Opportunistic, Not Optimal, Policy:
A Power-Sharing Explanation for Central Bank Independence in Post-Communist Countries

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Abstract

Conventional wisdom suggests that countries with independent central banks (CBI) have central banks ran by technocrats who are interested in policy not participating in electoral politics. But in many countries, politically experienced appointees lead central banks, including those that are highly independent. To explain why, we develop a formal model of candidate selection where the candidate has private information about his own political ambitions. One prediction from the model is that technocrats are awarded higher levels of CBI than candidates with political experience, but as the leader faces more formidable challengers, appointees with political experience get higher levels of policy discretion as well. We test our theory using an updated measure of CBI and biographical data for 29 post-communist countries between 1990 and 2012. We find evidence that the electoral strategy of the appointing political incumbent is an important predictor of a country's level of CBI.

Introduction

How much policy discretion should a government give its central bank, and who should occupy its helm? What mechanisms drive the delegation of monetary policy and the granting of policy independence? The classic model of central bank delegation focuses on the benefits that arise from delegating monetary policy discretion to independent stewards or experts with inflation aversion (Barro and Gordon 1983; Rogoff 1985).[1] Delegation is thought to be most efficient in democracies (Broz 2002; Bearce and Hallerberg 2011), although scholars show that even in non-democracies, handing over monetary authority to bureaucratic experts, or technocrats, can help save the economy from cycles of credit booms and busts (Shih 2008). Independent central banking is, therefore, typically associated with the transference of policy discretion to outside experts.

Yet most of these studies assume that high levels of CBI precludes the possibility that central bank governors have electoral ambitions. Empirically, however, we observe a number of cases where the heads of even highly independent central banks have ran in and won elections, especially in post-communist countries. In the Czech Republic, for example, 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. The current governor of the central bank, Jiří Rusnok, acted as the country's prime minister from 2013 to 2014 and had widely been seen as an ally of the current prime minister, Miloš Zeman, since the party's beginning in the 1980s (Petříček 2016).

Existing literature, therefore, falls short of offering a full explanation for how CBI can coexist with politically ambitious central bankers. Some scholars point out that central bankers may be beholden to outside interests as they try to advance their own personal careers (Adolph 2013) and conform with behaviors expected by their social networks and peer groups (Johnson 2016; Kaplan 2017). Our argument instead suggests that the level of policy independence – or policy discretion

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

from the government – given to the central bank governor – is influenced by the reelection strategy of the incumbent who holds the appointment rights. In particular, we argue that the level of policy discretion granted to the appointee is determined by the ability for the leader to use greater offers of policy discretion to discern a candidate's electoral motivations. We show how the leader can use greater promises of policy discretion to differentiate those central bank candidates that favor policy (technocrats) from those that favor political office (contenders). Because technocrats prioritize policymaking, the leader can use discretion to attract technocrats and commit electoral campaign resources to deter contenders. This allows the leader to substitute discretion granted to a contender with electoral resources committed against a technocrat.

Based on this mechanism, we make two central predictions. Because past political experience indicates an interest in electoral politics, the leader gets away with granting less discretion to the technocrat while the contender's ability to extract discretion from the leader decreases. Thus, central banks with politically experienced governors are granted less CBI than banks with experienced governors. This is consistent with extant views on the relationship between CBI and political appointments. However, when the election margins narrow as policy-minded candidates become more serious electoral challengers, identifying whether a candidate is a strong electoral challenger becomes less important. Thus, a politically experienced governor-candidate will receive similar levels of discretion as a politically inexperienced one.

While the general model can be applied to other policy areas and countries, our empirical tests focus on explaining central bank independence in post-communist countries. After the fall of the Berlin Wall, the breakdown of the Soviet Union left its successor states to develop political institutions and markets simultaneously (Frye 2010). One important reform included determining the level of independence the central bank had from the government (Johnson 2016). Importantly, reforms made at the start of the transition period had variable staying power and were often subject to change.[2] To explain this variation, we test our argument using original data on central bank

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2. For example, the Hungarian case alone shows both the central bank being captured by a loyal ally of the gov-

appointments from 29 post-communist countries between 1990 to 2012. Consistent with our argument, we find an overall negative association between central bank governors with prior political experience and a country's level of CBI. This accords with the existing literature on the politics and delegation, however, the rationale for why is different in our model. Additionally, we also show that in elections with a smaller margin of victory, the gap in CBI associated with and those without political experience narrows. Specifically, in those elections where the appointing politician retains his or her incumbency, the closer the margin of victory, the lower the penalty that a candidate pays for having political experience.

Our findings offer a new explanation for why we observe politically experienced central bank governors at the helm of central banks, and even those central banks that have relatively high levels of independence. We show how the policy discretion that technocrats receive on account of their being politically unmotivated declines as the leader faces more consequential opponents. Thus, as electoral competition and other factors push up independence, we see governors with political backgrounds associated with appreciable levels of CBI as well.

Our theory contributes to the literature by showing how CBI can be used by those in political power to help secure their reelection. Thus, our theory aligns well with a growing literature examining how domestic political institutions can be used opportunistically by leaders (Shih 2008; Gandhi and Lust-Okar 2009; Svolik 2009). We also contribute to the literature on the quality of appointments (Reuter and Robertson 2012) and show how leaders' survival tactics can in part help explain the appointment of politically motivated individuals to powerful bureaucracies.

The Political Origins of CBI

Previous explanations for the origins of central bank independence usually center on domestic factors, such as partisanship and delegation; the role of democracy and democratic institutions;

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ernment and the EU intervening to hold off the capture for two years, but then running out of tools for maintaining its independence (Johnson and Barnes 2015).

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). 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.

Even if governments would prefer control of the money supply, the economic benefits of monetary delegation often compel them to institute CBI. 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). Countries that have stronger socioeconomic cleavages are also expected to delay costly inflation reforms and therefore have higher inflation (Alesina and Drazen 1991).

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), for example, left-leaning parties use information about the educational background of central bankers to infer whether appointees hold heterodox or mainstream policy preferences; left governments then appoint mainstream economists when the economy is doing poorly. Similarly, in Johnson (2016), incumbents use information about careers in international organizations (IO). Actors with IO experience are expected to hold loyalties to global epistemic communities, which skews their preferences away from the local economy and towards their international peer group. Similarly in Adolph (2013), central bankers' future career aspirations can affect their policy preferences today. This research shows that those interested in working in finance are generally more inflation averse.

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Even a central banker's ascriptive characteristics, like gender, is thought to matter, with women being relatively more inflation averse than their male counterparts (Diouf and Pépin 2017).

We build on these last two sets of scholarship – the political role of central banks, as well as the individual attributes of central bank governors – and construct a new explanation for why central banks vary in terms of the level of discretion awarded to the central bank governor (CBG). While many scholars have discussed the ways in which governments in advanced democracies can structure autonomous appointments (Balla 1998; Calvert, McCubbins, and Weingast 1989; Huber and Shipan 2002) and the benefits that this entails, the literature predominantly highlights how bureaucratic agencies in general may acquire good reputations for competence (Carpenter 2001; McCarty 2004), and utility from their posts (Gailmard and Patty 2007), yet little research examines why political experience matters for selecting a central bank governor other than aligning policy preferences. Furthermore, the literature primarily focuses on the U.S. and other consolidated democracies, without acknowledging the role that autonomous agencies such as central banks play in newer or transitioning democracies. In such places, members of the professional class often play multiple roles.[3] Indeed, while one might argue that central bankers have rarely made good politicians or are uninterested in winning elections, such an argument is empirically unsupported. Not only does the sheer number of central bankers who have had political careers suggest otherwise, the electoral success of some bears this out as well.[4] Thus, even those governors who seem, at first glance, to be uncharismatic bureaucrats can and do pose electoral challenges to political incumbents, and even for the highest political office. The possibility of such challenges, therefore, may pose electoral risks for those currently in power, which is, to our knowledge, a concern missing in previous literature.

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3. For recent exceptions, see Ainsley 2017; Johnson 2016; Shih 2008; Kaplan 2017

4. In Ukraine, for example, Viktor Yushchenko started out his government career as a modest and competent central banker. Then-President Leonid Kuchma, under pressure from the International Monetary Fund, appointed him as prime minister in part because he seemed nonthreatening and lacking in ambition ("Viktor Yushchenko, Ukraine's faint hope," *The Economist,* 4 May 2000). But Yushchenko went on to oust Kuchma in the so-called Orange Revolution in 2000.

According to the biographies of central bank governors in post-communist countries 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 CBG in post-communist countries since transition. While the number of central bankers with political experience has stayed relatively constant over time, the strength, power, and independence of the institutions that they command has grown enormously. What accounts for a rise in politically experienced CBGs with significant policy discretion? The next section presents a formal game theoretic model that provides a new explanation based on electoral threats to the appointer.

Figure 1: CBI and Political Appointments
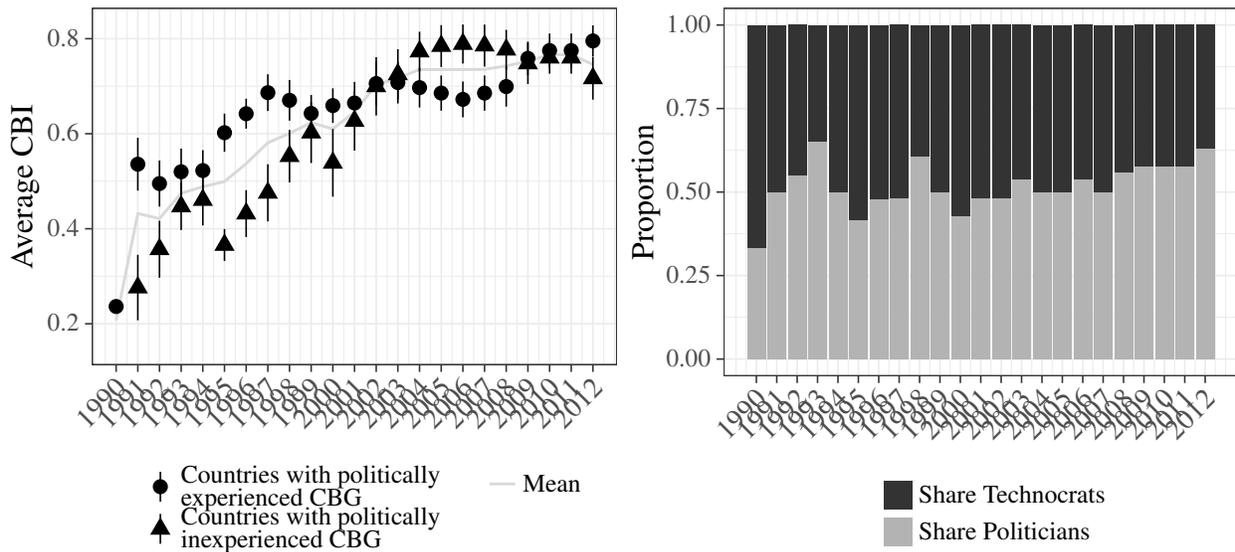
Incumbent Survival and Policy Discretion

We develop a simple game theoretic model of candidate selection where the incumbent with the appointment powers (the leader) has imperfect information about a candidate's political ambition.[5] We do this to highlight how the electoral risks that a candidate might pose to a political incumbent can help explain the level of policy discretion the candidate is awarded. While our focus in this model 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. Our argument proceeds in three stages. First, we construct a principal-agent model in which a leader with central bank appointment powers wants to ensure her reelection and give up as little of central bank discretion as possible. Given a single candidate, the leader needs to decide the optimal level of policy discretion she should award the nominee as well as sufficiently invest in her reelection strategy against the nominee if it turns out that her is indeed a formidable rival in an election. A central problem facing the leader is therefore how to ensure her reelection while limiting the amount of policy discretion given to the nominee. While the leader can use information about the nominee's prior career for clues about whether or not he is an electoral threat, the leader is, however, only imperfectly informed about the nominee's true electoral ambitions to replace her.

Next we show how the leader (she) can prevent the candidate (he) from misreporting his true political ambitions by presenting the candidate with a menu of appointment offers with a different set of policy discretion and electoral campaign investment efforts committed to different types of candidates – i.e. discriminating offers. We explore how the leader uses this offer menu so as to learn which candidates value office (technocrats) and which value elected office (contenders). We show how the leader uses this offer menu to try to discourage candidates from running for elected office.

Lastly, we compare the leader's offer to the candidate when she observes prior political experience and when she does not. Since politically experienced nominees are more likely to be political

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5. We use the terminology nominee and candidate interchangeably.

challengers, the leader wants to grant less discretion to a politically experienced candidate. Yet, as the candidate becomes more electorally motivated, we expect to see a smaller margin of victory and higher levels of CBI awarded to those even with political experience.

One key empirical implication from our model is that as the overall political ambitions of candidates increases, even candidates with past political experience receive a greater level of policy discretion. A second empirical implication is that as the overall competitiveness of candidates increases, elections will have closer vote margins. This is because the leader is less inclined to devote significant campaign efforts to more formidable challengers. The potential threat to the leader's political survival, therefore, determines both the amount of policy discretion the leader delegates to the challenger as well as her investment strategy in securing her reelection.

More formally, consider a situation where a leader (L) needs to appoint a nominee or candidate (K) as central bank governor.[6] Importantly in our model, the candidate is not only the leader's agent but also her political competitor.[7] We assume that different candidates have different relative expected valuations for holding elected office and policy office which we refer to as f and 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 to 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*. Formally, the candidate, K is of two types $\theta \in \{\underline{\theta}, \bar{\theta}\}$ and contenders ($\bar{\theta}$) always have a larger elected office value than technocrats ($\underline{\theta}$), so that $f(e, \bar{\theta}) > f(e, \underline{\theta})$ for all $e > 0$. Further, we 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 $\frac{\partial f}{\partial^2 e} \geq 0$. We also assume that K's political ambition is private information known only by the candidate. Further, we assume

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6. We use K or nominee / candidate so as not to confused him with a contender.

7. We do not make specific institutional assumptions about the political contest in which the two actors engage. Our empirical test in the next section focuses on inter-party competition in elections but in principle our argument also holds for intra-party competition.

that as the leader grants more policy discretion and expends more effort towards reelection, the candidate's expected influence over policy, $p(e, d)$, increases such that $\frac{\partial p}{\partial e} > 0$ and $\frac{\partial p}{\partial d} > 0$. Lastly, we assume that the leader's own valuation of holding office, $o(e)$, is increasing in her campaign efforts so that $\frac{\partial o}{\partial e} = o_1 > 0$.

We also assume that the leader can observe the candidate's previous career path, $\pi \in \{0, 1\}$, 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 $\Phi(\pi) = P(\theta = \bar{\theta}|\pi)$. From observing the candidate's previous career path, the leader can derive (imperfect) information on whether the nominee is a technocrat or a contender.[8] We capture this by assuming the following:

Assumption 1

If a candidate has prior political experience it is more likely that he is a Contender than a Technocrat.

$$\Phi(\pi = 1) > \Phi(\pi = 0)$$

To keep things simple and to focus on the equilibrium relationship between the level of discretion offered to the nominee and the amount of effort expended by the leader rather than focus on the electoral contest itself, we 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. Since the election stage is not the mechanism we focus on, we assume that the candidate acts non-strategically so that the election outcome is exclusively determined by the leader's choice of effort. Although modeling the candidate's campaign response would have produced a more intuitive implication for effort, this is not the mechanism driving our result and we chose to simplify this stage. Specifically, the nominee's own effort in winning the election is strategically indepen-

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8. A contender would have had an incentive to enter a political career prior to becoming a candidate for the central bank governorship. 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.

dent of the leader's effort. Importantly, however, as the leader faces a more politically ambitious candidate, she expends less campaign effort, resulting in a closer election result. The reverse is also true. While 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. For a similar argument see (Banks and Kiewiet 1989). 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 $v(e) \in [0, 1]$. The intuitive implication of this function is that more ambitious candidates lead to narrower vote margins and that less ambitious candidates lead to wider vote margins.

Utility Functions

We model K's payoff as,

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

This simple utility function implies that the nominee's overall utility increases in the expected office valuation and the expected valuation from policy influence if he accepts. In case he rejects the offer, the nominee receives a reservation utility $r > 0$. Similarly, the leader's utility function can be written as,

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

The leader's overall utility increases in the expected office valuation and decreases in the level of discretion awarded and cost of campaigning. To keep things simple, we normalize the leader's reservation utility to zero in the case where the candidate rejects her offer.[9] Lastly, we assume that campaign efforts come at a cost defined by the cost-function $c(e)$ with $c(0) = 0$, $\frac{\partial c}{\partial e} = c_1 \geq 0$ and $\frac{\partial c}{\partial e^2} = c_2 \geq 0$.

Game Sequence

The game sequence is depicted in Figure 2. The leader cannot perfectly observe the candidate's political ambition so her 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
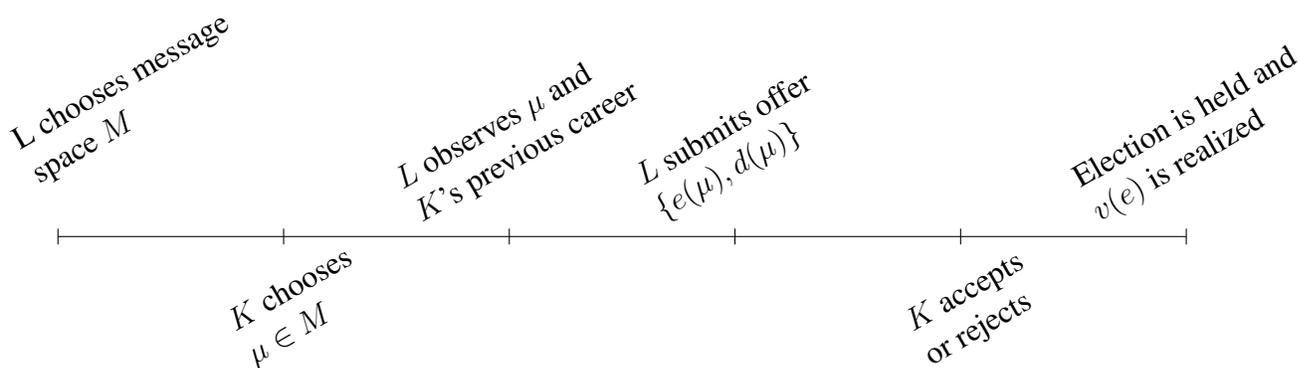
Equilibrium

A key concern of the leader in successfully appointing a nominee while ensuring her own reelection is that both *Technocrats* and *Contenders* may benefit from misreporting their type. If the leader makes a one-size-fits-all offer, both nominees may have incentives to try to extract more concessions from the leader. In the appendix we show how the leader always gains by preventing the nominee from misreporting. Following the revelation principle (Myerson 1979), we therefore focus on finding a truthful, direct mechanism i.e. an offer menu for the leader that depends on messages chosen from the type-space θ. Focusing on truthful reporting allows us to simplify notation so that $d(\underline{\theta}) = \underline{d}$, $d(\bar{\theta}) = \bar{d}$, $e(\underline{\theta}) = \underline{e}$ and $e(\bar{\theta}) = \bar{e}$. We find that the candidate reports truthfully as long as the leader's offer satisfies the following constraint for each type,

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

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

These constraints are important for uncovering the equilibrium outcome below.

Case 1: Technocrats

We first establish L's equilibrium offer if nominee K reports 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 there are two types of candidates, this implies,

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

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

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

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

Two implications follow from equation (3). First, if $\underline{P}$ and $\overline{IC}$ are satisfied, $\overline{P}$ will be satisfied as well. In words, if an offer is acceptable to a technocrat, it will also be acceptable to a contender. Second, if $f(\underline{e}, \theta) > 0$ then $\overline{P}$ is the only binding participation constraint. If this was not the case, the leader could reduce the level of policy-discretion granted to the technocrat, while still satisfying all other constraints. What this means is that a technocrat always receives exactly his reservation utility in the form of some combination of campaign effort and policy discretion. How 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.

Case 2: Contenders

Next, we consider the leader's equilibrium offer if the candidate reports that he is a contender. From equation (3), we know that a contender's participation constraint is satisfied by implication of $\underline{P}$ and $\overline{IC}$, and that it is not binding as long as the leader grants some level of discretion to the candidate.[10] Further, in equilibrium $\overline{IC}$ is always binding. If this was not the case, the leader would offer a combination of effort and discretion that satisfies $\overline{IC}$ by strict inequality. What this means is that the leader could increase her utility by decreasing the amount of discretion granted to the candidate, meanwhile keeping all constraints satisfied.[11] Intuitively, not being able to observe the candidate's political ambition makes the leader consider whether or not the candidate is misreporting. In order to prevent misreporting, the leader must therefore implement an offer strategy that includes both running an efficient campaign and making an optimal delegation choice at the same time as stifling any information advantage that the candidate has over the leader about his own political motivations. The leader's equilibrium offer reflects these concerns.

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10. Formally, this is $u_K(\bar{d}, \bar{e}), \bar{\theta}) = u_K(\underline{d}, \underline{e}), \bar{\theta})$ if $p(\bar{e}, \bar{\theta}) > 0$

11. In the appendix, we show that the solution to this subconstrained problem is also a solution to the overall problem.

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Proposition 1

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

$$f_1(\bar{e}^*, \bar{\theta}) = c_1(\bar{e}^*) - o_1(\bar{e}^*) \qquad\qquad p(\bar{d}^*, \bar{e}^*) = r - f(\bar{e}^*, \bar{\theta})$$

$$f_1(\underline{e}^*, \underline{\theta}) = c_1(\underline{e}^*) - o_1(\underline{e}^*) \qquad\qquad\qquad\qquad + f(\underline{e}^*, \bar{\theta}) - f(\underline{e}^*, \underline{\theta})$$

$$+ \frac{\Phi}{1 - \Phi}(f_1(\underline{e}^*, \bar{\theta}) - f_1(\underline{e}^*, \underline{\theta})) \qquad p(\underline{d}^*, \underline{e}^*) = r - f(\underline{e}^*, \underline{\theta})$$

As shown in the appendix, Proposition 1 implies that the leader always exerts more campaign efforts to a nominee who says that he is a technocrat. While counter-intuitive, this result conforms with the intuition that stronger candidates lead to closer election outcomes. The leader exerts more campaign effort towards a technocrat in order to make it less attractive for a contender to misreport his type. Importantly, this affects how much discretion the leader grants the candidate in two ways. First, the leader grants more discretion to a candidate reporting to be a technocrat than to a candidate reporting to be a contender. This 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 $f(e, \bar{\theta}) > f(e, \underline{\theta})$. Such a finding implies that nominees who are politically ambitious are likely to be associated with less policy discretion. Second, any additional effort exerted towards a technocrat is increasing in the leader's prior belief that the nominee is a contender. Furthermore, this 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.

While the leader cannot observe the true political ambitions of the candidate, she can observe his prior career. One important question, therefore, centers on how information about the nominee's prior experience affects the 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.

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

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 (2):

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

The key reason why the leader makes the candidate discriminating offers 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 minimizes 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 so offers greater policy discretion.

Second, while the composition of the leader's menu of offers depends on the candidate's ambition, as reported by the candidate, prior observable information about the candidate – such as whether or not he has a prior political career – 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 a contender than she will to a technocrat.

Next we ask how the above relationship changes as the leader exerts more or less effort, such as an increase in her office valuation or higher cost of campaigning.

Proposition 3

As long as it is sufficiently likely that a candidate turns out to be a contender, the discriminating

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effect increases in size as the leader exerts more effort.

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

Intuitively, consider the two parts that determine the discriminating effect of the leader's offer.

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

Propositon 1 implies that the second term is always positive, meaning that as Φ 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 may increase in Φ as well. The intuition for Propositions 2 & 3 is thus 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 advantage of knowing something the leader does not – the leader grants less discretion to a candidate with a prior political career and will do so to a larger extent if she runs a more fierce reelection campaign.

Policy Discretion and Vote Margin

In this section, we now use specific functional forms instead of our general model above and illustrate how the leader's information problem affects the level of discretion the leader grants to the central bank nominee. We also examine how this changes as the leader's efforts towards ensuring her reelection changes. The central predictions are that politically experienced nominees receive less discretion than politically inexperienced nominees and that the discrepancy between

Figure 3: The Effect of Political Experience on Discretion
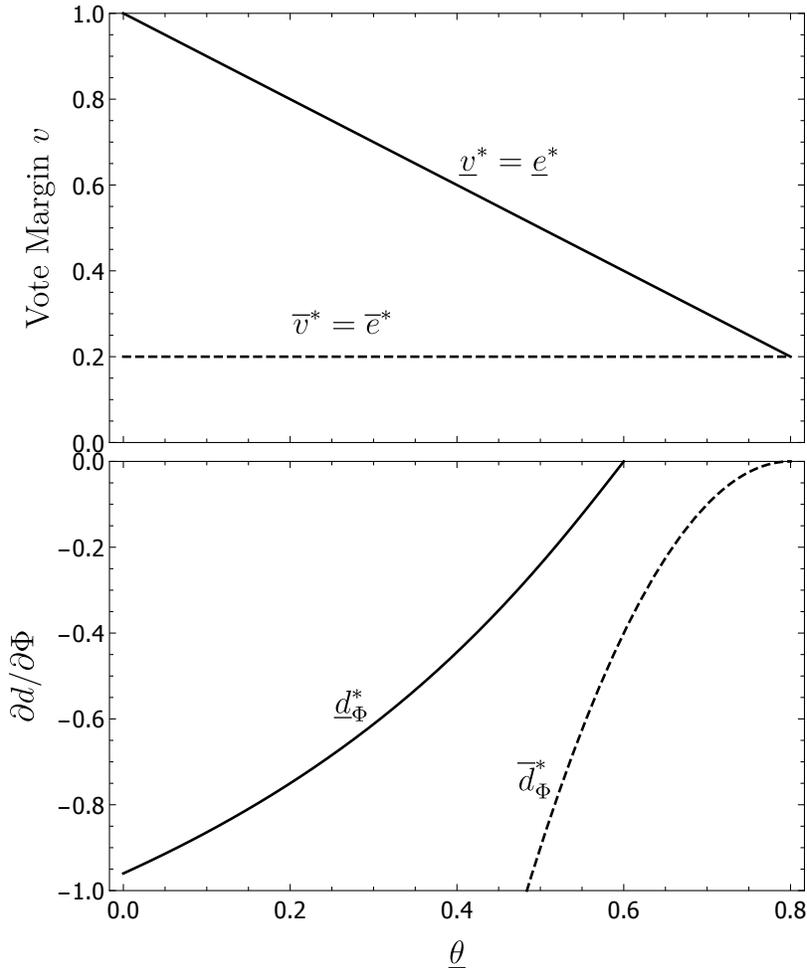
Note: The figure shows equilibrium changes for the functional forms of f, p and o as shown in the appendix, assuming $r = 0.6$, $o = 1.2$, $\bar{\theta} = 0.8$, and $\Phi = 0.5$

the offers attenuates as the leader exerts less effort, i.e. the vote margin decreases.

For 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 $\{\bar{e}^*, \bar{d}^*\}$ $\{\underline{e}^*, \underline{d}^*\}$ be the leader's equilibrium offers and $\bar{d}_\Phi^*$, $\underline{d}_\Phi^*$ the change in discretion d offered to a technocrat and a contender due to observing that the nominee has past political experience, Φ.

Figure 3 illustrates the two central results of our model. First, given our assumptions, the leader

always offers less discretion to the nominee after having observed that he has had a previous political career. What this means in terms of our model is that $\underline{d}^*_\Phi$ and $\bar{d}^*_\Phi$ 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. Thus, when facing a politically experienced candidate, the leader needs to threaten less campaign resources in order to learn about the candidate. 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 results 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, under certain conditions, the negative effect of having a political career decreases in size, as the leader exerts less effort towards campaigning. Recall that less effort implies a closer electoral vote margin. As noted earlier, this attenuation effect is conditional on how any additional information affects the contender's information rent, however. For example, if the electoral arena is becoming more competitive because the pool of previously apolitical technocrats begins to pose a more serious threat to the leader, even politically experienced candidates will receive higher offers of discretion. This result generalizes to any parameter value of o, $\bar{\theta}$ and Φ. For the case that the candidate reports to be a technocrat (solid line), the effect is also negative so long as $\underline{\theta} < r < \bar{\theta}$.

From these three propositions, we derive the following testable hypotheses:

H1: Political Experience and Policy Discretion: *On average, candidates with political experience will be awarded lower levels of policy discretion than candidates without political experience.*

Our model predicts a negative relationship between political experience and policy discretion. This is consistent with the extant understanding of the relationship between CBI and political appointments, however, the underlying reasoning for this gap is different from previous literature. In previous theories, technocrats are granted greater CBI because they are apolitical. In our model, rather than being rewarded, technocrats are offered greater CBI so as to dissuade those with po-

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litical motivations from misreporting and hence more easily challenging. This implies that an additional rationale, from the perspective of the leader, for committing a technocrat CBG is that it ensures the incumbent an easier reelection. The second hypothesis is that any assurances provided by this strategy is less effective the more formidable the candidate, and consequently, the less gap we expect to observe in the level of CBI offered across the types.

H2: Effort and Policy Discretion: *As the leader's electoral vote margin decreases, there is an associated increase in the level of policy discretion offered to candidates with political experience.*

Data and Methodology

Sample and Data

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 collect a new dataset on central bank governor (CBG) appointments across time in 29

post-communist countries between 1990 and 2012.[12] This new dataset includes 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 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. In our dataset, being politically experienced in the early 1990s means that an individual held a position in the previous communist regime, or was part of the transition government/legislature. We code whether the individual has ever held a political post, regardless of when it was held.[13] 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.

De jure Central Bank Independence

Our main dependent variable is the granting of monetary policy discretion. We operationalize policy discretion using an index of *de jure* central bank independence in country j in year t, with the (Cukierman 1992) measure, recently updated by Garriga (2016). The index ranges from 0 (completely dependent) to 1 (completely independent), with a sample mean of 0.64 and a standard error of 0.2. The CBI index is a sum of three dimensions: personnel, policy objectives, and policy tools, weighted according to the judgment of the initial authors Cukierman (1992). The personnel dimension concerns the term length, the appointing and dismissing body, and whether CBGs can

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

13. As 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.

hold parallel public office. Since information on the previous vocational experience of the CBGs is not included in the CBI index, we are confident that this index is independent from our main explanatory variable.[14]

Political Experience

Our key explanatory variable is whether or not the appointed CBG has past political experience or not, or *political experience*. 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; 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 has past vocational experience 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. We also code whether or not the individuals 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 empirical and theoretical model, we restrict 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

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14. As a robustness check, we ran all of our models with the different components of CBI and find that the results are mainly driven by the policy independence and limitations on lending components.

for each central bank again from the central bank directory resources and also central bank laws from central bank websites across countries in our sample. We then code 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 the 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.

We also 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. As 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. As a preview, we 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.

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, 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 – the difference in the number of seats – won by the first and second parties.[15] We then transform the variable, taking $1 - \texttt{seatmargin}$ such that electoral competition is higher when the seat margin is

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15. We 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.

smaller and electoral competition is lower 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 candidates in the first round of the presidential election. As above, we transform this variable $1 - \texttt{votemargin}$, such that a smaller vote margin is again associated with higher competition and a larger vote margin with lower competition.[16] The underlying data are from (Coppedge et al. 2016), which aggregates election data from Europe and Asia (Nohlen and Stöver 2010; Nohlen, Grotz, and Hartmann 2001).

Control 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). We expect that CIM will be positively associated with the level of CBI in a country and also positively associated with inflation.

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 CBI.

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.

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16. There 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.

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, *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 CBI.

We include a measure of the country's growth rate from the WDI, which we expect matters for both the level of CBI as well as for the competitiveness of the election, *gdp per capita growth*.

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).[17]

Empirical Strategy

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).[18] Model (2) is specified as:

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

In the supplemental appendix, we show that the variables that we use are between 0 and 19% missing, which leads to the listwise deletion of 386 country-years. For our main analyses, we

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17. As 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.

18. Model 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. More specifically, we estimate the model $y_{j,t} = \alpha + \beta_1 PA_{j,t} + \beta_2 EC_{j,t} + \beta_3 AO_{j,t} + \beta_4(PA_{j,t} * EC_{j,t} * AO_{j,t}) + \beta_5' X_{j,t} + \theta_j + \nu_{j,t}$, with $\nu_{i,t} = \rho_i \nu_{i,t-1} + u_{i,t}$ under the assumption that $u_{i,t}$ is white noise.

report the findings with missing data. In the supplemental analysis, we impute the missing data 10 times using a prediction model featuring a wide array of predictors and include specifications with the imputed data.[19] We find consistent results irrespective of imputation.

Empirical Results

We present the results from our model specifications (1-3) using a coefficients' plot for ease of interpretation. As predicted by our first hypothesis, we recover a negative independent relationship between political experience and CBI 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 CBI, 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 CBI again when other conditions are not present (there is a technocrat appointed and no electoral competition).[20]

In addition to the independent effects, our main variable of interest from hypothesis 2 is the multiplicative relationship between political appointments, incumbent turnover, and the margin of victory. In order to interpret the effect of a change in effort on the marginal effect of political appointments on CBI, 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 such outcomes. As predicted by hypothesis 2, we see that the level of CBI granted to political nominees becomes closer to that of technocrats (i.e. the negative effect attenuates), as the margin of victory declines.[21] For those cases where the incumbent is not

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19. All imputations were performed using the AMELIA II package (Honaker, King, Blackwell, et al. 2011).

20. We also checked 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.

21. 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

Figure 4: Effects of Political Appointments and Electoral Competition on CBI
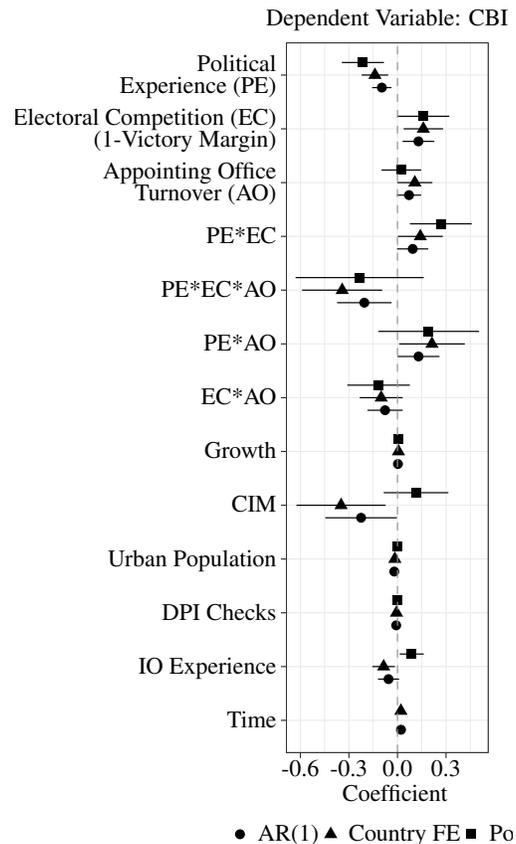
Note: The plot represent the model results depicted in the supplemental appendix. The dependent variable in all models is CBI. The lines show 95% confidence intervals

reelected, we do not find any attenuation.[22]

What about the results for our control variables?[23] We find that GDP growth is positively associated with CBI across all models, although its effects are not large. The CIM measure is positively associated with CBI until we include the time counter to account for the increasing trend. The time trend picks up over-time covariation in movements, likely the increase in the

effect. We find consistent results irrespective of whether the political experience is before or after, suggesting that information asymmetries is likely one of the mechanisms at play.

22. 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.

23. We also run a stripped-down model where we only consider the components of the interaction term and the time trend, as most of our control variables, along with the time trending variable, are expected to be positively correlated with CBI. We find no substantively different results. We report this test alongside others in the supplemental appendix.

Figure 5: Marginal Effects of Political Appointments on CBI (AR(1) - Non-imputed)
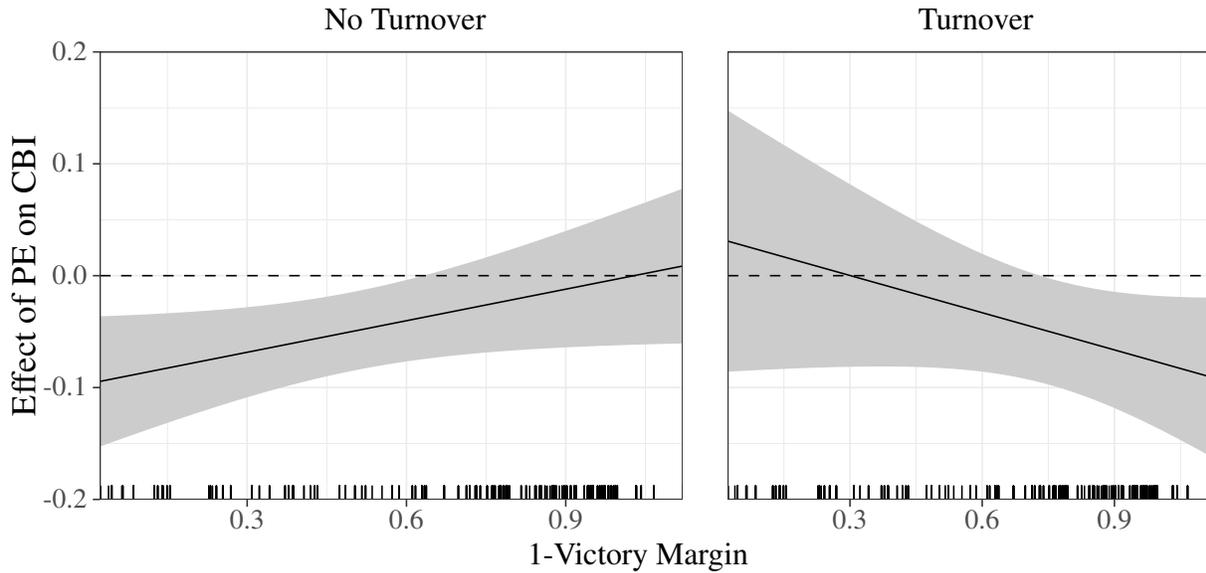

credibility of these institutions over time. Our urban population variable is also not substantively important; neither is the democracy variable DPI checks. Like the CIM measure, whether or not someone has experience in an IO is positively related to CBI in the pooled specification. However, this effect reverses once we include the time trend, the result of the joint increase in the probability of working in a IO and CBI over time.

What Kind of Political Experience?

While the above examines the impact of political experience, if what actually matters for incumbents is whether or not a CBG acts as an electoral threat or not, 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. The estimates shown in Figure 6 are based on the same specification as in

Figure 6: Marginal Effect of Political Experience on CBI by Type of Experience
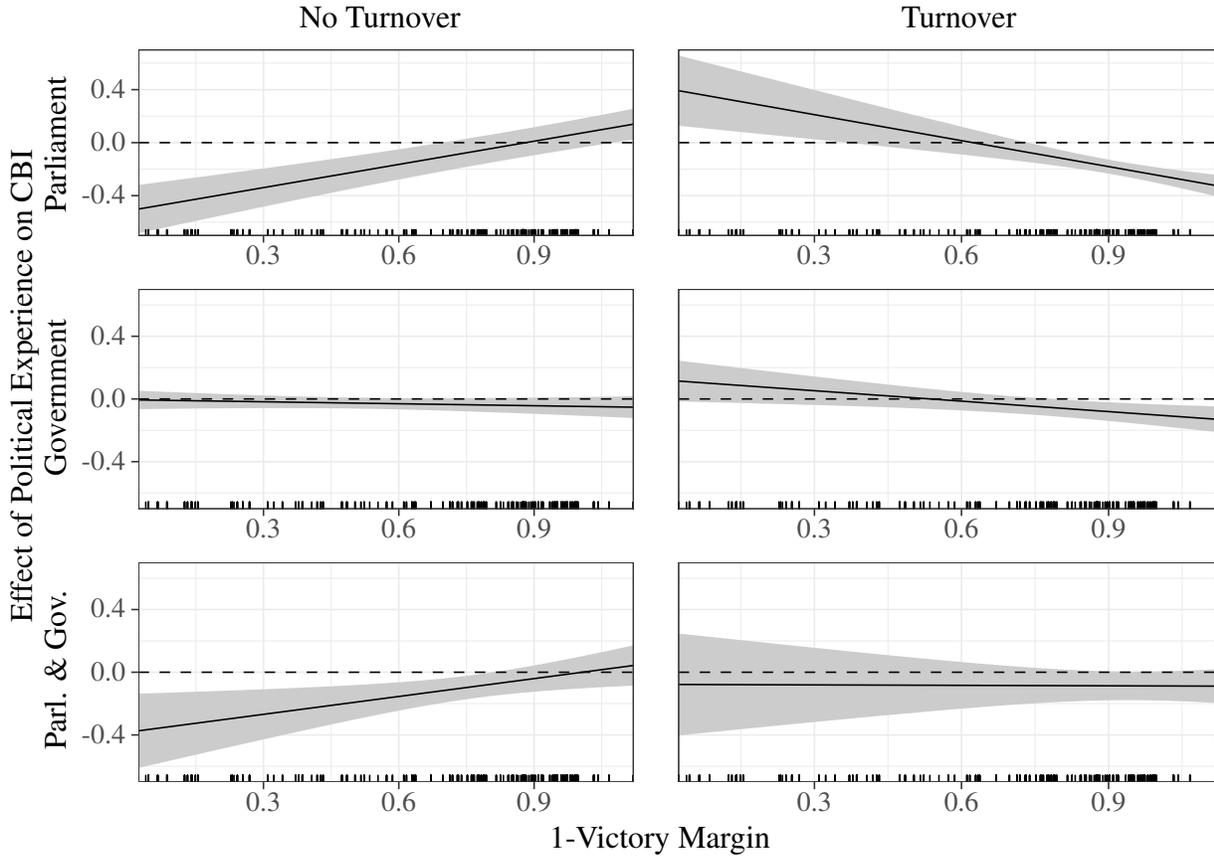
model (2) above.[24] These results suggest that CBGs who were parliamentarians have a stronger attenuation affect (are more likely to be granted discretion) than CBG appointments from the executive branch of the government. At low levels of competition, the difference in expected values of CBI with a previous parliamentarians vs. technocrats as governor is about 0.1 index points lower than the difference in expected CBI with executive member vs. technocrat. 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 expe-

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

rience. Furthermore, this negative association holds when we account for a number of possible co-determinants such as experience in a IO or a country's political and economic conditions. Additionally, we also find evidence that as the margin of victory narrows, candidates with political experience lead central banks with similar levels of CBI as their non-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. Here we find that the relationship between experience and margin or victory 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? Theoretically, our paper explains how appointments to a country's central bank can be used opportunistically by incumbents to secure their reelection. Our theory demonstrates one mechanism whereby political incumbents use higher offers of policy discretion and threats of higher campaign efforts to distinguish nominees that favor policy from nominees that favor electoral office. We show that an incumbent's success in screening candidates crucially depends on the expected race facing the incumbent. As the overall quality of challengers increases, elections become more competitive, and the incumbent's willingness to use discriminating offers lessens. Our model therefore shows a previously unexplored relationship between political appointments and central bank independence. It predicts that the level of discretion granted to candidates with political backgrounds will converge towards the level of discretion awarded to technocrats as electoral victories narrows. Another contribution is the development of a new and important dataset that looks at the politics of central bank appointments outside of OECD countries.

While our argument focuses on those conditions that determine politically experienced appointees, outstanding questions remain. Future research might explore the consequences of an increase in political appointments on a battery of macroeconomic outcomes that central bank independence is expected to matter for, such as inflation, asset prices, and growth rates. Other future work might construct a measure of *de facto* rather than *de jure* CBI and compare with our results. 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, especially after central banks "won" enlarged powers during the U.S. and European financial crises, or be more embedded into domestic politics, it is worth investigating whether or not those countries with a higher proportion of politically experienced central bankers do indeed narrow the democratic deficit. An alternative and more pessimistic argument is that with an increase in political ties between the central bank and the government, cronyism is closer at hand.[25]

Furthermore, for countries transitioning to democracy, our argument points to a previously unexplored trade-off in the development of a country's bureaucracy. 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 central banks and governors with strong political ties may be at risk of encouraging 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 leaders may 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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25. For example, on trust in the European Central Bank see (Kaltenthaler, Anderson, and Miller 2010).

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