

Monetary Institutions and the Political Survival of Long-Serving Political Leaders

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Abstract

What determines why some democratic leaders are able to stay in office longer than others? According to previous research, survival-maximizing leaders will manipulate whatever macroeconomic policy instruments they have at their disposal in order to retain power. In democracies where capital is mobile, leaders will engage in monetary expansions prior to elections if the exchange rate is flexible and the central bank is not independent. Leaders will engage in fiscal expansions prior to elections if the exchange rate is fixed. If, however, the exchange rate is flexible and the central bank is independent, elected leaders will have neither fiscal nor monetary instruments available for electoral purposes. Consequently, all else equal, we expect leaders in such circumstances to find it more difficult to survive in office. We test this claim using data from 19 OECD countries in the latter part of the 20th century when the degree of capital mobility in the international economy was high.

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1 Introduction

With a long term in office comes accusations of stale policies. The biggest challenge facing Margaret Thatcher prior to her 1987 reelection was to continually rebut “anyone [who] hoped to attack the Conservative Party for running out of ideas after two periods of office.”¹ In a key debate prior to the 1993 legislative elections, the chief Spanish opposition rival, Jose Marie Anzar Lopez, leveled the following accusation against the long serving Spanish Prime Minister, Felipe Gonzalez; “you have lost the confidence of the nation and your government has run out of ideas.”² In the leadup to the election that eventually ended Helmut Kohl’s 16 year tenure as German Chancellor, *The Economist* magazine editorialized that change was needed because, quite simply, Kohl was “out of ideas.”³ What can long serving leaders do to counter the accusation of having “run out of ideas,” particularly when their long tenures mean such claims might actually be true? Though leaders may attempt to reposition their party or unveil new policies, we argue that these leaders are the most likely to resort to a tried and true method: inducing political business cycles.

Previous work argues that survival-maximizing leaders will manipulate whatever macroeconomic policy instruments they have at their disposal in order to retain power (Clark & Hallerberg 2000). Given the high degree of capital mobility in the international economy, the choice of exchange rate regime has a substantial impact on the political survival of leaders. In democracies where capital is mobile, leaders will engage in monetary expansions prior to elections if the exchange rate is flexible and the central bank is not independent. Leaders will engage in fiscal expansions prior to elections if the exchange rate is fixed. If, however, the exchange rate is flexible and the central bank is independent, elected leaders will have neither fiscal nor monetary instruments available for electoral purposes. Indeed, Clark (2003) finds that when context-dependent, electorally motivated manipulations of monetary and fiscal policy occur, they produce expansions

¹Quoted from speech to unveiling the Conservative party’s manifesto (*Time* magazine, June 1, 1987).

²“Gonzalez wins by default in lackluster clash. *The Independent* (London), June 2, 1993. p. 10

³“Chancellor Schröder?” *The Economist*, March 7, 1998, p. 15

in national income and reductions in unemployment in pre-electoral periods.

Incumbents attempt to produce these outcomes in order to curry favor with myopically retrospective voters. Consequently, we expect leaders without these instruments to find it more difficult to survive in office. However, we suspect that the ability of a leader to invoke “political business cycles” is not only conditional on the institutional context, but also on time. Specifically, we expect that monetary and fiscal policy autonomy will increase leader survival only when the leader has been in office for an extended period of time. We hold this expectation for four reasons. First, leaders who are removed from office in their first year are not likely to have been able to propose, let alone enact and implement, a change in macroeconomic policy. Second, given the time lag between the implementation of expansionary fiscal or monetary policy and its real effect on the economy, it is unlikely that a leader removed in their second or third year in office would have the ability to manipulate the economy in such a way as to induce favorable voter sentiment.⁴ Third, leaders in the early years of their tenure are able to blame difficult economic times on the policies of their predecessors; thereby eliminating a need to manipulate the economy solely for political gain. Fourth, it is leaders in the later stages of tenure, who are neither in a post-election “honeymoon” period, nor have a new policy agenda with which to engender voter support, who are most in need of pulling the levers of monetary and fiscal policy.⁵

The next section briefly reviews the theory of context specific macroeconomic policy manipulation. We form the hypothesis that leaders who possess instruments with which to engineer pre-electoral macroeconomic expansions should survive longer in office than those do not, and the effect of these instruments will be greater the longer a leader has been in office. Sections 3 and 4 describe our research design, refined hypotheses, and empirical test. We test our hypothesis using

⁴There exists the possibility of fiscal foresight, as reviewed extensively by Leeper, Walker & Yang (2009), in which economic actors change behavior in response to a known change in tax policy. However, voters at large may still adopt a “believe it when I feel it” approach; i.e., they must have directly received the benefits from the change in policy before it can induce a change in voting behavior.

⁵As Schultz argues, we should only expect leaders to produce political business cycles when their prospects for re-election are not good. That is, the “incentives for governments to engineer economic cycles can vary greatly from one election to the next depending upon their political needs at the time” (Schultz 1995, 81).

data from 19 OECD countries from 1972 to 1999, including original data on the reasons for leader removal. Section 5 reports our results. Consistent with our expectations, we find that having control of macroeconomic policy tools enhances leader survival, but only once leaders have been in office for approximately seven years. In section 6, we briefly highlight the role of economic voting as the relevant mechanism for survival in office.

2 Monetary Institutions and the Effectiveness of Macroeconomic Policy Instruments

Standard open economy macroeconomic theory is relatively straightforward. Absent capital mobility, both monetary policy and fiscal policy can be used to affect national income. After capital mobility is introduced, monetary policy is effective only when the exchange rate is allowed to fluctuate, and fiscal policy is effective only when the exchange rate is fixed (Mundell 1963). Consequently, in the absence of capital mobility, incumbents have two macroeconomic policy instruments at their disposal, but with capital mobility they are forced to choose between fiscal and monetary instruments.

Central bank independence adds a further complication for incumbents. Assuming central bankers and incumbents differ in their policy preferences, the independent status of the bank drives a wedge between what the leader would like to do and what she can do. The claim here is not that independent central bankers can routinely ignore the policy preferences of their political principals, but that independence creates friction in at least one of the mechanisms by which incumbents attempt to prolong their tenure.

Clark and Hallerberg (2000) draw on these key macroeconomic insights to explain why political business cycles occur in some times and places and not others. They theorize and find evidence to support the notion that, when macroeconomic conditions permit doing so, leaders vigorously manipulate macroeconomic policy instruments in pre-electoral periods. For instance,

when capital mobility is limited and the central bank is dependent, leaders have both monetary and fiscal policy at their disposal and, therefore, can induce pre-election expansions. In marked contrast, when capital is mobile, the exchange rate is allowed to fluctuate, and the central bank is independent, leaders have autonomous control over neither policy instrument.

What follows builds on Clark and Hallerberg's work. As they have already demonstrated the conditions under which leaders can induce political business cycles, we do not replicate that analysis here. Rather, we test a different implication from their argument: we ask, when leaders have macroeconomic policy autonomy, do the tools actually help leaders survive longer in office?

An initial, but naive, answer to this question is illustrated in Table 1. Each cell of Table 1 characterizes a different combination of macroeconomic conditions and identifies the policy tools available to leaders under those particular set of conditions. Next, each cell reports the average time in office of leaders who ruled under those particular set of conditions. Though one should suspect that, all things being equal, leaders who possess instruments with which to engineer pre-electoral macroeconomic expansions should survive longer in office than those do not, Table 1 suggests that things are not quite so simple. First, notice that leaders in our data set (described in detail below) are fairly evenly distributed across the six monetary regimes.⁶ There are 188 distinct leaders in our sample with just about 40 leaders experiencing each of the combinations of monetary institutions.⁷ The average leader survived in office for 3.52 years. Within the monetary regimes encountered in this period, the average time in office for all leaders is between about 3 and 5 years. Survival time is almost as little as three years for leaders confronting a dependent central bank during the period of high capital mobility.⁸ This is surprising in light of the theoretical expectations articulated above—political survival is expected to be particularly difficult when capital is mobile, the exchange rate

⁶The countries in our dataset are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Spain, Sweden, United Kingdom, and the United States.

⁷Since some leaders had experience with more than one combination of monetary institutions, the numbers in Table 1 do not sum the number of leaders in the data set.

⁸We make the simplifying assumption that capital was immobile during the Bretton Woods period and mobile afterward. For a defense of this assumption see Clark (2003).

is flexible, and the central bank is *independent*.

Table 1: Macroeconomic Tools Available to Leaders under Alternative Monetary Institutions

		Dependent Central Bank	Independent Central Bank
No Capital Mobility		(a) <i>Monetary and Fiscal Policy</i> Mean: 2.35 years SD: 2.48 years N: 19	(b) <i>Fiscal Policy</i> Mean: 3.36 years SD: 2.18 years N: 29
Capital Mobility	Fixed Exchange Rate	(c) <i>Fiscal Policy</i> Mean: 3.07 years SD: 3.07 years N: 48	(d) <i>Fiscal Policy</i> Mean: 4.86 years SD: 4.04 years N: 27
	Flexible Exchange Rate	(e) <i>Monetary Policy</i> Mean: 3.29 years SD: 3.16 years N: 33	(f) <i>No instruments</i> Mean: 4.54 years SD: 3.25 years N: 20

Data are from 19 OECD countries, 1972-1999.

When consistent with one's expectations, average survival rates are useful because they frequently pass the "interocular trauma test". However, the surprising results (given our theoretical expectations) are suspect for two reasons. First, it is unlikely that institutions that grant incumbents the power to prolong their time in office will have the same effect throughout the incumbent's tenure in office. Monetary and fiscal policy help incumbents survive because they allow incumbents to engineer macroeconomic outcomes rewarded by voters. Access to such an instrument is likely to influence incumbent survival most when the incumbent is facing the threat of replacement and lacks alternatives for inducing voter support (such as a new policy agenda). Looking at average survival rates for particular institutional configurations ignores this fact. As we will discuss below, so do standard proportional hazard models. Second, simple comparisons across regime types are

likely to be subject to omitted variable bias. There are certainly factors other than monetary institutions that influence the survival of leaders and the literature on the political economy of monetary institutions suggests that many of these are probably correlated with monetary institutions. Consequently, failure to control for these factors makes drawing inferences from Table 1 extremely problematic.

3 Research Design

In our analysis, we have to take account of the effectiveness of monetary institutions during the Bretton-Woods era compared to the post-Bretton Woods era as well as political business cycles. We also rely on previous research to identify other factors likely to affect the survival of democratic leaders that we might need to control for in our empirical analyses.

3.1 Monetary Institutions and Political Survival during the Bretton Woods Era

There are many good reasons to believe that the effect of monetary institutions on political survival will be fundamentally different during and after the Bretton Woods era. First, many scholars believe that the end of the Bretton Woods system accompanied a structural break in the degree of capital mobility in the international economy (Andrews 1994, Webb 1991). Since, according to the Mundell-Fleming model, the choice of the exchange rate regime is a major determinant of the effectiveness of monetary and fiscal policy instruments only when capital is mobile, it follows that exchange rate regime choice should matter for leadership survival only in the post-Bretton Woods era. Secondly, there is almost no variance in the choice of exchange rate regime during the Bretton Woods era – fixed rates are ubiquitous. Only after the break up of Bretton Woods is there sufficient variance in the choice of exchange rate regimes to test our argument about the effect of exchange rate regime choice on political survival. Consequently, even if we were to challenge conventional

wisdom and claim that there was sufficient international capital mobility prior to 1972 to make the choice of exchange rate regime consequential for political survival, there is not enough observed variance in exchange rate regimes in that period to test the claims. For these reasons, we restrict our sample analysis to the post Bretton Woods period.

3.2 The Cyclical Nature of Political Business Cycles

The existence of political business cycles is highly controversial, but if they exist, they are by definition cyclical. Consequently, institutions that suppress or facilitate political business cycle behavior will only take effect when the time is right for incumbents to manipulate monetary and/or fiscal policy. In systems with fixed electoral calendars, this is typically thought to be the period leading up to elections. In the U.S., for example, scholars have often looked for expansionary behavior in the year prior to a presidential election. If, as argued above, a particular combination of institutions inhibits the use of monetary policy, fiscal policy or, most importantly, both, we should expect to see an increased risk of removal from office around the time of elections. But we would not expect this institutional combination to increase the likelihood that incumbents be removed from office in the early days of their term. From the standpoint of estimation, the problem is that models such as the Cox proportional hazard model assume that the effect of any covariate has a proportional and constant effect “that is invariant to when in the process the value of the covariate changes. That is, each observation’s hazard function follows exactly the same pattern over time [...]. Theoretically, one would be suspicious of the proportional hazards assumption if there was reason to suspect that the effect of a covariate changes over time” (Box-Steffensmeier & Jones 2004, 132). The standard solution is to include the covariates expected to have a non-proportional effect along with an interaction effect between these covariates and some function of time (Teachman & Hayward 1993, Box-Steffensmeier & Jones 2004). That is the strategy we pursue here. Specifically, we treat the case where incumbents lack instruments for electoralist manipulation of the macroeconomy as our baseline, and then ask how a shift to a regime that gives

the incumbent control of either fiscal policy or monetary policy affects the risk of removal from office, conditional upon where the incumbent is in their tenure in office.

Our argument suggests that when capital is mobile (as we are suggesting it has been in the post-Bretton Woods period) political survival should be a function of, among other things, an interaction between central bank independence and the choice of the exchange rate regime. Table 1, for example, shows that when capital is mobile, the exchange rate is flexible, and the central bank is highly independent (cell *f*), the incumbent controls neither survival-enhancing policy instrument. If our argument is correct, a movement away from this condition should increase the survival chances of the incumbent. For example, it should be the case that a shift to a dependent central bank (holding capital mobility and the exchange rate regime constant, i.e. going from cell *f* to cell *e*), should enhance the survival prospects of the incumbent. Similarly, starting again at our baseline case, a change to a fixed exchange rate (from cell *f* to cell *d*) should give the incumbent newfound power to use fiscal policy to enhance its survival in office. Finally, a shift from our baseline case that involves both a reduction in central bank independence and an adoption of a fixed exchange rate (from cell *f* to *c*) also gives the incumbent potentially survival-enhancing control over fiscal policy, where it previously had no such control.

However, the extent to which this is the case will depend on time. Specifically, we expect that monetary and fiscal policy autonomy will increase leader survival only when the leader has been in office for an extended period of time. As we mentioned above, several reasons lead to this expectation. In their first year in office, leaders are not likely to have been able to implement any changes in macroeconomic policy (even if they were to propose them). Second, given the time lag between the implementation of expansionary fiscal or monetary policy and its real effect on the economy, it is unlikely that leader who are removed in their second or third years in office would be able to make use of macroeconomic manipulations in such a way as to induce favorable voter sentiment. Third, leaders in the early years of their tenure are able to scapegoat their predecessors when attributing blame for difficult economic times, thereby eliminating a need to manipulate the

economy solely for political gain. Finally, it is leaders who have been in office for a long time, who benefit neither from a post-election “honeymoon” period, nor from a new policy agenda with which to engender voter support, who are most in need of pulling the levers of monetary and fiscal policy. In other words, long serving political leaders have simply run out of ideas and, as a result, turn to economic manipulation.

We can now state the following two hypotheses:

Hypothesis 1: When capital is mobile and the central bank is independent, incumbents with fixed exchange rates should survive longer in office (have lower hazard rates) than those with flexible exchange rates, and this effect should increase with a leader’s tenure in office.

Hypothesis 2: When capital is mobile and exchange rates are flexible, incumbents with dependent central banks should survive longer in office (have lower hazard rates) than those with independent central banks, and this effect should increase with a leader’s tenure in office.

3.3 Other factors affecting the survival of democratic leaders

The general literature on leader survival suggests some additional factors that may well affect the length of time a leader is able to stay in power. We might expect that leaders who participate in multi-party coalitions survive at different rates than leaders who head single-party majority governments. It is not immediately clear, however, which arrangement should improve a leader’s tenure. On the one hand, leaders of single-party majority governments will have the ability to respond quickly to exogenous shocks and will have little opposition when they want to use macroeconomic policy instruments for political purposes. On the other hand, when things go awry, voters will find it easier to place the blame on single party majorities than parties in large coalitions. Single-party majority governments, therefore, are more autonomous in their control of policy, but are also more

likely to be held accountable (Powell 2000).⁹ Controlling for type of government is important because scholars have argued that commitments to central bank independence will lack credibility when made by single-party majority governments (Keefer & Stasavage 2002, Moser 1999).

While we have focused on the manipulation of macroeconomic policy instruments by survival maximizing incumbents, another possibility is that leaders survive by judiciously timing elections to take advantage of good economic times that may be largely outside their control (Smith 1996, Smith 2004, Kayser 2005). If leaders “surf” the economy rather than “manipulate” it, then leaders should survive longer in countries with endogenous election timing, and their survival should be unrelated to the monetary institutions that we have identified as crucial to their ability to manipulate the economy. Alternatively, it is possible that surfing and manipulating are substitutes – perhaps leaders are more likely to surf when they do not have the instruments that are required to manipulate. Leaders ought to be more reluctant to adopt monetary institutions that inhibit the ability to manipulate the economy in systems with exogenously-timed elections. Therefore, in the analysis that follows we will control for endogenous election timing.

Another institutional feature that is likely to influence leadership survival is the number of electoral districts. The number of electoral districts captures the degree to which the legislature is geographically fractionalized. When the legislature is carved up into many small constituencies, it may be possible for leaders to use targeted government spending to increase their survival in office even when mobile capital and flexible exchange rates render such spending ineffective in terms of the macroeconomy (Weingast, Shepsle & Johnsen 1981, Franzese 2002, Franzese & Nooruddin 2004). Nevertheless, it may also influence the choice of exchange rate regime or degree of central bank independence. To see why, imagine an incumbent in a system with many

⁹We can think of minority governments as de facto coalition governments, since the government relies on support from opposition parties to remain in power and pass legislation. But they, arguably, will find it difficult to share blame for bad outcomes with “shadow” coalition partners. Consequently, one might think of minority governments as cursed with the worst of both worlds. They lack both the autonomy to respond quickly that single party majority governments and the ability to share blame with coalition partners (Powell 2000). However, some scholars have argued that what keeps minority parties in power is that they are “strong” parties in the sense that there is no viable alternative to their rule (Laver & Shepsle 1996). In this sense, we might expect them to have the longest tenure.

small electoral districts. When capital is mobile, a fixed exchange rate will allow targeted fiscal expenditures to also have a broader macroeconomic effect, thus making fixed exchange rates more attractive. Alternatively, one might think incumbents would want to complement targeted fiscal expenditures with the ability to control the broader macroeconomy with monetary policy, making flexible exchange rates more attractive. Either way, the choice of exchange rate regime would be correlated with the number of electoral districts and excluding this variable from our analysis could bias our results.¹⁰

4 Model and Data

We test our hypotheses using survival (event history) analysis. The central concept in survival analysis is the hazard function or hazard rate, $h(t)$. This is the probability that an event will occur at a particular point in time given that the event has yet to occur. In terms of the analysis here, the event in question is the removal of the leader from office. The hazard rate has two components. The first is a set of covariates that are hypothesized to systematically affect the timing of an event. The second is the baseline hazard function that indicates the rate of event occurrence when all the covariates are zero i.e. the baseline hazard reflects how the rate of event occurrence changes with time only. The hazard rate typically has the following form: $h(t|x) = h_0(t)e^{x\beta}$ where $h_0(t)$ is the baseline hazard rate and $x\beta$ in this particular case is specified as

$$\begin{aligned}
 \text{LEADER TENURE} &= \beta_1 \text{FIXED EXCHANGE RATE} + \beta_2 \text{DEPENDENT CENTRAL BANK} \\
 &+ \beta_3 \text{FIXED EXCHANGE RATE} \times \text{DEPENDENT CENTRAL BANK} \\
 &+ \beta_4 \text{FIXED EXCHANGE RATE} \times \text{TIME} \\
 &+ \beta_5 \text{DEPENDENT CENTRAL BANK} \times \text{TIME} \\
 &+ \beta_6 \text{FIXED EXCHANGE RATE} \times \text{DEPENDENT CENTRAL BANK} \times \text{TIME} \\
 &+ \beta_i \text{CONTROLS}
 \end{aligned}$$

¹⁰Some readers might wonder if it is appropriate to control for the ideological orientation of the government, but we do not believe this is necessary. While partisan orientation of government might be related to the choice of monetary institutions, we are unaware of a literature that claims that partisan orientation influences leader survival.

To create a dependent variable measuring the tenure in office of political leaders, we must first identify when leaders leave office and, second, if their removal can be classified as a “political death.” Unfortunately, existing datasets on leader removal, such as the *Archigos* dataset by Goemans, Gleditsch, and Chiozza (2009), is inadequate for this purpose. Though the *Archigos* dataset is extensive, it focuses on evaluating “irregular” causes of leader removal, such as coups and forceful removal by another state. Consequently, it codes all removals by the “prevailing rules, provisions, conventions, and norms of the country” as simply “regular” removals (Goemans & Chiozza 2009, 272). However, we need to know the exact “regular” cause that resulted in the leader’s loss of office.

Therefore, we create an original dataset of leader removal in 19 OECD countries from 1960 to 2001. The dataset identifies whether a leader leaves office due to a resignation induced by scandal, a resignation induced by a lack of popularity (and, hence, the party desires to change leadership), a resignation induced by health concerns, a loss of an election, death in office, or a term limit. We draw on two sources to construct this dataset. First, we obtain a listing of political leaders, their party, and their dates in office from Zarate’s Political Collections dataset. Second, each leader’s reason for leaving office is coded with information from Keesing’s Record of World Events.

Excluding interim leaders (McEwan of Australia in 1967/1968; Aoki of Japan in 2000; Zolotas of Greece in 1989/1990; Poher of France in 1974; Ito of Japan in 1980; and Grivas of Greece in 1989), military dictators (Franco of Spain; Papadopoulos and Gizikis of Greece), monarchs (Constantine II and Paul I of Greece), and transitional leaders (Juan Carlos of Spain), we have information on the loss of leadership for 203 leaders in 19 countries over a 42 year period.

Having constructed this dataset, we code “political death” using the following rules. First, if a leader resigns or retires for any reason other than declining health, we code this as a political death. For example, since Giulio Andreotti resigned as Prime Minister of Italy in 1992 due to a poor showing by the Christian Democrats in legislative elections, this is coded as a political death.

However, Prime Minister of Japan Hayato Ikeda's resignation in 1964 due to declining health is not coded as a political death.

Second, if a leader loses a general election, we code this as a political death. Hence, despite serving in office for 16 years, Helmut Kohl is ultimately coded as a political death as he lost the 1998 German general election to Gerhard Schroeder. Third, if a leader is term limited, but that leader's party loses office in the preceding election, this is coded as a political death. For example, when Ronald Reagan, a Republican, left office in January 1989, another Republican, George H. W. Bush, was to be sworn in as the next President. Since the Republican party maintained control of the Presidency, this is not coded as a political death. However, when Bill Clinton, a Democrat, left office in 2001, a Republican, George W. Bush, was to be sworn in as the next President. Since the Democratic party did not maintain control of the Presidency, this is coded as a political death.¹¹

Table 2 tabulates the number of leaders from our sample coded for each reason of "political death." The largest category is political resignations, comprising nearly half the sample (98 of 203 leaders). Italy (21) has the most resignations, followed closely by Japan (14). We should note that of these resignations, five were related to scandals (Adenauer, Germany, 1963; Nixon, USA, 1974; Nakasone, Japan, 1987; Uno, Japan, 1989; Hosokawa, Japan, 1994) and seven were ostensibly retirements (LeMass, Ireland, 1966; Pearson, Canada, 1968; Erlander, Sweden, 1969; Sato, Japan, 1972; Karamanlis, Greece, 1980; Haughey, Ireland, 1992; Carlsson, Sweden, 1996).

Figure 1 plots the tenures of all the leaders in the dataset, while Table 3 provides descriptive statistics of the leader tenure data. As the majority of leaders leave office within the first few years of tenure, becoming a long serving leader (in office past 5 years or more) is rare. However, as we will show, it is this rare breed of long serving leaders who benefit most, electorally speaking, from having macroeconomic policy autonomy.¹²

¹¹The complete dataset of leader removal is available from the authors by request.

¹²There is uncertainty regarding the proper coding of Finland. Specifically, there is debate about whether the President should be coded as the leader of Finland for the entire time frame or if the leader of Finland should be coded as the President up to 1981 and the Prime Minister should be coded as the leader after 1981. We conduct all tests with both codings and the results are not altered. Therefore, the results reported here are with the President coded as the

Table 2: Leader Removal, by Type

Reason for Removal	Number of Leaders
<i>"Political Deaths"</i>	
Lost Election	69
Term Limit (succeeded by co-Partisan)	1
Resign (Political)	98
<i>"Extra political"</i>	
Term Limit (not succeeded by co-partisan)	2
Resign (Health)	10
Death	5
End of Sample	18

Data compiled using Zarate's Political Collections dataset and Keesing's Record of World Events

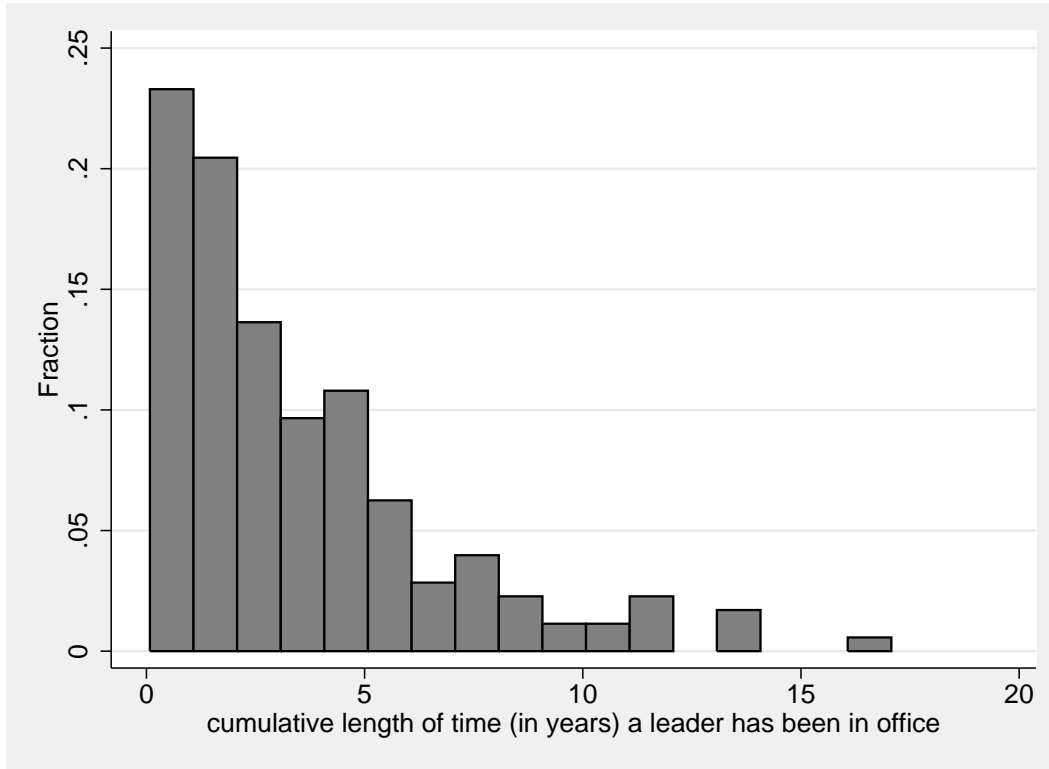
The main independent variables tell us the monetary institutions under which each leader operated. These sometime vary over the tenure of a particular leader. *Fixed Exchange Rate* is a dichotomous variable based on the IMF's *Exchange Rate Arrangements and Exchange Restrictions* (various years). *Central Bank Independence* equals 1 if the country's legal independence measure (Cukierman, Webb & Neyapti 1992) is above the sample median. These measures were taken from Clark (2003).

Our first control variable indicates whether leaders can easily determine election timing. We rely on coding by Kayser (2006) to identify "premier timing" cases in our dataset. As Kayser (2005, 18) notes, of the 19 countries in our dataset, only Norway and the United States "fully preclude early elections". Neither country ever has endogenously-determined elections, whereas they can occur in the other countries. However, the ability of leaders to determine elections dates is not equally unconstrained across the sample of 'endogenous-timing countries' and so we follow Kayser's practice of dividing this set of countries into those that have premier timing and those that do not.¹³ In our sample, twelve of the nineteen countries are premier-timing.

leader of Finland.

¹³According to Kayser, the distinction is as follows: "Premier-timing requires that the incumbent executive have

Figure 1: Distribution of leader tenures



Our measure of geographic fragmentation of the legislature, the number of electoral districts, is taken from Golder (2005). Since we expect a decreasing marginal effect in the number of districts, we will use the natural log of the number of districts rather than the actual number of districts. The final control variable is a dummy variable indicating if a single-party majority controls the government or not. This variable was coded with data from Woldendorp, Keman & Budge (2000), and supplemented where necessary from country reports from the *European Journal of Political Research* or media accounts.¹⁴

the *de jure* and *de facto* ability to initiate dissolution and early elections either directly or through a parliamentary majority whereas the non-premier category includes countries in which early elections are limited to extraordinary circumstances or election dates are set by any actor other than the government” (Kayser 2006, 442).

¹⁴For the United States, we coded as single-party majority government those case in which the president and a majority in both houses of Congress were controlled by the same party (Laver & Shepsle 1991). For all other countries in the sample, Woldendorp et al. (2000) explicitly code government types, indicating whether a government consists of a single-party majority or not.

Table 3: “Political Tenure” Data Summary

Mean Tenure (in years)	3.52
Median Tenure (in years)	2.54
Minimum Tenure (in years)	0.08 (Lyng, Norway)
Maximum Tenure (in years)	16.07 (Kohl, Germany)
90 percentile (in years)	7.67
75 percentile (in years)	4.85
25 percentile (in years)	1.22

5 Results

In the following analysis, we employ a Cox survival model since this allows us to estimate the effect of the covariates on the hazard rate without requiring us to specify a particular parametric form for the baseline hazard. Recall that our argument suggests that when capital is mobile, political survival should be a function of an interaction between central bank independence and the choice of the exchange rate regime. Specifically, our model uses the flexible exchange rate with an independent central bank as the baseline case. According to our theory, leaders will possess the ability to control neither monetary, nor fiscal policy under these circumstances. The hazard of being removed from office, therefore, is at its highest. In contrast, when a leader confronts a flexible exchange rate and a *dependent* central bank she can use monetary policy for survival maximizing purposes. Alternatively, when a leader confronts an independent central bank and a *fixed* exchange rate, she can use fiscal policy to enhance her political survival. Consequently, any combination of monetary institutions other than the baseline case should prove sufficient to reduce the leader’s hazard of removal.

To test the proposed links between monetary institutions and leader survival in a proportional hazard model, we would only need to interact a dummy variable that equals one when the central bank is dependent with a dummy variable that equals one when the exchange rate is fixed. If the proportional hazards assumption holds (i.e. if the effect of the covariates is time-invariant), then

we would expect that the coefficient on central bank dependence and fixed exchange rate to each be negative (the hazard is expected to be lower when either institution is different from the baseline case), and the coefficient on the interaction term to be zero (all institutional combinations other than the base-line case have the same expected hazard rate).

However, if alternative institutional arrangements are expected to have an effect on survival at some points in the incumbent's tenure and not others, such a test would either overestimate or underestimate the difference in the hazard rates of leaders ruling under different combinations of monetary institutions.¹⁵ We need to take account of the possibility that the effect of these institutions might depend on the leader's time in office. Consequently, we enter an interaction between the model just discussed and a measure recording the tenure in office of the leader. Now the coefficient on the dummy variable for a dependent central bank, for example, indicates the effect of low central bank independence on leader survival when the leader has just entered office and when the exchange rate is flexible. Similarly, the coefficient on the dummy variable for a fixed exchange rate regime tells us the effect of fixed exchange rates at the beginning of a leader's term when the central bank is independent.

Table 4 presents our estimates of this model. Model 1 contains only the main independent variables, while Models 2 - 4 each add in one of the control variables. Finally Model 5 includes all of the controls in the same model. Notice that our model specifications do not include the measure for tenure by itself. Normally, we would include all constitutive terms that comprise an interaction term separately as well. Since the underlying hazard rate is a function of time, doing so would lead to perfect collinearity.

¹⁵According to Box-Steffensmeier & Jones (2004, 132), "Misspecified proportional hazards models will overestimate the impact of variables whose associated hazards are increasing, while coefficient estimates for covariates in which the hazards are converging will be biased towards zero."

Table 4: The Effect of Monetary Institutions on Survival Time in the post-Bretton Woods Era (1971-1999)
 Dependent Variable: Tenure of Leader (in years)

Independent Variables	(1)	(2)	(3)	(4)	(5)
	Main Model	Main Model w/ Premier-timed Elections	Main model w/ Number of Districts	Main Model w/ Single-party majority govts	Main Model w/ all controls
Fixed Exchange Rate	2.90*** (0.84)	2.64*** (0.84)	2.79*** (0.86)	2.86*** (0.84)	2.43*** (0.86)
Dependent Central Bank	3.39*** (0.83)	3.19*** (0.82)	3.39*** (0.83)	3.40*** (0.83)	3.18*** (0.83)
Fixed Exchange Rate × Dependent Central Bank	-2.56*** (0.91)	-1.78* (0.93)	-2.52*** (0.91)	-2.59*** (0.91)	-1.68* (0.93)
Fixed Exchange Rate × Time	-0.57*** (0.13)	-0.51*** (0.13)	-0.56*** (0.13)	-0.58*** (0.13)	-0.51*** (0.13)
Dependent Central Bank × Time	-0.59*** (0.14)	-0.58*** (0.14)	-0.60*** (0.14)	-0.60*** (0.14)	-0.60*** (0.14)
Fixed Exchange Rate × Dependent Central Bank × Time	0.48*** (0.16)	0.46*** (0.16)	0.48*** (0.16)	0.48*** (0.16)	0.48*** (0.16)
Premier-timed Elections		0.94*** (0.28)			1.10*** (0.29)
Ln(Number of Electoral Districts)					0.01 (0.08)
Single-party Majority Governments					-0.44* (0.26)
Log Likelihood	-450.6	-444.5	-450.4	-450.5	-443.1
Observations (Leaders)	149	149	149	149	149

* p<0.10; ** p<0.05; *** p<0.01 (two-tailed).

NOTES: Cox proportional hazards estimates; standard errors in parentheses. The Efron method is employed for handling ties. Data are based on leaders from 19 OECD countries between 1972 and 1999.

In all five models, the coefficients indicate the effect of the covariates on the baseline hazard. A positive coefficient indicates that the covariate in question increases the hazard rate or, more intuitively, reduces the length of a leader's tenure. Conversely, a negative coefficient implies that the covariate reduces the hazard rate or increases the leader's time in office. Note that the coefficients on the interaction terms that include *Time* are all significant, which indicates that the proportional hazard assumption is violated (Cleves et al. 2008, 198). The usefulness of the results in Table 4, however, is limited due to the interactions terms. As we mentioned earlier, the coefficient on *Fixed Exchange Rate* only tells us the effect of having a fixed exchange rate regime when the central bank is independent (i.e., *Dependent Central Bank* is equal to 0) and when *tenure* is equal to zero.

To present the results in a more substantively meaningful way, we graph the percentage change in the hazard rate associated with a change in our covariates *Fixed Exchange Rate* and *Dependent Central Bank* over time. To calculate the effect of a change in a covariate in terms of a percentage change in the hazard rate, we use the following formula:

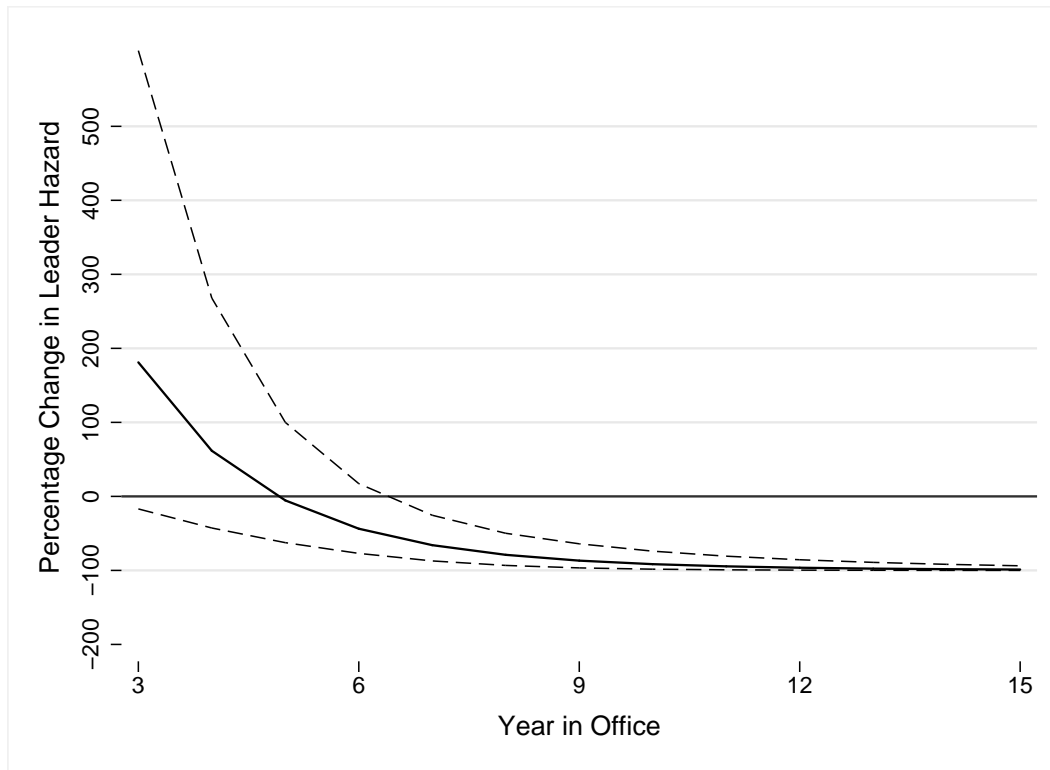
$$\% \Delta h(t) = \left[\frac{e^{\beta(x_i=X_2)} - e^{\beta(x_i=X_1)}}{e^{\beta(x_i=X_1)}} \right] \times 100 \quad (1)$$

where X_1 and X_2 are, respectively, the values of the covariate before and after the change.

Hypothesis 1 states that when capital is mobile and the central bank is independent, having fixed rather than flexible exchange rates should decrease a leader's hazard rate (increase the leader's time in office), and this effect should increase with a leader's tenure in office. To evaluate this hypothesis we need to calculate the estimated effect of a change in institutions on the hazard rate over a plausible range of the leader's tenure. For example, in Figure 2 ,we plot the percentage change in the hazard rate of having fixed instead of flexible exchange rates from the third to the fifteenth year in office for the leaders in our sample.¹⁶

¹⁶We plot this period for a couple of reasons. One is that we do not expect that these tools will make a difference for leaders in the first few years of their term; they should matter most when survival is more tenuous, which we expect to be the case later in a leader's term. The other is simply for ease of presentation; for a couple of the graphs the percentage change is large (and positive) in the first year of a leader's term and it makes the relevant details in the graph more difficult to ascertain.

Figure 2: Percentage Change in Hazard Rate when Leader has Fixed Instead of Flexible Exchange Rate Regime, when Central Bank is Independent



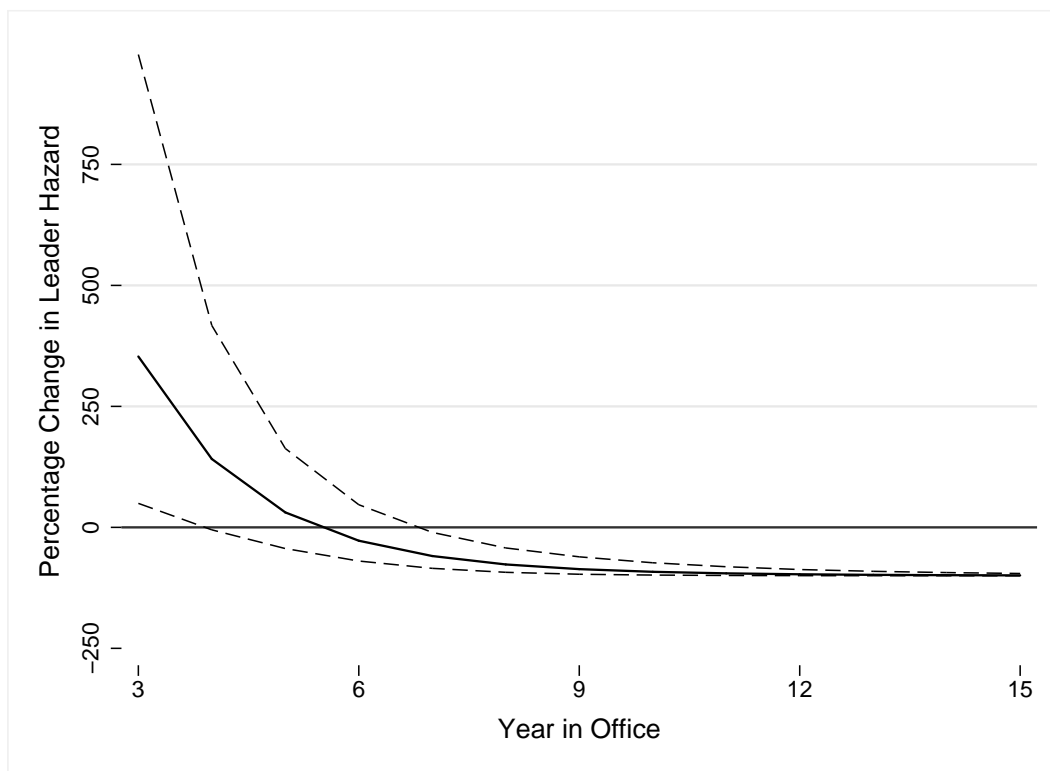
In Figures 2-6, the solid black line indicates how the percentage change in the hazard rate changes with the length of time in office. The 95% confidence intervals around this line allow us to determine the conditions under which the difference between flexible and fixed exchange rate regimes has a statistically significant effect on the leaders' hazard rates.¹⁷ All other variables are held at their means or modes. The percentage change in the hazard rate is statistically significant whenever the upper and lower bounds of the confidence interval are both above (or below) the zero line. The figure shows that the percentage change in the hazard rate is negative and significant after a leader has been in office for seven years. At this point, having the ability to make use of a fixed exchange rate regime to manipulate the economy has a significant effect on the incumbent's ability

¹⁷Confidence intervals are based on simulations using 10,000 draws from the estimated coefficient vector and variance-covariance matrix.

to stay in office - as anticipated by Hypothesis 1.

Hypothesis 2 states that when capital is mobile and exchange rates are flexible, incumbents with dependent central banks should survive longer in office (have lower hazard rates) than those with independent central banks and that this effect should increase with a leader's tenure in office. Figure 3 shows that when the exchange rate is flexible, leaders confronting dependent central banks face a lower hazard of leaving office than those confronting an independent central bank when they are later in their tenure.

Figure 3: Percentage Change in Hazard Rate when Leader has Dependent Central Bank instead of Independent, when Exchange Rate is Flexible



Specifically, the percentage change in the hazard rate is negative and significant after a leader has been in office for seven years. In other words, having a dependent rather than an independent central bank (with a flexible exchange rate) has the hypothesized effect when a leader tries to stay

in power beyond her seventh year in office. This is once again consistent with Hypothesis 2 and remarkably similar to the evidence found in support of Hypothesis 1.

While it is important to show that the changes in institutions relevant to hypotheses 1 and 2 have statistically significant effects in the hypothesized directions, it is also important to determine if the magnitude of these estimated effects are substantively important. Table 5 suggests they are. To set a baseline for comparison we look at the case where leaders control neither monetary nor fiscal policy. The hazard rate for leaders in their seventh year in office in countries with highly independent central banks and flexible exchange rates (with all other variables held at their mean or mode) is 3.42. In contrast, and consistent with hypothesis 1, leaders in countries that are the same in all relevant ways to this baseline except that they maintain a commitment to fixed exchange rates (thereby granting leaders effective control over fiscal policy) are estimated to face a hazard rate less than half as large (1.22, a 64.3 percent decrease in the hazard rate). Similarly, and consistent with Hypothesis 2, leaders in countries that are the same in all relevant ways to the baseline case except that central bank independence is low (thereby granting leaders effective control over monetary policy) are also estimated to a hazard rate less than half as large (1.38, a 59.6 percent decrease in the hazard rate) as the baseline case.

Table 5: Effect on Leader Survival of Alternative Monetary Institutions in Seventh Year of Tenure

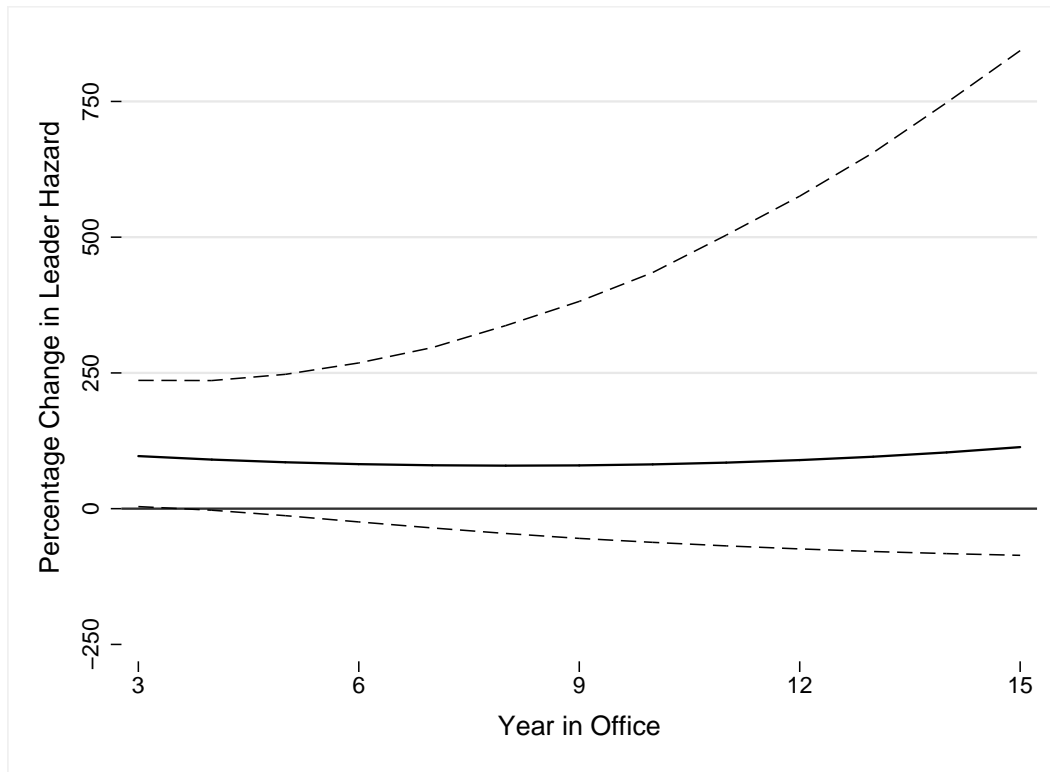
Case	Hazard Rate	Percentage Change from Base Case
<i>Baseline Case:</i>		
High CBI, Flexible Exchange Rate	3.42	n/a
<i>Alternative Case 1:</i>		
High CBI, Fixed Exchange Rate	1.22	-64.3
<i>Alternative Case 2:</i>		
Low CBI, Flexible Exchange Rate	1.38	-59.6

It should be noted that results (Figures 2 and 3) indicate that during an incumbent's first few years in office, central bank dependence, as well as a fixed exchange rate regime, increase the likelihood of being expelled from office. We find this a bit surprising but it might be explained by the fact that incumbents who can manipulate monetary and fiscal policy for political purposes are more likely to experience the consequences of their predecessors short-sighted policies in the early days of their tenure.

While our primary hypotheses concern the way in which gaining access to either monetary or fiscal policy can prolong the survival of incumbents, our theoretical perspective also has testable implications about changes involving the fourth logically possible institutional combination - the case of low central bank independence and fixed exchange rates. Since fiscal policy is expected to be effective in this case, leaders should be able to use it to engineer macroeconomic expansions when their survival is threatened, but this is also the case when the exchange rate is fixed and the central bank is independent. So, we would expect no significant difference between the hazard rates between leaders in low central bank independence and high central bank independence countries if the exchange rate is fixed. Figure 4 suggests this is indeed the case - the confidence intervals surrounding the estimated change in the hazard rate contain zero over the relevant range of the modifying variable.

Similarly, in countries with low levels of central bank independence, a change from flexible exchange rates to fixed exchange rates is not expected to have any effect on the leader's hazard of being removed from office. According to Clark and Hallerberg (2000), in the absence of central bank independence a change in the exchange rate regime dictates the instrument incumbents use to manipulate the economy, not *whether* they manipulate the economy - when the exchange rate is fixed they use fiscal policy, when the exchange rate is flexible they use monetary policy. Absent knowledge about the relative effectiveness of these survival maximizing strategies we expect hazard rates to be roughly equivalent under these two regimes. Figure 5 is consistent with this expectation - once again there is no statistically significant difference in hazard rates across be-

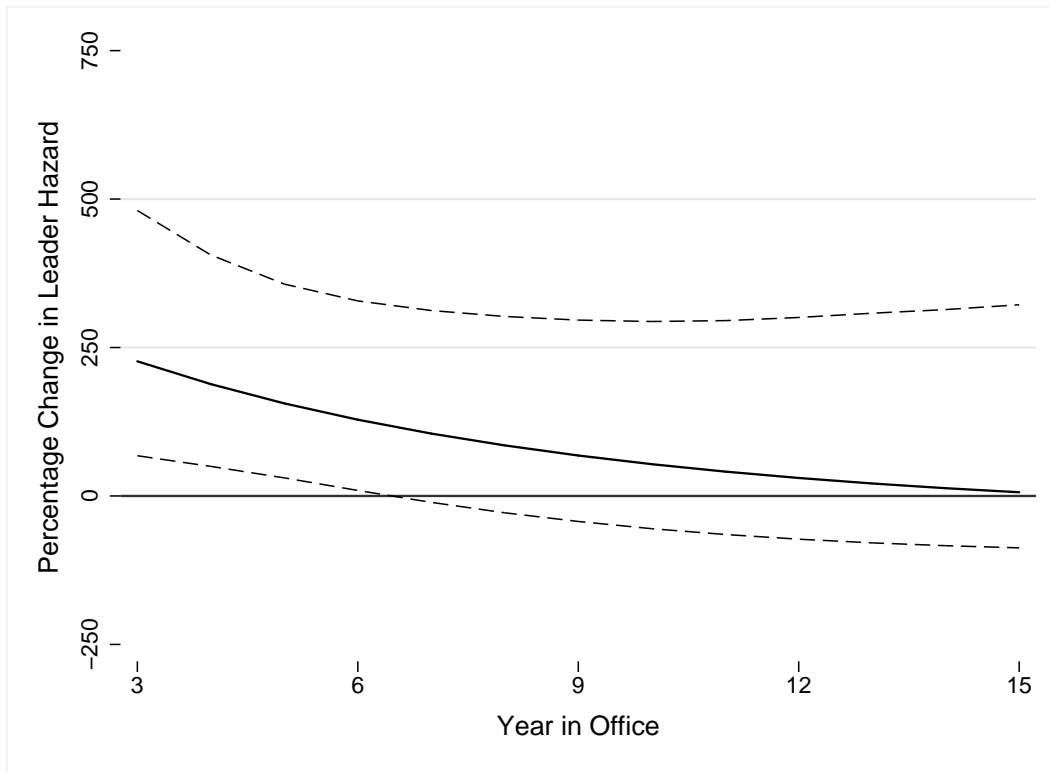
Figure 4: Percentage Change in Hazard Rate when Leader has Fixed instead of Flexible Exchange Rate Regime, when Central Bank is Dependent



tween fixed and flexible exchange rate countries when central bank independence is low late in the incumbent's tenure.

We expressed concerns that a set of political variables might be correlated both with leader survival and the choice of monetary institutions. Models 2-5 in Table 4 are meant to address such concerns. Note that all of the coefficients connected to monetary institutions are quite stable across changes in specification. The coefficients for fixed exchange rates and dependent central bank experience moderate attenuation when we control for these other institutional variables, but the coefficients on the interaction terms are remarkably stable. This suggests that if we were to create figures like Figures 2 through 5 based on these alternative specifications, the picture would remain largely the same. The size of the positive effect of institutional changes would be diminished

Figure 5: Percentage Change in Hazard Rate when Leader has Dependent Central Bank instead of Independent, when Exchange Rate is Fixed



somewhat and the point at which these institutions reduce leader’s risk of removal would occur slightly earlier. But otherwise the story is the same. This suggests that the specification shown in Model 5 in Table 4 is not an unreasonable specification upon which to base our inferences.

It should also be noted that political survival in the post-Bretton Woods era appears to be influenced by some of the control variables discussed above. Most pronounced is the effect of endogenous elections, though the direction of the effect may be surprising to some readers. Leaders who have the ability to influence when elections are called are at roughly twice the hazard of being removed as leaders without the ability to time elections to take advantage of positive economic shocks. If we think of manipulation and “surfing” as alternative instruments in a survival maximizing leader’s arsenal it is, perhaps surprising that leader with only one instrument survive longer

than those with two. On the other hand, Smith (1996) presents a model in which voters punish incumbents who call snap elections because they infer that incumbents have private information that the economy is about to experience a downturn. This, of course, suggests that incumbents should not, in equilibrium, call snap elections. But since they sometimes do, Smith's model may explain why leaders who have the legal power to surf may, on average, be at greater risk of being removed from office. Another possibility, for example, is that legislatures in such systems may have mechanisms for removing leaders that may be absent in many systems with exogenously timed elections. Put differently, this result may be due to cabinet instability that is unrelated to the management of the economy.¹⁸

Recall that we considered competing arguments regarding the effect of government type on leader survival. On the one hand, single-party majority governments are expected to be capable of acting quickly and decisively in pursuit of survival-maximizing policies. In addition, some have argued that commitments to central bank independence will lack credibility if the government consists of a single party majority. Both of these factors suggest that incumbents in countries with single-party majority governments should face less of a risk of replacement. On the other hand, governments in such circumstances will find it harder to share the blame when things go poorly. The evidence in columns four and five of Table 2 suggest that leaders in single-party government situations will face hazard rates that are lower than leaders in countries with other government types. This might suggest that the ease of policy making and/or the ability to override nominally independent central banks may trump the dangers associated with high clarity of responsibility, but we are reluctant to read too much into these results since the coefficient in Model 4 was not significant and the one in Model 5 was only significant at the 90% confidence level. Finally, we find no evidence of a relationship between the number of electoral districts and the hazard rate.

¹⁸If our goal was to assess the effects of premier-timed elections on political survival, however, we might have wished to control for other factors that are correlated with premier-timed elections that might also effect survival.

6 An Extension Highlighting Economic Voting as the Relevant Mechanism

We have argued that monetary institutions influence the survival of leaders because they determine whether incumbents can control the policy instruments needed to manipulate the macroeconomy in ways that will curry favor with voters. Clark and Hallerberg (2000) and Clark (2003) provide evidence that leaders will aggressively manipulate whatever monetary and fiscal policy instruments are available in the run up to elections. We have shown that long serving leaders who control neither monetary nor fiscal policy instruments face a higher risk of being removed from office, which is consistent with the idea that they are unable to produce the macroeconomic outcomes needed to ensure their political survival. But we have not provided direct evidence of this last step.

The literature on economic voting is relevant here. Numerous studies identify an association between incumbent vote share and various macroeconomic indicators (e.g., Duch & Stevenson (2008)). But if our argument is correct, we should observe a broader connection between the macroeconomy and political survival. Since losing elections is only one way in which a leader can leave office, it should be the case that poor macroeconomic conditions ought to place incumbents in peril and, conversely, good economic performance ought to reduce the incumbent's hazard of being removed from office.

To provide a preliminary test of this implication of our argument - and to further nail down that the mechanism tying higher hazard rates with certain combinations of monetary institutions is the inability to produce outcomes favored by voters - we combined our data on leader survival with Geoffrey Garrett's data on real GDP growth (Garrett 1998). We have argued that when leaders confront an independent central bank, mobile capital, and a flexible exchange rate, they will lack the necessary tools to produce macroeconomic expansions needed to stave off challenges to their political survival. Implicit in our argument is that leaders with the means to produce macroeconomic expansions late in their terms will do so and that is why they face a lower risk of removal

from office. But we have not shown that long surviving leaders presiding over good economic times actually survive longer than those that do not. Determining whether this is the case is our current concern.

Table 6 presents results from two hazard models germane to this current concern. This table reports estimates from a hazard model that interacts GDP growth with tenure in office. Our expectation is that increased economic growth reduces the leader's risk of being removed from office - particularly late in their tenure. A graph analogous to Figures 2 and 3 allow us to determine if the data is consistent with this expectation. Figure 6 suggests it is - shortly after year three, a one percentage point increase in the growth rate is associated with a decline in the hazard rate. As the leader's tenure approaches year six, this decline becomes statistically significant. The magnitude of this change is also substantively important. By year seven a one percentage point increase in the growth rate is associated with a 26.2 percent decline in the hazard rate.

Table 6: The Effect of Economic Growth on Survival Time in the post-Bretton Woods Era

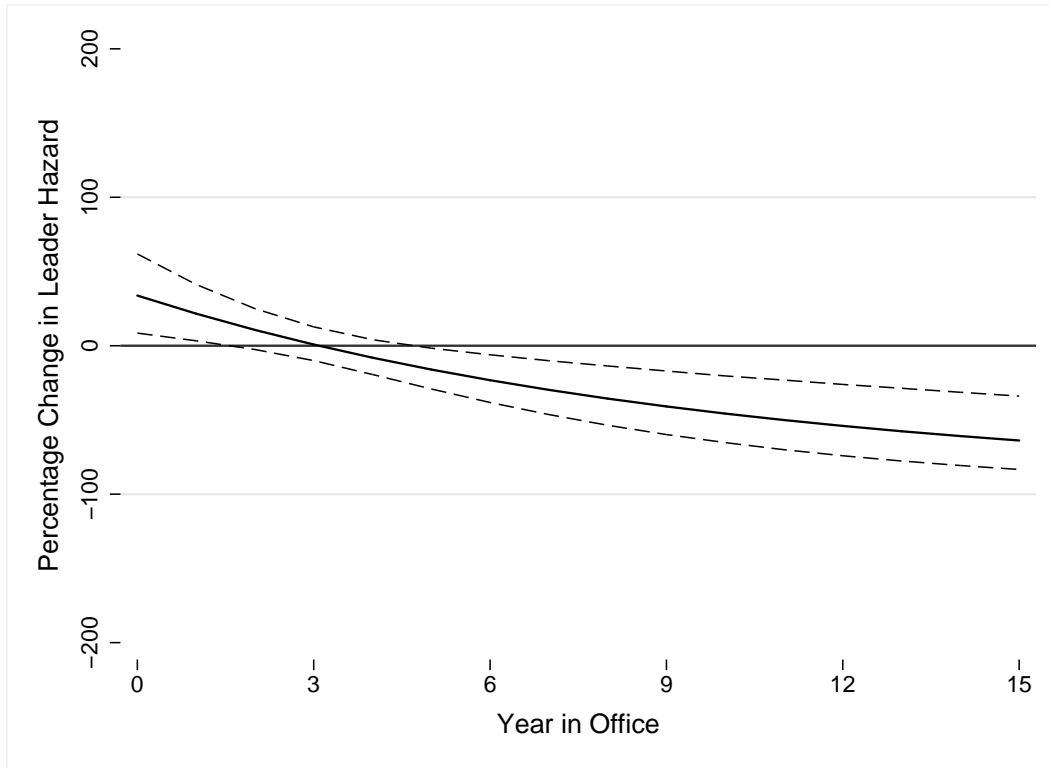
Dependent Variable: Tenure of Leader (in years)	
Independent Variables	Main Model
GDP Growth Rate	0.286** (0.121)
GDP Growth \times Tenure	-0.094*** (0.034)
Log Likelihood	-179.8
Observations (Leaders)	266

NOTES: * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$ (two-tailed). Cox proportional hazards estimates; standard errors in parentheses. The Efron method is employed for handling ties. Data are based on leaders from 19 OECD countries between 1972 and 1999.

Recall that earlier (Table 5) we showed that gaining control of either monetary or fiscal policy reduced the leader's hazard rate by at least 50 percent. We argued that this was because it allowed the leader to engineer the type of economic outcomes that prolonged their political

life. This latest result suggests that an extra percentage point or two of economic growth could be expected to do the trick.

Figure 6: Percentage Change in Hazard Rate Associated with an Increase in Economic Growth



7 Conclusion

There is a large literature on economic voting that suggests that incumbents presiding over economic downturns are more likely to be removed from office by retrospective voters. The literature on political business cycles suggests that the threat of suffering such a fate induces incumbents to engineer macroeconomic expansions during pre-electoral periods. The current paper suggests the literatures linked by the above logic both understate and over-generalize the link between economics and politics. They understate the link between economics and politics because elections

are only one way in which unpopular leaders are removed from office in democracies. In fact, in our sample more leaders leave office through resignation than by losing elections. The existing literatures may over-generalize the link between economics and politics in two ways. First, it appears that the state of the economy has a pronounced effect on the incumbent's survival chances only when incumbents have been in power for some time. Second, while all leaders are at risk of being removed from office during economic hard times late in their tenure, not all leaders possess the macroeconomic policy instruments that would allow them to try to stave off hard times.

Together, the above observations suggest that leaders face an increased risk of being removed from office for poor economic policy performance independent of the onset of elections. Consequently, leaders in "premier-timed" systems are not likely to be content to "surf" on exogenously determined economic waves. They too have incentives to manipulate the economy. It is, therefore, significant that the results reported in this paper are drawn from a sample in which very few countries have entirely fixed electoral calendars.

We present robust evidence that when political leaders lack control of either monetary or fiscal policy, they stand a higher risk of being removed from office from their seventh year in office on. Effective manipulation appears to occur only when incumbents have the means and the motive. Leaders are most motivated to manipulate the economy late in their tenures. Newly elected leaders have at their disposal a wider range of alternative tools, such as implementing a new policy agenda, with which to curry the favor of the electorate. And long surviving leaders can no longer plausibly blame tough economic times on the misguided policies of their predecessors. Thus the fact that monetary institutions have a time dependent effect on survival should not be surprising. The desire to manipulate the economy may be necessary, but it is not sufficient. Long lived leaders with neither control of monetary nor fiscal policy are stuck between a rock and a hard place and, consequently, run a higher risk of being removed from office.

One consequence of this predicament is that leaders in such a position may be more apt to cast about for more desperate ways to prolong their political lives. For example, if leaders benefit

from a "rally around the flag effect", they might be particularly tempted to engage in diversionary foreign policy acts late in their terms if they lack the capacity to manipulate the macroeconomy. Since it is plausible that leaders might have a hierarchy of survival-maximizing strategies it is plausible they would engage in macroeconomic manipulation if that option is available and diversionary war only when it is not. This context conditionality may explain why unconditional tests of the diversionary hypothesis have produced contradictory results.

It is interesting to point out that the combination of institutions that leaves incumbents without the ability to manipulate the macroeconomy for their political survival (independent central bank, mobile capital, and flexible exchange rates) is precisely the set of institutions frequently trumpeted by international financial institutions such as the International Monetary Fund. It is not surprising that the Fund would like member countries to adopt institutions that make it difficult for economic policy to be used for political purposes, but our results suggest that survival maximizing leaders should be reluctant to adopt such institutions. The speculation in the above paragraph suggests there might be negative geopolitical externalities produced if they did so.

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