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ABSTRACT

Party Governance and Political Competition with an Application to the American Direct Primary*

We analyse how the governance structure of political parties influences electoral competition. Parties choose their organization to manipulate the incentives of politicians to provide effort. We show that intra- and inter-party competition interact to shape these incentives. We also get new insights on the role of information, polarization, and on the value of rents from office. More extreme parties tend to prefer less democratic governance structures. Instead, democratic structures are preferred when voters are ill informed about the candidates' performance and when the rents from office are low. We use our theory to interpret the introduction of the Direct Primary system in the USA at the beginning of the 20th century.

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"The hallmark of a party [...] *is its ability to channel the competing career ambitions of its potential and actual officeholders, forming them into an effective electoral machine"* [Aldrich 1995, p.13]

I Introduction

In democratic elections, the electorate must select one among many candidates. Each of these candidates represents one party, and each party is generally represented by one candidate. For that reason, theory generally assumes that politicians and parties are one and the same: competition only takes place between parties. While in line with one of Downs's [1957] insights, namely that winning elections should serve the purposes of most groups in a party, this modelling approach overlooks the internal struggles that take place before the general election. To understand the behavior of parties, the role of their internal organization, and the impact of this organization on politicians, we must open the party black box and analyze intraparty politics as well.

Accordingly, this paper models parties as organizations, the role of which is to channel the incentives of politicians to increase the electoral success of the party. We argue that the choice of one or another type of organizational structure depends on different socioeconomic factors such as ideology, the value of holding office and the quality of voters' information. Thus, one should expect to find historical and cross-country differences that are based on these factors. In Europe, for instance, extremist parties are usually dominated by an entrenched leadership and are organized quite differently from large –more centrist– parties, which tend to be more democratic in their organization. We explore how the organization of parties can be understood in terms of incentives: incentives for the party leadership to choose one form of organization over another; incentives for politicians to improve the quality of their platforms; incentives for voters to respond to the image of the party as conveyed by its organization. We also analyze how these incentives vary with the environment and how differences in the socioeconomic environment may lead to changes in the political system.

A very interesting historical case to illustrate our theory is the introduction of the direct primary in the United States. The beginning of the 20th century witnessed a major change in the American political system, with the introduction of an unusual way to organize candidate selection inside the party: direct primary elections. Ware [2002] describes it as "a system in which political parties are required by law to choose their candidates through state-administered elections in which any legally qualified person must be allowed to vote". Before, parties could nominate their candidates through a system involving caucuses and conventions. The main characteristic of this system was that decision powers were in the hands of party delegates, and that decisions were taken with

little transparency. Major changes occurred in just a few years at the beginning of the 20h century. In 1899, Minnesota was the first state to introduce a legislation mandating the use of direct primaries. By 1915, all states but three had enacted similar legislations. This switch to a candidate-centered system is still viewed as puzzling by political scientists. The classical explanation, put forward by Merriam and Overacker [1928], is that the caucus-convention system was not working anymore and that, under pressure from the public and from reformers, parties had to adapt. Ware [2002] casts doubts on this interpretation and argues that the parties were actually not forced into this reform. They willingly adopted the direct primary in response to a change in the environment. He centers his analysis on the incentives that politicians, party leaders, and party elites were facing at the time of this reform. Our model formalizes this argument and argues that the direct primary reform can indeed be interpreted as an organizational best-response to the socio-economic changes that were taking place at the time.

A Main results

We develop a model of electoral competition with two active political parties. Parties are viewed as organizations that select politicians for the general election. Each party consists of the rank-and-file, who control the procedure by which politicians are selected, and of potential politicians, whose role is to design platforms for the elections. Like in any organization, such task specialization is bound to generate a wedge between the aspirations of the rank-and-file and those of the politicians. The rank-and-file want their party to win, so that their ideology is implemented, whereas each politician has a preference for himself winning the election. However, as argues Schlesinger [1984], parties differ from corporations since they cannot provide politicians with direct monetary incentives. They can only control how much competition politicians face inside the party. We argue that interparty and intraparty competition are two channels through which these incentives can be provided. Changes in the environment can modify the efficiency of these channels and lead to different optimal forms of organizations. To analyze how organizational structure performs in such a political environment, we choose to assume away competition through ideology. Ideology is treated as an exogenous parameter, but we manage to investigate how the ideological bias of the politicians influences the optimal structure of their party. Since politicians do not control the ideology of their platform, they can only use "quality" to improve the appeal of their platform in the electorate.

We consider two possible types of party organization, that correspond to different levels of intraparty competition.[1] The "entrenched" organizational structure protects the politician from internal competition: the party preselects its leader early on. He is fully in

[1] See Caillaud and Tirole [2002] for a related model of party organization. We borrow from them the terminology of party organization.

charge of the design of the party's platform and cannot be overthrown. We also consider a "democratic" or "competitive" structure, in which different candidates must design and propose their platform to the rank-and-file. The party then selects the candidate who designed the platform perceived as being the best to win in the general election. By assumption, designing a good platform is costly: politicians must exert "effort" to improve the quality of their platform.

Which form of organization is chosen depends on the incentives these structures provide. We show that intraparty competition leads to better incentives when interparty competition is weak, that is when the expected quality of platforms is low. However, as competition intensifies, intraparty competition dilutes incentives; the entrenched structure provides better incentives in that case. This stems from the fact that external competition affects politicians' incentive in a different way, depending on the structure of their party. In a democratic party, external competition tends to decrease investment in quality. That is, when interparty competition is fierce, an entrenched structure generates higher-powered incentives. In an environment with little interparty competition, it is the democratic structure that generates the best incentives.

Another important element of our model is that voters are in general poorly informed about platforms. In that case, the organization of the party becomes a useful proxy to assess platform quality: voters' beliefs are based on the equilibrium incentives provided by the organization. An uninformed voter rationally casts his vote on the candidate whose party provides the best incentives. In other words, when information is missing, the best organization is the one that earns the party the trust of the electorate.

The optimal organization depends on these two dimensions: individual incentives and trust. When voters are informed, observed qualities matter. The optimal structure is the one that maximizes the probability that the party can run on a high-quality platform. In that case, there may be a trade-off between incentives (that can be diluted because of internal competition) and selection (competition increases the number of potentially successful candidates). Instead, when voters are not informed, earning the voters' trust is what matters. Trust reflects individual incentives. The selection motive of competition is absent in this case; competition is only useful if it generates better incentives.

We show that the influence of internal competition also depends on the objective of politicians. Opportunistic politicians respond well to the incentives provided by an internally competitive structure: they want to win, to enjoy the benefits of power. Ideological politicians respond less well to this type of competition, given that they want their party to win, irrespective of who gets the job. In that case, internal competition suffers from a free-riding problem, which reduces the appeal of a democratic type of organization.

B Related literature

Our paper is closely related to Caillaud and Tirole [2002]. They provide a model that analyzes the role of party organization and show that allowing or not for internal fights among party leaders affects the "image" of the party in the electorate. However, they choose to focus on a single party, thereby leaving external competition out of the analysis. In contrast, interparty competition is central to our analysis. Interparty competition is a crucial feature of political competition, and we show that it determines the choice of internal structure. The influence of external competition on the optimal form of organization has already been acknowledged in the industrial organization literature: Legros and Newman [1996 and 2004], Schmidt [1997], Aghion et al. [1999] and Marin and Verdier [2002] demonstrate that the behavior of agents inside a firm is influenced by external market forces. The optimal contract between a principal and a manager thus depends on external market conditions. Legros and Newman [1996 and 2004] show that the reverse holds as well: changes in the internal structure of the firm impacts on the other firms' decisions and therefore modifies the structure and degree of external (market) competition.

Another difference between our model and Caillaud and Tirole [2002] stems from the internal validation mechanism that the party's organization provides. When the quality of platforms is not observed, the parties' organization provides the electorate with some information about platforms qualities. Since Caillaud and Tirole [2002] focus on a single party, the effect of the internal validation mechanism does not take into account the other party's choice of organization, nor the effort of its politicians. In contrast, we endogenize the trust of the electorate by rooting it in the organizational choice of each of the two parties. The image of the party depends not only on its own organization, but also on that of its competitor.

The analysis of intraparty structure and the resulting incentives of the various actors that constitute the party is also present in the political science literature; see e.g. Strom [1990] and Aldrich [1995]. They describe the mutual dependency between the leaders of a party and its management. Central to their analysis is the role of intraparty democracy, as opposed to the delegation of all decision powers to an autocratic leader. They show that delegation to an unchallenged leader may lose him/her support inside the party, and thereby reduce his/her chances of winning the elections. Our analysis shows that causality does not run one-way: internal democracy also affects the incentives of the leaders (that is: of politicians) to craft good platforms. If internal democracy improves the politician's incentives, then the party becomes more competitive, and the rank-and-file should support their candidate more wholeheartedly. Yet, there are other cases in which the opposite holds true; internal competition may also dilute incentives. The candidates then invest less in their platform and political campaigns. In turn, this diverts voters away from the party and ends up being detrimental to the rank-and-file as well. Therefore, the rank-and-file

may on occasion prefer to delegate decision powers to an authoritarian leader.[2]

The paper proceeds as follows. Section 2 introduces the theoretical model and discusses the main assumptions. In section 3, we analyze the incentives of individual candidates. Section 4 analyzes the trade-off between inter and intraparty competition and solves the model in the case of opportunistic politicians. Section 5 introduces partisan candidates. Section 6 summarizes the history of the introduction of the American direct primary and interprets this reform in the light of our theoretical model. The last section concludes and discusses avenues for further research.

II The model

We model electoral competition between two parties. Their ideology will be considered as fixed throughout. In the usual Downsian fashion, it is represented as a position on the line, and we assume for simplicity that there are exactly three locations on the political spectrum: left, center and right. We assume there is one left-wing party and one right-wing party. The parties' positions L and R are equidistant from the centrist location 0. Hence, no party has an initial advantage.

These political parties are organizations, the role of which is to select politicians for the general election. Each party consists of the rank-and-file who decide the structure of the party, and of two potential politicians, who design a platform for the election.

The timing of the game is as follows.

$t = 0$. **Party governance**: the rank-and-file choose the governance structure.

$t = 1$. **Intraparty Competition**: politicians exert effort to improve their platform.

$t = 2$. **Public signal**: platform qualities are revealed to everyone with probability p.

$t = 3$. **Nomination**: parties nominate their candidate for the general election.

$t = 4$. **General election**: knowing the ideology of parties, their governance structures, and possibly platforms quality, voters vote in the general election.

[2] Strom [1990] details how the features of the election influence the incentives for parties to adopt one or another structure. Instead, our analysis focuses on a first-past-the-post election but endogenizes the degree of competition in that election.

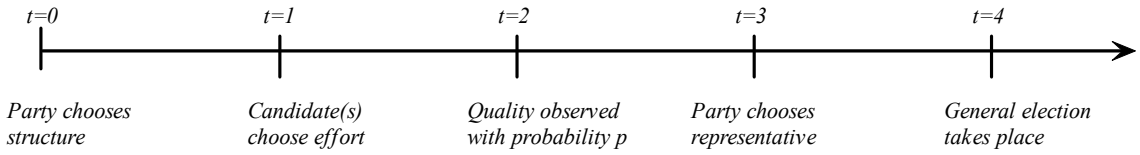

Figure 1: Timing of the game

The design and the quality of political platforms

In the ideological dimension, politicians are constrained by the position of their party. However, each politician can exert effort to improve the quality of his platform. The quality of a platform can be interpreted in several ways, such as competency, valence etc.

Platform quality can be either high or low. The probability that quality is high is equal to the effort q supplied by the politician, at a cost $c(q) = \alpha q^2/2$.[3] Importantly, we assume throughout that effort is not observable neither by the rank-and-file nor by the voters. Citizens are ill-equipped to assess quality issues. Therefore, their assessment of platform quality is uncertain: with probability $p \in (0,1)$, the voters and the parties' rank-and-file discover the quality of the platforms.[4] A high value of p can be interpreted as a country with a vivid political culture, in which citizens display a lot of interest in political issues; another interpretation is that p reflects the quality of the media that analyze political platforms.

Politicians' objective function

The political science literature usually classifies politicians in two groups: *pure office-seekers* and *pure partisans*. The former are only motivated by the perks from office. These perks represent the ego rents associated with the exercise of power, the financial benefits of the office, and any other rent that comes with the position. *Ideological politicians* only value being in office as a means to implement their favored policy. Since the (absence of) congruence between the party's and the politicians' objectives lies at the core of the organization of parties, we do not impose one type of objective. We instead study how these two motivations interact (see Section V).

We denote the utility derived from being in office by w. If candidates only care about w, they are purely office-motivated. The ideological utility gain depends on the distance

[3] This is the same specification as in Caillaud Tirole [1999]. It is a continuous version of the effort model in Caillaud Tirole [2002]. Carrillo and Castanheira [2003] also use a similar specification but focus on a single politician in each party.

[4] Thus, with probability $1-p$, no information becomes available. This information structure allows us to capture in a very tractable way the idea that an imperfect signal can affect behavior only if it is sufficiently strong. Similarly, the assumption that voters and parties have the same information is made for simplicity. The results immediately extend to the case in which parties are better informed than voters; the effect being that the democratic structure is preferred for a larger set of parameters.

between the positions of the two parties (by assumption, candidates inside the same party implement the same ideology). A politician only motivated by ideology receives a utility of $K = |L - R|$ if the implemented policy corresponds to his preferred ideology, and a utility of zero otherwise. This implies that politicians do not value platform quality for its own sake; politicians provide effort only to win the election.

Swing Voters Behavior

Voters can be partisans (leftists or rightists) or swing voters (centrists). We assume that a partisan voter always prefers a politician of his party, independently of platform qualities. Thus, partisans always vote for their own party. By contrast, centrist voters can be swung by quality differentials: they are indifferent between ideologies. Thus, they base their vote on the relative quality of platforms. By assumption, these swing voters are pivotal in the election.

With probability p, voters know exactly the quality of each platform. In that case, swing voters elect the politician with the highest quality platform. If we interpret p as the quality of the media, one sees that the media play the role of an external validation process.

When left uninformed about platforms qualities (this happens with probability $1-p$), voters have to form beliefs about the qualities they can expect from each politician. The only information they possess is the governance structure of the parties. From that information, swing voters can infer the equilibrium effort level of each candidate in each party. Based on these expectations, they support the party that proposes the candidate with highest expected quality. This corresponds to the trust that swing voters have in the different parties. Note that politicians cannot directly influence this trust, which comes from the party's governance structure and not from the efforts exerted by the candidates to set up a good platform (since effort is not observable).

Party objective and choice of governance structure

We follow Roemer [2001] and Caillaud and Tirole [2002] in assuming that the governance structure of the party is chosen by the assembly of the rank-and-file, at the onset of the game (see the timing above). Given that the rank-and-file are not candidates, they only care about the probability that the party wins the election.[5] The rank-and-file can choose one among two governance structures: entrenchment, denoted $\mathcal{E}$, in which the party delegates all decision powers to a lone and uncontested candidate; or a democratic structure, denoted $\mathcal{D}$, in which two candidates compete for the right to represent their party in the general election. In a democratic party, the rank-and-file retain eventual decision powers as to which platform/candidate will run in the general election. Whenever such a democratic party gets informed about the quality of the platforms, it selects the candidate

[5] Hence, they do not internalize the cost of the effort exerted by the politicians.

with the higher-quality platform. When qualities are equal or remain unknown, the party selects one of the two candidates by tossing a fair coin. These structures represent two different levels of intraparty competition.

III Politicians' incentives to invest in quality

In our model, the outcome of the election depends on the effort exerted by politicians. The link is direct if qualities are observed. It is indirect if they are not. It is therefore essential to understand the incentives politicians face. These incentives depend on the governance structure of their party (intraparty competition) and on the governance of the other party (interparty competition).

A Incentives in an entrenched party

Under an entrenched governance structure, the rank-and-file select a party leader who is in charge of designing the platform of the party. This candidate cannot be challenged: there is no intraparty competition. Suppose party L is entrenched. Its leader's only goal is to defeat the candidate of the other party in the general election. Of course, his probability of winning depends on the expected quality of his opponent.

If candidate L wins the election, his payoff is $w + K - c(q_L)$, where w corresponds to the rent of being in office, K to the utility of implementing his favored ideology and $c(q_L)$ is the cost of effort. If the other party wins the election, the utility of candidate L is $-c(q_L)$.

When the public signal reveals information about the quality of the platforms, the probability of winning the election depends on the relative quality of the candidates. Let $\tilde{q}_R$ denote the expected quality of the right-wing party's candidate in the general election, when quality is revealed.[6] When qualities are revealed, the probability that L wins the election is:

$$\pi_L(q_L, \tilde{q}_R) = q_L(1 - \tilde{q}_R) + \frac{q_L\tilde{q}_R + (1-q_L)(1-\tilde{q}_R)}{2} = \frac{1}{2}[1 + q_L - \tilde{q}_R]. \quad (1)$$

This reads as follows. With probability q_L, candidate L achieved a high-quality platform. Whenever the front-runner from party R has low quality (which happens with probability $1 - \tilde{q}_R$), candidate L is elected. This is the first term in (1). Whenever both L and the front-runner of R achieve the same quality, each of them is elected with probability $\frac{1}{2}$. This is the second term in (1). In the other cases, party L loses the election.

[6] If party R is democratic, we have that $\tilde{q}_R = 1 - (1 - q_{R_1})(1 - q_{R_2})$ since two candidates are competing to become party R's candidate at the election stage and the party selects a candidate with a good platform whenever one is available. If party R has an entrenched structure, then $\tilde{q}_R$ corresponds to the effort of the only candidate.

When there is no public signal to reveal information, voters cannot condition their vote on the realized quality of the two platforms. They can only form beliefs about the expected quality of the platforms. We denote the probability that L wins the general election when qualities are not observed by $1^L\left(\mathsf{E}q_L, \mathsf{E}q_R\right)$, which can be equal to $0, \frac{1}{2}$ or 1, depending on voters' beliefs.

The expected utility of the candidate is therefore:

$$U_L\left(\mathcal{E}\right) = (w+K) \times \left\{p\,\pi_L\left(q_L, \tilde{q}_R\right) + (1-p)\; 1^L\left(\mathsf{E}q_L, \mathsf{E}\tilde{q}_R\right)\right\} - c(q_L), \tag{2}$$

and he selects his effort q_L to maximize:

$$(w+K) \cdot p \cdot \pi_L\left(q_L, \tilde{q}_R\right) - c(q_L).$$

B Incentives in a democratic party

Suppose now that party L has a democratic governance structure. Two candidates compete to be selected for the general election. Each candidate in party L has to pass two hurdles: first, he must win the primary election inside his party. Second, he must win the general election.

If he wins eventually, his payoff is $(w+K)$. If he loses the primary election, but the other candidate in the party wins the general election, his payoff is K, since his favorite policy is implemented. Finally, if no candidate from the party is elected, his payoff is 0. Of course, the cost of effort must be substracted from these payoffs.

Let us denote by q_{L_1} and q_{L_2} the efforts of the two candidates in the left-wing party. As before, $\tilde{q}_R$ represents the probability that the front-runner of the right-wing party has a high-quality platform in case qualities are observed.

When qualities are observed, the probability that candidate L_1 wins the general election is:

$$\begin{aligned}
\pi_{L_1} &= q_{L_1}\left(\left(1-q_{L_2}\right)\left(1-\tilde{q}_R\right) + \frac{\tilde{q}_R\left(1-q_{L_2}\right)+q_{L_2}\left(1-\tilde{q}_R\right)}{2} + \frac{q_{L_2}\,\tilde{q}_R}{4}\right) + \frac{\left(1-q_{L_1}\right)\left(1-q_{L_2}\right)\left(1-\tilde{q}_R\right)}{4} \\
&= \left[\, q_{L_1}\left(3-\tilde{q}_R-q_{L_2}\right) + \left(1-q_{L_2}\right)\left(1-\tilde{q}_R\right)\right] / 4.
\end{aligned}$$

Candidate L_1 gets nominated for sure if he has a better quality platform than candidate L_2. This probability is $\frac{1}{2}$ if both have the same quality, and 0 if he obtains a lower quality. Once nominated, he faces the front-runner of party R in the general election. He wins this election for sure if his platform is of better quality; he wins with probability $\frac{1}{2}$ if both platforms have the same quality, and with probability 0 if his platform has a lower quality than that of the other party's candidate.

The probability that L_2 wins the election is computed in the same way:

$$\pi_{L_2} = \left[\, q_{L_2}\left(3-\tilde{q}_R-q_{L_1}\right) + \left(1-q_{L_1}\right)\left(1-\tilde{q}_R\right)\right] / 4.$$

When qualities are not observed, the result of the election depends only on the relative trust that swing voters have in the two parties. Each candidate in a democratic party is selected for nomination with probability $\frac{1}{2}$. Conditional on qualities being unrevealed, his payoff is therefore:

$$1^L\left(\mathsf{E}q_L, \mathsf{E}q_R\right)\left(K + \frac{w}{2}\right).$$

The expected utility of candidate L_1 in the democratic party L is thus:

$$U_{L_1}\left(\mathcal{D}\right) = p\left[\pi_{L_1}\ \left(w + K\right) + \pi_{L_2}\, K\right] + \left(1 - p\right)\ 1^L\left(\cdot\right)\left(K + \frac{w}{2}\right) - c\left(q_{L_1}\right). \tag{3}$$

As before, since trust cannot be influenced by individual efforts, L_1 chooses q_{L_1} to maximize:

$$\left(w + K\right) \cdot p \cdot \pi_{L_1} + K \cdot p \cdot \pi_{L_2} - c\left(q_{L_1}\right).$$

IV Office-motivated candidates

We begin by analyzing the case of purely office motivated politicians. This is a good benchmark to understand how incentives work and how they relate to the governance structure of parties. We first derive the effort of politicians under each structure and determine the trust of swing voters when there is no public signal. We then derive the winning probabilities under each governance configuration and solve for the equilibrium structures.

A Equilibrium Effort Provision

Consider first the case of an entrenched leadership. The party's leader maximizes:

$$\underset{q_L}{Max}\ p \cdot w \cdot \pi_L\left(q_L, \tilde{q}_R\right) - c\left(q_L\right).$$

If the solution is interior, the optimal effort is given by the first order condition:

$$c'\left(q_L^*\left(\mathcal{E}\right)\right) \equiv \alpha q_L^*\left(\mathcal{E}\right) = \frac{p\, w}{2},$$

or:

$$q_L^*\left(\mathcal{E}\right) = \frac{p\, w}{2\alpha}. \tag{4}$$

Clearly, the equilibrium level of effort is thus increasing in the returns to effort, *i.e.* in p (the probability of external validation) and in w (the perks from office), whereas it is decreasing in the marginal cost of effort, α. It turns out that the intensity of external competition does not influence the optimal choice of effort. The reason is that the marginal benefit of effort does not change with the quality of the opposing party. Whether candidate L expects to face a high-quality candidate or a low-quality candidate in the general election,

improving the quality of his platform increases his winning probability by exactly $\frac{1}{2}$. To see this, assume that candidate L is facing an opponent with a *low* quality. In this case, his own quality can either be equal to or higher than that of his opponent. In the former case, his winning probability is $\frac{1}{2}$; in the latter it is 1. Assume now that candidate L is facing a candidate with a high-quality platform. In that case, his own quality can either be lower than or equal to that of his opponent. In the former case, his winning probability is 0; in the latter it is $\frac{1}{2}$. Hence, whatever the quality of his opponent, the marginal benefit of effort is the same.

Let us now consider the case of a candidate in a democratic left-wing party ($\mathcal{D}$). This candidate, call him L_1, chooses q_{L_1} to maximize:

$$\underset{q_{L_1}}{Max}\, p \cdot w \cdot \pi_{L_1}\left(q_{L_1}, q_{L_2}, \tilde{q}_R\right) - c\left(q_L\right).$$

If the solution is interior, optimal effort is given by:

$$c'\left(q^*_{L_1}\left(\mathcal{D}\right)\right) = \alpha q^*_{L_1}\left(\mathcal{D}\right) = \frac{p\, w}{4}\left(3 - q^*_{L_2}\left(\mathcal{D}\right) - \tilde{q}^*_R\right), \tag{5}$$

or:

$$q^*_{L_1}\left(\mathcal{D}\right) = p\, w\, \frac{3 - q^*_{L_2} - \tilde{q}^*_R}{4\alpha}. \tag{6}$$

In contrast with the case of an entrenched leadership, the optimal choice of effort of a candidate in a democratic party does depend on what other candidates are doing. The reason stems from the fact that, in a democratic party, a candidate has to pass two hurdles to be elected. He first has to defeat the other candidate from his party (intraparty competition) and then defeat the other party's candidate (interparty competition). Inspecting (6), we see that the higher is the expected quality of his opponents, the lower his marginal benefit of effort becomes. Assume that the candidate expects all his opponents to have a low quality platform. In that case, when qualities are revealed, his probability of getting elected with a low quality platform is $\frac{1}{4}$, whereas this probability increases to 1 with a high-quality platform. The benefit in terms of election probability is thus $\frac{3}{4}$ when opponents have low quality. By contrast, if candidate L_1 faces opponents with high-quality platforms, that benefit is reduced: a low quality would give him no chance of being elected, but a high quality would only increase his winning probability to $\frac{1}{4}$. Hence, the higher the expected quality of his opponent, the lower his incentives to exert effort. The intuition is not as simple as it seems. It is not simply a question of level, or that two hurdles are harder to jump than one. The main difference with the case of entrenchment is that the marginal benefit of effort is higher under primaries when the average quality of platforms is low, but decreases when expected quality increases.

External competition thus affects incentives in a different way across party structures. In a democratic party, an increase in competition decreases the incentives of politicians whereas, in an entrenched party, the level of competition among parties is neutral; it does

not affect incentives. This means that in an environment with fierce interparty competition, a democratic structure yields low-powered incentives, while in an environment with little interparty competition, a democratic structure generates high-powered incentives.

Focusing on parameter values such that all solutions are interior (that is, we impose that $pw < 2\alpha$), equilibrium efforts are (the proof can be found in the appendix):

Lemma 1 *When politicians are office seekers, we find that, in equilibrium:*

Whenever a party is entrenched:

$$q^*(\mathcal{E}) = \frac{p\,w}{2\alpha}. \tag{7}$$

If the two parties are democratic, we have:

$$q^*(\mathcal{D},\mathcal{D}) = \frac{Z - \sqrt{Z^2 - 12p^2w^2}}{2pw},\ \textit{with } Z = 4\alpha + 3pw. \tag{8}$$

Finally, in the case of asymmetric party structures (say: L is Democratic and R is Entrenched), we have:

$$q_L^*(\mathcal{D},\mathcal{E}) = \frac{pw}{2}\frac{6 - pw/\alpha}{4\alpha + pw}\ \textit{if } pw/\alpha < 2 \tag{9}$$

Trust as an internal validation mechanism

When a public signal reveals information about candidates, realized qualities determine the outcome of the election. When quality is not observed, swing voters cast their vote on the party that is expected to have the highest quality. This represents the trust that voters have in the party as a function of its governance structure.

Under entrenchment, the expected quality of the candidate, as derived in (7) , and that of the party are always the same, by definition. In the context of a single party choosing its governance structure, Caillaud and Tirole [2002], exogenously endow a democratic party with an internal validation mechanism. Their internal validation mechanism would correspond in our model to the assumption that, when both candidates of a democratic party are of high quality, the primaries can convey this information to the voters. In contrast with their assumption, we impose that the expected quality of the candidate nominated by a democratic party always corresponds to the equilibrium effort of an individual candidate. That is, we impose that the rank-and-file have no informational advantage about the quality of the platforms.

Equilibrium efforts are identical across parties when they adopt the same structure. Therefore, voters have no reason to trust one party more than another. The interesting case arises when parties choose different governance structures. How is trust affected if, say, party L chooses to be democratic and R chooses entrenchment? To answer that question, we need to compare the efforts of an individual candidate under each structure:

Proposition 1 *When candidates are purely office-motivated:*
Equilibrium effort provision in the entrenched party is linear in the probability that the quality of the platforms is observed, p, in the perks from office, w, and in the inverse of the cost parameter, α.
Equilibrium effort provision inside the democratic party is strictly increasing and concave in the probability that the quality of the platforms is observed p, in the spoils from office w, and in the inverse of the cost parameter α.
Finally, $q_L^*(\mathcal{D},\mathcal{E}) > q_R^*(\mathcal{D},\mathcal{E})$ *and* $1^L(\mathsf{E}q_{L_i},\mathsf{E}q_{R_i}) = 1$ *(resp. 0) for any* $pw < \alpha$ *(resp.* $pw > \alpha$*).*

The following graph illustrates this result. We plot $q_R^*(\mathcal{D},\mathcal{E})$ (the straight line) and $q_L^*(\mathcal{D},\mathcal{E})$ (the concave curve) for $w = 2$ and $\alpha = 1$:

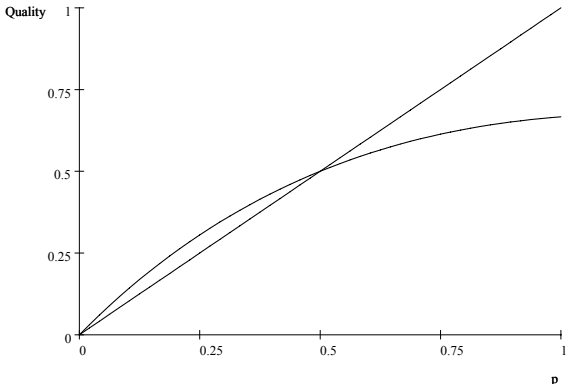

Figure 2: Equilibrium efforts

These findings are key to many subsequent results. When p or w are small or α is large, direct incentives to invest in quality are low. Thus, politicians are likely to have a low quality platform. Coming back to the discussion of incentives in the previous section, remember that the returns to effort are always proportional to $\frac{1}{2}$ under entrenchment. By contrast, when qualities are low (i.e. when q_L^* and q_R^* are smaller than $\frac{1}{2}$, which happens to the left of intersection between the two curves), the returns to effort provision are closer to $\frac{3}{4}$ in the democratic party. For this reason, effort is higher in the democratic party when external competition is "weak". Conversely, if competition is fierce (q_L^* and q_R^* are larger than $\frac{1}{2}$), the returns to effort provision are closer to $\frac{1}{4}$ in the democratic party, and effort becomes smaller in the democratic party. That is, internal and external competition are seen to be substitutes.

B Equilibrium Party Structures

Having characterized optimal effort provisions and how the trust of voters responds to the possible configurations of governance structure, we are now in a position to analyze the optimal organizational choice by the rank-and-file.

Since the cost of platform-design is only borne by the candidates and is disregarded by the rank-and-file, the optimal governance structure is the one that maximizes the probability that the party wins the election. Our concern at this stage is therefore to solve for the Nash Equilibrium in governance structures.

When both parties choose the same structure, the individual incentives of politicians and the expected quality of their platforms are identical. As a consequence, trust is also the same, and both parties must face a probability of election equal to $\frac{1}{2}$. Hence, we focus on the case in which exactly one party has a democratic structure. Suppose this is party L. From Lemma 1, and given that $q^*_{L_1} = q^*_{L_2}$ in equilibrium, we have:

$$\begin{aligned} \pi^*_{L_1} &= \pi^*_{L_2} = \frac{1 + 2q^*_L - (q^*_L)^2 - q^*_R}{4}, \\ \pi^*_R &= 1 - 2\pi^*_{L_1}. \end{aligned}$$

In equilibrium, (the democratic) Party L's probability of winning is thus given by:

$$\begin{aligned} \mathcal{P}^*_L(\mathcal{D}, \mathcal{E}) &= p\left[\pi^*_{L_1} + \pi^*_{L_2}\right] + (1-p)1^L(\mathsf{E}q_L, \mathsf{E}q_R) \\ &= 2p\pi^*_{L_1} + (1-p)1^L(\mathsf{E}q_L, \mathsf{E}q_R). \end{aligned} \tag{10}$$

Party R lets a leader run uncontested, and its probability of winning is given by:

$$\mathcal{P}^*_R(\mathcal{D}, \mathcal{E}) = p\pi^*_R + (1-p)\left[1 - 1^L(\mathsf{E}q_L, \mathsf{E}q_R)\right],$$

given that $P^*_L(\mathcal{D}, \mathcal{E}) + P^*_R(\mathcal{D}, \mathcal{E}) = 1$.

When party R is entrenched, the rank-and-file in party L prefer the democratic structure whenever it increases the probability of winning, that is, when $P^*_L(\mathcal{D}, \mathcal{E}) > \frac{1}{2} = P^*_L(\mathcal{E}, \mathcal{E}) = P^*_L(\mathcal{D}, \mathcal{D})$.

We can now fully characterize the conditions under which a party chooses the democratic structure. The parties' probability of winning is summarized as follows:

	Democratic	Entrenched
Democratic	$\left(\frac{1}{2}, \frac{1}{2}\right)$	$\left(\mathcal{P}^*_L(\mathcal{D}, \mathcal{E}),\ 1 - \mathcal{P}^*_L(\mathcal{D}, \mathcal{E})\right)$
Entrenched	$\left(\mathcal{P}^*_L(\mathcal{E}, \mathcal{D}),\ 1 - \mathcal{P}^*_L(\mathcal{E}, \mathcal{D})\right)$	$\left(\frac{1}{2}, \frac{1}{2}\right)$

It is clear from the matrix that as soon as $P^*_L(\mathcal{D}, \mathcal{E}) = P^*_R(\mathcal{E}, \mathcal{D})$ is greater than $\frac{1}{2}$, the dominant strategy is for both parties to adopt a democratic structure. This leads us to our second proposition:

Proposition 2 *When politicians are pure office seekers:*
a) for $p < \widehat{p}(= \alpha/w)$, and independently of the value of w, the unique Nash equilibrium is for both parties to choose the democratic structure;
b) for $p > \widehat{p}$ and $w \leq 5\alpha/4$, we have $\mathcal{P}_L^*(\mathcal{D}, \mathcal{E}) > \frac{1}{2}$. Hence, the unique Nash equilibrium is for both parties to choose the democratic structure;
c) for $p > \widehat{p}$, and $w > 5\alpha/4$, there exists a value $\tilde{p} > \alpha/w$ such that the unique Nash equilibrium is for both parties to choose the entrenched structure for any $\widehat{p} \leq p \leq \tilde{p}$ and the democratic structure for $p \geq \tilde{p}$.[7]

Proof. *See Appendix.* ■

When making their decision, parties take into account both the effect on the incentives of politicians and the probability that information is revealed. When the external validation mechanism is weak (p small), parties are primarily interested in obtaining the trust of the voters: realized quality is rarely revealed, and voters mainly use their expectations to cast their ballot. In that case, the trust goes to the structure which provides the highest individual incentives. Thus for p small enough (keeping w and α constant), the democratic structure is chosen since it provides higher-powered individual incentives.

As the external validation mechanism improves (p becomes large), the comparative advantage of the democratic structure decreases. However, the importance of trust also decreases, since information about platforms' quality is more likely to be revealed. This leads to a continuous decrease of the probability of winning for a democratic party facing an entrenched party, up to $\hat{p}$. In $p = \widehat{p} = \alpha/w$, individual incentives become identical across structures and trust is thus equally shared among parties. The probability of winning is therefore discontinuous in that point. It suddenly decreases because the democratic party loses voters' trust. That drop is immaterial if the resulting probability of winning remains higher than $\frac{1}{2}$, or if the point of discontinuity requires that p increases above 1 (in the latter case, trust remains with the democratic structure for any level of $p \in [0, 1]$).

Proposition 2 shows that whether or not the probability of winning drops below $\frac{1}{2}$ depends on the values of w and α. When $w \leq 5\alpha/4$, the loss of trust occurs at a relative large value of $\widehat{p}$, and has therefore limited impact on winning probabilities –the value of being trusted is relatively small anyway. For that reason, we find that the probability of winning remains larger than $\frac{1}{2}$ for the democratic party. In this case as well, the democratic structure is always preferred. This is part b and it is illustrated in the left panel of Figure 3. When $w \geq 5\alpha/4$, the loss of trust may become prohibitively costly. At the point of discontinuity, losing the voter's trust necessarily implies that the democratic party contemplates a winning probability below $\frac{1}{2}$. This can be seen in the central and right panels of Figure 3: in equilibrium both parties choose an entrenched structure for $p \in (\hat{p}, \tilde{p})$.

[7] Note that $\tilde{p}$ may well be larger than 1. In that case, ($\mathcal{E}$,$\mathcal{E}$) in the unique equilibrium $\forall p > \hat{p}$.

These results demonstrate that trust in a democratic party is always a sufficient condition to obtain (Democratic, Democratic) as the only Nash equilibrium. At the time of the internal election, a democratic party always has two options (candidates) to choose from. If incentives are stronger in the democratic structure, each of these two options are better than the only draw available under entrenchment. Hence, the probability of winning must be larger than $\frac{1}{2}$. However, trust is not a necessary condition. When effort provision is lower in the democratic party, the rank-and-file face a trade-off: opting for internal democracy reduces the expected quality of each individual platform, which implies that voters' trust is lost. Yet, they can still select the best of two candidates. When qualities are observed, this possibility of selection is an advantage, which explains why winning probabilities can be larger than $\frac{1}{2}$ despite the absence of trust, as seen in the central panel of Figure 3, for p close enough to 1.

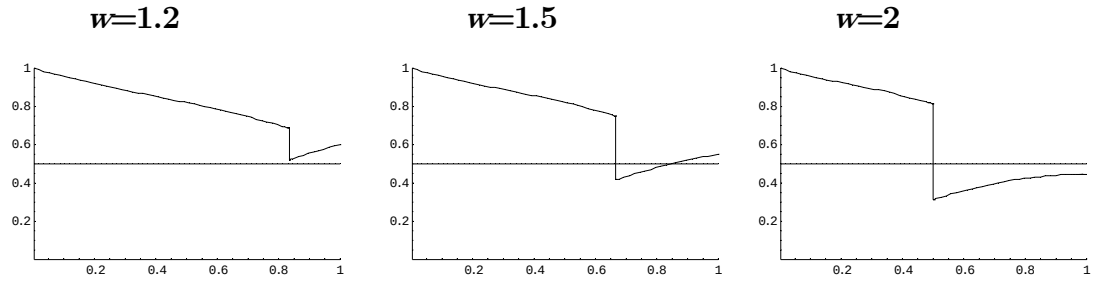

Figure 3: Probability of winning under democratic structure, as a function of p

Summing up, this analysis reveals that intraparty competition can be valuable in two different scenarios. When interparty competition is low and the electorate is poorly informed, intraparty competition provides better individual incentives, gives the party a good image, and earns it the trust of swing voters. Conversely, when voters are very well informed, gaining voters' trust has essentially no value. Yet, in that case, a democratic structure has the advantage of facilitating the selection of the best candidate.[8]

[8]It is also interesting to relate these results to the first Proposition in Caillaud and Tirole [2002]. According to their proposition, the higher is p, the better is the democratic structure (provided that the latter maintains the incentives to exert effort). However, part d) in their proposition warns that these incentives may be reduced when p is large enough. This holds when the behavior of the other party is exogenous, and their results are independent of the other variables that characterize the election: neither the marginal productivity of effort ($1/\alpha$ in our model), nor the perks from office (w in our model) influence the outcome. By contrast, we show that these are the relevant parameters when competition from the other party is not exogenous. Low external incentives (high α or low w and p) reduce the intensity of interparty competition, and call for stronger intraparty competition. Next, in contrast to their results, intraparty competition does not always improve party image: whether voters perceive the democratic structure as superior or inferior depends on incentives ($wp \gtrless \alpha$).

C Some comments on the welfare of voters

In the model, swing voters' utility is increasing in the probability that the elected candidate has a high-quality platform. That is, in the probability that at least one of the initial candidates has proposed a high-quality platform. Clearly, this probability depends on the structure of each party.

Two equilibria may arise: either both parties opt for an Entrenched structure or they opt for a Democratic one. Under the former equilibrium, exactly two candidates exert effort; one in each party. When realized qualities are observed, the electorate faces only low-quality platforms with probability $[1 - q_P(\mathcal{E}, \mathcal{E})]^2$. Therefore, with probability $1 - [1 - q_P(\mathcal{E}, \mathcal{E})]^2$, voters can benefit from a high-quality platform. If realized qualities remain unobserved, voters must select one candidate at random, and the expected quality of the latter is $q_P(\mathcal{E}, \mathcal{E})$. This implies that when both parties are entrenched, voters' expected welfare is given by:

$$W(\mathcal{E}, \mathcal{E}) = p\left[1 - [1 - q_P(\mathcal{E}, \mathcal{E})]^2\right] + (1 - p)\, q_P(\mathcal{E}, \mathcal{E}).$$

When both parties are democratic, the situation is slightly different: when realized qualities are revealed, the probability that all candidates have low quality is: $[1 - q_P(\mathcal{D}, \mathcal{D})]^4$. When realized qualities are not observed, both the parties and the voters must select a candidate at random. Therefore, his expected quality is $q_P(\mathcal{D}, \mathcal{D})$. As a consequence, when both parties are democratic, voters' expected welfare is:

$$W(\mathcal{D}, \mathcal{D}) = p\left[1 - [1 - q_P(\mathcal{D}, \mathcal{D})]^4\right] + (1 - p)\, q_P(\mathcal{D}, \mathcal{D}).$$

Comparing these two welfare equations, one can check that an increase in information quality may end up reducing voters' welfare. The graph below depicts the electorate's welfare when both parties are entrenched (this is the lower dashed curve), when both parties are democratic (this is the upper dashed curve) and when both parties follow their equilibrium strategies (this is the solid curve). The preferences of the electorate and those of the two parties are perfectly aligned for small values of p (one can show that this holds for any w and α). Yet, when p rises above $\hat{p}$, both parties switch to the entrenched structure, and voters' welfare is reduced: improved information harms them. Indeed, parties change structure only to attract the voters' trust. Yet, the lower number of candidates available more than offsets the gain from (slightly) higher individual equilibrium effort provision. Spelled differently, even though parties choose their governance structure with the sole aim of maximizing their probability of winning, their equilibrium choices need not coincide with those that maximize the electorate's welfare.

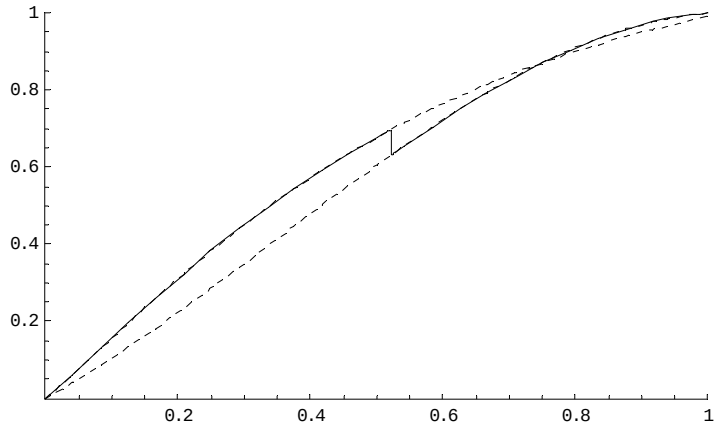

Figure 4: Voters' welfare

Last, we can compute the expected welfare of voters for the out-of-equilibrium situation in which only one party has a democratic structure. More precisely, we are interested in their welfare at the point $\hat{p}$. From Proposition 2, all candidates exert the same level of effort in that point. Hence:

$$\begin{aligned} W(\mathcal{E},\mathcal{D}) = W(\mathcal{D},\mathcal{E}) &= \hat{p}\left(1-(1-q_P(\mathcal{E},\mathcal{E}))^3\right)+(1-\hat{p})\ q_P(\mathcal{E},\mathcal{E}) \\ &> W(\mathcal{E},\mathcal{E}), \end{aligned}$$

which shows that, for p larger than but close to $\hat{p}$, the equilibrium in party structures is necessarily suboptimal from the voters' standpoint.

We can summarize the above discussion into the following proposition:

Proposition 3 *Whenever there exists some $\hat{p} \in (0,1)$ such that $(\mathcal{D},\mathcal{D})$ is an equilibrium for $p \leq \hat{p}$ and $(\mathcal{E},\mathcal{E})$ is an equilibrium for $p \geq \hat{p}$, then:*
a) for some values of w and K, a marginal increase in p above $\hat{p}$ decreases voters' welfare;
b) there always exists a non-empty set $(\hat{p}, s)$ within which the equilibrium governance structure is suboptimal for the voters.

Proof. *See above* ■

V Ideological politicians

So far, we assumed that politicians are only motivated by ambition. However, politicians are citizens: they have preferences over ideology and winning an election is also a means to other ends (whether career or policy). The goal of this section is to understand how the ideology of politicians modifies their incentives and how this may in turn change the effectiveness of party organization.

Under entrenchment, ideological preferences makes no real difference. A politician benefits from election both for the perks of office and for being able to implement his preferred ideology. Partisanship reinforces the value of being elected. In a democratic structure instead, ideological preferences have a very different effect on politicians' incentives. The reason is that ideological politicians are also rewarded when they are not elected but another member of their party is. This means that ideological preferences have a tendency to soften intraparty competition. Even if he is not selected for the general election, a politician benefits from his party's victory. But ideological preferences also increase the total value of winning the election, as in the entrenched case. Therefore the effect on politicians' incentives is not straightforward and depends on the degree of interparty competition.

A Pure Partisan Politicians

Suppose politicians are pure partisans, so that $K > 0$ and $w = 0$.[9] We can adapt the results in section 3 to find the equilibrium efforts under an entrenched and a democratic structure. The first order conditions yield:

$$\begin{aligned} \alpha q_R^*(\mathcal{E}) &= \frac{pK}{2}, \\ \alpha q_{L_1}^*(\mathcal{D}) &= \frac{pK}{2}\left(1 - q_{L_2}^*\right). \end{aligned}$$

Equilibrium efforts are:

$$q_R^*(\mathcal{E}) = \frac{pK}{2\alpha};\ q_L^*(\mathcal{D}) = \frac{pK}{2\alpha + pK} < q_R^*(\mathcal{E}). \tag{11}$$

When politicians are pure partisans, intraparty competition always reduces effort. Hence, a democratic party can never benefit from the voters' trust if it faces an entrenched party. The intuition behind this result is straightforward: under pure ideologic motivation, with intraparty competition, each politician is tempted to free-ride on the other candidate from his party, given that he only cares about his party winning the election. Since there is no office-motivation, "who" gets elected is of no importance. All that matters is that the party wins.

The probability of election of party L under $(\mathcal{D}, \mathcal{E})$ is then:

$$\mathcal{P}_L^*(\mathcal{D}, \mathcal{E}) = \frac{p}{2}\left(1 + q_L^*\left(2 - q_L^*\right) - q_R^*\right), \tag{12}$$

which is clearly smaller than $\frac{1}{2}$ for $p \to 0$. However, for values of p close to 1, a democratic structure may still be chosen, to take advantage of the selection effect:

[9] This formulation is in line with citizen candidates models, in which politicians share the same preferences as the citizens (See Besley and Coate [1997] or Osborne and Slivinski [1996]). In our case, that would be the case if partisan voters were completely indifferent about the quality of platforms.

Proposition 4 *When politicians are purely motivated by ideology ($w = 0$), voters always trust an entrenched party over a democratic one. The unique Nash equilibrium is that both parties choose an entrenched organization for all values of p below some threshold $\tilde{p}$. This threshold $\tilde{p}$ is strictly smaller than 1 if and only if $K \leq \alpha\left(\sqrt{5}-1\right)$.*

Proof. That voters only trust the entrenched party is immediate from (11) . Next, using (11) and (12) , we have that the democratic structure is chosen when: $\mathcal{P}_L^*(\mathcal{D},\mathcal{E}) > 1/2$. Following the same steps as for the proof of proposition 2, one can check that, if there exists a value $\tilde{p}$ such that $\mathcal{P}_L^*(\mathcal{D},\mathcal{E}) = 1/2$, then $\partial\mathcal{P}_L^*(\mathcal{D},\mathcal{E})/\partial p > 0$ for any $p \geq \tilde{p}$ and hence that $\mathcal{P}_L^*(\mathcal{D},\mathcal{E}) > 1/2$, $\forall p > \tilde{p}$. Therefore, it is enough to compute $\mathcal{P}_L^*(\mathcal{D},\mathcal{E})$ in $p = 1$ to verify whether there exist values of p such that $\mathcal{P}_L^*(\mathcal{D},\mathcal{E}) > \frac{1}{2}$. Straightforward computations then demonstrate the proposition. ■

Proposition 4 tells us that when candidates are purely partisan, as soon as K is bigger than some threshold, a democratic structure is always dominated by an entrenched one. A democratic structure is chosen in equilibrium only if the advantage of selecting the best of two candidates compensates the loss of incentives. This happens only for high values of p (high probability that qualities are revealed) and K not too large (so that equilibrium efforts are no too high).

We see that, taken in isolation, ideologic- and office-motivation have opposite effects on the choice of effort by candidates. We now analyze the case in which politicians are both partisan and opportunistic.

B Office and ideological motivation

Adapting the previous calculations, it is easy to show that:

$$q_L^*(\mathcal{E}) = q_R^*(\mathcal{E}) = \frac{p}{2\alpha}(w+K). \tag{13}$$

As before, when structures are identical, the two candidates have the same expected quality and each party's probability of being elected is then equal to $\frac{1}{2}$.[10] We still have to analyze the case of asymmetric structures.

An entrenched versus a democratic party

Assume that party L chooses a democratic structure. The expected utility of candidate L_1 in party L is:

$$U_{L_1}(P) = p\left[\pi_{L_1}\cdot(w+K) + \pi_{L_2}\cdot K\right] + (1-p)\,\mathsf{1}\left(\mathsf{E}q_L, \mathsf{E}q_R\right)\left(K+\frac{w}{2}\right) - c(q_{L_1}). \tag{14}$$

[10] The computation of equilibrium efforts when both parties are democratic are unimportant for our analysis but available upon request.

Taking the first order conditions yields:

$$\alpha q_{L_i}^* = p\left[\frac{1-q_{L_j}^*}{2}K + \frac{3-q_R^*-q_{L_j}^*}{4}w\right]. \tag{15}$$

Then, using (13) and (15), when the solution is interior we get:

$$\begin{cases} q_R^*(\mathcal{D},\mathcal{E}) = \frac{p}{2\alpha}(w+K), \\ q_{L_1}^*(\mathcal{D},\mathcal{E}) = q_{L_2}^*(\mathcal{D},\mathcal{E}) = \frac{p}{2\alpha}\frac{\alpha(4K+6w)-pw(w+K)}{4\alpha+p(2K+w)}. \end{cases} \tag{16}$$

It is clear that, in the entrenched party, office and ideological motivation have exactly the same positive role on incentives. Effort is increasing in both w and K and is independent of the expected effort of the candidate of the democratic party.

In the democratic party, incentives are more involved. From the first order condition (15), we observe that equilibrium effort levels increase more in w than in K: ideological motivation still induces free-riding. It is also noticeable that intraparty and interparty competition now affect incentives differently. Higher interparty competition (a higher q_R^*) only appears in the term that depends on w.

The consequence of these three effects is that, in a democratic party, equilibrium efforts are increasing in the perks from office w but that the effect of increasing ideology is ambiguous:

Proposition 5 *When politicians are office-motivated and partisan,*
a) $\frac{\partial q_L^*}{\partial K} > 0$ *if and only if* pw/α *is small enough;*
b) $\frac{\partial q_R^*}{\partial K} > 0$;
c) The impact of increasing ideology is higher on effort in an entrenched party: $\frac{\partial q_R^*}{\partial K} > \frac{\partial q_L^*}{\partial K}$.

Proof. See Appendix. ■

Compared to the case with pure office motivation (see previous subsection), introducing ideology makes the democratic structure less attractive. The first reason comes through the fact that ideology gives additional incentives to all politicians. However, we have seen that –everything else equal– a very competitive election makes a democratic structure less appealing. The second reason is that the benefit of ideological preferences is fully internalized by a candidate in an entrenched party, but not in a democratic party, because of free-riding.

As in the analysis of the previous section (with purely office-motivated politicians), the value of the parameters that equalize effort provision across party structures is very important. We can show that this happens when $p = \bar{p} \equiv \dfrac{\alpha w}{(w+K)^2}$. In $\bar{p}$, efforts are equal to $\bar{q} = \frac{1}{2}\frac{w}{w+K}$.

Using this result, we find an equivalent to Proposition 2:

Proposition 6 *When candidates are opportunists and partisans, then:*

1. *for* $p < \bar{p}\ (= \dfrac{w}{(w+K)^2})$, *the unique Nash Equilibrium is* $(\mathcal{D}, \mathcal{D})$;
2. *for* $p > \bar{p}$, *even when* w *is very small (see Proposition 1), if* K *is also small enough, there exists a* $\overline{\overline{p}} > \bar{p}$ *such that for* $p \in \left(\bar{p}, \overline{\overline{p}}\right)$, *the unique Nash equilibrium is* $(\mathcal{E}, \mathcal{E})$; *whereas for* $p \notin \left(\bar{p}, \overline{\overline{p}}\right)$, $(\mathcal{D}, \mathcal{D})$ *is the unique Nash Equilibrium*;
3. *for* $p > \bar{p}$, *if* K *(or* w*) is large enough, the unique Nash Equilibrium is* $(\mathcal{E}, \mathcal{E})$;

Proof. Similar to the proof of Proposition 2. ■

When the preference of politicians become more ideological, or when competition becomes more polarized, the ratio w/K decreases. What the above proposition shows is that polarization shifts party organization away from democratic internal structures. One implication is thus that extreme parties should rely more often on entrenched structures than moderate parties do.

This prediction finds some support in Europe: it is clear that centrist parties contemplate more rotation of their leadership than extremist parties. For example, the name of France's Front National is hardly distinct from that of J.M. Le Pen. Similarly, communist parties had very little internal competition at the time they were perceived as a credible threat to centrist parties. There is also a striking difference between candidate selection in the US and that in European countries. The rise of the American Direct Primary is the purpose of the next section.

VI The rise of the American Direct Primary

In this section, we offer an interpretation of the introduction of the direct primary system in the United States. In contemporary United States, parties face many constraints in the selection of candidates for elections. With only few exceptions (notably, the selection of the candidate for the Presidency), parties cannot organize candidate selection by themselves; by law, they must rely on independent state agencies, which organize elections to ensure that the procedure is democratic and fair. This (s)election procedure, known as the *American Direct Primary*, is strikingly different from the procedures used in Europe. It is the result of a reform implemented at the turn of the twentieth century, that replaced the system of caucuses and conventions used until then.

A The Adoption of the Direct Primary

According to Ranney [1975, p121; quoted by Ware 2002] "*The adoption of the direct primary by the states from the early 1900s onward is* [...] *the most radical of all the party reforms adopted in the whole course of American history*". The Caucus-Convention system, used in most states in the 19th century, was a largely informal two-stage system. The first stage consisted of meetings for general discussion and the election of delegates. The second stage, the party convention, would then select the party candidates for elections. These delegates were usually not bound by any voting commitment and their vote could easily be swayed one way or another. Hence, party elites could easily dominate candidate selection. The introduction of the direct primary was a reform that radically changed the way parties organize themselves.

The received wisdom about the reasons behind the adoption of the direct primary has been uncontroversial for a long time. In their book, Merriam and Overacker [1928] were in no doubt. The existing caucus-convention system had come under increasing pressure from outsiders and the people. The way in which representatives were selected had become increasingly obscure, prompting allegations of fraud, corruption and nepotism: "startling disclosures respecting the betrayal of public trust by party leaders aroused the people to a crusade for responsible government" [Merriam and Overacker 1928]. They concluded that the direct primary had been adopted because the public demanded it, and that the reform was imposed on the parties by anti-party reformists. Ware's [2002] analysis provides ample evidence to challenge this view. Parties were extremely powerful at the time of the reform. It would thus be surprising that such a reform could have been passed against their will. He argues that the caucus-convention system had worked for a while but that societal changes had prompted such a reform:

> America consisted of small towns and rural hinterlands; it was a face-to-face society in which informal constraints were largely sufficient to regulate the conduct of politics [...]. However, in the decades after the emergence of mass party politics in the 1830s, the social base of America changed radically. [...] A style of politics that worked relatively well in the 1830s was working much less well in the new circumstances. [Ware 2002, p21].

The debate is thus whether anti-party reformists succeeded in imposing this reform against the will of the parties or whether this reform was the result of a consensus, which actually benefitted parties as well. Quite clearly, the analysis and the results in the previous sections can help us address this question. Faced with increasing criticism, adopting the direct primary was an efficient way to react to societal changes changes. In our terms, parties could change their organization as a way to keep, or restore the voters' trust. Our model identifies how the societal changes described by Ware affected the roles of interparty

and intraparty competition. We argue that the change in the internal organization of parties can be interpreted as a best-response to the evolution from a "face-to-face" society to a "large, urbanized, and heterogenous" society.

B Optimal party structure: from a face-to-face to a large and anonymous society

We now interpret the introduction of the direct primary in the context of our model. According to Ware [2002], the main change in American society was the end of the face-to-face society, in which voters could easily participate in politics, knew party members and candidates, and were well informed about the politicians' every move. In our model, such a society is characterized by a high value of p. With well informed voters, the realized quality of candidates is what matters. In such an environment, the optimal organization of the party is the one that maximizes the probability that at least one politician in the party has a good platform. In this case, the informal caucus-convention system is a good way to select candidates. Frauds and misconducts would be rapidly detected, and voters would replace the incumbent by a challenger when they would realize the incumbent had a bad quality platform.

With the development of mass-party politics, voters got less involved and became less informed about politics (decrease in p). Parties started to worry about the voters' trust. Our model shows that the lower is p, the more important is the voters' trust in a party. Indeed, for low values of p, voters are unlikely to be informed about the quality of the platforms and thus base their vote on their beliefs, their trust in the parties. In the model, when p is low, voters tend to trust the parties that adopt the democratic structure.

This is exactly what American parties decided to do: they modified their selection procedure to make it more democratic. The direct primary increased the transparency and the objectivity of the political game. The simple interpretation is then that the end of the face-to-face society (decrease in p) led to a change in the equilibrium choice of organization. Parties rationally chose to adopt the reform, in order to improve intraparty competition and thereby restore the trust of the electorate. In line with this interpretation, Ware (p. 101) documents the fact that the first counties (e.g. Crawford county, Pennsylvania) to experiment with the direct primary were rural counties that lacked the face-to-face characteristics of 19th century New England.

Why this reform took the form of the direct primary and why the old caucus system was not an efficient way to organize competition is less straightforward, but our model can still shed light on the timing of the reform. As Ware reports, the caucus system worked pretty well in the first half of the 19th century. When needed, parties could organize actual

primaries; when not, parties handed over all decision powers to one politician.[11] The gradual movement from this face-to-face society towards a more anonymous one should thus be read as a progressive fall in p: with an increasing probability, misconducts are left undetected.

With this decrease in information, the first change was a progressive shift towards a more entrenched organization, that could be implemented through the old system of caucuses and conventions. However, this led to less and less effort from politicians. The public felt that the system was not working anymore and anti-party reformists were asking for changes. Our model predicts that voters and parties would have opposite preferences for intermediate values of p: the equilibrium organization chosen by parties is not optimal for the voters (See Proposition 3 about the welfare of voters). When p decreases further, the parties optimally decide to restore intraparty competition. The view that, later, parties also benefited from the reform is thus also consistent with our model. However, sufficiently low values of p are needed for parties to adopt the reform. If we assume a continuous decrease of p over time, after a period of conflict between reformists and party leaders, the leaders finally supported the reform.[12]

The reason why the old caucus system was not an efficient way to organize internal competition is that, with mass-party politics, intraparty competition is used to earn the trust of uninformed voters as much it is used to select a good candidate. Gaining the trust of the electorate is therefore central to a good reform, and the direct primary proved to be a good way of committing to have a genuine selection process, that parties delegates could not hijack. Implementing such a reform through state legislation was a sensible way to ensure credibility and transparence.

Another important argument put forward to explain the introduction of the direct primary is the degree of interparty competition. Some early studies of the direct primary argue that the absence of competition (as for example in southern states) was an important factor for the adoption of the primaries system. Our model is symmetric by design and must be adapted to analyze asymmetric electoral competition with an advantaged party. An advantaged party has more to gain from the primaries system than a disadvantaged party. Actually, an advantaged party is compelled to rely on intraparty competition, to maintain appropriate incentives for its politicians. In the absence of intraparty competition, politicians can become lazy and corrupt (since the other party is no match). In a world in which information about candidates is decreasing, the image of the

[11] Depending on parameters' values (w and K), which can vary across counties, cities and offices, our model predicts that to high values of p, may correspond an equilibrium with an entrenched structure (high w and/or K) or a competitive structure (low w and K).

[12] Still, the results of this reform were not universally positive. At places, direct primaries proved simply inadequate to improve candidate selection. Indeed, primaries would induce more voters to get involved in the selection of candidates. The newcomers were presumably less informed than the people who used to make decisions in caucuses. Lower values of p tend to decrease efforts and thus platform quality.

party is increasingly important, and a transparent selection process can help regain the trust of the electorate. In line with the main results of the paper, this stems from the fact that intraparty competition is a good substitute for interparty competition, when external competition is weak –as it is the case for an advantaged party. A disadvantaged party, on the contrary, can suffer from the reform. Since its potential candidates have little chance to win the election, adding an extra barrier in the form of a selection process can even decrease the politicians' incentives in the disadvantaged party.

VII Conclusion

We proposed a model that opens the black box of political parties. This allowed us to analyze how interparty and intraparty competition interact. Interestingly, we found that two effects determine whether intraparty competition is valuable. First, a selection effect: *ceteris paribus*, the party benefits from having a larger set of candidates. Second, an incentive effect: creating competition among different politicians in the party may (or not) induce them to exert more effort. This is how the organization of the party can transform politicians into an "effective electoral machine" (Aldrich, 1995).

However, these two effects can also play against each other. This happens when the perks from office are high and when polarization is strong. An implication of this result is that extreme parties should prefer to entrench one "leader" at their head, whereas moderate parties tend to benefit more from internal democracy.

Also important is information. When voters are well informed, only actual qualities matter. Hence, whether or not intraparty competition is valuable depends on both the incentive and selection effects. Instead, when voters are ill-informed, the selection effect does not matter. Since intraparty competition generates better incentives for the politicians, it is preferred by the parties, to improve their image.

Finally, these results allowed us to shed light on the *direct primary* reform that changed American politics at the beginning of the 20th century. As Ware [2002] shows, the reform precisely took place when the quality of information worsened. The received wisdom on this reform used to be that it was imposed onto the parties, against their will. Our findings instead demonstrated that, when the quality of information drops, parties may benefit from such a reform as well.

Our analysis has focused on the impact of organization on the incentives of politicians to improve their platforms. We voluntarily assumed that all politicians have the same ability and that ideologies were fixed, to abstract from adverse selection issues.[13] Another

[13] For a complementary analysis that considers adverse selection problems (but overlooks moral hazard issues), see Carrillo and Mariotti [2001]

important role of party organization is to select the most promising candidate. Analyzing the interaction between selection and incentives is outside the scope of this paper but may be important to further understand the mechanics of party organization. In that respect, the current debate taking place in California and Oregon about the introduction of an open primary system leads to many interesting questions for future research[14].

[14] See Kiesling and Reed [2004]. Proposition 62, that proposes such a reform is already on the ballot in California.

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Appendix: Proofs

Proof of Lemma 1

The equilibrium value of $q^*(\mathcal{E})$ was derived in (4). To derive equilibrium efforts in a democratic party, we start from the reaction function (6):

$$q^*_{P_i}(\mathcal{D}) = p\,w\,\frac{3 - q^*_{P_j} - \tilde{q}^*_{P'}}{4\alpha}, \tag{17}$$

where $P, P' \in \{L, R\}$, $P \neq P'$ denote parties and $i, j \in \{1, 2\}$, $i \neq j$ denote the two candidates from each party.

When both parties are democratic, we have that $\tilde{q}_{P'} = 1 - (1 - q_{P'_i})^2$ and, by symmetry, $q^*(\mathcal{D}, \mathcal{D})$ must thus solve:

$$q^*(\mathcal{D}, \mathcal{D}) = p\,w\,\frac{3 - q^*(\mathcal{D}, \mathcal{D}) - \left[1 - (1 - q^*(\mathcal{D}, \mathcal{D}))^2\right]}{4\alpha},$$

which yields (8).

When party R is entrenched, (17), becomes:

$$q^*_L(\mathcal{D}, \mathcal{E}) = p\,w\,\frac{3 - q^*_L(\mathcal{D}, \mathcal{E}) - \frac{pw}{2\alpha}}{4\alpha},$$

which yields (9).

Proof of Proposition 1

The proof for effort provision in the entrenched party is obvious. Turning to $q^*_L(\mathcal{D}, \mathcal{E})$, we have:

$$\frac{dq^*_L}{dp} = w\frac{24\alpha^2 - 8\alpha pw - p^2w^2}{2\alpha\,(4\alpha + pw)^2},$$

which is positive for any $pw/\alpha < 2(-2 + \sqrt{10})$. Since this inequality is satisfied for any $pw/\alpha < 2$, we found that $\frac{dq^*_L}{dp} > 0$.[15]

Turning to the second order derivative, we have:

$$\frac{d^2q^*_L}{dp^2} = -\frac{40w^2\alpha}{(4\alpha + pw)^3} < 0 \text{ if } pw/\alpha < 2.$$

Hence, q^*_L is found to be strictly increasing and concave in p. The proof is similar for w and α.

Turning to the last part of the proposition, comparing (7) and (9), one finds that:

$$q^*_L(\mathcal{D}, \mathcal{E}) \geq q^*_R(\mathcal{D}, \mathcal{E}) \Leftrightarrow p \leq \widehat{p} \equiv \alpha/w,$$

which implies that $\mathsf{1}(\mathsf{E}q_{L_i}, \mathsf{E}q_{R_i}) = 1$ (resp. 0) for any $p < \widehat{p}$ (resp. $p > \widehat{p}$).

[15] Furthermore, it is easily shown that this is also true for the complementary case $pw > 2\alpha$.

Proof of Proposition 2

Using Lemma 1 and Proposition 1, if party L has a democratic structure and party R is entrenched, we have:

$$\begin{aligned} q_R^* < q_L^* < \frac{1}{2} \text{ iff } p < \hat{p} \equiv \frac{\alpha}{w} \\ q_R^* = q_L^* = \frac{1}{2} \text{ iff } p = \hat{p} \\ q_R^* > q_L^* > \frac{1}{2} \text{ iff } p > \hat{p}. \end{aligned} \tag{18}$$

Hence, for p smaller than $\hat{p}$, we have that $\mathbf{1}^L(\mathsf{E}q_L, \mathsf{E}q_R) = 1$, and, by (10):

$$\mathcal{P}_L^*(\mathcal{D}, \mathcal{E}) > \mathcal{P}_L^*(\mathcal{E}, \mathcal{E}) = 1/2 = \mathcal{P}_L^*(\mathcal{D}, \mathcal{D}) > \mathcal{P}_L^*(\mathcal{E}, \mathcal{D}).$$

Therefore, choosing $\mathcal{D}$ is a dominant strategy for any value of p below $\hat{p}$. This proves point *a)*.

For p larger than $\hat{p}$, we have that $q_R^* > q_L^*$, and hence $\mathbf{1}^L(\mathsf{E}q_L, \mathsf{E}q_R) = 0$. Therefore:

$$\mathcal{P}_L^*(\mathcal{D}, \mathcal{E})|_{pw>\alpha} = 2p\pi_{L_1}\left(q_{L_1}^*, q_{L_2}^*, \tilde{q}_R^*\right). \tag{19}$$

Taking the limit of this probability for p approaching $\hat{p}$ from above, by (18), we have:

$$\lim_{p \to (\alpha/w)^+} \mathcal{P}_L^*(\mathcal{D}, \mathcal{E}) = \frac{5\alpha}{8w},$$

which is larger than $\frac{1}{2}$ if and only if $w \leq 5\alpha/4$. This implies that, for p approaching $\hat{p}$ from above, the democratic structure will be preferred iff $w \leq 5\alpha/4$.

However, to prove b and c in the proposition, we still need to show how $\mathcal{P}_L^*(\mathcal{D}, \mathcal{E})$ behaves for values of p above $\hat{p}$. To this end, we focus on the the derivative of $\mathcal{P}_L^*$ with respect to p and show that it must be strictly increasing if $\mathcal{P}_L^* \geq \frac{1}{2}$.

(19) and (7) imply:

$$\begin{aligned} \frac{d\mathcal{P}_L^*(\mathcal{D}, \mathcal{E})}{dp} &= \frac{\mathcal{P}_L^*(\mathcal{D}, \mathcal{E})}{p} + p(1 - q_L^*)\frac{dq_L^*}{dp} - \frac{pw}{4\alpha} > 0 \\ &\Rightarrow \frac{\mathcal{P}_L^*(\mathcal{D}, \mathcal{E})}{p} + p(1 - q_L^*)\frac{dq_L^*}{dp} - \frac{1}{2} > 0, \end{aligned} \tag{20}$$

where (20) is obtained by noting that $pw/(4\alpha) < \frac{1}{2}$ for any value of $pw < 2\alpha$. In (20), one sees that the first term must be larger than $\frac{1}{2}$ (since $\mathcal{P}_L^*(\mathcal{D}, \mathcal{E}) > \frac{1}{2}$ and $p < 1$), and hence that the inequality does holds (since $\frac{dq_L^*}{dp} > 0$).

All this implies that, if $w \leq 5\alpha/4$, $(\mathcal{D}, \mathcal{D})$ must be the unique equilibrium for all values of $p > \alpha/w$, which proves point *b)*.
To prove point *c)*, we follow the same steps: from the results above, for $w > 5\alpha/4$, we have that $\lim_{p \to (\alpha/w)^+} \mathcal{P}_L^*(\mathcal{D}, \mathcal{E}) < \frac{1}{2}$, and hence that $(\mathcal{E}, \mathcal{E})$ is the only equilibrium for $p \to (\alpha/w)^+$. However, if there exists some value $\tilde{p}$ $(> \bar{p})$ such that $\mathcal{P}_L^*(\mathcal{D}, \mathcal{E})|_{\tilde{p}} = \frac{1}{2}$, then it must be true that $\mathcal{P}_L^*(\mathcal{D}, \mathcal{E}) > \frac{1}{2}$ for any $p > \tilde{p}$, by the argument above (see (20)). Hence, $(\mathcal{E}, \mathcal{E})$ is the only equilibrium for any $p \in (\bar{p}, \tilde{p})$ and $(\mathcal{D}, \mathcal{D})$ the unique equilibrium for all values of $p \notin (\bar{p}, \tilde{p})$. This proves point *c)*.

Proof of Proposition 5

From (13) and (16), we have that: $\frac{\partial q_R^*}{\partial w} = \frac{\partial q_R^*}{\partial K} = \frac{p}{2\alpha} > 0$.

Next, let us compute the derivative of q_L^* with respect to K :

$$\frac{\partial q_L^*(\mathcal{D},\mathcal{E})}{\partial K} = \frac{1}{2}p\frac{16\alpha^2 + p^2w^2 - 12\alpha pw}{\alpha(4\alpha + 2pK + pw)^2}.$$

This is larger than zero iff: $16 + \frac{p^2w^2}{\alpha^2} - 12\frac{pw}{\alpha} > 0$, that is iff $\frac{pw}{\alpha} < 6 - 2\sqrt{5} \approx 1.52$. This proves part *b*.

Finally, it is obvious that $\frac{\partial q_R^*(\mathcal{D},\mathcal{E})}{\partial K} > \frac{\partial q_L^*(\mathcal{D},\mathcal{E})}{\partial K}$. Rewriting $q_L^*(\mathcal{D},\mathcal{E})$, we find:

$$q_L^*(\mathcal{D},\mathcal{E}) = \frac{q_R^*(\mathcal{D},\mathcal{E})\ \left(1 - \frac{pw}{4\alpha}\right) + \frac{pw}{4\alpha}}{1 + \frac{p}{2\alpha}\left(K + \frac{w}{2}\right)},$$

and hence that $\partial q_L^*(\mathcal{D},\mathcal{E}) / \partial q_R^*(\mathcal{D},\mathcal{E}) = \left(1 - \frac{pw}{4\alpha}\right) / \left(1 + \frac{p}{2\alpha}\left(K + \frac{w}{2}\right)\right)$ which is smaller than 1.