Supplementary Appendix for "Parties as Disciplinarians: Charisma and Commitment Problems in Programmatic Campaigning"

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A Proofs of Theoretical Propositions: Baseline Model

Proof of Proposition 1

Consider the following strategy profile, which we will refer to as the no party-centric effort equilibrium:

$$\text{For } P:$$

$$p_j(e_{j,t}, \nu_j) = \begin{cases} 1 \text{ if } \nu_j = \bar{\nu} \\ \frac{N_H - \omega N_L}{(1-\omega)N_L} \text{ if } \nu_j = 0 \end{cases}$$

$$\text{For } i:$$

$$e_{i,t} = 0 \; \forall \; i, t$$

To see that this is a subgame perfect equilibrium, note first that, in the terminal subgame, all candidates have a dominant strategy of setting $e_{k,t} = 0$. This is true because the marginal effect of party-centric effort on the probability of election $\gamma \frac{\lambda\psi}{N} < \gamma$ is always less than that from particularistic (γ).

Given this strategy by all senior nominees, the party's best response must involve selecting high-valence types with probability 1. Recall that the party's utility is simply a function of the number of offices its candidates secure, hence, if $e_{k,t}$ is invariant in type, it always strictly prefers to nominate high-valence types. It has a dominant strategy of setting $p_j(e_{j,t} =\cdot, \nu_j = \bar{\nu}) = 1$.

The party is similarly indifferent over nominating any particular low-valence type, since all exert the same level of party-centric effort $e_{k,t} = 0$ in their final period of life. Hence, it can do no better than selecting among such candidates at random.

Finally, note that when promotion strategies are invariant in effort decisions in the first period of life, all junior candidates have a best response of setting $e_{j,t} = 0$.

If $\lambda\psi < 1$, then the marginal return to party-centric effort for the *party* – $N(\frac{\lambda\psi}{N})$ – is strictly less than that from particularistic effort 1. Given this, there is no incentive to induce party-centric effort for any actor.

Now consider an alternative strategy profile, which will constitute a subgame perfect uncommitted equilibrium for a subset of parameter values:

$$\text{For } P:$$

$$p_j(e_{j,t}, \nu_j) = \begin{cases} 1 \text{ if } \nu_j = \bar{\nu} \\ \frac{N_H - \omega N_L}{\sum_{\{j:\nu_j=0\}} e_{j,t}} \text{ if } e_{j,t} = 1, \; \nu_j = 0 \\ 0 \text{ otherwise.} \end{cases}$$

$$\text{For } j:$$

$$e_{j,t} = \begin{cases} 0 \text{ if } \nu_j = \bar{\nu} \\ 1 \text{ if } \nu_j = 0 \end{cases}$$

$$\text{For } k:$$

$$e_{k,t} = 0$$

As before, senior candidates k have a dominant strategy of setting $e_{k,t} = 0$. And, as before, given this strategy for senior candidates of all types, the party has a best response of nominating high-valence types with probability one.

Since the party is indifferent over which low-valence junior candidates to nominate, it may commit to setting $p(e_{j,t}, \nu_j = 0) > 0$ only if $e_{j,t} = 1$.

Given that their promotion probabilities are indifferent in $e_{j,t}$, all high valence types have a best response of exerting particularistic effort in their first period of life. Given the strategy of the party, however, low-valence types prefer to set $e_{j,t} = 1$ provided $p(1, 0)$ is sufficiently high. Specifically, this will

be a best response if $p(1,0) \geq \frac{N-\lambda\psi}{\delta_I b[\lambda\psi(1-\omega)N_L+N(1+\frac{\lambda}{2})]}$. Since we are examining symmetric equilibria, all low-valence types must respond in the same way. So, this equilibrium exists only if $\frac{N_H-\omega N_L}{(1-\omega)N_L} \geq \frac{N-\lambda\psi}{\delta_I b[\lambda\psi(1-\omega)N_L+N(1+\frac{\lambda}{2})]}$. $\square$

Defining the Incentive Compatibility Constraints

Definition A.1. *Define the following thresholds in p:*

$$\bar{p} \equiv \frac{N-\lambda\psi}{\delta_I b[\lambda\psi N_L + N(1+\bar{\nu}+\frac{\lambda}{2})]}$$
$$\underline{p} \equiv \frac{N-\lambda\psi}{\delta_I b[\lambda\psi N_L + N(1+\frac{\lambda}{2})]}$$

where $\bar{p}$ and $\underline{p}$ are the incentive compatibility constraints for the high- and low-valence candidates respectively, and $\underline{p} > \bar{p}$.

These incentive compatibility constraints (ICCs) are defined under the assumption that the committed equilibrium (defined below) holds. They constitute the minimum probability with which junior candidate j will be nominated to run for higher office p_j when $e_{j,t}=1$ such that j prefers to set $e_{j,t}=1$. When $e_{j,t}=0$ assume that the probability of being nominated to run for higher office is zero. Under these conditions, j prefers to set $e_{j,t}=1$ iff:

$$\begin{aligned}\gamma\{\frac{\lambda\psi N_L}{N}+\nu_j+\frac{\lambda}{2}+p_j\delta_I b[\frac{\lambda\psi N_L}{N}+1+\nu_j+\frac{\lambda}{2}]\} \\ \geq \gamma[\frac{\lambda\psi(N_L-1)}{N}+1+\nu_j+\frac{\lambda}{2}] \\ \Rightarrow p_j \geq \frac{N-\lambda\psi}{\delta_I b[\lambda\psi N_L+N(1+\nu_j+\frac{\lambda}{2})]}\end{aligned}$$

Substituting $\nu_i=\bar{\nu}$ and $\nu_i=0$ gives us the expressions for $\bar{p}$ and $\underline{p}$, respectively.

Definition of the Threshold $\bar{\delta}_I$

Definition A.2. *Implicitly define $\bar{\delta}_I$ as the minimal value of $\delta_I \in [0,1]$ such that $\bar{p}\omega + \underline{p}(1-\omega) \leq \frac{N_H}{N_L}$. If this inequality fails to hold for any $\delta_I \in [0,1]$ define $\bar{\delta}_I = 1$.*

Lemma A.1. *$\bar{\delta}_I$ is unique and interior to the unit interval for $\lambda\psi$ sufficiently high.*

Lemma A.1 defines a parameter restriction which ensures that both ICCs can simultaneously hold. For both ICCs to hold, it must be the case that when both ICCs are met at equality, the number of candidates nominated to run for higher office does not exceed the number of available higher offices to be filled:

$$\begin{aligned}\bar{p}\omega+\underline{p}(1-\omega) \leq \frac{N_H}{N_L} \\ \Rightarrow \frac{\omega(N-\lambda\psi)}{\delta_I b[\lambda\psi N_L+N(1+\bar{\nu}+\frac{\lambda}{2})]}+\frac{(1-\omega)(N-\lambda\psi)}{\delta_I b[\lambda\psi N_L+N(1+\frac{\lambda}{2})]} \leq \frac{N_H}{N_L}.\end{aligned}$$

The left-hand side of this expression is monotonic and decreasing in δ_I, whereas the right-hand side is invariant in δ_I. The limit of the left-hand side as $\delta_I \to 0$ is ∞. So, for a sufficiently low value of δ_I, this expression can never hold.

If there exists an interior value of δ_I such that the expression does holds at equality, it must be the case that as $\delta_I \to 1$ this expression strictly holds. We demonstrate that this will be the case, so long as $\psi\lambda$ is sufficiently high.

Notice further that the LHS of this expression is continuous and monotonically falling in λ and in ψ. Moreover, as these terms converge to their maximal possible values, such that $\lambda\psi \to N$, the LHS converges to zero for any $\delta_I > 0$. An envelope theorem result, therefore, implies that $\bar{\delta}_I$ is falling in λ, ψ—and is guaranteed to be interior to the unit interval for a sufficiently high value of $\lambda,\ \psi$.

As $\lambda,\ \psi$ converge to their minimal admissible values, $\lambda \to 1$ and $\psi \to 0$, we are guaranteed an interior $\bar{\delta}_I$ if $N_L N \leq \frac{3N_H N}{2}$. Substituting $N = N_L + N_H$, this condition is satisfied if $N_L \leq \frac{3}{2}N_H$. Hence, if this condition is satisfied, $\bar{\delta}_I$ is always interior (and strictly falling in $\lambda,\ \psi$). Otherwise, $\bar{\delta}_I$ is interior for $\lambda,\ \psi$ sufficiently large. □

Definition of a Committed Equilibrium Strategy Profile

Definition A.3. *Define a committed equilibrium as a strategy profile in which P adopts a strategy of*

$$p(e_{j,t}, \nu_j) = \begin{cases} \min\{1, \frac{N_H - \underline{p}\sum_{\{j:\nu_j=0\}} e_{j,t}}{\sum_{\{j:\nu_j=\bar{\nu}\}} e_{j,t}}\} \text{ if } e_{j,t}=1,\ \nu_j = \bar{\nu} \\ \max\{\underline{p}, \frac{N_H - \sum_{\{j:\nu_j=\bar{\nu}\}} e_{j,t}}{\sum_{\{j:\nu_j=0\}} e_{j,t}}\} \text{ if } e_{j,t}=1,\ \nu_j = 0 \\ 0 \text{ otherwise.} \end{cases}$$

On the path of play, junior candidates adopt a strategy of $e_{j,t} = 1\ \forall\ j$ and senior candidates adopt a strategy of $e_{k,t} = 0\ \forall\ k$.

Off the path of play, should P ever deviate from this nomination strategy, all actors revert to the equilibrium strategies from Proposition 1 in which $e_{i,t} = 0\ \forall\ i,t$ and $p_j(e_{j,t}, \nu_j) = \begin{cases} 1 \text{ if } \nu_j = \bar{\nu} \\ \frac{N_H - \omega N_L}{(1-\omega)N_L} \text{ if } \nu_j = 0 \end{cases}$

Defining a Threshold Value of $\bar{\nu}$

Definition A.4. *Define* $\hat{\nu} \equiv \frac{(N_L + BN_H)(\frac{\lambda\psi N_L}{N}) - N_L}{B[N_L(\omega + \underline{p} - \omega\underline{p})]}$.

$\hat{\nu}$ defines a threshold such that, for all $\bar{\nu} \leq \hat{\nu}$ there exists a δ_P interior to the unit interval such that the strategies defined in Definition A.3 constitute a subgame perfect equilibrium. As we demonstrate below, $\bar{\nu} \leq \hat{\nu}$ is a sufficient, not a necessary, condition for such an equilibrium to exist.

Consider the strategy profile defined in Definition A.3. Define the continuation value to the Party along the equilibrium path as V^C, that from the Nash reversion as V^R, and that from the Party's optimal deviation as V^D. A necessary condition for this strategy profile to constitute a subgame perfect equilibrium is that: $\frac{\delta_P}{1-\delta_P}(V^C - V^R) \geq V^D - V^C$.

There are two configurations of parameter values to consider. First, $\underline{p} < \frac{N_H - \omega N_L}{(1-\omega)N_L}$: the Party is able to satisfy the incentive compatibility constraint of low-valence politicians even when advancing all high-valence types. (Commitment, in this instance, implies that—off the equilibrium path—the Party would pass over a high-valence type who fails to exert party-centric effort.) Since profitable deviations always entail advancing high-valence types over low-valence, there is no room for a profitable deviation for the Party in this case. $V^D = V^C$, implying that the above inequality will be satisfied for any δ_P.

Next, we must consider the case in which $\underline{p} \geq \frac{N_H - \omega N_L}{(1-\omega)N_L}$: to meet the incentive compatibility constraint of low-valence types, the Party must pass over some high-valence candidates. Here, a profitable deviation consists of lowering the probability with which low-valence types are advanced, and instead advancing $\bar{\nu}$ types. The most profitable deviation naturally involves promoting all available ωN_L high-valence candidates and filling only the remaining candidacies with low-valence types.

Substituting the relevant values from the inequality above:

$$V^D - V^C = \gamma\bar{\nu}B[N_L(\omega + \underline{p} - \omega\underline{p}) - N_H]$$
$$V^C - V^R = \gamma\{(N_L + BN_H)(\frac{\lambda\psi N_L}{N}) - N_L + \bar{\nu}B[N_H - N_L[(1-\omega)\underline{p} + \omega]]\}$$

implying $\frac{\delta_P}{1-\delta_P}(V^C - V^R) \geq V^D - V^C$ iff:

$$\delta_P \geq \frac{\bar{\nu}B[N_L(\omega + \underline{p} - \omega\underline{p}) - N_H]}{(N_L + BN_H)(\frac{\lambda\psi N_L}{N}) - N_L}$$

It therefore follows that there exists an interior value of δ_P such that conformity with the strategy profile defined in Definition A.3 constitutes a best response for the Party so long as $\bar{\nu} \leq \frac{(N_L+BN_H)(\frac{\lambda\psi N_L}{N})-N_L}{B[N_L(\omega+\underline{p}-\omega\underline{p})-N_H]}$.

Proof of Proposition 2

Definition A.3 characterizes the strategies of all actors in the committed equilibrium. Notice that these strategies imply that, on the equilibrium path, low-valence junior candidates face a promotion schedule of $p_j(e_{j,t}, \nu_j = 0) = \begin{cases} \max\{\underline{p}, \frac{N_H - \omega N_L}{(1-\omega)N_L}\} \text{ if } e_{j,t} = 1 \\ 0 \text{ otherwise.} \end{cases}$. From the definition of the such candidates incentive compatibility constraints in Definition A.1, the best response for such actors to such a nomination schedule is to set $e_{j,t} = 1$.

The nomination schedule faced by high-valence junior candidates is

$$p(e_{j,t}, \nu_j = \bar{\nu}) = \begin{cases} \min\{1, \frac{N_H - \underline{p}(1-\omega)N_L}{\omega N_L}\} \text{ if } e_{j,t} = 1 \\ 0 \text{ otherwise.} \end{cases}.$$

From Lemma A.1, we are guaranteed that this nomination schedule ensures that the best response for such actors is to set $e_{j,t} = 1$. Given that $\delta_I > \bar{\delta}_I$, both incentive strategy constraints may be satisfied simultaneously.

Given that $e_{k,t} = 0$ is a best response for all types of senior candidates for $\lambda\psi < N$, the specified strategy profile constitutes a best response for all candidates on the path of play. Off the path of play, candidates adopt a Nash reversion strategy.

All that remains, therefore, is to examine the best responses for the Party. From the characterization of Definition A.4 above, we can see that the specified strategies constitute a best response on the path of play when $\underline{p} < \frac{N_H - \omega N_L}{(1-\omega)N_L}$ if $\delta_P \geq \frac{\bar{\nu}B[N_L(\omega+\underline{p}-\omega\underline{p})-N_H]}{(N_L+BN_H)(\frac{\lambda\psi N_L}{N})-N_L}$. If, contrastingly, $\underline{p} \geq \frac{N_H-\omega N_L}{(1-\omega)N_L}$, the specified strategies constitute a best response for any $\delta_P \in [0, 1]$.

Off the path of play, for the strategy profile to constitute a subgame perfect equilibrium, the Party must be willing to 'punish' candidates who fail to exert party-centric effort (i.e., those who deviate from the equilibrium). The Party is always weakly better off from punishing low-valence types. And, when $\underline{p} < \frac{N_H-\omega N_L}{(1-\omega)N_L}$, the Party is willing to punish deviating high-valence types (who can be replaced with an alternate high-valence candidate who set $e_{j,t} = 1$). This constraint only binds, therefore, when $\underline{p} \geq \frac{N_H-\omega N_L}{(1-\omega)N_L}$ – punishing a high-type means replacing her with a low.

For commitment to be incentive compatible off the path, it must be the case that the net returns to the Party from deviating from punishment ($B\bar{\nu}$) must be smaller than the net present value of the benefits of commitment. Substituting and rearranging yields:

$$\delta_P \geq \frac{B\bar{\nu}}{(N_L + BN_H)(\frac{\lambda\psi N_L}{N}) - N_L + B\bar{\nu}}$$

We can therefore define $\bar{\delta}_P$ as follows:

$$\bar{\delta}_P = \begin{cases} \frac{\bar{\nu}B[N_L(\omega+\underline{p}-\omega\underline{p})-N_H]}{(N_L+BN_H)(\frac{\lambda\psi N_L}{N})-N_L} \text{ if } \underline{p} > \frac{N_H-\omega N_L}{(1-\omega)N_L} \\ \frac{B\bar{\nu}}{(N_L+BN_H)(\frac{\lambda\psi N_L}{N})-N_L+B\bar{\nu}} \text{ otherwise.} \end{cases}$$

□

Proof of Proposition 3

This follows directly from the definition of $\bar{\delta}_P$ in Proposition 2.

Proof of Proposition 4

This proposition holds that the threshold values $\bar{\delta}_I$ and $\bar{\delta}_P$ are both falling in λ and in ψ. We consider each of these parameters in turn.

From Lemma A.1, $\bar{\delta}_I$ is defined implicitly as the value of δ_I such that:

$$\frac{\omega(N-\lambda\psi)}{\delta_I b[\lambda\psi N_L + N(1+\bar{\nu}+\frac{\lambda}{2})]} + \frac{(1-\omega)(N-\lambda\psi)}{\delta_I b[\lambda\psi N_L + N(1+\frac{\lambda}{2})]} = \frac{N_H}{N_L}$$

where such a $\delta_I \in [0,1]$ exists. Otherwise, this parameter is defined as equal to 1.

Notice that the LHS of this expression is monotonically decreasing in both δ_I and in $\lambda\psi$. Hence, the envelope theorem implies that any interior $\bar{\delta}_I$ is strictly falling in $\lambda\psi$. For a corner $\bar{\delta}_I = 1$ with a given $\lambda\psi$, a shift in parameter values to $\lambda'\psi' > \lambda\psi$ produces a corresponding $\bar{\delta}_I \leq 1$. Hence, $\bar{\delta}_I$ is weakly falling in $\lambda\psi$.

We now consider $\bar{\delta}_P$, as defined in Proposition 2:

$$\bar{\delta}_P = \begin{cases} \frac{\bar{\nu}B[N_L(\omega+\underline{p}-\omega\underline{p})-N_H]}{(N_L+BN_H)(\frac{\lambda\psi N_L}{N})-N_L} \text{ if } \underline{p} > \frac{N_H-\omega N_L}{(1-\omega)N_L} \\ \frac{B\bar{\nu}}{(N_L+BN_H)(\frac{\lambda\psi N_L}{N})-N_L+B\bar{\nu}} \text{ otherwise.} \end{cases}$$

Notice that the expression for $\bar{\delta}_P$ when $\underline{p} > \frac{N_H-\omega N_L}{(1-\omega)N_L}$ is strictly falling in $\lambda\psi$, as is the expression for $\bar{\delta}_P$ when $\underline{p} \leq \frac{N_H-\omega N_L}{(1-\omega)N_L}$.

Note further that, for $\underline{p} > \frac{N_H-\omega N_L}{(1-\omega)N_L}$, $\frac{\bar{\nu}B[N_L(\omega+\underline{p}-\omega\underline{p})-N_H]}{(N_L+BN_H)(\frac{\lambda\psi N_L}{N})-N_L} > \frac{B\bar{\nu}}{(N_L+BN_H)(\frac{\lambda\psi N_L}{N})-N_L+B\bar{\nu}}$ (given the discrete nature of these assignments $N_L(\omega+\underline{p}-\omega\underline{p}) - N_H] \geq 1$).

From the definition of $\underline{p}$ in Definition A.1, $\underline{p}$ is strictly falling in $\lambda\psi$. Hence, $\bar{\delta}_P$ is falling everywhere in $\lambda\psi$. □

B Proofs of Theoretical Propositions: Extended Model

We now turn our attention to the extended model. This model is isomorphic to the baseline model, discussed above, save insofar as we now assume politicians value the political success of their co-partisans. This level of loyalty is indexed by $\alpha > 0$. Politician utilities are thus given as follows:

$$EU_i(e_{i,t}, e_{i,t+1}; p_i) = \gamma[x_{i,t} + p_i\delta_I b x_{i,t+1}] + \alpha\gamma[\sum_{h\neq i} x_{h,t} + \delta\sum_{h\neq i} x_{h,t+1}]$$

$$\text{where } x_{i,t} = \lambda F(\frac{\sum_i e_{i,t}}{N}) + 1 - e_{i,t} + \nu_i.$$

Definition of a Threshold in α

Definition B.5. *Define* $\bar{\alpha} \equiv \frac{N-\lambda\psi}{\lambda\psi(N-1)}$.

Notice that setting $e_{j,t} = 0$ boosts the probability of election for a given junior politician by a factor of γ. Setting $e_{j,t} = 1$ boosts her probability of election by $\gamma\frac{\lambda\psi}{N} < \gamma$. But, devoting party-centric effort also boosts the probability of each of the other $N-1$ co-partisans by a factor of $\gamma\frac{\lambda\psi}{N}$. Thus the marginal effect of setting $e_{j,t} = 1$ on candidate j's expected utility is $\gamma[\frac{\lambda\psi}{N} + \alpha(N-1)\frac{\lambda\psi}{N}]$. Algebraic manipulation reveals that the marginal gain in utility from setting $e_{j,t} = 1$ exceeds that from setting $e_{j,t} = 0$ iff $\alpha \geq \frac{N-\lambda\psi}{(N-1)\lambda\psi} \equiv \bar{\alpha}$.

An analogous calculation for senior politicians reveals that the marginal return to particularistic effort γb is less than that of party centric effort $\frac{\gamma b\lambda\psi}{N} + \alpha(N-1)\frac{\lambda\psi}{N}$ iff $\alpha \geq b\bar{\alpha}$.

Proof of Proposition 5

We can now proceed to derive the loyal equilibrium described in Proposition 5. Define the strategy profile as follows:

For P :

$$p_j(e_j, \nu_j) = \begin{cases} 1 \text{ if } \nu_j = \bar{\nu} \\ \frac{N_H - \omega N_L}{(1-\omega)N_L} \text{ otherwise} \end{cases}$$

For j :

$$e_{j,t} = 1$$

For k :

$$e_{k,t} = \begin{cases} 1 \text{ if } \alpha > b\bar{\alpha} \\ 0 \text{ otherwise} \end{cases}$$

Proceeding via backward induction, if $\alpha < b\bar{\alpha}$, all candidates in their final period of life have a dominant strategy of setting $e_{k,t} = 0$. If $\alpha \geq b\bar{\alpha}$ all have a dominant strategy of setting $e_{k,t} = 1$.

Given this strategy by candidates nominated for higher office, P has a strict preference for nominating high-valence politicians over low-valence. Its utility is invariant in any other parameter bar politician type. Hence, a best response for the party is to set the nomination schedule $p(e_{j,t}, \nu_j) = \begin{cases} 1 \text{ if } \nu_j = \bar{\nu} \\ \frac{N_H - \omega N_L}{(1-\omega)N_L} \text{ if } \nu_j = 0 \end{cases}$

In the first period of their lives, given $\alpha \geq \bar{\alpha}$, all candidates have a best response of setting $e_{j,t} = 1$. This then establishes that the proposed strategy profile constitutes a subgame perfect equilibrium. □

Strategies when $\alpha < \bar{\alpha}$

When $\alpha < \bar{\alpha}$, the extended model closely resembles the baseline. All politicians have a primitive preference for setting $e_{i,t} = 0$, and this will be a dominant strategy in the final period of life. Hence, in any equilibrium $e_{k,t} = 0$. The party may, however, attempt to induce politicians to exert party-centric effort through manipulation of the nomination schedule. This manipulation is made more difficult, however, by the fact that the party has a strict preference for nominating high-valence politicians for higher office—this is the interaction of the commitment and public goods problems that motivates this paper.

We can thus characterize uncommitted equilibria that are directly analogous to those characterized in Proposition 1 above, if $\alpha < \bar{\alpha}$.

Proposition B.6. *If $\alpha < \bar{\alpha}$, there exists a symmetric subgame perfect equilibrium in which P sets a nomination schedule of* $p_j(e_{j,t}, \nu_j) = \begin{cases} 1 \text{ if } \nu_j = \bar{\nu} \\ \frac{N_H - \omega N_L}{(1-\omega)N_L} \text{ if } \nu_j = 0 \end{cases}$ *. $e_{j,t} = e_{k,t} = 0 \; \forall \; j, k$.*

If, $\alpha < \bar{\alpha}$ and $\frac{N_H - \omega N_L}{(1-\omega)N_L} \geq \frac{N - \lambda\psi - \alpha(N-1)\lambda\psi}{b\delta_I[\lambda\psi(1-\omega)N_L + N(1+\frac{\lambda}{2})]}$, there coexists a symmetric subgame perfect equilibrium in which P sets a nomination schedule of $p(e_{j,t}, \nu_j) = \begin{cases} 1 \text{ if } \nu_j = \bar{\nu} \\ \frac{N_H - \omega N_L}{\sum_{\{j:\nu_j = 0\}} e_{j,t}} \text{ if } \nu_j = 0, \; e_{j,t} = 1 \\ 0 \text{ otherwise.} \end{cases}$ *Junior politicians adopt a strategy of* $e_{j,t} = \begin{cases} 0 \text{ if } \nu_j = \bar{\nu} \\ 1 \text{ if } \nu_j = 0 \end{cases}$ *And senior politicians adopt a strategy of $e_{k,t} = 0 \; \forall \; k$.*

Proof. Proceed via backward induction. In their final period of life, all nominated politicians have a dominant strategy of setting $e_{k,t} = 0$ given $\alpha < \bar{\alpha} < b\bar{\alpha}$. Given their strategy in this subgame, the party strictly prefers to nominate high-valence candidates over low-, but is indifferent among politicians conditional on type. Hence, it is a best response for the party to nominate all available high-valence politicians to run, and to fill any remaining nominations with low-valence politicians selected at random. Given that this strategy by the party is invariant in junior politicians' actions in their first period of life, their best response is dictated by their primitive preferences which value particularistic over party-centric effort. Hence $e_{j,t} = 0 \; \forall \; j$. All actors are thus adopting best responses in all subgames, this strategy profile constitutes a subgame perfect equilibrium.

Note however, while the party has a strict preference over nominations of candidates based on type, it is indifferent among possible nominees once we condition on type. Hence, it is also a best response for the party to confine nominations to low-types who exert party-centric effort in the first period of their life, randomly selecting among such politicians. This strategy will be part of a symmetric subgame perfect strategy profile if the nomination schedule generates sufficient incentive for low-valence types to exert party centric effort in their first period of life.

Low-valence junior politicians will be motivated to exert party centric effort if $p_j(e_{j,t} = 0, \nu_j = 0) = 0$ and $p_j(e_{j,t} = 1, \nu_j = 0)$ exceeds some threshold. Specifically, we need $p_j(e_{j,t} = 1, \nu_j = 0) \geq \frac{N - \lambda\psi - \alpha(N-1)\lambda\psi}{b\delta_I[\lambda\psi(1-\omega)N_L + N(1+\frac{\lambda}{2})]}$. Notice that the denominator of this expression is strictly positive, as is the numerator for $\alpha < \bar{\alpha}$. Therefore, if $\frac{N_H - \omega N_L}{(1-\omega)N_L} \geq \frac{N - \lambda\psi - \alpha(N-1)\lambda\psi}{b\delta_I[\lambda\psi(1-\omega)N_L + N(1+\frac{\lambda}{2})]}$, the party may adopt the proposed nomination schedule, all low-valence junior politicians will set $e_{j,t} = 1$, and the relevant incentive compatibility constraint is satisfied. The strategy profile thus constitutes as symmetric subgame perfect equilibrium. □

All that remains is to characterize the committed equilibrium to this game. To conserve on notation, we will redefine some of the thresholds from the baseline model. We begin by characterizing the incentive compatibility constraints for low- and high-valence politicians.

Definition B.6. *Re-define the following two thresholds in $p_j(e_{j,t}, \nu_j)$:*

$$\bar{p} = \frac{N - \lambda\psi - \alpha(N-1)\lambda\psi}{b\delta_I[\lambda\psi N_L + N(\frac{\lambda}{2} + \bar{\nu})]}$$

$$\underline{p} = \frac{N - \lambda\psi - \alpha(N-1)\lambda\psi}{b\delta_I[\lambda\psi N_L + N(1 + \frac{\lambda}{2})]}$$

where $\bar{p}$ and $\underline{p}$ are the incentive compatibility constraints for high- and low-types, respectively, and $\underline{p} > \bar{p}$.

We can now move on to a statement of a version of Lemma A.1, revised for the extended model.

Lemma B.2. *Re-define $\bar{\delta}_I$ as the minimal value of δ_I such that $\bar{p}\omega + \underline{p}(1-\omega) \leq \frac{N_H}{N_L}$, where the values of $\bar{p}$ and $\underline{p}$ are as re-defined in Definition B.6 above. If such a value of δ_I does not exist, define $\bar{\delta}_I = 1$. $\bar{\delta}_I$ is interior for a sufficiently high value $\lambda\psi$ and, for such values, it is unique.*

Proof. We are looking for a value of δ_I such that:

$$\omega\bar{p} + (1-\omega)\underline{p} \leq \frac{N_H}{N_L}$$
$$\Rightarrow \omega[\frac{N - \lambda\psi - \alpha(N-1)\lambda\psi}{b\delta_I[\lambda\psi N_L + N(\frac{\lambda}{2} + \bar{\nu})]}] + (1-\omega)[\frac{N - \lambda\psi - \alpha(N-1)\lambda\psi}{b\delta_I[\lambda\psi N_L + N(1 + \frac{\lambda}{2})]}] \leq \frac{N_H}{N_L}$$

Clearly, the LHS of the above expression is monotonic and decreasing in δ_I; whereas, the RHS is invariant in this term. Moreover, as $\delta_I \to 0$, the LHS of the expression goes to ∞. So, via the intermediate value theorem, there will be a threshold $\bar{\delta}_I$ as defined in the lemma, so long as the expression holds strictly as $\delta_I \to 1$.

Notice further that as λ and ψ converge to their maximal values, such that $\lambda\psi \to N$, the LHS of this expression converges to zero for any strictly positive δ_I and $\alpha < \bar{\alpha}$. Given that the RHS of this expression is strictly positive, for a sufficiently high value of $\lambda\psi$, there exists a $\delta_I \equiv \bar{\delta}_I \in (0,1)$ such that the expression holds at equality, and holds strictly for all $\delta_I > \bar{\delta}_I$.

This then completes the proof of the lemma. □

Definition B.7. *Define a committed equilibrium as a strategy profile in which P adopts a strategy of*

$$p(e_{j,t}, \nu_j) = \begin{cases} \min\{1, \frac{N_H - \underline{p}\sum_{\{j:\nu_j=0\}} e_{j,t}}{\sum_{\{j:\nu_j=\bar{\nu}\}} e_{j,t}}\} \text{ if } e_{j,t} = 1,\ \nu_j = \bar{\nu} \\ \max\{\underline{p}, \frac{N_H - \sum_{\{j:\nu_j=\bar{\nu}\}} e_{j,t}}{\sum_{\{j:\nu_j=0\}} e_{j,t}}\} \text{ if } e_{j,t} = 1,\ \nu_j = 0 \\ 0 \text{ otherwise.} \end{cases}$$

On the path of play,junior candidates adopt a strategy of $e_{j,t} = 1\ \forall\ j$ and senior candidates adopt a strategy of $e_{k,t} = 0\ \forall\ k$.

Off the path of play, should P ever deviate from this nomination strategy, all actors revert equilibrium strategies in which $e_{i,t} = 0\ \forall\ i,t$ and $p(e_{j,t}, \nu_j) = \begin{cases} 1 \text{ if } \nu_j = \bar{\nu} \\ \frac{N_H - \omega N_L}{(1-\omega)N_L} \text{ otherwise.} \end{cases}$ from Proposition B.6.

Proposition B.7. *If $\alpha < \bar{\alpha}$ and $\delta_I > \bar{\delta}_I$, the strategy profile in Definition B.7 constitutes a subgame perfect equilibrium if the party is sufficiently forward-looking. Specifically, there exists a threshold in $\delta_P \equiv \bar{\delta}_P$ such that this profile constitutes a subgame perfect equilibrium for $\delta_P \geq \bar{\delta}_P$ and does not for $\delta_P < \bar{\delta}_P$. If $\frac{N_H - \omega N_L}{(1-\omega)N_L} < \underline{p}$, $\bar{\delta} \in (0,1)$ if $\bar{\nu} \leq \hat{\nu}$ (as defined in Definition A.4). Otherwise, $\bar{\delta}$ is interior for all realizations of $\bar{\nu}$.*

Proof. The proof of this Proposition is largely identical to that of Proposition 2. The only feature that differs are the relevant thresholds governing the value of the threshold in δ_P. We can redefine this threshold as $\bar{\delta}_P$, where:

$$\bar{\delta}_P = \begin{cases} \frac{\bar{\nu}B[N_L(\omega + \underline{p} - \omega\underline{p}) - N_H]}{(N_L + BN_H)(\frac{\lambda\psi N_L}{N}) - N_L} \text{ if } \underline{p} > \frac{N_H - \omega N_L}{(1-\omega)N_L} \\ \frac{B\bar{\nu}}{(N_L + BN_H)(\frac{\lambda\psi N_L}{N}) - N_L + B\bar{\nu}} \text{ otherwise.} \end{cases}$$

where $\underline{p}$ is as redefined as $\underline{p} = \frac{N - \lambda\psi - \alpha(N-1)\lambda\psi}{b\delta_I[\lambda\psi N_L + N(1+\frac{\lambda}{2})]}$ as in Definition B.6. □

C Empirical Analysis: Cross-National Data Sources and Variables

Table C1 lists the data sources for the volatility index in each country in our cross-national sample. Table C2 gives details for the variables used in the cross-national analysis. Table C3 gives the summary statistics. Figure C1 shows the patterns of missing observations across the variables.

Table C1: Sources of volatility data

Source	Countries
Mainwaring, Gervasoni and España-Najera (2016)	Argentina, Australia, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Dom. Rep., Ecuador, El Salvador, Guatemala, Honduras, India, Israel, Jamaica, Japan, Malaysia, Mexico, Mongolia, New Zealand, Nicaragua, Panama, Philippines, ROK, Taiwan, Turkey, USA, Uruguay, Venezuela
Powell and Tucker (2014)	Albania, Austria, Belgium, Bulgaria, Croatia, Czech Rep., Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Macedonia, Moldova, Netherlands, Norway, Poland, Portugal, Romania, Russia, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, UK, Ukraine
Weghorst and Bernhard (2014)	Benin, Botswana, Ghana, Kenya, Mali, Mauritius, Mozambique, Namibia, Niger, Nigeria, S. Africa, Senegal, Tanzania, Zambia
Olivares-Concha (2014)	Paraguay, Thailand
Croissant and Völkel (2012)	Indonesia
N/A	Angola, Bangladesh, Egypt, Lebanon, Morocco, Pakistan, Peru

Here, we reproduce the question wording of the key DALP items used to construct measures of Personalism, Programmaticness, and group attachments.

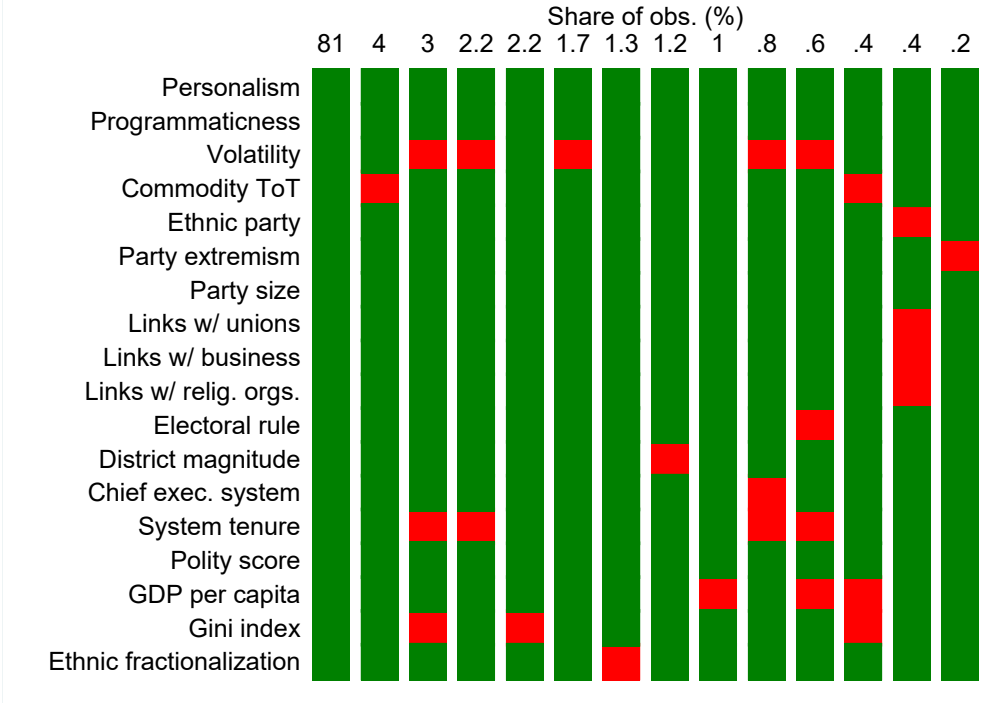
Personalism: "*To what extent do parties seek to mobilize electoral support by featuring a party leader's charismatic personality?*" This survey question, as well as the two questions used for Programmaticness, is on a 4-point scale, one denoting that a party does "not at all" rely on an electoral strategy, and four denoting that a party "very strongly" relies on it.

Programmaticness: (a) "*Please indicate the extent to which parties seek to mobilize electoral support by emphasizing the attractiveness of the party's positions on policy issues*," (b) "*Please indicate the extent to which parties draw on and appeal to voters' long-term partisan loyalty (party identification). Parties may invoke their historical origins or the achievements of historical leaders. They may feature party symbols and rituals to reinvigorate party identification.*"

Group attachment—ethnicity: "*Political parties often have more or less routine and explicit linkages to [...] organizations based on [...] language, or ethnicity. The linkages might include leadership and membership overlap, mutual financial support, reserved positions for representatives of these organizations at National Conventions, etc. Do the following parties have strong linkages to Ethnic/linguistic organizations?* [Yes/no]"

Group attachment—ideological extremism: "*Party is best located at the 'left/right' of the national political spectrum based upon its overall policy positions and ideological framework*" (left=1, right=10).

Figure C1: Patterns of missing observations



Notes: Green cells indicate non-missing values; red cells indicate missing values. The percent share of missing observations for each missingness pattern (column) is indicated at the top of the graph.

Table C2: Description of variables

Variable	Source	Comments	Omitted category
Dependent variables			
Personalism	DALP	Item *e1*	
Programmaticness	DALP	Average of items *e2* and *e4*	
Key independent variables			
Electoral volatility	Table C1	Rescaled from $[0, 100]$ to $[0, 1]$	
Commodity terms of trade	IMF	Recoded from index (2012=100) to a normalized (mean-zero, st. dev. one) and reverse-scaled measure	
Ethnic party	DALP	Based on item *a8_4*; parties with rating average greater than 0.5 are coded as ethnic	
Party extremism	DALP	Based on variables *dw* (overall left-right party placement), *d5* (party placement on traditional authority, institutions, and customs), *d4* (party placement on national identity), and *partysize*. The one-dimensional extremism measure is based on *dw*, expressed as the absolute distance of each party to a country's mean of all parties, weighted by party size. The two-dimensional measure is based on *dw* and *d5*, expressed as the absolute city-block size-weighted distance of each party to a country's centroid. The three-dimensional measure is equivalent to the two-dimensional measure, but is based on *dw*, *d5*, and *d4*	
Party-level covariates			
Party size	DALP	Item *partysize*	
Links w/ unions	DALP	Item *a8_1*	Links w/ urban or rural associations and women's organizations
Links w/ business	DALP	Item *a8_2*	Links w/ urban or rural associations and women's organizations
Links w/ religious orgs	DALP	Item *a8_3*	Links w/ urban or rural associations and women's organizations
Electoral system covariates			
Plurality	DES	Variable `legislative_type`; where possible, missing values filled in with data from DPI (variable `pluralty`)	Mixed system
Proportional representation	DES	Variable `legislative_type`; where possible, missing values filled in with data from DPI (variable `pr`)	Mixed system
List-PR	DPI	Variable `cl`	Closed and open list dummies in analysis; omitted is non-list PR (mainly SMDP)
Average district magnitude	DPI	Variable `mdmh`; refers to lower house	
SMDP	DES	Variable `elecrule` (in Table D5)	Block vote rule
Two-round vote	DES	Variable `elecrule` (in Table D5)	Block vote rule
Alternative vote	DES	Variable `elecrule` (in Table D5)	Block vote rule
STV	DES	Variable `elecrule` (in Table D5)	Block vote rule
Mixed system	DES	Variable `elecrule` (in Table D5)	Block vote rule
Political system covariates			
Presidential system	DPI	Variable `system`	Assembly-elected presidential system (parliament elects but cannot easily recall president)
Parliamentary system	DPI	Variable `system`	Assembly-elected presidential system
System tenure	DPI	Length of democratic tenure; equal to variable `tensys`, unless variable `eiec` is less than 5, in which case it takes the value of 0	
Polity score	QoG	Variable `p_polity2`	
Other country-level covariates			
GDP per capita, PPP	QoG	Variable `wdi_gdpcappppco`; logged	
Gini index	QoG	Variable `wdi_gini`; due to missingness, we calculate the average of the available years for 2000-2008 whenever the data for 2008 are missing	
Ethnic fractionalization	QoG	Variable `al_ethnic`	

Notes: DALP (Kitschelt, 2013), DPI (Cruz, Keefer and Scartascini, 2015), DES (Bormann and Golder, 2013), IMF (Gruss and Kebhaj, 2019), QoG (Teorell et al., 2017).

Table C3: Summary statistics

	Mean	St. dev.	Min.	Max.	No. values
Programmaticness	3.03	0.44	1.42	3.96	398
Personalism	2.84	0.71	1.00	4.00	224
Electoral volatility	0.29	0.15	0.02	0.69	81
Commodity terms of trade	-0.17	0.44	-1.62	3.80	83
Ethnic party	0.18	0.39	0.00	1.00	2
Party extremism	1.73	1.20	0.01	6.28	493
Party size	0.15	0.15	0.00	0.79	388
Links w/ unions	0.35	0.35	0.00	1.00	112
Links w/ business	0.47	0.33	0.00	1.00	119
Links w/ relig. orgs.	0.26	0.32	0.00	1.00	103
Plurality	0.23	0.42	0.00	1.00	2
PR	0.57	0.49	0.00	1.00	2
Open list	0.57	0.50	0.00	1.00	2
Closed list	0.25	0.43	0.00	1.00	2
District magnitude	1.94	1.46	-0.33	6.11	65
Presidential system	0.42	0.49	0.00	1.00	2
Parliamentary system	0.52	0.50	0.00	1.00	2
System tenure	3.09	0.93	0.00	4.36	32
Polity score	7.91	2.89	-6.00	10.00	11
GDP per capita	9.58	0.96	6.71	11.09	85
Gini index	0.38	0.09	0.24	0.65	83
Ethnic fractionalization	0.38	0.23	0.00	0.86	87

D Empirical Analysis: Additional Cross-National Results

Table D1 shows the coefficient estimates. The first two columns evaluate Hypothesis 1; the remaining columns address Hypothesis 2 with group attachments proxied by ethnic parties (columns 3-4) and ideological extremism (column 5-6). The coefficients on our key variables, Volatility and Volatility $\times$ Group Attachments are as expected, and are statistically significant at conventional levels (Volatility ranges from 0 to 1, Ethnicity is a dummy variable, and Ideology ranges from 0 to about 6).

Table D1: Electoral Volatility, Group Attachments, and Electoral Strategies—OLS Results

	Baseline model		Extended model			
			Ethnicity		Ideology	
	Personalism	Programmaticness	Personalism	Programmaticness	Personalism	Programmaticness
Key variables						
Electoral volatility	1.08**	-0.41*	1.29**	-0.54*	1.94**	-1.09**
	(0.24)	(0.20)	(0.24)	(0.22)	(0.46)	(0.31)
Group attachment			0.47*	-0.06	0.11	-0.04
			(0.18)	(0.10)	(0.07)	(0.03)
Volatility $\times$ group attachment			-1.15*	0.64*	-0.50*	0.39**
			(0.50)	(0.30)	(0.22)	(0.12)
Party-level covariates						
Party size (vote share in prev. elec.)	1.42**	0.99**	1.50**	0.98**	1.36**	1.14**
	(0.22)	(0.18)	(0.22)	(0.18)	(0.23)	(0.17)
Links w/ unions	-0.13	0.36**	-0.12	0.38**	-0.08	0.29**
	(0.10)	(0.07)	(0.10)	(0.07)	(0.10)	(0.06)
Links w/ business	0.19	-0.13*	0.19	-0.11*	0.20†	-0.11*
	(0.12)	(0.05)	(0.12)	(0.05)	(0.12)	(0.05)
Links w/ religious orgs.	0.11	0.29**	0.11	0.26**	0.12	0.30**
	(0.11)	(0.07)	(0.11)	(0.07)	(0.11)	(0.07)
Electoral system covariates						
Plurality	0.36**	0.23**	0.30*	0.19*	0.33**	0.28**
	(0.12)	(0.09)	(0.13)	(0.08)	(0.12)	(0.09)
Proportional representation	0.05	0.18**	0.05	0.18**	0.07	0.16*
	(0.07)	(0.07)	(0.07)	(0.07)	(0.08)	(0.06)
Closed list	0.51**	0.21*	0.46**	0.18*	0.47**	0.26**
	(0.13)	(0.08)	(0.13)	(0.07)	(0.12)	(0.09)
Open list	0.26*	0.18*	0.23†	0.14*	0.23*	0.22*
	(0.12)	(0.07)	(0.12)	(0.06)	(0.12)	(0.08)
Average district magnitude (lower house)	0.00	0.02	0.00	0.02	-0.00	0.02
	(0.03)	(0.02)	(0.03)	(0.02)	(0.03)	(0.02)
Political system covariates						
Presidential system	0.04	-0.33**	0.09	-0.33**	0.02	-0.31**
	(0.13)	(0.09)	(0.13)	(0.09)	(0.14)	(0.09)
Parliamentary system	0.20	-0.16†	0.23†	-0.21*	0.16	-0.13†
	(0.13)	(0.08)	(0.13)	(0.09)	(0.14)	(0.08)
System tenure	-0.01	0.02	-0.01	0.02	-0.00	0.00
	(0.05)	(0.03)	(0.05)	(0.03)	(0.05)	(0.03)
Polity score	0.02	0.00	0.02	0.00	0.01	0.01
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Other country-level covariates						
GDP per capita, PPP (logged)	-0.15**	-0.02	-0.15**	-0.01	-0.16**	-0.02
	(0.04)	(0.04)	(0.04)	(0.03)	(0.04)	(0.04)
Gini index	0.17	0.16	0.17	0.08	0.14	0.11
	(0.49)	(0.33)	(0.48)	(0.31)	(0.50)	(0.29)
Ethnic fractionalization	0.13	0.10	0.08	0.07	0.08	0.14
	(0.20)	(0.10)	(0.21)	(0.10)	(0.20)	(0.09)
Constant						
	2.83**	2.76**	2.71**	2.73**	2.84**	2.72**
	(0.48)	(0.46)	(0.48)	(0.43)	(0.49)	(0.46)
Observations	431	431	431	431	430	430

Notes: ** $p < .01$, * $p < .05$, † $p < .1$. Standard errors are clustered by country. Outcome variables are given in column headers. Explanatory variables, data sources, and omitted categories are described in Table C2.

In the text, *Programmaticness* is based on the average of two survey items in DALP (see Table C2).

The second item refers to parties' appeals to voters' partisan loyalty. This may be problematic because partisan loyalties may be endogenous to electoral volatility, and also related to our measures of group attachments. Table D2 shows that the results with Programmaticness defined only with the first item are very similar to the main results.

Table D2: Electoral Volatility, Group Attachments, and Electoral Strategies—Alternative Programmaticness Measure

	Baseline model	Extended model	
		Ethnicity	Ideology
Key variables			
Electoral volatility	-0.63*	-0.86**	-1.20**
	(0.28)	(0.26)	(0.39)
Group attachment		-0.37*	0.02
		(0.14)	(0.04)
Volatility × group attachment		1.20**	0.33*
		(0.41)	(0.14)
Party-level covariates			
Party size (vote share in prev. elec.)	0.49*	0.43*	0.73**
	(0.20)	(0.20)	(0.18)
Links w/ unions	0.27**	0.27**	0.17*
	(0.09)	(0.09)	(0.07)
Links w/ business	-0.12†	-0.11	-0.08
	(0.07)	(0.07)	(0.07)
Links w/ religious orgs.	0.05	0.03	0.08
	(0.08)	(0.08)	(0.08)
Electoral system covariates			
Plurality	0.19†	0.21†	0.25*
	(0.12)	(0.11)	(0.12)
Proportional representation	0.19†	0.19*	0.18*
	(0.10)	(0.09)	(0.09)
Closed list	0.18	0.20†	0.24†
	(0.12)	(0.10)	(0.13)
Open list	0.17	0.17†	0.22†
	(0.11)	(0.10)	(0.12)
Average district magnitude (lower house)	0.01	0.01	0.01
	(0.03)	(0.03)	(0.02)
Political system covariates			
Presidential system	-0.26*	-0.30**	-0.25*
	(0.12)	(0.11)	(0.11)
Parliamentary system	-0.22†	-0.27*	-0.19†
	(0.13)	(0.12)	(0.11)
System tenure	0.11*	0.11**	0.08†
	(0.04)	(0.04)	(0.05)
Polity score	-0.02	-0.02	-0.01
	(0.03)	(0.03)	(0.03)
Other country-level covariates			
GDP per capita, PPP (logged)	0.11†	0.11*	0.11*
	(0.06)	(0.05)	(0.05)
Gini index	-0.93†	-0.97*	-0.99*
	(0.48)	(0.45)	(0.43)
Ethnic fractionalization	0.27†	0.29†	0.32*
	(0.16)	(0.15)	(0.15)
Constant			
	2.18**	2.25**	2.07**
	(0.74)	(0.67)	(0.72)
Observations	431	431	430

Notes: ** $p < .01$, * $p < .05$, † $p < .1$. Standard errors are clustered by country.

Our measures of group attachment—links with ethno-linguistic organizations and ideological extremism—only partially capture the notion of party members' group attachments. Another important source of group identity historically comes from the socialist parties' links with trade unions. We utilize the DALP item *a8_1* (see Table C2) that captures parties' links with unions. Combining all three measures, Table D3 shows that the results are very similar to those in the main text.[1]

Table D3: Electoral Volatility, Group Attachments, and Electoral Strategies—Combined Group Attachment Measure

	Personalism	Programmaticness
Key variables		
Electoral volatility	1.79**	-1.12**
	(0.38)	(0.30)
Combined group attachment	0.28†	-0.05
	(0.14)	(0.08)
Volatility × combined group attachment	-1.00*	0.99**
	(0.46)	(0.26)
Party-level covariates		
Party size (vote share in prev. elec.)	1.30**	1.32**
	(0.20)	(0.16)
Links w/ business	0.22†	-0.19**
	(0.11)	(0.05)
Links w/ religious orgs.	0.14	0.22**
	(0.11)	(0.07)
Electoral system covariates		
Plurality	0.36**	0.22**
	(0.13)	(0.08)
Proportional representation	0.08	0.14*
	(0.07)	(0.06)
Closed list	0.47**	0.24**
	(0.13)	(0.07)
Open list	0.24†	0.21**
	(0.12)	(0.06)
Average district magnitude (lower house)	0.00	0.02
	(0.03)	(0.02)
Political system covariates		
Presidential system	0.04	-0.31**
	(0.14)	(0.07)
Parliamentary system	0.17	-0.12†
	(0.13)	(0.07)
System tenure	-0.01	0.00
	(0.05)	(0.03)
Polity score	0.01	0.00
	(0.02)	(0.02)
Other country-level covariates		
GDP per capita, PPP (logged)	-0.15**	-0.02
	(0.04)	(0.04)
Gini index	0.13	-0.06
	(0.49)	(0.27)
Ethnic fractionalization	0.08	0.10
	(0.20)	(0.10)
Constant		
	2.69**	3.02**
	(0.48)	(0.48)
Observations	430	430

Notes: ** $p < .01$, * $p < .05$, † $p < .1$. Standard errors are clustered by country.

Our main empirical findings with respect to ideological extremism (testing hypothesis H2) rely on a one-dimensional measure of ideology, based on the left-right placement of parties by DALP experts. However, a one-dimensional measure may be too reductive (e.g. Albright, 2010; Gabel and Huber, 2000), as scholars

[1] We dichotomize the ideological extremism variable so that parties above the median are considered extremist; the combined measure is equal to one if any of the three measures are equal to one, and zero otherwise.

have proposed other dimensions on the state's role in social issues (Inglehart, 1990), and the role of national identity (e.g. Bakker, Jolly and Polk, 2012). Ignoring multiple dimensions may be consequential for the findings on ideologically moderate parties' strategies, since some parties—like the modern radical right-wing populist parties—may appear moderate on one dimension but extremist on other dimensions.[2] Table D4 shows that our results are substantively unchanged when using either a two-dimensional or a three-dimensional measure of ideological extremism (for details on the measures, see Table C2).

In the main analysis, we controlled for broad differences across electoral systems. Scholars have also highlighted the role of other nuanced institutional differences, such as vote pooling within party lists (e.g. Carey and Shugart, 1995). Table D5 shows that the results are unchanged when including a more detailed set of institutional controls: List PR, type of lists, SMDP, two-round vote, alternative vote, single transferable vote, and mixed systems (these models include all the other control variables from the main specification, but are omitted for readability).

Finally, as discussed in the text, electoral volatility may be endogenous to past party strategies. We therefore use another measure of volatility more plausibly exogenous to past electoral dynamics: the commodity terms of trade. We use the data from Gruss and Kebhaj (2019), which combines changes in international prices of up to 45 commodities with each country's commodity import and export data to create a country-specific commodity terms-of-trade index. We average the index over the four years leading up to 2009, and reexpress it so that higher values indicate a *negative* terms of trade shock. Table D6 shows that, while somewhat more variable than the results with electoral volatility, the substantive takeaways are very similar.

Table D7 shows that the commodity terms of trade are strongly correlated with electoral volatility: a deterioration in the terms of trade (i.e. an income loss from unfavorable commodity prices) is associated with greater electoral volatility.

[2]For example, the Austrian right-wing FPÖ is rated by DALP experts in the center on economic issues, but more than a standard deviation more extremist on cultural issues and nationalism.

Table D4: Results with Multi-Dimensional Measures of Ideological Extremism

	Economic and social left-right		Economic, social left-right, and nationalism	
	Personalism	Programmaticness	Personalism	Programmaticness
Key variables				
Electoral volatility	2.09**	-1.06**	2.06**	-1.15**
	(0.43)	(0.32)	(0.45)	(0.32)
Ideological extremism	0.07†	-0.03	0.07*	-0.03*
	(0.04)	(0.02)	(0.03)	(0.01)
Volatility × extremism	-0.33**	0.21**	-0.22*	0.17**
	(0.11)	(0.07)	(0.09)	(0.05)
Party-level covariates				
Party size (vote share in prev. elec.)	1.33**	1.13**	1.47**	1.07**
	(0.24)	(0.18)	(0.24)	(0.18)
Links w/ unions	-0.08	0.32**	-0.12	0.35**
	(0.09)	(0.07)	(0.10)	(0.07)
Links w/ business	0.20†	-0.11*	0.22†	-0.11*
	(0.12)	(0.05)	(0.11)	(0.05)
Links w/ religious orgs.	0.11	0.27**	0.11	0.28**
	(0.10)	(0.07)	(0.10)	(0.07)
Electoral system covariates				
Plurality	0.34**	0.25**	0.35**	0.24*
	(0.11)	(0.09)	(0.11)	(0.10)
Proportional representation	0.08	0.16*	0.08	0.16*
	(0.08)	(0.06)	(0.08)	(0.07)
Closed list	0.47**	0.24**	0.48**	0.24**
	(0.13)	(0.09)	(0.12)	(0.09)
Open list	0.24*	0.21*	0.25*	0.20*
	(0.12)	(0.09)	(0.11)	(0.09)
Average district magnitude (lower house)	0.00	0.02	0.01	0.02
	(0.03)	(0.02)	(0.03)	(0.02)
Political system covariates				
Presidential system	-0.02	-0.27**	0.00	-0.27**
	(0.15)	(0.08)	(0.13)	(0.08)
Parliamentary system	0.13	-0.11	0.16	-0.13†
	(0.14)	(0.08)	(0.13)	(0.07)
System tenure	-0.01	0.01	-0.02	0.02
	(0.05)	(0.03)	(0.05)	(0.03)
Polity score	0.01	0.01	0.01	0.01
	(0.02)	(0.02)	(0.02)	(0.02)
Other country-level covariates				
GDP per capita, PPP (logged)	-0.16**	-0.03	-0.16**	-0.03
	(0.04)	(0.04)	(0.04)	(0.04)
Gini index	0.18	0.07	0.15	0.09
	(0.50)	(0.30)	(0.48)	(0.31)
Ethnic fractionalization	0.04	0.16	0.09	0.15
	(0.21)	(0.10)	(0.20)	(0.10)
Constant				
	2.84**	2.77**	2.75**	2.83**
	(0.50)	(0.46)	(0.48)	(0.49)
Observations	430	430	430	430

Notes: ** $p < .01$, * $p < .05$, † $p < .1$. Standard errors are clustered by country.

Table D5: Results with Detailed Electoral Rules Controls

	Baseline model		Extended model			
			Ethnicity		Ideology	
	Personalism	Programmaticness	Personalism	Programmaticness	Personalism	Programmaticness
Key variables						
Electoral volatility	1.01**	-0.39†	1.23**	-0.54*	1.79**	-1.06**
	(0.23)	(0.20)	(0.24)	(0.22)	(0.46)	(0.32)
Group attachment			0.53**	-0.08	0.10	-0.04
			(0.19)	(0.11)	(0.07)	(0.04)
Volatility × group attachment			-1.31**	0.67*	-0.45*	0.38**
			(0.49)	(0.32)	(0.22)	(0.12)
Electoral system covariates						
Plurality	0.66**	0.01	0.63**	-0.07	0.58**	0.11
	(0.12)	(0.20)	(0.16)	(0.16)	(0.12)	(0.23)
Closed list	0.54**	0.22†	0.44**	0.20†	0.50**	0.27*
	(0.13)	(0.11)	(0.11)	(0.10)	(0.13)	(0.11)
Open list	0.31**	0.18†	0.25*	0.15†	0.29*	0.23*
	(0.12)	(0.10)	(0.10)	(0.09)	(0.11)	(0.11)
Average district magnitude (lower house)	-0.00	0.02	-0.00	0.02	-0.01	0.02
	(0.03)	(0.02)	(0.03)	(0.02)	(0.03)	(0.02)
SMDP	-0.48**	0.08	-0.59**	0.14	-0.45**	0.05
	(0.13)	(0.23)	(0.15)	(0.19)	(0.14)	(0.26)
Two-round vote	-0.05	-0.03	-0.13	0.06	-0.06	-0.04
	(0.24)	(0.23)	(0.25)	(0.19)	(0.26)	(0.26)
Alternative vote	-0.72**	-0.03	-0.68**	0.05	-0.69**	-0.10
	(0.12)	(0.20)	(0.15)	(0.17)	(0.12)	(0.24)
STV	-0.23*	0.08	-0.20*	0.07	-0.24*	0.09
	(0.09)	(0.07)	(0.09)	(0.08)	(0.09)	(0.07)
Mixed system	-0.04	-0.18*	-0.05	-0.18**	-0.06	-0.16*
	(0.07)	(0.07)	(0.08)	(0.07)	(0.08)	(0.07)
Observations	429	429	429	429	428	428

Notes: ** $p < .01$, * $p < .05$, † $p < .1$. Standard errors are clustered by country.

Table D6: Economic Shocks, Group Attachments, and Electoral Strategies

	Baseline model		Extended model			
			Ethnicity		Ideology	
	Personalism	Programmaticness	Personalism	Programmaticness	Personalism	Programmaticness
Key variables						
Commodity terms of trade	0.30**	-0.17*	0.36**	-0.21**	0.52**	-0.16
	(0.09)	(0.07)	(0.11)	(0.08)	(0.15)	(0.11)
Group attachment			0.02	0.18**	-0.04	0.08**
			(0.11)	(0.05)	(0.04)	(0.02)
Terms of trade × group attachment			-0.37†	0.27*	-0.15*	0.02
			(0.19)	(0.11)	(0.06)	(0.05)
Party-level covariates						
Party size (vote share in prev. elec.)	1.43**	0.99**	1.43**	1.02**	1.41**	1.17**
	(0.23)	(0.18)	(0.23)	(0.18)	(0.24)	(0.17)
Links w/ unions	-0.15	0.36**	-0.12	0.36**	-0.14	0.29**
	(0.10)	(0.07)	(0.10)	(0.07)	(0.10)	(0.06)
Links w/ business	0.19	-0.16**	0.21†	-0.16**	0.20†	-0.13*
	(0.12)	(0.05)	(0.12)	(0.05)	(0.11)	(0.05)
Links w/ religious orgs.	0.07	0.29**	0.06	0.26**	0.05	0.32**
	(0.11)	(0.07)	(0.12)	(0.07)	(0.11)	(0.07)
Electoral system covariates						
Plurality	0.31*	0.28**	0.29*	0.21**	0.31*	0.30**
	(0.13)	(0.07)	(0.14)	(0.07)	(0.13)	(0.08)
Proportional representation	0.07	0.19*	0.08	0.19*	0.08	0.20*
	(0.08)	(0.08)	(0.08)	(0.08)	(0.09)	(0.07)
Closed list	0.51**	0.25**	0.49**	0.21**	0.49**	0.26**
	(0.15)	(0.07)	(0.15)	(0.07)	(0.15)	(0.08)
Open list	0.19	0.24**	0.17	0.20**	0.18	0.25**
	(0.15)	(0.07)	(0.14)	(0.06)	(0.15)	(0.07)
Average district magnitude (lower house)	0.02	0.01	0.01	0.00	0.02	0.01
	(0.02)	(0.02)	(0.03)	(0.02)	(0.03)	(0.02)
Political system covariates						
Presidential system	0.00	-0.32**	0.01	-0.30**	0.01	-0.31**
	(0.16)	(0.07)	(0.16)	(0.07)	(0.16)	(0.07)
Parliamentary system	0.22	-0.19**	0.20	-0.21**	0.21	-0.17**
	(0.14)	(0.06)	(0.14)	(0.06)	(0.14)	(0.05)
System tenure	-0.08	0.03	-0.08†	0.03	-0.07	0.02
	(0.05)	(0.03)	(0.05)	(0.03)	(0.05)	(0.03)
Polity score	0.04**	-0.01	0.04**	-0.01	0.04**	-0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Other country-level covariates						
GDP per capita, PPP (logged)	-0.23**	0.03	-0.22**	0.04	-0.24**	0.02
	(0.05)	(0.03)	(0.05)	(0.03)	(0.05)	(0.03)
Gini index	-0.29	0.29	-0.32	0.29	-0.33	0.25
	(0.58)	(0.29)	(0.58)	(0.27)	(0.58)	(0.26)
Ethnic fractionalization	0.22	0.11	0.20	0.07	0.21	0.11
	(0.22)	(0.09)	(0.22)	(0.08)	(0.22)	(0.08)
Constant						
	4.12**	2.16**	4.01**	2.09**	4.27**	2.13**
	(0.55)	(0.31)	(0.54)	(0.31)	(0.55)	(0.32)
Observations	420	420	420	420	419	419

Notes: ** $p < .01$, * $p < .05$, † $p < .1$. Standard errors are clustered by country. Outcome variables are given in column headers. Explanatory variables, data sources, and omitted categories are described in Table C2 in the Supplemental Appendix.

Table D7: Electoral Volatility and Commodity Terms of Trade Shocks

	(1)	(2)
Terms of trade index	0.13*	0.12*
	(0.05)	(0.05)
Party size (vote share in prev. elec.)		-0.08
		(0.06)
Links w/ unions		-0.01
		(0.02)
Links w/ business		0.02
		(0.02)
Links w/ religious orgs.		-0.03
		(0.03)
Plurality		-0.01
		(0.06)
Proportional representation		-0.02
		(0.05)
Closed list		0.08
		(0.06)
Open list		-0.00
		(0.05)
Average district magnitude (lower house)		0.02
		(0.02)
Presidential system		-0.09
		(0.09)
Parliamentary system		-0.08
		(0.09)
System tenure		-0.06**
		(0.02)
Polity score		0.02
		(0.01)
GDP per capita, PPP (logged)		-0.05†
		(0.03)
Gini index		-0.35
		(0.23)
Ethnic fractionalization		0.05
		(0.10)
Constant	0.31**	0.96**
	(0.02)	(0.27)
Observations	442	411

Notes: ** $p < .01$, * $p < .05$, † $p < .1$. Standard errors are clustered by country.

E Empirical Analysis: Additional Results for the Quantitative Case Study

In the main paper, we present the results from a quantitative case study based on Brazil's mayoral elections between 1996 and 2012, utilizing a regression discontinuity (RD) design. That analysis is not meant as a complete study of candidate valence in the Brazilian party system, but rather as an illustration of how our theoretical model can be used in non-legislative contexts and with administrative election data that allows for candidate-level proxies of valence instead of cross-country party-level survey data.

Brazil's mayors cannot run for reelection after having served two terms. This means that our dataset effectively contains two samples: (a) municipalities where the party runs with an incumbent candidate at election t, who upon winning would be ineligible to run for reelection at $t+1$—the *Incumbent* sample; and (b) municipalities where the party is running with a non-incumbent candidate at t who upon winning could run again at $t+1$—the *Open Seat* sample. In the Incumbent sample, the incumbent party at t whose candidate wins that election has to run with a new candidate at $t+1$. After having had a mayor for eight years, it is plausible that the party would choose a relatively young(er) candidate. Given that our measures of valence are defined by candidate age, using the Incumbent sample may well result in a mechanical effect of victory at t on candidates' age at $t+1$. To avoid such mechanical effects, we focus on the Open Seat sample only. In addition to this mechanical-effect concern, Klašnja and Titiunik (2017) find that parties suffer an incumbent disadvantage in the Incumbent sample, but not the Open Seat sample. Such a disadvantage may have other, complicated, strategic effects that we wish to abstract from in our analysis.

As discussed in the main paper, for Brazil's mayoral elections to serve as a useful context to test our theory, mayorships must be considered senior offices that are sufficiently attractive to junior candidates. Based on our analysis for the period 1996-2012, Table E1 shows that very few mayors run for state or federal office and are considerably more likely to stay in local politics. For example, when eligible for reelection to the mayoral post, 72% of mayors run again; however, when term-limited, only 6% choose to run in elections for state and federal office. These patterns strongly indicate that the mayorship is a prized position.

Table E1: Brazilian Mayors' Probability of Running in Subsequent Municipal and Higher-Office Elections

	Next election			All subsequent elections		
	Full sample	Lame duck	Reelection-eligible	Full sample	Lame duck	Reelection-eligible
State or national election	0.01	0.02	0.01	0.04	0.06	0.02
Municipal election	0.54	0.02	0.72	0.40	0.18	0.52

Source: Klašnja and Titiunik (2017).

Mayorships are also senior to the other political career option available at the municipal level—the local council. Based on our analysis of the Brazilian campaign receipts data, Table E2 shows that mayoral candidates raise on average around 40 times more (the median is around 20 times more) in campaign funds than the average candidate for the local council.

As noted in the main paper, our two proxies for valence are based on the mayoral candidates' age and occupation. These measures are imperfect and we seek to validate them using a strategy inspired by "par," a measure of the 'normal' party vote share developed by Erikson and Palfrey (1998) in the context of American elections. The strategy consists of using a party's municipal-level vote shares for national and state-wide offices (president, governor, senator, and state deputies) to predict the party's municipal vote

Table E2: Total Campaign Receipts Ratio, Mayoral vs. Local Council Candidates

Year	Mean	Median	S.D.
2004	40.41	19.08	71.11
2008	34.34	24.03	35.26
2012	39.08	26.02	42.83

Notes: Analysis is based on the campaign receipts data provided by the Tribunal Superior Eleitoral at: `https://www.tse.jus.br/hotsites/pesquisas-eleitorais/prestacao_contas.html`.

share in the mayoral election (which occurs two years later, because Brazilian municipal-level elections are not concurrent with national and state-wide elections). We treat this prediction as a party's 'normal' mayoral vote share driven solely by a municipality's partisanship—but not characteristics of the mayoral candidates themselves. For every party, we then compare the mayoral candidate's *actual* vote share in the mayoral election to this normal vote share. As we construct it, a positive prediction error means that the party's candidate over-performed relative to what was expected based on the normal vote—i.e., based on state-wide and national electoral results. We then study the correlation between our valence proxies based on candidate age/occupation and the prediction error. We believe that our valence measures are more likely to actually capture candidates' charisma if the young/outsider candidates systematically over-perform their predicted margin of victory.

We create the predictions separately for each party. Using two thirds of the data as a training set, we fit a "kitchen sink" least squares model that uses all covariates, a ridge regression, and LASSO, using cross-validation to choose the ridge and LASSO tuning parameters (see, e.g., Hastie, Tibshirani and Friedman, 2009). We then choose the fit that minimizes the mean-squared-error of the prediction in the remaining third of the data.

Table E3 shows the results of this validation exercise. The first row shows that the average prediction error for candidates who are young is 1.6% while the average prediction error for candidates who are older is -0.142%. This means that, on average, young candidates over-perform their predicted margin of victory by approximately 1.74 percentage points relative to older candidates. Similarly, candidates who are both young and outsiders outperform their predicted margin of victory by approximately 1.53 percentage points relative to the rest. Both mean differences are statistically different from zero at 5% (see column 4).[3] These results are consistent with our assumption that our proxies do indeed capture the candidates' own electoral appeal—valence.

Table E3: Predicted margin of victory of party's candidate at t by candidate characteristics–All parties

Outcome	$\texttt{Mean}_1$	$\texttt{Mean}_0$	p-value	$\texttt{N}_1$	$\texttt{N}_0$
Margin of victory: young vs. not	1.596	-0.142	0.002	2755	25729
Margin of victory: young & outsider vs. not	1.427	-0.099	0.012	2345	26139

Notes: Columns $\texttt{Mean}_1$ and $\texttt{Mean}_0$ report, respectively, the average predicted margin of victory for a party competing for the mayor's office when the party's candidate is young and not young (or young and outsider and not young and outsider). Data from elections in Brazil in 1996-2012; predictions based on state-wide and nation-wide election results in the prior election.

[3]The complete list of parties included in our analysis is PRB, PP, PDT, PT, PTB, PMDB, PSTU, PSL, PST, PTN, PSC, PCB, PR, PPS, DEM, PAN, PSDC, PRTB, PTC, PSB, PSDB, PPL, PSD, and PCdoB.

F Qualitative Case Studies

To illustrate the mechanics of our model, we present two brief case studies examining the response of party nomination and campaign strategies to changes in electoral volatility. Our cases are intended for illustrative purposes only, to elucidate the outcomes that change as a result of our theoretical claims; we do not argue that the dynamics highlighted by our model were the only factors driving the outcomes we describe. We also note that there is inevitable slippage between our stylized and simplified model of intra-party politics and the more complicated, coalition dynamics these cases outline.

Austria's People Party

To illustrate the shift from the Committed to the Uncommitted equilibrium, we focus on the center-right Austrian People's Party (ÖVP) in Austria's 2017 election. Consistent with our theoretical expectation, we observe that the increasing volatility in Austria's parliamentary elections—largely due to the increasing importance of extremist parties—led the centrist ÖVP to run a personalistic campaign on the coattails of its newly promoted charismatic leader, Sebastian Kurz.

While Austria's electoral volatility is comparatively very low, it has been increasing over the last two decades. This trend was particularly marked in terms of what Powell and Tucker (2014) term 'Type A' volatility, arising from the entry and exit of new parties.[4] Driving this trend was the fracturing of the center. Historically, political competition centered on two centrist political parties (the center-left SPÖ and center-right ÖVP) that often ruled jointly in coalition. However, voters increasingly gravitated toward new and ideologically extreme parties, such that the 2016 run-off presidential election was contested by candidates of the far-right FPÖ and the leftist Greens.[5]

Based on our model, this increase in electoral volatility corresponds to a downward shift in the value of ψ, which could push centrist parties such as ÖVP (with relatively low value of α) from the Committed to the Uncommitted Equilibrium. Promotions within the party ranks should focus less on programmatic, party-based campaigning effort and more on charisma, which in turn could lead candidates to run increasingly personalistic campaigns for office.

In Austria's 2017 parliamentary election, the ÖVP did exhibit such a shift, notably through the behavior of its 31 year-old leader, Sebastian Kurz. Kurz's rise to power was meteoric; he was promoted from the ÖVP youth league to become Austria's youngest ever foreign minister at age 27, and from there to the position of ÖVP leader.[6] With the rise of this charismatic new leader, the ÖVP also began to shift its campaign style by placing more emphasis on valence. An early advertisement featured Kurz and other young ÖVP members, in short sleeves and jeans, seated on a black Hummer in front of a night club, with the caption "Black [the then-color of the ÖVP] is hot."[7] By the time of the 2017 campaign, Kurz would change the party color from black to turquoise. Party merchandise was branded with his name. And the ÖVP name (the People's Party) was replaced on the ballot by the Sebastian Kurz New People's Party.[8] This shift in the emphasis on valence is consistent with our predictions.[9]

[4] According to Powell and Tucker (2014), overall volatility increased from about 4 in 1994-1995 to around 20 by 2006 (on a 0-100 scale). 'Type A' volatility increased from zero to over six in that period.

[5] "Vexed in Vienna," *The Economist*, May 21, 2016. https://www.economist.com/news/europe/21699145-one-europes-most-steadfastly-dull-countries-has-suddenly-turned-interesting-vexed-vienna, last accessed April 16, 2018.

[6] Eddy, Melissa. "For Sebastian Kurz, Austria's 31-Year Old New Leader, a Swift Rise." *New York Times*, October 16, 2017. www.nytimes.com/2017/10/16/world/europe/sebastian-kurz-austria.html, last accessed April 16, 2018.

[7] Friedman, Vanessa. "How to Dress to Win an Election: The Sebastian Kurz Primer." *The New York Times*, October 19, 2017. www.nytimes.com/2017/10/19/style/sebastian-kurz-austria-branding-style.html, last accessed April 16, 2018.

[8] Oltermann, Philip. "Sebastian Kurz's Audacious Gamble to Lead Austria Pays Off." *The Guardian*, October 15, 2017. www.theguardian.com/world/2017/oct/15/sebastian-kurz-could-31-year-olds-audacious-bid-to-lead-austria-pay-off, last accessed April 16, 2018.

[9] Kurz also shifted the party to the right on one programmatic issue—immigration.

Importantly for our story, the ÖVP also began changing the slating of candidates to its party list. It granted Kurz the right to name 100 'experts', none of whom had previously stood for the ÖVP at the federal level. The list skewed notably young (with an average age of 46), and emphasized charisma and celebrity appeal by including such candidates as a prominent radio presenter, an opera-ball organizer, and former international pole vaulter.[10] The promotion of charismatic outsiders to such prominent party positions is consistent with a move to the Uncommitted Equilibrium.

Spain's Socialist Workers' Party

Here, we discuss the case of the Socialist Workers' Party (PSOE) in Spain during the period between the 1977 and 1982 elections; a period that witnessed the gradual consolidation of the Spanish party system, following the first post-Franco elections (which were held in 1977). The Pedersen Index, as measured by Mainwaring, Gervasoni and España-Najera (2016) initially rose from 24.4 to 51.3 from the 1977 to the 1979 elections, but fell to 9.9 thereafter. In contrast to the Austrian case, therefore, Spain saw a marked increase in ψ. This decline in volatility is also marked by the PSOE taking the position of the main party of the center-left, abandoning its Marxist roots. This ideological shift corresponds to a decline in α in our model.[11] Our theory implies that these simultaneous shifts in ψ (volatility) and α (ideological moderation) should push the PSOE from the Loyal to the Committed Equilibrium. Nominations should thus be predicated less on candidates' charisma, and more on emphasizing the PSOE's programmatic platform.

Spain's first democratic elections, convened by King Juan Carlos in 1977 following the death of the autocratic head of state Franco in 1975, were characterized by a particularly crowded playing field. In the years leading up to Franco's death, a number of new political parties had been organized, particularly on the political left. Prominent among these was the PSOE, a self-professed "mass, Marxist, and democratic," party (Share, 1989, 40). In the context of a former right-wing dictatorship, this affiliation marked the PSOE as an ideologically extreme organization—α was high (i.e. $\alpha > \bar{\alpha}$).

As is consistent with the Loyal Equilibrium, the PSOE relied on charismatic appeals to help strengthen its position relative to other left-wing parties. Its leader, Secretary General Felipe Gonzalez, was a prominent dissident and was crucially involved in the democratic transition. In the 1977 election, the PSOE's campaign "centered on the charismatic image of its leader ... a tactic that was aimed at personalizing the appeal of the PSOE" (Share, 1989, 42-3). The party promoted its most charismatic candidate to a leadership position. Yet, at the same time, Gonzalez's efforts were strongly ideological, aimed at building up the programmatic reputation of the PSOE—as consistent with our expectations for a party in the Loyalist equilibrium. Namely, in the run up to the 1977 election, Gonzalez relied on stirring "anti-imperialist and anti-capitalist rhetoric [...] to help swell the ranks of a hitherto minuscule party" (Share, 1989, 41).

In the wake of the 1977 election, it was clear that the fractured electoral playing field would eventually consolidate into a more coherent party system—ψ was bound to rise. Gonzalez hoped to solidify the PSOE's stance as the dominant left-leaning party in the new party system. To achieve this, he proposed moderating the party's ideological stance, particularly dropping the Marxist label from the party platform. The party initially tabled this proposal when it was put forward by Gonzalez in 1978. The party went on to suffer significant defeats in Spain's second general elections, held in 1979 (Kennedy, 2013, 28-9).

Following this electoral setback, Gonzalez proposed a radical reorganization of the party. He again sought to drop the Marxist party-label (reduce the value of α). Importantly, he also sought to strengthen

[10] "100 'Experten auf der Bundesliste von Sebastian Kurz." *Die Presse*, August 28, 2017. https://diepresse.com/home/innenpolitik/nationalratswahl/5275456/100-Experten-auf-der-Bundesliste-von-Sebastian-Kurz, last accessed April 16, 2018.

[11] Of course, this shift itself was the product of strategic decisions by PSOE leaders, notably its Secretary General Felipe Gonzalez. Our model, however, does not speak to the parties' choice of positions in ideological space, only to the consequences thereof.

the tools of internal party discipline, by imposing a system of intra-party elections for leadership posts that strongly favored insiders over novice challengers (Share, 1989). In essence, Gonzalez sought to shift the PSOE from a Loyal Equilibrium to a Committed one.

These proposals, which were brought to the floor of the Party's Twenty-Eighth Congress in May 1979, fractured the PSOE. Gonzalez's supporters, nicknamed the *oficialistas*, confronted more ideologically driven opponents, the *criticos*.[12] During the party congress, the *criticos* won a brief victory on issue of the party label, but lost on all organizational motions. Gonzalez then forced the convening of a second, extraordinary, party congress in September of the same year, by resigning his post as Secretary General (Kennedy, 2013). This party congress, selected under the new voting rules Gonzalez put in place, passed the motion to drop the Marxist label and reinstated Gonzalez to his position as party secretary general (Kennedy, 2013; Share, 1989).

Following the adoption of his proposed reforms, Gonzalez moved to sideline his opponents within the party. *Criticos* faced harsh punishment and demotion on the party lists (Share, 1989). The PSOE gained an image for discipline and regimentation (Gillespie, 1989). In the next general election campaign, the PSOE offered a substantially more moderate and policy-focused party platform. Party planks emphasizing class struggle were ditched in favor of "[building a] new society amid the 'peaceful co-existence of all citizens of Spain"' (Gillespie, 1989, 364). The platform further emphasized programmatic goals relating to civil service reform, economic restructuring and unemployment, and the development of a more independent (from NATO) foreign policy (Preston, 2001). Politicians campaigned on party-centric lines, emphasizing programmatic policy concerns. These behaviors are consistent with Proposition A.3.

[12] In addition to their opposition to Gonzalez's proposals, the *criticos* advocated entry into a loose electoral alliance with the Spanish Communist Party (PCE), which lay to the PSOE's left in ideological space.

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