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Foundation of Policy Stability:
The Institutional Basis of Non-Market Pricing,

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**Foundations of Policy Stability:
The Institutional Basis of Non-Market Pricing**

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Abstract

One of the great frustrations for policy analysts is government's frequent perpetuation of non-market pricing schemes with large social welfare costs. Theoretically, the foundations of such policies are often viewed as problematic and, indeed, there are empirical examples where seemingly stable policies are rapidly reformed. Our analysis focuses on one prominent instance where non-market pricing stands at considerable variance from what economic logic would suggest but the essence of a redistributive policy has been continued: the valuation of grazing rights paid by ranchers on federal lands. Using a random utility model to estimate ideal points of legislators we find that, indeed, the foundations of policy stability may be weak and that possible institutional explanations, such as institutionalized logrolls or outlier congressional committees, do not anchor stability in the legislature. Rather, we discover that it is both possible for the chief executive to raise grazing rates dramatically via executive order without Congress being able to overturn such a change directly and, net of an executive order, for the median legislator to support a significant increase over the status quo. Additionally, our results for the determinants of ideal points suggest that political economic changes could further stress the ability to maintain the present system. Taken together, our findings imply that, at least in this instance, stability may be characterized as, essentially, artifactual.

Foundations of Policy Stability:
The Institutional Basis of Non-Market Pricing

How is long-term legislative policy stability maintained politically given well-known reasons to expect instability? Theoretically, as Ferejohn (1986) points out, the nature of social choice implies that many simple responses to this question do not constitute answers at all. In reaction, scholars have offered a variety of potential explanations: institutionalized logrolls by which several programs are tied together (Ferejohn 1986), monitoring advantages that are a function of asymmetric information (Lohmann 1998), and committee influence by which high demand committees are able to control the legislature (e.g., Shepsle and Weingast 1979). Nonetheless, there is no definitive model explaining policy stability.

Empirical observation also offers no straightforward answer. On the one hand, certain policies redistributing to narrow, concentrated, interests seem virtually invulnerable given their longevity. For instance, policy analysts of many stripes express frustration with the continuation of non-market pricing by government that seemingly defies credulity (e.g., Nelson 1995). In the United States, many examples revolve around the allocation and utilization of publicly-controlled natural resources: minerals are given away for virtually nothing, water rights are allocated in a manner encouraging waste, and prices for agricultural uses of land are set well-below market levels. Yet, alternatively, enduring, inefficient, economic regulatory policies have been deregulated in transportation and telecommunications (e.g., Derthick and Quirk 1985, Peltzman 1989); in a similar spirit, inefficient allocational mechanisms have been rejected in favor of more efficient alternatives for issues as diverse as air pollution causing acid rain and airwave bandwidth (e.g., Bryner 1995, McAfee and McMillan 1996).

In the following analysis, we attempt to gain insight into legislative policy stability by focusing on a single instance of a highly inefficient, redistributive, program that has seemingly exhibited stability: the valuation of grazing rights paid by ranchers on federal lands. A number of features make such fees especially appropriate for investigating stability. Not only are grazing fees highly inefficient but their real price has been declining as a result of policy stability (a stipulated formula to compute fees). Additionally, there are a variety of political economic and institutional features that provide a *prima facie* reason for believing that the redistributive status quo would be undermined. Finally, for at least a cross-sectional snapshot, we can identify the determinants of legislative ideal points over grazing fees in the U.S. House of Representatives.

While a number of analytic vantage points are possible, we adopt an explicitly institutional perspective. Given our political structure, we explore how the preferences of political actors translate into inefficient outcomes in the House of Representatives. We can do this because, in the fall of 1997, the House took a series of votes that explicitly provided representatives with a chance to reveal their preferences over fee levels; we examine these votes via random utility models, combining ideal point estimation with elements of institutional structure which can lead sophisticated legislators to change their vote choices (on such models, see, e.g., Krehbiel and Rivers 1988, Volden 1998).[1] Although legislation was eventually passed incorporating a modest rise in the grazing fee, more dramatic increases that would have brought fees closer to those suggested by the market, and which unlike the small increase would have not been blocked by a presidential veto, were rejected. Despite the final bill's failure to become law—after a similar bill passed in the Senate Energy and Natural Resources

Committee, the legislation was allowed to die—these votes offer a window on the foundation of long-term legislative support.

Specifically, our analysis addresses five questions to determine whether there is a true basis for stability or whether stability is, essentially, an artifact:

- Does policy stability reflect an institutionalized logroll?
- Is stability a function of committee members with preferences for very low fees driving policy?
- Could a presidential executive order raising fees have been sustained?[2]
- Could the small grazing fee increase passed have been sustained over a presidential veto?
- Could an increase that would have been acceptable to the president been passed?

The Puzzle of Stability: Grazing Policy and the Events of 1997

"The fact is, many of these cowboys today are wearing wingtip shoes."
(Representative Bruce Vento)

To reiterate, our puzzle is why grazing policy exhibits stability. While maintaining stability is difficult even given highly favorable circumstances, in a time of dynamic change, such as when there is increased awareness of the economic, environmental, and budgetary costs of grazing policy, it is particularly problematic.

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[1]Thus, besides establishing the basis of grazing policy support, we will demonstrate how utility models with ideal point estimation can be adapted to circumstances that are less straightforward or intuitive than the standard minimum wage example.

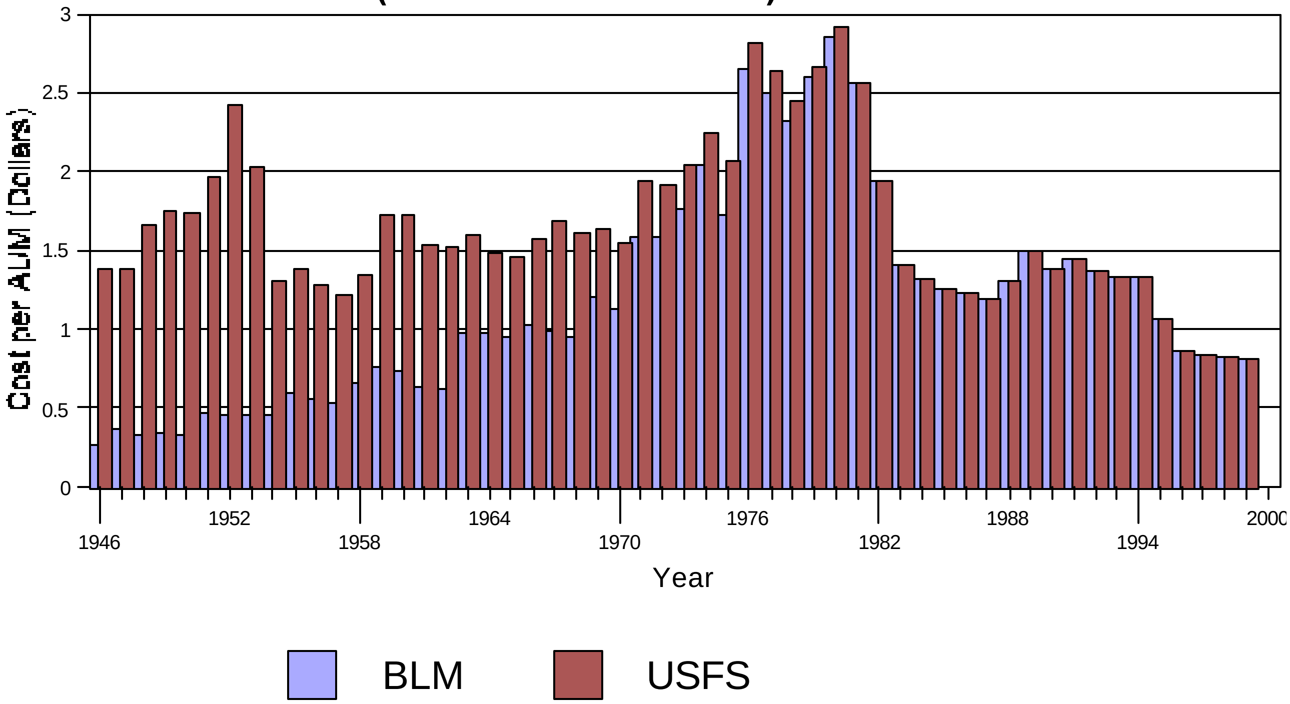
[2]As we will discuss, one of the interesting nuances that makes stability that much more surprising is that the president retains the authority to raise fees via executive order.

Solving our puzzle requires understanding supply and demand components–the federal government's setting of rates and the political underpinnings of support for them. Regarding the former, more than one-third of all federal lands, around 270 million acres, are devoted to domestic livestock grazing by private producers. The vast majority is controlled either by the Bureau of Land Management (BLM; 167 million acres) or by the United States Forest Service (USFS; 95 million acres) and is located in the American West. The fees charged to private grazers are paid by the animal unit month (AUM), which is the amount of forage needed to sustain one cow and calf, one horse, or five sheep or goats for a month (with cattle grazing constituting the great majority). Under the present system, 50 percent of the recovered fees go to support the attempts of the respective agencies to maintain their lands, with the rest split between the U.S. Treasury and the states in various allocations depending upon historical vagaries.[3]

Figure 1 illustrates the history of real grazing rates since World War II. Despite an overall picture of stability, there has been some fluctuation in real prices over the years (and there was considerable variance between USFS and BLM rates until 1981). Fees peaked in the late 1970s, not coincidentally the era of the so-called Sagebrush Rebellion (Cawley 1993**)**, at which time Congress took matters into its own hands by determining that BLM and USFS fees would be set in lockstep according to a formula codified in the Public Rangelands Improvement Act of 1978 (PRIA) which, when threatened with expiration, was continued with slight change

[3]For USFS lands, the states and the Treasury each get 25 percent of fees; for most BLM lands (section 3 lands–150 million acres) the split is 12.5 and 37.5 percent respectively while, for the remaining lands (section 15 lands–17 million acres) the states receive 50 percent.

Figure 1: Real Grazing Fees, 1946-1999
(In 1982-1984 Dollars)



Consumer prices available at: ftp://ftp.bls.gov/pub/special.requests/cpi/cpiai.txt

Note: BLM and Forest Service grazing fees are identical by statute beginning in 1981. Also, as the size of animals has increased with time, the amount of forage that an AUM entails has increased somewhat over the years (e.g., the decline in real prices in the last 20 years is underestimated).

by a 1985 Executive Order (#12548).[4] The PRIA stipulated that grazing fees would be calculated as a function of a $1.23 AUM base level, livestock market prices, and rancher operating costs, while the latter essentially continued the status quo but dictated that the fee not decline below $1.35.[5]

For the ranchers, the 1980s and 1990s have constituted an incredible windfall: The post-1985 period nominal fee has never broken $2 and, despite some ups and downs, the real price has declined notably. Indeed, with falling beef prices and rising production costs, the AUM fee has settled at the $1.35 minimum since 1996, which most economic assessments indicate is too low by an order of magnitude. Even though below-market public grazing rates should somewhat dampen demand, in 1997 private grazing fees averaged around $11 per AUM according to the USDA's National Agricultural Statistics Service (differences between public and private land quality and other characteristics mean that such a figure needs to be viewed cautiously). This is roughly consistent with the 1992 claim by the BLM and the USFS that private alternatives for grazing varied from $4.68 per AUM to $10.26 per AUM (Secretaries of Agriculture and the Interior 1992). As a more direct comparison, rates on

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[4]As mentioned, a curiosity of the grazing fee controversy is that the president appears to have the authority to set fees, net of legislative action, via executive order. Furthermore, presidential incentives for promoting efficiency and opposing narrowly redistributive policies imply that chief executives should often prefer a higher fee (and they generally have). However, despite the seeming ease of increasing fees, reality has proven more complicated (for discussions of the history of grazing fees, see, e.g., Klyza 1996, Davis 1997). For example, when Bill Clinton's Secretary of Interior, Bruce Babbitt, proposed dramatically increasing the AUM rate to around $4 (actually less than the administration's original proposal; see Bureau of Land Management 1994, Smith 1995), members of Congress filibustered the Department's annual appropriation. The administration backed off its plan, and signaled that it preferred a statutory solution.

[5]Technically, the agencies regained authority to set fees after 1985, but the bureaucrats continued to employ the fee formula. Regardless, as the agencies have advocated higher fees, blaming low rates on bureaucratic discretion is misguided; AUM levels are clearly a negotiated outcome for which Congress and the President loom as the principal institutional players.

publicly-owned state lands (states control 37 million additional acres of grazing land), while tending to fall below private rates, are all markedly higher than the federal government fee (O'Toole 1997; as we shall discuss further, state fees were around $4, with considerable cross-state variance).

As for the demand side, many forces would seem to work against promoting the interests over the long-haul of the roughly 20,000 ranchers benefiting from below-market grazing fees. Furthermore, changes in the political economy of grazing fees would appear to exacerbate predispositions to make AUM rates less favorable to these recipients.

First, consider that, given the regional basis of publicly-subsidized grazing, it is conceivable to put together a congressional majority using narrow self-interest as a criteria, even a filibuster-proof majority, raising grazing fees to make agriculture more efficient and government revenues higher. Only 16 states have PRIA fees assessed–Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Utah, Washington, and Wyoming–and for four of these states (Kansas, Nebraska, Oklahoma, and Washington) federal grazing rights are minimal (indeed, the Kansas AUMs constitute the equivalent of rights to graze 10 cows). Even in grazing states, almost three-quarters of districts lack federal grazing and, therefore, their representatives are presumably not inherently disposed toward low rates unless, perhaps, they have statewide ambitions. Nevertheless, if every House member from these states voted for low grazing fees, the distribution of pro and con legislators in the 1990s would be 325-110. Nor would Senators from these 12-16 states be able to sustain a filibuster by themselves. Thus, even if politicians had an incentive to bias policy toward well-organized special interests for reasons such as monitoring, not enough elected officials would have an incentive to maintain the status quo.

Consider also that, while real grazing fees have been declining, the following potentially destabilizing political economic trends would appear to be working against rancher interests:

- Given greater prosperity (which is associated with demand for environmental quality) and increasing understanding of environmental costs, environmental sensitivities toward grazing have heightened. Specifically, grazing threatens species extinction and, by trampling and grazing on environmentally-sensitive and important streambanks, harms riparian areas (e.g., Belsky, Matzke, and Uselman 1999; e.g., the BLM estimates that only 25 percent of riparian areas in Nevada are in proper condition). Therefore, overgrazing promoted by below-market rates, combined with moral hazard that is a function of government leasing, is the bane of many an environmentalist.
- Grazing's importance to the Western economy has declined. As opponents to the status quo are quick to point out (e.g., Power 1996, Salvo 1998), many Sunbelt and Western states are rapidly urbanizing and industrializing, small numbers of ranchers with federal permits are increasingly dwarfed by growing populations, and the amount of agricultural production on federal grazing lands is slight compared not only to other agricultural outputs but to growing state economies. Consequently, policy stability and the maintenance of any long-term alliances facilitating low fees are all the more impressive.
- Budget deficits, at least until very recently, have made charging higher grazing rates attractive. With the rise of massive budget deficits in the 1980s, grazing fees became one of a host of government activities targeted to close the gap. Thus, for example, the Congressional Budget

Office (1999) has regularly suggested adjusting grazing fees as part of a general policy of producing government revenues more in line with expenditures.

Furthermore, although we will investigate several of these issues empirically, it is not immediately obvious that processes postulated to induce policy stability are at work. There is no clear logroll, such as that institutionalized between poor urban areas and farm constituencies combining Food Stamps and agricultural subsidies until the 1996 Freedom to Farm legislation (e.g., Ferejohn 1986), that would credibly and permanently bond livestock interests with some other powerful constituency and insure that attempts to change the status quo either statutorily or administratively would fail. While the most obvious is with agriculture, there is reason to believe that it would be difficult to sustain (on claims of agricultural logrolls, see, e.g., Stratmann 1995).[6] By contrast, as implied above, there is an obvious anti-grazing alliance to be constructed between fiscal conservatives/budget hawks and environmentalists, given that low, inefficient, grazing fees are both a drain on the federal treasury and the economy and produce considerable, uncompensated, environmental damage. Thus, while we can imagine an agriculturally-based logroll with low fees being successful at one point in time, the theoretical underpinnings for perpetuating it over the long-term are ambiguous.

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[6]For instance, institutionalizing the Food Stamp/agricultural subsidy logroll depended upon both programs coming from the Department of Agriculture, being delegated to the same congressional committees, and, eventually, being voted upon simultaneously. An alliance between livestock and crop producers would lack many of these advantages. Ironically, the only claimed vote-trade in the popular discussion of grazing fees was in 1991, when the U.S. House actually voted to raise grazing fees to $8.70 as part of the appropriation process for the Interior Department (meaning that the vote was not "clean" like those under consideration here) but reverted to the status quo when a "corn for porn" compromise was brokered by which the National Endowment for the Arts (NEA) would continue to receive funding in exchange for dropping higher grazing fees. However, the NEA and grazing have not been tied together subsequently.

Additionally, although we cannot test this assertion empirically, the informational asymmetries that would allow small, concentrated, ranching interests to have important monitoring advantages à la Lohmann should be unimportant for grazing fees. The issue at hand is transparent rather than opaque (how high should a fee be?) and numerous environmental groups and governmental officials actively provide information about the grazing program's costs and advocate higher fees.

Finally, there is no obvious mechanism of committee control of the legislative process. Although the relevant House committees (Resources and Agriculture) may be somewhat sympathetic to ranchers, and Agriculture has been found to be an outlier committee, there is no clear means by which they have prevented consideration of grazing issues.

Along these lines, Congress did move on the grazing fee issue in 1997 and explicitly provided House members the chance to change the status quo with no other complicating features. Yet, House members opted not to address significantly the inefficiencies inherent in the fee structure or to satisfy the chief executive at a minimum level. Rather a modest bill was passed that was widely hailed as an effort to build bridges between East and West.[7] More dramatic fee increases were unsuccessfully proposed as amendments. The approved bill, threatened with a veto and lacking a veto proof majority, was reported out of Senate committee unchanged but not acted on the floor. The mid-1980s status quo remained in force.

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[7]The main reason for this interpretation was that the committee bill was stripped of provisions giving ranchers greater control over public lands (a complicating feature of previous fee proposals). The exclusive focus on fee levels won over the support of Eastern Republicans, most notably of Sherwood Boehlert of New York (chairman of the House Transportation and Infrastructure Committee's Water Resources and Environment Subcommittee and a member with a demonstrated willingness to desert his fellow Republicans). Also, Speaker Gingrich's attempts to bring his party together and prove that he was not a closet environmentalist reinforced the bridge building claim.

Specifically, four hotly contested, yet bipartisan, House floor votes were taken. The first, on the House committee bill, provided for a modest grazing fee hike–by most accounts, from the status quo of $1.35 to $1.84.[8] This proposal was met by a stern, public, veto threat by the Clinton administration.[9] Subsequently, three votes were taken, each raising effective fees above the $1.84 level to a lesser and lesser extent. The first amendment would have required farmers to pay at the level of their state grazing fees. Given that state fees were all higher than the PRIA mandated fee (Arizona's $2.18 being the lowest), this represented a substantial increase over either the status quo or that in the original bill (rates would have presumably risen to over $4 on average, with considerable geographic variance).[10] This amendment, which it is reasonable to assume that Clinton would have signed, lost by a scant 14 votes.

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[8]Although most appear to have accepted the claim that the new formula would raise rates to $1.84, some seemingly misread a CBO report as suggesting that $1.55 would be the new status quo. Nevertheless, all seemed to agree that, relative to market or state rates, the increase was modest and the smallest of those that the House voted on.

[9]This was curious, as the President's ideal point was closer to $1.84 than to $1.35 (although the administration voiced worries about non-fee related issues, they had been eliminated in committee before the veto threat). One obvious reason for opposition was the belief that the higher fee would result in the issue being pronounced "solved" and taken off the political agenda; those in favor constantly talked about providing ranchers certainty about the future (as Agriculture Committee Chair Bob Smith put it, "We need something to make sure this industry can go to the bank and say, "Look, these are my fees and I'm going to be able to graze these cattle" " (reported in Bettelheim 1998, p. E-03)). Regardless, the veto threat seems to have been accepted as sincere and not as strategic posturing that would not ultimately result in a veto for any proposal greater than $1.35.

[10]Exactly how these rates would have all been sorted out was a bit ambiguous, as states have a variety of ways of determining rates that are not directly comparable to the federal government. Nonetheless, in 1996 state rates were as follows: Arizona ($2.18), California ($500/year minimum, based on comparable private lease which averaged $10.60 per AUM), Colorado ($6.50 - $7.17), Idaho ($4.86), Kansas (NA), Montana ($4.05 and $4.53), Nebraska ($15.50), Nevada (variable; function of auction), New Mexico ($3.54), North Dakota (highly variable; up to $30-35), Oklahoma ($10), Oregon ($2.72 and $3.43), South Dakota ($7.00+), Utah ($2.50), Washington ($4.55 and $7.34), and Wyoming ($3.50 minimum). These numbers are from Baldwin and Cody (1996).

A subsequent amendment, which exempted small grazers from the provision linking fees to state levels (as the quote from Vento at the beginning of this section implies, a common critique of grazing policy is that it is welfare for the rich), who as defined accounted for about half of all AUMS, failed by just four votes. In other words, this amendment cut the aggregate increase over the $1.84 level in half (i.e., to perhaps $3 on average), and likely would have also received Bill Clinton's signature, but it was not enough to win the needed additional support. Finally, an effort to eliminate a provision in the approved bill benefiting sheep and goat farmers by reducing their effective rate relative to other grazers failed substantially (i.e., this amendment, which would have almost certainly generated a presidential veto, slightly increased the amount charged by the federal government to farmers so that we might think of the aggregate AUM as the equivalent of $2). As there was some justification for this adjustment–cows had simply gotten fatter relative to goats and sheep so that the old AUM ratio was being rendered obsolete–presumably those voting against this amendment but favoring the first successful amendment were voicing their desire to limit further fee increases in any way possible. That is, this vote isolated the hardcore opponents and supporters of grazing. Even though the fee increase was considerably smaller than in the previous two amendments, it received less support.[11]

As foreshadowed, such events raise curious issues. Given environmentally-sensitive constituents, concerns about budget deficits, and geographically-concentrated benefits that are less and less relevant, why do the majority of members of Congress not approve grazing fees that more approximately mirror those of the private market, or at least those charged by the states themselves? And, assuming that there was some realistic possibility to change the status quo, why could a bill not be

[11]We will consider later whether we can treat this vote analogously to the others taken.

produced with a lesser threat of a veto or with the requisite support to override a veto?[12] Finally, was it really not possible for the president to employ an executive order if Congress remained unwilling to act in acceptable fashion?

Theoretical Perspective

Answering such questions requires determining the distribution of legislative preferences for, or against, change. The 1997 House votes allow us to recover this preference distribution and answer our questions about policy stability.

Theoretically, we build on the random utility models used by Krehbiel and Rivers (1988) and Volden (1998) to study the minimum wage. The former pioneered the method of specifying an underlying utility model and using voting outcomes on a series of proposals to recover member preferences in terms of a most-preferred level. The latter showed that such an analysis could incorporate both the likely response of the president to any bill that Congress sent to the White House and the likelihood of sophisticated voting performed by members in spite of possible electoral retribution for misrepresenting their constituents' preferences.

Thus, analogous to previous studies, we assume that we can order the original bill and its three proposed amendments to increase grazing fees on a single dimension. Various influences, such as partisanship, member ideology, preferences for revenue enhancement and environmental protection, the

[12]There is no evidence that these roll calls were merely symbolic and that, therefore, supporters only voted for the measure because they were sure it would never become law either due to Senate intransigence or the inability to override a certain Senate veto.

importance of grazing to the member's district, and possible alliances with other agricultural members, can then be combined to determine an ideal grazing fee level for House member *i*, denoted x_i, $i = 1, 2, \ldots, 435$. We further assume that each member has single-peaked preferences over the multitude of possible changes to the status quo fee level, so that the utility she gains from a final legislative outcome decreases the farther the mandated fee level diverges from her ideal point. Formally:

$$(1) \qquad U_i(q_j) = -|x_i - q_j|$$

where q_j is the fee level associated with one of k possible legislative outcomes $(q_1, q_2, \ldots, q_k)$, including the status quo.[13]

We can also order the five possible outcomes from this series of votes according to their grazing fee level:

1) q_1, the status quo grazing fee level of \$1.35 per AUM (assuming that the PRIA formula continues to produce this rate), which obtains when the House rejects the final bill, amended or not (*SQ*);

2) q_2, the unamended compromise bill (HR 2493), floor-managed by Agriculture Committee Chair Bob Smith (R-OR), which would raise grazing fees to \$1.85 per AUM (*B*);

3) q_3, the bill amended by the second of Rep. Bruce Vento's (D-MN) amendments, the third and final amendment considered under the rule (H Res 284), which would increase grazing fees to about \$2 per AUM (*V2*);

4) q_4, the bill as amended by the first of Rep. Vento's amendments, the second amendment considered under the rule, which would increase grazing fees to about \$3 per AUM (*V1*);

5) q_5, an amendment to the first Vento amendment proposed by Rep. Scott Klug (R-WI), the first amendment considered under the rule, which would increase grazing fees to about \$4 per AUM, with considerable geographic variance (*K*).

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[13]As Krehbiel and Rivers (1988, 1155) note, the assumption in (1) of a quadratic loss function can be relaxed to any monotone decreasing function f_i such that $u_i(q) = f_i(|q - x_i|)$.

This model allows us to specify the relationship between outcomes, monetary cutpoints, and member ideal points as defined by Regions determined by estimated cutpoints (Figure 2). Thus, the first line in Figure 2 simply represents outcomes q_1 through q_5 on the grazing fee dimension. Note how these alternatives were considered; after voting on q_5, q_4, and q_3 in order, amendments which would increase grazing fees by successively less on average, the final vote is between the bill, amended (q_5, q_4, or q_3) or not (q_2), and the status quo (q_1). Note also that q_1 through q_5 represent the outcomes associated with voting for each of the four legislative motions. Members voting "aye" on the first vote–whether or not to amend the first Vento amendment (*V1*) with the Klug amendment (*K*)–are expressing preferences for a $4.00 per AUM fee level, which will result only if the amended bill passes the House at the final voting stage when pitted against the status quo (*SQ*). As the second line shows, we can then use the midpoints between outcomes to define cutpoints in monetary units (except for those wanting extremely high fees, where the cutpoint location, C_D, is unclear). Finally, as the third line illustrates, we can represent the locations of ideal points for members whose votes on the four motions reveal their preferences for change in federal grazing fees, Regions I through VI, as defined by cutpoints that we will estimate from a structural model.

Table 1 then summarizes the relationship between Region, vote patterns, and ideal points. We can associate the Region in which a member's ideal point must fall if her preferences over outcomes are characterized by Equation (1) and her votes on the alternatives (*K, V2, V1, B*), as defined by our dependent variable y (which we measure from 0 to 5), follow the pattern in the second column. Each voting pattern, in turn, is associated with a range of ideal points defined by a monetary range and an estimated range based on the underlying latent variable y^* (we will focus our discussion here on the monetary range and leave the estimated range to our econometric discussion). For instance, if member i

votes against all three amendments (*K, V2, V1*) and the committee bill (*B*), she expresses a preference for the status quo, indicating that her ideal grazing fee x_i is less than \$1.60 (where \$1.60 = $\frac{q_1 + q_2}{2}$).

Those supporting only the

Figure 2: Representation of Outcomes, Monetary Cutpoints, and Ideal Points

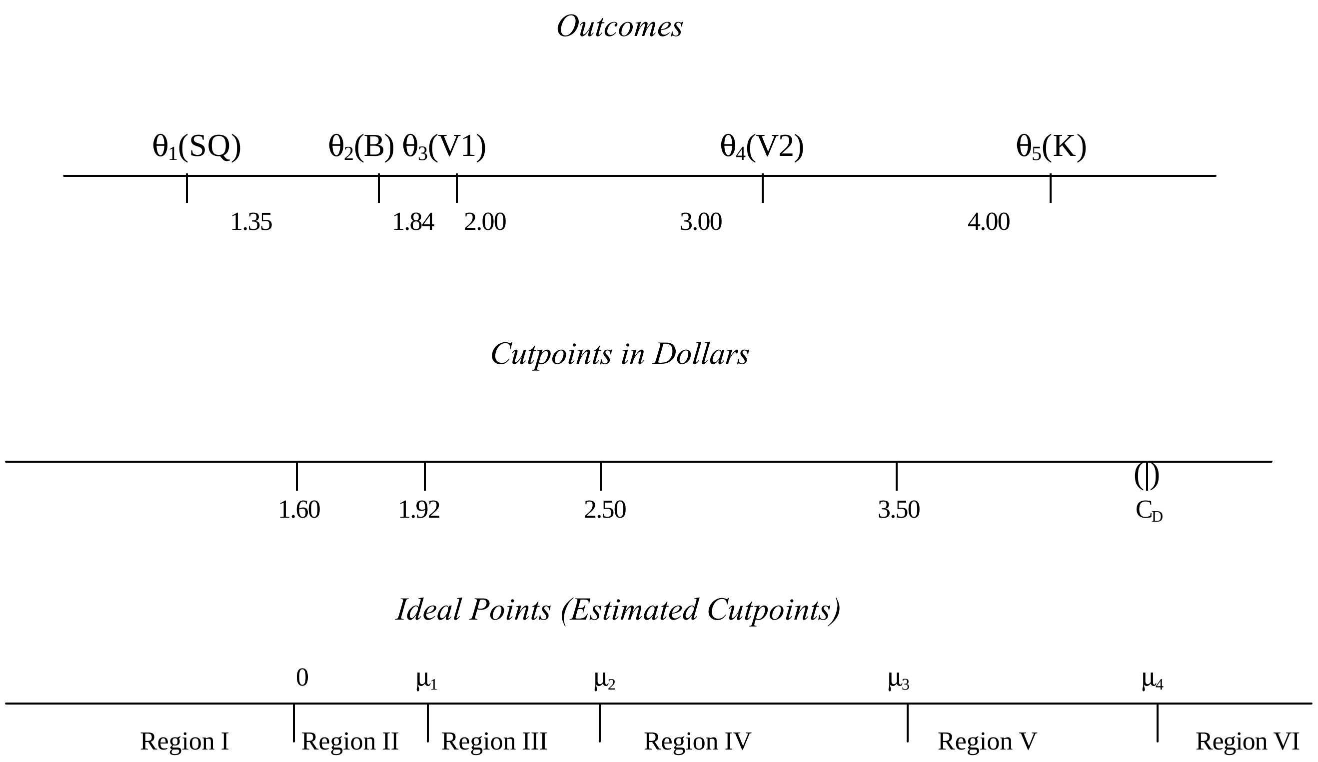

Table 1: Posited Relationship Between Vote Patterns and Ideal Points

Region	**Observed dependent variable and accompanying vote pattern**	**Range of ideal points**	**Range, using estimated cutpoints and unscaled ideal points**
I	$y = 0$ (N,N,N,N)	$0 < x_i <$ \$1.60	$y^* < 0$
II	$y = 1$ (N,N,N,Y)	\$1.60 $\leq x_i <$ \$1.92	$0 \leq y^* < \mu_1$
III	$y = 2$ (N,N,Y,Y)	\$1.92 $\leq x_i <$ \$2.50	$\mu_1 \leq y^* < \mu_2$
IV	$y = 3$ (N,Y,Y,Y)	\$2.50 $\leq x_i <$ \$3.50	$\mu_2 \leq y^* < \mu_3$
V	$y = 4$ (Y,Y,Y,Y)	\$3.50 $\leq x_i < C_D$	$\mu_3 \leq y^* < \mu_4$
VI [sophisticated voting]	$y = 5$ (Y,Y,Y,N)	$x_i \geq C_D$	$y^* \geq \mu_4$

original committee bill have ideal points falling within Region II; their opposition to even the minimal increase to $2 indicates that their ideal points are between $1.60 and $1.92. Those voting in favor of $2 but against $3 and supporting $1.84 versus the status quo fall in Region III and have ideal points between $1.92 and $2.50. Members in Region IV prefer a slightly larger increase in fees ($2.50 to $3.50) and thus vote for the $3 proposal, but will accept a smaller increase as a second- or third-best outcome; those in Region V prefer an even higher level (at least $3.50) and favor any of the proposed amendments to the original bill but accept the unamended bill after all the amendments are voted down. Members in Region VI, the sophisticated voting region, have ideal points above $3.50 and vote for all the amendments but are unwilling to accept the minimal increase proposed by the unamended bill. To reiterate, the location of the cutpoint C_D separating Region V from Region VI is not apparent (nor did floor debate make it clear where C_D might be).[14]

Most representatives fall in either Region II or Region VI. Many Republicans, and a few conservative Democrats (notably Blue Dog Charles Stenholm of Texas), are in Region II. Only a few representatives, mostly from Western states, voted against even this small fee increase and belong in Region I.[15] Many liberal and Eastern Democrats are classified into Region VI, voting for all the amendments but against the final bill. Smaller numbers of representatives also fall into the other Regions, providing us with additional leverage for recovering member ideal points.

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[14]As mentioned, what is likely behind this sophisticated behavior is an expectation that grazing fees will remain stable after they are hiked to $1.84.

[15]Interestingly, according to an out-of-sample prediction (i.e., based on estimated coefficients for those in the sample), Rep. Barbara Cubin (R-WY), Wyoming's representative at large, who did not vote on any of the four motions, had an ideal point in Region I. Whether Cubin "took a walk," strategically abstaining rather than dealing with pressures to vote for a fee increase given her ranching-heavy state, or whether she was absent for other reasons, is unclear.

Econometric Model

To answer the questions that interest us, we must derive inferences about the preference distribution. In order to do so, we develop an econometric model based on random utility.[16]

Like previous analyses, we assume that member preferences over alternatives follow the spatial model formula described by Equation (1). As evidence of revealed preferences, we use the votes over (*K, V1, V2, B*) and estimate an ordered probit (McKelvey and Zavoina 1975) to categorize the distribution of ideal grazing fees in the House and to identify the factors that drive members' preferences for more or less change to the 1978 PRIA provisions. Thus, we express member i's ideal point, x_i, as a function of a vector of independent variables, z, and a stochastic error term, e_i:

$$(2) \qquad x_i = z_i' g + e_i$$

where z_{i1}, the first element in z_i, is equal to 1 for all i, and e_i is normally distributed with mean zero and variance s^2. As shown in Table 1, members reveal that their ideal points are located in a given Region by their voting patterns, our dependent variable characterizes member i's voting pattern as an ordinal variable y_i, y = 0, 1, …, 5, we assume that these patterns reflect utility differences over alternatives, and y is the observed analogue to latent variable y^*, whose value depends on the Region in which member i's ideal point x_i is located.

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[16]While the 1997 votes meet the prerequisites for using random utility models–a well-defined structure of how the original bill and its proposed amendments would increase the average public lands grazing fee, public knowledge among members of the amount of change associated with each proposal, and a well-recognized and easily identifiable opportunity for sophisticated voting–the observed vote patterns necessitate minor changes to this analytic framework by modifying the method of cutpoint rescaling (see Appendix).

Combined with Equation (2), this allows us to develop an ordered probit model to estimate x_i. For example, the probability of member i's ideal point falling in Region III is given by

$$(3) \qquad Prob(y_i = 2) = Prob(\$1.92 \leq x_i < \$2.50) = Prob(\mu_1 \leq y_i^* < \mu_2),$$

where

$$(4) \qquad y_i^* = z_i'\beta + \varepsilon_i$$

so that y_i^* and x_i are a function of the same independent variables. As Figure 2 illustrates, (3) and (4) suggest that the distance between μ_1 and μ_2 on the single dimension can be expressed as rescaled versions of the actual monetary cutpoints. Combining (3) and (4), we find that

$$(5) \; Prob(\mu_1 \leq y^* < \mu_2) = Prob(\mu_1 \leq z_i'\beta + \varepsilon_i < \mu_2) = Prob\left(\frac{\mu_1 - z_i'\beta}{\sigma} \leq \frac{\varepsilon_i}{\sigma} < \frac{\mu_2 - z_i'\beta}{\sigma}\right) =$$

$$\Phi(\mu_2 - z_i'\beta) - \Phi(\mu_1 - z_i'\beta),$$

where Φ represents the standard normal distribution, since the stochastic term $\varepsilon_i \sim N\,[0, \sigma^2]$. We can then use Equation (5), and similar expressions for the probability that a member's ideal point falls into each Region, to define the ordered probit log-likelihood function:

$$(6) \qquad L_n(\beta,\mu) = \sum_{y_i=0} log\, \Phi(-z_i\beta) + \sum_{y_i=1} log[\Phi(\mu_1 - z_i\beta) - \Phi(-z_i\beta)] +$$

$$\sum_{y_i=2} log[\Phi(\mu_2 - z_i\beta) - \Phi(\mu_1 - z_i\beta)] + \sum_{y_i=3} log[\Phi(\mu_3 - z_i\beta) - \Phi(\mu_2 - z_i\beta)] +$$

$$\sum_{y_i=4} log[\Phi(\mu_4 - z_i\beta) - \Phi(\mu_3 - z_i\beta)] + \sum_{y_i=5} log[\Phi(z_i\beta - \mu_4)]$$

which we maximize in terms of the parameter vectors β and μ to get maximum-likelihood estimates $\hat{\beta}, \hat{\mu}_1, \hat{\mu}_2, \hat{\mu}_3$ and $\hat{\mu}_4$.

For model identification, we normalize the upper endpoint of Region I at zero.[17] Additionally, the knowledge, derived from the spatial model assumptions of preferences in Equation (1), that the cutpoints of the model are in dollars allow us to rescale the maximum-likelihood estimates $\hat{b}, \hat{m}_1, \hat{m}_2, \hat{m}_3$ and $\hat{m}_4$ to recover the ideal points in dollars, $\hat{x}_i$, from the $\hat{y}_i^*$.[18] For instance, for a member with a predicted y_i^* falling within Region III, $\hat{x}_i$ can be recovered from $\hat{y}_i^* = z_i' \hat{b}$ by:

$$(7) \qquad \hat{x}_i = \frac{\hat{y}_i^* - \hat{m}_1}{\hat{m}_2 - \hat{m}_1} \cdot (2.50 - 1.92) + 1.92$$

where $(2.50 - 1.92) = \left(\frac{q_4 + q_3}{2} - \frac{q_3 + q_2}{2} \right) = \left(\frac{q_4 - q_2}{2} \right)$.[19]

Independent Variables

To estimate our model, we employ variables capturing the ideological, partisan, and particularistic conflicts that engulf the debate over grazing fees.

In recent years it has been demonstrated that congressional voting, even on issues such as the minimum wage, is predicted well by an underlying ideological dimension(s), which is quite stable over time and across votes, and whose theoretical basis rests in spatial theory (Poole and Rosenthal 1997).

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[17]Volden (1998) identifies this cutpoint by omitting a constant term. But Krehbiel and Rivers (1988) illustrate that this is unnecessary for recovering ideal points on the actual dollar scale.

[18]Typically, we normalize s at 1 to identify the model, which produces a likelihood function (using Region III as an example) with terms like $\sum_{y_i=2} log\left[F\left(m_2 - z_i b\right) - F\left(m_1 - z_i b\right)\right]$. The knowledge of the dollar value of the cutpoints permits exact identification of x_i by allowing us to estimate the positive constant s in (5). See the Appendix for details about this rescaling process.

Thus, we include *member ideology*, using Poole and Rosenthal's first dimension W-NOMINATE score, which has values ranging from roughly –1 (conservatives) to 1 (liberals). Although support for low grazing fees has both features associated with modern liberalism and conservatism, we nonetheless expect that conservatives will vote in favor of low rates.[20] However, given our pinpointing of environmentalists and budget hawks as two groups with a special antipathy to low grazing fees, we include two specific ideology measures: *LCV*, the vote score compiled by the environmentally-oriented League of Conservation Voters, and *NTU*, an analogous score published by the government spending/deficit-sensitive National Taxpayers' Union. Both scores range from 0 (low environmental support; sensitivity to deficit spending) to 100 and have been purged of the grazing votes that were used to help calculate 1997 scores.[21]

The fight over grazing fees was also clearly partisan. Although results related to partisanship might be captured by our ideology measures in these days of highly polarized legislative parties, we wish to control for any additional effects of party membership. Thus, we include a dummy variable, *party*, scored 1 for Democrats and 0 for Republicans. Its sign should be positive, indicating that Democrats prefer higher grazing fees, all else being equal.

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[19]Substituting $m_1 = 0$ and suppressing the subscript on m_2, it is clear that the scaling procedure in Krehbiel and Rivers (see their Appendix) is a special case of (7).

[20]Many conservatives supported the unamended bill in the end, suggesting that they preferred the $1.84 rate proposed by those associated with ranching interests. However, as mentioned, some members had ideal points falling in Region I and opposed even this minimal increase.

[21]These three measures all are strongly correlated with one another, suggesting a high risk of multicollinearity (Poole and Daniels 1985). However, our results indicate that our estimation is able to distinguish among them.

Finally, although also related to ideology and party, there are particularistic district characteristics that should help determine support for subsidies. Most notably, the presence of federal lands grazing in the district should be a virtually decisive feature for representatives. Thus, we include *graze*, which is an approximation of the number of AUMs held by permitholders within a member's district.[22] Additionally, although somewhat skeptical of the ability to maintain an agriculturally-based logroll (and while it is clear that at least some representatives of Eastern and Midwestern agricultural districts were unwilling to support the $1.84 solution), we incorporate district agricultural activity by including *farm income*, measured as per capita farm income by district residents according to the 1990 Census.[23] We expect that the greater the farm income the lower the grazing level preferred; evidence that farm income matters would at least be consistent with a logroll and evidence that it is insignificant would refute such a proposition.

Determinants of Ideal Points

Table 2, Model 1, contains parameter estimates for member ideal points toward grazing fees. Overall, this specification works well. Almost all the variables are signed as posited and are statistically significant. The Region in which members fall is also well predicted: 319 of the 364 members in the

[22]As direct measures of AUMs by congressional district are unavailable, we define this measure as a state's total AUMs divided by the number of districts in the state with federal grazing (as determined by an examination of USFS and BLM maps). In other words, within a given state, we have to assume that the number of AUMs per district is equivalent.

[23]Additional variables intended to measure differences in heavily agricultural and ranching districts regarding the type of livestock being grazed (cattle, sheep or horses) were insignificant, even for a probit model exclusively predicting the vote on the second Vento amendment targeting sheep and goat ranchers.

analysis (87.6 percent) are correctly classified (Table 3; notice that those who do not vote according to one of our 6 voting patterns are omitted). For comparison's sake, a "pure ideology" model using only the W-NOMINATE score as an independent variable predicts 82.7 percent of the cases correctly and a "pure party vote" model predicting that all Republicans fall within Region II and that all Democrats fall within Region VI predicts 81.6 percent of the cases correctly. Thus, the estimated model reduces prediction error by 28.6 percent and 31.5 percent respectively.

Additionally, our results have some interesting implications for the sources of grazing policy. First, as expected, ideology matters a great deal. The W-NOMINATE ideology scale is extremely important in distinguishing low versus high fee types. However, it is not perfect. Despite strong correlations with W-NOMINATE, views toward both environmentalism and fiscal responsibility are relevant, if not as important as overall ideology. We draw the latter inference by examining two partial derivatives, $\boldsymbol{d}_{II}$ and $\boldsymbol{d}_{VI}$, which summarize the marginal effects of ideological change on the probability that x_i falls into Region II or Region VI respectively.[24] While these partial derivatives for W-NOMINATE are $\boldsymbol{d}_{II}$[W-NOMINATE] = 0.8355 and δ_{VI}[W-NOMINATE] = –0.7810, their equivalents for LCV scores (-0.2774 and 0.2593) and for NTU scores (-0.3693 and 0.3452) are much smaller. Nevertheless, given that we control for the large

[24] Greene (1997) recommends this method as a means of easily comparing substantive impacts of variables in ordered probit models. For a variable z_i, we define $\delta_{II}[z_i] = \dfrac{\partial Prob[x_i \in \textit{ Region II}]}{\partial z_i}$ and $\delta_{VI}[z_i] = \dfrac{\partial Prob[x_i \in \textit{ Region VI}]}{\partial z_i}$, where in each case all variables $z_{(-i)}$ are held constant at their means. While corresponding partial derivatives can be calculated for changes in the probability of falling in the other four Regions, we focus on Regions II and IV as they incorporate so many members.

Table 2: Legislators' Ideal Grazing Fees
(Parameter and Cutpoint Estimates for the Four-Vote Model)

	Model 1		Model 2	
Variable	**Coefficient (Standard Error)**	***t*-ratio**	**Coefficient (Standard Error)**	***t*-ratio**
Constant	3.396 (0.189)	17.976**	3.366 (0.210)	16.046**
Member Ideology (W-NOMINATE)	-2.095 (0.429)	-4.885**		
Republican-Conservatism			-0.697 (0.130)	-5.378**
Democratic-Conservatism			-0.339 (0.206)	-1.648*
LCV	0.698 (0.182)	3.823**	0.737 (0.184)	3.998**
NTU	0.929 (0.249)	3.723**	0.885 (0.268)	3.306**
Party (Democratic)	-0.441 (0.243)	-1.813*	1.186 (0.274)	4.330**
Farm Income	-0.152 (0.130)	-1.167	-0.141 (0.135)	-1.045
Graze	-0.159 (0.086)	-1.854*	-0.164 (0.093)	-1.764*
$\hat{m}_1$	3.401 (0.228)	14.899**	3.344 (0.234)	14.300**
$\hat{m}_2$	3.491 (0.227)	15.367**	3.434 (0.232)	14.803**
$\hat{m}_3$	3.561 (0.228)	15.620**	3.504 (0.232)	15.097**
$\hat{m}_4$	3.769 (0.218)	17.288**	3.713 (0.223)	16.667**
Number of Cases	364		364	
Model log-likelihood:	-175.813		-176.699	
Restricted log-likelihood:	-346.85		-346.85	
Model χ^2 (d.f.)	342.0755 (7)		340.3029 (6)	
Significance	$p < 0.00001$		$p < 0.00001$	

**: Significant at $p < 0.01$, one-tailed test of H_0: $\boldsymbol{b}_k = 0$

*: Significant at 0.01 < p < 0.05, one-tailed test (unless otherwise specified in text)

Table 3: Predicted Values for Four-Vote Analysis
(Based on Model 2 Estimates)

	Predicted Region						
Actual Region	I	II	III	IV	V	VI	Total
I	0	3	0	0	0	3	6
II	0	179	0	0	4	6	189
III	0	3	0	0	0	1	4
IV	0	2	0	0	0	1	3
V	0	2	1	1	0	5	9
VI	0	9	2	0	2	140	153
Total	0	198	3	1	6	156	364

effects of overall ideology it is reasonable to conclude that any trend toward liberalism, environmentalism, or concerns about budget deficits are threats to low grazing fees.

The one surprising result in Model 1 is that Democrats actually want lower fee levels, *ceteris paribus* (although the significance level is only .10 with a two-tailed test and the marginal effect of the variable is small, $\boldsymbol{d}_{II}$[party] = 0.1756 and $\boldsymbol{d}_{VI}$[party] = –0.1641). This seems counter to efforts by the Republicans to forge a consensus using $1.84 as a focal point. To further explore this finding, we estimate Model 2, in which we slightly change our specification to find out more about how the influence of liberalism-conservatism varies between Democrats and Republicans by substituting the variables *Democratic Conservatism* and *Republican Conservatism* (defined as a member's W-NOMINATE score minus the score of the median member of her party) for W-NOMINATE. In other words, we essentially chop general ideology into continuous measures of conservative Republicans, liberal Republicans, conservative Democrats, and liberal Democrats. The resulting variables should be negatively signed if conservatives within each party prefer smaller increases in federal grazing fees. What we find is that, while results for other factors are robust, ideological distinctions among Democrats have a greater impact than those among Republicans (as defined by the partial derivatives) and that Republicans do, indeed, seem to prefer lower grazing fees.[25] This is consistent with the notion that most of the leadership action on the grazing bill came from the Republican side and that such efforts helped GOP members overcome ideological differences.

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[25]For Democratic Conservatism the partial derivatives for Regions II and VI are 0.2769 and –0.2633 and for Republican Conservatism they are 0.1348 and –0.1282. Also, the magnitude of direct partisan effects in Model II are considerably larger than for Model 1, $\boldsymbol{d}_{II}$[party] = –0.4711 and $\boldsymbol{d}_{VI}$[party] = 0.4479.

Finally, our measures of particularistic features yield two interesting findings. First, as expected, the grazing variable is significant and negative, indicating that there is more than ideology or partisanship driving preferences for fees, although the marginal effects of representing a grazing district are, befitting the fact that most districts have no grazing, small (δ_{II}[grazing] = 0.0653 and δ_{VI}[grazing] = –0.0621). Nonetheless, for those dismissing the importance of specific district characteristics once ideology is controlled either because ideology functions as a dominant independent force or because it proxies district characteristics, at least in this extreme case specific district features matter somewhat net of even three different ideology measures (see the discussion in Poole and Rosenthal 1997). Furthermore, per capita farm income is insignificant, indicating there was no agricultural logroll.[26]

As implied already, one possible problem with our analysis is that the second Vento amendment stands somewhat apart from the other votes because it does not propose a specific grazing fee and because it tries to redress a technical imbalance. Indeed, we lose almost 10 percent of our sample (35 members) by including this vote due to misclassification. Thus, as a robustness check we rerun our analysis with this vote excluded (Tables 4 and 5). However, the results are striking similar to the four-vote analysis, with the major differences being that significance levels are a bit higher and, when we examine ideal grazing fee levels, the distribution is somewhat more spread out.[27] None of the results in Table 2 are an artifact of the Vento amendment's inclusion.

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[26]The small correlation between grazing and farm income (0.12) indicates that agricultural activity simply adds no predictive power to the model.

[27]For example, for the four-vote model the House mean is \$6.94 (however, we should keep in mind that the median is \$1.89) with a standard deviation of \$6.97, while for the three-vote model the mean and standard deviation are \$8.03 and \$7.56 respectively.

Table 4: Legislators' Ideal Grazing Fees
(Parameter and Cutpoint Estimates for the Three-Vote Model)

	Model 1		Model 2	
Variable	**Coefficient (Standard Error)**	**t-ratio**	**Coefficient (Standard Error)**	**t-ratio**
Constant	3.335 (0.166)	20.074**	3.337 (0.176)	18.921**
Member Ideology (W-NOMINATE)	-2.189 (0.353)	-6.201**		
Republican-Conservatism			-0.747 (0.108)	-6.911**
Democratic-Conservatism			-0.341 (0.141)	-2.413**
LCV	0.709 (0.152)	4.679**	0.756 (0.152)	4.966**
NTU	1.066 (0.183)	5.810**	1.009 (0.200)	5.046**
Party (Democratic)	-0.454 (0.212)	-2.143**	1.237 (0.212)	5.841**
Farm Income	-0.173 (0.106)	-1.629	-0.166 (0.110)	-1.511
Graze	-0.157 (0.082)	-1.921*	-0.164 (0.085)	-1.932*
$\hat{m}_1$	3.158 (0.202)	15.658**	3.110 (0.206)	15.095**
$\hat{m}_2$	3.276 (0.200)	16.342**	3.228 (0.205)	15.776**
$\hat{m}_3$	3.763 (0.194)	19.432**	3.719 (0.198)	18.772**
Number of Cases	399		399	
Model log-likelihood:	-231.748		-230.09	
Restricted log-likelihood:	-416.974		-416.974	
Model χ^2 (d.f.)	370.4522 (6)		373.7687 (7)	
Significance	p < 0.00001		p < 0.00001	

**: Significant at $p < 0.01$, one-tailed test of H_0: $b_k = 0$

*: Significant at $0.01 < p < 0.05$, one-tailed test (unless otherwise specified in text)

Table 5: Predicted Values for Three-Vote Analysis
(Based on Model 2 Estimates)

	Predicted Region					
Actual Region	I	II	III	IV	V	Total
I	0	4	0	0	3	7
II	1	177	3	4	8	193
III	0	3	2	0	2	7
IV	0	12	0	4	12	28
V	0	11	1	9	143	164
Total	1	207	6	17	168	399

As also implied, besides examining variable coefficients, our analysis can provide us with additional insight into policy stability by looking at member preference distributions. First, consider whether members of the House Agriculture or House Resource Committees, which both dealt with the bill in question (although it was lead on the floor by Agriculture members), had very low ideal points relative to the House median.[28] In fact, our analysis finds substantively negligible distinctions—for example, for the four-vote estimation, the difference between the Agricultural Committee and floor medians is a scant $0.09 ($1.80 versus $1.89) and for the three-vote model it rises to $0.24 ($2.14 versus $2.38). Results for the House Resource Committee are analogous. Compare such divisions to that for partisanship (using only the four-vote results for parsimony): the Republican median wants a $1.78 level and the Democratic median wants $11.65 (i.e., essentially market rates). In short, a high demand committee does not represent a smoking gun for stability.

Additionally, our estimates of the distribution of ideal points indicate that a grazing fee higher than that approved, and which might have won presidential support, could have won support versus the status quo but did not. How high this fee could be depends somewhat upon whether we believe the four-vote results and its $1.89 median—indicating the median legislator would be indifferent between the status quo and $2.43—or the $2.38 median—suggesting that the point of the median's indifference between the alternative and the status quo was actually above $3. Consequently, members were seemingly induced, perhaps by congressional leaders, to ignore the presidential veto threat and not offer or support an alternative that the president would have been likely to sign.[29] Additionally, our analysis

[28]We do note, however, that Battaglini (1999) questions the theoretical basis for studying preference outliers.

[29]Of course, House leaders and members could have strategically assumed that the Senate would not pass an identical bill (although the Senate committee bill was identical) and that a compromise could be

indicates that the president's veto would have been upheld given the unwillingness of low fee advocates to up the ante, as the House veto override point was at a fee level in excess of $8 (see Appendix). This indicates both that supporting the $1.84 fee level was tantamount to supporting the $1.35 status quo and that a presidential executive order raising fees could not have been overturned if the chief executive was willing to veto subsequent legislation.

Thus, our analysis of member ideal points over grazing suggests that the House median was, essentially, realized in the reported bill. In this process, any number of high demand members voted strategically, following the president's lead by rejecting the $1.84 outcome outright over the $1.35 option (although we cannot interpret this as presidential influence, per se), even though the latter was clearly closer to their ideal points.

As a means of summarizing what we have found, we can now answer the five specific questions with which we began our analysis:

- Our findings for district agricultural activity provide no evidence that policy stability is an institutionalized logroll.
- We find no evidence that committee members with preferences for very low fees are driving policy.
- A presidential executive order raising fees could have been sustained. Indeed, the relevant veto override point probably approximates the market value of these public lands.
- The president could have effectively vetoed a small grazing fee increase, as more than one-third of the House had ideal points indicating support for the veto.

arrived at via a conference committee. Nevertheless, there is not much observable evidence of a presidential veto impact by those wanting low fees.

- Given our assumption of single-peaked preferences, an increase that would likely have been acceptable to the president could have been passed in that the median member would have been at least indifferent between it and the status quo.

Is Stability an Artifact?

Many view the perpetuation of low grazing fees for a select group of ranchers in the American West as either incomprehensible or obvious. For some, policy is incomprehensible given the ecological damage done, the misallocation of resources and resulting efficiency losses, and the government revenues foregone; for others, the policy status quo is easily explained as a function of the localized source of support for low grazing fees and the possibilities of employing institutional mechanisms to maintain the current state of affairs.

Our analysis offers a different view: that stability is so fragile that we might consider it artifactual. Neither looking at member preferences nor institutional features provides reason to draw the inference that there is little possibility for real, significant, change.

Most obviously, our ideal point analysis indicates that the chief executive could alter the status quo via executive order and it would be very difficult to establish a new status quo that would survive a presidential veto.[30] Clearly, supporters of low grazing fees could try, as they have at least once in the past, to put together an *ad hoc* trade of low grazing fees for other policies important to the chief

[30]It is ironic that the president comes out so badly in our analysis given the prominence recently attributed to executive orders by some scholars (e.g., Moe and Howell 1999). Yet, for grazing fees the president is unwilling to use executive order authority, unable to sway votes with a veto threat, and

executive or her supporters. However, such efforts would likely be unstable over the long-run, particularly if the president allocates a high priority to grazing reform.

But, even net of the president utilizing her first-move advantage, we can clearly see reform possibilities. The median member, even of the Republican Party, is willing to accept some significant increase in grazing fees above the $1.84 that was unacceptable to the president. Although such a fee, for example a doubling of the current AUM level, would not approximate that which policy analysts would recommend, it would significantly effect the environment, lower efficiency costs associated with grazing, and raise Treasury revenues. Thus, even given a conservative Congress, there is room for maneuver and, to reiterate, it is hard to establish that there are strong institutional mechanisms that would prevent such a change.

Finally, there may be longer-term reasons to expect change. Most obviously, the distribution of ideological preferences in Congress can vary markedly toward liberalism (and, indeed, there has been some movement in this direction since 1997), which would raise the ideal point of the median voter considerably if Democrats and Republicans continue along their present paths. As well as changes in underlying legislative dispositions, heightened environmental sensibilities as the American West faces increasing developmental pressures and enjoys more prosperity, coupled with the declining importance of agriculture to the economies of many of these states, could further produce pressures to reform the grazing fee structure (although, admittedly, the possible dampening of deficit or taxation concerns in the last few years may work at cross-purposes.

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unable to win even the votes to maintain the status quo (although, of course, that was the eventual outcome in the Congress as a whole).

In brief, we can understand why, given the president's strategic behavior, the House median failed in 1997 (and why the Senate, after the same bill was voted out of committee, gave up on the proposal which would have fallen easily to a veto). Minimally, the bill had no chance of becoming law unless the president backed down. But we can also see how, the next time similar opportunities arise, a markedly different outcome could result. More generally, when considered together, our findings imply that even seemingly stable policies may, in fact, rest on a very tenuous foundation.

Appendix: A General Method of Recovering Ideal Points

Although our four votes give us more information than comparable analyses estimating member ideal points, x_i, it requires us to produce a general scaling method to deal with multiple scaling parameters.

We can illustrate this by comparing our analysis with the Krehbiel-Rivers minimum wage example. The latter needs to only estimate one scaling parameter, $\hat{s}$, to convert its estimated latent variable, $\hat{y}_i^*$, into an estimated ideal minimum wage level $\hat{x}_i$. By contrast, the number of vote choices in our analysis means that many such parameters are estimable and, it turns out, that using the same value of $\hat{s}$ across all Regions is problematic. The $\hat{s}$ yielding sensible estimates for ideal points in Regions I and II seriously understates their magnitude in Regions III, IV, V and, especially, VI. While few legislators exhibit the (N,N,N,N) voting pattern necessary for deducing that their ideal points fall in Region I, rescaling $\hat{y}_i^*$ according to the formula described in (7) produces predicted ideal points that are within the actual intervals (0, \$1.60) and (\$1.60, \$1.92) for members falling in Regions I and II. However, as almost half the House voted against all of the amendments and for the unamended bill, and they constitute a wide variety of members, the maximum likelihood estimate of the cutpoint m_1 must place Region II's upper bound quite far from zero. Given the small monetary range of \$0.32 between actual cutpoints for Region II, and the estimated cutpoint $\hat{m}_1$ being so far from zero ($\hat{m}_1$ = 3.3445), we obtain a very small $\hat{s}$ of (0.096). This leads to the inference that the actual distribution of member ideal points is far smaller than the range of $\hat{y}_i^*$ and results in severe underestimation of member ideal points in Regions III through VI. As defined in dollars, the $\hat{x}_i$ fall far from their proper Regions (recall Figure 2).

Obviously, as the Krehbiel-Rivers formulation only used two votes to estimate one cutpoint in consideration of three voting patterns, it did not face such a disjunction. Consequently, although their analysis relied not only on spatial model assumptions but on debatable assumptions about agenda formation (Wilkerson 1991), their ideal minimum wage levels estimates were sensible for all members. Similarly, Volden obtained reasonable estimates given that the distribution of members in the various Regions that he considered was fairly uniform. Clearly, we need a more general approach to dealing with scaling parameters.[31]

To deal with our unique situation, we rescale our member ideal point estimates in Regions III through VI to fall between the actual monetary cutpoints that define these intervals. We can then generalize (7) to estimate the ideal point of a member estimated to be in Region j,

j = 2, 3, 4:

$$\hat{x}_i \equiv E\left[x_i \mid j, \hat{b}, \hat{m}\right] = \frac{\hat{y}_i^* - \hat{m}_{j-2}}{\hat{m}_{j-1} - \hat{m}_{j-2}} \cdot \left(\frac{q_{j+1} - q_{j-1}}{2}\right) + \frac{q_j - q_{j-1}}{2} \qquad (8)$$

Following Krehbiel and Rivers, we use the same formula for Region I as for Region II; since $\hat{y}_i^* < 0$ for these members, the formula gives $\hat{x}_i$ < \$1.60. This general formula also allows us to introduce the information contained in $\hat{m}_2$ and $\hat{m}_3$, equaling \$2.50 and \$3.50, respectively.

Theoretically, we should use the Region IV estimates, computed according to (8), to provide the additional information for computing the Region V and VI estimates. However, since only three

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[31] Although Volden's ideal point estimates are unreported and not used in tests of the likelihood of sophisticated voting, he may also have encountered such scaling issues in his analysis. The difference between Volden's q_1 (\$3.35) and his q_2 (\$4.25) is large compared to his q_3, which he concludes was probably around \$4.31 (since the hypothesis of costly sophisticated voting could not be rejected) and his q_4 (\$4.65).

members actually fall within Region IV and only one member is (incorrectly) predicted to fall within Region IV, in our four-vote models the maximum-likelihood estimates $\hat{m}_2$ and $\hat{m}_3$ are very close together and statistically indistinguishable while the dollar range ($2.50-$3.50, or $1.00) is large. As a result, the scaling formula that we derive for Region IV translates very small differences in $\hat{y}^*$ into very large differences in $\hat{x}_i$, so that members with very large $\hat{y}^*$ have unreasonably large predicted values of $\hat{x}_i$—on the order of $50 per AUM for the largest $\hat{y}^*$. Thus, we scale the ideal point of the lone member for whom $\hat{m}_2 < \hat{y}_i^* < \hat{m}_3$ according to the formula used for Region III.

For Regions V and VI, since the cutpoint μ_4 is theoretically defined as C_D, an unknown quantity, the underlying scale can be defined either by specifying a value for C_D or by employing the same scaling procedure used in Region IV to estimate $\hat{C}_D$. We recover $\hat{x}_i$ for Regions V and VI by computing $\hat{C}_D$ as $E\left[x_i \mid \hat{y}_i^* = \hat{m}_4\right]$, using the scaling formula that was used in Regions III and IV. This estimate of $\hat{C}_D$ produces substantively plausible estimates for the $\hat{x}_i$ in Regions V and VI. $\hat{C}_D$ = $4.83, [32] and we recover $\hat{x}_i$ for Regions V and VI using the following version of (8):

$$\text{(8)} \qquad \hat{x}_i \equiv E\left[x_i \mid j = 5,6; \hat{b}; \hat{m}\right] = \frac{\hat{y}_i^* - \hat{m}_3}{\hat{m}_4 - \hat{m}_3} \cdot \left(\hat{C}_D - \frac{q_4 + q_5}{2}\right) + \frac{q_4 + q_5}{2}$$

so that for members in Region VI, $\hat{y}_i^* > \hat{m}_4$ so that $\hat{x}_i > \hat{C}_D$. The largest values of $\hat{x}_i$ are about $27.00 using this formula, which is very large but comparable to a high-end estimate of fair market value, given that ranchers in South Dakota pay more than that to graze on state-owned lands.

[32] When we use the theoretically indicated formula for Region IV, $\hat{C}_D$ is over $20.

We follow the same procedure for our three-vote model. With the second Vento amendment excluded, the ideal point estimates are slightly higher for members in Regions III through VI–$\hat{C}_D$ = $7.43, for instance–but the highest estimated ideal points are about the same as with the four-vote model: $26.61 for the first analysis and $28.43 for the second. The estimated ideal point of the pivotal member for a veto override, the 291st highest ideal fee, is $10.32 for the three-vote analysis as compared to $8.06 for the four-vote analysis.

While rescaling y^* for members in these Regions seems like a violation of the homoskedasticity assumption that the conditional variance of member ideal points, Var $[x_i \mid z_i'g]$, is a constant (s^2) across all Regions, it is justifiable for two reasons. First, homoskedasticity often is violated in practice (Alvarez and Brehm 1995, 1997, 1998) even though it might not be easily detected when the observed number of members in each Region is roughly equal or when the number of Regions is small (in our case, it should be more apparent since we place members in six Regions and the number of members falling in Regions I, III, IV and V is small).[33] Second, using our general method has the compensating virtue of exploiting the many pairs of cutpoints with which we have to work. While the actual range in dollars between estimated cutpoints provides the theoretical leverage to recover the $\hat{x}_i$, it makes sense to employ the different scales that can be derived from any of the observed pairs of cutpoints to improve our ideal point estimation.

[33]Our general rescaling method, like the special case used by Krehbiel and Rivers, renders the assumption of single-peaked preferences untestable by rescaling ideal points so that they fall within the dollar-value cutpoints predicted by the spatial model. Theoretically, a model explicitly allowing for heteroskedasticity would allow us to derive estimates of the average conditional ideal point variance, $s^2{}_k$, for each Region k (k = 1,2, …, 5) and use them to rescale the ideal points. We plan to explore this possibility in an extension of this research.

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