

**GW Political Science
Methods Exam: Summer 2024 (retake)**

Instructions: Read all questions before answering any of them. When you use substantive examples in your answers, we prefer to see examples from political science. Answer all questions in part I. Answer 3 questions in part II. If you are completing the exam at GW, feel free to hand-write answers or parts of answers in a blue book, but carefully label them and note that you are using the blue book in your typed document. If you are completing the exam at home, you can similarly include photos/scans of hand-written material. Good luck!

Part I

1. An important research question in both American Politics and Comparative Politics is whether distributive spending affects the incumbent party's vote share. A recent article examined how federal spending affected presidential vote share at the county-level between 1988 and 2008. In Table 2 (below), it examined whether the impact of federal spending on presidential elections differed between competitive and non-competitive states. The regression specification is described in the table's notes.

% change in grants × not a competitive state	0.493*** (0.146)
% change in grants × competitive state	1.134*** (0.187)
Change in per capita income (in 1,000s)	0.169*** (0.029)
Television ad difference	0.071*** (0.012)
Campaign appearance difference	0.208*** (0.019)
Change in pres party house vote	0.013*** (0.003)
Iraq casualties in county 2004	-0.485*** (0.125)
Iraq casualties in county 2008	-0.266*** (0.075)
% change in county population	-0.440 (1.209)
Competitive state – within 5%	-0.000 (0.108)
Constant	-2.725*** (0.151)
Observations	17,959
R-squared	0.500

*** $p < 0.01$. ** $p < 0.05$. * $p < 0.10$.
Notes: Least squares model with fixed effects for counties and years. Dependent variable is the percent change in county-level vote for the incumbent president (or the incumbent party) since the previous presidential election. Competitive states are those in which the losing candidate averaged 45% or more of the two-party vote in the preceding three presidential elections. Counties in competitive states reward presidents for federal spending at higher levels than counties in uncompetitive states. Robust standard errors clustered on county in parentheses.

This is the article's description of the findings in this table:

“To test the importance of electoral context, the model in Table 2 includes two new terms: an indicator variable identifying whether a county is in one of the most competitive states and the interaction of this variable with the change in federal grant spending in the county. We define competitive states as those in which the losing candidate averaged 45% or more of the two-party vote share in the preceding three electoral contests.

Consistent with our hypothesis, the coefficients for change in grant spending are positive and statistically significant in both competitive and noncompetitive states; however, the coefficient is more than twice as large in competitive states. This shows that, although incumbent presidents (or their party's nominee) enjoyed an electoral advantage from federal spending in counties from nonswing states, the electoral boost from grant spending is even larger in counties from swing states.”

Critically evaluate these claims.

2. A recent article investigated the impact of casualties in the Iraq War on the 2004 presidential election in the United States. Specifically, it examined the relationship between state-level casualties and the change in President Bush’s vote share between 2000 and 2004.

TABLE 3 The Impact of Iraq War Deaths and Wounded on the 2004 Bush Vote Share, Interaction Effects

	Dependent variable: Change Bush vote share, 2000 to 2004			
	(1)	(2)	(3)	(4)
Total Iraq deaths and wounded per 100,000 pop.	-.0086** (.0018)	-.0099** (.0020)	-.0073** (.0025)	-.0068** (.0024)
South region	-.033* (.014)			
South region * Total Iraq deaths and wounded per 100,000 pop.	.0100** (.0030)			
Bush won state, 2000		-.022 [†] (.012)		
Bush won state, 2000 * Total Iraq deaths and wounded per 100,000 pop.		.0074* (.0028)		
Total Presidential or VP nominee visits to the state after the GOP convention			-.00061 (.00055)	
Total nominee visits * Total Iraq deaths and wounded per 100,000 pop.			.00010 (.00017)	
Total campaign media spending in the state (in US\$ millions)				.00067 (.00162)
Total campaign media spending * Total Iraq deaths and wounded per 100,000 pop.				-.00053 (.00057)
State economic, demographic controls	Yes	Yes	Yes	Yes
Observations	51	51	51	51
R ²	.49	.46	.47	.46

Notes: OLS regressions. Robust Huber-White standard errors in parentheses. Statistical significance [†] $p \leq .10$, * $p \leq .05$, ** $p \leq .01$. “South” states use the *Congressional Quarterly* definition (the 11 states of the former Confederacy plus Kentucky and Oklahoma). State economic, demographic controls are the same as in Table 2.

- a. Based on column 1, what is the marginal impact of 1 additional Iraq war casualty per 100,000 people on President Bush’s vote share in the non-South region? What about in the South region?
- b. Looking across columns 1 and 2, in what group of states did Iraq War casualties have the biggest impact on the election?

- c. How should we interpret the fact that the main effect of Iraq War casualties (row 1) is larger in column 4 than in column 1? Does that make you concerned about the robustness of the findings?
 - d. Should we be worried about the R-squared values in this regression?
 - e. Discuss the identification assumptions necessary to interpret the point estimates on total Iraq War casualties in the first row of this regression as causal effects. What additional assumptions are necessary for the interactions to be interpreted as causal?
 - f. Discuss possible recommendations for this research team for specifications or research designs that might improve the causal identification for this study.
3. Gerber and Hopkins (2011) (see <https://www.jstor.org/stable/pdf/23025054.pdf>) examine how the partisanship of mayors affect downstream policy outputs in city governments. They use a regression discontinuity designs (RDD) to identify the causal effect of mayoral partisanship. Discuss the key assumption(s) that must be necessary for an RDD to generate a causal estimate for this research question. How would you evaluate the validity of the RDD for this research question? Do they perform this robustness check (or set of checks) in the article (be sure to check the appendix)? How could you evaluate the robustness of these findings (think creatively)? Any other concerns about the validity of the findings?

Part II.

1. Models with two-way fixed effects were arguably the most common research design for causal inference in the 2000 and early 2010s. These were often described as analogous to difference-in-difference models. However, we now know that's not necessarily true. What are the potential problems with analyses that use two-way fixed effects? How common are these problems in applied studies?
2. Imagine that you want to measure political candidates' ideology on a one-dimensional left-right scale. Based on class readings, class slides, and discussions from the Measurement Models course, please discuss three possible approaches to do this. Be specific about the statistical model(s) and the data that would be required. Please discuss strengths and weaknesses of each approach. Briefly discuss how you would evaluate the validity of your measures of candidate ideology.
3. In the literature on media and politics, it is commonly asserted that watching a particular television program makes people more likely to support a particular candidate. For instance, imagine that a television news anchor runs for Congress. Someone tells you that watching that anchor on TV made people more likely to support their campaign. What research design(s) could we use to evaluate this claim? Think creatively based on course coverage in the second and third Quantitative Methods classes. Discuss the strengths and weaknesses of any research design you propose.
4. Imagine that a state government (or country) has had a longstanding ban on alcohol consumption ("prohibition"). However, the state government passes a new policy in 2010 enabling city governments to allow alcohol consumption (i.e., repeal prohibition) via direct democracy. To adopt a new policy allowing alcohol consumption, the majority of voters in the city have to vote for it via a ballot initiative. It is now 2024. 250 of the 450 cities in the state have passed ballot

initiatives to allow alcohol consumption. Another 150 cities have voted in ballot initiatives against allowing alcohol consumption. And 50 cities never held a ballot initiative on this issue. For your dissertation, you want to leverage this “natural experiment” to examine the impact of allowing alcohol consumption on downstream outcomes. Discuss at least two possible research designs, including their strengths and weaknesses. How would we evaluate the validity of any design you recommend?

5. Imagine that you are writing a dissertation on the impact of television advertisements on political behavior. Your advisor recommends that you run a survey experiment using an online survey panel (e.g., Lucid) to see how a particular set of advertisements affect survey respondents’ vote intention (e.g., whether they will vote for Kamala Harris or Donald Trump). What are the strengths and weaknesses of using a survey experiment to answer this research question? What are some potential threats to real-world validity? How much should we worry about these threats to validity?