Appendix.
Supplementary Analysis

Contents:

1. Descriptive statistics and frequencies for the independent variables

Table A1.1 provides descriptive statistics for the independent variables observed at the state level. These reflect data on all 48 states and territories in 1890, but only those represented in Congress were used in the analysis. The territories that had not yet gained statehood were Utah (admitted in 1896), Oklahoma (admitted in 1907), Arizona (admitted in 1912), New Mexico (admitted in 1912). Hawaii (admitted in 1959) was not yet a U.S. territory, and statistics were not recorded for Alaska (admitted in 1959).

Table A1.1
Descriptive Statistics for Variables Measured at State Level

Variable	Mean	Std. Dev.	Minimum	Maximum
Proportion of state workforce engaged in agriculture	0.408	0.188	0.071	0.778
Export-orientation of state economy	0.107	0.136	0.012	0.619
Import sensitivity of state economy	0.028	0.042	0.008	0.295
Proportion of state workforce employed in iron and steel or shipbuilding industries	0.005	0.011	0	0.054
Change in number of strikes per 1000 population in state, 1881-85 to 1886-90	0.042	0.069	-0.071	0.316
Change in proportion of state population born in Eastern or Southern Europe	0.004	0.009	-0.030	0.034

Table A1.2 presents descriptive statistics for the individual-level variables. A total of 335 members served in the 51st House of Representatives. The institution had not yet reached its present size of 435.

Table A1.2
Descriptive Statistics for Variables Measured at Individual Level

Variable	Mean	Std. Dev.	Minimum	Maximum
Representative served as military officer	0.344	0.476	0	1
Representative attended an Ivy League university	0.085	0.279	0	1
Age of representative	48.85	9.34	29	75
Democratic party affiliation	0.476	0.500	0	1

Figures A1.1 through A1.6 present frequency distributions for each of the state-level variables.

Figure A1.1

Frequency of Agricultural Sector Variable at State Level

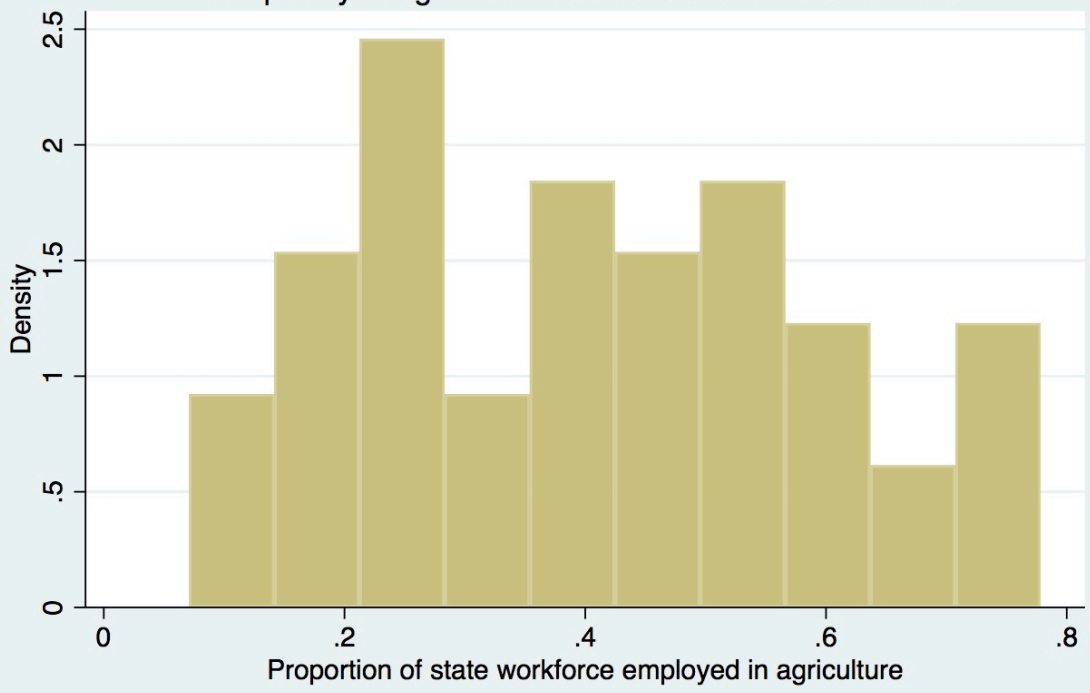


Figure A1.2

Frequency of Export Orientation Variable at State Level

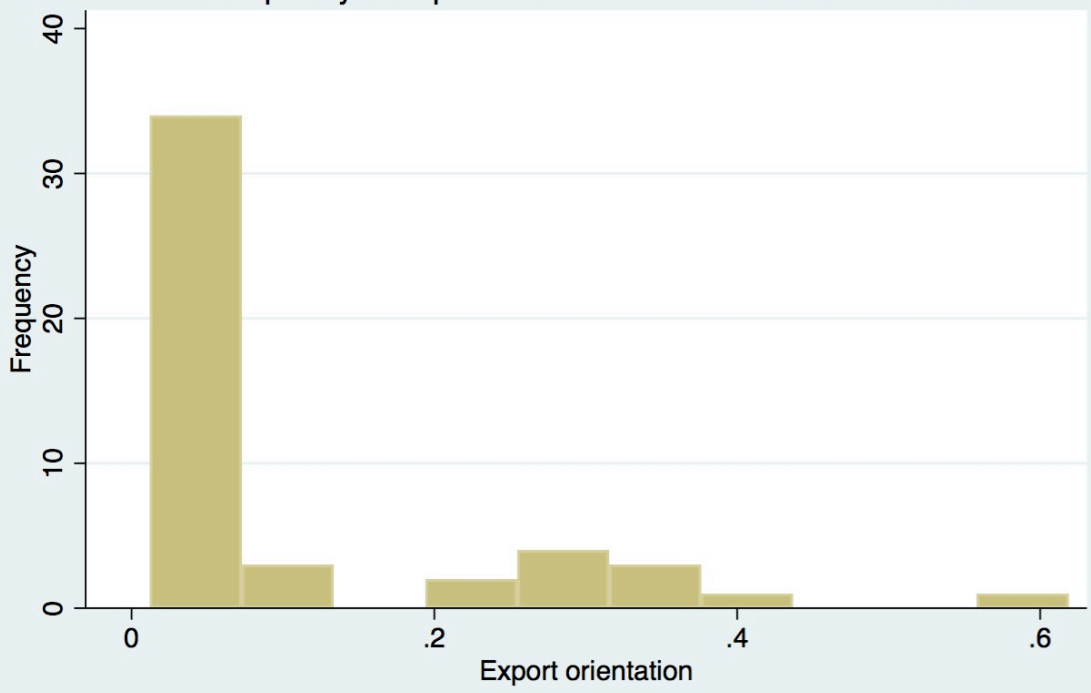


Figure A1.3

Frequency of Import Sensitivity Variable at State Level

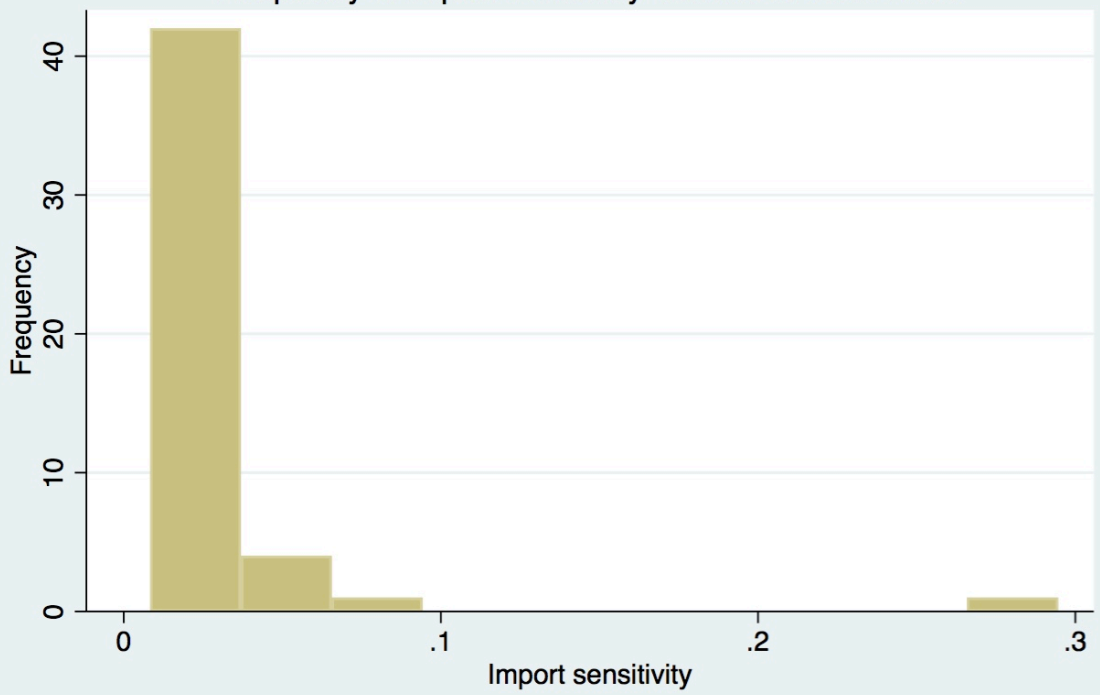


Figure A1.4

Frequency of Steel/Shipbuilding Variable at State Level

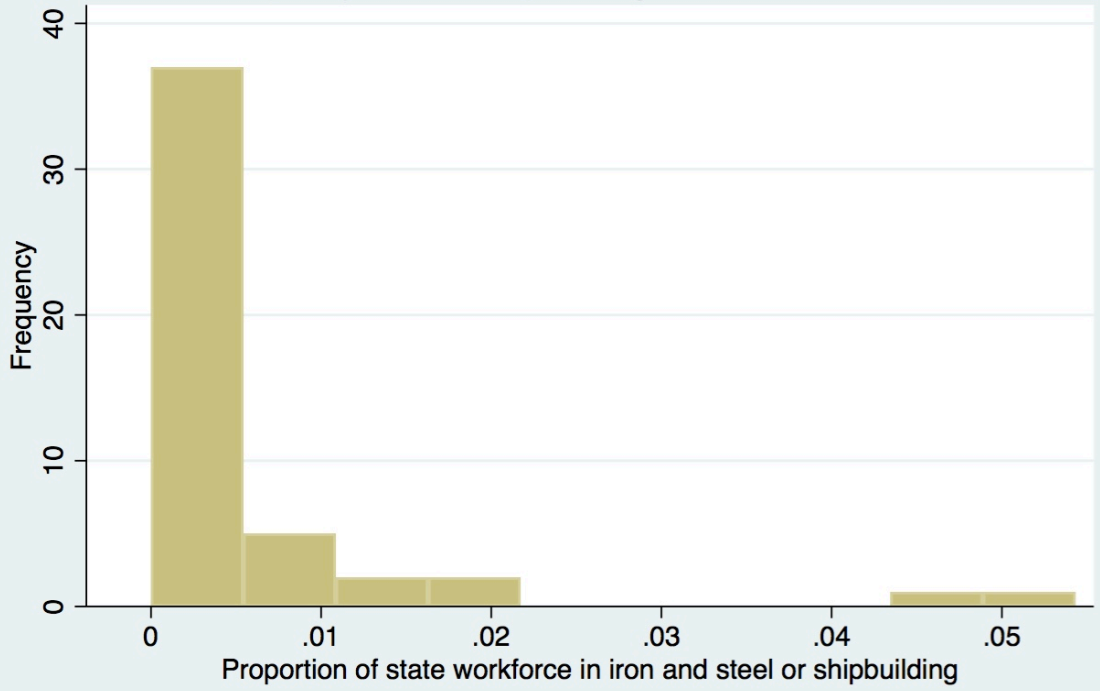


Figure A1.5

Frequency of Strike Variable at State Level

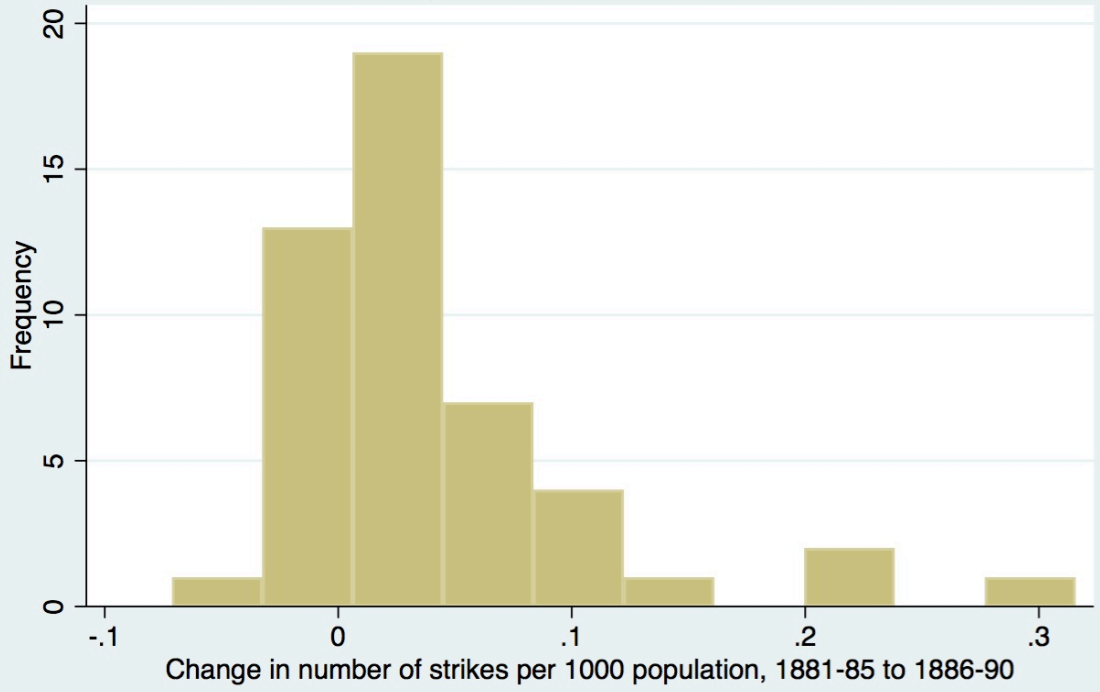
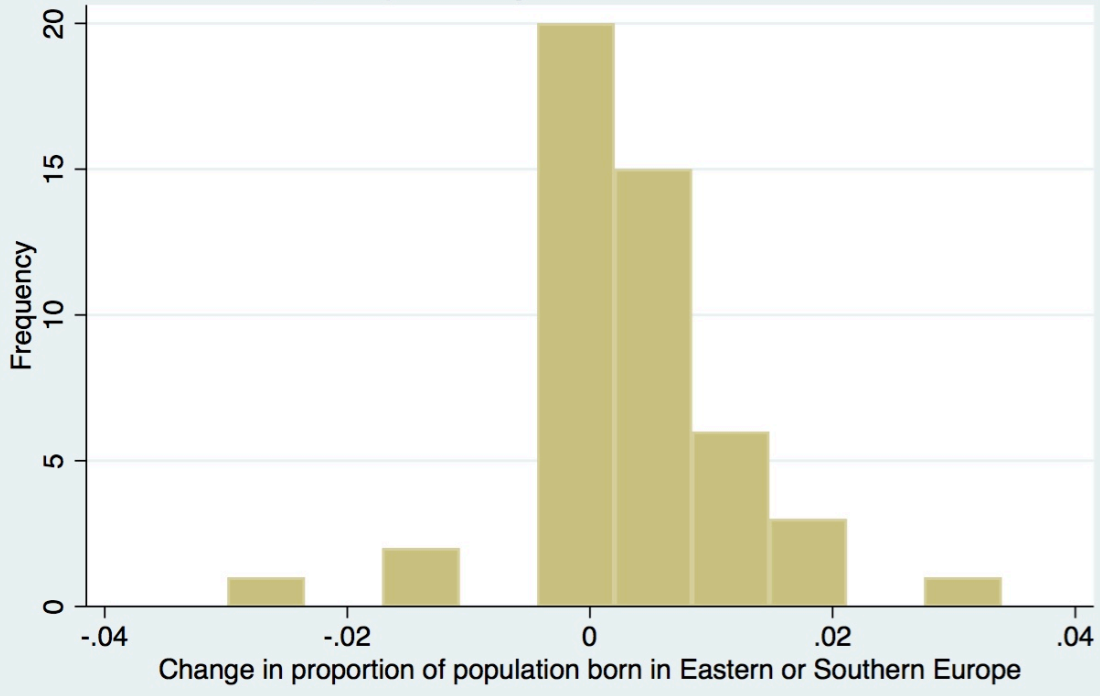


Figure A1.6

Frequency of Immigration Variable at State Level



2. Absenteeism and Roll-Call Voting

One potential problem with the analysis of roll-call voting on the battleship program is the surprisingly high rate of absenteeism among individual representatives. The correspondence between President Benjamin Harrison and his Secretary of State, James Blaine, indicates that absences from Congress were a political concern. Blaine urged Harrison not to call an extra session in the fall of 1889 because the two parties held such a similar number of seats that absences might tip the balance. "That 325 men from every State and every district in the United States should, despite all the incidents and accidents of life, meet at a given hour, on a given day, at a given place, is so uncertain that men who study the doctrine of chances would declare it to be highly improbable. Against which side the doctrine of chances might operate no one can foresee: it might be in our favor; it might be against us." (Blaine to Harrison, 4 September 1889, in Volwiler 1940, 83).

The House of Representatives had only 330 members in the 51st Congress, compared to the 435 it has had since the Apportionment Act of 1911. Even so, between one quarter and one third of members missed each of the votes listed in Table 1. Historical accounts of the battleship debates offer no evidence that these absences had any strategic purpose, and they were not an issue during the debates. Nevertheless, if absenteeism is related to the independent variables used to predict the battleship votes, it might affect inferences about these variables.

Table A2.1 replicates the models presented in Table 3 of the main text using absence from the votes as a dependent variable instead of support for the battleship program. Some of the independent variables, particularly those concerning economic structure, indeed appear to predict absences. There is no evidence that either battleship supporters or opponents were more likely to be absent. Some of the variables that predict support for the battleship program, such as import sensitivity, predict absence, but so do some of the variables that predict opposition, such as the prevalence of agriculture.

Table A2.1
Logit Models of Absences from Votes on Battleship Construction, 1890-91

	Model 1	Model 2	Model 3	Model 4	Model 5
Proportion of state workforce engaged in agriculture	0.02	2.93*			
	(0.51)	(1.35)			
Export-orientation of state economy		-1.84	0.43	-0.15	
		(1.27)	(0.65)	(0.78)	
Import sensitivity of state economy		6.09	-7.01	-5.46	
		(7.97)	(5.07)	(5.10)	
Proportion of state workforce employed in iron and steel or shipbuilding industries		12.91	0.34	2.06	
		(7.48)	(3.86)	(3.78)	
Change in number of strikes per 1000 population in state, 1881-85 to 1886-90		3.73*	2.09*	1.84*	
		(1.08)	(0.92)	(0.86)	
Change in proportion of state population born in Eastern or Southern Europe		3.73*	-1.01	-5.11	
		(1.08)	(15.24)	(15.67)	
Representative served as military officer				-0.36*	-0.43*
				(0.17)	(0.19)
Representative attended an Ivy League university				-0.09	-0.01
				(0.26)	(0.29)
Age of representative				-0.001	0.001
				(0.01)	(0.01)
Democratic party affiliation				0.45*	0.42*
				(0.20)	(0.18)
Constant	-0.72*	-2.19*	-0.77*	-0.76*	-0.81*
	(0.26)	(0.68)	(0.19)	(0.39)	(0.37)
Observations	2,130	2,130	2,130	2,130	2,130
Percent correctly predicted	66.10	66.29	66.29	67.18	66.10

Note: Asterisk indicates significance at the $p < 0.05$ level. Robust standard errors adjusted for clustering on the state are reported in parentheses. All models also include a dummy variable for five of the six roll-call votes, not reported here. Models including the import sensitivity variable also include a dummy variable for the state of Louisiana to control the effect that state's extreme outlier for import sensitivity.

One way to test whether absenteeism biases inferences about the major independent variables is to model these absences alongside members' roll-call votes. Table A2.2 presents the result of a multinomial logit model that does so. The dependent variable in this model has three categories: support for the battleship program, opposition to it, and absence from the vote. It includes all the independent variables considered here. The omitted category in the multinomial logit model is opposition. This makes the results of the equation predicting support for the battleship program comparable to those of the logit results that treat absences as missing data. The results suggest that absences indeed affected inferences about support and opposition to the battleship program, but not enough to change the substantive interpretations offered in the paper.

Table A2.2
Alternative Models of Votes on Battleship Construction, 1890-91

	Multinomial Logit:		Logit:
	No vote	Support	Support
Proportion of state workforce engaged in agriculture	2.81	-0.19	-1.61
	(2.09)	(2.26)	(2.45)
Export-orientation of state economy	-1.32	0.56	2.14
	(1.72)	(1.88)	(2.10)
Import sensitivity of state economy	3.55	-2.83	-10.28
	(11.19)	(11.77)	(13.36)
Proportion of state workforce employed in iron and steel or shipbuilding industries	20.56	8.80	5.34
	(13.45)	(14.40)	(15.34)
Change in number of strikes per 1000 population in state, 1881-85 to 1886-90	7.40*	5.90*	6.66*
	(1.80)	(1.88)	(2.15)
Change in proportion of state population born in Eastern or Southern Europe	21.42	29.31	28.29
	(17.72)	(19.16)	(24.71)
Representative served as military officer	-0.23	0.25	0.11
	(0.27)	(0.29)	(0.29)
Representative attended an Ivy League university	0.37	0.75*	0.24
	(0.37)	(0.36)	(0.37)
Age of representative	-0.01	-0.01	-0.01
	(0.01)	(0.01)	(0.01)
Democratic party affiliation	-2.23*	-4.41*	-4.62*
	(0.26)	(0.29)	(0.33)
Constant	0.29	2.29	2.87
	(1.14)	(1.36)	(1.57)
Observations	2,130		1,408

Note: Asterisk indicates significance at the $p < 0.05$ level. Robust standard errors adjusted for clustering on the state are reported in parentheses. All models also include a dummy variable for five of the six roll-call votes, not reported here. They also include a dummy variable for the state of Louisiana to control for the state's outlying import sensitivity score. The omitted category in the multinomial logit model is opposition to the battleship program.

3. Alternative analysis using an index of support for battleship-building

Another potential problem with modeling votes as the paper does concerns the non-independence of multiple votes by the same member. This modeling choice is defensible because each of the six votes concerns a somewhat different question, and evoke different aggregate levels of support, even though all relate to the battleship program. A substantial minority of members--25 percent--voted to support the battleship program on some but not all of the six votes. Still, most were consistent.

One way to handle concerns about the non-independence of each member's votes is to use an index of all six as a dependent variable instead of modeling each vote separately. The models in Table A3.1 implement this approach, replicating the five models presented in Table 3 of the main text. The dependent variable is the proportion of the six votes on which the member supported the battleship program. Because the data contain a large number of zeroes and ones, I used a generalized linear model with a logit link function and a binomial family for estimation.

Table A3.1
Models of Index of House Votes on Battleship Construction, 1890-91

	Model 1	Model 2	Model 3	Model 4	Model 5
Proportion of state workforce engaged in agriculture	-4.49* (0.59)	-1.24 (1.86)			
Export-orientation of state economy		-5.30* (1.77)	-6.26* (1.10)	1.54 (1.45)	
Import sensitivity of state economy		22.52 (13.24)	27.87* (10.81)	-5.55 (10.03)	
Proportion of state workforce employed in iron and steel or shipbuilding industries		5.17 (12.45)	10.41 (9.71)	0.36 (11.74)	
Change in number of strikes per 1000 population in state, 1881-85 to 1886-90		1.71 (1.91)	2.43 (1.68)	6.41* (1.62)	
Change in proportion of state population born in Eastern or Southern Europe		-26.34 (22.19)	-3.53 (18.21)	38.30 (24.06)	
Representative served as military officer				-0.03 (0.28)	-0.31 (0.27)
Representative attended an Ivy League university				0.02 (0.36)	0.54 (0.33)
Age of representative				0.001 (0.01)	0.01 (0.01)
Democratic party affiliation				-4.25* (0.30)	-4.07* (0.25)
Constant	2.13* (0.27)	0.98 (0.92)	0.38 (0.24)	1.84* (0.67)	2.25* (0.67)
Observations	330	330	330	330	330

Note: Asterisk indicates significance at the $p < 0.05$ level. Estimates are from a generalized linear model with a logit link function and a binomial family. The models include a dummy variable for the state of Louisiana to control for the state's outlying import sensitivity score, not reported here.

The results broadly support the paper's conclusions. Economic structure is strongly related to support for the battleship program. The argument concerning trade interests still best accounts for this relationship in the alternative models. Export orientation is the only significant independent variable in the second model, and it remains significant in every specification that included it. The same cannot be said for import sensitivity, which comes close to the threshold for statistical significance ($p=0.064$) only in the third model.

The results also offer some support the argument that increasing labor unrest contributed to support for the battleship program. Trends in strikes were related to the index of support for the

battleship program in two of the three specifications that included it, just as in the original analysis.

None of the individual-level variables other than party was statistically significant, even when the economic structural variables were excluded. Unlike the original analysis, these models also offer no support for the expected relationship between the slave population in 1860 and support for the battleship program.

Table A3.2 reports results like those in Table 5 of the paper, substituting the index of votes for the individual votes used in the main analysis. As one would expect given the smaller number of observations, the results are somewhat weaker than those in Table 5. Import sensitivity is only a statistically significant influence on Republicans in the more generous specification, and export orientation is not significant at all. However, there is still evidence that import sensitivity affected Republicans and that trends in strikes affected Democrats, just as in the main analysis.

Table A3.2
Models of Index of House Votes on Battleship Construction, 1890-91, by Party

	Democrats		Republicans	
Proportion of state workforce engaged in agriculture	2.51		-5.65	
	(4.03)		(3.45)	
Export-orientation of state economy	0.94	2.96	1.42	-3.58
	(3.36)	(1.63)	(5.00)	(3.15)
Import sensitivity of state economy	-12.03	-24.39	64.57	88.54*
	(24.71)	(13.32)	(44.52)	(39.45)
Proportion of state workforce employed in iron and steel or shipbuilding industries	9.43	-2.84	-16.63	4.34
	(23.80)	(14.01)	(24.62)	(20.40)
Change in number of strikes per 1000 population in state, 1881-85 to 1886-90	8.07*	6.36*	-0.22	2.89
	(3.40)	(2.02)	(4.22)	(4.28)
Change in proportion of state population born in Eastern or Southern Europe	59.68	63.55	-11.36	10.53
	(37.12)	(39.63)	(37.24)	(39.84)
Constant	-3.53	-2.30*	3.52*	0.81
	(2.06)	(0.34)	(1.76)	(0.55)
Observations	152	152	178	178

Note: Asterisk indicates significance at the $p < 0.05$ level. Estimates are from a generalized linear model with a logit link function and a binomial family. The models include a dummy variable for the state of Louisiana to control for the state's outlying import sensitivity score, not reported here.

4. Regional dummies vs. economic structure

One way in which the models presented here differ from those of Trubowitz (1998, 31-95) and others is that this earlier work used region rather than economic structure as a primary independent variable. Like most work on political geography, Trubowitz (1998, 6) intends the regions he considers to capture differences in economic structure: political conflict among them "grows out of the striking degree of regional economic specialization and differentiation that is an enduring feature of the development of the national economy." A measure of economic structure, such as the share of agriculture or manufacturing in the economy, is theoretically preferable to simple indicators of region in the empirical analysis because it captures this economic specialization and differentiation directly. Nevertheless, there may be more to regional differences than just the balance between agriculture and manufacturing. If so, regional dummy variables might still produce a better-fitting model.

The first model in Table A4.1 uses dummy variables for the regions that Trubowitz employed to predict support for battleship-building. (The South is the excluded regional category.) It replicates the first model from Table 3 in the main text, substituting these dummies for the size of the agricultural sector. It fits the data better than that model does, producing a BIC statistic that is 7.77 points lower. Under the conventional standards set out in Long (1997, 112), this offers strong support for the use of regional dummies rather than the share of agriculture.

Would using regional dummies instead of the agricultural share of the state economy affect inferences about other independent variables? The second and third models in Table A4.1 seek to answer this question. The first replicates the second model from Table 3 in the main text, substituting the regional dummy variables. The second includes all the independent variables considered in the main text. They produce similar substantive results. The magnitude of the coefficient on the strike variable is quite a bit larger when using the regional dummies instead of the size of the agricultural sector, passing the threshold for statistical significance in the revised model when it did not do so in the original. This result is worth noting, but, because this variable had effects in other models in the paper, the interpretation of its overall role in the process is not really changed.

The main implication of the analysis using the dummy variables is that there is more to regional differences than the balance between agriculture and manufacturing. Unfortunately, the regional dummies are blunt instruments. They do no reveal the source of the additional explanatory power. It might stem from unmeasured differences in economic structure, differences in the strength of party attachments, regional cultural factors, or something else. The main text of the paper retains the results using the agricultural share of the economy because they fit the paper's argument about economic structure more closely, and their interpretation is clearer.

Table A4.1
Alternative Models of House Votes on Battleship Construction, 1890-91

	Model 1	Model 2	Model 3
Northeast	1.92*	0.51	-0.95
	(0.41)	(0.62)	(0.65)
West	2.47*	1.82*	-0.86
	(0.30)	(0.39)	(0.56)
Export-orientation of state economy		-4.39*	-0.99
		(1.46)	(1.85)
Import sensitivity of state economy		21.64*	2.19
		(10.24)	(10.51)
Proportion of state workforce employed in iron and steel or shipbuilding industries		22.72	17.40
		(13.29)	(14.14)
Change in number of strikes per 1000 population in state, 1881-85 to 1886-90		5.21*	8.37*
		(2.21)	(1.95)
Change in proportion of state population born in Eastern or Southern Europe		-25.90	29.52
		(36.82)	(23.63)
Representative served as military officer			0.09
			(0.30)
Representative attended an Ivy League university			0.27
			(0.38)
Age of representative			-0.01
			(0.01)
Democratic party affiliation			-4.85*
			(0.35)
Constant	-1.05*	-0.57	2.72
	(0.27)	(0.44)	(0.93)
Observations	1,408	1,408	1,408
Percent correctly predicted	73.65	74.73	89.84
BIC	1659.41	1605.48	947.80
BIC of identical model with agricultural sector instead of regional dummies	1667.18	1650.27	940.53

Note: Asterisk indicates significance at the $p < 0.05$ level. Robust standard errors adjusted for clustering on the state are reported in parentheses. All models also include a dummy variable for five of the six roll-call votes, not reported here. Models that include import sensitivity also include a dummy variable for the state of Louisiana to control for the state's outlying import sensitivity score.

5. Alternative analysis of strikes and immigration

The analysis in the paper treats the effects of strikes and immigration as additive, like the other independent variables in the analysis. An alternative reading of the "psychic crisis" argument might suggest that both strikes and immigration were necessary to produce this effect. Some observers during this period found strikes alarming because they thought "foreign" ideologies brought to the United States by immigrants had radicalized workers. This line of argument suggests that an interaction between strikes and immigration would be a better specification.

Table A5.1 presents the results of two models testing this possibility. The first builds on the conservative specification in Table 3, model 2, that includes the basic economic structural variable, the size of the agricultural sector. The second builds on the more generous specification that excludes this structural variable. Both include an interaction term for strikes and immigration. (In order to estimate this properly, trends in both strikes and immigration had to be re-scaled so that they were always positive.)

Table A5.1
Logit Models of House Votes on Battleship Construction, 1890-91

	Model 1	Model 2
Proportion of state workforce engaged in agriculture	-2.47 (1.46)	
Export-orientation of state economy	-6.11* (1.82)	-7.87* (1.55)
Import sensitivity of state economy	27.04* (11.86)	36.22* (11.15)
Proportion of state workforce employed in iron and steel or shipbuilding industries	7.11 (11.60)	16.42 (10.76)
Change in number of strikes per 1000 population in state, 1881-85 to 1886-90	**-18.58** **(12.16)**	**-12.69** **(11.54)**
Change in proportion of state population born in Eastern or Southern Europe	**-87.87** **(49.70)**	**-17.22** **(33.85)**
Interaction of strike and immigration variables	**434.84** **(251.79)**	**337.78** **(238.49)**
Joint significance test for components of interaction	**Chi-squared (3) = 4.84**	**Chi-squared (3) = 8.55***
Constant	4.68* (2.24)	2.71 (1.81)
Observations	1,408	1,408
Percent correctly predicted	72.87	72.80
BIC	1650.03	1647.50
BIC of identical model without interaction	1650.27	1645.22

Note: Asterisk indicates significance at the $p < 0.05$ level in a two-tailed test. Robust standard errors adjusted for clustering on the state are reported in parentheses. All models also include a dummy variable for five of the six roll-call votes, not reported here. Models that include import sensitivity also include a dummy variable for the state of Louisiana to control for the state's outlying import sensitivity score.

The results do not offer much support for the interactive specifications. The components of the interaction are jointly significant in the more generous specification, but not in the more conservative one. More tellingly, the interactive model in which the interaction effect is significant does not fit the data as well as the additive version, which has a slightly lower BIC statistic.

6. Models disaggregating the steel and shipbuilding sectors

One possible objection to the results concerning the steel and shipbuilding sectors is that these might not have had the same effects. Perhaps the construction of the fleet was more important for shipbuilding than for steel, though it would have used the services of both. Table A6.1 presents results that disaggregate these two sectors, then enter them into the more generous specification used in Table 3, model 3, singly and together. The results provide no evidence that the size of these sectors in their home state affected members' support for the battleship program.

Table A6.1
Alternative Models of House Votes on Battleship Construction, 1890-91

	Model 1	Model 2	Model 3
Export-orientation of state economy	-7.55* (1.54)	-7.48* (1.51)	-7.56* (1.53)
Import sensitivity of state economy	29.04* (10.65)	32.00* (10.95)	31.92* (11.04)
Proportion of state workforce employed in shipbuilding industry	**-26.79 (65.71)**		**-31.44 (66.05)**
Proportion of state workforce employed in iron and steel industry		**15.49 (9.31)**	**15.83 (9.43)**
Change in number of strikes per 1000 population in state, 1881-85 to 1886-90	2.29 (1.53)	3.07* (1.49)	3.05* (1.51)
Change in proportion of state population born in Eastern or Southern Europe	-11.27 (26.72)	-30.36 (26.95)	-28.89 (27.62)
Constant	0.48 (0.45)	0.32 (0.44)	0.35 (0.45)
Observations	1,408	1,408	1,408
Percent correctly predicted	73.15	72.80	73.15

Note: Asterisk indicates significance at the $p < 0.05$ level. Robust standard errors adjusted for clustering on the state are reported in parentheses. All models also include a dummy variable for five of the six roll-call votes, not reported here. Models that include import sensitivity also include a dummy variable for the state of Louisiana to control for the state's outlying import sensitivity score.

7. The legacy of the Civil War

Another possible linkage to industrialization not discussed at length in the paper concerns the legacy of the Civil War. This possibility is less theoretically important because the Civil War and its aftermath had substantively little to do with the pros and cons of modernizing the Navy more than two decades later. However, there is a potentially important indirect connection that might threaten the validity of the results. First, differences in economic structure between the industrializing North and the agrarian South clearly contributed to the Civil War. The production of export-oriented agricultural commodities continued to dominate the Southern economy after the war ended. The industrial development of the North, which contributed to the region's different perspective on slavery as well as the tariff prior to the war, also continued after it ended. The two regions' economic differences had contributed to political conflict over the tariff as well as slavery prior to the war. While the war settled the question of slavery, it magnified and hardened other regional political differences.

After Reconstruction, Southerners remained suspicious of spending on federal military forces. They feared these forces might be used to interfere with their efforts to reimpose white supremacy after the withdrawal of federal troops in 1877. As Bensel (1984, 61) put it, "[t]he southern periphery opposed imperialist expansion primarily because the policy required the development of a large military establishment and strong central government. These policies reminded the South of Reconstruction and the possibility that the experience might be repeated." Indeed a so-called "Force Bill" providing for federal supervision of elections in the South, and raising the possibility of military intervention to enforce its implementation was debated in 1890 at roughly the same time as the battleship appropriation. Southerners linked Northern support for an imperialist foreign policy to their intentions in the South, arguing that their region might be subjugated like Ireland or India (Bensel 1984, 73-79).

This Southern suspicion of the military creates an indirect link between economic structure and the politics of battleship-building. Unlike the three linkages already outlined in this section, it is not causal. It does not stem from a direct connection between battleship-building and economic interests but rather with unrelated implications of economic structure. Even so, any effort to disentangle the reasons for a linkage between economic structure and the battleship debate must consider it or risk incorrectly evaluating the causal relationships.

There are several possible approaches to capturing the legacy of the Civil War. The most promising variable is the proportion of the population that was enslaved in 1860, recorded in the 1860 Census (Kennedy 1864, 594-5). To the extent that economic structure contributed to the onset of the Civil War, the prevalence of slavery in Southern agriculture was the most proximate trigger. The states with the largest prewar slave populations faced the greatest challenges in adjusting to the postwar order. Other research has found that slavery had very persistent political effects (Acharya, Blackwell, and Sen 2016). This indicator has the advantage of capturing variation in the effect of the Civil War within the former Confederate states, as well as in border states like Kentucky and Missouri, something that cannot be said for a simple dummy variable

indicating whether a state seceded.[1] Nevertheless, the fact of secession is clearly significant, and deserves to be considered as an indicator of the war's impact on subsequent political alignments.

Another possible indicator of the legacy of the Civil War is the population of Confederate and Union veterans in each state (Census Office 1897, Tables 123-124). This is less directly related to economic structure, reflecting instead the idiosyncrasies of military recruitment patterns and postwar population movements. Table A7.1 presents the results of six models testing these three alternatives. The replicate models 2 and 3 from Table 3 in the paper, replacing the proportion of the population enslaved in 1860 with the alternatives.

The legacy of the Civil War, as measured by the proportion of the population that was enslaved in 1860, or whether the states seceded, had no effect on support for battleship-building. Only the proportion of Confederate and Union veterans in the population made a statistically significant difference. The proportion of Confederate veterans is significant in both specifications. The BIC statistics for these models are also lower than those employing either of the other variables. While these results are interesting, the most important observation about them is that the indicator of the legacy of the Civil War does not greatly affect the results concerning other aspects of economic structure.

[1] The eleven states that seceded were Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Texas, Tennessee, and Virginia.

Table A7.1
Models with Alternative Indicators of the Legacy of the Civil War

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Proportion of state workforce engaged in agriculture	-1.45 (1.53)		-1.23 (1.80)		0.26 (1.93)	
Export-orientation of state economy	-5.27* (1.76)	-6.25* (1.58)	-5.78* (1.49)	-6.51* (1.10)	-7.41* (1.80)	-7.24* (1.56)
Import sensitivity of state economy	20.96 (13.08)	26.64* (12.62)	22.74* (11.86)	26.98* (11.62)	34.37* (14.09)	33.29* (13.61)
Proportion of state workforce employed in iron and steel or shipbuilding industries	6.76 (11.57)	12.70 (10.20)	7.93 (11.58)	12.81 (10.42)	15.94 (13.31)	14.86 (11.07)
Change in number of strikes per 1000 population in state, 1881-85 to 1886-90	2.27 (1.69)	3.13* (1.34)	2.39 (1.70)	3.12* (1.34)	2.36 (1.84)	2.22 (1.25)
Change in proportion of state population born in Eastern or Southern Europe	-28.49 (22.88)	-25.69 (24.11)	-29.20 (23.21)	-26.51 (24.30)	-56.42* (26.54)	-56.55* (26.57)
Proportion of state population enslaved in 1860	**-0.90** **(1.50)**	**-1.03** **(1.46)**				
Former Confederate state			**-0.26** **(0.44)**	**-0.33** **(0.38)**		
Proportion of Confederate veterans in population					**-63.13*** **(22.00)**	**-62.31*** **(20.07)**
Proportion of Union veterans in population					**-54.61** **(28.78)**	**-54.13** **(29.19)**
Constant	1.07 (0.84)	0.38 (0.49)	0.96 (0.85)	0.38 (0.51)	1.74 (1.06)	1.85* (0.64)
Observations	1,408	1,408	1,408	1,408	1,408	1,408
Percent correctly predicted	72.87	72.87	72.73	72.80	73.65	73.65
BIC	1656.07	1650.59	1656.25	1650.16	1633.12	1625.92

Note: Asterisk indicates significance at the $p < 0.05$ level. Robust standard errors adjusted for clustering on the state are reported in parentheses. All models also include a dummy variable for five of the six roll-call votes, not reported here. The models also include a dummy variable for the state of Louisiana to control for the state's outlying import sensitivity score.

8. DW-NOMINATE as an alternative indicator of partisanship

Analyses of roll-call voting frequently use the first dimension of DW-NOMINATE as an indicator of liberal-conservative ideology (Poole and Rosenthal 2007). The score for each individual member ranges from a theoretical minimum of -1, at the liberal end of the spectrum, to +1, at its most conservative point. It is possible to use these scores in a similar fashion here, though two caveats are necessary. First, as with party and other individual-level variables, they are post-treatment with respect to the economic structural variables. Economically motivated constituents could use this characteristic to select candidates likely to take positions they prefer. This is a particularly acute problem with vote-based indicators of ideology, including DW-NOMINATE (e.g., Jackson and Kingdon 1992, 809-14; Vandoren 1990, 315-6). It is thus undesirable to include these scores in models estimating the total effects of the economic variables.

Second, while interpreting the first dimension of DW-NOMINATE as an indicator of liberal-conservative ideology makes sense for more recent congresses, the practice is anachronistic when applied to the 1890-91 period. The of the 51st House of Representatives with the lowest DW-NOMINATE scores are Southern Democrats. These individuals were certainly not "liberal" or "left" in any ordinary sense of these terms. For several reasons, the measure has more face validity as a as an indicator of the intensity of party loyalty. It is correlated with Democratic Party affiliation at -0.95. As in our current, highly polarized era, there was no overlap between the two parties on the first dimension of DW-NOMINATE. All Republicans had scores greater than 0, ranging from 0.082 to 0.767. All Democrats had scores less than 0 (-0.124 to -0.697).

Table A8.1 presents four models of support for the battleship program, three that include the first dimension of DW-NOMINATE. For ease of reference, the first replicates model 4 from Table 3 of the main text, which includes only the party variable. The second adds the DW-NOMINATE variable. It provides further support for interpreting this variable as an indicator of party loyalty. The party variable is not significant in model 2, as one would expect if in the presence of a more nuanced and continuous measure of the same concept.

Table A8.1
Logit Models of House Votes on Battleship Construction, 1890-91

	Model 1	Model 2	Model 3	Model 4
Export-orientation of state economy	0.96 (1.29)	3.74* (1.32)	3.67* (1.31)	
Import sensitivity of state economy	-3.14 (10.02)	-17.88 (10.87)	-17.47 (10.67)	
Proportion of state workforce employed in iron and steel or shipbuilding industries	12.63 (12.99)	5.82 (10.94)	6.68 (11.12)	
Change in number of strikes per 1000 population in state, 1881-85 to 1886-90	7.60* (1.27)	5.71* (1.30)	5.94* (1.30)	
Change in proportion of state population born in Eastern or Southern Europe	30.39 (23.09)	35.44 (20.90)	35.70 (20.94)	
Representative served as military officer	0.09 (0.29)	0.36 (0.25)	0.34 (0.25)	0.26 (0.31)
Representative attended an Ivy League university	0.26 (0.37)	0.21 (0.34)	0.21 (0.34)	-0.60 (0.34)
Age of representative	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)
Democratic party affiliation	-4.63* (0.33)	0.39 (0.78)		
DW-NOMINATE, first dimension		7.34* (1.32)	6.81* (2.94)	6.27* (0.51)
Constant	2.10* (0.86)	-0.25 (0.85)	-0.09 (0.85)	0.37 (0.86)
Observations	1,408	1,408	1,408	1,408
Percent correctly predicted	89.84	89.91	89.99	89.99

Note: Asterisk indicates significance at the $p < 0.05$ level. Robust standard errors adjusted for clustering on the state are reported in parentheses. All models also include a dummy variable for five of the six roll-call votes, not reported here. Models that include import sensitivity also include a dummy variable for the state of Louisiana to control for the state's outlying import sensitivity score.

Model 3 and 4 produce a surprising change in the sign for export orientation. It had a negative sign in the models without the individual-level variables, but a statistically significant positive sign when the DW-NOMINATE variable is included. This is a more extreme version of the problem posed by this variable's insignificance in the first model in the table, which was discussed in the main text. The total effect of both export orientation on support for the battleship program is negative, and the total effect of import sensitivity is positive. However, party (and party loyalty) mediates much of this effect.

Table A8.2 shows that the economic structural variables effect the DW-NOMINATE scores--our indicator of party loyalty--much as they did party selection in Table 4 of the main text. The effect of the structural variables on party loyalty, as indicated by the DW-NOMINATE score, embodies not only the impact of the economic variables on the 1888 election, but also its impact on the voting behavior of members of Congress after they are seated. These effects are quite strong, which explains why the inclusion of party loyalty in models of support for battleship-building changes the apparent effect of economic structure so much.

Table A8.2
OLS Models of Republican Party Loyalty in the House of Representatives, 51st Congress

	Model 1	Model 2	Model 3
Proportion of state workforce engaged in agriculture	-1.02*	-0.43	
	(0.10)	(0.32)	
Export-orientation of state economy		-1.46*	-1.79*
		(0.30)	(0.17)
Import sensitivity of state economy		5.58*	7.53*
		(2.10)	(1.54)
Proportion of state workforce employed in iron and steel or shipbuilding industries		1.69	3.55*
		(2.08)	(1.57)
Change in number of strikes per 1000 population in state, 1881-85 to 1886-90		-0.30	-0.06
		(0.33)	(0.27)
Change in proportion of state population born in Eastern or Southern Europe		-9.45*	-8.90*
		(3.58)	(3.56)
Constant	0.43*	0.32	0.10
	(0.04)	(0.16)	(0.04)
Observations	354	354	354
Adjusted R-squared	0.22	0.31	0.30

Note: Asterisk indicates significance at the $p < 0.05$ level. Models that include import sensitivity also include a dummy variable for the state of Louisiana to control for the state's outlying import sensitivity score.

How much does economic structure influence congressional voting behavior after the election? The results in Table A8.3 attempt to answer this question. The models there estimate the effect of economic structure on party loyalty within each party. Put differently, they consider the effects of economic structure beyond the determination of the member's party.

Table A8.3
OLS Models of Republican Party Loyalty in the 51st House of Representatives, by Party

	Democrats			Republicans		
Proportion of state workforce engaged in agriculture	-0.42*	-0.26		-0.24*	-0.06	
	(0.07)	(0.13)		(0.06)	(0.19)	
Export-orientation of state economy		-0.17	-0.37*		-0.13	-0.17
		(0.16)	(0.12)		(0.27)	(0.20)
Import sensitivity of state economy		0.51	1.81		1.32	1.55
		(1.16)	(0.97)		(1.39)	(1.10)
Proportion of state workforce employed in iron and steel or shipbuilding industries		-1.29	-0.12		2.00*	2.23*
		(1.04)	(0.96)		(0.92)	(0.70)
Change in number of strikes per 1000 population in state, 1881-85 to 1886-90		0.08	0.24*		0.22	0.24
		(0.11)	(0.05)		(0.15)	(0.17)
Change in proportion of state population born in Eastern or Southern Europe		1.92	1.96		-2.06	-1.96
		(2.18)	(2.31)		(2.30)	(2.22)
Constant	-0.19*	-0.25*	-0.38*	0.48*	0.38*	0.35*
	(0.03)	(0.07)	(0.03)	(0.02)	(0.09)	(0.02)
Observations	168	168	168	186	186	186
Adjusted R-squared	0.47	0.47	0.53	0.13	0.13	0.13

Note: Asterisk indicates significance at the $p < 0.05$ level. Robust standard errors adjusted for clustering on the state are reported in parentheses. All models also include a dummy variable for five of the six roll-call votes, not reported here. Models that include import sensitivity also include a dummy variable for the state of Louisiana to control for the state's outlying import sensitivity score.

The results suggest that economic structure, especially export-orientation, increases party loyalty among Democrats. (This is apparent as a negative effect of export orientation on Republican Party loyalty among Democrats.) As in the results presented in Table 5 of the main paper, this effect is mitigated by increasing labor unrest in the representative's home state, which diminishes party loyalty. The same is true for Republicans, though the effect of economic structure on party loyalty appears to work mainly through the state's participation in military contracting.

These results suggest some interesting wrinkles in the way economic structure influences partisanship, but they do not change the principal conclusions offered in the main text of the paper: much of the effect of economic structure is mediated through party affiliation, but not all of it. Democrats and Republicans from states with economic structural characteristics that align with their party's positions on battleship-building (and probably other issues, particularly trade protection) tend to be more loyal to their party's positions in general.

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