

Opportunistic, not Optimal Delegation: The Political Origins of Central Bank Independence

Abstract

Economists have long argued that central banks run by technocrats have greater policy independence from the government. But in many countries, politically experienced central bankers are at the helm, including those banks that are highly independent. To explain why, we develop a formal screening model where central bank nominees are screened for their political ambitions and show how screening and reelection efforts by the nominating official changes the level of policy discretion awarded to different types of candidates. We predict that technocrats get higher levels of policy discretion than nominees with political experience, but as the appointing official faces tougher reelection, those candidates with political experience get higher policy discretion as well. We test our theory using new data from 29 post-communist countries between 1990-2012. We find evidence that the reelection strategy of the nominating official is an important predictor of the level of policy discretion awarded.

Introduction

Economists have long argued that central bank independence (CBI) protects citizens from opportunistic governments. They believe that appointing a politically independent, technocratic central banker protects the economy from expectations driven inflation. Puzzling, however, is that while the level of central bank independence is increasing globally (Garriga 2016), we continue to see central bank governors (CBGs) with either past or future political experience. What explains the co-occurrence of central bank independence and politically experienced central bankers? What role, if any, do electoral risks facing the nominating official play in the delegation of monetary policy and the granting of policy independence?

In the standard explanation for central bank independence, the government gives up monetary policy discretion to independent experts with inflation aversion (Barro and Gordon 1983; Rogoff 1985; Bodea and Higashijima 2017) so as to commit to credible low inflation.¹ Research suggests that delegation works best in democracies (Broz 2002; Bearce and Hallerberg 2011; Bodea and Higashijima 2017), although, even in non-democracies, handing over monetary authority to bureaucratic experts, or technocrats, can help save the economy from economic cycles, especially if power is shared with elites through dominant parties (Shih 2008; Bodea, Garriga, and Higashijima 2017). With its focus on credibility, previous explanations of CBI ignore the possibility that central bankers themselves may have ambitions for elected office and consequently, those appointing CBGs have incentives to screen candidates for electoral as well as policy preferences. For example, we observe a number of cases where the heads of even highly independent central banks have previously ran in and won elections. In the Czech Republic, the first governor of the newly independent central bank, Josef Tošovský, also served as the country's prime minister in 1998, subsequently going back to head the central bank until 2000. Later on, the CBG, Jiří Rusnok acted as the country's prime minister from 2013 to 2014 (Petříček 2016). Furthermore, at times, central

¹But see Ainsley (2017), which suggests that delegation to inflation-averse bankers is suboptimal.

bank appointments to candidates with political backgrounds coincide with *increases*, not drops, in monetary policy discretion. For example, in Ukraine in 2010, CBG Volodymyr Stelmakh was pressured to resign to make way for Serhiy Arbuzov, yet, at the time of Arbuzov's appointment, formal central bank independence *rose* rather than declined.² Arbuzov went on to have a prominent political career, serving as vice-prime minister and then prime minister following his stint at the National Bank of Ukraine (Dpa International 2010; BBC Monitoring: International Reports 2011).

We argue that in addition to their policy-preferences, the threat that CBG candidates pose to the appointing incumbent's reelection chances affects the level of policy discretion granted. In particular, the level of policy independence a central banker is awarded depends on how easy or hard it is for the appointer to identify a CBG candidate as a likely electoral threat. In the case of relative uncertainty, the incumbent expends efforts towards reelection in order to deter candidates from disguising their political ambitions. Given information that a candidate may indeed be striving for political office, for example, by having held a political position in the past, the appointer will delegate less policy independence to the CBG. Yet, as the nominating official becomes either more certain that she faces an electorally more ambitious pool of candidates or alternatively, higher costs of winning reelection, screening candidates for additional information about their possible electoral threat becomes less efficient for the incumbent. Thus, whereas before the appointer committed extra campaign resources towards fending off politically unambitious candidates to dissuade ambitious candidates, now she expends relatively less effort to counter politically ambitious candidates meanwhile delegating relatively more policy independence to even politically ambitious candidates.

Our main empirical expectation is that under conditions of electoral competition and incumbent reelection, CBGs with political experience are awarded higher levels of policy discretion than the same candidates would be when the appointer is more electorally secure. We test our

²According to measures from Bodea and Hicks (2015), CBI rose from 0.71 to 0.87 in the year of Arbuzov's appointment.

argument using original data from 29 post-communist countries between 1990 and 2012. As the main dependent variable, we measure policy discretion a number of ways including rules allowing independent policy-making, establishing formal restrictions on lending to the government, and a composite measure of CBI used frequently in the literature (Garriga 2016). We find that after governors with political experience have been appointed, their central banks become less limited in lending to governments and less independent in their rules of policy-making. Yet, as elections become more competitive and the appointing incumbent is reelected, the negative gap in policy discretion between those governors with and without political experience narrows. This finding is consistent with our argument that incumbents reduce the level of candidate screening for political aspirations when facing more competitive elections.

Our findings offer a new explanation for the puzzle of why we observe both central banks that are highly independent yet are also staffed with politically experienced CBGs. We show that any discretion premium that technocrats receive on account of their political inexperience attenuates as the incumbent becomes more electorally vulnerable. Our theory adds to the literature by showing how institutional independence may be compromised by the electoral strategies of the appointer. Thus, our theory aligns well with a growing literature showing the opportunistic use of bureaucratic institutions by leaders (Alesina and Tabellini 2007; Gandhi and Lust-Okar 2009; Svobik 2009).

The Political Origins of CBI

Previous explanations for CBI usually center on domestic factors, such as policy preferences and partisanship; the role of democracy and democratic institutions; the solving of political business cycles (see, e.g., Kydland and Prescott 1977; Barro and Gordon 1983; Chang 2003; Bearce and Hallerberg 2011; Alesina, Roubini, and Cohen 1997); or the role of international organizations, private capital markets, and pressures for reforms by internationally linked epistemic communities (Gray 2009; Johnson 2016; Maxfield 1998; Santiso 2013; Giesenow and Haan 2019). Even in non-democracies, Shih (2008), shows how Chinese party cadres are willing to hand over monetary

policy to an elite faction that does not want to expand the monetary base and trigger short term growth, but do so only when the economy is doing poorly.³

Even if governments would prefer control of the money supply, the economic and political benefits of monetary delegation often compel them to delegate. Besides reducing expectations-driven inflation, delegation of monetary policy to an autonomous central bank can help stabilize coalitions with diverse policy preferences (Crowe 2008); can restrain deficit spending (Bodea and Higashijima 2017); and can reduce information asymmetries between legislators, coalition partners, and government officials. Such latter achievements are also associated with the quelling of costly domestic conflicts between factions or rivals (Bernhard 1998; Treisman 2000).

In addition to these institutional accounts, scholars also highlight the personal attributes of central bankers and the role that their individual backgrounds might play. In Kaplan (2017), left-leaning parties use information about the educational background of central bankers to infer their policy preferences and find that left governments appoint mainstream economists but only when the economy is doing poorly. Similarly, in Johnson (2016), incumbents use information about careers in international organizations (IO) to determine preferences. Actors with IO experience are expected to hold loyalties to global epistemic communities, which skews their preferences towards their international peer group. Similarly in Adolph (2013), central bankers' future career aspirations can affect their policy preferences today with those interested in a future career in finance demonstrating more inflation aversion.

While the aforementioned literature finds that candidates are likely screened for their policy preferences, to our knowledge, previous research ignores whether (or when) candidates are screened for political ambitions. Furthermore, no research to our knowledge examines how screening for political ambition may affect the level of policy discretion awarded. Yet, in looking at countries around the world, it is important to note that members of the professional class often play multiple roles, including holding both elected and appointed office during one's career, espe-

³For a good review, see Goodman (1991) and Fernández-Albertos (2015).

cially in countries transitioning to democracy.⁴ Indeed, while central bankers in most developed countries seem uninterested in running or winning elections, there is little evidence that electoral disinterest applies to post-communist countries.⁵ According to the biographies of CBGs in post-communist countries, which is the sample of countries we focus on in this paper, between 1990 and 2012, 76 out of 160 (47%) central bankers acted as politicians before taking the helm of the country's central bank. Figure 1 shows both the increase in CBI and also variation in the proportion of technocrats (operationalized as having had vocational experience exclusively outside of government) versus politicians (operationalized as vocational experience inside of government) appointed as central bank governor (CBG) in post-communist countries since transition. Even more puzzling is that while the number of central bankers with political experience and those that do not has stayed relatively constant over time, CBI has risen, and it has risen at a faster pace for those with political experience. These two trends, the relatively constant share of technocrats and the increase in the level of CBI awarded to CBGs with political experience suggests that something in addition to merely screening candidates for their economic policy preferences is at play. We offer a theoretical model that suggests that the electoral contest facing the nominating official is one possible explanation for these trends.

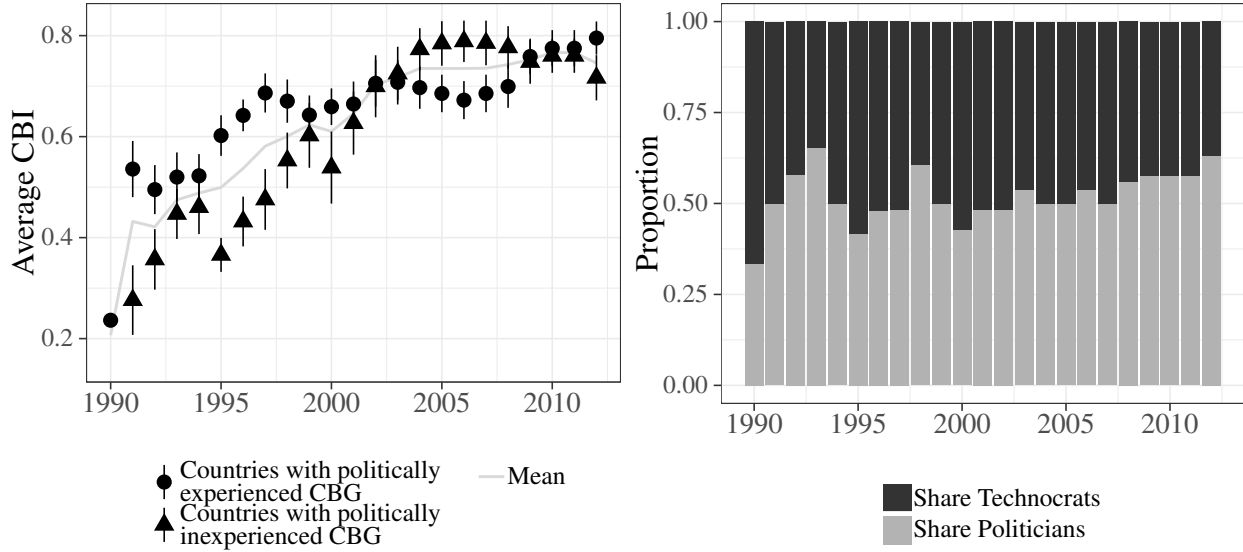
Theory

Before moving on to present the formal theoretical model, first let us consider the set up. Consider a simple, two actor screening model where a principal, in this case a political incumbent with appointment powers to the central bank, has imperfect information about a front-runner candidate's political ambition. Whereas previous models employ the distinction between electoral and career concerns mechanisms that hold policy-makers accountable from a normative perspective (Alesina

⁴For recent exceptions, see Johnson 2016; Shih 2008; Kaplan 2017

⁵Note however that even in the U.S., the possible appointment of Herman Cain to the Federal Reserve is noteworthy as Cain competed in the 2012 Presidential election. "Trump Considering Herman Cain for Federal Reserve Board, Sources Say," Bloomberg, January 31 2019. Similarly, Finish Central Bank Governor Olli Rehn was also previously Minister of Economic Affairs.

Figure 1: CBI and Political Appointments



and Tabellini 2007), we focus on the consequences of uncertainty over which mechanism applies to a given candidate. Political ambition can thus be interpreted as the factors determining an individual's career path such as electability and personal motives.⁶ We present our theoretical argument in three stages. Firstly, we consider a simple principal-agent model in which an incumbent leader needs to appoint a central bank head. In doing so, she wants to ensure her own reelection and also wants to give up as little policy discretion to the candidate as possible. Assuming the leader is assessing a single candidate for the job, she needs to decide both the optimal level of policy discretion she should award the candidate as well as sufficiently invest in her reelection strategy against the candidate should he turn out to be a formidable political rival in an election. To simplify the model, we assume that the leader only considers the front-runner candidate and any selection criteria besides the political ambitions of the candidate occurred previously.⁷ We also assume that the candidate's political ambitions are less well known to the leader than they are to the candidate.

⁶While our focus is on individuals, the model could also be interpreted as groups, such that the leader represents the incumbent group or faction and the candidate, a challenging group or faction.

⁷We do not have lists of the possible pool of candidates nor measures of their policy preferences, so we assume that the appointed front-runner in any candidate-list meets the leader's policy criteria at some early stage.

While the leader can use observable information about the candidate's past career to infer his political ambitions, the leader remains, however, only imperfectly informed. The key question that the leader then asks is how do I both ensure my reelection meanwhile limiting the amount of policy discretion awarded to the candidate?

Secondly, we show how the appointer (she) can prevent the candidate (he) from misreporting his true type by making discriminating offers. More specifically, the leader presents the candidate with a menu of appointment offers with a different set of policy discretion, d and re-election efforts, e , committed to different realizations of the candidate's type. We show that in equilibrium, the leader offers discriminating offers in order to induce the candidate to reveal his true type. Intuitively, this means that the leader's optimal mechanism rewards different types of candidates differently. By promising greater discretion to the technocrat, the leader can deter those that are politically ambitious from misreporting their type, as they are more interested in elected than appointed office. In the end, types of candidates are separated and policy discretion is, holding all else constant, higher for the technocrat than the contender.

Thirdly, while the candidate's political ambitions are unknown, their previous career path is observable to the leader. Therefore, we compare the leader's offer to the candidate when the leader observes prior political experience and when she does not. Since politically experienced candidates are also those candidates more likely to be interested in electoral politics, the leader wants to grant less policy discretion to a politically experienced candidate. Working in an opposing direction, however, as the candidate becomes more electorally motivated, the leader has less incentive to invest in screening the candidate because any information gained through candidate screening is less efficient. Thus, as either the electoral arena becomes more competitive or the exogenous pool of possible candidates becomes, on average, more electorally threatening, the level of discretion awarded to even those candidates with political experience converges towards those without political experience.

The Model

Formally, consider a situation where a leader (L) needs to appoint a nominee (K) to the central bank.⁸ Importantly, the candidate is both the leader's agent and also a possible rival in an election. We assume that different candidates have different relative expected valuations for holding political office, f and policy office, p . To keep our model general, we model these valuations as functions of three inputs: Candidate K 's preference for holding office, $\theta > 0$, the Leader L 's campaign efforts towards reelection $e \in [0, 1]$ and the amount of discretion she grants the candidate $d \in [0, 1]$. We call a candidate with relatively little interest in holding elected office a *Technocrat* and a candidate with a stronger interest in political life a *Contender*.

We make a number of assumptions in order to keep the model simple. First, as mentioned, we assume that the leader considers the list of candidates in order and each candidate independently starting with the front-runner. Second, rather than have a continuum of candidate types, we assume that K can only be of two types: policy seeking ($\underline{\theta}$) or office seeking ($\bar{\theta}$) and that K 's political ambition, or type, is private information known only to the candidate. We also assume that contenders always have a larger elected office value than technocrats, so that $f(e, \bar{\theta}) > f(e, \underline{\theta})$ for all $e(\theta) > 0$.⁹ Third, we assume that there is a positive relationship between policy discretion, effort, and the candidate's expected influence over policy.¹⁰ We assume that the leader's own valuation of holding office, $o(e)$, is increasing in her campaign efforts.¹¹ Fourth, we also assume that while the leader cannot perfectly observe the candidate's type, the leader can observe the candidate's previous career.¹² From observing the candidate's previous career path, the leader can derive (imperfect) information about whether the nominee is a technocrat or a contender.¹³ Finally, we

⁸We use K as the nominee so as not to confuse him with a contender.

⁹We also assume that K 's elected office value is continuous, twice differentiable, and decreasing in the leader's campaign effort so that $\frac{\partial f}{\partial e} = f_1 < 0$ and $\frac{\partial f}{\partial^2 e} \geq 0$.

¹⁰ $p(e, d)$, increases such that $\frac{\partial p}{\partial e} > 0$ and $\frac{\partial p}{\partial d} > 0$.

¹¹ $\frac{\partial o}{\partial e} = o_1 > 0$.

¹² $\pi \in \{0, 1\}$, where $\pi = 1$ indicates that the candidate has held a political office before. Let $\Phi(\pi)$ be the probability that a nominee turns out to be a contender conditional on his past political career or $\Phi(\pi) = P(\theta = \bar{\theta} | \pi)$.

¹³A contender had incentives to enter into politics prior to becoming a candidate for the central bank governorship.

also assume that there is a positive relationship between pre-election campaign efforts exerted by the leader and the number of votes cast for the leader in the election. We assume the nominee's own effort in winning the election is strategically independent of the leader's effort.¹⁴ Importantly, however, as the leader faces a more politically ambitious candidate, she expends less campaign effort, which results in a closer election outcome. The reverse is also true.¹⁵ The implication of this mapping of effort to vote share is to ensure that more ambitious nominees are associated with narrower vote margins and that less ambitious nominees are associated with wider vote margins without making the model more complicated, for example, by including an election stage.

Equation (1) shows K 's payoff. K 's utility increases in the expected office valuation and the expected valuation of policy influence if he accepts the appointment. In the case where he rejects, K receives a reservation utility, $r > 0$.

$$u_K(d, e, \theta) = \begin{cases} f(e, \theta) + p(e, d) & \text{if K accepts} \\ r & \text{if K rejects.} \end{cases} \quad (1)$$

Similarly, L 's payoff is given in equation (2).

$$u_L(d, e, \theta) = \begin{cases} o(e) - p(e, d) - c(e) & \text{if K accepts} \\ 0 & \text{if K rejects} \end{cases} \quad (2)$$

Similar to the connection between latent productivity and education level of workers in job-market screening models (Spence 1973), political ambitions may influence a nominee's previous career path. Contenders incur less costs of choosing a career path involving politics or have less prospects in career paths outside politics.

¹⁴Although modeling the candidate's campaign response would have produced a more intuitive implication for effort, this is not the mechanism driving our result and so we simplify this stage.

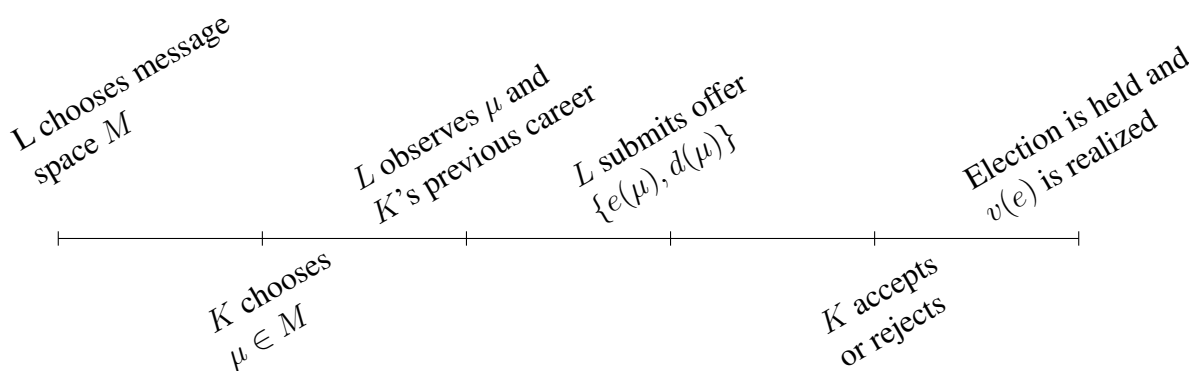
¹⁵While perhaps counter-intuitive, if the opponent that an incumbent faces is less ambitious, this encourages the leader to invest more in the campaign efforts, ensuring more votes. Alternatively, stronger candidates discourage the leader from investing and as a result, increase the odds of unseating the incumbent by reducing the number of votes cast for the incumbent. Formally, we define the electoral vote-margin, v , as a function of the leader's campaign efforts, $v(e)$, so that $\frac{\partial v}{\partial e} > 0$ and $\frac{\partial v}{\partial e^2} < 0$ with $v(e) \in [0, 1]$.

Like K , L 's payoff increases in the expected office valuation o but unlike K , decreases in the level of discretion awarded. In other words, the leader would like to win the election, award little discretion, and expend effort efficiently. To keep things simple, we normalize the leader's reservation utility to zero in the case where the candidate rejects.¹⁶ Lastly, we assume that campaign efforts are increasing at an increasing rate.¹⁷

Game Sequence

The game sequence is depicted in Figure 2. Unaware of the candidate's political ambition, the leader's choice depends on a costless message, sent by the candidate, about his type. First, the leader chooses a message space, M , from which the candidate, K , chooses to report his type, $\mu \in M$. Having observed K 's message, L makes K an offer to become central bank governor, with the offer consisting of a level of policy discretion $d(\mu) \in [0, 1]$ and campaign effort $e(\mu) \in [0, 1]$. Importantly, we assume that the leader is committed to this offer and discretion and campaign efforts are offered simultaneously as a "take it or leave it" deal. The candidate then accepts or rejects the leader's offer. We solve the game for perfect Bayesian equilibria (PBE) in pure strategies.

Figure 2: Model Sequence



¹⁶This can be interpreted as a base-loss from leaving the post open or from having to appoint a less able individual.

¹⁷ $c(e)$ with $c(0) = 0$, $\frac{\partial c}{\partial e} = c_1 \geq 0$ and $\frac{\partial^2 c}{\partial e^2} = c_2 \geq 0$

Equilibrium

A key concern of the leader is that both *Technocrats* and *Contenders* may benefit from misreporting their type. If the leader makes a one-size-fits-all offer, both types of nominees may have an incentive to try to extract more concessions from the leader.¹⁸ Following the revelation principle (Myerson 1979), we focus on characterizing a direct truth-telling mechanism i.e. an offer menu that depends on the true types of candidate K . We simplify notation so that $d(\underline{\theta}) = \underline{d}$, $d(\bar{\theta}) = \bar{d}$, $e(\underline{\theta}) = \underline{e}$ and $e(\bar{\theta}) = \bar{e}$ and find that the candidate reports truthfully as long as the leader's offer satisfies the following constraint for each type:

$$u_K(\underline{d}, \underline{e}, \underline{\theta}) \geq u_K(\bar{d}, \bar{e}, \underline{\theta}) \quad (\underline{IC})$$

$$u_K(\bar{d}, \bar{e}, \bar{\theta}) \geq u_K(\underline{d}, \underline{e}, \bar{\theta}) \quad (\bar{IC})$$

These constraints are important for uncovering the equilibrium outcome given the cases of reported types shown in the next section.

Case 1: Candidate Reports to be a Technocrat

We first establish L's equilibrium offer if the nominee claims that he is a technocrat. Since L always prefers that K accepts her offer, she needs to make an offer that is larger than the candidate's reservation utility. As the candidates can be of two types, this implies that the offer must be greater than the reservation utility for both types, or:

$$f(\bar{e}, \bar{\theta}) + p(\bar{e}, \bar{d}) \geq r \quad (\bar{P})$$

$$f(\underline{e}, \underline{\theta}) + p(\underline{e}, \underline{d}) \geq r \quad (\underline{P})$$

¹⁸In the appendix we show how the leader always gains by preventing the nominee from misreporting.

In conjunction with the truth telling constraint listed above, \overline{IC} , \underline{P} implies that,

$$f(\bar{e}, \bar{\theta}) + p(\bar{e}, \bar{d}) \geq r + f(\underline{e}, \bar{\theta}) - f(\underline{e}, \underline{\theta}). \quad (3)$$

Two implications follow from equation (3). First, if an offer is acceptable to a technocrat, it will also be acceptable to a contender. Second, a technocrat always receives exactly his reservation utility in the form of some combination of campaign effort and policy discretion.¹⁹

Case 2: Candidate Reports to be a Contender

Next, we consider the leader's equilibrium offer if the candidate reports that he is a contender. Intuitively, the leader, not being able to observe the candidate's political ambition, is concerned that the candidate might misreport his type. In order to prevent misreporting, the leader must therefore implement an offer strategy that balances the commitment of campaign efforts on the one hand and the delegation of policy discretion on the other hand while minimizing the information advantage that the candidate has over the leader. The leader's equilibrium offer reflects these trade-offs.

First, we find that the leader grants more discretion to a candidate reporting to be a technocrat than to a candidate reporting to be a contender.²⁰ As effort is increasing in discretion, nominees who are technocrats also face more campaign efforts devoted by the leader. Second, any additional effort exerted towards a technocrat is increasing in the leader's prior belief that the nominee is a contender.²¹

Proposition 1

¹⁹How campaign effort and policy discretion relate in equilibrium depends on the relative size of his reservation utility, r , and the value that he places on holding elected office.

²⁰This can be verified by evaluating $p(\bar{d}^*, \bar{e}^*)$ in light of the implication $f(\bar{e}^*, \bar{\theta}) > f(\underline{e}^*, \bar{\theta})$ from Proposition 1 and our assumption $f(e, \bar{\theta}) > f(e, \underline{\theta})$.

²¹This is true as long as $f_1(\underline{e}^*, \bar{\theta}) > f_1(\underline{e}^*, \underline{\theta})$, which holds by our assumption that a contender values elected office more than a technocrat does.

In equilibrium, the leader's offer, e^* , d^* satisfies discriminating offers:

$$\begin{aligned}
 f_1(\bar{e}^*, \bar{\theta}) &= c_1(\bar{e}^*) - o_1(\bar{e}^*) & p(\bar{d}^*, \bar{e}^*) &= r - f(\bar{e}^*, \bar{\theta}) \\
 f_1(e^*, \underline{\theta}) &= c_1(e^*) - o_1(e^*) & &+ f(e^*, \bar{\theta}) - f(e^*, \underline{\theta}) \\
 &+ \frac{\Phi}{1 - \Phi} (f_1(e^*, \bar{\theta}) - f_1(e^*, \underline{\theta})) & p(\underline{d}^*, e^*) &= r - f(e^*, \underline{\theta})
 \end{aligned}$$

Importantly, while the leader cannot observe the true political ambitions of the candidate, she can observe his prior career-path. One important question, therefore, centers on how information about the nominee's prior experience affects the relationships above?

Proposition 2

If the leader's expected value of holding office is sufficiently high, she offers less discretion to a candidate with political experience.

$$\frac{\partial p(\bar{e}^*, \bar{d}^*)}{\partial \Phi} < 0 \text{ if } o(e^*) > 2 \frac{\partial f(e^*, \bar{\theta})}{\partial \Phi} - f(e^*, \bar{\theta}) - c(e^*)$$

The intuition behind Proposition 2 is shown by examining the composition of the equilibrium level of policy discretion. Consider the equilibrium discretion choice from Proposition (1):

$$p(\bar{d}^*, \bar{e}^*) = r - f(\bar{e}^*, \bar{\theta}) + \underbrace{f(e^*, \bar{\theta}) - f(e^*, \underline{\theta})}_{\text{Information Rent}} \tag{4}$$

The key reason why the leader makes discriminating offers based on types is that the contender can extract more policy discretion from the leader if he exploits his information advantage. In order to protect against this, the leader tries to minimize the amount of discretion granted by extending discriminating offers. The leader exerts more campaign effort against the technocrat in order to make it less attractive for a contender to misreport. However, the leader needs to compensate the technocrat to ensure that he accepts the appointment, and in doing so, offers the technocrat greater policy discretion. Intuitively, this means that the technocrat is awarded more policy discretion as a

function of the leader wanting to *deter contenders* and that this relationship holds independently of any personal characteristics that the technocrat may have, such as his policy preferences, besides being more interested in policy-making than holding elected office.

Now we move to the second part of the theory and consider how the leader's offer changes if she observes that the candidate had a political career. Prior observable information about the candidate changes how much the leader needs to discriminate in her offers. She does this such that any information rent that the candidate may enjoy – the material advantage that arises from him knowing something the leader does not – is minimized. Thus, as long as the leader's own reelection value is sufficiently high, the leader will grant less discretion to candidates with a previous political career.

Next we ask how the above relationship changes as a function of the leader's effort. Here we find:

Proposition 3

As long as it is sufficiently likely that a candidate turns out to be a contender, the discriminating effect increases in size as the leader exerts more effort.

$$\frac{\partial p(\bar{e}^*, \bar{d}^*)}{\partial \Phi \partial e^*} < 0 \text{ if } \frac{\partial f_1(\underline{e}^*, \underline{\theta})}{\partial \Phi} < \frac{f_1(\underline{e}^*, \bar{\theta}) - f_1(\underline{e}^*, \underline{\theta})}{(1 - \Phi)^2}$$

Proposition 1 implies that as the probability of being a contender increases, the leader expends more campaign effort towards a technocrat than she would under conditions of perfect information. As the leader is more sure that she actually confronts a contender, she increases campaign efforts towards technocrats in order to increase the contender's payoff if he should tell the truth. However, since the leader needs to compensate the technocrat for this distortion in his offer, the payoff a contender could realize from cheating can increase as well. The intuition for Propositions 2 & 3 is similar. If the information provided by a past political career and subsequently the effort expended towards campaigning effectively reduces the contender's information rent, the leader grants less

discretion to a candidate with a prior political career and will do so to a larger extent the less fierce the reelection campaign.

Model Implications

For the purpose of illustration, we now specify functional forms to generate comparative statics of how the leader's information problem affects the level of discretion the leader grants to the candidate.²² We also show how the level of discretion offered to the candidate changes as the leader's effort towards ensuring her reelection increases and decreases.

Our model predicts a negative relationship between policy discretion and political experience. While such a negative relationship is consistent with prior research, the mechanism driving the relationship is new. In previous theories, technocrats are granted greater discretion because of their presumed policy biases for lower inflation, which enables the government to credibly commit to low inflation. Our model gives an alternative explanation. The leader uses the technocrat opportunistically so as to secure her own political power. She does this by deterring possible political opponents from pretending to be interested in policy-making. This is important as it implies that any additional policy discretion awarded to technocrats is not only due to inflation averse policy preferences of the technocrat but may also result from lower electoral risks for the incumbent. Another way of saying this is that by granting technocrats more policy discretion, the incumbent creates an entry barrier to political markets, blocking possible political challengers from entering either elected or appointed office. In sum, policy independence can be used as a mechanism to secure the political power of the appointer rather than (or in addition to) ensuring credible commitment.

Second and related, we also find that the above entry-blocking strategy is less effective the

²²For simplicity, we assume linear expected value functions $f(e, \theta) = (1 - e)\theta$, $p(e, d) = ed$ and $o = eo$. We also assume a quadratic cost function for effort, $c(e) = e^2$. Further, we assume a positive linear relationship between the leader's effort e and the electoral vote-margin, $v(e) = e$. Lastly, let $\{\bar{e}^*, \bar{d}^*\}$ $\{e^*, d^*\}$ be the leader's equilibrium offers and \bar{d}_Φ^* , d_Φ^* the change in discretion d offered to a technocrat and a contender due to observing that the nominee has past political experience, Φ .

more formidable the candidate. The more electorally competitive the electoral contest, the less efficient it is for the incumbent to spend on screening. One observable implication from our model, therefore, is that any increase in electoral competition, either due to exogenous increases in costs or alternatively, an exogenous change in the candidate pool, means that even those nominees with political experience are *more* likely to control greater policy discretion than when electoral competition is lower.

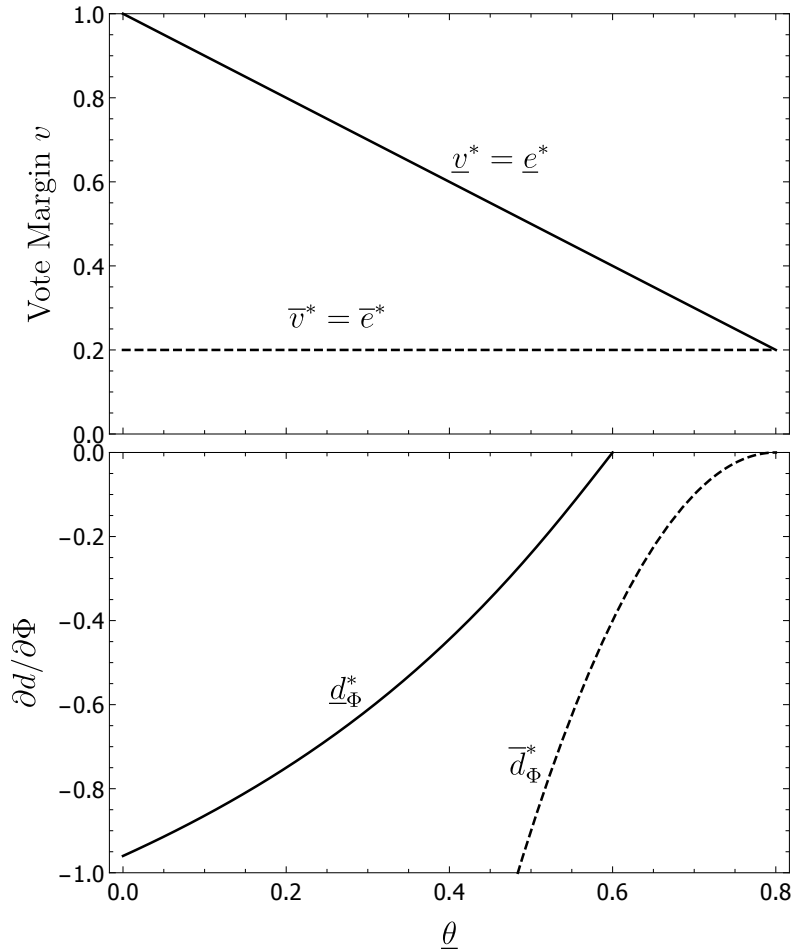
Figure 3 illustrates the two central results of our model graphically. First, given our assumptions, the leader always offers less discretion to the nominee after having observed that he has previous political experience. What this means in terms of our model is that \underline{d}_Φ^* and \bar{d}_Φ^* are both negative. As noted previously, to a leader, a political career indicates that she is more likely to face a contender, so it is less important to the leader to learn about the candidate's political ambitions by investing in screening. Thus, when facing a politically experienced candidate, the leader needs to threaten less campaign resources in order to learn about the candidate's true ambitions. Along with not having to pay the cost for extracting information, it also lowers the discretion payoff granted to the contender and lowers the discretion payoff granted to the technocrat. Furthermore, this result holds generally, as long as the candidate's outside option is more valuable than the technocrat's elected office value ($\underline{\theta} < r < \bar{\theta}$).

Second, the negative effect of having a political career declines in size as the leader faces a closer margin of victory. As noted in Proposition (3), this attenuation effect is conditional on how any additional information affects the contender's information rent. For example, if the electoral arena is becoming more competitive because the pool of candidates begins to pose a more serious electoral threat to the leader, even politically experienced candidates will receive higher offers of discretion.²³

In summary, the theoretical model predicts a negative relationship between political experi-

²³This result generalizes to any parameter value of α , $\bar{\theta}$ and Φ . For the case that the candidate reports to be a technocrat (solid line), the effect is also negative so long as $\underline{\theta} < r < \bar{\theta}$.

Figure 3: The Effect of Political Experience on Discretion



Note: The figure shows equilibrium changes for the functional forms of f, p and o as shown in the appendix, assuming $r = 0.6, o = 1.2, \bar{\theta} = 0.8$, and $\Phi = 0.5$

ence and policy discretion. Because the expected relationship is the same as existing competing mechanisms, however, finding a negative relationship between political experience and policy independence is necessary, but not sufficient, evidence of our theory. The second expectation is that the leader's deterrence strategy is less effective (and less attractive) to the leader the more politically viable the candidate. Consequently, we also expect to observe attenuation in the gap of policy discretion awarded to technocrats and contenders as the electoral vote margin narrows and when the incumbent secures her reelection and not otherwise. This is because, according to our model, the leader always offers the candidate an offer that he will accept. This implies that rather than be

replaced, leaders survive in office. The conditional hypothesis that we take to the data therefore is that: *Conditional on the incumbent staying in power, as the leader's margin of victory decreases, the level of policy discretion offered to those candidates with political experience increases.* Before moving to the data, the next section briefly outlines alternative explanations.

Alternative Explanations

It is important to keep in mind that our model hinges on the level of policy discretion offered to potential contenders increasing as electoral competition rises. Several competing dynamics and rival explanations in explaining policy discretion must also be taken into account.

As mentioned, the traditional economic explanation is that the level of policy independence of a nation's central bank is positively associated with staffing by technocrats and negatively associated with those individuals with past (or future) political experience. According to this view, changes to policy discretion will be independent of electoral contests, as each rival party has the incentive to constrain future governments from using the central bank opportunistically. Consequently, we should not observe policy discretion co-varying with election outcomes nor should it matter whether the incumbent stays in power or is replaced. Alternatively, according to our argument, the incumbent grants more policy discretion to candidates with political experience when elections become more competitive and the incumbent retains her seat. In the empirical section that follows, we directly test these competing predictions by focusing on whether or not there is variation in the effects of political experience on policy discretion across cases when the incumbent is reelected.

Another alternative mechanism is that the level of policy discretion might be associated with international rather than domestic level factors. Additional international dynamics were also at play in Central and Eastern Europe during the time period of our analysis. For a start, after the fall of the Berlin Wall, international organizations had a strong direct and indirect influence on post-communist countries (Polillo and Guillén 2005). Many of those states had aspirations of joining the European Union (EU), and a sound monetary policy was an explicit requirement of

EU accession. The International Monetary Fund also conducted several stabilization programs in Eastern Europe after the end of the Cold War. Many countries we examine also adopted exchange-rate pegs after the fall of the Berlin Wall. Some — like the Baltic countries — did so in anticipation of admission to the eurozone, while others — including Bulgaria — imposed a peg as a measure to fight inflation. A fixed exchange rate can in principle ameliorate the need for an independent central bank (Bodea 2010). To account for this, we include a model controlling for exchange rate regimes and EU membership and candidacy and we report these findings, which are similar to our main findings, in the appendix. Similarly, another explanation is that career experience in international organizations (IOs) rather than electoral threats matters for policy discretion (Johnson 2016). To account for this argument, we also include information on whether or not the CBG has previous career experience working in an IO.

Another rival explanation, and one that is perhaps most related to our argument, is that any “independence bump” that politically experienced candidates get as a consequence of more competitive elections is due to co-elites rewarding or buying-off other elites for their support rather than strategic choices that incumbents make as a consequence of variation in investing in information about candidates. Intuitively, however, one would expect that it would be easier for incumbents to buy-off contenders with more policy discretion when electoral competition is low rather than high. As power becomes more closely shared by rival factions or competing elites, compromise candidates rather than favoured candidates are more likely granted greater autonomy (Boix and Svobik 2013). Unfortunately, as the partisan information of the CBG is limited to non-existent for almost all of these countries, we tackle this alternative explanation by examining variation in effects for those candidates with legislative experience as parliamentarians compared to those candidates with only executive branch experience. Our expectation is that we should observe stronger effects for candidates with political experience in the legislature than those with experience in the executive branches of government if our theory is correct, as parliamentarians are more likely contenders for political office, whereas we should see no difference across the branches of government if buying-

off is at work. This is because buying-off co-elites could occur in both the parliament and the executive branches of government whereas electoral threats to the appointing official are likely to be strongest from former parliamentarians.

Data and Methodology

The post-communist countries represent an excellent sample to test the expected relationship between prior political experience, elections, and policy discretion. First, despite varying levels of wealth and economic conditions, all countries faced a need to undertake economic and political reforms around the same time (Frye 2010). This alone makes understanding the ways in which countries' central bank reform trajectories diverged worthwhile. Second, the paths that these countries took vary significantly over time and across countries (see also Johnson 2016). Some countries, such as Azerbaijan, Kazakhstan, Hungary, and Romania reformed in three steps, increasing their independence at each step. Not all countries show such a sustained upward trend, however. Countries such as Belarus and Macedonia also rolled back their level of discretion. Furthermore, the level of changes also varies, with some countries implementing dramatic increases in their central bank independence, such as Lithuania and the Ukraine, when compared to other countries, such as Moldova and Albania.

We develop a new dataset on monetary policy independence and biographical information of CBG career experience across time in 29 post-communist countries, between 1990 and 2012.²⁴ This new dataset includes measures of monetary policy independence, constraints on government borrowing, and a composite measure of CBI, as well as biographical information on all CBG appointments for those countries that were either Soviet republics, members of the Warsaw Pact, or held very close ties to the Soviet Union, such as Mongolia. To be consistent with previous literature, we follow the coding efforts of Hallerberg and Wehner (2017), who also code biographical

²⁴We consider Czechoslovakia as a separate country. Plots of the CBI variable for each country are given in the Appendix.

information for political actors (CBGs, Prime Ministers, Presidents, and Finance Ministers), although these authors consider the biographies of actors in OECD countries only. To do our coding, we hired three research assistants with Russian and English language skills to compile information from online sources such as official central bank websites, individual CVs, biographies, and Wikipedia. We code whether the individual has ever held a political post in any post-communist government or legislature. Thus, in our dataset, being politically experienced in the early 1990s means that an individual held a position in the transition government/legislature, not the communist regime.²⁵ As a result, this makes our key independent variable somewhat different from Hallerberg and Wehner (2017), however, we use the same coding rules as these authors for coding vocational experience.

Policy Discretion

Our main dependent variable is policy discretion. The aggregate CBI index commonly used in the literature is an average of four dimensions: personnel, policy objectives, policy tools, and limitations on lending to the government weighted according to the judgment of the initial authors (Cukierman 1992). We operationalize policy discretion two ways. First, we use the component “policy independence” from the index of *de jure* central bank independence in country j in year t , with the Cukierman (1992) measure, recently updated by Garriga (2016). This is the most direct test of our argument. As a second measure of policy discretion, we also examine whether or not the central bank has legal limitations on lending to the national government, “limitations on lending” from the same index. The idea is that the greater the policy independence and the larger the legal limitations for lending to the government, the more autonomous the central bank is from the government.²⁶ Since information on the previous vocational experience of the CBGs is not

²⁵As a robustness check, we distinguish between political experience before and political experience before and after the individual holds the central bank governorship. Our main tables report the results for those with previous political experience, however, the results are similar for both specifications.

²⁶For robustness, we also use the composite CBI index rather than just the two components listed above. The full index ranges from 0 (completely dependent) to 1 (completely independent), with a sample mean of 0.64 and a standard

included in the CBI index, we are confident that these measures are independent from our main explanatory variables.

Political Experience

Our key explanatory variable is whether or not the appointed CBG has past *political experience* or not. We define political experience as having held a career as a party official, campaigning or holding a political office via direct or indirect election, or holding an appointed office in one of the three branches of the government after 1990 or the first year of independence; this variable is coded 1 if yes to the above and 0 if no. In addition, we also code whether or not the appointed CBG's two significant vocational experiences involved working in a international organization. As above, *IO experience* is coded 1 if the individual has experience in an IO and 0 if not. Importantly, these two attributes are not mutually exclusive. Approximately half of the individuals that held previous careers in politics also have vocational experience working in an IO (52%). Those that do match on these attributes, however, held office for a relatively short period of time. Only in 5% of country-years with political appointments does the CBG also have experience working in an IO. For a proxy of policy ambition used as a robustness check in the appendix, we also code whether or not an individual holds a Ph.D. in Economics, which also represents a large share of those people in our sample (57 out of 162, or 35%).

Appointment Office

In our theoretical model, the political leader has direct appointment powers as well as control over the level of discretion awarded to the nominee. In order to best match our empirics with the theoretical model, we focus our attention to electoral contests for those positions where the political incumbent has the appointment rights for the CBG. To determine this, we collected information

error of 0.20. The main results show our findings with policy independence and limitations on lending and the index results are shown in the appendix, however, the results do not vary significantly.

from central bank laws, directories, websites and secondary sources to determine which leader gets to draft the initial nominee list for the central bank. Interestingly, we find significant variation in who gets to draft the initial list of nominee names across central banks in our sample. In 153 country-year cases, the initial appointment is made by parliament; in 393 country-year cases, the initial appointment is made by the president; and finally, in 43 country-year cases, the initial appointment is made by the prime minister. We drop 23 country-year cases in which the initial appointing government office is not clearly identifiable. These country-year cases include Georgia, where the suggestion for the CBG comes directly from the central bank board. We also drop all cases where the central bank law is not reformed and the country retains Soviet-era central bank governors.

In order to evaluate the relationship of interest both when the incumbent retains and loses her seat, we code the variable *appointment office* as 1 if the incumbent stays in office after an election and 0 otherwise. In determining the relevant incumbent, we consider the electoral contest for the leader who holds the CBG appointment office as mentioned above.²⁷

Campaign Effort

Our final main explanatory variable measures the leader's *campaign effort*. As we do not have a direct measure of a leader's efforts to win an election, we use as a proxy the margin of victory that the political candidate wins in the election. For legislative elections, we proxy effort with seat margins, or the difference in the number of seats won by the first and second most successful parties.²⁸ We then transform the variable, taking $1 - \text{seatmargin}$ such that electoral competition is higher (lower effort) when the seat margin is smaller and electoral competition is lower (higher

²⁷As a second specification, we also recode the *appointment offer* variable to distinguish between the incumbent staying in power, the incumbent replaced by intra-party turnover, and finally, the incumbent replaced by inter-party turnover and find no difference in the results and so present only the results using the binary measure where the same incumbent remains in power or not.

²⁸We use the seat margins for the parliamentary elections rather than vote margins because of greater data availability. However, our results hold irrespective of whether or not we use seat margins or vote margins.

effort) when the seat margin is larger. For those cases where the president rather than the legislature determines the CBG appointment, we use the difference in the number of votes between the first and second candidate in the first round of the presidential elections. As above, we transform this variable $1 - \text{votemargin}$, such that a smaller vote margin is again associated with higher competition (lower effort) and a larger vote margin with lower competition (higher effort).²⁹ The underlying data are from Coppedge et al. (2017), which aggregates election data from Europe and Asia (Nohlen and Stöver 2010; Nohlen, Grotz, and Hartmann 2001).

Other Variables

We also include a number of other variables to account for possible confounding factors. In order to control for the level of financial development or trust in the central bank, we include a measure of *contract-intensive money* (CIM). CIM reflects the proportion of money that is held in the official banking sector derived from a measure of the money supply (M2) (Clague et al. 1999). One interpretation is that CIM proxies the security of property rights (in this case, financial assets).

Previous literature finds that political institutions are essential to the proper functioning of CBI in democracies. As such, we also include a measure of *checks and balances* from the Database of Political Institutions (Beck et al. 2001). As in Keefer and Stasavage (2003), we expect the level of checks to be positively associated with higher levels of policy discretion.

The degree of urbanization may affect the level of prices and also the demand for independent economic institutions. Therefore, we include the share of the population living in urban areas, *urban population*, from the World Bank's World Development Indicators (WDI). Like the above measures, we also expect this variable to be positively associated with higher levels of CBI.

In order to account for important explanations based on social networks and peer groups, such as a epistemic links with colleagues working international institutions, we also include the variable,

²⁹There are a few cases with the vote margin is larger than one in our dataset. This is due to cases where candidate B in the first round received less votes than candidate A, but in subsequent rounds, received more votes than candidate A.

international organizations. This variable accounts for whether or not the CBG’s two professional positions prior to appointment included working in an IO. Our expectation is that this variable is also positively associated with higher levels of policy discretion.

We include a measure of the country’s growth rate from the WDI, which we expect matters for both the level of policy discretion as well as for the competitiveness of the election, *gdp per capita growth*. We also include a model controlling for EU membership and candidacy and also Ilzetzki, Reinhart, and Rogoff (2017)’s coarse measure of a country’s exchange rate regime.

Finally, there is an obvious upward trend in our CBI index variable over time. We follow the strategy employed by Marsh and Mikhaylov (2012), who, in studying the Irish economic crisis, include a *time* count variable. This variable starts at the beginning of our sample (1990) and goes up incrementally by 1 unit until the end of our sample (2012).³⁰

Model Specification

In order to test our hypotheses, we estimate three models, with each iteration increasing in structure: a pooled model (1), a country fixed-effects model (2) and a country fixed-effects model with an assumed AR(1) process (3).³¹ Model (2) is specified as:³²

$$y_{j,t} = \alpha + \beta_1 PA_{j,t} + \beta_2 EC_{j,t} + \beta_3 AO_{j,t} + \beta_4 (PA_{j,t} * EC_{j,t} * AO_{j,t}) + \beta_5 (PA_{j,t} * EC_{j,t}) + \beta_6 (PA_{j,t} * AO_{j,t}) + \beta_7 (EC_{j,t} * AO_{j,t}) + \beta_8' X_{j,t} + \theta_j + \epsilon_{j,t}$$

³⁰As another specification, we also subtracted the global mean level of CBI from the dependent variable and re-ran the analyses; the simple time trend seems to work more effectively at removing the trend, and so we report these and other robustness exercises in the supplementary appendix.

³¹Model 3 addresses potential serial correlation of type AR(1) using a two-step Prais-Winsten feasible generalized least squares (FGLS) procedure with panel-specific autocorrelation coefficients. We estimate the model $y_{j,t} = \alpha + \beta_1 PA_{j,t} + \beta_2 EC_{j,t} + \beta_3 AO_{j,t} + \beta_4 (PA_{j,t} * EC_{j,t} * AO_{j,t}) + \beta_5 (PA_{j,t} * EC_{j,t}) + \beta_6 (PA_{j,t} * AO_{j,t}) + \beta_7 (EC_{j,t} * AO_{j,t}) + \beta_8' X_{j,t} + \theta_j + \nu_{j,t}$, with $\nu_{i,t} = \rho_i \nu_{i,t-1} + u_{i,t}$ assuming that $u_{i,t}$ is white noise.

³²The shares of missing values in our data range between 0 and 19%, which leads to the listwise deletion of 386 country-years. For our main analyses, we report the findings with missing data. In the appendix we report the models using imputed data 10 times using a prediction model featuring a wide array of predictors using the AMELIA II package (Honaker, King, Blackwell, et al. 2011). The results are consistent with the results of the main analysis.

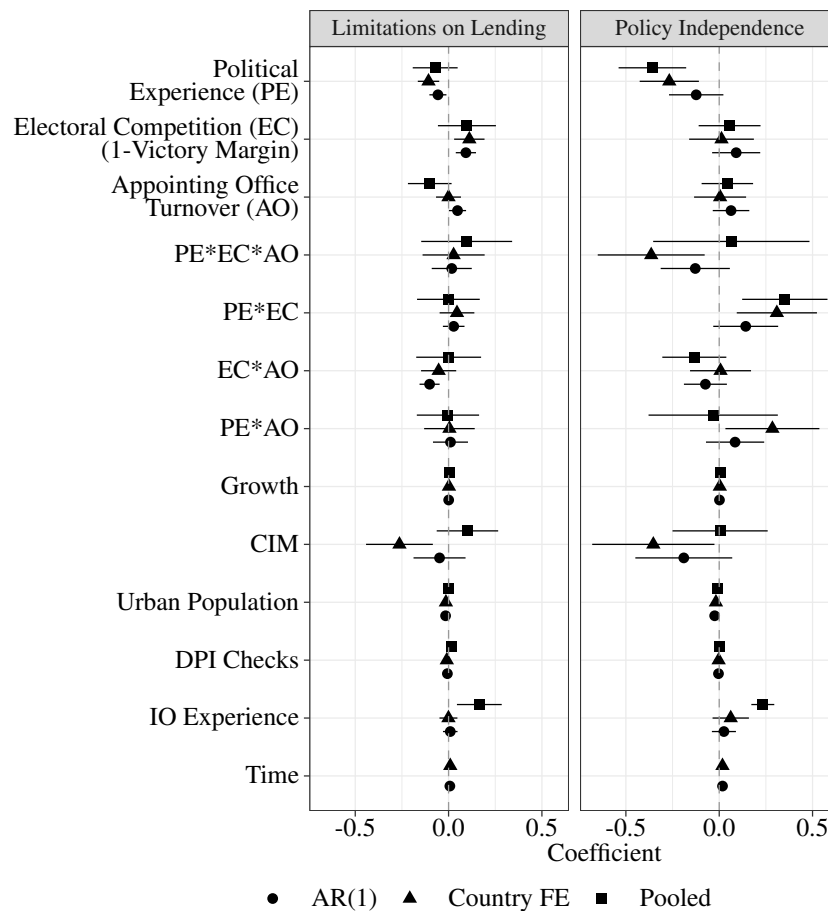
Empirical Results

We present the results from our model specifications (1-3) using a coefficients' plot for ease of interpretation. As expected, we find a negative independent relationship between political experience and policy discretion when the other conditioning terms are zero (no incumbency turnover and large vote-margin). Similarly, vote- and/or seat margin, has a positive effect on policy discretion, again, under the assumption that all other conditioning variables are equal to zero (the governor is a technocrat and there is no incumbency turnover). Third, there is a positive independent effect of incumbent turnover on the level of policy discretion again when other conditions are not present (there is a technocrat appointed and no electoral competition).³³

In addition to the independent effects, our condition of interest is the multiplicative relationship between political appointments, incumbent turnover, and the margin of electoral victory. In order to interpret the effect of a change in campaign effort on the marginal effect of political appointments on policy discretion, we examine the marginal effects plot across those cases when there is no electoral turnover (the incumbent stays in power) and alternatively, when there is electoral turnover (the incumbent is replaced by either someone in her party or another party). Our theoretical argument suggests that in order for the nominee to be appointed, the incumbent must be reelected and so we primarily focus on this outcome. As predicted by our hypothesis, we see that the level of discretion granted to nominees with political experience becomes closer to that of technocrats (i.e. the negative effect attenuates), as the electoral margin declines. For those cases where the incumbent is not reelected, we do not find any attenuation. One concern is that the model depicts a leader's expected electoral competition as a function of effort whereas in the data, we measure actual election outcomes as a proxy for effort. As effort is an unobservable variable, we thereby assume that candidates have relatively sophisticated means of forecasting their electoral chances and that they know how to translate campaign efforts into electoral gains.

³³We check the time series for non-stationary / unit-root process using Augmented Dickey Fuller test up to a lag-order of 5 years indicating that the series is stationary.

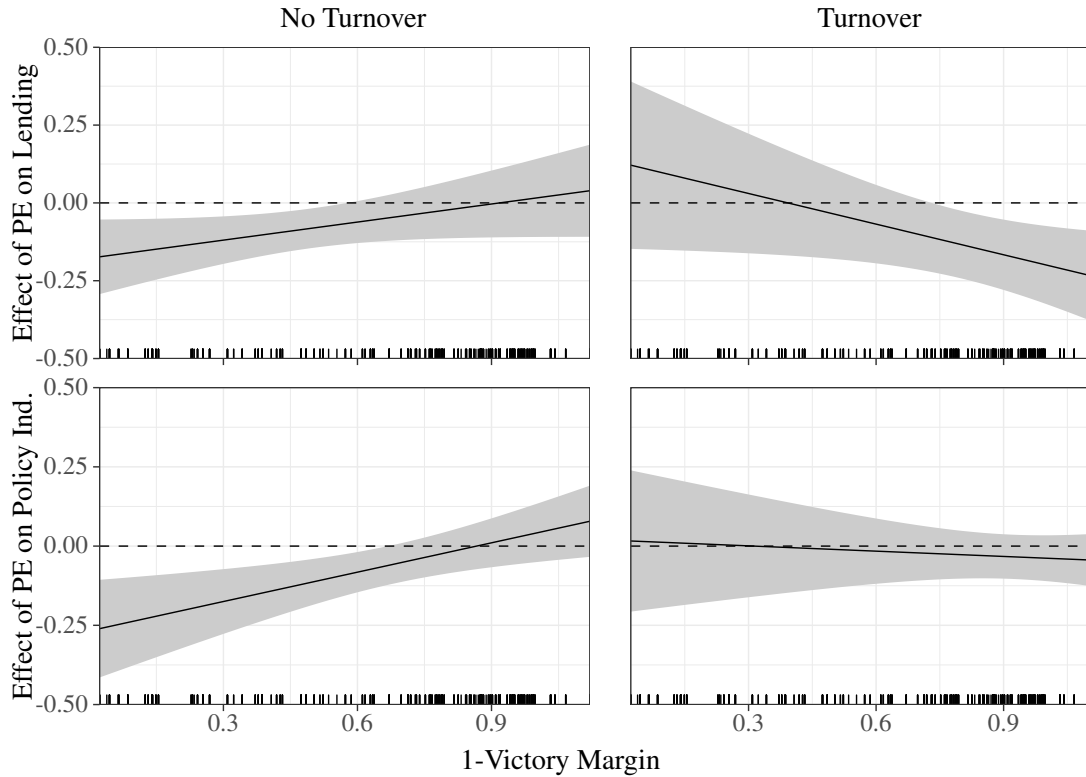
Figure 4: Effects of Political Experience and Electoral Competition on Lending Limitations and Policy Independence



Note: The plot represent the model results depicted in the supplemental appendix. The dependent variables are the CBI index components "Limitations on Lending" and "Policy Independence." The lines show 95% confidence intervals based on robust standard errors.

What about the results when we account for other possible alternative explanations? We find that GDP growth is positively associated with policy discretion across all models, although its effects are not large. The CIM measure is positively associated with discretion until we include the time counter to account for the observed increasing trend in central bank independence over time. The time trend likely picks up over-time covariation in movements, such as an increase in the credibility of central banks over time. Our urban population variable is also not substantively important; neither is the democracy variable DPI checks. Like the CIM measure, whether or not

Figure 5: Marginal Effects of Political Appointments on Policy Independence and Lending Limitations



Note: The plot reports the results from the country fixed-effects models with the CBI components "Policy Independence" and "Limitations on Lending" as dependent variables. The shaded areas show 95% confidence intervals using heteroscedasticity robust standard errors.

someone has experience in an IO is positively related to policy discretion in the pooled specification. However, this effect reverses once we include the time trend, the result of the joint increase in the probability of working in a IO and central bank independence increasing over time.

For robustness, we also examine whether or not political experience only matters for candidates that have political experience before becoming the CBG or whether political experience before and after performing the role of CBG has the same effect. We find consistent results irrespective of whether the political experience is before or after holding the CBG post, suggesting that information asymmetries is likely one of the mechanisms at play. Additionally, we also include into the model a measure for EU accession and a measure of a country's exchange rate regime. Again, we

find similar results. These and other tests can be found in the supplemental appendix.

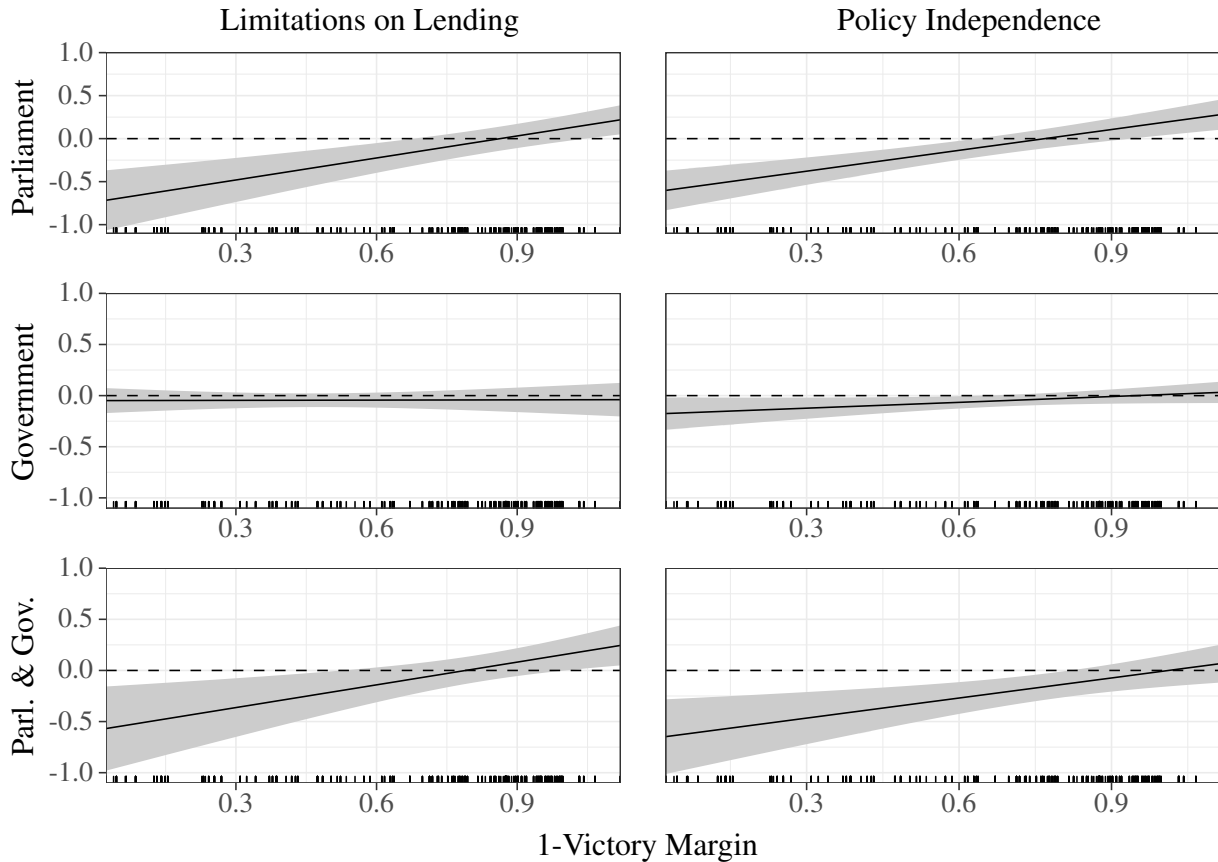
One methodological concern is that our proxies of electoral effort directly influence the likelihood of turnover of the incumbent's office. Thus, our results may result from post-treatment bias rather than any causal connection suggested by our theory. Because our model makes a prediction conditional on incumbent investing more effort in the election and succeeding in staying in office, we cannot rule out post-treatment bias by design. Yet, when dropping the post-treatment interaction, our results do not change substantially.

While the above examines the impact of political experience and turnover on policy discretion, if what actually matters for incumbents is whether or not a CBG acts as an electoral threat or not and the appointer's information problem, then we might expect to see stronger effects for those CBGs that have previous *legislative* political experience. In order to investigate this, we split our key independent variable, *political experience* according to the branches of government that the CBGs have experience working in. We then re-run the analyses from above. Here the results suggest that the predicted relationship is especially pronounced when the CBG has legislative experience and not otherwise. The estimates shown in Figure 6 are based on the same specification as in model (2) above.³⁴ These results suggest that CBGs who were parliamentarians have a stronger attenuation affect (are more likely to be granted discretion) than CBG appointments from the executive branch of the government. Yet, this difference dissipates when opposition parties receive higher vote shares, and it is not distinguishable at relatively low margins of victory.

In summary, we find evidence that appointed candidates with political experience are associated with *lower* levels of central bank independence compared to those without political experience. Furthermore, this negative association holds when we account for a number of possible co-determinants. Additionally, we find evidence that as the margin of victory narrows, candidates with political experience lead central banks with similar levels of policy discretion as their non-

³⁴No governor in our sample had prior experience in the judiciary. For detailed results, see the supplemental appendix.

Figure 6: Marginal Effect of Political Experience on CBI by Type of Experience



Note: The plot reports the results from the country fixed-effects models with the CBI components "Policy Independence" and "Limitations on Lending" as dependent variables and the categories of political experience as independent variables. The plot only shows the marginal effects for the case that the appointing body does not experience a turnover. For the turnover case is depicted in the appendix. The shaded areas show 95% confidence intervals using heteroscedastic robust standard errors.

politically experienced counterparts. In order to make sure that it is electoral threats that are indeed driving the results, we decompose the findings based on type of political experience and find that the relationship is mainly driven by those with experience in the legislative branch rather than the executive branch. This, coupled with the fact that we examine elections only for those incumbents that directly hold appointment powers for the CBG, supports the predictions from our theoretical model.

Conclusion

What conditions determine the delegation of monetary policy and the granting of policy discretion? Our theory demonstrates one mechanism whereby political incumbents use higher offers of policy discretion and threats of higher campaign efforts to deter nominees that favor appointed office from nominees that favor electoral office. We show that an incumbent's success in screening candidates for political ambitions crucially depends on the expected closeness of the race facing the incumbent, however. As either the overall quality of challengers increases or as elections become more competitive, the incumbent's willingness to use discriminating offers to deter politically minded central bankers lessens. Our model therefore finds evidence of a previously unexplored relationship between political appointments, elections, and policy discretion. We observe that the level of discretion granted to candidates with political backgrounds will converge towards the level of discretion awarded to technocrats as electoral victories narrow. Another contribution is the development of a new and important dataset that looks at the career experience of CBGs outside of OECD countries.

While our argument focuses on those conditions that determine discretion given to CBGs as a consequence of election concerns facing nominating official, outstanding questions remain. Future research might explore the consequences of an increasing number of CBGs with political experience on a battery of macroeconomic outcomes that central bank independence is expected to matter for, such as inflation, asset prices, and growth rates. Furthermore, one limitation of our research is that we use measures of *de jure* policy discretion rather than *de facto* policy discretion. While the construction of a new measure of monetary policy discretion is outside of the scope of this paper, the fact that we find evidence in support of our theory despite the relatively slow changing nature of official discretionary power is promising. Finally, questions about bureaucratic politics and agency slack naturally arise from our results. While some have called for central banks to be more accountable to voters, it is worth investigating whether or not those countries with more

politically experienced central bankers are indeed more accountable. One alternative and more pessimistic argument, which our evidence points to, is that with an increase in political competition in countries transitioning to democracy, the marginal efficiency of investing resources to keep politically minded candidates out of important bureaucracies declines. Our argument, therefore, points to challenges in the development of a country's institutions. On the one hand, new countries must select and promote a new generation of political leaders in order to effectively manage the country. On the other hand, the coupling of independent agencies staffed with governors with strong political ties may encourage corruption and patronage rather than accountability.

For now, we hope to have contributed to a deeper understanding of the interaction between strategies aimed at electoral survival and those aimed at delegation to outside experts. While previous research has centered on the need for incumbents to signal to investors and domestic publics that they are credibly committing to a low-inflation policy, we expand this story by acknowledging the political calculations that appointing officials make as well. Our story complements the existing accounts of delegation, while showing the deeper electoral concerns that might motivate incumbents in an environment of heightened political competition. Thus, our paper paints a more nuanced picture of the calculations that governments make in handing over power.

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Supplemental Appendix

Proofs

The leader's problem can be written as

$$\begin{aligned} & \max_{\{\bar{d}, \bar{e}\}, \{\underline{d}, \underline{e}\}} \Phi(o(\bar{e}) - p(\bar{e}, \bar{d}) - c(\bar{e})) + (1 - \Phi)(o(\underline{e}) - p(\underline{e}, \underline{d}) - c(\underline{e})) \\ & \text{subject to} \end{aligned}$$

$$f(\bar{e}, \bar{\theta}) + p(\bar{e}, \bar{d}) \geq r \quad (\bar{P})$$

$$f(\underline{e}, \underline{\theta}) + p(\underline{e}, \underline{d}) \geq r \quad (\underline{P})$$

$$f(\underline{e}, \underline{\theta}) + p(\underline{e}, \underline{d}) \geq f(\bar{e}, \bar{\theta}) + p(\bar{e}, \bar{d}) \quad (\underline{IC})$$

$$f(\bar{e}, \bar{\theta}) + p(\bar{e}, \bar{d}) \geq f(\underline{e}, \underline{\theta}) + p(\underline{e}, \underline{d}) \quad (\bar{IC})$$

Further we remind the reader, that we assume that $f(e, \bar{\theta}) > f(e, \underline{\theta})$, $\frac{\partial f}{\partial e} = f_1 < 0$ and $\frac{\partial f}{\partial^2 e} \geq 0$ as well as $\frac{\partial p}{\partial e} > 0$, $\frac{\partial p}{\partial d} > 0$, $o(e) > c(e) + f(e, \bar{\theta})$, $\frac{\partial o(e)}{\partial e} = o_1 > 0$ and $\frac{\partial c(e)}{\partial e} = c_1 > 0$. As shown in the discussion of Equation (3) in the text \bar{P} holds by implication of \bar{IC} and \underline{P} . Further, because $f(e, \bar{\theta}) > f(e, \underline{\theta})$, \underline{P} and \bar{IC} are always binding. Therefore, the following problem is an equivalent problem above as long as its solution satisfies \underline{IC} . First, present the solution to the problem and then verify that it satisfies \underline{IC} .

$$\begin{aligned} & \max_{\bar{e} \geq 0, \underline{e} \geq 0} \Phi(o(\bar{e}) - p(\bar{e}, \bar{d}) - c(\bar{e})) + (1 - \Phi)(o(\underline{e}) - p(\underline{e}, \underline{d}) - c(\underline{e})) \\ & \text{subject to} \end{aligned}$$

$$f(\underline{e}, \underline{\theta}) + p(\underline{e}, \underline{d}) = r \quad (\underline{P})$$

$$f(\bar{e}, \bar{\theta}) + p(\bar{e}, \bar{d}) = f(\bar{e}, \bar{\theta}) + p(\bar{e}, \bar{d}) \quad (\bar{IC})$$

Proposition 1

In equilibrium, the leader's offer, e^* , d^* , must satisfy

$$\begin{aligned} f_1(\bar{e}^*, \bar{\theta}) &= c_1(\bar{e}^*) - o_1(\bar{e}^*) & p(\bar{d}^*, \bar{e}^*) &= r - f(\bar{e}^*, \bar{\theta}) \\ f_1(\underline{e}^*, \underline{\theta}) &= c_1(\underline{e}^*) - o_1(\underline{e}^*) & &+ f(\underline{e}^*, \bar{\theta}) - f(\underline{e}^*, \underline{\theta}) \\ &+ \frac{\Phi}{1 - \Phi}(f_1(\underline{e}^*, \bar{\theta}) - f_1(\underline{e}^*, \underline{\theta})) & p(\underline{d}^*, \underline{e}^*) &= r - f(\underline{e}^*, \underline{\theta}) \end{aligned}$$

By substituting the constraints in the objective function and rewriting the problem we get

$$\max_{\bar{e} \geq 0, \underline{e} \geq 0} o(\underline{e}) - c(\underline{e}) - r - f(\underline{e}, \underline{\theta}) + \frac{\Phi}{1 - \Phi}(o(\bar{e}) - c(\bar{e}) - r - f(\bar{e}, \bar{\theta})) - \frac{\Phi}{1 - \Phi}(f(\underline{e}, \bar{\theta}) - f(\underline{e}, \underline{\theta}))$$

Assuming that $S(e, \theta, \bar{\theta}) = o(\underline{e}) - c(\underline{e}) - r - \frac{\Phi}{1-\Phi}(f(\underline{e}, \bar{\theta}) - f(\underline{e}, \underline{\theta}))$ is strictly concave with regard to e , the Kuhn-Tucker conditions are a sufficient condition for a global maximum. The Lagrangian is $L(\underline{e}, \bar{e}, \lambda_1, \lambda_2) = o(\underline{e}) - c(\underline{e}) - r - f(\underline{e}, \underline{\theta}) + \frac{\Phi}{1-\Phi}(o(\bar{e}) - c(\bar{e}) - r - f(\bar{e}, \bar{\theta})) - \frac{\Phi}{1-\Phi}(f(\underline{e}, \bar{\theta}) - f(\underline{e}, \underline{\theta})) + \lambda_1 \underline{e} + \lambda_2 \bar{e}$. A critical point must thus satisfy

$$\begin{aligned} o_1(\underline{e}) + f_1(\underline{e}, \underline{\theta}) - c_1(\underline{e}) - \frac{\Phi}{1-\Phi}(f_1(\underline{e}, \bar{\theta}) - f_1(\underline{e}, \underline{\theta})) + \lambda_1 &= 0 \\ \frac{\Phi}{1-\Phi}(o_1(\bar{e}) + f_1(\bar{e}, \bar{\theta}) - c_1(\bar{e})) + \lambda_2 &= 0 \\ \underline{e}, \bar{e}, \lambda_1, \lambda_2 \geq 0, \lambda_1 \underline{e} = \lambda_2 \bar{e} &= 0 \end{aligned}$$

If $\bar{e} = 0$ then $o_1(0) + f_1(0, \bar{\theta}) - c_1(0) \leq 0$ which would contradict $\frac{\partial S}{\partial e} > 0$ for $e = 0$. Thus, $\bar{e} > 0$ which implies $\lambda_2 = 0$ and $o_1(\bar{e}) + f_1(\bar{e}, \bar{\theta}) - c_1(\bar{e}) = 0$. Similarly, if $\underline{e} = 0$ then $o_1(0) + f_1(0, \underline{\theta}) - c_1(0) - \frac{\Phi}{1-\Phi}(f_1(0, \bar{\theta}) - f_1(0, \underline{\theta})) \leq 0$ which would contradict $\frac{\partial S}{\partial e} > 0$ for $e = 0$. Thus, $\underline{e} > 0$ which implies $\lambda_1 = 0$ and $o_1(\underline{e}) + f_1(\underline{e}, \underline{\theta}) - c_1(\underline{e}) - \frac{\Phi}{1-\Phi}(f_1(\underline{e}, \bar{\theta}) - f_1(\underline{e}, \underline{\theta})) = 0$.

Solving these two conditions for the unique global maximum $(\bar{e}^*, \bar{\theta}^*)$ and $(\underline{e}^*, \underline{\theta}^*)$ yields

$$\begin{aligned} f_1(\bar{e}^*, \bar{\theta}) &= c_1(\bar{e}^*) - o_1(\bar{e}^*) \\ f_1(\underline{e}^*, \underline{\theta}) &= c_1(\underline{e}^*) - o_1(\underline{e}^*) + \frac{\Phi}{1-\Phi}(f_1(\underline{e}^*, \bar{\theta}) - f_1(\underline{e}^*, \underline{\theta})) \\ p(\bar{d}^*, \bar{e}^*) &= r - f(\bar{e}^*, \bar{\theta}) + f(\underline{e}^*, \bar{\theta}) - f(\underline{e}^*, \underline{\theta}) \\ p(\underline{d}^*, \underline{e}^*) &= r - f(\underline{e}^*, \underline{\theta}) \end{aligned}$$

Lastly, we must show that the above solution satisfies IC. Together, IC and \overline{IC} implies that the solution must satisfy

$$f(\bar{e}, \bar{\theta}) - f(\underline{e}, \bar{\theta}) \geq p(\underline{e}, \underline{d}) - p(\bar{e}, \bar{d}) \geq f(\bar{e}, \underline{\theta}) - f(\underline{e}, \underline{\theta})$$

which implies that if $\underline{e}^* \geq \bar{e}^*$ the solution satisfies IC.

Assume $\bar{e}^* > \underline{e}^*$, then

$$\begin{aligned} f_1(\underline{e}^*, \underline{\theta}) &= c_1(\underline{e}^*) - o_1(\underline{e}^*) + \frac{\Phi}{1-\Phi}(f_1(\underline{e}^*, \bar{\theta}) - f_1(\underline{e}^*, \underline{\theta})) \\ &> c_1(\underline{e}^*) - o_1(\underline{e}^*) \geq c_1(\bar{e}^*) - o_1(\bar{e}^*) = f_1(\bar{e}^*, \bar{\theta}) \end{aligned}$$

which implies $\bar{e}^* \geq \underline{e}^*$ which contradicts our initial assumption. Thus $\bar{e}^* \geq \underline{e}^*$ must be true and our solution satisfies IC. \square

Proposition 2

If the leader's office value is sufficiently high, she offers less discretion to a candidate with political experience.

$$\frac{\partial p(\bar{e}^*, \bar{d}^*)}{\partial \Phi} < 0 \text{ if } o(e^*) > 2 \frac{\partial f(e^*, \bar{\theta})}{\partial \Phi} - f(e^*, \bar{\theta}) - c(e^*)$$

From Proposition 1 we have $\frac{\partial p(\bar{e}^*, \bar{d}^*)}{\partial \Phi} = \frac{\partial f(e^*, \bar{\theta})}{\partial \Phi} - \frac{\partial f(e^*, \theta)}{\partial \Phi}$. Thus, $\frac{\partial p(\bar{e}^*, \bar{d}^*)}{\partial \Phi} < 0$ under the condition

$$\frac{\partial f(e^*, \theta)}{\partial \Phi} > \frac{\partial f(e^*, \bar{\theta})}{\partial \Phi} \quad (1)$$

which after substitution simplifies to

$$\Phi > \frac{\partial f(e^*, \bar{\theta})}{\partial \Phi} - \frac{f(e^*, \bar{\theta}) + o(e^*) - c(e^*)}{\frac{\partial f(e^*, \bar{\theta})}{\partial \Phi}}.$$

Since $\Phi > 0$, a sufficient condition for (1) to hold is $o(e^*) > 2 \frac{\partial f(e^*, \bar{\theta})}{\partial \Phi} - f(e^*, \bar{\theta}) - c(e^*)$. \square

Proposition 3

As long as it is sufficiently likely that a candidate turns out to be a contender, the discriminating effect decreases in size as the leader exerts more effort towards campaigning.

$$\frac{\partial p(\bar{e}^*, \bar{d}^*)}{\partial \Phi \partial e^*} < 0 \text{ if } \frac{\partial f_1(e^*, \theta)}{\partial \Phi} < \frac{f_1(e^*, \bar{\theta}) - f_1(e^*, \theta)}{(1 - \Phi)^2}$$

Taking the second derivative of $p(e^*, \theta)$ with regard to Φ and e^* we have

$$\frac{\partial p(e^*, \theta)}{\partial \Phi \partial e^*} = \frac{\partial f_1(e^*, \bar{\theta})}{\partial \Phi} - \frac{\partial f_1(e^*, \theta)}{\partial \Phi}$$

which after substitution simplifies to

$$\frac{\partial p(e^*, \theta)}{\partial \Phi \partial e^*} = \frac{o_1(e^*) - c_1(e^*) + f_1(e^*, \theta) - (1 - \Phi)\Phi \frac{\partial f_1(e^*, \theta)}{\partial \Phi}}{\Phi^2}$$

so $\frac{\partial p(e^*, \theta)}{\partial \Phi \partial e^*} < 0$ under the condition

$$\frac{\partial f_1(e^*, \theta)}{\partial \Phi} < \frac{f_1(e^*, \bar{\theta}) - f_1(e^*, \theta)}{(1 - \Phi)^2}$$

\square

Data and Sample Construction

We first collected the names of all the CBG's appointed during this period, using information from two periodicals: the Central Bank Directory (Pringle, 1994) and the Annual Reports of The World's Central Banks (Joint Bank-Fund Library, 1984). Unfortunately, we do not have a list of all possible individuals considered for the appointment, only those that are actually appointed. For those cases where there was mistakes in the periodicals, we went with the information on the CB's official website and cross-checked our names with other scholars working on this topic.

Figure 1 illustrates the variety of professional experience of post-communist leaders across our sample: CBGs, Finance Ministers, Prime Ministers, and Presidents, both before and after their appointments to the country's central bank. In the case of CBGs, we see that while many CBGs come directly from Ph.D. programs, still others come from the political system. After leaving the central bank, in their post-governor appointments, a large number of CBGs also move into political careers as well. We also see that many individuals that held positions as Finance Ministers and Prime Ministers also held posts working in central banks.

Figure 1: Careers of Leaders Before and After Appointment

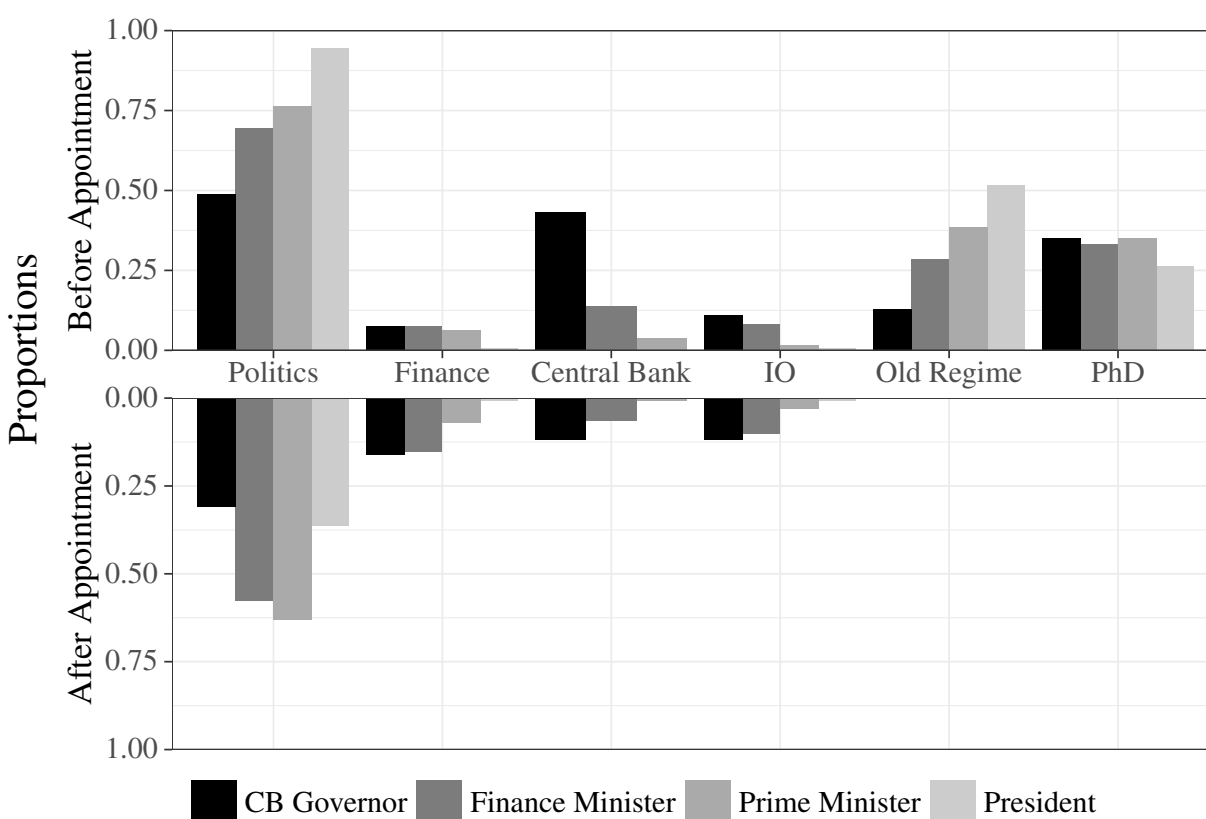
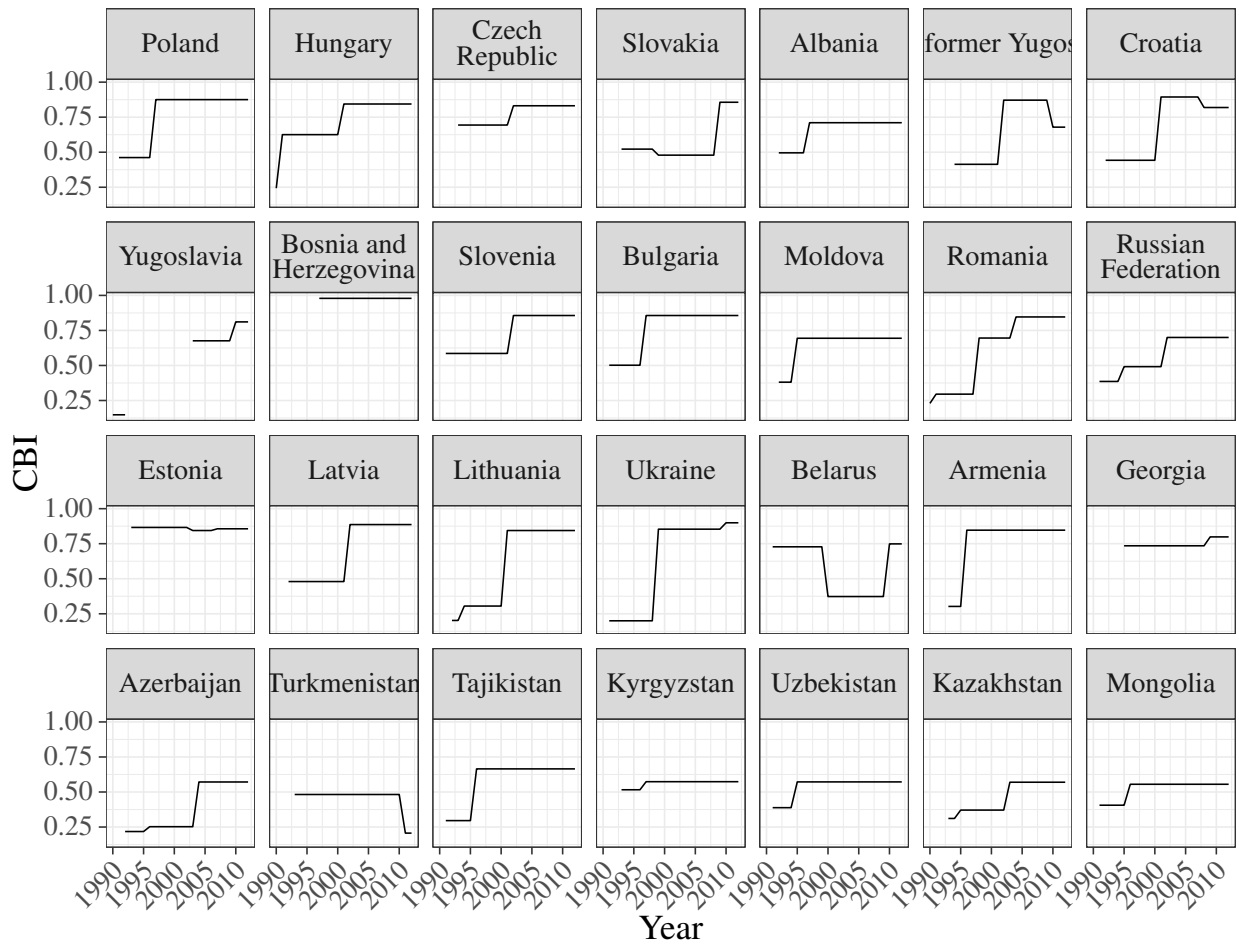


Table 1: Effects of Political Appointments and Electoral Competition on CBI and Components

	CBI				LimLen				Pol.Len									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Political Appointment (PA)	-0.221 (-0.352,-0.091)	-0.144 (0.027,-0.266)	-0.089 (-0.157,-0.022)	-0.126 (-0.241,-0.010)	-0.070 (-0.155,0.015)	-0.052 (-0.115,0.012)	-0.072 (-0.192,0.049)	-0.107 (-0.165,-0.050)	-0.057 (-0.103,-0.011)	-0.023 (-0.147,0.100)	-0.028 (-0.088,0.033)	-0.052 (-0.107,0.004)	-0.358 (-0.539,-0.177)	-0.268 (-0.426,-0.109)	-0.123 (-0.269,0.022)	-0.205 (-0.417,0.007)	-0.148 (-0.295,-0.002)	-0.052 (-0.107,0.004)
Electoral Competition (EC)	0.146 (0.010,0.302)	0.158 (0.036,0.279)	0.133 (0.032,0.234)	0.207 (0.053,0.361)	0.195 (0.071,0.320)	0.090 (0.001,0.180)	0.098 (-0.057,0.254)	0.111 (0.030,0.193)	0.093 (0.038,0.147)	0.150 (-0.037,0.337)	0.137 (0.049,0.224)	0.090 (0.019,0.162)	0.056 (-0.110,0.221)	0.012 (-0.161,0.186)	0.091 (-0.038,0.220)	0.246 (-0.028,0.520)	0.107 (-0.078,0.293)	0.090 (0.019,0.162)
Appointment Office (AO)	0.016 (-0.104,0.136)	0.115 (0.003,0.226)	0.075 (-0.003,0.153)	-0.025 (-0.170,0.119)	0.057 (-0.041,0.156)	0.012 (-0.079,0.103)	-0.101 (-0.218,0.016)	-0.0004 (-0.067,0.066)	0.048 (0.002,0.094)	-0.045 (-0.179,0.090)	-0.085 (-0.140,0.070)	0.012 (-0.052,0.076)	0.044 (-0.094,0.181)	0.005 (-0.135,0.144)	0.063 (-0.035,0.161)	0.115 (-0.139,0.368)	0.007 (-0.152,0.167)	0.012 (-0.052,0.076)
PE*EC	0.277 (0.086,0.467)	0.147 (0.007,0.288)	0.086 (-0.017,0.188)	0.154 (-0.018,0.326)	0.015 (-0.112,0.141)	0.040 (-0.056,0.135)	-0.001 (-0.169,0.167)	0.045 (-0.048,0.138)	0.027 (-0.030,0.085)	-0.003 (-0.202,0.197)	-0.063 (-0.162,0.036)	0.040 (-0.039,0.119)	0.352 (0.123,0.580)	0.309 (0.094,0.524)	0.142 (-0.032,0.316)	0.251 (-0.022,0.523)	0.143 (-0.062,0.348)	0.040 (-0.039,0.119)
PE*EC*AO	-0.246 (-0.640,0.147)	-0.346 (-0.598,-0.094)	-0.196 (-0.367,-0.024)	-0.168 (-0.498,0.162)	-0.089 (-0.321,0.143)	-0.093 (-0.261,0.075)	0.097 (-0.147,0.340)	0.027 (-0.139,0.193)	0.017 (-0.090,0.124)	0.017 (-0.256,0.289)	0.081 (-0.103,0.265)	-0.093 (-0.233,0.048)	0.065 (-0.354,0.484)	-0.364 (-0.651,-0.078)	-0.128 (-0.314,0.057)	-0.001 (-0.450,0.447)	-0.048 (-0.341,0.245)	-0.093 (-0.233,0.048)
PE*AO	0.200 (-0.109,0.509)	0.213 (0.006,0.419)	0.122 (-0.010,0.254)	0.122 (-0.129,0.373)	0.057 (-0.117,0.230)	0.067 (-0.062,0.197)	-0.003 (-0.170,0.164)	0.005 (-0.131,0.140)	0.010 (-0.084,0.104)	0.004 (-0.183,0.191)	-0.016 (-0.156,0.124)	0.067 (-0.038,0.173)	-0.032 (-0.379,0.314)	0.285 (0.033,0.537)	0.085 (-0.071,0.241)	-0.052 (-0.410,0.307)	0.011 (-0.190,0.272)	0.067 (-0.038,0.173)
AO*EC	-0.106 (-0.295,0.084)	-0.104 (-0.240,0.031)	-0.080 (-0.191,0.031)	-0.045 (-0.245,0.155)	-0.084 (-0.218,0.049)	-0.037 (-0.156,0.081)	0.005 (-0.173,0.174)	-0.053 (-0.147,0.041)	-0.102 (-0.156,-0.048)	-0.004 (-0.203,0.195)	-0.018 (-0.155,0.119)	-0.037 (-0.125,0.050)	-0.133 (-0.305,0.038)	0.007 (-0.156,0.170)	-0.074 (-0.189,0.041)	-0.157 (-0.468,0.154)	-0.020 (-0.214,0.174)	-0.037 (-0.125,0.050)
Growth	0.007 (0.002,0.011)	0.006 (0.003,0.009)	0.003 (0.001,0.005)	0.008 (0.005,0.011)	0.002 (-0.002,0.005)	0.001 (-0.001,0.002)	0.003 (0.000,0.006)	0.002 (-0.000,0.004)	0.001 (-0.001,0.002)	0.003 (0.002,0.005)	0.005 (-0.001,0.002)	0.001 (-0.001,0.002)	0.005 (0.000,0.010)	0.003 (-0.003,0.007)	0.001 (-0.001,0.003)	0.008 (0.004,0.012)	0.003 (-0.005,0.006)	0.001 (-0.001,0.002)
IO Experience	0.088 (0.012,0.163)	-0.086 (-0.155,-0.017)	-0.055 (-0.117,0.007)	0.059 (-0.009,0.127)	-0.044 (-0.097,0.009)	-0.020 (-0.062,0.021)	0.165 (0.045,0.285)	-0.001 (-0.049,0.047)	0.009 (-0.030,0.048)	0.013 (-0.114,0.140)	-0.049 (-0.086,-0.012)	-0.020 (-0.056,0.015)	0.233 (0.172,0.295)	0.062 (-0.036,0.159)	0.025 (-0.039,0.090)	0.030 (-0.070,0.129)	-0.012 (-0.089,0.066)	0.020 (-0.056,0.015)
Urban Population	-0.001 (-0.003,0.002)	-0.012 (-0.024,-0.001)	-0.020 (-0.029,-0.011)	-0.001 (-0.004,0.003)	-0.018 (-0.030,-0.005)	-0.015 (-0.021,-0.009)	-0.001 (-0.003,0.001)	-0.014 (-0.024,-0.005)	-0.016 (-0.026,-0.007)	-0.004 (-0.004,0.003)	-0.005 (-0.016,0.006)	-0.015 (-0.025,-0.004)	-0.008 (-0.010,-0.005)	-0.018 (-0.032,-0.004)	-0.024 (-0.038,-0.010)	-0.005 (-0.009,-0.002)	-0.023 (-0.046,0.001)	-0.015 (-0.025,-0.004)
CIM	0.105 (-0.097,0.308)	-0.342 (-0.617,-0.068)	-0.008 (-0.440,0.009)	0.106 (-0.093,0.305)	-0.209 (-0.421,0.003)	-0.173 (-0.300,-0.047)	0.101 (-0.064,0.266)	-0.283 (-0.442,-0.084)	-0.048 (-0.188,0.091)	-0.028 (-0.216,0.160)	-0.096 (-0.268,0.076)	-0.173 (-0.303,-0.044)	0.005 (-0.250,0.260)	-0.353 (-0.680,-0.026)	-0.190 (-0.449,0.070)	-0.131 (-0.432,0.171)	-0.125 (-0.497,0.248)	0.020 (-0.303,-0.044)
DPI Checks	0.002 (-0.024,0.024)	-0.005 (-0.023,0.012)	-0.008 (-0.021,0.004)	0.007 (-0.017,0.031)	0.003 (-0.016,0.021)	0.001 (-0.009,0.012)	0.016 (-0.004,0.036)	-0.009 (-0.028,0.009)	-0.006 (-0.016,0.004)	0.011 (-0.012,0.033)	-0.006 (-0.024,0.013)	0.001 (-0.009,0.011)	0.004 (-0.023,0.031)	-0.003 (-0.026,0.020)	-0.004 (-0.018,0.010)	0.019 (-0.012,0.050)	0.007 (-0.017,0.031)	0.001 (-0.009,0.011)
Time Trend	0.021 (0.017,0.025)	0.022 (0.017,0.026)	0.022 (0.017,0.026)	0.022 (0.016,0.023)	0.020 (0.018,0.022)	0.020 (0.018,0.022)	0.020 (0.018,0.022)	0.020 (0.018,0.022)	0.020 (0.018,0.022)	0.020 (0.018,0.022)	0.020 (0.018,0.022)	0.020 (0.018,0.022)	0.020 (0.018,0.022)	0.020 (0.018,0.022)	0.020 (0.018,0.022)	0.020 (0.018,0.022)	0.020 (0.018,0.022)	0.020 (0.018,0.022)
Constant	0.535 (0.428,0.643)	1.515 (0.810,2.220)	1.855 (1.346,2.364)	0.446 (0.316,0.575)	1.690 (0.959,2.421)	1.486 (1.114,1.858)	0.584 (0.489,0.678)	1.592 (0.994,2.190)	1.506 (0.906,2.106)	0.505 (0.471,0.719)	0.957 (0.299,1.615)	1.486 (0.897,2.075)	1.177 (1.055,1.300)	2.102 (1.260,2.945)	2.272 (1.410,3.134)	0.883 (0.652,1.115)	2.071 (0.665,5.484)	1.486 (0.897,2.075)
Country Fixed Effects	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
R ²	0.215	0.691	0.758	0.211	0.704	0.758	0.211	0.704	0.758	0.155	0.635	0.758	0.34	0.704	0.758	0.285	0.664	0.758
SE Type	Newey-West	Newey-West	OLS	Newey-West	Newey-West	OLS	Newey-West	Newey-West	OLS	Newey-West	Newey-West	OLS	Newey-West	Newey-West	OLS	Newey-West	Newey-West	OLS
Error Correction	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Time Trend	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Observations	340	340	340	340	340	340	340	340	340	613	613	613	340	340	340	613	613	613

Note: Intervals in parentheses denote 95% confidence intervals using the type of standard error denoted in the row "SE Type".

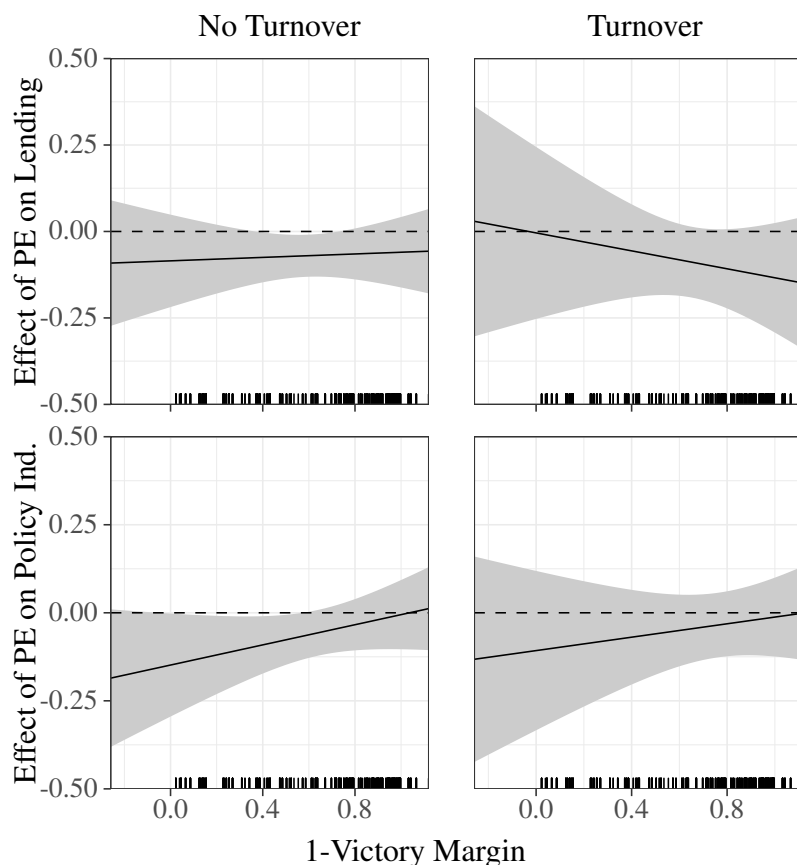
Figure 2: CBI by Country



Additional Empirical Tests

Unlike in Kaplan (2017), we do not code for whether the economics degree is from a heterodox or mainstream economics department because earlier CBG had training in Soviet schools and so many of the schools and or dissertation titles refer to either Marxism and or the command economy, which makes it difficult to compare Ph.D. “quality” over time.

Figure 3: Marginal Effects of Political Appointments on CBI (AR(1) -Imputed)



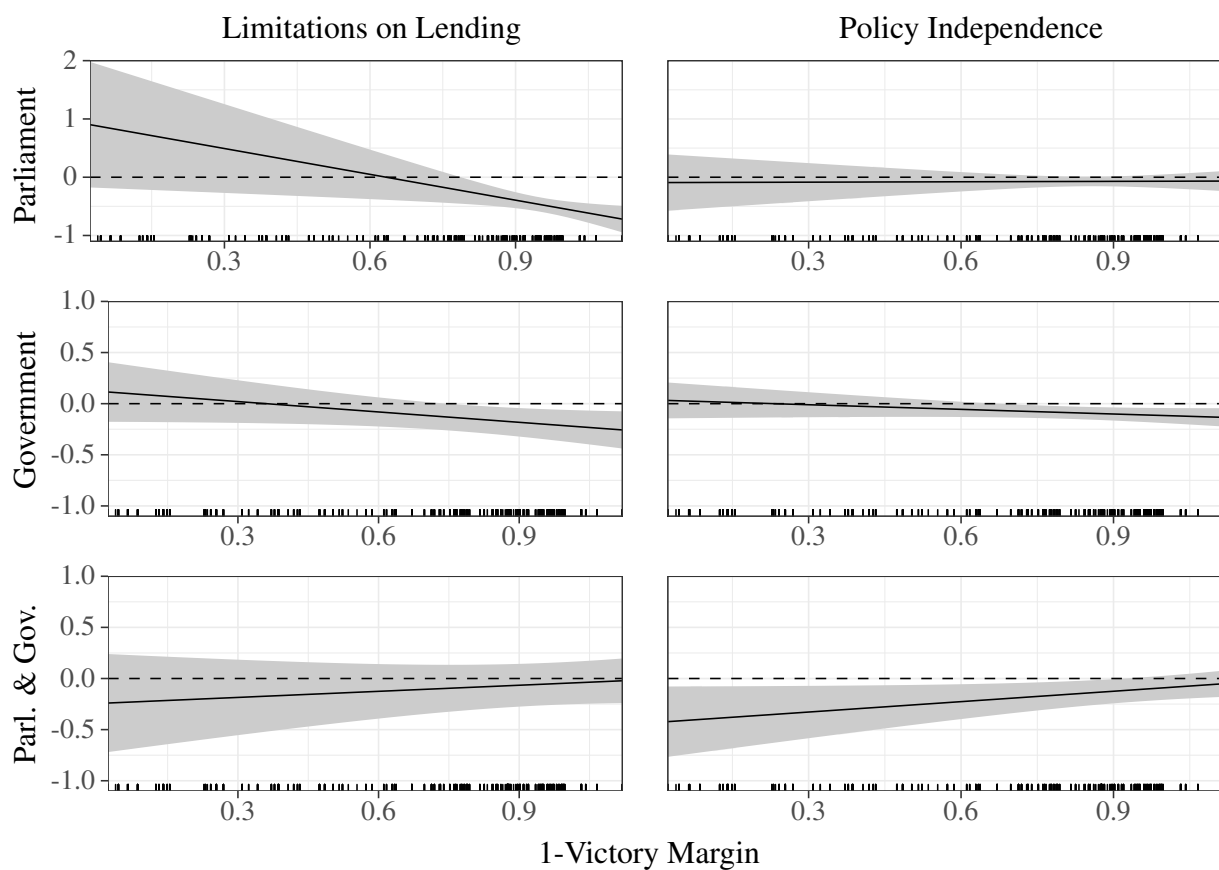
Note: The plot reports the marginal effects from the country fixed-effects models with the CBI components "Policy Independence" and "Limitations on Lending" as dependent variables using the imputed dataset. The shaded areas show 95% confidence intervals using robust standard errors.

Table 2: Summary Statistics

Statistic	N	Mean	St. Dev.	Min	Max
CBI	576	0.642	0.204	0.148	0.979
Political Experience	564	0.523	0.500	0	1
Victory Margin	489	0.332	0.303	-0.120	0.977
Appointment Office Turnover	568	2.846	7.811	-45.325	35.390
Growth	495	0.747	0.153	0.242	0.962
Contract Intensive Money	613	56.716	12.213	26.400	75.467
Checks & Balances	538	3.052	1.637	1	8
IO Experience	571	0.100	0.300	0	1

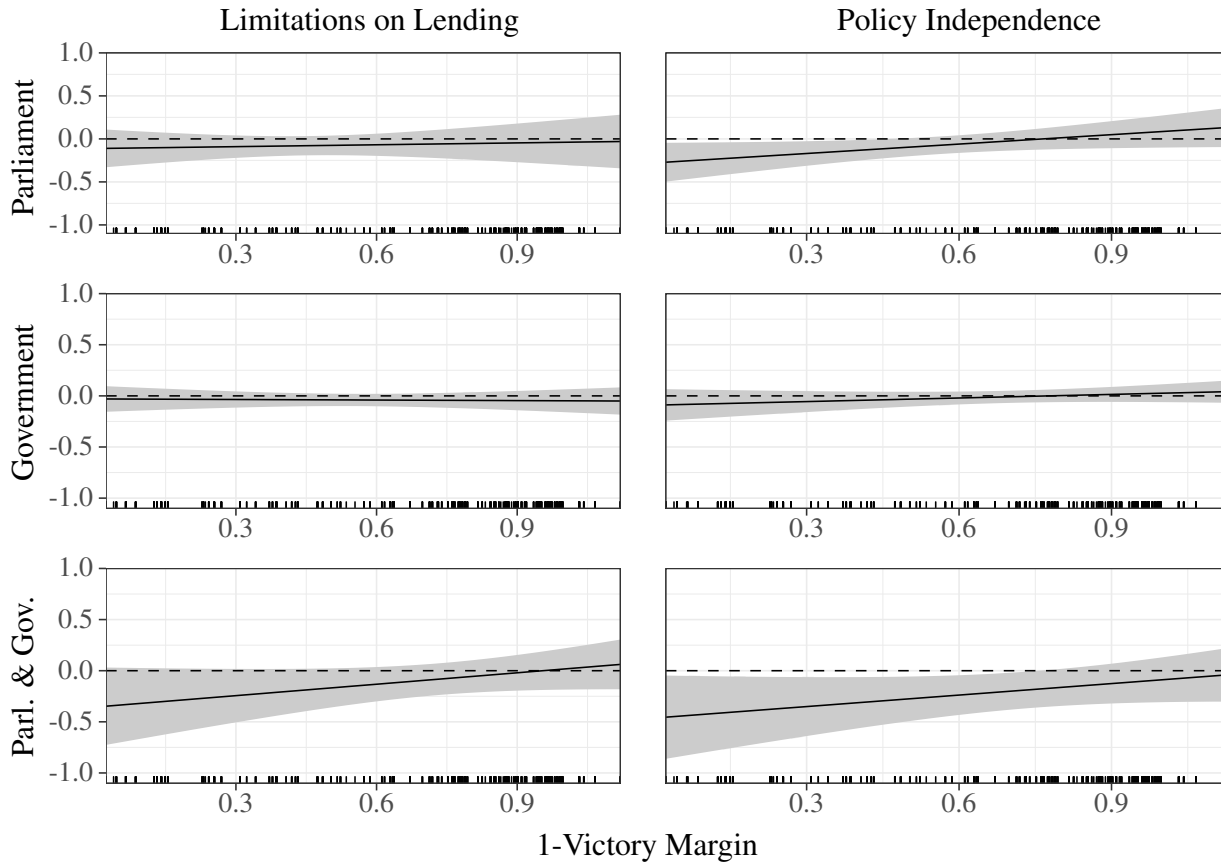
Number of country-years in sample: 613

Figure 4: Marginal Effect of Political Experience on CBI by Type of Experience (Turnover)



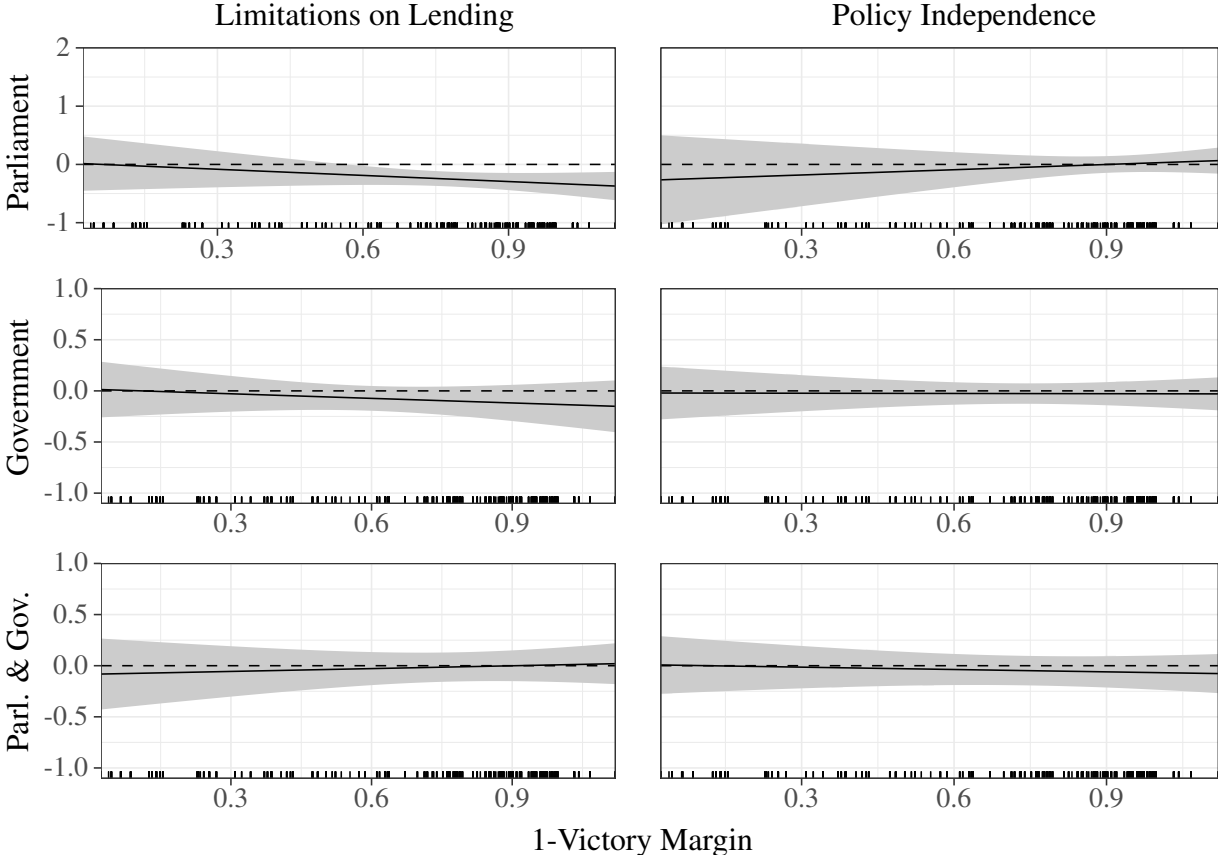
Note: The plot reports the results from the country fixed-effects models with the CBI components "Policy Independence" and "Limitations on Lending" as dependent variables and the categories of political experience as independent variables. The plot only shows the marginal effects for the case that the appointing body experiences a turnover. It accompanies Figure 6 in the paper. The shaded areas show 95% confidence intervals using heteroscedasticity robust standard errors.

Figure 5: Marginal Effect of Political Appointments on CBI by Type of Experience (Country FE, Imputed, No Turnover)



Note: The plot reports the results from the country fixed-effects models with the CBI components "Policy Independence" and "Limitations on Lending" as dependent variables and the categories of political experience as independent variables. The plot only shows the marginal effects for the case that the appointing body does not experience a turnover. The shaded areas show 95% confidence intervals using heteroscedasticity robust standard errors.

Figure 6: Marginal Effect of Political Appointments on CBI by Type of Experience (Country FE, Imputed, Turnover)



Note: The plot reports the results from the country fixed-effects models with the CBI components "Policy Independence" and "Limitations on Lending" as dependent variables and the categories of political experience as independent variables. The plot only shows the marginal effects for the case that the appointing body experiences a turnover. The shaded areas show 95% confidence intervals using heteroscedasticity robust standard errors.

Table 3: Effects of Political Appointments and Electoral Competition on CBI by Type of Experience

	<i>Dependent variable:</i>					
	CBI		Lim.Len		Pol.Ind	
	Non-Imputed (1)	Imputed (2)	Non-Imputed (3)	Imputed (4)	Non-Imputed (5)	Imputed (6)
Legislative Exp. (LEG)	-0.542 (-0.790,-0.293)	-0.107 (-0.261,0.047)	-0.347 (-0.573,-0.121)	-0.091 (-0.253,0.071)	-0.621 (-0.857,-0.384)	-0.279 (-0.512,-0.046)
Executive Exp. (EXEC)	-0.058 (-0.142,0.027)	-0.028 (-0.109,0.054)	-0.082 (-0.138,-0.027)	-0.004 (-0.070,0.061)	-0.180 (-0.342,-0.018)	-0.091 (-0.249,0.067)
EXP & LEG	-0.444 (-0.741,-0.147)	-0.296 (-0.576,-0.016)	-0.232 (-0.406,-0.057)	-0.161 (-0.302,-0.021)	-0.662 (-1.037,-0.288)	-0.463 (-0.880,-0.046)
Electoral Competition (EC) (1-Victory Margin)	0.099 (-0.021,0.219)	0.159 (0.039,0.279)	0.061 (-0.015,0.136)	0.111 (0.018,0.203)	-0.071 (-0.224,0.082)	0.028 (-0.155,0.212)
Appointment Office (AO) Turnover	0.085 (-0.022,0.192)	0.046 (-0.049,0.140)	-0.040 (-0.106,0.027)	-0.041 (-0.147,0.065)	-0.041 (-0.157,0.076)	-0.036 (-0.188,0.115)
LEG*EC	0.639 (0.372,0.906)	0.085 (-0.180,0.350)	0.385 (0.135,0.636)	0.045 (-0.177,0.268)	0.807 (0.495,1.120)	0.365 (-0.001,0.731)
LEG*EC*AO	-1.334 (-1.961,-0.706)	-0.205 (-0.724,0.315)	-0.203 (-0.558,0.153)	0.070 (-0.317,0.458)	-0.784 (-1.435,-0.133)	-0.065 (-1.020,0.891)
LEG*AO	0.945 (0.334,1.556)	0.050 (-0.375,0.475)	0.198 (-0.132,0.527)	-0.019 (-0.354,0.317)	0.528 (-0.019,1.075)	0.008 (-0.839,0.854)
EXEC*EC	0.024 (-0.125,0.174)	-0.019 (-0.150,0.112)	0.009 (-0.083,0.101)	-0.086 (-0.190,0.018)	0.190 (-0.025,0.405)	0.117 (-0.093,0.327)
EXEC*EC*AO	-0.271 (-0.532,-0.009)	-0.088 (-0.380,0.204)	-0.072 (-0.223,0.079)	0.021 (-0.176,0.218)	-0.341 (-0.574,-0.108)	-0.125 (-0.473,0.224)
EXEC*AO	0.148 (-0.057,0.353)	0.042 (-0.164,0.248)	0.112 (-0.006,0.231)	0.021 (-0.137,0.179)	0.215 (0.021,0.408)	0.070 (-0.201,0.342)
LEG & EXEC*EC	0.516 (0.176,0.856)	0.282 (-0.057,0.621)	0.180 (-0.039,0.399)	0.087 (-0.129,0.302)	0.654 (0.217,1.091)	0.375 (-0.129,0.878)
LEG & EXEC*EC*AO	-0.310 (-0.728,0.108)	-0.175 (-0.593,0.242)	0.321 (-0.095,0.738)	0.345 (-0.293,0.983)	-0.315 (-0.870,0.239)	-0.451 (-0.995,0.093)
LEG & EXEC*AO	0.191 (-0.198,0.579)	0.188 (-0.165,0.542)	-0.265 (-0.657,0.126)	-0.244 (-0.814,0.325)	0.233 (-0.281,0.746)	0.472 (0.009,0.935)
AO*EC	-0.062 (-0.189,0.064)	-0.058 (-0.180,0.063)	-0.024 (-0.115,0.068)	-0.009 (-0.142,0.124)	0.085 (-0.058,0.227)	0.051 (-0.133,0.236)
Constant	1.085 (0.383,1.787)	1.526 (0.870,2.181)	1.490 (0.857,2.123)	0.910 (0.261,1.559)	1.927 (1.207,2.646)	1.968 (0.719,3.217)
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
R ²	0.737	0.708	0.729	0.654	0.73	0.684
SE Type	OLS	OLS	OLS	OLS	OLS	OLS
Error Correction	No	No	No	No	No	No
Time Trend	Yes	Yes	Yes	Yes	Yes	Yes
Observations	330	613	330	613	330	613

Note: Intervals in parentheses denote 95% confidence intervals using the type of standard error denoted in the row "SE Type".

Table 4: Robustness Checks: PhD, No Controls for Limitations on Lending and Policy Independence

	<i>Dependent variable:</i>			
	Lim.Len		Pol.Ind	
	(1)	(2)	(3)	(4)
Political Experience (PE)	-0.083 (-0.167,-0.0003)	-0.087 (-0.168,-0.006)	-0.053 (-0.221,0.114)	-0.247 (-0.381,-0.114)
PhD	0.021 (-0.060,0.102)	0.069 (0.001,0.137)	0.138 (-0.067,0.342)	0.101 (-0.011,0.213)
Electoral Competition (EC) (1-Victory Margin)	-0.069 (-0.167,0.030)	-0.133 (-0.281,0.015)	0.160 (-0.048,0.368)	0.094 (-0.149,0.338)
Appointment Office (AO) Turnover	0.206 (0.090,0.321)	0.204 (0.086,0.322)	0.124 (-0.090,0.339)	0.389 (0.195,0.583)
PE*EC	-0.187 (-0.376,0.002)	-0.131 (-0.387,0.124)	-0.102 (-0.422,0.218)	-0.172 (-0.592,0.249)
PE*EC*AO	0.152 (0.0003,0.303)	0.008 (-0.198,0.214)	0.072 (-0.195,0.338)	0.085 (-0.254,0.424)
PE*AO	0.051 (-0.060,0.162)	0.157 (-0.020,0.335)	-0.179 (-0.417,0.059)	-0.155 (-0.446,0.136)
PhD*EC	0.002 (-0.0003,0.004)		0.003 (-0.001,0.007)	
PhD*EC*AO	-0.038 (-0.088,0.012)		0.037 (-0.052,0.127)	
PhD*AO	-0.025 (-0.035,-0.015)		-0.025 (-0.041,-0.009)	
AO*EC	-0.355 (-0.563,-0.148)		-0.306 (-0.670,0.058)	
Growth	-0.009 (-0.028,0.011)		-0.003 (-0.026,0.021)	
IO Experience	0.012 (0.007,0.016)		0.018 (0.012,0.023)	
Urban Population	2.237 (1.575,2.899)	0.630 (0.584,0.675)	2.358 (1.396,3.320)	0.673 (0.598,0.748)
Country Fixed Effects	Yes	No	Yes	No
R^2	0.706	0.136	0.667	0.09
SE Type	Newey-West	Newey-West	Newey-West	
Error Correction	No	No	No	
Time Trend	Yes	Yes	Yes	
Observations	328	430	328	430

Note: Intervals in parentheses denote 95% confidence intervals using the type of standard error denoted in the row "SE Type".

Table 5: Robustness Checks: PhD, No Controls and Detrended CBI

	<i>Dependent variable:</i>		
	CBI	CBI (detrended)	
	(1)	(2)	(3)
Political Experience (PE)	-0.064 (-0.135,0.007)		-0.099 (-0.177,-0.022)
PhD		0.024 (-0.101,0.149)	
Electoral Competition (EC) (1-Victory Margin)	0.180 (0.090,0.269)	0.216 (0.063,0.370)	0.105 (0.013,0.198)
Appointment Office (AO) Turnover	0.051 (-0.048,0.150)	0.111 (-0.035,0.258)	-0.002 (-0.112,0.108)
PE*EC	0.011 (-0.091,0.113)		0.062 (-0.051,0.174)
PE*EC*AO	-0.095 (-0.277,0.087)		-0.093 (-0.290,0.104)
PE*AO	0.056 (-0.092,0.204)		0.060 (-0.103,0.223)
PhD*EC		-0.039 (-0.200,0.122)	
PhD*EC*AO		0.031 (-0.229,0.291)	
PhD*AO		-0.029 (-0.212,0.153)	
AO*EC	-0.074 (-0.199,0.052)	-0.159 (-0.359,0.040)	-0.016 (-0.154,0.123)
Growth	0.001 (-0.001,0.003)	0.002 (-0.0001,0.005)	
IO Experience	-0.047 (-0.092,-0.002)	-0.019 (-0.067,0.030)	
Urban Population	-0.017 (-0.023,-0.010)	-0.018 (-0.032,-0.005)	
CIM	-0.181 (-0.332,-0.031)	-0.185 (-0.403,0.034)	
DPI Checks	0.003 (-0.008,0.014)	0.005 (-0.014,0.025)	
Time Trend	0.011 (0.009,0.013)	0.019 (0.015,0.022)	0.018 (0.016,0.020)
Constant	1.174 (0.788,1.561)	1.611 (0.839,2.383)	0.516 (0.426,0.606)
Country Fixed Effects	Yes	Yes	Yes
R^2	0.601	0.676	0.656
SE Type	Newey-West	Newey-West	Newey-West
Error Correction	No	No	No
Time Trend	Yes	Yes	Yes
Observations	613	613	613

Note: Intervals in parentheses denote 95% confidence intervals using the type of standard error denoted in the row "SE Type".

Table 6: Robustness Check: Controls for EU Membership and Exchange Rate Regimes

	<i>Dependent variable:</i>		
	CBI	Lim.Len	Pol.Ind
	(1)	(2)	(3)
Political Experience (PE)	-0.163 (-0.247,-0.080)	-0.104 (-0.169,-0.040)	-0.291 (-0.452,-0.130)
Electoral Competition (EC) (1-Victory Margin)	0.143 (0.017,0.269)	0.108 (0.024,0.192)	-0.004 (-0.181,0.174)
Appointment Office (AO) Turnover	0.065 (-0.042,0.172)	-0.019 (-0.090,0.052)	-0.050 (-0.190,0.091)
PE*EC	0.190 (0.060,0.319)	0.046 (-0.057,0.150)	0.358 (0.145,0.571)
PE*EC*AO	-0.379 (-0.608,-0.151)	0.008 (-0.151,0.167)	-0.400 (-0.663,-0.137)
PE*AO	0.222 (0.036,0.408)	0.014 (-0.117,0.145)	0.295 (0.069,0.521)
AO*EC	-0.042 (-0.173,0.089)	-0.029 (-0.129,0.072)	0.076 (-0.089,0.240)
FX Regime	-0.038 (-0.061,-0.015)	-0.010 (-0.025,0.004)	-0.042 (-0.067,-0.018)
EU	0.072 (-0.002,0.146)	0.094 (-0.017,0.205)	0.067 (-0.051,0.186)
Growth	0.004 (0.001,0.006)	0.001 (-0.001,0.003)	0.001 (-0.003,0.004)
IO Experience	-0.111 (-0.171,-0.051)	-0.014 (-0.059,0.030)	0.035 (-0.044,0.113)
Urban Population	-0.016 (-0.027,-0.005)	-0.014 (-0.024,-0.004)	-0.022 (-0.036,-0.008)
CIM	-0.226 (-0.495,0.043)	-0.211 (-0.395,-0.026)	-0.226 (-0.534,0.082)
DPI Checks	-0.002 (-0.018,0.014)	-0.010 (-0.027,0.008)	0.001 (-0.021,0.022)
Time Trend	0.015 (0.011,0.020)	0.006 (0.003,0.009)	0.012 (0.007,0.017)
Constant	1.728 (1.065,2.392)	1.516 (0.851,2.180)	2.367 (1.474,3.260)
Country Fixed Effects	Yes	Yes	Yes
R^2	0.717	0.718	0.708
SE Type	Newey-West	Newey-West	Newey-West
Error Correction	No	No	No
Time Trend	Yes	Yes	Yes
Observations	340	340	340

Note: The variable EU indicates if a country has been a full member or an official candidate in a given year. The variable Exchange Rate Regime indicates if a country has a fixed or a flexible exchange rate. Intervals in parentheses denote 95% confidence intervals using type of standard error denoted in the row "SE Type".