Ideologues: Explaining Partisanship and Persistence in Politics (and Elsewhere)*

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Abstract

This paper suggests a theory of ideology for public leaders. It provides an explanation for why office holders may want to adopt ideological positions that do not reflect their true preferences, and maintain them over time even in the face of conflicting evidence. We study a dynamic framework in which policy motivated and office motivated politicians are better informed than the voting public about an underlying state of nature that determines the desirability of a given policy measure. Voters attach ideological labels to the available policy alternatives as well as to the political candidates running for office. As we show, the fact that voters perceive policies to be ideologically tinted and expect politicians to implement policies that reflect their own perceived ideology may suffice to induce the latter to actually act partisan in the first place. Both sides are caught in an *ideology trap*: because voters expect the ideology of office holders to determine their political actions, an official's (re-)election chances will vary with his or her perceived ideology as well as with the electorate's beliefs about the underlying state. In their desire not to reveal a state unfavorable to their own perceived ideological position, officials act partisan, thereby confirming voters' expectations. Importantly, the issue itself can be non-partisan, meaning that neither voters nor politicians have to display any intrinsic preferences for either policy; in particular, a leader does not have to be a "true believer" to act like an ideologue. Our analysis also shows that equilibrium policies are inefficient and persistent over time, i.e., incumbent politicians are reluctant to abandon their previously enacted policies and deny conflicting evidence, resulting in political failure.

Keywords: Partisanship, Ideology, Policy Persistence, Political Competition, Political Economy

JEL classification: P16, N40, H11

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"Partisanship is our great curse. We too readily assume that everything has two sides and that it is our duty to be on one or the other." James Harvey Robinson (American historian, 1863-1936)

1 Introduction

Political leaders often define themselves in terms of a set of beliefs and values that they adhere to, and consistently base their political action on that set. Such leaders, who place greater weight on ideology as a collection of ideas about how society should work and the best way to achieve this goal, can be referred to as ideological leaders or *ideologues*. Some well-known public figures can be placed into this category: from Charles de Gaulle to Margaret Thatcher, from Vladimir Lenin to Mohandas Gandhi, many historical leaders derived their power from ideological principles and their ability to convince others that one can accomplish a lot by adhering to that particular ideology.

Politics today is no exception. On a smaller scale, for instance, one has to look no further than to contemporary American politics to find plenty of ideologues: "liberal", "conservative", "moderate", "leftist" – politicians routinely use ideological labels to describe themselves and their opponents, and the American public, led by journalists and political activists, are happy to join in. Of course, one may wonder what's in a name. Surprisingly much as it turns out. As documented in the empirical work on Congressional voting behavior of Poole and Rosenthal (1997), McCarthy et al. (2006)and others, the belief systems of political elites can often largely be captured with a single dimension, their *ideology*, which almost always mirrors party affiliation: with just the label "conservative" (Republican), for example, one can fairly accurately predict a politician's stance on policy issues as disparate as taxes, gun control, affirmative action, health care, and abortion. Moreover, ideological positions of individual members are remarkably stable. That is, based upon the roll call voting record, once elected to Congress, members adopt an ideological position and maintain that position throughout their careers – once a liberal or a conservative or a moderate, always a liberal or a conservative or a moderate." [1] As Poole (2007, p. 435) puts it, "members of Congress die in their ideological boots. Clearly, this phenomenon is neither exclusive to the U.S., nor is it confined to positional (divisive) issues that voters have different preference over, depending on their socio-economic status, race, gender, or religion. Partisan politics are a frequent phenomenon even regarding so-called valence issues for which there should be a common agreement among the electorate (such as crime, foreign policy, corruption and economic growth).[2]

[1] What is more, members of Congress seem to remain ideologically consistent even in the face of changing personal or electoral conditions: members' voting records remain essentially the same, regardless of whether they plan to retire, plan to run for a higher office, serve in a higher office, or have their districts redrawn. [see Poole and Rosenthal (1997) and Poole (2007) and the references therein].

[2] In the U.S. Congress, for example, support for the president on matters of foreign policy and defense has largely been along party lines ever since the Vietnam War [Meernik (1993)]. On a more general note, empirical evidence at from the U.S. Congress support the view that partisanship of political representatives often does not simply mirror equally divided constituents. Rather than representing the district voters, a representative's own ideology is the primary determinant of roll-call voting patterns [see Lee et al. (2004)

The observation that ideological labels seem meaningful after all does not answer the question of why they are adopted and why they are played out in partisan politics, especially on policies where voters would prefer their representative to seek common ground. Another question is why political elites tend to maintain their positions over time, i.e. why ideological views are so persistent, even in the face of changing circumstances to the point where they are at odds with the facts.

To analyze these issues, the present paper suggests a theory of ideology for public leaders. We seek to answer two questions. First, what incentive do political elites have to adopt ideological labels and stick to them even in the face of contradicting evidence? Second, what are the cost of such behavior? To this end, we develop a dynamic model that closely ties observable characteristics of political representative (such as their gender, their party affiliation, or their district) to voters' expectations. As we show, politicians may take an ideological stance and act partisan simply because voters' *expect* them to. The theory implies, for instance, that a female Democrat from California is likely to take a liberal stance on most issues, not because her true preferences or her belief system necessarily reflects this view, but because her constituents expect a female Democrat from California to be a liberal (and elected her for this very reason). Our model starts from the observation that voters are often uncertain about how policy instruments map into policy outcomes. To capture this idea, we assume that the electorate does not observe external circumstances that make a specific policy more desirable than others. Given their beliefs about the prevailing state, voters therefore form expectations about which policy candidates are likely to implement once in office, and which of those is most likely to succeed. Importantly, voters attach ideological labels *both* to the various policy alternatives that are available *and* to the political candidates running for office. To develop our argument in the strongest manner possible, we assume that this association, i.e., the perceived positioning of policies and office holders in the political spectrum, is completely arbitrary; in other words, candidates derive the exact same utility from the policy measure as the electorate at large,[3] and their ideological characterization is truly nothing more than a label. Our main finding is that, nevertheless, policy holders have an incentive to adopt a particular ideological position in their policy choice and maintain it over time. The argument is as follows. Suppose voters expect political candidates to act partisan once in office, i.e., to remain 'true to their colors', implementing policies that are 'close' to their own ideology as perceived by the voting public. Given these expectations, voters have a straightforward incentive to elect the representative whose perceived partisan policy (ideology) corresponds to what they think is in their best interest based on their current information. As we show, this may suffice to induce candidates

and Levitt (1996)]. In either case, voter polarization is presumably a lesser danger for valence issues. Polling data on foreign policy confirm this presumption. Two recent pools conducted by the Program on International Policy Attitudes (PIPA) and the Chicago Council on Foreign Relations (CCFR) found that Americans share common views on a wide array of foreign policy issues, and would prefer that Democrats and Republicans seek common ground [for details, see the website of Partnership for a Secure America (http://www.psaonline.org/), an organization dedicated to recreating the bipartisan center in American national security and foreign policy.]

[3]It should be emphasized that the theory also applies for non-valence (positional) issues. There already is an extensive literature on these type of policies, however, which provides a range of complementary explanations for why candidates diverge in platforms and voting records. See below for more details.

to actually act partisan, i.e., according to their ideology, in the first place. The specific motivation is one of signal-jamming: an incumbent who sticks to his partisan policy avoids revealing that current circumstances would favor his opponents' partisan position, making his re-election more likely if voters expect partisan behavior in the future.[4] By implementing his partisan policy, a sufficiently office motivated incumbent will demonstrate confidence in his own ideology. As even inefficient policies may turn out to be successful, this behavior potentially allows to hold up the electorates' belief in the incumbent's ideology. The result is political failure in the sense that the equilibrium partisan policy outcomes are Pareto dominated. Thus, the model can explain policy bias and divergence from the fact that voters *perceive* policies to be ideologically tinted and *expect* candidates to act partisan. Both sides are caught in an *ideology trap*: because voters expect the ideology of office holders to determine their political actions, an officials (re-)election chances will vary with his or her perceived ideology. In their desire to influence the outcome of the election, these expectations induce the officials to act partisan.[5] Importantly, the issue itself can be non-partisan, meaning that neither voters nor politicians have to display any intrinsic preferences for either policy: a leader does not have to be a "true believer" to be an ideologue. Because incumbents will tend to enact the partisan policy independent of the prevailing state in equilibrium, our analysis also has another interesting implication. It shows that incumbent politicians are reluctant to abandon their previously enacted policies, even if those are no longer applicable or have proven to be invalid. In other words, the model can explain why office holders will maintain their ideology and deny conflicting evidence, resulting in policies that are likely to persist.[6]

Our theory is related – and contributes to – three different strands of the literature. First, there is a growing economic literature on the question of where ideologies as a collections of ideas and a set of firmly held beliefs come from. Bénabou and Tirole (2006) study voters' perceptions about the extent to which people are responsible for their own fate, and show that beliefs in a "just world" can help individuals to motivate themselves or their children toward effort. Bénabou (2008) looks at perceptions about the relative merits of governments versus markets. In forming their beliefs, individuals optimally trade off the value of remaining hopeful about their (or their children's) future prospects and the costs of misinformed decisions. Both papers, unlike our approach, posit time-inconsistent preferences which can make it optimal for people to strategically ignore information and distort beliefs. Since expected payoffs also depend on whether other citizens respond to unpleasant facts

[4] Alesina and Cukierman (1990) study an environment in which voters are unsure about the ideological position of candidates (as opposed to the state of the economy as in our paper). Akin to the signal-jamming effect we find, they show that politicians may want to deliberately choose 'ambiguous' policies in order to conceal their true preferences, thereby keeping their ideological advantage.

[5] Conversely, if either policies are perceived to be ideologically neutral or candidates are expected to act-non-partisan, even the most office-minded politician has no incentive to deviate from what is optimal for the electorate.

[6] The resilience of economic policies that benefit (target) a specific groups of voters has been studied by Coate and Morris (1999) who use a dynamic model to formalize the intuition that implementation of a policy increases the political effectiveness of its beneficiaries in lobbying. As in our model, this persistence gives rise to political failure in the sense that equilibrium policy sequences can be Pareto dominated. The main difference between Coate and Morris (1999) and our approach is that we focus on *non-partisan* (valence) issues, which do not target specific groups.

with realism or denial, multiple equilibria that reflect different social cognitions (ideologies) emerge. While these models can explain ideology as a collectively held belief, we focus on a leader who *publicly acts* upon – rather than genuinely entertains – certain beliefs in order to maintain his power and leadership role.

Second, our argument also bears on the important question of why political parties and politicians seeking office diverge in their positions on critical issues, contrary to what the Downsian model would predict. In the past two decades, scholars in economics and political science have identified a number of factors that contribute to policy divergence, including the presence of valence issues [Ansolabehere and Snyder (2000)], the threat of third-party entry [Palfrey (1984)], office-motivated candidates [Wittman (1983), Osborne and Slivinski (1996), Besley and Coate (1997)] and an electorate that is imperfectly informed about candidates' types [Kartik and McAfee (2007), Callander (2008)]. All of these explanations, however, require *partisan preferences*. Indeed, we are not aware of a single contribution that is able to explain polarized and partisan politics on matters where voters commonly agree.[7] Moreover, since enacted policies in these models directly reflect the preferences of the electorate, they are silent on why policies can persist over time even in the face of new (and conflicting) evidence.

Finally, the model we develop draws from the literature on political failure. In a model similar to ours, Cukierman and Tommasi (1998) show that if voters are also imperfectly informed about an incumbent ideology, his electoral prospects may increase the more atypical the policy he proposes to implement. The theory can explain historic incidences such as Nixon opening up to China, where important policy shifts where initiated by office holders or parties whose traditional position was to oppose such policies.[8] Harrington (1993) and more recently, Maskin and Tirole (2004) study how incumbents' incentives to influence their re-election prospects can lead to policy failure in representative democracies. Instead of focusing on the role of elections of holding incumbents accountable for unsatisfactory performance and selecting the most talented (or congruent) politicians[9], these authors emphasize a flip side of elections: if the office-holding motive is sufficiently strong, politicians may choose the most popular alternative. Catering to public opinion pays off because it allows candidates whose intrinsic objectives are not in tune with those of the public to remain in office. Using a similar mechanism, Stasavage (2007) shows in a recent paper that contrary to common beliefs, public debate between representative may serve to deepen polarization and promote dissent. If debates are held under the public eye, candidates may ignore their private information about the true desirability of various policy measures and instead promote policies popular

[7] Another line of research in political economy has focused on explaining the prevailing polarization on 'moral' issues, such as abortion or gay marriage. Glaeser et al. (2005) identify a form of strategic extremism, which helps politicians to induce their core constituents to vote (or make donations).

[8] Although the basic line of reasoning in our analysis is obviously quite different, our results provide a new perspective on the conclusions of Cukierman and Tommasi (1998): while it may be true that only unlikely parties can credibly persuade voters to support 'extreme' policies, this effect depends crucially on the electorate having sufficiently uncertain expectations as to where parties stand. Otherwise, if Nixon went to China and by doing so could convince the American public that this policy was in their best interest (and not the Anti-Communist position he'd previously occupied), why should he expect the electorate to re-elect him, rather than a Democratic opponent who had been favoring this course of action all along?

[9] See Barro, 1973, Ferejohn, 1986, and Persson and Tabellini, 2000, chapters 4 and 9

among their constituents. Our analysis goes beyond these contributions by emphasizing how the inefficiency can depend solely on voters' *expectations* about a candidate's future policy intentions, rather than on a true discrepancy between the ideal policy of a candidate and that of the electorate at large.[10]

The remainder of the paper is organized as follows. The basic framework is developed in Section 2. Section 3 provides an in-depth analysis of the model. We show that both partisanship and non-partisanship can arise in equilibrium. Section 4 considers two extensions. We first demonstrate that our model uniquely predicts which of these equilibria occurs if candidates have arbitrary small biases towards their partisan policy.Second, we show that partisan behavior becomes even more plausible if the prospects of inefficient policies are themselves uncertain. Section 5 concludes.

2 A dynamic Model of Partisanship

2.1 Preferences and Economic Environment

Consider an infinite-horizon economy in discrete time. The economy is populated by an infinite number of risk-neutral consumer-voters who derive the same per-period benefit $b_t = b(a_t, s_t) \in \{0, b\}$ from a policy decision a_t. For simplicity, we take a_t to be binary; in particular, there is a 'left-wing' alternative $a_t = l$ and a 'right-wing' alternative $a_t = r$.[11] Consumers know the set of feasible policies (and have common views on which they perceive as being left-wing and right-wing, respectively) but are uncertain about the underlying state of the economy $s_t \in \{l, r\}$. As an example, take the issue of state versus market provision of public services (such as health care and education): here, the underlying state s_t captures the relative efficacy of government provision and the policy decision is whether or not the service is publicly provided, where public provision is commonly viewed as the "left-wing" alternative and private provision universally perceived as a "right-wing" policy.

Voters' per period payoff stochastically depends on the unobserved state s_t as follows:

$$b(a_t = s_t) = \quad b \quad \text{with probability } 1$$

$$b(a_t \neq s_t) = \begin{cases} b & \text{with probability } \pi \\ 0 & \text{with probability } 1 - \pi \end{cases}$$

[10] In Harrington (1993), the difference in objective functions between candidates and voters stems from differences in beliefs about which policy is best. Maskin and Tirole (2004) assume that some politicians are simply incongruent in the sense that their preferred action is always different from that of the electorate.

[11] Provided the policy issue is one-dimensional, the binary assumption could easily be relaxed. Assuming a binary political decision also has some appeal in that voters may find it difficult to make subtle distinctions between policies, e.g., they may only take note of whether government spending goes up or down. In this sense, policies may be quite broadly defined and fit well into the ideological spectrum of 'left' and 'right'. The presumption of one-dimensionality is also supported by empirical evidence from the US Congress: in well-known study using data on roll-call votes from the House and the Senate, Poole and Rosenthal (1997) show that more than 80 percent of representatives' voting records over the past 40 years can be explained solely on the basis of the one-dimensional variable (i.e., their 'ideology').

In other words, if the policy choice matches the state, the policy is 'successful' with probability one and voters receive a certain payoff of b. Otherwise, the policy 'fails' with probability $1-\pi$ in which case we normalize payoffs to zero.

The state of the economy evolves over time according to a symmetric transition function

$$Prob\{s_{t+1} = s_t\} = \gamma = 1 - Prob\{s_{t+1} \neq s_t\}, \tag{1}$$

independent of the policy chosen. We assume that the state is persistent, in the sense that $\gamma \in (0.5, 1)$. Letting μ_t denote the likelihood voters attach to the left-state $s_t = l$, we can write individual preferences as in period t

$$E\sum_{j=0}^{\infty} \beta^j b_{t+j} = E\sum_{j=0}^{\infty} \beta^j b\left(a_{t+j}|s_{t+j}\right). \tag{2}$$

where $\beta < 1$ is the discount factor. Note that, by construction, the issue is *non-partisan* (ideologically neutral) in the sense that all voters unanimously agree on the optimally chosen policy alternative: if they knew the state to be s, they unanimously preferred the policy that is appropriate for the state, i.e., $a = s$. Since they do not know s but share a common belief μ, voters prefer policy l over policy r in any given period t if and only if $\mu_t \geq \frac{1}{2}$.

Political decisions are not taken in direct democratic vote. Instead, voters elect an office holder as their representative in each period, who selects and implements the policy alternative a_t. Unlike voters, politicians observe the state s, which may simply reflect their greater expertise better access to resources, or their greater incentive to become informed.[12]

There are two observable types of politicians, left-wing L and right-wing R. We interpret the type $i \in \{L, R\}$ as politicians' 'ideology' or 'party affiliation', but any other observable characteristic such as the candidates' gender, their home district, or their previous position on a different (unrelated) policy issue would work equally well. Consistent with our notion that the issue is non-partisan, politicians derive the *same* utility from a given s than the voters, *independent* of their type i. However, they also care about holding office. We formalize this second motive in the usual fashion by a rent ϕ that politicians receive from being elected to office in period t. In summary, the per-period utility of an incumbent of type i in period t when the state is s_t is

$$u_t^i = b(a_t, s_t) + \phi. \tag{3}$$

When not in office, politicians receive a continuation utility of zero. Finally, we assume that not being re-elected is an absorbing state, i.e., a once defeated incumbent never returns to holding office.

The timing of the stage game is as follows. First, nature draws the state s_t, which is immediately revealed to politicians but not to ordinary citizens. Next, elections are held

[12] The natural assumption that politicians are generally better informed than the electorate at large is often evoked in the literature. See, e.g., Cukierman and Tommasi (1998) or Maskin and Tirole (2004). Kessler (2005) provides an analysis where officials to endogenously acquire competence on the issues they oversee and specialize in policy formation.

in which voters decide whether to re-elect the incumbent or whether to newly elect the challenger for office (a period defines a term of office). Throughout, we restrict attention to the case where the challenger has a different ideology or party-affiliation than the incumbent. Once elected, the office holder chooses a policy alternative a_t. Finally, voters and politicians observe whether the policy was a success ($b_t = b$) or a failure ($b_t = 0$).

2.2 Equilibrium Definition

As is common in these types of models, we will restrict attention to pure strategy, stationary and symmetric Markov perfect equilibria of this game. In those equilibria, players ignore all details of the history (including its length) and condition their strategies only on the pay-off relevant information. Note that because there is no link between periods other than the information revealed by politicians about the underlying state and the evolution of that state, the latter can be summarized for the electorate by its belief μ_t at time t. A strategy for a representative voter is thus a rule that determines whether he or she plans to vote for the previous period incumbent or the challenger in t, based on μ_t. When voters are indifferent between two candidates, either stands equal chances of winning the election.[13] Similarly, a strategy for a type-i candidate maps voters' beliefs μ_t (and hence, election outcomes) as well as the current state s_t into a policy choice $a \in \{l, r\}$. In equilibrium, strategies must be mutual best responses and beliefs evolve in a way consistent with Bayes rule whenever possible. Strategies are optimal if they maximize the value functions of candidates and voters. The value function for a representative voter can be written as

$$U(\mu_t) = \max_{P^i(\mu_t)} \; E\left[\sum_i P^i(\mu_t) b(a^i_t(\mu_t, s_t), s_t) + \beta U(\mu_{t+1})\right] \tag{4}$$

where $P^i(\mu_t) \in [0,1]$ is the probability that an i-type candidate is elected in t, and where the expectation is taken over b_t and s_t given current beliefs μ_t. Note that in general, beliefs μ_{t+1} at time $t+1$ will depend on the elected candidate, the implemented policy and the success or failure of the policy in t. The value function of a type i candidate is

$$V^i(\mu_t, s_t) = \max_{a^i(\mu_t, s_t)} \; P^i(\mu_t) E\left[b(a^i(\mu_t, s_t), s_t) + \phi + \beta V^i(\mu_{t+1}, s_{t+1})\right], \tag{5}$$

where the expectation is over b_t and s_{t+1}, given s_t.

3 Equilibrium Analysis

In what follows we will use the term *non-partisan* politics to characterize the Pareto-optimal policy choice, i.e., the office holder implements $a_t = s_t$, independent of her type i. *Partisan*

[13] Since we assume a continuum of voters, no single voter can possibly influence the outcome of an election and every voting strategy is consistent with equilibrium. To eliminate this artificial multiplicity, we will throughout consider only strategies that maximize (4) below, i.e, those that would be optimal in case the vote was decisive (weakly undominated strategies if there is a finite number of citizens).

politics, in contrast, involves politicians selecting the alternative that corresponds to their ideology, i.e., $a_t = l$ if $i = L$ and $a_t = r$ if $i = R$, independent of the state s_t. Recall from (3) that an office holders per-period utility is independent of her ideology or party affiliation. Consequently, the sole channel through which ideology can possibly influence the choice of policy is through voters' *expectations*, which for the politicians will translate into the likelihood they are (re-)elected to office. It is this link between actual policy choices and voter's expectations about candidates' post-election behavior – partisan or non-partisan – we are most interested in. To highlight the interdependencies, we have eliminated all other well-studied determinants of partisan politics (partisan voters, partisan politicians etc.), not because we consider them implausible but simply because they would only serve to disguise the true effects at work here. Of course, the fact that politicians' utilities do not depend on ideology or party affiliation renders their characterization as *left-wing* or *right-wing* as well as the labeling of alternatives as *left* and *right* completely arbitrary. What matters, as we will see below, are solely voters perceptions as to a) what constitutes a left-wing and a right-wing policy alternative, and b) who is a left-wing and a right-wing politician.

3.1 The Non-Partisan (Efficient) Equilibrium

As a benchmark, we first construct an equilibrium in which candidates choose policies in a Pareto efficient manner along the equilibrium path, and voters' – because they correctly expect non-partisan behavior from their representatives – have no preferences for either type of politician. Thus, suppose incumbents always choose $a_t^i = s_t$, irrespective of their ideology or party affiliation i. Since both types of politicians implement the same Pareto efficient alternative in every period, voters hold no preference for the incumbent or the challenger and elect either with probability 1/2. Let $U(i, \mu_t)$ be voter's utility from electing an i-type candidate in period t along the equilibrium path. We have

$$U(L, \mu_t) = U(R, \mu_t) \quad \text{and} \quad P^i(\mu_t) = \frac{1}{2} \qquad \forall \mu_t, t, i.$$

It is worth noting that the implementation of an efficient policy alternative – precisely because is is necessarily conditional on the current state – provides voters with additional information about s_t. Indeed, since the choice of $a_t = s_t$ perfectly reveals s_t, the only uncertainty about the underlying economy stems from the fact that the conditions may change from one period to the next according to (1). For any initial belief μ_0, beliefs in this equilibrium therefore evolve according to

$$\mu_{t+1}(a_t, \mu_t) = \begin{cases} \gamma & \text{if } a_t = l \\ 1-\gamma & \text{if } a_t = r \end{cases} \qquad \forall \mu_t, t.$$

In what follows, we will for notational simplicity focus on left-wing politicians $i = L$, dropping the index i whenever possible. The argument for right-wing politicians $i = R$ is analogous. Recalling that $b_t \equiv b$ if $a_t = s_t$ the value function of an incumbent politician is if he or she implements the efficient alternative is

$$V(s_t) = \frac{1}{2} \left\{ b + \phi + \beta \; E\left[V(s_{t+1})\right] \right\}.$$

Note that $V(s_t)$ is independent of μ_t, because given the electorate's voting rule any incumbent faces equal chances of being re-elected and defeated, respectively, regardless of beliefs. If the incumbent deviates by choosing $a_t \neq s_t$ in some t, the value function becomes

$$\hat{V}(s_t) = \frac{1}{2}\left\{\pi b + \phi + \beta E\left[V(s_{t+1})\right]\right\},$$

which by inspection is strictly less than $V(s_t)$ for any $\pi < 1$. Hence, $a_t = s_t$ is indeed the utility-maximizing choice for incumbents in each period. We can thus conclude that non-partisan politics and an electoral rule that assigns equal election chances to incumbents and challengers in all periods form an equilibrium. In fact, it is the Markov perfect equilibrium with the highest payoff to the electorate,

$$U^{\max} = \sum_{t=0}^{\infty} \beta^t b = \frac{1}{1-\beta} b.$$

Proposition 1. *[Non-Partisan Equilibrium] There always exists an equilibrium in which elected office holders act non-partisan and are re-elected with probability* $1/2$. *In this equilibrium, voters have full information about the prevailing state following the policy choice in each period, and receive the highest possible utility.*

While the non-partisan equilibrium always exists and Pareto-dominates all other equilibria for the voters, it is not the only possible outcome. In the following sections, we demonstrate sub-optimal partisan politics can be supported in equilibrium as well. Moreover, we will show that optimal non-partisan politics are fragile in the sense that they cannot survive if citizens' expectations about office holders' behavior are subject to (small) uncertainty.

3.2 The Partisan Equilibrium

We next study the possibility of a partisan equilibrium. Intuitively, suppose voters' expect office holders to play partisan and choose $a_t = i$ in every period, independent of the current state s_t. The key to observe is that voters are no longer indifferent across politicians with distinct ideologies. In particular, if a voter knew the state to be $s_t = l$, he or she would *strictly prefer* a type-L candidate to a type-R candidate, because only the former's partisan behavior coincides with the efficient policy choice in period t. A direct consequence of this strict preference ordering is that period-t incumbents now face a dilemma whenever their ideology does not match the state. A type-L office holder who selects the non-partisan choice of $a_t = r$ would reveal the state to be $s_t = r$, and would not be re-elected with probability one. Similarly, a type R-incumbent who implemented the efficient left-wing alternative $a_t = l$ because the state was $s_t = l$ would face certain defeat. A partisan choice of $a_t \equiv i \neq s_t$, on the other hand, will *conceal* the true state and thus may ensure – possibly depending on the observed success or failure of the alternative – re-election. It is then intuitive that this effect can induce partisan behavior provided politicians care sufficiently strong about their (re-)election prospects. The remainder of this section establishes this result formally.

To this end, consider a type-i candidate whose strategy is to choose the partisan policy whenever in office in period t. Given μ_0, the voters' belief along the equilibrium path then evolves as follows

$$\mu^L_{t+1}(a_t = l, \mu_t) = \begin{cases} 1-\gamma+(2\gamma-1)\frac{\mu_t}{\mu_t+(1-\mu_t)\pi} & \text{if policy } a_t = l \text{ was a success} \\ 1-\gamma & \text{if policy } a_t = l \text{ was a failure} \end{cases} \tag{6}$$

$$\mu^R_{t+1}(a_t = r, \mu_t) = \begin{cases} \gamma-(2\gamma-1)\frac{1-\mu_t}{1-\mu_t+\mu_t\pi} & \text{if policy } a_t = r \text{ was a success} \\ \gamma & \text{if policy } a_t = r \text{ was a failure.} \end{cases}$$

Note that the office holders' policy choice reveals no new information about the current state on the equilibrium path since the implemented policy always corresponds to the politcians' affiliation. Formally, the beliefs satisfy the property $E[\mu^L_{t+1}|a_t = l, \mu_t] = E[\mu^R_{t+1}|a_t = r, \mu_t] = \gamma\mu_t + (1-\gamma)(1-\mu_t)$.[14] Thus, the electorate only learns by observing whether the policy has been successful or not.

As usual, beliefs are not defined off the equilibrium path, i.e., when the electorate observes the non-partisan policy being implemented. Off equilibrium path, we make the natural assumption that non-partisan politics are perfectly revealing

$$\mu^L_{t+1}(a_t = r) = 1-\gamma \quad \text{and} \quad \mu^R_{t+1}(a_t = l) = \gamma, \tag{7}$$

i.e., if the electorate unexpectedly observes a left-wing office holder to select $a_t = r$, it assumes that the non-partisan state $s_t = r$ must have occurred, and vice versa.[15]

Now suppose voters elect the left-wing (right-wing) candidate for beliefs $\mu_t > 1/2$ ($\mu_t < 1/2$) and give both candidates equal chances of winning for $\mu_t = 1/2$. The value function of the electorate is then

$$U(\mu_t) = \begin{cases} (\mu_t + (1-\mu_t)\pi)\left(b + \beta U(\mu^L_{t+1})\right) + (1-\mu_t)(1-\pi)\beta U(1-\gamma) & \mu_t \geq 0.5 \\ (1-\mu_t+\mu_t\pi)\left(b+\beta U(\mu^R_{t+1})\right) + \mu_t(1-\pi)\beta U(\gamma) & \mu_t < 0.5. \end{cases} \tag{8}$$

Closer inspection of (8) reveals that $U(\mu_t)$ is increasing in μ_t for values $\mu_t \geq 1/2$ and decreasing in μ_t otherwise (at $\mu_t = 1/2$, the function assumes a minimum). Intuitively, more extreme beliefs increase the benefit of electing the right politician. A direct consequence of this property is that voters would never want to 'experiment', i.e., elect a candidate who subsequently is *less* likely to implement the efficient policy in order to receive more precise information about the state.[16] Doing so would only increase the chances of a policy failure, in which case voters would be even more convinced that the elected candidate was not appropriate. Put differently, the electorate would dispose of a more accurate belief only if the implemented policy goes awry. In the unlikely case of success on the other hand, the resulting belief is less precise than the one that would have resulted from having the appropriate candidate successfully implement his partisan policy.

[14]The right hand side of this expression is the evolution of beliefs in case the electorate observed nothing in each period.

[15]This out-of equilibrium belief is the unique belief satisfying the Banks & Sobel divinity D1 criterion.

[16]See also Lemma 1 in the Appendix, which formally shows that experimentation does not improve voters' payoffs.

Turning now to candidates, we will without loss of generality again consider the behavior of left-wing candidates, omitting the index L whenever possible. Anticipating the voting behavior of the electorate, the equilibrium value of acting partisan for a left-wing candidate is

$$V(\mu_t, s_t) = \begin{cases} P(\mu_t)\left\{b + \phi + \beta\left[\gamma V(\mu_{t+1}, l) + (1-\gamma)V(\mu_{t+1}, r)\right]\right\} & \text{if } s_t = l \\ P(\mu_t)\left\{\pi b + \phi + \beta E\left[(1-\gamma)V(\mu_{t+1}, l) + \gamma V(\mu_{t+1}, r)\right]\right\} & \text{if } s_t = r \end{cases}$$

where the expectation is taken over μ_{t+1} given s_t and b_t and

$$P(\mu) = \begin{cases} 1 & \text{if } \mu > 0.5 \\ 0.5 & \text{if } \mu = 0.5 \\ 0 & \text{else} \end{cases}. \tag{9}$$

A candidate who deviates by setting $a_t = r$ in period t, in contrast, would reveal the true state to be $s_t = r$. Voters' beliefs at the beginning of the next period are therefore $\mu_{t+1} < 1/2$, resulting in certain defeat and a utility normalized to zero. Hence, we can write the office holder's utility $\hat{V}(\mu_t, s_t)$ from such a deviation as

$$\hat{V}(\mu_t, s_t) = \begin{cases} P(\mu_t)\left\{\pi b + \phi\right\} & \text{if } s_t = l \\ P(\mu_t)\left\{b + \phi\right\} & \text{if } s_t = r. \end{cases}$$

Obviously, no rational incumbent would ever want to select an opponents partisan policy in a state where in fact her own partisan policy is myopically optimal. Thus, the strategy $a_t = l$ is trivially utility maximizing in the 'partisan' state $s_t = l$. It remains to study when politicians are willing to sacrifice the utility from the Pareto-optimal choice of $a_t = r$ by choosing $a_t = l$ in state $s_t = r$. Comparing $V(\mu_t, r)$ with $\hat{V}(\mu_t, r)$, we see that the answer is yes if $V(\mu_t, r) \geq \hat{V}(\mu_t, r)$ or

$$\beta E\left[\gamma V(\mu_{t+1}, l) + (1-\gamma)V(\mu_{t+1}, r)\right] \geq (1-\pi)b. \tag{10}$$

On the right-hand side of (10) are the short-term gains from deviating, as reflected in the additional expected benefit from the optimal non-partisan choice over the suboptimal partisan choice. The left-hand side captures the expected loss from facing certain defeat in this case; it is the utility lost by not staying in power, which is increasing in the parameters β and ϕ, among others (as shown below). Thus, as indicated above, the incumbent must have a high enough value remaining in office. This is intuitive: if politicians do not care about their (re-)election chances, either because they highly discount the future (low β) or because the benefits they derive from office are small (low ϕ), they will select whatever policy maximizes their per-period payoff, which by assumption is the Pareto optimal choice. But another, and perhaps less apparent, factor also plays a crucial role: by acting partisan, the candidates must also be able to *improve* their (re-)election chances by a sufficient margin. That this is not trivial can be seen by considering very low values of μ_t. Clearly, in this case we cannot rule out that even a success with the chosen partisan policy may result in defeat because voters' ex post belief, μ_{t+1}, remains below 1/2. For the remainder of this section, we will therefore assume for any belief $\mu \in [1-\gamma, \gamma]$, the success probability π of a sub-optimally chosen partisan policy is low enough, such that an office holder doing so in the current period would have a chance of being re-elected. In other words, even for $\mu_t = 1-\gamma$, the electorate's updated belief satisfies $\mu_{t+1} = \frac{(1-\gamma)}{(1-\gamma)+\gamma\pi} > 0.5$, which is equivalent to

Assumption 1.

$$\pi < \frac{1-\gamma}{\gamma}. \tag{A1}$$

Under Assumption 1, a success results in sure re-election (and failure in sure defeat) irrespective of the state s_t or of beliefs μ_t. In this case, $V(\mu_t, s_t)$ assumes a particularly simple form. It is constant (and equal to zero) for beliefs $\mu_t \in [1-\gamma, \frac{1}{2})$ where the candidate is not elected in equilibrium, takes on a single intermediate value for $\mu_t = \frac{1}{2}$, and is constant again for all higher beliefs $\mu_t \in (\frac{1}{2}, \gamma]$, where the candidate is elected with probability one.

Formally, $\forall \mu_t, \in (0.5, \gamma]$ we have $P(\mu_t) = 1$ and $\mu_{t+1} > \frac{1}{2}$ if the policy was successful and $\mu_{t+1} = 1-\gamma < \frac{1}{2}$ otherwise. $V(\mu_t, s_t) \equiv \bar{V}(s_t)$ for all values in this interval. Similarly, $\forall \mu_t, \in [1-\gamma, \frac{1}{2})$, $F(\mu_t) = 0$, implying $V(\mu_t, s_t) \equiv 0$. Selecting the non-partisan policy in state r then will not be optimal if

$$b + \phi \leq \pi b + \phi + \pi\beta[(1-\gamma)\bar{V}(l) + \gamma\bar{V}(r)]$$

or

Assumption 2.

$$(1-\pi)b \leq \pi\beta[(1-\gamma)\bar{V}(l) + \gamma\bar{V}(r)] \tag{A2}$$

where $\bar{V}(r)$ and $\bar{V}(l)$ can explicitly be computed to read

$$\begin{aligned} \bar{V}(r) &= \frac{b\pi(1+\beta(1-2\gamma\beta)) + (\pi\beta(1-\gamma)+1-\beta\gamma)\phi}{\pi\beta(\beta(2\gamma-1)-\gamma)+1-\beta\gamma} \\ \bar{V}(l) &= \frac{b(\pi\beta(1-2\gamma)+1) + (1-\beta(\pi\gamma+\gamma-1))\phi}{\pi\beta(\beta(2\gamma-1)-\gamma)+1-\beta\gamma}. \end{aligned} \tag{11}$$

We can conclude:

Proposition 2. *[Partisan Equilibrium] Under (A1) and (A2), there always exists an equilibrium in which elected office holders act partisan regardless of the state. In this equilibrium, politicians are re-elected with probability one if their implemented policy was a success and face certain defeat if it was a failure, and voters receive no information about the prevailing state from the choice of policy (other than ex post from its success or failure).*

It is important to contrast the equilibrium behavior in Proposition 2 to the well-known danger of office-motivated representatives 'pandering to public opinion'. Harrington (1993) and Maskin and Tirole (2004) investigate this phenomenon, which turns the accountability role of elections on its head. The authors show that, because the electorate is unable to evaluate the official's actions directly, the desire to be (re-)elected may lead non-congruent representatives to pursue the most popular, rather than the welfare maximizing, course of action. While similar in its consequences, the policy choice in a partisan equilibrium does not follow the most popular course of action. Instead, incumbents in our model stick to their once enacted policies so as not to reveal that "times have changed". Moreover, what is at the heart of the resulting policy bias is a perceived – as opposed to a real – ideological bias or non-congruency: ideology is a social perception not an innate characteristic of the candidates.

In particular, comparing Proposition 1 and 2, the blame for the policy bias can be squarely laid on the fact that voters *perceive* policies to be ideologically tinted and *expect* candidates to act partisan. If any one of these conditions is missing, i.e., policies are perceived to be ideologically neutral or candidates are expected to act-non-partisan, even the most office-minded politician has no incentive to deviate from what is optimal for the electorate [Proposition 1]. Only if voters expect partisan politics in the future will they have an incentive to elect the candidates whose perceived position corresponds to what they think is in their best interest given their current information. And it is the voters' expectations, in turn, which induce candidates to actually act partisan, i.e., according to their ideology, in the first place. Put differently, voters and representatives are caught in an *ideology trap*: because voters expect the ideology of office holders to determine their political actions, an officials (re-)election chances will vary with his or her perceived ideology. In their desire to influence the outcome of the election, these expectations induce the officials to act partisan. Shifts from non-partisan politics to partisan politics confirm the electorate's assessed likelihood of the latter, cementing the polarization even further. Ideologues emerge who are *not* true believers. Instead, ideology is purely a social perception based on observable characteristics of candidates: if voters expect a female representative from California who supports gun control to also favor big government, then this is what she will do in equilibrium. Thus, issue bundling occurs not because preferences are bundled, but because voters' expectations tie candidates' to candidates' characteristics (such as their party affiliation or their position on other issues).

There are two possible misgivings one could have against this line of reasoning. First, voters are strictly better off in the non-partisan equilibrium than in the partisan equilibrium, and thus there may *a priori* be little reason to expect partisan behavior to prevail. Second, non-partisan behavior is not observed on the equilibrium path in the partisan equilibrium: by assumption, if voters unexpectedly see candidates acting non-partisan, they infer that the state must be unfavorable to their ideological position. Although plausible[17], the fact remains that these are off-equilibrium beliefs. As we will see, both arguments are rooted in the simple nature of the model and can easily be addressed. Section 4 below presents two variations of our our basic framework that deal with these concerns in turn.

We close this section by studying the set of parameters that supports partisan behavior as an equilibrium phenomenon. First, note that Assumption 1 is satisfied for small values of either π or γ, or both: if $\gamma \to \frac{1}{2}$, (A1) holds for almost all feasible values of π; values $\gamma \to 1$,

[17]It is easy to verify that the equilibrium survives a number of commonly used refinements.

in contrast, require $\pi \to 0$. Ceteris paribus, partisan behavior is thus more likely to arise if either i) the electorate is sufficiently uncertain about the underlying state or ii) the success and failure of policies is sufficiently accurate signal of the state, or both. Intuitively, these conditions ensure that challengers do not credibly deviate to non-partisan behavior. If (A1) does not hold, a challenger who unexpectedly (i.e. off the equilibrium path) won the election would always act non-partisan, simply because he would have no chance of getting re-elected even if his partisan policy proved successful. If the state can be determined fairly accurately because it persists over long time horizons ($\gamma \to 1$) or if the signal of a policy's success or failure is very inaccurate ($\pi \to 1$), even a successful partisan policy choice of a challenger would not convince voters to turn their backs on an incumbent. Consequently, challengers would have no incentive to act partisan if elected, which in turn would make their election strictly optimal for voters.

Second, to better understand the restrictions embodied in Assumption 2, we can we can substitute for $\bar{V}(r)$ and $\bar{V}(l)$ in condition (A2) using (11), which yields

$$\frac{b}{\phi + b} \leq \frac{\pi\beta\left(1 - \beta(2\gamma - 1)\right)}{(1 - \pi)\left(1 - \beta\gamma\right)} \tag{12}$$

Thus, and not surprisingly, partisan behavior is more likely to arise whenever politicians have a strong relative office holding motive: their rent from holding onto power, ϕ, relative to the the payoff b they forgo by not choosing the correct policy must be sufficiently high. Setting $\beta = 1$, equation (12) further simplifies to[18]

$$\frac{\phi}{b} \geq -\frac{1}{2}\left(3 - \frac{1}{\pi}\right).$$

Note that the condition is satisfied even for $\phi = 0$ as long as $\pi > \frac{1}{3}$ because candidates derive utility from their policy choice only while in office.

3.3 Properties of the Partisan Equilibrium

As explained above, the specific motivation for acting partisan given voters' expectations is one 'signal-jamming' (rather than signaling itself). An efficient policy choice conveys information about the state of the world, making it less likely that the incumbent office holder is re-elected if he is expected to act partisan in the future. To improve his chances of re-election, the incumbent thus 'jams' the voters' inference problem by instead using the partisan policy, which is both inefficient and less responsive to current circumstances.

The latter fact is noteworthy, not only because it can explain the emergence of "ideologues" but also because, by definition, an ideologue's preferred policy choice does not vary with the underlying state. Thus the model can also provide a possible explanation for inefficient policy persistence: along the equilibrium path, there will not be a deviation from a given

[18]Since the probability that a candidate is eventually ousted from office approaches one, candidates have finite values even if they do not discount the future. In this case the values are $\bar{V}(r) = \frac{2b\pi + \phi + \pi\phi}{1-\pi}$ and $\bar{V}(l) = \frac{b+\phi}{1-\gamma} + \bar{V}(r)$.

policy unless voters oust a politician from office. Moreover, the probability that the policy (ideology of the office holder) varies with the state and changes from one period to the next is smaller than in the non-partisan equilibrium.

Finally, despite the fact that incumbents who 'stick to their political colors' and do not change policies enact inefficient policies, the political failure does not result in lower election chances. In fact, it is easy to show that – relative to the efficient equilibrium – incumbents enjoy an advantage in the partisan equilibrium: their chances of winning another term in office are strictly higher than even.[19]

These observations are summarized in

Proposition 3. *In a partisan equilibrium:*

a) voters receive strictly less utility than in the non-partisan equilibrium [Policy Failure]

b) incumbents' policies do not vary with the current state and policies are less likely to be changed than would be efficient [Policy Persistence], and

c) the long run probability that an incumbent wins another term in office is strictly greater than one half [Incumbency Advantage].

The implication of policy persistence is particularly interesting for two reasons. First, it shows that policies may be resilient not only because they are targeted and thus allow for the formation of powerful interest groups who subsequently lobby for their continued enactment as in Coate and Morris (1999). Persistence may also be a problem for non-targeted (valence) issues, simply because incumbent politicians may be reluctant to abandon their previously enacted policies so as to not openly admit that "times have changed". Second, this persistence gives rise to political failure. Rather than the result of a struggle between powerful interest groups and the public at large, the inefficient inertia in the political process is driven by the fact that, in a world on partisanship, office holders are reluctant to admit that new circumstances warrant a new policy and, therefore, new leaders in the eyes of the electorate.

Both policy persistence and incumbency advantage distinguish our model from from other models of policy divergence (such as the citizen-candidate model) and can potentially be tested for empirically. While a full-fledged empirical analysis of these phenomena is beyond the scope of the present paper, we confine ourselves to point out that these implications are consistent with empirical observations regarding democratic two-party systems. As stated in the Introduction, studies of voting behavior in the U.S. Congress in particular confirm our theoretical predictions of ideological positioning and polarization along party lines [McCarthy et al. (2006)]. Using data from roll call voting records, Poole (2007) presents a variety of evidence showing that, once elected, members adopt a consistent ideological position and maintain it over time. Moreover, in spite of (or perhaps even because of) their

[19] One may object to this assertion that since voters are indifferent between candidates in the non-partisan equilibrium, any probability of re-election is consistent with equilibrium behavior (including perfect incumbency advantages with re-election probabilities equal to one). Note, however, that such outcomes would require voters to co-ordinate their voting strategies, an implausible scenario when the electorate is large.

stubborn behavior, re-election rates for senators and House members are regularly above 80 percent. In 2002, for instance, 398 House members ran for reelection, of which only 16 were defeated. In the Senate, a mere three out of 26 senators running for reelection lost.

Finally, note that the qualitative results of this section in no way depend on our assumption that there is no uncertainty in the voting behavior of the electorate, which makes competition between candidates especially fierce. In particular, a standard probabilistic voting model where candidates face uncertain electoral prospects and cater to the swing voter would yield identical conclusions.[20]

4 Extensions: Voter Uncertainty

4.1 Candidate Behavior

As mentioned above, one possible objection to the partisan equilibrium is that it is Pareto dominated by the non-partisan equilibrium for the voters (though not for the politicians). Arguably, this could make sub-optimal partisan behavior less likely to be observed: if the electorate collectively benefits from expecting representatives to act in its best interest, then why should it expect otherwise?

Although this reasoning may sensible enough, at least in circumstances that facilitate some form of voter coordination, we will show in this section that there are compelling arguments in favor of the partisan equilibrium. Specifically, the result below demonstrates that the non-partisan equilibrium is fragile (unstable) in the sense that it does not survive small perturbations in voters' expectations. Hence, introducing a small amount of voter uncertainty will select the partisan equilibrium whenever it exists. Formally, suppose that from the perspective of voters' there is some small probability $\epsilon > 0$ that candidates play partisan.[21]

We have

Proposition 4. *If there is an arbitrarily small and i.i.d. probability $\epsilon > 0$ that office holders follow their ideology in each period, then generically there exists* either *the partisan equilibrium* or *the non-partisan equilibrium, not both.*

Proposition 4 shows that a small amount of voter uncertainty regarding candidate behavior suffices to select the inefficient, partisan equilibrium. Intuitively, non-partisan behavior is

[20] See the Appendix for proof of Proposition 2 for the case where $P(\mu_t)$ is an arbitrary increasing function of μ_t. Also note that our results are equally robust to the possibility that voters occasionally observe the state of the world: while introducing a small probability that s_t is commonly observed will make partisan-behavior less attractive, ceteris paribus, condition (12) still holds for sufficiently high ϕ/b.

[21] One explanation for why voters could expect partisan behavior to arise with positive probability is party pressure [see Cukierman and Tommasi (1998)]. The possibility of a "partisan shock" could then formalized by a probability ϵ with which the office holder realizes an additional benefit $B^i(a) \equiv B$ whenever he chooses the policy a corresponding to her ideology or party affiliation i, and assuming that the per-period payoff from a partisan choice is sufficient to compensate for the expected loss from not choosing the efficient alternative, i.e., $B > (1-\pi)b$). Another conceivable rational for this type of voter uncertainty would be that voters are unsure about whether or not the issue is in fact non-partisan.

unstable because voters have no preferences over non-partisan politicians; everyone is equally good as long as he or she is expected to act non-partisan. Small amounts of uncertainty regarding candidates' subsequent behavior, however, make voters strictly prefer the candidate whose ideological position is more likely to succeed given their beliefs about the current state. This is true even if the probability of acting partisan is very small, since voters are indifferent between candidates to begin with.

While we use the result in Proposition 4 primarily to select among equilibria, the fragility of non-partisan (respectively, partisan) equilibria has obvious implications concerning how shifts in voters' expectations translate into policy changes. In particular, the above finding shows that even small changes in the perception of voters concerning the likelihood of partisan behavior of their representatives are sufficient to trigger major shifts in the type of policies that are proposed and how these policies are voted upon. Thus, Proposition 4 could fruitfully be applied to explain sudden trends in polarization and partisanship. On matters of foreign policy , for example, partisanship as measured by the lack of support for the President by members of the U.S. congress increased dramatically following the Vietnam war (an event that may well have changed peoples' expectations about partisan behavior).[22] For the same reason, the result is also consistent with – and can possibly account for – occurrences of within-party polarization and convergence, such as the split between Southern and Northern Democrats during the Civil War area and its diminishing importance in the past decades.

4.2 Policy Prospects

In this section we allow voters to be uncertain as to the prospect of an inefficiently chosen policy. Apart from capturing reality, the extension serves two purposes. First, since candidates will prefer to implement efficient (non-partisan) policies whenever their partisan policy is unlikely to succeed, voters will observe non-partisan behavior on the equilibrium path, eliminating out-of equilibrium beliefs. Second, the partisan equilibrium will exist for a wider range of parameters.

Specifically, assume that the probability of success of an inefficient policy choice π_t evolves stochastically over time in the following way: in each period t, it is either $\pi > 0$, as before, or zero. The latter case captures a situation where it is very important to pick the right policy: inefficient policy choices never succeed and, consequently, the electorate always learns when the wrong policy was implemented. To fix ideas, we will refer to such a period as a *crisis*. Let q be the probability of a normal period (with success probability π) so a crisis occurs with probability $1 - q$, independently of the state $s_t \in \{r, l\}$. Candidates learn π_t at the beginning of each period, together with the state of the world. Voters do not observe π_t. This implies that when observing a non-partisan (efficient) policy choice, they cannot be sure whether this choice was due to a crisis situation or whether the candidate deviated from

[22] Using data on foreign policy and defense roll-call votes in the U.S. House and Senate, Meernik (1993) documents that the Vietnam War had a significant impact on bipartisan presidential support: whereas substantial consensus existed prior to the War, is has become much more infrequent afterwards.

his or her partisan equilibrium behavior.[23]

Turning to equilibria, observe first that the non-partisan equilibrium still exists since deviating to a partisan policy is even less attractive in a crisis. As before, though, a partisan equilibrium where politicians act partisan in normal times and non-partisan whenever there is a crisis is also supported. In this equilibrium the electorate learns the state at the end of any crisis period whenever $s_t \neq i$. To see this, suppose the incumbent chooses the nonpartisan policy $a_t = s_t$. Then voters learn that the non-partisan state occurred, since this policy is never played otherwise. If instead the incumbent deviated and choose his partisan policy $a_t = i$ instead, then it will surely fail - which is again observed by the electorate. In both cases, the electorate learns that the a crisis occurred and that the economy was in a state unfavorable to the incumbent.

Since a crisis doesn't persist by assumption, voters' beliefs over π_t are the same each period, and we can w.l.o.g. condition the election probabilities condition exclusively on the belief over the state, as before. We concentrate on symmetric equilibria and assume the candidates act symmetrically whenever a crisis occurs. Thus, the election probabilities remain as in section 3.2: voters elect the left-wing (right-wing) candidate for beliefs $\mu_t > 1/2$ ($\mu_t < 1/2$) and give both candidates equal chances of winning for $\mu_t = 1/2$. Now suppose the left-wing candidate has been elected in a crisis period. Consider $\pi_t = 0$ and $s_t = r$. A partisan policy $a_t = l$ will surely fail, leading to a current payoff of ϕ and next period's belief of $\mu_{t+1} = 1-\gamma$. A non-partisan choice $a_t = r$ on the other hand will be successful, yielding higher current payoff of $b + \phi$ with the same next period's belief at $\mu_{t+1} = 1 - \gamma$. By a similar argument, $a_t = l$ must be optimal if $\pi_t = 0$ and $s_t = l$. Therefore, any partisan equilibrium must involve the efficient policy being implemented during a crisis.

Next, let $V^c(\mu_t, s_t)$ denote the left-wing candidate's expected discounted value if state s_t occurs, the electorate has belief μ_t and he follows the equilibrium strategy for the rest of the game. In contrast to the base model, $V^c(\mu_t, s_t)$ now also contains the expectation with respect to a possible crisis. We can adapt the condition (10) of the base model that supports partisan behavior in any *normal* period,

$$\beta E\left[\gamma V^c(\mu_{t+1}, l) + (1-\gamma)V^c(\mu_{t+1}, r)\right] \geq (1-\pi)b \tag{A2'}$$

where the value functions are slightly modified to account for the additional uncertainty induced by π_t:

$$V^c(\mu_t, s_t) = \begin{cases} P(\mu_t)\left\{b + \phi + \beta\left[\gamma V^c(\mu_{t+1}, l) + (1-\gamma)V^c(\mu_{t+1}, r)\right]\right\} & \text{if } s_t = l \\ P(\mu_t)\{q\pi b + (1-q)b + \phi + q\beta\pi\left[(1-\gamma)V^c(\mu_{t+1}, l) + \gamma V^c(\mu_{t+1}, r)\right]\} & \text{if } s_t = r \end{cases}$$

It is easy to show that $V^c(\mu_t, s_t) = 0$ for $\mu_t < 0.5$ and $V^c(\mu_t, s_t) \equiv \overline{V}^c(s_t)$ for $\mu_t > 0.5$, as in the base model.

Interestingly, the partisan equilibrium now exists *more* often. Like in the previous section, a candidate is only willing to implement the partisan policy if this assures reelection in case

[23]The assumption that voters do not observe the success probability at all is made to simplify matters. Our qualitative argument remains valid as long as there is some residual uncertainty with regard to π_t.

of success; in particular this must be true even if the electorate holds the worst possible beliefs, $\mu_t = 1 - \gamma$. However, since the partisan policy is less often implemented than in the base model, observing a successful partisan policy contains now more information and therefore raises the posterior belief more than before. Specifically, (A1) becomes

$$\pi < \frac{(1-\gamma)}{\gamma q}. \tag{A1'}$$

Proposition 5. *Under (A1') and (A2'), there exists an equilibrium in which elected office holders act partisan in normal times and efficient in times of crisis. In this equilibrium, politicians are re-elected with probability one if their implemented policy was a success and face certain defeat if it was a failure or they implemented the non-partisan policy.*

Note that (A2') is equivalent to (A2) from section 3.2, and is explicitly given by (12),

$$\frac{b}{\phi + b} \leq \frac{\pi\beta\,(1-\beta(2\gamma-1))}{(1-\pi)\,(1-\gamma\beta)}.$$

which is satisfied whenever holding office is important enough compared to implementing policies successfully. To intuitively understand why (A2) remains unchanged, assume for the moment it is satisfied with equality. Then, given the electoral voting rule (9), one can verify that (A2') also holds with equality. This means that the office holder is indifferent between implementing his inefficient partisan policy or the efficient one if $\pi_t = \pi$. In this case, the value of being in office in the non-partisan state and following the equilibrium strategy equals that of implementing the efficient policy after observing $\pi_t = 0$ (and not getting reelected afterwards): $\overline{V}^c(r) = \phi + b$. Since the value in state r equals that of the base model, and both the strategy and the payoff in state l remain as in section 3.2, we must also have $\overline{V}(l) = \overline{V}^c(l)$.

Now suppose that (A2) holds with strict inequality, which renders holding office more attractive. By the preceding paragraph, both in the base model and in this section, an incumbent would prefer to implement the partisan policy whenever $\pi_t = \pi$. Since incumbents implement the efficient policy if $\pi_t = 0$, the possibility of a crisis *ceteris paribus* decreases the value of office holders in the partisan equilibrium whenever it exists, i.e. $\overline{V}^c(l) \leq \overline{V}(l)$ and $\overline{V}^c(r) \leq \overline{V}(r)$.

In summary, we find that the possibility of a crisis renders the partisan equilibrium more plausible. Intuitively, if the electorate is uncertain about the prospects of inefficient policies, it expects the candidates sometimes to implement the non-partisan policy. If voters observe that a politician has abandoned his ideology, they know that he did so to avoid a certain political failure - as a result, they (correctly) do not interpret this behavior as a sign of honesty and therefore do not draw inferences regarding the politician's future strategy. Finally observe that the partisan equilibrium continuously converges to the equilibrium in the basic framework as $q \to 0$, thereby justifying the off-equilibrium beliefs of section 3.2: upon observing the non-partisan policy being implemented, the electorate assumes that the incumbent has been forced to abandon his ideology, simply because the conflicting evidence was too strong.

5 Discussion and Concluding Remarks

This paper proposes a theory of ideology for public leaders. We have shown that there are circumstances under which elected officials may adopt ideologically opposed positions, resulting in inefficient partisan policies even in areas that are generally perceived to be non-partisan. In particular, partisanship and polarization can emerge in equilibrium despite the fact that voters and their representatives are in complete agreement as to which is the optimal course of action. The problem the parties face can be viewed as an 'ideology trap', which emerges because voters perceive alternative policy measures to be ideologically tinted, and expect candidates to remain 'true to their ideology' which itself is a social perception grounded in observable characteristics (such as their gender, their party affiliation, or their position on a different policy issue).

The basic argument is simple: if voters expect political candidates to act partisan once in office, they have an incentive to elect the a representative whose perceived partisan policy (ideology) corresponds to what they think is in their best interest based on their current information. As we show, this may suffice to induce candidates to actually act partisan in the first place, thereby confirming the expectations of the electorate. This is because choosing the efficient (non-partisan) policy choice conveys information about the state of the world, making it less likely that the incumbent office holder is re-elected if he is expected to act partisan in the future. To improve his chances of re-election, a sufficiently office-motivated incumbent thus 'jams' the voters' inference problem by instead using the partisan policy, which is less responsive to current circumstances. The result is political failure in the sense that the equilibrium partisan policy outcomes in are Pareto dominated. Thus, the model can explain policy bias and divergence even on non-partisan issues from the fact that voters *perceive* policies to be ideologically tinted and *expect* candidates to act partisan. Moreover, such partisan politics are also persistent in the sense that equilibrium polices are less volatile and less responsive to changes in the underlying state than efficient policies.

Importantly, the inertia is not driven by a fear of appearing incompetent. Rather, in a partisan world, leaders are a reluctant to admit that 'times have changed' because new circumstances will warrant a new policy and, therefore, new leaders in the eyes of the electorate.[24] Our model also should be contrasted with the widely-used adverse selection approach of reputation in repeated games, initially formalized by Kreps et al. (1982) and Kreps and Wilson (1982). In these models, small amounts of imperfect information regarding their payoff can induce players to attempt to build a reputation for being of a certain type, as to trigger more favorable responses from others.[25] Translated into our framework, this approach would assume that politicians can be of two unobservable (payoff) types,

[24] Using the US relations to Iraq as an example, take George W. Bush's reluctance to admit that his strategy in Iraq failed. According to our model, it is not the gain from appearing competent (or the loss from appearing incompetent) that causes the political failure. Instead, admitting mistakes would imply that the Democrats' strategy to deal with the situation in Iraq was preferable, which in turn implies that a Democrat could do better when in office.

[25] In a recent application of this approach to a related question, Morris (2001) for example assumes that political advisers can be either good or bad. A priori, both types of adviser would like being perceived as good, which may prompt them to keep their advice "politically correct" (against better knowledge).

a "partisan" type and a "non-partisan" type, where the latter is strictly preferable to the electorate. In such a world, candidates with partisan preferences would be tempted to implement an efficient policy so as to appear non-partisan. Obviously, one could not possibly explain ideologically tinted behavior with this line of argument. In contrast, there is no uncertainty about the candidates' type in our model. Thus, implementing efficient policies in the partisan equilibrium cannot serve as a signal for being an efficient type. Rather, the electorate is unsure about the current state of the world, and an incumbent who implements a non-partisan policy will at most signal that a certain state prevails, which in turn makes it desirable to out him from power.[26]

[26] Recall that the preference ordering of the electorate over states, and consequently its voting behavior, depends on the equilibrium strategy of the candidates.

Appendix

The following lemma establishes that there is no 'experimenting' in equilibrium

Lemma 1. *Suppose that both candidates implement their partisan policy in each period. Then the electorate's value function is unique and has the following properties*

i) The value function $U(\cdot)$ is axially symmetric around 0.5, i.e $U(\mu_t) = U(1-\mu_t)$ for $\mu_t \in [1-\gamma, \gamma]$.

ii) The value function $U(\cdot)$is strictly decreasing in the belief for $\mu_t < 0.5$ and strictly increasing for $\mu_t > 0.5$.

iii) The value function $U(\cdot)$ satisfies $b + \beta U(\mu_t) - \beta U(1-\gamma) \geq (1-\gamma)(1-\pi) b \quad \forall \mu_t \in [1-\gamma, \gamma]$.

iv) The electorate's optimal voting strategy is identical to that of a myopic electorate.

Proof. Recall that the value function for a representative voter along the equilibrium path is

$$U(\mu_t) = \begin{cases} (\mu_t + (1-\mu_t)\pi)\left(b + \beta U(\mu_{t+1}^L)\right) + (1-\mu_t)(1-\pi)\beta U(1-\gamma) & \mu_t \geq 0.5 \\ (1-\mu_t+\mu_t\pi)\left(b + \beta U(\mu_{t+1}^R)\right) + \mu_t(1-\pi)\beta U(\gamma) & \mu_t < 0.5 \end{cases}$$

which is equivalent to (where $z_t = 1$ denotes success of policy a_t)

$$U(\mu_t) = \begin{cases} (\mu_t + (1-\mu_t)\pi)\, b + E[\beta U(\mu_{t+1}^L)] & \mu_t \geq 0.5 \\ (1-\mu_t+\mu_t\pi)\, b + E[\beta U(\mu_{t+1}^R)] & \mu_t < 0.5 \end{cases}$$

with

$$\mu_{t+1}^R(a_t = r, \mu_t) = \begin{cases} \gamma - (2\gamma-1)\frac{1-\mu_t}{1-\mu_t+\mu_t\pi} \equiv \varphi^R(\mu_t) & \text{if policy } a_t = r \text{ was a success} \\ \gamma & \text{if policy } a_t = r \text{ was a failure.} \end{cases}$$

and

$$\mu_{t+1}^L(a_t = r, \mu_t) = \begin{cases} 1-\gamma + (2\gamma-1)\frac{\mu_t}{\mu_t+(1-\mu_t)\pi} \equiv \varphi^L(\mu_t) & \text{if policy } a_t = l \text{ was a success} \\ 1-\gamma & \text{if policy } a_t = l \text{ was a failure.} \end{cases}$$

Step 1: We prove uniqueness and properties i)-iii) by use of the contraction mapping Theorem: Define the functional operator $T : \mathcal{U} \mapsto \mathcal{U}$ that maps the space of bounded continunous functions $\mathcal{U}$ defined on $[1-\gamma, \gamma]$ with range $\mathbb{R}^+$into itself as follows:

$$(TU)(\mu_t) = \begin{cases} (\mu_t + (1-\mu_t)\pi)\left(b + \beta U(\varphi^L(\mu_t))\right) + (1-\mu_t)(1-\pi)\beta U(1-\gamma) & \mu_t \geq 0.5 \\ (1-\mu_t+\mu_t\pi)\left(b + \beta U(\varphi^R(\mu_t))\right) + \mu_t(1-\pi)\beta U(\gamma) & \mu_t < 0.5 \end{cases}$$

This operator satisfies Blackwells sufficient conditions[27] and is therefore a *contraction*: It satisfies *monotonicity* because U enters only linearly with positive coefficient. It satisfies *discounting* because $T(U+a) = TU + \beta a$ as we have $\mu_t + (1-\mu_t)\pi + (1-\mu_t)(1-\pi) = 1$ and $1 - \mu_t + \mu_t\pi + \mu_t(1-\pi) = 1$. As $\mathcal{U}$ together with the *sup*-Norm is a complete metric space the contraction mapping Theorem applies.[28] Hence there exists a unique electorate's value function $U(\cdot)$.

We will prove the properties i), iii) and the following stronger property ii') of U by use of Corollary 1 of the contraction mapping Theorem of Stokey and Lucas (1989, p. 52):

ii') $U'(\mu_t) \leq -(1-\gamma)(1-\pi)^2 b$ for $\mu_t < 0.5$, $U'(\mu_t) \geq (1-\gamma)(1-\pi)^2 b$ for $\mu_t > 0.5$

It can be shown that the set of bounded continuous functions that satisfy these properties is closed. To apply the Corollary we thus have to show that if U satisfies these properties, then TU also satisfies them. Suppose that U satisfies properties i), ii') and iii).

i) Since $\varphi^L(0.5+x) = 1 - \varphi^R(0.5-x)$, TU also satisfies $U(0.5-x) = U(0.5+x)$ for $x \in [0, \gamma - 0.5]$.

ii') For $\mu_t > 0.5$,

$$
\begin{aligned}
(TU)'(\mu_t) &= (1-\pi)\left(b + \beta U(\varphi^L(\mu_t) - \beta U(1-\gamma)\right) + (\mu_t + (1-\mu_t)\pi)\,\beta U'(\varphi^L(\mu_t))\varphi^{L'}(\mu_t) \\
&\geq (1-\gamma)(1-\pi)^2 b
\end{aligned}
$$

where the inequality is because of $b + \beta U(\mu_t) - \beta U(1-\gamma) \geq (1-\gamma)(1-\pi) b$ and because the second term is nonnegative by property ii). For $\mu_t < 0.5$, an analogous argument applies.

iii) For $\mu_t > 0.5$ we have:

$$
\begin{aligned}
TU(\mu_t) &= (\mu_t + (1-\mu_t)\pi)\left(b + \beta U(\varphi^L(\mu_t))\right) + (1-\mu_t)(1-\pi)\beta U(1-\gamma) \\
&= (\mu_t + (1-\mu_t)\pi)\left(b + \beta U(\varphi^L(\mu_t)) - \beta U(1-\gamma)\right) + \beta U(1-\gamma)
\end{aligned}
$$

Hence we have:

$$
\begin{aligned}
b + \beta TU(\mu_t) - \beta TU(1-\gamma) &= b - (\gamma + (1-\gamma)\pi)\left(b + \beta U(\varphi^L(\gamma)) - \beta U(1-\gamma)\right) \\
&\quad + (\mu_t + (1-\mu_t)\pi)\left(b + \beta U(\varphi^L(\mu_t)) - \beta U(1-\gamma)\right) \\
&\geq b - (\gamma + (1-\gamma)\pi)\left(b + \beta U(\varphi^L(\gamma)) - \beta U(1-\gamma)\right) \\
&= (1-\gamma)(1-\pi) b + (\gamma + (1-\gamma)\pi)\left(\beta U(\gamma) - \beta U(\varphi^L(\gamma))\right) \\
&\geq (1-\gamma)(1-\pi) b
\end{aligned}
$$

where we used property i) repeatedly. The first inequality is due to property iii) and the last one due to propery ii).

[27] see e.g. Stokey Lucas, Theorem 3.3)

[28] see e.g. Stokey Lucas, Theorem 3.2.

Step 2: Now we show that it is indeed optimal to vote for the left party if $\mu_t > 0.5$. (an analogous argument holds for $\mu_t < 0.5$). Deviating once and electing the right party yields for $\mu_t > 0.5$:

$$\hat{U}(\mu_t) = (1 - \mu_t + \mu_t\pi)\left(b + \beta U(\varphi^R(\mu_t)\right) + \mu_t(1-\pi)\beta U(\gamma).$$

Hence:

$$\begin{aligned} U(\mu_t) - \hat{U}(\mu_t) &= (2\mu - 1)(1-\pi)\left(b + \beta U(\varphi^L(\mu_t)) - \beta U(\gamma)\right) \\ &\quad + (1 - \mu_t + \mu_t\pi)\left(\beta U(\varphi^L(\mu_t)) - \beta U(\varphi^R(\mu_t))\right) \\ &\geq (1 - \mu_t + \mu_t\pi)\left(\beta U(\varphi^L(\mu_t)) - \beta U(\varphi^R(\mu_t)\right) \geq 0, \end{aligned}$$

where the last inequality follows from $\varphi^L(\mu_t) - 0.5 > |0.5 - \varphi^R(\mu_t)|$ and property ii). To see this, note that for $\varphi^R(\mu_t) > 0.5$ this condition is true as we always have $\varphi^L(\mu_t) > \varphi^R(\mu_t)$. Hence we only have to check if $\varphi^L(\mu_t) - 0.5 > 0.5 - \varphi^R(\mu_t)$ when $\varphi^R(\mu_t) < 0.5$. Inserting the formulas above we have:

$$\begin{aligned} 1 - \gamma + (2\gamma - 1)\frac{\mu_t}{\mu_t + (1-\mu_t)\pi} - 0.5 &> 0.5 - \left[\gamma - (2\gamma - 1)\frac{1-\mu_t}{1 - \mu_t + \mu_t\pi}\right] \\ \Leftrightarrow 1 - \gamma + (2\gamma - 1)\frac{\mu_t}{\mu_t + (1-\mu_t)\pi} &> 1 - \gamma + (2\gamma - 1)\frac{1-\mu_t}{1 - \mu_t + \mu_t\pi} \\ \Leftrightarrow \frac{\mu_t}{\mu_t + (1-\mu_t)\pi} &> \frac{1-\mu_t}{1 - \mu_t + \mu_t\pi} \\ \Leftrightarrow \frac{1}{1 + (1-\mu_t)\pi\mu_t^{-1}} &> \frac{1}{1 + (1-\mu_t)^{-1}\pi\mu_t} \end{aligned}$$

which is true for $\mu_t > 0.5$. □

Proof. [Proof of Proposition 3]

Part a) is trivial. To show part b), define the random variable $\tilde{s}_t \in \{m, n\}$ whose two realizations are 'match' $\tilde{s}_t = m$ when the correct policy is implemented in a given period ($a_t = s_t$)and 'non-match' n as the opposite event. In the partisan equilibrium, the transition probabilities between these states are:

$$T = \begin{pmatrix} t_{mm} & t_{nm} \\ t_{mn} & t_{nm} \end{pmatrix} = \begin{pmatrix} \gamma & 1-\gamma \\ (1-\pi)\gamma + \pi(1-\gamma) & (1-\pi)(1-\gamma) + \pi\gamma \end{pmatrix}$$

where the element t_{ij} of the transition matrix T denotes the transition probability from state i to state j. Recall that in the partisan equilibrium, a change in the implemented policy (i.e. $a_t \neq a_{t+1}$) only occurs if the implemented policy in period t produced a failure. This in turn can only occur if the implemented policy was wrong, i.e. a non-match. Hence the probability of an policy change between period t and $t+1$ is $Pr(\tilde{s}_t = n)(1-\pi)$.In the efficient equilibrium a policy change occurs whenever the true state changes i.e. with probability $1-\gamma$. By definition, the partisan equilibrium involves more persistence in a given period t whenever the probability of a change in policies between period t and $t+1$is lower than the probability of change in the efficient equilibrium which is $1-\gamma$. This condition is satisfied whenever:$Pr(\tilde{s}_t = n)\,(1-\pi) \leq 1-\gamma$.

We proceed to show that for any initial belief and state, the long run probability of having a non-match is small enough to satisfy this condition. The (generically unique) stationary stationary distribution corresponds to the eigenvector which is associated to the unit eigenvector of T' (a the Markov chain is asymptotically stationary if $t_{ij} > 0, \quad \forall i,j$). It is $\bar{f}' = \left(\frac{-2\pi\gamma+\gamma+\pi}{1-2\gamma\pi+\pi}, \frac{1-\gamma}{1-2\gamma\pi+\pi}\right)$, where the first (second) element denotes the stationary probability that a match (non-match) occurs. The probability that a non-match occurs is thus $\lim_{t\to\infty} Pr(\tilde{s}_t = n) = \frac{1-\gamma}{1-2\gamma\pi+\pi}$. Due to $\gamma < 1$, we have

$$(1-\pi)\lim_{t\to\infty} Pr(\tilde{s}_t = n) = \frac{(1-\pi)\,(1-\gamma)}{1-2\gamma\pi+\pi} < (1-\gamma)$$

which completes the proof.

To show part c), recall that in the partisan equilibrium, an incumbent is not re-elected only in the event of a political failure. From the proof of part b), this occurs with probability $Pr(\tilde{s}_t = n)(1-\pi)$, which is in the long run equal to

$$(1-\pi)\lim_{t\to\infty} Pr(\tilde{s}_t = n) = \frac{(1-\pi)\,(1-\gamma)}{1-2\gamma\pi+\pi} < (1-\gamma)\; < \frac{1}{2}$$

where the last inequality follows from $\gamma > \frac{1}{2}$. □

Proof that Proposition 2 carries over to smooth re-election probabilities

Let $P(\mu_t)$ be an arbitrary (monotone) function that describes the probability that the left politician is elected.

Proposition 6. *The pure strategy profile in which all politicians choose the partisan policy regardless of the state is a Markov Perfect Equilibrium if the office holding motive of the politicians is strong enough.*

Proof. The feasibility condition for partisan equilibrium reads

$$(1-\pi)b \leq \beta E_{s_{t+1},z_t}\left[V(\mu_{t+1}(\mu_t, p, \tilde{z}_t), \hat{s}_{t+1}) - V(1-\gamma, \hat{s}_{t+1})|\hat{s}_t\right] \tag{13}$$

First note that equation (5) defines a contraction mapping with unique fixed point. As the period reward function $P(\mu_t)(b(a_t,s_t)+\phi)$ is strictly increasing in μ_t, it is straightforward to show that $V(\cdot,\cdot)$ must be at least weakly increasing in μ_i.

Take the stationary partisan strategy $x(\cdot,p) = x(\cdot,n) = p$ as given.Denote by $V_0(\mu_t, s_t)$ the value of implementing once the non-partisan policy and reverting to the partisan strategy thereafter.

Expanding condition 13 once yields:

$$\begin{aligned}
&V(\mu_t, n) - V_0(\mu_t, n) \\
&= (\pi - 1)b + \beta E_{s_{t+1},z_t}\left[\left(P\left(\mu_{t+1}(\mu_t, p, \tilde{z}_t)\right) - P(1-\gamma)\right)\right. \\
&\times \left(b(p, \tilde{s}_{t+1}) + \beta E_{s_{t+2},z_{t+1}}\left[V(\mu_{t+2}(\mu_{t+1}, p, \tilde{z}_{t+1}), \hat{s}_{t+2}) - V(\mu_{t+2}(1-\gamma, p, \tilde{z}_{t+1}), \hat{s}_{t+2}) | \hat{s}_{t+1}\right]\right)\Big] \\
&\geq -b\left(1-\pi\right) + \beta\pi\left(\left(P\left(\mu_{t+1}(\mu_t, p, \tilde{z}_t)\right) - (1-\gamma)\right)\right)\left(\phi + \left(\gamma\pi + 1 - \gamma\right)b\right)
\end{aligned}$$

In the previous calculation, the inequality comes from the monotonicity of $V(\cdot,\cdot)$ in μ_i. Hence no deviation is indeed optimal whenever

$$\beta\pi\left(\left(P\left(\mu_{t+1}(\mu_t, p, \tilde{z}_t = 1)\right) - (1-\gamma)\right)\right)\left(\frac{\phi}{b} + (\gamma\pi + 1 - \gamma)\right) \geq (1-\pi) \qquad \forall \mu_t$$

As $P(\cdot)$ is increasing in μ_t in the partisan equilibrium, a necessary and sufficient condition for the previous condition to hold is

$$\beta\pi\left(\left(P\left(\mu_{t+1}(1-\gamma, p, \tilde{z}_t = 1)\right) - (1-\gamma)\right)\right)\left(\frac{\phi}{b} + (\gamma\pi + 1 - \gamma)\right) \geq (1-\pi)$$

This condition is satisfied whenever both $\left(P\left(\mu_{t+1}(1-\gamma, p, \tilde{z}_t)\right) - (1-\gamma)\right) > 0$ and $\frac{\phi}{b}$is high enough.

Hence a one-shot deviation is never positive. As payoffs are continuous at infinity, the one stage deviation principle for infinite-horizon games ensures existence of equilibrium.[29]

□

Proof. [Proof of Proposition 4] Note first that, for all $\epsilon \in (0,1)$, strategies and re-election probabilities in the partisan equilibrium are unchanged. Moreover, neither voters' nor office holders' payoffs are affected. Thus, partisan behavior continues to be an equilibrium under (A1) and (A2).

Turning to the most most efficient equilibrium (or ϵ-efficient equilibrium, indicated by the superscript ϵE), recall that voters' optimally vote based on their current period payoffs only, i.e., as if they were myopic (see Lemma 1). Hence for any $\epsilon > 0$ the reelection probabilities are now

$$P^{\epsilon E}(\mu) = \begin{cases} 1 & \text{if } \mu > 0.5 \\ 0.5 & \text{if } \mu = 0.5 \\ 0 & \text{else} \end{cases}$$

[29]Concerning the one stage deviation principle for infinite-horizon games see Fudenberg / Tirole "Game Theory" p.108-110

and equal those of the partisan equilibrium. The evolution of beliefs in the non-partisan equilibrium is

$$\mu_{t+1}^L(a_t,\mu_t) = \begin{cases} 1-\gamma+(2\gamma-1)\frac{\mu_t}{\mu_t+(1-\mu_t)\epsilon\pi} \equiv \varphi^{L,\epsilon E}(\mu_t) & \text{if policy } a_t = l \text{ was a success} \\ 1-\gamma & \text{if policy } a_t = l \text{ was a failure or } a_t = r \end{cases}.$$

We can define the value for a left wing politician in the ϵ-efficient equilibrium as follows: For $\mu_t < 0.5$ we have $V^{\epsilon E}(\mu_t) = 0$ while for $\mu_t > 0.5$ we have

$$\bar{V}^{\epsilon E}(s) \equiv \begin{cases} b+\phi+\beta\left[\gamma\bar{V}^{\epsilon E}(l)+(1-\gamma)\bar{V}^{\epsilon E}(r)\right] & \text{if } s=l \\ (1-\epsilon)b+\phi+\epsilon\pi\left[b+\beta\left(\gamma\bar{V}^{\epsilon E}(r)+(1-\gamma)\bar{V}^{\epsilon E}(l)\right)\right] & \text{if } s=r, \end{cases}$$

where we have used the fact that l-type incumbents are not re-elected following the efficient choice of $a_t = r$ in state $s_t = r$.

Now suppose that a partisan equilibrium exists. Then, generically, (10) is satisfied with strict inequality,

$$(1-\pi)b < \pi\beta[(1-\gamma)\bar{V}^P(l)+\gamma\bar{V}^P(r)], \tag{14}$$

where $\bar{V}(l) > 0$ and $\bar{V}(r) > 0$ [see the proof of Proposition 2]. Because the reelection probabilities are the same as in the partisan equilibrium, this directly implies that a repeated deviation by playing $a_t = l$ in states $s_t = r$ guarantees an expected payoff of $\bar{V}^P(s)$. We want to show that whenever (14), then $\bar{V}^P(s) > \bar{V}^{\epsilon E}(s)$, i.e. a repeated deviation is profitable. We use the same contraction argument as in Lemma (1) of the appendix: According to this reasoning, it suffices to show that if $\bar{V}^P(s) > \bar{V}^{\epsilon E}(s)$, $s \in \{l,r\}$ then also

$$\bar{V}^P(r) > (1-\epsilon)b+\phi+\epsilon\pi\left[b+\beta\left(\gamma\bar{V}^{\epsilon E}(r)+(1-\gamma)\bar{V}^{\epsilon E}(l)\right)\right].$$

To see that this inequality is indeed satisfied, note that

$$\begin{aligned} &\phi+\pi\left[b+\beta\left(\gamma\bar{V}^P(r)+(1-\gamma)\bar{V}^P(l)\right)\right] \\ &\qquad > \quad (1-\epsilon)(b+\phi)+\epsilon\left[\phi+\pi\left[b+\beta\left(\gamma\bar{V}^P(r)+(1-\gamma)\bar{V}^P(l)\right)\right]\right] \\ &\qquad > \quad (1-\epsilon)(b+\phi)+\epsilon\left[\phi+\pi\left[b+\beta\left(\gamma\bar{V}^{\epsilon E}(r)+(1-\gamma)\bar{V}^{\epsilon E}(l)\right)\right]\right] \end{aligned}$$

where the first inequality comes from (14) and the second from the hypothesis $\bar{V}^P(s) > \bar{V}^{\epsilon E}(s)$.

Next, we show that whenever the parameters b,ϕ,β,π are such that there is no partisan equilibrium, then an ϵ-efficient equilibrium exists. We prove this by showing the converse, i.e. whenever there is no ϵ-efficient equilibrium, then there exists the partisan equilibrium. Whenever an ϵ-efficient equilibrium cannot be enforced, then by the one deviation principle and the fact that enforceability in state r implies enforceability in state l a single deviation for $\mu_t > 0.5$ and in state r must be profitable:

$$(1-\pi)b < \pi\left[b+\beta\left(\gamma\bar{V}^{\epsilon E}(r)+(1-\gamma)\bar{V}^{\epsilon E}(l)\right)\right] \tag{15}$$

We have to show that (15) implies that the partisan equilibrium can be enforced, i.e. that (14) holds (which implies that the second enforcement condition for state l is also satisfied). The same technique as above yields that (15) implies $\bar{V}^P(s) > \bar{V}^{\epsilon E}(s)$, $s \in \{l, r\}$. This together with (15) yields (14). $\square$

Proof. [Proof of Proposition 5]

Note that condition (A2') is equivalent to $\overline{V}^R(r) \geq b + \phi$ where we use the same notation as in the base model, i.e. $\overline{V}^R(s_t) \equiv V^R(\mu_t, s_t)$ for $\mu_t > 0.5$. We have to show that this condition is satisfied if assumption (A2) holds.

At the same time, we show that assumption (A2) also implies $\overline{V}^R(l) \geq \frac{(1+\beta(1-\gamma))(b+\phi)}{1-\gamma\beta}$. Applying a contraction argument similar to the Lemma in the appendix, we have to show that whenever $\overline{V}^R(r) \geq b+\phi$, $\overline{V}^R(l) \geq \frac{(1+\beta(1-\gamma))(b+\phi)}{1-\gamma\beta}$ and assumption (A2) holds, then the following both inequalities are satisfied:

$$b + \phi + \beta\left[\gamma\overline{V}^R(l) + (1-\gamma)\overline{V}^R(r)\right] \geq \frac{(1+\beta(1-\gamma))(b+\phi)}{1-\gamma\beta}$$

$$\pi b + \phi + q\beta\pi\left[(1-\gamma)\overline{V}^R(l) + \gamma\overline{V}^R(r)\right] + (1-q)(1-\pi)b \geq b + \phi$$

To see that the first inequality is true note that our hypothesis implies:

$$b + \phi + \beta\left[\gamma\overline{V}^R(l) + (1-\gamma)\overline{V}^R(r)\right] \geq b + \phi + \beta\left[\gamma\frac{(1+\beta(1-\gamma))(b+\phi)}{1-\gamma\beta} + (1-\gamma)(b+\phi)\right]$$

Furthermore, it can be directly verified that $b+\phi+\beta\left[\gamma\frac{(1+\beta(1-\gamma))(b+\phi)}{1-\gamma\beta} + (1-\gamma)(b+\phi)\right] = \frac{(1+\beta(1-\gamma))(b+\phi)}{1-\gamma\beta}$ so that we have shown that the first inequality is true.

The second inequality is equivalent to:

$$\pi b + \phi + \beta\pi\left[(1-\gamma)\overline{V}^R(l) + \gamma\overline{V}^R(r)\right] \geq b + \phi$$

Again, by our hypothesis, $\pi b+\phi+\beta\pi\left[(1-\gamma)\overline{V}^R(l) + \gamma\overline{V}^R(r)\right] \geq \pi b+\phi+\beta\pi\left[(1-\gamma)\frac{(1+\beta(1-\gamma))(b+\phi)}{1-\gamma\beta} + \gamma(b+\phi)\right]$

Direct computation shows that (A2) is equivalent to $\pi\beta\left[(1-\gamma)\frac{(1+\beta(1-\gamma))(b+\phi)}{1-\gamma\beta} + \gamma(b+\phi)\right] \geq (1-\pi)b$. Putting both observations together confirms the second inequality.

$\square$

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