How do Electorally Vulnerable Politicians Allocate Effort? Evidence from Canada*

Vinayak Iyer † Anjali P. Verma ‡

March 21, 2024

Abstract

How well does the so-called discipline effect work in democratic elections and how does it affect the allocation of time and resources of politicians? To answer this, we present causal evidence of the effect of electoral vulnerability on subsequent performance of Canadian Members of Parliament along various dimensions. More specifically, we document a politician's substitution of effort across different tasks in response to plausibly exogenous variation in electoral vulnerability. Using party opinion polls on the day before the election as an instrument, we estimate that more electorally vulnerable politicians substitute effort away from attending the parliament and instead spend more money in their constituency and more money in the following election campaign. These MPs spend more on salaries to their staff, travel to and from the constituency and advertising to constituents. we also find evidence that electorally vulnerable MPs find it harder to raise money for their next election but are compensated by transfers from the political party they belong to. This substitution of effort towards constituency and campaign activities is rationalized with a simple political economy model where politicians can influence a voter's belief about their ability by exerting effort on more costly, but relatively more observable actions to the voter.

*The authors are especially grateful to Suresh Naidu and Bernard Salanié for insightful feedback and constant encouragement. The paper also benefited from comments from participants at Columbia's Applied Microeconomics Methods and Applied Microeconomic Theory colloqiua. The views in this paper do not reflect Uber or Amazon and solely represent those of the authors.

†(Corresponding Author):PhD, Department of Economics, Columbia University Email: vinayak.iyer@columbia.edu

‡PhD, Department of Economics, University of Texas at Austin Email: anjali.priya@utexas.edu

Introduction

Democratic elections are commonly believed to play two main roles in improving the performance of elected politicians. First, elections serve as an important disciplining mechanism for politicians and policy-makers. Given that incumbent politicians are faced with re-election incentives, higher electoral competition would likely modify their performance in office to increase the probability of getting re-elected. This is the well-known discpline effect as studied in the literature by papers like Barro (1973) and Ferejohn (1986). Second, elections also act as a selection function which weeds out low performing politicians and hence on average, re-elected politicians will be of higher quality than first-term politicians. Amongst older papers Banks & Sundaram (1993) make this point while more recently Smart & Sturm (2004) highlight this aspect as well.

Over the past two decades, significant progress has been made in theoretically modeling the discipline and selection effects described above. Empirical research in estimating these effects have been fairly sparse and quantifying the welfare gains/losses for the voters has only been done very recently by Aruoba *et al.* (2015) and Sieg & Yoon (2017). [1] Both these papers estimate a dynamic game of asymmetric information in which voters don't know the politician's type and instead update beliefs after observing performance in office after which they decide whether or not to re-elect the incumbent politician. These models incorporate the fact that incumbent politicians choose their actions in office to maximize re-election probabilities and that voters optimally choose whether or not to re-elect based on observed performance.

However, both these papers do not capture the fact that incumbent politicians use multiple avenues to signal their type and maximize re-election chances. The three main instruments that politicians use to try and influence the voter's decision are :

1. Constituency Activities
2. Parliamentary/ Legislative Activities
3. Campaign Activities

Importantly, these three different instruments differ in the information they provide voters and also whether or not they necessarily are beneficial to voters. One might imagine that campaign activities might be the most informative to voters rather than how a politician voted in Parliament. Through this project, we're interested in studying the allocation of effort/resources across these multiple avenues and seeing whether competitive elections generate these discipline effects. This insight draws heavily from the multi-tasking model of Holmstrom & Milgrom (1991) which studies an agent's optimal allocation of effort across multiple tasks given how easily the principal/voter can observe the signals generated by the multiple tasks.

[1] These are general equilibrium models in the sense that they look at a voter's problem whether or not to re-elect while in this paper, we only present empirical results looking at a Politician's "effort" in response to electoral vulnerability. Hence we have not looked at how a voter rewards/punishes a politician's performance.

In this paper we study Canadian Members of Parliament and look at their substitution patterns across the above-mentioned tasks in response to changes in electoral vulnerability. This is important since it sheds light on how competitive elections might cause politicians to reallocate their time and resources which in turn affects voters' welfare. Ex-ante it is unclear whether this reallocation amongst tasks benefits or hampers voters. we proxy for a Politician's electoral vulnerability using his/her Victory Margin in the previous election. Given that this measure is endogenous due to measurement error and unobserved time-varying politician characteristics, we instrument for this using a Party-level Opinion Poll conducted by the survey company Nanos on the day before an election.

To justify the choice of previous victory margins as a proxy of a politician's subjective belief about his/her electoral vulnerability, we show evidence that past victory margins are very good predictors of future margins. Motivated by this correlation, we use this measure as a proxy for electoral vulnerability that politicians respond to. Figure (1) below shows this correlation and Table (15) in the Appendix shows the same result after adding in time and region fixed effects.

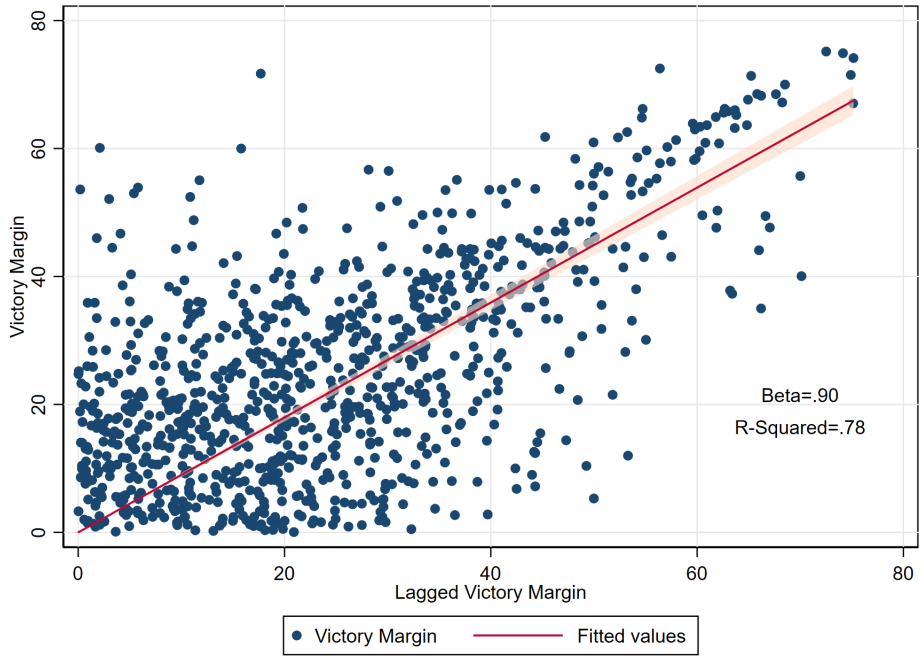

FIGURE 1: CORRELATION BETWEEN PAST AND FUTURE VICTORY MARGINS

Figure (2) shows that elections in Canada are quite competitive ; a significant proportion of MPs win with fairly narrow margins. This ensures that the extensive margin of politician response to electoral vulnerability is fairly large as well and that our results are not driven purely by the intensive margin.

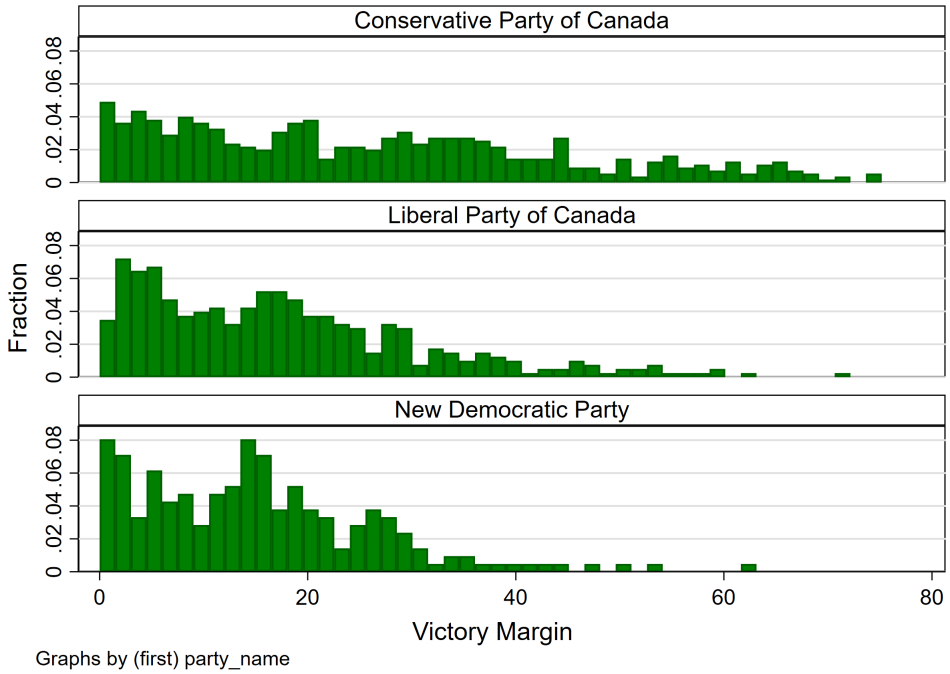

FIGURE 2: HISTOGRAM OF VICTORY MARGINS BY MAJOR POLITICAL PARTIES

Moreover, to the best of our knowledge, this paper is the first to causally estimate the substitution of effort and resources (across multiple tasks) of electorally vulnerable politicians in contrast to other reduced form papers in this literature which focus on a single aspect of politician performance.

The main findings of this paper are : **(1)** The 2SLS estimates indicate that more electorally vulnerable MPs substitute effort away from attending the Parliament for votes and instead spend more money in their constituency and more money in the following election campaign. **(2)** Within constituency expenditure, MPs spend more for Salaries for their Staff, Travel to and from the constituency and Advertising to constituents. **(3)** Within campaign expenditure we find evidence that Politicians find it harder to raise money for their next election if they are electorally vulnerable, but the Political Parties spend large amounts supporting these politicians which allows them to spend more money for their next campaign. **(4)** We find strong evidence that MPs are less likely to be absent for votes on bills which are close (ex-post) with a stronger effect for less electorally vulnerable MPs. **(5)** Finally, we find suggestive evidence of career concerns and/or learning over the course of an MP's career. Experienced, electorally vulnerable MPs shirk more in Parliament and spend more money in their constituency as compared to their inexperienced counterparts.

Contribution & Related Literature

Theoretical Work

Theoretical work in political economy started with Downs (1957) who developed the canonical theoretical model of a single election in which candidates can commit to policies prior to an election. Alesina (1988) extended the basic static framework and considered a repeated election model with two candidates. Barro (1973), Ferejohn (1986) focus on the moral hazard reducing aspect of elections i.e. the discipline effect while Banks & Sundaram (1993), Smart & Sturm (2004) and Duggan & Martinelli (2017) focus on the adverse selection reducing aspect of elections i.e. the selection effect. [1]

Our paper contributes to this literature by providing strong empirical support to papers like Daley & Snowberg (2009) and Ashworth (2005). Daley & Snowberg (2009) develop a dynamic multidimensional signaling model of campaign finance in which candidates can signal their ability by enacting policy and/or by raising and spending campaign funds, both of which are costly. They find that campaign finance reform improves voter welfare at the expense of politicians if one assumes that high-ability candidates are better policymakers and better fundraisers. The intuition is that high ability candidates will raise and spend campaign funds even if voters care only about legislation and so capping expenditure will force high ability politicians to switch to legislative activities; thus improving voter welfare. Ashworth (2005) looks at a model of repeated elections with both learning about candidate ability and moral hazard. In his model, candidates choose how to allocate their resources between constituency service and policy work. Early in their careers, they devote excessive time to constituency service in an attempt to manipulate voter learning. Since voters use elections to select better candidates, incumbents become more confident of reelection over time and reduce the distortion in their effort allocations.

Empirical Work

In terms of contribution to the empirical literature, to the best of our knowledge, this paper is the first to causally estimate the substitution of effort and resources (across multiple tasks) of electorally vulnerable politicians. Most reduced form papers in the literature focus on a single aspect of politician performance and don't consider the reallocation of resources to maximize re-election chances. Secondly, while almost all papers focus on US politicians, this is one of the few papers to work with data on Canadian politicians.

One of the earliest and most influential papers looking at incentives of politicians is Besley & Case (1995). They look at US governors and show that gubernatorial term limits significantly affect policy choices. Besley *et al.* (2010) analyze how a lack of political competition in US states can lead to policies that hinder economic growth. A related strand of literature looks at the relation between

[1] Duggan (2000) introduced repeated elections into a citizen-candidate model with asymmetric information. Sieg & Yoon (2017) base their structural model on Duggan (2000) using which they estimate the welfare effects on voters after term limit reform.

political competition and political outcomes. Papers which highlight this link include Stromberg (2008),Dal Bó *et al.* (2009), Svaleryd & Vlachos (2009), or Ollé (2003). For example, Dal Bó *et al.* (2009) shows that political dynasties are less likely to occur when political competition is more intense.

More closely related is the literature which looks at the behavioural response of politician to electoral competition. Recent papers in this literature are Ferraz & Finan (2011), Snyder Jr & Strömberg (2010), Becker *et al.* (2009), Fisman *et al.* (2015), Gagliarducci *et al.* (2010) and Arnold (2013). Ferraz and Finnan show that corrupt politicians are less likely to get re-elected. Snyder and Stromberg look at the relationship between political competition and voting for or against party lines. Becker *et al.* (2009), Fisman *et al.* (2015) and Arnold (2013) look at the relation between financial incentives; (either Salary from holding office or outside income) and electoral competition.

While the previous papers focus on the financial aspect of political shirking, this paper studies more measurable notions of politician performance. The closest papers in the literature to this are by Bernecker (2014), Galasso & Nannicini (2011) and Nannicini *et al.* (2013). Galasso & Nannicini (2011) presents a model where party leaders allocate high quality candidates to more competitive districts and the winners in competitive districts are less absent in Parliament. They claim that lower absence rates are driven more by selection rather than re-election concerns. Bernecker (2014) studies German Members of Parliament and shows that opposition party MPs who expect to face a close race in their district show significantly and relevantly lower absence rates in parliament beforehand.

Other papers which are related to this paper are Milligan & Rekkas (2008) which is a reduced form paper looking at the effect of campaign spending limits on incumbent vote shares. Gowrisankaran *et al.* (2004) use a structural model to pin down the mechanism driving incumbency advantage amongst US senators. Papers studying different factors affecting electoral accountability such as information provision, corruption, intrinsic office motivation and voter attention include Arias *et al.* (2019), Larreguy *et al.* (2020), Pavão (2018), Duggan & Martinelli (2020) and Devdariani & Hirsch (2021). To our knowledge, the three structural papers closest to this topic namely Sieg & Yoon (2017), Aruoba *et al.* (2015) and Iaryczower *et al.* (2017).

Sieg & Yoon (2017) use semi-parametric techniques to identify and estimate a dynamic voting game with perfect monitoring. They back out the unobserved distribution of voter and politician preferences as well as the distribution of politician ability. They use their estimated model to quantify the effects of term limits and characterize conditions under which term limits improve voters' welfare. They show that term limits may be welfare improving if the effects of moral hazard (tenure effect) are negative and sufficiently large.

Aruoba *et al.* (2015) estimate a voting model with asymmetric information in order to quantify the discipline and selection effects for US governors between 1982-2012. They find that possibility of re-election provides a significant incentive for incumbent politicians to exert effort. They however don't find too big of a selection effect. They use their model to conduct counterfactuals

with respect to increasing term limits and find that two-term limit leads to a 4.2% increase in voter welfare compared to a 1-term limit.

Iaryczower *et al.* (2017) estimate a dynamic model of an incumbent politician running for re-election who strategiccally chooses policy positions and TV-adverstising each month in the run up to an election. They use their estimated model to quantify how career concerns and policy preferences affect electoral accountability and advertising in competitive and uncompetitive elections.

Institutional Background

Canadian Parliamentary System

The House of Commons, a component of the Parliament of Canada is a democratically elected body of 338 members (one for each Federal Electoral District or FED) [1] who are elected by simple plurality. Members of Parliament (MP) hold office until the Parliament is dissolved and serve for constitutionally limited terms of up to five years after an election. Seats in the House of Commons are distributed roughly in proportion to the population of each province and territory. The 38th Canadian Parliament was in session from 2004 until 2005; the 39th Canadian Parliament was in session from 2006 until 2008. The 40th Canadian Parliament was in session from 2008 to 2011; the 41st Parliament from 2011 to 2015. The 42nd Parliament is currently in session and the 43rd Federal Election will be held sometime in 2019.

General elections occur whenever Parliament is dissolved by the governor general on the monarch's behalf. The timing of the dissolution has historically been chosen by the prime minister. Moreover, campaign lengths before Canadian elections are fixed beforehand. An important point concerns how candidates are chosen by the political parties across constituencies. Pruysers & Cross (2016) find that there is a surprisingly similar process of candidate selection across all the political parties in Canada. They find that *...At the most fundamental level, each of the parties relies on a similar process: candidates are chosen through a plebiscite of local party members, while the central party sets the rules and framework in which this selection occurs.* This addresses a major concern regarding whether the subsequent results are driven by selection or re-election concerns.

Five political parties are represented in the House of Commons, namely, Liberal, Conservative, New Democratic, Bloc Quebecois and the Green Party. In terms of the ideological spectrum, Liberals are centrist ; BQ, Green Party and the NDP are left of centre and the Conservative party is on the right.

Moreover, MPs are not term-limited unlike politicians in the US and can choose to repeatedly stand for re-election. Further, MPs in the Canadian Parliament are responsible for maintaining offices in their constituency partly funded by the House of Commons. In a recent book, Gidengil & Bastedo found that perceptions about the relative importance of these activities (legislative, campaign and constituency) among MPs in Canada differed according to previous victory margins.

[1] There were 308 FEDs till the 42nd Federal Election. Prior to the election for the 42nd Parliament, 30 additional FEDs were added.

Canadian Elections

Campaign lengths are mandated to be at least 37 days long and have rarely gone beyond this stipulated minimum. Candidates in Canadian federal elections are not limited with respect to how much money they can raise. However their expenditures are limited and governed by the Canada Elections Act. Section 407 of the act defines election expenses broadly, from advertising and promotion to remuneration for campaign workers to surveys and research. These items are deemed expenses if the good or service was received, whether or not payment was made.

The amount of the limit per candidate is determined by a complicated formula, provided in Section 441 of the act. The input to the formula consists of two numbers: the number of electors and the area in square kilometres of each Federal Electoral District (FED). Moreover, these spending limits are adjusted each election for inflation. So essentially all candidates contesting a seat in a particular FED are bound by the same spending limit.

However in 2014, the law was modified to give candidates an extra $\frac{1}{37}^{th}$ of the limit for each day beyond 37 days. Given this change, the 2015 election campaign held for 78 days while all previous election campaigns in our sample ran for 37 days. Figure (16) in the Appendix plots the histogram of constituency level campaign expenditure limits for different election campaigns.

Data

In order to study MP's allocation of effort and resources across available actions , it was important to collect data so as to create a complete (as complete as possible) profile of actions available to an MP. The data that we have collected is given in some detail below:

- Campaign Expenditure Data (2004-2017)
  - All candidates submit detailed Campaign Expenditure Balance Sheets to the Election Commission which we use to construct this dataset.
  - Detailed expenditure on election campaigns like advertising (TV,radio or other), salaries paid to employees and also campaign expenditure at the aggregate level.
  - Detailed data on campaign contributions including type of entity (Individual,Industry etc)
  - Permitted Spending Limits at the Consituency Level
- Parliamentary Data
  - Voting Data (2006-2017)
    - Record of how each MP voted on each bill in the House of Commons, what stage of the process it was along with short description of the Bill and the sponsors of the Bill.

    - Data on the date that the MP started in Parliament

- District Expenditure Data (2000-2017)
  - MP's have to submit yearly reports detailing how much they spent in different categories for their constituency activities. Part of the expenditure is funded by the Member's Office Budget and the remaining part is funded by Resources Provided by the House (to support Members in the discharge of their parliamentary functions, including travel expenses)
  - Items include Travel, Advertising (to constituents), Staff Salaries in the constituency office.
  - One caveat is that we observe the Advertising category from 2006 onwards
- Opinion poll data (2000-2015)
  - Party level Opinion Polls conducted by Nanos on the day prior to an Election which we will use as an instrument for the endogenous variable, Victory Margin.
- Electoral Results Data (1996-2017)
  - Candidate level information about number of votes received as well as victory margins.
  - Some demographic information such as gender and profession of the MP.

Combining all this data from multiple sources, we construct three different datasets. We take the Electoral results data and merge it with each of the Campaign Expenditure Data, Constituency Expenditure Data and Parliamentary Voting Data separately.

Model

In this section, we outline a simple theoretical model which highlights why an electorally vulnerable politician may choose to shift effort towards constituency activities and away from legislative effort. This framework is a simplified version of Ashworth (2005) which incorporates elements from Holmström (1999) and Holmstrom & Milgrom (1991). There are two time periods $t = 0, 1$. At each date t an incumbent politician divides total effort R between constituency service a and policy work y. The incumbent's payoff is given by :

$$\begin{aligned} V &= B + u(R - a) - u(R) \\ &= B - c(a) \end{aligned}$$

The incumbent cares about policy work y, but must also spend time doing constituency service. As will be discussed henceforth, the politician is incentivized to exert some effort into constituency

service because the voter cares about it and it influences their belief about the incumbents' ability. In other words, $c(a)$ can be interpreted as the opportunity cost of constituency service. Assume that the utility function $u(\cdot)$ is increasing, concave and satisfies the Inada conditions. The assumptions on $u(\cdot)$ imply that $c(\cdot)$ is increasing and convex. Each politician draws an unknown ability from the $N(0, \sigma_\theta^2)$. This ability is unknown to both the voter and the politician. At the end of period 0, a representative voter decides whether or not to re-elect the incumbent.

Voter's Utility

The representative voter has the utility $u_t = \theta + a_t + \varepsilon_t$, where $\varepsilon_t \sim N\left(0, \sigma_\varepsilon^2\right)$. Further, we assume that ε is independent of θ. Thus u_t is the signal that the voter observes to update her prior about the incumbent. Using standard Bayesian updating rules, denote $\bar{\theta}_i^t$ as the expected mean of the voter's (and incumbent's) posterior belief about the incumbent's ability on the equilibrium path.[1] Given an expected action a^*, the belief updates according to the following rule :

$$\bar{\theta}_t = \lambda \left(u_{t-1} - a_{t-1}^*\right) + (1-\lambda)\bar{\theta}_{t-1} \tag{1}$$

where $\lambda = \sigma_\theta^2/(\sigma_\theta^2 + \sigma_\varepsilon^2)$.

Incumbent's and Voter's Choices

The voter's strategy is given by $\rho(\theta) \in \{0, 1\}$ i.e. at the end of $t = 0$ i.e. the voter decides whether or not to re-elect the incumbent. The incumbent on the other hand decides an allocation of effort (a_0^*, a_1^*) over the two time periods. The incumbent's optimization problem given the voter's re-election choice is given by :

$$a_0^* = \arg\max B - c(a_0) + \mathbb{E}\left(\rho_0^*\left(\tilde{\theta}\right)\left(B - c(a_1^*(\tilde{\theta})\right)|a_1^*, a_0\right) \tag{2}$$

$$a_1^* = \arg\max -c(a_1) \tag{3}$$

Given this optimization problem of the incumbent, the voter decides to re-elect the incumbent iff :

$$\mathbb{E}(\theta + a_1^*(\theta)) \geq \mathbb{E}\left(a_1^*(0)\right) \tag{4}$$

Equilibrium

In the last period, the incumbent will choose $a_1^* = 0$ since there are no more career concerns. Given this, the voter will choose the candidate with the higher expected ability θ. If the incumbent chooses an effort level a different from what the voter expects, say a^*, then the voter will update

[1] The beliefs of the incumbent and voter may differ off-path, but to keep exposition simple, we will suppress the extra notation since on-path the beliefs will coincide.

their belief about the incumbent's ability as :

$$\mathbb{E}(\theta) = \bar{\theta} + \lambda(a - a^*)$$

Given the voter's belief about the ability of the incumbent, and given our assumptions on the distribution of θ and ε, he is re-elected with probability :

$$\mathbb{E}(\rho(\bar{\theta})) = 1 - \Phi\left(\frac{-\bar{\theta} - \lambda(a - a^*)}{\sigma}\right) \tag{5}$$

Using the expression above and the fact that $a_1^* = 0$, the incumbent's optimization problem in the first period therefore can be rewritten as :

$$\max_{a_0} B\left(1 - \Phi\left(\frac{-\bar{\theta} - \lambda(a_0 - a^*)}{\sigma}\right)\right) - c(a_0)$$

The FOC from the optimization problem above is given by :

$$\frac{\lambda B}{\sigma}\phi\left(\frac{\bar{\theta} + \lambda(a - a^*)}{\sigma}\right) = c'(a_0^*) \tag{6}$$

In equilibrium, the optimal effort choice of the incumbent is given by a^*.[2] Moreover, given our assumption of $c(\cdot)$ being strictly increasing and convex, that implies that we can invert the above expression and obtain the optimal effort level for constituency service a at $t = 0$:

$$a_0^*(\bar{\theta}) = (c')^{-1}\left(\frac{\lambda B}{\sigma}\phi\left(\frac{\bar{\theta}}{\sigma}\right)\right) \tag{7}$$

Comparative Statics

Now that we have solved for the equilibrium allocation of effort across constituency service and policy work, we can now conduct comparative statics to highlight the key prediction from the model. The main comparative static that we want to highlight is that if a voter revises her predictions downward due to some exogenous shock, then the incumbent will shift his effort more towards constituency service relative to policy effort.

Proposition 1. *The re-election probability is increasing in the expected value of the posterior mean. Moreover, the equilibrium choice of constituency work is decreasing the expected value of the posterior mean.*

Proof. From the expression for the probability of re-election in Equation (5), we can see that as $\bar{\theta}$ increases, the probability of re-election increases. Moreover, we can see from Equation (7) that as $\bar{\theta}$ increases, $\phi\left(\frac{\bar{\theta}}{\sigma}\right)$ decreases which implies that a_0^* decreases. □

[2] The appendix of Ashworth (2005) shows that in equilibrium, given the voter expects the incumbent to choose a^*, the optimal choice for the incumbent is to devote a^* of his resources to constituency work.

This proposition shows that if politicians are more electorally vulnerable i.e. their probability of re-election is lowered, then they substitute their effort more towards constituency activities. The intuition for this result is simple. While politicians do not instrumentally care for constituency activities, the voter does. Therefore putting in high effort in constituency activities helps the voter update their beliefs about the politician's ability which allows them to be re-elected. The core assumption driving this result is that the voter observes a signal with finite noise about the politician's constituency activities, but no informative signal about his policy work. It can be shown that this result continues to hold even if the voter observes an informative signal about a politician's policy work as long as it is relatively more noisy than the signal generated from constituency work.[3] Most importantly, this assumption is plausible since what voters are most likely to observe with relatively less noise is what the politician does in their own constituency and not the policy work done at the national level.

Instrument and First Stage Results

In this section we discuss the instrument we use and present results from the first stage. Given the motivation of the paper, we would ideally like to estimate a model of the form :

$$y_{ipt} = \alpha_i + \gamma_t + \beta ElectoralVulnerability_{i,t-1} + X'_{ipt}\theta + \varepsilon_{ipt} \tag{8}$$

where y_{ipt} is some measure of performance (constituency, parliamentary or campaign) of an MP i of party p at time t. The main coefficient of interest is β which measures how changes in a politician's electoral vulnerability modifies his/her performance subsequently. Given that we proxy for "Electoral Vulnerability" with victory margin, one of the main concerns is measurement error. Moreover, even though we observe MPs over time (and hence can include MP fixed effects), we are not capturing time-varying intrinsic motivation which is an additional source of endogeneity. For example, it may be the case that as an MP spends longer in government their (unobservable) motivation might reduce which affects both their victory margin as well as their subsequent performance in government. To try and get around this, we want to instrument for victory margin.

Since we will eventually use multiple outcome variables for the second stage (with data available for differing lengths of time for each), in this section, we present first stage results for the longest length of time for which we have data to motivate the proposed instrument. Later, when presenting the results for the second stage, we report first stage results for each outcome variable separately.

The instrument we propose is the Party Opinion poll collected by the survey company Nanos on the day before the election. For relevance, one would need that the instrument and the variable of interest, "Victory Margin" be correlated and exogeneity would require that the instrument be uncorrelated with the error term. The reasoning behind the choice of instrument is that it is an ag-

[3] Ashworth (2005) has an extension which incorporates two signals from each of these activities and establishes this result.

gregate variable capturing the "mood" of the population at a very short notice prior to the election and hence as an example, a general anti-incumbency wave might lower the victory margins of the MPs of the ruling party on average. The instrument therefore attributes to a particular MP, his/her party's opinion poll rating on the day prior to the election.Figure (3) below shows the variation in the instrument:

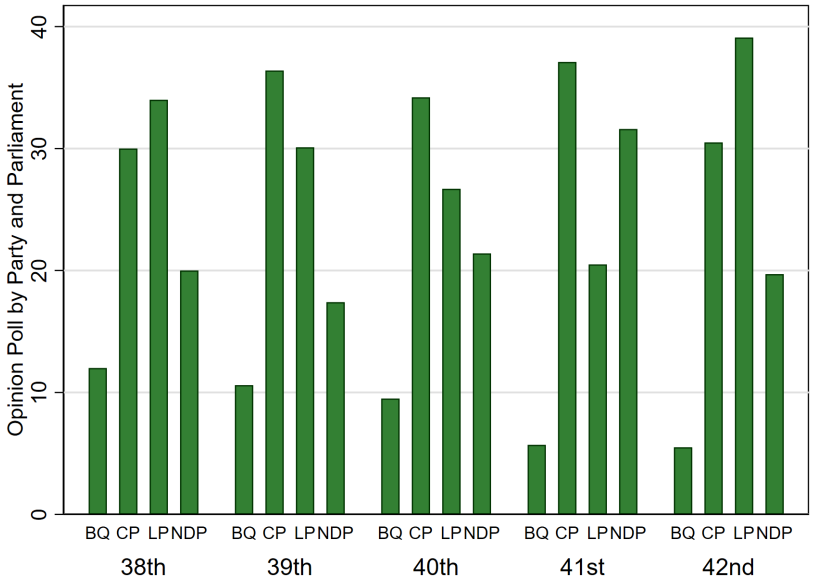

FIGURE 3: OPINION POLLS BY PARTY AND PARLIAMENT

A potential issue is that we have opinion poll ratings for the major parties and so in the first stage, the instrument only varies at the $Party \times Parliament$ level leading to about 25 clusters. So in order to correctly estimate the standard errors, we follow Cameron *et al.* (2008) and compute standard errors using the wild cluster bootstrap at the Party level. In Monte-Carlo simulations, they show that this performs well when it comes to inference with a small number of clusters. However, as far as we know, the literature is yet to determine at the performance of this method in a 2SLS setting and hence to back our results further, we report the reduced form results of the IV estimation with the bootstrapped standard errors to argue that the results are unlikely to be a result of the wild cluster bootstrap.

To argue for exogeneity, we rely on the timing of the instrument and the fact that it is an aggregate variable i.e. it does not vary at the MP level. Denoting the IV as $Opinion_{t-1}$, we claim that all the effects of that $Opinion_{t-1}$ should matter for MP Performance in the following period t through its effect on an MPs own victory margin. Moreover, given that these are large parties and the public's perception about a party does not reflect the perception about an individual MP, we claim that the instrument is exogenous. Therefore the key identification assumption is that :

$$\mathbb{E}\left(Opinion_{t-1}\varepsilon_t | Controls_t\right) = 0 \tag{9}$$

One may worry that while $Opinion_{t-1}$ may be exogenous (conditional on observables) to the MP's effort choice in period t, $Opinion_t$ is still an important covariate to take into account. In the main specifications, we try to capture as much of $Opinion_t$ with MP and Parliament Fixed Effects. In the appendix, we include $Party \times Parliament$ dummies to capture party specific opinion polls every parliament. [1] we don't include this in the main specification as we cannot control for this variable in the first stage regression, since the instrument will be collinear with these dummies. This however is not a huge concern since we are considering a politician's effort through the entire course of their subsequent term; while opinion polls are likely to play some role only just before the next election. However to alleviate these concerns, in the appendix, we show that the results are quite robust (and arguably even stronger) to the inclusion these $Party \times Parliament$ dummies in the second stage. [2] Tables (10)-(14) in the Appendix show these results. To illustrate the relevance of the instrument, we run the following regression :

$$VictoryMargin_{ipt} = \alpha_i + \gamma_t + \beta Opinion_{pt} + X'_{ipt}\theta + \varepsilon_{ipt} \tag{10}$$

where $VictoryMargin_{ipt}$ is MP i's of Party p at time t. α_i and γ_t are MP and Parliament Fixed Effects. Moreover, X_{ipt} is a vector of controls which in Table (1) below includes the lagged value of mean constituency expenditure by MP i in parliament t. Table (1) shows the results from the first stage :

TABLE 1: FIRST STAGE IV RESULTS

	Full Sample	Less than 25 %	More than 25 %
Party Opinion Poll (Nanos)	1.59***	0.77***	1.20***
	(0.00)	(0.00)	(0.00)
Controls	Yes	Yes	Yes
Politician FE	Yes	Yes	Yes
Parliament FE	Yes	Yes	Yes
Observations	827	367	319
Kleibergen-Papp F stat	268.5	99.9	45.7
Cragg-Donaldson F stat	566.2	110.4	128.3

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(1) Wild Cluster Robust Bootstrapped p values in parentheses

(2) Controls here include Lagged Total Constituency Expenditure, MP and Parliament Fixed Effects.

[1] In case of the Absence measure, we use $Party \times Parliamentary \times Session$ dummies since we have high frequency data.

[2] While the instrument varies at the $Party \times Parliament$ level, the predicted values of Victory Margin vary at the $MP \times Parliament$ level because of the MP Fixed Effects and MP level covariates.

We run the model on different subsamples of the data since we will be presenting the second stage results for these sub-samples as well. The $p-$values are reported in parentheses after computing bootstrapped Standard errors at the party level. As seen in the table, the coefficient on the IV is highly significant and the sign is as expected as discussed earlier. A 1% increase in the opinion for a party, leads to 1.59 percentage point increase in the victory margin of an MP. The fact that we see a more than proportionate impact of a party's opinion poll can be explained partially by that we are running this regression only on the winners. This however is not a problem since the first stage is merely a projection and I'm not attempting to uncover a causal impact. Finally, the diagnostic tests for weak IV tests are strongly rejected with large values of the F-statistic.

2SLS Results

In this section, we will present causal estimates of electoral vulnerability on MP performance in the following parliament. As mentioned before, we will look at constituency expenditure, election campaign expenditure in the following campaign and absence in parliament. The measures associated with constituency and campaign expenditure will be aggregated to the parliament level while the absence will be measured at the vote level. For the first two measures the second stage equation will be of the form :

$$y_{ipt} = \alpha_i + \gamma_t + \delta y_{ip,t-1} + \beta \widehat{VictoryMargin}_{i,t-1} + X'_{ipt}\theta + \varepsilon_{ipt} \tag{11}$$

As will be shown in Figures (4) and (12) below, there is persistence in the expenditure variables which is why controlling for $y_{ip,t-1}$ is important. However, doing this introduces the well-known Nickell's bias in dynamic panel models. Moreover this bias is supposed to be relatively large in samples with a small- T and large N. To get around this problem, we use the estimator derived in Arellano & Bond (1991) and Arellano & Bover (1995) with an external instrument; namely the Nanos Opinion Poll. Appendix Section () shows that in this setting, the 2SLS estimates of $\hat{\beta}$ are underestimated and correcting for the Nickell's bias using the Arellano-Bond estimator increase the absolute value of the coefficients.

Constituency Expenditure

All members of parliament are mandated by law to submit detailed yearly constituency expenditure reports which includes amongst other categories, money spent on salaries to staff, travel expenditure (to and from their constituency) , advertising expenditure on constituents, expenditure for the office lease, printing and phone etc. The trends for all these categories are plotted in Figure (4) below :

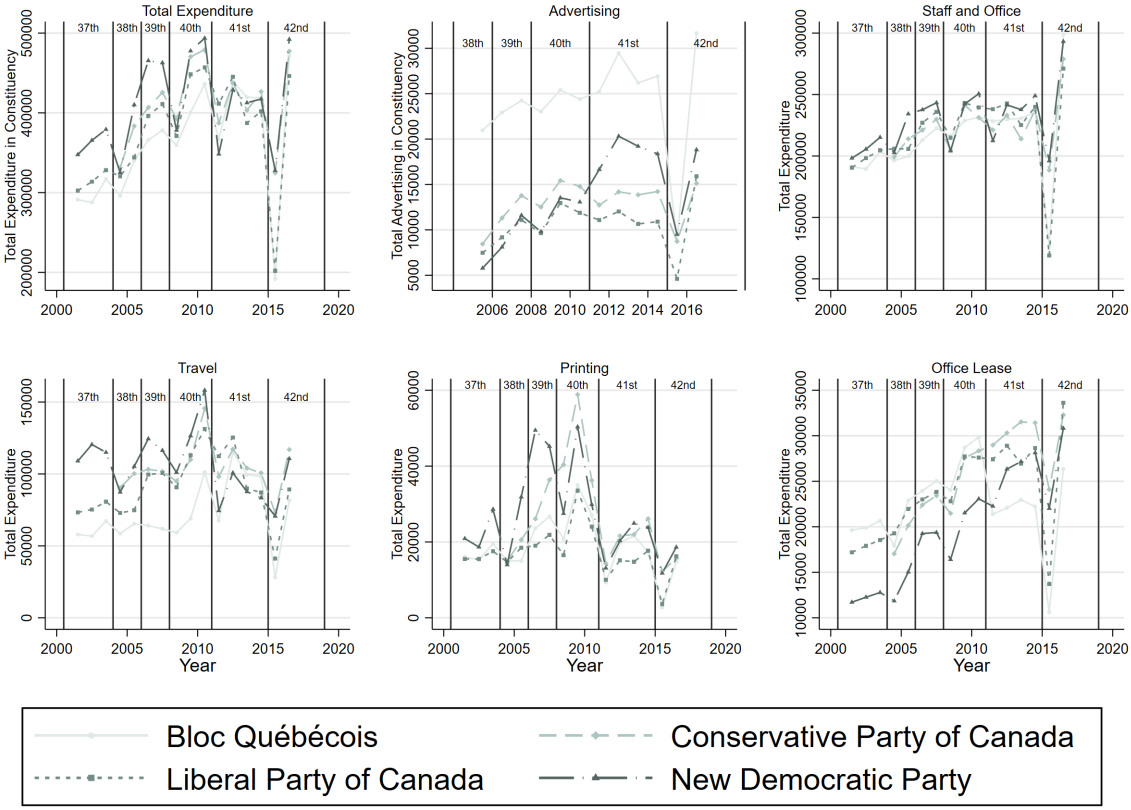

FIGURE 4: TRENDS OF CONSTITUENCY EXPENDITURE OVER TIME

All categories follow a generally upward trend with a drop after the 2015 elections. There are a couple of reasons for this. First, there was a major shakeup of the parliament with many first time MPs who were still learning the ropes which led to a fall in average expenditure across all categories. Second, there was redistricting done before the 2015 election which led to the creation of 30 additional Federal Electoral Districts. This also would lead to lower average expenditure per MP.

The trends of expenditure suggest that controlling for lagged values of these expenditure categories are an important predictor of current levels of expenditure as discussed before.

In Figure (13) in the Appendix, we show scatterplots of the various expenditure categories against victory margin to show that a naive OLS might find positive correlation between these variables, but as the results below show that correcting for endogeneity will lead to estimates with the signs flipped.

Table (2) below displays the results from the second stage specification in Equation (11) above. The outcome variable is measured as the mean expenditure in a category by an MP during the entire duration of a parliament till it was dissolved. We choose the mean because of the varying lengths of the parliament and thus taking the total expenditure over the course of a parliament would lead to problems with comparison. The results presented below are robust to looking at the

expenditures during the first financial year into the new parliament instead of looking at the mean expenditure over the course of the entire duration in which the parliament was in session.

Each specification includes controls, MP and parliament fixed effects with the first stage F statistics reported as well. Moreover, as mentioned before, following Cameron *et al.* (2008), wild cluster bootstrapped standard errors are calculated and the corresponding $p-$ values are reported with the coefficients. From the table we see evidence that more electorally vulnerable MPs spend more overall in their constituency (Column 1) with this increase mainly coming from salaries paid to staff employed in the office (Column 2) and travel expenses to and from the constituency (Column 3). In terms of magnitudes, a 5% reduction in the victory margin of an MP would lead to approximately $4800 dollar increase in expenditure. This would approximately a 1.25-1.66% increase in the budget of an MP. Given that for all MPs, the budget for constituency expenditure is capped at a certain amount (with some additional amount given based on some geographical and demographical characteristics), this represents a fairly large increase in total expenditure. As mentioned before, we present, to allay concerns about the wild bootstrap, we run the reduced form (which is a scaled version of the 2SLS estimate) and show in Tables (18) and (19) in the Appendix that the results in terms of significance is unchanged.

TABLE 2: SECOND STAGE IV RESULTS FOR CONSTITUENCY EXPENDITURE (FULL SAMPLE)

	Total Expense	Staff	Travel	Ads	Phone	Print	Lease
Victory Margin	-962.5***	-399.8***	-464.8**	-27.1	-37.7**	28.5	23.5
	(0.002)	(0.001)	(0.024)	(0.164)	(0.077)	(0.871)	(0.281)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Politician FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Parliament FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	827	827	822	631	827	827	827
Kleibergen-Papp F	74.2	73.9	70.4	46.7	69.5	86.1	71.9
Cragg-Donaldson F	566.2	561.0	551.1	415.1	558.1	542.8	559.3

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(1) Wild Cluster Robust Bootstrapped p values in parentheses

(2) Controls here include Lagged values of y, MP and Parliament Fixed Effects

(3) First Stage F statistics reported

Next, we focus on the sub-sample of MPs who had a margin of victory lesser than 25 % since one should expect the most effect to come from the more electorally vulnerable politicians. The results are shown in Table (3) below. As we can see that the coefficients on almost all the variables become much larger in magnitude. However we lose power, with the coefficients on “Staff" and “Travel" becoming insignificant. Moreover we find that a 5% decrease in the victory margin leads

to a $8150 increase in total expenditure with part of it accounted by a $720 increase in advertising expenditure to constituents.

TABLE 3: SECOND STAGE IV RESULTS FOR CONSTITUENCY EXPENDITURE (VICTORY MARGIN $< 25\%$)

	Total Expense	Staff	Travel	Ads	Phone	Print	Lease
Victory Margin	-1630.6**	-494.3	-505.8	-144.3*	-20.1	-391.1	54.6
	(0.042)	(0.249)	(0.446)	(0.090)	(0.621)	(0.220)	(0.527)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Politician FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Parliament FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	367	367	364	280	367	367	367
Kleibergen-Papp F stat	49.2	50.3	57.7	35.9	50.2	67.6	51.7
Cragg-Donaldson F stat	110.4	110.0	111.9	80.4	111.8	109.0	109.1

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(1) Wild Cluster Robust Bootstrapped p values in parentheses

(2) Controls here include Lagged values of y, MP and Parliament Fixed Effects

(3) First Stage F statistics reported

As mentioned above, these estimates might suffer from Nickell's bias and so we adjust for this bias using the estimator suggested in Arellano & Bover (1995). The setting is slightly different in the sense that the original paper assumed that $Z_{ipt} = \begin{bmatrix} VictoryMargin & X \end{bmatrix}$ is exogenous while in our setting Victory Margin is endogenous. Hence we use the estimator with an external instrument namely the Nanos Opinion Poll which gives us a moment condition of the form $\mathbb{E}\left[Opinion_{t-1}\Delta\varepsilon_{it}\right] = 0$. We use the "forward orthogonal deviations" proposed by Arellano & Bover (1995) which prevents loss in sample size since forward averages are computable for every observations except the last. Moreover the AR(2) tests statistics used to check the exogeneity of the second lags of the endogenous variable are reported in the tables below.

The results from the estimation presented in Table (4) and (5) are for the full sample and the sample below 25% victory margin respectively. We see that the estimates remain in a similar ballpark compared to Tables (2) and (3) above. The estimates for Total Expenditure, Staff Salaries and Travel Expenses are similar in magnitude to the 2SLS estimates and retain significance in both the Full Sample as well as the sub-sample considered. Hence we see that an increase in electoral vulnerability (fall in Victory Margin) leads to an economically and statistically significant increase in constituency expenditure in the following parliament. The tables with the lagged coefficients are reported in the Appendix.

TABLE 4: ARELLANO-BOND ESTIMATES WITH AN EXTERNAL INSTRUMENT

	Total Expense	Staff	Travel	Ads	Phone	Print	Lease
Victory Margin	-829.6***	-284.2*	-424.1***	-35.2	-12.0	35.6	20.1
	(303.85)	(168.01)	(151.35)	(28.13)	(12.03)	(72.98)	(22.67)
Politician FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Parliament FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AR(2) p value	0.65	0.95	0.072	0.35	0.69	0.035	0.77
Observations	543	543	539	397	543	543	543

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(1) Two-Step robust Standard Errors in parentheses

(2) Controls here include Lagged values of y, MP and Parliament Fixed Effects

(3) AR(2) p values reported

TABLE 5: ARELLANO-BOND ESTIMATES WITH AN EXTERNAL INSTRUMENT (VICTORY MARGIN $< 25\%$)

	Total Expense	Staff	Travel	Ads	Phone	Print	Lease
Victory Margin	-1247.3***	-493.6**	-396.7*	-17.9	-14.6	2.74	6.46
	(382.53)	(197.54)	(209.80)	(33.43)	(12.86)	(99.42)	(38.77)
Politician FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Parliament FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AR(2) p value	0.59	0.69	0.40	0.80	0.14	0.076	0.41
Observations	277	277	275	214	277	277	277

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(1) Two-Step robust Standard Errors in parentheses

(2) Controls here include Lagged values of y, MP and Parliament Fixed Effects

(3) AR(2) p values reported

Next, we try and provide suggestive evidence of career concerns and/or politicians learning over the course of their career. We document that compared to electorally vulnerable and inexperienced MPs, more experienced (yet electorally vulnerable) MPs spend more money in their constituency. This is suggestive of learning in the broad sense and might and this effect gets larger with experience. However, if we restrict the analysis to electorally secure MPs, we find that inexperienced MPs spend more compared to experienced MPs which suggests that there may be be some aspect of career concerns present as well. Figures (5) and (6) show these patterns. In the

Figure on the left, we restrict the sample to MPs with victory margins below 25%, while on the Figure on the right, we look at MPs with margins greater than 25%. The regression we run is :

$$TotalExpense_{ipt} = \alpha_i + \gamma_t + \delta TotalExpense_{ip,t-1} + \sum_{k=1}^{7} \beta_k Experience_k \times VictoryMargin_{i,t-1} + \varepsilon_{ipt} \tag{12}$$

The coefficients β_k are plotted in the figures below and the base category is politicians who have served one term in parliament. As can be seen from the figure on the left, as an electorally vulnerable MP's experience increases, he/she spends more in the constituency in response to decreases in victory margins as compared to an MP who has just served a single term in parliament. This is suggestive evidence of learning that has been documented in many theoretical and empirical papers, especially in the IO literature. In the figure on the right, we see the opposite trend with more experienced MPs spending less in their constituency with narrower victory margins which suggests that inexperienced MPs are exhibiting career concerns as has been shown in the political economy context by papers such as Keane & Merlo (2010) and Diermeier *et al.* (2005).

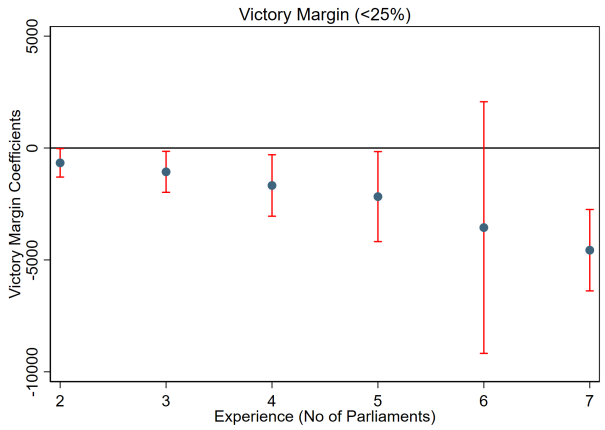

FIGURE 5: β_k FOR VICTORY MARGIN <25%

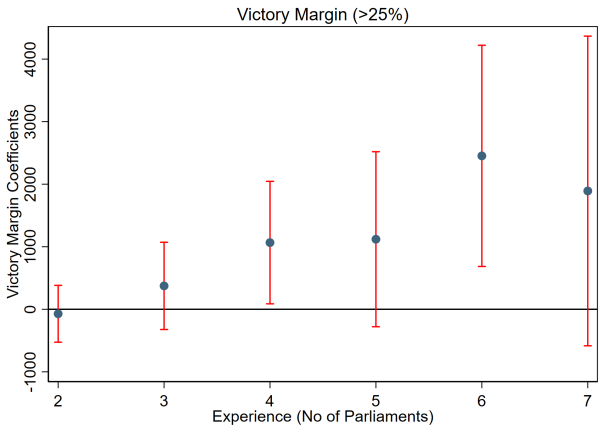

FIGURE 6: β_k FOR VICTORY MARGIN >25%

Parliamentary Activity

One of the easier measures to consider when looking at the parliamentary activity of an MP is to look at their absence rates in parliament. This is one of the measures which is harder to verify and observe for the voters. Hence it would probably make more sense for an electorally vulnerable politician to shirk more in parliament and spend more time in his/her own constituency. So the parliamentary performance measure we look at is whether or not an MP was present for a particular vote on a bill in parliament and thus the eventual goal would be to make a claim as to how more or less likely an MP will be absent for a vote if he/she is more electorally vulnerable. A graph of the number of bills introduced in each parliament disaggregated by political parties is shown in Figure (14) in the Appendix.

The graphs below demonstrate the movement of absence rates in Parliament over time disag-

gregated by Political Parties and whether or not an MP was part of the ruling party or not. Figure (7) below shows the average absence rate of different political parties over time. Immediately one can see that Absence rates were much higher for the Liberal Party till the 42^{nd} Parliament which started in 2015 after which their absence rates fell by a lot. The absence rates of the MPs of the Conservative Party were the lowest for 2006 to 2015 where the Conservative Party was in Power. This shows the importance of including for time fixed effects and whether or not an MP was part of the ruling party or not in any regression.

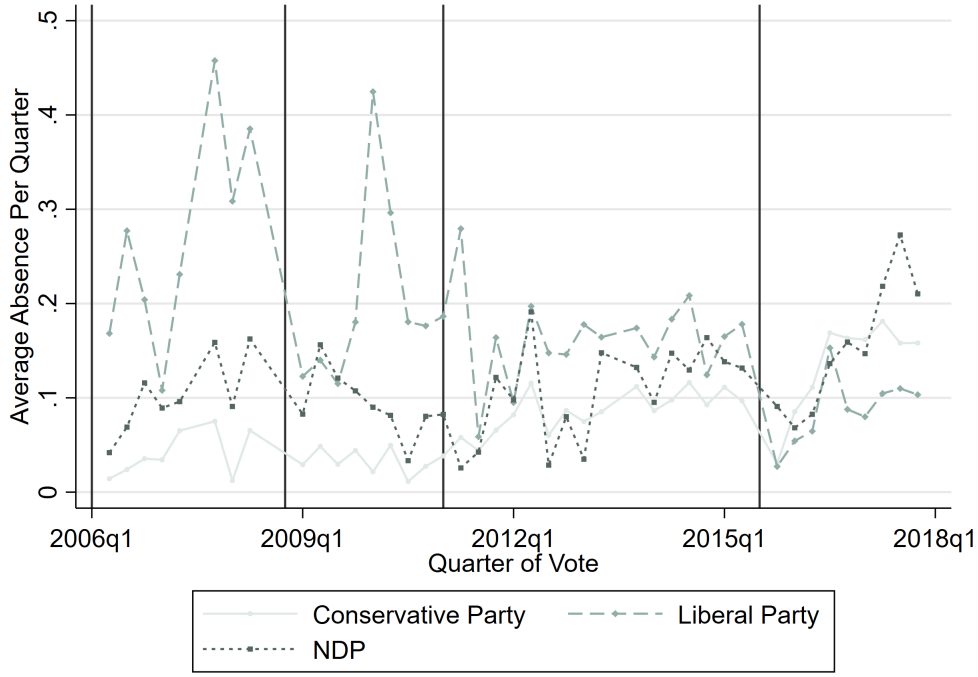

FIGURE 7: TREND OF ABSENCE FROM VOTES OVER TIME

Another nice pattern in absence behaviour showing the differing electoral incentives for MPs of the ruling v/s non-ruling parties is illustrated in Figure (8) below where we run the following regression and then plot the residuals over time stratifying by whether or not the MP was part of the ruling party or not. The regression we run is :

$$Absent_{i,k,s,t} = \alpha_i + \lambda_k + \theta_{Month} + \beta VictoryMargin_{i,t-1} + X_{i,k,s,t}\gamma + \varepsilon_{i,k,s,t} \tag{13}$$

where $Absent_{ikst}$ is a dummy variable for whether or not MP i was absent for the the s^{th} reading of bill k in parliament t. We include a set of controls in X like the experience of the MP, dummies for the last session of a parliament, last quarter etc. The residuals from this regression are plotted against the month of the vote. The first pattern to notice as seen in the Figure above is that the (residual) absence rates of MPs in power are lower than that of the MPs not in power. This is intuitive given that the ruling party is in the majority and hence have the numbers to pass/block

any bill in parliament. A second interesting pattern is that as elections draw nearer, the MPs of the party in power tend to become increasingly less absent while the MPs of the other parties tend to become more absent. This also makes sense since the major selling point of MPs in power is the work they managed to do while in power before parliament is dissolved. The MPs not in power have the opposite incentive and would rather drum up support in their constituency since that's an outcome they can directly control while being in parliament to vote on bills does little to influence their re-election probabilities.

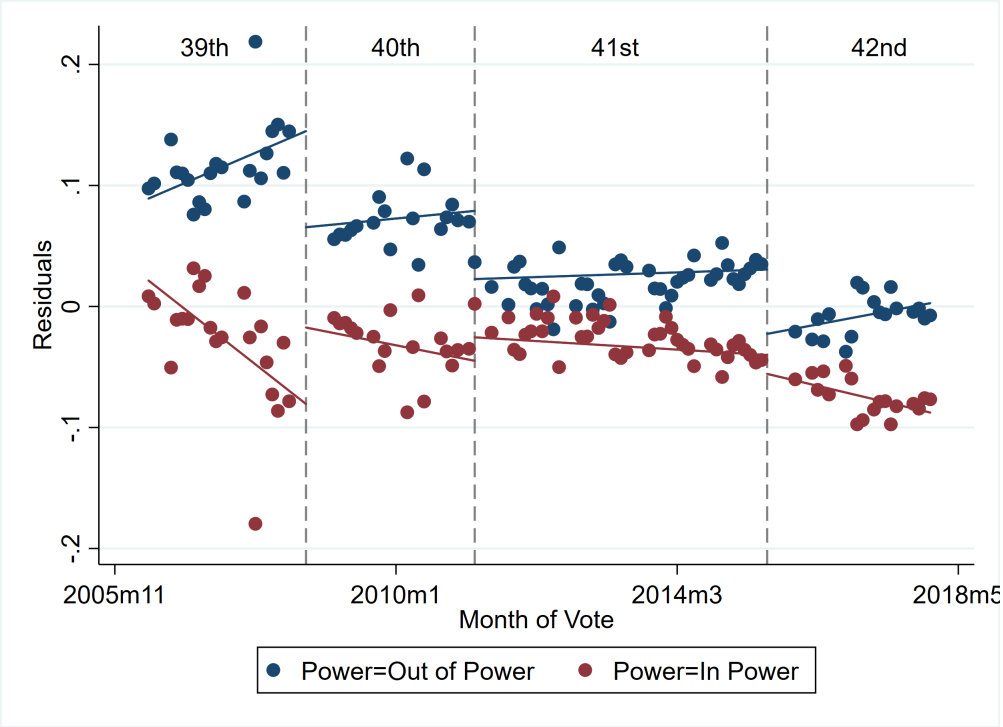

FIGURE 8: RESIDUALS OF PARLIAMENTARY ABSENCE OVER TIME

To see how electorally vulnerable MPs modify their behaviour in parliament, we first run the specification in Equation (13) above and display the results in Table (6) below. The columns refer to running the specification for different sub-samples i.e. for the full sample, the sample below the 10th percentile of the victory margin distribution and the sample above the 10th percentile. From the table, we see that if we look at the whole sample, then a 5% reduction in the victory margin leads to a .76% decrease in the probability of being absent for a vote which seems to suggest that MPs shirk more often as they become more electorally secure suggesting a moral hazard story. However, if we look at column two which looks at the most electorally vulnerable MPs, then we see that a 1% decrease in their victory margin leads to a 20% increase in the probability of being absent for a vote. This suggests that the most electorally vulnerable are likely to spend less time in parliament and instead as suggested above, are likely to spend more time in their constituency.

TABLE 6: FIXED EFFECTS RESULTS FOR ABSENCE IN PARLIAMENT

	Full Sample	Below 10th Percentile	Above 10th Percentile
Victory Margin	0.00154***	-0.199**	0.00202***
	(0.001)	(0.091)	(0.001)
Controls	Yes	Yes	Yes
Politician FE	Yes	Yes	Yes
Parliament FE	Yes	Yes	Yes
Month of Vote FE	Yes	Yes	Yes
Bill FE	Yes	Yes	Yes
Observations	496615	48641	447974
Adj. R-Square	0.112	0.127	0.113

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(1) Standard Errors are Clustered at the MP and Party×Parliament Level.

(2) Controls include Experience of the MP, whether or not the MP was in the Ruling party or the Main Opposition, Dummy for the last quarter before Parliament was dissolved, the Session of Parliament and stage of the Bill.

Finally, we present the 2SLS estimates in Table (7) below. In the first stage, we do not include dummies for month of vote, session etc since $VictoryMargin_{i,t-1}$ is pre-determined at the time and hence it does not make sense to regress it on future variables. We use the predicted values from the first stage and run the following regression similar to the one we have above :

$$Absent_{i,k,s,t} = \alpha_i + \lambda_k + \theta_{Month} + \beta \widehat{VictoryMargin}_{i,t-1} + X_{i,k,s,t}\gamma + \varepsilon_{i,k,s,t} \tag{14}$$

Note that even though the instrument $Opinion$ varies at the $Party \times Parliament$ level, the predicted value $\widehat{VictoryMargin}_{i,t-1}$ varies at the $Politician \times Parliament$ level due to the fixed effects and MP-specific variables in the first stage. Hence we report standard errors clustered at the $Politician$ and $Party \times Parliament$ level while in the first stage, we cluster at the $Party$ level since the instrument varies only at the party level within a parliament.

The 2SLS results indicate are similar in magnitude to the results presented above and if anything become stronger in the sense that the power goes up as well as the magnitude of the coefficients. We see in Table (7), when looking at the entire sample, a 5% decrease in the victory margin leads to a 1% decrease in the probability of being absent for a vote. However when we look at Column 2, a 1% decrease in the victory margin leads to 25% increase in the probability of being absent for a vote. The conclusions are similar to those discussed above.

TABLE 7: SECOND STAGE IV RESULTS FOR ABSENCE IN PARLIAMENT

	Full Sample	Below 10th Percentile	Above 10th Percentile
Victory Margin	0.00234**	-0.246***	0.00272**
	(0.001)	(0.072)	(0.001)
Controls	Yes	Yes	Yes
Politician FE	Yes	Yes	Yes
Parliament FE	Yes	Yes	Yes
Month of Vote FE	Yes	Yes	Yes
Bill FE	Yes	Yes	Yes
Observations	491232	47905	443327
Kleibergen-Papp F stat	148.6	32.95	124.7

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(1) Clustered Standard errors in parentheses

(2) Controls include Experience of the MP, whether or not the MP was in the Ruling party or the Main Opposition, Dummy for the last quarter before Parliament was dissolved, the Session of Parliament and what stage of the Vote the Bill was in.

(3) First Stage F statistics reported

While the results suggest that MPs substitute effort away from parliamentary work, the next natural question to ask whether this shirking has any real consequences in the sense that it would be interesting to see if MPs choose to be absent for votes for which they know with a high degree of certainty that they will not be pivotal; since it is not a stretch to imagine that politicians know in advance whether a vote is likely to be close or not. Moreover, party discipline in Canada is known to be pretty high i.e. party whips typically ensure that MPs vote along party lines and turn up for crucial votes. So in order to see whether MPs are absent for votes which were close ex-post, Figure (9) below plots the empirical probability of being absent for a vote against the margin of the vote which we define as $BillMargin = (YesVotes - NoVotes)/(TotalVotes)$. The closer this measure is to 0, the closer the vote on that bill was and hence each vote is much more likely to be pivotal. The figure plots this separately for politicians who are electorally vulnerable and for those who are not.

In the graph, we restrict the sample to votes which had a margin ranging from -0.2 to 0.2. From the graph we see that all MPs shirk significantly less for votes which turned out to be close ex-post, but this is more pronounced for MPs who are more electorally secure. Thus it seems that MPs who are more electorally vulnerable are less flexible in terms of modifying their behaviour. Moreover, this also speaks more to the fact that MP presence in parliament is not a very observable signal of politician ability and this is supported in the graphs by the fact that electorally secure politicians respond much more than electorally vulnerable politicians for close votes. Another channel ex-

plaining the difference in the magnitude of response amongst the two types of politicians might be the fact that the political parties might encourage the more vulnerable MPs to stay back in their constituencies to engage more with the voters. Figure (15) in the Appendix shows that we get a similar shape of absence probabilities after controlling for a bunch of observables.

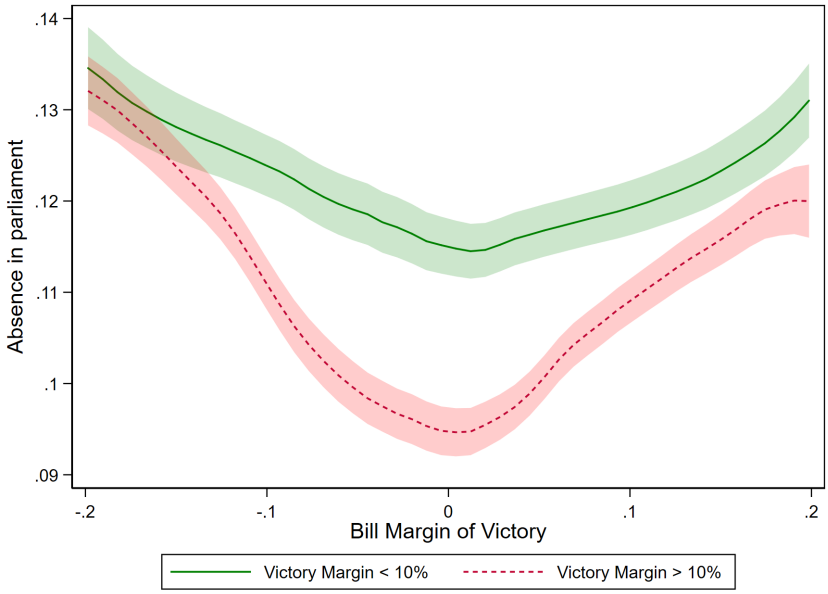

FIGURE 9: EMPIRICAL PROBABILITY OF BEING ABSENT FOR CLOSE VOTES

As done before for constituency expenditure, we plot the coefficients to check heterogeneous effects along the experience dimension for electorally vulnerable and secure politicians separately. The regression we run is similar to the one above in Equation (13):

$$Absent_{i,k,s,t} = \alpha_i + \lambda_k + \theta_{Month} + \sum_{k=1}^{22} \beta_k Experience_k \times VictoryMargin_{i,t-1} + X_{i,k,s,t}\gamma + \varepsilon_{i,k,s,t} \tag{15}$$

The coefficients β_k are plotted in Figures (10) and (11) below. In the Figure on the left, we see that compared to MPs who just entered parliament, more experienced politicians are more absent to parliament which again could be both due to learning and career concerns. Looking at the Figure on the right, we see weak evidence that more experienced MPs shirk more than inexperienced MPs which again lends some credibility to both the mechanisms mentioned above.

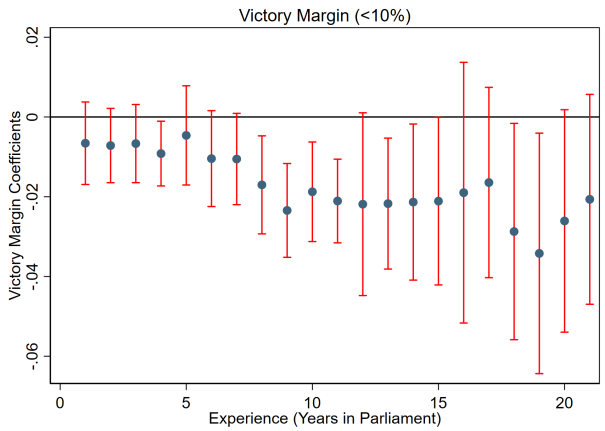

FIGURE 10: β_k FOR VICTORY MARGIN <10%

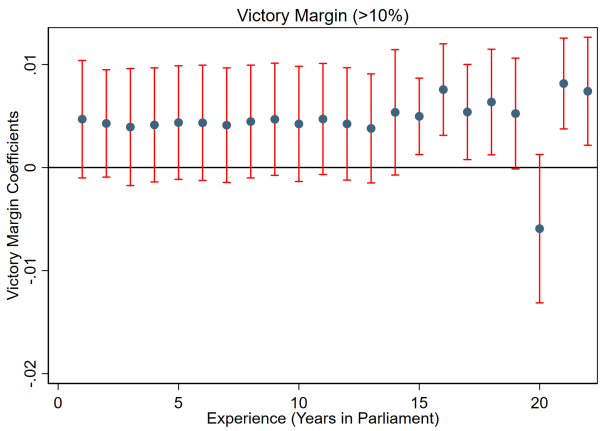

FIGURE 11: β_k FOR VICTORY MARGIN >10%

Campaign Expenditure

As with constituency expenditure, all candidates (whether they win or not) report detailed balance sheets of their campaign expenses before a particular election. Campaign lengths are set ahead of time and candidates are not officially allowed to campaign outside the stipulated window. This makes it an institutionally cleaner setting compared to other countries without federally stipulated campaign lengths. Moreover, all candidates within the same constituency are subject to a campaign expenditure limit as mandated by the Canada Elections Act and parties are also subject to a national cap on campaign expenses. A histogram of these constituency specific expenditure limits is shown in Figure (16) in the Appendix.

In this section we focus on MPs who won at least one re-election campaign and look at 4 outcome variables namely Total Expenditure in the next campaign with Total Contributions, Total Transfers and Total Personal Loans taken by the MPs as the different subcategories. Contributions refer to only those made by individuals and not by other institutions like corporations or trade unions. Transfers refer to mainly the money that the MP's party contributed towards the MP's budget (which is over and above what the Party might spend for their candidate in a constituency). Of these total campaign expense represents a cash outflow while the other 3 represent cash inflows. It is not uncommon for candidates to run a small surplus at the end of the election campaign.

As in the section above, we plot trends of campaign expenditure by Political Party over time in Figure (12) below. The graph plots the average expenditure in the different categories for the main political parties for the campaign held after a parliament was dissolved. So the numbers corresponding to the 41^{st} parliament refers to the expenses after the 41^{st} parliament was dissolved. Again, the numbers show an upward trend because the campaign expenditure limits were changed to account for the length of the campaign. Moreover,we also use these trends to motivate the inclusion of lagged expenditure variables in subsequent regressions.

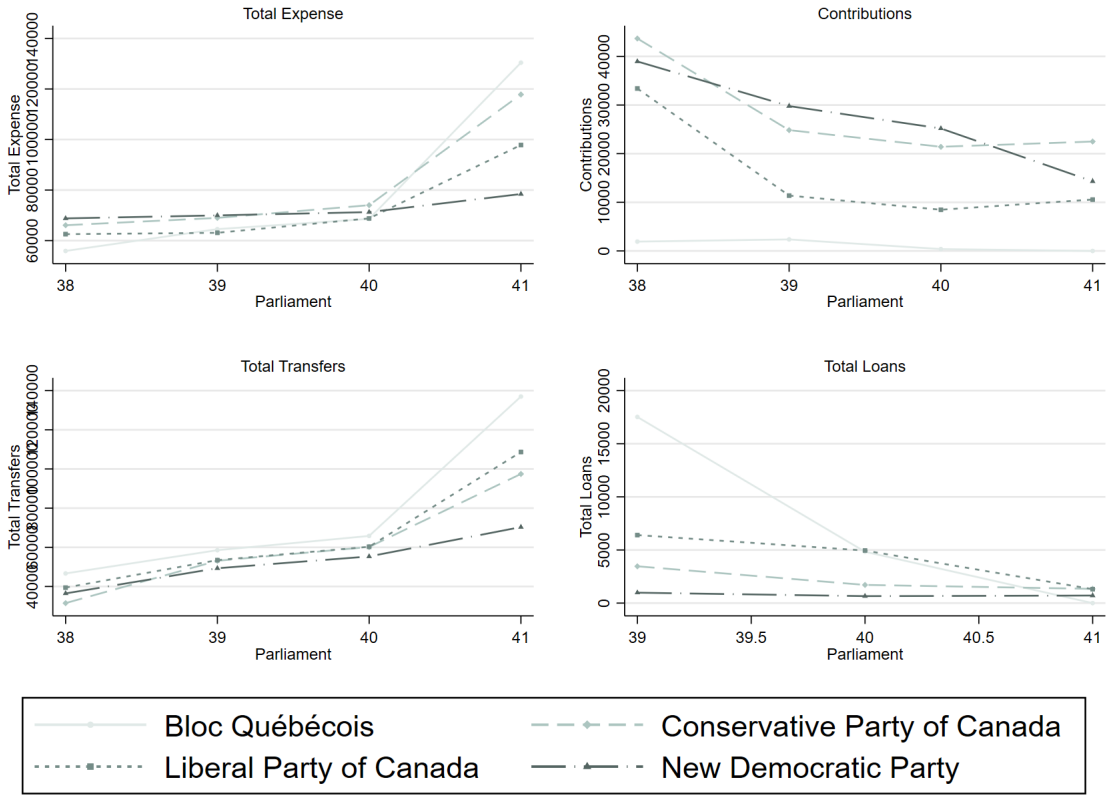

FIGURE 12: TREND OF CAMPAIGN EXPENSES OVER TIME

In Figure (17) in the Appendix, we show scatterplots of the various expenditure variables we consider plotted against victory margin to show correlations between the variables. As mentioned before these are merely correlations possibly indicating that elections in certain constituencies remain competitive over time. The results for the 2SLS estimates shown in Table (8) shows that the coefficient for Victory Margin when considering Total Transfers as an outcome variable is significant with political parties pouring in an additional $1215 for every additional percentage point reduction in the victory margin for an MP. The estimates when looking at total expenditure is negative and smaller in magnitude but insignificant suggesting that there is a trade-off in terms the amount of cash inflows that an electorally vulnerable candidate can generate. The sub-categories of cash inflows and outflows that we are reporting here are not exhaustive and there are a couple of big categories like contributions from entities like corporations and trade unions as well as the candidate's personal expenditures that we have not yet looked at deeply. Broadly, the results seem to indicate that the more electorally vulnerable an MP is, his/her ability to generate inflow from other sources (like loans and contributions) goes down and instead, the party of the MP (more than proportionately) shoulders the loss in inflows by transferring more money.

TABLE 8: SECOND STAGE IV RESULTS FOR CAMPAIGN EXPENDITURE

	Expenses	Contributions	Total Transfers	Total Loans
Victory Margin	-438.4	31.8	-1215.6**	101.8
	(0.509)	(0.870)	(0.038)	(0.144)
Controls	Yes	Yes	Yes	Yes
Politician FE	Yes	Yes	Yes	Yes
Parliament FE	Yes	Yes	Yes	Yes
Observations	399	399	374	122
Kleibergen-Papp F stat	6.27	7.59	7.37	13.6
Cragg-Donaldson F stat	53.5	61.5	54.8	50.2

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(1) Wild Cluster Robust Bootstrapped p values in parentheses

(2) Controls here include Lagged values of y, Dummy for Power and MP and Parliament Fixed Effects

(3) First Stage F statistics reported

TABLE 9: SECOND STAGE IV RESULTS FOR CAMPAIGN EXPENDITURE (VICTORY MARGIN $<$ 25%)

	Expenses	Contributions	Total Transfers	Total Loans
Victory Margin	-1278.7**	360.1	-2695.7***	-3.91
	(0.013)	(0.352)	(0.003)	(0.978)
Controls	Yes	Yes	Yes	Yes
Politician FE	Yes	Yes	Yes	Yes
Parliament FE	Yes	Yes	Yes	Yes
Observations	183	183	168	44
Kleibergen-Papp F	17.9	15.8	25.4	17.6
Cragg-Donaldson F	33.3	29.5	28.6	16.9

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(1) Wild Cluster Robust Bootstrapped p values in parentheses

(2) Controls here include Lagged values of y, Dummy for Power and MP and Parliament Fixed Effects

Table (9) below runs the same specification for the sample with the victory margin below 25%. The results are much starker here with a 5% reduction in victory margin leading to a $6200 increase in campaign expenditure in the following election. Moreover a 5% decrease in the victory margin leads to an approximately $12500 increase in transfers to the MP. Given that the average limit on

expenses was about $90000, this is approximately 14% of the limit which is an economically very significant. Table (22) in the Appendix show the entire regression table with the lagged coefficients for the full sample. Since we have a very short time period, we cannot test conduct the $AR(2)$ test for the Arellano-Bond estimator and hence we do not estimate the coefficients for the campaign expenditure using the GMM estimator. Moreover Tables (23) and (24) in the Appendix show the reduced form results with bootstrapped $p-$ values.

Conclusion

In this paper, we present evidence of the discipline effect in the political economy literature. More specifically, we document a Politician's substitution of effort across different tasks in response to an exogenous change in electoral vulnerability. The empirical results presented tie in closely with the predictions from multi-tasking model and career concerns models (Holmstrom & Milgrom (1991), Holmström (1999)). We develop a simple theoretical framework where a politician has to divide effort amongst multiple tasks and take actions so as to convince a voter to re-elect him. We show that a politician who believes their re-election probability to be low (due to a downward revision of beliefs in their ability by the voter) will allocate more effort to activities which are more easily observable to the voter. To test these predictions, we use party opinion polls on the day before the election as an instrument for a politician's victory margin and estimate that the most electorally vulnerable politicians substitute effort away from attending the Parliament for votes and instead spend more money in their constituency and more money in the following election campaign. Moreover, we find that within constituency expenditure, MPs spend more for salaries for their staff, travel to and from the constituency and advertising to constituents. Finally within campaign expenditure we find evidence that politicians find it harder to raise money for their next election if they are electorally vulnerable, but the political parties spend large amounts supporting these politicians which allows them to spend more money for their next campaign. Finally, we find suggestive evidence of career concerns and/or learning over the course of an MP's career.

References

ALESINA, ALBERTO. 1988. Macroeconomics and politics. *NBER macroeconomics annual*, **3**, 13–52.

ARELLANO, MANUEL, & BOND, STEPHEN. 1991. Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *The review of economic studies*, **58**(2), 277–297.

ARELLANO, MANUEL, & BOVER, OLYMPIA. 1995. Another look at the instrumental variable estimation of error-components models. *Journal of econometrics*, **68**(1), 29–51.

ARIAS, ERIC, BALÁN, PABLO, LARREGUY, HORACIO, MARSHALL, JOHN, & QUERUBÍN, PABLO. 2019. Information provision, voter coordination, and electoral accountability: Evidence from Mexican social networks. *American Political Science Review*, **113**(2), 475–498.

ARNOLD, FELIX. 2013. German MPs' outside jobs and their repercussions on parliamentary effort.

ARUOBA, S BORAĞAN, DRAZEN, ALLAN, & VLAICU, RAZVAN. 2015. *A Structural Model of Electoral Accountability*. Tech. rept. National Bureau of Economic Research.

ASHWORTH, SCOTT. 2005. Reputational dynamics and political careers. *Journal of Law, Economics, and Organization*, **21**(2), 441–466.

BANKS, JEFFREY S, & SUNDARAM, RANGARAJAN K. 1993. Adverse selection and moral hazard in a repeated elections model. *ch*, **12**, 295–311.

BARRO, ROBERT J. 1973. The control of politicians: an economic model. *Public choice*, **14**(1), 19–42.

BECKER, JOHANNES, PEICHL, ANDREAS, & RINCKE, JOHANNES. 2009. Politiciansâ outside earnings and electoral competition. *Public Choice*, **140**(3), 379–394.

BERNECKER, ANDREAS. 2014. Do politicians shirk when reelection is certain? Evidence from the German parliament. *European Journal of Political Economy*, **36**, 55–70.

BESLEY, TIMOTHY, & CASE, ANNE. 1995. Does electoral accountability affect economic policy choices? Evidence from gubernatorial term limits. *The Quarterly Journal of Economics*, **110**(3), 769–798.

BESLEY, TIMOTHY, PERSSON, TORSTEN, & STURM, DANIEL M. 2010. Political competition, policy and growth: theory and evidence from the US. *The Review of Economic Studies*, **77**(4), 1329–1352.

CAMERON, A COLIN, GELBACH, JONAH B, & MILLER, DOUGLAS L. 2008. Bootstrap-based improvements for inference with clustered errors. *The Review of Economics and Statistics*, **90**(3), 414–427.

DAL BÓ, ERNESTO, DAL BÓ, PEDRO, & SNYDER, JASON. 2009. Political dynasties. *The Review of Economic Studies*, **76**(1), 115–142.

DALEY, BRENDAN, & SNOWBERG, ERIK. 2009. Even if it is not bribery: the case for campaign finance reform. *The Journal of Law, Economics, & Organization*, **27**(2), 324–349.

DEVDARIANI, SABA, & HIRSCH, ALEXANDER V. 2021. Voter Attention and Electoral Accountability.

DIERMEIER, DANIEL, KEANE, MICHAEL, & MERLO, ANTONIO. 2005. A political economy model of congressional careers. *American Economic Review*, **95**(1), 347–373.

DOWNS, ANTHONY. 1957. An economic theory of political action in a democracy. *Journal of political economy*, **65**(2), 135–150.

DUGGAN, JOHN. 2000. Repeated elections with asymmetric information. *Economics & Politics*, **12**(2), 109–135.

DUGGAN, JOHN, & MARTINELLI, CÉSAR. 2017. The political economy of dynamic elections: Accountability, commitment, and responsiveness. *Journal of Economic Literature*, **55**(3), 916–84.

DUGGAN, JOHN, & MARTINELLI, CÉSAR. 2020. Electoral accountability and responsive democracy. *The Economic Journal*, **130**(627), 675–715.

FEREJOHN, JOHN. 1986. Incumbent performance and electoral control. *Public choice*, **50**(1-3), 5–25.

FERRAZ, CLAUDIO, & FINAN, FREDERICO. 2011. Electoral accountability and corruption: Evidence from the audits of local governments. *The American Economic Review*, **101**(4), 1274–1311.

FISMAN, RAYMOND, HARMON, NIKOLAJ A, KAMENICA, EMIR, & MUNK, INGER. 2015. Labor supply of politicians. *Journal of the European Economic Association*, **13**(5), 871–905.

GAGLIARDUCCI, STEFANO, NANNICINI, TOMMASO, & NATICCHIONI, PAOLO. 2010. Moonlighting politicians. *Journal of Public Economics*, **94**(9), 688–699.

GALASSO, VINCENZO, & NANNICINI, TOMMASO. 2011. Competing on good politicians. *American political science review*, **105**(1), 79–99.

GOWRISANKARAN, GAUTAM, MITCHELL, MATTHEW F, & MORO, ANDREA. 2004. *Why do incumbent senators win? Evidence from a dynamic selection model*. Tech. rept. National Bureau of Economic Research.

HOLMSTRÖM, BENGT. 1999. Managerial incentive problems: A dynamic perspective. *The review of Economic studies*, **66**(1), 169–182.

HOLMSTROM, BENGT, & MILGROM, PAUL. 1991. Multitask principal-agent analyses: Incentive contracts, asset ownership, and job design. *JL Econ. & Org.*, **7**, 24.

IARYCZOWER, MATIAS, MOCTEZUMA, GABRIEL LOPEZ, & MEIROWITZ, ADAM. 2017. Career Concerns and the Dynamics of Electoral Accountability.

KEANE, MICHAEL P, & MERLO, ANTONIO. 2010. Money, political ambition, and the career decisions of politicians. *American Economic Journal: Microeconomics*, **2**(3), 186–215.

LARREGUY, HORACIO, MARSHALL, JOHN, & SNYDER JR, JAMES M. 2020. Publicising malfeasance: when the local media structure facilitates electoral accountability in Mexico. *The Economic Journal*, **130**(631), 2291–2327.

MILLIGAN, KEVIN, & REKKAS, MARIE. 2008. Campaign spending limits, incumbent spending, and election outcomes. *Canadian Journal of Economics/Revue canadienne d'économique*, **41**(4), 1351–1374.

NANNICINI, TOMMASO, STELLA, ANDREA, TABELLINI, GUIDO, & TROIANO, UGO. 2013. Social capital and political accountability. *American Economic Journal: Economic Policy*, **5**(2), 222–250.

NICKELL, STEPHEN. 1981. Biases in dynamic models with fixed effects. *Econometrica: Journal of the Econometric Society*, 1417–1426.

OLLÉ, ALBERT SOLÉ. 2003. Electoral accountability and tax mimicking: the effects of electoral margins, coalition government, and ideology. *European Journal of Political Economy*, **19**(4), 685–713.

PAVÃO, NARA. 2018. Corruption as the only option: The limits to electoral accountability. *The Journal of Politics*, **80**(3), 996–1010.

PRUYSERS, SCOTT, & CROSS, WILLIAM. 2016. Candidate selection in Canada: Local autonomy, centralization, and competing democratic norms. *American Behavioral Scientist*, **60**(7), 781–798.

SIEG, HOLGER, & YOON, CHAMNA. 2017. Estimating dynamic games of electoral competition to evaluate term limits in us gubernatorial elections. *American Economic Review*, **107**(7), 1824–57.

SMART, MICHAEL, & STURM, DANIEL M. 2004. Term limits and electoral accountability.

SNYDER JR, JAMES M, & STRÖMBERG, DAVID. 2010. Press coverage and political accountability. *Journal of political Economy*, **118**(2), 355–408.

STROMBERG, DAVID. 2008. How the Electoral College influences campaigns and policy: the probability of being Florida. *American Economic Review*, **98**(3), 769–807.

SVALERYD, HELENA, & VLACHOS, JONAS. 2009. Political rents in a non-corrupt democracy. *Journal of Public Economics*, **93**(3), 355–372.

Appendix

Direction of Nickell's Bias

In the original paper, Nickell (1981) showed that if we assume $Z_{ipt} = \begin{bmatrix} VictoryMargin & X \end{bmatrix}$ is exogenous in Equation (10), then denoting $\phi = \begin{bmatrix} \beta & \theta \end{bmatrix}$, we have the following expressions for the consistency of the OLS estimators for (δ, ϕ) :

$$plim_{n\to\infty}\left(\hat{\delta}-\delta\right) = \left(plim_{n\to\infty}\frac{1}{NT}\tilde{y}'_{-1}M\tilde{y}_{-1}\right)^{-1} plim_{n\to\infty}\frac{1}{NT}\tilde{y}'_{-1}\tilde{\varepsilon} \quad (16)$$

$$plim_{n\to\infty}\left(\hat{\phi}-\phi\right) = -plim_{n\to\infty}\left[\left(\tilde{Z}'\tilde{Z}\right)^{-1}\tilde{Z}'\tilde{y}_{-1}\right] plim_{n\to\infty}\left(\hat{\delta}-\delta\right) \quad (17)$$

where $\tilde{Z}, \tilde{y}$ and $\tilde{\varepsilon}$ are demeaned values of the respective variables. Moreover $\tilde{y}_{-1}$ denotes the lagged value of y. Finally $M = I - Z\tilde{Z}\left(\tilde{Z}'\tilde{Z}\right)^{-1}\tilde{Z}'$, also known as the residual maker matrix. From Equations (16) and (5), we see that if:

1. $\delta > 0$
2. $\beta < 0$
3. $Cov\left(\tilde{y}_{-1}, VictoryMargin\right) > 0$ which would imply for example that Constituency Expenditure in $t-1$ positively affects the Victory Margin in the upcoming election.

then the 2SLS estimates of $\hat{\beta}$ are actually underestimates and correcting for the Nickell's bias using the Arellano-Bond estimator should push the coefficients even lower. In reality, since we are using an external instrument for Victory Margin, this result does not directly apply as the variable is not exogenous. However if the endogeneity with respect to Victory Margin is relatively small, we should still see the coefficients becoming more negative. In subsequent sections we will be looking at 2SLS results for a variety of outcome variables.

Robustness Checks

In this section, we report the 2SLS estimates of all the measures with the inclusion of $Party \times Parliament$ in the Second Stage regression for measures of Campaign and Constituency expenditure, and inclusion of $Party \times ParliamentSession$ dummies for the Parliamentary absence measure. The results do not change much from the estimates in main section and if anything, become economically and statistically more significant.

Constituency Expenditure

TABLE 10: 2SLS RESULTS FOR CONSTITUENCY EXPENDITURE INCLUDING $Party \times Parliament$ DUMMIES (FULL SAMPLE)

	Total Expense	Staff	Travel	Ads	Phone	Print	Lease
Victory Margin	-1379.5***	-338.8*	-693.0***	-11.5	-27.0	-243.1***	2.25
	(0.00)	(0.06)	(0.00)	(0.52)	(0.22)	(0.00)	(0.95)
L.Total Expense	0.076						
	(0.25)						
L.Staff		0.012					
		(0.88)					
L.Travel			0.083				
			(0.42)				
L.Ads				0.12*			
				(0.06)			
L.Phone					-0.089		
					(0.47)		
L.Print						-0.13	
						(0.24)	
L.Lease							0.40***
							(0.00)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Politician FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Parliament FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	827	827	822	631	827	827	827
Kleibergen-Papp F	74.2	73.9	70.4	46.7	69.5	86.1	71.9
Cragg-Donaldson F	566.2	561.0	551.1	415.1	558.1	542.8	559.3

(1) Wild Cluster Robust Bootstrapped p values in parentheses

(2) Controls include Lagged values of y,Dummies for $Party \times Parliament$, MP and Parliament Fixed Effects

(3) First Stage F statistics reported

TABLE 11: 2SLS RESULTS FOR CONSTITUENCY EXPENDITURE INCLUDING $Party \times Parliament$ DUMMIES (<25%)

	Total Expense	Staff	Travel	Ads	Phone	Print	Lease
Victory Margin	-3183.3***	-1190.7*	-1804.3***	-432.8***	65.4	-229.0**	-61.6
	(0.00)	(0.07)	(0.00)	(0.00)	(0.19)	(0.04)	(0.47)
L.Total Expense	0.052						
	(0.45)						
L.Staff		-0.093					
		(0.16)					
L.Travel			-0.0086				
			(0.93)				
L.Ads				0.23**			
				(0.01)			
L.Phone					-0.26		
					(0.10)		
L.Print						-0.090	
						(0.23)	
L.Lease							0.46***
							(0.00)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Politician FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Parliament FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	367	367	364	280	367	367	367
Kleibergen-Papp F	49.2	50.3	57.7	35.9	50.2	67.6	51.7
Cragg-Donaldson F	110.4	110.0	111.9	80.4	111.8	109.0	109.1

(1) Wild Cluster Robust Bootstrapped p values in parentheses

(2) Controls include Lagged values of y,Dummies for $Party \times Parliament$, MP and Parliament Fixed Effects

(3) First Stage F statistics reported

Parliamentary Absence

TABLE 12: 2SLS RESULTS FOR CONSTITUENCY EXPENDITURE INCLUDING $Party \times ParliamentSession$ **DUMMIES**

	Full Sample	Below 10 % Margin	Above 10 % Margin
Victory Margin	-0.00532***	-0.194***	0.00678
	(0.001)	(0.057)	(0.004)
Controls	Yes	Yes	Yes
Politician FE	Yes	Yes	Yes
Parliament FE	Yes	Yes	Yes
Month of Vote FE	Yes	Yes	Yes
Bill FE	Yes	Yes	Yes
Observations	491232	144016	347216

(1) Cluster Standard errors in parentheses

(2) Controls include Experience of the MP, whether or not the MP was in the Ruling party or the Main Opposition, Dummy for the last quarter before Parliament was dissolved, the Session of Parliament and what stage of the Vote the Bill was in and $Party \times Parliament$ dummies.

(3) First Stage F statistics reported

(4) I use a different subsample for this robustness check since I fail to get enough variation when I look at really electorally vulnerable MPs i.e. below the 10th percentile.

Campaign Expenditure

TABLE 13: 2SLS RESULTS FOR CAMPAIGN EXPENDITURE INCLUDING $Party \times Parliament$ DUMMIES (FULL SAMPLE)

	Expenses	Contributions	Total Transfers	Total Loans
Victory Margin	-1941.0***	584.1***	-983.3**	96.0
	(0.00)	(0.00)	(0.04)	(0.18)
L.Total Expenses	-0.48***			
	(0.00)			
L.Contributions		-0.0095		
		(0.86)		
L.Transfers			-0.36**	
			(0.04)	
L.Loans				-0.94*
				(0.06)
Controls	Yes	Yes	Yes	Yes
Politician FE	Yes	Yes	Yes	Yes
Parliament FE	Yes	Yes	Yes	Yes
Observations	399	399	374	122
Kleibergen-Papp F stat	6.27	7.59	7.37	13.6
Cragg-Donaldson F stat	53.5	61.5	54.8	50.2

(1) Wild Cluster Robust Bootstrapped p values in parentheses

(2) Controls here include Lagged values of y, Dummies for $Party \times Parliament$, MP and Parliament Fixed Effects

(3) First Stage F statistics reported

TABLE 14: 2SLS RESULTS FOR CAMPAIGN EXPENDITURE INCLUDING $Party \times Parliament$ DUMMIES (<25%)

	Expenses	Contributions	Total Transfers	Total Loans
Victory Margin	-1429.0***	993.4***	-2215.5***	83.6
	(0.00)	(0.00)	(0.01)	(0.50)
L.Total Expenses	-0.24			
	(0.17)			
L.Contributions		-0.089		
		(0.20)		
L.Transfers			-0.47**	
			(0.03)	
L.Loans				-1.06**
				(0.04)
Controls	Yes	Yes	Yes	Yes
Politician FE	Yes	Yes	Yes	Yes
Parliament FE	Yes	Yes	Yes	Yes
Observations	183	183	168	44
Kleibergen-Papp F stat	17.9	15.8	25.4	17.6
Cragg-Donaldson F stat	33.3	29.5	28.6	16.9

(1) Wild Cluster Robust Bootstrapped p values in parentheses

(2) Controls here include Lagged values of y, Dummies for $Party \times Parliament$, MP and Parliament Fixed Effects

(3) First Stage F statistics reported

Additional Tables and Graphs

This section presents some additional tables and graphs which are referred to in the main text.

Correlation of Victory Margins

TABLE 15: CORRELATION OF VICTORY MARGINS FOR DIFFERENT SUBSAMPLES

	(1)	(2)	(3)
Lagged Victory Margin	0.90***	0.50***	0.50***
	(0.01)	(0.03)	(0.03)
Parliament FE	No	No	Yes
Province FE	No	Yes	Yes
Observations	954	954	954
Adjusted R^2	0.78	0.46	0.47

(1) Standard Errors Clustered at the MP level

(2) The first specification mimics the graph and is estimated without a constant

Constituency Expenditure

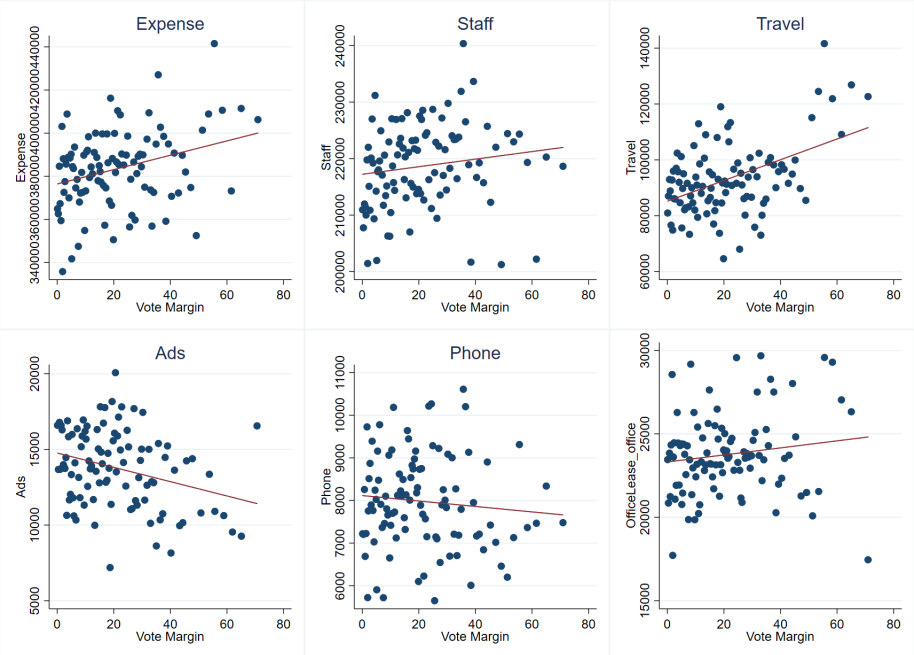

FIGURE 13: CONSTITUENCY EXPENDITURE AGAINST VICTORY MARGIN

TABLE 16: FIXED EFFECTS RESULTS FOR CONSTITUENCY EXPENDITURE (FULL SAMPLE)

	Total Expense	Staff	Travel	Ads	Phone	Print	Lease
Victory Margin	-404.2**	-161.6*	-182.6**	-18.9	-8.67	72.1**	22.8
	(193.05)	(91.83)	(91.63)	(13.02)	(9.36)	(31.14)	(14.26)
L.Total Expense	0.042						
	(0.06)						
L.Staff		-0.0022					
		(0.05)					
L.Travel			0.091				
			(0.07)				
L.Ads				0.12**			
				(0.05)			
L.Phone					-0.058		
					(0.08)		
L.Print						-0.18***	
						(0.03)	
L.Lease							0.41***
							(0.06)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Politician FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Parliament FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	828	828	823	633	828	828	828
R^2	0.72	0.59	0.85	0.86	0.67	0.70	0.89

(1) Clustered Standard Errors in parentheses

(2) Controls include Lagged Values of y, MP and Parliament Fixed Effects.

TABLE 17: SECOND STAGE IV RESULTS FOR CONSTITUENCY EXPENDITURE WITH ALL COEFFICIENTS (FULL SAMPLE)

	Total Expense	Staff	Travel	Ads	Phone	Print	Lease
Victory Margin	-962.5***	-399.8***	-464.8**	-27.1	-37.7**	28.5	23.5
	(0.002)	(0.001)	(0.024)	(0.164)	(0.077)	(0.871)	(0.281)
	(0.00)	(0.00)	(0.01)	(0.08)	(0.03)	(0.83)	(0.15)
L.Total Expense	0.040						
	(0.49)						
L.Staff		0.0096					
		(0.85)					
L.Travel			0.066				
			(0.47)				
L.Ads				0.12**			
				(0.05)			
L.Phone					-0.073		
					(0.56)		
L.Print						-0.18*	
						(0.10)	
L.Lease							0.40***
							(0.00)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Politician FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Parliament FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	827	827	822	631	827	827	827
Kleibergen-Papp F	74.2	73.9	70.4	46.7	69.5	86.1	71.9
Cragg-Donaldson F	566.2	561.0	551.1	415.1	558.1	542.8	559.3

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(1) Wild Cluster Robust Bootstrapped p values in parentheses

(2) Controls here include Lagged values of y, MP and Parliament Fixed Effects

(3) First Stage F statistics reported

TABLE 18: REDUCED FORM FOR CONSTITUENCY EXPENDITURE (FULL SAMPLE)

	Total Expense	Staff	Travel	Ads	Phone	Print	Lease
Party Opinion Poll (Nanos)	-1531.4**	-632.5**	-737.2*	-43.7	-59.7	44.3	37.3
	(0.04)	(0.02)	(0.10)	(0.20)	(0.10)	(0.91)	(0.24)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Politician FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Parliament FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	827	827	822	631	827	827	827

(1) Wild Cluster Robust Bootstrapped p values in parentheses

(2) Controls include Lagged values of y, MP and Parliament Fixed Effects

TABLE 19: REDUCED FORM FOR CONSTITUENCY EXPENDITURE (LESS THAN 25%)

	Total Expense	Staff	Travel	Ads	Phone	Print	Lease
Party Opinion Poll (Nanos)	-1252.1**	-379.9	-389.9	-115.5	-15.6	-294.2	41.7
	(0.04)	(0.27)	(0.57)	(0.15)	(0.50)	(0.54)	(0.40)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Politician FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Parliament FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	367	367	364	280	367	367	367

(1) Wild Cluster Robust Bootstrapped p values in parentheses

(2) Controls include Lagged values of y, MP and Parliament Fixed Effects

TABLE 20: ARELLANO-BOND ESTIMATES FOR CONSTITUENCY EXPENDITURE WITH ALL COEFFICIENTS (FULL SAMPLE)

	Total Expense	Staff	Travel	Ads	Phone	Print	Lease
Victory Margin	-829.6***	-284.2*	-424.1***	-35.2	-12.0	35.6	20.1
	(303.85)	(168.01)	(151.35)	(28.13)	(12.03)	(72.98)	(22.67)
L.Total Expense	0.050						
	(0.09)						
L.Staff		0.026					
		(0.08)					
L.Travel			0.067				
			(0.22)				
L.Ads				-0.49			
				(0.40)			
L.Phone					0.30		
					(0.19)		
L.Print						0.093	
						(0.21)	
L.Lease							0.24**
							(0.12)
Politician FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Parliament FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AR(2) p value	0.65	0.95	0.072	0.35	0.69	0.035	0.77
Observations	543	543	539	397	543	543	543

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(1) Two-Step robust Standard Errors in parentheses

(2) Controls here include Lagged values of y, MP and Parliament Fixed Effects

(3) AR(2) p values reported

Parliamentary Absences

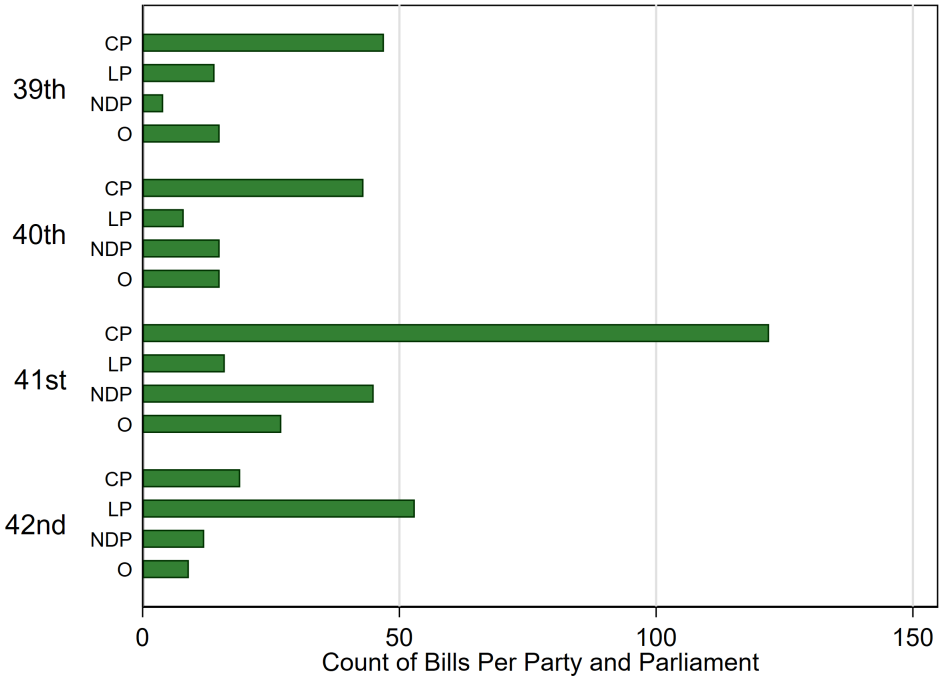

FIGURE 14: NUMBER OF BILLS PER PARLIAMENT BY PARTY

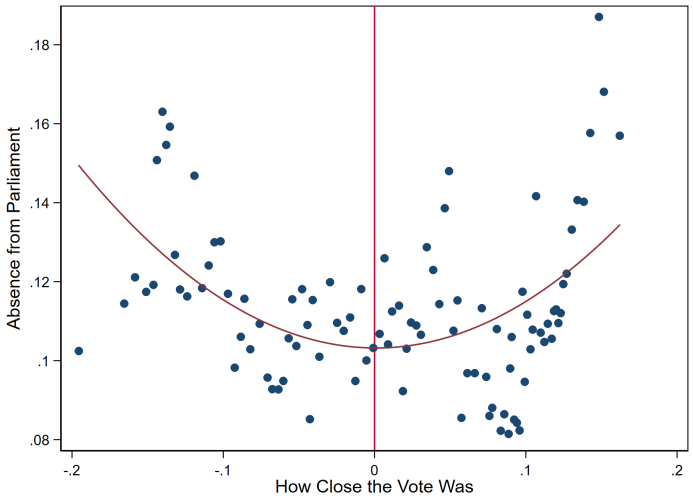

FIGURE 15: PROBABILITY OF ABSENCE FOR CLOSE VOTES (POST CONTROLS)

Campaign Expenditure

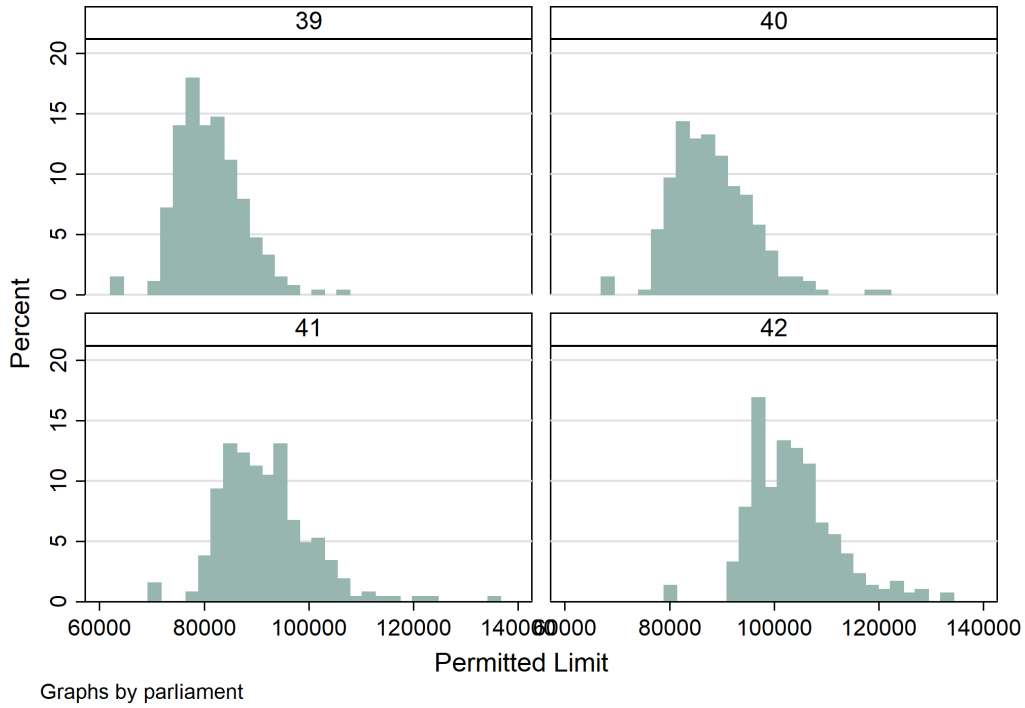

FIGURE 16: HISTOGRAM OF CAMPAIGN EXPENDITURE LIMITS

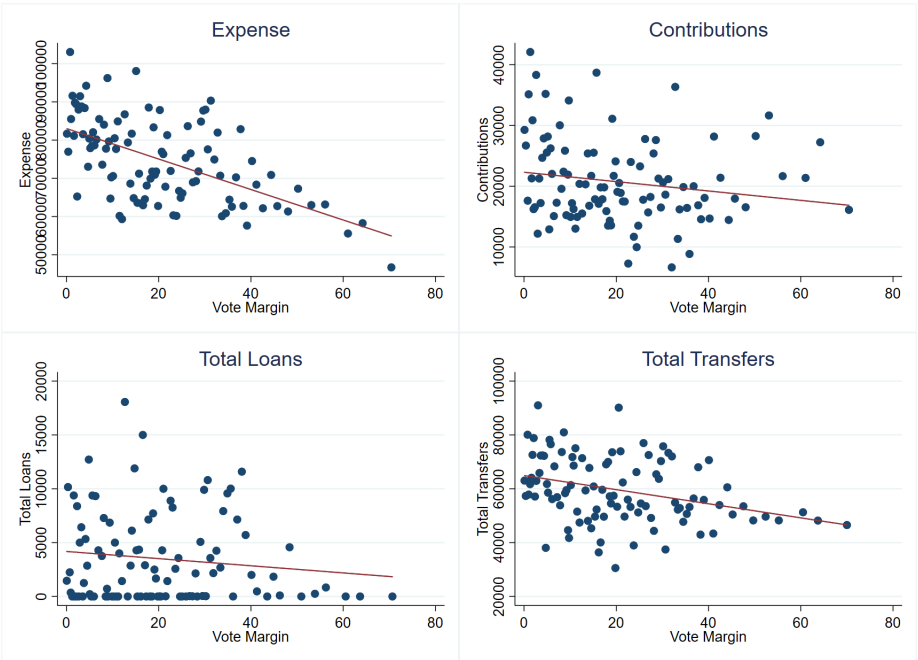

FIGURE 17: CAMPAIGN EXPENSES AGAINST VICTORY MARGIN

TABLE 21: FIXED EFFECTS RESULTS FOR CAMPAIGN EXPENDITURE (FULL SAMPLE)

	Expenses	Contributions	Total Transfers	Total Loans
Victory Margin	150.1	-35.8	-7.34	40.0
	(129.42)	(77.13)	(178.89)	(54.24)
L.Total Expenses	-0.19			
	(0.13)			
L.Contributions		-0.035		
		(0.06)		
L.Total Transfers			-0.37***	
			(0.14)	
L.Total Loans				-0.97***
				(0.34)
Controls	Yes	Yes	Yes	Yes
Politician FE	Yes	Yes	Yes	Yes
Parliament FE	Yes	Yes	Yes	Yes
Observations	401	401	376	122
R^2	0.66	0.69	0.57	0.24

(1) Clustered Standard Errors in parentheses

(2) Controls include Lagged Values of y, Power Dummy, MP and Parliament Fixed Effects.

TABLE 22: SECOND STAGE IV RESULTS FOR CAMPAIGN EXPENDITURE WITH ALL COEFFICIENTS (FULL SAMPLE)

	Expenses	Contributions	Total Transfers	Total Loans
Victory Margin	-438.4	31.8	-1215.6**	101.8
	(0.509)	(0.870)	(0.038)	(0.144)
L.Total Campaign Expenditure	-0.29**			
	(0.019)			
L.Campaign Contributions		-0.034		
		(0.477)		
L.Total_amount_of_transfers			-0.37	
			(0.103)	
L.Total_amount_of_loans				-0.96**
				(0.083)
Controls	Yes	Yes	Yes	Yes
Politician FE	Yes	Yes	Yes	Yes
Parliament FE	Yes	Yes	Yes	Yes
Observations	399	399	374	122
Kleibergen-Papp F stat	6.27	7.59	7.37	13.6
Cragg-Donaldson F stat	53.5	61.5	54.8	50.2

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(1) Wild Cluster Robust Bootstrapped p values in parentheses

(2) Controls here include Lagged values of y, Dummy for Power and MP and Parliament Fixed Effects

(3) First Stage F statistics reported

TABLE 23: REDUCED FORM FOR CAMPAIGN EXPENDITURE (FULL SAMPLE)

	Expenses	Contributions	Total Transfers	Total Loans
Party Opinion Poll (Nanos)	-410.4	32.0	-1264.8	136.3
	(0.32)	(0.80)	(0.17)	(0.19)
Controls	Yes	Yes	Yes	Yes
Politician FE	Yes	Yes	Yes	Yes
Parliament FE	Yes	Yes	Yes	Yes
Observations	399	399	374	122

(1) Wild Cluster Robust Bootstrapped p values in parentheses

(2) Controls here include Lagged values of y, Dummy for Power and MP and Parliament Fixed Effects

TABLE 24: REDUCED FORM FOR CAMPAIGN EXPENDITURE (LESS THAN 25%)

	Expenses	Contributions	Total Transfers	Total Loans
Party Opinion Poll (Nanos)	-894.8**	234.9	-1945.8*	-3.06
	(0.05)	(0.32)	(0.07)	(0.99)
Controls	Yes	Yes	Yes	Yes
Politician FE	Yes	Yes	Yes	Yes
Parliament FE	Yes	Yes	Yes	Yes
Observations	183	183	168	44

(1) Wild Cluster Robust Bootstrapped p values in parentheses

(2) Controls here include Lagged values of y, Dummy for Power and MP and Parliament Fixed Effects