

## Who Surfs, Who Manipulates?

### The Determinants of Opportunistic Election Timing and Electorally Motivated Economic Intervention<sup>\*</sup>

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In this paper, I develop a career concerns model of government policy choice within a fully dynamic optimal stopping framework to predict the degree of *surfing* (opportunistic timing) and *manipulation* (politically motivated economic intervention) under alternate institutional structures and voter characteristics. Among other results, I find that the likelihood of opportunistic elections rises with longer maximum term lengths and with future uncertainty but diminishes in the value of office-holding; manipulation increases with the maximum term length and with the value of office-holding; but surfing and manipulation, acting as substitutes, are inversely associated. The model suggests that majority governments should be highly opportunistic in calling elections and that countries that allow opportunistic election timing should experience less economically distortionary political intervention.

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*“A wise person does at once, what a fool does at last. Both do the same thing; only at different times.”*

*- Lord Acton*

Scholars and pundits alike have long believed that governments, where institutionally and politically possible, time elections and manipulate their economies for their own political advantage. Yet, it was only in the 1990s that many scholars realized that each process – election timing and economic manipulation – is often endogenous to the other. Ito and Park’s (1988) seminal paper invited a wave of studies showing that pre-election economic expansions were considerably tempered in several countries that permit endogenous election calling (e.g., Ito 1990, Cargill and Hutchinson 1991, and Chowdurry 1993). This largely empirical literature offered new insight into the puzzling absence of political business cycles around the world, at least among endogenous timing countries.<sup>1</sup> Curiously, after this initial burst of interest, however, the field stalled.<sup>2</sup> Diminishing marginal returns to demonstrating the same effect in additional countries and the absence of an explicit theoretical framework to generate new empirically testable hypotheses combined to dampen interest. I seek to redress this problem by developing a fully dynamic model to predict the level of *surfing* (the opportunistic timing of elections) and *manipulation* (politically motivated intervention in the economy) under various institutional and constituency features.<sup>3</sup> Reassuringly, the model matches many of the empirical results in the preceding literature, but perhaps more importantly, generates new

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<sup>1</sup> One notable exception to the empirical orientation of this research area was Chappell and Peel’s (1979) early model of the political business cycle with endogenous elections; this model, however, provides no uncertainty in the election calling decision.

<sup>2</sup> With the notable exception of articles by Reid (1998) and Heckelman and Berument (1998).

<sup>3</sup> This usage of the term “surfing,” to the best of my knowledge, was coined by Inoguchi (1979).

empirically testable predictions for several determinants of the balance between surfing and manipulation.

It is clear that variation in institutions and electorates poses strong implications for the timing of elections, the degree of manipulation and, by extension, incumbency advantage and electoral politics. Thus, an explicit institutional understanding of election timing and manipulation promises substantial future payoffs. In this paper, to be precise, I embed a career concerns model of government policy choice within a dynamic optimal stopping framework to predict the degree of *surfing* and *manipulation* under alternate institutional, governmental, and voter characteristics. Among other results, I find that the likelihood of *early elections* rises with the variance of exogenous shocks to voters' welfare (interpreted by them as government competence)<sup>4</sup>, with longer constitutional inter-election periods (CIEP), and with uncertainty about the future, but diminishes with the value of office-holding; *manipulation* decreases in the variance of competence shocks but increases with the CIEP and with the value of office-holding; and as surfing is increasing in competence shocks but manipulation decreasing, they effectively behave as substitutes.

These results are strongly prescriptive for institutional engineering and suggestive of some possible unintended consequences of certain political and constitutional arrangements. In an era in which political intervention in the economy – both monetary and fiscal – has become increasingly constrained by economic globalization and political integration, governments able to time their elections

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<sup>4</sup> As I explain later, voters in this framework cannot directly observe government competence; they infer it from their welfare. Consistent with empirical literature, they do not distinguish between welfare shocks beyond the control of their elected representatives and those more credibly attributable to government.

strategically may be relatively electorally advantaged. For the most economically integrated, primarily advanced industrial states, capital mobility, exchange rate coordination, and for some, outright monetary union, imply loss of monetary autonomy; on the fiscal side, the growing share of exports in GDP implies that a smaller portion of the economy is susceptible to traditional fiscal tools of domestic demand management, let alone those countries in which debt is constrained by multilateral agreements such as the European Union's growth and stability pact. In countries in which manipulation is difficult, strategic election timing may be especially appealing and advantageous for incumbent governments. Those with the fewest institutional and political barriers to opportunistic election timing, the smallest most volatile economies, and the longest CIEPs, may enjoy the greatest advantage in their reelection campaigns.

Where manipulation is least constrained and economic performance most volatile – primarily in the less economically integrated developing world – it is the electorate that may gain the most through opportunistic election timing. Those states that least impede the strategic timing of elections, primarily parliamentary democracies with long maximum terms, should experience less pre-election manipulation and concomitantly less distortion in the post-election economy.

A second intention of this paper is to replicate for majority governments what Lupia and Strom's (1995) and Diermeier and Stevenson's (2000) coalition bargaining models have done for the study of government termination and hence, election timing, under coalition governments. By making coalition bargaining explicit, they make opportunistic dissolution and elections a consequence of the strategic interaction of coalition members rather than, as it was commonly understood, as an epidemiological

process with exogenous shocks.<sup>5</sup> As Grofman and Rozendaal (1994) once commented, it is the choices of actors within circumstances created by exogenous shocks that bring cabinets down. Election timing by **majority governments** is considerably simpler than dynamic coalition bargaining but much can still be gained by an explicit consideration of the actor's choices within circumstances created by exogenous shocks: single-party governments maximize both the duration of the current term and the probability of reelection to another, not just time in office. I model this trade-off between extending the current term and winning another as a dynamic optimization problem. This is not the first model of strategic election timing – signaling games by Terrones (1989) and Smith (1996) find pooling equilibria on early elections and no early elections, respectively, and dynamic programming models by Balke (1990) and Ito (1990) yield numerical predictions of election timing – but this model, in addition to explicit consideration of manipulation, offers the first analytic predictions of when elections should be called and under which institutions they should be most prevalent.

As a majority of parliamentary democracies allow for endogenous election timing, the implications of this research are neither obscure nor trivial. A clearer understanding of why and when elections are called promises broadly applicable insights into electoral politics and the political business cycle. The remainder of this paper is organized as follows: Section One constructs a basic optimal stopping model of election timing; Section Two illustrates the intuition with a simulation of an incumbent's election calling decision; Section Three adds optimal manipulation; a fourth section summarizes comparative statics; and a final section concludes.

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<sup>5</sup> See Grofman and Roozendaal's (1997) review article for a history of the coalition stability and duration literature.

### ***The Basic Model***

Election timing is quintessentially a problem of optimization under uncertainty. The incumbent government assesses electoral conditions in each period of its term and decides whether to call an election or to proceed to the next period, not knowing what that period holds. Opportune timing can increase both the probability of electoral victory and legislative efficacy through greater seat share but also effectively stops (i.e., resets) the game. Thus, election timing is fundamentally a finite horizon optimal stopping problem. The government has a fixed number of periods in which to call an election before one is imposed on it and must time the election to maximize its utility.

Recognizing election timing as an optimal stopping problem allows one to model a government's dynamic decision process explicitly. Simple dynamic programming techniques, as explained below, permit current period options to be repeatedly compared to the expected value of future opportunities. Although the unknown and arbitrary values of several parameters prevent us from predicting the magnitude of different variables' effects on the probability of elections in this model, dynamic programming solutions are a strong tool for predicting the *sign* of that effect.<sup>6</sup>

Imagine for now the simplest possible arrangement: voters have no memory of previous periods; the government's reelection probability,  $p$ , in each period  $t \in [0, \tau]$ , is strictly increasing in government competence, a random variable,  $\mu$ , distributed, for simplicity, uniformly with density  $\zeta$ ; each draw of  $\mu_t$  is independent of others; the value of office-holding is constant over time; and governments simply maximize their chance

of re-election, by maximizing  $\mu_t$ . Competence, however, is not fixed; as new challenges arise at each  $t$ , the government can be expected to address them with varying degrees of success. Whereas the government can directly observe  $\mu_t$ , voters infer  $\mu_t$  based on the government's provision of public goods, so competence varies both with exogenous events (economic growth, international conflict, etc.) and the government's ability to manage them. Thus  $\mu$ , although referred to as government competence, actually captures the state of the world and the government's response to it. This is a reasonable construction given research showing that voters often hold politicians accountable for acts of God that they can perhaps mitigate but not prevent.<sup>7</sup>

Assuming optimizing behavior in each *future* period allows us to calculate the government's expected future competence via backwards induction. Thus, for example, in the penultimate period,  $\tau-1$ , the government's expected competence from continuing to the final period,  $E_{\tau-1}(\mu_\tau)$ , is simply the expected value of the random variable  $\mu$ ,  $\mu \sim U[1 - 1/2\zeta, 1 + 1/2\zeta]$ , i.e. 1. In this penultimate period the government will call an election if the current competence,  $\mu_{\tau-1}$ , is greater than the expected future competence,  $E_{\tau-1}(\mu_\tau) = 1$ . This logic is then extended to the preceding period,  $\tau-2$ . The government's expected competence from continuing from  $\tau-2$  to  $\tau-1$  is simply the value of playing an optimal strategy at  $\tau-1$ , i.e., the average expected competence from  $\tau-1$ 's two possible outcomes

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<sup>6</sup> Deriving a better estimate of these parameters is certainly feasible, however. One method would be to employ actual polling data in place of the current stochastic competence shocks.

<sup>7</sup> The recent paper by Achen and Bartels (2002) showing how New Jersey voters punished local politicians for shark attacks (among other examples) is an amusing illustration of this. Susan Hansen (1999) shows that even competent state governors are often punished by voters for national economic trends such as unemployment over which they have little influence.

over all possible values of  $\mu$ : 1) continuing to the final period *if*  $\mu_{\tau-1} < E_{\tau-1}(\mu_{\tau})$  (payoff = 1) and 2) calling an election *if*  $\mu_{\tau-1} > E_{\tau-1}(\mu_{\tau})$  (payoff  $E_{\tau-1}(\mu_{\tau}) \mid \mu_{\tau-1} > 1$ ).

Expressed more succinctly, the government's decision at each  $t$  solves the program

$$\int_{1-\frac{1}{2\zeta}}^{1+\frac{1}{2\zeta}} \max\{E_t(\mu_{t+1}), \mu_t\} \mu \, d\mu, \quad \mu \sim U\left[1 - \frac{1}{2\zeta}, 1 + \frac{1}{2\zeta}\right]$$

which implies the value of playing an optimal strategy at  $t$  is

$$(1.1) \quad E(\mu_t) = \int_{1-\frac{1}{2\zeta}}^{E(\mu_{t+1})} \max\{E(\mu_{t+1}), \mu_t\} \mu \, d\mu + \int_{E(\mu_{t+1})}^{1+\frac{1}{2\zeta}} \max\{E(\mu_{t+1}), \mu_t\} \mu \, d\mu$$

or, more explicitly,<sup>8</sup>

$$(1.2) \quad E(\mu_t) = \int_{1-\frac{1}{2\zeta}}^{E(\mu_{t+1})} E(\mu_{t+1}) \zeta \, d\mu + \int_{E(\mu_{t+1})}^{1+\frac{1}{2\zeta}} \mu_t \zeta \, d\mu$$

Thus the government's expected competence from playing an optimal strategy can be calculated at any period and the expected value of continuing is just the value of an optimal strategy in the subsequent period. Since  $E(\mu_{t+1})$ , the expected utility of continuing in office, is a monotonically decreasing function of time, converging to  $E(\mu)$ , i.e. unity, in the penultimate period, it is least likely that current-period circumstances will exceed the expected future circumstances at the beginning of a term. As remaining tenure wanes, however, expected future competence steadily decreases thereby increasing



the probability that a current period random draw of  $\mu$  will exceed it and trigger an election.<sup>9</sup>

Governments, however, derive utility from many time-dependent actions in office not just from election *per se*. In this context, election to office becomes only a necessary condition: governments maximize their reelection probabilities in order to extend their time in office, but must trade off a probability-weighted new term against the remainder of their current term. Calling an election too soon costs the government the utility from the remainder of the current term, waiting too long reduces the chances of another favorable period occurring before mandatory dissolution. Thus a rational incumbent attempts to call elections in the *last best period possible*.

When utility comes from office-holding, the incumbent's decision becomes

$$(1.3) \quad U(t) = \max_t \begin{cases} \text{continue} \\ \text{call} \end{cases}$$

Each period in office the government gains one unit of utility -- consider this an ego rent,  $R$  -- and receives new information about its current competence. The rational office-seeking incumbent continues in office until the expected utility of calling an election

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<sup>8</sup> Keep in mind the distinction between  $E(\mu)$  and  $E(\mu_t)$ : the former is simply the expected value of a single draw from the competence ( $\mu$ ) distribution whereas the latter is the expected utility of playing an optimal strategy at  $t$ .

<sup>9</sup> The expected utility of continuing declines with time because the number of future draws decreases with time. This process is akin to that faced by a job seeker with a fixed number of sequential job offers with salaries drawn from the same distribution. At the final offer she will have to accept the expected value of a single draw from the distribution, its mean. She will therefore accept the penultimate offer only if it exceeds the expected value of the final offer, and so on backwards to the first offer.

exceeds the expected utility of continuing in office, knowing that future elections may arrive under less fortunate circumstances. I represent  $\lambda$ , the value of continuing, as

$$(1.4) \quad \lambda = e^{-\delta(\tau-t)} p(E(\mu_{t+1}))\tau R + (\tau - t)R$$

The second term of the equation,  $(\tau-t)R$ , captures the remaining utility in the current term in office and shrinks as the term progresses, providing a diminishing incentive to forego favorable election opportunities.  $\tau$  is the maximum term length in periods and  $t$ ,  $t \in [0, \tau]$ , represents the current period.

The first term of equation (1.4) represents the other important element in determining election timing: the expected value of calling an election in the future. When incumbents expect favorable circumstances for an election in the future, it is easier to forego current opportunities. More precisely, the expected value of a future election is the product of the reelection probability generated by expected future competence  $p(E(\mu_{t+1}))$  and the utility of a new term in office,  $\tau R$ , appropriately time discounted. Against this expected value of continuing, politicians must weigh the utility of calling elections. In its most basic form the expected utility of elections in any period is

$$(1.5) \quad n_t = p(\mu_t) \tau R,$$

simply the maximum length of another term weighted by current period reelection probability,  $p(\mu_t)$ .

I make the voters' selection process, and hence the government's reelection probability calculation, explicit within a career concerns framework (Holström 1982; Dewatripont, Jewitt and Tirole 1999; Persson and Tabellini 2000) positing asymmetric information. The government has better knowledge over its own current competence than the voters who must infer government competence from knowledge of past performance and the level of public goods provision. Suppose that government provision of public goods,  $g_t$ , is constrained by  $g_t = z_t(Ty + s_t)$  where  $T$  represents the tax rate,  $y$  income,  $z_t$  aggregate two-period government competence, and  $s_t$  a hidden and distorting tax that shifts resources from the future to the present, improving current period welfare at the cost of the equivalent amount plus negative economic distortions,  $V(s)$ , in the subsequent period. More competent governments provide more public goods; less competent governments less. While voters can immediately observe  $g$ ,  $T$ , and  $y$ , both  $z'_t$  and  $s'_t$  remain at least partially unobservable. Past aggregate competence,  $z_{t-1}$ , is both observable and related to present competence but the current period's competence cannot be observed directly. Imagine aggregate competence,  $z_t$ , as the sum of the random and serially uncorrelated competence variable  $\mu$  over the present and immediately preceding period,  $z_t = \mu_{t-1} + \mu_t$ , where  $\mu_{t-1}$  is observed by government and voters alike but knowledge of  $\mu_t$  is reserved for the government. Voters must infer overall government competence as  $z'_t = g_t/(Ty + s'_t)$ . Given that the random variable  $\mu$  is distributed uniformly with mean 1 and density  $\zeta$ ,  $\mu \sim U[1-1/(2\zeta), 1+1/(2\zeta)]$ , voters choose the government if its inferred current competence  $\mu'_t$  is greater than the opposition's expected competence,  $E(\mu_0) = 1$ .<sup>10, 11</sup> Thus, the government's reelection probability is

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<sup>10</sup> unity is chosen simply to simplify later algebra and has no substantive effect on the model's

$$p_t = \begin{cases} 0 & \text{if } \mu'_t < 1 \\ 1 & \text{if } \mu'_t \geq 1 \end{cases},$$

simply the probability that its inferred current competence exceeds the opposition's expected competence. More explicitly,

$$(1.6) \quad p_t = \Pr[\mu'_t \geq 1] = \Pr\left[\frac{g_t}{Ty + s'_t} - \mu_{t-1} \geq 1\right]$$

or, reexpressing  $g_t$  and rearranging,

$$(1.7) \quad p_t = \Pr\left[\frac{Ty + s_t}{Ty + s'_t} (\mu_{t-1} + \mu_t) - \mu_{t-1} \geq 1\right]$$

Thus, reelection probabilities are increasing in  $\mu_t$  and  $s_t$ , providing governments with an incentive to manipulate the economy in election periods for electoral advantage. To provide more realism (and an interior solution), I explore the derivation of optimal manipulation,  $s^*$ , below; but first let us consider the model's broader intuition.

### ***The Intuition***

Thus far we have established a framework for how majority governments calculate reelection prospects and how voters assess government competence. In brief, expected future election period competence diminishes as remaining time (and hence election calling opportunities) wanes; voters infer competence and select candidates

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comparative statistics. Objections that government competence increases welfare beyond the a government's resources are easily met by reducing  $E(\mu)$  to  $\frac{1}{2}$  or less.

based on their own welfare; and governments continually compare current and expected future utility in deciding when to call an election. Adapting the government's election calling decision to a fully dynamic setting in which future periods within the present term are discounted relative to more immediate periods now allows us to strengthen the model's intuition by simulating an incumbent's period-by-period election calling decision.

A period-by-period decision process requires us to calculate the present value of each term's finite revenue stream at the time of each election calling decision, at each  $t$ . Not only do governments view future terms as less valuable than the present term, but within a given term a distant period is less valuable than the current  $t$ . Hence, the government's election calling decision should be expressed as

$$(1.8) \quad \max_t \begin{cases} e^{-\delta(\tau-t)} \int_0^\tau E(p_{t+1}) R e^{-\delta t} dt + \int_t^\tau R e^{-\delta t} dt & (\text{continue}) \\ \int_0^\tau p R e^{-\delta t} dt & (\text{call}) \end{cases}$$

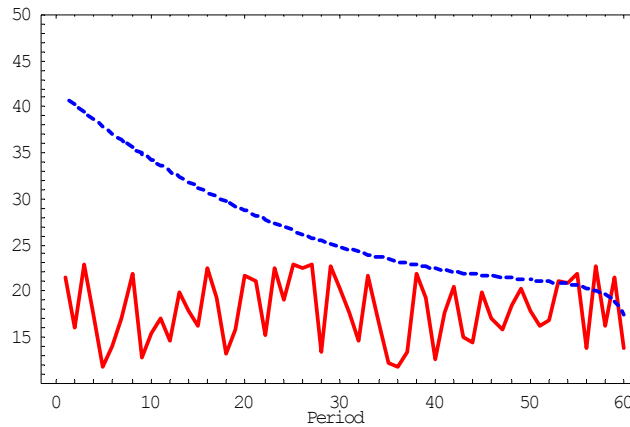
This decision is best presented graphically. Figure One simulates the calling (solid line) and continuing (dotted line) decision over time, assuming  $\zeta = 3$ ,  $\delta = .02$ , and  $\tau = 60$ . Obviously, when calling exceeds continuing, election are called. Toward the beginning of a term, the time remaining in the current term,  $\tau-t$ , together with high expected future popularity,  $E(p_{t+1})$ , ensure that the value of continuing in office far outstrips the value of calling elections. As time in office progresses, however, both  $\tau-t$  and  $E(p_{t+1})$  diminish, lowering the value of waiting to the range where an exogenous stochastic event may

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<sup>11</sup> Note that variables not directly observed by the electorate are denoted with an prime..

make a snap election the more appealing option. From the government's perspective, when  $\lambda$  exceeds  $n$  circumstances are better than expected and likely only to deteriorate in the future.

**Figure 1.1: Election-Calling Over Time**

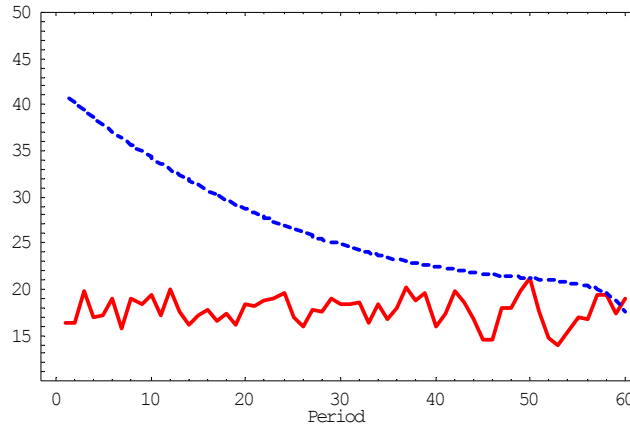


What if voters' affections are not so fickle? Although extraneous to the model at hand, we can easily simulate voters who recall previous events and update their assessment of government competence more slowly. Constructing  $p$  as a linear combination in which past reelection standing is combined with new events in proportion to the strength of voter memory does not change the model's fundamentals. Suppose

$$(1.9) \quad p_t = m p_{t-1} + (1-m) p_t^i$$

where  $m$ ,  $m \in [0,1]$ , captures the strength of the previous period's influence on current reelection prospects and  $p_t^i$  represents the current period instantaneous reelection probability, the government's chance of reelection if voters based their decision on only the current period's events. At higher levels of  $m$ , new developments affect reelection prospects less and, obversely, lower levels of  $m$  weight present events more.

**Figure 1.2: The Election Calling, Long Voter Memories**  
 $(\zeta=3; \delta = .02; m =.7; \tau=60)$



Voter memory reduces the volatility of government reelection probabilities and consequently may lower the likelihood of early elections. This can be seen in Figure 1.2 ( $\zeta=3$ ,  $\delta=.02$ ,  $m=.7$ , and  $\tau=60$ ) in which  $n$ , the value of calling at each  $t$ , is visibly less erratic than in the earlier Figure. If we conceive of memory broadly so as to measure societal features such as education levels and the independence and quality of the press as well as innate human abilities, societies with higher (lower) levels of education and a less (more) sensationalistic press may be more (less) resistant to opportunistic election calling. But such speculation aside, both figures illustrate the model's fundamental intuition: a high initial value of continuing descends into a range where it may be exceeded by stochastic competence shocks as a government ages.

### ***Optimal Manipulation***

As the model is currently posed, however, reelection-minded governments should increase economic manipulation continually until their probability of reelection

approaches unity, engendering an economically destructive vicious cycle as expectations also adjust upwards. As voters do not witness the distortionary effects of  $s$  until after the election, governments should consistently inflate the economy beyond expectations to ensure victory.

However, a government that cares about voter welfare or, more cynically, its own reputation and future reelection bids, will avoid this corner solution, trading off higher reelection probability against lower voter welfare in the following period. Current period manipulation -- borrowing from the future either through fiscal deficit, seignorage, or any other unseen distortionary tax -- implies for the subsequent period 1) lower government revenue, 2) lower public goods provision as  $g_{t+1} = z_{t+1}(Ty - s_t)$ , and 3) exacerbating negative distortionary effects,  $V(s_t)$ , such that

$$(1.10) \quad w_{t+1} = y(1-T) - V_{t+1}(s_t) + g_{t+1}.$$

In short, governmental sins of the past revisit the voters' present as the distortionary effects of previous period manipulation and lower levels of public goods as the government repays election period obligations. Incumbents thus maximize a combination of reelection conditional utility and voter welfare in choosing the optimal level of economic manipulation,

$$(1.11) \quad \max_s p_t \tau R + E(w_{t+1})$$



or, equivalently<sup>12</sup>

$$(1.12) \quad \max_s \frac{\tau R}{2} + \tau R \zeta \left[ \frac{s_t - s'_t}{Ty + s_t} - \mu_{t-1} \frac{s'_t - s_t}{Ty + s_t} \right] + E[y(1-T) - V_{t+1}(s_t) + (\mu_t + \mu_{t+1})(Ty - s_t)]$$

which, taking expectations,  $E(\mu_{t+1}) = 1$ , and retaining only necessary subscripts, yields

$$(1.13) \quad \frac{\partial U}{\partial s} = RT\zeta \left[ \frac{\mu_{t-1}}{Ty + s} + \frac{s' + Ty - \mu_{t-1}s + \mu_{t-1}s'}{(Ty + s)^2} \right] - V'(s) - \mu_t - 1$$

Multiplying through by the inverse of  $V'(\cdot)$  and setting  $s' = s$  (in equilibrium) provides the FOC

$$(1.14) \quad \frac{R\tau\zeta(\mu_{t-1} + 1)}{V'(Ty + s)} = \frac{\mu_t + 1}{V'} + s$$

With a little help from the Implicit Function Theorem, we now see that optimal manipulation is decreasing in competence.

$$(1.15) \quad \frac{\partial s^*}{\partial \mu_t} = - \frac{(T + s)^2}{R\tau\zeta(\mu_{t-1} + 1) + V'(Ty + s)^2}$$

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<sup>12</sup> Solving expression (1.7) for  $\mu_t$  yields the critical value,  $\mu_t^{\text{crit}} = (s' + Ty + \mu_{t-1}s' - \mu_{t-1}s)/(Ty + s)$ .  $p_t$  is the area in the  $\mu$  distribution where  $\mu > \mu^{\text{crit}}$ , that is,  $p_t = \zeta[1 + 1/(2\zeta) - \mu^{\text{crit}}]$  or more explicitly,  $p_t = \frac{1}{2} + \zeta \left[ \frac{s - s'}{Ty + s} - \mu_{t-1} \frac{s' - s}{Ty + s} \right]$ . Persson and Tabellini (2000) offer an

excellent explanation of similar probabilistic voting techniques. The expectations term represents expected welfare in the period following the election period. I assume that revenues,  $s_t$ , borrowed in the election period must be repaid, thereby reducing the provision of public services in the succeeding period,  $g_{t+1}$ .

Governments, concerned with their legacies and constituents' welfare, are not willing to induce too severe a post-election economic distortion in return for marginal increase in reelection probability. While strong incentives exist to manipulate the economy for electoral gain in election periods, the degree of such intervention is tempered by concerns about economic repercussions.

### *Comparative Statics*

So what does this mean for election timing? The comparative statics of this model bear strong implications for optimal election timing. Understanding the effect of  $\tau$ ,  $R$ ,  $\zeta$ ,  $\mu$ , and  $\delta$  on  $p$  has – as I show below – direct implications for optimal timing, and consequently institutional design. We will also see that opportunistic timing, in turn, has its own implications, especially in relation to manipulation.

A single observation, posed as a proposition below, allows for relatively simple comparative statics on election timing.

**Proposition:** Let  $E(t_{elec})$  be the expected period in which elections are called under optimal election timing. Then  $E(t_{elec})$  is strictly decreasing in  $E(p_t)$  if  $e^{-\delta(\tau-t)} E(p_{t+1})/E(p_t) < 1$ .

Given (1.8), any increase in  $E(p_t)$ , the central component in calling, yields a greater increase in  $E(p_{t+1})$ , the primary component in continuing, in all periods prior to  $\tau-1$ . The expected value of playing an optimal strategy over multiple future periods is greater than

the (expected) value of the single draw in the current period, so any increase in single draw  $E(p_t)$  is amplified in  $E(p_{t+1})$ . This implies that the value of continuing increases in  $E(p_t)$  at a faster rate than the value of calling, yet as calling is immediate and continuing deferred, only the latter is time discounted. As long as a government discounts the future at a rate sufficient to offset the rate at which  $E(p_{t+1})$  surpasses  $E(p_t)$ , then  $d(\lambda-n)/d E(p_t) < 0$ .<sup>13</sup>

Given that  $e^{-\delta(\tau-t)} E(p_{t+1})/E(p_t) < 1$  obtains, we can now draw a number of conclusions about the effect of several societal and institutional features on election timing and manipulation. Proposition One implies that opportunistic timing increases (i.e.,  $\lambda-n$  decreases) in:

1.  $\mu_t$ . Governments cannot set  $\mu$  but they are able call elections to correspond with opportune, albeit largely exogenously generated,  $\mu$ . Greater  $\mu$  increases public goods provision, the electorate's estimate of government competence, and the incumbent's current period reelection probability.

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<sup>13</sup> The condition that  $e^{-\delta(\tau-t)} E(p_{t+1})/E(p_t) < 1$  is very reasonable. For example, even near the end of a term where  $dE(p_{t+1})/dE(p_t)$  is greatest and the exponential discounting slightest, given  $p \sim U[1/4, 3/4]$  and three remaining periods prior to mandatory elections, any  $\delta$  greater than .02 suffices to ensure that an increase in  $E(p)$  will raise the utility of calling more than continuing. In the preceding period,  $\tau-4$ , the discount threshold falls to .018, and by the first period of a sixty period term, think of monthly periods in a five year term, any value of  $\delta$  greater than .002 will ensure that  $e^{-\delta(\tau-t)} E(p_{t+1})/E(p_t) < 1$  and therefore  $d(\lambda-n)/dE(p) < 0$ . Thus, anything that raises  $E(p_t)$  yields more opportunistic election calling and earlier elections if  $e^{-\delta(\tau-t)} E(p_{t+1})/E(p_t) < 1$  and reduces opportunistic election calling and extends expected government tenure if  $e^{-\delta(\tau-t)} E(p_{t+1})/E(p_t) > 1$ .

2.  $\delta$ . The more a government discounts the future, the more  $\lambda$ , continuing, is reduced relative to  $n$ , calling. This suggests that minority governments or governments with narrow majorities or low party discipline should be more inclined to opportunistic timing.
3.  $\tau$ . Longer maximum terms postpone the expected election period,  $t_{elec}$ , but increase opportunistic election calling by decreasing  $\lambda \cdot n$ . The prior occurs because the remaining term forgone by early elections grows; the latter occurs because longer terms increase the value of a given term thereby invoking proposition one.

but opportunistic timing decreases in

4.  $R$ . The greater the value of office-holding, the less opportunistic the government. An increase in the value of office-holding (fewer checks on power, weaker opposition, etc.) is reduced by reelection uncertainty in the calling function common to  $\lambda$  and  $n$  but is unmodified in the remainder of the present term unique to  $\lambda$ .
5.  $\zeta$ . The greater the density of  $\mu$ , the lower the variance of  $\mu$ , the lower the probability of a draw of  $\mu_i$  sufficiently above  $E(\mu)$  for  $n$  to exceed  $\lambda$ .

Similarly, review of (1.14) shows that manipulation,  $s^*$ , increases in

6. R. Greater value of office-holding increases the optimum level of reelection motivated intervention in the economy.
7.  $\tau$ . Longer maximum term lengths increase the value of office-holding and the level of election motivated economic manipulation.
8.  $\zeta$ . Higher density in the distribution of competence implies more manipulation. Imagine an infinite density so that every draw of  $\mu$  equals  $E(\mu)$ . Then only manipulation remains as a means of increasing perceived competence.

but decreases in

9.  $\mu$ . Greater competence substitutes for economic manipulation, lowering the need for distortionary manipulation by raising reelection probability.

Moreover, and perhaps most importantly, we now see that improved election circumstances, i.e., competence, increase opportunistic timing but, recalling 1.15, decrease manipulation.

10. Opportunistic timing and manipulation are inversely related.

*Surfing* and *manipulation* are inversely related in  $\mu$ . Although  $\mu$ , an exogenous random variable, is not a choice variable like  $s$ , opportunistic timing effectively makes it one. Institutional arrangements allowing opportunistic timing, by enabling incumbents to coordinate elections with favorable election circumstances, effectively ensure higher election period  $\mu$  and consequently reduce manipulation.

### ***Conclusion***

With the exception of three elections called in the first nineteen months in office by governments hoping to improve weak parliamentary positions, none of the sixteen British general elections since the Second World War have been called before forty months, two thirds of the maximum five-year term (Butler 1995; Keesing's). Yet, only two governments (under Alec Douglas-Home in 1964 and John Major in 1997) have run their entire term. New Zealand exhibits a strikingly different pattern: there, it is extremely rare for a parliament not to run its entire three-year course, although opportunistic elections are clearly allowed. Since World War Two, only three of twenty New Zealand parliaments have been dissolved early (by Holland in 1951, Muldoon in 1984, and Clark in 2002). In Great Britain political business cycles in macroeconomic aggregates are largely absent; in New Zealand exceptional economic growth prior to elections has been highly apparent (cf. Alesina, Roubini, Cohen 1997). This paper provides some tentative explanations for these observations and suggests the existence of additional regularities.

More specifically, I have found that *surfing* increases in government competence, in the discounting of future periods, in the degree of electoral uncertainty, in the maturity of a parliament, and in the maximum length of term, but decreases in the value of office-holding and as government performance varies less. *Manipulation* increases in the value of office-holding, the maximum length of a term, and the density of the competence distribution but decreases in government competence. Importantly, better government performance increases opportunistic timing but diminishes election-motivated economic manipulation, implying an inverse relationship between surfing and manipulation.

By now a considerable amount of empirical work has highlighted the endogeneity bias inherent in tests for political business cycle or even rational political budget cycle patterns in policy aggregates when endogenous election calling is permitted but not modeled (cf., Heckelman and Berument 1998). Yet, this is the first paper to delineate the explicit relationship between surfing and manipulation. The ease with which governments can time their own elections should be a negative predictor of the magnitude of pre-election economic manipulation. This paper now explains why, where, and to what magnitude opportunistic timing should effect manipulation.

As important as the implications for the political business cycle, may be the implications for election timing *per se*. The model suggests that most majority governments should be highly opportunistic in calling elections. Although this assertion is commonplace among journalists and pundits, political scientists have long discounted or overlooked questions of opportunistic election timing and its consequences, focusing instead on epidemiologically analogous hazard analyses of government duration that largely relegated strategic dissolution to the error term (cf. Warwick 1994; Grofman and

Roozendaal 1997). This omission may end after the dawn of the strategic coalition bargaining models by Lupia and Strom (1995) and Diermeier and Stevenson (2000), but the question of how opportunistic governments are in their calling of elections is still very much unsettled.

Recent work by Alastair Smith (1996, 2000), for example, suggests that governments should not be highly opportunistic: voters, he argues, interpret early elections as a sign of asymmetric government foreknowledge of imminent downturns and accordingly punish governments that dissolve parliament ahead of expectations.<sup>14</sup> Yet other work suggests that governments are highly opportunistic in their election timing (Palmer and Whitten 2000) and that early elections may signal high government competence since low competence governments, unlikely to win reelection, are also unlikely to call early polls (Terrones 1989). That opportunistic elections occur does not refute the possibility of an early-election penalty, nor would such a penalty contradict this model, for opportunistic elections do suggest that governments expect a *net gain* from opportunistic timing.

The absence, until now, of a formal understanding of the relationship between *surfing* and *manipulation* has resulted in a paucity of theorizing over the effect of institutional arrangements and societal features on the balance between the two. This paper hopefully furthers our understanding of the relationship between politics and the

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<sup>14</sup> This decision calculus implies an interesting problem of observational equivalence in distinguishing between foreknowledge of imminent downturns and exploitation of exceptionally favorable events in empirical tests. Regression to the mean implies that conditions should deteriorate after an election spurred by exceptionally beneficial circumstances. Moreover, as increasingly advantageous circumstances are required to induce an election early in a term, early elections should also be followed by greater downturns than later elections. This same pattern – a deterioration of post-election performance negatively associated in magnitude with the age of a



economy and raises questions about previously unexpected relationships. We, to consider a few, can now better predict – and later test – where pre-election economic manipulation should be strongest, election surfing most prevalent, and incumbency advantage greatest.

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government – should also be found after elections induced by foreknowledge of future deterioration.

## **References**

- Achen, Christopher H., and Larry M. Bartels. 2002. "Blind Retrospection: Electoral Responses to Drought, Flu, and Shark Attacks." Paper presented at the Annual Meeting of the American Political Science Association, Boston, 2002.
- Alesina, Alberto and Nouriel Roubini with Gerald Cohen. 1997. *Political Cycles and the Macroeconomy*. Cambridge, MA: The MIT Press.
- Balke, Nathan S. 1990. "The Rational Timing of Parliamentary Elections." *Public Choice* 65: 201-216.
- Cargill, Thomas F., and Michael M. Hutchinson. 1991. "Political Business Cycles with Endogenous Election Timing: Evidence from Japan." *The Review of Economics and Statistics* 73: 733-739.
- Chappell, D. and D.A. Peel. 1979. "On the Political Theory of the Business Cycle." *Economics Letters* 2: 327-332.
- Chowdhury, Abdur R. 1993. "Political Surfing over Economic Waves: Parliamentary Election Timing in India." *American Journal of Political Science* 37: 1100-1118.
- Diermeier, Daniel, and Randolph T. Stevenson. 2000. "Cabinet Terminations and Critical Events." *American Political Science Review* 94: 627-640.
- Dewatripont, M., I. Jewitt, and J. Tirole. 1999a. The Economics of Career Concerns – Part I: Comparing Information Structures. *Review of Economic Studies* 66: 183-98.
- Dewatripont, M. I. Jewitt, and J. Tirole. 1999b. The Economics of Career Concerns, Part II: Application to Missions and Accountability of Government Agencies. *Review of Economic Studies* 66: 199-217.
- Hansen, Susan B. 1999. "Life is Not Fair: Governors' Job Performance Ratings and State Economies." *Political Research Quarterly* 52: 167-188.
- Heckelman, Jac. C. and Hakan Berument. 1998. "Political Business Cycles and Endogenous Elections." *Southern Economic Journal* 64: 987-1000.
- Holmström, B. 1982. Managerial Incentive Problems – a dynamic perspective. Reprinted in 1999 in *Review of Economic Studies* 66: 169-82.
- Inoguchi, Takashi. 1979. "Political Surfing over Economic Waves: A Simple Model of the Japanese Political Economic System." *unpublished manuscript*.
- Ito, Takatoshi and Jin Hyuk Park. 1988. "Political Business Cycles in the Parliamentary System." *Economics Letters* 27: 233-238.

- Ito, Takatoshi. 1990. "The Timing of Elections and Political Business Cycles in Japan." *Journal of Asian Economics* 1: 135-156.
- Ito, Takatoshi. 1991. "International Impacts on Domestic Political Economy: a Case of Japanese General Elections." *Journal of International Money and Finance* 10: S73-S89.
- Keman, Hans and Ian Budge. 1990. *Parties and democracy : coalition formation and government functioning in twenty states*. Oxford UP: New York.
- Lupia, Arthur, and Kaare Strom. 1995. "Coalition Termination and the Strategic Timing of Elections." *American Political Science Review* 89: 648-65.
- Palmer, Harvey D. and Guy D. Whitten. 2000. "Government Competence, Economic Performance and Endogenous Election Dates." *Electoral Studies* 19: 413-426.
- Persson, Torsten and Guido Tabellini. 2000. *Political Economics: Explaining Economic Policy*. Cambridge, MA: MIT Press.
- Rogoff, Kenneth. 1990. "Equilibrium Political Budget Cycles." *American Economic Review* 80: 21-36.
- Schultz, Kenneth A. "The Politics of the Political Business Cycle." *British Journal of Political Science* 25: 79-99.
- Smith, Alastair. 1996. "Endogenous Election Timing in Majoritarian Parliamentary Systems." *Economics and Politics* 8: 85-110.
- Smith, Alastair. 2000. "Election Timing in Majoritarian Parliaments." Paper presented at the Annual Meeting of the American Political Science Association, Washington, DC.
- Terrones, Marco Emilio. 1989a. *Macroeconomic Policy Cycles and Elections*. Dissertation. University of Wisconsin.
- Terrones, Marco Emilio. 1989b. "Macroeconomic Policy Cycles Under Alternative Electoral Systems" Research Report 8905, Department of Economics, University of Western Ontario.
- Warwick, Paul. 1994. *Government Survival in Parliamentary Democracies*. New York: Cambridge University Press.