incumbent is always reelected in this equilibrium so $p_2 = 0$. In turn, $E[r_1] = E[r_2] = (1 - q_H)\bar{r}$, and $E[\rho_1] = E[\rho_2] = (1 - q_H)\bar{\rho}$. So decisive voters' expected utility if they vote for a conservative politician for office in the first period is:

$$-aq - (1 - q_H)(\bar{r} + \bar{\rho}) + \beta[-aq - (1 - q_H)(\bar{r} + \bar{\rho})]$$

Therefore, voters prefer a reformist politician for office in the first period iff $q \geq \frac{1}{2} - \frac{\beta(1-q_H)q_H(\bar{r}+\bar{\rho})}{2a(1+\beta q_H)}$. But this condition does not hold since $q \leq \frac{1}{2} - \frac{q_H(\bar{r}+\bar{\rho})}{2a} \leq \frac{1}{2} - \frac{\beta(1-q_H)q_H(\bar{r}+\bar{\rho})}{2a(1+\beta q_H)}$.

□

6. The proof is the same as before.

□

Proof of Proposition 9. 1. We will prove that $\sigma_9^* = (\sigma_R, \sigma_C) = ((0, \bar{r}, RR), (0, \bar{r}, NN))$ is an equilibrium if the following conditions hold:

$$q \leq \frac{1}{2} + \frac{(\frac{1}{2} + |\frac{1}{2} - q_H|)(\bar{r} + \bar{\rho})}{2a}.$$

Proof. (a) Conditions. The proof is similar to the one of Proposition 5. Note that the conditions are:

$$q_H \leq \frac{1}{2}, q \geq \frac{1}{2} + \frac{(1 - q_H)(\bar{r} + \bar{\rho})}{2a}, \quad \text{or}$$

$$q_H \geq \frac{1}{2}, q \geq \frac{1}{2} + \frac{q_H(\bar{r} + \bar{\rho})}{2a},$$

which can be expressed as in the proposition.

(b) Voters choice in the first election.

Voters expected utility with a reformist and a conservative politician in office in the first period is:

- Reformist. With this politician in office, $p_1 = 1$. The first period incumbent is always reelected in this equilibrium so $p_2 = 0$. In turn, $E[r_1] = E[r_2] = (1 - q_H)\bar{r}$, and $E[\rho_1] = E[\rho_2] = (1 - q_H)\bar{\rho}$. So decisive voters' expected utility if they vote for a reformist politician for office in the first period is:

$$-a(1 - q) - (1 - q_H)(\bar{r} + \bar{\rho}) + \beta[-a(1 - q) - (1 - q_H)(\bar{r} + \bar{\rho})]$$

- Conservative. With this politician in office, $p_1 = 0$. There is no reelection in this equilibrium so $p_2 = 1$. In turn, $E[r_1] = E[r_2] = (1 - q_H)\bar{r}$, and $E[\rho_1] = E[\rho_2] = (1 - q_H)\bar{\rho}$. So decisive voters' expected utility if they vote for a conservative politician for office in the first period is:

$$-aq - (1 - q_H)(\bar{r} + \bar{\rho}) + \beta[-a(1 - q) - (1 - q_H)(\bar{r} + \bar{\rho})]$$

Therefore, voters prefer a reformist politician for office in the first period iff $a(2q - 1) \geq \frac{1}{2}$. This condition holds since $q \geq \frac{1}{2} + \frac{(1-q_H)(\bar{r}+\bar{\rho})}{2a} \geq \frac{1}{2}$.

□

2. We will prove that $\sigma_4^* = (\sigma_R, \sigma_C) = ((0, \bar{r}, NN), (0, \bar{r}, RR))$ is an equilibrium if the following conditions hold:

$$q \leq \frac{1}{2} - \frac{(\frac{1}{2} + |\frac{1}{2} - q_H|)(\bar{r} + \bar{\rho})}{2a}.$$

Proof. (a) Conditions.

The two conditions that must hold are:

$$q \leq \frac{1}{2} - \frac{(1 - q_H)(\bar{r} + \bar{\rho})}{2a} \quad \text{and} \quad q \leq \frac{1}{2} - \frac{q_H(\bar{r} + \bar{\rho})}{2a}.$$

Notice that:

$$\frac{1}{2} - \frac{(1 - q_H)(\bar{r} + \bar{\rho})}{2a} \leq \frac{1}{2} - \frac{q_H(\bar{r} + \bar{\rho})}{2a},$$

iff $q_H \leq \frac{1}{2}$.

Thus, when $q_H \leq \frac{1}{2}$ the first condition is binding, while in the other case, it is the second.

Finally, we can express conditions as:

$$q_H \leq \frac{1}{2}, q \leq \frac{1}{2} - \frac{(1 - q_H)(\bar{r} + \bar{\rho})}{2a}, \quad \text{or}$$

$$q_H \geq \frac{1}{2}, q \leq \frac{1}{2} - \frac{q_H(\bar{r} + \bar{\rho})}{2a}.$$

(b) Voters choice in the first election. Voters expected utility with a reformist and a conservative politician in office in the first period is:

- Reformist. With this politician in office, $p_1 = 1$. There is no reelection in this equilibrium, so $p_2 = 0$. Hence, $E[r_1] = E[r_2] = (1 - q_H)\bar{r}$, and $E[\rho_1] = E[\rho_2] = (1 - q_H)\bar{\rho}$. So decisive voters' expected utility if they vote for a reformist politician for office in the first period is:

$$-a(1 - q) - (1 - q_H)(\bar{r} + \bar{\rho}) + \beta[-aq - (1 - q_H)(\bar{r} + \bar{\rho})]$$

- Conservative. With this politician in office, $p_1 = 0$. The first period incumbent is always reelected in this equilibrium so $p_2 = 0$. Hence, $E[r_1] = E[r_2] = (1 - q_H)\bar{r}$,

and $E[\rho_1] = E[\rho_2] = (1 - q_H)\bar{\rho}$. So decisive voters' expected utility if they vote for a conservative politician for office in the first period is:

$$-aq - (1 - q_H)(\bar{r} + \bar{\rho}) + \beta[-aq - (1 - q_H)(\bar{r} + \bar{\rho})]$$

Therefore, voters prefer a reformist politician for office in the first period iff $a(2q - 1) \geq 0$. But this condition is not fulfilled in this equilibrium because $q \leq \frac{1}{2} - \frac{(\frac{1}{2} + |\frac{1}{2} - q_H|)(\bar{r} + \bar{\rho})}{2a} \leq \frac{1}{2}$

□

3. We will prove that $\sigma_6^* = (\sigma_R, \sigma_C) = ((0, \bar{r}, RR), (0, \bar{r}, RN))$ is an equilibrium if the following conditions hold:

$$q_H \leq \frac{1}{2}, q \in \left[\frac{1}{2} + \frac{q_H(\bar{r} + \bar{\rho})}{2a}, \frac{1}{2} + \frac{(1 - q_H)(\bar{r} + \bar{\rho})}{2a} \right],$$

and,

$$\bar{r}[1 - \beta(2 - q_H)] \geq \beta[a(2 - |1 - 2q|) + (2 - q_H)\bar{\rho} + E].$$

Proof. (a) Conditions

The two conditions on q that should hold are:

$$q \geq \frac{1}{2} + \frac{q_H(\bar{r} + \bar{\rho})}{2a},$$

and,

$$q \in \left[\frac{1}{2} - \frac{q_H(\bar{r} + \bar{\rho})}{2a}, \frac{1}{2} + \frac{(1 - q_H)(\bar{r} + \bar{\rho})}{2a} \right].$$

Notice that these two conditions are compatible iff:

$$\frac{1}{2} + \frac{q_H(\bar{r} + \bar{\rho})}{2a} \leq \frac{1}{2} + \frac{(1 - q_H)(\bar{r} + \bar{\rho})}{2a},$$

or equivalently, iff $q_H \leq \frac{1}{2}$.

(b) Voters choice in the first election. Voters expected utility with a reformist and a conservative politician in office in the first period is:

- Reformist. With this politician in office, $p_1 = 1$. The first period incumbent is always reelected in this equilibrium so $p_2 = 1$. Hence, $E[r_1] = E[r_2] = (1 - q_H)\bar{r}$, and $E[\rho_1] = E[\rho_2] = (1 - q_H)\bar{\rho}$. So decisive voters' expected utility if they vote for a reformist politician for office in the first period is:

$$-a(1 - q) - (1 - q_H)(\bar{r} + \bar{\rho}) + \beta[-a(1 - q) - (1 - q_H)(\bar{r} + \bar{\rho})]$$

- Conservative. With this politician in office, $p_1 = 0$. With probability q_H the first period incumbent is honest, extracts no rents $r_1 = 0$ and is reelected so $p_2 = 0$. With probability $(1 - q_H)$ the incumbent is dishonest, extracts rents $r_1 = \bar{r}$ and is not reelected so $p_2 = 1$. Hence, $E[r_1] = (1 - q_H)\bar{r}$, $E[r_2] = (1 - q_H)^2\bar{r}$, $E[\rho_1] = (1 - q_H)\bar{\rho}$ and $E[\rho_2] = (1 - q_H)^2\bar{\rho}$. So decisive voters' expected utility if they vote for a conservative politician for office in the first period is:

$$-aq - (1 - q_H)(\bar{r} + \bar{\rho}) + \beta[-a(1 - q) - aq_H(2q - 1) - (1 - q_H)^2(\bar{r} + \bar{\rho})]$$

Therefore, voters prefer a conservative politician for office in the first period iff

$$q \leq \frac{1}{2} + \frac{\beta(1 - q_H)q_H(\bar{r} + \bar{\rho})}{2a(1 + \beta q_H)}$$

But this condition cannot be fulfilled because $q \geq \frac{1}{2} + \frac{q_H(\bar{r} + \bar{\rho})}{2a} \geq \frac{1}{2}$ in this equilibrium. □

4. We will prove that $\sigma_{11}^* = (\sigma_R, \sigma_C) = ((0, \bar{r}, RN), (0, \bar{r}, RR))$ is an equilibrium if the following conditions hold:

$$q_H \leq \frac{1}{2}, q \in \left[\frac{1}{2} - \frac{(1 - q_H)(\bar{r} + \bar{\rho})}{2a}, \frac{1}{2} - \frac{q_H(\bar{r} + \bar{\rho})}{2a} \right],$$

and,

$$\bar{r}[1 - \beta(2 - q_H)] \geq \beta[a(2 - |1 - 2q|) + (2 - q_H)\bar{\rho} + E].$$

Proof. (a) Conditions. The proof is similar to the one of the previous item.

(b) Voters' welfare.

Let's decompose the last expression as the sum of the following terms:

$$\begin{aligned} & -\beta(1 - q)a - \beta(1 - q)aq_H \\ & -\beta(1 - q_H)aq, \\ & -(1 - q_H)(\bar{r} + \bar{\rho}), \\ & -\beta(1 - q_H)^2(\bar{r} + \bar{\rho}), \\ & P_C a(1 - 2q), \\ & \beta P_C a(1 - 2q)q_H, \end{aligned}$$

and,

$$-\beta P_C(1 - q_H)q_H(\bar{r} + \bar{p}).$$

□

□

Proof of proposition 10 . Four strategy profiles can be played in equilibrium after the election of a reformist and a conservative candidate in the first election (propositions 1 to 3). Therefore, there are sixteen possibilities, of which eleven have been covered in propositions 7 to 9. We now show that the remaining five combinations presented in table 1 cannot be equilibria of the whole game because there is no parameter configuration such that these profiles are PBE of the subgames that begin after the first election simultaneously.

Reformist	Conservative
$00RN$	$00RN$
$00RN$	$0\bar{r}RR$
$0\bar{r}NN$	$0\bar{r}NN$
$0\bar{r}RR$	$00RN$
$0\bar{r}RR$	$0\bar{r}RR$

Table 1: Incompatible subgame equilibria

Propositions 1 to 3 imply that the profiles $(0, 0, RN)$, $(0, \bar{r}, NN)$ and $(0, \bar{r}, RR)$ cannot be part of an equilibrium simultaneously for reformist and conservative incumbents. Also, the conditions such that the profile $(0, 0, RN)$ [$(0, 0, RR)$] is played when the incumbent is reformist, and $(0, \bar{r}, RR)$ [$(0, 0, RN)$] when it is conservative, are incompatible.

The unicity of the equilibria in the subgames that begin with the first election proved in proposition 6 imply that the equilibria in the whole game are also unique.

□

8.2 Separation of powers

8.2.1 Definitions: Strategies, beliefs and payoffs

We define the game played between voters, the executive and the legislature.

Strategies:

1. The honest executive has two information sets (each containing only one node): one after Nature chooses an honest politician for the legislature, and another when it chooses a dishonest politician.

At each information set, the executive has two possible actions: 0 and \bar{r} . We denote a strategy as a 2-vector, where the first (second) component is the action at the first (second) information set. The same holds for the dishonest executive.

2. The honest legislative has four information sets (each containing only one node): one after Nature chooses an honest politician for the executive who proposed 0 rents, another when Nature chooses an honest politician who proposed \bar{r} rents, another after Nature chooses a dishonest politician who proposed 0 rents, and finally, after Nature chooses a dishonest politician who proposed \bar{r} rents. At each information set, it has two possible actions: 0 and \bar{r} . We denote a strategy as a 4-vector, where the first, second, third, and fourth component is the action at the first, second, third, and fourth information set, respectively. The same holds for the dishonest legislative.
3. Voters have four information sets (each containing four nodes). The information sets follow after the executive and the legislature propose $(\tilde{r}_{X,t}, \tilde{r}_{L,t}) \in \{(0, 0), (0, \bar{r}), (\bar{r}, 0), (\bar{r}, \bar{r})\}$. Each information set has 4 nodes: one where both politicians are honest, one where only the executive is honest, another when only the legislative is honest, and another where both are dishonest. At each information set, voters have four possible actions: reelect both politicians, only one, or neither of them.

Voters beliefs:

Define:

$$\begin{aligned}
 P_{HH}(\tilde{r}_X, \tilde{r}_L) &= \text{Prob}(X_H, L_H | \tilde{r}_X, \tilde{r}_L) \\
 P_{HD}(\tilde{r}_X, \tilde{r}_L) &= \text{Prob}(X_H, L_D | \tilde{r}_X, \tilde{r}_L) \\
 P_{DH}(\tilde{r}_X, \tilde{r}_L) &= \text{Prob}(X_D, L_H | \tilde{r}_X, \tilde{r}_L) \\
 P_{DD}(\tilde{r}_X, \tilde{r}_L) &= \text{Prob}(X_D, L_D | \tilde{r}_X, \tilde{r}_L)
 \end{aligned}$$

It is immediately clear that:

$$\begin{aligned}
 P_D(\tilde{r}_X, \tilde{r}_L) &= \text{Prob}(X_D | \tilde{r}_X, \tilde{r}_L) = P_{DH}(\tilde{r}_X, \tilde{r}_L) + P_{DD}(\tilde{r}_X, \tilde{r}_L) \\
 P_{.D}(\tilde{r}_X, \tilde{r}_L) &= \text{Prob}(L_D | \tilde{r}_X, \tilde{r}_L) = P_{HD}(\tilde{r}_X, \tilde{r}_L) + P_{DD}(\tilde{r}_X, \tilde{r}_L)
 \end{aligned}$$

Whenever it is possible, voters update their beliefs using Bayes.

Voters expected payoffs

At the election time, forward looking voters look at their expected second period utility to choose their vote. The expected utility associated to votes casted in the election at the end of period one depends on who the first period incumbents are and which policy results. The identity of the first period incumbent matters because the expected utility of voting for a given party depends on the information citizens have about the candidate and this depends on whether the candidate is an incumbent running

for reelection or a challenger. The first period policy matters because it conditions the second period policy outcome if voters choose a divided government for the second period. We focus in what follows on moderate citizens who are the only possible swing voters. To simplify notation, we drop the M subindex.

There are six different voters payoff-relevant histories:

1. BB, so $p_1 = 1$;
2. AA, so $p_1 = 0$;
3. BA and $p_0 = 0$, in which case $p_1 = 0$;
4. BA and $p_0 = 1$, in which case $p_1 = 1$;
5. AB and $p_0 = 0$, in which case $p_1 = 0$;
6. AB and $p_0 = 1$, in which case $p_1 = 1$;

Voters second period expected utility at the election time in the information set $(\tilde{r}_X, \tilde{r}_L)$ are indicated in table 2. We focus on the case $p_0 = 0$.

Incumbents in $t = 1$	Incumbents in $t = 2$	Payoffs
BB	BB	$-a(1 - q) - \bar{\rho}P_D(\tilde{r}_X, \tilde{r}_L) - \bar{r}P_{DD}(\tilde{r}_X, \tilde{r}_L)$
BB	BA	$-a(1 - q) - \bar{\rho}P_D(\tilde{r}_X, \tilde{r}_L)$
BB	AB	$-a(1 - q) - \bar{\rho}(1 - q_H)$
BB	AA	$-aq - \bar{\rho}(1 - q_H) - \bar{r}(1 - q_H)^2$
AA	BB	$-a(1 - q) - \bar{\rho}(1 - q_H) - \bar{r}(1 - q_H)^2$
AA	BA	$-aq - \bar{\rho}(1 - q_H)$
AA	AB	$-aq - \bar{\rho}P_D(\tilde{r}_X, \tilde{r}_L)$
AA	AA	$-aq - \bar{\rho}P_D(\tilde{r}_X, \tilde{r}_L) - \bar{r}P_{DD}(\tilde{r}_X, \tilde{r}_L)$
BA	BB	$-a(1 - q) - \bar{\rho}P_D(\tilde{r}_X, \tilde{r}_L) - \bar{r}P_D(\tilde{r}_X, \tilde{r}_L)(1 - q_H)$
BA	BA	$-aq - \bar{\rho}P_D(\tilde{r}_X, \tilde{r}_L)$
BA	AB	$-aq - \bar{\rho}(1 - q_H)$
BA	AA	$-aq - \bar{\rho}(1 - q_H) - \bar{r}(1 - q_H)P_D(\tilde{r}_X, \tilde{r}_L)$
AB	BB	$-a(1 - q) - \bar{\rho}(1 - q_H) - \bar{r}(1 - q_H)P_D(\tilde{r}_X, \tilde{r}_L)$
AB	BA	$-aq - \bar{\rho}(1 - q_H)$
AB	AB	$-aq - \bar{\rho}P_D(\tilde{r}_X, \tilde{r}_L)$
AB	AA	$-aq - \bar{\rho}P_D(\tilde{r}_X, \tilde{r}_L) - \bar{r}P_D(\tilde{r}_X, \tilde{r}_L)(1 - q_H)$

Table 2: Voters expected utility at each information set. Ass: $p_0 = 0$.

Inspection of table 2 shows that some actions are dominated:

- If BB in $t = 1$, then for $t = 2$, BA dominates BB in all the information sets and for any possible belief (on and off the equilibrium path). Intuitively, the status quo is $p_1 = 1$ in this scenario, and hence the policy outcome is the same with BB and BA . In turn, BA is preferred to BB because the latter opens the door to the extraction of observable rents.
- If AA in $t = 1$, then for $t = 2$, AB dominates AA in all the information sets and for any possible belief (on and off the equilibrium path). Intuitively, the status quo is $p_1 = 0$ in this scenario, and hence the policy outcome is the same with AA and AB . In turn, AB is preferred to AA because the latter opens the door to the extraction of observable rents.
- If AB or BA in $t = 1$, then in $t = 2$, AB dominates AA .

Simplifying assumptions

A1. A honest politician never proposes positive rents.

A2. A dishonest incumbent proposes rents only if the other incumbent also proposes rents.

These two assumptions imply that we will only focus on two type of equilibria: pooling on $r = 0$ and semiseparating. In the pooling equilibrium, the strategies are as follows: (i) X_H and X_D choose $(0, 0)$, i.e. the executive chooses $r = 0$ after observing a honest and a dishonest legislature, respectively; (ii) L_H and L_D choose $(0, 0, 0, 0)$, i.e. the legislature chooses $r = 0$ after observing a honest executive proposing zero rents, a honest executive proposing positive rents, a dishonest executive proposing zero rents and a dishonest executive proposing positive rents, respectively. In the semiseparating equilibrium, the strategies are as follows: (i) X_H chooses $(0, 0)$; (ii) X_D chooses $(0, \bar{r})$, i.e. the dishonest executive chooses zero rents if the legislature is honest and positive rents otherwise; (iii) L_H always propose zero rents $(0, 0, 0, 0)$ and (iv) L_D chooses $(0, \bar{r}, 0, \bar{r})$, i.e. he proposes to extract rents if the executive proposed to extract rents.

Beliefs in the pooling and semiseparating equilibria

Beliefs out of the equilibrium path are not restricted, but on the equilibrium path beliefs can be updated using Bayes.

Beliefs on the pooling equilibrium path (the only information set on the eq path in pooling eq is 00):

$$\begin{aligned} P_{HH}(0, 0) &= q_H^2 \\ P_{HD}(0, 0) &= q_H(1 - q_H) \\ P_{DH}(0, 0) &= q_H(1 - q_H) \\ P_{DD}(0, 0) &= (1 - q_H)^2 \end{aligned}$$

Beliefs on the semiseparating equilibrium paths (two information sets on the eq path in the semiseparating eq (00) and $(\bar{r}\bar{r})$):

$$\begin{aligned} P_{HH}(0, 0) &= \frac{q_H}{2 - q_H} \\ P_{HD}(0, 0) &= \frac{1 - q_H}{2 - q_H} \\ P_{DH}(0, 0) &= \frac{1 - q_H}{2 - q_H} \\ P_{DD}(0, 0) &= 0 \\ P_{HH}(\bar{r}, \bar{r}) = P_{HD}(\bar{r}, \bar{r}) = P_{DH}(\bar{r}, \bar{r}) &= 0 \\ P_{DD}(\bar{r}, \bar{r}) &= 1 \end{aligned}$$

8.2.2 Auxiliary propositions: equilibria of the subgames that begin after the first election

Pooling equilibria of the subgames that begin after the first election

Proposition 16. *Pooling equilibrium after BB.* *The subgame that begins when voters choose a unified government of party B at the beginning of period 1 has a perfect Bayesian equilibrium in which*

neither honest nor dishonest politicians extract observable rents and voters reelect the executive if and only if it proposes no rents. More formally, the strategy profile is

1. Executive: $X_H = X_D = (0, 0)$.
2. Legislature: $L_H = (0, 0, 0, 0)$ and $L_D = (0, \bar{r}, 0, \bar{r})$.
3. Voters: (BA, BA, AB, AB) .

This strategy profile and beliefs $P_D.(0, 0) = 1 - q_H$, $P_D.(0, \bar{r}) \leq 1 - q_H$, $P_D.(\bar{r}, 0) \geq 1 - q_H$ and $P_D.(\bar{r}, \bar{r}) \geq 1 - q_H$ are a PBE if and only if $(b_D - 1)\frac{\bar{r}}{2} \leq \beta(\bar{\rho}(1 - q_H + b_D) + E)$, and $a(1 - 2q) \leq \bar{r}(1 - q_H)^2$. Voters expected utility in this equilibrium is $(1 + \beta)[-a(1 - q) - (1 - q_H)\bar{\rho}]$.

Proof of proposition 16. We check that none has incentives to deviate at any information set.

1. Honest executive

- (a) After L_H . If X_H does not deviate, then the path is $X_H, L_H, 0, 0, BA$ and, according to Table ?? in the Appendix, the expected utility of the executive is $-aq + \beta(-aq + E)$. If X_H deviates to \bar{r} , then the path is $X_H, L_H, \bar{r}, 0, AB$ and the utility of the executive is $-aq + \beta[-aq - \bar{\rho}(1 - q_H)]$. The executive does not deviate, since the gains from deviating are $-\beta[\bar{\rho}(1 - q_H) + E] < 0$.
- (b) After L_D . The path is $X_H, L_D, 0, 0, BA$ if X_H does not deviate and $X_H, L_D, \bar{r}, \bar{r}, AB$ if it does. The utility gains from deviating are $-\bar{r} + \beta[-\bar{\rho}(1 - q_H) - E] < 0$, so the honest executive does not deviate.

2. Dishonest executive

- (a) After L_H . The path is $X_D, L_H, 0, 0, BA$ if the executive does not deviate and $X_D, L_H, \bar{r}, 0, AB$ if it does. The utility gains of the dishonest executive from deviating are $\beta[-\bar{\rho}(1 - q_H + b_D) - E] < 0$ and hence X_D does not deviate.
- (b) After L_D . The path is $X_D, L_D, 0, 0, BA$ if the executive does not deviate and $X_D, L_D, \bar{r}, \bar{r}, AB$ if it does. The utility gains of the dishonest executive from deviating are $(b_D - 1)\frac{\bar{r}}{2} \leq \beta[\bar{\rho}(1 - q_H + b_D) + E]$.

3. Honest legislature

- (a) After $X_H, 0$. The path is $X_H, L_H, 0, 0, BA$ if the legislature does not deviate and $X_H, L_H, 0, \bar{r}, BA$ if it does. The legislature does not deviate since the utility gains from deviating are zero.

- (b) After X_H, \bar{r} . The path is $X_H, L_H, \bar{r}, 0, AB$ if the legislature does not deviate and $X_H, L_H, \bar{r}, \bar{r}, AB$ if it does. The honest legislature does not deviate since the utility gains from deviating are $-\bar{r} < 0$.
- (c) After $X_D, 0$. The path is $X_D, L_H, 0, 0, BA$ if the legislature does not deviate and $X_D, L_H, 0, \bar{r}, BA$ if it does. The legislature does not deviate since the utility gains from deviating are zero.
- (d) After X_D, \bar{r} . The path is $X_D, L_H, \bar{r}, 0, AB$ if the legislature does not deviate and $X_D, L_H, \bar{r}, \bar{r}, AB$ if it does. The utility gains of the honest legislature from deviating are: $-\bar{r} < 0$, so the honest legislature does not deviate.

4. Dishonest legislature

- (a) After $X_H, 0$. The path is $X_H, L_D, 0, 0, BA$ if the legislature does not deviate and $X_H, L_D, 0, \bar{r}, BA$ if it does. The legislature does not deviate since the utility gains from deviating are zero.
- (b) After X_H, \bar{r} . The path is $X_H, L_D, \bar{r}, \bar{r}, AB$ if the legislature does not deviate and $X_H, L_D, \bar{r}, 0, BA$ if it does. The legislature does not deviate since the utility gains from deviating are $-(b_D - 1)\frac{\bar{r}}{2}$.
- (c) After $X_D, 0$. The path is $X_D, L_D, 0, 0, BA$ if the legislature does not deviate and $X_D, L_D, 0, \bar{r}, BA$ if it does. The legislature does not deviate since the utility gains from deviating are zero.
- (d) After X_D, \bar{r} . The path is $X_D, L_D, \bar{r}, \bar{r}, AB$ if the legislature does not deviate and $X_D, L_D, \bar{r}, 0, AB$ if it does. The utility gains of the dishonest legislature from deviating are: $-(b_D - 1)\frac{\bar{r}}{2} < 0$ so the dishonest legislature does not deviate.

5. Voter. In this equilibrium, $(0, 0)$ is the only voter's information set that lies on the equilibrium path. Using Bayes rule, the voter learns nothing in this equilibrium, so the priors are equal to the posteriors. This implies, in particular, that $P_D.(0, 0) = 1 - q_H$. Off the equilibrium path, we cannot rule out other beliefs. From inspection of table 2, and recalling that the current first period government is BB, we conclude that BB is dominated by BA.

- (a) Consider first the information set $(0, 0)$ which is on the equilibrium path. In this case, AB and BA give the same payoffs. So, we need to compare BA and AA . Voters do not have incentives to deviate to from BA to AA iff $a(1 - 2q) \leq \bar{r}(1 - q_H)^2$.
- (b) At the information set $(0, \bar{r})$, voters do not deviate from BA either to AB , if $P_D.(0, \bar{r}) \leq 1 - q_H$, or to AA , if $P_D.(0, \bar{r}) \leq \frac{1}{\bar{r}}[-a(1 - 2q) + \bar{r}(1 - q_H) + \bar{r}(1 - q_H)^2]$. This last condition is fulfilled since $P_D.(0, \bar{r}) \leq 1 - q_H$ and $a(1 - 2q) \leq \bar{r}(1 - q_H)^2$.
- (c) At the information set $(\bar{r}, 0)$, voters do not deviate from AB either to BA , if $P_D.(\bar{r}, 0) \geq 1 - q_H$, or to AA , if $a(1 - 2q) \leq \bar{r}(1 - q_H)^2$.

- (d) At the information set (\bar{r}, \bar{r}) , voters do not deviate from AB either to BA , if $P_D(\bar{r}, \bar{r}) \geq 1 - q_H$, or to AA , if $a(1 - 2q) \leq \bar{\rho}(1 - q_H)$.

□

Proposition 17. *The subgame that begins after voters choose BB in the first period has no pooling equilibrium with zero rents if $a(1 - 2q) > \bar{r}(1 - q_H)^2$.*

Proof. Using table 2, we note that voters always choose AA if $a(1 - 2q) > \bar{r}(1 - q_H)^2$. With this voters' strategy, a dishonest legislature has incentives to extract rents after the executive proposes positive rents. In other words, the strategy $(0, 0, 0, 0)$ cannot be a best response to voters strategy (AA, AA, AA, AA) for a dishonest legislature. Indeed, the utility gains of a dishonest legislature who accepts a proposal from the executive to extract rents are $(b_D - 1)\frac{\bar{r}}{2} > 0$. □

Proposition 18. Pooling equilibrium after AA . *The subgame that begins when voters choose a unified government of party A at the beginning of period 1 has a pooling perfect Bayesian equilibrium in which neither honest nor dishonest politicians extract observable rents, and voters reelect the executive and do not reelect the legislature unless the executive proposes positive rents. More formally, the strategy profile is*

1. Executive: $X_H = X_D = (0, 0)$.
2. Legislature: $L_H = (0, 0, 0, 0)$ and $L_D = (0, \bar{r}, 0, \bar{r})$.
3. Voters: (AB, AB, BA, BA) .

This strategy profile and beliefs $P_D(0, 0) = 1 - q_H$, $P_D(0, \bar{r}) \leq 1 - q_H$, $P_D(\bar{r}, 0) \geq 1 - q_H$ and $P_D(\bar{r}, \bar{r}) \geq 1 - q_H$ are a PBE if and only if $(b_D - 1)\frac{\bar{r}}{2} \leq \beta[\bar{\rho}(1 - q_H + b_D) + E]$, and $a(2q - 1) \leq \bar{r}(1 - q_H)^2$. Voters expected utility in this equilibrium is $(1 + \beta)[-aq - (1 - q_H)\bar{\rho}]$.

Proof of proposition 18. We check that no one has incentives to deviate at any information set.

1. Honest executive

- (a) After L_H . If X_H does not deviate, then the path is $X_H, L_H, 0, 0, AB$ and, according to Table ?? in the appendix, the expected utility of the executive is $-a(1 - q) + \beta(-a(1 - q) + E)$. If X_H deviates to \bar{r} , then the path is $X_H, L_H, \bar{r}, 0, BA$ and the utility of the executive is $-a(1 - q) + \beta[-a(1 - q) - \bar{\rho}(1 - q_H)]$. The executive does not deviate, since the gains from deviating are $-\beta[\bar{\rho}(1 - q_H) + E] < 0$.
- (b) After L_D . The path is $X_H, L_D, 0, 0, AB$ if X_H does not deviate and $X_H, L_D, \bar{r}, \bar{r}, BA$ if it does. The utility gains from deviating are $-\bar{r} - \beta[\bar{\rho}(1 - q_H) + E] < 0$, so the honest executive does not deviate.

2. Dishonest executive

- (a) After L_H . The path is $X_D, L_H, 0, 0, AB$ if the executive does not deviate and $X_D, L_H, \bar{r}, 0, BA$ if it does. The utility gains of the dishonest executive from deviating are $\beta[-\bar{\rho}(1 - q_H + b_D) - E] < 0$ and hence X_D does not deviate.
- (b) After L_D . The path is $X_D, L_D, 0, 0, AB$ if the executive does not deviate and $X_D, L_D, \bar{r}, \bar{r}, BA$ if it does. The dishonest executive does not deviate if $(b_D - 1)\frac{\bar{r}}{2} \leq \beta[\bar{\rho}(1 - q_H + b_D) + E]$ so the executive does not deviate.

3. Honest legislature

- (a) After $X_H, 0$. The path is $X_H, L_H, 0, 0, AB$ if the legislature does not deviate and $X_H, L_H, 0, \bar{r}, BA$ if it does. The legislature does not deviate since the utility gains from deviating are zero.
- (b) After X_H, \bar{r} . The path is $X_H, L_H, \bar{r}, 0, BA$ if the legislature does not deviate and $X_H, L_H, \bar{r}, \bar{r}, BA$ if it does. The honest legislature does not deviate since the utility gains from deviating are $-\bar{r} < 0$.
- (c) After $X_D, 0$. The path is $X_D, L_H, 0, 0, AB$ if the legislature does not deviate and $X_D, L_H, 0, \bar{r}, AB$ if it does. The legislature does not deviate since the utility gains from deviating are zero.
- (d) After X_D, \bar{r} . The path is $X_D, L_H, \bar{r}, 0, BA$ if the legislature does not deviate and $X_D, L_H, \bar{r}, \bar{r}, BA$ if it does. The utility gains of the honest legislature from deviating are: $-\bar{r} < 0$, so the honest legislature does not deviate.

4. Dishonest legislature

- (a) After $X_H, 0$. The path is $X_H, L_D, 0, 0, AB$ if the legislature does not deviate and $X_H, L_D, 0, \bar{r}, AB$ if it does. The legislature does not deviate since the utility gains from deviating are zero.
- (b) After X_H, \bar{r} . The path is $X_H, L_D, \bar{r}, \bar{r}, BA$ if the legislature does not deviate and $X_H, L_D, \bar{r}, 0, BA$ if it does. The legislature does not deviate since the utility gains from deviating are $-(b_D - 1)\frac{\bar{r}}{2} < 0$.
- (c) After $X_D, 0$. The path is $X_D, L_D, 0, 0, AB$ if the legislature does not deviate and $X_D, L_D, 0, \bar{r}, AB$ if it does. The legislature does not deviate since the utility gains from deviating are zero.
- (d) After X_D, \bar{r} . The path is $X_D, L_D, \bar{r}, \bar{r}, BA$ if the legislature does not deviate and $X_D, L_D, \bar{r}, 0, BA$ if it does. The legislature does not deviate since the utility gains from deviating are $-(b_D - 1)\frac{\bar{r}}{2} < 0$.

- 5. Voter. In the pooling equilibrium, $(0, 0)$ is the only voter's information set that lies on the equilibrium path. Using Bayes rule, the voter learns nothing in this equilibrium, so the priors are

equal to the posteriors. This implies, in particular, that $P_D.(0,0) = 1 - q_H$. Off the equilibrium path, we cannot rule out other beliefs. From inspection of table 2, and recalling that the current first period government is AA , we conclude that AA is dominated by AB .

- (a) Consider first the information set $(0,0)$ which is on the equilibrium path. In this case, BA and AB give the same payoffs. So, we need to compare AB and BB . Voters do not have incentives to deviate from AB to BB iff $a(2q - 1) \leq \bar{r}(1 - q_H)^2$.
- (b) At the information set $(0, \bar{r})$, voters do not deviate from AB either to BA , if $P_D.(0, \bar{r}) \leq 1 - q_H$, or to BB , if $P_D.(0, \bar{r}) \leq \frac{1}{\bar{p}}[a(1 - 2q) + \bar{p}(1 - q_H) + \bar{r}(1 - q_H)^2]$. This last condition is fulfilled since $P_D.(0, \bar{r}) \leq 1 - q_H$ and $a(1 - 2q) + \bar{r}(1 - q_H)^2 \geq 0$.
- (c) At the information set $(\bar{r}, 0)$, voters do not deviate from BA either to AB , if $P_D.(\bar{r}, 0) \geq 1 - q_H$, or to AA , if $a(2q - 1) \leq \bar{r}(1 - q_H)^2$.
- (d) At the information set (\bar{r}, \bar{r}) , voters do not deviate from BA either to AB , if $P_D.(\bar{r}, \bar{r}) \geq 1 - q_H$, or to BB , if $a(2q - 1) \leq \bar{r}(1 - q_H)^2$.

□

Proposition 19. Pooling equilibrium after BA. *The subgame that begins when voters choose a divided government BA at the beginning of period 1 has a pooling perfect Bayesian equilibrium in which neither honest nor dishonest politicians extract observable rents. More formally, the strategy profile is*

1. Executive: $X_H = X_D = (0, 0)$.
2. Legislature: $L_H = L_D = (0, \bar{r}, 0, \bar{r})$.
3. Voters: (BA, BA, AB, AB)

This strategy profiles and beliefs $P_D.(0,0) = (1 - q_H)$, $P_D.(0, \bar{r}) \leq 1 - q_H$, $P_D.(\bar{r}, 0) \geq 1 - q_H$ and $P_D.(\bar{r}, \bar{r}) \geq 1 - q_H$ are a PBE if and only if $a(2q - 1) \leq \bar{r}P_D.(0, \bar{r})(1 - q_H)$. Voters expected utility in this equilibrium is

$$(1 + \beta)[-aq - (1 - q_H)\bar{p}]. \quad (68)$$

Proof. We check that no one has incentives to deviate at any information set.

1. Honest executive

- (a) After L_H . The path is $X_H, L_H, 0, 0, BA$ if X_H does not deviate and $X_H, L_H, \bar{r}, 0, AB$ if it does. The utility gains from deviating are $\beta[-\bar{p}(1 - q_H) - E] < 0$, so the executive does not deviate.

- (b) After L_D . The path is $X_H, L_D, 0, 0, BA$ if X_H does not deviate and $X_H, L_D, \bar{r}, \bar{r}, AB$ if it does. The utility gains from deviating are $\beta[-\bar{\rho}(1 - q_H) - E] < 0$, so the honest executive does not deviate.

2. Dishonest executive

- (a) After L_H . The path is $X_D, L_H, 0, 0, BA$ if the executive does not deviate and $X_D, L_H, \bar{r}, 0, AB$ if it does. The utility gains of the dishonest executive from deviating are $\beta[-\bar{\rho}(1 - q_H + b_D) - E] < 0$ and hence X_D does not deviate.
- (b) After L_D . The path is $X_D, L_D, 0, 0, BA$ if the executive does not deviate and $X_D, L_D, \bar{r}, \bar{r}, AB$ if it does. The utility gains of the dishonest executive from deviating are $\beta[-\bar{\rho}(1 - q_H + b_D) - E] < 0$ and hence X_D does not deviate.

3. Honest legislature

- (a) After $X_H, 0$. The path is $X_H, L_H, 0, 0, BA$ if the legislature does not deviate and $X_H, L_H, 0, \bar{r}, BA$ if it does. The utility gains of the legislature from deviating are zero.
- (b) After X_H, \bar{r} . The path is $X_H, L_H, \bar{r}, 0, AB$ if the legislature does not deviate and $X_H, L_H, \bar{r}, \bar{r}, AB$ if it does. The utility gains from deviating are zero.
- (c) After $X_D, 0$. The path is $X_D, L_H, 0, 0, BA$ if the legislature does not deviate and $X_D, L_H, 0, \bar{r}, BA$ if it does. The utility gains of the legislature from deviating are zero.
- (d) After X_D, \bar{r} . The path is $X_D, L_H, \bar{r}, 0, AB$ if the legislature does not deviate and $X_D, L_H, \bar{r}, \bar{r}, AB$ if it does. The utility gains from deviating are zero.

4. Dishonest legislature

- (a) After $X_H, 0$. The path is $X_H, L_D, 0, 0, BA$ if the legislature does not deviate and $X_H, L_D, 0, \bar{r}, BA$ if it does. The utility gains of the legislature from deviating are zero.
- (b) After X_H, \bar{r} . The path is $X_H, L_D, \bar{r}, \bar{r}, AB$ if the legislature does not deviate and $X_H, L_D, \bar{r}, 0, AB$ if it does. The utility gains of the legislature from deviating are zero.
- (c) After $X_D, 0$. The path is $X_D, L_D, 0, 0, BA$ if the legislature does not deviate and $X_D, L_D, 0, \bar{r}, BA$ if it does. The utility gains of the legislature from deviating are zero.
- (d) After X_D, \bar{r} . The path is $X_D, L_D, \bar{r}, \bar{r}, AB$ if the legislature does not deviate and $X_D, L_D, \bar{r}, 0, AB$ if it does. The utility gains of the legislature from deviating are zero.

5. Voter. In the pooling equilibrium, $(0, 0)$ is the only voter's information set that lies on the equilibrium path. Using Bayes rule, the voter learns nothing in this equilibrium, so the priors are

equal to the posteriors. This implies, in particular, that $P_D.(0, 0) = 1 - q_H$. Off the equilibrium path, we cannot rule out other beliefs. From inspection of Table 2, and recalling that the current first period government is BA , we conclude that AA is dominated by AB .

- (a) Consider first the information set $(0, 0)$ which is on the equilibrium path. In this case, BA and AB give the same payoffs. So, we need to compare BA and BB . Voters do not have incentives to deviate to BB iff

$$a(2q - 1) \leq \bar{r}(1 - q_H)^2 \quad (69)$$

- (b) At the information set $(0, \bar{r})$, voters do not deviate from BA either to AB , if $P_D.(0, \bar{r}) \leq 1 - q_H$, or to BB , if

$$a(2q - 1) \leq \bar{r}P_D.(0, \bar{r})(1 - q_H) \quad (70)$$

- (c) At the information set $(\bar{r}, 0)$, voters do not deviate from AB either to BA , if $P_D.(\bar{r}, 0) \geq 1 - q_H$, or to BB , if

$$a(2q - 1) + \bar{\rho}(1 - q_H - P_D.(\bar{r}, 0)) \leq \bar{r}P_D.(\bar{r}, 0)(1 - q_H) \quad (71)$$

- (d) At the information set (\bar{r}, \bar{r}) , voters do not deviate from AB either to BA , if $P_D.(\bar{r}, \bar{r}) \geq 1 - q_H$, or to BB , if

$$a(2q - 1) + \bar{\rho}(1 - q_H - P_D.(\bar{r}, \bar{r})) \leq \bar{r}P_D.(\bar{r}, \bar{r})(1 - q_H) \quad (72)$$

Note that inequalities (71) and (72) are not binding because (i) $P_D.(\bar{r}, 0) \geq 1 - q_H$, (ii) $P_D.(\bar{r}, \bar{r}) \geq 1 - q_H$, and (iii) inequality (69) holds. Also note that inequality (69) is not binding because (i) $P_D.(0, \bar{r}) \leq 1 - q_H$ and (ii) inequality (70) holds.

□

Proposition 20. Pooling equilibrium after AB. *The subgame that begins when voters choose a divided government AB at the beginning of period 1 has a pooling perfect Bayesian equilibrium in which neither honest nor dishonest politicians extract observable rents. More formally, the strategy profile is*

1. Executive: $X_H = X_D = (0, 0)$.
2. Legislature: $L_H = (0, 0, 0, 0)$ and $L_D = (0, \bar{r}, 0, \bar{r})$.
3. Voters: (AB, AB, BA, BA)

This strategy profiles and beliefs $P_D.(0, 0) = (1 - q_H)$, $P_D.(0, \bar{r}) \leq 1 - q_H$, $P_D.(\bar{r}, 0) \geq 1 - q_H$ and $P_D.(\bar{r}, \bar{r}) \geq 1 - q_H$ are a PBE if and only if $a(2q - 1) \leq \bar{r}(1 - q_H)^2$, $a(2q - 1) \leq \bar{\rho}(1 - q_H - P_D.(0, \bar{r})) +$

$\bar{r}(1 - q_H)P_{.D}(0, \bar{r})$, $a(2q - 1) \leq \bar{r}(1 - q_H)P_{.D}(\bar{r}, 0)$ and $a(2q - 1) \leq \bar{r}(1 - q_H)P_{.D}(\bar{r}, \bar{r})$. Voters expected utility in this equilibrium is

$$(1 + \beta)[-aq - (1 - q_H)\bar{\rho}]. \quad (73)$$

Proof. We check that no one has incentives to deviate at any information set.

1. Honest executive

- (a) After L_H . The path is $X_H, L_H, 0, 0, AB$ if X_H does not deviate and $X_H, L_H, \bar{r}, 0, BA$ if it does. The utility gains from deviating are $\beta[-\bar{\rho}(1 - q_H) - E] < 0$, so the executive does not deviate.
- (b) After L_D . The path is $X_H, L_D, 0, 0, AB$ if X_H does not deviate and $X_H, L_D, \bar{r}, \bar{r}, BA$ if it does. The utility gains from deviating are $\beta[-\bar{\rho}(1 - q_H) - E] < 0$, so the honest executive does not deviate.

2. Dishonest executive

- (a) After L_H . The path is $X_D, L_H, 0, 0, AB$ if the executive does not deviate and $X_D, L_H, \bar{r}, 0, BA$ if it does. The utility gains of the dishonest executive from deviating are $\beta[-\bar{\rho}(1 - q_H + b_D) - E] < 0$ and hence X_D does not deviate.
- (b) After L_D . The path is $X_D, L_D, 0, 0, AB$ if the executive does not deviate and $X_D, L_D, \bar{r}, \bar{r}, BA$ if it does. The utility gains of the dishonest executive from deviating are $\beta[-\bar{\rho}(1 - q_H + b_D) - E] < 0$ and hence X_D does not deviate.

3. Honest legislature

- (a) After $X_H, 0$. The path is $X_H, L_H, 0, 0, AB$ if the legislature does not deviate and $X_H, L_H, 0, \bar{r}, AB$ if it does. The utility gains of the legislature from deviating are zero.
- (b) After X_H, \bar{r} . The path is $X_H, L_H, \bar{r}, 0, BA$ if the legislature does not deviate and $X_H, L_H, \bar{r}, \bar{r}, BA$ if it does. The utility gains from deviating are zero.
- (c) After $X_D, 0$. The path is $X_D, L_H, 0, 0, AB$ if the legislature does not deviate and $X_D, L_H, 0, \bar{r}, AB$ if it does. The utility gains of the legislature from deviating are zero.
- (d) After X_D, \bar{r} . The path is $X_D, L_H, \bar{r}, 0, BA$ if the legislature does not deviate and $X_D, L_H, \bar{r}, \bar{r}, BA$ if it does. The utility gains from deviating are zero.

4. Dishonest legislature

- (a) After $X_H, 0$. The path is $X_H, L_D, 0, 0, AB$ if the legislature does not deviate and $X_H, L_D, 0, \bar{r}, AB$ if it does. The utility gains of the legislature from deviating are zero.

- (b) After X_H, \bar{r} . The path is $X_H, L_D, \bar{r}, \bar{r}, BA$ if the legislature does not deviate and $X_H, L_D, \bar{r}, 0, BA$ if it does. The utility gains of the legislature from deviating are zero.
- (c) After $X_D, 0$. The path is $X_D, L_D, 0, 0, AB$ if the legislature does not deviate and $X_D, L_D, 0, \bar{r}, AB$ if it does. The utility gains of the legislature from deviating are zero.
- (d) After X_D, \bar{r} . The path is $X_D, L_D, \bar{r}, \bar{r}, BA$ if the legislature does not deviate and $X_D, L_D, \bar{r}, 0, BA$ if it does. The utility gains of the legislature from deviating are zero.

5. Voter. In the pooling equilibrium, $(0, 0)$ is the only voter's information set that lies on the equilibrium path. Using Bayes rule, the voter learns nothing in this equilibrium, so the priors are equal to the posteriors. This implies, in particular, that $P_D.(0, 0) = 1 - q_H$. Off the equilibrium path, we cannot rule out other beliefs. From inspection of Table 2, and recalling that the current first period government is AB , we conclude that AA is dominated by AB .

- (a) Consider first the information set $(0, 0)$ which is on the equilibrium path. In this case, BA and AB give the same payoffs. So, we need to compare AB and BB . Voters do not have incentives to deviate to BB iff

$$a(2q - 1) \leq \bar{r}(1 - q_H)^2 \quad (74)$$

- (b) At the information set $(0, \bar{r})$, voters do not deviate from AB either to BA , if $P_D.(0, \bar{r}) \leq 1 - q_H$, or to BB , if

$$a(2q - 1) \leq \bar{\rho}(1 - q_H - P_D.(0, \bar{r})) + \bar{r}(1 - q_H)P_D.(0, \bar{r}) \quad (75)$$

- (c) At the information set $(\bar{r}, 0)$, voters do not deviate from BA either to AB , if $P_D.(\bar{r}, 0) \geq 1 - q_H$, or to BB , if

$$a(2q - 1) \leq \bar{r}(1 - q_H)P_D.(\bar{r}, 0) \quad (76)$$

- (d) At the information set (\bar{r}, \bar{r}) , voters do not deviate from BA either to AB , if $P_D.(\bar{r}, \bar{r}) \geq 1 - q_H$, or to BB , if

$$a(2q - 1) \leq \bar{r}(1 - q_H)P_D.(\bar{r}, \bar{r}) \quad (77)$$

□

Semi-separating equilibria of the subgames that begin after the first election

Proposition 21. *Semi-separating equilibrium after BB.* The subgame that begins after voters choose BB in the first period has a semi-separating equilibrium in which:

1. honest politicians never propose positive rents: $X_H = (0, 0)$ and $L_H = (0, 0, 0, 0)$;

2. a dishonest executive proposes rents only when the legislature is dishonest: $X_D = (0, \bar{r})$, and the dishonest legislature does it only when the executive proposed positive rents: $L_D = (0, \bar{r}, 0, \bar{r})$;

3. voters choose (BA, BA, AB, AB) ; and

4. voters beliefs are:

$$\begin{aligned}
P_{HH}(0, 0) &= \frac{q_H}{2-q_H}; & P_{HD}(0, 0) &= P_{DH}(0, 0) = \frac{1-q_H}{2-q_H}; & P_{DD}(0, 0) &= 0; \\
P_D.(0, \bar{r}) &\leq 1 - q_H; & P_D.(0, \bar{r}) &\geq \frac{1}{\bar{\rho}}[a(1 - 2q) - \bar{\rho}(1 - q_H) - \bar{r}(1 - q_H)^2] \\
P_D.(\bar{r}, 0) &\geq 1 - q_H; \\
P_{HH}(\bar{r}, \bar{r}) &= P_{HD}(\bar{r}, \bar{r}) = P_{DH}(\bar{r}, \bar{r}) = 0; & P_{DD}(\bar{r}, \bar{r}) &= 1.
\end{aligned} \tag{78}$$

This strategy profile and beliefs are a PBE iff

$$\begin{aligned}
a(1 - 2q) &\leq \bar{r}(1 - q_H)^2 \\
\bar{r} &\geq \frac{2\beta}{b_D - 1}[\bar{\rho}(1 - q_H + b_D) + E]
\end{aligned} \tag{79}$$

Voters expected utility in this equilibrium is :

$$-a(1 - q)(1 + \beta) + (1 - q_H)^2[-\bar{\rho} - \bar{r} - (1 - q_H)\beta\bar{\rho}] + (1 - q_H)q_H(1 + \beta)(-\bar{\rho}). \tag{80}$$

Observable rents have to be sufficiently large for this strategy profile to be a PBE, since otherwise the dishonest executive would abstain from proposing rents to a dishonest legislature, mimicking a honest executive to be reelected. Note that, if rents are sufficiently large, $q \geq 1/2$ is sufficient for this strategy profile to be a PBE, provided $P_D.(0, \bar{r}) \leq 1 - q_H$ and $P_D.(\bar{r}, 0) \geq 1 - q_H$, i.e. provided voters take the off-equilibrium signals $(0, \bar{r})$ as “good” and $(\bar{r}, 0)$ as “bad news” regarding the type of the executive. Accordingly, voters reelect the executive after the former but not after the latter.

Proof. Using the expected utilities in tables ?? to ??, we verify that players have no incentives to deviate.

1. Honest executive

- (a) After L_H . The path is $X_H, L_H, 0, 0, BA$ if the executive does not deviate and $X_H, L_H, \bar{r}, 0, AB$ if it does. The honest executive’s gains from deviating are $-\beta[\bar{\rho}(1 - q_H) + E] < 0$, so he does not deviate.
- (b) After L_D . The path is $X_H, L_D, 0, 0, BA$ if the executive does not deviate and $X_H, L_D, \bar{r}, \bar{r}, AB$ if it does. The honest executive’s gains from deviating are $-\bar{r} - \beta[\bar{\rho}(1 - q_H) + E] < 0$, so he does not deviate.

2. Dishonest executive

- (a) After L_H . The path is $X_D, L_H, 0, 0, BA$ if the executive does not deviate and $X_D, L_H, \bar{r}, 0, AB$ if it does. The dishonest executive's gains from deviating are $-\beta[\bar{\rho}(1 - q_H + b_D) + E] < 0$, so he does not deviate.
- (b) After L_D . The path is $X_D, L_D, \bar{r}, \bar{r}, AB$ if the executive does not deviate and $X_D, L_D, 0, 0, BA$ if it does. The dishonest executive does not deviate iff

$$\bar{r} \geq \frac{2\beta}{b_D - 1} [\bar{\rho}(1 - q_H + b_D) + E] \quad (81)$$

3. Honest legislature

- (a) After $X_H, 0$. The path is $X_H, L_H, 0, 0, BA$ if the legislature does not deviate and $X_H, L_H, 0, \bar{r}, BA$ if it does. The honest legislature gains from deviating are 0, so he does not deviate.
- (b) After X_H, \bar{r} . The path is $X_H, L_H, \bar{r}, 0, AB$ if the legislature does not deviate and $X_H, L_H, \bar{r}, \bar{r}, AB$ if it does. The honest legislature gains from deviating are $-\bar{r}$, so he does not deviate.
- (c) After $X_D, 0$. The path is $X_D, L_H, 0, 0, BA$ if the legislature does not deviate and $X_D, L_H, 0, \bar{r}, BA$ if it does. The honest legislature gains from deviating are 0, so he does not deviate.
- (d) After X_D, \bar{r} . The path is $X_D, L_H, \bar{r}, 0, AB$ if the legislature does not deviate and $X_D, L_H, \bar{r}, \bar{r}, AB$ if it does. The honest legislature gains from deviating are $-\bar{r} < 0$, so he does not deviate.

4. Dishonest legislature

- (a) After $X_H, 0$. The path is $X_H, L_D, 0, 0, BA$ if the legislature does not deviate and $X_H, L_D, 0, \bar{r}, BA$ if it does. The dishonest legislature gains from deviating are 0, so he does not deviate.
- (b) After X_H, \bar{r} . The path is $X_H, L_D, \bar{r}, \bar{r}, AB$ if the legislature does not deviate and $X_H, L_D, \bar{r}, 0, AB$ if it does. The dishonest legislature gains from deviating are $-(b_D - 1)\frac{\bar{r}}{2} < 0$, so he does not deviate.
- (c) After $X_D, 0$. The path is $X_D, L_D, 0, 0, BA$ if the legislature does not deviate and $X_D, L_D, 0, \bar{r}, BA$ if it does. The dishonest legislature gains from deviating are 0, so he does not deviate.
- (d) After X_D, \bar{r} . The path is $X_D, L_D, \bar{r}, \bar{r}, AB$ if the legislature does not deviate and $X_D, L_D, \bar{r}, 0, AB$ if it does. The dishonest legislature gains from deviating are $-\bar{r} < 0$, so he does not deviate.

5. Voters have two information sets on the equilibrium path: $(0, 0)$ and (\bar{r}, \bar{r}) . Using Bayes rule, they compute the following posterior beliefs:

$$\begin{aligned} P_{HH}(0, 0) &= \frac{q_H}{2 - q_H}; & P_{HD}(0, 0) &= P_{DH}(0, 0) = \frac{1 - q_H}{2 - q_H}; & P_{DD}(0, 0) &= 0; \\ P_{HH}(\bar{r}, \bar{r}) &= P_{HD}(\bar{r}, \bar{r}) = P_{DH}(\bar{r}, \bar{r}) &= 0; & P_{DD}(\bar{r}, \bar{r}) &= 1; \end{aligned} \quad (82)$$

In table 3, we present the expected utility of voters in the information sets that lie on the equilibrium path in the semi-separating equilibrium. In the case of dominated actions, we simply write “dominated”.

Incumbents in $t = 2$	Payoffs after $(0, 0)$	Payoffs after (\bar{r}, \bar{r})
BB	dominated	dominated
BA	$-a(1 - q) - \bar{\rho} \frac{(1 - q_H)}{2 - q_H}$	dominated
AB	dominated	$-a(1 - q) - \bar{\rho}(1 - q_H)$
AA	$-aq - \bar{\rho}(1 - q_H) - \bar{r}(1 - q_H)^2$	$-aq - \bar{\rho}(1 - q_H) - \bar{r}(1 - q_H)^2$

Table 3: Voters expected utility at each information set on the eq path in a semiseparating eq. after BB. Ass: $p_0 = 0$.

We now analyze the conditions under which voters have no incentives to deviate in any information set:

- (a) $(0, 0)$. Inspection of table 3 indicates that, in this information set, the only undominated deviation is AA , so voters do not deviate from BA iff

$$a(1 - 2q) - \bar{r}(1 - q_H)^2 \leq \bar{\rho} \frac{(1 - q_H)^2}{(2 - q_H)}. \quad (83)$$

- (b) $(0, \bar{r})$. Inspection of table 2 indicates that BB is dominated, so we check that voters have no incentives to deviate from BA to AB or AA . They do not deviate iff:

$$\begin{aligned} 1 - q_H &\geq P_D.(0, \bar{r}); \\ P_D.(0, \bar{r}) &\geq \frac{1}{\bar{\rho}}[a(1 - 2q) - \bar{\rho}(1 - q_H) - \bar{r}(1 - q_H)^2]. \end{aligned} \quad (84)$$

- (c) $(\bar{r}, 0)$. Inspection of table 2 indicates that BB is dominated, so we check that voters have no incentives to deviate from AB to BA or AA :

$$\begin{aligned} P_D.(\bar{r}, 0) &\geq 1 - q_H \\ a(1 - 2q) &\leq \bar{r}(1 - q_H)^2 \end{aligned} \quad (85)$$

The second inequality in (85) implies that inequality (83) is not binding.

- (d) (\bar{r}, \bar{r}) . Inspection of table 3 indicates that, in this information set, the only undominated deviation is AA , so voters do not deviate iff $a(1 - 2q) \leq \bar{r}(1 - q_H)^2$.

The policy implemented in both periods is 1, so voters expected utility regarding the policy is $-a(1 - q)$. Consider the extraction of rents. With probability q_H the executive is honest and there is no rent extraction in either period (note that the executive is reelected). With probability $(1 - q_H)^2$ the

executive and the legislative are dishonest, and then there is extraction of both types of rents, the executive is not reelected, so with probability $(1 - q_H)$ there is extraction of non observable rents in the second period. Thus, voters expected utility is:

$$(1 - q_H)^2[-\bar{\rho} - \bar{r} - (1 - q_H)\beta\bar{\rho}].$$

Finally, with probability $(1 - q_H)q_H$ only the executive is dishonest, so there is extraction of non observable rents only in both periods. Voters expected utility in this case is:

$$(1 - q_H)q_H(1 + \beta)(-\bar{\rho}).$$

□

Proposition 22. *Semi-separating equilibrium after AA.* *The subgame that begins after voters choose AA in the first period has a semi-separating equilibrium in which:*

1. *honest politicians never propose positive rents: $X_H = (0, 0)$ and $L_H = (0, 0, 0, 0)$;*
2. *a dishonest executive proposes rents only when the legislature is dishonest: $X_D = (0, \bar{r})$, and the dishonest legislature does it only when the executive proposed positive rents: $L_D = (0, \bar{r}, 0, \bar{r})$;*
3. *voters choose (AB, AB, BA, BA) ; and*
4. *voters beliefs are:*

$$\begin{aligned} P_{HH}(0, 0) &= \frac{q_H}{2 - q_H}; & P_{HD}(0, 0) &= P_{DH}(0, 0) = \frac{1 - q_H}{2 - q_H}; & P_{DD}(0, 0) &= 0; \\ P_D.(0, \bar{r}) &\leq 1 - q_H; & P_D.(0, \bar{r}) &\leq \frac{1}{\bar{\rho}}[a(1 - 2q + \bar{\rho}(1 - q_H) + \bar{r}(1 - q_H)^2)] \\ P_D.(\bar{r}, 0) &\geq 1 - q_H; \\ P_{HH}(\bar{r}, \bar{r}) &= P_{HD}(\bar{r}, \bar{r}) = P_{DH}(\bar{r}, \bar{r}) = 0; & P_{DD}(\bar{r}, \bar{r}) &= 1. \end{aligned} \tag{86}$$

This strategy profile and beliefs are a PBE iff

$$\begin{aligned} a(2q - 1) &\leq \bar{r}(1 - q_H)^2 \\ \bar{r} &\geq \frac{2\beta}{b_D - 1}[\bar{\rho}(1 - q_H + b_D) + E] \end{aligned} \tag{87}$$

Voters expected utility in this equilibrium is :

$$-aq(1 + \beta) + (1 - q_H)^2[-\bar{\rho} - \bar{r} - (1 - q_H)\beta\bar{\rho}] + (1 - q_H)q_H(1 + \beta)(-\bar{\rho}). \tag{88}$$

Proof. Using the expected utilities in tables ?? to ??, we verify that players have no incentives to deviate.

1. **Honest executive**

- (a) After L_H . The path is $X_H, L_H, 0, 0, AB$ if the executive does not deviate and $X_H, L_H, \bar{r}, 0, BA$ if it does. The honest executive's gains from deviating are $-\beta[\bar{\rho}(1 - q_H) + E] < 0$, so he does not deviate.
- (b) After L_D . The path is $X_H, L_D, 0, 0, AB$ if the executive does not deviate and $X_H, L_D, \bar{r}, \bar{r}, BA$ if it does. The honest executive's gains from deviating are $-\bar{r} - \beta[\bar{\rho}(1 - q_H) + E] < 0$, so he does not deviate.

2. Dishonest executive

- (a) After L_H . The path is $X_D, L_H, 0, 0, AB$ if the executive does not deviate and $X_D, L_H, \bar{r}, 0, BA$ if it does. The dishonest executive's gains from deviating are $-\beta[\bar{\rho}(1 - q_H + b_D) + E] < 0$, so he does not deviate.
- (b) After L_D . The path is $X_D, L_D, \bar{r}, \bar{r}, BA$ if the executive does not deviate and $X_D, L_D, 0, 0, AB$ if it does. The dishonest executive does not deviate iff

$$\bar{r} \geq \frac{2\beta}{b_D - 1} [\bar{\rho}(1 - q_H + b_D) + E] \quad (89)$$

3. Honest legislature

- (a) After $X_H, 0$. The path is $X_H, L_H, 0, 0, AB$ if the legislature does not deviate and $X_H, L_H, 0, \bar{r}, AB$ if it does. The honest legislature gains from deviating are 0, so he does not deviate.
- (b) After X_H, \bar{r} . The path is $X_H, L_H, \bar{r}, 0, BA$ if the legislature does not deviate and $X_H, L_H, \bar{r}, \bar{r}, BA$ if it does. The honest legislature gains from deviating are $-\bar{r} < 0$, so he does not deviate.
- (c) After $X_D, 0$. The path is $X_D, L_H, 0, 0, AB$ if the legislature does not deviate and $X_D, L_H, 0, \bar{r}, AB$ if it does. The honest legislature gains from deviating are 0, so he does not deviate.
- (d) After X_D, \bar{r} . The path is $X_D, L_H, \bar{r}, 0, BA$ if the legislature does not deviate and $X_D, L_H, \bar{r}, \bar{r}, BA$ if it does. The honest legislature gains from deviating are $-\bar{r} < 0$, so he does not deviate.

4. Dishonest legislature

- (a) After $X_H, 0$. The path is $X_H, L_D, 0, 0, AB$ if the legislature does not deviate and $X_H, L_D, 0, \bar{r}, AB$ if it does. The dishonest legislature gains from deviating are 0, so he does not deviate.
- (b) After X_H, \bar{r} . The path is $X_H, L_D, \bar{r}, \bar{r}, BA$ if the legislature does not deviate and $X_H, L_D, \bar{r}, 0, BA$ if it does. The dishonest legislature gains from deviating are $-(b_D - 1)\frac{\bar{r}}{2} < 0$, so he does not deviate.
- (c) After $X_D, 0$. The path is $X_D, L_D, 0, 0, AB$ if the legislature does not deviate and $X_D, L_D, 0, \bar{r}, AB$ if it does. The dishonest legislature gains from deviating are 0, so he does not deviate.

(d) After X_D, \bar{r} . The path is $X_D, L_D, \bar{r}, \bar{r}, BA$ if the legislature does not deviate and $X_D, L_D, \bar{r}, 0, BA$ if it does. The dishonest legislature gains from deviating are $-(b_D - 1)\frac{\bar{r}}{2} < 0$, so he does not deviate.

5. Voters have two information sets on the equilibrium path: $(0, 0)$ and (\bar{r}, \bar{r}) . Using Bayes rule, they compute the following posterior beliefs:

$$\begin{aligned} P_{HH}(0, 0) &= \frac{q_H}{2-q_H}; & P_{HD}(0, 0) &= P_{DH}(0, 0) = \frac{1-q_H}{2-q_H}; & P_{DD}(0, 0) &= 0; \\ P_{HH}(\bar{r}, \bar{r}) &= P_{HD}(\bar{r}, \bar{r}) = P_{DH}(\bar{r}, \bar{r}) &= 0; & P_{DD}(\bar{r}, \bar{r}) &= 1; \end{aligned} \quad (90)$$

In table 4, we present the expected utility of voters in the information sets that lie on the equilibrium path in the semi-separating equilibrium. In the case of dominated actions, we simply write “dominated”.

Incumbents in $t = 2$	Payoffs after $(0, 0)$	Payoffs after (\bar{r}, \bar{r})
BB	$-a(1-q) - \bar{\rho}(1-q_H) - \bar{r}(1-q_H)^2$	$-a(1-q) - \bar{\rho}(1-q_H) - \bar{r}(1-q_H)^2$
BA	dominated	$-aq - \bar{\rho}(1-q_H)$
AB	$-aq - \bar{\rho}\frac{(1-q_H)}{2-q_H}$	dominated
AA	dominated	dominated

Table 4: Voters expected utility at each information set on the eq path in a semiseparating eq. after AA. Ass: $p_0 = 0$.

We now analyze the conditions under which voters have no incentives to deviate in any information set:

(a) $(0, 0)$. Inspection of table 4 indicates that, in this information set, the only undominated deviation is BB , so voters do not deviate from AB iff

$$a(2q - 1) - \bar{r}(1 - q_H)^2 \leq \bar{\rho} \frac{(1 - q_H)^2}{(2 - q_H)}. \quad (91)$$

(b) $(0, \bar{r})$. Inspection of table 2 indicates that AA is dominated, so we check that voters have no incentives to deviate from AB to BA or BB . They do not deviate iff:

$$\begin{aligned} 1 - q_H &\geq P_D.(0, \bar{r}); \\ P_D.(0, \bar{r}) &\leq \frac{1}{\bar{\rho}}[a(1 - 2q) + \bar{\rho}(1 - q_H) + \bar{r}(1 - q_H)^2]. \end{aligned} \quad (92)$$

(c) $(\bar{r}, 0)$. Inspection of table 2 indicates that AA is dominated, so we check that voters have no incentives to deviate from BA to AB or BB :

$$\begin{aligned} P_D.(\bar{r}, 0) &\geq 1 - q_H \\ a(2q - 1) &\leq \bar{r}(1 - q_H)^2 \end{aligned} \quad (93)$$

The second inequality in (93) implies that inequality (91) is not binding.

- (d) (\bar{r}, \bar{r}) . Inspection of table 4 indicates that, in this information set, the only undominated deviation is BB , so voters do not deviate iff $a(2q - 1) \leq \bar{r}(1 - q_H)^2$.

The policy implemented in both periods is 0, so voters expected utility regarding the policy is $-aq$. Consider the extraction of rents. With probability q_H the executive is honest and there is no rent extraction in either period (note that the executive is reelected). With probability $(1 - q_H)^2$ the executive and the legislative are dishonest, and then there is extraction of both types of rents, the executive is not reelected, so with probability $(1 - q_H)$ there is extraction of non observable rents in the second period. Thus, voters expected utility is:

$$(1 - q_H)^2[-\bar{\rho} - \bar{r} - (1 - q_H)\beta\bar{\rho}].$$

Finally, with probability $(1 - q_H)q_H$ only the executive is dishonest, so there is extraction of non observable rents only in both periods. Voters expected utility in this case is:

$$(1 - q_H)q_H(1 + \beta)(-\bar{\rho}).$$

□

8.2.3 Small rents and no reform dilemma

With small rents as indicated in inequality (52), there are the pooling equilibria described in propositions 16 to 20 in which dishonest politicians mimic honest ones. We use these propositions to prove proposition 11.

Proof of proposition 11. The conditions indicated in proposition 11 are sufficient for the existence of the PBE identified in the auxiliary propositions 16 to 20, provided the out of equilibrium beliefs spelled out in the auxiliary propositions hold. These auxiliary propositions identify an equilibrium for each possible composition of government in the first period. Assuming those PBE will be played, voters compute their expected utility associated to each composition of government in the first period.²⁶ It is then immediate to show that $q \geq 1/2$ implies that choosing a party B unified government in the first period is voters best choice, and conversely $q \leq 1/2$ implies that voters are indifferent between choosing AA, AB or BA and prefer any of these options to BB.

If voters choose a party B unified government in the first election, there will be a reform in period 1: $p_1 \neq p_0 = 0$. Because players are playing the pooling equilibrium described in proposition 16, there is no extraction of observable rents in the first period. Also, because in this equilibrium voters reelect the executive but not the legislature, in the second period there will be a divided government and

²⁶We can prove the equilibria exist but not that they are unique.

no extraction of observable rents. The probability that the executive is dishonest and hence extract unobservable rents is $(1 - q_H)$ in both periods.

If voters choose a divided or a party A unified government in the first election, there will be no reform in period 1: $p_1 = p_0 = 0$. Because players are playing the pooling equilibrium described in propositions 18, 19 or 20, there is no extraction of observable rents in the first period. In any of these three equilibria, voters choose a divided government for the second period so there is no extraction of observable rents in this period either. In none of these equilibria can voters identify dishonest politicians, so again the probability that the executive is dishonest and hence extract unobservable rents is $(1 - q_H)$ in both periods. \square

8.2.4 Intermediate rents and unified government

If rents are sufficiently large $\bar{r} \geq r^*$, then the unified government pooling equilibria described in propositions 16 and 18 do no longer exist, but there are the unified government semi-separating equilibria characterized in propositions 21 and 22. The divided government pooling equilibria identified in propositions 19 and 20 still hold. If rents are not “too” large ($\bar{r} \leq r^{**}$), voters will prefer the unified government semi-separating to the divided government pooling equilibria. If also $q \leq 1/2$, voters will not be interested in the reform and choose a party A unified government. Players will be playing party A semi-separating equilibrium identified in proposition 22. If $q \geq 1/2$, voters choose a party B unified government and the semi-separating equilibrium described in proposition 21 will be played.

Proof of proposition 12. The PBE identified in the auxiliary propositions 19, 20, 21 and 22 exist if $\bar{r} \geq r^*$ and voters hold the out of equilibrium beliefs spelled out in these auxiliary propositions.

Equations (80) and (88) imply that voters prefer the party A to the party B unified government semi-separating equilibrium iff $q \leq 1/2$. Then equations (88), (68) and (73) imply that voters prefer the party A unified to the divided government equilibria iff

$$\bar{r} \leq \beta \bar{\rho} q_H, \quad \text{and } q \leq 1/2. \quad (94)$$

But inequalities (52 and (94) cannot hold simultaneously, so voters cannot prefer a party A unified government if $\bar{r} \geq r^*$.

Conversely, voters prefer the party B to the party A unified government if $q \geq 1/2$. Then equations (80), (68) and (73) imply that voters prefer the party B unified to the divided government equilibria if

$$\bar{r} \leq \beta \bar{\rho} q_H + \frac{(1 + \beta)a(2q - 1)}{(1 - q_H)^2}, \quad \text{and } q \geq 1/2. \quad (95)$$

If $q \leq 1/2$ and hence voters choose a party A unified government in the first election, there will be no reform in period 1: $p_1 = p_0 = 0$. In this semi-separating equilibrium, the incumbent politicians extract observable rents if both the executive and the legislature are dishonest, something that happens

with probability $(1 - q_H)^2$. According to the strategies described in proposition 22, voters choose a divided government for the second period so there are no observable rents in this period. A dishonest executive extracts unobservable rents. The probability that the executive is dishonest in the first period is $(1 - q_H)$. In the second period, the executive is dishonest if either voters reelect a dishonest first period incumbent or elect a dishonest challenger. In this equilibrium, voters will reelect a dishonest incumbent for the executive office if the legislature is honest, because in this case the incumbents will not propose the extraction of observable rents. The probability that the first period executive is dishonest and the legislature is honest is $(1 - q_H)q_H$. In turn, voters will elect the challenger for the executive office in the second period if both the executive and the legislature in the first period turned out to be dishonest and hence proposed rents. The probability that voters choose the challenger and this candidate is dishonest is $(1 - q_H)^3$.

If $q \geq 1/2$, voters choose a party B unified government in the first election, so there will be reform: $p_1 \neq p_0 = 0$. The extraction of rents is the same as in the previous case. □

8.2.5 Large rents, divided government and no reform

If rents are “large” $\bar{r} \geq r^*$, there are the unified government semi-separating and the divided government pooling equilibria identified in propositions 19, 20, 21, and 22. Because rents are sufficiently large, voters prefer a divided government.

Proof of proposition 13. The PBE identified in the auxiliary propositions 19, 20, 21 and 22 exist if $\bar{r} \geq r^*$ and voters hold the out of equilibrium beliefs spelled out in these auxiliary propositions. If also $\bar{r} \geq r^{**}$, voters prefer the divided government equilibria to either the party A or B unified government semi-separating equilibria identified in propositions 21 and 22 (this is the converse of the arguments leading to inequalities (94) and (95)).

There is no policy reform because voters choose a divided government in both periods: $p_0 = p_1 = p_2$. Also, because of the divided government, there is no extraction of observable rents. Voters reelect the incumbent in this equilibrium, because they cannot identify the dishonest incumbents and hence the probability that the executive is dishonest and extracts unobservable rents is $(1 - q_H)$ in both periods. □