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# **Punching above One's Weight: The Case against Election Campaigns**

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# Punching above One's Weight – The Case against Election Campaigns

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## Abstract

Politicians differ in their ability to implement some policy. In an election, candidates make commitments regarding the plans they will try to implement if elected. These serve as a signal of true ability. In equilibrium, candidates make overambitious promises. The candidate with the highest ability wins. Yet, the electorate may be better off having a random candidate implement her best plan, rather than seeing the winner implementing an overambitious plan. This is more likely if the ability distribution is skewed toward high values, the number of candidates is high, with private benefits from being elected, or if parties select candidates.

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# 1 Introduction

When studying elections, models in political economy tend to focus on the position on which election candidates run. If candidates can choose that position, Hotelling (1929) and Downs (1957) showed that in the case of two candidates both will choose the position of the median voter. Haan and Volkerink (2001) show that the same is true with more than 2 candidates in a run-off system. If the true ideological position of a candidate is known and citizens decide whether or not to run for election, we face a multiplicity of equilibria (see Osborne and Slivinski, 1996, and Besley and Coate, 1997).

Often, however, the electorate will be interested not only in the ideological position of a candidate but also in her ability to get things done. For example, suppose that the median voter has the opinion that economic reforms are sorely needed. Yet, there are powerful vested interests that oppose such reforms. The median voter may then very well prefer a candidate with a policy platform that differs somewhat from his own but who is able to carry through substantial reforms, over a candidate with exactly the same preferences but who fails to get anything done once elected. One example is the 2008 US general election won by Barack Obama proclaiming "Yes, we can!", although his true message seemed to be the promise that "Yes, *I* can".

In this paper, we study how electoral competition is affected if voters are concerned by the ability of candidates. In our model, politicians run in an election. Each has an ability that is private information. More able candidates are more likely to achieve something once in office. For example, while an excellent politician may try to cut bureaucracy in half, a less able politician will already consider it a challenge try to reduce it by 10%. In the election campaign, candidates make binding commitments to the plans they will try to implement if elected. Election platforms then serve as a

signal of the true ability of a candidate. More able politicians will run on more ambitious platforms. Rationally, voters choose the most ambitious candidate. For example, in the 2007 South-Korean elections Lee Myung-bak ran on a plan dubbed “747” as it promised GDP growth of 7%, GDP per capita of USD40,000, and to make Korea the seventh-largest economy. This plan indeed got him elected. Commentators opined that “[i]f anybody can achieve economic goals as ambitious as the new 747 plan it is surely [...] Lee Myung-bak. [...] But it is unreasonable for anyone to expect [him] to actually hit the targets he promised the Korean people.” (Jackson 2007)

Indeed, the equilibrium of our model has politicians making more ambitious promises than they would make without the need to signal their true ability. This *overambition effect* is bad news for the electorate: it would be better if a politician tried to implement a plan that she can actually handle, rather than a plan that is overambitious. In other words, signalling ability is costly, as is standard in the signalling literature (see, e.g., Spence, 1973). But election promises also entail good news: by comparing the different plans, the electorate is at least able to pick the best politician. This is a *selection effect*. We show that the overambition effect may dominate. In such a case, the electorate is better off picking a random candidate and letting that candidate implement the plan that she thinks is the best, rather than having an election to pick the best candidate who will implement an overambitious plan. This is more likely if the distribution of abilities is skewed towards high values, if the number of candidates is high, if there are primary elections, or if the private benefits from office are high.

For our model, it is crucial that election promises consist of more than just statements concerning the ideological position that a candidate will take once she is elected. Our model effectively assumes that politicians not only

address *which* problem they want to tackle when elected, but that they also come with a detailed plan as to *how* to tackle the problem. Voters can then use that plan to infer the ability of the politician. For example, in the campaign for the 2000 US presidency, Al Gore not only indicated that he intended to supplement Social Security, but also presented detailed plans as to how to achieve this: through the creation of new tax-free, voluntary retirement accounts that would supplement Social Security benefits (see e.g. Nagourney, 2000).

Throughout this paper, we assume that more ambitious plans yield a higher pay-off to the electorate when successful. Yet, more ambitious plans are less likely to be successful. However, more able politicians are more likely to pull off a plan. Of course, the assumption that plans are either completely successful or not at all, is a simplifying one. Still, we feel that in many cases, it is not too far from the truth. For example, the first Clinton administration came with an ambitious health care reform plan. Ultimately, the administration failed to persuade Congress to implement it, which meant that the status quo remained (see Clymer, 1994). The same could have happened to Obama's health care plan in 2010.

In the political economy literature, it is routinely assumed that politicians simply choose a policy that they can implement when elected. This is where our model fundamentally differs. In our world a politician that tries to implement a policy has no guarantee that she will be successful in doing so: this will depend on her ability. During the election she merely makes a commitment that she will try to implement her platform. Her effort to do so is observable.

Our paper is not the first to study how election campaigns affect electoral competition. In Banks (1990) and Haan (2004) election promises serve as

signal of a politician's true position on the Hotelling line. Harrington (1993) studies a two-election model in which chances of reelection are affected by the extent to which politicians keep election promises. Aragonès, Postlewaite and Palfrey (2007) extend this analysis to one with repeated elections. Yet in these papers private information concerns policy preferences rather than ability.

In Rogoff and Sibert (1988) politicians also have private information concerning their ability. More competent politicians require less revenue to deliver the same amount of public goods. The incumbent has private information concerning an exogenous shock to his competency and uses tax policy as a signal. This gives rise to political business cycles. Rogoff (1990) extends the analysis to a case in which the incumbent can use both taxes and government spending as a signal. Yet, these papers do not study electoral competition between multiple candidates that can all signal their ability.

In a related paper, Onderstal (2007) shows that it can be optimal for governments to completely ignore lobbyists, even if their actions reveal their private information. The mechanism is somewhat similar to the one in this paper: rather than picking the interest group that is most worthy to support, a government is better off completely avoiding costly lobbying and picking one special interest group at random. Haan et al. (2007) use a similar set-up to show that principals may be better off if they cannot observe the project choice of their agents. If the principal can observe the project choice, the agent will choose a project that is overambitious, in an attempt to impress the principal.

One implication of our model is that having more candidates in an election may have an adverse effect on social welfare. Lizzeri and Persico (2005) also find this, but for a different reason. In their paper, as the number

of parties increases, each party focuses its electoral promises on a narrower constituency, so special interest politics replace more efficient policies with more diffuse benefits.

The remainder of this paper is structured as follows. In section 2 we present the general set-up of the model. Section 3 presents a simple example with 2 candidates and a specific distribution of abilities. In this particular example, we show that the electorate is always better off picking a candidate at random, rather than having an election in which candidates make costly promises. In section 4, we study a more general set-up, and derive the exact conditions under which the electorate does want to pick a candidate at random. In general, this turns out to be true if the distribution of abilities is sufficiently skewed towards high values. But even if this condition fails to hold, we can show that at some point, adding more candidates to an election will hurt the electorate. Section 5 studies a number of extensions. Section 5.1 considers the case in which candidates obtain private benefits of being in office, In section 5.2, we study a situation in which candidates are put forward by political parties. Both scenarios only strengthen our result, in the sense that the electorate is more likely to want to pick a candidate at random. Section 5.3 shows how our model can allow for the choice of ideological position. Section 6 concludes.

## **2 Set-up of the model**

Consider an election in which  $n$  candidates participate. For ease of exposition, we assume that voters do not care about the ideological disposition of a candidate. This is just a simplifying assumption: it is straightforward to extend the model to one in which the choice of platform does play a role, as we will do in section 5.3. For now, we assume that voters are only interested



in a candidate's ability to 'get the job done'. In the context of our model, 'the job' refers to some project that needs to be implemented. For example, this may be a country in which bureaucracy has gone out of control. Alternatively, corruption may have become a problem. In either case, it is obvious that something has to be done, yet politicians differ in their ability to successfully tackle the problem.

The ability of politician  $i$  is denoted  $\theta_i$ . This is private information. It is common knowledge that  $\theta_i$  is drawn from a continuous cumulative probability distribution  $F$  on  $[0, 1]$ . For simplicity, we will assume that  $F(\theta) = \theta^\alpha$ , with  $\alpha$  some strictly positive parameter. This specification allows for ample flexibility, while still being able to yield closed-form solutions. In the election campaign, each candidate chooses a platform. This is some policy  $x$  that the politician promises to implement once elected, with  $x \in [0, \bar{x}]$ , where  $\bar{x}$  is some exogenous upper bound. Crucially, we assume that politicians can commit to policy  $x$ . Thus, if a politician has promised to try to implement a policy  $x$  during the campaign, she has no other choice but to do so if elected. One justification for this assumption is that a politician's reputation will suffer greatly if she makes an election promise, but does not even make an effort to try to implement that promise. In any case, the purpose of this paper is precisely to study how the possibility of such binding commitments affect the electoral process.

Some policies are more ambitious than others. For example, one politician may run on a platform to root out corruption entirely, while another may promise to cut it in half. Of course, politicians also have to come up with detailed plans as to how they think to achieve these objectives. If such a plan is implemented, there is a probability that it will fail. Naturally, a more able politician will be more likely to pull off an ambitious plan than a less

able one. To capture this, we make the following assumptions. Suppose that a politician with ability  $\theta_i$  tries to implement some policy  $x$ . If she is successful, the payoff to the electorate is  $x$ . A higher  $x$  thus corresponds to a more ambitious plan. If she is unsuccessful, we are back to the status quo, which has payoff 0. The probability that the politician will be successful, is<sup>1</sup>  $\theta_i - x$ . Hence, a politician with a higher ability is more likely to be successful in pulling off any project. The expected payoff to the electorate of a project  $x$  implemented by a politician with ability  $\theta_i$  is  $W = (\theta_i - x)x$ .

We assume that the utility of an elected politician is proportional to how successful she turns out to be. There can be many reasons for this. A politician that delivers a higher payoff to her electorate, will be more likely to be reelected, to be remembered as an outstanding politician, or otherwise to obtain future benefits. Thus, a politician that would run unopposed in an election, would set  $x$  to maximize  $U_i = \gamma(\theta_i - x)x$ , with  $\gamma$  some strictly positive parameter. Her first-best choice is to propose a project  $\hat{x}_i = \theta_i/2$ , a choice that is also first-best from the point of view of the electorate.

A politician that does not run unopposed, however, will take into account that the policy  $x$  that she proposes in the election campaign, will serve as a signal of her true ability. A politician thus faces a trade-off: if she proposes a plan that is more ambitious than her first-best, she will be more likely to get elected, as the electorate will expect more ambitious plans to come from more able politicians. However, if she does get elected, her payoff will be lower as her plan is over-ambitious. This trade-off is very much like the trade-off that a bidder in an auction faces: a higher bid implies a higher probability of winning the auction, but also a lower payoff upon winning.

In the next section, we study a simple example with 2 politicians and a

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<sup>1</sup>Throughout the paper, we assume that parameters are such that probabilities are always well-defined. In all equilibria that we derive, this will indeed be the case.

specific distribution of possible abilities. We will show that, in this context, picking a politician at random yields higher welfare than having an election in which both candidates make commitments during the election campaign. In section 4, we study a more general set-up.

### 3 A simple example

Consider the set-up described in the previous section, with two politicians. Assume that  $F(\theta) = \theta^3$ . We look for the equilibrium platform function  $x(\theta)$ . As we have shown above, the full information outcome has  $\hat{x} = \theta/2$ . To derive the equilibrium in our private information set-up, we use standard techniques from mechanism design theory. We derive the utility that a type  $\theta_T$  obtains if she behaves as if she were a type  $\theta_A$ , and the other politician behaves according to the equilibrium platform function. Equilibrium then requires that the type  $\theta_T$  finds it optimal to behave as herself, so she chooses to optimally set  $\theta_A = \theta_T$ .

First of all let us assume that, when confronted with two election platforms  $x_1$  and  $x_2$ , it is always a best response for the electorate to choose the candidate with the highest  $x$ .<sup>2</sup> Thus, just as in an auction the bidder with the highest bid wins the auction, we have in our model that the candidate with the 'highest platform' wins the election.

Suppose that in a tentative equilibrium a politician with true type  $\theta_T$  behaves as if she had type  $\theta_A$ . Given that the other candidate sticks to the equilibrium strategy, this candidate would then win the election if the other candidates had an ability lower than  $\theta_A$ . This occurs with probability  $F(\theta_A)$ . If it occurs, this candidate's utility will be  $\gamma(\theta_T - x(\theta_A))x(\theta_A)$ . Expected

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<sup>2</sup>This is true if the equilibrium platform function  $x(\theta)(\theta - x(\theta))$  is strictly increasing in  $\theta$ , which will turn out to be the case.

utility thus equals

$$U(\theta_T, \theta_A) = F(\theta_A)\gamma(\theta_T - x(\theta_A))x(\theta_A).$$

With  $F(\theta) = \theta^3$ , we have

$$U(\theta_T, \theta_A) = \theta_A^3\gamma(\theta_T - x(\theta_A))x(\theta_A).$$

Taking the derivative with respect to  $\theta_A$ :

$$\frac{\partial U}{\partial \theta_A} = \theta_A^3\gamma(\theta_T - 2x(\theta_A))x'(\theta_A) + 3\gamma\theta_A^2(\theta_T - x(\theta_A))x(\theta_A).$$

Equilibrium requires that  $\theta_T = \theta_A$ , so

$$\theta_T^3\gamma(\theta_T - 2x(\theta_T))x'(\theta_T) + 3\gamma\theta_T^2(\theta_T - x(\theta_T))x(\theta_T) = 0.$$

It can be easily verified that this differential equation is solved by

$$x(\theta) = \frac{4}{5}\theta,$$

using the boundary condition  $x(0) = 0$ . Note that this implies that politicians are indeed overambitious in order to win the election: with complete information, each politician would simply run on her first best  $x = \theta/2$ .

We now compare the outcome of this model with election campaigns to a world in which politicians for some reason are not able to make commitments during the election. In such a world, voters do not obtain any information about the ability of candidates, and can do no better than simply picking a politician at random. That politician, say she has type  $\theta$ , will then implement  $x = \theta/2$ , which yields  $\theta^2/4$  to the electorate. The expected payoff to the electorate then is

$$W = \int_0^1 \frac{\theta^2}{4} f(\theta) d\theta = \int_0^1 \frac{3}{4}\theta^4 d\theta = \frac{3}{20}.$$

In the world with election platforms, the electorate can simply pick the best politician. The probability distribution of her quality is the expected value of the highest of two draws from distribution  $F$ . Denote the cumulative distribution as  $G(\theta) \equiv F(\theta)^2$ . In this case, we thus have  $G(\theta) = \theta^6$  and  $g(\theta) = 6\theta^5$ . As we showed above, the winning politician will implement  $x = \frac{4}{5}\theta$ , which yields a payoff to the electorate that equals  $(\theta - \frac{4}{5}\theta)(\frac{4}{5}\theta) = \frac{4}{25}\theta^2$ . The expected payoff from the election process then is

$$W = \int_0^1 \frac{4\theta^2}{25} g(\theta) d\theta = \int_0^1 \frac{24}{25} \theta^7 d\theta = \frac{3}{25}.$$

which is lower than the expected payoff of picking a politician at random. Intuitively, we have a trade-off. In a world with election platforms, the electorate is able to pick the best politician, which is good news. We will call this the *selection effect*. However, the winning politician will always implement a policy that is overambitious, which is bad news. We will call this the *overambition effect*. In the example we consider here, the bad news dominates: the overambition effect is stronger than the selection effect. In the next section, we give a more general analysis and derive results under which the electorate would be better off not having an election.

## 4 The general model

In this section, we construct the optimal selection mechanism in our general model. We thus consider any power distribution of abilities  $F(\theta) = \theta^\alpha$ , with  $\alpha > 0$ , and  $\theta \in [0, 1]$ , and  $n$  risk neutral politicians that compete to be elected.

If a politician with true type  $\theta_T$  behaves as if she has type  $\theta_A$ , her expected utility would equal

$$U(\theta_T, \theta_A) = (\theta_A)^{\alpha(n-1)} \gamma(\theta_T - x(\theta_A)) x(\theta_A).$$

Taking the derivative wrt  $\theta_A$  :

$$\frac{\partial U}{\partial \theta_A} = (\theta_A)^{\alpha(n-1)} \gamma(\theta_T - 2x(\theta_A)) x'(\theta_A) + \alpha(n-1) (\theta_A)^{\alpha(n-1)-1} \gamma(\theta_T - x(\theta_A)) x(\theta_A).$$

Equilibrium then requires  $\theta_A = \theta_T$ , so that

$$\theta_T (\theta_T - 2x(\theta_T)) x'(\theta_T) + \alpha(n-1) (\theta_T - x(\theta_T)) x(\theta_T) = 0.$$

It can be easily verified that this differential equation is solved by

$$x(\theta) = \frac{1 + \alpha(n-1)}{2 + \alpha(n-1)} \theta, \quad (1)$$

using the boundary condition  $x(0) = 0$ . Again, this implies that politicians are always overambitious in order to win the election, as we always have  $x(\theta) > x^*(\theta) = \theta/2$  if  $n \geq 2$ .

Expected welfare is given by

$$W(\alpha, n) = E \{ x(\theta^{(1)}) (\theta^{(1)} - x(\theta^{(1)})) \}$$

where  $\theta^{(1)}$  denotes the first-order statistic out of  $n$  draws from  $F$ . So

$$\begin{aligned} W(\alpha, n) &= E \left\{ \frac{1 + \alpha(n-1)}{(2 + \alpha(n-1))^2} (\theta^{(1)})^2 \right\} \\ &= \frac{1 + \alpha(n-1)}{(2 + \alpha(n-1))^2} \int_0^1 (\theta^{(1)})^2 dF(\theta^{(1)})^n \\ &= \frac{((n-1)\alpha + 1)n\alpha}{((n-1)\alpha + 2)^2(n\alpha + 2)}. \end{aligned} \quad (2)$$

Rather than having an election in which candidates make costly promises, the electorate could also choose to pick a candidate at random. Note that this is analytically equivalent to having an election in which exactly 1 candidate participates, so  $n = 1$ . This sole candidate will run on platform  $x(\theta) = \theta/2$ , as can also be readily verified from (1). This is also her preferred policy. Expected welfare then equals  $W(\alpha, 1) = \alpha/4(\alpha + 2)$ , which follows directly from (2).

The following table reports welfare for selected values for  $n$  and  $\alpha$ .

$n$	$W(\frac{1}{2}, n)$	$W(1, n)$	$W(2, n)$	$W(3, n)$
1	0.0500	0.0833	0.1250	0.1500
2	0.0800	0.1111	0.1250	0.1200
3	0.0952	0.1125	0.1042	0.0895
4	0.1020	0.1067	0.0875	0.0708
5	0.1042	0.0992	0.0750	0.0585
6	0.1037	0.0918	0.0655	0.0498
7	0.1018	0.0851	0.0580	0.0434
8	0.0992	0.0790	0.0521	0.0384
9	0.0962	0.0736	0.0472	0.0344
10	0.0930	0.0689	0.0432	0.0312
$\infty$	0.0000	0.0000	0.0000	0.0000

Table 1: Welfare for selected values of  $\alpha$  and  $n$ .

The first thing to note is that the result that we derived in section 3 is not general. For  $\alpha = 1/2$  or  $\alpha = 1$ , the electorate is strictly better off with an election with two candidates, rather than by picking a candidate at random, i.e. having  $n = 1$ . With  $\alpha = 2$ , the electorate is exactly indifferent between one or two candidates. Hence, in that case, the selection effect and the overambition effect exactly cancel out. Adding more candidates, however, does make the electorate strictly worse off: beyond two candidates, the overambition effect again dominates the selection effect. For lower values of  $\alpha$ , a similar mechanism is at work; for low values of  $n$ , the selection effect dominates, but for large values, the overambition effect does. With  $\alpha = 1/2$ , the optimal number of candidates from a welfare point of view, equals  $n = 5$ . If  $\alpha = 1$ , the optimal number is  $n = 3$ . Hence, at least for the values of  $\alpha$  considered here, the optimal number of candidates seems to decrease with  $\alpha$ .

In the remainder of this section, we will make these insights more precise, and prove them.

**Theorem 1** *The optimal number of candidates  $n^*$  is finite. Let  $N^* \subset \mathbb{N}$  be the set of the number of candidates from which welfare is maximized. Then  $|N^*| \in \{1, 2\}$ . If  $|N^*| = 2$ , the two elements in  $N^*$  are adjacent.*

**Proof.** The first part of the theorem follows immediately from the observation that  $W(\alpha, 1) > 0$  and  $\lim_{n \rightarrow \infty} W(\alpha, n) = 0$  for all  $\alpha > 0$ . Taking the derivative of welfare with respect to  $n$  yields

$$\frac{\partial W(\alpha, n)}{\partial n} = -\alpha \frac{\alpha(n-1)(2\alpha + n^2\alpha^2 - 6) - 4}{((n-1)\alpha + 2)^3 (n\alpha + 2)^2}. \quad (3)$$

Define

$$z(\alpha, n) \equiv \alpha(n-1)(2\alpha + n^2\alpha^2 - 6) - 4. \quad (4)$$

Note that  $\frac{\partial W(\alpha, n)}{\partial n} = 0$  iff  $z(\alpha, n) = 0$ . Because  $z$  is strictly increasing in  $n$ , there is at most one  $\tilde{n} \in \mathbb{R}$  for which  $\frac{\partial W(\alpha, \tilde{n})}{\partial n} = 0$ . Also note that for constant  $\alpha$ ,  $W$  is single peaked in  $n$ . The reason is that for all  $n > \tilde{n}$  [ $n < \tilde{n}$ ],  $z(\alpha, n) > 0$  [ $z(\alpha, n) < 0$ ]. Because  $W$  is single peaked in  $n$ , the set  $N^*$  of optimal number of candidates is constructed as follows. If  $\tilde{n} \leq 1$ ,  $N^* = \{1\}$ . Otherwise,  $n^* \in \arg \max_{n \in \{\lfloor \tilde{n} \rfloor, \lceil \tilde{n} \rceil\}} W(\alpha, n) \equiv N^* \subset \{\lfloor \tilde{n} \rfloor, \lceil \tilde{n} \rceil\}$ . ■

The following theorem specifies for which  $\alpha$ , the electorate is always strictly better off by picking a candidate at random.

**Theorem 2** *If  $\alpha \geq 2$ , the electorate is always strictly better off by picking a candidate at random rather than having an election in which  $n \geq 2$  candidates make costly campaign promises.*

**Proof.** Consider a move from 1 to 2 candidates. Using (2) the net effect on welfare of such a move is

$$\Delta W = \frac{(2\alpha - \alpha + 1)2\alpha}{(2\alpha - \alpha + 2)^2(2\alpha + 2)} - \frac{(\alpha - \alpha + 1)\alpha}{(\alpha - \alpha + 2)^2(\alpha + 2)} = \frac{(2 - \alpha)\alpha}{4(2 + \alpha)^2}.$$



This is negative if  $\alpha \geq 2$ . To see that welfare is also lower with a higher number of candidates, note from (4) that  $z(\alpha, 2) > 0$  for  $\alpha > 2$ , hence from (3), we then have  $\partial W/\partial n < 0$ . ■

As noted, Table 1 also suggests that the optimal number of candidates is decreasing in  $\alpha$ . We can show that this is generally true for a continuous proxy  $\tilde{n}$  for the optimal number of bidders  $n^*$ , i.e., if  $\tilde{n} \leq 1$ ,  $n^* = 1$ . Otherwise,  $n^* \in \arg \max_{n \in \{\lfloor \tilde{n} \rfloor, \lceil \tilde{n} \rceil\}} W(\alpha, n)$ .

**Theorem 3** *Let  $\tilde{n} \in \mathbb{R}$  for which  $\frac{\partial W(\alpha, \tilde{n})}{\partial n} = 0$ . Then  $\tilde{n}$  is unique and decreasing in  $\alpha$ .*

**Proof.** Recall from the proof of theorem 1 that  $\tilde{n}$  is unique and implicitly defined by

$$z(\alpha, \tilde{n}) \equiv \alpha (\tilde{n} - 1) (2\alpha + \tilde{n}^2 \alpha^2 - 6) - 4 \equiv 0. \quad (5)$$

That implies that

$$\begin{aligned} \frac{d\tilde{n}}{d\alpha} &= \frac{-\partial z/\partial \alpha}{\partial z/\partial \tilde{n}} = \frac{-(\tilde{n} - 1)(4\alpha + 3\tilde{n}^2 \alpha^2 - 6)}{\alpha(2\alpha - 6 + 3\tilde{n}^2 \alpha^2 - 2\tilde{n}\alpha^2)} \\ &= \frac{-2(\tilde{n} - 1)(2\alpha + \tilde{n}^2 \alpha^2 - 6) - (\tilde{n} - 1)(6 + \tilde{n}^2 \alpha^2)}{\alpha(2\alpha - 6 + \tilde{n}^2 \alpha^2) + \alpha(2\tilde{n}^2 \alpha^2 - 2\tilde{n}\alpha^2)}. \end{aligned}$$

From (5), we have that at the optimum

$$2\alpha + \tilde{n}^2 \alpha^2 - 6 = \frac{4}{\alpha(\tilde{n} - 1)}$$

hence

$$\frac{d\tilde{n}}{d\alpha} = \frac{-\frac{8}{\alpha} - (\tilde{n} - 1)(6 + \tilde{n}^2 \alpha^2)}{\frac{4}{\tilde{n} - 1} + 2\alpha^3(\tilde{n} - 1)\tilde{n}} < 0,$$

since the numerator is clearly negative, and the denominator clearly positive.

■

Taken together, our results imply that, for sufficiently high  $n$ , the overambition effect always dominates the selection effect. Hence, regardless of the

exact parameters of our model, it is never true that having more candidates is always better for welfare. Moreover, this effect becomes more pronounced for higher  $\alpha$ . Once  $\alpha \geq 2$ , the optimal number of candidates simply equals 1, and the electorate would rather pick a candidate at random rather than having an election. Intuitively, a higher value of  $\alpha$  implies that there is a higher probability of having candidates with high ability. An individual candidate with high ability is then more likely to face a contestant that also has high ability. This implies that she has to exaggerate even more to convince the electorate that she really is the best candidate. Hence, under such circumstances, a candidate will be even more overambitious, which we can also see from (1). This implies that the overambition effect is more likely to dominate the selection effect.

## 5 Extensions

In this section, we study a number of extensions to our basic model. Section 5.1 considers the case in which candidates obtain benefits from being in office, over and beyond the benefits that accrue to them due to the payoff to the policy that they implement. In section 5.2, we study the case in which candidates are put forward by political parties. Our results are only strengthened, in that the electorate is more likely to want to pick a candidate at random rather than to have an election. Section 5.3 shows that it is easy to extend our model to allow for the choice of platform. Such an extension does not affect our results.

### 5.1 Benefits from office

So far, we have assumed that the only payoff for the politician is related to the payoffs to the project that he implements while in office. Yet, there may

be additional benefits to being in office as such, and that are unrelated to the project that is implemented. For example, when in office, a politician can channel funds to preferred projects, appoint cronies to influential positions with the implicit understanding that there will be some quid pro quo in the future, etc. In this section, we study the effect of such benefits from office on our analysis.

We assume that benefits from office are given by  $b\gamma$ , where  $b$  reflects the importance of these benefits, and the multiplication by  $\gamma$  just amounts to a normalization. We assume that  $b$  is small enough relative to  $\alpha$  and  $n$  to always obtain internal solutions. The utility function of a candidate with true ability  $\theta_T$  that behaves as if her ability is  $\theta_A$ , is now given by

$$U(\theta_T, \theta_A) = (\theta_A)^{\alpha(n-1)} \gamma ((\theta_T - x(\theta_A)) x(\theta_A) + b).$$

Taking the first-order condition with respect to  $\theta_A$  and then imposing  $\theta_A = \theta_T$  yields

$$\theta_T (\theta_T - 2x(\theta_T)) x'(\theta_T) + \eta ((\theta_T - x(\theta_T)) x(\theta_T) + b) = 0, \quad (6)$$

where we have defined  $\eta \equiv \alpha(n-1)$ .

We now have the following result:

**Theorem 4** *Suppose the distribution of abilities is given by  $F(\theta) = \theta^\alpha$  on  $[0, 1]$ . Then for private benefits  $b$  sufficiently high, the electorate is always strictly better off by picking a candidate at random rather than having an election in which  $n \geq 2$  candidates make costly campaign promises.*

**Proof.** First, suppose that the benefits from office are  $b\gamma\theta^2$  instead of  $b\gamma$ . The utility function of a candidate with true ability  $\theta_T$  that behaves as if her ability is  $\theta_A$ , is now given by

$$U(\theta_T, \theta_A) = (\theta_A)^{\alpha(n-1)} \gamma ((\theta_T - \tilde{x}(\theta_A)) \tilde{x}(\theta_A) + b\theta_T^2).$$

Taking the first-order condition with respect to  $\theta_A$  and then imposing  $\theta_A = \theta_T$  yields

$$\theta_T (\theta_T - 2\tilde{x}(\theta_T)) \tilde{x}'(\theta_T) + \eta ((\theta_T - \tilde{x}(\theta_T)) \tilde{x}(\theta_T) + b\theta_T^2) = 0. \quad (7)$$

It can be verified that this differential equation is solved by

$$\tilde{x}(\theta) = \left( \frac{\eta + 1}{2\eta + 4} + \frac{1}{2} \sqrt{\left( \frac{\eta + 1}{\eta + 2} \right)^2 + \frac{4b\eta}{\eta + 2}} \right) \theta \quad (8)$$

From the differential equations (6) and (7), it follows that  $x(\theta) > \tilde{x}(\theta)$  for all  $\theta \in (0, 1]$  and  $n \geq 2$ . The reason is that  $x(0) = \tilde{x}(0) = 0$ , and  $x(\theta) = \tilde{x}(\theta) \Rightarrow x'(\theta) > \tilde{x}'(\theta)$  for all  $\theta \in [0, 1]$ . Note that for  $n = 1$ ,  $x(\theta) = \tilde{x}(\theta) = \frac{1}{2}\theta$ . So, if we can show that welfare is maximized at  $n = 1$  in the case that the benefits from office are  $b\gamma\theta^2$ , then we have that welfare is also maximized at  $n = 1$  for the true benefits from office  $b\gamma$ , since  $\beta\gamma\theta^2 < \beta\gamma$  for all relevant  $\theta$ .

Suppose in general that equilibrium promises in an election are given by  $x(\theta) = \beta\theta$ . Note from (8) that promises are of this form in our model with private benefits from office. Welfare then equals

$$\begin{aligned} W(\alpha, n) &= E \{ x(\theta^{(1)}) (\theta^{(1)} - x(\theta^{(1)})) \} = \beta(1 - \beta) E \{ (\theta^{(1)})^2 \} \\ &= \beta(1 - \beta) \int_0^1 (\theta^{(1)})^2 dF(\theta^{(1)})^n = \beta(1 - \beta) \frac{\alpha n}{\alpha n + 2} \end{aligned}$$

When picking a candidate at random, this candidate will again implement policy  $\theta/2$  and generate welfare equal to  $\alpha/(4\alpha + 8)$ , as was the case in our standard model. Hence, the electorate is better off by picking a candidate at random if

$$\beta(1 - \beta) \frac{\alpha n}{\alpha n + 2} < \frac{\alpha}{4\alpha + 8}$$

or

$$\beta > \frac{1}{2} + \frac{1}{2} \sqrt{1 - \frac{4n\alpha + 8}{4n\alpha + 8n}} \equiv \beta^*$$

Note that  $\beta^* < 1$  for all  $\alpha, n$ . In (8), we have that  $\theta(x)$  is increasing in  $b$ , and  $\theta(x) = x$  if  $b = 1/\eta$ . Taken together, this implies the required result. ■

Thus, having benefits from office only strengthens our results: we now have that the electorate is *always* better off picking a candidate at random rather than having an election, provided that private benefits are large enough. Private benefits make winning the election more valuable for a given candidate, which implies that she is willing to put up an even more overambitious plan, that ultimately will yield a low expected utility not only to her, but also to the electorate. The stronger the private benefits, the stronger the overambition effect. Theorem 4 implies that it is always possible to have private benefits that are so strong that the overambition effect dominates the selection effect.

## 5.2 Parties

In our analysis so far, we have assumed that any candidate can run in a general election. In practice, this is often not the case. Candidates have to win the nomination of some large political party in order to stand any chance in the general election. In the US, a candidate for almost any elected office first needs to win the nomination from either the Democratic or the Republican party to stand a serious chance. In the UK, a candidate first has to win the nomination of either the Labour or the Conservative Party, or perhaps the Liberal Democrats. Other examples abound. In this subsection, we show that such a set-up will only strengthen our result.

Suppose there are two parties, 1 and 2. They will both field one candidate in the general election, and decide upon this candidate through some internal process. Naturally, each party will try to field the candidate with the highest ability. Suppose that for each party  $\nu$  candidates are running to obtain the

candidacy of that party. Each candidate has an ability that is drawn from the cdf  $F(\theta) = \theta^\alpha$  on  $[0,1]$ . For simplicity, we assume that party is able to fully observe the quality of a candidate of its own party. Party barons already have ample experience with the members of their own party, and through such intensive interaction, are able to fully assess their quality, something the general public is not able to do. That implies that, from the point of view of the electorate, the distribution of the ability of the candidate that party  $i$  will field in the general election is that of the first-order statistic out of  $\nu$  draws from  $F$ , i.e.  $F_i(\theta) = \theta^{\alpha\nu}$ . In the general election, the electorate then has a choice between two candidates with an ability that is drawn from that distribution. Theorem 2 then immediately implies

**Theorem 5** *Consider a general election in which two parties field a candidate that has been selected from  $\nu$  internal candidates that each have an ability that is drawn from  $F(\theta) = \theta^\alpha$  on  $[0,1]$ . Then the electorate is better off by picking a candidate at random rather than having an election if  $\alpha\nu > 2$ .*

In section 4, we argued that the electorate is more likely to want to pick a candidate at random if the distribution of abilities is skewed towards high values. But if we first let parties pick the best candidate from among their ranks, we exactly achieve such skewness.

### 5.3 Ideologies

In this subsection we show that our basic model easily extends to a case in which not only the ability of politicians matter, but also their ideology. Suppose that ideological preferences of voters are uniformly distributed on  $[0, 1]$ , where 0 represents the most left-wing, and 1 represents the most right-wing position. The position of the median voter is then given by  $p = 1/2$ .

Suppose that the utility to the median voter of a candidate that has chosen ideological position  $p$ , has ability  $\theta$  and promises to implement policy  $x$ , is given by

$$U_m(p, \theta, x) = -(p - 1/2)^2 + x(\theta - x). \quad (9)$$

As in the standard Downs (1957) model, we assume that candidates have no policy preference. But then all candidates will simply choose the ideological position that is the preference of the median voter, so  $p = 1/2$ .

This can be seen as follows. Suppose that all candidates choose  $p = 1/2$  and make commitments according to (1). Suppose that candidate 1 considers a defection in one dimension. By construction, given that all candidates choose position  $1/2$ , making a promise different from (1) decreases the expected utility of candidate 1, hence she has no incentive to do so. Now consider a defection to some position  $p_1 \neq 1/2$ . Given (1), candidate 1 wins the election if she is preferred by the median voter and hence by the majority of the electorate. This is the case if

$$-(p_1 - 1/2)^2 + \theta_1^2 \frac{n\alpha - \alpha + 1}{(n\alpha - \alpha + 2)^2} > \theta_{-1}^2 \frac{n\alpha - \alpha + 1}{(n\alpha - \alpha + 2)^2},$$

where  $\theta_{-1}$  is the highest  $\theta$  of all other candidates:  $\theta_{-1} \equiv \max\{\theta_2, \dots, \theta_n\}$ . Obviously, this probability is maximized by choosing  $p_1 = 1/2$ . It is also easy to see that it does not pay to defect in both dimensions at the same time.

As the choices of platform and ideological position are separable, we can indeed focus on the choice of platform without having to take the choice of position into account. Note that this does not hinge on the additive separability that we assume in (9). Any specification where the median voter's utility is decreasing in distance from  $1/2$ , but increasing in  $x(\theta - x)$  will do.

## 6 Concluding remarks

In this paper, we introduced a possible effect of elections that has so far been overlooked in the literature. Candidates in an election may be inclined to come up with ambitious policy proposals in an attempt to convince the electorate that they are of the utmost competence. In that process, however, politicians may be so ambitious that the electorate would be better off by just picking an average candidate rather than going for the best politician that will attempt to implement some grandiose plan that is likely to fail.

We thus showed that the disadvantage of having overambitious promises being implemented may dominate the advantage of being able to choose the best candidate. In other words, the overambition effect of election platforms may very well outweigh the selection effect of elections. This is particularly likely if the distribution of abilities is skewed toward high values, or if the number of candidates is large. We also showed that the electorate is always better off picking a candidate at random rather than having elections if the private benefits from office are high enough.

Of course, our results should not be construed as an argument to abolish elections altogether. We would rather like to think of our analysis as an argument against election campaigns, rather than one against elections. It suggests that society may be better off if politicians postpone detailed policy proposals until after the election.

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