Working papers series

WP ECON 19.05

Discipline, party switching and policy divergence

Paula González
Universidad Pablo de Olavide

Francesca Passarelli
Universidad Pablo de Olavide

M. Socorro Puy
Universidad de Málaga

Keywords: Party switching; party discipline; ideology; reputation; ambition; policy divergence.

JEL Classification: D7, D72, D78

Department of Economics

Discipline, party switching and policy divergence*

Paula González†, Francesca Passarelli‡, and M. Socorro Puy§

31/01/2019

Abstract

We develop a comparative theoretical analysis of weak versus strong party discipline. In our model, political parties first select their policy platform and, in the case of strong party discipline, they set disciplinary penalties; second, candidates select their party label and, once elected, they choose whether to toe their party line in their legislative vote. Political parties maximize vote-share and they care about their candidates' loyalty. Candidates are ideological and try to satisfy some psychological needs such as ambition and reputation. We show that: i) A party attracts more candidates to its party label, the higher its expected vote-share and the smaller the parties' political distinctiveness; ii) Legislators deviating from party-line voting arise within the majority party and provided that there is weak discipline; iii) The more legislators care about ideology and the less about their reputation, the more they deviate from party-line voting; iv) Majority parties with weak discipline can opt for more partisan policies to discourage switching behavior in legislative votes, that is, polarization incentivizes loyalty.

keywords: Party switching; party discipline; ideology; reputation; ambition; policy divergence.

JEL Codes: D7, D72, D78.

1 Introduction

In modern representative democracies, candidates for congress and parliament are usually grouped around different political parties. It is in the

*Financial support from Ministerio de Ciencia y Tecnología (ECO2017-86245-P and ECO2015-65408-R) is gratefully acknowledged. The authors thank Elena del Rey, Bernard Grofman, Juan de Dios Moreno-Ternero, and Angel Solano for their valuable comments. M. Socorro Puy gratefully acknowledges the hospitality of the members of the Government Department at Harvard University where she completed this paper.

†Department of Economics, Universidad Pablo de Olavide. Email: pgonzalez@upo.es

‡Department of Economics, Universidad Pablo de Olavide. E-mail: fpas@upo.es

§Corresponding author: Department of Economic Theory and History, Universidad de Málaga. E-mail: puysegura@fas.harvard.edu

interest of political parties to define a common ideological ground for their affiliated candidates. The political party defines the ideology, which is the party label for its candidates (Snyder and Ting, 2001). When candidates' incentives are purely ideological, we would expect that like-minded ideological candidates would be sharing party membership. However, party labels do not only differ from each other on ideological principles, but also on their electoral prospects when facing new elections. This implies that different parties may offer different career opportunities for politicians, and ambitious candidates may opt for a party even when the party label does not represent their own ideology. It is not rare in some settings, however, for elected legislators to deviate from party-line voting. When a legislator fails to toe his/her party line and joins another party, the literature refers to such a legislator as a "switcher."

The phenomenon of party switching is huge in many countries. In Italy almost one-fourth of the members of the Chamber of Deputies switched parties at least once between 1996 and 2001 (Heller and Mershon, 2005, 2008, 2009). Similarly, in Brazil, more than one-third of the Brazilian members of the parliament elected in 1986 transferred from one party to another by late 1990 (Mainwaring and Pérez-Liñán, 1997). However, as far as we know, there is little theoretical research exploring this phenomenon and many questions abound at the very nature of candidates' incentives and political parties' strategies. Why do candidates switch party? Do parties respond with some strategies? Does switching behavior have an impact on elected policies?

In this paper, we develop a new model describing the interaction between candidates for parliament and political parties. We consider the following timing: First, parties set their policy platforms. Second, candidates select their party label. Third, elected candidates cast their vote in parliament. Candidates are ideological and face some phycological needs such as ambition and reputation. Ambition represents politicians' career opportunities and reputation is a cost associated with the loss of social credibility when deviating from party line voting. Political parties are office-motivated and they care about their candidates' loyalty in their legislative votes.

We analyze two different scenarios: one in which there is strong party discipline and those legislators who deviate from party-line voting face a disciplinary penalty, and another where party discipline is weak. These two scenarios differ in the influence that political parties exert over their legislators. The Spanish political system provides a good example of these two alternatives. The strong party discipline scenario reproduces the post-Constitutional period, from 1978 up to 1983, when political parties had strong power and could influence the decisions of their political legislators with control instruments. The weak party discipline scenario reproduces the legislative change that occurred after the 1983 Resolutions by the Spanish Constitutional Court, when legislators were considered to be entitled to their

seats and, consequently, the party could not dismiss or expel its elected candidates. Other important examples of weak party discipline are the United States Congress and the Italian Parliament.

Our model provides the following main predictions:

First, the higher the expected vote-share of one party and the closer the policy of that party to that of the rival, the higher the number of candidates that opt for that party label. While joining the majority party allows candidates to satisfy their ambition, the closeness between parties' policies implies that, from an ideological perspective, parties do not differ too much from each other.

Second, legislators switching party arise among those affiliated to the majority party and provided that the party does not posses disciplinary penalties. Being part of the majority party satisfies ambitious incentives. Beside, the absence of disciplinary penalties implies that the candidate, if elected, does not face a direct cost when deviating from party-line voting.

Third, the phenomenon of party switching in the legislative vote expands when legislators care more about their ideology than about their reputation. When casting legislative votes, there is a cost associated to the distance between one's ideal policy and the policy for which the legislator votes, this is the ideological cost. When not toeing party line voting, there is another cost associated to deviating from party line voting, this is the reputation cost. Thus, when the ideological cost is high enough, the legislator will vote in parliament for its most preferred policy, no matter what political party proposes such policy.

Fourth, expected majority parties with weak discipline can opt for more partisan policies to discourage switching behavior in legislative votes. This is our most unexpected result. We find the following trade-off: if a party proposes a moderate platform, it increases its vote-share but some of its candidates, when elected to parliament, may not toe their party line. If the party platform tends to the left or to the right, it becomes more partisan and it decreases its vote-share. However, candidates then face a stronger penalty when deviating from party line voting due to the increment in their reputation loss (which is increasing in the distance between the platforms of the parties). That is, in the absence of disciplinary tools, party polarization incentives candidates' loyalty.

There is a large literature quantifying the phenomenon of party switching all over the world: in Turkey (Turan, 1985), in Japan (Cox and Rosenbluth, 1995 and Reed and Scheiner, 2003), in Spain (Bowler et al. 1999 and Tomás Mallén, 2002), in Ecuador (Mejia Acosta, 2004), in Italy (Heller and Mershon, 2005, 2008, 2009 and Mershon and Shvetsova, 2008, 2014), in Brazil (Desposato, 2006), in Russia (Mershon and Shvetsova, 2008), and in the U.S. and Canada (Mershon and Shvetsova, 2014). There are, however, few contributions analyzing party switching from a theoretical perspective. As far as we know, the first important theoretical contribution is the work

by Aldrich and Bianco (1992), followed by Laver and Benoit (2003), Desposato (2006), Heller and Mershon (2008), Mershon and Heller (2009), and Mershon and Shvetsova (2014).[1] These authors highlight three elements as being the driving forces behind switching. The first one is the role of ambition (Aldrich and Bianco, 1992; Desposato, 2006; Mershon and Heller, 2008). Aldrich and Bianco (1992) show that switchers aim to enhance their prospects both for reelection and legislative influence. The second important element to understand switchers' behavior is the degree of ideological compatibility with their own ideal policies (Desposato, 2006; Mershon and Heller, 2008). The third driving force behind switching is the underlying formation of majority coalitions. As explained by Mershon and Shvetsova (2014) in a model of policy bargaining within parliaments, switching behavior is motivated by movements in the policy core. Against the benefits of switching, Desposato (2006) highlights some costs that act as a deterrent to switching. Our model builds on the relevance of these contributions incorporating ambition incentives, ideological incentives and elaborating a more sophisticated endogenous switching cost associated to candidates' concern about their political career.

The structure of the paper is as follows. Section 2 presents the model. Section 3 characterizes candidates' behavior in the strong and weak party discipline scenarios. Section 4 analyzes the endogenous location of policy platforms. Finally, the last section offers the conclusion. All the proofs are in the Appendix.

2 The Model

There are two political parties (or factions), L and R. Each political party selects a policy proposal that is denoted by l and r respectively, where l, $r \in [0, 1]$. Party L is the "leftist" and party R is the "rightist." There is a set of candidates who decide their party label (or the political faction that they join) and, once elected, they choose whether to toe their party line in their legislative vote. For non-elected candidates, their subsequent decision on toeing party line voting is redundant. Therefore, we just focus on those candidates that are finally elected and we use both terms, candidates or legislators, when referring to them.

Political parties compete for seats in a parliamentary election, and a number of candidates become legislators in parliament.[2] For the sake of simplicity, we consider a unique electoral district where seats in parliament are assigned in proportion to each party's vote-share. Once in parliament,

[1] See Mershon (2014) for an excellent survey on party switching.

[2] For the sake of expositional clarity, the model is explained in terms of parliamentary elections. However, the model can also be interpreted in terms of two distinct factions that compete for positions in a council committee (regional councils, city councils, professional councils, or a board of directors).

the majority party leader launches his/her party policy proposal (either l or r), and legislators have the option of voting in favor or against such proposal. We interpret that those legislators that vote against the proposal are implicitly supporting the policy of the minority party. Thus, for expositional clarity, we refer to two voting strategies, voting for l or voting for r, where i) voting for l means voting in favor of policy l when party L is the majority party and voting against r when party R is the majority party, and ii) voting for r means voting in favor of policy r when party R is the majority party and voting against l when party L is the majority party.[3]

Legislators have the option of switching in making their legislative vote. This means that they can select one party label while voting in parliament for the policy proposal of the other party. That is, if their party label is party L, they switch when voting for policy r, and when their party label is party R, they switch when voting for policy l. When a legislator does not toe the party line and votes for the other party proposal, we refer to such a legislator as a "switcher."

We consider two different scenarios, one in which parties are endowed with strong discipline and can impose certain disciplinary measures or penalties $F \geq 0$ on those legislators engaging in switching behavior, and another in which parties do not have the ability to impose penalties; this is the weak party discipline scenario.

We analyze the strategic decisions of two types of players: political parties and candidates. Political parties pursue strong support for their policy proposals in general elections and also try to avoid switching behavior among their legislators. Candidates' incentives are driven by different forces: ambition, ideology, and reputation. We analyze parties' and candidates' optimal strategies in the two above-mentioned scenarios.[4] There is also a population of voters that participate in the parliamentary election. These voters are ideological and vote for the party proposing the platform that is closer to their most preferred ideal policy. Thus, we assume that these voters are not strategic, meaning that they do not account for the possibility of elected legislators switching vote.

The timing of the proposed electoral game is as follows:

Stage 1: Parties announce their policy platforms and, only in the case of strong party discipline, specify disciplinary measures.
Stage 2: Candidates observe the announced policy platforms and disciplinary measures, and decide their party label.
Stage 3: Once general elections have been held, legislators vote in parliament.

[3] We do not take elected candidates abstaining in parliament into account. This can be, however, an interesting extension of the model.

[4] In an alternative model, Galasso and Nannicini (2015) address the composition and order of the list of candidates for each party.

We assume that political parties foresee candidates' decision with respect to their chosen party label and subsequent voting decisions in parliament. In order to provide a prediction of candidates' and parties' optimal decisions, we solve the proposed game by backward induction. That is, first, we analyze in Section 3 the two-stage candidates' decisions on their party label and legislative votes and, secondly, we analyze in Section 4 the political parties' optimal decision. In the strong party discipline scenario, the optimal penalty imposed by the party is analyzed in conjunction with candidates' decisions.

Preferences of candidates

Each candidate has an ideal policy denoted by $i \in [0,1]$. The preferences of each candidate are defined over the two decisions that they make, the party label under which they run $h \in \{R, L\}$ and their subsequent voting decisions in parliament $p \in \{r, l\}$. The utility of candidate i from winning a seat with party h and subsequently voting p in parliament is represented by the following career utility function

$$u_i(h,p) = \underbrace{\pi_h}_{\text{ambition}} - \underbrace{\mu(i-p)^2}_{\text{ideological cost}} - \underbrace{\lambda(\sigma_h - p)^2}_{\text{reputation cost}} - \underbrace{\mathbb{I}_i F_h}_{\text{disciplinary cost}},$$

where σ_h is the policy platform of the political party with which the candidate decides to run, $\sigma_L = l$ and $\sigma_R = r$, where $\mu, \lambda \geq 0$, and where $\mathbb{I}_i = 1$ if the candidate runs for office in a strong party discipline scenario and $\sigma_h \neq p$, whereas $\mathbb{I}_i = 0$ if the candidate runs for office in a weak party discipline scenario or in a strong party discipline one but $\sigma_h = p$.

The first term of the above expression π_h is the positive benefit from holding office and reflects candidates' ambition. We assume that such a benefit is not party-independent but depends on the power of party h in parliament.[5] Thus, the value π_h is the expected vote-share of party h. Candidates enjoy greater utility if they win a seat in the party which, in expectation, possesses higher vote-share. In the model, π_L and π_R are endogenous variables that depend on the announced policy platforms.

The second term is the ideological cost, which measures the disutility derived from voting for a policy that is different from the ideal policy i of the candidate. We refer to this as ideological cost because its magnitude depends on each candidate's ideal policy.

The third term is the reputation cost, which measures the disutility derived from switching in the legislative vote. Observe that this third term is either 0 when $\sigma_h = p$, or equal to $\lambda(l-r)^2$ when the legislator does

[5] For instance, in the U.S. the speaker of the House of Representatives and the chairs of every committee are members of the majority party. Moreover, the party holding a majority control of the chamber is entitled to have at least one more member on each and every committee.

not toe the party line, and therefore, σ_h is different from p.[6] Besides, the greater the distance between the policy platforms of the two parties, the higher the reputation cost. This cost captures how breaking party discipline may truncate the politician's career.[7]

The fourth term F_h is the disciplinary cost that only applies in a strong party discipline scenario and provided the candidate that selects party label h, engages in switching behavior.

The parameters $\mu, \lambda \geq 0$ are the weights that candidates assign to their ideology and their reputation respectively. When for instance $\mu > \lambda$, each unit distance of ideological cost has more impact on candidates' utility than each unit distance of reputation cost, in short, candidates care more about their ideology than about reputation. The opposite holds when $\mu < \lambda$.

Note that candidates' party label decisions are based on expected vote-shares, while legislative vote decisions are based on realized vote-shares. In this respect, we consider rational expectations implying that once political parties announce their policy platforms, candidates perfectly estimate the parties' vote-shares.[8] Thus, parliamentary vote decisions in our model are not contingent to different electoral results, but are just specified for the right prediction of the realized vote-shares. Therefore, each candidate can select one of the following four strategies:

1. Adopting party L's label and voting for the policy proposal of this party, l. In this case, we denote the candidate's utility by U_L where
$$U_L = u_i\left(L, l\right) = \pi_L - \mu(i-l)^2.$$

2. Adopting party R's label and voting for the policy proposal of this party, r. In this case, we denote the candidate's utility by U_R where
$$U_R = u_i\left(R, r\right) = \pi_R - \mu(i-r)^2.$$

3. Adopting party R's label and switching on the legislative vote to the policy proposal of party L. In this case, we denote the candidate's utility by U_R^S and this takes two different values depending on whether we account for a strong or weak party discipline scenario:
$$U_R^S = u_i\left(R, l\right) = \begin{cases} \pi_R - \mu(i-l)^2 - \lambda(r-l)^2 - F_R \text{ if strong discipline} \\ \pi_R - \mu(i-l)^2 - \lambda(r-l)^2 \text{ if weak discipline.} \end{cases}$$

[6] This modelization resembles that in Huang (2010), where elected candidates incur a quadratic "internal" cost if the implemented policy differs from candidates' own true policy position, and a quadratic "reputation" cost if the implemented policy differs from their announced policy.

[7] When the electorate or party militants are very partisan, switchers usually have little credibility, and face difficulties to attract votes or campaign support (Desposato, 2006).

[8] This is a strong assumption implying that candidates, in equilibrium, make their best decision (i.e., candidates do not regret their selected choices due to wrong expectations). An alternative, yet interesting question, would be analyzing the prediction of the model when candidates overestimate or underestimate the vote-share of a certain party.

4. Adopting party L's label and switching on the legislative vote to the policy proposal of party R. In this case, we denote the candidate's utility by U_L^S and this takes two different values depending on whether we account for a strong or weak party discipline scenario:

$$U_L^S = u_i(L,r) = \begin{cases} \pi_L - \mu(i-r)^2 - \lambda(l-r)^2 - F_L \text{ if strong discipline} \\ \pi_L - \mu(i-r)^2 - \lambda(l-r)^2 \text{ if weak discipline.} \end{cases}$$

Candidates engage in switching behavior when they opt for either $(h,p) = (R,l)$ or $(h,p) = (L,r)$. In these two cases, political parties, in a strong party discipline scenario, can inflict penalties on legislators who fail to toe the party line.

When comparing expressions U_R and U_L^S, and if $\pi_L < \pi_R$, we deduce that U_R is always greater than U_L^S. Thus, for every candidate, strategy (R,r) strictly dominates strategy (L,r), both in the weak and in the strong party discipline scenarios. This means that candidates adopting the party L's label, do not intend to engage in switching behavior. If instead $\pi_L > \pi_R$, candidates with party R's label are the ones that do not intend to engage in switching behavior. Finally, if $\pi_L = \pi_R$, there is no switching behavior at all.

We assume that in those cases in which the candidate is indifferent between the two party labels, the candidate opts for party R. Likewise, if a legislator is indifferent about switching or not in the legislative vote, the legislator opts not to switch.

The preferences of parties

Political parties have some flexibility regarding the policy platform they can select. Each party has some well-defined inherit upper and lower bounds within which it can locate its policy platform.[9] Party L can set its policy l in the interval $\left[\bar{L}-\varepsilon, \bar{L}+\varepsilon\right] \in \left[0, \frac{1}{2}\right]$ and party R can set its policy r in the interval $\left[\bar{R}-\varepsilon, \bar{R}+\varepsilon\right] \in \left[\frac{1}{2}, 1\right]$, where policies $\bar{L}$ and $\bar{R}$ represent some well established or historical position of the political parties, and ε represents the margin of flexibility around this historical position that it is accepted by the parties' current leaders. We consider that $\bar{L}+\varepsilon < \bar{R}-\varepsilon$, which implies that the policy platforms of the parties always satisfy the conditions $l \neq r$ and $l < r$**.**

Political parties are uncertain about the ideal policies of those candidates that select their party label. More precisely, from the parties' viewpoint, the ideal policies of candidates and those of voters for parliamentary elections are distributed according to a uniform distribution function over the unit interval $[0,1]$. This simplifying assumption implies that political parties

[9] See, for instance, Cadigan and Janeba (2002) or Martínez-Mora and Puy (2014).

consider that every ideology is equally likely to be a candidate's (or a voter's) ideology.[10]

We analyze two scenarios, strong and weak party discipline. In both scenarios, parties aim at maximizing its (expected) vote-share, subject to avoiding switching behavior. Both candidates and parties, decide on a common correctly estimated vote-share function, already denoted by π_h, which depends on the parties' policy platforms, l and r. Since seats in parliament are assigned in proportion to vote-shares, note that maximizing vote-shares is equivalent to maximizing seats in parliament.

In the *strong party discipline scenario* we already mentioned, political parties can apply certain disciplinary penalties $F_h \geq 0$ to those legislators who do not vote with the party line.[11] Imposing penalties is costly for the parties and, consequently, parties set the minimal disciplinary penalty that prevents switching behavior. Besides, parties select those policy proposals that maximize their expected vote-share. Analytically, parties' maximization problems are

$$\underset{l,F_L}{Max} \quad \pi_L(l,r) - F_L \qquad \underset{r,F_R}{Max} \quad \pi_R(l,r) - F_R$$
$$\text{s.t.} \quad \begin{cases} (h_i^*, p_i^*) \neq (L,r) \\ l \in \left[\bar{L}-\varepsilon, \bar{L}+\varepsilon\right] \end{cases} \qquad \text{s.t.} \quad \begin{cases} (h_i^*, p_i^*) \neq (R,l) \\ r \in \left[\bar{R}-\varepsilon, \bar{R}+\varepsilon\right] \end{cases}$$

In the *weak party discipline scenario,* parties are exposed to switching behavior and legislators, independently of their party label, opt for one of the voting proposals, l or r. Parties cannot set a disciplinary penalty. We then assume that parties set a policy proposal that maximizes their expected vote-share conditional to avoiding switching behavior. Analytically, parties' maximization problems are

$$\underset{l}{Max} \quad \pi_L(l,r) \qquad \underset{r}{Max} \quad \pi_R(l,r)$$
$$\text{s.t.} \quad \begin{array}{c} (h_i^*, p_i^*) \neq (L,r) \\ l \in \left[\bar{L}-\varepsilon, \bar{L}+\varepsilon\right] \end{array} \qquad \text{s.t.} \quad \begin{array}{c} (h_i^*, p_i^*) \neq (R,l) \\ r \in \left[\bar{R}-\varepsilon, \bar{R}+\varepsilon\right] \end{array}$$

We say that there is policy convergence when parties select centrist platforms, that is, $l = \bar{L} + \varepsilon$ and $r = \bar{R} - \varepsilon$. Otherwise, we say that there is policy divergence.

3 Party label and legislative votes

We analyze candidates' decisions regarding their party label and their subsequent legislative votes. Candidates' incentives are different in the strong as

[10] Our results do not depend on the uniform distribution of ideologies, or on the unit interval over which the ideologies are distributed. These are simplifying assumptions.

[11] In the real world, the threat of punishment is not absent. Party leaders control several disciplinary tools, including ballot access (Cox and McCubbins, 1994), committee positions (Kiewiet and McCubbins, 1991), advancement within the party, increased influence over party policy positions, and access to legislative perks (Bowler et al., 1999).

opposed to the weak party discipline scenarios. In a strong party discipline scenario, legislators face a disciplinary penalty $F \geq 0$ when deviating from the party line, whereas in a weak party discipline scenario there is no such penalty.

For the sake of tractability, suppose along this section that $\pi_L < \pi_R$ (the opposite case $\pi_L > \pi_R$ is symmetric).

3.1 The strong party discipline scenario

We analyze political parties' optimal disciplinary penalties. As already argued, when $\pi_L < \pi_R$ candidates whose party label is L never engage in switching behavior; therefore, only party R will impose disciplinary penalties. Party R seeks to minimize the value of the penalty F while still seeking to ensure that their candidates do not engage in switching behavior.

Let (h_i^*, p_i^*) denote the optimal decision of legislator i regarding party affiliation and subsequent voting decisions when parties' platforms are considered to be fixed at r, l where $l < r$. Party R sets F_R so as to solve

$$\begin{array}{ll} \underset{F_R \geq 0}{Min} & F_R \\ s.t. & (h_i^*, p_i^*) \neq (R, l) \text{ for all } i \in [0,1]\,. \end{array} \tag{1}$$

That is, party R sets F_R so as to eliminate switching behavior.

Candidates compare their utilities under three available strategies: selecting party R's label or party L's label and not switching in these two cases, and selecting party R's label and switching afterwards (we have already discarded the possibility of switching on legislative votes once the candidate's party label is L and $\pi_L < \pi_R$). The associated utilities are U_L, U_R and U_R^S respectively. The disciplinary penalties aim at preventing the following two types of candidates' preferences:

$$U_R^S > U_L \geq U_R \text{ and } U_R^S > U_R > U_L. \tag{2}$$

These preferences reflect that some candidates may prefer switching their legislative votes over the two other strategies, selecting party R's label or party L's label and not switching. Thus, F_R is set so as to prevent the preferences in (2).

First, requiring $U_L \geq U_R^S$ implies

$$F_R \geq \pi_R - \pi_L - \lambda(r-l)^2, \tag{3}$$

that is, the penalty cost has to be greater than the difference between ambition benefits and the reputation cost. Note that the higher the ambition benefits with respect to the reputation cost, the greater the penalty has to be in order to prevent switching behavior.

Second, requiring $U_R \geq U_R^S$ implies

$$F_R \geq \mu\left[(i-r)^2 - (i-l)^2\right] - \lambda(r-l)^2 \text{ for every } i, \tag{4}$$

that is, the penalty has to be greater than the difference between the ideological benefits derived from switching and the reputation cost.

In both cases, (3) and (4), we find that a high reputation cost is enough to prevent switching behavior.

We deduce that party L does not need to impose a penalty and party R has to impose a penalty in those cases in which ambition incentives are high, ideological incentives are high, or the reputation cost is low. The following proposition describes the optimal decision of both party R and the candidates:

Proposition 1 *In the strong party discipline scenario, party R sets an optimal penalty F_R^* that prevents switching behavior:*

$$F_R^* = \min\left\{\pi_R - \pi_L - \lambda(r-l)^2,\ \mu(r^2-l^2) - \lambda(r-l)^2\right\}$$

when $\pi_R - \pi_L > \lambda(r-l)^2$ and $\mu(r^2-l^2) > \lambda(r-l)^2$, otherwise $F_R^* = 0$. Regarding candidates, there is a threshold

$$\hat{\imath} = \frac{r+l}{2} - \frac{\pi_R - \pi_L}{2\mu\,(r-l)}$$

such that if the ideology of the candidate satisfies condition $i \geq \hat{\imath}$, then the candidate selects party R's label, and if $i < \hat{\imath}$, the candidate selects party L's label.

The threshold $\hat{\imath}$ results from comparing U_L and U_R, and defines the party with which the candidate decides to run in the elections. That is, all the candidates with ideal policies in the interval $[0, \hat{\imath})$ opt for $(h_i^*, p_i^*) = (L, l)$, and those candidates with ideal policies in the interval $[\hat{\imath}, 1]$ opt for $(h_i^*, p_i^*) = (R, r)$. Given that $\pi_R - \pi_L > 0$ and $r - l > 0$, $\hat{\imath}$ is always below the mid-point of the interval $[l, r]$ (defined by $\frac{r+l}{2}$). This implies that candidates' optimal decisions are not only ideological, but are also driven by their ambition. In fact, the larger the difference in $\pi_R - \pi_L$, or the smaller the weight that candidates assign to their ideology μ, or the closer the parties' proposals to each other, then the broader the range of ideologies under which a candidate decides to run with party R.[12] Besides, it can be the case that $\hat{\imath} \leq l$ when the ambition benefits $\pi_R - \pi_L$ are sufficiently high. In particular, condition $\hat{\imath} \leq l$ is equivalent to $\pi_R - \pi_L \geq \mu(r-l)^2$, that is, when ambition benefits are above $\mu(r-l)^2$, the threshold $\hat{\imath}$ is below the policy proposal of party L. Likewise, condition $\hat{\imath} > l$ is equivalent to $\pi_R - \pi_L < \mu(r-l)^2$, that is, when ambition benefits are below $\mu(r-l)^2$, the threshold $\hat{\imath}$ is in between policy l and $\frac{r+l}{2}$.

[12] The threshold that we derive in Proposition 1 resembles the one obtained in the model of political competition with valence advantage proposed by Groseclose (2001). In Groseclose's model, however, the threshold is to the right or to the left of the mean policy because the two competing political parties are asymmetric with respect to their valence advantage.

3.2 The weak party discipline scenario

In a weak party discipline scenario, candidates know that when switching on legislative votes, parties cannot apply a disciplinary penalty.

Candidates decide on one out of three available strategies (note that when $\pi_L < \pi_R$ we have already discarded the possibility of switching on legislative votes once the candidate's party label is L). The first two possibilities are the ones in which the candidate runs with one party (R or L) and follows the party line. The third alternative for the candidate is running with party R and switching on legislative votes.

When comparing U_L and U_R^S − that is, running with party L and voting for l, with respect to running with party R and switching − we deduce that $U_L \geq U_R^S$ implies

$$\pi_R - \pi_L \leq \lambda(r-l)^2. \tag{5}$$

This condition requires that the gains from ambition $\pi_R - \pi_L$ do not compensate for the loss in reputation when switching. That is, the reputation cost surpasses the benefits associated with ambition. Thus, when condition (5) is satisfied, we say that there is *strong social pressure.*

In the opposite case, that is, when $U_L < U_R^S$, we deduce that

$$\pi_R - \pi_L > \lambda(r-l)^2, \tag{6}$$

we then say that there is *weak social pressure.* In this latter case, the benefits associated with ambition $\pi_R - \pi_L$ are greater than the reputation cost and candidates opt for either running with party R and switching on legislative votes, or running with party R and voting r.

The following proposition describes the optimal decisions:

Proposition 2 *In the weak party discipline scenario:*
i) If there is strong social pressure, candidates behave as in the case of strong party discipline;
ii) If there is weak social pressure, there is a threshold

$$\ddot{\imath} = \frac{r+l}{2} - \frac{\lambda(r-l)}{2\mu},$$

such that if the ideology of the candidate satisfies condition $i \geq \ddot{\imath}$, then the candidate selects party R's label and votes for this party's policy proposals, whereas if $i < \ddot{\imath}$, then the candidate selects party R's label and switches on legislative votes.

Proposition 2 shows that strong social pressure results in a scenario similar to the one with strong party discipline. This is due to the high reputation cost that mitigates candidates' incentives to switch. However, when there is weak social pressure, we find that those candidates whose

ideologies are close to that of party L run with party R to satisfy their ambition and once elected, they break party discipline. That is, all the candidates with ideal policies in the interval $[0, \ddot{\imath})$ opt for $(h_i^*, p_i^*) = (R, l)$, and those candidates with ideal policies in the interval $[\ddot{\imath}, 1]$ opt for $(h_i^*, p_i^*) = (R, r)$.

Since $\frac{\partial \ddot{\imath}}{\partial \lambda} < 0$ and $\frac{\partial \ddot{\imath}}{\partial \mu} > 0$, we deduce that the larger the weight that candidates assign to the reputation cost λ, or the smaller the weight that candidates assign to the ideological cost μ, the narrower the range of candidates' ideologies for which candidates switch their legislative votes.

Notice that since $r - l > 0$, then $\ddot{\imath}$ is always below the mid-point of the interval $[l, r]$ (defined by $\frac{r+l}{2}$). Besides, it can be the case that $\ddot{\imath} \leq l$ when λ is high or when μ is low. In particular, condition $\ddot{\imath} \leq l$ is equivalent to $\mu \leq \lambda$ and, therefore, $\ddot{\imath} > l$ is equivalent to $\mu > \lambda$. That is, when $\mu < \lambda$, candidates care more about their reputation than about their ideology and there is less switching behavior. On the contrary, when $\mu > \lambda$, the phenomenon of switching behavior expands. In particular, the lower the ratio $\frac{\lambda}{\mu}$ the larger the fraction of centrist candidates affiliated to party R that vote for party L's policy proposals.

3.3 Comparing weak and strong party discipline

The next result compares the two analyzed scenarios. These two scenarios differ from each other when there is weak social pressure or/and high opportunistic advantages (that is, when $\pi_R - \pi_L > \lambda(r - l)^2$). In this case, legislators are tempted to engage in switching behavior if there is weak party discipline, and such an option is prevented in the strong party discipline scenario with the disciplinary penalties.

Proposition 3 *If there is strong social pressure, then the strong and the weak party discipline scenarios induce the same strategies from candidates. If there is weak social pressure, then $\hat{\imath} < \ddot{\imath}$, which implies that in the weak party discipline scenario (with respect to the strong party discipline scenario) there is a higher fraction of legislators who vote in accordance with their ideology.*

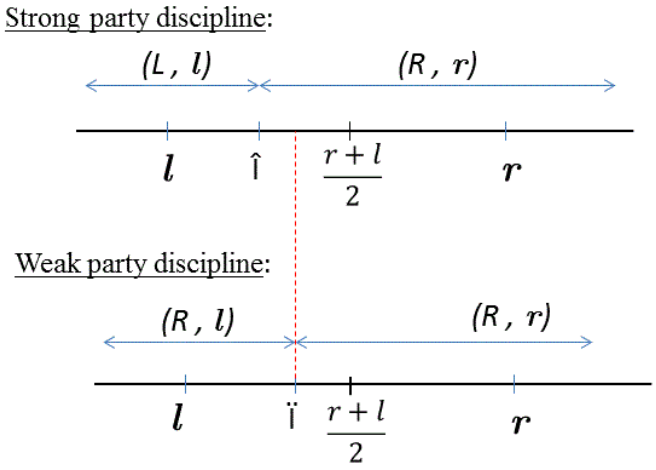

Figure 1: Candidates' optimal choices if $\pi_R > \pi_L$

Figure 1 illustrates the above result in the case of weak social pressure. The black straight lines represent the unidimensional policy space where the ideologies of the candidates and the political parties are located. Note that a candidate with an ideology $i \in (\hat{\imath}, \ddot{\imath})$ does not engage in switching behavior when there is strong party discipline, but he would engage in the weak party discipline scenario when there is weak social pressure. We can interpret that $\hat{\imath} < \ddot{\imath}$ implies that among moderate legislators (those with an ideal policy between l and r), the fraction of those who vote l over r is higher under weak party discipline. Besides, since $\ddot{\imath}$ is closer than $\hat{\imath}$ to the midpoint $\frac{l+r}{2}$, we say that there is more ideological voting under weak party discipline than under strong party discipline.

4 The policy location of political parties

As stated above, political parties foresee candidates' decision with respect to their chosen party label and their subsequent voting decision in parliament. In this section, we analyze the first stage of the electoral game in which political parties simultaneously select their policy proposals, l and r, respectively.

Voters for parliamentary elections are ideological and vote for the party which is closer to their ideological point. Given the policy proposals l and r where $l \neq r$, every voter with ideology $i \in \left[0, \frac{l+r}{2}\right]$ votes for party L and every voter with ideology $i \in \left(\frac{l+r}{2}, 1\right]$ votes for party R.

Since parties consider that voters' ideal policies are uniformly distributed over the interval $[0, 1]$, their expected vote-shares π_L and π_R are measured by

$$\pi_L = \Pr(i \leq \frac{l+r}{2}), \ \pi_R = 1 - \Pr(i \leq \frac{l+r}{2}).$$

In the strong party discipline scenario, the disciplinary cost prevents switching on legislative votes. Thus, parties in this scenario only care about maximizing its expected vote-share. In the weak party discipline scenario, note that switching behavior only occurs within the party with higher expected vote-share, i.e., the party with maximal expected vote-share below $\frac{1}{2}$ is not exposed to switching behavior.

4.1 The strong party discipline scenario

The only strategies for candidates in this scenario are joining party L and voting l in parliament, versus joining party R and voting r in parliament. According to Proposition 1, if a candidate i is such that $i < \hat{\imath}$, then this candidate affiliates to party L and votes l, and if $i \geq \hat{\imath}$, then this candidate affiliates to party R and votes r. As already mentioned, parties select a policy in the intervals $\left[\bar{L}-\varepsilon, \bar{L}+\varepsilon\right]$ and $\left[\bar{R}-\varepsilon, \bar{R}+\varepsilon\right]$ respectively.

Given some fixed value of the policy proposal of party R, that we denote by $\bar{r}$, party L selects the policy proposal l that maximizes its expected vote-share:

$$\underset{l\in\left[\bar{L}-\varepsilon,\bar{L}+\varepsilon\right]}{Max} \Pr(i \leq \frac{l+\bar{r}}{2}) \tag{7}$$

Likewise, given some fixed value of the policy proposal of party L, that we denote by $\bar{l}$, party R selects the policy proposal r that maximizes its expected vote-share:

$$\underset{r\in\left[\bar{R}-\varepsilon,\bar{R}+\varepsilon\right]}{Max} 1-\Pr(i \leq \frac{\bar{l}+r}{2}). \tag{8}$$

The following proposition describes the optimal policy of the parties.

Proposition 4 *In the strong party discipline scenario, it is always the case that both parties select their most moderate platform, that is, party L sets its platform at* $l^* = \bar{L}+\varepsilon$ *and Party R sets its platform at* $r^* = \bar{R}-\varepsilon$.

Note how party competition in the strong party discipline scenario leads to the standard result of both parties offering centrist platforms (Downs, 1957).

The location of $\bar{L}+\varepsilon$ and $\bar{R}-\varepsilon$ with respect to the midpoint $\frac{1}{2}$ determines what party has better expected vote-share. In fact, only when $\bar{R}-\varepsilon$ is closer to $\frac{1}{2}$ than $\bar{L}+\varepsilon$, we deduce that $\pi_L < \pi_R$.

4.2 The weak party discipline scenario

In this scenario, non-loyal candidates may benefit from the opportunistic advantage offered by the majority party. That is, switching behavior can occur within the party with higher expected vote-share.

Party R shows better expected vote-share than party L when $\pi_R - \pi_L > 0$ (and therefore, $\pi_R > \frac{1}{2}$) and party L when $\pi_R - \pi_L < 0$. When there is a tie, $\pi_R = \pi_L$, there is no switching behavior.

As already analyzed in Proposition 4, the strategy that allows parties to maximize their expected vote-share is $l = \bar{L} + \varepsilon$ and $r = \bar{R} - \varepsilon$.

When selecting these strategies, the expected percentage of votes for each party are the following

$$\pi_L^{\max} = \tfrac{\bar{L}+\bar{R}}{2} \text{ and } \pi_R^{\max} = 1 - (\tfrac{\bar{L}+\bar{R}}{2}).$$

We deduce three cases: i) $\bar{L} + \bar{R} = 1$, in which case $\bar{L} = \bar{R} = \frac{1}{2}$ which is not compatible with assumption $\bar{L} + \varepsilon < \bar{R} - \varepsilon$; ii) $\bar{L} + \bar{R} < 1$, in which case $\pi_R^{\max} > \frac{1}{2}$; and iii) $\bar{L} + \bar{R} > 1$, in which case $\pi_L^{\max} > \frac{1}{2}$. Note that only when cases ii) or iii) hold, there is a party exposed to switching behavior. Since only one of the parties can be exposed to switching behavior, we find that when there is weak party discipline, there is a party that maximizes its expected vote-share subject to preventing switching behavior while the other party only cares about maximizing its expected vote-share. We now analyze case ii (which is symmetric to case iii).

By assumption, $\bar{L} < \frac{1}{2}$ and $\bar{R} > \frac{1}{2}$, so that case ii) implies that $\frac{1}{2} - \bar{L} > \bar{R} - \frac{1}{2}$, i.e., policy $\bar{R}$ is closer to the median voter, located at $\frac{1}{2}$, than policy $\bar{L}$. In this scenario, party R is exposed to switching behavior and its optimization problem is as follows

$$\begin{array}{rl} \underset{r\in[\bar{R}-\varepsilon,\bar{R}+\varepsilon]}{Max} & 1 - \Pr(i \leq \frac{\bar{l}+r}{2}) \\ \text{s.t.} & \text{(i) } \pi_R > \pi_L \\ & \text{(ii) } \pi_R - \pi_L \leq \lambda(r-l)^2. \end{array} \tag{9}$$

By Proposition 2, restriction $\pi_R - \pi_L \leq \lambda(r-l)^2$ implies that high reputation cost, measured by $\lambda(r-l)^2$, mitigates candidates' incentives to switch, and condition $\pi_R > \pi_L$ implies that party R's expected vote-share should be greater than $\frac{1}{2}$. Notice that the maximization problem above has no solution when r satisfies restriction (ii) in equation (9) but it does not satisfy restriction (i), i.e., in those cases in which the policy proposal that discourages candidates from switching behavior provides a expected vote-share below $\frac{1}{2}$ (and therefore, incentives to switch vanish). In this case, party R just cares about maximizing its vote-share. Regarding party L, since it is not exposed to switching, it maximizes its vote-share

$$\underset{l\in[\bar{L}-\varepsilon,\bar{L}+\varepsilon]}{Max} \Pr(i \leq \frac{l+\bar{r}}{2}). \tag{10}$$

Solving parties' optimization problems yield the following result.

Proposition 5 *In the weak party discipline scenario, parties select their most moderate platform,* $l^* = \bar{L} + \varepsilon$ *and* $r^* = \bar{R} - \varepsilon$ *unless the weight that candidates assign to their reputation cost is neither too high nor to small, in which case the party with higher expected vote-share opts for certain more partisan platform, that is* $l^* < \bar{L} + \varepsilon$ *or* $r^* > \bar{R} - \varepsilon$*.*

Figure 2 illustrates the location of the optimal policy r^* when $l = \bar{L} + \varepsilon$. We show that $\pi_R - \pi_L$ is decreasing in r, whereas $\lambda(r-l)^2$ is increasing in r and r^* solves $1 - l - r^* = \lambda(r^* - l)^2$. Thus, every policy r below r^* avoids switching behavior, which implies that party R will select it unless the reduction in its vote share moves below $\frac{1}{2}$. In the figure, we provide an example where $\bar{R} - \varepsilon < r^* \in (\bar{R} - \varepsilon, 1 - \bar{L} - \varepsilon)$ which implies that policy r^* maximizes vote-share conditional to avoiding switching behavior.

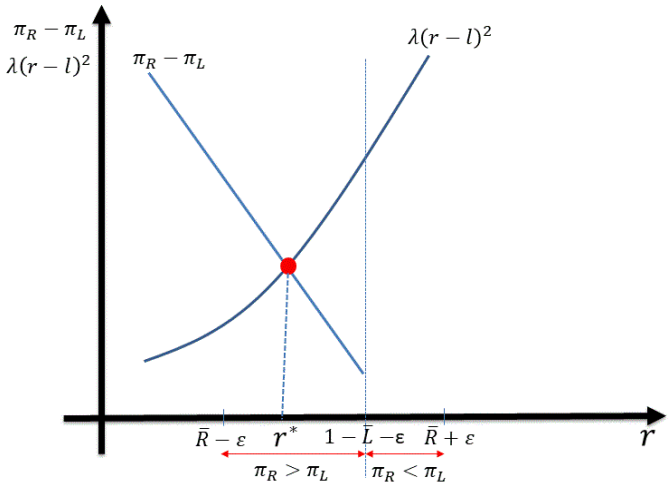

Figure 2: Optimal policy in the weak party discipline scenario

We conclude that in a scenario with weak party discipline, the party that, in expectation, obtains a majority may propose a more partisan policy platform, one that opportunistic legislators find it too hard, in terms of their reputation, to deviate from party-line voting.[13]

Figure 3 represents the optimal policies in the two scenarios, weak and strong party discipline. For the case of weak party discipline, we represent the two cases, the one in which party R holds better expected vote-share (where $\bar{L} + \bar{R} < 1$ and so, condition $r < 1 - \bar{L} - \varepsilon$ should hold to guarantee that $\pi_R > \pi_L$), and the other in which party L holds better expected vote-share (where $\bar{L} + \bar{R} > 1$ and so, condition $l > 1 - \bar{R} + \varepsilon$ should hold to guarantee that $\pi_R < \pi_L$). In the weak party discipline model we show

[13] In real politics, there are races where different pre-electoral polls provide different majorities. From the candidates' and political parties' perspective, this situation would be equivalent to $\pi_R = \pi_L$, and there is no a priori benefit of adopting party L's or Party R's label.

that at least one of the parties may deviate from its most moderate policy position. The parties, however, always propose their most moderate policies when party discipline is strong.

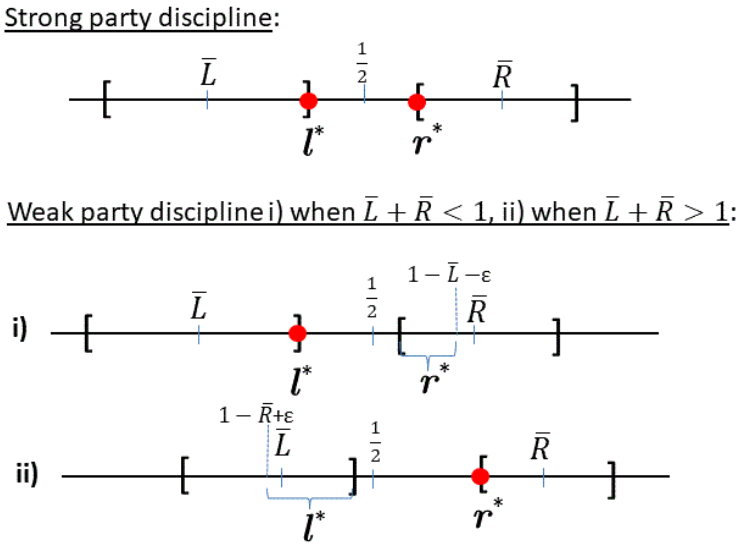

Figure 3: Parties' optimal policy location

5 Conclusion

We develop a model describing the interaction between candidates for parliament and political parties. Candidates differ in their ideal policies and maximize their utility, which is a function of their ambition less some ideological cost and a reputation cost associated with switching in their legislative votes. Political parties are office-motivated and they care about their candidates' loyalty in legislative votes.

The purpose of the paper was two-fold. First, we analyzed elected candidates' incentives to deviate from party-line voting, in two different political scenarios: one in which there is strong party discipline and those legislators who deviate from party-line voting face a disciplinary penalty, and another one where party discipline is weak. Second, we investigated whether politicians' incentives to potentially deviate from party-line voting once elected may impact parties' announced policy platforms.

Our analysis yielded interesting results which are open to empirical scrutiny.

First, regarding party affiliation, the expected majority party attracts more candidates, specially when policy platforms are close to each other and there is weak party discipline. The reason is that candidates satisfy ambitious incentives and the close distance between the parties' platforms reduces the ideological cost of party line voting. Besides, when there is

weak party discipline, the reputation cost of switching party is low due to the small distance between the policy platforms.

Second, regarding party-line voting, legislators switching party arise among those affiliated to the majority party and provided that the party does not posses disciplinary penalties. Intuitively, ambitious candidates bet on the winning horse when seeking party affiliation. Once elected, they may improve by deviating from party line voting. This argument is in coherence with empirical evidence in the Spanish legislature. When comparing the period of strong party discipline 1982–1986 to that of weak party discipline 1986–1989, switching behavior in parliament increased from 1 percent to 12 percent (Tomás Mallén, 2002).[14]

Third, and regarding party-line voting, the more legislators care about their ideology and the less about their reputation, the higher the magnitude of party switching. When legislators are strongly ideological, voting in parliament for a policy which is too distant to ones' ideal policy is too costly. If, in addition, legislators show low concern about their reputation, their cost for not following party-line voting is low.

Lastly, and regarding parties' policy positions, strong party discipline induces policy convergence, whereas weak party discipline provides incentives for divergent policy positions. Our unexpected result is that the majority party in a weak party discipline scenario, can opt for a polarized policy to discourage switching behavior in legislative votes. This is the mechanism that deters switching behavior: the more polarized the party is, the higher the distance between the parties' proposals and, thus, the higher the reputation loss of a candidate when deviating from party-line voting. When instead parties can impose direct disciplinary penalties, there is no need to offer a polarized platform. We can interpret this result in a more general setting in which two factions compete for committee positions. Our results reveal that the advantageous faction will opt for a more extreme policy proposal to obtain the support of loyal committee members. That is, we can argue that polarization and loyalty go hand in hand.

Our results reveal that weak party discipline and the absence of disciplinary tools can exert a negative social impact. When candidates are ambitious and they care about their reputation for not toeing the party line, weak party discipline induces divergence of policy platforms, which implies that the implemented policy moves away from the one that better represents the electorate. Against the theory of pure ideological candidates and the robustness of the policy convergence result (of the Downsian prediction), our unexpected result is that human psychological needs, such as ambition

[14] Heller and Mershon (2008) show that in the Italian Chamber of Deputies for the period 1988–2000, strong party discipline created incentives for legislators to switch parties. For these authors, party discipline is measured by the degree of cohesion in the vote of partisan legislators. In our model, strong party discipline refers to parties with available disciplinary tools. Our results, therefore, are not in contradiction.

and concern about one's own reputation, lead to alternative theories that can explain why political parties do not always converge to the policy representing the social optimum. This is an unexplored argument which can be added to those trying to explain why convergence to the electoral center is an extremely unlikely phenomenon (Ansolabehere, Snyder and Stewart, 2001; Klingemann et al., 2006).[15]

The findings of this study also raise interesting questions for future research. An important one would be to analyze the effects of different electoral and legislative rules on politicians' incentives to switch parties, as one might think that different political systems—like candidate-centered systems (such as single-member district systems or open-list proportional representation systems), or party-centered systems (such as closed-list proportional representation systems)—may offer different incentives for the frequency and patterns of party switching. This is an issue that has already been highlighted in the literature (Heller and Mershon, 2005; McLaughlin, 2011), but we are not aware of any theoretical contribution analyzing it, and existing empirical research has yet to agree fully on the extent to which electoral rules increase or decrease incentives for switching.

Finally, although it is common in many democracies that elected legislators do not follow party-line voting or abandon one party and join another, even during the legislative term, to date economists and political scientists have done little theoretical research into party switching. We hope that this study of switching by legislators and party policy positions can enrich our understanding of political parties, party discipline and policy making, and will open the door to further research into that area.

[15] Among others, platform divergence-based factors are entry deterrence (Palfrey, 1984; Osborne and Slivinski, 1996; Besley and Coate, 1997; Callander, 2005), politicians' policy preferences with uncertainty about voters' preferences (Calvert, 1985; Wittman, 1983), valence issues (Groseclose, 2001; Ansolabehere and Snyder, 2000; Aragonés and Palfrey, 2002), voter abstention, primary elections, party activists, and special interest groups (see Bernhardt et al. 2009, p. 570).

APPENDIX

Proof of Proposition 1: Simplifying Expression (4) yields

$$F_R \geq \mu\left[r^2 - l^2 - 2i(r-l)\right] - \lambda(r-l)^2 \text{ for every } i$$

Since the above expression is decreasing in i, then $i = 0$ is the ideology of the candidate with more incentives to switch. Substituting $i = 0$ in the above expression yields

$$F_R \geq \mu(r^2 - l^2) - \lambda(r-l)^2, \tag{11}$$

which guarantees that $U_R \geq U_R^S$ for every candidate. By (3), when $\pi_R - \pi_L \leq \lambda(r-l)^2$, then for every agent it holds that $U_L \geq U_R^S$ and by (4), when $\mu(r^2 - l^2) \leq \lambda(r-l)^2$ then for every agent it holds that $U_R \geq U_R^S$. That is, there are no incentives to switch in any of these two cases and the optimal penalty is $F^* = 0$. We deduce that $F^* \neq 0$ only when $\pi_R - \pi_L > \lambda(r-l)^2$ and $\mu(r^2 - l^2) > \lambda(r-l)^2$, in which case, the minimal F^* in the comparison between (3) and (4) guarantees that either $U_L \geq U_R^S$ or $U_R \geq U_R^S$ satisfies for every candidate. When $F_R^* = \pi_R - \pi_L - \lambda(r-l)^2$, then whatever the ideology of the candidate $U_R^S = U_L$ and candidates do not switch. When $F_R^* = \mu(r^2 - l^2) - \lambda(r-l)^2$, then whatever the ideology of the candidate $U_R^S = U_R$ and candidates do not switch. Since no candidate switches, they affiliate to party R and then vote r, or they affiliate to party L and then vote l.

We therefore compare the utilities U_L, U_R

$$\begin{aligned}
U_L \quad &\leq \quad U_R \Longleftrightarrow \pi_L - \mu(i-l)^2 \leq \pi_R - \mu(i-r)^2 \Longleftrightarrow \\
\pi_R - \pi_L \quad &\leq \quad \mu\left(i-r\right)^2 - \mu\left(i-l\right)^2 \Longleftrightarrow \\
2\mu i(r-l) \quad &\geq \quad \mu(r^2 - l^2) - (\pi_R - \pi_L) \Longleftrightarrow \\
&\Longleftrightarrow \quad i \geq \frac{r+l}{2} - \frac{\pi_R - \pi_L}{2\mu(r-l)} \equiv \hat{\imath}.
\end{aligned}$$

and this completes the proof.

Proof of Proposition 2: When $\pi_R - \pi_L \leq \lambda(r-l)^2$, we have shown that there are no incentives for switching behavior. Therefore, our results in Proposition 1 apply and the threshold $\hat{\imath}$ characterizes candidates' optimal decisions.

When $\pi_R - \pi_L > \lambda(r-l)^2$, we have already shown that the candidate opts for either affiliating to party R and switching afterwards, or affiliating to party R and not switching. We therefore compare the utilities U_R^S and U_R

$$\begin{aligned}
U_R \quad &\geq \quad U_R^S \Longleftrightarrow \pi_R - \mu(i-r)^2 \geq \pi_R - \mu(i-l)^2 - \lambda(r-l)^2 \\
&\Longleftrightarrow \quad -\mu(i-r)^2 \geq -\mu(i-l)^2 - \lambda(r-l)^2 \\
&\Longleftrightarrow \quad 2\mu i(r-l) \geq \mu(r^2 - l^2) - \lambda(r-l)^2 \\
&\Longleftrightarrow \quad i \geq \frac{r+l}{2} - \frac{\lambda(r-l)}{2\mu} \equiv \ddot{\imath}
\end{aligned}$$

and this completes the proof.

Proof of Proposition 3: By Propositions 1 and 2, the two scenarios, weak and strong party discipline, yield the same result when there is strong social pressure. If there is weak social pressure, then $\pi_R - \pi_L > \lambda(r-l)^2$. Dividing both terms by $2\mu(r-l)$ yields

$$\begin{aligned} \pi_R - \pi_L \quad &> \quad \lambda(r-l)^2 \Longleftrightarrow \frac{\pi_R - \pi_L}{2\mu(r-l)} > \frac{\lambda(r-l)}{2\mu} \\ &\Longleftrightarrow \quad -\frac{\pi_R - \pi_L}{2\mu(r-l)} < -\frac{\lambda(r-l)}{2\mu}. \end{aligned}$$

Adding $\frac{r+l}{2}$ to both terms

$$\underbrace{\frac{r+l}{2} - \frac{\pi_R - \pi_L}{2\mu(r-l)}}_{\hat{\imath}} < \underbrace{\frac{r+l}{2} - \frac{\lambda(r-l)}{2\mu}}_{\hat{\imath}}$$

and this completes the proof.

Proof of Proposition 4: Voters are uniformly distributed over the interval $[0,1]$, so that $\Pr(i \leq \frac{l+\bar{r}}{2}) = \frac{l+\bar{r}}{2}$. Solving for the first derivative of the optimization problems in (7) and (8):

$$\frac{\partial \Pr(i \leq \frac{l+\bar{r}}{2})}{\partial l} = \frac{1}{2} > 0 \qquad \frac{\partial(1 - \Pr(i \leq \frac{\bar{l}+r}{2}))}{\partial r} = -\frac{1}{2} < 0,$$

which implies that $l^* = \bar{L} + \varepsilon$ and $r^* = \bar{R} - \varepsilon$ are the optimal policies for party L and party R respectively.

Proof of Proposition 5: Party R can avoid switching behavior when reducing its expected vote-share π_R up to the point where $\pi_R - \pi_L \leq \lambda(r-l)^2$ and conditional to $\pi_R > \pi_L$.
Substituting $\pi_L = \frac{l+r}{2}$ and $\pi_R = 1 - (\frac{l+r}{2})$, we deduce $\pi_R - \pi_L = 1 - l - r$. Then, condition $\pi_R - \pi_L \leq \lambda(r-l)^2$ is equivalent to $1 - l - r \leq \lambda(r-l)^2$. Let $r^*(l)$ be the solution to $1 - l - r = \lambda(r-l)^2$, from where:

$$\lambda r^{*2} + r^*(1 - 2\lambda l) - (1 - \lambda l^2 - l) = 0 \Longleftrightarrow r^*(l) = \frac{1}{2\lambda}(l2\lambda - 1 + \sqrt{1 + 4\lambda(1-2l)}$$

As we already know, party L's optimal policy when maximizing its vote-share is $l = \bar{L} + \varepsilon$, and substituting in the above condition yields:

$$r^*(\bar{L} + \varepsilon) = \frac{1}{2\lambda}((\bar{L} + \varepsilon)2\lambda - 1 + \sqrt{1 + 4\lambda(1 - 2(\bar{L} + \varepsilon))}). \tag{12}$$

For restriction $\pi_R > \pi_L$ to be satisfied when $l = \bar{L} + \varepsilon$, the policy of party R should be closer to $\frac{1}{2}$ (the median voter location), than that of party L, i.e., $\frac{1}{2} - (\bar{L} + \varepsilon) > r - \frac{1}{2}$. Thus, condition $\pi_R > \pi_L$ is equivalent to

$$r < 1 - \bar{L} - \varepsilon. \tag{13}$$

From equations (9) and (10) we distinguish three cases:
Case 1: $r^*(\bar{L}+\varepsilon) \leq \bar{R}-\varepsilon$. In this case, condition $1-l-r \leq \lambda(r-l)^2$ holds for every $r \in [\bar{R}-\varepsilon, \bar{R}+\varepsilon]$: the l.h.s. term is strictly decreasing in r, the r.h.s. term is strictly increasing in r and both terms equal at $r^*(\bar{L}+\varepsilon)$. Thus, similar to the strong party discipline scenario, Party R selects the policy with which it maximizes votes $r = \bar{R}-\varepsilon$. Note that λ high enough guarantees condition $1-l-r \leq \lambda(r-l)^2$ holds.
Case 2: $\bar{R}-\varepsilon < r^*(\bar{L}+\varepsilon) < 1-\bar{L}-\varepsilon$. In this case, party R selects the policy $r^*(\bar{L}+\varepsilon)$, with which it maximizes its vote-share conditional to avoiding switching behavior and obtaining a majority. For this case, the weight assigned to the reputation cost (λ) can neither be too high, nor to low. If λ is high, candidates do never incur in switching behavior, if λ is too low, candidates will always incur in switching behavior, no matter the distance $(r-l)^2$ between the parties' policy positions. Thus, only for intermediates values of λ, Case 2 can occur.
Case 3: $1-\bar{L}-\varepsilon \leq r^*(\bar{L}+\varepsilon)$. In this case, the policy with which Party R avoids switching behavior does not guarantee the electoral victory. In such a case, Party R selects the policy that maximizes its vote-share, that is $r = \bar{R}-\varepsilon$. Note that, just the opposite of Case 1, λ low enough implies that $\lambda(r-l)^2$ is low and therefore condition $1-l-r = \lambda(r-l)^2$ requires some small r.

References

[1] Aldrich, J.H. and Bianco, W.T. (1992). A Game-theoretic Model of Party Affiliation of Candidates and Office Holders. *Mathematical and Compute Modelling*, 16: 103-116.

[2] Ansolabehere, S., Snyder, J.M. and Stewart, C. (2001). Candidate Positioning in U.S. House Elections. *American Journal of Political Science,* 45: 136-59

[3] Ansolabehere, S. and Snyder, J.M. (2000). Valence Politics and Equilibrium in Spatial Election Models. *Public Choice*, 103: 327-336.

[4] Aragonés, E. and Palfrey, T.R. (2002). Mixed Equilibrium in a Downsian Model with a Favored Candidate. *Journal of Economic Theory,* 103: 131-161.

[5] Besley, T. and Coate, S. (1997). An Economic Model of Representative Democracy. *Quarterly Journal of Economics,* 112: 85-114.

[6] Bernhardt, D., Duggan, J. and Squintani, F. (2009). The case for responsible parties. *American Political Science Review*, 103: 570-587.

[7] Bowler, S., Farrell, D.M. and Katz, R.S. (1999). Party Cohesion, Party Discipline and Parliaments. In: Party Discipline and Parliamentary Government. Editors: Bowler, S., Farrell, D.M. and Katz, R.S. Columbus: The Ohio State University Press.

[8] Cadigan, J. and Janeba, E. (2002). A citizen-candidate model with sequential elections. *Journal of Theoretical Politics,* 14: 387-407.

[9] Callander, S. (2005). Electoral Competition in Heterogeneous Districts. *Journal of Political Economy,* 113: 1116-1145.

[10] Calvert, R.L. (1985). Robustness of the Multidimensional Voting Model: Candidate Motivations, Uncertainty, and Convergence. *American Journal of Political Science,* 29: 69-95.

[11] Cox, G.W. and McCubbins, M.D. (1994). Bonding, Structure, and the Stability of Political Parties: Party Government in the House. *Legislative Studies Quarterly*, 19: 215-231.

[12] Cox, G.W. and Rosenbluth, F. (1995). Anatomy of a split: the Liberal Democrats of Japan. *Electoral Studies,* 14: 355-376.

[13] Desposato, S.W. (2006). Parties for Rent? Ambition, Ideology, and Party Switching in Brazil's Chamber of Deputies. *American Journal of Political Science*, 50: 62-80.

[14] Downs, A. (1957). An Economic Theory of Democracy. 1^a ed. New York: Harper & Row Publishers.

[15] Galasso, V. and Nannicini, T. (2015). So closed: Political selection in proportional systems. *European Journal of Political Economy*, 40: 260-273.

[16] Groseclose, T. (2001). A Model of Candidate Location When One Candidate Has a Valence Advantage. *American Journal of Political Science*, 45: 862-886.

[17] Heller, W.B. and Mershon, C. (2005). Party switching in the Italian Chamber of Deputies, 1996-2001. *Journal of Politics*, 67: 536-559.

[18] Heller, W.B. and Mershon, C. (2008). Dealing in Discipline: Party Switching and Legislative Voting in the Italian Chamber of Deputies, 1988–2000. *American Journal of Political Science*, 52: 910-925.

[19] Heller, W.B. and Mershon, C. (2009). Taking Stock of Party Switching. In: Political Parties and Legislative Party Switching. Palgrave Macmillan.

[20] Huang H. (2010). Electoral Competition When Some Candidates Lie and Others Pander. *Journal of Theoretical Politics,* 22: 333-358.

[21] Kiewiet, D.R. and McCubbins, M.D. (1991). The Logic of Delegation: Congressional Parties and the Appropriations Process. Chicago: University of Chicago Press.

[22] Klingemann, H.D., Volkens, A., Bara, J., Budge, I and McDonald, M.D. (2006). Mapping Policy Preferences II: Estimates for Parties, Electors and Governments in Eastern Europe, European Union and OECD 1990-2003. New York: Oxford University Press.

[23] Laver, M. and Benoit, K. (2003). The evolution of party systems between elections. *American Journal of Political Science*, 47: 215-233.

[24] Mainwaring, S. and Pérez Liñan, A. (1997). Party Discipline in the Brazilian Constitutional Congress. *Legislative Studies Quarterly,* 22: 453-483.

[25] Martínez-Mora, F. and Puy, M.S. (2014). The determinants and electoral consequences of asymmetric preferences. *European Journal of Political Economy,* 33: 85-97.

[26] McLaughlin, E. (2011). Electoral regimes and party-switching: Floorcrossing in South Africa's local legislatures. *Party Politics*, 18: 563-579.

[27] Mejía-Acosta, A. (2004). Ghost Coalitions: Economic Reforms, Fragmented Legislatures and Informal Institutions in Ecuador (1979-2002). PhD. Dissertation. Notre Dame: Department of Political Science, University of Notre Dame.

[28] Mershon, C. (2014). Legislative Party Switching. The Oxford Handbook of Legislative Studies. Edited by Shane Martin, Thomas Saalfeld, and Kaare W. Strøm. Oxford University Press.

[29] Mershon, C., and Heller, W.B. (2009). Integrating theoretical and empirical models of party switching. Political Parties and Legislative Party Switching. Palgrave Macmillan, US.

[30] Mershon, C. and Shvetsova, O. (2008). Parliamentary Cycles and Party Switching in Legislatures. *Comparative Political Studies*, 41: 99-127.

[31] Mershon, C. and Shvetsova, O. (2014). Change in parliamentary party systems and policy outcomes: Hunting the core. *Journal of Theoretical Politics,* 26: 331-351.

[32] Osborne, M.J. and Slivinski, A. (1996). A Model of Political Competition with Citizen Candidates. *Quarterly Journal of Economics,* 111: 65-96.

[33] Palfrey, T.R. (1984). Spatial equilibrium with entry. *Review of Economic Studies*, 51: 139-5.

[34] Reed, S.R. and Scheiner, E. (2003). Electoral Incentives and Policy Preferences: Mixed Motives Behind Party Defections in Japan. *British Journal of Political Science*, 33: 469-490.

[35] Snyder, J.M. and Ting, M.M. (2001). Party Labels, Roll-Call Votes, and Elections. *Political Analysis,* 11: 419-444.

[36] Tomás Mallén, B. (2002). *Transfugismo parlamentario y democracia de partidos*. Madrid: Centro de Estudios Políticos y Constitucionales.

[37] Turan, l. (1985). Changing Horses in Midstream: Party Changers in the Turkish National Assembly. *Legislative Studies Quarterly,* 10: 21-34.

[38] Wittman, D.A. (1983). Candidate Motivation: A Synthesis of Alternative Theories. *American Political Science Review*, 77: 142-157.