

Reform cycles and populist cycles*

(Preliminary and incomplete. Not for circulation.)

T. Renee Bowen[†] Jackie Chan[‡] Oeindrila Dube[§]

February 3, 2015

Abstract

How do electoral incentives affect the choice between reforms and populist policies? We present a model in which an incumbent politician can choose between reforms and a populist policy. Reforms are risky, their success is imperfectly observable and tied to the competence of the reformer. Populist policies deliver known returns that are observable, and lower on average than reforms delivered by competent politicians. The politician can be replaced by voters if voters believe he is incompetent. The theory predicts that in the absence of sufficient output, effort on reform is higher in the beginning of a politician's first term, while effort on the populist policy is higher at the end of the first term when elections are imminent. The model thus predicts that reform fatigue follows a political cycle, and, that this reform cycle runs counter to a populist cycle. We provide empirical evidence of reform fatigue cycles in financial policies among presidential countries, and populist cycles in minimum wage policies among both presidential countries and across US states. There is no evidence that countries participating in IMF programs exhibit significantly different policy cycles. Thus reform fatigue is not a phenomenon unique to IMF initiated financial reforms.

*We thank Alberto Alesina, Jeremy Bulow, Frederico Finan, Chad Jones, Ken Shotts, Nancy Zimmerman and conference participants at Stanford University Political Economy conference for helpful comments and conversations.

[†]Stanford University

[‡]Stanford University

[§]New York University

1 Introduction

An inherent struggle for elected officials is the choice between actions that deliver known, observable benefits to voters, and actions that have the potential to deliver greater benefits if successfully implemented, but are less observable. In December 1887 Grover Cleveland attempted to reduce high protective tariffs and subsequently lost his bid for re-election. He was quoted as saying “What is the use of being elected or re-elected unless you stand for something?”¹ In this case, the choice of a policy whose benefits were not directly observable to the voters, but perceived to be beneficial by the executive, was electorally costly. The term “reform fatigue” is used widely in the media with particular reference to International Monetary Fund (IMF) initiated financial reforms.² A typical explanation for reform fatigue is that elected officials retreat from reforms fearing the political cost.³ Financial reforms (such as those recommended by the IMF) are often a source of tension between voters and elected officials, and politicians must make trade-offs regarding the political cost of implementing the reform and the perceived benefit to voters. We theoretically and empirically examine this trade-off, with focus on economic policies and the politician learning about his ability to deliver benefits to voters.

We present a stylized model of the choice between economic reforms and populist policies. We extend the career concerns model used in the analysis of policy cycles and take the perspective that the benefits of reform are uncertain and tied to the competence of the politician in implementing the reform.⁴ Following Bowen and Lambert (2014), this competence is learned by the voters and the politician over time as output is realized. Effort on reform is unobservable to voters. In contrast, a populist policy does not require competence to implement, effort is perfectly observable to voters, and it delivers lower output on average than the reform policy. Output from both policies is uncertain, and voters cannot correctly attribute aggregate output to the populist policy or the reform policy if effort is made on

¹See Freidel and Sidey (2006).

²See, for example, ‘IMF warns of reform fatigue holding back Greece’, *Reuters*, June 10, 2014.

³See Lora et al. (2003).

⁴See, for example, Besley and Case (1995).

both. The politician will have more information about this attribution, thus the politician's belief about his competence may be different from the voters' in equilibrium. The politician anticipates that when the voters' beliefs about the politician's ability to implement reforms are sufficiently low he will not be re-elected. Thus in the absence of early output, reform attempts are halted and the populist policy is used to increase the chances of re-election.

This model delivers the sort of rich dynamics of reforms we see in the data. The theory predicts both reform fatigue cycles and also provides an explanation for cycles in populist policies that exhibit the opposite dynamics within a politician's term. Specifically, at the beginning of a term in office a new politician begins pursuing reforms. If the politician and the voters learn that the politician is competent, the politician devotes no effort to reform at the end of his term, but a politician with a very low belief about his ability to reform devotes little effort to reform and puts effort into a populist policy. This predicted pattern is consistent with the observed *reform fatigue*.

There are at least two competing explanations for reform fatigue. One potential explanation is that the benefits of reform to various constituencies are uncertain and potentially uneven. When information about reforms are revealed and a sufficiently large constituency expects to lose from reforms, they will oppose those reforms. This explanation has been studied by Fernandez and Rodrik (1991). Another explanation is that there are different types of reforms with varying degrees of difficulty and reformers enact "easy" reforms in the beginning and are simply unable to enact more difficult reforms later on, hence reforms appear to cease. This *gradualism* in reforms has been explored by Dewatripont and Roland (1992) and Dewatripont and Roland (1995). Unlike Fernandez and Rodrik (1991), Dewatripont and Roland (1995) not only consider the ex-ante choices, but the choices of the median voter after the realization of the outcome from initial reforms as the median voter learns about the reform. These explanations are appealing, but we show empirically that reform fatigue follows a political cycle, a prediction absent in these theories. These theories also do not predict a populist cycle.⁵

We provide empirical evidence to support the model's predictions about reform fatigue

⁵Tornell (1998) also provides a theory of reform, but does not focus on the electoral timing of reform.

cycles and populist cycles. We show that among countries with presidential systems, financial policies follow a political cycle – these reforms are implemented at a faster pace in the years following an election, and at a slower pace in the run-up to an election. Countries with parliamentary systems, where executives are not elected directly, exhibit no such cycle. This is consistent with our framework, which presumes politicians are directly accountable to voters. We also demonstrate that reform fatigue cycles do not vary significantly when countries are participating in an IMF program. In fact, the fatigue cycle is present among both program participants and non-participants. This refutes the conventional wisdom that reform fatigue is a phenomenon unique to IMF initiated reforms. Finally, we present evidence of populist cycles in minimum wages, among presidential countries and across gubernatorial elections in U.S. states.

Literature review

This paper is related to the substantial body of political economy research studying political failures first identified by Besley and Coate (1998). In this paper we investigate when political institutions fail to provide incentives for efficient levels of experimentation by politicians throughout the politician’s term in office. A similar question is explored theoretically in Canes-Wrone et al. (2001) and empirically in Canes-Wrone and Shotts (2004) in the context of pandering. Our contribution is to study the evolution of the trade-off between the reform policy and the populist policy throughout a politician’s term in office as he learns about his own competence. We show that the politician’s incentive to learn about his type induces more effort on reform early in a term, but in the absence of output leads to a decrease in effort on reform and an increase in populist policies.

Our theory is closely related to Bowen and Lambert (2014) and Jackson and Aghion (2014). These models consider the problem of motivating an agent through replacement incentives, when there is learning about the quality of the agent. Bowen and Lambert (2014) are the first to provide a theory of reform fatigue. The model we present differs from Bowen and Lambert (2014) primarily in that we consider one policy with unobservable effort and one policy with observable effort. Beyond this difference, the model of Bowen and Lambert

(2014) is more general as it is set in an arbitrary time horizon and elections can be at any instant of time. Consistent with Bowen and Lambert (2014) we predict a reform fatigue cycle in our limited setting, but also a populist cycle. We thus deliver predictions on policy cycles not present in Bowen and Lambert (2014) and test these predictions empirically. Jackson and Aghion (2014) do not consider that the agent's actions are private information as we do.

There is a large literature on bandit problems in economics including the classic work of Keller et al. (2005).⁶ However, few have applied these tools to the study of reforms. One notable exception is Strulovici (2010), who contributed to the literature on reforms considering reforms as risky experiments. Similar to Fernandez and Rodrik (1991) and Dewatripont and Roland (1995), Strulovici (2010) considers that reforms have heterogeneous effects that are learned over time. As a majority learns that reforms will benefit them or not, reforms either cease or continue until a positive outcome is realized. As in the previous literature, the theory does not predict a reform cycle since reforms are halted once a majority becomes convinced the reform is not in their interest.

There has been substantial attention devoted to politically induced cycles including the seminal works of Nordhaus (1975) and Rogoff (1990). The political budget cycle is well documented and summarized in Drazen (2001), and a political aid cycle is documented in Faye and Niehaus (2012). A common feature is that the cycle studied is an outcome easily observed by the voter and the researcher. Many policies of interests are not perfectly observable to the voter, and furthermore, the output from these policies may also be imperfectly observable, yet they may have significant impact on voter welfare and voters may base their decision at the polls on perceptions about output from such policies. We address this in the context of reform policies.

This paper is the first to empirically document a political reform cycle and a populist minimum wage cycle across countries. Lora et al. (2003) examines reforms in Latin American countries from 1985 to 2009. Regulations in other markets are also studied by Giuliano et al. (2013) for 150 countries from 1960-2004. Feldmann (2012) uses the Aleksynska and Schindler (2011) and Abiad et al. (2008) datasets, in addition to a large dataset of cross-

⁶See also Halac et al. (2013) for a recent contribution.

country product market regulations, to empirically examine the link between labor market performance and product, labor, and financial markets. Di Tella and MacCulloch (2005) examined labor market regulations. The focus of these studies is not electoral cycles in regulations. Alesina et al. (2006) examine the political economy of reforms, but focus on budget stabilizations. In accord with their findings we show that reform cycles are present in presidential regimes and are not significantly affected by participation in an IMF program.

The remainder of the paper is organized as follows. In Section 2 we present our stylized model of reforms with experimentation and private information, and in Section 3 we characterize the Bayes' perfect equilibrium of the game and present the results on reform fatigue in Proposition 1. Section 4.2 provides empirical evidence of reform fatigue and Section 5 concludes.

2 Model

We present a stylized model of a policy maker choosing reforms versus a populist policy under the shadow of electoral incentives. A voter and an incumbent politician interact during the politician's time in office. The politician is assumed to serve for two terms, but there are no re-election considerations in the second term, so only the first term is explicitly modeled. There are two periods in the first term indexed by $t = 0, 1$. Each period the politician can spend costly effort on two types of policies: reform and a populist policy. Let $x_t^r \in [0, 1]$ denote the politician's effort on reform, and $x_t^p \in [0, 1]$ is the effort on populist policy. The cost of effort in period t is given by $c((x_t^r) + (x_t^p))$ where $c \geq 0$.⁷

At the end of period 1 the voter decides to keep or replace the politician. We denote the voter's decision by $y \in \{0, 1\}$ where $y = 0$ if the politician is replaced and $y = 1$ if the politician is re-elected. The voter will decide to keep or replace the politician based on the the voter's expectation of future output. The voter's beliefs about future output is based on observed output and what the voter infers were policies selected by the politician during his first term in office.

⁷We show below that the results hold for small cost, and will take cost to be zero for most of the analysis.

Denote total output in period t by $z_t \in \{0, 1, 2\}$. Total output is the sum of output from policies the politician exerts effort on. The output from reform is denoted $z_t^r \in \{0, 1\}$ and the output from the populist policy is denoted $z_t^p \in \{0, 1\}$. Total output is thus $z_t = z_t^r + z_t^p$.

Policies result in output stochastically. If effort x_t^r is exerted on reform in period t then the probability that $z_t^r = 1$ is $\theta\lambda_r x_t^r$, where $\theta \in \{0, 1\}$ denotes the politician's type. If $\theta = 1$ the politician is a competent reformer, and if $\theta = 0$ the politician is an incompetent reformer and will deliver no output from reform regardless of the effort exerted.⁸ It is ex-ante unknown to both the politician and the voter if the politician is competent. The common prior probability that the politician is competent is $q_0 < 1$. If effort x_t^p is exerted on populist policy the probability that $z_t^p = 1$ is $\lambda_p x_t^p$. Assume $\lambda_p \leq \lambda_r q_0 < \lambda_r \leq \frac{1}{2}$, thus if a politician is known to be competent the voter would like the politician to spend all effort on reform.

The incumbent politician only cares about re-election and receives a fixed payoff, normalized to 1, if re-elected, and pays effort cost each period. The politician does not discount between periods. The voter wants to maximize expected future output denoted \bar{z} . Since the second period is not modeled we make the following assumptions on expected future output.⁹

$$\bar{z} = \begin{cases} q_2 \lambda_r & \text{if politician is re-elected} \\ q \lambda_r & \text{if politician is replaced,} \end{cases}$$

where q is the prior probability of the competence of a challenger drawn at random at the end of the period. The challenger is drawn from a pool of challengers with cumulative distribution over competence priors F . Assume the cumulative distribution F is uniform on $[0, 1]$. The challenger is revealed only after effort choices are made in period 1, but before the election.

The assumption on second period expected output is motivated as follows. If the politician is re-elected he is in his final term in office and spends maximum effort on reform. This is motivated by the fact that many executives in their final term in office are primarily

⁸This model of strategic experimentation follows Keller et al. (2005).

⁹The voter's payoff future payoff is endogenized in Bowen and Lambert (2014) and the predictions on reform fatigue are qualitatively similar.

motivated by legacy considerations and wish to pursue reforms regardless of competence.¹⁰ If the politician is not re-elected, then the challenger is also assumed to spend all effort on reform so expected output is $q\lambda_r$.

We make clear the informational assumptions made above. The prior probability that a new politician is competent q_0 is common knowledge. Effort on the populist policy x_t^p , total output z_t and the voter's decision to replace the politician y are publicly observed. Effort on reform x_t^r and the output pair (z_t^r, z_t^p) is private information to the politician. A leading example of unobservable effort on reforms are reforms in financial policies. These require the drafting of laws and calculations that are not perfectly observed to the voter. A leading example of a populist policy that is perfectly observable to voters is a minimum wage. These examples are the subjects of our empirical analysis.

The timing of the game is as follows. At the beginning of period 0, the voter and the politician hold beliefs q_0 about the politician's competence. The politician makes policy choice x_0 . The politician observes the output pair (z_0^r, z_0^p) and the voter observes total output z_0 . The voter and the politician update their beliefs about the politician's competence, and period 1 begins. In period one effort is made, output is observed and beliefs are again updated at the end of period 1. The voter makes the decision to keep or replace the agent at the end of period 1. Since the voter and the politician have different information, beliefs may differ on the equilibrium path. Denote the politician and the voter's beliefs about competence in period t as q_t and p_t respectively. We will use the convention that q_2 and p_2 denote beliefs at the end of period one. This timing is illustrated below in Figure 1.

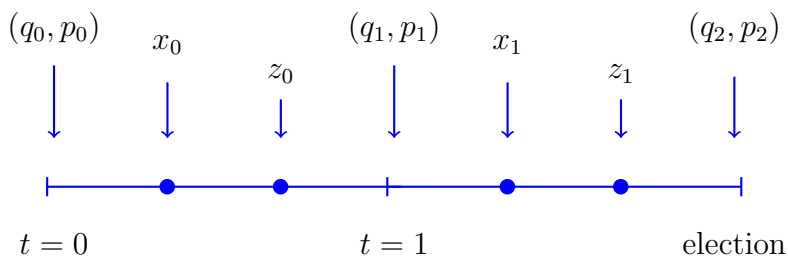


Figure 1: Timing

¹⁰Canes-Wrone et al. (2001) provide similar motivation for the future actions of a politician.

3 Bayes' perfect equilibrium

We characterize the Bayes' perfect equilibrium of the game and present the main result. Denote the politician's strategy as $\chi = (\chi_0, \chi_1)$, where $\chi_t = (\chi_t^r, \chi_t^p)$ is the politician's effort strategy for reform and populist policy in period $t \in \{0, 1\}$. In period 0 the politician and the voter have common beliefs about the politician's type, so $\chi_0^i : [0, 1] \rightarrow [0, 1]$ is the strategy for reform $i \in \{r, p\}$ in period 0. That is, given prior belief q_0 , the effort on reform $i \in \{r, p\}$ is $\chi_0^i(q_0)$. The effort strategy in period 1 is $\chi_1^i : [0, 1] \times \{0, 1, 2\} \rightarrow [0, 1]$. That is, given prior beliefs q_0 and observed period 0 output z_0 the politician chooses effort $\chi_1^i(q_0, z_0)$ on reform $i \in \{r, p\}$. At the end of period 1 the voter chooses to replace the politician conditional on his distribution of beliefs. Denote by $\Upsilon : [0, 1] \times \{0, 1, 2\}^2 \rightarrow \{0, 1\}$ the voter's strategy.

3.1 Beliefs

The model features hidden actions, hidden types and experimentation. The politician may have more information than the voter and as a result the beliefs of the politician and the voter may diverge on the equilibrium path. The politician updates his belief about his competence by Baye's rules as follows

$$q_{t+1} = \begin{cases} 1 & \text{if success on reform} \\ \frac{q_t(1-\lambda_r x_t)}{1-x_t q_t \lambda_r} & \text{if no success on reform.} \end{cases}$$

Since the voter is unable to directly observe if there is a success on reform or not, the voter must make inferences about the politician's actions in equilibrium. The voter knows the politician can condition his actions on his private information hence the voter must have beliefs about what information the politician has. That is, the voter must infer in equilibrium what the politician's type may be, and what action will be taken by that type in equilibrium. We restrict attention to equilibria in which the politician exerts maximum effort on reform and minimum effort on populist policies if he knows for sure he is competent. Thus if $q_t = 1$,

then $x_t^r = 1$ and $x_t^p = 0$.

Given the restriction that $x_t = 1$ if $q_t = 1$, the voter needs to assess whether or not the politician knows he is good in equilibrium. Denote by p_t^{NS} the voter's assessment of the politician's belief that he is good given no success on reform has been observed, p_t^K the probability the voter assesses that the politician knows he is good for sure and p_t^G as the probability with which the voter assess the politician is in fact good. Denote by p_t the voter's distribution over the politician's beliefs. The distribution p_t is given by

$$q_t = \begin{cases} 1 & \text{with probability } p_t^G p_t^K \\ p_t^{NS} & \text{with probability } 1 - p_t^G p_t^K. \end{cases}$$

We summarize $p_t = (p_t^{NS}, p_t^K, p_t^G)$.¹¹ The voter's distribution over beliefs is updated by Baye's rule. A detailed discussion is given in the Appendix.

3.2 Strategies

We make the following additional refinements of the equilibrium. First, we restrict attention to strategies in which the voter votes for the politician if indifferent between keeping and replacing. Second, we restrict attention to equilibria in which the voter knows the actions of each type of politician, thus on the equilibrium path $a_t = \chi_t^r$.

The politician maximizes the probability of re-election subject to minimizing effort cost. The voter re-elects the politician if and only if $E[q_2 \lambda_r] \geq q \lambda_r$, so

$$\begin{aligned} Pr[re - election] &= Pr[q_2 \geq q] \\ &= F[q_2] = q_2. \end{aligned}$$

Since q_2 is unknown to the voter, the voter re-elects the politician if the expectation of q_2 exceeds q . The probability of re-election is thus $p_2^K p_2^G + (1 - p_2^K p_2^G) p_2^{NS}$.

We summarize the politician's equilibrium strategy in the main result below, the proof of

¹¹This summary of beliefs follows Bowen and Lambert (2014).

which is in the Appendix.

Proposition 1. *If $q_0\lambda_r$ is sufficiently high, then an equilibrium strategy for the politician is*

$$\begin{aligned} \chi_0^p &= 0 \\ \chi_1^p &= \begin{cases} 1 & \text{if } z_0 = 0 \\ 0 & \text{if } z_0 = 1 \end{cases} \end{aligned}$$

$$\begin{aligned} \chi_0^r &= x_0^{r*} \in (0, 1] \\ \chi_1^r &= \begin{cases} x_1^{r*} \in (0, 1) & \text{if } z_0 = 0 \\ 0 & \text{if } z_0 = 1. \end{cases} \end{aligned}$$

Furthermore, $x_0^{r} > x_1^{r*}$. That is, we observe reform fatigue in equilibrium. In addition we observe populist policies in period 1 if there is no success in period 0, thus populist policy cycles are counter to reform fatigue cycles.*

We provide the proof of Proposition 1 in the Appendix and give some intuition here. The politician chooses effort on reform and the populist policy over the course of his term so that the voter optimally learns about his competence. Since the politician is ex-ante uncertain about his competence, he and the voter are simultaneously learning at the beginning of his term. The politician chooses no populist policy at the beginning of his term to ensure that any success is correctly attributed to the reform. In the event of a success, no further effort is required to prove competence, and all effort goes to zero at the end of the term. In the event of no success in the first term, the politician must optimally choose reform and the populist policy to maximize positive output and signal competence. It is however, not optimal to put full effort on reform. Full effort on reform with no further output causes the voter to update too negatively on the politician's competence causing him to lose the election with high probability. A sufficient amount of effort on reform maximizes the probability of success without jeopardizing re-election prospects too much.

4 Empirical Analysis

We test the predictions of Proposition 1. The model predicts that if no output is observed, the politician will reform more in the beginning of the first term, and reform less toward the end of the first term. Since elections take place at the end of this term, this predictions suggests that we should observe a decrease in the pace of reforms in the run-up to an election, and an increase in the pace of reforms after an election. In contrast, the model implies that the politician will expend more effort on the populist policy toward the end of the first term. Thus, we should observe an increase in the pace of populist policy implementation in the run-up to an election.

We employ both cross-country and within-country data in our empirical tests. The model assumes the politician is directly accountable to the voter, without a parliament playing an intermediary role. To reflect this framework, in the cross-country analysis, we focus on presidential regimes.¹² In the within-country analysis we use data from US state gubernatorial elections. US state governors are directly elected thus also fit the framework of our model.

4.1 Data

To test for reform cycles, we focus on financial reforms. We do so for two reasons. First, much of the qualitative debate and anecdotal accounts of reform fatigue have focused on the reforms within the financial sector. Second, these reforms exemplify the idea of unobservable effort by politicians within our model, as they are complicated to implement requiring reasonably sophisticated legislation and implementation.

We utilize data from Abiad et al (2008), which includes annual cross-national data on reforms covering the period 1973-2005. Abiad et al (2008) constructs an aggregate measure of seven financial policies. These are: (i) credit controls (including directed credit and credit ceilings), (ii) interest rate controls, (iii) entry barriers, (iv) state ownership in the banking sector, (v) capital account restrictions, (vi) bank supervision and (vii) securities market

¹²In the Appendix, we also verify that the model's predictions around policy cycles do not hold for parliamentary regimes.

policy. We analyze the change in this financial reform index, as measured by the annual first difference of this outcome variable.

To test for populist policy cycles, we focus on minimum wage policies. Minimum wages are a perfectly observable policy that is likely to appeal to a large mass of relatively poor voters, and thus exemplify what we think of as populist policies. For our cross-national analysis, we utilize a ratio of the minimum to mean wage as compiled by Aleksynska and Schindler (2011).¹³ This measure is available for the 1980-2005 period. For our U.S. analysis, we use state-level data on minimum wage drawn from the Tax Policy Center, covering the 1983-2015 period.¹⁴ (The original sources are the Book of States and the January edition of the Monthly Labor Review.) We again analyze the annual change in these minimum wage variables.

Finally, we utilize elections data from two sources. The World Bank Data on Political Institutions (DPI) records years in which an executive or legislative election takes place for the cross-national sample over the 1975-2012 period. Data on the U.S. governor elections cover the 1980-2012 period.

4.2 Empirical Strategy

To test these predictions, we examine whether the annual change in these policies varies over the course of the electoral cycle. For the cross-national analysis, we estimate:

$$\Delta y_{ct} = \alpha_c + \beta_t + \theta (ElectionLead)_{ct} + \delta (ElectionYear)_{ct} + \lambda (ElectionLag)_{ct} + \mathbf{X}_{ct}\phi + \varepsilon_{ct} \quad (1)$$

where Δy_{ct} designates the first difference in policy y for a given country c and for a year t ; α_c are country fixed effects; β_t are year fixed effects; \mathbf{X}_{ct} is a vector of time-varying country-level covariates; $ElectionYear_{ct}$ is an indicator that equals one for a year in which elections were held within a given country; while $ElectionLead_{ct}$ and $ElectionLag_{ct}$ are indicators for the years prior to an election, and year after an election, respectively. Thus, a slow down in

¹³This data also include a minimum to median wage ratio, but this is available for many fewer observations.

¹⁴Following List and Sturm (2006), we exclude Alaska and Hawaii from the sample. In addition, states without minimum wages are: Alabama, Louisiana, Mississippi, South Carolina, and Tennessee.

the pace of reforms prior to an election would correspond to a negative sign on θ , while an increase in the pace of reforms after an election would correspond to a negative sign on λ . We estimate equation (1) using OLS. In all specifications, we cluster the standard errors at the country level to account for potential serial correlation over time.

For the state level analysis, we estimate an equivalent specification:

$$\Delta y_{st} = \alpha_s + \beta_t + \theta (ElectionLead)_{st} + \delta (ElectionYear)_{st} + \lambda (ElectionLag)_{st} + \mathbf{X}_{st}\phi + \varepsilon_{st} \quad (2)$$

where s designates a state, and α_s designates state fixed effects. In these specifications, we cluster the standard errors at the state level.

Table 1 presents the descriptive statistics of the key variables, for which elections and policy data are both available. For the cross-national analysis, this comprises the countries with presidential systems, and extends until 2004.¹⁵ For the state sample, this comprises the 1984-2012 period.

Table 1: Summary Statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
Cross-country sample:					
Executive or legislative election, 1976-2004	1195	0.268	0.443	0	1
Executive election, 1976-2004	1195	0.171	0.376	0	1
Legislative election, 1976-2004	1195	0.223	0.416	0	1
IMF program participation, 1976-2004	1195	0.549	0.498	0	1
Financial reform index, 1975-2004	1195	43.415	27.355	0	100
Change in financial reform index, 1976-2004	1195	2.099	5.365	-28.571	38.095
Minimum wage to mean wage ratio, 1980-2004	638	34.033	20.717	0.000	87.800
Change in minimum wage to mean wage ratio, 1981-2004	638	-0.110	6.258	-36.2	27.3
U.S. state sample:					
Governor elections, 1984-2012	1173	0.268	0.443	0	1
Minimum wage, 1984-2012	1173	4.94	1.573	1.400	9.040
Change in minimum wage, 1984-2012	1173	0.16	0.347	-0.040	4.600

¹⁵2005 gets omitted since we include the election lead variable. In addition, the first year of the data – 1975 for financial reforms and 1980 for international wages – are also omitted since we include the election lag variable.

4.3 Reform fatigue cycles in financial policies

Figure 2 illustrates the time trend of the aggregate financial reform index from Abiad et al (2008). As the figure illustrates, these reforms have steadily increased over time on average across countries. In other words, they do not exhibit long-run reform fatigue.

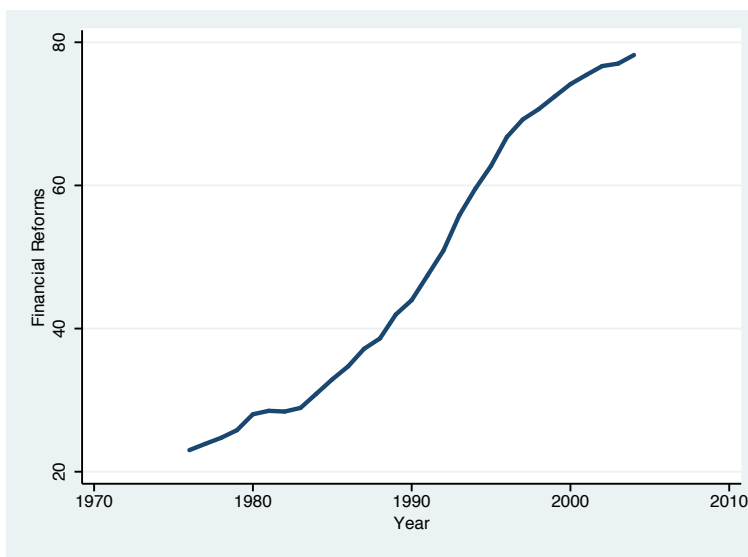


Figure 2: Time series of financial reforms averaged across countries

In Table 3 we examine reform fatigue cycles using the aggregate financial reform index. We restrict this analysis to presidential systems, where executives are directly elected by voters, which as discussed above, fits the framework of our model. The first three columns consider the impact of executive and legislative elections together; the second three columns consider just executive elections; and the last three columns consider just legislative elections. Within each grouping, we include estimates of equation (1), which simultaneously includes the election year, the election lead and election lag. We also present additional estimates, looking separately at just the election lead or just the election lag.

The results present evidence of reform fatigue in financial reforms. The positive coefficient on the Lag variable indicates that financial reforms tend to be implemented faster after elections, while the negative coefficient on the Lead variable suggests that these reforms are implemented at a slower pace in the run up to an election. These implied effects are

Table 2: Financial policies in presidential regimes

	Exec or Legislative			Exec			Legislative		
Lag	0.729** (0.361)	0.891** (0.370)		0.887** (0.425)	1.063*** (0.411)		0.669 (0.408)	0.910** (0.421)	
Year of	0.096 (0.379)	0.331 (0.345)	-0.148 (0.333)	-0.042 (0.416)	0.140 (0.386)	-0.317 (0.379)	0.051 (0.405)	0.374 (0.358)	-0.187 (0.359)
Lead	-0.652* (0.379)		-0.826** (0.377)	-0.582 (0.458)		-0.844* (0.439)	-0.875** (0.395)		-1.047*** (0.398)
Observations	1,195	1,195	1,195	1,195	1,195	1,195	1,195	1,195	1,195
R-squared	0.153	0.151	0.150	0.153	0.151	0.149	0.154	0.150	0.152
# countries	56	56	56	56	56	56	56	56	56

substantial. The coefficient of .729 indicates that after an election, the pace of financial reforms increased by 35 percent relative to the mean change of 2.099. The coefficient of -.652 implies that reforms slowed by 31 percent in the year before an election.

The disaggregation of the legislative and executive elections suggest that the effects are not driven by either type of election, as the coefficients on the lead variables and lag variables across specifications are not statistically distinguishable from one another at the 5 percent level. In the remainder of the analysis, we focus on the aggregate legislative and executive elections effect.

In the Appendix Table 6 we examine financial reforms in parliamentary regimes and demonstrate that there is no corresponding evidence of a cycle in this group of countries. These differing patterns are consistent with the fact that executives in parliamentary systems are not directly elected by voters, but rather by legislators with more information than voters.¹⁶

Next, we consider whether these financial reform cycles are influenced by participation in IMF programs. IMF programs are quite common in our sample, with just over half of the country year observations falling under such a program. In Table 3 we present estimates interacting our election variables with an indicator for IMF program participation. The coefficient on the IMF participation variable is positive and significant, while the coefficients on the interaction terms are insignificant across specifications.

¹⁶In the Appendix we also examine two sub-indices constructed by Giuliano et al. (2013). These sub-indices divide the financial reforms into domestic financial sector and capital account restrictions. These results, in Tables 7 and 8, also suggest that the effects are not driven by either type of financial reform.

These results indicate that countries under IMF programs do in fact, implement financial reforms at a faster pace. However, they also show that the political cycle in reform fatigue is neither dampened nor exacerbated by program participation. Thus, reform fatigue is not driven by external pressure from this international organization. Rather it is a broader phenomenon appearing among presidential countries more generally.

Table 3: Financial Reforms and IMF program participation in presidential regimes

	Exec or Legislative			Exec			Legislative		
	Lag	0.844 (0.539)	0.959* (0.541)		0.979 (0.696)	1.084 (0.697)		0.594 (0.621)	0.744 (0.622)
Lag \times IMF	-0.268 (0.719)	-0.179 (0.718)		-0.126 (0.916)	-0.012 (0.900)		-0.010 (0.774)	0.177 (0.781)	
Year of	0.639 (0.663)	0.785 (0.624)	0.372 (0.575)	0.201 (0.596)	0.303 (0.583)	-0.092 (0.541)	0.892 (0.741)	1.082 (0.687)	0.678 (0.615)
Year of \times IMF	-0.972 (0.864)	-0.817 (0.806)	-0.910 (0.764)	-0.168 (0.875)	-0.043 (0.824)	-0.150 (0.807)	-1.565 (0.975)	-1.319 (0.906)	-1.557* (0.830)
Lead	-0.302 (0.483)		-0.475 (0.480)	-0.241 (0.600)		-0.496 (0.591)	-0.409 (0.541)		-0.544 (0.539)
Lead \times IMF	-0.616 (0.662)		-0.602 (0.650)	-0.532 (0.712)		-0.555 (0.701)	-0.866 (0.724)		-0.895 (0.705)
IMF	2.237*** (0.680)	2.011*** (0.590)	2.161*** (0.569)	1.901*** (0.502)	1.782*** (0.474)	1.871*** (0.475)	2.268*** (0.590)	1.978*** (0.528)	2.291*** (0.507)
Observations	1,195	1,195	1,195	1,195	1,195	1,195	1,195	1,195	1,195
R-squared	0.172	0.169	0.170	0.171	0.169	0.167	0.175	0.170	0.174
# countries	56	56	56	56	56	56	56	56	56

4.4 Populist minimum wage cycle

Cross-country minimum wages

Figure 3 shows the time series of the minimum wage to mean wage ratio in our cross-country sample. As shown in the figure, this ratio has, on average, increased over time. However, this increase has not been monotonic, with some periods exhibiting average decreases.

Table 4 examines whether year-to-year changes in this minimum wage ratio follow a populist cycle. The results show that there are significant increases in this outcome during election years.



Figure 3: Time series of minimum wages to mean wage ratio averaged across countries

Table 4: Minimum wage to mean wage ratio in presidential regimes

Lag	-0.092 (0.695)	0.097 (0.616)	
Year of	1.328* (0.704)	1.203* (0.629)	1.327** (0.630)
Lead	-0.136 (0.527)		-0.150 (0.487)
Observations	638	660	641
R-squared	0.042	0.043	0.042
# countries	45	45	45

In contrast to financial policies, wage increases can be felt immediately. Thus, minimum wages implemented during election years can confer direct benefits to voters prior to when elections take place. As such, these results provide support for a political cycle in populist policy, and are consistent with the model's predictions.

Minimum wages in US states

In Table 5 we further examine impacts on wage policy, focusing on minimum wage changes implemented across U.S. states. These results again demonstrate that the political cycle is strongly correlated with the minimum wage. Specifically, the *electionlead* variable is positive and statistically significant, indicating that minimum wages are revised upward prior to state governor elections. The coefficient of .069 suggests that the minimum wage increase rises by 43 percent prior to an election, relative to average minimum wage changes of .16.

Table 5: Minimum wages in US states

Lag	0.024 (0.021)	-0.019 (0.022)	
Year of	-0.011 (0.023)	-0.032 (0.022)	-0.018 (0.020)
Lead	0.069*** (0.019)		0.053** (0.021)
Observations	1,173	1,173	1,173
R-squared	0.179	0.177	0.179
# states	43	43	43

The results in Tables 4 and 5 show timing differences, with effects appearing in the year before an election in the cross-state sample, and the year of an election in the cross-national sample. Since wage changes are felt immediately, either effect – in the year of an election or the previous year – are consistent with political cycles in wage policy and the predictions in our model.¹⁷

¹⁷However, one reason for this difference may lie in the timing of when minimum wages are recorded across different data sources. In particular, Aleksynska and Schindler (2011) record minimum wages among countries that were in effect as of July 1 of a given year. Under the latter coding, it is possible that minimum wage revisions occurring after July 1 in the year prior to an election are attributed to the following year in which elections take place. In contrast, the Tax Policy Center tends to record minimum wages effective in the United States as they occur throughout the calendar year.

5 Conclusion

This paper theoretically and empirically investigates the phenomenon of reform fatigue cycles and populist cycles. The theory of reform fatigue is based on the voter's uncertainty about the competence of the politician. The politician, fearing a negative political outcome, will reduce effort on reforms in the event reforms do not produce an early success. In contrast, the politician will increase effort on populist policies prior to elections in the event of no early success on reforms.

The predictions of the model are supported by empirical evidence. A reform fatigue cycle is identified in financial reform data across countries. Furthermore, we show that minimum wages (an arguably populist policy), exhibit a different political cycle - there is little effect after an election, but minimum wages are increased either during an election year or in the year prior to an election. The effect for the minimum wage populist cycle is demonstrated across countries and across US states.

Appendix

Voter belief updating

At the beginning of period zero the politician and the voter hold a common prior belief that the politician is good and no success has been observed, thus $p_0^{NS} = q_0$. Since the voter does not observe effort on reform, we denote by a_t the effort the voter believes the politician made on reform. The voter updates p_t^{NS} according to

$$p_{t+1}^{NS} = \frac{p_t^{NS}(1-\lambda_r a_t)}{1-a_t p_t^{NS} \lambda_r}.$$

If $q_0 < 1$, the probability that the politician knows for sure he is good is zero, hence $p_0^K = 0$. For all other periods p_0^K is updated according to

$$p_{t+1}^K = \begin{cases} 1 & \text{if } z_t = 2 \\ \frac{p_t^K \lambda_r + (1-p_t^K) \lambda_r a_t}{p_t^K \lambda_r + (1-p_t^K) [\lambda_r a_t + \lambda_p x_t^p]} & \text{if } z_t = 1 \\ \frac{p_t^K (1-\lambda_r)}{p_t^K (1-\lambda_r) + (1-p_t^K) (1-\lambda_r a_t) (1-\lambda_p x_t^p)} & \text{if } z_t = 0. \end{cases}$$

Finally, the voter's assessment that the politician is good in period zero must coincide with the politician's, so $p_0^G = q_0$. For all other periods p_t^G is updated according to

$$p_{t+1}^G = \begin{cases} 1 & \text{if } z_t = 2 \\ \frac{p_t^G [p_t^K \lambda_r + (1-p_t^K) (\lambda_r a_t + \lambda_p x_t^p)]}{p_t^G [p_t^K \lambda_r + (1-p_t^K) (\lambda_r a_t + \lambda_p x_t^p)] + (1-p_t^G) \lambda_p x_t^p} & \text{if } z_t = 1 \\ \frac{p_t^G [p_t^K (1-\lambda_r) + (1-p_t^K) (1-\lambda_r a_t) (1-\lambda_p x_t^p)]}{p_t^G [p_t^K (1-\lambda_r) + (1-p_t^K) (1-\lambda_r a_t) (1-\lambda_p x_t^p)] + (1-p_t^G) (1-\lambda_p x_t^p)} & \text{if } z_t = 0. \end{cases}$$

Proof of Proposition 1

We solve for the politician's strategy via backward induction.

Period 1

Consider the politician's effort choices in period 1. The politician enters the period knowing prior belief q_0 and period 0 output z_0 . The politician updates his own beliefs about his type q_1 , and knows that the voter updates his beliefs to $p_1 = (p_1^{NS}, p_1^K, p_1^G)$ conditional on output z_0 and the perceived effort choice. We consider the politician's effort given each realization of z_0 .

$z_0 = 2$. Suppose output in period 0 is 2. First note this outcome is only possible if $x_0^r > 0$ and $x_0^p > 0$. The politician and the voter know that the politician is competent for certain because the reform must have generated a success. The voter re-elects the politician for sure. Since effort is costly, the politician has no incentive to exert effort since he knows he will be re-elected. We have the following result

Lemma 1. *For all q_0 and z_1*

$$\begin{aligned} \Upsilon(q_0, 2, z_1) &= 1 \\ \chi_1^r(q_0, 2) &= \chi_1^p(q_0, 2) = 0. \end{aligned}$$

Proof. To be added. ■

Denote the ex-post equilibrium payoff to the politician in period 1 as $W_1(\chi, \Upsilon; z_0, z_1)$. If $z_0 = 2$, then for all z_1 we have $W_1(\chi, \Upsilon; 2, z_1) = 1$.

$z_0 = 1$. Suppose output in period 0 is 1, then $q_1 < 1$ and the voter holds beliefs $p_1 = (p_1^{NS}, p_1^K, p_1^G)$. The politician's choice of effort considers each possible future realization of z_1 . The politician's effort strategies in period 1 satisfy

$$(\chi_1^r, \chi_1^p) \in \arg \max_{(x_1^r, x_1^p) \in [0,1]^2} E_{z_1} [p_2^K p_2^G + (1 - p_2^K p_2^G) p_2^{NS}] - c((x_1^r) + (x_1^p)). \quad (\text{P1})$$

Note that the objective to be maximized has an expectation over the realization of z_1 , since each realization of z_1 results in different distributions of voter beliefs.

Beliefs in period 1 are influenced by period 0 effort choices, so consider the following three cases. First suppose $x_0^r = 0, x^p > 0$. In this case, any success in period 0 did not come from reform, so there is no updating of beliefs. Next, suppose $x_0^r > 0, x^p > 0$. In this case, it is not clear if success came from the reform or the populist policy, so the voter's beliefs will diverge from the politician's. Next suppose $x_0^r > 0, x^p = 0$. In this case, any success in period 0 came from the reform, so the solution is just as in the case of $z_0 = 2$, and $W_1(\chi, \Upsilon; 1, z_1) = 1$.

We consider which case(s) will occur in equilibrium. In period 0 the benefit of making effort on the reform is for the voter to learn something about his type. This learning does not occur unless there is positive effort on reform, so we rule out the first case. In the second case depending on the values of λ_r and λ_p , there may be a trade-off to be made to raise the probability of output while sending a strong signal. In the last case any success is due only to reform so the outcome is as in the case of $z_0 = 2$. We claim here, and later prove, that $x_0^p = 0$ and $x_0^r \in (0, 1)$. We solve the period 1 problem under this conjecture, which implies that if $z_0 = 1$ then effort on reform or populist policy in period 1 is zero since effort is costly and there is no learning to be done.

$\mathbf{z}_0 = \mathbf{0}$. We solve the politician's problem in period 1 conditional on $z_0 = 0, x_0^p = 0$ and $x_0^r \in (0, 1)$. In the rest of this section we assume $z_0 = 0, x_0^p = 0$ and $x_0^r \in (0, 1)$ but do not make it explicit unless there is possible confusion. Denote

$$w_1(x_1^r, x_1^p) = E_{z_1}[p_2^K p_2^G + (1 - p_2^K p_2^G)p_2^{NS}] - c((x_1^r) + (x_1^p)),$$

with

$$\begin{aligned} E_{z_1}[p_2^K p_2^G + (1 - p_2^K p_2^G)p_2^{NS}] &= Pr(z_1 = 2) \\ &+ Pr(z_1 = 1)(p_2^K p_2^G + (1 - p_2^K p_2^G)p_2^{NS}|z_1 = 1) \\ &+ Pr(z_1 = 0)(p_2^K p_2^G + (1 - p_2^K p_2^G)p_2^{NS}|z_1 = 0). \end{aligned}$$

Lemma 2. *For c sufficiently small we have $\partial w_1 / \partial x_1^p > 0$, $\partial^2 w_1 / \partial (x_1^r)^2 < 0$. Furthermore*

$\partial^2 w_1 / \partial (x_1^r)^2 |_{x_1^r=0} > 0$ and $\partial^2 w_1 / \partial (x_1^r)^2 |_{x_1^r=1} < 0$.

Proof. Note the following probabilities if the effort pair (x_1^r, x_1^p) is chosen in period 1.

$$\begin{aligned} Pr(z_1 = 2) &= p_1^{NS} x_1^r \lambda_r x_1^p \lambda_p \\ Pr(z_1 = 1) &= p_1^{NS} x_1^r \lambda_r (1 - x_1^p \lambda_p) + (1 - p_1^{NS} x_1^r \lambda_r) x_1^p \lambda_p \\ Pr(z_1 = 0) &= (1 - p_1^{NS} x_1^r \lambda_r) (1 - x_1^p \lambda_p). \end{aligned}$$

If effort pair (x_1^r, x_1^p) is chosen in period 1 and $z_1 = 1$ is observed, the resulting beliefs of the voter at the end of period 1 are

$$\begin{aligned} p_2^{NS} &= \frac{p_1^{NS} (1 - \lambda_r x_1^r)}{1 - x_1^r p_1^{NS} \lambda_r} \\ p_2^K &= \frac{p_1^K \lambda_r + (1 - p_1^K) \lambda_r x_1^r}{p_1^K \lambda_r + (1 - p_1^K) [\lambda_r x_1^r + \lambda_p x_1^p]} \\ p_2^G &= \frac{p_1^G [p_1^K \lambda_r + (1 - p_1^K) (\lambda_r x_1^r + \lambda_p x_1^p)]}{p_1^G [p_1^K \lambda_r + (1 - p_1^K) (\lambda_r x_1^r + \lambda_p x_1^p)] + (1 - p_1^G) \lambda_p x_1^p}. \end{aligned}$$

If effort pair (x_1^r, x_1^p) is chosen in period 1 and no output is observed, the voter has the same belief p_2^{NS} as in the case of output of 1, and the resulting values for p_2^K and p_2^G at the end of period 1 are

$$\begin{aligned} p_2^K &= \frac{p_1^K (1 - \lambda_r)}{p_1^K (1 - \lambda_r) + (1 - p_1^K) (1 - \lambda_r x_1^r) (1 - \lambda_p x_1^p)} \\ p_2^G &= \frac{p_1^G [p_1^K (1 - \lambda_r) + (1 - p_1^K) (1 - \lambda_r x_1^r) (1 - \lambda_p x_1^p)]}{p_1^G [p_1^K (1 - \lambda_r) + (1 - p_1^K) (1 - \lambda_r x_1^r) (1 - \lambda_p x_1^p)] + (1 - p_1^G) (1 - \lambda_p x_1^p)}. \end{aligned}$$

■

By Lemma 2, for sufficiently small cost of effort, the objective function w_1 is strictly increasing in x_1^p hence the optimal effort choice for the populist policy is $x_1^p = 1$. Furthermore, the objective function is strictly concave in x_1^r and the maximum is strictly in the interior. Denote

$$x_1^{r*} = \arg \max_{x_1^r \in [0,1]} w_1(x_1^r, 1).$$

Since Lemma 2 holds for small cost, we set $c = 0$ for the remainder of the analysis as this allows simpler closed form solutions. We can show that

$$x_1^{r*} = \frac{(\sqrt{2(1-\lambda_p)}-1)\lambda_p(1-x_0^r q_0 \lambda_r)}{(1-2\lambda_p)(1-\lambda_r x_0^r) q_0 \lambda_r}.$$

The following properties are useful.¹⁸

Lemma 3. 1. x_1^{r*} is increasing in x_0^r .

2. Denote $\Delta \equiv x_0^r - x_1^{r*}$.

(a) Δ is increasing in x_0^r .

(b) Δ is increasing in q_0 .

(c) If $x_0^r = 1$ and $q_0 = 1$ then $\Delta > 0$.

(d) There exists a \underline{x}_0^r and a \underline{q}_0 such that if $x_0^r \geq \underline{x}_0^r$ and $q_0 \geq \underline{q}_0$ then $\Delta \geq 0$.

Proof. For part 1 we take the derivative of x_1^{r*} with respect to x_0^r . This is

$$\frac{\partial x_1^{r*}}{\partial x_0^r} = \frac{(\sqrt{2(1-\lambda_p)}-1)\lambda_p(1-q_0)}{(1-2\lambda_p)(1-\lambda_r x_0^r)^2 q_0 \lambda_r}.$$

This is positive since $\lambda_p < \frac{1}{2}$. For part 2a note that $\frac{\partial \Delta}{\partial x_0^r} = 1 - \frac{\partial x_1^{r*}}{\partial x_0^r} > 0$. This is positive since $\lambda_p < \lambda_r \leq \frac{1}{2}$ and $x_0^r \leq 1$. For part 2b note that $\frac{\partial \Delta}{\partial q_0} = \frac{(\sqrt{2(1-\lambda_p)}-1)\lambda_p}{(1-2\lambda_p)(1-\lambda_r x_0^r) q_0^2 \lambda_r} > 0$. For part 2c note $\Delta|_{x_0^r=1, q_0=1} = 1 - \frac{(\sqrt{2(1-\lambda_p)}-1)\lambda_p}{(1-2\lambda_p)\lambda_r} > 0$. Part 2d follows from parts 2a, 2b and 2c. ■

By Lemma 3 reform fatigue occurs if x_0^r and q_0 are sufficiently high. We characterize x_0^r next.

Period 0

Consider the politician's effort choices in period 0. The politician and the voter enter the period with belief q_0 . The politician's choice of effort considers each possible realization

¹⁸To obtain x_1^{r*} as a function of x_0^r we substitute for beliefs given below in equations (3) and (4).

of z_0 and the equilibrium payoffs in the sub game in period 1. We conjectured before that $\chi_0^p = 0$ and we maintain this conjecture and later show there is no profitable deviation. The politician's effort on reform in period 0 satisfies

$$\chi_0^r \in \arg \max_{x_0^r \in [0,1]} E_{z_0}[W_1(\chi, \Upsilon; z_0, z_1)].$$

We have

$$\begin{aligned} E_{z_0}[W_1(\chi, \Upsilon; z_0, z_1)] &= Pr(z_0 = 1)[W_1(\chi, \Upsilon; z_0 = 1, z_1)] \\ &\quad + Pr(z_0 = 0)[W_1(\chi, \Upsilon; z_0 = 0, z_1)]. \end{aligned}$$

If the effort pair $(x_0^r, 0)$ is chosen in period 1 then

$$\begin{aligned} Pr(z_0 = 1) &= q_0 x_0^r \lambda_r \\ Pr(z_0 = 0) &= 1 - q_0 x_0^r \lambda_r. \end{aligned}$$

If effort pair $(x_0^r, 0)$ is chosen in period 0 and $z_0 = 1$ is observed, the voter and politician know that the politician is good for sure, and $W_1(\chi, \Upsilon; z_0, z_1) = 1$.

If effort pair $(x_0^r, 0)$ is chosen in period 0 and no output is observed, the resulting values for p_1^{NS} , p_1^K and p_1^G at the end of period 0 are

$$p_1^G = p_1^{NS} = \frac{q_0(1-\lambda_r x_0^r)}{1-x_0^r q_0 \lambda_r} \tag{3}$$

$$p_1^K = 0. \tag{4}$$

Denote

$$w_0(x_0^r) \equiv q_0 x_0^r \lambda_r + (1 - q_0 x_0^r \lambda_r) w_1(x^{r*}, 1),$$

and $x_0^{r*} = \arg \max_{x_0^r \in [0,1]} w_0(x_0^r)$. It is instructive to analyze the derivative of $w_0(x_0^r)$. This is

$$\frac{\partial w_0}{\partial x_0^r} = q_0 \lambda_r (1 - w_1(x^{r*}, 1)) + (1 - q_0 \lambda_r) \frac{\partial w_1}{\partial x_1^{r*}} \frac{\partial x_1^{r*}}{\partial x_0^r}.$$

The first term is positive and the second term may be positive or negative depending on the value of x_1^{r*} . Thus w_0 may be an increasing, decreasing or concave function of x_0^r . Note that as $q_0 \lambda_r$ increases the first term receives more weight and the derivative becomes more positive. Therefore for $q_0 \lambda_r$ sufficiently small we observe reform fatigue.

Financial reform in parliamentary regimes

We find no evidence of a political cycle in financial reforms in parliamentary systems. We present below in Table 6 the regression for the parliamentary countries in our dataset. parliamentary regimes typically do not have an executive election that is separate from the legislative election, so we do not present results for executive elections only.

Table 6: Financial reforms in Parliamentary Regimes

	Parliamentary					
	Exec or Legislative			Legislative		
Lag	0.415 (0.419)	0.301 (0.341)		0.602 (0.444)	0.419 (0.363)	
Year of	0.187 (0.327)	0.019 (0.267)	-0.001 (0.252)	0.338 (0.346)	0.141 (0.278)	0.056 (0.251)
Lead	0.270 (0.349)		0.093 (0.269)	0.423 (0.369)		0.160 (0.285)
Observations	909	909	909	909	909	909
R-squared	0.089	0.088	0.088	0.090	0.089	0.088
# countries	41	41	41	41	41	41

Disaggregated Financial Reforms

For the financial sector, the index on financial reforms from Abiad et al. (2008) is the aggregate over 7 separate measures. Giuliano et al. (2013) disaggregates these looking at capital account transactions and domestic financial market regulation separately. Moreover, their measure of credit controls only includes directed credit and subsidized lending, but

not ceiling on expansion of credit. By contrast, the variable for credit controls used in the computation of the financial reforms in Abiad et al (2008) is the average of direct credit and credit ceilings. We present the results for these desegregated reforms in presidential systems in Tables 7 and 8. As before the dependent variable is the first difference of these reforms. These do not exhibit a distinct pattern thus we conclude that reform fatigue is not restricted to specific financial policies, but rather a basket of financial policies are traded off against populist policies.

Table 7: Domestic Financial Sector Reforms in Presidential Systems

Lag	0.489 (0.361)	0.744** (0.362)	
Year of	-0.088 (0.367)	0.237 (0.330)	-0.230 (0.335)
Lead	-0.731* (0.412)		-0.825** (0.403)
Observations	1,195	1,244	1,202
R-squared	0.138	0.142	0.134
# countries	56	56	56

Table 8: Capital Account Restrictions in Presidential Systems

Lag	2.095** (1.057)	2.191** (0.970)	
Year of	0.594 (1.265)	0.696 (1.096)	-0.142 (1.153)
Lead	-0.361 (0.844)		-0.902 (0.770)
Observations	1,195	1,244	1,202
R-squared	0.052	0.052	0.049
# countries	56	56	56

References

- Abiad, A., Detragiache, E. and Tressel, T. (2008), ‘A new database of financial reforms’, *IMF Working Paper Working No. 08/266*. .
- Aleksynska, M. and Schindler, M. (2011), ‘Labor market regulations in low-, middle- and high-income countries: A new panel database’, *IMF Working Paper* .
- Alesina, A., Ardagna, S. and Trebbi, F. (2006), ‘Who Adjusts and When? The Political Economy of Reforms’, *IMF Staff Papers* **53**.
- Besley, T. and Case, A. (1995), ‘Does electoral accountability affect economic policy choices? evidence from gubernatorial term limits’, *Quarterly Journal of Economics* **110**(3), 769–798.
- Besley, T. and Coate, S. (1998), ‘Sources of Inefficiency in a Representative Democracy: A Dynamic Analysis’, *American Economic Review* **88**(1), 139–156.
- Bowen, T. R. and Lambert, N. (2014), ‘Reform Fatigue’, *Working paper* .
- Canes-Wrone, B., Herron, M. C. and Shotts, K. W. (2001), ‘Leadership and Pandering: A Theory of Executive Policymaking’, *American Journal of Political Science* **45**(3), 532–550.
- Canes-Wrone, B. and Shotts, K. W. (2004), ‘The Conditional Nature of Presidential Responsiveness to Public Opinion’, *American Journal of Political Science* **48**(4), 690–706.
- Dewatripont, M. and Roland, G. (1995), ‘The Design of Reform Packages under Uncertainty’, *The American Economic Review* **85**(5), 1207–1223.
- Dewatripont, M. and Roland, G. R. (1992), ‘Economic Reform and Dynamic Political Constraints’, *Review of Economic Studies* **59**, 703–730.
- Di Tella, R. and MacCulloch, R. J. (2005), ‘The Consequences of Labor Market Flexibility: Panel Evidence Based on Survey Data’, *European Economic Review* **49**(5), 1225–59.
- Drazen, A. (2001), The Political Business Cycle after 25 Years, *in* B. S. Bernanke and K. Rogoff, eds, ‘NBER Macroeconomics Annual 2000’, Vol. 15, pp. 75–138.

- Faye, M. and Niehaus, P. (2012), ‘Political Aid Cycles’, *American Economic Review* **102**(7), 3516–3530.
- Feldmann, H. (2012), ‘Product market regulation and labor market performance around the world’, *Labour* **26**(3), 369—391.
- Fernandez, R. and Rodrik, D. (1991), ‘Resistance to Reform: Status Quo Bias in the Presence of Individual-Specific Uncertainty’, *The American Economic Review* **81**(5), 1146–1155.
- Freidel, F. and Sidey, H. (2006), *The Presidents of the United States of America*, White House Historical Association.
- Giuliano, P., Mishra, P. and Spilimbergo, A. (2013), ‘Democracy and reforms: Evidence from a new dataset’, *American Economic Journal: Macroeconomics* **5**(4), 179–204.
- Halac, M., Kartik, N. and Liu, Q. (2013), ‘Optimal contracts for experimentation’, *Working Paper* .
- Jackson, M. O. and Aghion, P. (2014), ‘Tenure and Information Revelation: Learning in Leadership Replacement Decisions’, *Working paper* .
- Keller, G., Rady, S. and Cripps, M. (2005), ‘Strategic Experimentation with Exponential Bandits’, *Econometrica* **73**(1), 39–68.
- Lora, E., Panizza, U. and Quispe-Agnoli, M. (2003), ‘Reform Fatigue: Symptoms, Reasons and Implications’, *Inter-American Development Bank, Research Department* .
- Nordhaus, W. D. (1975), ‘The Political Business Cycle’, *The Review of Economic Studies* **42**(2), 169–190.
- Rogoff, K. (1990), ‘Equilibrium Political Budget Cycles’, *American Economic Review* **80**(1), 21–36.
- Strulovici, B. (2010), ‘Learning While Voting: Determinants of Collective Experimentation’, *Econometrica* **78**(3), 933–971.

Tornell, A. (1998), 'Reform from Within', *NBER Working paper* .