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Stay-at-home orders were issued earlier in economically unfree states

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Abstract

Stay-at-home orders curtailed the individual liberty of those across the United States. Governors of some states moved swiftly to impose the lockdowns. Others delayed and a few even refused to implement these policies. We explore common narratives of what determines the speed of implementation, namely partisanship and virus exposure. While correlation exists, we show that the most consistent explanation for the speed of the implementation of these orders is the state's economic freedom. It was the economically unfree states that issued stay-at-home orders earlier.

KEYWORDS

coronavirus, economic freedom, economic freedom of North America, *freedom of the 50 states*, liberty, stay-at-home orders

JEL CLASSIFICATION

H12; D8; I1

1 | INTRODUCTION

The stay-at-home orders issued across the United States are an invasion of personal liberty. Commerce and basic freedom of movement were severely curtailed. The costs and benefits of the lockdown are likely enormous, and it will take some time to be able to fully appreciate their magnitudes. A bounty of scholarship is likely to arise over the next several years attempting to comprehend the impacts that COVID-19 has had on the world. Here, we focus on a narrower question—the factors that explain the decision of state governors to issue stay-at-home orders.

On December 31, 2019, China reported the existence of a cluster of pneumonia cases in Wuhan. They confirmed that these cases were due to the novel coronavirus (COVID-19) on

January 7, 2020 (Holshue *et al*., 2020). Since then, the virus has spread around the world. The first case in the United States was on January 19 and the first death was on March 2. Governors responded by issuing stay-at-home orders. California moved first, imposing the restrictions on March 19, followed closely by Illinois, New Jersey, and New York. Governors of some other states delayed. For example, governors of Alabama, Missouri, and South Carolina did not initiate lockdowns until well into April. In fact, governors of seven states refused to adopt these statewide policies, instead calling on citizens to choose to take responsible actions. Our focus here is on this variation in gubernatorial decision making.

We first explore two popular narratives. First, recent commentators and academics have linked responsiveness to partisan ideology. The argument is that Republican leadership is less responsive to public health. For example, Nobel Laureate Joseph Stiglitz cites Republican desire to cut public health spending in the years leading up to the pandemic as an example of government failure.[1] Also, early in April 2020, two NBER working papers were released (Allcot *et al*., 2020; Barrios and Hochberg, 2020), both of which evaluate the behavior of "Trump voters." This research tracks cell phone movement and Google search behavior, and administers attitudinal surveys. These works, and other newly posted research in progress (Anderson, 2020; Gadarian *et al*., 2020) identifies variation in social distancing behavior and attitudes toward the lockdowns by political affiliation. The concern is policymaking is colored by partisanship.

A second narrative is that policy actions taken were in response solely to fears of the disease's spread and the capacity of the health care system to handle the illnesses. High-population, urban areas have a tighter concentration of people, increasing the speed of the virus's spread. The state's connectedness to the rest of the world, especially its contact with China, necessitated the restrictions. More rural states without urban centers did not have the immediate needs. Thus, exposure is an important determinant of policy.

We explore the relationship between the timing of the stay-at-home orders and these two narratives. Importantly, we add a third—respect for liberty. We show that while measures of partisanship and exposure are correlated with the speed at which a state issued the stay-at-home orders, these factors fade in importance once we control for the state's level of economic freedom. In fact, when political and exposure variables are included with economic freedom as explanatory variables, only economic freedom stands out consistently across specifications as being able to explain when the lockdowns were instituted. The leadership of economically free states delayed, or refused to implement, statewide restrictions to movement and trade.

2 | STAY-AT-HOME ORDERS

We collect the date at which each state's stay-at-home order took effect, merging information from NBC's web site with Ballotpedia's coronavirus information site.[2] We do not include the District of Columbia or Puerto Rico in the analysis as they are not included in our economic freedom indices.

There are seven states that did not issue a stay-at-home order: Arkansas, Iowa, Nebraska, North Dakota, South Dakota, Utah, and Wyoming. We focus only on statewide orders issued by

[1]See Joseph Stiglitz's online lecture (April 27) at Princeton University's Benheim Center "The U.S. Response to COVID-19": https://bcf.princeton.edu/event-directory/covid19_11/.

[2]For the small number of discrepancies, we used a third news source as a tie-breaker. The few discrepancies that existed were because one source mistakenly recording the date of the announcement, rather than the date of implementation.

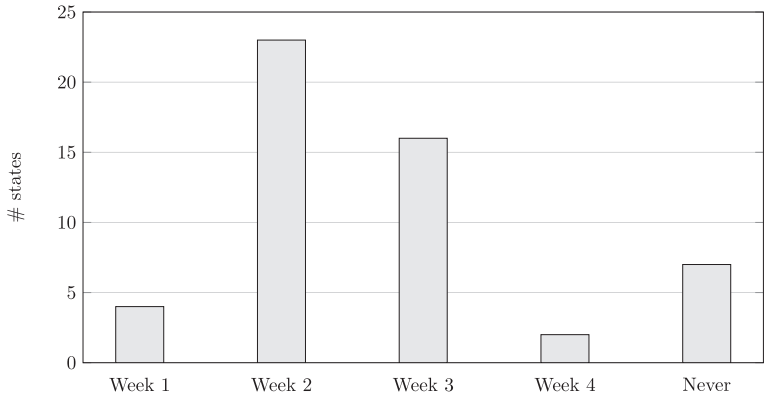

FIGURE 1 Timing of the stay-at-home orders each column represents the number of states that adopted the order during the associated week. Week 1 is the week of March 15–21. Week 2 is the week of March 22–28. Week 3 is the week of March 29–April 4. Week 4 is the week of April 5–11

Governors. Some counties and municipalities in the U.S. have implemented their own restrictions.[3] Figure 1 depicts the distribution of the timing of the orders. While the bulk of the orders went into effect during the second week of the implementation period (March 22–28), there is clearly variation in the timing and willingness of governors to take this step.[4]

To quantify the speed of implementation of the stay-at-home orders, we create several variables. $Days_s$ measures the number of days between the first cases of COVID-19 in the United States (January 19) and the day the stay-at-home order went into effect in state s. Since the easing of these orders began on April 25,[5] we use this date as the upper bound. Hence, the maximum number of days possible is 95. The handful of states that did not implement the lockdown receive this score. For the 50 states, the mean number of days is 72. We also create a series of indicator variables. The first eight states to implement the orders are categorized as "early adopters." The last eight are "late adopters." This corresponds with $Days_s < 65$ and $Days_s > 72$, respectively.

2.1 | Exposure

The first narrative was one of necessity. Having the virus (whether one either knows or does not know one's health status) and being in public creates a negative externality. A common public interest argument is that regulatory responses are needed to mitigate the negative spillovers. Some states were simply more exposed to the pandemic, and exposed earlier. This adjusted their cost–benefit calculation. The loss of liberty and the economic damages to a stay-at-home order is costly, but the welfare gains from a lockdown represent the benefit. When a

[3]This includes four counties in Utah. The seven states without a stay-at-home order issued less broad, localized policies instead. Further, these states issued statewide guidelines and some restrictions (just not stay-at-home orders). For example, they instituted requirements to wear masks in public places and limited the number of people at gatherings.
[4]There is, of course, variation in the breadth of the restrictions across the states For example, see Redford and Dills (2021) for a discussion of shutdowns of alcohol sales. For a discussion of the knowledge problem associated with designating which economic activities are "essential" see Storr *et al.* (2021).
[5]Mississippi issued their "Safer-at-Home" revision on April 24.

population is more exposed, and exposed earlier to the virus, then the benefit is greater, and the exposure becomes a reasonable motivation for state governments to impose this regulation.

We evaluate exposure along a number of dimensions. First, the presence of large cities accelerates the spread. Higher population density creates less natural "physical distance". Major metropolitan areas are more connected than rural areas. People travel from across the country and around the world to major U.S. cities. To account for this form of exposure, we record a state as having a major city if it has one of the 20 most populous cities in the United States. The 20 cities with the largest populations are spread out over 11 states.

Second, the virus originated in China. Countries with more frequent interaction with China, such as Italy and Iran, saw the pandemic hit earlier and stronger (Chinazzi *et al*., 2020). Similarly, the first case and first death in the United States was on the west coast. While crude and imprecise, we use the proportion of the population that identifies as Asian as our proxy for contact with China. Specifically, we use the 2018 American Community Survey estimates, as this is the most recent Census data.[6] The mean value for the Asian population share is 0.043, but it ranges from 0.376 (Hawaii) to 0.007 (West Virginia).

An alternative is to attempt to directly measure contact with China. Movement occurs primarily via airlines. To measure this, we record each U.S. city that has a direct flight to an airport within China in 2019. There are nine airlines providing such flights and 15 U.S. cities reached, which are spread out over 10 states. Therefore, we create an indicator variable for whether a state has a city connected to China with flights in 2019.

Finally, we collect the date of each state's first coronavirus-related death from Johns Hopkins University's *Coronavirus Resource Center*.[7] Washington was the first state to experience its first death (March 2), while Wyoming was the last state to record a death (April 14). Unfortunately, every state has experienced at least one death.

While the date of the first death will measure the swiftness in which the virus reached the state, it does not account for intensity felt early in the pandemic. Thus, we also record the total number of coronavirus-related deaths as of March 19, the date of the first state lockdown. Unfortunately, there were already 200 deaths by this date, with 73 of them in Washington state. The median number of deaths, though, was zero.

We choose to use the date of the first death and the number of deaths as our measures of virus infestation. There has been much debate and concern over the validity of the confirmed cases data. It is not clear how much testing was going on early in the pandemic. The data that exists is likely biased. Deaths, on the other hand, are a more reliable statistic and can be expected to be highly correlated with the disease's prevalence. If the virus came to a state late, then the first recorded death can be expected to be later and the number of deaths by March 19 should be low. Like the implementation of the stay-at-home orders, the first death is recorded as the number of days since the first case. Across the United States, the mean value is 61.8.

We first explore the correlation between the number of days since the first case in the United States and the day the order went into effect and each of these exposure-related variables. They are presented in Table 1.

Again, there seems to be validity in the exposure argument. States with a large city are less likely to delay. The *p*-value for this correlation is .108, near the convention of 10%. Both whether the state receives flights directly from China and the proportion of the population that

[6]https://data.census.gov/.

[7]https://coronavirus.jhu.edu/map.html.

TABLE 1 Pairwise correlations between days and exposure

Variable	Correlation coefficient
Presence of a large city	−0.23
Asian population share	−0.27*
Direct flight from China	−0.27*
Date of the first death	0.32**
Total deaths	−0.17

Note: Asterisks report the results from a *t* test; *** 1%; ** 5%; * 10% level of significance.

is Asian is correlated with the speed of the lockdown. The greater this proportion the fewer days there tends to be before the stay-at-home order is put into effect. In the upcoming analysis, since the Asian population share and the presence of flights to/from China is quite high ($\rho = 0.58$; $p < .001$), we use the Asian population share, but the results are unchanged if the flight information replaces it.[8] The speed and severity of the infestation also naturally relates. When it took longer for someone to die in a state, it took longer for a governor to impose the restrictions. Thus, exposure to the virus is a reasonable determinant of the speed of the lockdown.

2.2 | Partisanship

The second narrative is that the important distinction is political. We record for each state whether the governor is a Republican or Democrat. In 2020, 24 governors are Democrats and 26 are Republicans. In addition, we differentiate governors who are running for re-election in 2020. Of all governors, 10 are running in a contested re-election in 2020. Utah has an upcoming election, but the incumbent is not running for re-election.[9]

In addition, we collect public opinion poll data from Morning Consult. Every quarter they publish approval ratings for each governor in the United States. The most recent public opinion polls were as of December 31, 2019, which is the date of the first public announcement in China before it was confirmed to be the novel coronavirus.[10] Since Morning Consult allows for survey takers to respond with "do not know" as their opinion of the governor, we define a governor's approval rating as the proportion of those approving or disapproving who responded that they approve of the governor.

The mean approval rating of state governors is 0.612, with a standard deviation of 0.119. This suggests that there is quite a bit of variation in voter opinion about state leadership. The governor of Massachusetts has the highest approval ratings (87.3%), while the governor of Hawaii has the lowest (35.6%).

[8]The correlation between states with one of the 20 largest cities and states with a flight to China is greater than the presence of a large city and Asian population share. Thus, using Asian population share improves the chances that this will be shown to be important in the upcoming econometric analysis.

[9]We also consider the number of senators who are Democrats and the percentage of 2016 votes that went for Donald Trump. These variables are so highly correlated with the political affiliation of the state's governor that in this note we focus only on the political affiliation of the governor. We use the governor's affiliation over the others since stay-at-home orders are a gubernatorial power.

[10]The data and its methodology can be found at https://morningconsult.com/governor-rankings/.

TABLE 2 Pairwise correlations between days and partisanship

Variable	Correlation coefficient
Democratic governor	−0.47***
Governor up for re-election in 2020	−0.07
Governor's approval rating	0.27*
Bond rating	0.39***

Note: Asterisks report the results from a *t*-test; *** 1%; ** 5%; * 10% level of significance.

TABLE 3 Pairwise correlations between days and liberty

Variable	Correlation coefficient
Freedom of the 50 States: personal freedom	−0.22
Freedom of the 50 States: economic freedom	0.34***
Economic Freedom of North America	0.29***

Note: Asterisks report the results from a *t* test; *** 1%; ** 5%; * 10% level of significance.

Finally, the health of the state's finances should be another important political driver of the willingness to issue a stay-at-home order. Similar to the approval rating, the state's leadership should have known that the restrictions will hurt the economy and, hence, deteriorate tax revenues. A state in a better financial position may be more willing to issue the orders.

To measure this, we obtain state bond ratings from S&P prior to the pandemic. We create an ordered variable with higher bond ratings receiving a higher score. For example, Illinois had a BBB score—the worst in the country. Thus, its value of *Bond Rating* equals zero. States with the highest bond rating of AAA have *Bond Rating* equal to five. Intermediate bond ratings (A−, AA−, AA, and AA+) receive intermediate values. The mean value for the bond rating is 4.48.

The belief that political motivations correlate with the willingness to issue stay-at-home orders has support. Table 3 reports the pairwise correlation coefficient between each of these partisanship variables and the number of days since the first case in the United States and the day the order went into effect.

A negative correlation coefficient indicates that the stay-at-home order was implemented earlier. Thus, Democratic governors moved earlier. There is no relationship between the immediacy of a governor's re-election and the decision. Governors with higher approval ratings at the time of the pandemic's start delayed their responses. Interestingly, states with more secure public finances delayed longer.[11] Table 2 suggests that partisanship is a likely determinant of the lockdown's speed.

3 | ECONOMIC FREEDOM

Our emphasis here is on the level of freedom in each state. As our primary measurement, we use the *Freedom of the 50 States* index published by the Cato Institute (Ruger and Sorens, 2018). In it,

[11]There is evidence that economically free states are better managed and, hence, have higher bond ratings (Calcagno and Benefield, 2013; Ghosh and McCannon, 2017). Here *Bond Rating* and *Economic Freedom* have a pairwise correlation coefficient of 0.19 and 0.35 for the two indices (with the later—EFNA—being statistically significant at the 2% level).

numerous measurements of freedom are recorded for each state for each year.[12] The most recent year in the data set covers 2016 and will be the one used here. The measurements are used to create three scores. The first two, Regulatory Freedom and Fiscal Freedom, are combined to make the Economic Freedom score. Fiscal policy variables used include tax burdens and the amount of public sector employment. Regulatory policy includes numerous centralized controls of the economy such as the use of occupational licensing, price controls, and access to the legal system. Index values for economic freedom range from as low as −0.828 (New York) and as high as 0.376 (Florida).[13]

The other dimension to the *Freedom of the 50 States* project is personal freedom. Numerous freedoms are included in this measurement such as gun rights, abortion rights, and drug laws. Again, a weighted average of these freedoms is created. The personal freedom scores range from −0.044 (Texas) to as high as 0.246 (Maine).[14] Interested readers are encouraged to consult Ruger and Sorens (2018) for details on the index's methodology. Since personal freedom and economic freedom are distinct concepts, we evaluate them separately.

In addition, as a robustness check, we also use data from the *Economic Freedom of North America* (Stansel *et al*., 2019). This is a similar index of economic freedom of each state in the United States, along with the Canadian provinces and Mexican states, published by the Fraser Institute.[15] It consists of measurements in three distinct areas: government expenditures, taxation, and regulation. These components are merged into an index value ranging between 0 and 10. The most recent economic freedom data is from 2017.[16] It has a mean value of 6.26 in 2017, ranging from a high of 7.93 (New Hampshire) to a low of 4.49 (New York). The correlation between economic freedom measured in the *Freedom of the 50 States* and the Economic Freedom of North America indices is quite high ($\rho = 0.79$, $p < .001$).

As with the other two dimensions, we first check the correlation between the speed of the policy implementation and freedoms. Table 3 presents those relationships.

The correlation between personal freedom and the lockdowns is weak ($p = .118$), but suggests an inverse relationship between the number of days until the order implementation and the state's willingness to allow personal liberty. Economic freedom, on the other hand, is strongly correlated with delay. Those states whose policies are consistent with property rights and have a limited government are not the first to implement the stay-at-home orders. We will continue to separate personal freedom from economic freedom in the upcoming analysis since the signs and statistical significance of the two differ.

3.1 | Econometric results

So far, we have considered only simple correlations. The explanatory variables can be expected to be correlated with one another. The question is, given this multicollinearity, which variable

[12]The index has been used in a number of empirical studies. Dávila and Mora (2012) find that veterans earned more in free states following the terrorist attacks of September 11, 2001. Hall *et al*. (2018a) look at the relationship between economic freedom, race, and health disparities. Detotto and McCannon (2017) find a positive relationship between state economic freedom and the efficiency of prosecutor's offices.

[13]The mean value is −0.040 and the standard deviation is 0.232.

[14]The mean value is 0.079 and the standard deviation is 0.073.

[15]The index has been used to study migration (Ashby, 2007), exercise (Hall *et al*., 2018b), and job creation (Lucas and Boudreaux, 2020).

[16]Data and a description of the methods can be found here: https://www.fraserinstitute.org/sites/default/files/economic-freedom-of-north-america-2019-US-edition.pdf

TABLE 4 Economic freedom and speed of adoption

	Freedom of the 50 States		EFNA	
	OLS	Poisson	OLS	Poisson
Model	**(1)**	**(2)**	**(3)**	**(4)**
Economic freedom	11.34**	0.159***	3.22**	0.043**
	(4.29)	(0.054)	(1.57)	(0.019)
Personal freedom	−12.33	−0.160		
	(16.44)	(0.204)		
Democratic governor	−6.75**	−0.092**	−7.81**	−0.107***
	(3.01)	(0.036)	(2.88)	(0.035)
Governor's RE-election in 2020	−3.67	−0.047	−3.99	−0.051
	(3.13)	(0.038)	(3.18)	(0.039)
Governor's approval rating	−12.71	−0.184	−18.34	−0.256
	(14.75)	(0.173)	(15.52)	(0.184)
Bond rating	1.99**	0.029***	1.72**	0.024**
	(0.76)	(0.010)	(0.75)	(0.01)
Presence of a large city	−3.66	−0.053*	−4.17*	−0.059**
	(2.24)	(0.028)	(2.29)	(0.028)
Asian population share	−16.69	−0.251	−31.38**	−0462**
	(15.71)	(0.203)	(14.08)	(0.188)
Date of the first death	0.51**	0.007***	0.53**	0.007***
	(0.20)	(0.002)	(0.20)	(0.002)
Total deaths	13.49**	0.172***	12.49**	0.156**
	(5.35)	(0.060)	(5.58)	(0.067)
R^2	0.458	0.087	0.454	0.086
AIC	364.4	361.7	362.7	360.1

Note: Dependent variable is equal to the number of days since the first recorded case in the U.S. until the state issued a Stay-at-Home order. A constant is included in each specification, but not reported. Heteroscedasticity-robust standard errors presented in parentheses; *** 1%, ** 5%, * 10% level of significance. Columns (1) and (2) use the *Freedom of the 50 States* index. Columns (3) and (4) use the Economic Freedom of North America index.

has *independent* explanatory value. We ask whether economic freedom, controlling for exposure and partisanship, has a separate explanatory effect on the willingness to lock down the state's economy.

Our primary investigation, then, is to put all 10 explanatory variables into one regression with the number of days as the dependent variable. These results are presented in Table 4. We consider both a linear regression and a Poisson model. The latter is appropriate as it treats the dependent variable as a count variable adding up the number of days until a lockdown. Thus, it estimates which variables explain the higher count of days. The former, while it treats the dependent variable as a continuous one, has the advantage of easy-to-interpret coefficients. In both, standard errors calculated are heteroscedasticity-robust and are presented in parentheses.

Across the specifications, economic freedom stands out as a strong, independent predictor of how quickly a state issued a stay-at-home order.[17] In Columns (1) and (2) the *Freedom of the 50 States* index is used. Using Column (1)'s estimation results, a one standard deviation increase in economic freedom increases the number of days until the lockdown by 2.6 days (which is more than a one-quarter standard deviation increase). The statistical significance is not sensitive to the model used, Column (2). In fact, the marginal effect from the Poisson model, 11.45, is nearly identical to the coefficient in Column (1). The final two columns use the Economic Freedom of North America index. It does not have a personal freedom component. It too records a positive and strongly statistically significant relationship. The two indices are on a different scale. Using the coefficient in Column (3), a one standard deviation increase in economic freedom increases the number of days until a lockdown by 2.7 days. Hence, the two liberty-related measurements produce similar marginal effects.

While economic freedom retains its independent significance, some residual explanation is left for other variables. Consistently, the partisan affiliation of the governor is statistically significant. Democratic governors lock down quickly.[18] Also, there is some explanatory power left in the timing of the illnesses in the state and the number of affected.

Interestingly, though, pragmatic concerns of the governor, such as his/her upcoming re-election or voter approval rating are unrelated to their decision. The presence of large urban areas and connection with China, proxied by Asian populations, do not relate consistently to closures. Finally, it is worth pointing out that it is not personal freedoms in the state, but rather respect for economic freedom, that matters for the decision.

An alternative way to measure the speed is through the use of indicator variables for being an early adopting state. Table 5 uses the same explanatory variables as before, but uses the indicator variable as the dependent variable. Robust standard errors are presented in parentheses.

Economic freedom, regardless of whether the other factors are included as controls, is associated with a reduction in the probability of the state being an early adopter of the stay-at-home order. Similar findings arise if a logit or a probit model is alternatively estimated.

It is also worth pointing out that the effect of a Democratic governor, presence of a large city, Asian population share, and the total number of COVID-19 deaths, which all exhibited some statistical significance in Table 4, are not significant here. Thus, they are not important when trying to identify who adopted first. There is a statistically significant relationship between both the state's bond rating and the date of the first death and being an early adopter. It only arises when the Economic Freedom of North American index is used.

Also, in Table 5 the dependent variable takes the value of zero if the state was not an earlier adopter. It does not differentiate those that were late adopters, or never adopted a stay-at-home order. While not presented here, we also estimate multivariate regressions, each with the same set of explanatory variables but using the four different indicator variables for the timing of the order's implementation (early, "middle," late, and never). Here, economic freedom affects the likelihood of being an early adopter, while increasing the chances of being a "middle" adopter.

Taken together, the results in Tables 4 and 5 suggest that economic freedom is the best predictor of state policymaking in this unprecedented time.

[17]Also, one can be concerned that the result is impacted by the coding of the seven states that did not issue stay-at-home orders. If they are dropped the main result persists. For example, in Column (1) the coefficient on economic freedom is 5.87, which is also statistically significant. Thus, the results are not sensitive to their inclusion.

[18]As mentioned, we also record President Trump's vote share in 2016 and the number of Democratic senators. If either of these replaces the governor's affiliation, they too are statistically significant.

TABLE 5 Economic freedom and early adoption

	(1)	(2)
Economic freedom	−0.735***	−0.845***
	(0.225)	(0.199)
Personal freedom	−0.471	−0.725
	(0.555)	(0.611)
Democratic governor		−0.002
		(0.101)
Governor's re-election in 2020		−0.112
		(0.087)
Governor's approval rating		−0.212
		(0.571)
Bond rating		−0.075*
		(0.044)
Presence of a large city		0.150
		(0.119)
Asian population share		−1.368
		(0.928)
Date of first death		−0.014*
		(0.008)
Total deaths		−0.304
		(0.319)
R^2	0.214	0.419
AIC	35.5	36.4

Note: Dependent variable is equal to one if the state was an early adopter of a stay-at-home order. A constant is included in each specification, but not reported. Heteroscedasticity-robust standard errors presented in parentheses; *** 1%, ** 5%, * 10% level of significance. *Freedom of the 50 States* is used.

3.2 | Sensitivity

One should always be concerned about the validity of econometric results that rely on a relatively small number of observations and have numerous explanatory variables. Given the importance of policy debates during this time of declining economic freedom (using the *Freedom of the 50 States* index, 28 states reduced their economic freedom score from 2015 to 2016), one must be sure that the results are accurately reflecting the relationship between economic freedom and policy.

With a small number of observations, the concern is that the results become sensitive to an outlier. That is, one or two states can be having a disproportionate impact on the estimates. This opens up the possibility that we are not capturing a broad, valid relationship, but rather an omitted variable is influencing one's state's policy, which happens to be related to higher economic freedom.

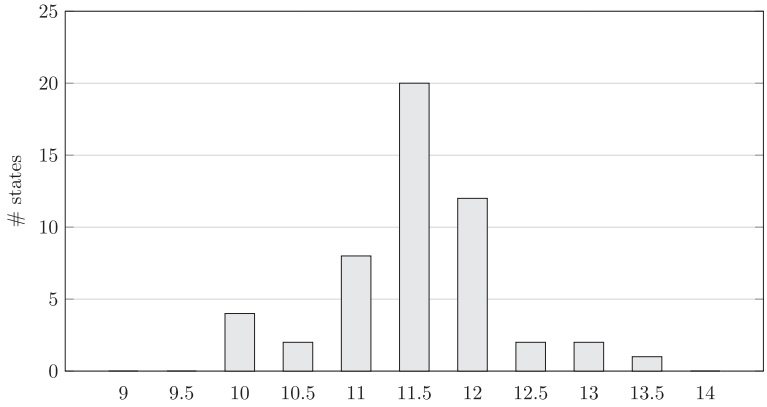

FIGURE 2 Distribution of coefficients histogram presents the number of coefficient estimates that fall within each bin from the leave-out sensitivity check. The number on the *x*-axis is the upper bound for the bin

A way to check is to follow a "leave-out" process. That is, remove one observation and re-estimate the model. We repeat this process for each of the 50 observations. Evaluating the distributions of estimated coefficients for economic freedom, then, allows for an analysis of the sensitivity of the main result.[19] The specification in Column (1) in Table 4 is used. Figure 2 presents the distribution of estimates.

The coefficient estimates are tightly centered in the 11.0 to 11.5 range, which coincides with the full sample estimate of 11.34. Also, importantly, no coefficient is very low. If it was the case that a few states were driving the findings, then when they are eliminated the estimated coefficient would drop to levels near zero. This does not happen.

Similarly, in this leave-out process, all but two of the specifications have a *t*-stat in excess of 2.0, which generates a *p*-value less than .05. The other two are statistically significant at the 10% level.

Multicollinearity in one's explanatory variables is another dimension to investigate further. With the inclusion of additional variables, the degrees of freedom drop, which may cause important variables to seem insignificant. We therefore engage in a stepwise estimation. We start with the main model, provided in Column (1) of Table 4 and Column (2) of Table 5, and drop the explanatory variable with the greatest *p*-value. We stop the iterations when all variables left are statistically significant at the 10% level. Table 6 reports the survivors of this process.

The first column uses the number of days until lockdown, while the second column denotes whether the state was an early adopter. Economic freedom consistently survives this process.

4 | CONCLUSION

We are in unprecedented times. Leaders have been put into place without anticipating the global health pandemic. Heterogeneity in gubernatorial policymaking provides us the opportunity to assess the important determinants of their decision making. Here, we focus on the stay-

[19]This is a simplification of Sala-i-Martin (1997).

TABLE 6 Stepwise elimination of insignificant variables

	Days	Early adopter
Dep. Var.	**(1)**	**(2)**
Economic freedom	9.57**	−0.640***
	(3.69)	(0.203)
Democratic governor	−5.53**	
	(2.26)	
Governor's re-election in 2020		−0.155*
		(0.077)
Bond rating	1.92**	−0.080**
	(0.76)	(0.035)
Presence of a large city	−4.18*	
	(2.28)	
Date of first death	0.34*	−0.011**
	(0.19)	(0.005)
R^2	0.403	0.360
AIC	359.1	29.2

Note: A constant is included in each specification, but not reported. Heteroscedasticity-robust standard errors presented in parentheses; *** 1%, ** 5%, * 10% level of significance. *Freedom of the 50 States* is used.

at-home orders, which severely limited personal and economic freedoms. Commerce screeched to a halt. Freedom of movement was curtailed. Unilateral policymaking ruled the day.

In this environment, economic freedom once again appears to be crucial. Even accounting for alternative narratives, namely partisanship and virus exposure, a state's economic freedom is the best, most-consistent determinant to the swiftness to which a governor issued a stay-at-home order.

In fact, our findings confirm the observation that past economic freedom is the best predictor of future economic freedom (Lawson *et al*., 2020). States with a higher baseline level of economic freedom are those that are more interested in preserving economic freedom in the future, even during a crisis. While the novel coronavirus is a novel event, differences in the willingness to quickly issue such a severe regulation can be expected to be a bellwether of the numerous policy decisions made in normal times.

Our primary objective is to document empirically the relationship between economic freedom and policymaking at the beginning of the COVID-19 pandemic. The conceptual mechanism behind this empirical observation is beyond the scope of this note. For example, economic freedom typically arises as institutional frictions restrain policymakers' ability to engage in regulatory measures (Troesken, 2015).[20] Alternatively, economic freedom may be derived from an underlying culture of respect for liberty (McCannon, 2014), or ideological constraints (Higgs, 1987), that manifests itself in institutions that protect property rights and is hesitant to impose strict curtailments, even during a pandemic.

There is more to be studied just within the narrow intersection of the coronavirus and economic freedom. For example, we have not included the complementary analysis of how quickly

[20]We thank an anonymous referee for pointing out this possibility.

the regulations were removed. This would be a bit more challenging to evaluate as states gradually phased in removals of restrictions. Further, as the predicted increases in coronavirus cases with the change in seasons have occurred, states have re-instituted restrictions. The willingness to disrupt economic activity and people's lives, in ways that frustrate individuals' ability to plan their lives, can also be expected to be related to a state's leadership's respect for economic freedom. As these events play out, future work should consider the relationship between respect for economic freedom and the fluctuating policy responses that have occurred.

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