Health vs. Economy: Politically Optimal Pandemic Policy

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ABSTRACT

Pandemics have heterogeneous effects on the health and economic outcomes of members of the population. To stay in power, politician-policymakers have to consider the health vulnerability–economic vulnerability (HV–EV) profiles of their coalition. We show that the politically optimal pandemic policy (POPP) reveals the HV–EV profile of the smallest, rather than the largest, group in the coalition. The logic of political survival dictates that the preferences of the most pivotal members of the coalition determine policy.

Introduction

Research on Covid-19 has focused on the macroeconomic impacts of the pandemic and on deriving optimal policies (i.e. Acemoglu *et al.*, 2020; Favero *et al.*, 2020). There has been comparatively little research from a political economy perspective.[1] We highlight the simple trade-off at the heart of policymaking during a pandemic: the trade-off between health and the economy. Policies

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[1]One exception is Pulejo and Querubín (2020) who find that reelection concerns are associated with a less stringent response to Covid-19.

such as early, prolonged, or severe lockdowns may limit disease contagion but impose economic costs. We bring to the fore a fundamental political economy explanation for the different initial policies taken by different governments in response to the pandemic. To the extent that politician-policymakers are accountable to citizens, equilibrium pandemic policy depends on citizens' preferences. When such preferences are heterogeneous, the politically optimal pandemic policy will be most responsive to the preferences of the most pivotal members of the ruling coalition.

To motivate our analysis, observe that there were striking differences across countries in their initial policy responses to Covid-19. Some countries imposed severe lockdowns relatively early on. Others waited until confirmed deaths from Covid-19 were in the hundreds or higher. For instance, Austria and Italy were more aggressive in implementing lockdowns, closing schools, and non-essential businesses than were the UK or Sweden.

Figure 1 highlights this heterogeneity in lockdown policy. It plots the stringency index collected by (Roser *et al.*, 2020) for nine selected countries at the point at which they reached 100 total Covid-19 deaths.[2] There is considerable variation between the aggressive pandemic response of Denmark
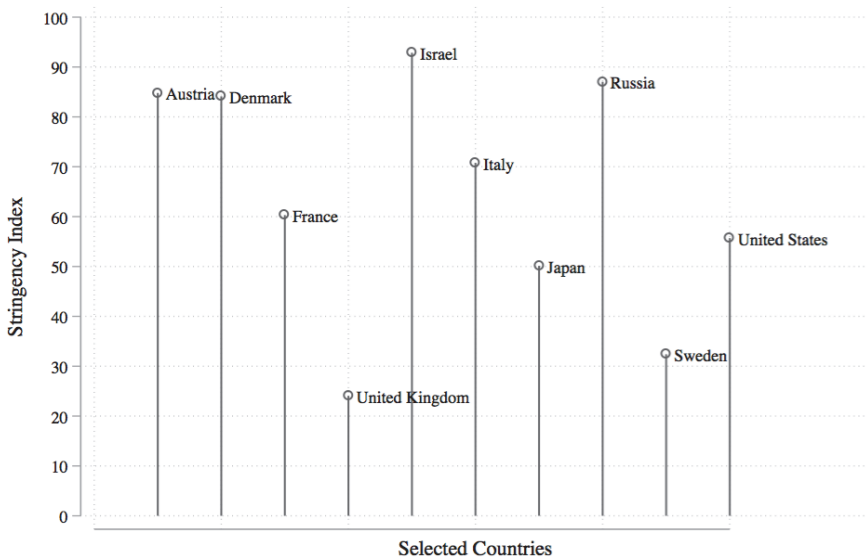

Figure 1: A snapshot of the stringency index at the point when 100 deaths were reached. Data: Roser *et al.* (2020) and Online Appendix A.

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[2]In the Online Appendix we report the stringency index for other countries and for different death thresholds.

and Israel compared to the United States and Japan. What explains these sharp differences in policy responses? For illustrative purposes, we only include a small number of countries but, as we demonstrate, in Online Appendix Figure 7, similar patterns are evident for all counties with at least 100 Covid-19 deaths by June 2020.

This variation in initial pandemic policy is difficult to explain. First, Figure 2 shows that in a simple regression framework, economic and demographic variables cannot account for the variation in initial stringency that we observe. Not only is no individual variable statistically significant but the overall explanatory power of all of these variables together is also low.[3] Second, Figure 3 shows that including political variables does not help predict the variation in policy. We separately find that constraints on the executive, the
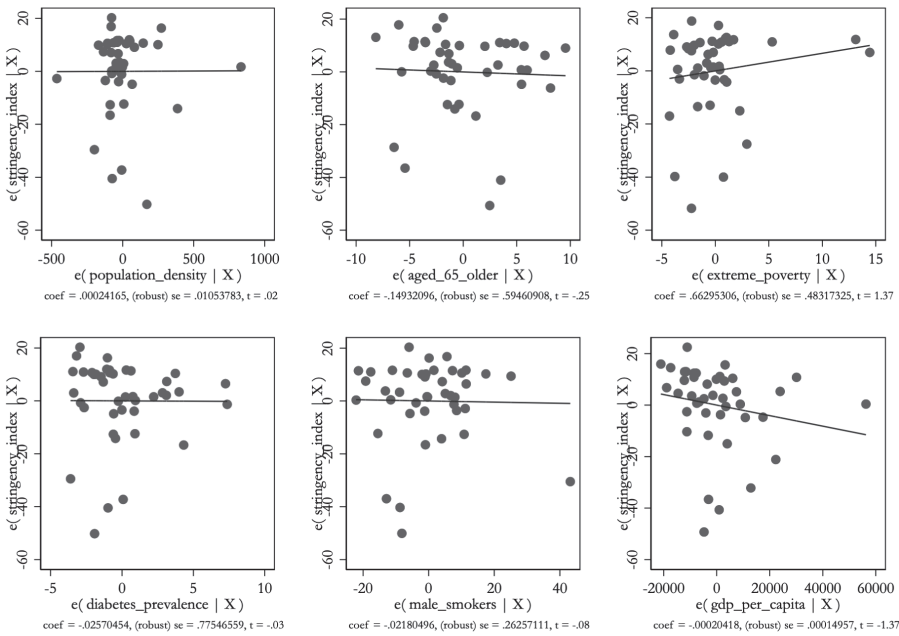

Figure 2: No relationship between economic and demography variables and stringency at 100 deaths.

Data: see Appendix A.

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[3]The variables included in Figure 2 are population density, percentage aged over 65, percentage in extreme poverty, diabetes prevalence, percentage of male smokers, and GDP per capita. We cluster standard errors at the country-level. The R-squared of the regression is 0.14.
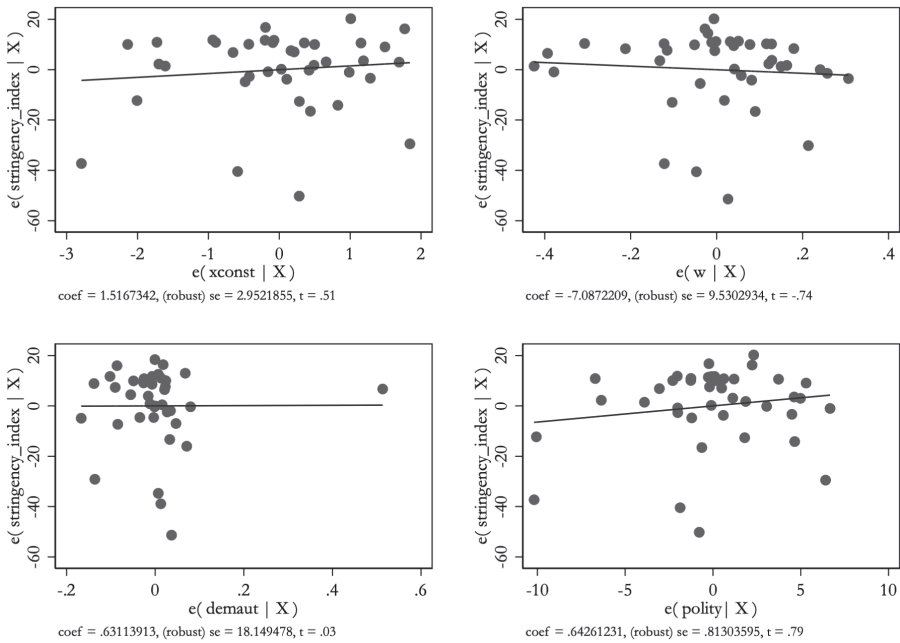
Figure 3: No relationship between the stringency index for selected countries and political variables at 100 deaths.

Data: see Appendix A.

size of the winning coalition, differences in democracy-autocracy scores and the polity score are not systematically related to initial stringency.[4]

In addressing this finding, we propose that the following stylized facts need to be taken into account. First, the heterogeneity in risk exposure is stark. Individuals under the age of 30 without preexisting conditions are extremely unlikely to develop a severe infection. However, the case fatality rate for individuals aged over 70 or with comorbidities is high. Thus we can distinguish between those with a high health vulnerability and those with a low health vulnerability to the pandemic.

Second, the economic risk engendered by Covid-19 is also highly dichotomous. Many small businesses have been forced to close and face the threat of collapse whereas many low-skilled workers, particularly in the service sector,

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[4]To avoid multicollinearity, Figure 3 reports the results of four separate regressions. The other variables included are the same as those in Figure 2. The R-squared for these regressions varies from 0.13 to 0.24. Further details on data construction are provided in the Appendix.

have been made unemployed.[5] Dingel and Neiman (2020) find that approximately 37% of jobs can be done from home. However, these tend to be high skilled jobs in corporate management, journalist, academia, law, and the technology sector. In contrast, workers in the service sector or in construction or manufacturing require the economy to remain open in order to keep their livelihoods. This provides a sharp distinction between individuals who have high economic exposure to the pandemic and those who have a comparatively low economic exposure to the pandemic.

How, then, do politician-policymakers balance the heterogeneous health and economic vulnerabilities of citizens? We apply the selectorate theory of Bueno de Mesquita *et al.* (2003) to predict the politically optimal policy.[6] Such a framework provides a tractable way to analyze public good/policy provision across a continuous spectrum of regimes, i.e. different levels of democracy and authoritarianism, by greatly simplifying the process of political turnover. Specifically, an incumbent leader's political survival depends on the continued support of a coalition of size W who are drawn from the 'selectorate' of size S. A majoritarian democracy, for instance, is then approximated when $\frac{W}{S}$ is close to $\frac{1}{2}$. Authoritarian regimes, on the other hand, would have $\frac{W}{S}$ close to zero — the leader remains in power with the support of a small number of elites who make up the leader's coalition.

Using selectorate theory then allows us to gauge the extent to which the logic behind public policy provision generalizes across regimes. There has been much debate, however, as to the usefulness of such a framework. (See Gallagher and Hanson, 2015 for a survey.) One issue is the confusion as to which members of a population comprise the selectorate and the coalition. Bueno de Bueno de Mesquita and Smith (2018) provide a dataset of proxies for the *size* of W and S of most countries over time. There is no existing dataset, however, that lists *who* such members of W and S are.[7]

Nevertheless, at least in the model, it is clear that members of the ruling coalition W receive both transfers and public goods/policy from the incumbent, whereas selectorate members who are not in W can only access the public goods.[8] In equilibrium, the incumbent leader provides policy exactly the way that a challenger leader or opposition would — since no selectorate member can be excluded from the policy, the incumbent cannot extract loyalty from

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[5]Similarly the Daily Telegraph notes "The great class divide is now between those who can work remotely" (Heath, 2020).

[6]See also Bueno de Mesquita *et al.* (1999), Bueno De Mesquita and Smith (2010), Desierto (2018), Gehlbach (2013), and Smith (2008).

[7]Several papers identify elites in authoritarian regimes (Francois *et al.*, 2020; Shih *et al.*, 2012, for China). However, these papers do not explicitly adopt the selectorate framework and therefore do not define these elites as members of either W or S.

[8]Some members of the population may not even belong to set S, in which case they cannot even access public goods, but nevertheless provide taxable income.

its coalition by providing different policy. (Instead, the incumbent does this through transfers.)

We take this specification at face value when we derive theoretical predictions. However, operationalizing the composition of W and S is not as straightforward, especially within authoritarian regimes. In the case of China, for instance, the selectorate could be composed of members of the Chinese Communist Party (CCP), from which members of the ruling coalition can be drawn. However, non-party members also have access to some public goods, which suggests that the definition of selectorate could be endogenous to the type of public good/policy being analyzed. It is also not clear who the members of the ruling coalition are. While the latter could reasonably include the Politburo, without whose support Pres. Xi Jinping's political power could significantly erode, there are also numerous non-politburo members who also receive transfers. Does this, then, imply that there could be groups within W? And if so, are some groups more important than others? What, then, happens when they have different preferences over public policy?

Such issues are difficult to resolve empirically, but neither can the selectorate framework readily provide adequate theoretical analysis. In its current form, the canonical selectorate model assumes that all selectorate members derive the same utility from public goods (and from transfers, should they be included in the ruling coalition), and that no coalition member is more pivotal than the rest. To the best of our knowledge, our paper is the first to model both the heterogeneity of preferences and the relative importance of members in the coalition within the selectorate framework.[9] We are then able to formally show, across all regime types, that if preferences and coalition members are heterogeneous, the public policy that the incumbent provides is one that reflects the preferences of the most pivotal group in her coalition.[10] In the context of pandemic policy, such preferences depend on how vulnerable this group is to the health and economic effects of this policy.[11]

The intuition is that since public policy is non-excludable, the incumbent provides it the way a challenger would. Now the best that any challenger can do is to 'balance' heterogeneous preferences such that the most pivotal

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[9]Desierto (2018) considers some heterogeneity in incomes — some selectorate and coalition members earn additional income from remittances, but derive the same utility from public goods and transfers as others.

[10]As seen in the next two sections, we capture a crude form of 'pivotalness' that is generalizable across regimes.

[11]For tractability, however, the model we propose is static. Thus, it abstracts away from modeling the dynamics of the disease — which is the focus of models that combine a macroeconomic model of the economy with a Susceptible Infectious Recovered (SIR) model of disease spread. Nevertheless, it should be straightforward to derive simple comparative statics in the model with respect to new information about disease severity or the cost of pandemic policies.

members derive the largest marginal utility from the policy. In equilibrium, the incumbent does the same.

Thus, this paper does not only contribute to the political economy of pandemic policy, but, more generally, it significantly advances selectorate theory as a viable framework for analyzing government provision of public goods or policy.

The rest of this paper is organized as follows. The next section the model, formally derives results that characterize the politically optimal pandemic policy, and suggests a way to take the theoretical predictions to the data. This latter is highly preliminary, as is the attempt, in Section "Preliminary Case Studies", to use some case studies to assess the suggested operationalization of the key variables in the model. The last section concludes.

The Model

Consider a selectorate $S = \{i\}$ of size S. To remain in power, the political leader needs to maintain the support of a subset of the selectorate, specifically, a coalition W of size $W \subseteq S$. Let this coalition be composed of K groups, i.e. $W = \sum_j^K w_j$, where the size of each group w_j is also indexed by w_j. Without loss of generality, assume that the relative sizes of these groups are $w_1 > w_2 > \cdots w_K$.[12]

The leader provides a combination of transfers and public policy — in this context, pandemic policy. The policy affects all of the selectorate, while the transfers are given only to coalition members. The disposable income of a selectorate member i during a pandemic is

$$y_i = (1 - \tau)[\rho_i Y_{\rho i} + (1 - \rho_i)\bar{Y}] + \frac{t_j}{w_j} \mathbb{1}_W, \tag{1}$$

where τ is the tax rate, $Y_{\rho i}$ i's potential income, ρ_i the probability that she realizes the potential income, $\bar{Y}$ the minimum level of income received if she is unable to realize potential income, with $Y_{\rho i} > \bar{Y}$, t_j is total transfers to the group j in which i belongs, which is distributed equally among members of w_j, and $\mathbb{1}_W$ an indicator variable that takes on one if the selectorate member is in the coalition. Transfers, then, are group-specific — when i joins W, she belongs to group w_j in the sense that she shares only in the total transfers allocated to w_j. One can then interpret groups within the coalition as members sharing some common interest or benefit from which other groups are excluded.

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[12]The canonical selectorate framework in which every member of W is the same is thus captured by $w_1 = w_2 = \cdots = w_K$. We make no other restrictions on these groups — there is no requirement, for instance, that such groups are politically organized as, e.g., parties. As will be made clear shortly, the only distinction is that each group receives a group-specific transfer.

Since our primary aim is to characterize the provision of (pandemic) policy rather than the transfers, we simply assume that every i has the same marginal benefit from the transfer received, i.e. equal to one.

Pandemic policy affects income in two ways — by suppressing potential productivity, but also increasing the probability that the productivity is realized by mitigating the severity of the pandemic. Specifically, denote pandemic policy as $p > 0$, with larger values associated with more aggressive policy, e.g. earlier lockdowns. Pandemic policy has heterogeneous effects across members of the selectorate. In particular, ρ_i is a function $\rho_i \equiv \rho\big(p, \eta_i \frac{\sum_i^S \rho_i}{S}\big)$, $\eta_i \geq 0$, while Y_{ρ_i} is a function $Y_{\rho i} \equiv Y_\rho\big(p, \epsilon_i \sum_i^S y_i\big)$, $\epsilon_i \geq 0$. Letting partial derivatives with respect to p be $\frac{\partial \rho_i}{\partial p} > 0$ and $\frac{\partial Y_{\rho_i}}{\partial p} < 0$, then ρ_i can capture the health of i (enabling her to realize potential output Y_{ρ_i}), which is directly (positively) influenced by a more aggressive pandemic policy, and indirectly through some contagion effect, which we simply capture by average health $\frac{\sum_i^S \rho_i}{S}$ of the selectorate, scaled by a 'health vulnerability' parameter η_i. Meanwhile, potential output Y_{ρ_i} is negatively impacted by more aggressive pandemic policy, directly and indirectly through total income $\sum_i^S y_i$ of the selectorate, scaled by an 'economic vulnerability' parameter ϵ_i.

Optimal pandemic policy and transfer amounts are thus determined from the following game that is played at each time $t = 1, 2, \ldots, \infty$.

1. The incumbent leader I forms a coalition of size W composed of K groups, each of size w_j. The size of each type in the coalition is fixed at $w_1 > w_2 > \cdots w_K$. A political challenger C nominates her own coalition, also of size W, with each w_j the same size as in I's coalition, and at least one member belonging to I's coalition. I and C propose pandemic policy p and transfers t_j to each group in the coalition.

2. Each selectorate member chooses between I and C. I is deposed if at least one member of her coalition chooses C.

3. The pandemic policy of the chosen leader is implemented, her transfers allocated, and incomes taxed at rate τ.

We characterize a stationary equilibrium in which the incumbent stays in power.

First, note that each selectorate member would prefer a pandemic policy and transfer that would maximize her disposable income y_i. Thus, the best that any challenger C can offer to her nominated coalition is to choose p and t_j for each group w_j as though she herself was simultaneously maximizing each member's disposable income, subject to the government budget constraint, which we specify as $\tau\big[\sum_i^S [(\rho_i Y_{\rho i}) + (1 - \rho_i)\bar{Y}]\big] + R = \kappa p + \sum_j^K t_j$, where

$\tau\left[\sum_{i}^{S}[(\rho_i Y_{\rho i}) + (1 - \rho_i)\bar{Y}]\right]$ is total tax revenues, R is other revenues, κ is the cost of implementing pandemic policy p, and $\sum_{j}^{K} t_j$ is total transfers.

C offers to each selectorate member i in her coalition, policy p and transfer $\frac{t_j}{w_j}$ that solve

$$Max_{p,\frac{t_j}{w_j}} (1 - \tau)[\rho_i Y_{\rho i} + (1 - \rho_i)\bar{Y}] + \frac{t_j}{w_j};$$

$$s.t. \ \tau\left[\sum_{i}^{S}[(\rho_i Y_{\rho i}) + (1 - \rho_i)\bar{Y}]\right] + R = \kappa p + \sum_{j}^{K} t_j.$$

Re-writing the budget constraint as (a) $t_j = \frac{\tau}{w_j}\left[\sum_{i}^{S}[(\rho_i Y_{\rho i}) + (1 - \rho_i)\bar{Y}]\right] + \frac{1}{w_j}\left[R - \kappa p - \sum_{-j} t_{-j}\right]$ and plugging into the maximand turns the problem into an unconstrained one. That is, for each member i in the coalition W, the challenger solves:

$$Max_p (1 - \tau)[\rho_i Y_{\rho i} + (1 - \rho_i)\bar{Y}]$$

$$+ \frac{\tau}{w_j^2}\left[\sum_{i}^{S}[(\rho_i Y_{\rho i}) + (1 - \rho_i)\bar{Y}]\right] + \frac{1}{w_j^2}\left[R - \kappa p - \sum_{-j} t_{-j}\right]. \quad (2)$$

Focusing on interior solutions, in equilibrium, challenger C proposes pandemic policy p_C that simultaneously satisfies W FOCs, each of the form:

$$F_i \equiv \left[\frac{d\rho_i}{dp}(Y_{\rho i} - \bar{Y}) + \frac{dY_{\rho i}}{dp}\rho_i\right]\left[(1 - \tau) + \frac{\tau}{w_j^2}\right]$$

$$+ \frac{\tau}{w_j^2}\left[\sum_{-i}\left[\frac{d\rho_{-i}}{dp}(Y_{\rho-i} - \bar{Y}) + \frac{dY_{\rho-i}}{dp}\rho_{-i}\right]\right] \quad (3)$$

$$- \frac{\kappa}{w_j^2} = 0.$$

These give p_C which, when plugged into (a) for each group w_j, solves for group transfers $t_j C$, $j = 1, 2, \ldots, K$. The value of C's offer for member i in group w_j is therefore[13]:

$$V_C^i = y_i\left(p_C, \frac{t_j C}{w_j}\right) + \delta\left[\frac{w_j}{S} V_I^i + (1 - \frac{w_j}{S}) V_o^i\right], \quad (4)$$

where δ is the discount rate, $\frac{w_j}{S}$ is the probability that a selectorate member i that belongs to group w_j is included in the coalition of whoever is the

[13]For readability, we refrain from indexing V_C^i and V_I^i by group, but it should be obvious that these vary by group to the extent that transfers are group-specific.

incumbent, in which case she obtains the value $V_I^i = \frac{y_i(p_I, \frac{t_j I}{w_j})}{1-\delta}$, with p_I the pandemic policy of the incumbent, and $V_o^i = \frac{y_i(p_I, 0)}{1-\delta}$ is the value of being outside the incumbent's coalition, in which case i is subject to the incumbent's pandemic policy, but no transfers are received.[14] Since the same pandemic policy benefits all selectorate members, whether or not they are in the coalition, then in equilibrium, $p_C = p_I = p$.

For the incumbent to stay in power, she has to match the value V_C^i from the challenger, i.e. $V_I^i = V_C^i$, which means $V_I^i = y_i(p_C, \frac{t_j C}{w_j}) + \delta\big[\frac{w_j}{S}V_I^i + (1 - \frac{w_j}{S})V_o^i\big]$. Imposing $p_C = p_I = p$, substituting the above expressions for V_I^i and V_o^i, and re-arranging obtain:

$$\frac{y_i\left(p, \frac{t_j I}{w_j}\right)}{1-\delta} - \left(\frac{1}{1 - \frac{\delta w_j}{S}}\right)\left[y_i\left(p, \frac{t_j C}{w_j}\right) + \left(1 - \frac{w_j}{S}\right)\left(\frac{y_i\left(p, \frac{t_j I}{w_j}\right)}{1-\delta}\right)\right] = 0.$$

(5)

It is straightforward to show that the incumbent gives transfers that are less than what the challenger would give. That is, re-writing the above as $\frac{y_i(p, \frac{t_j I}{w_j})}{1-\delta}\big[1 - \big(\frac{1}{1-\frac{\delta w_j}{S}}\big)\big(1 - \frac{w_j}{S}\big)\big] = \big(\frac{1}{1-\frac{\delta w_j}{S}}\big)y_i(p, \frac{t_j C}{w_j})$, it is obvious that $y_i(p, \frac{t_j I}{w_j}) < y_i(p, \frac{t_j C}{w_j})$ since:

$$\left(\frac{1}{1 - \frac{\delta w_j}{S}}\right)\left[\frac{1-\delta}{\left[1 - \left(\frac{1}{1-\frac{\delta w_j}{S}}\right)\left(1 - \frac{w_j}{S}\right)\right]}\right] > 1,$$

or, simplifying, $S > w_j$. Thus, to each group, the incumbent gives a smaller transfer than what the challenger offers. The intuition is that even if a member of the incumbent's coalition defects to the challenger, the latter can always replace her in the future. More precisely, a member of the incumbent's coalition who is in group w_j only has $\frac{w_j}{S}$ probability of remaining in the challenger's coalition after the initial defection. This, then, allows the incumbent to exploit her coalition members — the incumbent can give the latter smaller transfers than the challenger, without the members defecting.

More relevant for our analysis is the level of pandemic policy that the incumbent implements. Since the incumbent, to stay in power, would have to provide pandemic policy that is the same as what a challenger would provide,

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[14]In the canonical selectorate framework in which members are homogeneous, the probability that any one member is included in the coalition is $\frac{W}{S}$. Here, with W composed of heterogeneous groups, $\frac{\sum_i w_i}{S} = \frac{W}{S}$, with $\frac{W}{S}$ still capturing the type of regime, with values close to one-half approximating majoritarian democracies.

the optimal policy is given by the conditions $F_i = 0 \ \forall i \in \{W\}$. The following results can then be obtained. (All proofs are in the Appendix.)

Theorem 1. *The **politically optimal pandemic policy** (POPP) chosen by the incumbent government considers the effect of the policy on each group in its coalition, weighing them according to group size.*

Specifically, take any pair (a, b) of members in the coalition, respectively belonging to any pair (c, d) of groups in the coalition, and let $P_a \equiv \frac{d\rho_a}{dp}(Y_{\rho a} - \bar{Y}) + \frac{dY_{\rho a}}{dp}\rho_a$ and $P_b \equiv \frac{d\rho_b}{dp}(Y_{\rho b} - \bar{Y}) + \frac{dY_{\rho b}}{dp}\rho_b$ denote the respective marginal effect of the policy on a and b. Then, $w_c^2 P_a = w_d^2 P_b$.

Theorem 2. *The marginal effect of the POPP is decreasing in group size. Specifically, for any K-tuple of members respectively drawn from each group w_j in W, the member from w_K is most, while the member of w_1 is least, affected.*

Lastly, let the pair of parameters (η_i, ϵ_i) denote the Health Vulnerability–Economic Vulnerability (HV–EV) profile of selectorate member i.

Theorem 3. *The POPP most closely reveals the HV–EV profiles of the members of the smallest group in the incumbent's coalition.*

The model predicts that the smallest group determines pandemic policy. We call this the most 'pivotal' group since such members, should they defect to the challenger's coalition, would be least likely to remain there. In a majoritarian democracy, for example, this group could be approximated by swing voters who, unlike a leader's electoral base, can more easily move in and out of the coalition. In parliamentary systems, the pivotal group could be the smallest party in a coalition government.[15] Note, however, that while pivotalness in the model is strictly modeled by relative sizes of groups, this may not perfectly map into swing voters/parties. A large group could swing electoral outcomes. Also, the composition and size of swing voters and parties can change, whereas in the model, we greatly simplify by assuming them to be constant.

Perhaps such assumption is more applicable to authoritarian regimes, and contexts in which political turnover is less frequent. In such cases, however, pivotalness can take on a different meaning. When membership in the ruling coalition is reserved for certain elites, and if there is a hierarchical structure within the coalition, then the most elite members, i.e. those at the top of the hierarchy, would most likely be the smallest group. Yet it is hard to call them swing members if they tend to be the most loyal members of the coalition. Arguably, however, they are then least likely to remain in a challenger's

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[15]It follows that in the case of single-party majority governments, the single party is also the pivotal group. Such cases are relatively rare, however. Bassi (2017) shows that between 1945 to 2015, only 11.6% of governments in Western Europe were single-party majority.

coalition, should they choose to defect. Thus, pivotalness in this sense is still consistent with the model, since it is based on the probability $\frac{w_j}{S}$ that group w_j would remain in the challenger's coalition after initial defection.

In other words, pivotalness does not translate into relative loyalties of members of the ruling coalition. Thus, in Section "Preliminary Case Studies", we keep close to the model's specification by identifying the pivotal group based roughly on relative sizes in the coalition. For the democratic countries in our sample, we identify the group of voters or parties that swung the most recent election towards the incumbent — compared to the electoral base of the incumbent's party, this group is much smaller.

For the authoritarian countries in our sample, we simply look at the likely members of the leader's coalition, and juxtapose their HV–EV profiles against the country's initial pandemic policy. That is, we make no claim as to who, if any, are most pivotal in the coalition. Note that the model can easily accommodate the case when members are equally pivotal. Theorem 1 then implies that the incumbent weighs the marginal effect of that policy equally among equally pivotal members. That is, if $w_c = w_d$, then $w_c^2 P_a = w_d^2 P_b$ reduces to $P_a = P_b$. This further implies that if all coalition members were equally pivotal, i.e. $w_1 = w_2 = \cdots = w_K$, then the policy has the same marginal effect on each member of any K-tuple drawn from W.

This is not to say, however, that the HV–EV profiles of all coalition members would then be the same. To see this, from the proofs of Theorems 1 and 3, one can write the policy's marginal effect of a coalition member $l \in W$ as $P_l \equiv \left(\frac{\partial \rho_l}{\partial p} + \eta_l \frac{\partial \left(\frac{\sum_i^S \rho_i}{S} \right)}{\partial p} \right) (Y_{\rho_l} - \bar{Y}) + \left(\frac{\partial Y_l \rho}{\partial p} + \epsilon_l \frac{\partial (\sum_i^S y_i)}{\partial p} \right) \rho_l$. Thus, when l's health vulnerability parameter is high, while her economic vulnerability is low, then an aggressive pandemic policy would generate large marginal effect P_l since it induces large total health effect $\frac{\partial \left(\frac{\sum_i^S \rho_i}{S} \right)}{\partial p}$, which is weighted by high η_l. (The negative total economic effect $\frac{\partial \left(\sum_i^S y_i \right)}{\partial p}$ is mitigated for l because her economic vulnerability ϵ_l is low.) By analogous reasoning, when l's health vulnerability is low, while her economic vulnerability is high, then it is lax pandemic policy that would generate large P_l.

Thus, if all coalition members are equally pivotal, and if they all have the same high HV–low EV profiles, then the politically optimal pandemic policy would be aggressive. If they have the same low HV–high EV profiles, the policy would be lax. If they have a mix of profiles, then the policy would be moderate in order to maintain $P_1 = P_2 = \cdots = P_W$.

More generally, this logic precisely holds when some members are more pivotal than others. In this case, pandemic policy is such that the marginal effect of the policy is the same for all members of the most pivotal group. If, say, coalition members $l = 5, 6, 7, \ldots, W$ belong to group w_K, with $w_1 > w_2 > \cdots > w_K$,

Table 1: Taxonomy of economic vulnerability (EV) and health vulnerability (HV).

		Economic vulnerability	
		Low	High
Health vulnerability	Low	Moderate pandemic policy	Least stringent pandemic policy
	High	Most stringent pandemic policy	Moderate pandemic policy

then pandemic policy is such that $P_5 = P_6 = \cdots = P_W$. Again, if these latter members have the same high HV–low EV profiles, pandemic policy would be aggressive. If they have the same low HV–high EV profiles, policy would be lax. If their profiles are mixed, policy would be at some moderate level.

Table 1 summarizes the predicted relationship between the politically optimal pandemic policy and the health-economic vulnerability profiles of the most pivotal members of the coalition (whether they are a proper subset of W, or the entire W).

Before we apply this prediction to some case studies, it is useful to explain intuitively why the incumbent would choose policy that caters to the preferences of the most pivotal group. Because public goods or policy confer benefits to all members of the selectorate, in equilibrium, the incumbent provides policy as the challenger would. Unlike transfers, public policy cannot be used to engender loyalty among coalition members, as they will also get the policy if they defected to the challenger.

The question, then, is, what type of policy would the challenger provide? When policy has *homogeneous* effects among the selectorate and coalition members, then the challenger would do no better than to offer the policy that would maximize *a* coalition member's utility from it, subject to the government budget constraint.[16]

However, when coalition members derive heterogeneous utility from policy and belong to different groups, the incumbent 'balances' policy provision across groups. To illustrate, consider a simple case in which every member of group w_1 has the same marginal benefit P_1, while every member of more pivotal group w_2 has the same marginal benefit P_2, then the group's total marginal benefit from policy is $w_1 P_1$, while the total marginal benefit of group w_2 is $w_2 P_2$. In this case, by Theorem 1, the optimal policy provision is such that

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[16]More precisely, when both public policy and transfers are provided to coalition members, then the optimal policy is that which maximizes the coalition member's utility from the policy and transfers, subject to the government budget constraint.

$w_1^2 P_1 = w_2^2 P_2$ which, when $w_1 > w_2$, implies that to 'balance' preferences across groups, the marginal benefit of the policy to a member of group w_1 must be smaller than that to a member of the more pivotal group w_2. That is, $P_1 < P_2$ since $w_1 > w_2$. If groups are equally pivotal, then the optimal balancing of preferences is such that marginal effects are equal, i.e. $P_1 = P_2$.

Preliminary Case Studies

As there is no unified database that would permit us to conduct an econometric investigation, we use some case studies for preliminary empirical analysis. We first compare otherwise similar countries such as Brazil and Argentina, and Denmark and Sweden, which choose very different pandemic policies, before applying our model to the UK and the United States which had comparable policies.[17] We then look at Russia and China, to gauge the extent to which the model's predictions apply to authoritarian regimes. Several caveats are in order before proceeding. First, in no cases do we attempt to explain the entirety of the variation in pandemic policies; other factors, including cultural and idiosyncratic, are also clearly relevant. Second, identifying the most pivotal members of the incumbent coalition is not always obvious and relies on a degree of country-specific knowledge. This is especially true for Russia and China, since one cannot use past election outcomes to infer who the incumbent's pivotal group is. Thus in all cases, we regard our analysis here as a starting point for further work.

Argentina and Brazil

Argentina under Alberto Fernández adopted an aggressive pandemic policy. A full lockdown was imposed on March 19, at which point Argentina had only 128 official Covid-19 cases. This was kept in place until July 17th. The result is that, as of July 9, the outbreak has been contained — 87,030 cases and 1,694 confirmed deaths. In contrast, Brazil was slow to impose major restrictives and the federal government sought to limit local lockdown measures. President Bolsanaro fired two health ministers and opposed local attempts to impose lockdowns, for instance, by the mayor of San Paulo (see Figure 4).

Existing explanations of this policy divergence point to the personality of Jair Bolsanaro and also to his lack of a party base. For instance, the Guardian notes that "Bolsonaro split with the party that brought him to power, whereas Fernández is a product of one of Latin America's most enduring and powerful

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[17]Note we focus on the *initial* response to Covid-19. We do not consider the speed at which countries reopened as these policies are likely endogenous to the number of cases.
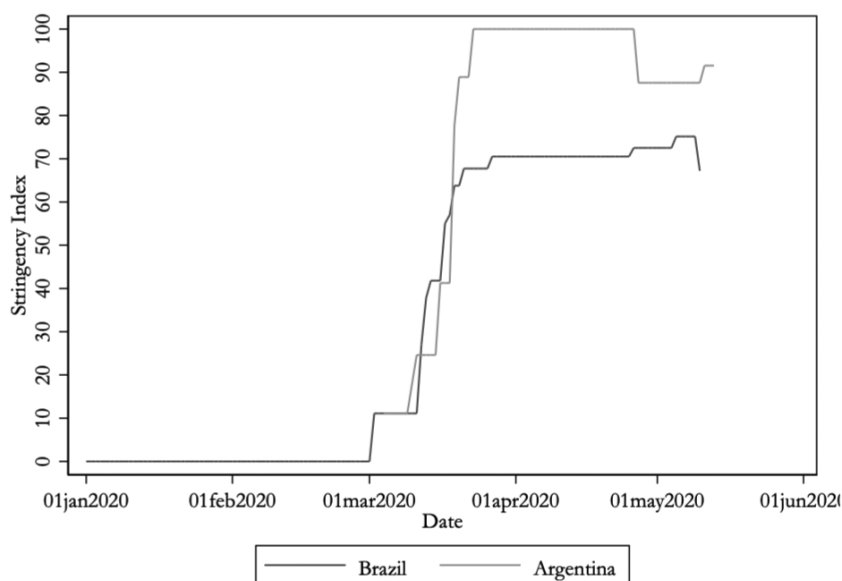
Figure 4: The contrasting pandemic policy of Argentina and Brazil.

national movements" (Goñi, 2020).[18] But to better understand this divergence it is more informative to look at the respective coalitions that elected Bolsanaro and Fernández.

Bolsanaro was elected following a sharp recession. He was able to win power from the Workers' Party by bidding away the support of working class voters. The voters who swung the electors to Bolsanaro were non-ideological working-class voters who voted on grounds of the economy and law and order (see Hunter and Power, 2019).[19] These voters would be highly vulnerable to the economic consequences of a stringent pandemic policy (i.e. high EV). Our model suggests that Brazil's sluggish response to Covid-19 is a response to the concerns of the group that were pivotal in his election.

Further confirmation of this interpretation comes from recent polls that suggest an improvement in Bolsanaro's popularity (see Lima *et al.*, 2020). While Bolsanaro's handling of the epidemic attracted widespread international

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[18]Another relevant factor was that Bolsanaro's policy response was shaped by the desire of opposing the lockdown policies of two prominent governors: of the State of Sao Paulo (Joao Doria), and of the State of Rio de Janeiro (Wilson José Witzel).

[19]Specifically, while affluent voters in Brazil have long been concerned with crime in the 2018 election "Poorer segments, who not only lack access to such options (e.g. gated communities) but also typically reside in areas of greater crime, sought credible promises of protection as well" (Hunter and Power, 2019, p. 74).

criticism, and Brazil has experienced one of the highest death tolls from the disease in the world, the pivotal voters who helped elect him in 2018 have benefited economically.

In contrast, Fernández was elected by a leftwing coalition. The working-class poor — those with the highest EV — were already likely to vote for Everyone's Front–which comprised various social democratic, Peronist, and Communist parties. Our model predicts that the Fernández government does not have to respond to their demands. Rather, policies will be more responsive to more pivotal members of the coalition who are more vulnerable to the pandemic itself. In the case of Everyone's Front, these may have been voters with Peronist learnings, who tend to be older than the other members of the Everyone's Front coalition.

Fernández's initially tough stance also had political dividends.[20] The political decisions of both leaders in the medium-run, however, depend on how the trade-off between the economy and health is perceived to evolve. This is something we leave for future research.

Denmark and Sweden

Both Denmark and Sweden are governed by left-wing coalitions that won power in 2019. Both are Scandinavian social democracies with high trust in government and high levels of social capital. While there are social and cultural differences between these two countries, these do not seem strong enough to explain the very different responses to Covid-19.

Denmark shut down on March 11 2020 — the second country in Europe to do so. This was only 12 days after the first confirmed case was announced on February 27. On March 13, Denmark closed its borders. In contrast, Sweden refrained from imposing an official lockdown, instead issuing guidance on social distances and risk avoidance. Schools, cafes, and restaurants remained open (see Figure 5).

Our model suggests an explanation of this divergence. In Sweden, the smallest group in the governing coalition is the Green Party. The spokesperson of the Green Party, Isabella Lövin, who is also Deputy Prime Minister, strongly defends the policies put in place by the Public Health Agency of Sweden (Folkhälsomyndigheten) and Anders Tegnell (Milne, 2020c).[21]

Consistent with our reasoning, the voters of the Green Party skew young. Hence they have a low HV but they are likely to have a relatively high EV.

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[20]The FT reports that "[d]espite one of the strictest and longest lockdowns in the world, Mr Fernández's approval ratings remain relatively high at about 60 per cent, although they have been gradually falling from highs of more than 80 per cent in March when the pandemic first hit Argentina, according Juan Germano at Isonomia, a local pollster" (Mander, 2020).

[21]Importantly, this discretionary authority is protected in the constitution and as such may seem to be outside the considerations of our model (Jonung, 2020).
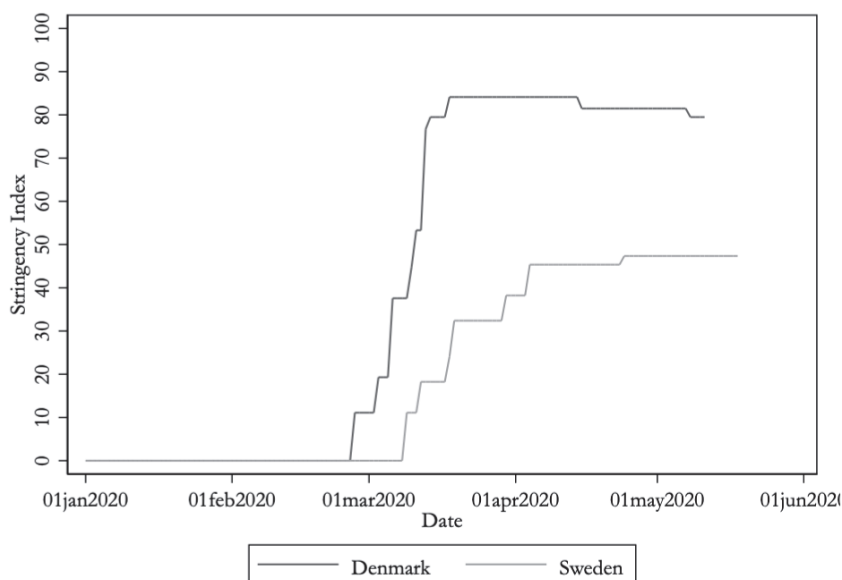
Figure 5: The contrasting pandemic policy of Denmark and Sweden.

Indeed, critics have charged that this is a "middle-class strategy" (Göransson, 2020).[22] Other explanations of Swedish policy rest on the discretion given to the Public Health Agency. Nonetheless, this explanation does not explain why there was little pressure on the Public Health Agency from the government and why criticism for not adopting a more aggressive pandemic policy has come from parties on political right.[23]

Sweden's high per capita death toll between April and June subsequently attracted severe criticism but Sweden's economy also fell significantly less in the second quarter of 2020 than did other European economies such as Spain and Germany's (Milne, 2020a).[24]

The UK and USA

The UK stands out from Figure 1 as having been slow to implement lockdown policies. The per capita fatality rates from Covid in the UK are also among the

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[22]These critics charge that "a left-leaning government that embraced a strategy that privileged the healthy and resilient but exposed the vulnerable to unnecessary contagion" (Göransson, 2020).

[23]See Lindeberg (2020).

[24]Note that by August, Sweden's per capita cases and death had fallen substantially (see Milne, 2020b).

highest in the world. In the press, the reluctance to impose a strict lockdown early on has been alternatively attributed to the liberal political preferences of Prime Minister Boris Johnson or to incompetence. While these factors may have been relevant, our model points to the importance of the new electoral coalition that was responsible for providing the Johnson government with its large majority in December 2019.

Johnson's victory rested on voters in the north of England who traditionally voted Labour. From the Economist: "The party of the rich buried Labour under the votes of working-class northerners and Midlanders." (*The Economist*, 2019). From the perspective of our model, northern working-class voters are the newest and most pivotal part of the current governing coalition. Indeed in his election results speech, Johnson acknowledged: "You may only have lent us your vote and you may not think of yourself as a natural Tory . . . And if that is the case, I am humbled that you have put your trust in me, and that you have put your trust in us. And I, and we, will never take your support for granted. And I will make it my mission to work night and day, flat out, to prove you right in voting for me this time, and to earn your support in the future."[25] These voters are particularly sensitive to downturns in the economy. Any lockdown policy imposed by Johnson had to carry the support of this key constituency. As a result, even had he been more alert to the threat posed by the pandemic, it is unlikely he would have been able to impose an earlier, more severe, lockdown policy.

The case of the United States is similar (see Figure 6). President Donald Trump was relatively slow to acknowledge the case of the threat posed by Covid-19. While this has been attributed to his personality, it also reflects his focus on the economy for the 2020 election. Indeed our model suggests that this focus on the economy is driven by concern over the pivotal members of the Trump electoral coalition.

Our framework can account for otherwise puzzling observations. For instance, a much remarked upon finding in the United States is that Covid-19 is more likely to kill Republicans than Democrats, as the former are older on average and more likely to have significant comorbidities. The Washington Post carried the headline "Republicans are endangering their own supporters and destroying Trump's electoral map"[26] Indeed Johnson *et al.* (2020) hypothesized that predicted fatalities from Covid-19 could swing elections in favor of the Democrats.

However, our model explains why Trump's policies have tended to favor reopening the economy despite fears of a second-wave. The incumbent should be most responsive, not to the concerns of his or her base — elderly, conservative, Republican voters in Southern states are unlikely to defect to the

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[25]https://www.news24.com/news24/columnists/guestcolumn/transcript-boris-johnsons-election-victory-speech-in-full-20191213.

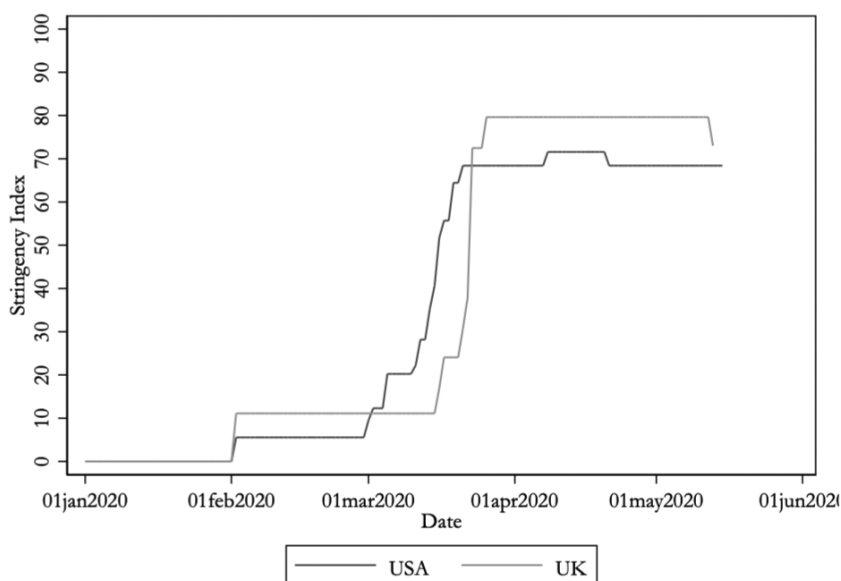[26]See Cadelago (2020) and Rubin (2020).

Figure 6: The similar pandemic policy of the UK and USA.

Democrats — but to the concerns of the most pivotal members of the coalition. Viewed through this lens, it is entirely rational for Trump's policies to mirror the concerns of blue-collar workers in states such as Wisconsin, Ohio, and Pennsylvania who were critical to his 2016 election win.

It is important to recognize that in both the UK and the USA there is a rightwing fringe that has opposed both lockdowns and other pandemic policies such as mandates for mask-wearing.[27] In general, however, pandemic policies in both the UK and USA have not been responsive to this fringe (even though President Trump has indulged them rhetorically). This is consistent with the argument we have made that pandemic policies will be responsible to pivotal members of the ruling coalition, rather than the base.

Numerous other arguments have been proposed to explain the variation in pandemic responses. For example, it has been claimed that populist leaders have been especially slow in their response. But while this claim fits the examples of Bolsanaro and Trump, it does not fit other populist leaders like Rodrigo Duterte in the Philippines who reacted aggressively (Billing, 2020). Nor does this explanation explain why populist leaders would be slow to react.

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[27]In the UK, this skepticism is evidence in the right-wing of the Conservative Party, a loyal voting base for Johnson. It is linked to the website Lockdown Sceptics setup by Toby Young, a long-term Johnson ally. In USA, mask wearing has also been highly politicized.

In contrast, the explanation we have offered here suggests that what matters are the pivotal members of the winning coalition and that this logic should reveal why populist leaders have pursued divergence pandemic policies.

The electoral concerns we have discussed here can also apply to the decision to open up following a lockdown, and the nature of the economic stimulus passed in response to the pandemic. We leave an analysis of these policies to subsequent research.

Russia and China

Neither Russia nor China is democratic. There is thus no clearcut way to identified the pivotal members of the incumbent's coalition. Our approach is to simply examine the leading members of the incumbent's coalition in both countries and to identify their HV–EV profile.

We first assess health vulnerabilities. We collect information on Russia's political elite. Specifically, we employ a list of 196 individuals who are reported to comprise Putin's inner circle and who can be viewed as part of the ruling coalition.[28] Their average age is 58.5, but there is considerable diversity: the youngest member is 38, whereas the oldest is 81, and the standard deviation is almost 8 years (see Table 2).

To study the ruling elite of China we follow the lead of recent scholarship and focus on the members of 19th National Congress of the Chinese Communist Party (CCP).[29] The stark finding is that to the extent that the National

Table 2: A Comparison of the HV of Chinese and Russian political elites.

	Russia	19th Party Congress	China Politburo Standing Committee	Politburo
Average age	58.6	63	65.5	65.9
Standard deviation	7.9	3.3	3.7	2.2
N	196	205	.25	7

The list of Russia political elites is from McKenzie *et al.* (2018). The Chinese political elite is defined as alternatively as the members of 19th National Congress of the Chinese Communist Party, and the membership of the Politburo and Politburo Standing Committee as of January 2020.

[28]This list is taken from McKenzie *et al.* (2018). To obtain information about each individual we used a collection of online sources including Wikipedia. The original list comprised 198 members but we removed the two who have passed away since 2018.

[29]This list is available at Wikipedia (19th National Congress of the Chinese Communist Party n.d.)

Congress reflects Chinas' political elite, the age distribution of this group is tightly distributed around 63. Based on this evidence, we would expect the Chinese political elite to have a systematically higher health vulnerability.[30] We also examined the composition of the Politburo Standing Committee and the Politburo. The former comprises 25 members — with an average age of 65.5 — the latter is a subset of the former and comprises seven members with an average age of 65.9. The age distribution of Chinese political elites thus suggests that they have a fairly uniform HV.

What about the relative economic vulnerability of Chinese and Russian elites? Again, due to the nature of autocratic regimes, there are no readily available measures of where members of the political elite derive their incomes from. Nonetheless, the extensive literature on China's political elites notes the extent to which their careers and the legitimacy of CCP rule is tied to economic performance (Bo, 1996; Jia *et al.*, 2015; Landry *et al.*, 2018). In contrast, the literature on Putin's Russia suggests that many members of Russia's political elite are less sensitive to the domestic economy (see Dawisha, 2014). To the extent that their income sources are in oil, gas, and other natural resources, they are sensitive to the global economy rather than the domestic one. That is, if international markets collapse this will affect their incomes more than what happens to the domestic economy. This mutes the economy-health trade-off and can help to explain their support for relatively stringent initial pandemic policies.

Observers divide the Russian political elite into several categories (Rutland, 2016): (i) Putin's inner circle, many of whom have become extremely rich and possess a diversified set of assets; (ii) the oligarchs whose wealth largely stems from natural resources, particularly oil and gas; (iii) the *siloviki* or members of the security administration with a military background; and (iv) the bureaucrats. It is not possible to measure the extent to which all of Russia's political elites are sensitive to either the domestic or the foreign economy but we can focus on group (ii). For the 88 oligarchs listed among the 196 individuals, over 1/3 (31) list either oil or metallurgy as one of their main sources of income. Given their influence, it is plausible to argue that Russian political elites have a low EV.

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[30]Note that it is especially hard to assess the Chinese policy response to Covid-19 as China was the first country impacted in January and February 2020. The Chinese government has been criticized for being slow to respond to the outbreak. But lockdowns were imposed first on Wuhan and then on other cities in Hubei by the end of January. At the time, Western media sources regarded these responses as draconian. However, by our measure of stringency at 100 deaths, China Covid-19 response can be categorized as moderate to lax.

Concluding Comments

We have developed a selectorate model of the tradeoffs facing an incumbent leader facing a pandemic. Responding to the pandemic imposes heterogeneous costs on members of the incumbent's ruling coalition. Specifically, policies like lockdowns impose economic costs that are disproportionately borne by some groups. The benefits of these policies disproportionately benefit those individuals most at risk from disease. We show that the incumbent's chosen policy is most responsive to the pivotal members of the incumbent's ruling coalition. By using selectorate theory, we formally demonstrate that this logic holds irrespective of the type of regime and the particular institutions that govern political turnover. We are then able to apply the model to analyze the variation in pandemic policies across a wide spectrum of countries — Argentina and Brazil, Denmark and Sweden, the UK and USA, and Russia and China.

More generally, the model can be adapted for other types of policies or public goods that have heterogeneous effects on citizens. By introducing heterogeneous preferences and groups within the ruling coalition, we significantly advance selectorate theory as a 'power tool' for analyzing public good/policy provision even in autocracies, rather than the 'dull blade' that Gallagher and Hanson (2015) claim.

References

19th National Congress of the Chinese Communist Party. n.d. https://en.wikipedia.org/wiki/19th_National_Congress_of_the_Chinese_Communist_Party.

Acemoglu, D., V. Chernozhukov, I. Werning, and M. D. Whinston. 2020. "A Multi-Risk SIR Model with Optimally Targeted Lockdown". May. https://economics.mit.edu/files/19698.

Bassi, A. 2017. "Policy Preferences in Coalition Formation and the Stability of Minority and Surplus Governments". *The Journal of Politics* 79(1): 250–68.

Billing, L. 2020. "Duterte's Response to the Coronavirus: 'Shoot Them Dead'". *Foreign Policy* April. https://foreignpolicy.com/2020/04/16/duterte-philippines-coronavirus-response-shoot-them-dead/.

Bo, Z. 1996. "Economic Performance and Political Mobility: Chinese Provincial Leaders". *Journal of Contemporary China* 5(12): 135–54.

Bueno de Mesquita, B., J. D. Morrow, R. M. Siverson, and A. Smith. 1999. "An Institutional Explanation of the Democratic Peace". *American Political Science Review* 93(4): 791–807. DOI: 10.2307/2586113.

Bueno de Mesquita, B., J. D. Morrow, R. M. Siverson, and A. Smith. 2003. *The Logic of Political Survival.* Cambridge, MA: MIT Press.

Bueno De Mesquita, B. and A. Smith. 2010. "Leader Survival, Revolutions, and the Nature of Government Finance". *American Journal of Political Science* 54(4): 936–50.

Bueno de Mesquita, B. and A. Smith. 2018. "Political Loyalty and Leader Health". *Quarterly Journal of Political Science* 13(4): 333–61.

Cadelago, C. 2020. "Study: Elderly Trump Voters Dying of Coronavirus Could Cost Him in November". *Politico* May. Accessed. https://www.politico.com/news/2020/04/23/how-coronavirus-could-upend-2020-battlegrounds-204708.

Dawisha, K. 2014. *Putin's Kleptocracy: Who Owns Russia?* New York: Simon & Schuster.

Desierto, D. A. 2018. "What Resource Curse? The Null Effect of Remittances on Public Good Provision". *Journal of Theoretical Politics* 30(4): 431–50.

Dingel, J. I. and B. Neiman. 2020. "How Many Jobs Can Be Done at Home?" *Journal of Public Economics* 189(September): 104235–8.

Favero, C., A. Ichino, and A. Rustichini. 2020. "Restarting the Economy while Saving Lives under Covid-10".

Francois, P., F. Trebbi, and K. Xiao. 2020. "Factions in Nondemocracies: Theory and Evidence from the Chinese Communist Party". *Tech. rep.* No. DP15226. CEPR, August.

Gallagher, M. E. and J. K. Hanson. 2015. "Power Tool or Dull Blade? Selectorate Theory for Autocracies". *Annual Review of Political Science* 18(1): 367–85.

Gehlbach, S. 2013. *Formal Models of Domestic Politics*. Cambridge: Cambridge University Press.

Goñi, U. 2020. "'You Can't Recover from Death': Argentina's Covid-19 Response the Opposite of Brazil's". *Guardian* May. Accessed. https://www.theguardian.com/world/2020/may/10/argentina-covid19-brazil-response-bolsonaro-fernandez.

Göransson, M. B. 2020. "Responsibility of the Swedish Left for Sweden's COVID-19 Tragedy". *Open Democracy* August. https://www.opendemocracy.net/en/can-europe-make-it/responsibility-of-the-swedish-left-for-swedens-covid-19-tragedy/.

Heath, A. 2020. "The Home-Working Revolution Will Derail the Middle-Class Gravy Train". *The Daily Telegraph* July. Accessed. https://digitaleditions.telegraph.co.uk/data/298/reader/reader.html?#!preferred/0/package/298/pub/298/page/68/article/64478.

Hunter, W. and T. J. Power. 2019. "Bolsonaro and Brazil's Illiberal Backlash". *Journal of Democracy* 30(1): 68–82.

Jia, R., M. Kudamatsu, and D. Seim. 2015. "Political Selection in China: The Complementary Roles of Connections and Performance". *Journal of the European Economic Association* 13(4): 631–68.

Johnson, A. F., W. Pollock, and B. Rauhaus. 2020. "Mass Casualty Event Scenarios and Political Shifts: 2020 Election Outcomes and the US Covid-19 Pandemic". *Administrative Theory & Praxis* 42(2): 249–64.

Johnson, B. 2019. *Boris Johnson's Victory Speech*. https://www.news24.com/news24/columnists/guestcolumn/transcript-boris-johnsons-election-victory-speech-in-full-20191213.

Jonung, L. 2020. "*Sweden's Constitution Decides Its Covid-19 Exceptionalism*". Working Paper No. 11. Lund University, Department of Economics School of Economics and Management, June.

Landry, P. F., X. Lü, and H. Duan. 2018. "Does Performance Matter? Evaluating Political Selection along the Chinese Administrative Ladder". *Comparative Political Studies* 51(8): 1074–105.

Lima, M. S., A. Rosati, and S. P. Iglesias. 2020. "Brazil Hands out so Much Covid Cash That Poverty Nears a Low". *Bloomberg.* Accessed. https://www.bloomberg.com/news/articles/2020-09-02/brazil-hands-out-so-much-covid-cash-that-poverty-nears-a-new-low.

Lindeberg, R. 2020. "Sweden's PM Hits Back at Criticism Over Covid Strategy". *Bloomberg* June. Accessed. https://www.bloomberg.com/news/articles/2020-06-14/sweden-s-pm-hits-back-at-criticism-over-outlier-covid-strategy.

Mander, B. 2020. "Back to Argentina's Treacherous Politics for Alberto Fernández". *Financial Times.* Accessed. https://www.ft.com/content/0dc1a3df-a3cd-4021-8833-87d70be135b1.

McKenzie, S., N. Gaouette, and D. Borak. 2018. *The Full 'Putin List' of Russia Oligarchs and Political Figures Released by the US Treasury.* Accessed. https://www.cnn.com/2018/01/30/politics/full-us-list-of-russian-oligarchs-with-putin-ties-intl/index.html.

Milne, R. 2020a. "Sweden's Economy Shrank Less Than Eurozone's at Height of Pandemic". *Financial Times* August. https://www.ft.com/content/fdb6fbe4-4997-4f35-ba41-06ac2d6fd824.

Milne, R. 2020b. "Sweden's Pandemic No Longer Stands Out". *Financial Times* August. https://www.ft.com/content/7acfc5b8-d96f-455b-9f36-b70dc850428f.

Milne, R. 2020c. "Swedish Ministers Defend Resisting Coronavirus Lockdown". *Financial Times* April. https://www.ft.com/content/5eb0a90b-ceb5-4441-9456-e30f9a2a7028.

Pulejo, M. and P. Querubín. 2020. "Electoral Concerns Reduce Restrictive Measures During the COVID-19 Pandemic". Working Paper.

Roser, M., H. Ritchie, E. Ortiz-Ospina, and J. Hasell. 2020. "Coronavirus Pandemic (Covid-19)". *Our World in Data.* https://ourworldindata.org/coronavirus.

Rubin, J. 2020. "Republicans are Endangering Their Own Supporters and Destroying Trump's Electoral Map". *Washington Post* July. 07/13/20.

Rutland, P. 2016. "Russia's Post-Soviet Elite". *POLIS: Political Studies* 6(3): 55–72.

Shih, V., C. Adolph, and M. Liu. 2012. "Getting Ahead in the Communist Party: Explaining the Advancement of Central Committee Members in China". *American Political Science Review* 106(1): 166–87.

Smith, A. 2008. "The Perils of Unearned Income". *The Journal of Politics* 70(3): 780–93.

The Economist. 2019. "Victory for Boris Johnson's All-New Tories" December. Accessed. https://www.economist.com/leaders/2019/12/13/victory-for-boris-johnsons-all-new-tories.