Primaries: the unifying force

(ONLINE APPENDIX)

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1 Extensions

An advantage of our simple model is the opportunity to extend it to accommodate different research questions. In what follows we will outline three extensions (some more formally presented than others) which have the potential to deliver new insights into the adoption of primaries and, indirectly, may also help us understand the endogenous creation/destruction of political parties.

1.1 Contagion effects

The elections of Latin American presidential candidates unveil a contagion effect by which parties are more likely to call a primary election if the opposition also does (see Aragon 2009). Our model can easily be extended to a situation in which the opposing party is composed of two factions, which allows us to study the circumstances in which a primary at one end of the political spectrum can

influence the adoption of primaries at the other.

The adoption of primaries by one party changes its selected candidate (and the policy advocated by the party). This affects the relative alignment (x) of the factions in the opposing party, which in turn may influence the opposing party's internal organization (Corollary 2). Similarly, a party split affects the electoral bonus, which in turn influences other parties' internal organizations.

These mechanisms can lead to an interesting multiplicity of equilibria. Parameter configurations exist in which the following three constitute an equilibrium: firstly, both opposing parties stay united and each party elite appoints its own candidate (the unity in each party reinforces the unity in the other because the threat of a split by dissenting factions is not credible); secondly, both parties call a primary election; their candidates thus no longer belong to the party elite (the change in policy in each party makes the threat of split credible which in turn makes the party elite call a primary election); and, thirdly, both parties split and the four factions run independently in the election (as one party splits, a split in the other becomes viable as parties face less competition).

Our model can explain geographical contagion, for example when Members of the US Congress are selected in 435 simultaneous elections. In this case the electoral bonus varies according to the overall composition of the House of Representatives. This implies that any change in a particular state can propagate into other states in consequence of the electoral bonus.

1.2 Dynamic model

In the basic model, primary elections are never introduced when the party elite is in the majority. This is because such institutional change is no concession to underrepresented factions (the party's candidate would still belong to the party elite). However, in a dynamic setting, primaries can be seen as a commitment to accept the will of the majority today and of an uncertain majority in the future. This future commitment may be enough to dissuade the party factions from splitting up.

In order to illustrate this, consider a two-period model in which the adoption of primaries is irreversible (i.e., if primaries are adopted in period one they are also in place in period two). For simplicity we assume that a party split also is irreversible, so that two parties that have run independently in one period cannot fuse in the following period. Any of our variables of interest can change from one period to the next. The driving force in our analysis is the likelihood that in period two we lie in any of the five regions depicted in the Figure 5.

[INSERT FIGURE 5 HERE]

In period one our players need to consider the consequences of any decision by evaluating the expected utility from the present election plus the expected discounted utility from the next election. The dissenting faction needs to acknowledge that if it runs separately today it will also run separately tomorrow, thus losing the opportunity to extract the benefits of the electoral bonus in the future (possibly with a primary election and a party candidate of its own group). Similarly, the elite faction acknowledges that allowing the party to split today will have long-term effects, so it may be willing to call a primary election for a larger set of parameters.

An uncertain future may now cause the party elite to call a primary election when it has the support of the voting majority. Such a change introduces no variation in the current party candidate but commits the party elite to call a primary in the next election (thus allowing the dissenting faction to select the candidate should they have majoritarian support).

It is convenient to separate the case in which the party elite has majoritarian support ($y > 0.5$) in period one from the case where it does not ($y < 0.5$).

[INSERT FIGURE 6 HERE]

On the left-hand side of Figure 6 we show the elite's optimal institutional setup in period one (when the elite has the support of the majority of the party). The gray (thin) curve shows the maximum

value of x for which the dissenting faction splits from the party. The solid red curve shows the same value for the two-period model: the range of values for which the split occurs is smaller in this case – the dissenting faction internalizes the future costs of running separately (when it could be beneficial to remain as one party). When the threat of a split is credible, the elite faction will always want to call a primary election (this changes nothing in the current election and is weakly superior in the next period's election). However, the dissenting faction is not always willing to stay within the party when a primary is called. It is only for intermediate values of x (those between the dashed and continuous red curves) that the dissenting faction sees the commitment to call a primary election sufficiently strong to remain within the party.

When the party elite does not have majority support in period one (right-hand side in Figure 6), the story is analogous to that shown in Figure 3. However, the conditions shift to the left capturing the fact that both the elite and dissenting factions are more reluctant to run separately because this has potentially high costs in the next period's election.

1.3 Probabilities of winning depend on vote shares

Up until now our analysis has focused on the strategic decisions of the factions within the party. We do not model voting behavior explicitly. The main reason for this is that implementing a voting model would require many more specific assumptions on the policy space at the cost of simplicity and generality. However, it is possible to illustrate some of these added factors by moving one step towards a voting model. In this section we therefor micro-motivate the winning probabilities in terms of the vote shares commanded by the different factions in the model.

An immediate result of this extension is that the electoral bonus depends not only on the electoral rule, but also on the particular distribution of vote shares across the different groups. For instance, in a purely majoritarian electoral system the difference between running together or not may imply winning or losing the election (e.g., vote shares of the elite and dissenting factions are in both cases

30%, and the opposing party's vote share is 40%), or it may not have any consequence for the group in control of the party machinery (e.g., vote shares of the elite faction are 36%, those of the dissenting faction are 30%, and those of the opposing party are 34%). In other words, the effects of the electoral system are mitigated or enhanced by the particular electoral landscape (i.e., the vote share of each party).

Following the well established empirical relationship between vote shares and seat shares first mentioned by James Parker Smith in the Royal Commission of Systems of Elections in 1909,[1] we assume that seat shares depend on vote shares in the following way:

$$s_i = \frac{v_i^p}{v_1^p + \_ + v_n^p}. \qquad (1)$$

The proportionality of the voting system is captured by p. When $p = 1$ we are in a perfectly proportional electoral system in which the percentages of votes and of seats coincide. As p grows, the electoral system becomes less proportional. At the limit, when p grows to infinity, we are in a perfectly majoritarian system such that the party that obtains the most votes obtains the totality of the seats. We assume further that the probability of a candidate implementing her preferred policy is equal to the seat share she obtains (i.e., $\pi_i = s_i$).[2]

From (1) we can easily see that a necessary condition for $\alpha > 1$ is having $p > 1$, i.e., the assumption that the electoral system favors larger parties.[3] We can now assess how the electoral bonus changes with the distribution of votes. On the one hand, the electoral bonus increases strictly in the vote share of the opposing party – the larger the opposing party, the greater the threat is for both factions and the stronger are the incentives for both to run within a single party. On the other hand, the electoral bonus is larger when both factions are of a similar size, but the effect of the factions' relative weights

[1] See Tufte (1973). For an excellent review of this literature, see Taagepera and Shugart (1989).
[2] This assumption can be motivated with Gamson's law (Gamson 1961): parties within a coalition obtain a share of portfolios proportional to their shares of seats. As a consequence, their impact on policy can be seen to be proportional to their seat shares.
[3] This assumption is supported by Taagapera and Shugart (1989).

on the likelihood of primaries is always dominated by the direct effect on y.

Finally, we can assess the impact of a change in the proportionality of the electoral system on the incentive to adopt primaries. It can be shown that the main mechanism in our model is preserved in this setting. Take, for example, a situation in which the two factions are organized into two separate parties, and the opposing party has the largest vote share among the three political groups. A reduction in the proportionality of the voting rule (increase in p), then unambiguously increases the likelihood of primaries. Intuitively, both factions must overcome the rising seat share of the opposing party and the smaller faction is willing to coalesce whilst conceding the selection of the party candidate.[4]

2 Proofs of proposition and corollaries

Proof of Proposition 1

There exists a Subgame Perfect Nash Equilibrium where primary elections are held when (1) the dissenting faction runs separately when a primary election is not held and runs jointly when a primary election is held and (2) the party elite prefers to run jointly with a primary selecting the candidate rather than the two factions running separately.

The dissenting faction always prefers to run jointly when a primary is called. It prefers to run separately when a primary is not called when *u_d (run separately) > u_d (run jointly, elite appoints)* $\Leftrightarrow \pi_e x + \pi_d > \pi x$. Dividing by $(\pi_e + \pi_d)$ both sides of the last inequality, and using the definitions of y and α we obtain $yx + (1-y) > \alpha x$ which can be easily rearranged into the Proposition's condition one.

The party elite prefers to call a primary to keep the party together rather than running as two separate parties when *u_e (run jointly, primary) > u_d (run jointly, elite appoints)* $\Leftrightarrow \pi x > \pi_e + \pi_d x$. Dividing once again both sides of the inequality by $(\pi_e + \pi_d)$ we obtain $\alpha x > y + (1-y)x$ which can be

[4] This is analogous to the second statement in Corollary 3.

easily rearranged into the Proposition's condition two. ■

Proof of Corollary 1

The conditions in Proposition one can be rewritten in terms of y : $y < \frac{1-\alpha x}{1-x}$ and $y < \frac{(\alpha-1)x}{1-x}$. From these conditions it follows immediately that a decrease in y increases the likelihood primaries occur because it is more likely both conditions in proposition one are satisfied. ■

Proof of Corollary 2

Imagine we are in a SPNE where both parties are running jointly. For this to hold true, the dissenting faction should not have incentives to split. That is, condition (1) in Proposition one should not be satisfied: $x > (1-y)/(\alpha - y)$. As we decrease x , it becomes more likely that condition (1) in the proposition is satisifed thus it is more likely we move away from the SPNE where the party runs jointly with a candidate of the elite and moves into the SPNE where primaries are called. Imagine instead that the two factions are organised as two separate parties. That is, condition (1) in Proposition is satisifed (there is a credible threat the dissenting faction leaves the party if the elite selects its own candidate) and condition (2) is not satisfied: $x < y/(\alpha - 1 + y)$ (the party elite prefers running separately rather than allowing the dissenting faction selecting the party candidate). As we increase x , it becomes more likely condition (2) in the proposition is satisifed thus it is more likely we move away from the SPNE where both factions run separately and move into the SPNE where both factions run together and primaries are called. ■

Proof of Corollary 3

Imagine we are in a SPNE where both parties are running jointly. For this to hold true, the dissenting faction should not have incentives to split. That is, condition (1) in Proposition one should not be satisfied: $x > (1-y)/(\alpha - y)$. As we decrease α , the RHS in the previous inequality increases so it becomes more likely condition (1) in the proposition is satisifed. This implies that it is more likely we move away from the SPNE where the party runs jointly with a candidate of the elite and move into

the SPNE where primaries are called. Imagine instead that the two factions are orgnaized as two separate parties. That is, condition (1) in Proposition one is satisifed (there is a credible threat the dissenting faction leaves the party if the elite selects its own candidate) and condition (2) is not satisfied: $x < y/(\alpha - 1 + y)$ (the party elite prefers running separately rather than allowing the dissenting faction to select the party candidate). As we increase x , the RHS in the previous inequality decreases so it becomes more likely condition (2) in the proposition is satisifed. This implies that it is more likely we move away from the SPNE where both factions run separately and move into the SPNE where both factions run together and primaries are called. ■

3 A Measure of conflict in Meinke et al (2010) 's analysis

Meinke et al (2010) analyze candidate selection rules in the Democratic party at the state level since 1970. They show that as the preferences of Democratic party leaders and the voting public diverge, party leaders choose a less open selection process.[5] Table A1 recreates their main regression in column one (spline logistic regression). In order to study the effect of x we construct a measure of party internal conflict within the Democratic party and use it as an additional explanatory variable.

[INSERT TABLE A1 HERE]

We add a measure of conflict that we construct from scores given to members of congress by the lobbying organization "Americans for Democratic Action" (ADA).[6] More precisely, ADA scores evaluate the voting behavior of members of congress in the most important votes from the perspective of the organization. Higher scores are given to parliamentarians that vote more towards the interests of ADA.

Denote the score of the member of congress i from state j in year t as $p_{i,j,t}$. We first calculate the average score for all Democrats from a given state and year:

[5] Their measure of this divergence is the difference between the Berry state citizen ideology score (a weighted average between the Democrat and Republican representatives scores) and the Berry-based Democratic elite ideology score.
[6] We use ADA scores to be consistent with the measures used in Meinke et al (2010). Our methodology can be used with the NOMINATE data as well.

$$P_{j,t} = \frac{p_{1,j,t} + p_{2,j,t} + \dots + p_{N,j,t}}{N(j)}$$

where $N(j)$ denotes the number of congressmen from state j. Our measure of conflict within the Democratic party is then

$$conflict_{j,t} = \sum_i |p_{i,j,t} - P_{j,t}|.$$

Our result is presented in table A1, column two. Clearly, conflict within the Democratic party increases the likelihood that primaries are adopted in Democratic states. Columns three and four present two robustness checks. Column three suggests that conflict within the Republican party has no explanatory power when explaining the adoption of primaries in Democratic states. Column four shows that our findings are not driven by the number of seats held by the Democratic party. In addition to being robust, internal conflict is also a strong predictor and explains the adoption of primaries as much as the measures developed by Meinke et al (2010). We run an impact analysis similar to theirs and find that if conflict decreases by one standard deviation the probability of an adoption of primaries (in the average state) falls by around 30 percentage points.[7]

There are several issues with measuring party-internal conflict this way. First the position that members of congress take on policies is endogenous to the candidate selection mechanism. While we have no good instrument for conflict we hope that lagging our independent variable by two years takes care of some of these concerns. In addition, we check for the pattern of correlation across time by running the regression in table A1, column one with different time lags and leads.

[INSERT FIGURE A3 HERE]

Figure A3 shows the results of our analysis: conflict is only a significant predictor of primaries in the same year and when lagged one to three years. This is very much in line with the view that conflict within the democratic party led to the adoption of primaries between elections and not the other way around. Second, we measure party conflict at the state level by voting behavior on the federal level (this may indeed be adding noise to our measure). Third, our empirical methodology does not perfectly fit our theory: the level of conflict within the Democrats is not computed relative to the ideological position of the Republicans in the same state and year. However, this would require a solid definition of factions within the Democratic party which we do not have. It is noteworthy in this

[7] Details are available from the authors on request.

respect that the distance between the party position of Democrats and Republicans as measured by our ADA score is highly correlated with the measure of ideological distance used by Meinke et al (2010) (a correlation coefficient of $\rho = 0.8$). If we interpret ideological distance as a proxy for inter-party conflict the negative coefficient in table A1 lends support to our theory as well. Larger ideological differences between Democrats and Republicans hinders the introduction of primaries because it reduces the threat by the dissenting faction to leave the party.

References

Meinke, S., Staton, J., & Wuhs, S. (2010). State delegate selection rules for presidential nominations, 1972-2000. *The Journal of Politics* 68(1), 180–193.

Taagepera, R., & Shugart, M. (1989). Seats and votes: the effects and determinants of electoral systems. *Canadian Journal of Political* Science 22, 875-876.

Tufte, E. (1973). The Relationship between Seats and Votes in Two-Party Systems. *The American Political Science Review* 67(2), 540-54.

VARIABLES	(1) primary	(2) primary	(3) primary	(4) primary
Ideological Distance	-0.0968***	-0.113**	-0.114***	-0.116**
	(0.0373)	(0.0457)	(0.0435)	(0.0500)
Conflict (Democrats)		0.165***	0.158***	0.189***
		(0.0525)	(0.0529)	(0.0561)
Conflict (Republicans)			-0.0420	
			(0.0491)	
Number of Democrats				-0.0613
				(0.0764)
Party Organization	0.737*	0.539	-0.00935	0.589
	(0.399)	(0.353)	(0.371)	(0.371)
Party Competition	-0.522	-1.290	0.396	-0.764
	(3.431)	(3.595)	(3.458)	(3.956)
Home-state Candidate	0.982	0.970	1.173	1.283
	(0.703)	(0.940)	(1.052)	(1.235)
South	-0.354	-0.838	-0.844	-0.751
	(0.749)	(0.894)	(0.928)	(0.925)
Time counter	0.647***	0.839***	0.892***	0.827***
	(0.187)	(0.256)	(0.273)	(0.261)
Caucus Years	-0.222**	-0.283***	-0.334***	-0.300***
	(0.0905)	(0.0957)	(0.0987)	(0.0980)
Spline	-9.31e-05	-0.000146	-0.000290**	-0.000165
	(0.000138)	(0.000128)	(0.000137)	(0.000123)
Constant	0.227	-0.276	0.00851	-0.618
	(2.754)	(2.907)	(2.794)	(3.109)
Observations	119	113	98	113

Sources: All variables are from Meinke et al (2006) except the two Conflict variables and Number of Democrats which we constructed based on data from ADA. Conflict (Democrats), Conflict (Republicans) and Number of Democrats is lagged by two years (Meinke et al (2006) panel has four-year periods). Caucus Yeas and Spline are constructed using Richard Tucker's BTSCS routine. Clustered (state) standard errors in parentheses , *** p<0.01, ** p<0.05, * p<0.1

Table A1: The effect of ideological distance on the adoption of primaries.

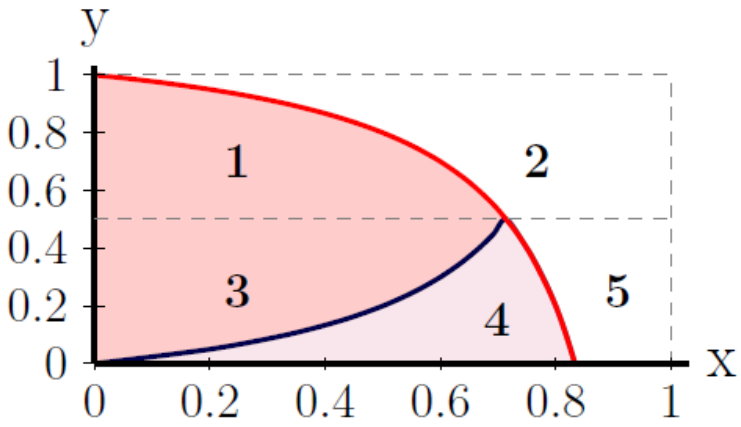

Figure A1: the five areas that are key for our analysis

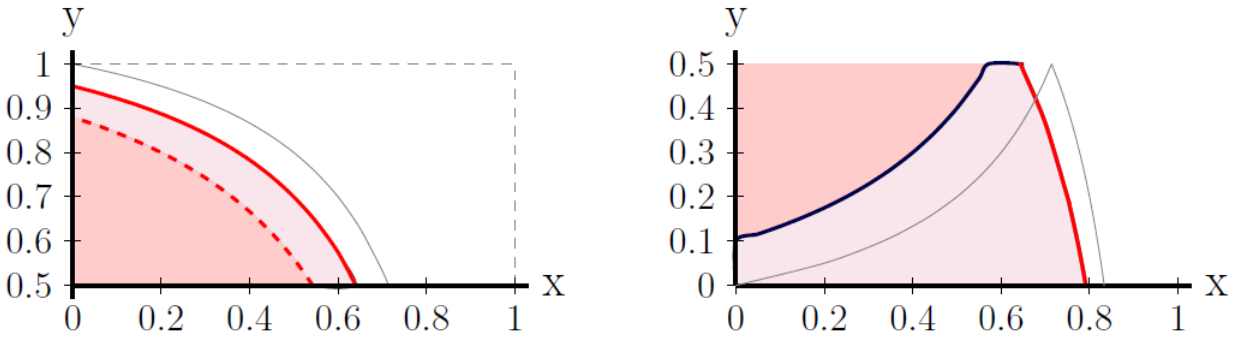

Figure A2: adoption of primaries in a two period model.

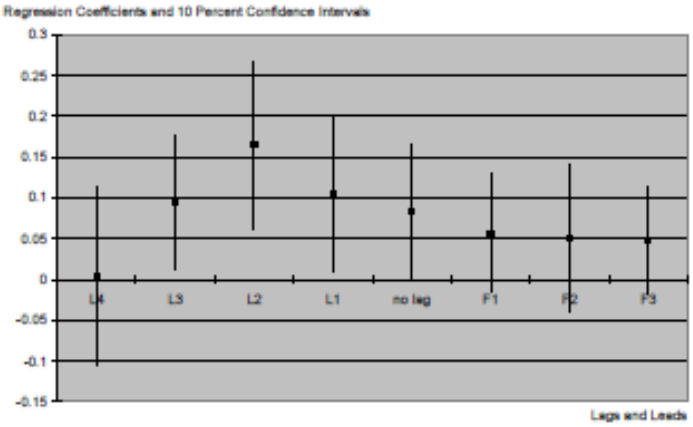

Figure A3: Conflict within the Democratic Party on the Adoption of Primaries.