Congressional Voting on Public Lands Reform in the Jacksonian Era

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Abstract

During the 1830s, Congress passed a series of laws reforming U.S. policy on acquiring public lands. These laws established a federal land policy of preemption, under which squatters on public land obtained legal title to it in exchange for payment of a minimum (and low) price per acre. Preemption significantly liberalized the terms of land ownership in the U.S. We explore the determinants of roll call voting on the preemption acts in Congress. We find that two dimensions of ideology, while important, typically fail to explain voting coalitions in the House of Representatives. A member’s region of the country consistently adds explanatory power: Representatives and Senators from the original thirteen states were less supportive of preemption on western lands, all else constant. This is inconsistent with explanations of a West-South coalition vs. the North often found in the literature. A member’s political party and district-level characteristics sometimes play an important explanatory role as well. Two dimensions of “ideology” provide a consistently better explanation of coalitions in the Senate than the House. Overall, the results suggest that liberalized land distribution policy depended on numerous cross-cutting factors, and a small-dimensional recovered “ideology” is not sufficient to explain this change in federal policy.

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The public lands policy of the United States changed significantly during the Jacksonian era. These policy changes enshrined in law the rights of squatters on public lands to claim ownership of the land they used. Pretensions of federal law notwithstanding (Frymer 2014), squatters had always been more or less successful at claiming this right in fact (Gates 1968; Murtazashvili 2013); with Jacksonian land reforms, it existed in law as well. Correspondingly, rights of land ownership were effectively distributed much more widely across the socioeconomic spectrum than they had previously been. These changes exert enduring influence on the political-economic development of the U.S., and are intrinsically interesting as a major episode of distributive politics and socioeconomic redistribution. Therefore, it is important to understand the political determinants of Jacksonian era public lands policy. That is the question we address in this paper.

In particular, we explore determinants of roll call votes by U.S. Senators and Representatives on a series of public lands bills from 1830 to 1841. We examine the ability of two dimensions of DW-NOMINATE scores—to which we often refer by the convenient misnomer “ideology”—to explain roll call voting. Jacksonian public lands votes should be a natural illustration of the explanatory power of DW-NOMINATE: they blend classic issues of economic redistribution of wealth down the socioeconomic ladder, and Antebellum territorial expansion. The first issue revolves around positions on the classic “left-right” conflict in politics; the second is closely related to the future of slavery in the U.S. and the sectional balance in the Senate. Antebellum DW-NOMINATE scores are typically interpreted as mapping the first of these issues to the first dimension of “ideology,” and the second issue to the second dimension (Poole and Rosenthal 2007; McCarty, Poole, and Rosenthal 2000).

Consistent with these expectations, we do find that these two dimensions of “ideology” do have significant explanatory power for Jacksonian public lands votes. This is particularly true of the first dimension, as is typically the case in DW-NOMINATE analyses (Poole and Rosenthal 2007). The first and second dimensions of DW-NOMINATE also provide greater explanatory power of votes in the Senate than the House, and somewhat greater explanatory power over time. Yet there are important anomalies in explanations based on DW-NOMINATE alone. There is significant instability over this short period of
time in the sign of the effect of each dimension of “ideology.” In addition, several other obvious factors add significant explanatory power for roll call votes, on top of the explanatory power of DW-NOMINATE scores—which is interesting because much of the overall effect of these factors is presumably captured in DW-NOMINATE scores in the first place. These factors include a member’s political party, region of the country, and district-level characteristics that (we contend) should capture aspects of district-level economic structure. In many cases these simple heuristic measures add significant explanatory power on top of DW-NOMINATE. In some cases and by some measures these simple heuristic explanations add much more explanatory power than both DW-NOMINATE dimensions combined.

Overall the results suggest that coalitions on this crucial political-economic issue were multifaceted and cross-cutting. In contrast to legislative coalitions on most major political issues today, they cannot be reduced to a small number of dimensions of conflict between members of Congress. And in contrast with explanations offered by several historians, Jacksonian land policy did not represent a coalition of the South and West vs. the North. Southern members were generally significantly more likely to vote against preemption, all else constant, than members from other sections of the country. Inasmuch as preemption votes did pit the Southerners on the Jacksonian side, it appears to have been in spite of their region, not because of it.

The rest of the paper proceeds as follows. First, we provide brief background on federal public lands policy in general up to 1862, and more detail on the specific bills we examine in our roll call analysis. Then we describe the data sources from which we draw and methods of analysis behind our conclusions. Then we present in detail the results of statistical modeling of roll call vote choice on the Jacksonian era public lands bills in Congress. All tables and figures are at the end of the paper.

1. A Brief Overview of Federal Public Lands Policy to 1862

In its first 75 years of existence, the United States expanded its western border from the Appalachian Mountains to the Pacific Ocean. The Louisiana Purchase alone pushed the western boundary of the U.S. to the Continental Divide in 1803. Cessions of western land claims by the first thirteen states after the Revolutionary War meant that, from the first
days of the republic, the federal government itself was the largest landowner in the U.S. Naturally, the land claimed by the federal government—“public lands” in the contemporary discourse—held immense potential value to Americans. However, in order to actualize that value in economic or fiscal terms, public lands had to be distributed to Americans.

Not surprisingly, an enduring conflict emerged between segments of American society about the ideal nature of this distribution. The Congress under the Articles of Confederation passed a series of land ordinances that allowed for orderly, planned surveying and settlement of land west of the Appalachians at a pace controlled by the federal government. These ordinances made it federal policy to divide territories into townships, and townships into 640 acre parcels of land. Eventually, these parcels were to be auctioned at competitive prices with federally mandated minimums. 640 acres was far larger than ordinary farms; the intention of these laws was that the 640 acre parcels could be purchased by developers, then subdivided and sold to smaller farmers.

Early, Federalist-era policy on public lands was dominated by policymakers who sought to transform the economic potential of public lands into a revenue stream for the federal government. This transformation required federal government control of distribution and settlement of public lands. Such control would restrict the supply of western land available at any time, thereby propping up revenues from land sales. Policymakers intended this hoped-for revenue to shrink the mountains of debt from the Revolutionary War. This would in turn enhance the flow of credit to other (economically elite) segments of the U.S. Controlled settlement would also limit the frontier defense obligations of the relatively feeble U.S. Army – allowing the peacetime army to remain small and cheap. Moreover, a restricted supply of frontier land and pace of settlement would keep eastern wages low and land values high.\(^1\) These effects would all be beneficial to the economic elite of the early U.S., both manufacturing and agrarian.

Yet there is a yawning gap between the intent to control and the realization of that intent. Despite exerting notional sovereignty through a series of laws regulating the locus and pace of settlement of the U.S. population on public lands (Frymer 2014), the Federal government had little real sovereignty on the frontier, in the sense of controlling where

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\(^1\) Contemporary policy makers recognized this effect; e.g. Sen. Thomas Hart Benton of Missouri made this point in Senate floor speeches in 1829 (Feller 1984).
people actually lived. The Treaty of Paris was not yet signed to end the Revolutionary War before American settlers spilled over the Appalachians to live, farm, and hunt on America’s newly acquired lands, irrespective of their legal title to it (Robbins 1924; Gates 1968; White 1991). As the boundary of the U.S. moved west, the pace of illegal squatting on public lands was never far behind. Contemporary accounts indicate that it was not unusual for a literal majority of residents in border territories to be squatters (e.g., Muhn 1997). Squatters lived illegally on federal land, informally claimed plots without title, and made improvements to their plots.

In the face of endemic squatting, formal U.S. law and policy at first insisted that the federal government controlled public lands. The Intrusion Act of 1807 had made unauthorized settlement of public land a crime, and authorized the president to use military force for the removal of squatters. Put simply, the planter elite did not want to squatters to get in the way of plantation development and expansion (Hibbard 1924), and the Northeastern economic elite had much to gain from restrictive access to Western public lands as well. While special preemption privileges were occasionally granted by Congress on an ad hoc basis, this was, formally speaking, the law of the land for roughly the next quarter century.

Operationally, incentives for U.S. Army enforcement were weak and the 1807 removal policy was therefore ineffective (Prucha 1969). The federal government also attempted to exert control over settlement by giving public lands as a bounty to veterans for military service, but the vast majority of these claims were sold to third parties and did not result in government control of the frontier population (CITE: Gates?). In short, despite federal efforts, western settlement was difficult to control, and squatting on western lands continued unabated. With population of western territories exploding, pressures for statehood followed (McCarty, Poole, and Rosenthal 2000).

The incomplete sovereignty of the early federal government resulted in a far more egalitarian distribution of U.S. land resources, and less monetary return to the U.S. Treasury from that distribution, than early federal government designs intended. Moreover, with relatively egalitarian distributions of wealth in these states, it is not surprising (cf. Acemoglu and Robinson 2005, Boix 2003) that their voting rights upon
gaining statehood were more equally distributed among adult while males than voting rights in older East Coast states (Keyssar 2000).

It is further unsurprising that Senators and Representatives from the new Western states favored far more liberal terms of public lands distribution than their counterparts from the East. The electoral connection, as well as the milieu from which they were selected, point strongly in this direction. By the time of President Andrew Jackson’s election, Jacksonian Democrats from the West were initiating a radical change in federal policy on public lands distribution. In this era, public lands policy shifted from a focus on revenue generation with direct benefits flowing to Eastern elites, to a focus on access to land ownership for a broad segment of Americans. Public lands policy lost its earlier pretensions of control, and reconciled actual and notional federal sovereignty in the distribution of Western lands. The vehicle for this reorientation of public lands policy was preemption.

Preemption gave squatters the right to claim legal title to a restricted plot of land, usually 160 acres, at the federally mandated price, around $1.00-$1.25 per acre. Thus, preemption claims were not subject to competition at auction. The federal government had several times granted relief to squatters in the form preemption. However, prior to the Jacksonian era, preemption was granted sparingly. It was rare, targeted to a specific place, and limited in time.

Jacksonian era preemption laws began like their predecessors. They required preemption claims to have been settled in a limited time frame before the act, and they allowed preemption claims only in specific locations. The difference between Jacksonian policy and its predecessors, at first, was the frequency of renewal of preemption laws. By 1841, however, preemption became a standing and prospective federal policy on the distribution of public lands. Preemption was no longer a relief for illegal action. It was a standard, presumptively available channel for the legal claim of title to public lands.

The Jacksonian turn toward liberalized public lands policy was a significant break from land policy of previous decades. It recognized in law what was already true in fact – squatters of relatively low socioeconomic status could use public lands to build their farms and lives. Thereafter, federal public lands policy retained the liberal bent established in the Jacksonian era. By 1842, Eastern designs to claim the bulk of revenue from public land
sales were permanently abandoned. Within twenty years, federal policy on public lands distribution for private ownership and residential use culminated in the Homestead Act of 1862. This most famous of public land laws entitled citizens or intended citizens to claim legal ownership of tracts of public lands free of charge, in exchange for a short-term commitment to inhabit and farm their land.

Overall, Jacksonian era public lands policy effected a much more egalitarian distribution of rights to land ownership across socioeconomic strata than was intended in earlier, Federalist-era policies. This is interesting not only as an exercise of distributive politics in its own right, but because the legacy of these policies continues to matter today. For example, Galor, Moav, and Vollrath (2009) argue that U.S. land inequality in the late 19th century affected public spending on human capital development to the mid-20th century: states with more land inequality had lower public education expenditures. The lasting effects of that human capital divergence are in turn obvious.

2. Jacksonian Era Preemption Laws, 1830-1841

Between 1830 and 1841, there were six general preemption acts adopted by Congress, with the 1830 and 1841 Acts considered “landmark” in their overall impact (Stathis 2003). We document and describe each of these below, and note the relevant roll-call votes in Congress on their passage.

As noted above, at the dawn of the Jacksonian era, the status quo in public land access was the restrictive Intrusion Act of 1807. In 1829, a heated debate erupted in the Senate following a resolution offered by Samuel Foot (W-CT) to suspend new land sales in the West and abolish the office of surveyor general. Thomas Hart Benton (D-MO) argued that Foot (and his ilk) sought to check the growth of the West in order to protect the manufacturing interests of the East and keep factory labor cheap and plentiful (Feller 1984).

The Benton position won out, resulting in the nation’s first general preemption law. Historians often explain passage in terms of sectional coalitions—preemption was supported by a coalition of West and South, possibly in a log roll from which the South

\[2\] 4 Stat. 420 (May 29, 1830).
gained lower tariffs (Feller 1984, Gates 1968, Robbins 1931). We address support for this position later, but in any case, the 1830 Act reversed the 1807 Act by forgiving past intrusions on the public lands and allowing squatters who had possessed and cultivated a tract (as of 1829) to claim up to 160 acres at $1.25 an acre. All claims had to be filed within a year of the date of enactment.

And while the 1830 Act was intended to be temporary, and explicitly sold as such, the demand for further grants of preemption were incessant. As Robbins (1931, 342) argues: “Once the government granted this concession it could not retract. The act in reality encouraged illegal settlements, for settlers immediately took up the best lands they could find and the petitioned Congress for another general pardon.”

And Congress responded. In 1832, a new Preemption Act was passed, which reduced the smallest unit that could be purchased to 40 or 80 acres, depending on whether the land was intended for speculation or “house-keeping.” Such a law further democratized Western settlement, by opening up the frontier for men of smaller means (Gates 1968, 229). Demand for land was growing, however, and settlers soon petitioned Congress for larger tracts. This was granted in the Preemption Act of 1834, which reenacted the earlier 1830 law, the provisions of which allowed persons who possessed and cultivated a tract (as of 1833) to claim up to 160 acres at $1.25 an acre. The time a person had two years from the date of enactment to file a claim.

By 1836, speculation in land had increased significantly, and Congress considered adopting a measure to slow or reverse the process. The Panic of 1837 changed all of that, however. The economic downturn that followed the panic did the work for Congress, by eliminating rampant speculation and rehabilitating the image of the Western settler (Robbins 1931). As a result, support for new preemption legislation grew, and a new Act

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3 4 Stat. 503 (April 15, 1832).
4 4 Stat. 678 (June 19, 1834).
5 At the same time, advocates of preemption sought another federal law. These efforts were led in Congress by Sen. Robert Walker (D-MS) and opposed by Sen. Henry Clay (W-KY). Walker’s preemption bill gained no traction in 1836. A revised version of the bill was tried again in 1837 (during the lame-duck session of the 24th Congress), and while it passed 27-23 in the Senate it failed in the House (see Van Atta 2014, 214-16).
was passed in 1838. This law granted a right of preemption to (a) every family head or (b) settler who was at least 21 years old who had a personal residence on the land in question, while reviving the basic terms of the 1830 act (claim rights of up to 160 acres at $1.25 an acre), with the life of the claim lasting for two years. These terms were extended yet again in the Preemption Act of 1840; moreover, the provisions were liberalized, as settlers were allowed to claim 320 acres as long as one half was cultivated and the other half was maintained as a residence (Gates 1968, 234-35).

To this point, preemption had mostly been a Democratic initiative. This would change, however, as the 1840 elections saw the Whigs take control of both chambers of Congress and the presidency. Now, the Whigs would push preemption in a different direction: permanent prospective preemption. Retrospective claims on unsettled lands were out. Prospective claims on surveyed lands were in. Those who were family heads, widows, or single men 21 years and older who were citizens or had filed to become citizens—which indicated a slightly nativist tilt to the legislation, which was also present in the congressional debate and voting—and resided on and improved the land could claim up to 160 acres at $1.25 an acre. Those who already owned 320 acres or whose main residence was elsewhere would be ineligible. And only one preemption claim per individual was allowed.

The Preemption Act of 1841 passed by fairly narrow margins in both chambers, and the coalitions switched – now the Whigs predominantly voted for it and the Democrats against it. Why the switch? Part may have had to do with the content of the legislation itself. The 1841 Act was broader and contained a distribution provision—a method of dividing the revenue from the sale of public lands among the states for internal

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6 Stat. 251 (June 22, 1838).
7 For an extended discussion of the politics behind the Preemption Act of 1838, see Van Atta (2008).
8 Stat. 382 (June 1, 1840).
9 Clay would manage this bill in the Whig-controlled 27th Congress, but the permanent prospective preemption idea was first introduced in 1840 by Robert Walker and Thomas Hart Benton in their “Log Cabin Bill.” Walker and Benton managed to get the bill through the Senate in the lame-duck session (on a 31 to 19 vote), but it died in the House. See Hibbard (1924), 347.
10 Stat. 453 (September 4, 1841).
improvements—which had been under consideration (and had divided Whigs and Democrats) since 1832. And distribution was very clearly a Whig-preferred policy. Per Gates (1968, 238 fn 52): “We may conclude that members voted yea or nay more because of distribution than preemption.”

3. Data and Methods

To get a better sense of the determinants of the Jacksonian turn in public lands policy, we examine final-passage roll-call votes for the House and Senate on the preemption legislation described in the previous section. Individual roll calls—and individual voting choices on those roll calls—were identified using Keith Poole and Howard Rosenthal’s Voteview data, and confirmed against information printed in the relevant *House* and *Senate Journals*. Party affiliations, presented in the Voteview files, are based on Martis (1989). District- and state-level census variables (population per square mile and percent of population that was slave) come from Parsons, Beech, and Herman (1978).

We explore the ability of different factors to explain individual vote choice by estimating a series of nested regression models of vote choice. The sequence of covariate groups we explore, which we refer to as models 1-5, is as follows:

1. DW-NOMINATE, 1st dimension (NOM1) only
2. Group 1 + NOM2
3. Group 2 + Democratic party indicator
4. Group 3 + Regional indicators for New England, Mid Atlantic, and South Atlantic, respectively
5. Group 4 + log(population density) + slaves per capita in slave states

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11 See also Feller (1984), 187-88.
12 Note that, for simplicity, we focus on two party labels—Democrats and Whigs—throughout our analysis. These labels assume antecedents (Jacksonians become Democrats and Adamsites/Anti-Jacksonians become Whigs) and combine third parties into their most natural party category (Anti-Masons into Whigs and Conservatives/Nullifiers into Democrats). We believe the latter combination does little damage, as a check of individual third-party member backgrounds (via the Congressional Biographical Directory and Martis [1989]) confirms perfectly the eventual movement into the assumed major party.
Models 1-3 capture the explanations of major congressional enactments based on “ideology” and/or member’s political party, as emphasized by most political scientists.\textsuperscript{13} By “ideology” we mean 1\textsuperscript{st} and 2\textsuperscript{nd} dimension DW-NOMINATE scores. Clearly these scores reflect many factors besides actual ideology, and we use this misnomer for DW-NOMINATE scores as a short hand. The important point of these variables in our analysis is that, whatever they say about ideology (either of a member per se or as induced from their district by the electoral connection), they reflect consistency across issues and time in the construction of voting coalitions. If DW-NOMINATE scores organize all the votes, it may not tell us much about the role of ideology as such, but it does reveal that the coalitions on this issue can be decomposed into axes of conflict that govern coalitions on most other issues.

Model 4 includes the sectionalist explanation—that an issue-specific regional coalition emerged to effect major policy change on public lands—as emphasized by numerous historians of public lands policy and Jacksonian politics. Model 5 includes two additional district-level attributes, slaves per capita for slave states, and natural log of population density. These capture socioeconomic structures that may impinge on the votes of members of Congress. Population density is probably related to the prevalence of manufacturing and importance of the commercial economy in a district.\textsuperscript{14} This can tap into the incentives of Eastern commercial-manufacturing interests to restrict Western settlement to affect manufacturing wages, or to reserve public lands for sale to reduce government crowding out in credit markets. Slaves per capita captures the interests of the Southern agricultural elite, as well as the interest that slave states always took in antebellum territorial expansion. At the same time, these very issues are held to map onto the 1\textsuperscript{st} and 2\textsuperscript{nd} dimensions of DW-NOMINATE (respectively) in this era (McCarty, Poole, and

\textsuperscript{13} It is true that the votes on the left hand side in these models are part of the basis for computing the DW-NOMINATE scores on the right hand side. However, any single vote likely has a negligible effect on DW-NOMINATE scores, so we ignore this issue.

\textsuperscript{14} Given the limited coverage of the 1830 census and other data sources, more direct measures of manufacturing-commercial intensiveness are not available at the congressional district level.
Rosenthal 2000). In this light, model 5 is essentially a loose check on how well the two dimensions of DW-NOMINATE capture these obvious candidates to explain votes.\textsuperscript{15}

For each of models 1-5, we estimate both a logistic regression model by MLE and a linear regression (linear probability) model by OLS. We use both estimators to enhance the robustness of the findings. The estimators provide different frameworks for assessing the explanatory power of each covariate group, and provide two different views of the effect of each covariate. Moreover, the OLS model provides a useful approach to estimating heteroscedasticity-consistent standard errors that are valid in small samples (or so marketed at the present time).

We estimate each model separately for each Congress and chamber, so that no data is pooled; for each estimator and set of covariates there are 10 different sets of results. Separating the analyses in this way allows us to avoid the morass of specification issues in panel data models regarding time dependence and various flavors of panel heteroscedasticity; while heteroscedasticity concerns are still significant in cross-section data, standard error specification is much simpler. Moreover, it is not clear that a “Yea” vote on each bill means exactly the same thing, so that pooling would pose problems for interpretation of coefficients. An additional reason to avoid pooling across chambers is that cross-chamber comparisons of DW-NOMINATE are not valid.

To assess the explanatory power of each covariate group, we calculate (1) the proportional reduction in error (PRE) for logit models, and (2) F tests for nested restrictions for successive OLS models. PRE compares goodness of fit in two logit models. It is 100\%, minus the number of votes incorrectly predicted under the “longer” model divided by the number incorrectly predicted under the “shorter” model. We compare each of models 1-5 to a “null” model with no covariates, in which each legislator’s predicted probability of voting “yea” is the overall proportion of actual “yeas.” PRE averaged over all bills in a given congress, APRE, is the criterion on which Poole and Rosenthal (2007) base the contention that most of the explanatory power of DW-NOMINATE comes from the first

\textsuperscript{15} Regression of 1\textsuperscript{st} dimension DW-NOMINATE on slaves per capita in slave states and log population density typically has $R^2$ between 0.25 and 0.58. Slaves per capita is just as often statistically significant as log population density. Similar regressions for the 2\textsuperscript{nd} dimension of DW-NOMINATE typically have $R^2$ between 0.10 and 0.25. It is not clear what $R^2$ would be large, but this seems non-trivial for two proxies, one of them relatively weak.
dimension—it provides around 80% APRE—with only a couple of percentage points PRE from the 2nd dimension, and negligible amounts from 3rd and higher.

The F statistic compares the sums of squared residuals from a "long" OLS model and a nested "shorter" model obtained by setting some of the long model’s coefficients to 0. If the difference in these sums of squares is close to 0, then the short model fits about as well as the long one, and the extra variables in the long model do not significantly improve the fit or explanatory power of the model. Since ratios of sums of squared errors follow an F distribution, it is possible to judge whether the two models’ sums of squares are “close” in a precise sense. The logit models and OLS models/F test are built on different parametric assumptions, which we are not in a position to evaluate; therefore it is useful to assess conclusions using both methods. Note that a logit model can make more prediction errors as covariates are added, resulting in a negative PRE, but it is not possible for the sum of squared residuals in an OLS model to increase as covariates are added. A longer OLS model always fits the data at least as well as a shorter one in the sense of reducing the sum of squared errors.

In addition to assessing explanatory power of covariate groups using PRE and F tests, we examine the statistical significance of individual covariates. This analysis requires more attention to high correlations among covariates, since this can raise standard errors significantly in small samples. The principal concern is that NOM1 is typically very well explained by a combination of political party and other covariates. This is particularly problematic in the Senate, where there are between 40 and 50 votes on each bill.

We are aware of two other analyses of roll calls on 19th century public lands bills. One is Murtazashvili (2013), who focuses on bills from the 1850s and later due to improvements in data availability; the other is Kanazawa (1996), who focuses only on the 1830 preemption act. In addition to covering a broader set of votes from the pivotal Jacksonian era, we present a more comprehensive comparison of models and different explanatory factors. For the bills he analyzes, Murtazashvili includes 1st dimension DW-NOMINATE as a covariate (but not the 2nd dimension, despite its relevance for territorial issues), and finds that lower 1st dimension scores (more liberal economic “ideology”) increase the likelihood of “Yea” votes; we corroborate this finding below. Kanazawa
includes region dummies, party dummies, and district-level measures of agricultural activity, but not “ideology” or other factors we consider.

4. Findings

Table 1 presents marginal distributions and party breakdowns for the roll calls we analyze; figure 1 presents a visual depiction.

As far as the House is concerned, it is apparent from figure 1 that these roll calls did not break down neatly either by political party or any combination of the DW-NOMINATE dimensions. This was especially true in the earlier Congresses. Explaining the Jacksonian liberalization of public lands policy is not a simple story of “ideology” of members, either on the 1st DW-NOMINATE dimension capturing classic “economic liberalism” or the 2nd dimension capturing ideology on slavery in this era (McCarty, Poole, and Rosenthal 2000). Nor is it a simple story of political parties determining voting coalitions. The one exception is that the 1st dimension of DW-NOMINATE organizes the graph considerably better in the 27th Congress than other Congresses. However, note the major reversal in the side each political party took, and the related effect of 1st dimension scores on voting: the Whigs and members with larger 1st dimension scores were strongly in favor of the preemption bill in 1841, while they had been strongly against this policy in the past. This finding is a reprise of the point made by numerous historians of this issue.

Figure 1 suggests that Senate voting was considerably better organized by “ideology” dimensions and political party than House voting. This is in contrast to the typical pattern of Senate votes in general; e.g. the explanatory power (as APRE) for DW-NOMINATE is lower overall for the Senate than the House (Poole and Rosenthal 2007). Indeed, by the 26th Congress, the two dimensions of “ideology” appear to perfectly explain Senate roll calls, and in the 27th Congress, the 1st dimension is essentially perfect.
Table 2 presents a more systematic quantitative assessment of the explanatory power of the different models laid out in section 3. It shows the proportional reduction in error (PRE) for successive logit models 1-5, vs. a null model in each case.

[Table 2]

For the House (top panel), several features of table 2 stand out. First, for all Congresses except 1 (the 22nd), the greatest PRE comes from one of the relatively long models, 4 and 5. These include the two ideology dimensions, political party, and dummies for various East Coast regions (model 4), and these same covariates as well as slaves per capita and population density (model 5). For Congresses 21, 23, 25, and 26, models 4 and 5 offer considerably more explanatory power in the sense of PRE than the more parsimonious “ideology only” models 1 and 2—PRE is anywhere from about double to quadruple that of models 1 and 2. A parsimonious explanation of House votes on preemption loses significant explanatory power compared to the more intricate explanations.

Second, for all models of House votes, explanatory power tends to grow over time. House votes are more intelligible in general, in the sense of being explained by obvious observable factors, in the later 1830s. Third, for the 1841 preemption vote (27th Congress), 1st dimension DW-NOMINATE alone provides a very good explanation for the vote. The Democratic party dummy also provides high PRE for this Congress (0.833), but 1st dimension DW-NOMINATE is notably better for this landmark vote (0.917).

Turning to the Senate (bottom panel), PREs bear out the visual impression from Figure 1—Senate voting is much better organized than House voting in general. The highest PRE for each Congress is always considerably higher for the Senate than the House (except for the 27th Congress, when they are both very high). Indeed, for the 25th, 26th, and 27th Congresses, one of the models gives a perfect explanation of Senate voting. This is not such an achievement for model 5 in the 25th Congress, which explains 48 votes with 8 variables. But in the 26th Congress only two dimensions of “ideology” perfectly explain all votes, and in the 27th the two “ideology” dimensions plus party do as well.

For the Senate after 1830, the explanatory power of the two DW-NOMINATE dimensions is generally very high. Put differently, the axes of conflict on this issue in the
Senate were similar to the axes of conflict on most other issues before the Senate. The 1st dimension captures almost all of this explanatory power in the 25th and 27th Congresses, while the adding the 2nd dimension gives a perfect (PRE = 1.00) explanation of Senate votes in the 26th Congress. As with the 1830 vote in the House, 1st dimension DW-NOMINATE provides little explanatory power for the Senate in this case (PRE = 0.083). The 2nd dimension adds considerably to it for the 1830 landmark vote (PRE = 0.417), and the two “ideology” dimensions plus region dummies are effective at explaining the vote (PRE = 0.833).

For most Congresses, DW-NOMINATE does seem to capture whatever explanatory power is available from district-level characteristics related to economic structure and prevalence of slavery (model 5). As noted these issues are generally held to map into the two DW-NOMINATE dimensions; they are also proxied by slavery per capita and population density, the additional variables in model 5. While Model 5 has the largest PRE in three Congresses for the House, it is never much better than model 4, with the exception of the 23rd House, where model 5 has PRE about 10 percentage points better than model 4. Otherwise, the additional PRE of model 5 is never more than about 4.5 percentage points, or 15% of the PRE of model 4 itself. The same is generally true for the Senate. The low additional explanatory power of slavery per capita and population density suggests that, inasmuch as these factors actually do capture relevant factors of the socioeconomic structure of congressional districts, they are already accounted for by “ideology,” political party, and/or region.

On the other hand, the explanatory success of model 4 (at least relative to these other models for the House, and for the 1830 landmark vote in the Senate), suggests that regional coalitions specific to the public lands issue played a crucial role in liberalizing public lands policy. This is consistent with the sectionalist explanations of historians of public lands policy, and inconsistent with the view that general “ideology” alone (or the tendency of coalitions to be stable across issues of a given type) can explain the choices of Congress.

Table 3 presents p-values from F tests of nested model restrictions for the OLS (linear probability) models. These tests evaluate the explanatory power of each model compared to the next shortest model. This is one important difference from the PREs in
Table 2: Those models are all evaluated relative to a common baseline (null) model. The F tests explore the marginal improvement in fit from each additional covariate group. The other important difference from the PREs is that F tests are based essentially on $R^2$ as the measure of goodness of fit.

[Table 3]

The results largely corroborate the PRE results. For the House, given relatively complex coalitions, the longer models (4 and 5) provide the greatest explanatory power. Model 5 generally does add statistically significant explanatory power, but not as much as the regional dummies in model 4 add. DW-NOMINATE 1st dimension alone always adds highly significant increases in fit, and the F test might appear to make it seem more “important,” relative to other variables, than the PRE results. However, this is largely a result of basing the F tests on nested model comparisons; all models in table 3 include this covariate, so they cannot obtain whatever improvements in fit their extra variables offer that is correlated with DW-NOMINATE. Put differently, the strength of DW-NOMINATE 1st dimension in the House F tests is due in part to the dependence of these test results on the order in which covariates are entered.

F test results also generally corroborate the PRE findings for the Senate. Voting coalitions were considerably better organized by “ideology” in the Senate than the House. The two DW-NOMINATE dimensions generally always add statistically significant explanatory power, while other non-“ideological” explanatory factors usually add smaller and insignificant increments to explanatory power.

We now turn to analysis of effects and statistical significance of individual covariates in the models. Rather than display 10 different regression tables, we use a graph to show these results. Figure 2 displays coefficients and 95% confidence intervals, for each covariate from model 5 (the long model), for each session of Congress. The results are from OLS estimation with heteroscedasticity-consistent standard errors and small sample degrees of freedom corrections. If the 95% confidence interval line crosses the vertical axis at 0, the coefficient is not statistically significant at the 5% level.
The covariates in the long model are highly intecorrelated; e.g., $R^2$ in a regression of 1st dimension DW-NOMINATE on other covariates is about 0.95. While not an issue in assessing a mode’s overall explanatory power, this degree of multicollinearity is a problem in assessing individual effects. This is reflected in the unstable coefficients on some variables in figure 2 and the very high standard errors for all variables, despite the model as a whole having relatively high explanatory power. At the risk of some bias, we drop the Democrat indicator variable. The resulting model output is displayed in figure 3.

[Figure 2]

[Figure 3]

For both the House and Senate, it is apparent from figure 3 that the effect of 1st dimension DW-NOMINATE is statistically significant and substantively large. However, for the 27th House, the sign changes: high 1st dimension scores predict greater likelihood of voting for preemption in this case. It is not immediately clear why this should be so. It is sometimes suggested that Whigs favored this bill because it contained a provision on “distribution” as well as preemption—so that revenue from public land sales would be distributed to states according to population. Given that Western Democrats had also been willing to do without much public land revenue at all (through proposals for “graduation”), it seems unlikely that distribution would be enough to turn essentially all of them off from a policy of permanent preemption. And given that preemption would imply much less revenue to distribute than Eastern Whigs had long desired, it seems unlikely that distribution of the revenues that did obtain would be enough to make Whigs swallow permanent preemption. Rather, it seems likely that Whigs were being strategic, and after 10 years of preemption extensions, saw the writing on the wall—so they strongly supported a half measure that was better than an even worse one they might have expected in the future.

In any case, estimating these models separately for each Congress presents a stronger effect of 1st dimension “ideology” within each Congress than it would likely exhibit in a pooled or panel estimation. In that case, the strong negative effect of 1st dimension “ideology” in the first five votes would counterbalance its strong positive effect in the sixth.
As noted, the PRE results suggest the importance of sectional alliances on top of “ideology” and political party in organizing voting coalitions, especially for the House. The other consistently significant individual factor is the South Atlantic dummy. However, the sign is negative. This is consistent with the view articulated earlier that Southerners as such had much to lose from liberalized access to Western land, not least control over the politics of slavery, and also possibly land value.

However, the negative effect of South-Atlantic origin is surprising given the widespread view that Jacksonian land reform turned on a coalition of Western and Southern representatives against Northeasterners. The statistical results suggest that, inasmuch as Southerners voted in favor of preemption, they did so in spite of their sectional origin, not because of it—their votes are explained by other factors than their section. Put differently, the conventional historical explanation suggests that the Jacksonian land reforms depended on a sectional coalition that was built for this issue, possibly as a log roll for low tariffs. The fact that those Southerners who did vote for preemption did so for ideological (or partisan) reasons that cut across issues in Congress undermines the argument that the Southern-Western coalition on public lands reform was specific to this issue or a small number of issues in a log roll. If that were the case, the South-Atlantic dummy would exhibit a positive sign, holding constant a member’s ideology (a typical basis for determining coalition membership).

By the same token, the results indicate that New England representatives were often inclined against preemption, but not always significantly, and not as strongly as Southerners were. The New England effect is about half the Southern effect on average, and significant in 4 of 6 regressions in figure 3. Echoing the PRE and F test findings, the sectional variables in the Senate do not have a consistently strong effect on votes.

Slaves per capita in slave states has a statistically significant and substantively meaningful effect in some regressions but not others. While the coefficient is small and close to 0 in figure 3, the standard deviation of this variable is about 20. Scaling the coefficient by this quantity, results in the House and Senate for Congresses 21, 22, and 23 reveal a positive and significant effect of this variable. The coefficient ranges from 0.005 to 0.008 in these cases, so that the marginal effect of a standard deviation change in the variable raises the probability of a Yea vote by over 10 percentage points in these cases.
For the 25th and later Congresses in the House and Senate, the effect of this variable is substantively negligible.

In addition, the effects of log population density, though statistically significant in about half the regressions, are also substantively very small. The standard deviation of log population density is typically about 2, so that a 1 unit change is substantively meaningful, and the very small coefficients are not simply reflecting a scale issue.

Overall, our analysis suggests that congressional voting was not just ideological business as usual. This is especially true in the House, where Yea and Nay coalitions cut across DW-NOMINATE space and political party. Sectional politics played a crucial role, in the sense of both goodness of fit and statistical significance of factors. But the role of section per se is different than accounts of a West-South coalition vs. the old North would suggest. Southerners were less likely to support the liberal policy of preemption than their DW-NOMINATE scores alone would predict. And New Englanders, while typically opposed, are less so than Southerners all else constant, in the sense of substantive magnitude and statistical significance.

The importance of district-level characteristics on top of other factors already considered is mixed. They are most important in earlier Congresses in our data set and more important in the House, i.e. precisely when DW-NOMINATE does the poorest job organizing votes. Slaves per capita and population density sometimes significantly improve the explanatory power of models, and are sometimes statistically and substantively significant. One would expect DW-NOMINATE scores to encompass district level economic structure already, so that additional representations should be statistically irrelevant. We do not find that consistently to be the case, though it sometimes is.

5. Conclusion

Jacksonian-era land reform was a pivotal change in public policy. It represented a major program of economic redistribution, it affected settlement and institutional development throughout the U.S., and its consequences for political-economic structure are still felt today. Thus, it is important to understand how existing theories of coalition formation and voting in Congress explain the passage of these land reform laws from 1830 to 1841. Our findings, based on goodness of fit of roll call models and statistical significance
of individual components, suggest that DW-NOMINATE scores generally add significant explanatory power, more so in the Senate than the House, and somewhat more so in later Congresses. In the last three Jacksonian preemption votes in the Senate, the Yea/Nay coalitions on preemption were constructed from liberal/conservative economic ideology and pro/anti-slavery ideology, in roughly the same way coalitions on other issues were. In the House, regional location on top of “ideology” is a crucial factor for explaining coalitions on all votes except the 1841 vote on permanent preemption—though the effect of region per se is the opposite of that which historians have typically identified.

While informative, the results are far from a definitive explanation of the determinants of public land reform voting in Congress. The region indicator variables do not themselves reveal the reasons why the sectional alliances worked as they did, or in particular the reason why Southerners were more inclined to vote against preemption rather than for it—as accounts of sectional coalitions suggest. The results also do not supply any explanation for the dramatic change in the direction of effect of 1st dimension DW-NOMINATE on Yea/Nay voting. It is possible that different bundles of land reform issues across the bills in our dataset account for this, but this seems unlikely given that differences seem substantively modest. In addition, to the extent that DW-NOMINATE accounts for the vote outcomes, it reveals that Yea/Nay coalitions were constructed the same way on public lands issues as they are on other issues. Put differently, the importance of DW-NOMINATE reveals a consistency of roll call voting across issues. It does not reveal the reasons why members might have the “ideology” they do, and answering that question is probably more fundamental for answering why Congress liberalized its distribution of American wealth in this way.
6. References.


Table 1. Key Votes on Preemption, 21st through 27th Congresses

### House

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<td>32</td>
<td>36</td>
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### Senate

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Notes.
1/ PRE each model calculated vs. null model (marginals only). Maximum PRE for each Congress in bold (ties go to shorter model).

2/
Model 1: Vote ~ NOM1
Model 2: Vote ~ NOM1 + NOM2
Model 3: Vote ~ NOM1 + NOM2 + Democrat
Model 5: Vote ~ NOM1 + NOM2 + Democrat + New Eng. + Mid Atl. + Sou. Atl. + Slaves per capita (Slave states) + Log(Population/Miles²)
Table 3. p-values from F tests of nested model restrictions (OLS models)

**House of Representatives**

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**Senate**

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Notes.
1/ p-value for each column tests H0: model adds no fit to shorter model in previous column. Model 1 is judged vs. null model (constant only).

2/
Model 1: Vote ~ NOM1
Model 2: Vote ~ NOM1 + NOM2
Model 3: Vote ~ NOM1 + NOM2 + Democrat
+ Slaves per capita (Slave states) + Log(Population/Miles²)
Figure 1. Roll call votes on preemption, by Congress, for House and Senate. Each dot is a vote. Dot color represents a member’s party (blue = Democrat, red = Whig). Dot symbol represents yea (“+”) or nay (“o”) on final passage. The Congress number is in the top of each panel. Apologies to readers of B&W versions.
Figure 2. Long regression (LPM) coefficients, by Congress, for House and Senate. Error bars reflect 95% CI with small-sample HC standard errors. For each covariate, lower lines correspond to earlier Congresses.
Figure 3. Long regression (LPM) coefficients excluding Party, by Congress, for House and Senate. Error bars reflect 95% CI with small-sample HC standard errors. For each covariate, lower lines correspond to earlier Congresses.