

## Disentangling Whether Divided Government Increases the Probability of Insulation in Agency Design: A Response to Corrigan and Revesz

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An essential part of the policy process in the United States is the implementation of policy by administrative agencies. Yet, agencies vary on a number of structural characteristics. Notably, some agencies are governed by boards whose members serve for fixed and staggered terms and can only be removed from their positions “for cause.” Some agencies are placed for administrative purposes in the orbit of the president and others are made independent—outside the existing structure of the Executive Office of the President or the executive departments. Some agencies are funded by streams of revenue outside the annual appropriations process and some have control over their own litigation, independent of the Department of Justice. Indeed, political actors can choose to design agencies with a number of features that make them amenable to or insulated from political control by the elected branches.

Scholars in different fields, including law, sociology, economics, and political science, have studied agency design for some time. Recently, approaches that focus on the political motivations for different design features have come to prominence. Some scholars have argued that designs that limit *ex post* political intervention provide credible commitments necessary for political actors to benefit from gains from trade. Others argue that agency designs are chosen based upon actors’ beliefs about how presidents will use delegated authority now and in the future and whether Congress will be able and willing to influence agencies themselves.

In this latter vein, Lewis 2003 includes a theory about when political actors are most likely to design agencies to be insulated from presidential control. The theory is summarized in three propositions:

- Members of Congress are more likely to pursue insulation as their policy preferences diverge from those of the president.
- Members of Congress assess presidential preferences at the point of decision and likely presidential preferences in the future when deciding about insulating an agency.
- The more difficult it is for Congress to come to agreement, the more likely it is for presidents to get agency designs they prefer.

The book proceeds to present measures of the key concepts in the propositions in an effort to empirically test their validity for the 1946-1997 time period. Specifically, the book measures agency insulation by evaluating where a new agency is located and by the presence or absence of 4 other distinct characteristics associated with insulation from the president (e.g., multi-member body, fixed terms, etc.). It measures preference divergence between the president and Congress with an indicator for divided government, the likely persistence of the president in office with presidential approval, and the ability of Congress to come to agreement with the size of the House majority.

In their 2017 paper, Corrigan and Revesz revisit Lewis 2003 and suggest that its key claims were wrong. The authors worry that the law literature has drawn the wrong conclusion about the impact of divided government on the probability that Congress creates agencies with features that insulate them from political control. The authors critique the measures and specification in Lewis 2003 and they also question the interpretation of the book’s statistical models. Corrigan and Revesz suggest the Lewis analysis uses the wrong data and they conclude that the models explain too little of the variance in agency design. Corrigan and Revesz claim the Lewis analysis actually shows divided government decreases the chances of insulation in most cases. They argue that quantitative analysis does not explain much of the variance in agency design and suggest that authors conduct case studies to supplement quantitative analysis.

In what follows, I review the key critiques of Lewis 2003 in the Corrigan and Revesz paper and highlight some of the helpful elements that move the field forward, including their discussion of the importance of

“for cause” protections, their critique of model specification, and their emphasis on the importance of in-sample model predictions. I also go beyond their critique to highlight another limitation of the earlier study, namely that the calculations of predicted probabilities in Lewis 2003 did not include estimates of uncertainty for the predictions. I also clarify some aspects of their critique that miss the mark. I explain problems with their new data, including how the sample of agencies they examine differs from the population of agencies in ways that likely lead them to underestimate the influence of divided government. I also describe how their coding protocol leads them to incorrectly identify agency start dates which makes connecting agency creation to divided/unified government impossible. For example, their dataset lists the start dates for the Social Security Administration as 1995 and the Department of Labor as 1977. Finally, I incorporate Corrigan and Revesz’s useful critique and reestimate the models from Lewis 2003 with a more appropriate specification. These models largely confirm the Lewis 2003 claim that divided government increases the probability that Congress creates insulated agencies provided the majority is large enough. I conclude by explaining how the effects of political factors are quite large and where case study methods are limited and where they are helpful in their ability to parse out causal effects.

### What Corrigan and Revesz Get Right

#### *The importance of “for cause” protections*

Corrigan and Revesz identify the creation of independent agencies, or “agencies that are insulated in at least some ways from direct presidential control” as the subject of their investigation. Specifically, they want to determine whether the common belief that such agencies are more likely to be created during periods of divided government holds up to close scrutiny.

The argument that politicians are more likely to create insulated agencies during periods of divided government they attribute to Lewis 2003. Corrigan and Revesz want to reevaluate the divided government hypothesis with new data and a better definition of independent agencies. On the latter point, Corrigan and Revesz note that Lewis 2003 uses a variety of different indicators of insulation from presidential control and conflates fixed terms with removal protections. They rightly note that for the legal literature removal protections are the key feature of agency independence and *Corrigan and Revesz are absolutely right to argue that removal protections are perhaps the key feature of agency independence in the legal literature and fixed terms should not be conflated with removal protections.*<sup>1</sup> The theoretical and empirical literature on agency design should be careful to make this distinction moving forward and Lewis 2003 got this wrong by conflating fixed terms and removal protections. Lewis 2003 also missed an opportunity in not examining “for cause” protections directly.

Of course, not all agencies traditionally considered to be “independent” in law or political science have removal protections in their statutes (e.g., Securities and Exchange Commission, National Labor Relations Board) and the appointed heads of some executive agencies have removal protections (e.g., Office of Special Counsel, Social Security Administration). Most political scientists conceptualize agency independence as an underlying latent dimension that manifests itself in a number of different design characteristics, including multi-member structures, bipartisan requirements for appointments, self-funding, etc. (see, particularly Selin 2015). If the purpose of insulating features is to blunt the power of elected officials, it is no surprise that different features are included because they blunt different powers. Fixed terms and for cause protections blunt the president’s removal power as do appointment limitations and staggered terms. Self-funding blunts

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<sup>1</sup> It does seem odd, however, to have fixed terms without removal protections. The only justification for fixed terms without removal protections is that Congress wants an opportunity to weigh in on leadership through the confirmation process at regular intervals (i.e., turnover leads to more confirmation opportunities). This was a reason for fixed terms in the 1820s in statutes like the Tenure of Office Act. Yet, I have found little evidence in the historical record surrounding the creation of independent commissions that Congress intended anything other than that fixed terms implied removal protection. Congress did not claim to be specifying fixed terms to maintain control over agency leadership. Rather, Congress sought fixed terms to reduce election-related turnover (not increase it) and through this stability increase expertise, stability, and the legitimacy of agency decisions. If fixed terms did not commonly imply removal protections, one wonders why presidents did not regularly remove appointees at the start of new terms.

the control provided the budgetary and appropriations power of the elected branches. Presumably, regressing other indicators of this underlying dimension of insulation on key political regressors should show something similar to models explicitly regressing “for cause” protections on these political factors.

#### *Critique of model specification*

Corrigan and Revesz go through the hard work of evaluating the statistical models in Lewis 2003 to determine whether they actually test the divided government hypothesis. They correctly point out a problem with the specification of the models as it relates to testing this hypothesis.

To clarify, Lewis 2003 argues that members of Congress want to insulate more when their preferences diverge from those of the president, as *measured* by divided government (preference divergence could be measured in different ways). While Congress may want more insulation when their preferences diverge from those of the president, they can only act on those preferences when Congress can come to agreement. Lewis measures Congress’s ability to come to agreement with the size of the House majority. So, the divided government hypothesis is neither the theory in the book, nor is it an unconditional hypothesis. Rather, Lewis argues that divided government should only increase the probability of insulation when the opposition majority is strong enough.

Where Corrigan and Revesz get it right is in the specification. Lewis chose divided government as a measure of preference divergence. He chose majority size of the House as a measure of congressional strength. The problem, according to Corrigan and Revesz, is that there are cases where government is divided but the House is aligned with the president. If this is the case, the majority size measure does not measure the strength of those that want to insulate. Rather, it measures the strength of the president’s party in Congress. During the period Corrigan and Revesz examine this happens somewhat regularly (e.g., 1911-1912; 1931-1932; 2001-2002; 2011-2014; 2019-2020). There are a number of years where the House is aligned with the president but the Senate is not. Fortunately, during the period Lewis examines there are no years where the House is aligned with the president during divided government. So, the size of the House majority is a reasonable proxy for the strength of the opposition in Congress.<sup>2</sup>

Despite this, Corrigan and Revesz are absolutely right: *A proper specification would take into account the alignment of the individual chambers with the president.*

#### *Generating Probabilities for Reasonable Values*

One common use of econometric models is to get predicted probabilities of quantities of interest. Varying hypothetical values of key independent variables (e.g., from 1 standard deviation below the mean to 1 standard deviation above), given estimated model coefficients, provides a means of determining the substantive effect of key factors.

Corrigan and Revesz try and determine the size of the House majority that would be necessary for divided government to increase the probability of insulation. They conclude that for 4 of the 5 dependent variables in Lewis 2003, there are no reasonable values of House majority size that would lead divided government to increase the probability that an agency has insulating characteristics. Corrigan and Revesz are absolutely right to assess whether the predictions for the model are generated for values observed in the data.

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<sup>2</sup> If we reestimate the Lewis models with the size of the Senate majority, excluding the 1981-1986 years where the Senate is aligned with the president, the results are consistent with what is reported in Lewis 2003.

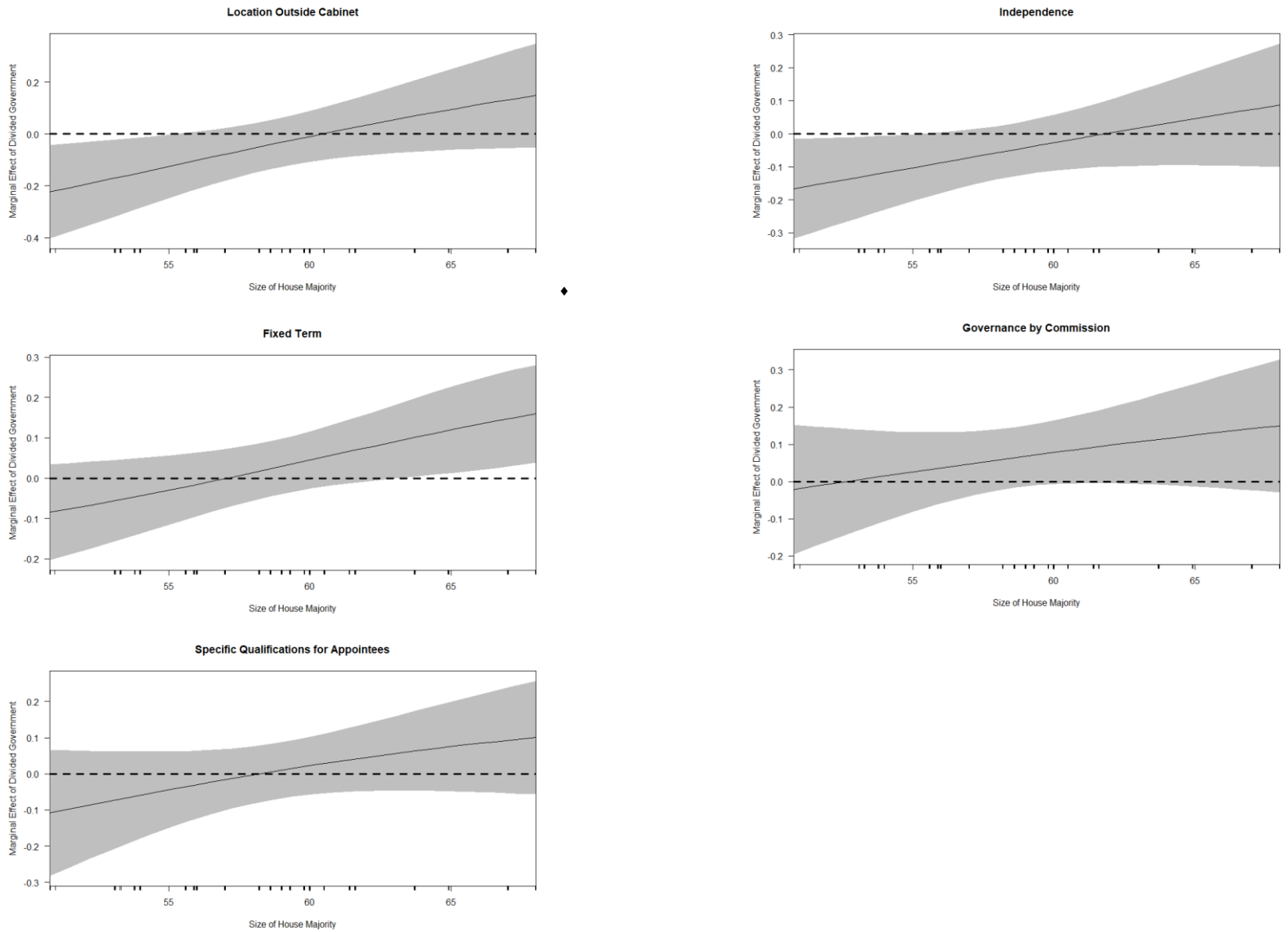


Figure 1. Marginal Effect of Divided Government, All Agencies

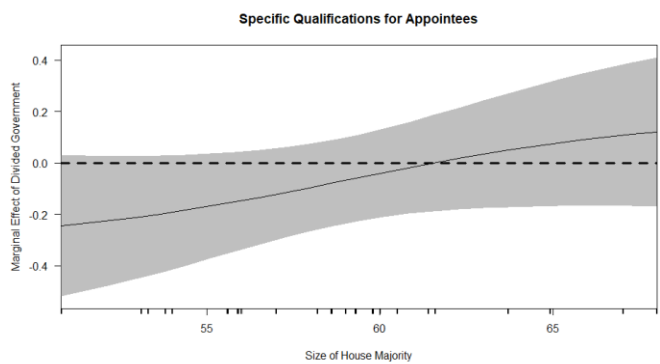
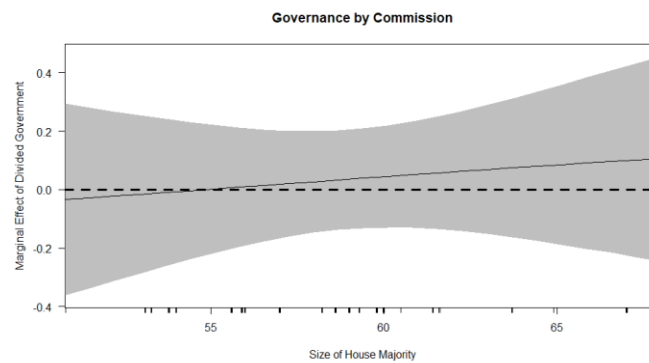
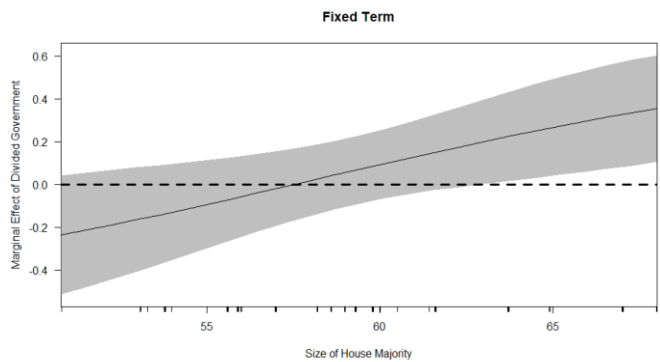
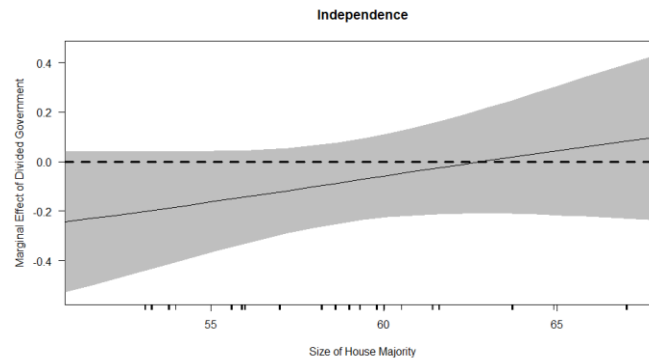
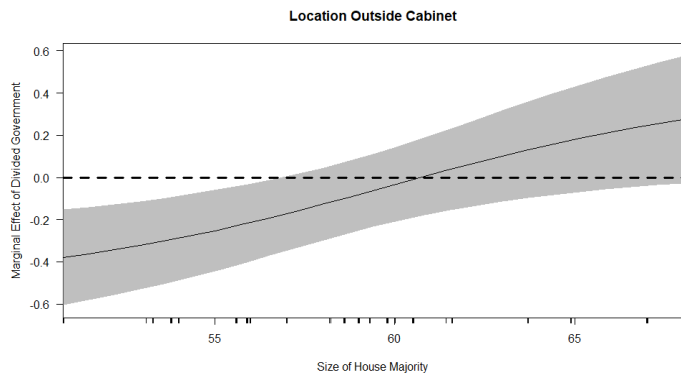


Figure 2. Marginal Effect of Divided Government, Statutory Agencies

Unfortunately, their conclusion about Lewis 2003 is wrong due to an incorrect interpretation of marginal effects. Indeed, the values necessary for estimates of divided government to increase the probability of insulation represent about 20 percent of the observed cases (depending upon the model). Figure 1 and Figure 2 include the estimated marginal effects of divided government by different sizes of the House majority for models estimated on all cases and legislatively created cases only, respectively. The figures include dotted lines at the 0 point to represent where the marginal effect would be estimated to have 0 effect on the probability that a new agency was insulated. In all cases, the crossing the point is well within the distribution of majority sizes we observe during this period (see the rug plot at the bottom of each figure for actual observed values in the data). The estimates demonstrate what Lewis claims, namely that divided government is estimated to increase the probability that a new agency will be insulated, provided the majority is large enough to come impose its preferences.

#### *Emphasis on the importance of uncertainty in model predictions*

The graphs in Figure 1 and Figure 2 show the level of uncertainty around the marginal effect of divided government. One area where empirical law and social science is better now than 20 years ago is the expectation that scholars generate estimates of uncertainty around predictions rather than just estimates. Lewis 2003 plots only the predicted probabilities and does not account for uncertainty. Scholars can and should plot predicted probabilities for values observed in the real world and plots should include measures of uncertainty based in part on the number cases in the region plotted.

In Figures 1 and 2 the point estimates and graphs of predicted probabilities suggest that divided government increases the probability of insulation for larger majorities (between about 57% to 63%) but there is uncertainty about the effect, with higher uncertainty in regions where there are fewer cases. So, while the coefficients are generally estimated precisely, the marginal effect of divided government for any particular majority size is less precise. Given the uncertainty estimate around the marginal effect, readers should exercise some caution in interpreting the results. While the evidence *consistently* points in the direction of a divided government effect across indicators of insulation, we cannot reject the null of no effect in 4/5 cases. This is an area where additional data collection might provide estimates with more precisions and why extending the data forward and backward would be a useful step forward in the literature.

### **What Corrigan and Revesz Get Wrong**

#### *Theory versus measurement*

Corrigan and Revesz are concerned that legal scholars believe that divided government increases the probability that agencies are insulated and attribute that argument to Lewis 2003. It is important to state the theory carefully and to distinguish theory from measurement. The first proposition from the theory in the book states that “Members of Congress are more likely to pursue insulation as their policy preferences diverge from those of the president.” The book argues in the second and third propositions that members take into account the preferences of future presidents and that members are constrained by their own ability or inability to come to agreement. So, the theory in the book states that whether or not preference divergence increases the probability of insulation is *conditional* on their perceptions of the future and their own ability to come to agreement. The “divided government hypothesis” as Corrigan and Revesz label it was never unconditional. It is concerning if the legal literature is reading Lewis 2003 to include an unconditional hypothesis.

Beyond the theory always being conditional, there is always a move in social science work from the theory to the measurement of key concepts. In Lewis 2003, preference divergence is measured using an indicator for divided government (0, 1). Anything other than unified party control was coded with as divided government. To measure the perceptions of the congressional majority about the future, Lewis uses presidential approval. Finally, to measure Congress’s ability to come to agreement, Lewis uses the size of the House majority.

Any critique of Lewis 2003 should characterize the theory correctly (i.e., its conditional nature) and disentangle theory and measurement.

### *Which is the Right Dataset?*

One of the distinctive features of the article is the claim by Corrigan and Revesz that they have collected new and better data to test the impact of divided government on the probability that a new agency has different insulating characteristics. Corrigan and Revesz collect data on 68 agencies created by statute between 1887 and 2015 using the *United States Government Manual (USGM)*. Their implicit claim is that an analysis of these 68 agencies can prove or disprove whether divided government increases the probability that agencies are created with insulating characteristics. This number of agencies is smaller than the samples included in previous empirical works but their claim is valid provided the sample they collected is representative of the population of interest.

On close analysis, however, most empiricists would question whether their sample is truly representative and worry that the differences between the sample and population would lead to bias in statistical estimates. Notably, there is a reasonably good chance that their sample would lead them to *underestimate* the effect of divided government. Scholars would also worry about their coding protocol given the stated creation dates of agencies in their dataset.

### Sample vs. Population

Collecting data on agencies is a complicated empirical task, requiring a definition of what is an and is not an agency and what constitutes a new organization. For the purposes of their data collection, Corrigan and Revesz follow some of the standard approaches of scholars before them and exclude advisory agencies, multilateral agencies, and units common to all large agencies (e.g., Office of General Counsel). They depart from past practice in a several ways but three departures are noteworthy. First, they include only agencies created by statute and exclude agencies created by reorganization plan<sup>3</sup>, executive order, and departmental order. Second, they exclude agencies that are sub-units of larger departments or agencies. Third, they exclude operational (i.e., non-advisory) agencies in the Executive Office of the President (EOP) and executive agencies in other branches. Finally, their definition of new agencies leads to some unconventional and problematic start dates for agencies.

The overall effect of their choices is to systematically exclude large numbers of *uninsulated* agencies from dataset. Reliable statistical inference requires that the sample examined is representative of the population of interest. Excluding uninsulated agencies systematically biases the sample in ways that can lead to biased statistical estimates of the impact of divided government. In this case, the question is whether the 68 agencies Corrigan and Revesz examine reflect the population of agencies created during the 1887-2015 period. On close examination, it is clear that the sample of 68 agencies examined is different from the population of agencies created during this period.

Agencies Created by Statute: Corrigan and Revesz examine only agencies created by statute. Yet, the bulk of agencies created during this period were created by executive action. The default form of agency creation for Congress is to delegate new authority to the executive branch and for the executive branch (either the president or agency head) to create a new unit to carry out this new function via an executive order or departmental order. Later, the executive branch will acknowledge the existence of this unit in a budget justification and this is sufficient for the new unit to secure appropriations. Sometimes Congress will later authorize the unit and sometimes it will not.<sup>4</sup> If Congress prefers an executive agency, they will not always formally create one in

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<sup>3</sup> They do include some agencies created by reorganization plan such as the Environmental Protection Agency but exclude some others such as the Department of Health, Education and Welfare (HEW), the Drug Enforcement Agency, or Federal Emergency Management Agency (FEMA). Presumably these agencies are excluded because they are not in existence in 2015 or are subcomponents of larger agencies.

<sup>4</sup> Mention of a new unit in budget justification and subsequent appropriation is sufficient to satisfy the requirement for authorization.

statute. Rather they will let the president or the department head create the new agency via executive order or departmental order, respectively. By only looking at agencies created by statute, Corrigan and Revesz get a biased sample. Indeed, 53 of the 68 agencies they examine are insulated in some way, a surprisingly high percentage given how much of the growth of government has been driven by executive agencies. Indeed, 90% of federal employees work in an executive department. Given the vast expansion of the executive departments during the 1887 to 2015 period, it is unlikely that the sample of agencies is representative of the population.

Exclude Sub-Units and Agencies Congress places in other Locations: One reason such a high percentage of their data is insulated is that Corrigan and Revesz exclude agencies created as part of larger agencies (e.g., bureaus) or agencies that are not part of the executive departments or list of independent establishments in the USGM (e.g., agencies in the Executive Office of the President or other branches). Their dataset excludes large sub-units within larger departments and agencies. This includes insulated agencies such as the Federal Energy Regulatory Commission (Department of Energy) and Consumer Financial Protection Bureau<sup>5</sup> (Federal Reserve System) but more commonly executive agencies such as the Transportation Security Administration (Department of Homeland Security), Federal Bureau of Investigation (Department of Justice), Forest Service (Department of Agriculture), and Centers for Medicare and Medicaid Services (Department of Health and Human Services). Again, the default in agency creation is executive agencies created by executive action and placed in a larger executive department. If scholars exclude such cases, their samples *overrepresent* the presence of insulated agencies in ways that threaten inference, namely to underestimate the effect of divided government (see below).

The location of agencies is a political choice and executive agencies such as the Botanic Garden and the Government Printing Office are part of the Legislative Branch and Congress placed agencies with operational functions such as the Office of Management and Budget, the Office of Economic Opportunity, and the Office of the United States Trade Representative in the Executive Office of the President (EOP). If these executive agencies are systematically excluded, this makes the sample of agencies unrepresentative of the population of agencies Congress has created.

Exclude Agencies Created after 1887 but Eliminated Prior to 2015: Corrigan and Revesz collect their data by starting with all agencies in existence in 2015 and researching details on these agencies. They exclude agencies created after 1887 and eliminated prior to 2015, including, among others, many agencies created to mobilize for and prosecute World War I and World War II, combat the New Deal, reconstitute government after the war, and implement the Great Society. Some prominent agencies that have been eliminated include the Civil Aeronautics Board, Office of Economic Opportunity, National Biological Service, and the Immigration and Naturalization Service. The agencies most vulnerable to termination are those that are uninsulated (Lewis 2004). If this is the case, the sample will differ from the population in overrepresenting insulated agencies which are more durable.

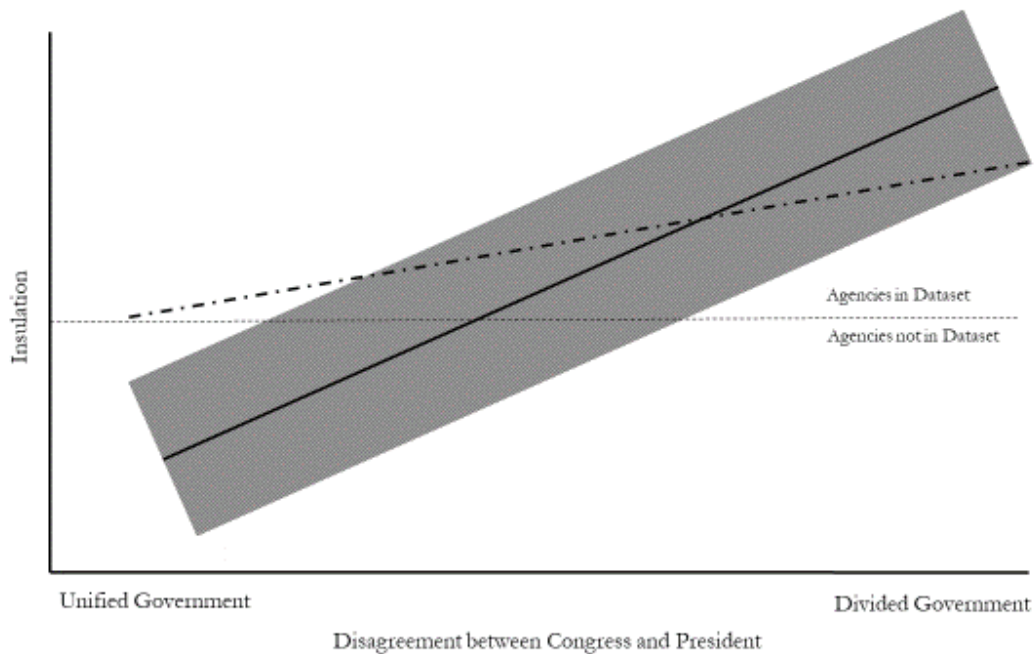
In Figure 3 I include a graphical representation of the inferential problem associated with the biased sample problem Corrigan and Revesz have collected. Consider hypothetical data graphed in the figure (gray region) with the x-axis being the degree to which government is divided during the period when the agency is created (from unified government on the left to divided government on the right) and the y-axis being the degree of insulation (from no probability of insulation to high probability of insulation). The graph includes a hypothetical regression line that represents the true relationship between divided government and the probability of insulation. If the bottom half of the distribution is systematically not observed because it is excluded from the dataset (e.g. uninsulated agencies in the Corrigan and Revesz data), the regression line that runs through the observed data will be flatter to fit the observed data. The flatter line will fit the observed data but not the true relationship between divided government and the probability of insulation. Specifically, the models will incorrectly suggest that there is no relationship or only a weak relationship between divided government and insulation.

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<sup>5</sup> Violating their own decision rules, their dataset actually includes the Consumer Financial Protection Bureau even though it is part of the Federal Reserve System.



**Figure 3. Sample Selection Problem in Agency Data**



#### Coding Protocols in the Dataset

One of the key difficulties in empirical studies of agency design and termination is determining what is a new agency. Very few agencies are created new out of whole cloth. Rather, existing programs and personnel are aggregated to create new units. When does a unit become a “new” agency? If we simply change an agency’s name is it new? If we simply take an agency that was a sub-component of an existing department and make it independent is that new? Does an agency become new if Congress allocates to it new delegated authority? These are hard questions to answer. Corrigan and Revesz start with the list of agencies in the 2015 *USGM* and work backward to determine start dates for each agency. To do so, they claim to look at all predecessor agencies for the 2015 agencies—i.e., agencies that “shared the same name” or performed the same “primary regulatory responsibilities.” They use the start date for these predecessor agencies as the date of agency creation for the purposes of determining whether the agency was created during divided or unified government.

There are two problems with this approach. First, Corrigan and Revesz consider an agency to not have existed if it was previously a unit of a larger department or agency. This also creates some puzzling start dates. Here are some examples of agencies with the start dates given them by Corrigan and Revesz:

- Social Security Administration (1995): In 1995 SSA was removed from being a part of the Department of Health and Human Services but it was clearly created in the 1930s as part of the New Deal.
- Department of Labor (1977): Congress created the Labor Department at least as early as 1903 when it was part of the Department of Commerce and Labor.
- National Archives and Records Administration (1984). The archives have existed in various forms for a long time before 1984, most recently as a sub-component of the General Services Administration.

Second, there are some other puzzling cases that seem difficult to understand on their face. Here are a few:

- Department of Homeland Security (2001): The DHS was created by legislation enacted in the fall of 2002 after the midterm election.

- United States Postal Service (1970): The Postal Department traces its origins to the period prior to the adoption of the United States Constitution. It was restructured to become a government corporation in 1970.
- Department of Veterans Affairs (1958): The Veterans Administration has existed for almost as long as the republic, notably being a key part of the scandals that engulfed the Harding Administration in the 1920s.

By virtue of their decision to exclude agencies that are part of larger departments, Corrigan and Revesz are forced into arguing that the Social Security Administration was created in 1995 and the Department of Labor in 1977. If, the dataset pairs the wrong details about unified or divided government with an agency's structure, this can obviously lead to incorrect statistical inferences. The models are only as good as the data underneath the models.

*What do their models show?*

Corrigan and Revesz seek to empirically evaluate the influence of divided government on the probability that new agencies are created with features we associate with insulation. One consistent finding in the models estimated on their own data is that for any given size of Senate majority, Senate alignment with the president decreases the chances an agency is insulated. Stated in terms of the divided government hypothesis, *their own data and analysis show that divided government increases the chances that an agency is insulated if divided government is measured by whether or not the Senate shares the president's party*. When the president and Senate do not share the same party, the probability of insulation increases. They cannot reject the null hypothesis that divided government does not increase the probability of insulation when the House is unaligned. Does their own analysis purport to reveal that divided government increase the probability of insulation? Yes, for almost all years of divided government. During this period, all years of divided government apart from 1981-1986 were periods when the Senate was not aligned with the president.

Corrigan and Revesz misinterpret the effect of divided government in their models. On p. 637 they write, "Out of the thirteen estimations we conducted (six for the first specification and seven for the second), divided government is statistically significant, and then only at the ten percent level, in only one..." Yet, the coefficient estimate for divided government cannot be evaluated in isolation since the models interact divided government with other variables that covary with divided government. An interpretation of the divided government variable in isolation is effectively evaluating the effect of divided government when the majorities in the House and Senate are 0, a world that never exists. A more defensible practice is to set key variables at reasonable values (i.e., divided government indicator, chamber alignment indicators, and majority size variables consistent with observed values in the real world) and calculate the predicted probabilities. Indeed, by their own accounting divided government is estimated to consistently increase the probability of insulation when the Senate is misaligned and increasingly so as the majority gets larger.

*Effect of divided government*

So, what is the true effect of divided government on the probability of insulation? To answer this question we need to use the data that best reflect the population of interest and the proper specification. The best data are those available on Lewis's website, adjusted for errors noted on the website and discovered after the initial analysis.<sup>6</sup>

The proper specification would allow for different configurations of divided government-- divided where both chambers are unaligned, divided where only the Senate is unaligned, and divided where only the House is unaligned-- and the best measure of the strength of the majority given these configurations. As mentioned above, there are no years in the Lewis data (1946-1997) where there is divided government but House is aligned with the president. So a proper specification accounts for divided government where both chambers are

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<sup>6</sup> See "Administrative Agency Data Set: Updates and Notes (<https://cdn.vanderbilt.edu/vu-my/wp-content/uploads/sites/411/2011/12/14094307/UpdateNotes.pdf>, accessed April 18, 2019).

unaligned and divided government where only the House is unaligned (i.e., 1981-1986). The proper specification, then, would include indicators (0,1) for both types of divided government and leave unified government as the base category.

Scholars can reasonably disagree about how to measure the strength of the congressional majority. One proxy is the size of the House majority since there are no periods of divided government where the House is aligned with the president. These are the models included in Lewis 2003 and they show that divided government increases the probability that a new agency is insulated but only when the majority is large enough, usually somewhere in 57%-63% range.

Another specification would use the Senate majority size but this would not work for the 1981-1986 period since the Senate was controlled by the president's party during this time. One could include measures of both the size of the House majority and Senate majority and interact them with the indicators for divided government-House unaligned and divided government-both chambers unaligned, respectively. Such a specification creates two problems, however. First, majority size of the two chambers is correlated at 0.65 and this multicollinearity can increase the size of the standard errors on the estimates. Second, there are only 8 agencies created by statute during this period and many cells have few cases, causing problems for estimation.

One solution is to estimate models excluding the 1981-1986 period and using only Senate majority size to measure congressional strength. Another is to estimate the models even with the misgivings. I have done both. In the models excluding the 1981-1986 period (and using the size of the Senate majority) the probability of insulation goes up in divided government with both chambers unaligned with the president for larger Senate majorities, usually about 60-61 percent of the Senate (i.e., the number necessary for invoking cloture). In the models that include both the House and Senate majorities, the estimates show that the probability of insulation goes up in divided government with both chambers unaligned with the president for larger Senate majorities. As in the other models, divided government begins to increase the probability of insulation at right about the point where the Senate majority is large enough to invoke cloture. When the chambers are split, however, there are mixed results. For some models divided government increases the probability of insulation and in other models divided government decreases the probability of insulation. It may be that the fact that the chambers are split is itself an indicator that it will be hard for Congress to impose its will on the president. One chamber may prefer to insulate a new agency but they will not be able to do so easily because of opposition from the other chamber.

Conclusion: The bulk of the estimations are consistent with Lewis 2003, namely indicating that divided government increases the probability of insulation but only when the majority is sufficiently large. Specifically, House and Senate majorities that comprise about 60% of the chambers are required for the divided government effect to kick in. The models also consistently show the reverse, namely that unified government decreases the probability than agencies are insulated and more so as the president's party in Congress gets larger. This is broadly what Lewis 2003 reported.

#### *How much variance is explained?*

One of the unusual claims in the Corrigan and Revesz paper is that the models explain little of the variance in outcomes. They rely on an analysis of the absolute value of  $R^2$  in the models. Few scholars use the  $R^2$  statistic as an absolute measure of the quality of fit of a model. Normally, such statistics are employed to evaluate the *relative* fit of nested models rather than overall fit. The reason for this is that a model can reveal the correct and substantively important relationship between an independent and dependent variable but increasing the variance of the independent or dependent variable around that regression line for any reason will reduce the  $R^2$ . So, for example, we might include more categories in a survey question and thereby increase the variance or there may be more error in measurement of a key variable. These would decrease the absolute value of the  $R^2$  but not the substantive informativeness of the model itself.

More commonly, scholars look at the substantive effect of the key regressors to evaluate the quality of a model. Do the variables have a large or small impact on outcomes? By this standard, the models are actually quite

important. The key regressors have a very large effect on the probability that an agency is insulated. By the information provided by Corrigan and Revesz, changing the size of the Senate majority in divided government from 50% to 60% increases the probability that a new agency has an insulating characteristic by 25 percentage points to 36 percentage points. Given that the baseline probability any agency has one of these characteristics is about 33%, Corrigan and Revesz are arguing that these political factors like Senate majority can double the chances that a new agency has insulating characteristics (i.e., from 33% to 58% - 69%). Most scholars would agree that these effects are quite large. If analysis of agencies over a 100+ period can tell us factors that double the probability any event will happen, that is doing pretty well. It is also important to remember that their own sampling procedure likely leads them to underestimate the true effects.

*Should we turn to case studies?*

The Corrigan and Revesz critique highlights an important difference between political science and some other disciplines. For many disciplines, the aspiration is to explain all of the causes of variance. Political scientists have much more modest goals, namely to illuminate those factors that explain most of the variance.

If the concern is that the empirical analyses in Lewis 2003 and Corrigan and Revesz 2017 explain too little of the variance, it is not clear why the answer is to examine less data (i.e., case studies). Wouldn't we want to look at more cases in order to explain the variance better? Reducing the number of cases and increasing the number of potential independent variables, decreases our ability to make reliable inferences across cases. Case studies are an important source of information about causal processes and useful for building and testing theories but also have a number of well known limits for generalization.