Policy Reversal

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Abstract

We analyze the existence of policy reversal, the phenomenon sometimes observed that a certain policy (say extreme left-wing) is implemented by the "unlikely" (right-wing) party. We formulate a Downsian signaling model where the incumbent government, through its choice of policy, reveals information both regarding own preferences and external circumstances that may call for a particular policy. We show that policy reversal may indeed exist as an equilibrium phenomenon. This is partly because the incumbent party has superior opportunities to reveal information, and partly because its reputation protects a left-wing incumbent when advertising a right-wing policy.

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History shows that important political reforms sometimes are undertaken by "unlikely" parties. As an example, it was the staunch anticommunist republican Nixon that opened the door to the west for communist China. In an important paper by Alex Cukierman and Mariano Tommasi (1998), this phenomenon is referred to as policy reversal.

Policy reversal is a striking example of the role of information for political processes in a democracy. When a political party announces its political platform or implements

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a certain policy, this reveals information to the electorate, not only on the party's political preferences but also on the underlying economic and political realities. This was first analyzed formally in Cukierman and Tommasi (1998). However, their model builds on restrictive assumptions regarding voter preferences and probability distributions. In contrast, we follow the standard approach in the literature and introduce Downsian preferences (Anthony Downs 1957) but allow for uncertainty regarding actual policy. More specifically, when evaluating uncertain policy platforms, we assume that the expected loss of a voter is equal to the expected distance between the voter's preferred policy and actual policy. With this specification of voter preferences, a mean-preserving increase in a party's policy reduces the attractiveness of that party, as if the voters were risk averse.

Politicians have private information regarding own preferences and external circumstances, where the latter influences the preferred policy of all agents in the same way. Before the election, the incumbent party commits to a policy (the opposition does not). The policy chosen by the incumbent gives a noisy signal about external circumstances, and voters take this into account when deciding which party to vote for. Consider a situation where a left-wing policy is proposed. If it is proposed by a right-wing government, voters will tend to interpret this as a signal that external circumstances call for a left-wing policy. If it is proposed by a left-wing government, voters will tend to interpret this as a signal that the government has left-wing preferences. Thus, the probability updating that takes place after observing the proposed left-wing policy may actually favor a right-wing government and disfavor a left-wing incumbent. In this sense, the incumbent is protected by its reputation when proposing unexpected policies at the opposite side of the political spectrum. Moreover, the incumbent party is in a position to reveal more information to the electorate than the opposition is. Consequently, voter uncertainty regarding the incumbent's policy is less than that of the opponent, giving rise to an incumbency advantage. Together, these two effects lead to policy reversal.

We also analyze whether a stronger form of policy reversal may exist in equilibrium, the situation where a certain policy can *only* be implemented by the unlikely party. The result is negative, this strong form of policy reversal does not occur for any parameter constellations. If the incumbent right-wing party proposes a sufficiently extreme policy platform on the opposite side of the political spectrum, the voters' will consider the incumbent as the left-wing candidate for office. Hence the incumbent party is no longer the "unlikely" party to implement the left-wing policy. This effectively limits the range of policies for which policy reversal can occur, and rules out strong policy reversal.

Our model is a signaling model where the government, through its choice of policy, signals its private information regarding external circumstances to the electorate. In this regard, our paper contributes to the literature on political signaling, see Joseph E. Harrington jr. (1993), John E. Roemer (1994), Christian Schultz (1996), Wilko A. Letterie and Otto H. Swank (1998), Schultz (2002), Steven Callander and Simon Wilkie (2007) and Navin Kartik and R. Preston McAfee (2007). Our paper also contributes to the literature on incumbency advantage, see Daniel E. Ingberman (1992), Stepen D. Ansolabehere, James M. Snyder and Charles Stewart (2000), Timothy J. Groseclose (2001) and Scott Ashworth and Ethan B. de Mesquita (2008).

I The model

The model goes as follows: two parties, L (left-wing) and R (right-wing) compete for office. Their utility functions if elected are given by $h - |x_i - c_i - \varepsilon_i - \gamma|$, $i = L, R$. Here h denotes the intrinsic value for the government of staying in office, x_i is policy, and γ reflects external circumstances. The parameters c_i and ε_i represent the policy preferences that are known and unknown to the electorate, respectively. A high (low) value of x denote right-wing (left-wing) policy, and $c_L < c_R$. Without loss of generality we assume that the left-wing party is in power (the incumbent party) before the election.

The loss function of a voter j is given by $-|x - \gamma - c_j|$, where c_j is a voter-specific preference parameter referred to as her preferences. Voting is probabilistic, and the preferences of the median voter are uniformly distributed on an interval $[\underline{c}, \overline{c}]$. The parameters are normalized such that $c_L = -c_R$ and $\underline{c} = -\overline{c}$. Note that γ influences the optimal policy of the two parties and of the voters equally.

The incumbent (but not the voters) first observes γ and ε_L, and then *announces and commits to* policy x_L. If the opposition wins, it sets its policy after the election, and implements its first best policy, adjusting fully for external circumstances γ. Its policy is thus given by

$$x_R^* = c_R + \varepsilon_R + \gamma. \tag{1}$$

If the opposition wins, the non-observable part ε_L of the incumbent's preferences is assumed to be eliminated. Hence, the expected utility of the incumbent before the election is given by

$$V_L = P_L[h - |x_L - c_L - \varepsilon_L - \gamma|] - (1 - P_L)E|c_R + \varepsilon_R - c_L|, \tag{2}$$

where P_L is the probability of being re-elected. Both γ and ε_i, $i = L, R$, are assumed to be drawn independently from normal distributions with expectations 0 and variances σ_γ^2 and σ_ε^2, respectively (independent of i).

Since the incumbent party commits to its policy, there is no uncertainty regarding x_L. For that reason, the incumbent's ideology ε_L plays no direct role for the voters. However, a voter does not know the external circumstances γ, and thus does not know which policy is optimal given her preferences. When voters observe the incumbent's proposed policy, they update their beliefs regarding γ. Let γ_x denote the distribution of γ conditioned on observing policy x. When voting for the incumbent, the expected utility of a voter with preferences c_j, as a function of advertised policy x_L, can be written as $-E|x_L - \gamma_x - c_j|$. The opposition's policy fully incorporates γ. The expected utility of this voter if the opposition wins is thus $-E|c_R + \varepsilon_R - c_j|$ (from 1).

A type j voter thus prefers the incumbent iff

$$E|x_L - \gamma_x - c_j| \leq E|c_R + \varepsilon_R - c_j| \tag{3}$$

As long as the left-wing party is supported by left-wing voters, the probability that the incumbent wins the election can be expressed as (as shown in Espen R. Moen and Christian Riis, 2009 the median voter theorem holds)

$$P_L(x_L) = \frac{c_m^c(x_L) - \underline{c}}{\overline{c} - \underline{c}} \tag{4}$$

where $c_m^c(x_L)$ denotes the preferences of the voter that is indifferent between the two parties, implicitly defined by the equation

$$E|x_L - \gamma_x - c_m^c| = E|c_R + \varepsilon_R - c_m^c| \tag{5}$$

II Equilibrium

Formally, the model is a signalling game, where the incumbent signals her private information through her choice of policy, and the voters respond. The preferred policy of the incumbent depends on the sum $\varepsilon_L + \gamma$, ref (2), and we therefore refer to $u_L = \varepsilon_L + \gamma$ as the government's "type". A sequential Bayesian equilibrium of this game is a mapping $x_L = B(u_L)$ from government type to policy, given that the voters have rational expectations and well-defined out-of equilibrium beliefs.[1] It is trivial to show that the Spence-Mirrlees single crossing condition holds in our model. In Moen and Riis (2009) we show, not surprisingly, that the model has no pooling equilibrium, and a unique separating equilibrium. Here we want to explain intuitively the nature of the equilibrium.

Our first observation concerns the equilibrium distribution of γ_x. Let $u' = B^{-1}(x)$. It follows that γ_x is normal with mean $\theta u'$ and variance $\theta\sigma_\varepsilon^2$, where $\theta := \sigma_\gamma^2/(\sigma_\gamma^2 + \sigma_\varepsilon^2) < 1$. By comparing the left- and right-hand side of (5) it follows that *the variance of the loss is lower when voting for the incumbent than for the opposition, as the variance of γ_x, $\theta\sigma_\varepsilon^2$, is less than the variance of ε_R, σ_ε^2.* Since the norm $|\cdot|$ is convex, it follows directly that a higher variance (for a given expectation) of the loss increases the expected loss of that policy, and that the increase is strict since the supports are infinite.[2] *The fact that the incumbent can commit to a policy, and thereby reduce the uncertainty regarding the attractiveness of her policy platform, gives her an incumbency-advantage.* Our first lemma follows immediately:

Lemma 1 *Suppose the incumbent's advertised policy is equal to the expected policy of the opposition: $x_L = c_R + E\gamma_x$. Then the incumbent wins with probability* 1.

In Moen and Riis (2009) we show that the equilibrium has the following form:

1. For an interval of types $[u_L^1, u_L^2]$ the incumbent wins with probability 1, and chooses its first best policy $x_L = c_L + u_L$.

2. For an interval below $[u_L^1, u_L^2]$, denoted by (u_L^0, u_L^1), the incumbent wins with a probability which is strictly between zero and one and increasing in u. For completeness, there also exists an interval (u_L^2, u_L^3) above u_L^2 where the probability of winning is decreasing in u.

3. Types $u \leq u_L^0$ and $u \geq u_L^3$ never win the election and therefore do not advertise policy.

[1] We also assume that an incumbent does not advertise any policy if her probability of winning is zero. This rules out trivial equilibria in which the incumbent always loses.

[2] See for instance Michael Rothschild and Joseph E. Stiglitz (1970) theorem 2.

The interval $[u_L^1, u_L^2]$ includes the policy x_L that is equal to the expectation of the opposition's policy, $x_L = c_R + E\gamma_x$, denoted by x_L^t. Since the incumbent of this type proposes its first best policy, this policy is proposed by a politician of type u_L^t given by $c_L + u_L^t = c_R + \theta u_L^t$, or

$$u_L^t = \frac{c_R - c_L}{1 - \theta} \tag{6}$$

The associated x_L^t is thus given by

$$x_L^t = B(u_L^t) = c_R + \frac{\theta}{1-\theta}(c_R - c_L) \tag{7}$$

The following curves help characterizing the equilibrium:

1. *The first best policy curve* $x^{FB}(u)$ shows the optimal policy as a function of type, $x^{FB}(u) = c_L + u$.

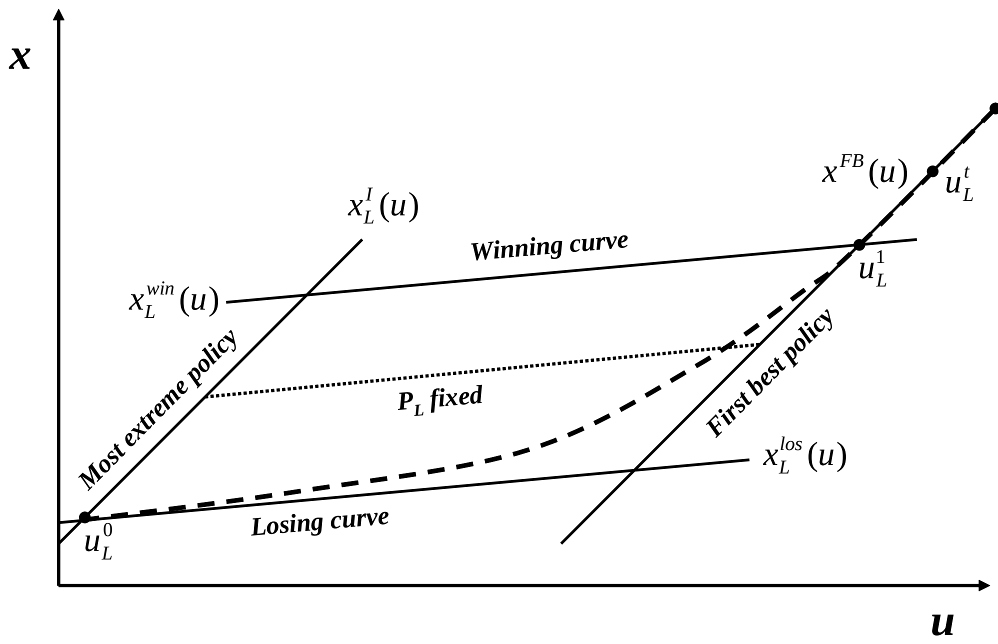
2. *The most extreme policy curve* $x_L^I(u)$ shows the most right-wing policy the L-incumbent of type u is willing to propose, i.e., the value of x that makes her indifferent between winning and losing the election. This curve is implicitly determined by the condition $h - |x - u - c_L| = -E|c_R + \varepsilon_R - c_L|$ and has slope 1.

3. *The losing curve* $x_L^{los}(u)$ is an indifference curve of the most *left*-wing median voter in the x-u space. Along the losing curve, this voter obtains the same expected utility from both policy platforms, $E|x_L^{los}(u) - \theta u - \underline{c}| = E|c_R + \varepsilon_R - \underline{c}|$. It follows that $\frac{dx_L^{los}}{du} = \theta$.

4. The *winning curve* $x_L^{win}(u)$ is an indifference curve of the most *right*-wing median voter in the x-u space. Along the winning curve, this voter obtains the same expected utility from both policy platforms. It follows that $\frac{dx_L^{win}}{du} = \theta$.

The four curves are depicted in figure 1.

In Moen and Riis (2009) it is shown that the point u_L^1 is at the intersection between the winning curve and the first best policy curve. u_L^0 is given by the intersection between the most extreme policy curve $x_L^I(u)$ and the losing curve $x_L^{los}(u)$. As types $u < u_L^0$ do not advertise policy, the equilibrium path (the dashed curve) begins at u_L^0. As the equilibrium path approaches u_L^1 from below, it may either converge to the first best policy line at



some u' below u_L^1, and then follow the first best line up to u_L^1, or approach first best policy at u_L^1. Between u_L^1 and u_L^2 the equilibrium path follows first best policy. Above u_L^2, the characterization of the equilibrium path replicates the characterization of the equilibrium below u_L^1.

III Policy reversal

Cukierman and Tommasi (1998) distinguish between two different forms of policy reversal, which they refer to as "Nixon" and "Only Nixon". We will also distinguish between two forms of policy reversal, and refer to them as weak and strong policy reversal.

We say that the model exhibits *weak* policy reversal if there exists a policy $x' > 0$ with the following characteristics: 1) For a small interval $I = (x_a, x_b)$ with $x_a > 0$ that contains x', the probability that the left-wing party implements (proposes and then wins the election) a policy in I is greater than the probability that a right-wing incumbent does. 2) After observing x', voters still expect x_R^* to be to the right of x'.

Strong policy reversal is defined analogously, however in this case we require that a policy in I is implemented with strictly positive probability by a left-wing incumbent and with zero probability by a right-wing incumbent.

Requirement 2) deserves a comment. If the left-wing party proposes a policy x' $> x_L^t = Ex_R^*$, the policy of the R-party is expected by the voters to be to the left of the L-party's proposed policy. In a sense, the two parties have changed identity, as the L-party will attract the *right-wing* voters and the R-party the *left-wing* voters. In this case it seems unreasonable to refer to the L-party as the "unlikely" party to implement right-wing policy. Note also that policy reversal only regards incumbents of different political colors, not opponents.

Our first proposition shows that weak policy reversal exists under a very mild parameter restriction:

Proposition 1 *Suppose $2\bar{c} > c_R$. Then weak policy reversal exists for sufficiently high values of h and for θ sufficiently close to* 1*.*

A formal proof is given in the appendix. To gain intuition, note the following. It can be shown that as $h \to \infty$, the equilibrium policy function converges to the $x_L^{win}(u)$ curve for all types $u < u_L^1$. Intuitively, as h grows to infinity, the incumbent wants to insure that she wins the election with probability 1. Provided that the incumbency advantage is small (and c_R is not too extreme), the incumbent must choose a policy that is close to the expected policy of the opponent in order to win with probability 1. But this implies that a left-wing incumbent tends to choose a right wing-policy (since her opponent is right-wing) while a right-wing incumbent tend to choose a left-wing policy (since her opponent is left-wing). Hence we get policy reversal. Note that the policy function $x_L^{win}(u)$ may well reflect extreme policies, how extreme depends on the variance of the prior distributions.

Strong policy reversal, by contrast, does not exist:

Proposition 2 *Strong policy reversal does not exist in equilibrium.*

The proof is given in the appendix. The proof consists of showing that the most right-wing policy x_R^0 that the right-wing party can implement is to the right of x_L^t, the point at which the left-wing incumbent attracts right-wing voters.

We will explain this result in a more intuitive way. Suppose first that θ is close to zero. Observing x then reveals little information regarding γ. It follows that $x_L^t \approx c_R$, see equation (7). However, a right-wing incumbent surely wins with positive probability if she advertises c_R since $\bar{c}$ by definition is closer to c_R than to c_L, the expected policy of a left-wing opposition. Hence the proposition holds for low values of θ.

For higher values of θ, both x_L^t and x_R^0 move to the right: a more extreme policy is acceptable because it signals that external circumstances, to a certain extent, rationalize such a policy. A right-wing incumbent who proposes x_R^0 advertises a policy to the left of her bliss point $c_R + u$ to the extent that she is indifferent between winning and losing. This implies that u is larger than x_R^0, and hence rationalizes a policy even further to the right. This is not the case at $x = x_L^t$, since at this point the incumbent advertises her first best policy. This indicates that $x_R^0 > x_L^t$ for all values of θ.

IV Conclusions

In their important paper, Cukierman and Tommasi (1998) define policy reversal as a situation in which it is the "unlikely" party that implements certain policies. The most well-known example of policy reversal is that it was the staunch anticommunist Nixon that opened the door to the west for communist China. In the present paper we analyze policy reversal in a Downsian political signalling model. Within this model we show that policy reversal can exists as an equilibrium phenomenon: if a right-wing party implements an extreme left-wing policy, voters will tend to interpret this as a warranted response to special circumstances rather than political extremism. In this case the right-wing politician is protected by the electorate's prior beliefs about her political preferences. Moreover, the incumbent party is in a position to reveal more information to the electorate than the opposition is. Consequently, voter uncertainty regarding the incumbent's policy is less than that of the opponent, giving rise to an incumbency advantage. Together, these two effects lead to policy reversal.

However, the more radical form of policy reversal, that *only* the unlikely party can implement certain extreme politics, is not an equilibrium outcome of our model. The policy needed in order for the left-wing policy to lose with probability 1 is so extreme that the right-wing party, if advertising it, will be considered to be to the leftist alternative and hence not the "unlikely" party.

Appendix

Proof of proposition 1

We first want to show that for any u, $\lim_{h\to\infty} B(u;h) \to x_L^{win}(u)$ for $u < u_L^1$. First observe that the curves $x_L^{los}(u)$, $x_L^{win}(u)$ and $x_L^{FB}(u)$ are independent of h. But $x^I(u)$ shifts upward as h increases, and, for any u', $\lim_{h\to\infty} x_L^I(u') = \infty$. It follows that u_L^1 is independent of h while $\lim_{h\to\infty} u_L^0 = -\infty$.

Suppose that for some $u' < u_L^1$, $\lim_{h\to\infty} B(u') = x' < x_L^{win}(u)$ (deviations to the right will never be an issue). It is sufficient to show that for large values of h, an incumbent of type u' strictly prefers policy $x_L^1 = B(u_L^1)$ to x'. Let $P(x', u') < 1$ denote the probability of winning at (x', u') (independent of h). Then the incumbent of type u' prefers policy x_L^1 to policy x' whenever $h - |x_L^1 - c_L - u'| > (1 - P(x', u'))(h - |x' - c_L - u'|)$ which is trivially satisfied for sufficiently large values of h. This proves the claim.

For $u \in [u_L^1, u_L^2]$, the equilibrium is independent of h. For $u > u_L^2$ the policy converges to the $x^{win}(u)$ curve, for $u > u_L^2$ defined as combinations of x and u that makes the most left-wing median voter $\underline{c}$ indifferent between the two parties.

As $\theta \to 1$, the distribution of γ_x converges in distribution to $u + \varepsilon_i$, or equivalently (due to symmetry) to $u - \varepsilon_i$, $i = L, R$, and the incumbency advantage vanishes. From (3) it follows that $\lim_{\theta\to 1} x_L^{win}(u) \equiv c_R + u$ if $c_R \leq \overline{c}$ and $\lim_{\theta\to 1} x_L^{win}(u) \equiv u + 2\overline{c} - c_R$ otherwise. Thus, if θ is sufficiently close to 1 and $2\overline{c} > c_R$ we know that $x_L^{win}(0) > 0$. By contrast, since $x_L^{FB}(0) = c_L < 0$ it follows that $u_L^1 > 0$. Due to symmetry, it follows that $x_R(0) = -x_L(0) < 0$ and thus that $x_R(0) < 0 < x_L(0)$.

From this point, proving policy reversal is simple. Consider a small interval I_0 around $x_L^{win}(0)$. First, since $x_L^{win}(0) > 0$, we know that the policy in this interval is right-wing policy (given that the interval is sufficiently small). Since $u_L^1 > 0$ we know that $B(0)$ is close to $x_L^{win}(u)$, which has slope θ. The limit probability (when h goes to infinity) that policy in this interval will be implemented by a left-wing incumbent is thus approximately $p_L = f_u(0)\frac{\Delta x}{\theta}$ where f_u is the density of u and Δx the measure of the interval.

Consider then a right-wing incumbent. Since $x_R^{win}(0) < 0$ it follows that $x_L^{win}(0)$ will be implemented for a right-wing incumbent with a strictly positive u, say u'. If u' is on the first-best curve, then the probability that the right-wing party will implement policy in the interval is $p_R = f_u(u')\Delta x < p_L$. If the policy is on the x_R^{win} curve, the probability is $p_R f_u(u')\frac{\Delta x}{\theta}$. Since $f_u(0) > f_u(u')$, we again have that $p_L > p_R$.

Furthermore, since $u_L^t > u_L^1 > 0$ it follows that the left-wing party is considered the unlikely party to implement this policy. The proposition thus follows.

Proof of proposition 2

Strong policy reversal exists if and only if $x_L^t > x_R^0$. Due to symmetry we know that $x_R^0 = -x_L^0$, and hence we have strict policy reversal if and only if $x_L^t > -x_L^0$.

We want to derive a lower bound for x_L^0. Due to the incumbency advantage, a voter will vote for the incumbent if the expected policy of the incumbent is as close to the voter's preferred policy as the expected policy of the opponent. Since $x_L^0 < \underline{c}$ it follows that $\underline{c} + E\gamma_x - x_L^0 > c_R - \underline{c}$, or

$$x_L^0 < 2\underline{c} + E\gamma_x - c_R \tag{8}$$

At the most extreme policy curve we know that the incumbent is indifferent between winning and losing. Since $x_L^0 > c_L + u_L^0$ (the first best policy of type u_L^0) it follows that

$$h - (x_L^0 - u_L^0 - c_L) = -E|c_R + \varepsilon_R - c_L|$$

Solving for u gives

$$\begin{aligned} u_L^0 &= x_L^0 - c_L - h - E|c_R + \varepsilon_R - c_L| \\ &\leq x_L^0 - c_R - h \end{aligned}$$

where we have used Jensen's inequality. It follows that $E\gamma_x = \theta u_L^0 \leq \theta(x_L^0 - c_R - h)$. Inserted into (8) this gives

$$x_L^0 < 2\underline{c} + \theta(x_L^0 - c_R - h) - c_R < \theta(x_L^0 - c_R) - c_R$$

or

$$x_L^0 < -\frac{1+\theta}{1-\theta} c_R \tag{9}$$

Since $x_R^0 = -x_L^0$ it follows that

$$x_R^0 > \frac{1+\theta}{1-\theta} c_R$$

According to (7)

$$x_L^t = c_R + \frac{\theta}{1-\theta}(c_R - c_L) = \frac{1+\theta}{1-\theta} c_R$$

hence $x_L^t < x_R^0$ as claimed.

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