Why Does it Take a Nixon to go to China?

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Abstract

When voters are not fully informed about the way in which policies map into outcomes, policy proposals convey information. This leads to conditions under which policies that benefit a majority are more likely to be implemented by "unlikely" characters. We argue that these conditions were at work in some well-know economic and foreign policy episodes.

Rodrik (1993) points out that it is ironic that populist and interventionist parties have implemented radical trade liberalizations, fiscal adjustments and institutional reforms. We demonstrate here why those parties had a comparative advantage at such policies. Similarly, sometimes it is "hawks" like M. Begin, R. Nixon and A. Sadat, who are able to take substantial steps towards peace.

Our analysis has more general implications for information transmission and credibility. Drazen and Masson (1994) have distinguished between credibility of policymakers and credibility of policies. We show here how credibility depends on the policymaker-policy **pair**.

1 Introduction

The history of public policy contains several episodes in which structural reforms or important economic or foreign policy shifts were implemented by parties or policymakers whose traditional position was to oppose such policies. Recent examples are the market oriented reforms and stabilization implemented in Argentina by Peronist President Carlos Menem, in Peru by President Fujimori, and in Bolivia by Populist Paz Estenssoro. France privatized some of its public sector and shifted the emphasis of policy to price stability during the eighties under socialist President Mitterand.

After ten years of vehement opposition to trading land for peace hawkish Israeli Prime Minister Begin finally gave up the entire Sinai peninsula in return for peace with Egypt at the end of the seventies. His partner to this historical deal was President Sadat of Egypt who is considered the first Arab leader to mount a relatively effective military campaign against Israel. Having established a strong and persistent anti communist record during the fifties and sixties President Nixon finally opened the door to the international legitimization of the People's Republic of China in the early seventies. It was staunch anti communist secretary of state John Foster Dulles who agreed, under Republican Eisenhower administration, to the partition of Korea into North and South Korea.

These episodes should not be interpreted to imply that large shifts in policy can be implemented **only** by political parties that have a historical bias against such policies. Privatization and other reforms under Thatcher are an obvious counterexample. But the examples in the preceding paragraph raise an intriguing and important question about the circumstances under which policies are implemented by "unlikely political parties" rather than by the parties whose "ideologies" favor such policies. The objective of this paper is to identify conditions under which required shifts in policy are more likely to be implemented

by unlikely characters. To this end, we first develop a political economy framework in which such a phenomenon **can** occur and we use it to pin down a set of conditions which make it more likely that such policies will be implemented by the "wrong" parties.

A basic precondition for such "policy reversals" is the existence of asymmetric information about the mapping from policy instruments to policy outcomes.[1] The utility of individuals depends on outcomes, and policy choices affect outcomes. However, outcomes are also influenced by external circumstances about which policymakers normally have better information than the general public. Depending on external circumstances, a "right wing" policy may or may not be desirable from the point of view of a majority of the population. Suppose that it is, and that the incumbent party is fully informed about this fact. In order to implement this policy, the party in office usually has to elicit the support of a majority. To that end, it has to transmit to the public the private information about the relative desirability of right wing policies. When the incumbent is a recognized "left winger", his ability to do that and to implement the required right wing policies is greater than the ability of a right wing incumbent. The reason is that in the first case the public has less reason to suspect that the right wing policy is proposed because of the "natural" ideological tendencies of the party in office.

The notion that incumbent politicians have better information than the public about the likely outcomes of alternative policies seems both natural and realistic. Acquisition of information in different policy areas requires different types of expertise and is usually quite costly. As a consequence the average citizen does not have the incentive, and in some cases not even the ability, to become fully knowledgeable about the effects of alternative policies.[2] By contrast, when important policy issues arise, it pays incumbent politicians to

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[1]The notion that this mapping is stochastic is not new. Recent references are Gilligan and Krehbiel (1989), Rogoff (1990), Alesina and Cukierman (1990), Harrington (1993) and Roemer (1994). Austen-Smith (1993) emphasizes that legislation (or policy more generally) is a means to an end rather than a final objective. Several of these papers also postulate, as we do, that there are some aspects of the mapping from policies to outcomes about which incumbent parties have better infomation than the general public.

[2]This naturally leads to specialization in knowledge (some people know more about some things than

become reasonably informed - mostly through the advice of specialists - about the possible outcomes of alternative policies. This idea is captured here by assuming that a key stochastic parameter of the mapping from policies to outcomes is observed by policymakers in office but not by the voting public.

Several other conditions make a policy reversal more likely. First, the policy switch that - in view of external circumstances - is desirable should be large **and** relatively rare. These conditions appear to have been broadly satisfied in the episodes mentioned before. Major economic reforms, the trading of land for peace, and the opening of a pathway towards China are major policy decisions, that occur infrequently.

Also, the enactment of new policies should require the approval of a majority of the public. This may be due to the existence of formal institutions that limit the power of incumbent politicians - elections and policy referenda are examples. But even in the absence of formal ratification of proposed policies, incumbent politicians are likely to seek support for their policies.[3]

In addition, since the outcomes of such policies occur far in the future, it pays the voting public to use the policy proposals of incumbents as signals for the likely future outcomes of the proposed policies. This feature is modeled formally by assuming that voting takes place **before** the realization of final outcomes.[4] The policymaker observes some relevant aspect of the mapping from policy to outcome. He then takes an action that commits him to a future policy (like making a statement or sending a bill to Congress) thereby revealing

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others) and to rational ignorance - Lupia (1992), Gilligan (1993) and Matsusaka (1994).

[3]Evidence from the U.S. indicates that public policy responds to public opinion not only when administrations change, but also within the term of office of an administration (Page and Shapiro, 1983). Also, in developing countries, policymakers depend on the approval of key interest groups for the implementation of any economic policy (Bates 1990, Burgess and Stern 1993, and Meier 1991).

[4]This is a crucial difference between our model and that in Harrington (1993). Harrington uses a similar informational structure to derive implications from voter uncertainty to policy manipulation for reelection purposes.

part or all of his private information to the public.[5]

The basic ideas of the paper are illustrated within two different institutional structures.[6] One is that of a referendum game (section 2). After having observed the state of the world the incumbent party may propose a policy that is different from the current status quo and put it up for a referendum. If it decides to make no proposal the status quo remains in effect. If it makes a proposal and submits it to a public referendum there are two possibilities - the proposal is either approved and enacted, or voted down, in which case the status quo prevails. The game theoretic formulation in section 2 enables us to develop specific implications for the credibility of policies and policymakers, in terms of voters' posterior beliefs.

The other institutional structure (in section 3) is that of a representative democracy in which the incumbent party commits to a policy platform. This is followed by elections. If the incumbent is reelected he implements the proposed policy; if another party is elected it picks the policy that is nearest to its own preferences given the realization of the stochastic component of the policy-to-outcome mapping. One of the main implications of section 3 is that **moderate** right-wing policies are more likely to be implemented by right-wing parties (and similarly for the left), but **extreme** right-wing policies are more likely to be implemented by left-wing parties (and viceversa).

In section 4 we discuss economic (market-oriented reforms) and foreign policy (land for peace) applications of the model.

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[5]Although the action taken by the policymaker might include a verbal statement, it is not cheap talk in the sense of Crawford and Sobel (1982). As stressed by Cukierman and Liviatan (1991) announcements of future policies by incumbent politicians are not necessarily costless from their point of view. Thus, although our analytical structure bears some resemblence to models of information transmission in debates - like those in Austin-Smith (1990) - it is based on costly rather than costless signalling.

[6]Shepsle and Weingast (1981) have emphasized the effect of institutional structure on policy choices. The search for conditions for reversals within two alternative institutional specifications can be viewed in this spirit since it gives some indication about the robustness of the results. The broad conditions for reversal discussed above apply to both institutional structures.

2 Credibility of Policymakers and Policy Proposals

We present a game between a policymaker and the voting public. The formal analysis focuses on the case in which the policymaker is of the "left" type. The symmetric case of a "right-wing" policymaker is not analyzed explicitly, but it is in the background. The main results come from comparing the differential ability of right-wing (R) and left-wing (L) policymakers to implement certain policies.

Preferences of player j - including L, R, and voters - are given by

$$U_j = -|z - (c_j + \gamma)| \tag{1}$$

where z is the policy implemented, c_j is a constant for each player, and γ is a stochastic variable. The ideal policy of any player depends on the type-specific "taste" parameter c_j, as well as on the realization of the exogenous state of nature parameter γ. γ induces unidirectional shifts in the preferred policies of everyone, capturing the effect of external circumstances.[7]

The timing of events (summarized in Figure 1) is as follows. First, L observes the realization of the random variable γ which affects everybody's payoffs. Then he chooses between doing nothing (in which case the status quo policy, which we normalize to 0, prevails) or proposing a policy $x_L \in \{-x, x\}$, where $x > 0$. We interpret $-x$ as a left wing policy (to

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[7]An example from current Israeli politics may clarify the conception underlying this specification. For a given probability of achieving a stable agreement with the Palestinians, Israelis differ with respect to the amount of land they are willing to yield. But when a given territorial concession maps into a greater probability of peace, the ideal policy of everybody shifts towards yielding larger amounts of land. The heterogeneity of preferences is captured by c_j and the common effect of external circumstances by γ. More specifically, let a larger x represent a more hawkish policy on the land versus peace issue and let a larger γ represent a **smaller** probability of peace for a given amount of land relinquished. Viewed in these terms, equation (1) states that an increase in the perceived probability of peace for a given amount of land relinquished (a lower γ) shifts everybody's ideal point to a more dovish range ($c_j + \gamma$ is smaller for all j's.) This, and other more economically oriented examples (in which we interpret γ as an "efficiency" effect) are discussed in section 4.

the left of the status quo), and x as a right wing policy.[8] After a policy x_L is proposed, voters choose $v \in \{0,1\}$, where 0 is a vote-against and 1 a vote-for the proposed policy. Voters have single peaked symmetric preferences, hence the outcome is decided by the median voter, with bliss point c_m.

z denotes the final policy: $z = 0$ if the policymaker chooses not to propose an alternative or if the proposed alternative is voted against. $z = x_L$ if the proposed alternative is accepted by voters. The formal structure is that of a referendum game, similar to the one in Lupia (1992) and (1993).[9] Notice that this structure is more general than the specific institution of referendum. In many countries (especially LDC's) approval of key interest groups, is a prerequisite for the successful implementation of any policy. The ways in which disapproval is converted into effective actions are varied, ranging from binding referenda to assassination.

The prior distribution of γ which is common knowledge, is:

$$\gamma = \begin{cases} -a & \text{with probability } p \\ 0 & \text{with probability } (1 - 2p) \\ a & \text{with probability } p \end{cases} \tag{2}$$

where $a > 0$. If $\gamma = a > 0$, right wing policies become relatively more desirable for everyone. As explained in the introduction, the underlying idea is that policies map into outcomes in an

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[8]We do not feel embarrassed to model policy choices as discrete. On the one hand, the results do not depend on this assumption, as shown by the model of section 2. But also, the cases we have in mind seem to involve a somewhat discrete choice set. Policy choices in the Arab-Israeli conflict are not over squared centimeters of land to be relinquished, but over entire regions, like the Sinai or Gaza strip. Economic policy making broadly defined also seems to have elements of discreteness (Harrington, 1993). In the case of economic reforms in the developing world, the issue is whether to have extensive or minimal government intervention in the economy. Perktold and Tommasi (1994) identify conditions under which equilibrium choices of **degree** of government intervention will be discrete.

[9]An early theoretical discussion and evidence on policy choices in referenda, in the context of school budgets, appears in Romer and Rosenthal (1979). Banks (1990) extends to an asymmetric information environment, in the same spirit of our paper.

uncertain way. Even though people have well defined stable preferences over outcomes, the uncertainty over the mapping from policy to outcome induces reduced form preferences over policies which have a "stochastic" component. The implicit assumption of the model is that the policymaker is better informed than the median voter about that mapping. In particular, he observes the realization of γ while the voters do not. Voters will infer something about γ from the policy proposals. In section 4 we provide specific examples from economic- and foreign- policy making.

The location of the median voter is stochastic, with

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c_m = \begin{cases} -\bar{c}_m & \text{with probability } \varepsilon \\ 0 & \text{with probability } (1 - 2\varepsilon) \\ \bar{c}_m & \text{with probability } \varepsilon \end{cases} \tag{3}
$$

where $\bar{c}_m > 0$. To simplify the exposition, we will further assume that $c_L = -c$, and $c_R = c > 0$.

Let $S_L : \{-a, 0, a\} \rightarrow \{-x, 0, x\}$ be the (left wing) policymaker strategy, $S_m(c_m) : \{-x, x\} \rightarrow \{0, 1\}$ be the strategy of a voter with bliss point c_m, and $B = \{\pi(-a| - x), \pi(0| - x), \pi(a| - x), \pi(-a|x), \pi(0|x), \pi(a|x)\}$ be the voter's posterior belief system about γ after observing the choice of x_L.[10]

2.1 Equilibrium

The game is a sequential game of incomplete information; a natural solution concept is Perfect Bayesian Equilibrium (PBE). A PBE of this game consists of a strategy for the policymaker, a strategy for the median voter, and beliefs (over γ) for the voter, which satisfy three properties. First, the voter's beliefs are consistent with L's strategy in the sense that they are generated by Bayes updating whenever possible. Second, the voter's strategy is optimal given these beliefs and L's strategy. Finally, L's strategy is optimal given the

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[10]A belief system is a probability measure for each history of play (Osborne and Rubinstein, 1994, p.223).

voter's strategy and beliefs.

In order to establish uniqueness, we will need to refine the equilibrium concept to (trembling hand) Perfect Equilibrium - THPE - (Fudenberg and Tirole, 1991, pp.350-356). A THPE restricts equilibrium actions to be best responses even if there is a small probability that the other players will "tremble". THPE forces "rational" choice even at points in the game that will not be reached in equilibrium. (Its application to our game is explained in more detail in the Appendix.)

We introduce now four conditions which assure that the equilibrium has the feature that it takes a left wing party to implement a right-wing policy.

$(A1)$ $a - c > x/2$

$(A2)$ $c > x/2$

$(A3)$ $p < 1/3$

$(A4)$ $\bar{c}_m - a > -x/2.$

Notice that $A1$-$A4$ characterize a non-empty set of parameter values. We discuss the role and interpretation of each condition below.

Let $x(\gamma)$ be the action chosen by L as a function of his observation of γ, and $v(x)$ be the vote chosen after observing proposal x.

Consider the strategies S_L^* and $S_m^*(c_m)$ such that:

$S_L^*:$ $\qquad x(-a) = x(0) = -x,\ \ x(a) = x;$

$S_m^*(-\bar{c}_m):$ $\ \ v(-x) = 1,\ \ v(x) = 0$

$S_m^*(0):$ $\qquad v(-x) = 0,\ v(x) = 1;$

$S_m^*(\bar{c}_m):$ $\qquad v(-x) = 0,\ v(x) = 1;$

and the belief system B^*:

$\pi(-a|-x) = p/(1-p),$ $\qquad \pi(-a|x) = 0;$

$\pi(0|-x) = (1-2p)/(1-p),$ $\ \ \pi(0|x) = 0;$

$\pi(a|-x) = 0,$ $\qquad\qquad\quad \pi(a|x) = 1.$

Define the equilibrium E^* as $\{S_L^*, S_m^*, B^*\}$.

Proposition 1 *(1) Existence: If A1-A4 are satisfied, then E^* is a PBE.*

(2) Uniqueness: If A1-A4 are satisfied, then E^* is the unique THPE.

Proof.   In the Appendix.

In equilibrium, the left wing policymaker attempts left wing policies for $\gamma = -a$ and $\gamma = 0$, while he proposes right wing policies for $\gamma = a$. A "central" median voter $(c_m = 0)$ will accept the right wing policies and reject the left wing ones from L. L still has an incentive to propose $-x$ given the chance ε of acceptance.

Remember that $\gamma \in \{-a, 0, a\}$ is a parameter that affects everybody in the same direction. In the economic applications, we will call it an "efficiency" effect. $A1$ requires a to be large enough to induce L to choose x when $\gamma = a$, i.e., large enough to overcome his leftist "preference." Condition $A2$ requires this preference effect to be large enough to induce a tendency towards $-x$ for $\gamma = 0$ (when there is no "efficiency" effect, he indulges in his leftist tendencies). Notice that this tendency is the source of L's credibility problem when $\gamma = -a$, i.e., when left wing policies are indeed efficient. This is commonly referred to as a "cry wolf" situation.

$A3$ states that the probability of $\gamma = -a$ has to be small enough compared to the probability of $\gamma = 0$ so that the median voter votes against $-x$. (If the probability of $-a$ is high, then it might be beneficial to accept $-x$). Parties propose policies which are "ideologically" (c_L or c_R) motivated often enough (with high enough likelihood, $(1 - 2p) > 1/3$) so that they have a credibility problem. If, when voters observed $x_L = -x$, they assigned a high probability to the truth being $-a$, they would tend to accept it. In that case, anyone could implement any policy and we wouldn't have the "**only** Nixon could go to China" effect.

Finally, $A4$ ensures that "extreme" voters vote in a simple way: $c_m = \bar{c}_m$ always votes

for x and against $-x$, and vice versa for $c_m = -\bar{c}_m$. This is not strictly necessary for the main result (that it takes a Nixon to go to China), but it simplifies the intuitive presentation.

2.2 Implications for credibility and information transmission

Politicians usually justify their policy proposals by claiming that the state of the world is the one that would elicit maximum public support for their proposed policies. In the context of this model, the statement that would elicit maximum support (if believed) for policy $-x$ (for policy x) is "$\gamma = -a$" ("$\gamma = a$"). One measure of the credibility of policy proposals is, therefore, the posterior probability assigned by the public to the event $\gamma = -a$ (or a) when policy $-x$ (or x) is proposed.[11] For this definition of credibility we obtain:[12]

Result 1: (Credibility of a given policymaker across policies).

$$\pi(a|x_L = x) = 1 > \pi(-a|x_L = -x) = p/(1-p).$$

A left wing policymaker has more credibility when he proposes right wing policies than when he proposes left wing policies.

$$\pi(-a|x_R = -x) = 1 > \pi(a|x_R = x) = p/(1-p).$$

A right wing policymaker has more credibility when he proposes left wing policies than when he proposes right wing policies.

That is, credibility increases as politicians move away from their "ideological" positions. Note that credibility depends on the **pair** policy-policymaker.

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[11]In Roemer (1994) political parties make announcements about "the way the economy works" (γ in our model), and then propose policies. In his model, there is complete convergence of policies (median voter theorem) but different parties announce different γs to try to influence people's reduced-form preferences. Roemer does not model the formation of beliefs explicitly, he just postulates a mapping from announcements to beliefs. Here, we deduce the belief-formation process from the rational (Bayesian) behavior of voters.

[12]The notion of credibility in the text is by no means the only one possible. Alternative notions of credibility are discussed in chapter 11 of Cukierman (1992).

Result 2: (Credibility across policymakers for a given proposal).

$$\pi(a|x_L = x) = 1 > \pi(a|x_R = x) = p/(1 - p).$$

A left wing policymaker is more credible than a right wing policymaker when announcing a right wing policy.

$$\pi(-a|x_R = -x) = 1 > \pi(-a|x_L = -x) = p/(1 - p).$$

A right wing policymaker is more credible than a left wing policymaker when announcing a left wing policy.

Also, our analysis has implications for the transmission of information embedded in policy announcements.[13] We could measure the degree of information by the posterior probability that voters assign to the true value of γ, $\pi(\gamma|\gamma)$. Notice that, when L is in office:

$$\pi(-a| - a) = p/(1 - p) < \pi(0|0) = (1 - 2p)/(1 - p) < \pi(a|a) = 1.$$

Hence:

Result 3: (Information transmission).

Voters obtain better information the further away is the required policy from the ideological position of the party in office.[14]

As was the case for credibility, the quality of information transmission depends both

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[13]This relates to work on strategic models of talk in political decision making - Austen-Smith (1992), Gilligan (1993) and Gilligan and Krehbiel (1989) - and in the choice of monetary policy - Cukierman and Meltzer (1986), Stein (1989), and Cukierman and Liviatan (1991). See chapters 14 and 16 of Cukierman (1992).

[14]Information acquisition is passive in our model. Calvert (1985) analyses the (active) choices of a political actor seeking costly advice. He shows that in some cases it is best to seek biased sources of information, which are very unlikely to give advice contrary to the actor's priors. In the event that the unexpected recommendation is given, it contains a lot of information (very similar to our result.) In Calvert the bias is just assumed, while we derive it in equilibrium from the preferences of the informed agent.

on the policy and on the policymaker's type. Crawford and Sobel (1982) find that equilibrium signalling is more informative when agent's preferences are more similar. Here we find that equilibrium signalling is more informative, the further away the action (signal) from the ex-ante preferences of the sender. In a wider sense, this result is consistent with that of Crawford and Sobel since (when L is in office) the information transmission is maximal when $\gamma = a$, that is when the relative divergence between the objectives of L and of the median voter is the smallest.

3 The signalling effect of policy instruments in a representative democracy.

In this section we derive results similar to those of section 2, in the context of electoral competition (in a *representative* rather than *direct* democracy.) Also, in this section we allow for a continuous signal and policy space ($\gamma \in \mathbb{R}$ and $x \in \mathbb{R}$.)

In a representative democracy, voters do not choose policy directly. Instead they choose elected officials who decide what policy to follow. We model this institutional setup by postulating two parties that compete for office. Each party cares about the issues as well as about being in office per se -this "Downsian" component is called ego-rents by Rogoff and Sibert (1988). There is a right wing party denoted by R and a left wing party denoted by L. Parties' objective functions are:

$$h- \mid x_i - (c_i + \varepsilon_i + \gamma) \mid \quad i = L, R, \quad c_R > c_L. \tag{4}$$

h is the value of being in office per-se, x_i is the policy chosen by party i when in office and $c_i + \varepsilon_i + \gamma$ is party i's ideal policy outcome. c_i is deterministic, and ε_i and γ are independent normally distributed stochastic variables with mean zero and variances σ_ε^2 and σ_γ^2 respectively. The deterministic component c_i is common knowledge, but the stochastic

component ε_i is known only by party i.[15]

The utility of type j voter is given by

$$- \mid x^* - (c_j + \gamma^*) \mid \tag{5}$$

where x is policy and c_j is a constant. The stars attached to x and γ denote expected values of these variables conditioned on the information available.

3.1   Timing of Events

It is convenient to divide the sequence of events into two periods. In the first period, the incumbent observes γ and his own ε. He then makes a policy proposal x. After having observed the incumbent party's platform, the general public votes for or against the incumbent. In the second and last period public policy is carried out. If the incumbent is reelected he carries out the policy he proposed in the first period (the proposal is a binding commitment). If the challenger is elected, he gets to observe the realization of γ and his own ε and then picks the policy that maximizes the ex-post value of his objectives. The sequence of events is illustrated in Figure 2.

Note that there is an important asymmetry between the incumbent and the challenger. While the first commits to a policy prior to elections the second, if elected, gets to choose policy only after the elections. This asymmetry reflects the presumption that reputational and other considerations make it more difficult to adjust policy for the incumbent than for the challenger.[16]

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[15]An idea well established in political science - see Kirchheimer (1966) and Laver and Schofield (1990) - is that different parties cater to the interests of different but contiguous groups of constituencies. The ideal policy outcome of the left-wing party reflects a compromise between the different leftish groups and similarly for the right wing party. The relative ability of each such group to affect the party's policy position is usually in a state of flux and not fully known by the general public. The stochastic component, ε_i, reflects this element of asymmetric information.

[16]The notion that incumbents' platforms are more reliable indicators of their future policies than are the

3.2 Elections and their Outcome

Since voters' preferences are single peaked, the outcome of the elections is determined by the preferences of the median voter. Let c_m be the median of the distribution of the c_j's across the voting population. The party whose perceived policy is nearest to the ideal policy, $c_m + \gamma^*$, of the median on election day will win the elections. More formally the elections' outcome is determined by the condition:

$$Min_{x_L^*, x_R^*} [\mid c_m + \gamma^* - x_L^* \mid, \mid c_m + \gamma^* - x_R^* \mid] \tag{6}$$

where x_i^* is the policy that voters expect from party i if that party is elected.

Prior to elections the exact policy preferences of the median voter are unknown. We model this uncertainty by assuming that c_m is a uniformly distributed stochastic variable. Formally

$$c_m \sim U[\underline{c}, \bar{c}]. \tag{7}$$

3.3 Equilibrium

Suppose, for concreteness and without loss of generality, that the incumbent is party L. Since policy must be chosen prior to elections and since their outcome is uncertain, the incumbent takes into consideration the effect of current policy choice on the probability of reelection. More precisely it picks policy in period 0 so as to maximize the expected value of:[17]

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platforms of challengers for their policies is not new. Examples can be found in Bernhardt and Ingberman (1985) and in Ingberman (1984).

[17]This specification subsumes the assumption that a party that is not in office does not care about policy outcomes. A possible justification for this simplification is that the party leadership acts as an agent for particular groups of constituencies that have an interest in the implementation of a specific policy. These constituencies penalize the party leadership for deviations from their preferred position when the party is in office and therefore able to affect policy. However, when the party is not in office there is no penalty since those constituencies realize that the party leadership is not in a position to affect policy. Hence the penalty

$$M\underline{c}x_{x_L}P^L[x_L]\left[h-\mid x_L-(c_L+\varepsilon_L+\gamma)\mid\right].\tag{8}$$

$P^L[\cdot]$ is the probability that incumbent L will be reelected and it depends on policy choice, x_L.

The functional form of $P^L[\cdot]$ depends on the way the voting public forms its perception of γ. But the formation of this perception depends, in turn, on the policy rule of the incumbent which depends, in turn, on $P^L[\cdot]$. In equilibrium, the policy rule that the public postulates in order to form perceptions of γ has to be consistent with the actual policy rule followed by the incumbent, and the expectation formation process assumed by the incumbent has to be identical to the actual process of expectation formation. A full definition of equilibrium follows.

Definition 2 *An equilibrium is a pair of policy functions, $(x_L[\gamma,\varepsilon_L],x_R[\gamma,\varepsilon_R])$, together with voters' beliefs $\gamma^*[x_L]$, such that:*

- *The incumbent party chooses policy (prior to elections) so as to maximize (8).*

- *If elected, the challenging party chooses policy after elections so as to maximize the value of its objectives.*

- *Voters' perceptions about γ (and about the policy of the challenging party, if elected) are formed rationally using all the available information.*

- *Given his perception of γ (and of the policy of the challenging party) the median voter votes for the party whose expected policy is nearest to his ideal point.*

If the right wing challenger is elected, he picks the policy that maximizes his ex-post objectives in equation (4). Hence, if elected, he implements policy:

$$x_R=c_R+\varepsilon_R+\gamma.\tag{9}$$

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for deviating from the preferred policy applies only when the party is in office.

The policy expected by voters from R prior to elections is, therefore:

$$x_R^* \equiv E\left[x_R \mid x_L\right] = c_R + \gamma^*. \tag{10}$$

Note that the policy expected from R depends on the policy proposed by the left wing incumbent prior to elections. The reason is that the choice of policy by both R and L depends on γ and that voters receive information about γ from x_L.

The choice of policy by the left wing incumbent is more complicated, since he has to take into consideration the effect of his current choice of policy on voters' expectations and through them on the probability of reelection. The equilibrium solution for x_L is obtained by the method of undetermined coefficients. We first postulate that the equilibrium choice of x_L is the following linear function of γ and ε_L:

$$x_L = B_L + b_{L\gamma}\gamma + b_{L\varepsilon}\varepsilon \tag{11}$$

where $B, b_{L\gamma}$ and $b_{L\varepsilon}$ are coefficients to be determined. It is easy to verify that, given voters cannot disentangle the effects of γ an of ε, (11) simplifies to

$$x_L = B_L + b_L(\gamma + \varepsilon) \tag{12}$$

Voters know the decision rule in (12), observe x_L prior to elections, and use it to improve their forecast of γ. Since B_L is a known combination of parameters, it is easy to show that the expected value of γ conditional on x_L is given by:[18] (see for instance Brunk (1965, pp. 212-218))

$$\gamma^* \equiv E\left[\gamma \mid x_L\right] = \frac{\theta}{b_L}\left(x_L - B_L\right) \tag{13}$$

where

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[18]Some of the more tedious derivations of the results of the section are omitted. They are present in a previous version, and available upon request.

$$\theta \equiv \frac{\sigma_\gamma^2}{\sigma_\gamma^2 + \sigma_\varepsilon^2}. \tag{14}$$

ASSUMPTION 1: In equilibrium voters believe that the policy proposed by the left wing incumbent is always to the left of that of the right wing challenger, or: $x_L^* = x_L < x_R^*$.

Conditions on the model's parameters that assure the fulfillment of this assumption are presented in the appendix of Cukierman and Tommasi (1994).

A direct implication of equation (6) and of Assumption 1 is that there exists a critical value of c_m, denoted c_m^c, such that if $c_m \leq c_m^c$ the left wing party wins the elections and if $c_m > c_m^c$ the right wing party wins the elections. The value of c_m^c is obtained from:

$$\mid x_L - \gamma^* - c_m^c \mid = \mid x_R^* - \gamma^* - c_m^c \mid$$

which, due to Assumption 1, is equivalent to:

$$\gamma^* + c_m^c - x_L = x_R^* - \gamma^* - c_m^c. \tag{15}$$

Rearranging (15) and using (10) we obtain:

$$c_m^c = \frac{1}{2}\left(c_R + x_L - \gamma^*\right). \tag{16}$$

The probability $P^L[x_L]$, that the left wing incumbent is reelected is equal to the probability that the ideal point, c_m, of the stochastic median voter falls to the left of c_m^c. Equation (7) implies that this probability is given by:

$$P^L[x_L] = \frac{c_m^c - \underline{c}}{\overline{c} - \underline{c}}. \tag{17}$$

Using (13) in (16) and the resulting expression in (17), we obtain:

$$P^L[x_L] = \frac{1}{2(\overline{c} - \underline{c})} \left[c_R - 2\underline{c} + \theta \frac{B_L}{b_L} + dx_L \right]. \tag{18}$$

where $d \equiv 1 - \theta/b_L$.

Substituting (18) into the left wing incumbent's objective function (8) we obtain the following first and second order conditions for an internal maximum:

Case 1: If $x_L > c_L + \varepsilon_L + \gamma$, the first and second order conditions are given respectively by:

$$d\left(h - |x_L - (c_L + \varepsilon_L + \gamma)|\right) - 2(\overline{c} - \underline{c})P^L[x_L] = 0 \tag{19}$$

$$-d < 0. \tag{20}$$

Case 2: If $x_L < c_L + \varepsilon_L + \gamma$, the first and second-order conditions are given respectively by:

$$d\left(h - |x_L - (c_L + \varepsilon_L + \gamma)|\right) + 2(\overline{c} - \underline{c})P^L[x_L] = 0. \tag{21}$$

$$d < 0. \tag{22}$$

Rearranging the first-order conditions we obtain:

Case 1:

$$x_L = \frac{1}{2d} \left[d(c_L + h) - c_R - \theta \frac{B_L}{b_L} + 2\underline{c} \right] + \frac{1}{2}(\gamma + \varepsilon_L) \quad \text{for } x_L > c_L + \varepsilon_L + \gamma \tag{23}$$

Case 2:

$$x_L = \frac{1}{2d}\left[d\left(c_L - h\right) + c_R + \theta\frac{B_L}{b_L} - 2\underline{c}\right] + \frac{1}{2}\left(\gamma + \varepsilon_L\right) \quad \text{for } x_L < c_L + \varepsilon_L + \gamma \quad (24)$$

Equating coefficients across equations (23), (24) and (12) we obtain:

$$b_L = \frac{1}{2} \text{ and} \quad (25)$$

$$
\begin{aligned}
B_L &= \tfrac{1}{2}\left[\left(2\underline{c} - c_R\right)\left(1 + \frac{\sigma_\gamma^2}{\sigma_\varepsilon^2}\right) + \left(h + c_L\right)\left(1 - \frac{\sigma_\gamma^2}{\sigma_\varepsilon^2}\right)\right] \quad \text{for } x_L > c_L + \varepsilon_L + \gamma \\
B_L &= \tfrac{1}{2}\left[\left(2\underline{c} - c_R\right)\left(1 + \frac{\sigma_\gamma^2}{\sigma_\varepsilon^2}\right) + \left(c_L - h\right)\left(1 - \frac{\sigma_\gamma^2}{\sigma_\varepsilon^2}\right)\right] \quad \text{for } x_L < c_L + \varepsilon_L + \gamma.
\end{aligned} \quad (26)
$$

This implies that the second order conditions for a maximum in the two cases are respectively:

Case 1:

$$\sigma_\gamma^2 < \sigma_\varepsilon^2 \text{ for } x_L > c_L + \varepsilon_L + \gamma \quad (27)$$

Case 2:

$$\sigma_\gamma^2 > \sigma_\varepsilon^2 \text{ for } x_L < c_L + \varepsilon_L + \gamma. \quad (28)$$

Notice from (18), (20) and (22) that $P^L[x_L]$ will be increasing in case 1 and decreasing in case 2. Since we are interested in conditions for "policy reversals" (i.e., higher chances of a right wing policy by a left wing incumbent), we concentrate from now on case 1 ($\sigma_\gamma^2 < \sigma_\varepsilon^2$). Notice that $\sigma_\gamma^2 < \sigma_\varepsilon^2$ is the continuous equivalent of $p < 1/3$ in section 2. The smaller σ_γ^2, the less mass we assign to the tails of the normal distribution of γ.

3.4 Which party is more likely to implement which policies?

We come now to the central issue. As in section 2, we center our analysis on a comparison between the behavior of left and right-wing **incumbents**. To do that, notice that an equivalent derivation for a right-wing incumbent delivers:

$$x_R = B_R + \frac{1}{2}(\gamma + \varepsilon_R),$$

$$B_R = \frac{1}{2}\left[\left(1 - \frac{\sigma_\gamma^2}{\sigma_\varepsilon^2}\right)(c_R - h) + \left(1 + \frac{\sigma_\gamma^2}{\sigma_\varepsilon^2}\right)(2\bar{c} - c_L)\right],$$

and

$$P^R[x_R] = \frac{1}{2(\bar{c} - \underline{c})}\left[2\bar{c} - c_L - 2\theta B_R - dx_R\right].$$

Let $PI^i(x)$ be the probability that incumbent party i implements policy x, and $Q^i(x)$ be the probability that incumbent party i proposes policy x, so that:

$$PI^i(x) = Q^i(x)P^i(x),$$

where $P^i(x)$ are the probabilities of reelection, derived above.

Notice that $x_i = B_i + \frac{1}{2}(\gamma + \varepsilon_i)$ implies that the proposals x_i are distributed $x_i \sim N[B_i, V]$, with $V = (\sigma_\gamma^2 + \sigma_\varepsilon^2)/4$. Hence:

$$Q^i(x) = (2\pi V)^{-(1/2)}\exp\{-\frac{(x - B_i)^2}{2V}\}.$$

All of the above information is summarized in Figure 3. Figure 3a shows the probabilities of each proposal, $Q^i(x)$. Figure 3b shows the probability of winning the election as function of the proposal, $P^i(x)$. Notice that the picture of $PI^L(x) = Q^L(x)P^L(x)$ can be obtained by increasing the mass of the right tail and decreasing the mass of the left tail of $Q^L(x)$, and conversely for R. This is shown in Figure 3c. Under some conditions (specified in Cukierman and Tommasi 1994), this partitions the range of x into 2 regions:

- a central region $(\underline{x}, \bar{x})$ in which the conventional result obtains (policies to the left of the average policy are more likely to be implemented by L, and policies to the right of the average policy are more likely to be implemented by R)

- a "reversal" region outside $(\underline{x}, \overline{x})$ in which very left wing policies ($x < \underline{x}$) are more likely to be implemented by R, and very right wing policies ($x > \overline{x}$) are more likely to be implemented by L.

It turns out that for even more extreme values of x, we obtain that $P^R[x > \overline{X}] = 0$, and $P^L[x < \underline{X}] = 0$. In those outermost regions, **only** the unlikely party can implement.

The details and conditions for these results to obtain are specified in Cukierman and Tommasi (1994).

4 Applications

We provide here some applications of our framework to specific policy issues. For the sake of brevity, we do so in the context of the model of section 2.

4.1 Economic Applications

4.1.1 A simple model of market-oriented reforms

There are three groups in society: rich (R), middle class (M) and poor (P). Rich and poor can be reinterpreted as any other distributive cleavage, with the government having some power for (and some interest in) redistribution. We can think of group P as trade unions, urban dwellers, import-competing sectors, etc.; and of R as export sectors, non-tradable sectors, etc. The income of each group is given by:

$$
\begin{aligned}
y_M &= kY \\
y_P &= d(1-k)Y \\
y_R &= (1-d)(1-k)Y,
\end{aligned}
\tag{29}
$$

where Y is aggregate income, $k \in [0,1]$ is an exogenous parameter, and $d \in \{\underline{d}, d_s, \overline{d}\}$ is a policy parameter. d_s is the status quo, $\underline{d}$ is a right-wing policy with less redistribution towards the poor, and $\overline{d}$ is a left-wing policy. Let $d_s = \frac{1}{2}(\overline{d} + \underline{d})$. We will interpret a movement

from d_s to $\underline{d}$ as a market-oriented shift. (It is worth repeating here that we are agnostics, so that R and P should not be taken to literally mean Rich and Poor.) Assume that party L's objective is a weighted average of y_M and y_P, while party R's objective is a weighted average of y_M and y_R.

Aggregate income, which realizes after policy implementation, equals

$$Y = Y_0 + \gamma(d_s - d) \tag{30}$$

Equations (29) capture the **distributive** effect of policy d, while (30) captures the (stochastic) **efficiency** effect of policy d.

Equation (2) in section 2 characterizes the prior beliefs over γ, which has the same interpretation as before - "the correct model of the world", or "the way the economy really works" (Roemer, 1994). We interpret $p < 1/3$ as the probability that the policymaker is convinced (by facts, readings, advice) that the true model of the world is $\gamma = \underline{c}$ (or $-\underline{c}$). γ is private information to policymakers, and the crux of the problem is the differential ability of right and left wing policymakers to credibly communicate different values of γ.

The information structure and decision sequence is the same as that of section 2. The median voter equals group M with probability $(1 - 2\varepsilon)$, equals R with probability ε, and equals P with probability ε. Normalize policy as $(d_s - d)$, so that $x = (d_s - \underline{d})$, $x_s = 0$, and $-x = (d_s - \bar{d})$. Policy x represents a decrease in redistribution from R to P (or an increase in redistribution from P to R .) Policy $-x$ represents an increase in redistribution towards P.

If the "efficiency" effect is such that $\gamma = \underline{c}$, everybody shifts to the right, in the sense that x becomes relatively more desirable. This shift might be enough to induce group M to prefer less redistribution, but not enough for P to prefer it. Imagine a policymaker observing $\gamma = \underline{c}$, stating: "tough adjustments are needed," and proposing $x = (d_s - \underline{d})$. Who has the credibility to do so? As our analysis of the previous section suggests:

Result 4: (Comparative advantages in policy implementation)

A left-wing policymaker will be able to implement a market-oriented swing, not feasible for a right wing government.

Symmetrically, if a major move to the left were necessary, a right-wing policymaker is more likely to succeed.

We have interpreted successful implementation of market reforms by a left-wing policymakers as a case in which he convinces group M that these measures are efficiency enhancing. We could also build a case in which the approval of P is necessary for the reforms and the efficiency effect is so strong that even P benefits from $x = (d_s - \underline{d})$. In that case, if L proposes x, R's benefit no matter what, so they approve, and P's approve since it is their representative (L) who is proposing, while they would reject if the policy had been proposed by a right-wing policymaker.[19]

4.1.2   Examples of market-oriented reforms in Latin America

Argentina. Peronist president Carlos Menem has implemented an extensive and quite successful transformation of Argentina into a market-friendly economy. This is particularly surprising since "Peronism has been virtually synonymous with populism and protectionism" (Rodrik 1993, p.356). While our model does not explain why a Peronist administration chose such a comprehensive shift to markets,[20] it does explain why a Peronist administration has

---

[19]On a related issue, Martinelli and Tommasi (1994) argue that the implementation of reform packages might suffer from time consistency problems. Groups that benefit from early reforms but suffer from later reforms may blockade the later stages making some reform paths time-inconsistent. An implication of the logic of this section is that policymakers may, then, start a reform sequence by implementing the measures that hurt their own constituencies.

[20]Perktold and Tommasi (1994) provide an information-based model, which is consistent with the view in this paper.

a comparative advantage at such policies. The explanation is that Menem could credibly claim that such reforms are necessary and good for (most of) the people. "Menem used Peronist language even as he conveyed new proposals. The public, far from considering this to be contradictory, understood it quite well. The public knew that Peronism had changed, was speaking of privatization, of producing, of integrating Argentina in the world, of foreign investment, and that none of if meant it was any less Peronista. When he announced his program and began implementing it, when he opened up to entrepreneurs ... , Menem did not lose any of his electoral support." (Mora y Araujo 1991, English quote from Packenham 1992). Packenham also discusses the previous administration: Alfonsin was president (1983-1989) representing the Union Civica Radical, a historically middle class, centrist party. He also attempted privatization and stabilization with little success. Some of the fiercest obstacle were the (Peronist related) trade unions.

Peru. President Fujimori was elected (with the electoral support of populist APRA and of the left) by being to the left of the opposing candidate Vargas Llosa. As Menem, he was the "president like you " candidate - a message destined to distinguish himself from the "oligarchic"and "IMF-oriented" alternative, in the eyes of the middle and lower class voters. Yet, he implemented tough market oriented reforms. Inflation was reduced from 7,650 in 1990 to 57 percent in 1992. Fujimori mounted an aggressive campaign to privatize some of the largest state-owned enterprises, and restored the country's creditworthiness. In spite of bad foreign press for his closure of Congress, he is considered by Peruvians a success (his approval rate following the closure of Congress was 80%).

Bolivia. Paz Estenssoro was the leader of the traditionally populist party. He successfully implemented the orthodox 1985 stabilization. He, like Menem, was able to overcome trade union opposition, since he could claim to be a representative of the working class.

Brazil. President Fernando Collor de Melo won the elections as the right-center candidate over the left-center candidate Lula. He later pledged to liberalize the Brazilian economy, with very limited success. There were other elements, but analysts believe that his

structural situation was a big obstacle (Packenham 1992).

Cross-country evidence. Williamson and Haggard (1994) find that in only 3 out of the 13 cases in Williamson (1994), was market-oriented reform implemented by a right-wing government.

4.2 Political applications

4.2.1 Land for peace (foreign policy)

Imagine a country involved in important territorial disputes, with frequent armed confrontations. We can think of "land" (x) and "peace" (P) as two arguments in the utility function, with different people having different preferences (marginal rates of substitution.) For instance, a "dove" (left-wing) will have very flat indifference curves in the x-P space, and a "hawk" (right-wing) will have very steep ones - it requires a large gain in peace to compensate for a small loss of territory.[21]

There is also a transformation curve that shows feasible combinations of land and peace, which depend among other things on the domestic situation and foreign policy of the "enemy." Normalizing the current territory (land) to 0, territorial concessions $-x$ presumably map into increases in peace (decreases in the likelihood of armed confrontation.) Territorial expansion x maps into decreases in P. The exact marginal rate of transformation is not known with certainty. It is reasonable to argue that policymakers are better informed than the average citizen about the domestic situation and foreign strategy of the enemy.[22] Imagine that the policymaker observes $\gamma = -\underline{c}$; that is, territorial concessions will map into a large increase in the chances for peace. If this were public information, doves as well as "intermediates" will be in favor of making those concessions, while extreme hawks might still oppose. In terms of our model, $c_m = -\bar{c}_m$ and $c_m = 0$ will vote for $-x$, while $c_m = \bar{c}_m$

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[21]We even allow for people who actually **like** war.

[22]Intelligence services report to the head of the executive (and sometimes to a few ministries) but not to the general public.

will vote against it.

The question is, what type of policymaker will have more credibility (and hence will be able to influence the voting decision of non-extremists) when proposing $-x$: one with a hawkish or one with a dovish past? The answer seems to be the former. Examples are Menahem Begin, Annuar-el-Sadat, and stretching the application, Richard Nixon and John Foster Dulles.

5 Concluding Remarks

When voters are not fully informed about the way in which policies map into outcomes, policy proposals convey information. This leads to situations in which policies that benefit a majority are more likely to be implemented by "unlikely" characters. We argued that these conditions were at work in some well-know economic and foreign policy episodes.

Rodrik (1993) points out that it is ironic that populist and interventionist parties have implemented radical trade liberalizations, fiscal adjustments and institutional reforms. We demonstrate here why those parties had a comparative advantage at such policies. Similarly, sometimes it is "hawks" like M. Begin, R. Nixon and A. Sadat, who are able to take substantial steps towards peace.

Our analysis has more general implications for information transmission and credibility. Drazen and Masson (1994) have distinguished between credibility of policymakers and credibility of policies. We show here how credibility depends on the policymaker-policy **pair**.

A crucial aspect of our analysis is the assumption that agents are not fully informed about the way the world works. We believe this is a crucial feature of most political issues. The formal analysis of the implications of "rational" ignorance for political economy is in its infancy.

6 Appendix

6.1 Proof of Proposition 1.

Notice that $a1\&a2$ imply $a > x$ and $a > c$.

Let $v(x|c_m) = \arg\max_{\{0,1\}}\{-|z - c_m - \gamma|\}$.

Let $\overline{\mu}$ be the probability of approval of proposal x, and $\underline{\mu}$ be the probability that $-x$ is accepted. Then,

$$\overline{\mu} = \varepsilon v(x| - \overline{c}_m) + \varepsilon v(x|\overline{c}_m) + (1 - 2\varepsilon)v(x|0)$$

and

$$\underline{\mu} = \varepsilon v(-x| - \overline{c}_m) + \varepsilon v(-x|\overline{c}_m) + (1 - 2\varepsilon)v(-x|0).$$

Let $EU_L(\bullet|\gamma)$ denote the expected payoff from L's actions, given his observation of γ. Then

$$
\begin{aligned}
EU_L(x|\gamma) &= \overline{\mu}U_L(x|\gamma) + (1 - \overline{\mu})U_L(0|\gamma) \\
EU_L(0|\gamma) &= \mu U_L(0|\gamma) \\
EU_L(-x|\gamma) &= \underline{\mu}U_L(-x|\gamma) + (1 - \underline{\mu})U_L(0|\gamma),
\end{aligned}
\tag{31}
$$

where

$$U_L(x|\gamma) = -|x - c_L - \gamma| = -|x + c - \gamma|,$$

and similarly for the other actions, 0 and $-x$.

We proceed now to prove the first part of the proposition.

(1) E^* *is a PBE.*

1.1. S_L^* *is a best response to* S_m^*.

Let $x(\gamma) = \arg\max_{\{-x,0,x\}}\{EU_L(\bullet|\gamma)\}$.

1.1.1. $x(a) = x$.

Notice that when the median voter is playing S_m^*, $\bar{\mu} = (1 - \varepsilon)$ and $\underline{\mu} = \varepsilon$. Hence

$EU_L(x|a) \quad = \quad -(1 - \varepsilon)|x + c - a| - \varepsilon|c - a|$

$EU_L(0|a) \quad = \quad -|c - a|$

$EU_L(-x|a) \quad = \quad -\varepsilon| - x + c - a| - (1 - \varepsilon)|c - a|.$

Condition $a1$ implies $c - a < 0$. This implies that $|c - a| < |c - a - x|$ from which it follows that $EU_L(0|a) > EU_L(-x|a)$. Condition $a1$ also implies that $|a - c - x| < |a - c|$ from which it follows that $EU_L(x|a) > EU_L(0|a)$.

1.1.2. $x(0) = -x$.

$EU_L(x|0) \quad = \quad -(1 - \varepsilon)|x + c| - \varepsilon|c|$

$EU_L(0|a) \quad = \quad -|c|$

$EU_L(-x|a) \quad = \quad -\varepsilon| - x + c| - (1 - \varepsilon)|c|.$

It is clear that 0 dominates x. $a2$ implies that $-x$ dominates 0.

1.1.3. $x(-a) = -x$.

It is easy to verify that 1.1.2. implies 1.1.3. Intuitively, if L prefers $-x$ when $\gamma = 0$ he *afortiori* prefers this action when $\gamma = -a$.

1.2. S_m^* *is a best response to* S_L^*, *given* B^*.

1.2.1. For the case of $c_m = 0$.

1.2.1.1. $v(x) = 1$.

Given B^*, the voter is certain that $\gamma = a$ when he observes proposal x. Hence, the value of accepting the proposal is $-|x - a|$, while the value of rejecting it is $-a$. Since $a > x$, $-|x - a| = -(a - x) > -a$, so that $v(x) = 1$.

1.2.1.2. $v(-x) = 0$.

The value of accepting $-x$ is

$$V_1 = -\frac{p}{(1-p)}|a - x| - \frac{(1-2p)}{(1-p)}| - x| = -\frac{p}{(1-p)}a - \frac{(1-3p)}{(1-p)}x,$$

while the value of rejecting it is $V_0 = -\frac{p}{(1-p)}a$. So that $v(-x) = 0$ as long as $A3$ is satisfied.

1.2.2. For the case of $c_m = \bar{c}_m$.

It is easy to verify that 1.2.1. implies 1.2.2.

1.2.3. For the case of $c_m = -\bar{c}_m$.

1.2.3.1. $v(-x) = 1$ as long as $\bar{c}_m > \frac{(1-3p)}{(2-4p)}x$.

1.2.3.1. $v(x) = 0$ as long as $A4$ is satisfied, which is stronger than the condition above since $a > x$ and $p < 1/3$.

1.3. *The belief system B^* follows from the priors and S_L^* by application of Bayes rule.*

This concludes the proof of (1). We proceed now to prove the second part of the Proposition.

(2) *We introduce the refinement that $\bar{\mu} > 0$ and $\underline{\mu} > 0$. Then, under A1-A4, the equilibrium E^* is unique.*

We proceed in 3 stages. First, we show that $A1$ and $A2$ imply that S_L^* is the unique best response to any voter's strategy that gives positive probability to an affirmative vote after any proposal ($\bar{\mu} > 0$ and $\underline{\mu} > 0$). Posterior beliefs B^* follow from using S_L^* to update the prior distribution of γ, by application of Bayes rule. Finally, we show that S_m is the unique best response to S_L^*, given beliefs B^* and $A1$, $A2$, $A3$ and $A4$.

2.1. *A1&A2 imply that S_L^* is a dominant strategy.*

Notice that the proof in 1.1. did not use the fact that $\bar{\mu} = (1 - \varepsilon)$ and $\underline{\mu} = \varepsilon$. Hence, everything we said there applies more generally for any voting behavior, as long as $\bar{\mu} > 0$ and $\underline{\mu} > 0$.

2.2. *Given A1, A2, A3, A4 and B^* (which follows from 2.1. by Bayes rule). S_m is the unique best response to S_L^*.*

Notice that once we have established the optimality of S_L^* and the fact that B^* follows from Bayes rule, the proof of 2.2. is the same as that of 1.2.

This completes the proof.

6.1.1 An example of a PBE which is not THPE:

It is illustrative at this point to present an example of the type of equilibria we are eliminating by imposing the refinement $\underline{\mu} > 0$. Imagine that $\underline{\mu} = 0$, that is $v(-x| - \bar{c}_m) = v(-x|\bar{c}_m) = v(-x|0) = 0$. In that case, $EU_L(0|\gamma) = EU_L(-x|\gamma)$ for any γ, so that $x(0) = x(-a) = 0$ is a (weakly) dominant strategy for L. If that is L's choice, then it is also correct to postulate $v(-x| - \bar{c}_m) = v(-x|\bar{c}_m) = v(-x|0) = 0$, since $-x$ does not occur in equilibrium and hence any voting there is rational. In that way we construct an equilibrium in which $-x$ is never proposed, and if it were proposed it is voted against by all median voter types. By introducing the trembling hand requirement, we force L to behave "rationally" even at off-equilibrium nodes. Hence, given $A1$ and $A2$, he will choose $-x$ when he observes $\gamma = 0$ or $\gamma = -a$ (given a slight chance of acceptance, $-x$ and 0 are no longer equivalent). This selects E^* uniquely.

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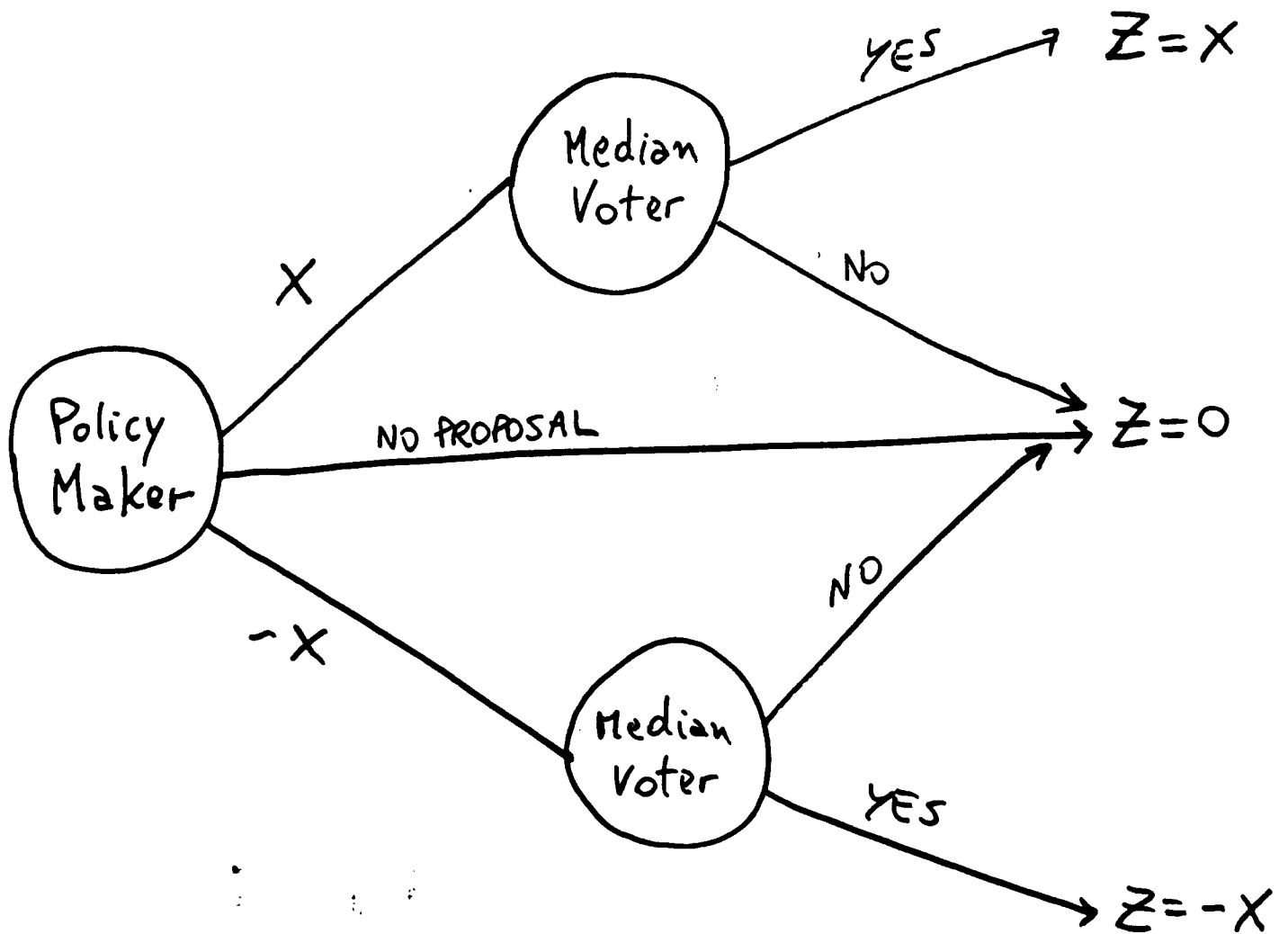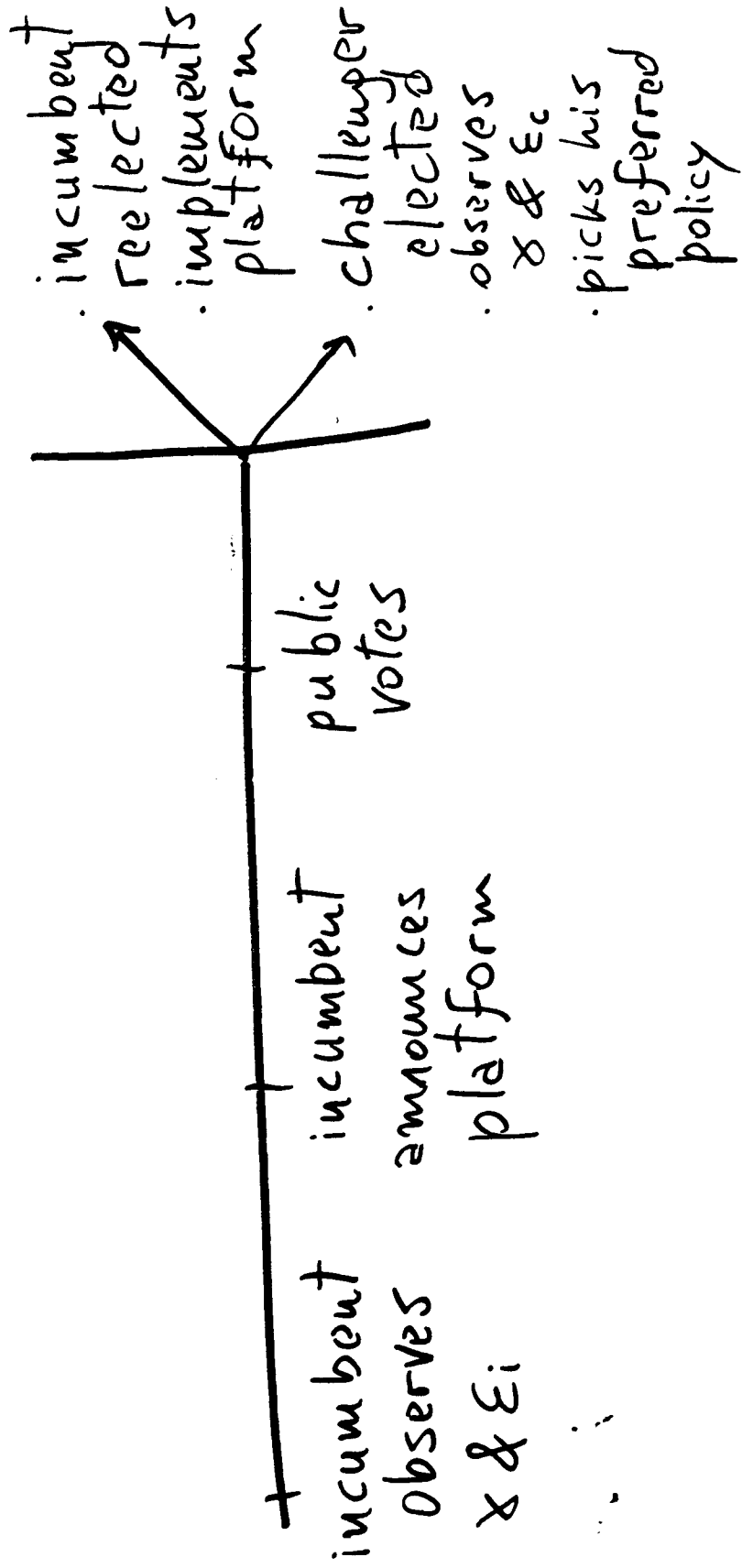
FIGURE 1

Figure 2

incumbent
observes
x & ε_i

incumbent
announces
platform

public
votes

- incumbent
  reelected
- implements
  platform

- challenger
  elected
- observes
  x & ε_c
- picks his
  preferred
  policy

Figure 3a: PROBABILITIES OF POLICY PROPOSALS BY INCUMBENTS L & R

$Q^L(x)$ $Q^R(x)$ X

B_L B_R
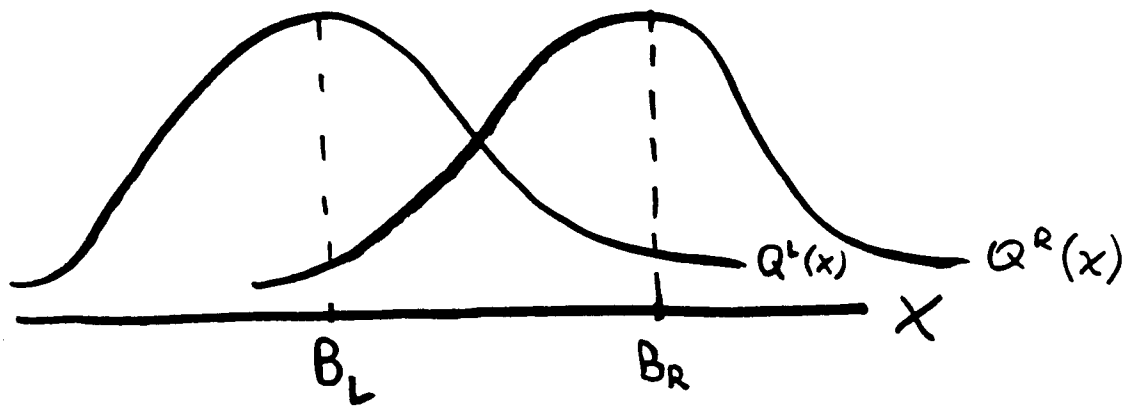
Figure 3b: PROBABILITIES OF REELECTION AS FUNCTION OF POLICY PROPOSALS

$P^L(x)$

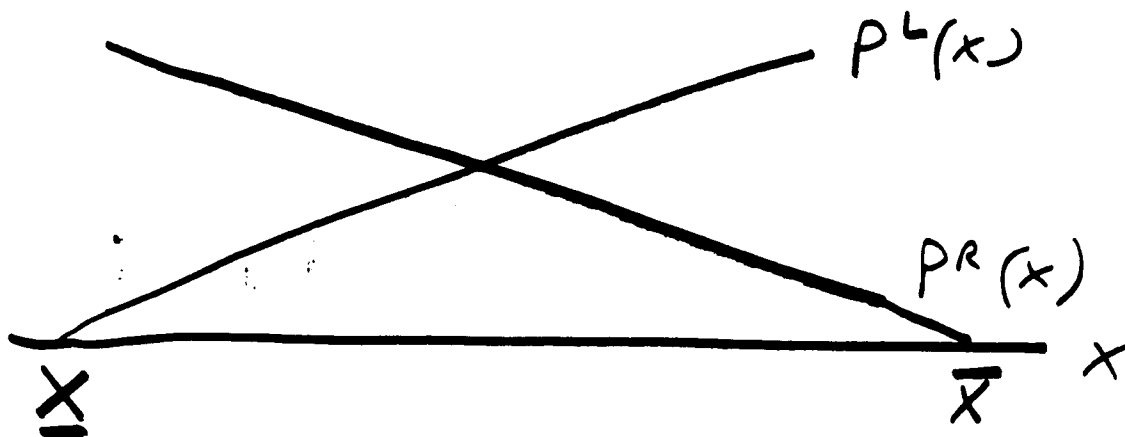$P^R(x)$

$\underline{x}$ $\overline{x}$ X

Figure 3c: PROBABILITY OF IMPLEMENTATION

$$PI^i(x) = Q^i(x) P^i(x)$$

$PI^L(x)$

$PI^R(x)$

$\underline{x}$ $\overline{x}$ X