Endogenous Party Formation in a Model of Representative Democracy

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Abstract

We extend the citizen candidate framework by allowing for endogenous party formation. When a party is formed, any member of that party that wants to be a candidate in the election, first has to run in the primary election of her party. We show that in equilibrium one left-wing and one right-wing party will be formed. Also, there may be a range of tiny centrist parties. At most one group of extreme citizens may not be a member of any party. For each party, at most one candidate runs in its primary election. There is a range of equilibria in which one candidate runs in the general election, but we find a unique two-candidate equilibrium. We thus show that allowing for parties to form severely restricts the range of possible equilibria in the citizen candidate model.

- - - PRELIMINARY - - -

1 Introduction

In this paper, we introduce endogenous party formation in a citizen candidate framework. In that framework, developed by Osborne and Slivinsky (1996) and Besley and Coate (1997), every citizen can choose whether or not to run for office. In this way, the approach further endogenizes the political process. In the standard Downsian approach (see Hotelling 1929, and Downs 1957) two candidates, usually interpreted as parties, are assumed to

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exist from the outset. The only objective of these parties is to win the election. They are indifferent as to which policy is implemented. Therefore, in equilibrium, they both choose a policy position that coincides with that of the median voter.

This approach has been criticized by, for example Wittman (1973). In the real world, he argues, political parties do care which policy is implemented. The position they choose is a trade-off between the probability of getting elected, and the rents they obtain when they are elected. Also, the Downsian model has been criticized for the fact that it does not yield an equilibrium in the case that more than two parties run (Eaton and Lipsey 1975). Moreover, in the two party equilibrium, any third party can enter and win the election (Prescott and Visscher 1977). For a review of this literature, see Osborne (1995).

The citizen-candidate model addresses some of the concerns that are raised against the Downsian model. In the citizen-candidate approach any citizen can run in an election. Citizens have policy preferences, and their decision to run is a trade-off between the costs of running, and the effect of their candidacy on the policy outcome of the election. There is no benefit of holding office per se[1]: citizens primarily run in an attempt to influence the policy outcome, not for the perks of being in office. Citizens cannot commit to some policy position before the election. They can observe each other's preferences. Hence, any citizen can only run on a platform that is her preferred platform.

Yet, this approach also has some drawbacks. They have a wide range of Nash equilibria. Typically, any citizen can run as part of some Nash equilibrium. Also, these models implicitly assume that only independent candidates run. There is no role for parties. Thus, where Downsian models typically assume political parties that only care about getting elected and choose to locate at the median voter's ideal position, in citizen candidate models only independent candidates can run, citizens primarily care about the outcome of the election, and any citizen can run in some equilibrium.

This paper builds on Besley and Coate's (1997) citizen-candidate model by adding a party formation stage to the process. Anyone can choose to unite a range of citizens under

[1]Osborne and Slivinski (1996) do allow for this, but it is not crucial for the qualitative nature of their outcomes.

the banner of a political party. Any citizen that is a member of a party and decides to run for office, first has to run in the primary election of the party of which he is a member. The timing is thus as follows. At stage 1 candidates declare themselves. At stage 2, there are primary elections in which members of each party choose who will represent their party in the general election. At stage 3, general elections are held. At the final stage the elected candidate makes a policy choice. When no citizens runs, a default policy is implemented. When only members of one party run, the winner of the primary election of that party is, by default, also the winner of the general election. When only one candidate runs for a particular party then, by default, she wins the primary election of that party.

In this way, we derive an active role for parties in a citizen-candidate framework. With our approach, we can explain why political parties are formed. In our model, parties are formed to coordinate on the Nash equilibria that are preferred by all citizens. Also, we endogenize the preferences a given party has. Often, parties are modelled as having some utility function based on an aggregation of the preferences of its members. In our model, the preference of an active party simply coincides with the unique citizen that decides to run in the primary election of that particular party.

We derive the following results. In equilibrium one left-wing and one right-wing party will be formed. We can also have a range of tiny centrist parties. At most one group of citizens with extreme policy preferences chooses not to form a party. In any primary election, at most one citizen runs. There is a unique two-candidate equilibrium, and a range of equilibria in which only one candidate runs. Only a small range of candidates can run in any Nash equilibrium. Thus, this paper gives an explanation for why political parties form. Also, it restricts the number of equilibria in the citizen candidate model, yielding a unique two-candidate equilibrium.

Some other papers also consider a more active role for parties. Caillaud and Tirole (1999) argue that the chances any party has in an election, also depends on its governance structure. They argue that more extreme parties are more likely to win the election, since for these parties, the Downsian leaders have to put in more effort to come up with a high quality platform that will not be overruled by its rank-and-file. Other related literature includes Caplin and Nalebuff (1997), Baron (1993), and Aldritch (1983).

The remainder of these paper is structured as follows. In section 2 we describe the model. In sections 3 through 5, we define the equilibria in the general election stage, the primary election stage, and the candidacy stage. Section 6 considers parties. First, we give some definitions as to what constitutes a party, then we define citizens' preferences over the formation of parties, and finally we define a party formation equilibrium. In section 7, we solve the model. We first consider the case in which there is only one party, of which all citizens are a member. From this exercise, we can derive some general conditions any equilibrium of the full model has to satisfy. Then we consider the case with two parties, one consisting of all citizens to the left, and the other consisting of all citizens to the right of the median voter. Finally, we solve the full model in section 7.4. Section 8 concludes.

2 The Model

Consider a community that is made up of N citizens, with N odd. The set of policy alternatives is the unit interval $[0, 1]$. Each citizen i has Euclidian preferences over these alternatives with distinct ideal point ω_i. Each citizen only cares about policy outcomes. For simplicity, we assume that citizens' ideal positions are evenly spaced on this interval, thus $\omega_i = (i - 1)/(N - 1)$. This assumption is merely for expositional convenience.

The median position is given by $\omega_{\frac{1}{2}N} = \frac{1}{2}$, $i = 1, \ldots, N$. We order the citizens such that $\omega_1 < \omega_2 < \ldots < \omega_N$ and refer to the median citizen as citizen m. When her preferred policy is not implemented, we assume that a citizen gets some disutility. This disutility is increasing in the distance between her preferred policy and the policy that is implemented, and does so at an increasing rate. Thus, with some abuse of notation, we can write $v_i(x) = -u(|\omega_i - x|)$ for the utility of citizen i when the policy choice is x, where $|y|$ denotes the absolute value of y, and the loss function u is strictly convex. Thus, citizens are risk averse with respect to the policy that will be implemented.

The community selects its representative in an election. All citizens can run for office, but face a utility cost δ if they do so. If only one candidate runs in the general election, he is automatically elected. If no one runs, some default policy x_0 is implemented, which is the worst possible outcome for all citizens: $v^i(x_0) = -\infty \ \forall i$.

Citizens can choose to unite in a political party. Doing so is costless. If a citizen decides to run for office, she first has to run in a primary election of her party. There are no additional costs involved in doing so. For ease of exposition, we initially assume that all citizens are a member of a political party. This is harmless: a party may exist of all citizens. Also, a party may exist of only one citizen. If there is only one candidate in the primary election of a particular party, then she is automatically selected as that party's candidate in the general election. If no one runs in the primary election of a party, then that party does not field a candidate in the general election. If more than one candidate runs in a party's primary election, then the members of that party decide in an election which one of these candidates will run in the general election. We assume that citizens can be a member of only one party.

The timing is as follows. In stage 1, parties are formed. In stage 2, candidates declare themselves. In stage 3, primary elections are held. In stage 4, the general election is held. In stage 5, either the winning candidate decides which policy to implement, or, when no one ran in the general election, the default policy is implemented. Obviously, given that she cannot commit to a different policy in advance, the winner of the general election will always implement her preferred policy: $x = \omega_i$ if i wins. If any election ends in a tie, the winner of that particular election is decided by a coin toss. Thus, an election can have several winners. Yet, only one of those winners in a primary election goes on to run in the general election. Also, only one of the winners in the general election gets to implement her preferred policy.

Our model closely follows Besley and Coate (1997), section 4. The main difference is that they do not consider the formation of parties and, hence, also do not have a primary election stage. Moreover, they assume a linear loss function u, whereas ours is strictly convex. Finally, we make the simplifying assumption that the status quo is such that any citizen is willing to run against it, given that she is the only one doing so. Also, we put additional structure on the distribution of preferences over citizens. Osborne and Slivinski

(1996) use a similar model. The main difference between their model, and the approach used in Besley and Coate (1997) and in this paper, is that these authors assume that voters always vote sincerely: they cast their vote on the candidate with a policy preference that is closest to theirs. Also, Osborne and Slivinski (1996) allow for the possibility of a positive utility of holding office.

Suppose K parties are formed in stage 1, which are indexed by $k = 1, \ldots, K$. Exactly how and why these parties are formed, will be considered later in this paper. Denote the initial set of candidates $\mathcal{C} = \mathcal{C}^1 \cup \mathcal{C}^2 \cup \ldots \cup \mathcal{C}^K$, with $\mathcal{C}^k$ the candidates who are a member of party k. Let $\alpha_j^k \in \mathcal{C}^k \cup \{0\}$ denote citizen j's decision in the primary election, given that she is a member of party k. If $\alpha_j^k = i$, then j casts her vote for candidate i, if $\alpha_j^k = 0$, she abstains. If there is no candidate in the primary election of party k, then $\alpha_j^k = 0$ by construction.

The set of candidates in the general election $\mathcal{C}^G$ is determined by the primary elections: $\mathcal{C}^G = \mathcal{C}^G(\mathcal{C}^1, \ldots, \mathcal{C}^P, \alpha^1, \ldots, \alpha^K)$, with α^k the vector of voting decisions of members of party k. The number of candidates in the general election equals the number of parties that field at least one candidate: $\#\mathcal{C}^G = \#\{p : \#\mathcal{C}^k > 0\}$. Let $\beta_j \in \mathcal{C}^G \cup \{0\}$ denote citizen j's decision in the general election. If $\beta_j = i$, then j casts her vote for candidate i, if $\beta_j = 0$, she abstains. Let β the vector of those decisions: $\beta = (\beta_1, \ldots, \beta_N)$. Also define α as the vector of all voting decisions in the primary elections, thus $\alpha = (\alpha_1^{k(1)}, \ldots, \alpha_N^{k(N)})$, with $k(j)$ the party of which citizen j is a member. Note that the vector β depends on the set of candidates there actually are in a general election, $\mathcal{C}^G$, which in turn depends on voting behavior in the primary elections. Thus, we can write $\beta = \beta(\mathcal{C}^G(\alpha))$. For the sake of brevity, however, we will usually simply stick to β.

The set of winning candidates in party p's primary election is denoted $W^k(\mathcal{C}^k, \alpha^k)$, and that in the general election $W(\mathcal{C}^G, \beta)$. The probability that a candidate $i \in \mathcal{C}^k$ wins the primary election of her party is denoted $P_i^k(\mathcal{C}^k, \alpha^k)$, and equals $1/\#W^k(\mathcal{C}^k, \alpha^k)$ if i is in the winning set of the primary election and 0 otherwise. The probability that a candidate i who has won the primary election goes on to win the general election is $P_i^G(\mathcal{C}^G, \beta) = 1/\#W(\mathcal{C}^G, \beta)$ if i is in the winning set of the general election and 0 otherwise.

Consequently, the a priori probability that some candidate $i \in \mathcal{C}^k$ wins the general election equals $P_i^{k,G}(\mathcal{C}, \alpha, \beta) = P_i^k(\mathcal{C}^k, \alpha^k) \cdot P_i^G(\mathcal{C}^G(\mathcal{C}, \alpha), \beta)$.

We look for a sequential equilibrium. That implies that candidates cannot commit whom to vote for in a general election before the result in the primary election is known. Thus, in the general election, citizens do not necessarily vote for the candidate of their own party. In the subsequent sections, we define the equilibria in the different stages of the game. We do so by backward induction. Section 3 defines the equilibrium in the general election. Section 4 does so for the primary elections, and section 5 for the candidacy stage. Finally, we consider party formation in section 6.

3 General election

Solving the game backwards, we first define the equilibrium in the penultimate stage of the game[2], which is the general election:

Definition 1 *Given $\mathcal{C}^G$, the set of candidates in a general election, a* general election voting equilibrium *is a vector of voting decisions β^* such that*

1. *for each citizen j, β_j^* is a best response to β_{-j}^* :*

$$\beta_j^* \in \arg \max_{\beta_j \in \mathcal{C}^G \cup \{0\}} \left\{ \sum_{i \in \mathcal{C}^G} P_i^G \left(\mathcal{C}^G, (\beta_j, \beta_{-j}^*) \right) \left(-u \left(|\omega_j - \omega_i| \right) \right) | \right\}. \tag{1}$$

2. *β_j^* is not a weakly dominated voting strategy.*

Thus, given the set of candidates, each citizen decides whether to vote and, if so, whom to vote for. This decision has to be such that the voting decisions of all citizens constitutes a Nash equilibrium. Moreover, we require that no weakly dominated strategies are played. The probability that any given candidate i wins is P_i^G. If she does, utility for voter j is $-u\left(|\omega_j - \omega_i|\right)$. Hence the expected utility of citizen j of some voting profile (β_j, β_{-j}^*) is

[2]As argued, the solution to the final stage of the game, which is policy implementation, is trivial: the winner of the general election will always implement her preferred policy.

given by the term in curly brackets on the RHS of (1). Using Nash (1950), it is easy to see that a general election voting equilibrium in mixed strategies always exists for any nonempty candidate set.

The expected utility for voter j of the outcome of a general election with candidate set $\mathcal{C}^G$ given that the general election voting equilibrium β^* is played, is denoted

$$U_j\left(\mathcal{C}^G, \beta^*\right) = \frac{1}{\#W(\mathcal{C}^G, \beta^*)} \sum_{i \in W(\mathcal{C}^G, \beta^*)} -u\left(|\omega_j - \omega_i|\right), \tag{2}$$

if $\#\mathcal{C}^G > 0$ and $U_i(\emptyset, \beta^*) = -\infty$ otherwise. Note that $W(\mathcal{C}^G, \beta^*)$ is the set of winners in the general election. The preferred policy of any of these winners is implemented with probability $1/\#W(\mathcal{C}^G, \beta^*)$, hence 2.

4 Primary elections

Given a general election voting equilibrium, we can define a primary election voting equilibrium. Such an equilibrium will depend on the exact parties that are formed in the previous stage. Thus, we define a primary election voting equilibrium conditional on the prevalent party structure P. Later we will be more specific about the definition of P.

Definition 2 *Given the set of candidates $\mathcal{C}$ and the party structure P, a* primary election voting equilibrium *is a vector of voting decisions α^* and a vector of voting decisions $\beta^*(\mathcal{C}^G(\alpha^*))$ such that*

1. *for each citizen j, α_j^* is a best response to α_{-j}^*;*

$$\alpha_j^* \in \arg \max_{\alpha_j \in \mathcal{C}^{k(j)} \cup \{0\}} \left\{ \sum_{i \in \mathcal{C}} P_i^{k,G}(\mathcal{C}, \alpha, \beta(\mathcal{C}^G(\alpha^*))) U_i\left(\mathcal{C}^G\left(\mathcal{C}, \alpha_j, \alpha_{-j}^*\right), \beta^*\right) \right\}, \tag{3}$$

2. *α_j^* is not a weakly dominated voting strategy,*

3. *$\beta^*(\mathcal{C}^G(\alpha^*))$ is a general election voting equilibrium.*

This definition is very similar to definition 1. Given the set of candidates in a primary election, and given the general election voting equilibrium that will be played in the next round, every citizen's voting decision should maximize her expected utility, given the voting decision of all other citizens. Note that this definition implies that, when deciding whom to vote for in a primary election, citizens not only take the behavior of the other party member into account, but also that of members of other parties. This is obvious: the candidate that members of a particular party want to field in a general election, depends not only on their own preferences, but also on the chances their candidate has in the general election. Ultimately, the utility of a citizen depends on the identity of the winner of the general election, not on the identity of the winner of the primary election of the party of which she happens to be a member. Also note that the primary election voting equilibrium depends on the equilibrium that will be played in the general election. Thus, if there are multiple general election voting equilibria for a given set of candidates in the general election $\mathcal{C}^G$, then any of those equilibria can possibly support a different set of primary election voting equilibria.

Again, it is obvious that an equilibrium exists. Given a primary election voting equilibrium (α^*, β^*), the expected payoff to citizen j is

$$U_j\left(\mathcal{C}, \alpha^*, \beta^*\right) = \sum_{i \in \mathcal{C}} -u\left(\left|\omega_j - \omega_i\right|\right) \cdot P_i^{k,G}(\mathcal{C}, \alpha^*, \beta^*), \tag{4}$$

with $U_j\left(\emptyset, \alpha^*, \beta^*\right) = -\infty$.

5 Candidates

Now consider the candidacy stage. Given the choices voters will make in the primary and general elections, citizens decide whether or not to run for office. Again, which citizens are willing to run depends not only on the voting equilibria that will be played, but also on the exact party structure P. Citizen i's pure strategy in this stage of the game is $s^i \in \{0, 1\}$, where $s^i = 1$ denotes entry. A pure strategy profile is therefore given by $s = \left(s^1, \ldots, s^N\right)$. Given s, we can write the set of candidates as $\mathcal{C}(s) = \{i | s^i = 1\}$.

For an equilibrium in the candidacy stage, we need, first, that each candidate must be willing to run given who else is running and, second, there is no individual not in the race who would like to enter, given that the outcome of the primary and secondary elections are $\alpha^k(\mathcal{C})$ and $\beta(\mathcal{C}^G(\alpha))$. Define $\mathcal{C}/\{i\}$ as the candidate set with individual i removed. We now have[3]

Definition 3 *Given the party structure P,a* pure strategy equilibrium of the entry game *is a pure strategy profile s and voting vectors $\alpha^*(\mathcal{C}(s))$ and $\beta^*(\mathcal{C}(s))$ such that*

1. *for all $i \in \mathcal{C}(s)$,*

$$U_i\left(\mathcal{C}(s), \alpha^*(\mathcal{C}(s)), \beta^*(\mathcal{C}(s))\right) - \delta \geq U_i\left(\mathcal{C}(s)/\{i\}, \alpha^*(\mathcal{C}(s)/\{i\}), \beta^*(\mathcal{C}(s)/\{i\})\right), \tag{5}$$

2. *for all $i \notin \mathcal{C}(s)$,*

$$U_i\left(\mathcal{C}(s), \alpha^*(\mathcal{C}(s)), \beta^*(\mathcal{C}(s))\right) \geq U_i\left(\mathcal{C}(s) \cup \{i\}, \alpha^*(\mathcal{C}(s) \cup \{i\}), \beta^*(\mathcal{C}(s) \cup \{i\})\right) - \delta, \tag{6}$$

3. *$\alpha^*(\mathcal{C}(s))$ is a primary election voting equilibrium,*

4. *$\beta^*(\mathcal{C}(s))$ is a general election voting equilibrium.*

The first condition says that every candidate i that is running, is willing to stay in the race. If she does, she obtains expected utility $U_i\left(\mathcal{C}(s), \alpha^*, \beta^*\right)$, as defined by (4), and incurs the costs of running δ. If she drops out, she obtains $U_i\left(\mathcal{C}(s), \alpha^*, \beta^*\right)$, the expected utility from an election among all other candidates in the race. This candidate is willing to stay in the race if, for some voting equilibria, dropping out gives a lower expected utility, hence (5). For any citizen i not running, the exact opposite must hold. From the current set of candidates, she obtains expected utility $U_i\left(\mathcal{C}(s), \alpha^*, \beta^*\right)$. Also running yields $U_i\left(\mathcal{C}(s) \cup \{i\}, \alpha^*, \beta^*\right)$ minus the costs of running δ. The utility from staying out has to be bigger, thus (6). The third and fourth condition say that the vectors of voting decisions

[3]To keep the notation manageable, we do not use α^* as an argument of β^* in this definition.

α^* and β^* on which candidates base their entry decisions, are equilibria in the subsequent subgames.

In the remainder of this paper we will often refer to a pure strategy equilibrium of the entry game as simply an entry equilibrium. Again, it is easy to see that an equilibrium in mixed strategies always exists. However, given the set-up of the model, it can be shown that a pure strategy equilibrium also always exists. In the remainder of this paper, we will restrict attention to these pure strategy equilibria.

6 Parties

6.1 Party definitions

To define an equilibrium in the party formation stage, we first have to be more specific as to what constitutes a party and how parties are formed. For simplicity, we assume that if both citizen i and citizen $i+r$, are a member of some party k, then all citizens j with $\omega_i < \omega_j < \omega_{i+r}$ are also a member of that same party. This does not affect the results, but does greatly simplify the analysis. Thus

Definition 4 *A* party *k is uniquely defined by its two most extreme members k_l and k_r, and consists of all citizens i for whom $\omega_{k_l} \leq \omega_i \leq \omega_{k_r}$.*

Every citizen is a member of one and just one party. For ease of exposition, we refer to the ideological position of citizens as being left-wing or right-wing, dependent on their position on the unit line: citizen i is more left-wing than citizen j if and only if $\omega_i < \omega_j$. This definition directly extends to parties. Since parties consist of all citizens between their two most extreme members, we necessarily have that all members of some party k are either more left-wing or more right-wing than all members of some other party t :

Definition 5 *Party k is more* left-wing *than party t if and only if $\omega_{k_r} < \omega_{t_l}$.*

Parties are adjacent if there is no party located between them. Thus

Definition 6 *Parties k and t, with k more left-wing than t, are* adjacent *if*

$$\{i : \omega_{k_r} < \omega_i < \omega_{t_l}\} = \emptyset. \tag{7}$$

Not every party necessarily fields a candidate in the general election. If no citizen that is a member of some party k decides to run in the primary election of her party, then that party does not have a candidate in the general election. We refer to such a party as being inactive.

Definition 7 *An* inactive party *is a party that, for a given entry equilibrium, does not field a candidate in the general election. An* active party *is a party that, for a given entry equilibrium, does field a candidate in the general election.*

An inactive party is not necessarily inactive in every election. There may be entry equilibria in which some party k is inactive, and other equilibria in which it is active. Some parties, however, may be always inactive:

Definition 8 *A party is* always inactive *if it does not field a candidate in any entry equilibrium.*

Obviously, it makes little sense to refer to such a group of people as a party. Yet, for ease of exposition, we will do so for the time being. That allows us to stick to the convention that each citizen is a member of one and just one party. Before presenting the main results of this paper, however, we will relax this assumption. Then will regard a party that is always inactive, as being non-existent. Note that, if two adjacent parties are both always inactive, we may just as well regard them as one larger party. Thus

Assumption 1 *Of any two adjacent parties, at most one is always inactive.*

6.2 Preferences over parties

Before we can predict which parties will be formed, we have to be more specific about the preferences citizens have with regard to the outcome of the party formation process.

Conditional on which parties are exactly formed, there can be a range of possible Nash equilibria. For example, when there is just one party that consists of all citizens, we are back to Besley and Coate (1997), and there is a range of equilibria with two candidates running who are equidistant from the median voter. We consider this case in section 7.2.

For a given party structure P, where P is some partition of the set of citizens into parties, denote the set of candidates in some n-candidate equilibrium as $z_n(P)$. Thus, if there is an equilibrium in which only citizens ω_i and ω_j run, then that equilibrium can be represented as $z_2(P) = (\omega_1, \omega_2)$. Also, let $Z_n(P)$ denote the set of all n-candidate equilibria, given the party structure P. The total set of equilibria in the entry game can then be written $Z(P) = Z_1(P) \cup Z_2(P) \cup \ldots \cup Z_N(P)$. Thus, if any set of candidates $\mathcal{C}$ constitutes a Nash equilibrium of the entry game for some voting equilibria α^* and β^*, then $\mathcal{C} \in Z(P)$. Also, if a set of candidates $\mathcal{C} \in Z(P)$, then $\mathcal{C}$ constitutes a Nash equilibrium of the entry game. Note that any $z(p)$ is an equilibrium conditional on the primary election voting equilibrium α^* and the general voting equilibrium β^* it induces. Therefore, to keep the notation tractable, for any $z \in Z(P)$, we can simply write $U_i(z)$ instead of $U_i(z, \alpha^*, \beta^*)$ for the expected utility citizen i obtains from the equilibrium in the entry game z, and the subsequent voting equilibria α^* and β^* that support that equilibrium.

Consider the preferences a given citizen i would have with regard to the parties that are formed. In solving the entry stage and the primary election stage, we simply looked for equilibria in that stage, given some equilibrium that may prevail in the subsequent stages. Such an approach, however, seems less appropriate for the party formation stage. In our approach, the whole point of forming parties is to restrict the number and range of possible equilibria. Rather than forming parties based on some equilibrium in subsequent stages that the formation of these parties supports, parties are formed here exactly to restrict the number and range of those equilibria. Therefore, we assume that preferences citizens have with respect to the formation of parties, is determined by the range of entry equilibria such a party structure supports.

In Besley and Coate (1997), there is a range of two-candidate equilibria. Consider an election in which citizens j_1 and k_1 are running. For this to be an equilibrium, these citizens have to be equidistant from the median voter. In that case, they both have probability 1/2 of winning the election. Compare this to an election in which citizens j_2 and k_2 are running. These citizens are also equidistant from the median voter, yet, $j_2 < j_1$. By construction, $k_2 > k_1$. Again, both candidates have a probability 1/2 of winning the election. Note however, that any citizen i would prefer an election between j_1 and k_1 above an election between j_2 and k_2. In both elections, the expected policy that will be implemented is that of the median voter. Yet, in the first election the two policies that may be implemented are much closer to each other than is the case in the second election. Since we assume that voters are risk averse, they all prefer the first election.

Now consider the party formation stage. Clearly, citizens would prefer a party structure in which $z = (i_1, j_1)$ is the only entry equilibrium, above a party structure in which $z = (i_2, j_2)$ is the only entry equilibrium. This argument can also be made more generally. Suppose that in party structure P, all possible two-candidate equilibria are given by $Z_2(P)$. Under a different party structure P', these equilibria are $Z_2(P')$. Suppose that all the other n-candidate equilibria, thus for $n \neq 2$, are equal under both structures: $Z_n(P) = Z_n(P'), \forall n \neq 2$. Moreover, suppose that the two-candidate equilibria under P are also two-candidate equilibria under P', but there are more two-candidate equilibria under the latter structure: $Z_2(P) \subset Z_2(P')$. Consider some z_2 that is an equilibrium under P', but not under P. Then, if the expected utility of a citizen with z_2 is lower than her expected utility with any two-candidate equilibrium in P, a straightforward extension of the argument above implies that this citizen then prefers party structure P over party structure P'. More formally

Assumption 2 *Citizen i prefers a party structure P over a party structure P', which we write as $P \succ_i P'$, if either one of the following conditions hold.*

1. *For all $z \in Z(P)$ and $z' \in Z(P'), U_i(z) \geq U_i(z')$ with strict inequality for at least one (z, z').*
2. *For all $j \in \{1, \ldots, N\}$, either one of the following conditions hold*

(a) $Z_j(P) = Z_j(P')$,

(b) $Z_j(P) \subset Z_j(P')$, *and* $U_i(z_j') < U_i(z_j)$, *for all* $z_j' \in Z(P')/Z(P)$, *and* $z_j \in Z(P)$.

In this assumption, $Z(P')/Z(P)$ denotes the set of vectors that are a member of $Z(P')$, but not of $Z(P)$. Note that the lemma only gives necessary conditions for preference over party structures, they don't have to be sufficient. Yet, for the purpose of this paper, they are all we need.

The first condition in the lemma says that the expected utility voter i obtains in every entry equilibrium that is supported by party structure P is higher than what he obtains in any entry equilibrium that is supported by party structure P. Clearly, in such a case, voter i is better off if party structure P is formed. The second condition is more subtle, and reflects the argument made above. There are more equilibria under P' than there are under P. Yet any n-candidate equilibrium under P' that is not an equilibrium under P, makes the citizen worse off than any n-candidate equilibrium that is supported by party structure P'. Then, this citizen is better off under party structure P.

Note that a party structure is a partition of the citizen space. We defined k_l as the most left-wing member of party k, and k_r as the most right-wing member of party k. Thus, with K parties, we can write $P = \{\{1_l, l_r\}; \{2_l, 2_r\}; \ldots ; \{K_1, K_r\}\}$, with $l_1 = 1$ (the most left-wing member of the most left-wing party is citizen #1), $K_r = N$ (the most right-wing member of the most right-wing party is citizen #N), and $k_r + 1 = (k+1)_l \; \forall k < K$ (for any two adjacent parties there are no citizens between the most right-wing member of the more left-wing party, and the most left-wing member of the more right-wing party). For brevity, we will write $P = \{\mathbf{1}; \mathbf{2}; \ldots ; \mathbf{K}\}$, with $\mathbf{k} = \{k_l, k_r\}$.

6.3 Party formation

After describing the preferences citizens have with respect to the formation of parties, we can now proceed to the party formation process itself. We assume that party formation proceeds as follows. Any citizens can make a proposal to a set of citizens to join to form a party. A proposed citizen will agree upon the formation of this party, if it makes her better off compared to the initial situation, in which that party did not exist. The party will be formed if all citizens to whom the proposal is made, agree to do so. Membership of a party is voluntary. Also, any other citizen who wants to join an existing party, is allowed to do so: members of a party cannot forbid others to join their party.

Next, given a certain party structure, a group of party members can always choose to break away from the party they are a member of, and form a new party. The way this happens is roughly the same as the formation of a new party described above. One of the members of a party makes a proposal to a group of other members to break away from the party they are currently a member of. A proposed citizen will agree with this break, if it makes her better off than she is in the current situation. The new party will form if all citizens to whom the proposal is made, agree to do so. Also, such a group of dissidents may choose to join an existing party rather than form a new one. Again, all citizens to which such a proposal is made, have to agree to do so. Note that this only applies to the group of citizens that choose to break away from their existing party, not to the party they decide to join, since we assume that any citizen who wants to join an existing party, is allowed to do so. Also, if the group of members of a party that chooses to "break away" in this manner, consists of all members of that party, then we simply have a merger between two parties.

Finally, citizens may choose to form a new party together with a like-minded group of dissidents from an adjacent party. Again, one of the citizens involved first makes a proposal to do this, and the proposal goes through if all the citizens involved, agree. A party formation equilibrium is a party structure such that none of the possibilities described above is attractive for any individual or group of individuals. Thus, no group of citizen has an incentive to form a party, break away from their current party, or merge with another party. Formally,

Definition 9 *A* party formation equilibrium *is a party structure P such that*

1. *For all $k = 1, \dots, K-1$, there is no group of citizens $\{k_b, k_{b+1}, \dots, k_r\}$, with $k_l \leq k_b \leq k_r$, that are members of party k, such that for all those citizens $P' \succ_i P$, with*

either

(a) $P' = \{\mathbf{1}; \mathbf{2}; \ldots; \{k_l, k_{b-1}\}; \{k_b, k_r\}; \mathbf{k+1}; \ldots; \mathbf{K}\}$, *or*

(b) $P' = \{\mathbf{1}; \mathbf{2}; \ldots; \{k_l, k_{b-1}\}; \{k_b, (k+1)_r\}; \mathbf{k+2}; \ldots; \mathbf{K}\}$.

2. *For all* $k = 2, \ldots, K$, *there is no group of citizens* $\{k_l, \ldots, k_{b-1}, k_b\}$, *with* $k_l \leq k_b \leq k_r$, *that are members of party* k, *such that for all those citizens* $P' \succ_i P$, *with either*

(a) $P' = \{\mathbf{1}; \mathbf{2}; \ldots; \{k_l, k_b\}; \{k_{b+1}, k_r\}; \mathbf{k+1}; \ldots; \mathbf{K}\}$, *or*

(b) $P' = \{\mathbf{1}; \mathbf{2}; \ldots; \{(k-1)_l, k_b\}; \{k_{b+1}, k_r\}; \mathbf{k+1}; \ldots; \mathbf{K}\}$.

3. *For any two parties* $k = 1, \ldots, K-1$,*there is no group of citizens* $\{k_b, k_{b+1}, \ldots, k_r\}$, *with* $k_l < k_b \leq k_r$, *that are members of party* k, *and a group of citizens* $\{(k+1)_l, \ldots, (k+1)_{d-1}, (k+1)_d\}$, *with* $(k+1)_l \leq (k+1)_d < (k+1)_r$, *such that for all those citizens* $P' \succ_i P$, *with*

$$P' = \{\mathbf{1}; \mathbf{2}; \ldots; \{k_l, k_{b-1}\}; \{k_b, (k+1)_d\}; \{(k+1)_{d+1}, (k+1)_r\}; \mathbf{k+2}; \ldots; \mathbf{K}\}. \tag{8}$$

The first condition says that the most right-wing members of a given party do not have an incentive to break away from their party, either by forming a new party (condition a) or by joining the adjacent right-wing party (condition b). Note that the definition only requires that it is in the interest of the dissident group to break away from the party. Neither the remaining members of the party they leave, nor (in condition b) those of the party they join have a say in this matter. This reflects the fact that any member is free to leave or join a party. Also note that the faction breaking away can consist of just one member (in that case $k_b = k_r$), or of all members of a party (in that case $k_b = k_l$). In the latter case, condition (a) is trivial, and condition (b) implies that there is no party in which all members want to merge with the adjacent right-wing party. Condition 2 gives the similar conditions for the most left-wing faction in a party. Condition 3 implies that for no two adjacent parties, the right-wing faction of one is willing to form a new party with the left-wing faction of the other party. In this case we do require that both factions have to agree with the formation of a new party. When a new party is formed, all citizens joining that party have to be better off by doing so.

Note that, in general, the definition requires that members break away from a party when they are strictly better off doing so. When they are indifferent, they stick to their original parties. This broadens the range of possible party formation equilibria.

7 Solving The Model

7.1 Introduction

In this section, we set out to solve for the model described in the previous sections. As an illustration, we first consider the entry equilibria that emerge in a one party system. From this analysis we also obtain some more general characteristics of the possible equilibria that can emerge in the full model, where also the party formation stage is included. Then, we solve the model for the case in which two parties are formed, one consisting of all citizens that are more left-wing than the median voter, and one consisting of all citizens that are more right-wing than the median voter. Finally, we derive the equilibria of the full model.

For the purposes of this section, we need the following definition

Definition 10 *Citizen $l(\delta)$ is the citizen such that $\omega_{l(\delta)} < \omega_m - \Delta^*$, and $\omega_{l(\delta)+1} > \omega_m - \Delta^*$. Citizen $r(\delta)$ is the citizen such that $\omega_{r(\delta)} > \omega_m + \Delta^*$, and $\omega_{r(\delta)-1} < \omega_m + \Delta^*$. Here, $\Delta^* = \min_\Delta\{\Delta : u(2\Delta) \geq 2\delta\}$.*

Thus, $(l(\delta)$,$r(\delta))$ is the pair of citizens that is willing to run against each other in a general election but, given that condition, are as close to the median voter as possible. The distance Δ is such that two citizens whose policy preferences are 2Δ removed, are just willing to run against each other given that both have a probability 1/2 of winning. Citizens $l(\delta)$ and $r(\delta)$ are the citizens closest to, but equidistant from the median voter, who are indeed at least 2Δ removed from each other.

7.2 The case of one party

Suppose only one party is formed which, necessarily consists of all citizens. We are then back in the Besley and Coate (1997) model. We thus have

Theorem 1 *With only one party, we have the following pure strategy equilibria of entry game:*

1. Citizen i runs unopposed if and only if $l(\delta) < i < r(\delta)$.
2. Citizen i and j run against each other if and only if
   (a) $(\omega_i + \omega_j)/2 = m$,
   (b) $i \leq l(\delta)$.

PROOF For a one-candidate equilibrium we need that, if i runs, nobody else is willing to run. The condition that citizen i is willing to run against the status quo is always satisfied, since we assume the utility from the status quo to be minus infinity. Any k closer to the median voter would beat i in a general election with certainty, whereas any k equidistant from the median voter would beat him with probability 1/2. Thus, if the distance of i to the median voter is Δ, we need $-u(\Delta) < \delta$ and $-u(2\Delta) < 2\delta$. By construction, the latter condition is satisfied for any i such that $l(\delta) < i < r(\delta)$. From convexity of u we have that $-u(2\Delta) < 2\delta$ implies $-u(\Delta) < \delta$, hence condition 1. Condition 2 follows directly from Besley and Coate (1997), using definition 10. ■

The first condition gives the one-candidate equilibria. It requires there is no other citizen that would win if she chose to run (condition a: citizen k is closer to the median voter than citizen i), and also would be willing to run if she was a sure winner (condition b: the utility gain for citizen k from her preferred policy rather that of citizen i, is smaller than the costs of running). The second condition gives the two-candidate equilibria. It requires that both candidates have an equal probability of winning (condition a: both are equidistant from the median voter) and both are willing to stay in the race (condition b:

the expected utility loss for citizen j of dropping out exceeds the costs of running). Note that, regardless of the distance between ω_i and ω_j, no other citizen has an incentive to enter the election. If she would, no citizen would be willing to vote for her, given the equilibrium behavior of all other citizens. By switching her vote to the new entrant, any citizen only induces her most preferred candidate among the original two, to lose. Also note that any candidate close to the median voter can run in some one-candidate equilibria. All citizens i further removed from the median voter can run as part of some two-candidate equilibrium.

Note there are no equilibria in which more than three candidates are running. In any election with three candidates, one of those candidates is better off by dropping out. But that also implies that, for exactly the same reason, in a general election, we can also have at most two candidates running. Thus

Corollary 1 *In any political equilibrium, at most two parties will be active.*

This also implies that, in any general election, we have a truthful general election voting equilibrium. Given that there are at most two candidates, the best any citizen can do is vote for the candidate with the policy preference that is closest to hers.

If we have a one-candidate equilibrium, then no other citizen is willing to run against this candidate, whereas this one candidate is willing to run. But this is independent of the exact party structure that is formed. The calculation that makes a citizen decide not to be willing to run against some candidate i in a general election, is independent of how parties are exactly structured. Thus,

Corollary 2 *One-candidate equilibria are always those given by condition 1 of theorem 1, regardless of the political parties that are formed.*

7.3 The case of two parties

Now consider that we have two parties, one consisting of all the citizens with a policy preference to the left of that of the median voter, and one consisting of all the citizens with a policy preference to the right of that of the median voter. Of which party the median voter herself is a member is not important. We can first show the following

Lemma 1 *With a left-wing and a right-wing party, both consisting of* $1/2$ *of the citizens, we have that, in any equilibrium, at most one candidate runs in the primary election of any party.*

PROOF Suppose, without loss of generality, that in the primary election of the left-wing party, two candidates are running, j and k, with $j < k$. Then both candidates must have equal probability of winning the primary election. First, consider the case in which the right-wing party has no candidate. But then, the winner of the primary election of the left-wing party will also win the general election. For this to be an equilibrium, we need that j and k are equidistant from the median voter of their party, whom we denote m_l. Thus, the expected policy that will be implemented is ω_{m_l}. Now consider the median citizen of the right-wing party, m_r. If she stays out of the race, her expected utility is $-\frac{1}{2}u(|\omega_i - \omega_{m_r}|) - \frac{1}{2}u(|\omega_j - \omega_{m_r}|)$. Now suppose she also runs. With probability 1/2 the general election is against j, which she will win, and with probability 1/2 she loses to i. Her expected utility of entering thus equals $-\frac{1}{2}u(|\omega_j - \omega_{m_r}|) - \delta$. Thus, she is willing to run if $\delta < \frac{1}{2}u(|\omega_i - \omega_{m_r}|)$. But, from the fact that i is willing to run against j, we know that $\delta < \frac{1}{2}u(|\omega_i - \omega_{m_r}|)$. Thus, since $|\omega_i - \omega_{m_r}| > |\omega_i - \omega_{m_r}|$, citizen ω_{m_r} is willing to run and the initial situation was not an equilibrium. Second, consider the case in which the right-wing party has one candidate. This cannot be an equilibrium. For that we would need that i and j have probability 1/2 of winning their primary election and both i and j have a probability 1/2 of winning a general election against the candidate of the right-wing party. That is impossible. Finally, consider the case in which both parties have two candidates in their primary election. For that to be an equilibrium, we need that both the candidates of the left-wing party and that of the right-wing party are equidistant from the median voter of their respective parties, and also that these distances are the same for both parties. Every candidate then has probability 1/4 of becoming the elected official. Also, in that case, the expected policy outcome is that of the median voter of the entire set of citizens. But any member of the left-wing party who is voting for candidate i in the primary election, now has an incentive to switch and vote for j : by doing so, j will win the primary election with certainty, thus with probability $3/4$ j also wins the general election, whereas with probability $1/4$ the most left-wing candidate of the right-wing wins. The expected policy that will be implemented is then to the left of the median voter, a situation clearly preferred by all the citizens who were supposed to vote for i in the primary election. Thus, this can also not be an equilibrium. This argument extends to the case in which the right-wing party has more than two candidates in its primary election. Thus, we have showed that it cannot be an equilibrium if there are two candidates in the primary election of any of these parties. It is easy to see that the proof can easily be adapted to a case in which more than two candidates are running in any primary election, which proves the theorem. ■

But given that this is the case, we can show the following:

Corollary 3 *With a left-wing and a right-wing party, both consisting of* $1/2$ *of the citizens, we have that any entry equilibrium is also an entry equilibrium for the one-party case.*

Proof From corollary 2 we have that one-candidate equilibria for the two-party case coincide with that of the one-party case. From theorem 1, any primary election has at most one candidate. This implies that anyone who stands in a primary election, automatically enters the general election. Thus if any set of candidates is an equilibrium when these two parties run, then it also has to be an equilibrium in the one-party case. ■

Theorem 2 *With a left-wing and a right-wing party, both consisting of* $1/2$ *of the citizens, we have the following pure strategy equilibria of the entry game*

1. *Citizen* i *runs unopposed if and only if* $l(\delta) < i < r(\delta)$.
2. *Citizens* $l(\delta)$ *and* $r(\delta)$ *run against each other.*

Proof The first part follows from theorem 1 and corollary 2. For the second part note that, from corollary 3 that if a two-candidate equilibrium exists, it necessarily satisfies the second condition in theorem 1. Suppose we have a two-candidate equilibrium with $i < l(\delta)$ and $j > r(\delta)$ running, with i and j equidistant from the median voter. Now suppose that

$l(\delta)$ enters. All left-wing voters are now strictly better off voting for this candidate in their primary elections; if they do, $l(\delta)$ wins the general election with certainty, which they strictly prefer to the lottery between ω_L and ω_R. Therefore, the initial situation is not an equilibrium. When $l(\delta)$ and $r(\delta)$ are running, some candidate $l(\delta) + 1$ does not have an incentive to enter since, by construction, he is not willing to run against $r(\delta)$. ■

7.4 The general model

If we compare the outcome of theorem 2 with that of 1, we see that the one-candidate equilibria in both situations are the same. Yet, the set of two-candidate equilibria in theorem 2 is only a subset of that in theorem 1. Also note that the expected utility for all citizens in the unique two-party equilibrium of theorem 2 is strictly higher than that in the other two-party equilibria in theorem 1. Thus, all citizens prefer a party structure with two parties, as decribed in theorem 2, over a party structure with only one party, as decribed in theorem 1. Thus, using definition 9, we have established

Lemma 2 *Having only one party is not a party formation equilibrium.*

We can also show

Lemma 3 *No party formation equilibrium has $l(\delta)$ and $r(\delta)$ being a member of the same party.*

Proof. From lemma 2 having all citizens in one party is not an equilibrium. Suppose not all citizens are member of one party, but $l(\delta)$ and $r(\delta)$ are. First, assume we have party structure $P = \{\{1, l(\delta)-d\}; \{l(\delta)-d+1, r(\delta)+d-1\}; \{l(\delta)+d, N\}\}$,for some $d \geq 1$. Then, we have the two-party equilibria from theorem 1, in which i and j are both a member of the center party, plus a two-candidate equilibrium in which $l(\delta) - d$ and $r(\delta) + d$ run. If party $\{l(\delta) + d, N\}$ now joins the center party $\{l(\delta), r(\delta)\}$, the only change in the set of two-candidate equilibria is that the latter is no longer an equilibrium.That makes all the members of the original party $\{l(\delta) + d, N\}$ better off, hence they have an incentive to do so. Finally consider the case in which $l(\delta)$ and $r(\delta)$ are member of one party, but that party is asymmetric around the mean, so we have a party $\{l(\delta) - d, r(\delta) + b\}$ with $d \neq b$. Again, we refer to this party as the center party. Without loss of generality, consider the case in which $b > d$. Now, the only two candidate-equilibria are those from theorem 1, in which i and j are both a member of the center party, thus equilibria in which $l(\delta) - f$ runs against $r(\delta) + f$, for $f = 0, 1, 2, \ldots, d$. But then citizen $l(\delta) - d$ has an incentive to leave the center party. By doing so, he is no longer part of any Nash equilibrium, which makes him better off, since the only remaining two-candidate equilibria are then those in which $l(\delta) - f$ runs against $r(\delta) + f$, for $f = 0, 1, 2, \ldots, d - 1$. This establishes the lemma. ■

Thus, candidates $l(\delta)$ and $r(\delta)$ are members of different parties. We can also show the following

Lemma 4 *Either citizen 1 is a member of the same party as $l(\delta)$, or citizen N is a member of the same party as $r(\delta)$, or both.*

Proof. Suppose this would not be the case, and there is an extremist leftist party $\{1, d\}$, and an extremist rightist party $\{b, N\}$, with $d < l(\delta) < r(\delta) < d$. Also assume, without loss of generality that $d > N - b$, thus the extreme left-wing party is at least as big as the extreme right-wing party. But then we have a two-candidate equilibrium with b running against $N - b + 1$. That implies that the extreme right-wing party is better off joining the adjacent party. In that case, any $i \geq b$ no longer runs in any two-candidate equilibrium, which makes them better off. ■

The intuition is that, if both citizen 1 and citizen N both were member of a party of their own, then we would have an equilibrium in which these two citizens run against each other in the general election. Yet, the expected utility to all citizens from this equilibrium would be lower than in the case in which $l(\delta)$ and $r(\delta)$ were running against each other. Thus, either 1 or N has an incentive to form the party of a more moderate candidate, such that $z_2 = (1, N)$ is no longer an entry equilibrium. Thus, interestingly, the extreme candidates are better off by joining a more moderate party, since it prevents themselves from running in some entry equilibrium. If they run, the other extreme candidate will run as well, which would ultimately make them worse off.

For our party formation equilibria we thus have the following restrictions. First, $l(\delta)$ and $r(\delta)$ cannot be part of the same equilibrium. Second, either the party of which $l(\delta)$ is a member, includes the most left-wing citizen, or the party of which $r(\delta)$ is a member, includes the most right-wing candidate. Suppose the latter is the case. Then, we may have some party $\{r, \ldots, N\}$, with $N \geq r > r(\delta)$. Note however that there is no entry equilibrium in which this party fields a candidate. Thus, this "party" is always inactive: it never has a candidate in the general election. For that reason, we do not consider this group to constitute a party, as argued in section 6.1. We may also have a center party, consisting of citizens $\{b, \ldots, d\}$, with $l(\delta) < b \leq d < r(\delta)$. But this party does field a candidate in some elections. In fact, any member of this party runs in some one-party equilibrium. Also, this group of citizens does not have to constitute one party. They can choose to form any set of parties.

We have now established our main result.

Theorem 3 *Any party formation equilibrium has the following characterics*

1. *There is one left-wing party, of which at least citizen $l(\delta)$ is a member, and one right-wing party, of which at least citizen $r(\delta)$ is a member.*
2. *At least one of the following conditions is satisfied:*
   (a) *All citizens $\{1, \ldots, l(\delta)\}$ are a member of the left-wing party,*
   (b) *all citizens $\{r(\delta), \ldots N\}$ are a member of the right-wing party.*
3. *There is a small set of centrist citizens $\{l(\delta)+1, \ldots, r(\delta)-1\}$ who are indifferent as to which party they are a member of: they may choose to be a member of the left-wing party, the right-wing party, or form any centrist party.*
4. *There can be at most 1 group of citizens with relatively extreme policy preferences that isn't a member of any party.*
5. *For all equilibrium party structures, we have the following pure strategy equilibria of the entry game*

(a) Citizen i runs unopposed if and only if $l(\delta) < i < r(\delta)$.

(b) Citizen $l(\delta)$ and $r(\delta)$ run against each other.

PROOF. Follows largely from the above. To prove condition 5, note that the proof of lemma 1 and theorem 2 extend directly to the case of a left-wing and a right-wing party as described in this theorem. ■

8 Conclusion

In this paper, we extended the citizen candidate framework by allowing for endogenous party formation. When a party is formed, any member of that party that wants to be a candidate in the election, first has to run in the primary election of her party. We show that in equilibrium one left-wing and one right-wing party will be formed. Also, there may be a range of tiny centrist parties. At most one group of extreme citizens may not be a member of any party. For each party, at most one candidate runs in its primary election. There is a range of equilibria in which one candidate runs in the general election. However, we find a unique two-candidate equilibrium. Thus, we showed that allowing for parties to form, severely restricts the range of possible equilibria in the citizen candidate model. Citizens are better off, since we no longer have two-candidate equilibria in which more extreme candidates choose to run.

Many papers that consider competition between political parties either implicitly or explicitly assume that parties maximize some sum of weighted utility of their members. That is odd. The whole point of studying political competition is to move away from the assumption that society maximizes some social welfare function. It then seems strange to assume that political parties do exactly that. In the approach in this paper the utility function of a political party is determined endogenously: it coincides with the utility function of the unique member that chooses to run in the party's primary election.

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