A Model of Politics and the Central Bank

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Abstract

We develop a model of the interaction between an independent central bank and a government seeking to win elections. We find that a hawkish central bank increases the incumbent's chance of reelection. This leads governments to prefer more inflation-averse central bankers than is socially optimal, rationalizing the political success of inflation targeting. The incumbent's preference for an inflation-averse central bank arises from a desire to improve economic outcomes conditional on being re-elected, but to worsen them conditional on losing the election. The political selection implies that a hawkish central bank leads to higher but less volatile unemployment. Consistent with the model, panel evidence from developed countries shows incumbents are more likely to be re-elected when central banks adopt a single inflation mandate or when executives hold appointment powers over central bank governors.

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1 Introduction

Central bank independence has been widely successful, and yet its success has appeared under threat in recent years. The global trend toward central bank independence (CBI) over the past several decades is often viewed as a successful institutional response to the problem of time-inconsistent monetary policy. Following the seminal work of Kydland and Prescott (1977) and Barro and Gordon (1983), economists recognized that governments are tempted to stimulate output through surprise inflation, particularly ahead of elections. To remedy this problem, many countries delegated monetary policy to independent central banks, ideally staffed by conservative policymakers in the spirit of Rogoff (1985) "inflation-averse central banker." The conventional narrative holds that elected officials recognized the economic benefits of CBI and voluntarily constrained their own discretion for the sake of macroeconomic stability.

Yet, this account leaves a crucial political economy question unexamined: do office-motivated politicians—who care about reelection and not social welfare—have genuine incentives to establish independent central banks and appoint appropriately hawkish central bankers? In practice, governments remain central actors in the appointment process, and recent episodes in countries such as Turkey or the U.S. suggest that CBI may be more fragile than once believed. This raises the question whether the observed wave of CBI was merely a technocratic success due to a coincidence of historical circumstances, or whether CBI can be viewed as a conscious choice made by politicians in the face of electoral pressures.

In this paper, we ask whether governments indeed have incentives to appoint appropriately hawkish central bankers. To do so, we revisit the canonical model of monetary policy delegation (Barro and Gordon, 1983; Rogoff, 1985), and combine it with a classic model of government competence and elections (Ferejohn, 1986). Crucially, we focus on the govern-

ment's choice of the central banker and assume that instead of maximizing social welfare, the government makes choices to maximize its reelection chances.

At the start of the game, the incumbent government appoints a central banker who is to conduct monetary policy for the rest of the game. The voters and the central bank have similar preferences, modeled as a classic quadratic loss function over inflation and unemployment fluctuations, but the relative weight on inflation vs. unemployment of the central banker is chosen by the government and may differ from that of the voters. We label a central banker with a high weight on inflation fluctuations *inflation-averse* or *hawkish* and a central banker with a low weight on inflation fluctuations as *unemployment-averse* or *dovish*.[2] Inflation and unemployment are linked via a forward-looking Phillips curve, where public inflation expectations are formed rationally. The main departure from Barro and Gordon (1983) and Rogoff (1985) is that the standard cost-push shock to unemployment in the Phillips curve reflects the government's competence. So a lower quality government tends to lead to higher inflation and higher unemployment on average.

In the first period, the incumbent's competence is drawn and observed only by the government and the central bank. Voters observe only unemployment, which is a function of the incumbent's competence and the monetary policy, and draw inferences about the incumbent's competence. Finally, the voters choose whether to re-elect the incumbent, in which case her competence persists to the second period. Alternatively, voters can elect a challenger, whose competence is unknown but drawn from a known distribution with zero mean. In the second period, the central bank again sets inflation, taking inflation expectations as given, inflation and unemployment are realized, and the game ends.

[2]While we refer to the "central banker" throughout, in practice the inflation hawkishness of course depends not only on the chair, but also on the committee, the formal monetary policy framework, and the overall institutional design. These additional determinants further strengthen our rationale to model the central banker's inflation weight as persistent throughout periods 1 and 2.

We first show that in equilibrium, the voters re-elect only incumbents who are sufficiently competent, but the threshold competence for reelection is lower than the average competence. To understand why, note that the voters' electoral choice can be understood as a risk–return trade-off: they are comparing an incumbent of known quality—and hence with predictable economic outcomes—to a challenger of unknown competence—and hence risky economic outcomes. Not surprisingly, voters are willing to tolerate the economic consequences of a below-average incumbent, in exchange for avoiding the unemployment and inflation uncertainty that a challenger of unknown quality would bring.

Our central results concern the relationship between the inflation-aversion of the central banker and the incumbent's probability of reelection. We show that *a more inflation-averse central banker increases the reelection chances of a low-competence incumbent.* Facing a more hawkish central bank modifies both sides of the risk-return trade-off faced by rational voters. Since the below-average competence of a marginal incumbent is expected to persist and enters into period 2 inflation expectations, it leads to a strong inflation bias. A more inflation-averse central banker reduces this inflation bias, making such an incumbent more attractive. By contrast, the challenger's unknown competence is mean-zero and hence does not lead to an inflation bias. However, an inflation-averse central banker is not expected to smooth the economic shocks coming from the uncertain competence of the challenger, making the challenger less attractive to the risk-averse voters. Our main result implies that if a strongly anti-inflationary central bank is the norm, voters become complacent about electing low-competence politicians known to follow policies that drive up inflation while also raising unemployment, such as unionization or de-globalization.

This leads to the main finding of the paper: an office-motivated incumbent *prefers a central banker who is as inflation-averse as possible*, or alternatively, a central banker inclined

to follow strict inflation targeting. Our model hence provides a new explanation for the political success of inflation-averse central banks.

Our model has two novel empirical predictions regarding CBI and political stability, understood as the probability that the incumbent will be re-elected. Political stability should be higher in countries in which the central banker has a stricter anti-inflation mandate and lower in countries in which the appointment of the central bank is not controlled by the executive. Note that these two institutional features are usually bundled together into a measure of CBI (Cukierman et al., 1992), but our model predicts that they have opposite effects on political stability.

To investigate our empirical predictions, we rely on simple historical measures CBI from Cukierman et al. (1992), because we require a long sample to match with reelection data. We extend the reelection variable following the expanded definition of Brender and Drazen (2008) for 21 developed countries. Our baseline sample is 1980-1998, ending with the introduction of the Euro. Consistent with the model, the executive's ability to appoint the head of the central bank is positively related to the probability that a political leader is re-elected, controlling for real GDP growth. Said differently, the central bank's "appointment independence" is related negatively to a political leader's reelection probability in the data. However, the political leader's reelection probability increases with the central bank's weight on price stability, which is again consistent with the model. Similar relationships hold when we exploit the changes in central bank independence around the Euro introduction, which allows us to control for fixed differences across countries in political turnover.

Our prediction that incumbent governments favor inflation-averse central bankers may seem in contrast with the episodes of intense pressure from governments to loosen monetary policy. We reconcile these two by emphasizing the difference between selecting a hawkish

central banker to affect expectations vs. desiring looser monetary policy while in office. To explain this difference, we extend the model to allow the government to raise inflation before the election in ways that are not observed by the voters. In the extension, the incumbent has the ability to pressure the central bank to stimulate employment just before the election, with inflationary effects coming after the election. Since voters infer the competence of the incumbent from unemployment, unexpectedly higher inflation lowers unemployment and hence raises their evaluation of the government's competence, thereby increasing its reelection chances. However, because voters correctly invert the relationship between unemployment and government competence, equilibrium political turnover is unaffected. Hence, our model predicts that an office-motivated politician appoints an inflation-centric central banker but applies political pressure to loosen monetary policy before elections.

The conflicting incentives for a politician to appoint a hawkish central banker, but also covertly exert pressure, are well illustrated by the conquest of the "Great Inflation" in the U.S. in the early 1980s. President Ronald Reagan publicly supported Paul Volcker as chairman of the Federal Reserve as a well-known inflation hawk, reappointing him in 1983. At the same time, Reagan and his team pressured Volcker at least once not to raise interest rates prior to the midterm elections in 1982.[3] As inflation fell from double digits to close to 3%, Reagan got rewarded at the ballot box in his landslide reelection in 1984.

We next investigate what patterns of economic and political outcomes we should expect when monetary policy affects the reelection chances of incumbents. First, we find that the incumbent's first-period economic performance is exacerbated in the second period if re-elected: below-average incumbents deliver worse inflation and unemployment than they did in their first term, while the opposite is true for above-average incumbents. Second, a more

[3]See *Federal Reserve Board Oral History Project* (2008).

inflation-averse central banker lowers average inflation—a prediction in line with standard models—and by facilitating the reelection of below-average incumbents, it increases unemployment on average, which is a novel prediction. Finally, the increased political stability means that a more inflation-averse central banker makes unemployment less variable over time. This prediction differs from a model without political turnover Rogoff (1985), where a more inflation-averse central bank is predicted to raise unemployment, but can explain the empirical findings of Alesina and Summers (1993); Grilli et al. (1991).

1.1 Literature

Our paper adds to a recent and growing literature on macroeconomics, political economy, and the role of the central bank (Dovis and Kirpalani (2021), Bianchi et al. (2023), Halac and Yared (2020)). While Afrouzi et al. (2024) consider an exogenous change in firms' market power, interpreted broadly as unionization, de-globalization or fiscal profligacy, driving an increase in long-run inflation and rise in unemployment, these forces arise endogenously in our model due to an increased willingness to vote for such policies when inflation appears to have been tamed. We also add to the broader literature studying the interaction of monetary and fiscal policy (Lucas Jr and Stokey (1983), Calvo (1978), Lustig et al. (2008), Schreger et al. (2024)). Different from the partisan model of Alesina and Gatti (1995), where the election probabilities are taken to be exogenous, political stability is the key endogenous outcome variable in our model and empirical analysis.

On the political economy side, our research contributes to the literature studying the interaction between the executive and other branches of government. The executive's interaction with the legislature (e.g. Alesina and Rosenthal (1996), Alesina and Rosenthal (2000)), with the bureaucracy (Fiorina and Noll (1978), Acemoglu and Verdier (2000)),

and with state-owned enterprises (Shleifer and Vishny (1994)) have been subject of large literatures.

The paper provides a complementary perspective to the literature on political business cycles (Nordhaus (1975), Persson et al. (2000), Lohmann (1998), Cukierman and Meltzer (1986), Rogoff (1990), Rogoff and Sibert (1988)). While our model is consistent with this earlier literature, it makes distinct predictions for political turnover and economic outcomes.

There is a growing empirical literature studying how inflation shapes elections and, conversely, political pressure on central banks. Brender and Drazen (2005), and Brender and Drazen (2008) find that deficit spending in election years does not increase reelection chances, but low inflation and central bank independence do. Federle et al. (2024) show that higher inflation increases the election chances of populists. Binder (2024) argues that inflation outcomes have been an important determinant of election outcomes throughout U.S. history. Conversely, Bianchi et al. (2023) use high-frequency identification to argue that political pressure by the first Trump administration has moved interest rates, while Drechsel (2024) analyze political pressure in the 1970s using a narrative approach. Binder (2021) quantifies political pressures on central banks around the world using text-based analysis, finding that political pressure on central banks is the exception rather than the norm. Baerg et al. (2021) provides evidence of central bankers' desire to run for office using data from post-communist countries.

We contribute to this literature by providing a simple, stylized, benchmark model of the tensions faced by office-motivated politicians with the central bank, and evidence for central model predictions. This lends itself to various extensions, which we discuss in the Conclusion.

2 Model

There are three groups of agents: central bankers, politicians, and voters. At the start of the game, the first-period politician—called the incumbent—acts as the government and appoints a central banker to oversee monetary policymaking by the central bank for the rest of the game. After the appointment is made, the incumbent's competence is drawn exogenously from a prior distribution. The central banker observes the incumbent's competence and conducts monetary policy. Voters then observe the resulting unemployment—which is a function of the incumbent's competence and the monetary policy—and decide whether to re-elect the incumbent for a second term or replace her with a challenger. In period 2, the elected politician's competence is either equal to the incumbent's competence realized in the first period if the incumbent is re-elected or drawn from a known distribution if the challenger is elected. The central bank conducts monetary policy again, second-period inflation and unemployment are realized, and the game ends. Figure 1 illustrates the timeline of the model.

2.1 Monetary Policy

We assume the classical Barro and Gordon (1983) monetary policy problem.[4] Social welfare each period is represented by a loss function that is quadratic in unemployment, u_t, and inflation, π_t,

$$\mathcal{L}_t = \frac{(u_t - u^*)^2}{2} + \theta \frac{{\pi_t}^2}{2}, \tag{1}$$

[4]See Drazen (2000) for a textbook exposition.

where θ captures the social weight on inflation fluctuations.[5] The socially optimal level of inflation is normalized to zero, and u^* is the socially optimal unemployment level. We assume that $u^* < 0$, capturing pre-existing economic distortions that lead to a steady-state unemployment level above the socially optimal one. The objective function of the form (1) can be microfounded as a log-quadratic expansion of the consumer welfare function in New Keynesian models (Woodford (2003)).

The central banker's loss function takes the same form as the social loss function, but the central banker's weight on inflation fluctuations, $\tilde{\theta}$, may be different from the social weight, θ:

$$\tilde{\mathcal{L}}_t = \frac{(u_t - u^*)^2}{2} + \tilde{\theta}\frac{\pi_t^2}{2}, \tag{2}$$

We call $\tilde{\theta}$ the central banker's *inflation-aversion.* If $\tilde{\theta}$ is large, we say that the central bank(er) is *inflation-averse* and if $\tilde{\theta}$ is low, we say that the central bank(er) is *unemployment-averse.* The central banker's inflation-aversion is common knowledge and is the same in both periods.

Each period, the central bank chooses inflation π_t and unemployment u_t to minimize $\tilde{\mathcal{L}}_t$ subject to a standard expectational Phillips curve

$$u_t = -(\pi_t - \pi_t^e) - g_t, \tag{3}$$

and the voters' inflation expectations π_t^e being rational. The Phillips forward-looking curve (3) captures firms' production decisions in the presence of price distortions, with g_t capturing a cost-push shock. Different from a standard monetary policy model, but similar to the political business cycle literature (Persson et al. (2000), Lohmann (1998)), we assume that

[5] Assuming homogeneous voters, our model of elections is based on government competence rather than partisan preferences, which would introduce additional complications. See Hibbs (1977), Alesina (1987), and Alesina and Roubini (1992) for theory and evidence of partisan business cycles.

the shock g_t reflects government competence. For simplicity, we assume that government competence is the only shock to the Phillips curve, though the results would be unchanged if we allowed additional exogenous shocks. We abstract from government competence entering as a demand shock, because those can be perfectly undone by monetary policy, whereas supply shocks present the central bank with a meaningful trade-off between inflation and unemployment. Macroeconomic supply shocks were also perceived as the dominant shocks during key periods where central bank independence was at stake, in particular during the 1970s through 1990s, and again now, according to evidence from financial markets (Campbell et al. (2020), Pflueger (2025)). Government competence can therefore be thought of as policy-induced distortions to product and labor markets, such as restrictions on wages, prices, labor mobility, or better or worse policy in the face of commodity price shocks.

Inflation expectations π_t^e are formed after the period t government is elected. The central bank chooses period t inflation and unemployment, knowing inflation expectations π_t^e and after learning the government quality g_t. We assume that the central bank minimizes its loss function period by period, as is common in analyses of central bank inflation bias (Kydland and Prescott (1977), Rogoff (1985)). Since the central bank is assumed to be myopic, it has no preferences over election outcomes, as would be the case for an apolitical central bank, but this assumption turns out to be inconsequential.[6]

Our assumption that the socially optimal unemployment level is negative, $u^* < 0$ combined with (3), ensures that under a government with competence $g_t = 0$, the standard time-inconsistency problem arises. The central bank wants to generate unexpected inflation in order to bring unemployment u_t closer to the optimal level u^*. The standard argument

[6]In a previous version of this paper, we considered a central bank that maximizes the sum of social payoffs for both periods taking into account the effect of its monetary policy on the information it conveys to the voters and hence the electoral outcomes. The results remain unchanged.

shows that in equilibrium, the voters must anticipate this desire, which results in inflation bias: inflation is above the optimal level with no impact on unemployment. Note that since low competence of the incumbent moves the unemployment level further away from u^*, low competence exacerbates this problem. This observation will play a crucial role in our results.

2.2 Elections

Period 1 starts with the incumbent government in power. The incumbent's quality is denoted by g_I, so $g_1 = g_I$. We assume that the quality of the incumbent is drawn from a distribution F, with corresponding probability density f. The distribution is assumed to have mean 0, variance σ_g^2, and the upper bound $-u^*$.[7] The upper bound on the quality of the government assures that no government fully eliminates all distortions in the economy, and that unemployment is always higher than socially optimal. We assume that g_I is not directly observed by the voters. Instead, at the time of the election, voters observe only period 1 unemployment u_1. As the reader will see, whether voters observe inflation π_1 is irrelevant in the baseline version of the model.

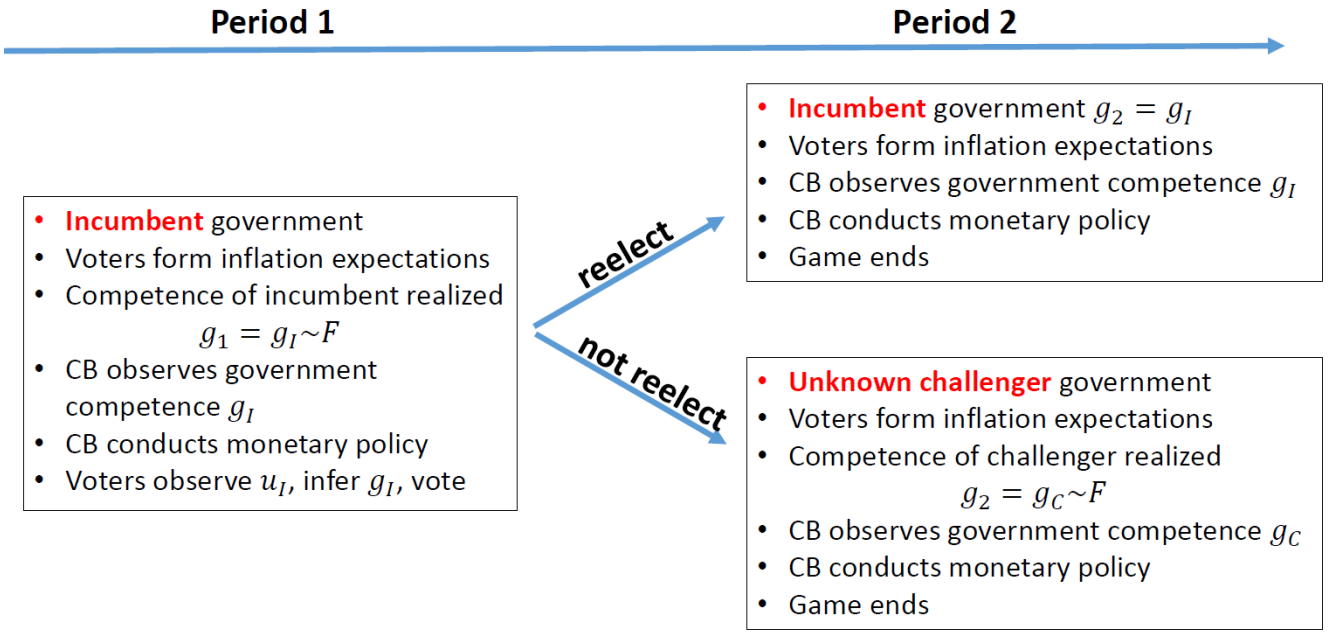
The voters' problem at the end of period 1 is to choose whether to re-elect the incumbent, in which case the government's quality persists so $g_2 = g_I$, or to elect a challenger of unknown quality, in which case $g_2 = g_C$, where g_C is drawn from F. The quality of the incumbent and the challenger, g_I and g_C, are assumed to be uncorrelated.

The voters' period utility function is the negative of the loss function (1). They re-elect the incumbent if and only if their expected utility from doing so is at least as large as the expected utility from electing the unknown challenger. When voting, voters recognize that

[7] We normalize F to have zero mean, as a shift in the distribution for g_t is isomorphic to a change in the socially optimal level of unemployment u^*.

in the second period the central bank will observe g_2 and choose inflation and unemployment to minimize its own loss function (2). After the loss in the second period is realized, the game ends.

Figure 1: **Model Timeline**



2.3 Discussion of assumptions

The majority of our modeling assumptions follow Persson et al. (2000) and Lohmann (1998), though we differ by assuming that inflation is set by an independent central bank. Our assumption that g_t reflects the government's competence and enters (3) is meant to capture the fact that incompetent governments engage in policies that raise unemployment and inflation, whereas competent governments engage in policies that lower those economic measures.

The assumption that the incumbent appoints the central banker for both periods 1 and 2 captures the real-world feature that central bankers have long and staggered terms, which are deliberately asynchronous with political elections (see our discussion in Section 3.3). We assume that the central bank appointment is made under the veil of ignorance, i.e., before the incumbent politician knows her own type. This assumption is particularly plausible for appointments early in a politician's term, and simplifies the analysis because it allows us to abstract from a politician's incentive to separate from the incompetent and pool with the competent type.

Even if in practice some uncertainty about the central banker's type is inevitable, we believe that the assumption that the public knows $\tilde{\theta}$ is a useful and reasonable baseline. For example, appointed heads of central banks tend to have a long history of comments on monetary policy, revealing their philosophy, and their training and pedigree are well-known.

And finally, voters in our model are rational. They understand the objective function of the central bank and rationally anticipate its policy-making. In practice, voters' inflation expectations may also be influenced by non-rational components, e.g., the history of past inflation. To the extent that non-rational components in inflation expectations act as noise in the voters' learning problem, the mechanism presented here will be present.

3 Political Outcomes in the Model

This section presents our main results. We analyze first how the inflation aversion of the central bank affects elections (Proposition 2), what this implies for the incumbent's decision about the appointment of the central banker (Corollary 1), and how the appointed central banker compares to the one a social planner would choose (Proposition 3).

3.1 Reelection Probability

We start by characterizing the voters' equilibrium reelection decision

Proposition 1 ***(Political Turnover):*** *There exists* $\underline{g}(\tilde{\theta}) < 0$ *such that the incumbent is re-elected if and only if* $g_I \geq \underline{g}(\tilde{\theta})$.

The intuition for Proposition 1 is as follows. Voters like competence because it positively affects economic outcomes, and dislike uncertainty about competence because they are risk-averse over economic outcomes. Hence, they are willing to sacrifice competence in exchange for certainty about it. Since in our model voters learn about the incumbent's competence before the election, but are uncertain about the competence of the challenger, they optimally choose to re-elect below-average incumbents. Intuitively, the marginal reelected incumbent is mediocre, with below-average competence. Voters prefer to reelect such a mediocre incumbent over electing a risky challenger to avoid the possibility of drawing a challenger with much-worse competence, even if the average expected challenger's competence is higher.[8] As the saying goes, "better the devil you know than the devil you don't".

Differentiating the reelection threshold $\underline{g}(\tilde{\theta})$ with respect to $\tilde{\theta}$ delivers the main result of the paper: the incumbent's reelection chances are higher under a more inflation-averse central banker.

Proposition 2 *The incumbent government's reelection probability increases with central bank inflation aversion:* $\frac{d\Pr\left(g_I \geq \underline{g}\right)}{d\tilde{\theta}} > 0$.

There are two complementary effects that drive Proposition 2. First, a more inflation-

[8] We can also show that the social inflation aversion θ drops out of the optimal reelection threshold. This means that despite $\tilde{\theta} \neq \theta$, the central bank and the voters agree on which quality incumbents should be re-elected, and hence the central bank has no incentive to try to change voters' perception of the incumbent's quality.

averse central bank decreases the inflation bias associated with the reelection of the below-average incumbent. Second, a more inflation-averse central bank increases uncertainty associated with electing a challenger of unknown competence.

To see the intuition behind the first effect, consider the voters facing an incumbent of below-average competence. The voters anticipate that the central bank will react to the policies of such an incumbent by easing the monetary policy in the second period. Hence, they form high inflation expectations, which in turn lead to high inflation but leave unemployment unaffected in equilibrium. When the central bank is highly inflation-averse, voters anticipate a relatively stricter monetary policy, lowering their inflation expectations, which leads to lower ensuing inflation

To see the intuition behind the second effect, recall that the challenger's competence is unknown at the election time, leading to uncertainty about the unemployment that will ensue. A more inflation-averse central bank is expected to mitigate the challenger-induced unemployment shocks less, rendering the challenger riskier for the voters.

Proposition 2 implies the following.

Corollary 1 *The following holds:*

1. *An office-motivated incumbent prefers a central bank that focuses solely on inflation, i.e.,* $\tilde{\theta}_I = \infty$*;*

2. *An office-motivated challenger prefers a central bank that focuses solely on unemployment, i.e.,* $\tilde{\theta}_C = 0$.

Note that since the incumbent does not care about inflation and unemployment per se, her preference for an inflation-averse central bank in Corollary 1 does not result from a simple

desire to improve economic welfare by resolving the well-known time-inconsistency problem of monetary policy. Instead, the incumbent appoints an inflation-averse central banker to improve economic outcomes conditional on being re-elected, but to worsen them conditional on losing the election.[9]

3.2 Socially Optimal Inflation Weight

In a model without political selection, Rogoff (1985) established that it is optimal for the society to select a central banker who is more inflation averse than the citizens due to the classic time-inconsistency of monetary policy and the resulting inflation bias. Corollary 1 implies that a central banker who is selected by the executive will be more inflation-averse than what is deemed optimal by the standard model.

The inflation-aversion highlighted by Rogoff (1985), however, ignores political selection, that is, the fact that the central banker's inflation aversion affects the electoral outcomes. Let $\tilde{\theta}_{iid}$ denote the inflation-aversion of Rogoff (1985) (i.e. minimizing $\mathbb{E}(\mathcal{L}_1 + \mathcal{L}_2)$ if g_1 and g_2 are drawn independently), let $\tilde{\theta}_I$ denote the inflation-aversion selected by the incumbent in our model, and let $\tilde{\theta}_{\text{planner}}$ denote the inflation aversion that would be chosen by a welfare maximizing social planner who recognizes the impact of $\tilde{\theta}$ on electoral outcomes and hence on the competence of the second-period politician (i.e. minimizing the ex ante expected social loss $\mathbb{E}(\mathcal{L}_1 + \mathcal{L}_2)$ with political turnover described in Proposition 2).

Proposition 3 ***(Social Planner)*** *The following holds;*

$$\theta < \tilde{\theta}_{iid} < \tilde{\theta}_{planner} < \tilde{\theta}_I = \infty. \tag{4}$$

[9]The assumption that incumbents are purely office-motivated leads to a stark result in Corollary 1, but it is not crucial for the qualitative result. As long as governments are partly motivated by reelection, the incumbent favors a more inflation-averse central bank than the challenger would prefer.

That is,

1. *The incumbent government prefers a central bank that is more inflation-averse than is socially optimal;*

2. *The socially optimal inflation weight exceeds the optimal weight without political selection, and the latter exceeds the social inflation weight.*

The relationship between $\tilde{\theta}_{\text{iid}}$ and $\tilde{\theta}_{planner}$ requires an explanation. The standard Rogoff-optimal inflation aversion $\tilde{\theta}_{\text{iid}}$ attempts to mitigate the inflationary bias coming from exogenous economic distortions $u^* < 0$. In the model with political selection, the marginal re-elected politician has below-average competence and hence adds to the economic distortions, increasing the inflationary pressures. This increases the benefit of having an inflation-averse central banker.

3.3 Discussion

It is important to emphasize that the preferences of the incumbent over the central banker's inflation aversion act solely through the central banks' impact on the second period and voters' expectations. Hence, what is relevant for our result is that the incumbent chooses $\tilde{\theta}$ that binds for the second period. We view this assumption as highly realistic: oftentimes, the tenure of the central banker extends beyond the tenure of the incumbent. In the U.S., for example, both tenures are four years, but the incumbent typically gets to appoint the chair of the Federal Reserve only well into her term, so she expects the same chair to be responsible for monetary policy at least at the beginning of the next term. Moreover, the members of the Federal Open Market Committee selected by the executive are appointed for 14-year terms.

Such institutional arrangements were selected on purpose to arguably increase the central bank's independence from the executive. Independence, however, could also be achieved by removing the appointment power from the executive.[10] Our model highlights the difference between these solutions: leaving the appointment power in the hands of the executive but making this appointment binding beyond the current term introduces incentives for the executive to appoint extremely inflation-averse central bankers.

Our results help explain the sweeping adoption of inflation targeting since the 1990s and its continued political success and especially the support it receives from the executive branch. Moreover, they provide a different explanation for this success: it is not necessarily that benevolent politicians have newly understood the economic rationale for inflation-targeting, but it may be that office-motivated incumbents are maximizing their reelection chances.

Proposition 3 reveals, however, a darker side of the apparent support of the executive for inflation-averse central bankers: overly hawkish central banks arise in equilibrium, not due to a desire to increase economic welfare but due to incumbent governments' desire to get re-elected. We analyze the economic consequences of the equilibrium selection of the central bankers in Section 6.

4 Empirical Analysis

In this Section, we provide supportive evidence of the key model predictions outlined in Proposition 2 and Corollary 1. Prior work studied the relationship between CBI and politi-

[10]The Swedish Riksbank is one prominent example, where the executive board is appointed by a "General Council", consisting of former central bankers and members of the public. The "General Council" is in turn appointed by the Swedish parliament. This contrasts with the U.S., where the Federal Reserve chair is nominated by the President and confirmed by the Senate.

cal stability. Dreher et al. (2010) has found that political stability, i.e., the probability that the incumbent is re-elected, may be positively correlated with the overall central bank independence. Gilardi (2007) considers this finding to be a puzzle, because the reverse empirical relationship holds for the independence of other regulatory agencies: the independence of regulatory agencies decreases political stability. The explanation for the latter is that an independent agency removes a policy lever from the executive, lowering the stakes of the elections. When the stakes are lower, risk-averse voters are less likely to stand by known incumbents and more likely to experiment with less-known challengers. In this literature, the empirical results necessarily reflect the reelection changes of the *marginal* incumbent, whereas the effect on non-marginal incumbent politicians is zero. We follow the prior literature in estimating the effects on the average reelection probability, understanding that changes in the average reelection probability necessarily reflect changes for marginal incumbents.

Our model highlights that in the case of monetary policy, there is a countervailing effect. For the same reason as in the case of any agency, delegating monetary policy could increase political turnover. At the same time, when the selection of the central bankers is in the hands of the executive, the independent central bankers are likely to be extremely inflation-averse (Corollary 1), and extremely inflation-averse central bankers lead to lower political turnover (Proposition 2). Our model hence predicts that political stability should be higher in (1) countries where the executive appoints the central bankers and (2) in countries where central bankers have a stricter inflation control mandate (higher $\tilde{\theta}$).

We provide empirical evidence for these predictions using data on CBI components Cukierman et al. (1992). We start our main sample with the first year in Cukierman et al.

(1992) and end with the introduction of the Euro, 1980-1998.[11] Central bank independence is measured in four separate categories: appointment, instrument, objectives, and fiscal. "Appointment independence" takes a lower numerical value if the central bank governor is appointed directly by the executive, a higher value if the governor is appointed by parliament, and an even higher value if the appointment is chosen by a committee within the central bank. "Objectives independence" measures the mandate of the central bank and takes the highest value if price stability is the major or only objective in the charter, and the central bank has the final word in case of conflict with other government objectives, and lower values if, for example, the central bank charter mentions several objectives. Finally, the remaining two components capture whether the central bank can set the policy rate without consultation with the executive ("instrument independence") and whether it is prohibited from lending to the government ("fiscal independence"). Our key model predictions imply a positive relationship between "objectives independence" and reelection probabilities, and a negative relationship between "appointment independence" and reelection probabilities.

To measure election outcomes, we extend the data of Brender and Drazen (2008). The observation unit is a national election in country i and year t, and takes a value of one if the political leader gets re-elected and zero if not.[12] We use Brender and Drazen (2008)'s expanded definition and their data for the pre-1998 period. Because Brender and Drazen

[11] We rely on these simple measures of CBI because they are available for a long historical sample covering the pre-Euro period, giving us a broad cross-section of developed countries with reelection data. Combined with the Crowe and Meade (2008) extensions, this also allows us to exploit changes in CBI around the introduction of the Euro. For a more finely grained measure of central bank objectives available over a more recent sample, see Borio and Chavaz (2025).

[12] The "expanded" definition adds cases in which a leader was substituted by another candidate from the same party under the following specific circumstances: (1) the leader died in the year before the elections; or (2) the leader could not run for reelection due to legal term limits. In these cases, the substitute leader (in the first case) or the candidate from the leader's party (in the second case) is treated as the incumbent. Additionally, in the expanded sample, leaders who quit their jobs within a year before the election are treated as having lost reelection.

(2008)'s data ends in 2003, we hand-collect additional data to update the reelection data until 2015 for our Euro sample, and for Switzerland for the full sample. For this, we collect reelection data manually from the International Institute for Democracy and Electoral Assistance (IDEA) data set "Voter Turnout Since 1945", the International Foundation for Election Systems ELECTION GUIDE data set, Zárate's Political Collections (ZPC) and the Worldstatesmen online encyclopedia. We control for real GDP growth, which in our model is closely related to incumbent competence. We follow Brender and Drazen (2008)'s variable construction for real per capita GDP growth, using average annual growth rate of real GDP per capita between the current and the previous election year in constant 2010 USD from the World Development Indicators (WDI) database. Our pre-1998 sample of countries consists of Australia, Austria, Belgium, Canada, Switzerland, Germany, Denmark, Spain, Finland, France, the United Kingdom, Greece, Ireland, Italy, Japan, Luxembourg, the Netherlands, Norway, New Zealand, Sweden, and the United States. This gives us a total of 95 elections 1980-1998 in all developed countries and 51 elections over this sample period for the Euro sample.[13] The period ending in 2015 for the Euro sample is determined by the availability of election data. Treating each national election as an observation, we estimate:

$$Reelect_{i,t} = b_0 + b_1 CBI_{i,t} + b_2 GDP_{i,t} + \varepsilon_{i,t}, \tag{5}$$

where $CBI_{i,t}$ is either the aggregate central bank independence measure or one of its four components, and $GDP_{i,t}$ measures real per capita GDP growth over an incumbent's term.

[13]We include Denmark in the Euro sample, because it closely coordinates its monetary policy with the Eurozone and the Danish Krone is pegged to the Euro with a narrow band. For the Euro analysis, we extend the central bank independence measures using Crowe and Meade (2008)'s measures for 2003.

Table 1: The Effect of Central Bank Independence on Probability of Reelection 1980-1998

	Dependent Variable: $Reelect_{i,t}$									
	Combined		Appointment		Instrument		Objectives		Fiscal	
CBI	0.70	0.39	-0.87***	-0.48*	0.69*	0.25	0.52***	0.26**	0.70	0.31
	(1.36)	(1.15)	(-3.20)	(-1.77)	(2.09)	(0.94)	(4.05)	(2.57)	(1.69)	(1.15)
GDP Growth	5.66	8.49*	7.32	7.74*	8.04	8.35*	4.54	7.28	6.75	8.89*
	(0.92)	(2.00)	(1.33)	(1.85)	(1.33)	(1.92)	(0.71)	(1.62)	(1.11)	(2.06)
Const.	0.07	0.17	0.74***	0.59***	0.09	0.26**	0.04	0.23**	0.08	0.20
	(0.34)	(1.15)	(5.29)	(4.22)	(0.56)	(2.43)	(0.36)	(2.58)	(0.44)	(1.53)
Countries	Euro	Dev	Euro	Dev	Euro	Dev	Euro	Dev	Euro	Dev
N	51	95	51	95	51	95	51	95	51	95
R-sq	0.06	0.06	0.11	0.07	0.13	0.06	0.10	0.07	0.09	0.06

Note: This table reports regressions of the form $Reelect_{i,t} = b_0 + b_1 CBI_{i,t} + b_2 GDP_{i,t} + \varepsilon_{i,t}$. The observation is at the country-election level, and $Reelect_{i,t}$ takes a value of one if the incumbent was re-elected and zero otherwise. $CBI_{i,t}$ is a measure of central bank independence. We follow Brender and Drazen (2008)'s expanded definition, where a substitute leader is considered to have won reelection if the previous leader was prevented from being re-elected due to term limits or death in office. $CBI_{i,t}$ is the central bank independence measure of Cukierman et al. (1992) obtained via Crowe and Meade (2008) for the period 1980-1989. Appointment independence, instrument independence, objectives independence, and financing independence are the four aspects used to compute $CBI_{i,t}$. $GDP_{i,t}$ is real annualized GDP growth in percent over the leader's term, as in Brender and Drazen (2008). The Euro sample consists of all original Euro members plus Denmark. The developed countries sample "Dev" additionally includes Australia, Canada, Switzerland, the United Kingdom, Japan, New Zealand, Sweden, and the United States. Elections are from 1980 through 1998, though countries may start later depending on data availability. Standard errors clustered by year in parentheses. * p <0.10, ** p <0.05, *** p <0.01.

Table 1 starts with combined central bank independence, which is a combination of all four categories. The first two columns show that combined central bank independence is not significantly correlated with the probability of being re-elected, either for the Euro sample or all developed countries. However, the next two columns show that "appointment independence" enters negatively and significantly for both the Euro and all developed countries samples, consistent with the model. This holds while controlling for GDP growth, which enters positively and significantly, consistent with Brender and Drazen (2005).[14] The effect of "appointment independence" is quantitatively meaningful, with a one-standard-deviation increase in "appointment independence" associated with a 7 percentage point increase in the reelection probability for all countries and a 15 percentage point increase in the reelection probability for the Euro sample. The raw data of reelection probabilities vs. "appointment independence" is plotted in Figure 2, Panel A.

Table 1 also shows that "objectives independence" is significantly positively related to the political leader's reelection probability, consistent with the model. The magnitudes are again meaningful. A one standard deviation increase in central bank objectives independence in the Euro sample equals 0.27, so a one-standard deviation increase in objectives independence tends to be associated with an increase in the probability of being re-elected of 14 percentage points. Figure 2, Panel B plots the raw relationship between central bank "objective independence" and the reelection probability. Finally, the empirical relationships of reelection probabilities with "instrument independence" and "fiscal independence" are generally weak, consistent with the model not making strong predictions about these relationships. The raw data of reelection probabilities vs. "objectives independence" is plotted in Figure 2, Panel B.

[14]We find similar results for a logit model estimation, see Appendix Table A2.

We next exploit the introduction of the Euro in 1999, which unified monetary policy across a large number of European countries, leading plausibly to a convergence in the central bank objective functions. Because different countries started from different central bank objective functions, we predict a bigger change in reelection probabilities for countries that experienced larger increases in "objectives independence". Since none of the Eurozone governments were able to appoint the central banker post-Euro, it is not clear whether we should expect a relationship with the change in "appointment independence".

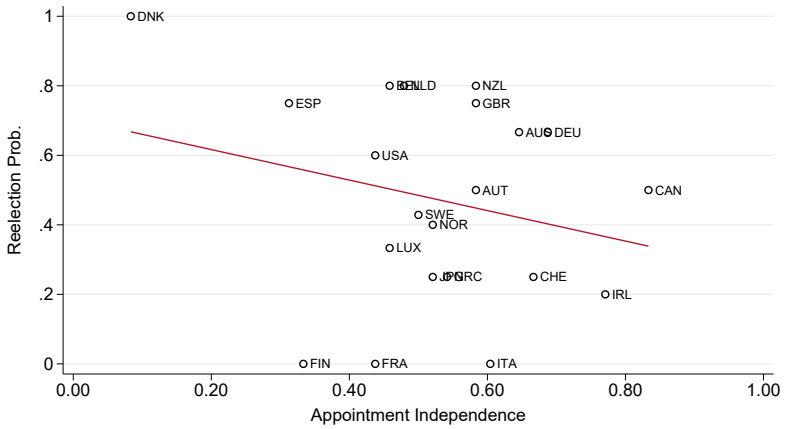
Table 2: The Effect of Central Bank Independence on Reelection Probabilities around Euro Introduction

	Dependent Variable: $Reelect_{i,t}$									
	Combined		Appointment		Instrument		Objectives		Fiscal	
CBI	0.35	0.51*	-0.40	-0.18	0.67**	0.55**	0.38**	0.38**	0.38	0.45*
	(1.16)	(1.74)	(-1.59)	(-0.28)	(2.14)	(2.05)	(2.62)	(2.16)	(1.45)	(2.00)
GDP Growth	8.20***	8.41***	8.50***	8.32***	8.96***	8.59***	7.99***	8.41***	8.38***	8.46***
	(3.68)	(3.56)	(3.80)	(3.54)	(4.00)	(3.51)	(3.51)	(3.59)	(3.80)	(3.56)
Const.	0.15	0.10	0.49***	0.40	0.07	0.16	0.05	0.06	0.15	0.15
	(1.15)	(0.37)	(3.53)	(0.99)	(0.65)	(0.71)	(0.53)	(0.23)	(1.38)	(0.65)
Country FE	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Post-1999 FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Countries	Euro	Euro	Euro	Euro	Euro	Euro	Euro	Euro	Euro	Euro
N	105	105	105	105	105	105	105	105	105	105
R-sq	0.10	0.29	0.11	0.28	0.15	0.30	0.12	0.29	0.11	0.30

Note: This table reports regressions of the form $Reelect_{i,t} = b_0 + b_1 CBI_{i,t} + GDP_{i,t} + c_i + I_{t\geq 1999} + \varepsilon_{i,t}$. Here $I_{t\geq 1999}$ is a dummy taking a value of one if $t \geq 1999$ and zero otherwise. The sample consists of all original Euro countries plus Denmark 1980-2015. For 1999-2015, we use the updated CBI measures by Crowe and Meade (2008). All other measures are as in Table 1. Standard errors clustered by year in parentheses. * p <0.10, ** p <0.05, *** p <0.01.

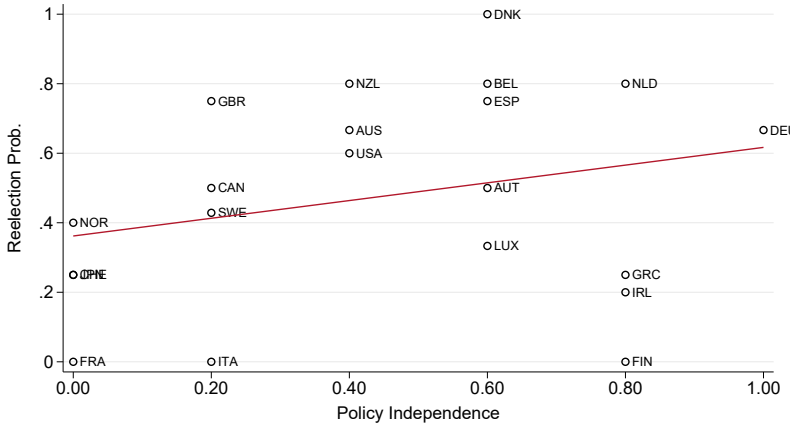
Figure 2: Probability of Reelection vs. Aspects of Central Bank Laws

Panel A: Appointment Independence



Central bank board appoints ← → Executive appoints

Panel B: Objectives Independence



Several conflicting objectives ← → Single price stability objective

Note: This figure plots the average probability of reelection for all developed countries on the y-axis against aspects of central bank independence on the x-axis. A fitted regression line is shown in red solid. Reelection probabilities are averages for the period 1980-1998. The developed country sample is defined as in Table 1.

Table 2 confirms our predictions in the pre- and post-Euro sample period. All regressions include a post-1999 dummy to control for possible joint time trends in the probability of reelection. We show all regressions with and without country fixed effects, thereby controlling for the possibility that some countries may have persistently higher political turnover for reasons unrelated to central bank independence. "Objectives independence" continues to enter significantly with a large coefficient, with and without country fixed effects. Instrument independence also enters positively and significantly, potentially because it is correlated with "objectives independence" in this sample. Fiscal independence also enters positively, though somewhat inconsistently. Appointment independence no longer enters significantly, but the point estimate is still negative. Overall, the empirical evidence supports our model's predictions that if the executive is less able to appoint the central bank governor, this decreases her reelection chances, but a strong focus of the central bank's charter on price stability increases the incumbent's reelection chances.

5 Extension: Hidden Inflationary Pressure

Our model predicts that office-motivated incumbents should select central bankers committed primarily to fighting inflation. This may explain the political survival of CBI and the tradition of selecting inflation-averse central bankers. Nevertheless, history is also full of examples of the executive pressuring the central bank to ease monetary policy. Such examples might at first appear to be in contrast to our model predictions.

We now present an extension of our model, where the incumbent government's incentive to appoint a hawkish central banker coexists with an incentive to pressure monetary policy to provide inflationary economic stimulus. These two incentives coexist because the appoint-

ment of a central banker acts by shaping expectations for the next period, while inflationary pressure changes the voters' inference problem in the current period. Hence, our main model insights are consistent with repeated attempts by politicians to influence monetary policy in a more dovish direction.

The model extension relies on two additional assumptions. First, following Lohmann (1998), we now assume that inflation is not observed prior to the election. Second, nesting the canonical political business cycle incentive (Nordhaus, 1975), we assume that after the central bank has chosen its action but before the election, the politician is able to influence inflation. We interpret this assumption as capturing incumbents' ability to covertly exert "political pressure" on the central bank, like in Drazen (2001).

Formally, we assume that the incumbent can change inflation by $b_1 \in \left[\underline{b}, \bar{b}\right]$ after the central bank has made its decision. That is, if π_t^* denotes inflation chosen by the central banker, the resulting inflation is

$$\pi_t = \pi_t^* + b_t. \tag{6}$$

The resulting inflation π_t then enters the Philips curve (3). We further assume that b_t is not observed by the voters, and that when choosing π_t^*, the central banker anticipates the government's choice of b_t.

Proposition 4 describes the equilibrium outcome.

Proposition 4 ***(Political Pressure):***

1. *An office-motivated incumbent optimally sets inflation as high as possible, i.e.,* $b_1 = \bar{b}$.

2. *Voters perfectly learn the incumbent's type.*

3. *Equilibrium inflation and unemployment are the same as in the previous model.*

4. Voters' threshold to re-elect the incumbent is the same as in the previous model.

To understand 1., note that voters use the observed unemployment to infer the incumbent's quality. If the government raises inflation unexpectedly, equation (3) implies that unemployment goes down. For any given voters' inflation expectations, this decrease in unemployment is attributed to higher government competence g_I. So an office-motivated incumbent has an incentive to generate unexpected inflation.

However, in equilibrium, voters understand that the incumbent engages in this action, and correctly invert the relationship between unemployment and the incumbent's quality, thereby leaving the reelection threshold unchanged compared to our baseline model. The independent central bank, rationally anticipating the politician's inflation action, chooses a more anti-inflationary policy, so equilibrium inflation is also unchanged from before.

The politician engages in maximal political pressure to raise inflation, but the political and macroeconomic equilibria are unchanged. It follows that the incumbent's incentive to appoint a conservative central banker is also unchanged.[15] Hence, our model can accommodate the emergence of inflation-centric central banks with continuing political pressure on these institutions. On the one hand, the incumbent wants to raise unobserved inflation to boost her election chances.

While the separation between the desire to commit to an inflation-averse central bank and "political pressure" to raise inflation ahead of elections is particularly stark in our model, the interaction between these forces could lead to further, rich implications. Learning from monetary policy actions when the true central bank type is unknown could introduce an

[15]The equilibrium with a hidden inflation action is a pure "signal jamming" equilibrium similar to Stein (1989). It also resembles the mechanism of monetary policy gradualism in Stein and Sunderam (2018), where markets rationally invert the Fed's eventual interest rate target, but the Fed has an incentive to move the policy rate in small increments to minimize bond market volatility.

additional cost to pressuring the central bank, as in such a case observing more hawkish monetary policy would lead voters to update that they are facing a more hawkish central bank (Bauer et al. (2024), Bauer et al. (2025), Bocola et al. (2025)). The incentive to appoint a maximally inflation-averse central banker likely also depends on voters' understanding that inflation expectations can become self-fulfilling if not properly counteracted by the central bank. This is a subtle argument, and more likely to be relevant for voters who have experienced high and painful inflation (Malmendier and Nagel, 2016).

5.1 Discussion: Volcker and Reagan

The conquest of the "Great Inflation" in the early 1980s provides an illustrative example for the forces present in our model. President Ronald Reagan publicly strongly supported Paul Volcker in his determination to bring down inflation. Reagan initially inherited Volcker as Fed chairman when he took office in 1981. However, in 1983 he took an active decision to reappoint Volcker, whose credentials as an inflation hawk were well-known by then. Reagan's political support for a strongly anti-inflationary Fed paid off as inflation fell from double-digits to close to 3%, and Reagan famously got re-elected in a landslide in 1984.

At the same time, while Reagan was broadly supportive of Volcker's fight against inflation, there was at least one episode where President Reagan's team tried to pressure Volcker to lower interest rates shortly before the 1982 midterm elections.[16] The interactions between Reagan and Volcker hence illustrate the tensions between the desire to have a central banker with a strong anti-inflationary bias—and getting rewarded in elections—and seeking to lower

[16]Paul Volcker recalled this episode as follows: "President Reagan didn't say anything. Baker said, "The President wants to give you an order," which startled me. [Laughter] He said the President didn't want interest rates to go up before the election, which left me absolutely speechless, because at that time I had no thoughts of tightening." (*Federal Reserve Board Oral History Project* (2008)).

interest rates and boost inflation, particularly when a short timeline until the next election implies that inflation is less likely to be observed by voters.

6 Economic Outcomes in the Model

In this section, we characterize the economic implications of our model. Since the direct economic consequences of an inflation-averse central banker are well known, we focus on the effect of electoral selection— below-average incumbents being re-elected—on economic outcomes. Since period 1 is unaffected by elections, we isolate the elections channel by comparing economic outcomes in period 2 relative to period 1. We first characterize the average effect of elections on inflation and unemployment (Proposition 5) and then how the appointment of an inflation-averse central banker affects this effect (Proposition 6).

Proposition 5 ***(Economic Outcomes due to Political Selection)***

1. *On average, inflation and unemployment are lower in the second period:* $\mathbb{E}(\pi_2 - \pi_1) < 0$ *and* $\mathbb{E}(u_2 - u_1) < 0$.

2. *Conditional on the incumbent being re-elected,* $\pi_2 - \pi_1 > 0$ *and* $u_2 - u_1 > 0$ *if* $g_I < 0$, *and* $\pi_2 - \pi_1 < 0$ *and* $u_2 - u_1 < 0$ *if* $g_I > 0$.

Proposition 5.1 states that on average, political selection is beneficial, lowering period 2 unemployment and inflation relative to period 1. Voters vote the incumbent out of office if her quality is too low, thereby benefiting both inflation and employment.

Proposition 5.2, however, captures an interesting heterogeneity when we restrict attention to the performance of re-elected incumbents. When the incumbent is re-elected, her quality remains unchanged. However, because voters learn about the incumbent's quality,

monetary policy is less able to mitigate the effects of the government's competence in period 2. As a result, above-average governments (i.e. $g_I > 0$) perform better and below-average governments (i.e. $g_I < 0$) perform worse in their second terms. To our knowledge, this is a novel prediction. Instead of reversion to the mean in the second period, the model predicts that the incumbent's performance is more extreme in the second term than in the first.

We now characterize how an inflation-averse central banker affects the results of Proposition 5.

Proposition 6 ***(Economic Outcomes and Central Bank)***

1. *An inflation-averse central bank lowers average inflation, but raises average unemployment:* $\frac{\mathbb{E}(u_2+u_1)}{d\tilde{\theta}} > 0$*, and if* $\max_g f(g)$ *is not too large then* $\frac{\mathbb{E}(\pi_2+\pi_1)}{d\tilde{\theta}} < 0$*;*

2. *An inflation-averse central bank raises the average second-period inflation and unemployment relative to period* 1*:* $\frac{d\mathbb{E}(\pi_2-\pi_1)}{d\tilde{\theta}} > 0$ *and* $\frac{d\mathbb{E}(u_2-u_1)}{d\tilde{\theta}} > 0$*.*

3. *Inflation and unemployment variability decline with the central bank's inflation weight* $\tilde{\theta}$ *when* $\tilde{\theta}$ *is small:* $\frac{d\mathbb{V}(\pi_2-\pi_1)}{d\tilde{\theta}} < 0$ *and* $\frac{d\mathbb{V}(u_2-u_1)}{d\tilde{\theta}} < 0$*.*

Proposition 6.1 shows that, in contrast to standard models of time-inconsistency, appointing an inflation-averse central banker is costly for average unemployment, as an inflation-averse central bank increases the reelection chances of low-competence incumbents. Similarly to the standard model without political selection, having a more inflation-averse central banker lowers average inflation.[17]

[17]The decrease in average inflation is driven by the standard forces present in the time-inconsistency literature, though the proof shows that this standard effect is weakened by the fact that a more inflation-averse central bank leads to the election of lower-competence, and hence more inflationary, incumbents. The condition on $\max_g f(g)$ needed for this result assures that a small change in the central bank's inflation aversion does not lead to a disproportionately large change in the mass of incumbents that get re-elected.

Figure 3: **Economic outcomes against central bank inflation aversion**

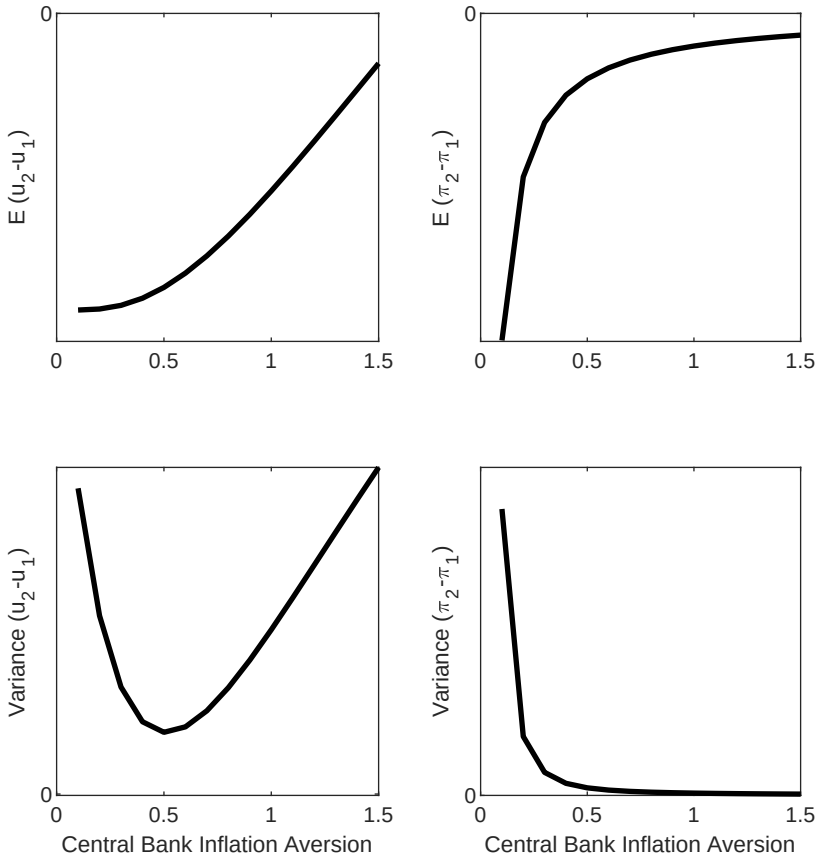


Figure 4: This figure shows the difference between period 2 and period 1 unemployment (left panels) and inflation (right panels) as a function of the central bank inflation weight $\tilde{\theta}$ for $\sigma_g = 1$ and $u^* = -2$. The upper panels show the average (Proposition 6.2), and the lower panels show the variance (Proposition.6.3). To generate those plots, we assume that F is a normal distribution, even though technically this distribution does not satisfy our assumptions that g has an upper bound. However, for the chosen parameter values, the probability that $g > -u^*$ is very small.

Proposition 6.2 shows that an inflation-averse central bank mitigates the beneficial effects of political selection on unemployment and inflation identified in Proposition 5. The upper panels of Figure 3 visualize the effect of the elections channel on average unemployment and inflation against central bank inflation-aversion. The top panels show that increasing the central bank's inflation weight raises unemployment and inflation in period 2 through the political selection effect. The bottom panels show that the variability of the period 2 minus period 1 unemployment and inflation initially fall with the central bank's inflation weight, i.e., near $\tilde{\theta} = 0$. Furthermore, in this example, the volatility of the change in inflation declines with the central bank inflation weight globally, whereas the variance of the unemployment change reaches a minimum and eventually increases with the central bank inflation weight. The intuition is that when the central bank is singularly focused on inflation, this can raise unemployment volatility, dominating the political selection effect.

Proposition 6.3 shows that similarly to Alesina and Gatti (1995), our non-partisan model with political selection can rationalize the ambiguous empirical relationship between central bank independence and real economic volatility (Alesina and Summers, 1993; Grilli et al., 1991; Bhalla et al., 2023). This is different from the standard model without political selection, which implies that an inflation-averse central bank has a real economic cost by increasing real economic volatility. Proposition 6.3 states that this can be explained by political selection. A more inflation-averse central bank increases the probability that the incumbent is re-elected, thereby reducing unemployment volatility. The lower left panel of Figure 3 illustrates the u-shaped relationship between central bank inflation aversion and the volatility of unemployment in our model for a particular distribution F.

7 Conclusion

The interaction of the central bank and politics is clearly a first-order question in the face of high and increasing political uncertainty, and the post-pandemic experience of high inflation. We present a fully rational framework of this interaction, building on the classic framework of Barro and Gordon (1983) and Rogoff (1985) on the monetary policy side, and a simple model of non-partisan political turnover (Ferejohn, 1986) on the political economy side.

Our framework shows that governments may have socially excessive political incentives to institute an inflation-targeting central bank. At the same time, they have an incentive to pressure the central bank to loosen monetary policy to lower unemployment ahead of elections. The model generates unique predictions about the political implications of a politician's ability to appoint the central banker, and the nature of the central bank's objective, which we verify in the data.

Given that our model presents a simple benchmark model combining a standard time-inconsistency model of monetary policy with non-partisan political turnover, this opens the door to several new avenues of research. First, we assumed an apolitical central bank, which minimizes its loss function period by period without taking into account the implications of its monetary policy for elections. This raises the question under what conditions the central bank may have an incentive to affect electoral outcomes.

Another potential avenue of research could shed light on political incentives when inflation is potentially misperceived or even subject to systematic biases, as documented by Malmendier and Nagel (2016). One could imagine that having an electorate that is more attuned to inflation, maybe due to its own personal experiences, would increase the government's incentive to build inflation credibility and strengthen our main channel. On the

other hand, erosion of institutions and norms might increase the government's incentive to pressure the central bank, increasing inflation bias without mitigating the negative effects of political selection.

Finally, it could be fruitful to investigate moral hazard and partisan incentives in future research. Having delegated inflation control to a hawkish central bank, governments might face weaker incentives to implement other valuable reforms to raise productivity and lower inflation. While not investigated in this study, the regularly scheduled central bank framework reviews may provide additional points of interaction between the political process and central banks. While our model considers a non-partisan model of political turnover, the significant distributional consequences of inflation make it natural to ask how governments with different preferences would optimally choose to appoint a central banker and shape monetary policy institutions more broadly.

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Online Appendix: A Model of Politics and the Central Bank

Wioletta Dziuda and Carolin Pflueger

A Model Proofs

Within-Period Equilibrium: The within-period problem of the central bank is completely standard. Plugging the Philips curve into the central bank's objective function and minimizing it with respect to π_t delivers:

$$\pi_t = \frac{1}{1+\tilde{\theta}} \left(\pi_t^e - g_t - u^*\right). \tag{A.1}$$

Imposing that voters' expectations are rational in (A.1) gives

$$\pi_t^e = -\frac{1}{\tilde{\theta}} \left(\mathbb{E}\left(g_t \,|I_t\right) + u^*\right). \tag{A.2}$$

Using (A.2) in (A.1) we obtain

$$\pi_t - \pi_t^e = -\frac{1}{1+\tilde{\theta}} \left(g_t - \mathbb{E}\left(g_t \,|I_t\right)\right). \tag{A.3}$$

Substituting (A.3) into the Phillips Curve (3) delivers that in period t, equilibrium inflation and unemployment are given by

$$\pi_t = -\frac{1}{\tilde{\theta}} u^* - \frac{1}{\tilde{\theta}} \mathbb{E}\left(g_t \,|I_t\right) - \frac{1}{1+\tilde{\theta}} \left(g_t - \left(\mathbb{E}\left(g_t \,|I_t\right)\right)\right) \tag{A.4}$$

$$u_t = -\mathbb{E}\left(g_t \,|I_t\right) - \frac{\tilde{\theta}}{1+\tilde{\theta}} \left(g_t - \mathbb{E}\left(g_t \,|I_t\right)\right), \tag{A.5}$$

where I_t denotes information that voters have at the beginning of period t once the election outcome is known. So $I_1 = \emptyset$ and $I_2 = \{u_1\}$.

In $t = 1$, voters have only their prior about the first period government's quality, so

$\mathbb{E}(g_1 | I_1) = 0$, and hence equations (A.4) and (A.5) become

$$\pi_1 = -\frac{1}{\tilde{\theta}} u^* - \frac{1}{1+\tilde{\theta}} g_I, \tag{A.6}$$

$$u_1 = -\frac{\tilde{\theta}}{1+\tilde{\theta}} g_I. \tag{A.7}$$

Period 2 inflation and unemployment are different depending on whether the incumbent or the challenger wins the election. Note that if the incumbent is re-elected, voters can use (A.7) to infer its quality from u_1, so $\mathbb{E}(g_2 | I_2) = g_I$. Hence conditional on the incumbent being re-elected, period 2 inflation and unemployment are given by

$$\pi_2 = -\frac{1}{\tilde{\theta}} u^* - \frac{1}{\tilde{\theta}} g_I, \tag{A.8}$$

$$u_2 = -g_I. \tag{A.9}$$

By contrast, if the challenger is elected, $\mathbb{E}(g_2 | I_2) = \mathbb{E}(g_C) = 0$, so period 2 inflation and unemployment are given by

$$\pi_2 = -\frac{1}{\tilde{\theta}} u^* - \frac{1}{1+\tilde{\theta}} g_C, \tag{A.10}$$

$$u_2 = -\frac{\tilde{\theta}}{1+\tilde{\theta}} g_C. \tag{A.11}$$

Proof of Proposition 1. Taking the expectation of (2), we obtain

$$\mathbb{E}(\mathcal{L}_t | I_t) = \frac{1}{2}\left(\mathbb{V}(u_t | I_t) + (\mathbb{E}(u_t | I_t) - u^*)^2\right) + \frac{\theta}{2}\left(\mathbb{V}(\pi_t | I_t) + (\mathbb{E}(\pi_t | I_t))^2\right),$$

and using (A.7) and (A.6) in the above, we obtain

$$\begin{aligned}
\mathbb{E}(\mathcal{L}_t | I_t) &= \frac{1}{2}\left(\left(\frac{\tilde{\theta}}{1+\tilde{\theta}}\right)^2 \mathbb{V}(g_t | I_t) + (\mathbb{E}(g_t | I_t) + u^*)^2\right) \\
&+ \frac{\theta}{2}\left(\left(\frac{1}{1+\tilde{\theta}}\right)^2 \mathbb{V}(g_t | I_t) + \left(\frac{1}{\tilde{\theta}}\right)^2 (\mathbb{E}(g_t | I_t) + u^*)^2\right) = \\
&= \frac{\tilde{\theta}^2 + \theta}{2\left(1+\tilde{\theta}\right)^2} \mathbb{V}(g_t | I_t) + \frac{\tilde{\theta}^2 + \theta}{2\tilde{\theta}^2} (\mathbb{E}(g_t | I_t) + u^*)^2,
\end{aligned}$$

which shows that

$$\mathbb{E}\left(\mathcal{L}_t \,|I_t\right) = \frac{\tilde{\theta}^2+\theta}{2\left(1+\tilde{\theta}\right)^2}\mathbb{V}\left(g_t \,|I_t\right) + \frac{\tilde{\theta}^2+\theta}{2\tilde{\theta}^2}\left(\mathbb{E}\left(g_t \,|I_t\right)+u^*\right)^2. \tag{A.12}$$

For $t=2$, $\mathbb{V}\left(g_2 \,|I_2\right)=0$ and $\mathbb{E}\left(g_2 \,|I_2\right)=g_I$ if the incumbent is re-elected and $\mathbb{V}\left(g_2 \,|I_2\right)=\sigma_g^2$ and $\mathbb{E}\left(g_2 \,|I_2\right)=0$ if the challenger wins. Comparing voters' expected loss if the incumbent is re-elected and if the challenger wins, we obtain that voters reelect the incumbent if and only if:

$$\left(g_I+u^*\right)^2-\left(u^*\right)^2 \leq \left(\frac{\tilde{\theta}}{1+\tilde{\theta}}\right)^2\sigma_g^2. \tag{A.13}$$

Since $g_I<-u^*$ by assumption, this implies that the incumbent is re-elected iff $g_I>\underline{g}$, where

$$\underline{g}=-u^*-\sqrt{\left(u^*\right)^2+\left(\frac{\tilde{\theta}}{1+\tilde{\theta}}\right)^2\sigma_g^2}<0. \tag{A.14}$$

It is immediate that $\frac{\partial \underline{g}}{\partial \sigma_g^2}<0$ and $\frac{\partial \underline{g}}{\partial u^*}<0$. As $u^*\infty$, voters' loss function becomes more steeply sloped in the level of unemployment, so more negative u^* can be interpreted as a decline in voter risk aversion. This leads to Proposition 1. ■

Proof of Proposition 2. Differentiating (A.14) with respect to $\tilde{\theta}$, one obtains

$$\frac{d\underline{g}}{d\tilde{\theta}}=-\frac{\frac{1}{\left(1+\tilde{\theta}\right)^2}\sigma_g^2}{\sqrt{\left(u^*\right)^2+\left(\frac{\tilde{\theta}}{1+\tilde{\theta}}\right)^2\sigma_g^2}}<0. \tag{A.15}$$

■

Proof of Proposition 3. We start with the Rogoff case, where shocks across period are assumed to be iid. From equation (A.12), the expected period 1 loss equals

$$\mathbb{E}\left(\mathcal{L}_1\right)=\frac{1}{2}\frac{\tilde{\theta}^2+\theta}{\left(1+\tilde{\theta}\right)^2}\sigma_g^2+\frac{1}{2}\frac{\tilde{\theta}^2+\theta}{\tilde{\theta}^2}(u^*)^2. \tag{A.16}$$

The optimal $\tilde{\theta}_{\text{iid}}$ is given by the first-order condition for $\mathbb{E}\left(\mathcal{L}_1\right)$ with respect to $\tilde{\theta}$, where

$$\frac{d\mathbb{E}\left(\mathcal{L}_1\right)}{d\tilde{\theta}}=\left(\frac{\tilde{\theta}-\theta}{(1+\tilde{\theta})^3}\sigma_g^2-\frac{\theta}{\tilde{\theta}^3}(u^*)^2\right). \tag{A.17}$$

When $\tilde{\theta} = \theta$, this derivative is clearly negative. As $\tilde{\theta} \to -\infty$, the positive terms in (A.17) dominate. Together, this shows that $\theta < \tilde{\theta}_{\text{iid}}$.

Now we turn to the case with political turnover. The first period loss function as well as the loss function conditional on the challenger being elected is the same as in (A.16). Conditional on the incumbent being re-elected, (A.12) gives

$$\mathbb{E}\left(\mathcal{L}_2 \left| \text{incumbent} \right.\right) = \frac{1}{2}\frac{\tilde{\theta}^2 + \theta}{\tilde{\theta}^2}\left(g_I + u^*\right)^2.$$

Hence

$$\mathbb{E}\left(\mathcal{L}_1 + \mathcal{L}_2\right) = \left(1 + F\left(\underline{g}\right)\right)\left(\frac{1}{2}\frac{\tilde{\theta}^2 + \theta}{\left(1+\tilde{\theta}\right)^2}\sigma_g^2 + \frac{1}{2}\frac{\tilde{\theta}^2 + \theta}{\tilde{\theta}^2}(u^*)^2\right) + \int_{\underline{g}}^{\infty}\frac{1}{2}\frac{\tilde{\theta}^2 + \theta}{\tilde{\theta}^2}\left(g_I + u^*\right)^2 f(g_I)dg_I.$$

Using the Leibniz rule to differentiate integrals, we obtain

$$\begin{aligned}\frac{d\mathbb{E}\left(\mathcal{L}_1 + \mathcal{L}_2\right)}{d\tilde{\theta}} &= \left(1 + F\left(\underline{g}\right)\right)\left(\frac{\tilde{\theta} - \theta}{(1+\tilde{\theta})^3}\sigma_g^2 - \frac{\theta}{\tilde{\theta}^3}(u^*)^2\right) + \left(\frac{1}{2}\frac{\tilde{\theta}^2 + \theta}{\left(1+\tilde{\theta}\right)^2}\sigma_g^2 + \frac{1}{2}\frac{\tilde{\theta}^2 + \theta}{\tilde{\theta}^2}(u^*)^2\right) f\left(\underline{g}\right)\frac{d\underline{g}}{d\tilde{\theta}} \\ &\quad -\frac{1}{2}\frac{\tilde{\theta}^2 + \theta}{\tilde{\theta}^2}\left(\underline{g} + u^*\right)^2 f(\underline{g})\frac{d\underline{g}}{d\tilde{\theta}} - \int_{\underline{g}}^{\infty}\frac{\theta}{\tilde{\theta}^3}\left(g_I + u^*\right)^2 f(g_I)dg_I.\end{aligned}$$

Using the fact that at $g_I = \underline{g}$, the expected loss from the challenger and the incumbent is the same, that is, $\frac{\tilde{\theta}^2+\theta}{\left(1+\tilde{\theta}\right)^2}\sigma_g^2 + \frac{\tilde{\theta}^2+\theta}{\tilde{\theta}^2}(u^*)^2 = \frac{\tilde{\theta}^2+\theta}{\tilde{\theta}^2}\left(\underline{g} + u^*\right)^2$, we obtain

$$\frac{d\mathbb{E}\left(\mathcal{L}_1 + \mathcal{L}_2\right)}{d\tilde{\theta}} = \left(1 + F\left(\underline{g}\right)\right)\left(\frac{\tilde{\theta} - \theta}{(1+\tilde{\theta})^3}\sigma_g^2 - \frac{\theta}{\tilde{\theta}^3}(u^*)^2\right) - \int_{\underline{g}}^{\infty}\frac{\theta}{\tilde{\theta}^3}\left(g_I + u^*\right)^2 f(g_I)dg_I. \quad \text{(A.18)}$$

For $\tilde{\theta}$ close to 0 this entire expression is clearly negative, and by definition, the first term equals 0 at $\tilde{\theta} = \tilde{\theta}_{\text{iid}}$. As $\tilde{\theta} \to \infty$ the positive terms dominate in (A.18), giving $\tilde{\theta}_{\text{iid}} < \tilde{\theta}_{\text{planner}} < \infty$. ■

Proof of Proposition 4. Inflation and unemployment are now described by

$$\begin{aligned}\pi_t &= \pi_t^* + b_t, &\text{(A.19)}\\ u_t &= -(\pi_t - \pi_t^e) - g_t, &\text{(A.20)}\end{aligned}$$

where π_t^* is the inflation level targeted by the central bank and the action b_t is taken after

the central bank has chosen π_t^*. The central bank's objective function is still given by

$$\tilde{\mathcal{L}}_t = \frac{(u_t - u^*)^2}{2} + \tilde{\theta}\frac{\pi_t^2}{2}. \tag{A.21}$$

Voters make their choice between the incumbent and the challenger after observing u_1 but not π_1.

Period 1 Equilibrium: Taking the expectations of b^e and π^e as given, the central bank chooses π_t^* to minimize

$$\frac{(-(\pi_t^* + b_t^e - \pi_t^e) - g_t - u^*)^2}{2} + \tilde{\theta}\frac{(\pi_t^* + b_t^e)^2}{2} \tag{A.22}$$

Taking the first-order condition with respect to $\pi^* + b_t^e$ and setting the expected value to zero implies that the central bank chooses

$$\pi_t^* + b_t^e = \frac{1}{1+\tilde{\theta}}(\pi_t^e - g_t - u^*) \tag{A.23}$$

and rational inflation expectations satisfy

$$\pi_t^e = -\frac{1}{\tilde{\theta}}(E(g_t|I_t) + u^*). \tag{A.24}$$

Realized inflation then satisfies

$$\pi_t - \pi_t^e = \frac{1}{1+\tilde{\theta}}(g_t - E(g_t|I_t)) + (b_t - b_t^e), \tag{A.25}$$

and period 1 unemployment equals

$$u_1 = -\frac{\tilde{\theta}}{1+\tilde{\theta}}g_I - (b_t - b_t^e). \tag{A.26}$$

Voters' perceived quality of the incumbent after observing period 1 unemployment is

$$E(g_I|u_1) = -\frac{1+\tilde{\theta}}{\tilde{\theta}}u_1 \tag{A.27}$$

For an incumbent seeking to maximize the probability of being re-elected it is hence never optimal to set $b_1 < \bar{b}$, as this would lower the perceived average quality of the incumbent without affecting the variance, thereby unambiguously lowering the chance of being re-elected. ■

Proof of Proposition 5.

Using (A.6), (A.7), (A.8), (A.9), (A.10), and (A.11) we obtain second-period inflation and unemployment as functions of g_I and g_C

$$\pi_2(g_I, g_C) = \begin{cases} -\frac{1}{\tilde{\theta}}u^* - \frac{1}{\tilde{\theta}}g_I \text{ if } g_I \geq \underline{g} \\ -\frac{1}{\tilde{\theta}}u^* - \frac{1}{1+\tilde{\theta}}g_C \text{ if } g_I < \underline{g} \end{cases}$$

$$u_2(g_I, g_C) = \begin{cases} -g_I \text{ if } g_I \geq \underline{g} \\ -\frac{\tilde{\theta}}{1+\tilde{\theta}}g_C \text{ if } g_I < \underline{g} \end{cases}$$

Subtracting period 1 inflation and unemployment shows that ex ante, before the realization of g_I and g_C, we have

$$\begin{aligned} \mathbb{E}[\pi_2 - \pi_1] &= \int\int_{g_I \geq \underline{g}} \left[-\frac{1}{\tilde{\theta}}g_I + \frac{1}{1+\tilde{\theta}}g_I\right] f(g_I)\, dg_I f(g_C)\, dg_C \\ &\quad + \int\int_{g_I < \underline{g}} \left[-\frac{1}{1+\tilde{\theta}}g_C + \frac{1}{1+\tilde{\theta}}g_I\right] f(g_I)\, dg_I f(g_C)\, dg_C \\ &= -\frac{1}{\tilde{\theta}}\int_{g_I \geq \underline{g}} g_I f(g_I)\, dg_I < 0. \end{aligned} \tag{A.28}$$

This last inequality follows because g_I is assumed to have mean zero, and we have already shown that $\underline{g} < 0$.

For the average change in unemployment between periods 2 and 1:

$$\begin{aligned} \mathbb{E}[u_2 - u_1] &= \int\int_{g_I \geq \underline{g}} \left(\frac{\tilde{\theta}}{1+\tilde{\theta}}g_I - g_I\right) f(g_I)\, dg_I f(g_C)\, dg_C \\ &\quad + \int\int_{g_I < \underline{g}} \left(\frac{\tilde{\theta}}{1+\tilde{\theta}}g_I - \frac{\tilde{\theta}}{1+\tilde{\theta}}g_C\right) f(g_I)\, dg_I f(g_C)\, dg_C \\ &= -\int_{g_I \geq \underline{g}} g_I f(g_I)\, dg_I < 0, \end{aligned} \tag{A.29}$$

which proves part a. Part b is straightforward and proved in the main text. ■

Proof of Proposition 6.

Differentiating the (A.28) and (A.29), we obtain

$$\frac{d\mathbb{E}[\pi_2 - \pi_1]}{d\tilde{\theta}} = \frac{1}{\tilde{\theta}^2}\int_{g_I \geq \underline{g}} g_I f(g_I)\, dg_I + \frac{1}{\tilde{\theta}}\underline{g} f\left(\underline{g}\right)\frac{d\underline{g}}{d\tilde{\theta}} > 0,$$

$$\frac{d\mathbb{E}\left[u_2-u_1\right]}{d\tilde{\theta}}=\underline{g}f\left(\underline{g}\right)\frac{d\underline{g}}{d\tilde{\theta}}>0,$$

proving Proposition 6.2. To prove Proposition 6.1 note that

$$\mathbb{E}\left[u_1+u_2\right]=\mathbb{E}\left[2u_1+u_2-u_1\right]=\mathbb{E}\left[u_2-u_1\right],$$

and we have already shown that the last expression increases with $\tilde{\theta}$. Now use (A.6) and (A.7) and (A.28) to obtain that

$$\mathbb{E}\left[\pi_1+\pi_2\right]=\mathbb{E}\left[2\pi_1+\pi_2-\pi_1\right]=-\frac{2}{\tilde{\theta}}u^*+\mathbb{E}\left[\pi_2-\pi_1\right]=-\frac{2}{\tilde{\theta}}u^*-\frac{1}{\tilde{\theta}}\int_{g_I\geq\underline{g}}g_If\left(g_I\right)dg_I. \quad \text{(A.30)}$$

Using (A.30), we have

$$\frac{d\mathbb{E}\left[\pi_1+\pi_2\right]}{d\tilde{\theta}}=\frac{2}{\tilde{\theta}^2}u^*+\frac{1}{\tilde{\theta}^2}\int_{g_I\geq\underline{g}}g_If\left(g_I\right)dg_I+\frac{1}{\tilde{\theta}}\underline{g}f\left(\underline{g}\right)\frac{d\underline{g}}{d\tilde{\theta}}.$$

Since $g_I<-u^*$, we have $\frac{d\mathbb{E}[\pi_1+\pi_2]}{d\tilde{\theta}}<\frac{1}{\tilde{\theta}^2}u^*+\frac{1}{\tilde{\theta}}\underline{g}f\left(\underline{g}\right)\frac{d\underline{g}}{d\tilde{\theta}}$. From (A.15), we have

$$\frac{d\mathbb{E}\left[\pi_1+\pi_2\right]}{d\tilde{\theta}}<\frac{1}{\tilde{\theta}}\left(\frac{1}{\tilde{\theta}}u^*-\frac{\frac{1}{\left(1+\tilde{\theta}\right)^2}\sigma_g^2}{\sqrt{\left(u^*\right)^2+\left(\frac{\tilde{\theta}}{1+\tilde{\theta}}\right)^2\sigma_g^2}}\underline{g}f\left(\underline{g}\right)\right).$$

and the last expression is negative if and only if $f\left(\cdot\right)$ is sufficiently small.

To prove Proposition 6.3, note that

$$\begin{aligned}E\left[\left(u_2-u_1\right)^2\right] &= \left(\frac{1}{1+\tilde{\theta}}\right)^2\int_{g_I\geq\underline{g}}\left(g_I\right)^2f\left(g_I\right)dg_I+\\ &\quad+\left(\frac{\tilde{\theta}}{1+\tilde{\theta}}\right)^2\int\int_{g_I<\underline{g}}\left(g_C^2+g_I^2\right)f\left(g_C\right)dg_Cf\left(g_C\right)dg_C,\end{aligned}$$

which can be rewritten as

$$\begin{aligned}E\left[\left(u_2-u_1\right)^2\right] &= \left(\frac{1}{1+\tilde{\theta}}\right)^2\int_{g_I\geq\underline{g}}\left(g_I\right)^2f\left(g_I\right)dg_I\\ &\quad+\left(\frac{\tilde{\theta}}{1+\tilde{\theta}}\right)^2\int_{g_I<\underline{g}}\left(\left(g_I\right)^2+\sigma_g^2\right)f\left(g_I\right)dg_I.\end{aligned}$$

Using this and (A.29), we obtain

$$\begin{aligned}\mathbb{V}(u_2-u_1) &= \left(\frac{1}{1+\tilde{\theta}}\right)^2\int_{g_I\geq\underline{g}}(g_I)^2 f(g_I)dg_I \\ &\quad+\left(\frac{\tilde{\theta}}{1+\tilde{\theta}}\right)^2\int_{g_I<\underline{g}}\left((g_I)^2+\sigma_g^2\right)f(g_I)dg_I \\ &\quad-\left(\int_{g_I\geq\underline{g}}g_I f(g_I)dg_I\right)^2\end{aligned}$$

$$\begin{aligned}\frac{d\mathbb{V}(u_2-u_1)}{d\tilde{\theta}} &= -2\frac{1}{\left(1+\tilde{\theta}\right)^3}\int_{g_I\geq\underline{g}}(g_I)^2 f(g_I)dg_I \\ &\quad+2\left(\frac{\tilde{\theta}}{\left(1+\tilde{\theta}\right)^3}\right)\int_{g_I<\underline{g}}\left((g_I)^2+\sigma_g^2\right)f(g_I)dg_I \\ &\quad+\left(2\left(\int_{g_I\geq\underline{g}}g_I f(g_I)dg_I\right)\underline{g}+\left(\frac{\tilde{\theta}}{1+\tilde{\theta}}\right)^2\left(\left(\underline{g}\right)^2+\sigma_g^2\right)-\left(\frac{1}{1+\tilde{\theta}}\right)^2\left(\underline{g}\right)^2\right)f(\underline{g})\frac{d\underline{g}}{d\tilde{\theta}}\end{aligned}$$

Evaluated at $\tilde{\theta}=0$, and hence $\underline{g}=0$, we obtain

$$\frac{d\mathbb{V}(u_2-u_1)}{d\tilde{\theta}}=-2\int_{g_I\geq 0}(g_I)^2 f(g_I)dg_I<0.$$

To prove the corresponding result for inflation, note that

$$\begin{aligned}\pi_2\left(g_I,g_C\right)-\pi_1 &= \begin{cases}-\frac{1}{\tilde{\theta}}g_I+\frac{1}{1+\tilde{\theta}}g_I \text{ if } g_I\geq\underline{g}\\ -\frac{1}{1+\tilde{\theta}}g_C+\frac{1}{1+\tilde{\theta}}g_I \text{ if } g_I<\underline{g}\end{cases} \\ &= \frac{1}{\tilde{\theta}}\left(u_2-u_1\right).\end{aligned}$$

The proof for $\frac{d\mathbb{V}(\pi_2-\pi_1)}{d\tilde{\theta}}<0$ then uses the fact that that

$$\frac{d\mathbb{V}(\pi_2-\pi_1)}{d\tilde{\theta}}=-\frac{2}{\tilde{\theta}^3}\mathbb{V}(u_2-u_1)+\frac{1}{\tilde{\theta}^2}\frac{d\mathbb{V}(u_2-u_1)}{d\tilde{\theta}},$$

which implies that $\frac{d\mathbb{V}(\pi_2-\pi_1)}{d\tilde{\theta}}<0$ for $\tilde{\theta}$ close to 0. ■

B Empirical Robustness

This Section reports robustness for our empirical results. Table A1 reports summary statistics for our 1980-1998 sample of developed countries.

Table A1: Summary Statistics 1980-1998 Developed Countries

	N	Mean	Std	Min	Max
$Reelect_{i,t}$	95	.4947368	.5026247	0	1
$CBI_{i,t}$	95	.3676574	.1548495	.1366319	.6785715
"Appointment Independence"	95	.5346491	.1550891	.0833333	.8333333
"Instrument Independence"	95	.2326316	.2326728	0	.6666667
"Objectives Independence"	95	.44	.3095639	0	1
"Fiscal Independence"	95	.3433626	.2124984	.0777778	.8541667

Table A2 reports an estimation of a logit model for our main empirical result in Table 1. We see that appointment independence continues to enter negatively and significantly, and objectives independence enters positively and significantly. Our results are therefore not sensitive to whether we estimate them via OLS or in a logit specification. Table A3 shows analogous OLS regressions without the GDP growth control. We see that controlling for GDP growth increases the precision of our estimates, as one would expect if voters learn from realized unemployment, but results are similar in magnitude if slightly noisier for the developed country sample when we do not control for GDP growth.

Table A2: Logit Model of Probability of Reelection onto Central Bank Independence 1980-1998

	Dependent Variable: $Reelect_{i,t}$									
CBI Measure	Combined		Appointment		Instrument		Objectives		Fiscal	
Central Bank Laws	2.93	1.68	-3.88***	-2.07	3.07*	1.03	2.41***	1.12***	2.96	1.31
	(1.34)	(1.17)	(-2.61)	(-1.61)	(1.84)	(0.94)	(3.40)	(2.60)	(1.63)	(1.16)
GDP Growth	23.83	37.15*	32.78	33.77	35.88	36.03*	19.62	32.79	28.83	38.58*
	(0.89)	(1.74)	(1.21)	(1.61)	(1.31)	(1.68)	(0.69)	(1.44)	(1.08)	(1.79)
Const.	-1.80**	-1.41**	1.10*	0.38	-1.84**	-1.01*	-2.11***	-1.19**	-1.80**	-1.27**
	(-1.96)	(-2.05)	(1.68)	(0.62)	(-2.22)	(-1.95)	(-3.56)	(-2.53)	(-2.19)	(-2.08)
N	51	95	51	95	51	95	51	95	51	95
Pseudo R-sq	0.05	0.04	0.09	0.05	0.10	0.04	0.08	0.05	0.07	0.05
AIC	73.20	131.82	70.49	131.07	69.42	132.01	71.13	130.64	71.71	131.64

Note: This table reports estimations from a logit model of $Reelect_{i,t}$ onto a constant $CBI_{i,t}$ and $GDP_{i,t}$. The sample and all variable definitions are as described in Table 1. Standard errors clustered by year in parentheses. * p <0.10, ** p <0.05, *** p <0.01.

Table A3: Probability of Reelection onto Central Bank Independence 1980-1998 - No GDP Control

	Dependent Variable: $Reelect_{i,t}$									
CBI Measure	Combined		Appointment		Instrument		Objectives		Fiscal	
Central Bank Laws	0.66	0.24	-0.74***	-0.46	0.58	0.16	0.53***	0.28**	0.61	0.16
	(1.18)	(0.64)	(-2.99)	(-1.59)	(1.49)	(0.55)	(4.16)	(2.67)	(1.31)	(0.56)
Const.	0.21	0.41**	0.84***	0.74***	0.30*	0.46***	0.13	0.37***	0.26	0.44***
	(0.88)	(2.71)	(6.95)	(4.68)	(2.08)	(5.51)	(1.44)	(5.79)	(1.37)	(4.15)
N	51	95	51	95	51	95	51	95	51	95
R-sq	0.04	0.01	0.07	0.02	0.08	0.01	0.08	0.03	0.06	0.00

Note: This table reports regressions analogous to Table 1, but does not include the GDP growth control. Standard errors clustered by year in parentheses. * p <0.10, ** p <0.05, *** p <0.01.