

# Misspecified Politics and the Recurrence of Populism

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*Abstract:* We develop a model of political competition between two groups that differ in their subjective model of the data generating process for a common outcome. One group has a simpler model than the other group as they ignore some relevant policy variables. We show that perpetual changes of power are a natural feature of this dynamic learning environment and that simple world views -which can be interpreted as populist world views- imply extreme policy choices. Periods in which those with a more complex model govern increase the specification error of the simpler world view, leading the latter to underrate the effectiveness of complex policies and overestimate the positive impact of a few extreme policy actions. Periods in which the group with the simple world view implement their narrow policies result in subpar outcomes and a weakening of their omitted variable bias. Policy cycles arise, where each group's tenure in power sows the seeds of its eventual electoral defeat.

"Democracy is complex, populism is simple" (R. Dahrendorf, 2007)

## 1 Introduction

Voters differ not merely in their economic interests and preferences, but also in their fundamental understanding of the data generating process that underlies observed outcomes. Consequently, because they consider the same historical data through the prism of different models, even fully rational and otherwise similar voters can have persistent differences of opinion. In politics, such differences in model specification translate into differences in realized policy decisions when different groups are in power. The consequent interplay between world views, beliefs and policy can generate systematic correlations across observed data that sustain differing beliefs and biases.

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Indeed, understanding the implications of differing world views can shed light on an important aspect of populism. While the amorphous concept of "populism" has perhaps as many definitions as authors, the simplicity of populist world views are an important aspect of such movements. Motivated by the experience of populism in Latin America, Dornbusch

inequality in healthcare, opportunities, mental health issues and structural discrimination.<sup>6</sup> A related and similar one-dimensional view of the world is behind more current populist views and suggested policies about immigration.

To focus on the implications of simplistic world views on politics, we consider political competition between groups that share the same interests and preferences over common

broad policy agenda this increases the omitted variable bias of the simple group. The simple group believes that the complex group are wasting resources on irrelevant policies and they fully attribute the outcomes they observe to the few actions taken on the policy instruments they deem relevant. This increases the simple group's assessment of the likely effectiveness of a more decisive narrow policy agenda and mobilizes them in support of political candidates

by more than that of the opposition group. This arises as the group in power actually implements its ideal policy and hence learns more precisely that such policy is not effective. This accords with the conventional wisdom that large negative shocks trigger populism but might also end its term.

Our paper complements the growing literature about populism by uncovering two aspects of the dynamic political process. First, we highlight a novel mechanism for political cycles when misspecified simple and complex world views are held by different groups in the electorate. In a model with rational individuals we show how the dynamics of learning through misspecified models and endogenous power shifts renders political cycles to be natural and inevitable.

Second we provide a rationale for why simple world views imply extreme and suboptimal policy prescriptions. In this sense, our paper adds to the literature of political-economy models of sub-optimal populist policies. Acemoglu et al (2013) model left-wing populist policies that are both harmful to elites and not in the interests of the majority poor as arising from the need for politicians to signal that they are not influenced by rich right-wing interests. Di Tella and Rotemberg (2016) analyze populism in a behavioural model in which voters are betrayal averse and may prefer incompetent leaders so as to minimize the chance of suffering from betrayal. Guiso et al (2017) define a populist party as one that champions short-term redistributive policies while discounting claims regarding long-term costs as representing elite interests. Bernhardt et al (2019) show how office seeking-demagogues who cater to voters' short term desires compete successfully with far-sighted representatives who guard the long-run interests of voters. Morelli et al (2020) show how in

recently, Esponda and Pouzo (2016) and Molavi (2019). Several recent papers feature interactions between competing subjective models that share features of our framework. Mailath and Samuelson (2019) consider individuals with heterogeneous models who exchange beliefs sequentially once they receive a one-off (private) data and characterize conditions under which beliefs converge. Eliaz and Spiegler (2019) present a static model of political competition based upon competing narratives that draw voters' attention to different causal variables and mechanisms. They focus on a static equilibrium and on the possibility of "false positive" variables (which are not necessarily policy variables). Montiel Olea et al (2019), with

all relevant  $k$  policies, but alternatively we could add noise to only the set of policies that are implemented at each period and the results would be the same.

only mean beliefs matter, and we henceforth denote the vector of mean beliefs at period  $t$  by  $\bar{\mu}_{st}$  and  $\bar{\mu}_{ct}$ .

Although the subjective model of  $i \in \{\mathbf{S}; \mathbf{C}\}$  is fixed, the beliefs of type  $i \in \{\mathbf{S}; \mathbf{C}\}$



In each period political competition will determine which type chooses current period policies:

The political competition: We first define the notion of intensity of preferences. Let

$$(11:5) \quad I_i = y[x_i; \bar{x}_i] - y[x_j; \bar{x}_i];$$

where  $y[x_j; \bar{x}_i]$  is type  $i$ 's expected outcome when type  $j$  chooses their optimal policy. The intensity of preferences of type  $i$  is therefore the loss this type incurs from  $j$ 's ideal policy compared to her own ideal policy, given her subjective model.  $I_i$  does not necessarily equal  $-I_j$  as beliefs differ across the two types. More specifically:

$$(11:6) \quad \begin{aligned} I_s &= x_s^0 - x_c^0 \\ I_c &= x_c^0 - x_s^0 \end{aligned}$$

We assume that at any period  $t$ ; the type that has the higher intensity of preferences wins the election, and then implements her ideal policy in that period (we focus then on myopic choices of policies and discuss strategic choices of policies in Section 4.2).

Below we construct a political competition model which rationalizes why intensity of preferences is an engine for power shifts. Assume that the polity consists of two equally sized groups, simple and complex, each a continuum. Each group is represented by a "citizen-candidate" that runs in the election and if elected, implements the type's ideal policy.<sup>12</sup> Voting is costly, but citizens vote because they believe with some (exogenous) probability  $p$  their vote will be pivotal.<sup>13</sup> Consequently, a voter  $i$  of type  $i$  will vote (for their own representative) if the expected gain from the implementation of type  $i$ 's optimal policies relative to those of type  $j$  exceeds voter  $i$ 's cost of voting, i.e.:

$$(11:7) \quad pI_i > 1.3 \dots [ ( ; ) ] TJ/F5018.208 0 Td [ ( pI ) 671]$$



that  $C$  has a different model. It can be the case that  $S$  believes that  $C$  is corrupt and invests in policies that do not benefit the general public but only a select group. This fits well with the anti-elite interpretation of populism ascribing to populist supporters frustration with policies of the liberal elite which they see as unhelpful or not benefiting the “people”. For example, in relation to Example 1, they might view spending on welfare benefits or integration programs as wasteful and corrupt.

### 3 Perpetual Cycles and Extremist Populists

In this section we present Theorem 1, our main result, characterizing the unique steady state the dynamic model converges to. The steady state involves political cycles and extreme policies espoused and implemented by type  $S$ : To formalize the notion of political cycles, let  $j_t$  denote the share of time that  $j \in \{S; C\}$  had been in power up to period  $t$ : Let  $k_s$  be the  $k$ -vector that agrees with the true parameters of  $\theta$  on all policies that group  $S$  deem relevant and has zero entries on all other  $k - k_s$  policies and let  $\beta = \sqrt{\frac{\theta_0}{\theta_s}} > 1$ : We then have (for the proof see Appendices I-II):

**Theorem 1:** *For sufficiently small  $\frac{2}{n}$ ; the polity converges a.s. to a unique equilibrium in which: (i) Political cycles:  $\lim_{st \rightarrow \infty} s = \frac{1}{1 + \frac{2}{n}}$ ;  $0 < s < 1$ ; (ii)  $\lim_{ct \rightarrow \infty} c = \beta$ ; (iii) Colinear and extreme beliefs for  $S$ :  $\lim_{st \rightarrow \infty} s = ( \ )_s$ :*

1057(s)8(t)8(e--220.49-308779Td[(i)7(n)12(p)11(e)10()11(g)-332(t246h)12(a)10(t)-360(g)10((e)9(e). We first discuss the intuition for the main findings of political cycles a11.9551(i)7(l)6(i0)shct

her beliefs; when **S** is in power and when **C** is in power respectively. That is:

$$(III:2) \quad \begin{aligned} x_s^0 - x_s^0 &= y[-s; x_s] - y[; x_s]; \\ x_c^0 - x_c^0 &= y[-s; x_c] - y[; x_c]; \end{aligned}$$

These expressions of average mistakes will play an important role in the intuition for our key results, which we now provide.

### 3.1 The Cycles of Populism

We now show how cycles must arise. When only one group is in power, let's say **S**; so that  $\alpha_s = 1$ ; this implies, from (III:1) and (III:2); that in the limit **S**'s beliefs are such that they are not "surprised" anymore by the *average* output they produced, and so are not mistaken on average:

$$(III:3) \quad y[-s; x_s] = y[; x_s]$$

And trivially, **C** also predicts correctly the average output  $y[; x_s]$ . But note that **C** can do better than  $y[; x_s]$ : Its limit beliefs also explain what **S** does, but if it switches to its optimal policies given  $\alpha_c = 1$ ; namely  $x_c$ ; **C** can generate a higher output: Specifically, by shifting some resources from a narrow set of policies to the whole vector of policies, **C** uses the resources more efficiently and generates higher output. In other words,

$$(III:4) \quad y[; x_c] > y[; x_s] = y[-s; x_s];$$

This, by Lemma 1, implies then that **C** becomes more intense than **S** when **S** is assumed to hold power indefinitely. We then have a contradiction to this assumption, and so **S** must be replaced and cannot be in power for ever.

The exact same argument implies that when **C** is in power indefinitely, it is now that **S** becomes more intense. When  $\alpha_c = 1$ ; again, the beliefs of **S** (as well as those of **C**) converge to explain the average output produced by **C**; in the limit **S** is not surprised by what **C** is producing, with  $\alpha_s$  solving  $x_c^0 - x_c^0 = y[-s; x_c] - y[; x_c]$ : But given these beliefs, **S** realises that it can produce more than  $y[-s; x_c]$ ; namely  $x_s$ ; **S** can generate a higher output: Specifically, by shifting some resources from a narrow set of policies to the whole vector of policies, **S** uses the resources more efficiently and generates higher output. In other words,

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In other words, when one group is in power indefinitely, both groups learn to explain the average output it produces. But while the group in power also gets to implement its ideal policies given these beliefs, the group in opposition believes it can do better; this implies that it becomes more intense and power shift is inevitable. Thus long term dynamics must include political cycles. This can also be interpreted as a form of *incumbency disadvantage*. While the incumbent party implements its ideal policies given its beliefs, the opposition party finds the incumbent's policies wasteful, either as the incumbent invests in what it finds to be irrelevant policies (as is the case when  $S$  is in opposition), or as the incumbent invests too

First, let us illustrate the political cycles result in this simple model. Note that when  $S$  is in power indefinitely, they have the true model to assess what they are doing; since they set  $x_2 = 0$  their learning about  $x_1$  is not biased. This implies that they will learn the true impact of law and order,  $\alpha_1$ : In this case, it is easy to see how  $C$  has greater intensity as it can produce a more effective crime prevention outcome by spreading resources efficiently on both policies. Alternatively, when  $C$  is in power forever,  $S$ 's belief will suffer from an omitted variable bias and will be exaggerated and so  $\alpha_1$  will solve:

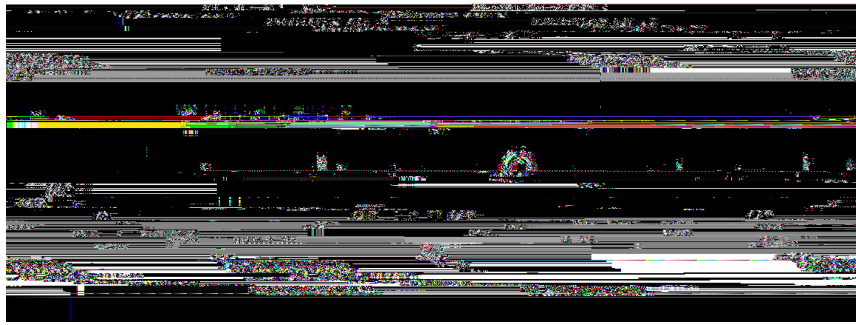
$$(III:6) \quad \alpha_{1;c} = \alpha_{1;c} + \alpha_{2;c} \Rightarrow \\ \alpha_1 = \alpha_1 + \alpha_2 \frac{2}{1}$$

where we had substituted for the optimal policies of  $C$ : Again, as derived in the previous section, this implies that  $S$  develops greater intensity as  $S$  believes that substituting  $x_{1;s}$  for  $x_{1;c}$  will produce greater output on average, and so cycles must arise.

The implication of the political cycles result is that the belief of  $S$  must converge to satisfy *equal intensity*, as in any other case one group will be in power indefinitely. This pins down the (excessive) belief of  $S$  as follows:

$$(III:7) \quad \gamma[\alpha_1; x_{1;s}] = \gamma[\alpha_1; x_c] \Rightarrow \alpha_1 = \sqrt{(\alpha_1)^2 + (\alpha_2)^2} > \alpha_1$$

Figure 1 below describes the asymptotic beliefs of  $S$ ; close to the equilibrium belief defined above (note that these beliefs must be “sandwiched” between the limit beliefs that arise when each group is in power indefinitely). Close to the equal intensity belief, whenever the intensity of preferences of  $S$  is larger than that of  $C$ ; it gains power and implements its ideal policy. But then, on average,  $S$  becomes disappointed in the outcomes it generates and moderates its belief towards the true  $\alpha_1$ : Simple voters are then systematically disappointed by the outcomes of their extreme investment in law and order. This leads to a gradual diminution of beliefs, until those with more complex views once again take power. But whenever  $S$ 's intensity falls below that of  $C$ ; and  $C$  gains power,  $S$  starts to inflate again the effectiveness of law and order: The surprising success of  $C$ 's policies (which includes an array of other policies such as investment in education, integration and employment) gradually convinces simple voters of the value of law and order policies as they believe the success of  $C$  stems from these policies only. This omitted variable bias that affects their belief increases their probability of voting in favour of populist politicians who advocate narrow and extreme solutions to complex problems. The equal intensity belief is then a basin of attraction for these dynamics.



then learn the true parameter values on the policies it considers. However, as power shifts are inevitable, the learning of  $\mathbf{S}$



### 3.4 Dynamics of Power Shifts

Conditional on  $\mathcal{C}^0$ 's beliefs converging to the true parameters we have a unique equilibrium steady state. We now explore the comparative statics of the political cycles and how the true data generating process affects these dynamics.

First, we solve for the limit share of time that each group is in power. To solve for  $s$ ; we plug the expression for  $\bar{s}$  from (III:12) in the OLS condition (III:1); where  $\bar{s}$  is also required to explain mistakes across the two regimes. Noting that  $\bar{c} = \bar{s}$ ; we then get:

$$(III:13) \quad s = \frac{1}{1 + \lambda};$$

where it is easy to see that  $s$  is lower when  $\lambda$  is higher. The colinearity parameter measures the relative importance of the parameters *not* considered by  $\mathbf{S}$ . Therefore we have:

*Observation 1: The more important are the policy variables that S ignores, the more extreme are S's belief, and the less time it spends in power.*

Intuitively, to generate more extreme beliefs in equilibrium,  $\mathbf{S}$

Proposition 1: A *negative (positive)* " shock to  $y$

	$\sigma^2 = 0.1$	$\sigma^2 = 1$	$\sigma^2 = 10$	$\sigma^2 = 100$
$\tau_c$	0.5	0.5	0.5	0.5
$\tau_s$	0.5	0.5	0.5	0.5
$\tau_{c,s}$	0.5	0.5	0.5	0.5
$\tau_{c,s}^-$	0.5	0.5	0.5	0.5
$\tau_{c,s}^+$	0.5	0.5	0.5	0.5

Table 1: Simulation of long term transition of power for varying variance of  $\epsilon$ .

As can be seen in the table,  $\tau_s$  and  $\tau_c$  increase with the variance of  $\epsilon$ ; where  $\tau_c \approx \tau_s$ . Also, for both types, the fraction of transitions of power that involve a negative shock increases, from 0.5 to 1. This confirms our analytical results reported in Proposition 1, showing that a negative shock hastens transition of power.

The simulation results illustrate the interplay between the systemic components of power dynamics, which are derived from the equal intensity and colinearity conditions, and those determined directly by the noise  $\epsilon$ : The larger is the variance of  $\epsilon$ , the more likely are paths in which beliefs wander further away from the point of equal intensity. This lengthens the stay in power of incumbents, as one good shock allows them to be in power for a longer time (noting that future shocks have mean zero). Moreover, the shock is dominating the variation of intensity. Being far away from equal intensity implies that the systematic component cannot easily shift beliefs across the equal intensity point, but a big negative shock will do so.

### 3.5 Convergence

In general, establishing convergence with misspecified models is problematic even with exogenous iid data (see Berk 1966). Having endogenous data, as we have in our model, introduces more challenges as observations are non iid. As we mentioned in the introduction, substantial progress has been made in the literature analyzing the convergence properties of misspecified models with non iid data.<sup>20</sup> But with respect to this literature, our model is further complicated by having multiple players, continuous actions, and a multidimensional state space.

Specifically, multiple dimensions of policy allows for the possibility that types entertain multiple equilibrium beliefs in the long term. This multiplicity introduces additional challenges for establishing convergence as it is hard to prove that types do not perpetually

<sup>20</sup>See for example Esponda, Pouzo and Yamamoto (2019) and Frick, Iijima and Ishii (2020).

"travel" along this continuum of beliefs. As we show below, the policy noise,  $\mathbf{n}_t$ , allows us to establish convergence in this model.

In the appendix we prove convergence with the following steps. First, we establish a law of large numbers for our framework that relies on the fact that at period  $t$ ; the regressors  $\mathbf{x}_t$  and the shock  $\epsilon_t$  are independent of each other. While the regressors depend on past



our positive results but not the qualitative effect of the simple group's influence on policy outcomes. While this is beyond the scope of our analysis, we conjecture that even in such a model, in the long term, the simple group's misspecified model will affect policies. Specifically, it is not possible for the complex group to be perpetually in power implementing their ideal policy, as in such a case the simple's estimates must converge to induce them to have higher intensity. As a result, even if the complex converge to be in power perpetually, they must implement long-term policies that prevent the simple from obtaining higher intensity; such policies have therefore to be biased.

**Office-motivated politicians:** One may imagine other models of political competition, e.g., a probabilistic voting model with office motivated politicians, which essentially implies that politicians choose policies to maximize average welfare. While this would yield different policies as well as learning patterns, a key feature of our analysis will remain: In equilibria, policies will cater to group **S** to some degree. That is, the omitted variable bias in **S**'s beliefs

## 4.4 Relation to Berk-Nash equilibrium

To conclude the discussion, we examine the relation between our results above and a static