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**COMMON SENSE OR COMMONWEALTH?  
THE FENCE LAW AND INSTITUTIONAL CHANGE IN THE POSTBELLUM SOUTH**

**Shawn E. Kantor and J. Morgan Kousser**



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**ABSTRACT**

What causes individuals to change age-old economic, political, and social institutions? "Radical" historians claim that economic elites use their political power to impose institutions that enable them to extract the "labor surplus" more easily. This sharply conflicts with many economists' belief that economic growth comes about as society adopts a new regime of rules so as to capture potential efficiency gains. Whereas previous economists and historians have not addressed each other's concerns, this paper tests these contending hypotheses using an example common to both literatures — fence laws.

As demographic and economic changes permeated the postbellum South, many progressive farmers called on their state legislatures to adopt stock laws which would prohibit grazing animals on unfenced land. Focusing our attention on the same Georgia counties as previous historians have studied, we provide a more comprehensive analysis of the empirical data than has heretofore been given. Previous research on what contemporaries called the fence question has portrayed the conflict as one between the "haves" and the "have nots" — wealthy landowners against yeoman farmers, tenants, and laborers — or between contending "cultures" — believers in a precapitalistic "household mode of production" against partisans of national and international capitalistic market relations. Our investigation of the qualitative and quantitative evidence shows that the two-class interpretation is wrongly simple and the cultural gloss is simply wrong. The stock law created potential benefits which crossed class lines and there is little evidence that its opponents rejected the crass cash nexus. The debate, therefore, was not rooted in class conflict, but stemmed from the materialistic goals of individuals concerned about the equitable distribution of costs and benefits of fencing crops and animals.

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"Let us suppose that a farmer and [a] cattle-raiser are operating on neighboring properties. Let us further suppose that, without any fencing between the properties, an increase in the size of the cattle-raiser's herd increases the total damage to the farmer's crops. . . .The real question that has to be decided is: should A be allowed to harm B or should B be allowed to harm A? The problem is to avoid the more serious harm."<sup>1</sup>

– Ronald Coase, "The Problem of Social Cost," *Journal of Law and Economics*, 3 (October 1960), pp. 2–3. The order of the two sentences has been rearranged.

"What underlay contention over the material consequences of the stock law was considerably different, and increasingly antagonistic, ideas about social relations and property rights. . . .The freedom to which [stock law opponents] adhered was not merely that founded upon ownership of one's person and exchange in the marketplace, but that founded upon control over productive resources, labor time, and subsistence which, in turn, could be realized only through membership in the commonwealth of producers. The stock-law controversy set the republicanism of those producers against the values of the free market."

– Steven H. Hahn, *The Roots of Southern Populism: Yeoman Farmers and the Transformation of the Georgia Upcountry, 1850–1890* (New York: Oxford University Press, 1984), pp. 250, 254.

**Economists and Historians on the Fence**

Economists and labor historians have viewed the topics of property rights and institutional change quite differently. While economists' often theoretical accounts have stressed efficiency and bargaining between self-interested individuals, historians, no less abstract, but more in the tradition of Karl Marx than of Ronald Coase, have highlighted distributional issues and conflicts between classes that represented, some historians assert, contending cultures. To economists such as Lance Davis and Douglass North, shifts in relative prices and discoveries of new opportunities for gain tend to induce alterations in institutions so as to foster economic growth.<sup>2</sup> To "radical" historians, such as Steven Hahn, elites used their political dominance to substitute a capitalist for a cooperative, non-profit-oriented "household mode of production" in order to control labor more easily, and thereby to facilitate their exploitation of the "labor surplus."

These two conflicting views are not incommensurable. They do not represent incompatible rhetorics, or "different tropes for different folks," as Donald N. McCloskey might express it.<sup>3</sup> Even though labor historians have heretofore not directly confronted the economists' contentions, both schools have examined a common example, fence laws, and the accounts of both contain serious deficiencies. This paper seeks to combine the theoretical insights of the economics literature with the empirical richness of the historians' research mode to provide a new, more comprehensive account of the fence law debate in the postbellum South, a debate in which Hahn and others have discerned "the roots of southern Populism."

For evidence of contemporary behavior, we will draw not only on economic and political statistics but also on a startlingly rich debate over the fence laws conducted by partisans of the two sides in local newspapers. That late nineteenth century Georgia backwoodsmen demonstrably understood all the economic subtleties of the fence problem and the consequences of changing their economic, political, and social institutions should both cheer and chasten us — the former because their statements demonstrate the ubiquity of economic reasoning and the rationality and vigor of democratic debate during the 1880s, the latter because our models a century later are no more sophisticated.

### Historians' Explanations of the Fence Law Struggle

Hailed as an important reinterpretation of postbellum southern society and politics, Steven H. Hahn's prize-winning *Roots of Southern Populism* puts major emphasis on what is in essence a simple question of tort law: Would owners of livestock be liable for damages to other people's crops if they did not fence in their animals (which was referred to as the "stock law") or did crop-owners have to fence out other people's cattle and swine (the "fence law")?<sup>4</sup> Before 1872 in most of sparsely-settled Georgia, the open range or fence law position prevailed. After 1872, when the state legislature passed a general act allowing citizens in each county to petition to hold referenda on the question, an increasing number of counties, and later districts within counties, adopted stock laws that shifted property rights to crop-growers and town-dwellers, and away from owners of livestock.<sup>5</sup> Debates over this question, Hahn contends, reflected struggles between an "agrarian bourgeoisie," on the one hand, and those who believed in "a cooperative principle that challenged the tenets of bourgeois individualism and property, that challenged the hegemony of the marketplace," on the other. The fence law contests "paved the road to Populism."<sup>6</sup> Actually devoting little direct attention to Populism itself, Hahn concentrates on two small counties in the Georgia hills, Carroll and Jackson, and for obvious reasons we focus our attention on the same two counties.

Charles L. Flynn, Jr. also highlights the fence law problem, which he refers to as "the bitterest political issue in Georgia politics between Redemption and the Populist Revolt of the 1890s."<sup>7</sup> But instead of a symbolic cultural battle, Flynn sees the contest as a purely materialistic class conflict between relatively affluent landowners, on one side, and landless or land-poor whites and blacks, on the other. Although he admits the validity of some of the arguments of the stock law

proponents, Flynn judges partisans of that position "at least indifferent to the burdens that the change placed upon the poor."<sup>8</sup> As the controversy spread from the more thickly settled, less heavily forested black belt to the still developing hill country, it shifted from a predominantly racial contest to one primarily between different classes of whites. "The fence-law controversy," Flynn contends, "illustrated the intersecting class and racial division in the life of the New South." While the stock law men wished to minimize the expense of fencing and the losses from scrawny, ill-bred, marauding animals, fence law advocates feared high charges by landlords or large farmers for penned, watered grazing space if the fence law were repealed.<sup>9</sup>

Reviewing two centuries of southern grazing laws, J. Crawford King, Jr. details the gradual closing of the southern range.<sup>10</sup> Rather than analyzing what each side said were its reasons for acting, King divides the counties of Alabama and Mississippi in 1880 into those that partially or wholly adopted the stock law and those where no animal had to be fenced in, and compares several of the objective traits of the two groups of counties: population density, racial proportions, farm tenure arrangements and size, intensity of cultivation and concentration on cotton, and stock (especially hogs) per person. Unfortunately, he does not employ any multivariate methods or explicit statistical models, but only a series of contrasts between the mean values of each variable in the two sets of counties.<sup>11</sup> Although King concludes that his results "suggest a much more complex interpretation than the simplistic and somewhat artificial picture of battle between 'haves' and 'have-nots'," he does not flesh out such an interpretation himself.<sup>12</sup>

In another analysis of the fence question, James C. Bonner views the debate as a conflict mainly between "small farmers in isolated areas and those living in more densely populated areas."<sup>13</sup> Before the Civil War, agriculture had dominated the southern economy. After 1865, southern farmers suffered from periodic depressions at the same time that railroad mileage, town population, and industries were expanding. This uneven development created a "rural-urban schism" that manifested itself in the local debate over the fence issue. The Populists' relative success in Carroll county, Georgia in the 1890s, according to Bonner, was the climactic result of class conflicts that began to develop during local battles to close the open range.<sup>14</sup> Expressing many of the core ideas later generalized to the entire South and expressed more vividly by Hahn, Bonner's 1971 monograph attracted much less attention than Hahn's 1984 work.

### **Economic Theories of Property Rights and Institutional Change**

The neoclassical literature on property rights and institutional change begins with Coase's seminal paper. Coase argues that as long as transactions costs are zero or at least very small, the initial assignment of property rights does not matter because agents can voluntarily reach an agreement that maximizes their joint production.<sup>15</sup> To give a simplistic example, suppose that there are two college students who live next door to each other in a dormitory. One likes to sleep late in the morning and to stay up late at night, while the other rises early and retires early. Both have stereos, which they prefer to play at high volume. But, given thin walls in the building and their opposed schedules, they quickly agree that, while both can play music loud during the middle of the

day, neither will do so early or late. This voluntary agreement among two people is obviously easy to negotiate and enforce. It suggests, by contrast, the difficulties that might arise when this extremely uncomplicated situation is altered by relaxing the implicit assumption that each party is equally able to negotiate the contract, by multiplying the number of people involved, by making information less easy to obtain, or by increasing the costs of supervision and/or enforcement. Alternatively, when transactions costs are sufficiently high, the assignment of property rights becomes crucial, as different assignments may lead to quite different allocations of resources, levels of production, and distributions of burdens and benefits. Clearly, the assumption that transactions costs are small is difficult to apply to almost any historical or contemporary situation. However, Coase's work offers insight into the various problems that arise when parties are unable to negotiate effectively a Pareto-improving contract.<sup>16</sup>

The effects on efficiency were understandably great when animals were free to roam the open range and farmers were required to enclose their crops. Following Gordon, we can sketch the theoretical problems that arise when animal owners have free access to exploit the "common pool."<sup>17</sup> If we assume, as economists typically do, that individuals do not take into account the costs that they impose on others, then in a "common pool" setting, they will equate only their own private marginal benefits to the private marginal costs of grazing animals. The result will be inordinate short-term exploitation of the land with little long-term investment to restore it. If there are no exclusive property rights, because animals can graze in any unfenced area, every individual person will have an incentive to increase his herd to higher levels than he would if he had to provide all the foraging himself. In more technical terms, such an institutional arrangement encourages stockowners to create negative externalities for other people and not to take into account the full social costs of keeping animals. Therefore, as displayed in Figure 1, animal owners will carry a herd size of  $A^*$ , whereas  $A$  is the socially optimal size.<sup>18</sup> Thus, there will be an overinvestment in animals under the open range system.

*(Figure 1 about here)*

Alternatively, farmers who must fence out the animals will not expect to receive a "normal" rate of return, and will underinvest in improvements on their land, or, what amounts to the same thing, will be forced to overinvest in fencing, buckshot, and lawyers' fees. This phenomenon is pictured in Figure 2. Because of the wedge created between the private and social marginal benefits (i.e., the farmer is unable to realize all of the benefits from his land because marauding animals are extracting some of the benefits), an individual farmer will invest in  $L^*$  of land, while  $L$  would be the socially optimal amount. Thus, future generations will be robbed to allow for the rapid exploitation of resources in the present, and land, labor, and capital will be socially misallocated to erecting long, sinuous fences around crops in order to protect against the violation of ill-defined rights.

*(Figure 2 about here)*

Since the large number of participants, each trying to transfer his own cost onto others, makes private contracts in this setting unstable, government intervention becomes necessary to enforce strict property rights or contracts between the different bargaining parties. However, as the relative strength of the competing groups differs, the government's ultimate decision is likely to be influenced by the power of each individual group.<sup>19</sup> The final allocation of property rights dictated by the government, therefore, may not conform to the one which maximizes social welfare.<sup>20</sup>

What will cause people to seek a change in the status quo in the first place? Davis and North theorize that institutional change will tend to come about when the net present value of a new regime of property rights exceeds the net present value of the traditional set of rights.<sup>21</sup> As the costs and benefits are continuously changing under each institutional structure, the net present value calculation will become a dynamic process that individuals and groups constantly update. Examples of changes which might have encouraged groups in upcountry Georgia to reassess the costs and benefits of the open range and fence law include technological advances in agriculture or animal husbandry, improved transportation, and changes in the population density, the amount of improved acreage under cultivation, or the relative prices of certain commodities, such as timber, labor, animals, animal products, or agricultural produce. As more people occupied the same amount of land and the proportion of land under cultivation grew, for example, the probability that one man's animal would destroy another's crops would increase as well. This would, in turn, make the stock law more attractive.

Of course, realizing that a new institution is more valuable than the old one is quite different from actually adopting the new, better regime. As individuals who would be adversely affected by the change seek a priori contracts for compensation, those who are destined to benefit must decide upon how much to pay, who should pay, and who should receive their payments. The "free rider"<sup>22</sup> problem ultimately plagues the transition, as those who should be making the payment try to hold out and refuse to participate, hoping that their neighbors will pay the entire amount. Thus, even though an institution may be Pareto improving, there are difficult problems of free riding, distribution, equity, and fairness that must be resolved before all pertinent parties decide to undergo change voluntarily.<sup>23</sup> At this point the impasse must be solved by a governmental arbiter, but there is nothing to guarantee that the political solution adopted will be the most efficient or equitable one, or even that it will be more efficient or fair than the status quo.

By focusing our attention on the role of property rights and institutional change, we are in a better position to determine the economic (dis)incentives which drove Georgia's upcountry citizens to argue bitterly over the fence law. Issues of efficiency, equity, fairness, and distribution of income fit naturally into any explanation of institutional change and provide us with a framework for analyzing the rich debate which clearly displays the economic concerns and desires of those involved.

### The Fence Law Debate in 19th Century Upcountry Georgia

While the inhabitants of the nineteenth century Georgia upcountry were lamentably ignorant of neoclassical economic theory, the arguments that they offered during the fence law debate bear a striking resemblance to those of modern economic historians. Like recent theorists of property rights and institutional change, nineteenth century Georgians discussed possible gains in farming efficiency and resource conservation, as well as the effects of these changes on the distribution of income under different institutional structures.

Georgia law from colonial times until after the Civil War essentially stipulated that land that was not fenced in could be used as common pasture by everyone.<sup>24</sup> This was not an English or "Celtic" inheritance, however.<sup>25</sup> English common law did not require a man to fence in his land against another man's cattle. Rather, owners of animals were required to keep their stock on their own property, and, thus, animals that strayed onto a neighbor's enclosed or unenclosed land were considered trespassers.<sup>26</sup> As English emigrants arrived in America to find vast amounts of unimproved land and sparse settlements, it seemed desirable and economical to allow animals to roam the countryside freely. The eventual result of this new policy was to force landowners to erect and maintain adequate or "lawful" fences, or else to forego any chance for compensation for damages caused by another person's animals. In other words, "in every state of the Union, from the earliest times, it ha[d] been made compulsory for the landowner to maintain good fences for the protection of crops; to fence animals *out*, rather than to fence them *in*."<sup>27</sup> Georgia's first fence law, passed in 1759, explicitly required that:

all fences or enclosures . . . that shall be made around or about any garden, orchard, rice ground, indigo field, plantation or settlement in this province, shall be six feet high from the ground when staked or ridered and from the ground to the height of three feet of every such fence or enclosure, the rails thereof shall not be more than four inches distant from each other; and that all fences or enclosures that shall consist of paling shall likewise be six feet from the ground and the pales thereof not more than two inches asunder: *Provided always*, that where any fence or enclosure shall be made with a ditch or trench, the same shall be four feet wide, and in that case the fence shall be six feet high from the bottom of the ditch.<sup>28</sup>

Those whose fences did not adhere precisely to the letter of the fence law were subject to treble damages if they killed or injured an animal straying upon ill-fenced land. In the 1881 decision of *Hamilton v. Howard*, the Georgia Supreme Court declared that a lawful fence had to rise five feet from the ground everywhere, rather than merely averaging that height.<sup>29</sup> Furthermore, an 1889 decision ruled that an agreement to dispense with a partition fence (one between two neighbors) was not the equivalent of a legal fence. Unless an actual fence were broken — not merely a contract or agreement to dispense with a fence or an agreement to treat a dividing line as a fence — it was illegal for a farmer to harm a stray.<sup>30</sup> The Court's message throughout was clear: a legal fence was defined absolutely and no room for variations and exceptions existed.

The economic changes occurring in the postbellum era, however, gave many farmers reason to question the traditional practice of fencing in crops from animals. "I am compelled to build a lawful fence: or in other words a fence, 'horse-high, bull-strong and pig-tight,' to protect my own growing crop. Is that just? If this land belongs to me, has your stock any right to anything that grows upon it without my consent? That is my property. As a matter of justice, as a matter of policy, what right have you to the grasses that grow on the land of your neighbor? It is only permissive right, there is no legal or moral right in it." Such was the emphatic and frustrated argument of "P," a Thompson's Mills resident in Jackson county, Georgia who finally pleaded with his fellow citizens, "'The stock law we must have, or we perish.'" For many stock law supporters in the postbellum period, the argument to fence in animals was very basic — each person should be entitled to use his own private property as he saw fit. "Where does one man have a right to let his stock run over, and feed upon another's land?" asked a landless citizen of Carroll county in 1878 who went by the *nom de plume*, "L". I.H.P. Beck, a landless farmer, schoolteacher, and devout Populist in the 1890s, agreed: "A man's land is his own and one man's cow has no right to run on another's land inclosed or not."<sup>31</sup>

Drawing on familiar Jeffersonian rhetoric, reformers attacked fence laws as incompatible with "republican" independence. As "L" advised, "If you have stock, own a piece of land to put them on, and keep them; not have them, and allow them to run over other's property." [sic]<sup>32</sup> Not only did stock law advocates claim that roving stock illegally violated their personal property rights, they also felt that their neighbor's had a moral obligation to respect these rights. Appealing to a widely shared individualistic natural rights tradition, J.O.R. Word proclaimed that "from a sense of justice between man and man, I think that every man should be compelled to take care of his own stock, that he has no moral right to turn loose his stock to prowl around upon his neighbor's crop." Illustrating the incongruity of common grazing rights within a more general system of wholly private property, proponents of the stock law posed homespun analogies: "A man has as much right to take his household and kitchen furniture and put it in another man's house and kitchen, as he does for his stock to run on his neighbor's enclosed or unenclosed." A *Carroll Free Press* reporter from Villa Rica described the logical result of a law which allowed a man to permit his stock to graze upon his neighbor's land. "If he has this right, then by the same reasoning, he would be entitled to all the property not sheltered. A buggy or wagon left from under the shelter would be public property."<sup>33</sup>

While some renters, such as I.H.P. Beck, announced that "I am going to vote for 'no fence' because I think it will be to my interest to do so and every other renter," others disagreed. Thus, an anonymous writer in Carroll county declared that "It is time now for the poor people to open their eyes and to come forward and stand up for their rights and not allow themselves to be led by the cunning land owners any longer and to come out and say we want a fence and turn out en masse and carry the election for fence. . . ." Anti-stock law men appealed to traditional rights, just as the stock law proponents did. A. Nixon, an owner of a 125 acre farm in Carroll county, contended that "the citizens of this county have and always have had the legal, moral and the Bible right to let their stock, unless of a dangerous character, run at large." Like their opponents, fence law champions mixed practical with moral appeals. Many could not understand the logic of depriving their animals

of nature's abundant gifts. This was the argument of J.W. Pitts, alias "Buffalo Bill", of Carroll, ". . . we have acorns, hickory-nuts, chesnuts and m[o]ss for hogs and in most parts we have a splendid range of grass. Wouldn't it be foolishness to shut our stock from it? Of course it would." Although Pitts believed that Carroll's natural resources were large enough to make the stock law unnecessary, he did not categorically dismiss the idea: "while they [trees] are all cut down and washed away in a great many places, Carroll boasts of plenty of timber, one thousand acres or more in one body, while the fields are small. It's the other way in those counties [that have adopted the stock law], and when Carroll gets in that condition, we'll give up for no fence, and not before." Similarly, W.D. Lovvorn of Bowdon, Georgia saw no reason for the stock law because "the woods are full of grass and acorns part of the year. They were put here by our Creator for the benefit to his people, and I don't think it right to deprive a large majority to please a minority."<sup>34</sup>

It was not only the threat of being "deprived" that frightened anti-stock law supporters, but also the belief that the poor man's loss was the rich landowner's gain. Many contemporaries viewed the struggle not as a cultural one, but as a simple material class conflict. John Stogner of Bowdon, for example, condemned the stock law as

the greatest curse upon the poor laborer that has been since the civil war. We were told in 1859 that secession was the greatest thing that the south could do, so it was to lead her into destruction. It was a rich mans war and a poor mans fight, so will the stock law be to a few landlords who have plenty of water on their lands while nine tenths of the people will be in a deplorable condition.

If the stock law passed, according to Stogner, "the common laborer will be the ones that will be the sufferers . . . and why should we try [to] oppress this class any worse. God makes the grass[,] the mountaines crown, and corn in valley grow, so lets not try to deprive our poor neighbors from receiving his blessing. . . ." A. Nixon lent a literary note to predictions of the law's effect:

The stock law will divide the people of this county into classes similar to the patricians and plebians of ancient Rome, which unhappy division, was the source of much contention, injustice, violence and blood shed, and finally the overthrow of the republic, the kingdom and the empire, and brought on the dark ages of the world.<sup>35</sup>

Or as one tenant farmer bluntly observed, "This [stock] law will simply take rights away from the poor man and give them to the rich."<sup>36</sup>

Some stock law supporters lent credence to the class oppression charges of their critics. One, for instance, contended that "the non land holding class have no right to vote on this subject." Another asserted that "there should be a property qualification to every vote cast — own so much property to be allowed to vote . . . It does seem sensible, dont you think, to allow the landholders to say whether they shall fence their lands or not."<sup>37</sup> Thomas P. Janes, the Georgia Commissioner of Agriculture, in his 1875 annual report made clear his position on the fence question:

Even the present Act, which leaves the question of "fencing stock" or "fencing crops" to the voters of the several counties is unjust, since it allows non-freeholders, who generally consist a majority of the voters of every county, to decide a question of policy and economy in which they have no interest. The most equitable way of disposing of the

question which, under the present labor system, is a vital one, is by legislative enactment leaving its decision to the *freeholders* of each county.<sup>38</sup>

This conjunction of attacks on traditional political rights with those on traditional economic rights stimulated bitter responses condemning the stock law supporters as tyrants and oppressors of the poor and laboring class. "P.H.C.", a Democratic party leader from the Kansas district of Carroll county, who became a stock law supporter in 1882, earlier denounced "such a law to prohibit any one from voting [as] wickedness in the eye of the law and the eye of God." He further blasted those supporting disfranchisement, saying that, "such sentiments as these are tyrannical and we are opposed to them from the fact that we live in an independent government by the people." Right-thinking elements of the population advocating white supremacy, however, made it clear that they did not oppose restricting black suffrage. "Mill Boy" explained that "If he [the stock proponent] can scratch out that clause in the constitution that entitles them [blacks] to vote, I dont suppose that there are many Mill Boys that would cry about it. But sir, for God's sake dont disfranchise a white man, just because he is poor." <sup>39</sup>

But combat over political rights was usually subordinated to purely economic debates. Observing tangible losses in land, labor, capital, and natural resources, stock law supporters pressed their case with the utmost urgency. Nineteenth century southern farmers, for the most part, used "worm" fences to enclose their crops, and fences made of pale for their gardens and homesteads. Because the worm fence is constructed by laying the ends of rails on each other, a four foot strip on each side of the fence was wasted.<sup>40</sup> Therefore, for every mile of fence, approximately one acre of productive land was wasted. Those who were forced to expend extra land, labor, and capital under the fence law began to ask, "Why . . . should my land which I choose to tum out to improve by rest, be taken possession of and impoverished by other people's stock?"<sup>41</sup> Although farmers conceded that the fence law was once an economical response to the antebellum geography and demography of an area, many began to feel the increasing burden of fencing in their crops. "School Boy" of Carroll county admitted that "when our fathers first settled in this country and our range was good and when the acreage in cultivation was [s]mall, the present system of fencing was proper . . ." J.O.R. Word, a fellow Carrollite and stock law supporter, told a similar story about the stock law's erstwhile usefulness: "Forty nine years ag[o] father moved to this county. It was then a fine range for stock. I[t] was then the best economy to fence up our crops, for our farms were small and far between and range fresh and large." The Jefferson *Forest News* tried to reason with its readers: "When the country was very sparsely settled, farms few and timber very abundant the present law was enacted, and like many law and customs, its has outlived its usefulness . . ." In fact, the paper believed that "it is a sad evidence of old fogyism, general ignorance and backwardness of agriculture in the South that such a law as that now in force can exist." In a word, "reformers" believed that increases in population made the open range growingly inefficient for the society as a whole. "This is not a range country like it once was," as the ubiquitous correspondent "Ripples" put it.<sup>42</sup>

As economic changes were taking place in the Georgia upcountry, many reformers argued that the stock law was a first step in the South's movement away from relative poverty. In a Darwinian allusion, "Edgar" declared that "we must learn to give way to the fittest, for by doing so

we will keep prospering, and if not, we will never prosper." Jackson county's "P" was even more certain of the stock law's necessity. "I regard it [stock law] as the preliminary step to the prosperity of the agriculturalists of Jackson county." On the eve of the first fence election in Carroll county, "Ripples" chided his opponents, "Dont say the time is not yet come to begin to economize." While stock law advocates stressed progress, their opponents just as vaguely invoked tradition. Thus, Jackson county's "Fairplay" forthrightly sought to preserve the status quo, "Our present system of fencing is an old one — so old that it would seem cruel to attempt an innovation upon it."<sup>43</sup> Another saw the fence law as an embodiment of "the liberty that our forefathers fought for."<sup>44</sup> "C.W.C" of Carroll county was simply at philosophical odds with his progressive stock law opponents, "He [I.H.P. Beck] says that he would rather jump into something new than to stand still and die in stagnation. There's where we differ, I would rather stagnate than to die in the stock law." Such statements made easy targets for "New South" rhetoric: ". . . By long usage our people are accustomed to the wagons, and why should we now try to supplant them by an engine? Whew! Supreme folly!' The fence law as we now have it was itself, at one age of the world, a new thing." Or, as another reformer chided, "Does improvement, progress and enterprise mean cruelty? Then Webster stands revised."<sup>45</sup>

While the stock law supporters may have hailed the law as a panacea for the economic woes of the South, they had difficulty convincing their contemporaries that the law would, in fact, increase their wealth. Their contention that the fence law unnecessarily wasted labor, land, and capital aimed to convert those who showed signs of "old fogyism, general ignorance and backwardness," in "an age of improvement" like that of the nineteenth century. "[T]he Southern farmer ha[d] not learned yet" economy.<sup>46</sup> Stock law champions would teach him.

Reformers in Jackson and Carroll counties claimed that the stock law would save farmers both labor and capital. "It [fence law] takes away most of the profit of farming to keep up good fences," cried I.H.P. Beck. The *Jefferson Forest News* anticipated that "when farm stock is restrained, and the responsibility for their depredations is thrown on their owners, capital is released from the very unprofitable investment of fencing, and made available for farm improvements." Combining both factors of production, "Plow Boy" suggested that ". . . we should dispense with fences. . . because we could spend our time at something that would be much more remunerative than patching up fences such as making our manure heaps larger, stopping washes, etc., besides we would have no other stock to see after but our own." Likewise, Eugene F. Adair of Harmony Grove, Jackson county, asserted that, "While we used to split and haul rails, we could, under this arrangement [stock law], with the same labor, be making manure to improve the land intended to be cultivated."<sup>47</sup>

Other stock law advocates tried to make more precise calculations of the economic disadvantages of the status quo. Thus, "School Boy" claimed that "the fences of Carroll county are worth three times more than all the hogs, cows and sheep in the county, and I . . . ask . . . if it is economy for a man to have one dollar invested in a business and it takes three t[o] keep that one dollar up." After diligent computation, Vande Linctum found that "for every dollar invested in

livestock in the State, two dollars are required for construction of fences to protect the growing crops." "Hopeful" from Human's Store, Jackson county, "found out that it costs us twice as much to fence out stock as it does to pay our taxes, and besides we have had about enough of our crops destroyed by stock to pay our taxes . . ." In an anonymous Jackson county writer's derisive summary, the fence law advocate was like the "foolish boy who invested ten cents in a candle in order to look for [the] three cent piece he had dropped." In the face of such arguments, opponents could only bluster, as "Sandy Creek" of Jackson county did: "I don't call a man a farmer until he does keep his field fenced, and well at that. . . I think any man that is worthy of owning a farm ought to keep it fenced, and I don't consider him worthy of the name of a farmer unless he does."<sup>48</sup>

Even more often than they stressed labor saving, reformers prophesied that the stock law would improve the quality of livestock and, thus, yield better meat and dairy products. While fencing might reduce the number of livestock, the improved quality of the animal would more than compensate for the loss in number. "Ripples'" argument was typical:

The milk and butter is free from poisons taken from cows that are kept up [i.e., fenced in] and then you know what your cattle eat. But when they woods it, you don't know when you are drinking or eating deadly poisons. Butter made from cows kept up is much richer than from those cows that are allowed to run at large. There is as much difference as between gold and nickle silver. The beef is fatter, tenderer and better. Breed stock can be improved. One good cow well fed and pastured is worth 5 ticky woods cows. Two hogs kept up is worth ten razor backs running at large.

Others asserted that Coweta county, which passed the stock law in 1881, was self-sufficient in meat, while Carroll was not. " . . . [H]ere are two counties [Coweta and Carroll], one self sustaining and the other not," "Plow Boy" wrote in the *Free Press*, "and yet some will tell you that you cant raise hogs in a stock law county." "Ripples," who lived in neighboring Coweta county but communicated through the Carroll newspapers, admitted that "we don't have quite so many hogs over here in Coweta as we used to have," before Coweta passed a stock law, but assured Carroll countians that Coweta hogs "are a heap bigger and fatter than they were."<sup>49</sup>

As population expanded throughout the South, as blacks took advantage of their freedom to move, and as the growth of the railroad network made it possible to market crops from previously isolated areas, population density increased in the Georgia upcountry. Table 1 shows the percentage change in population by race, broken down into the six conventional regions of Georgia from 1850 to 1890. Between 1870 and 1880 the Upcountry, Wiregrass, and Pine Barrens regions were leading the state with percentage increases between twenty-four and thirty-six percent for whites and between thirty-four and thirty-nine percent for blacks. Even though it grew less rapidly in the 1880s than did the Wiregrass and Pine Barrens regions, the Upcountry population was still increasing at a faster pace than either the Plantation Belt or the Mountain regions. The Table also shows the percentage increase for Carroll and Jackson counties. Carroll's population growth was rather astounding, with the black population growing, on average, fifty-five percent per decade and 177 percent from 1870 to 1890. The white population growth was also relatively healthy, with an average increase of twenty-seven percent per decade and seventy-six percent over the two decades.

Jackson county's black population growth was more modest with an 1870 to 1890 total of forty-five percent, while the white sector grew eighty-four percent over the two decades.

*(Table 1 about here)*

To stock law supporters, the increasing pressure on the land required that it be used more efficiently. If animals were forced to be fenced in, improved acreage could be expanded. The reformers saw two sources of unimproved land that could be brought into cultivation — the wasted land used as fence rows and patches of fertile land too small to justify the expenditure for a surrounding fence. Speaking from his stock law experience in Coweta, J.P. Reese (alias "Ripples") contended that "the old fence rows of Carroll county will make corn enough in three years to pay for all the crops that will grow in the county for the next ten years. I mean the wood grasses." Similarly, Jackson county's Adair predicted that "if there was a law compelling owners of stock to keep them under a fence, we could clean and plant just such pieces of land as we thought best. Leaving out the poorest, we could plant where we pleased, no matter how small, or in what shape it might be."<sup>50</sup>

Yet population growth is hardly a necessary condition and may not be even a sufficient condition for institutional change. What about relative price changes and a changing market environment as an impetus for doing away with the fence law? Let us suppose that farmers produced two commodities, crops and animals. If the relative price of crops to animals increased, the farmer would shift away from producing animals and increase his crop acreage. As a consumer, on the other hand, he would tend to eat relatively more meat and less corn and other grains. As a consequence, this hypothesized relative price change would make the stock law more attractive to a farmer having access to inter-regional trade, *ceteris paribus*. Figure 3 plots the relative price of corn to bacon sides and of cotton to bacon sides in Georgia from 1870 to 1890, inclusive. As regressions based on this Figure show, the relative price of corn and cotton rose during this two decade span, but at a statistically insignificant rate.<sup>51</sup> And while contemporary debaters did not explicitly refer to such complex and subtle economic trends, the discussion did reflect an awareness of the basic facts. As the editor of the *Jackson Herald* observed, "It stands to reason that in an agricultural country stock is not of such great importance as the crops, hence they should be confined. If this was a stock county the crops, which would be small and insignificant, ought to be fenced." In sum, "the whole subject is one that can be reduced to dollars and cents."<sup>52</sup>

*(Figure 3 about here)*

The market environment in the upcountry was changing dramatically as recovery from the Civil War progressed. Since many rivers were not yet navigable and wagon transportation to the nearest major trading centers, such as Atlanta and Augusta, was very expensive, railroads became the essential driving force behind the economic growth of many counties in the Georgia hills. Although the first rail company that proposed a line in Carroll county was chartered in 1852, the Savannah, Griffin, and North Alabama Railroad Company (SG&NA) did not have a track in Carroll ready for use until 1873. Because of natural obstacles, the SG&NA did not reach Carrollton, Carroll's largest

town, until 1874. By 1888 the Chattanooga, Rome, and Columbus Railroad had only a short section in Floyd county to finish before connecting Carrollton and Chattanooga. As an example of the railroad's success, consider the following: In 1890 passengers travelling to Atlanta (about 45 miles away) could leave Carrollton at 5:00 a.m., spend the day in the city, and then return to Carrollton by 8:00 p.m. Elsewhere in the county, the Georgia Pacific Railroad, which completed work in 1882, connected Villa Rica, Carroll's second largest town, to central Alabama.<sup>53</sup>

Jackson county, on the other hand, was still without its own rail connection in 1880. However, since 1876 residents on the eastern border of the county were able to use the Northeastern Railroad of Georgia (NRG), which connected them to wider markets via Athens, Georgia. In the early-1880s, however, the Gainesville, Jefferson, and Southern Railroad (GJ&S) began to stir public emotion in order to attract local stockholders so that a road could be built into Jefferson, Jackson's county seat. John W. Glenn, spokesman for the railroad company, explained to Jackson county's farmers that their county was rich in natural resources which could easily "bring an astonishing income," if only they could get their produce to market. Glenn foresaw land values near the route "doubl[ing] and quadrupl[ing]," capital flowing freely into the county, and a population increase which would result in a great competition for land. Glenn emphasized that "we can never be a great agricultural district without quick and cheap transportation."<sup>54</sup> In 1884 the GJ&S began operation and connected Jackson's largest town to major trading centers of Georgia.<sup>55</sup> Having close communications with such major trade cities as Atlanta, Augusta, Chattanooga, and Montgomery greatly expanded the economic opportunities of upcountry farmers. In fact, James C. Bonner, in his history of Carroll county, explains that "the railroads did more to quicken the economic tempo of Carroll County than any other event during [the nineteenth] century."<sup>56</sup>

The emergence of the railroad had three very important effects on the upcountry economy. First, relatively inexpensive transportation enabled farmers to import a technology, namely guano (contemporaries seem to have called any commercial fertilizer "guano"), which tremendously increased cotton yields per acre. Second, the railroad provided an efficient method for sending the county's fertilizer-stimulated surplus to major marketing centers.<sup>57</sup> Together, these explosions in productivity induced a third change, an increased demand for cultivated acreage, which, in turn, raised the stakes of the controversy over the fence laws.

The reformers' concern for the future was reflected also in their emphasis on resource conservation. Present over-exploitation of forests to build extensive networks of fences robbed future generations and threatened to denude the areas of timber. As J.O.R. Word insisted, ". . . this is a question of vast importance not only to the present, but to the future generation." "I speak in behalf of saving the timber for the benefit of the future generation . . . ." Vande Lintum claimed that "the repair of fences annually calls for the destruction of nearly 100,000 acres of timber, which, when taken in connection with other depletions of forest in the next half century, will leave the entire country destitute of timber." Moreover, since railroads both used wood for ties and made it possible to sell timber in a larger marketplace, the expansion of the rail network made lumber more valuable than it had been when the upcountry was isolated and self-sufficient. As "Ripples" remarked, "If I

owned the timber of Carroll county I would not want any bigger fortune. The way to save your timber is adopt the stock law."<sup>58</sup> Although the Georgia General Assembly of 1879 allowed barbed wire to be classed a legal fence, the wire was relatively expensive, and reformers believed, probably correctly, that upcountry farmers would continue to build more wooden fences for some time.<sup>59</sup>

### A Theory of Stock Law Voting

Advocates of fence reform realized "that people [would] vote for what they suppose to be personal interest in the matter."<sup>60</sup> Although they did not use the phrase, stock law proponents understood the concept of a Pareto improvement, and they freely admitted that their reform would not make everyone better off. "School Boy", for example, stated, "I will admit that there are a few men that it [stock law] will not suit — though I think it will benefit twenty–five where it will injure one." In similar fashion, J.O.R. Word reasoned, "Admitting that the no fence law would work a hardship against a few, would it not be the part of wisdom to legislate for the best good of many[?]" Finally, "Summuloc" of Jackson county succinctly summarized his argument for the stock law, "We need not hope to please everybody, for that is impossible. Our object should be to promote the general good, and our motto, '*Pro Bono Publico* .'"<sup>61</sup> In fact, with majority rule, they realized that the proposed law did not need to benefit everyone.

As pointed out above, some historians of the fence debate have grouped the contending parties in the debate into laborers and tenants of both races, along with "very small farmers, the poorer end of the landowning class," on one side, and richer white landowners, on the other.<sup>62</sup> Or, as Hahn puts it, "the mass of Upcountry yeomen, tenants, and laborers," fought against "landlords, merchants, and business interests throughout the state."<sup>63</sup> However, if we assume that voters cast their ballots for the stock or fence law so as to maximize their expected utilities, and if we assume a competitive market for labor<sup>64</sup>, economic theory offers quite different predictions of who supported the stock law and of their reasons for doing so.<sup>65</sup>

Let us first consider landowners. Quite simply, if the stock law passed and a landowner expected to be a net loser, he or she would experience the full effect of the loss, *ceteris paribus*. Clearly, as Flynn and Hahn suggest, yeomen farmers who relied on the open range to feed their animals would have been solidly against any redefinition of property rights. Alternatively, the wealthier landowners who could afford to provide pasturage for their animals and who expected to profit from the stock law, would have been the champions of reform.

Tenants (either sharecroppers or cash renters),<sup>66</sup> contrary to the claims of Flynn and Hahn, cannot be so easily placed in the fence law camp on the basis of theory. Imagine a landowner and tenant signing a contract stipulating that the tenant had to provide for his animals, but not furnishing pasturage on the landowner's farm. In the rental contract between James Willbanks and C.M. Wood, a landlord from Harmony Grove, Jackson county, for example, the subject of pasturage was made quite explicit. Not only was Willbanks "to take care of said farm as it was his own," but it was stated

also that "there is to be noe pastureing on the land of said place that are in cultivation."<sup>67</sup> If the rental contract forbade pasturing on cultivated acreage, and provided no pasture or unimproved land for animals to forage,<sup>68</sup> a tenant then had two options: he could pen his animals and feed them purchased grain or fodder grown on his own small farm, or he could send his animals out into the forest to find food for themselves. Whether a tenant signed such an agreement or he received pasture as part of the contract, the implicit wage each of these tenants expected to receive must have been equal, holding everything else constant, if the market for labor was competitive.<sup>69</sup>

If the stock law were adopted, competition for tenants should have compelled the landowner to compensate any tenant whose animals had previously been dependent on the open range by giving him pasture, by taking a smaller share of the crop, or by reducing the cash rent. In the end, however, the tenant's implicit wage would remain the same. As a class, tenants should have been indifferent between the stock and fence laws. A similar argument would equate the before and after implicit wages of the small percentage (6.1%) of the tenants in Jackson and Carroll counties who owned no animals.

Contemporary stock law advocates understood these arguments well. Jackson county's "Progress" contended that the stock law would make both landowners and their tenants better off. "The income of tenants and wages of hirelings will be regulated by the profits of the land owners . . . . Renters now demand houses for their families, and why not demand, under the new law, pasturage for their stock with the same propriety? This they will do and receive it at far less cost to the owner than is required to repair fences." Similarly, the *Forest News* editorialized:

It is currently reported that the great majority of the colored people in this county are opposed to it [stock law] upon the idea that most of them are tenants, and that if the stock law is passed they cannot keep any stock on their own account...It is pure fallacy to say that the laborer or tenant, or, as the demagogues have it, the poor man, will suffer by it. The man who will have the burden to bear will be the man who owns the land. He will be compelled to furnish pasturage for his tenants or not get them, and it is impossible for him to do without help.

Richard Baldwin, a black Morgan county resident, speaking in Monroe, Walton county, admitted that he had been opposed to the stock law at first, but upon seeing how the stock law operated in his home county, soon changed his mind and averred that all other blacks had also. Baldwin affirmed that "I know of no man in Morgan county who charges his tenants for pastures. If there was such a man the darkeys wouldn't live with him to save his life." "Tenant" had the same faith in the stock law, believing it to be in ". . . the interest of the tenant fully as much or more than the land-holder, from the fact that whoever furnishes the best pastures will certainly get the best tenants, as it is all bosh about the land-holder being more independent than the tenant, for what is his land worth to him without labor?" In Rockdale county, which was one of the first to pass the stock law, the editor of the county newspaper observed that "landlords see who can arrange the best pastures to secure the best tenants."<sup>70</sup> Assuming unanimous support for the fence law among tenants ignores what contemporaries said, as well as the logic of the competitive market.

Wage laborers may also have found the stock law in their interest. At least in the short run, the demand for labor might increase under the stock law because farmers would be able to remove the fences surrounding their crops and, hence, could expand their acreage by cultivating former fence rows and small patches of fertile ground. Labor would not only be needed to remove the fences, but also to build them around pastures so as to enclose any previously non-pastured animals. Since the short run supply of labor was presumably inelastic, the wages of laborers could be expected to rise.

It might be argued that the increased labor demand would be offset because farmers were most likely over-investing in animals and with the stock law, herd sizes (of non-draft animals) would be reduced, causing a decreased need for people to look after animals. Since farmers reported their 1879 expenditure on labor services for the 1880 Census, we are able to estimate which factors influenced a farmer's use of wage labor. Regression analysis of those farms using wage labor shows that milk cows and swine, the animals most likely to be allowed to roam the open range, were not significant determinants of the wage bill (See Table 2).<sup>71</sup> Nor was butter production a significant user of labor services. Therefore, we can conclude that for those farms using wage laborers, the labor was allocated to raising cotton and grains and to tending to draft animals. Thus, we can reject the notion that the stock law would decrease the need for labor because cow and swine herd sizes would be reduced.

*(Table 2 about here)*

Table 3 shows the occupations of black and white household heads in Carroll and Jackson counties. Tenants and laborers of both races made up substantial portions of the voting population in both counties as they comprised, respectively, 43.9 and 46.9 of the white and 91.7 and 93.1 of the black household heads. It is interesting to note that 72.4 and 57.6 of the white farm owners in Carroll and Jackson, respectively, were operating farms with less than fifty acres of tilled land. If men voted as both Flynn and Hahn predict, a priori, it would appear that the stock law supporters had no chance for success. Their hope, which was certainly expressed in the contemporary newspapers, was to sway the pivotal coalition of tenants and laborers of both races to the stock law side.

*(Table 3 about here)*

The theoretical model of the fence struggle that we propose differs significantly from the one contained in the historical literature. Instead of a class conflict between relatively wealthy landowners and a coalition of yeomen farmers, tenants, and wage laborers, we contend that tenants and laborers had few reasons to be strong advocates of the fence law. In fact, theoretically, they should have expected to profit from the stock law.

### **The Changing Pattern of Voting on the Stock Law**

Voting returns from militia districts in Carroll and Jackson counties translated the attitudes expressed in the fence debate into actual behavior. From 1881 to 1890, Carroll county held five

countywide elections — in January, 1882; September, 1882; July, 1885; July, 1887; and July, 1890. Jackson county held two countywide elections, one in July, 1881, and another in September, 1883. In addition, many of the militia districts held local-option elections, which were sporadically and incompletely reported in the newspapers. We therefore focus primarily on the returns from the countywide referenda, which we report in Tables 4 and 5.

Although the fence side consistently attracted a majority of those casting ballots in both counties, there are two important trends in the data, only the first of which has been stressed by previous historians. The fence law progressively lost support throughout the 1880s. As the time series of turnout figures demonstrates, however, this decline was overshadowed by the dramatic decrease in participation on both sides of the issue. The much more numerous elections in Carroll show the rise and fall of the fence debate's fury most clearly. An increase in voter turnout by almost seventeen percent between January and September, 1882 is certainly an indication of the intense competition between the fence and stock law factions. As the editor of the *Carroll County Times* remarked after the second ballot in his county: "No election for a long time has excited more interest than the election last Saturday on the fence question. Exciting the interest it did, of course, there was a full vote polled — larger, we believe, than any we have had in a long time."<sup>72</sup> By 1885 the intensity on both sides began to wane, as almost twenty percent fewer eligible voters cast ballots, with the stock law making marginal gains as a result of the diminished interest.

*(Tables 4 and 5 about here)*

Although proponents of the stock law were able to increase their relative share of the electorate over time, their base of support, at least in Carroll, was quite unstable. Table 6 displays the transition matrices between the first and second elections in Carroll and Jackson counties, and between the second and third election in Carroll. The transition matrices contain estimates of the probability that voters who supported one side in one election continued supporting that position, switched to the other side, or abstained from voting in a subsequent contest. Because some estimates calculated by ordinary least squares fell outside the logical 0–100 percent bounds, we have estimated the equations underlying these tables in logit form.<sup>73</sup> While an estimated 92.0 percent of the fence law voters in Carroll's first election voted for the status quo again in election two, only 67.1 percent of the stock law voters continued their support to the second election. Moreover, of those who voted for the stock law in election one, 29.3 percent of them simply did not vote the second time. This is surprising, since the interval between the two elections was only eight months, and since overall turnout rose by 17 percent from the first to the second contest. It is interesting to note that almost 29 percent of the non-voters in the first election supported the fence law in election two, while about 20 percent of the newly mobilized cast their franchises for the stock law position.

*(Table 6 about here)*

Surprisingly, Panel B, which summarizes the transition from election two to three, shows an even greater pattern of volatility, especially on the stock law side. Of those who voted for the new institution in election two, only half remained faithful through the next election, and almost half

abstained. Stock law proponents attracted 59 percent of the non-voters of election two; otherwise, the stock law's showing in the third election would certainly have been even more meager. Conversely, the fence law faction was able to maintain approximately three-fourths of its support over this period, with most of the remainder abstaining in the later election. In sum, Carroll county's stock law coalition did not vote with the vigor that we would expect from "landlords, merchants, and business interests," and, contrary to Hahn's claim, stock law opponents *were* apparently able to "develop an organizational apparatus to mobilize their ranks and inspire confidence in their numerical strength."<sup>74</sup>

Panel C of Table 6 shows that Jackson county's stock law coalition was extremely cohesive between 1881 and 1883. The fence law retained two-thirds of its backers over the same period, and gained about 28 percent of those who had abstained at first. Although the stock law was able to hold its support in Jackson county through 1882, the basic fact is that the law's proponents were continuously overpowered by the fence law advocates' numerical strength. Carroll county's stock law men, by contrast, were too few and too fickle to prevail at the county level.

Frustrated by their repeated countywide defeats, stock law supporters began to concentrate their attention on adopting the law at the militia district level. By the 1887 countywide election in Carroll, eight of the fifteen districts had adopted the stock law in district referenda. In four of these eight districts, however, the fence law had originally been declared the victor, but after being contested on the ground of ballot fraud, the county ordinary (judge) overturned the results and declared the districts stock law areas. The precise wording of the law, no doubt, created confusion among voters as the county election ballots were required to read either "fence" or "no fence," the latter meaning the stock law. The district election ballots, on the other hand, had to be either "for fence" or for the "stock law." The election in Carroll's Bowdon district was particularly "muddled" as the precinct managers certified the result in favor of the fence law 102 to 73. However, the actual vote cast was 73 for "stock law," 68 "for fence," 30 for "fence," 2 for "a fence," and 2 for "the fence." The county ordinary, after hearing arguments from both sides, threw out the 34 votes not cast "for fence," thus leaving a majority for the "stock law."<sup>75</sup> In the remaining four districts, however, the stock law won comfortable majorities.<sup>76</sup> Therefore, by taking advantage of legal changes and ambiguities and by concentrating their attention on the much smaller districts, stock law supporters were able to close the open range of Carroll and Jackson counties little by little.

Since more than half of Carroll county's districts were already under the stock law rule, it is not surprising that only about half of the eligible voters cast ballots in the 1887 county election. Within the next three years, five more districts imposed the stock law, and turnout in that year's contest plummeted to 19 percent, the decrease being most dramatic in the stock law districts.<sup>77</sup> Figure 4 shows Carroll county's voter turnout and election results for three types of districts, labelled A, B, and C, respectively: those that adopted the stock law by the 1887 countywide election, those that adopted after the 1887 election, but before the 1890 contest, and, finally, those districts that never adopted the law until after 1890. The graphs in Figure 4 track voter activity from 1885 to 1890, including the district referendum in which the stock law prevailed (if relevant). What is

apparent from Panel A of Figure 4 is that once districts adopted the stock law, many voters apparently felt that the costs of casting a ballot for either option were too high to justify a trip to the polls.<sup>78</sup>

While Group A districts sent about sixty percent of their eligible voters to the polls in 1885 and in the local referenda, after these districts adopted the stock law turnout fell to 41.6 percent in 1887 and to a low of 12.9 percent in 1890. Group B districts followed the same general pattern described above, with turnout near sixty–five percent in 1885, 1887, and in their district elections, but only 23.8 percent in the 1890 countywide ballot. It is important to note that in regions where the open range continued to be argued actively, voters continued to go to the polls in large numbers. Group C districts, those that retained the open range through the 1890 election, sent 59 percent of their voters to the polls in the last election, whereas their stock law counterparts sent only 12.9 to 23.8 percent of theirs. And as Panel B of the Figure shows, these districts voted faithfully for the fence law throughout the election process.

*(Figure 4 about here)*

Tables 4 through 6 and Figure 4 cloud Hahn's image of helpless partisans of common rights overwhelmed by a juggernaut of merchants and rich farmers who represented the impersonal free market.<sup>79</sup> Fence law partisans won all seven countywide elections in the two counties from 1881 to 1890; and their pattern of support was, on the whole, much less volatile than that of their opponents. Even more serious for Hahn's thesis, after adopting their preferred arrangement in their own districts, most stock law supporters abstained in subsequent countywide referenda, rather than seeking to impose their views on open range areas. Contemporaries explicitly recognized this practice. A correspondent of the pro–stock law *Carroll Free Press* thought it "wrong for the county to pass on the question as to whether they should have the stock law in his district as the policy has been heretofore to let the districts act upon this matter for themselves. We agree with the Squire, let each district work out its own salvation, but dont force it on a district whether they are willing or not."<sup>80</sup>

On the same day in 1890 that Carroll county stock law supporters abstained in droves, the same voters decided another issue in a local referendum. The object of bitter contention for years, the proposal to issue bonds to erect a new county courthouse attracted 1432 ballots in districts that had adopted the stock law, while only 650 of the same voters who had already assumed the cost of going to the polls in the two issue election bothered to express their opinions on the fence question.<sup>81</sup> This special "allegiance to local control"<sup>82</sup> displayed in the 1890 election is a clear indication that fence reformers were not engaged in any sweeping plan to restructure the social or cultural basis of their economy. Their goal, instead, was to restructure property rights in specific geographic areas where economic efficiencies could be captured through a redefinition of the tort liability regarding animals and fences.

### Who Favored the Stock Law?

The time-series analysis of the voting presented above, while uncovering the changing mood and incentives of the voters on each side of the struggle, ignores the underlying reasons voters aligned with either side. Did men vote for the fence law as a means of voicing their objections to the encroaching capitalist market, as Hahn contends? Was the fence law conflict, as both Flynn and Hahn assert, a manifestation of the class distinctions of this agricultural society? Or do the voting patterns suggest a more complex pattern of divisions, as the individual utility maximization model outlined in the previous section implies? In particular, which side did blacks and white tenant farmers support? Since, as Table 3 shows, more than eight out of ten black household heads in Jackson county were unskilled laborers, not tenants, in our regression analysis of the voting returns we enter both the percentage of tenants and the percentage black in each district as independent variables.

To test for the possibility that fence law voters cast their ballots to demonstrate their opposition to the encroachment of capitalist markets, we use two variables: per capita cotton production and the percentage of farms achieving self-sufficiency in grain.<sup>83</sup> Since cotton was unequivocally a cash crop, growing it plainly involved farmers in the international market. Furthermore, relatively more self-sufficient farms within a district meant that less reliance on the wider market, and, if Hahn is correct, a higher likelihood that the district would oppose a law that symbolized the intrusion of outside economic forces.

With the rich data that we have collected from the manuscript census returns for individual farms, we are able to estimate whether a farm expected to benefit or lose if the stock law had been instantaneously put into force in 1880. The details of the calculation are discussed in Appendix A. For the regression analysis, we calculated the percentage of farms in each district that would have received a positive net return from the stock law's adoption. As the percentage of farms that could be expected to profit increased, a self-interest model would predict that a higher percentage of voters would support the stock law, *ceteris paribus*.

We also included variables that tapped the percentage of the district's acreage that was wooded, per capita wealth, and population density. A higher proportion of woodlands meant easier foraging for animals and cheaper wood for fences, and, consequently, less support for the stock law. The higher the population per square mile, the greater the likelihood that one person's roaming animals would destroy another's crops, or, in small towns, another's garden plots. Recognizing the special circumstances of such hamlets, the General Assembly gave many incorporated town councils the right to pass local ordinances forbidding animals from running at large.<sup>84</sup> The town of Carrollton passed her own local ordinance in March, 1886, making it unlawful for animals to be allowed "willfully or negligently" to run at large within the corporate limits of the town.<sup>85</sup> Thus, higher population density should correlate with greater support for the stock law.

White per capita wealth is included among the independent variables to test how material wealth affected voting behavior across districts.<sup>86</sup> The Hahn and Flynn contention is that the "poor," as a class, voted to keep the open range, while the "rich" fought for the enforcement of private property rights. If this hypothesis is correct, per capita wealth should be negatively correlated with the fence law vote and the opposite for the stock law.

As shown above, the adoption of the stock law at the militia district level markedly changed the behavior of voters in subsequent countywide elections. Therefore, in order to control for the effect of a district's adoption of the stock law, we created a variable interacting a dummy variable for the 1887 Carroll election and a dummy taking the value of 1 if the district had already passed the stock law by the time of the 1887 general countywide election, and 0 otherwise. A similar interaction variable captures how those districts that adopted the stock law by 1890 behaved in the last Carroll referendum. As our discussion above implies, the fact that a district had already closed the range should have had a negative effect on both stock law and fence law voting, and a positive effect on voter abstention. These effects should be more pronounced for the 1890 election.

Before proceeding to the multivariate statistical analysis, we present in Table 7 the matrix of bivariate correlation coefficients between our dependent and independent variables. The dependent variables of the analysis are the percentage of the eligible voters voting for the fence law, the stock law, or not voting at all. The agricultural data used as independent variables was aggregated from the manuscript agricultural schedules of the 1880 census up to the militia district level, using a 100 percent sample of farms within both counties. Population figures, however, were obtained from published census documents, while information on wealth and eligible voters was found in the counties' original property tax digests.

The data tentatively supports our model predicting self-interested behavior. The variables describing the economic environment agents faced, such as amount of forest available, population density, and expected profitability of the stock law separately seem to explain the voting trends well. Our hypothesis that tenants and laborers had little reason to favor the fence law is supported, more dramatically for black than for white voters. As the Table shows, neither cotton production nor self-sufficiency in grain significantly affected voting behavior. The Bonner and Hahn observation that wealth was a significant factor in a district's voting calculus is substantiated, but what must be noted is wealth's strong correlation with many other variables that also affected voting behavior. Therefore, in order to create a clear, more complete picture of the voting dynamics, we must abandon Bonner and Hahn's use of bivariate analysis for a more rigorous test of the contending hypotheses surrounding the fence debate.

*(Table 7 about here)*

Ordinary least squares estimates of the three share equations are reported in Table 8.<sup>87</sup> The two variables directly testing Hahn's "rebellion" thesis, self-sufficiency in grain and per capita cotton production, are insignificantly different from zero in all three equations. In other words, the hypothesis that fence law supporters were men protesting their involvement in the capitalist

economy and communicating their desire for a return to a "moral economy," is rejected by the data.  
(Table 8 about here)

The elections returns support the competitive model's prediction that tenants' wages would be equal under the fence and stock law regimes and that these farmers would vote accordingly. None of the coefficients is significantly different from zero at the 0.05 level, suggesting that tenants were indifferent between the two laws. If anything — contrary to Flynn's and Hahn's views — tenants were more favorable to the stock law than to the fence law standard.<sup>88</sup> Nor are laborers disproportionately represented in the fence law coalition, as Hahn asserted. As a district's black population increased, the percentage voting for the fence law decreased. Rather than support either side, blacks seem to have abstained.<sup>89</sup> This result refutes the hypothesis that laborers would vote for the stock law upon realizing that their wages might increase in the short term after the institutional change. However, black voter abstention did not significantly reduce the stock law's support, which suggests that laborers were not vehemently against the fencing-in of animals.

The variables tapping the economic incentives facing voters, for the most part, operate as expected. The percent forest coefficient is of the right sign in the first two equations, but never significant at conventional levels. Furthermore, population density affected voting in the expected direction, but is never significant. Our variable estimating the percentage of farms expecting to benefit from the stock law seems to be an accurate description of the relative benefits anticipated from the stock law. Particularly important in a voter's decision calculus was whether or not his income would rise or fall after the stock law's adoption. As the regressions clearly display, voters seem to have been well aware of the monetary implications of changing the fence law and to have sided with the option that promised to maximize their net benefits over time.

White per capita wealth was strongly and positively correlated with a district's voting for the stock law. In order for the Flynn/Hahn hypothesis that class distinctions divided the stock law and fence law coalitions to be accepted, we would expect increased wealth to have positively influenced the stock law voting and negatively affected fence law voting. However, this pattern is not observed in the data. While the coefficient for wealth in the stock law equation is positive and highly significant, it is insignificantly different from zero in the fence equation. This implies that fence voters were not motivated by the class distinctions of their society when choosing to support the open range. Even though we control for effects such as the use of tenant farmers, population density, and expected profit from the stock law, which all correlate positively with per capita wealth, the wealth coefficient is still quite significant. It is likely that some of the economic benefits accruing to the relatively wealthy town districts are not captured by our measure of expected benefits to farms. The olfactory benefits of banning marauding cows and pigs from small towns, as well as the more tangible ones of keeping them out of one's garden are as difficult to compute a century later as they were to ignore in the 1880s.

Finally, the coefficients of the dummy variables proxying the behavioral change of individual districts that adopted the stock law at the sub-county level by the 1887 and 1890 Carroll

elections have the expected signs. The fence law was the hardest hit once individual districts no longer had a stake in the countywide election process. The status quo lost 20.4 percent of its electoral support in 1887 and an additional 12 percent by the 1890 poll, holding all else constant. While the stock law's supporters continued to vote for their choice in 1887, by 1890 the new institution lost almost eight percent of the electorate. Since the stock law supporters were outnumbered by their opponents between two and three to one before 1887, the dropoff in turnout hurt them nearly as much as it did the fence partisans, who easily carried all seven elections in both counties.<sup>90</sup>

### A Conflict of Cultures or a Conflict of Interests?

The fence law question was of considerable concern to many Southern farmers and, hence, received much attention in the postbellum South. A thorough investigation of the arguments put forward by participants of the debate shows that contemporaries were well aware of the economic benefits and problems associated with the stock law. They understood the economic consequences of their actions and addressed issues familiar to neoclassical economic historians, such as private property rights, the redistribution of income, Pareto optimality, and fairness.

Recently, historians have addressed the fence debate, portraying it primarily as a conflict between the rich and the poor, the "haves" and the "have-nots." Clearly, this explanation is too simple. Both qualitative and quantitative evidence suggests that the fence issue was more than a struggle between the landed and the landless — it represented an opportunity for at least some members of these two groups to forge a political coalition in order to capture the economic advantages of a new, more efficient institution.

A simple two-class conflict model fits the data from Carroll and Jackson counties poorly because group interests did not divide neatly into two parts. As our theoretical model based on expected utility maximization predicted, tenants and laborers were indifferent between the fence law and the stock law. The relationship between voting patterns and variables designed to reflect the economic incentives facing voters, such as unimproved or forest acreage and the percentage of farms expecting to profit from the law imply that farmers were lined up according to the divergent economic interests of the areas in which they resided. The insignificant effect of per capita wealth on fence law support, *ceteris paribus*, also weighs heavily against a simple class interpretation. Nor does Hahn's contention that fence voters cast their ballots in rebellion against the "values of the free market" gain support from our more comprehensive analysis. Neither market integration nor market isolation played a significant role in a district's decision to vote for the stock law or fence law.

This brings us back to the start of our paper: are the views of economists and historians who explain the process of institutional change as a calculated attempt to capture economic efficiencies at odds with those who couch their explanations of political and economic struggles, such as the fence debate, in terms of a predetermined conflict between classes? As our analysis shows, the stock law clearly created an opportunity for progressive farmers to capture the efficiency gains from enclosing

animals. The benefits, however, did not accrue to wealthy farmers alone — the expected profitability was spread across class lines, as tenants and laborers might have expected to benefit from the stock law as well.

The more serious front on which debaters of the fence issue fought concerned the distribution of costs and benefits. Small farm owners who relied on the open range as a food source certainly had no desire to keep their animals penned up, for that meant reducing their herd sizes, shifting cultivated acreage out of crop production and into pasturage for the remaining animals, and taking land out of cotton production in order to feed their livestock. These farmers, who made up a large percentage of the populations of Carroll and Jackson counties, seem to have been motivated by the same force that drove their stock law counterparts, the desire to preserve or expand their economic stature. Both qualitative and quantitative evidence drawn from the same counties as Hahn and Bonner studied convinces us that the bitter conflict over the fence law had its roots not in a struggle to preserve a cooperative "moral economy," but in the straightforwardly materialistic goals shared in common by those who expected to win and those who expected to lose by this institutional change. It was a conflict not of cultures or classes, but of interests.

## **APPENDIX A**

### **Procedure Used to Calculate Expected Savings from Stock Law**

Given the very detailed agricultural data of the manuscript schedules, we are able to approximate the expected gain or loss from the stock law accruing to individual farms. The variable we use in our regression analysis, however, is the percentage off all farms expecting a non-negative net return. Below we detail the procedure used to compute the expected (dis)savings.

#### **1.) Wasted Land**

Contemporaries believed that the largest potential source of savings from the stock law could be achieved by literally breaking down the fences and bringing into production that land previously occupied by fence rows. They argued that between 1.0 and 3.4 percent of the land behind fences was consumed by fence rows.<sup>91</sup> We will assume that 1.0 percent of the land was wasted for our computation.

#### **2.) Crops Grown on Wasted Land**

We assume that two types of crop are grown on the wasted acreage. Cotton will be grown on the cotton producing acres and corn, peas, and fodder will be grown on the corn, wheat, rye, and oat acres (for simplicity, grain acres). Yield per acre for cotton and corn was determined by dividing the total crop output by total acres of that particular crop. For the

corn yield per acre measure we subtract 0.25 bushels per acre for seed.<sup>92</sup> The yield per acre of peas and fodder is assumed to be 4 bushels and 185 pounds, respectively, as reported in the "Annual Report of Thomas P. Janes Commissioner of Agriculture of the State of Georgia For the Year 1875," p. 135. The total crop of corn, peas, and fodder grown on the extra land brought into cultivation is equal to the number of extra grain acres times the yield per acre of the respective crop. Similarly, the total extra cotton crop is equal to the extra cotton acres times the yield per acre of cotton. Since the yield per acre is reported in bales, we multiply the total output by 475, the average weight of a bale of cotton, to obtain total pounds of extra cotton grown.<sup>93</sup>

### 3.) Gross Value of Crops Grown on Wasted Land

After finding the total number of bushels or pounds of each crop that could be grown on the wasted acreage, we multiply the figure by the price per unit. The price of cotton is assumed to be \$0.1118 per pound and corn is assumed to be \$0.673 per bushel. These are the average prices for the year 1880 as reported in the *Atlanta Constitution*. We sampled the newspaper once every month, trying to obtain prices for the fourth day of each month. If the price was not reported on the fifth, we went to the sixth, seventh, and so on. The price of peas is assumed to be \$1.10 per bushel and fodder \$0.0119 per pound as reported in "The Annual Report...1875," p. 135.

### 4.) Cost of Producing Crops

"The Annual Report... 1875," p. 135, reports the cost of producing corn, peas, and fodder on the same land as \$8.00 per acre. Assuming an interest rate of 7 percent, an annual land depreciation rate of 2.7 percent,<sup>94</sup> and a cash value per acre of Georgia farms of \$4.67, the cost of producing the corn, peas, and fodder becomes \$8.45 per acre.<sup>95</sup> We have the benefit of two cost estimates for cotton. "The Annual Report... 1875," p. 135, reports the production cost of cotton to be \$16.48 per acre, and includes the cost of marketing the crop. R.H. Loughridge, "Report on the Cotton Production of the State of Georgia, with a Description of the General Agricultural Features of the State," in the 1880 Agricultural Census, p. 175, has several cost estimates for various counties within Georgia. Loughridge's figures correspond very closely to the \$16.48 reported by the Georgia Department of Agriculture and, thus, we use this estimate to predict the total cost of producing the extra cotton crop, with one adjustment. The \$16.48 figure includes the cost of fencing the acre of cotton land. Therefore, the "real" cost of planting an acre of cotton becomes \$14.58 (see section 6, below, for \$1.90 fence cost). It should be noted that this estimate includes the rental price of the land.

An additional cost of producing the extra crops is the opportunity cost of the capital used to work the land, specifically any machinery, farm implements, or draft animals. We first determine the value of machinery capital per acre by dividing the "value of farming implements and machinery" by the total number of cotton, corn, wheat, rye, and oat acres. To estimate the machinery rent associated with producing the extra crop, we multiply the per acre value of machinery by the total acres brought into cultivation by the depreciation and interest rate. We take the rate of depreciation to be 15 percent, following Ransom and Sutch, p. 108, and Robert C. Allen.<sup>96</sup> Again, the interest rate is assumed to be 7 percent.

To find the rent associated with work animals, we need to determine the total value of such animals, because the Census reports the value of all farm animals. Using the 1879 prices given in the *Historical Statistics of the United States, Colonial Times to 1957*, Series K 195–212, p. 290, for horses (\$51.55), mules (\$57.08), and all cattle (\$16.96), we are able to estimate the total value of capital in the form of horses, mules, and oxen. By the same procedure used for machinery and implements, we determine the value per acre of work animals used to produce all crops within a county. Using a depreciation rate of 15 percent (Allen, p. 952) and an interest rate of 7 percent, the total rent for animals associated with producing the additional crops is the value of work animals per acre times 22 percent times the total number of wasted acres brought into cultivation.

## 5.) Dealing with Animals

Because many animals were roaming the open range, we need to take into account the pasturing and feeding of these animals once the hypothetical stock law is implemented. The Census reports acres of "Permanent meadows, Permanent pastures, orchards, and vineyards" and we will take this lump sum to represent the total amount of land devoted to animal pasture. The "Annual Report...1875" gives data on total pasture enclosed by fence, and for more than 80 counties, the Georgia Department of Agriculture reports a pasture measure greater than the Census' enhanced pasture statistic. Therefore, we do not believe that using the Census pasture variable will bias the result in any dramatic fashion.

To this permanent pasture we allocate animals so that we are able to estimate the number of animals that were roaming the countryside. We first allocate 5 sheep per acre of pasturage ("Annual Report... 1875," p. 128), then sequentially allocate one horse, mule, ox, milk cow, head of cattle per acre, and if possible, 5 swine per acre. The Jackson *Herald*, August 31, 1883, reports that six cows and twelve hogs could be put on a six acre pasture sown in vetch for the summer. Moreover, the March 30, 1885 *Herald* reported that one acre of pasture per cow was suitable. Given this, we believe one acre devoted to each horse, mule, ox, head of cattle, and milk cow is a generous estimate. Furthermore, five pigs per acre seems reasonable, given that five sheep per acre was the norm, and taking into account the *Herald's* 1883 advice.

Once we determine the number of animals that were non-pastured, we must deduct from our savings estimate a feed allowance for these animals. Before the stock law is instituted, we assume that farmers fed their non-pastured animals the Ransom and Sutch "Lower bound" feed estimate reported in Table E.4, p. 250. Once the hypothetical law is implemented, these animals must be put into pastures and we assume that they are now fed the Ransom and Sutch "Reasonable allowance, 1880" of corn-equivalent bushels. Of course, we need not allocate feed to previously pastured animals because we assume they were fed the "Reasonable allowance" before and after the law. In fact, the feed allowance only has to be made for horses, mules, and oxen because grain given to milk cows, cattle, and swine was consumed by the farm family in a different form, namely meat, milk, cheese, butter, etc. Therefore, the dollar value of the feed is equal to  $\$0.673/\text{bushel corn} * (\text{nphorses} * 11.7 \text{ bushels} + \text{npxen} * 11.7 \text{ bushels} + \text{npmules} * 14.5 \text{ bushels})$ , where "np" represents "non-pastured."

#### 6.) Fence Maintenance Savings

Contemporaries claimed that the depreciation of fences amounted to 10 percent of the initial value of the fence. However, as described above, previously non-pastured animals require a fence enclosure, and we will assume that these animals are penned on unimproved land.<sup>97</sup> We assume that each non-pastured horse, mule, ox, head of cattle, and milk cow was given one acre of land and one acre was allocated for 5 sheep and swine. Let us call the land used to pasture the previously non-pastured animals, "new fenced acres." In addition, we have assumed that all of the fences around crops are removed and, thus, no longer require repair expense. Call the amount of land used to grow the cotton and grain crops before the hypothetical stock law, "crop acres." Using the fact that the average cost of fencing in the South was \$1.90 per acre, we are able to estimate the amount saved from maintaining fewer fences. Thus, the fence savings is equal to  $0.10 * \$1.90 * (\text{crop acres} - \text{new fenced acres})$ .

We also must take into account the cost of fencing the "new fenced acres" devoted to penning the animals. Denoting the one-time cost of this fence as  $C_0$ , its value is given by  $\$1.90 * (\text{new fenced acres})$ .

#### 7.) Total Expected Savings

The total annual expected savings once the hypothetical law is passed is obtained by adding the gross value of the additional crops grown and the money saved from maintaining fewer fences and subtracting the total cost of producing the crop, including the rent on the capital, and the value of the feed allowance given to previously non-pastured horses, mules, and oxen. A general equation for the savings after the first year can be written as:

Total expected savings (S) =  $x\%$  cotton acres \* [bales/acre \* 475 lbs/bale \* \$0.1119/lb – \$14.58 cost/acre – \$rent of capital/acre] +  $x\%$  grain acres \* [(bushels corn/acre \* \$0.673/bushel + 4 bushels peas/acre \* \$1.10/bushel + 185 lbs fodder/acre \* \$0.0119/lb) – \$8.45 cost/acre – \$rent of capital/acre] – \$0.673, bushel corn \* [11.7 bushels \* nphorses + 11.7 bushels \* npxoxen + 14.5 bushels \* npmules] + 0.10 \* \$1.90 \* [crop acres – new fenced acres],

where  $x\%$  represents the percentage of tilled acreage wasted by fence rows. The savings of the first year that the law is in force is slightly different. All of the profits from the crops as well as the depreciation from the crop acre fences are realized as savings. However, in the first year the full value of  $C_0$  is subtracted off and the depreciation from these fences need not be subtracted. Thus, the net present value of the expected savings is  $\sum_{t=0}^{\infty} S_t - 0.9 C_0$ , where  $0.9 C_0$  is the cost of the animals' fences plus the first year's depreciation which is embedded in the  $S_t$  term.

## APPENDIX B

### Data Appendix

As discussed in the text, we used three primary sources for our data: the Population and Agricultural Manuscript Schedules of the 1880 Census, as well as published census data, contemporary newspapers, and property tax digests from Carroll and Jackson counties, which are housed in the Georgia Department of Archives and History. This Appendix discusses the procedural details behind the creation of the variables found in Tables 7 and 8.

The fence election data was culled from contemporary newspapers, specified in the sources of Tables 4 and 5. For the statistical analyses in this paper, we used the percentage of the eligible voters who cast ballots for the fence law, stock law, or who did not vote as our dependent variables. Therefore, it was necessary to create an accurate count of the electorate to use as a common denominator. Although the property tax digests record the number of men who paid the poll tax, Kousser (*The Shaping of Southern Politics: Suffrage Restriction and the Establishment of the One-Party South, 1880–1910* (New Haven: Yale University Press, 1974), chapter 3) argues that tax collectors purposefully avoided collecting the tax from those who they deemed undesirable voters, such as Republican black voters. A more accurate description of the eligible voting population would be the number of men twenty-one years of age or older. However, the Census only reported this data for the whole county and not the individual militia districts. Therefore, our strategy in estimating the potential electorate was to inflate the number of black and white polls reported in the tax digest for individual districts to a level commensurate with the Census' count of males 21

years or older.

We first determined the total number of black and white voting age males within each county for 1880 using our 100 percent sample of the Population Manuscript Schedules. In the published 1890 Population Census, voting age males of both races are reported. Using a linear interpolation between the 1880 and 1890 census data, we have countywide estimates of the number of potential voters for the 1880s. The next step was to find the total number of men, black and white, who paid the poll tax within each county for each year that a fence election was held. Finally, we used the ratio of the total countywide number of voting age males, of each race, enumerated by the Census to the countywide number of poll tax payers as our inflator of the number of districtwide voters reported in the tax digests. For example, assume that  $wi_{1882}$  is the interpolated estimate of the census' total number of white voting age males divided by the total number of white men who paid their poll tax in Carroll county in 1882. If district  $X$  had 100 white poll tax payers in 1882, our estimate of the "actual" number of white voters is  $100 * wi_{1882}$ . An analogous calculation was used to determine the "actual" number of black voters within district  $X$ . Of course, the total number of potential voters in this hypothetical district would be the sum of the black and white estimates described above. The apparent undercollection of taxes was more dramatic for Carroll than for Jackson county. The black and white polls in Carroll had to be inflated, on average, 45 percent and 23 percent, respectively. For Jackson county, we only had to inflate the black and white polls 30 percent and 19 percent, respectively.

The percent forest, percentage of tenant operated farms, per capita cotton, the percentage of farms achieving self-sufficiency, and the proportion expecting to profit from the new law were all created using the data from Agricultural Manuscript Schedules. Self-sufficiency was determined using the method that Ransom and Sutch, *One Kind of Freedom*, have devised. In estimating the number of farms expecting to profit from the stock law, we followed the procedure detailed in Appendix A.

The population density variable uses published census data from the *Compendium of the Eleventh Census*, pp. 89 and 93. We used a linear interpolation to estimate a district's population in years between 1880 and 1890. The density variable is the population per square mile, using the total district acreage aggregated from the manuscript schedules. Substituting tilled land for total land mass in the denominator did not change the results reported above. Percent black is just the percentage of the electorate, as estimated above, that was black. Finally, white per capita wealth is the total white taxable wealth in a district divided by its number of potential white voters (estimated above). Georgia tax records for this era are conveniently segregated by race.

During the 1880s Carroll county saw two major internal boundary changes. Two new districts were created, Shiloh and Flint Corner. It was rather clear from the tax digests and maps (in Bonner's book) which districts were cut in order to create the new ones. In

particular, Smithfield and Carrollton were dissected to create Shiloh and, later, Flint Comer was created out of parts of Shiloh and Smithfield. Unfortunately, with the agricultural data that we have, we never observe the specific characteristics of the new districts, especially since the 1890 census returns are not available. Therefore, in dealing with the addition of these new districts, we adopted the convention that a new district obtained half of its land from each of its parent districts. After determining what percentage of the parent district was "transferred" to the new one, call it  $y\%$ , we subtracted  $y\%$  from the aggregated raw data for the parent district and added this same amount to the newly created district. For example, let the vectors  $\bar{S}$  and  $\bar{T}$  be the raw data for two districts of the same names. Assume that district X is created out of S and T and we find that  $x\%$  of district S is lost and  $y\%$  of district T. Thus, the new data for districts S, T, and X will be  $(1-x\%)\bar{S}$ ,  $(1-y\%)\bar{T}$ , and  $(x\%\bar{S} + y\%\bar{T})$ . The appropriate percentages used as independent variables were calculated using this adjusted data.

Two of our variables, self-sufficiency and farms profiting from the stock law, depend upon farm specific data. But we do not know which farms actually changed districts as a result of the boundary alterations. Therefore, to create the aforementioned variables for the new districts, we simply take the average of the parent districts' percentages. This assumption should not cause statistical problems as long as the boundary changes were done arbitrarily, in the sense that new districts were not created so as to contain a greater majority of farms achieving self-sufficiency or expecting to profit from the stock law. Wealth and racial composition for the new districts was obtained from the tax digests. Since the 1890 Census reported the population for the new districts, the population density variable is accurate.

TABLE 1

## PERCENT CHANGE IN GEORGIA POPULATION BY RACE, BY REGION, 1850 - 1890

REGION	1850-60 WHITE	1850-60 BLACK	1860-70 WHITE	1860-70 BLACK	1870-80 WHITE	1870-80 BLACK	1880-90 WHITE	1880-90 BLACK
PLANTATION BELT	-1.17	17.64	5.20	15.92	14.63	22.72	10.93	11.99
UPCOUNTRY	23.43	43.42	9.93	25.64	29.64	35.19	22.22	23.46
WIREGRASS	81.85	126.53	22.66	36.74	24.43	33.71	42.17	73.84
PINE BARRENS	26.70	32.15	11.00	3.63	36.29	38.77	42.01	57.87
COAST	41.29	-2.84	9.62	23.31	13.19	13.83	33.13	25.92
MOUNTAIN	20.85	41.80	4.75	-16.17	20.41	21.88	16.63	-1.05
STATE	13.42	21.08	8.01	17.06	21.78	24.82	19.77	18.46
CARROLL CO.	22.59	69.68	3.53	-30.19	28.22	43.33	26.45	66.71
JACKSON CO.	6.48	13.38	3.06	10.55	32.93	28.06	23.71	4.63

Sources: *Population Census, 1870*, pp. 20-22; *Compendium of the Tenth Census, 1880*, pp. 341-343; *Compendium of the Eleventh Census, 1890*, pp. 12-3 & 590-5.

TABLE 2

ALLOCATION OF LABOR SERVICES FOR FARMS USING WAGE LABOR —  
ORDINARY LEAST SQUARES ESTIMATION

VARIABLE	COEFFICIENT
CONSTANT	-132.99 (-1.53)
COTTON ACREAGE	2.39 (3.18)
GRAIN ACREAGE	2.17 (4.00)
VALUE OF FARM	0.02 (1.85)
DRAFT ANIMALS	22.64 (3.45)
COWS	-10.67 (-1.20)
SWINE	0.28 (0.21)
CATTLE	8.82 (2.02)
POUNDS OF BUTTER PRODUCED	-.01 (-0.14)
CARROLL COUNTY DUMMY	-59.57 (-5.86)
OWNER-OCCUPIED FARMDUMMY	25.67 (2.22)
FARM < 25 ACRES	119.07 (1.45)
FARM 25 - 49 ACRES	78.77 (1.00)
FARM 50 - 99 ACRES	61.02 (0.81)
FARM 100 - 199 ACRES	56.14 (0.75)
FARM > 300 ACRES	76.98 (0.68)
<i>N</i>	977
<i>R</i> <sup>2</sup>	0.47
$\bar{R}^2$	0.46

Notes:  $t$ -statistics are in parentheses. The farm size variables are dummies for acreage classes. For example, if a farm's improved acreage was less than twenty-five acres, its value on the "farm < 25 acres" variable was 1; otherwise, the value for this variable was zero. The other four farm size variables are defined analogously. The regression equation was corrected for heteroskedasticity using Halbert White's method, "A Heteroskedasticity-Consistent Covariance Matrix Estimation and a Direct Test for Heteroskedasticity," *Econometrica*, 48 (May 1980), pp. 817-838.

Source: Manuscript Agricultural Schedules of Carroll and Jackson counties, Georgia. The data set includes all farms that the Census Bureau enumerated.

TABLE 3

## OCCUPATIONS OF HOUSEHOLD HEADS, CARROLL AND JACKSON COUNTIES, 1880

OCCUPATION	% WHITE HOUSEHOLD HEADS		% BLACK HOUSEHOLD HEADS	
	CARROLL	JACKSON	CARROLL	JACKSON
FARMER <sup>a</sup>	45.3	43.6	5.4	5.1
FARMER (NO REAL ESTATE)	25.3	10.0	37.0	4.0
TRADE <sup>b</sup>	2.9	2.3	0.0	0.1
PROFESSIONAL <sup>c</sup>	3.1	3.1	0.8	0.5
SERVICE <sup>d</sup>	0.2	0.1	0.3	0.0
SKILLED, SEMISKILLED <sup>e</sup>	4.5	3.8	1.8	1.2
UNSKILLED				
—FARM LABORER <sup>a</sup>	13.6	34.9	41.1	86.2
—OTHER LABORER	5.0	2.0	13.6	2.9
OTHER	0.0	0.3	0.0	0.0
<i>N</i> <sup>f</sup>	2683	2086	389	896
Agricultural <i>N</i>	2264	1845	325	854

Notes: *a* The numbers in the "farmer" and "farm laborer" rows are substantially different from those that Hahn reports. The reason is that 253 white and 44 black household heads in Carroll and 173 whites and 34 blacks in Jackson reported their occupations as "farmer," but were not recorded in the agricultural census. We, therefore, considered these individuals as farm laborers.

*b* Includes merchants, grocers, and other shopkeepers.

*c* Includes lawyers, physicians, clergymen, teachers, and political officials.

*d* Includes hotel, stable, and saloon keepers.

*e* Includes artisans and helpers likely to acquire a skill such as "works in blacksmith shop".

*f* Does not include household heads reporting no occupation, "keeping house," or "student," and does not include persons in jail or in the poor house.

Source: Manuscript Population Schedules of Carroll and Jackson counties, Georgia. The data set includes all households that the Census Bureau enumerated.

**Table 4**  
**Carroll County Fence Election Returns**

District	January 1882		September 1882		July 1885		July 1887		July 1890	
	Fence	Stock	Fence	Stock	Fence	Stock	Fence	Stock	Fence	Stock
Carrollton	225	257	343	295	295	220	233	223	105	120
Whitesburg	181	31	207	51	108	40	90	60	46	43
Temple	121	92	167	106	155	97	55	25	- <sup>c</sup>	- <sup>c</sup>
Kansas	90	14	92	21	92	21	67	30	20	19
Turkey Creek	93	20	95	34	66	25	57	39	- <sup>c</sup>	- <sup>c</sup>
Bowdon	158	28	168	47	146	45	91	46	49	55
Smithfield	138	3	183	18	123	3	130	4	44	5
Shiloh <sup>a</sup>	-	-	-	-	72	20	58	39	- <sup>c</sup>	- <sup>c</sup>
Flint Corner <sup>b</sup>	-	-	-	-	-	-	-	-	24	5
New Mexico	88	14	116	12	74	13	92	21	52	12 <sup>a</sup>
Lowell	135	8	146	20	120	30	121	26	89	26
Cross Plains	87	13	122	25	128	28	118	39	39	8
County Line	42	14	60	36	37	33	33	37	- <sup>d</sup>	- <sup>d</sup>
Fairplay	115	35	147	37	52	67	42	43	5	13
Villa Rica	56	69	71	70	47	101	55	61	- <sup>c</sup>	- <sup>c</sup>
Roopville	86	22	104	50	56	42	98	52	55	24
<b>Total</b>	<b>1615</b>	<b>620</b>	<b>2021</b>	<b>822</b>	<b>1571</b>	<b>785</b>	<b>1340</b>	<b>745</b>	<b>528</b>	<b>332</b>
<b>Percentages</b>	<b>72.3</b>	<b>27.7</b>	<b>71.1</b>	<b>28.9</b>	<b>66.7</b>	<b>33.3</b>	<b>64.3</b>	<b>35.7</b>	<b>61.4</b>	<b>38.6</b>
<b>Turnout</b>	<b>62.3</b>		<b>79.2</b>		<b>59.9</b>		<b>50.2</b>		<b>19.1</b>	

- Notes: <sup>a</sup>Shiloh was, for the most part, created from parts of Carrollton and Smithfield. See Appendix B for a discussion of our handling of newly created districts.
- <sup>b</sup>Flint Corner was created from parts of Smithfield and Shiloh. See Appendix B for a discussion of our handling of newly created districts.
- <sup>c</sup>No fence election held.
- <sup>d</sup>No data reported.
- <sup>e</sup>The stock law vote reported in our original source is 2 votes. However, analysis of the time-series data showed that this number was an extreme outlier and caused abnormal results in our computation of transition probabilities. Given our suspicion of the number reported in the contemporary newspaper, we assumed that the stock law vote decreased at the same rate as the fence law vote between 1887 and 1890.
- Sources: *Carroll County Times*, January 13, 1882; *Carroll County Times*, September 15, 1882; *Carroll Free Press*, July 3, 1885; *Carroll Free Press*, July 8, 1887; *Carroll Free Press*, July 4, 1890.

**Table 5**  
**Jackson County Fence Election Returns**

District	July 1881		September 1883	
	Fence	Stock	Fence	Stock
Jefferson	317	128	124	83
Harrisburg <sup>a</sup>	-	-	101	115
Harmony Grove	149	101	131	102
Newtown	179	31	170	46
Clarksboro	89	17	121	66
Santa Fe	58	4	66	5
Chandler	174	4	119	11
House	84	46	93	33
Randolph	132	18	190	32
Miller	34	13	53	33
Cunningham	77	75	83	84
Wilson	86	41	67	31
<b>Total</b>	<b>1379</b>	<b>478</b>	<b>1318</b>	<b>641</b>
<b>Percentages</b>	<b>74.3</b>	<b>25.7</b>	<b>67.3</b>	<b>32.7</b>
<b>Turnout</b>	<b>54.5</b>		<b>57.5</b>	

Notes: <sup>a</sup> Harrisburg was reported as part of Jefferson in 1881. Therefore, in the statistical analyses the districts are considered a single district for 1881.

Sources: *Jackson Herald*, July 8, 1881; *Jackson Herald*, September 14, 1883.

TABLE 6

## TRANSITION MATRICES — CARROLL AND JACKSON

## Panel A: Carroll County — Election 1 to Election 2

		ELECTION 2			Mean of Row
		% Fence	% Stock	% Abstain	
ELECTION 1	% Fence	0.920	0.052	0.028	0.496
	% Stock	0.036	0.671	0.293	0.135
	% Abstain	0.286	0.196	0.518	0.369
	Mean of Column	0.603	0.197	0.200	

TABLE 6 (continued)

## TRANSITION MATRICES — CARROLL AND JACKSON

## Panel B: Carroll County — Election 2 to Election 3

		ELECTION 3			Mean of Row
		% Fence	% Stock	% Abstain	
ELECTION 2	% Fence	0.764	0.034	0.202	0.603
	% Stock	0.015	0.500	0.485	0.197
	% Abstain	0.178	0.590	0.233	0.200
	Mean of Column	0.430	0.181	0.390	

TABLE 6 (continued)

## TRANSITION MATRICES — CARROLL AND JACKSON

## Panel C: Jackson County — Election 1 to Election 2

		ELECTION 2			Mean of Row
		% Fence	% Stock	% Abstain	
ELECTION 1	% Fence	0.660	0.023	0.317	0.400
	% Stock	0.002	0.994	0.004	0.139
	% Abstain	0.283	0.107	0.610	0.461
	Mean of Column	0.383	0.181	0.436	

TABLE 7  
CORRELATION BETWEEN VARIABLES

Variable	Percent Forest	Density	Percent Tenants	Percent Black	Per Cap. Cotton	Self-Sufficiency	Per Cap. Wealth	Stock Law Profitability	Percent Fence	Percent Stock	Percent Abstain
Forest	—										
Density	-0.21 <sup>a</sup>	—									
Tenants	0.19	-0.05	—								
Black	-0.47 <sup>b</sup>	0.15	-0.23 <sup>a</sup>	—							
Cotton	-0.31 <sup>b</sup>	-0.45 <sup>b</sup>	0.22 <sup>a</sup>	0.05	—						
Self-Suf.	0.06	0.26 <sup>a</sup>	-0.43 <sup>b</sup>	-0.05	-0.14	—					
Wealth	-0.31 <sup>b</sup>	0.40 <sup>b</sup>	0.12	0.40 <sup>b</sup>	-0.32 <sup>b</sup>	0.00	—				
Profit	-0.24 <sup>a</sup>	0.00	0.02	0.35 <sup>b</sup>	0.36 <sup>b</sup>	0.06	0.13	—			
Fence	0.28 <sup>b</sup>	-0.47 <sup>b</sup>	-0.03	-0.31 <sup>b</sup>	0.03	-0.10	-0.27 <sup>b</sup>	-0.31 <sup>b</sup>	—		
Stock	-0.17	0.10	0.21 <sup>a</sup>	0.22 <sup>a</sup>	-0.03	-0.08	0.55 <sup>b</sup>	0.28 <sup>b</sup>	-0.24 <sup>a</sup>	—	
Abstain	-0.19	0.42 <sup>b</sup>	-0.07	0.21 <sup>a</sup>	-0.02	0.14	0.01	0.17	-0.88 <sup>b</sup>	-0.24 <sup>a</sup>	—

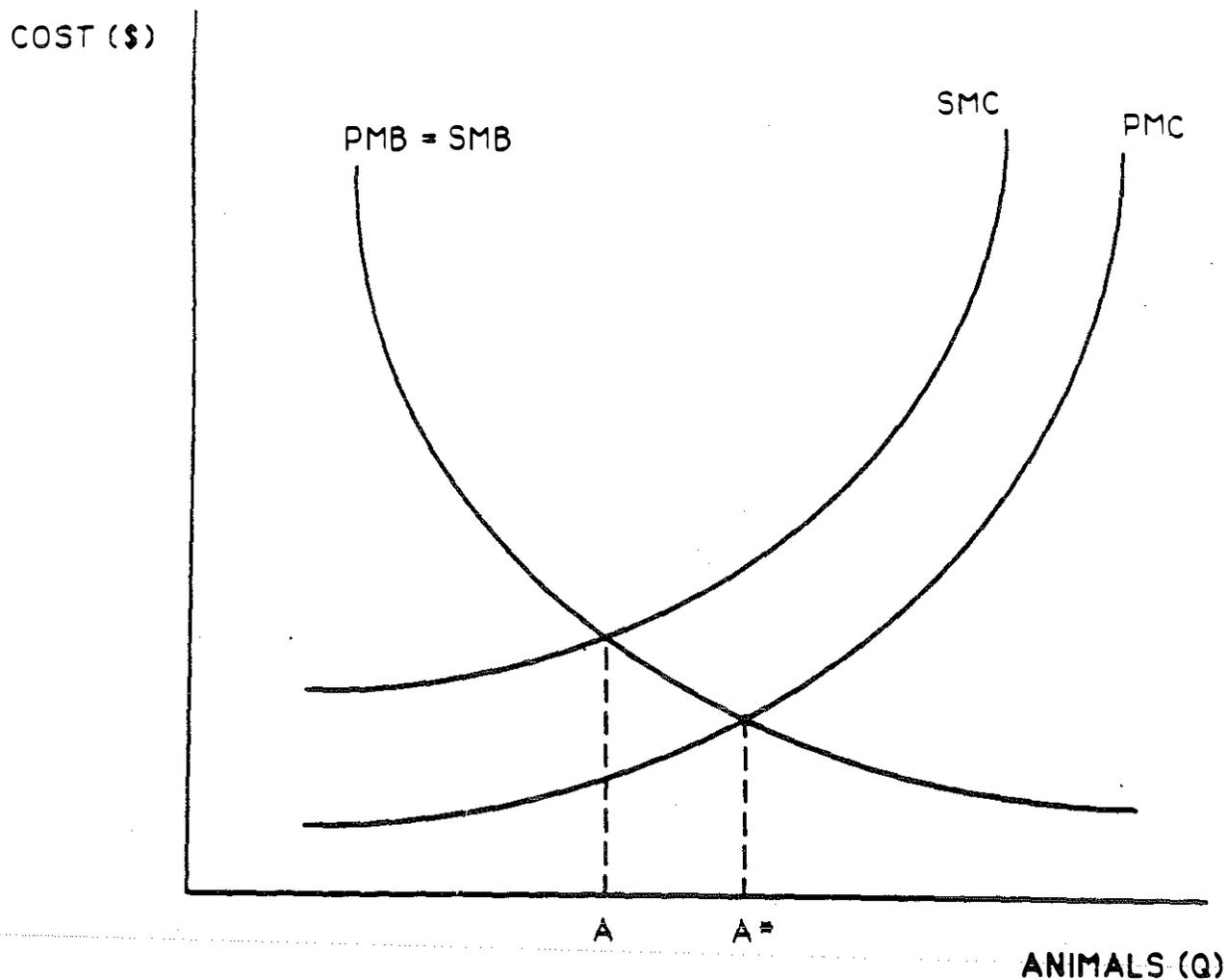
Notes: <sup>a</sup>Significant at the 5 percent level.  
<sup>b</sup>Significant at the 1 percent level.

Sources: See Appendix B

TABLE 8

## REGRESSIONS OF FENCE VOTING PERCENTAGES, ORDINARY LEAST SQUARES

VARIABLES	% FENCE LAW	% STOCK LAW	% ABSTAINING
CONSTANT	71.729 (3.386)	-1.067 (-0.089)	29.338 (1.409)
% FOREST	0.266 (1.445)	-0.017 (-0.162)	-0.249 (-1.377)
POPULATION DENSITY	-0.149 (-0.859)	0.011 (0.116)	0.138 (0.807)
% TENANT FARMS	-0.107 (-0.757)	0.107 (1.348)	-0.000 (-0.002)
% BLACK	-0.398 (-2.111)	-0.043 (-0.408)	0.441 (2.382)
PER CAPITA COTTON	-8.591 (-0.555)	-4.412 (-0.507)	13.003 (0.855)
% SELF-SUFFICIENT	-0.083 (-0.561)	-0.010 (-0.118)	0.093 (0.639)
PER CAPITA WHITE WEALTH	-0.006 (-0.792)	0.018 (3.870)	-0.011 (-1.410)
% FARMS PROFITING FROM STOCK LAW	-0.327 (-2.175)	0.186 (2.200)	0.141 (0.953)
STOCK LAW DISTRICTS, 1887	-20.378 (-4.043)	0.868 (0.306)	19.509 (3.938)
STOCK LAW DISTRICTS, 1890	-32.367 (-5.858)	-7.856 (-2.526)	40.223 (7.407)
<i>N</i>	92	92	92
$R^2$	0.572	0.428	0.587
$\bar{R}^2$	0.520	0.358	0.536



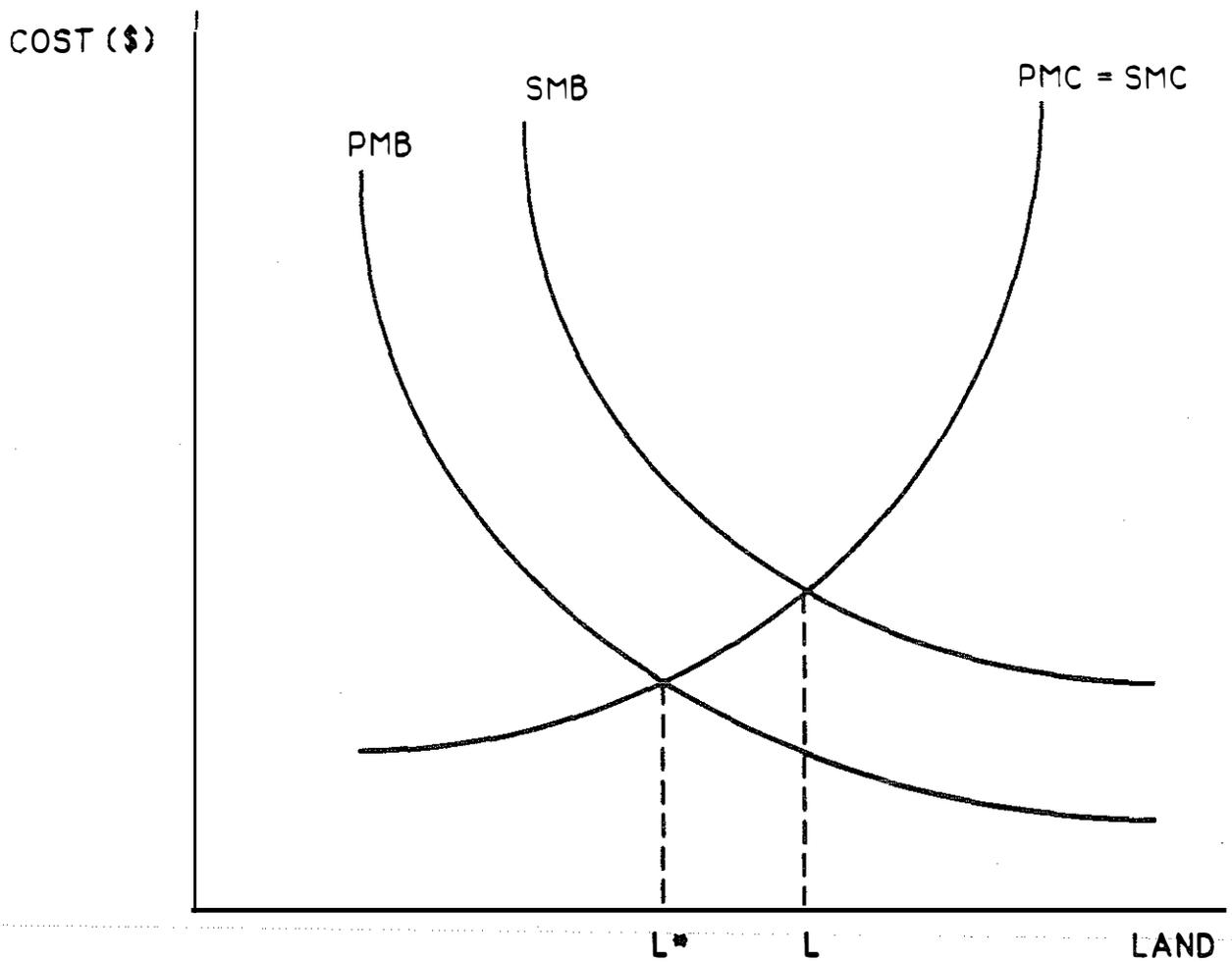
**FIGURE 1**

**When Animals Can Graze on All Unfenced Land, Owners Will Increase the Sizes of Their Herds More Than They Would If They Had to Pay for All of the Animals' Food and Water.**

**Legend:**      **SMC = Social Marginal Cost**  
                   **PMC = Private Marginal Cost**  
                   **SMB = Social Marginal Benefit**  
                   **PMB = Private Marginal Benefit**

**Notes:** *t*-statistics in parentheses. Appendix B gives more detailed description of variables and data.

**Sources:** See Appendix B.



**FIGURE 2**

**Farmers Forced to Fence Out Animals Will Invest Less in Land and Other Improvements Than They Would Under a Stock Law.**

**Legend:**

- SMC = Social Marginal Cost**
- PMC = Private Marginal Cost**
- SMB = Social Marginal Benefit**
- PMB = Private Marginal Benefit**

FIGURE 3: RELATIVE PRICES OF COTTON AND CORN TO BACON SIDES  
 cotsides(#); crnsides(^)

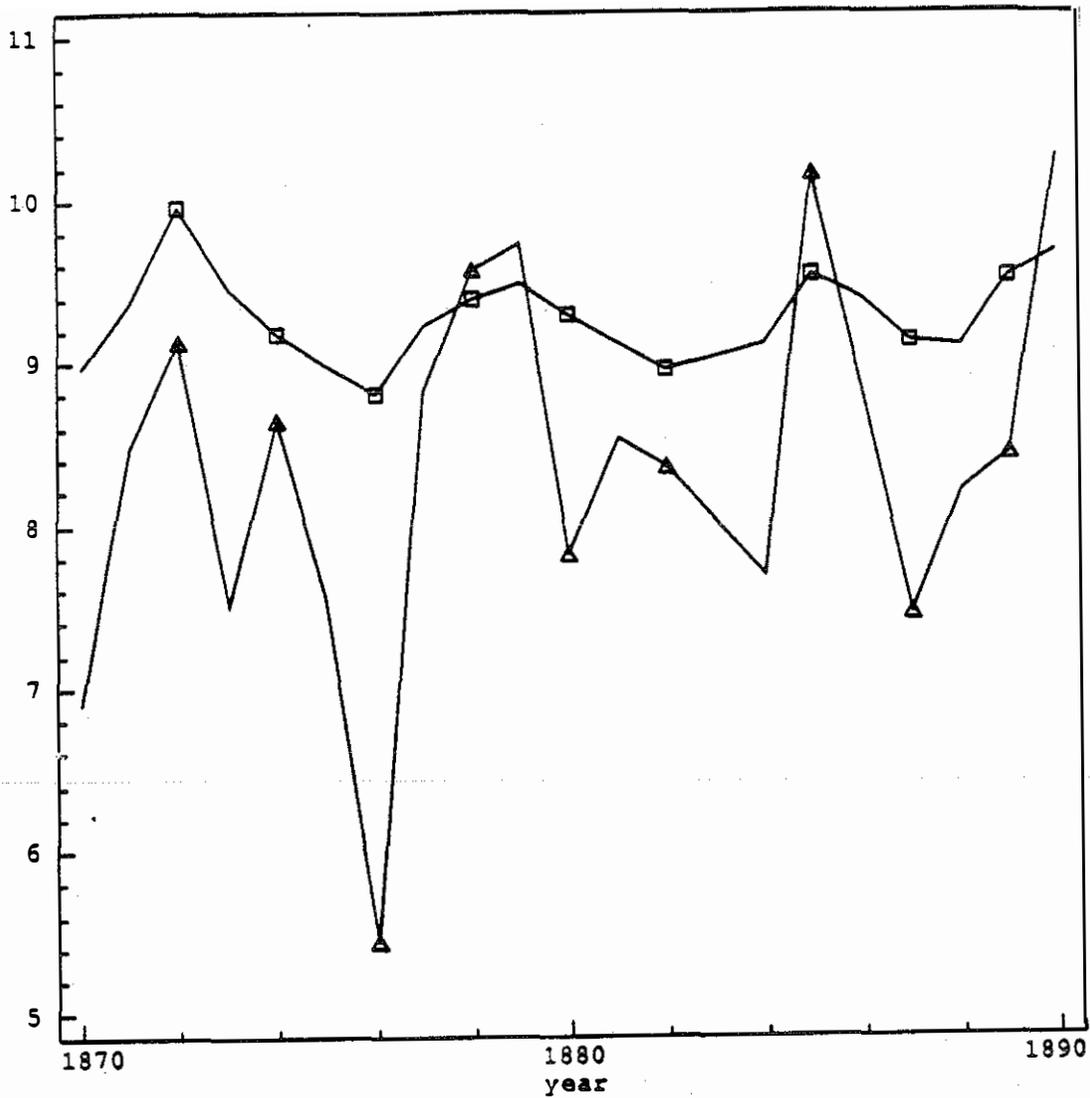


FIGURE 3

Notes: The squares correspond to the cotton series and the triangles to the corn price series.

Sources: *Atlanta Constitution*, 1870–1890. See Appendix A, section 3 for a discussion of our sampling procedure.

FIGURE 4  
Panel A: Voter Turnout by Group

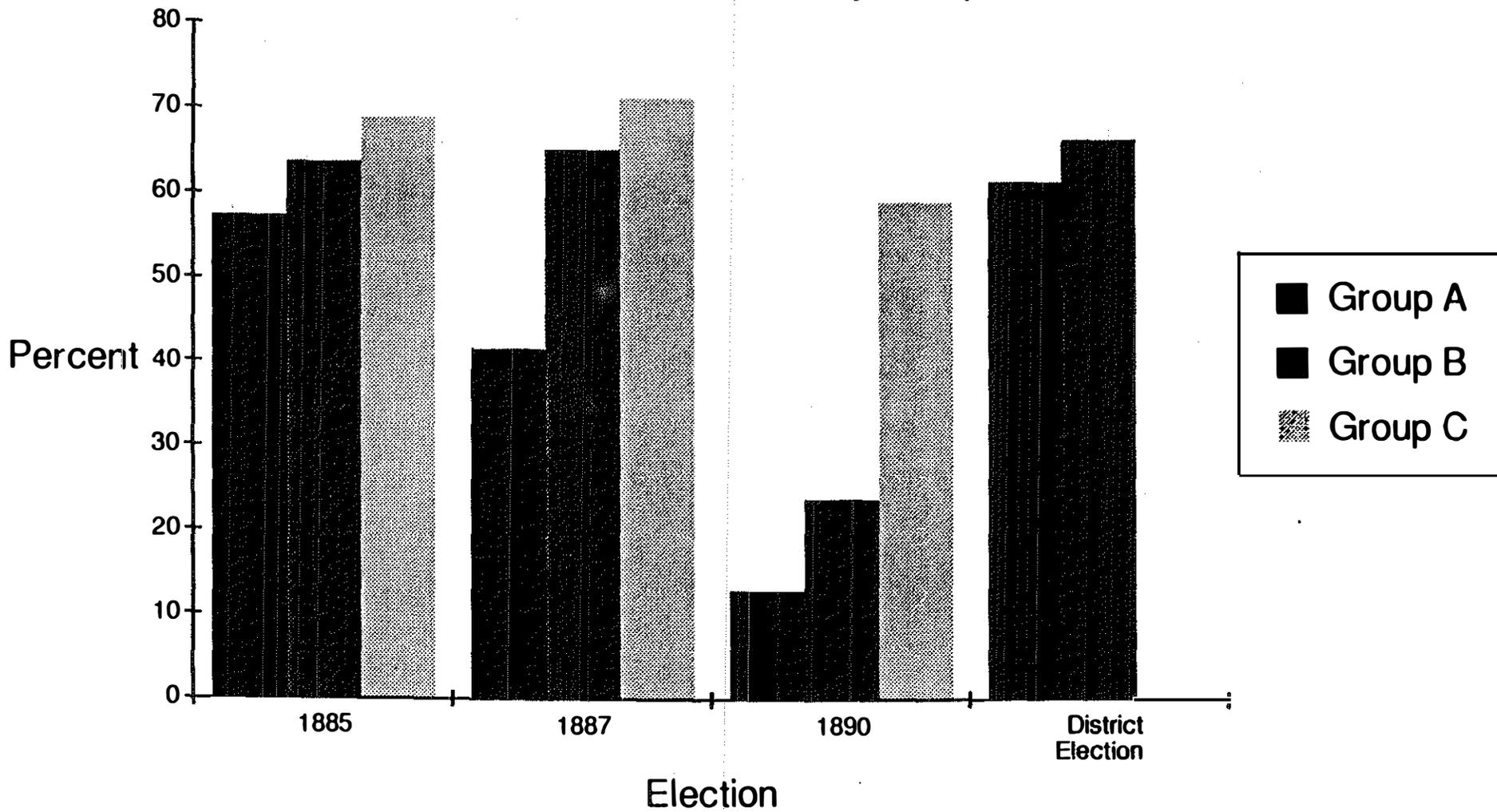
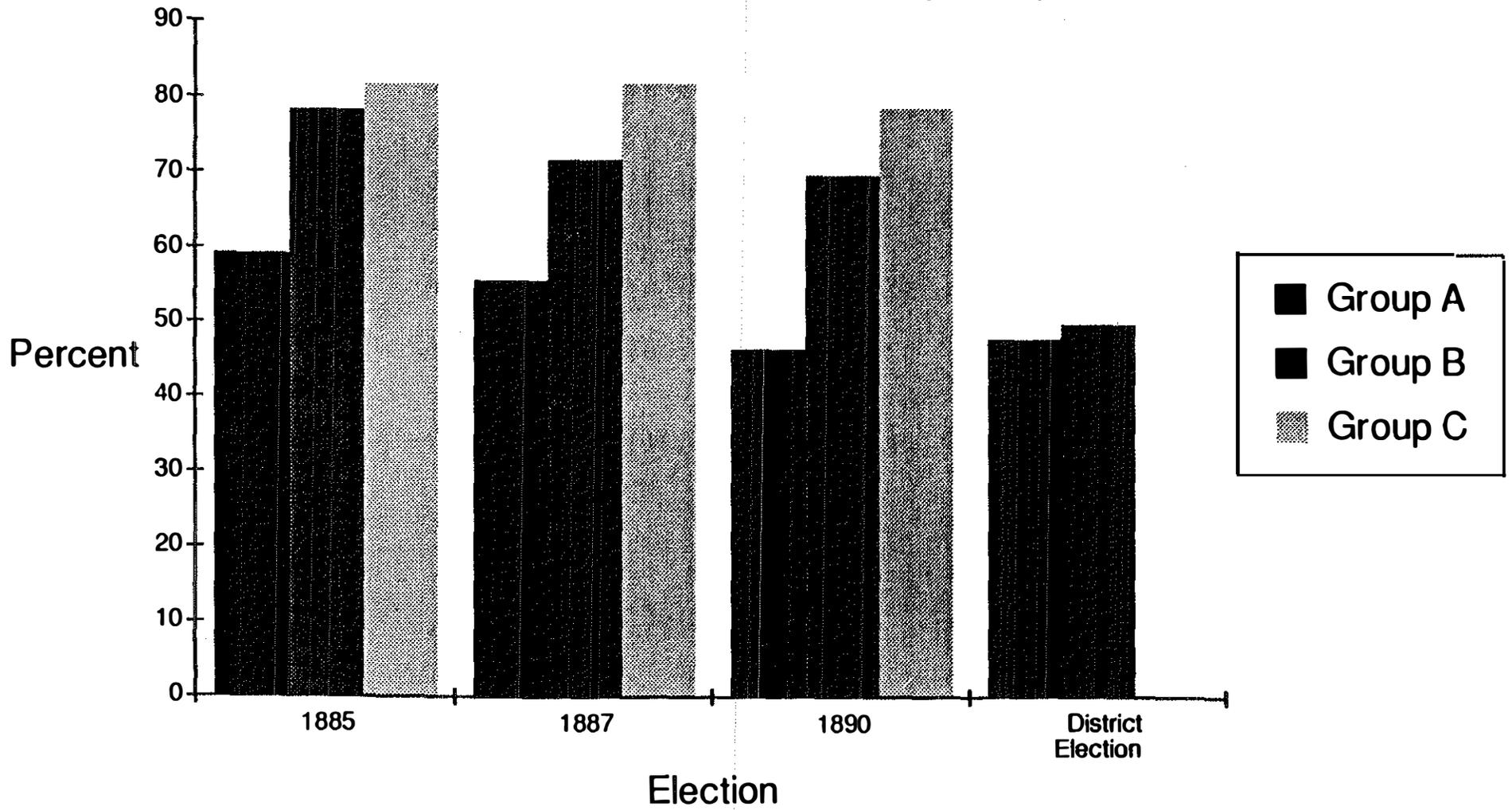


FIGURE 4 (continued)  
Panel B: Percent for Fence Law by Group



*FIGURE 4*

Notes: Group A districts are those that adopted the stock law at the district level by the time of the 1887 countywide election. Group B districts adopted the stock law after the 1887 election, but before the 1890 poll. Finally, those districts in Group C did not adopt the new law until after 1890.

Sources: See Table 4. Appendix B contains a discussion of our estimation of the size of the electorate.

## FOOTNOTES\*

- \* The first author acknowledges financial support from the John Randolph Haynes and Dora Haynes Foundation and the Anna and James McDonnell Memorial Scholarship Fund. Research for this article was also sponsored by the Division of the Humanities and Social Sciences at the California Institute of Technology. We thank Lance E. Davis, Philip T. Hoffman, and especially Jean-Laurent Rosenthal for helpful discussions and comments. Of course, we retain strict property rights to any of the paper's remaining shortcomings.
1. Coase's words eerily echo those of an 1878 Sparta, Georgia farmer: "A. owns a tract of land and wishes to plant it in various crops. B. owns a tract of land joining it and wishes to raise stock. A's crop will not leave his land to go on B's land to injure B's stock; but B's stock will go on A's land and destroy his crop. Now which is in fault, A's crop or B's stock? Certainly B's stock, and B should be forced to fence his stock, and be made liable for damages. . . ." David Dickson, in *Southern Cultivator*, 36 (December 1878), p. 451.
  2. Lance E. Davis and Douglas C. North, *Institutional Change and American Economic Growth* (Cambridge: Cambridge University Press, 1971).
  3. McCloskey, *The Rhetoric of Economics* (Madison, WI: University of Wisconsin Press, 1985). Economists' mathematical models and statistical tests, McCloskey claims, are only "figures of speech" (p. xvii). "Economics is a collection of literary forms, not a science." (p.55) While denying that he favors "irrationalism", the ever provocative McCloskey avers that "there is no reason to search for a general quality called Truth. . . Truth is a fifth wheel. . ." (pp. 48–49)
  4. Steven H. Hahn, *The Roots of Southern Populism: Yeoman Farmers and the Transformation of the Georgia Upcountry, 1850–1890* (New York: Oxford University Press, 1984), pp. 60–63, pp. 239–68.
  5. GA Session Laws 1872, No. 329, pp. 34–6. In 1881, militia districts were permitted to hold fence elections. See GA Session Laws, 1881, No. 401, pp. 79–81. In certain cases, throughout the late nineteenth century, the stock law was imposed by the state legislature, without referenda.

6. Hahn, *Roots*, pp. 240–53.
7. Charles L. Flynn, Jr., *White Land, Black Labor: Caste and Class in Late Nineteenth Century Georgia* (Baton Rouge, La.: Louisiana State University Press, 1983), p. 128.
8. *Ibid.*, p. 131.
9. *Ibid.*, pp. 115–49.
10. J. Crawford King, Jr., "The Closing of the Southern Range: An Exploratory Study," *Journal of Southern History*, 48 (February 1982), pp. 53 –70.
11. *Ibid.*, pp. 63–70.
12. *Ibid.*, p. 68.
13. James C. Bonner, *Georgia's Last Frontier: The Development of Carroll County* (Athens, GA: University of Georgia Press, 1971), p. 143.
14. *Ibid.*, p. 139.
15. Ronald Coase, "The Problem of Social Cost," *Journal of Law and Economics*, 3 (October 1960), pp. 1–44. Transactions costs include the costs of bargaining, information, supervision, enforcement, measurement, and political action. See Elizabeth Hoffman and Matthew L. Spitzer, "The Coase Theorem: Some Experimental Results," *Journal of Law and Economics*, 25 (April 1982), p. 73, for an extensive list of Coase's assumptions.
16. A contract is Pareto-efficient if it specifies the actions of all agents and any redistribution of income and there exists no other contract which will make everyone at least as well off (in utility terms) and at least one agent strictly better off. Therefore, if  $C$  is the status quo contract,  $C'$  is Pareto-improving if it makes at least one person strictly better off without making anyone else worse off.
17. H. Scott Gordon, "The Economic Theory of a Common Property Resource: The Fishery," *Journal of Political Economy*, 62 (April 1954), pp. 124–42.
18. For our purposes a "socially optimal" use of a resource occurs when agents completely take into account the social costs and benefits of their actions. If individuals do not take consider the externality that they impose on others, for example, those being adversely affected might be willing to pay the perpetrators to

cease their harmful actions. In this case, a social optimum results from a reallocation of resources such that Pareto efficiency is achieved.

19. See, for example, George J. Stigler, "The Theory of Economic Regulation," *Bell Journal Economics and Management Science*, 2 (Spring 1971), pp. 3–21; Sam Peltzman, "Toward a More General Theory of Regulation," *Journal of Law and Economics*, 19 (August 1976), pp. 211–248; Gary Becker, "A Theory of Competition Among Pressure Groups for Political Influence," *Quarterly Journal of Economics*, 98 (August 1983), pp. 371–400.
20. For simplicity suppose that individuals,  $1, \dots, n$ , have utility functions ( $u_i$ ) with respect to one good, a property right,  $p$ . In deciding on the appropriate distribution of property rights, society will seek to maximize a social welfare function  $W(u_1(p), u_2(p), \dots, u_n(p))$ . If we assume that  $p^*$  solves  $\max W(u_1(p), u_2(p), \dots, u_n(p))$ , then  $p^*$  is Pareto efficient. However, with governmental intervention, the government may, for political purposes, maximize social welfare for only a subset of the population. Clearly the  $p'$  which maximizes  $W(u_1(p), u_2(p), \dots, u_i(p))$ ,  $i < n$ , may not be the same as  $p^*$  and most likely will not be Pareto efficient.
21. Davis and North, *Institutional Change*, Chapters 1–4.
22. Assume that an economic change involves benefits which accrue to individuals, but involves costs which must be borne by the society at large. If there is no mechanism for policing agents, a self-interested individual who believes that his fellow citizens will bear all of the costs realizes that he can enjoy all of the benefits of the economic change without paying his share of the costs. An individual who attempts to appropriate the benefits while shifting the costs onto others is known as a "free rider."
23. The notion of equity or fairness is very difficult to pinpoint. Clearly, each individual has her own idea of a fair redistribution of income and may have an incentive to misrepresent this idea strategically so as to capture a greater portion of the redistribution. Economists have suggested their own criteria to measure the optimality of a certain reallocation of resources — should it follow the Pareto criterion, or the Kaldor, or the Scitovsky, or the Samuelson criteria? See Allan M. Feldman, *Welfare Economics and Social Choice Theory* (Boston: Kluwer Nijhoff Publishing, 1980), pp. 140–147, for a discussion of the above welfare criteria.
24. We must be cautious in our discussion of common rights. Although people were free to allow their animals to roam the countryside, this does not imply that they had a lawful "common title" to unenclosed land. In *Wright H. Harreil v. Hanum and Coleman* (55 Georgia 508 (1876)), it was decided that a cattle farmer did not have a common right to pasture in the woods, or upon the unenclosed land of others. The

Court argued that the cattle farmer "does not set forth any contract, prescription or other lawful basis for the right he claims. What belongs to the world at large is no man's in particular. . . ."

25. For the alleged contrast between English and "Celtic" fencing practices, see Grady McWhiney and Forrest McDonald, "Celtic Origins of Southern Herding Practices," *Journal of Southern History*, 51 (May 1985), pp. 165–82. For a masterful critique, see Rowland Berthoff, "Celtic Mist Over the South," *ibid.*, 52 (November 1986), pp. 523–46.
26. Washburn and Moen Manufacturing Co., *The Fence Question in the Southern States as Related to General Husbandry and Sheep Raising, with the History of Fence Customs, and Laws Pertaining Thereto: And a View of the New Farm System of the South, as Shown in the Census of 1880*, (Worcester, MA: Snow, Woodman & Co., 1881), pp. 10–11.
27. *Ibid.*, p. 11. Italics in original.
28. Hahn, *Roots*, pp. 60–1. The Georgia General Assembly, in the early nineteenth century, did reduce the legal height of fences by a foot, however.
29. *Hamilton v. Howard*, 68 Georgia Reports 288 (1881).
30. *Tumlin v. Parrott*, 82 GA Reports 732 (1889).
31. *Jackson Herald*, August 3, 1883; *Carroll County Times*, June 7, 1878; *Carroll Free Press*, May 15, 1885. For a summary right-based arguments for the stock law, see *Southern Cultivator*, 39 (January 1881), pp. 15–6.
32. Instead of wearying the reader with repeated *sics* for spelling or grammer, we will henceforward print the letters from the newspapers as they appeared, inserting bracketed phrases or punctuation for clarity when appropriate.
33. *Carroll County Times*, May 31, 1878; *Carroll Free Press*, May 1, 1885; *Carroll Free Press*, April 17, 1885; *Carroll Free Press*, May 1, 1885. The editor of the Athens, Georgia, *Southern Cultivator*, 36 (January 1878), pp. 8–9, stated the rights claim and the contradiction succinctly: "If one holds a *fee simple* to land, he is entitled to all the fruits and benefits of it, including pasturage. His neighbors have no right to pasture their stock on it. . . .If your neighbors should fence in *all* their lands, your stock would be confined to your own land for support; but you could not complain, for it is fully admitted they have a right to enclose every acre they own."

34. *Carroll Free Press*, May 15, 1885; *Carroll Free Press*, June 19, 1885; *Carroll Free Press*, June 26, 1885; *Carroll County Times*, August 25, 1882; *Carroll County Times*, September 8, 1882; *Carroll Free Press*, June 5, 1885.
35. *Carroll Free Press*, June 26, 1885; *Carroll Free Press*, June 26, 1885.
36. Quoted in Flynn, *White Land, Black Labor*, p. 131.
37. *Carroll County Times*, May 3, 1878; *Carroll County Times*, June 7, 1878.
38. Georgia Department of Agriculture, *Annual Report of Thomas P. Janes, Commissioner of Agriculture of the State of Georgia for the Year 1875* (Atlanta: J.H. Estill, 1876), p. 66.
39. *Carroll County Times*, May 17, 1878; *Carroll County Times*, June 21, 1878; *Carroll County Times*, June 21, 1878.
40. Washburn and Moen, *The Fence Question*, p. 16.
41. Quoted in Hahn, *Roots*, p. 62.
42. *Carroll County Times*, September 1, 1882; *Carroll Free Press*, May 1, 1885; *Jefferson Forest News*, April 23, 1880; *Newnan (Georgia) Herald*, June 30, 1881. See also *Carroll Free Press*, April 17, 1885 and May 1, 1885.
43. *Carroll County Times*, September 1, 1882; *Jackson Herald*, August 3, 1883; *Carroll County Times*, September 8, 1882; *Jefferson Forest News*, June 17, 1882.
44. Quoted in Flynn, *White Land, Black Labor*, p. 131.
45. *Carroll Free Press*, June 19, 1885; *Jefferson Forest News*, June 24, 1881.
46. *Jefferson Forest News*, April 23, 1880; *Carroll Free Press*, May 1, 1885; *Carroll County Times*, May 3, 1878.
47. *Carroll Free Press*, May 1, 1885; *Jefferson Forest News*, April 23, 1880; *Carroll Free Press*, April 17, 1885; *Jefferson Forest News*, December 24, 1880.
48. *Carroll County Times*, September 1, 1882; *Jefferson Forest News*, June 17, 1881; *Jefferson Forest News*, September 5, 1879; *Jefferson Forest News*, April 23, 1880; *Jefferson Forest News*, January 14, 1881. Similarly, see a report from Chatham county, Georgia, in *Southern Cultivator*, 34 (June 1876), p. 220.

49. *Carroll Free Press*, April 17, 1885; *Carroll Free Press*, April 17, 1885; *Carroll Free Press*, May 1, 1885.
50. *Carroll Free Press*, April 17, 1885; *Jefferson Forest News*, December 24, 1880.
51. Consider the equation  $\frac{P_{it}}{P_{Bt}} = \beta_0 + \beta_1 t + \varepsilon_t$ , where  $P$  is the price of commodity  $i$  (corn or cotton) at time  $t$  and  $P_{Bt}$  is the price of bacon sides at time  $t$ .  $\beta_0$  is the intercept,  $\beta_1$  is the time trend coefficient, and  $\varepsilon$  is an error term. Regressions of yearly price data from 1870 to 1890, inclusive, collected from the *Atlanta Constitution* yield  $\frac{P_{COTt}}{P_{Bt}} = 1.239 + 0.005t$ ,  $N=20$ ,  $R^2=0.01$ , and  $\frac{P_{CORnt}}{P_{Bt}} = 7.756 + 0.057t$ ,  $N=20$ ,  $R^2=0.10$ ,  $t$ -statistics in parentheses. In the corn equation, if we leave out the outlying year 1876, we find that the rate of increase was still insignificantly different from zero. The sampling procedure for collecting the commodity prices data set is described in Section 3 of Appendix A; the yearly prices used in the regressions above are an average of the year's monthly prices.
52. *Jackson Herald*, July 20, 1883.
53. Bonner, *Georgia's Last Frontier*, pp. 95–99.
54. *Jefferson Forest News*, April 23, 1880 and May 7, 1880.
55. *Poor's Manual of Railroad in the United States*, v. 17, 1884, p. 451.
56. Bonner, *Georgia's Last Frontier*, p. 99.
57. See Hahn, *Roots*, pp. 145–52 and David F. Weiman, "The Economic Emancipation of the Non-Slaveholding Class: Upcountry Farmers in the Georgia Cotton Economy," *Journal of Economic History*, 45 (March 1985), pp. 71–93.
58. *Carroll Free Press*, May 1, 1885 and June 12, 1885; *Jefferson Forest News*, June 17, 1881; *Carroll County Times*, September 8, 1882.
59. GA Session Laws, 1878–79, no. 304, p. 165. The specifications of the legal barbed wire fence were revised in GA Session Laws, 1882–3, no. 440, p. 139. It was not only the relative cost of barbed wire that bothered farmers, but the wire was thought to have injured animals as they ran against it. For evidence that farmers were cautious with respect to wire fences, see *Southern Cultivator*, 39 (October 1881), p. 376 and (December 1881), p. 444.

60. *Carroll Free Press*, May 22, 1885.
61. *Carroll County Times*, September 1, 1882; *Carroll Free Press*, May 1, 1885; *Jackson Herald*, March 30, 1885.
62. Flynn, *White Land, Black Labor*, p. 145.
63. Hahn, *Roots*, pp. 248 and 262.
64. The competitiveness of the postbellum southern labor market is discussed by Robert Higgs, *Competition and Coercion: Blacks in the American Economy, 1865–1914* (New York: Cambridge University Press, 1977); Stephen J. DeCanio, *Agriculture in the Postbellum South: The Economics of Production and Supply* (Cambridge, MA: The MIT Press, 1974); and Joseph D. Reid, "Sharecropping as an Understandable Market Response: The Postbellum South," *Journal of Economic History* 33 (March 1973), pp. 106–30.
65. Throughout the forthcoming analysis we assume that transactions costs were sufficiently high so that private transfers in this economy were not made. In other words, because of free-riding, bargaining costs, the large number of strategic bargainers, and the difficulty of enforcing contracts, Coase-type private agreements were not an option.
66. We use the term tenant generically. For our purposes it is not important to distinguish between cash renters, share tenants, or sharecroppers. By "tenant" we mean to imply that the farmer did not own his land and, therefore, signed a contract with a landowner specifying, for example, the rent (in-kind or cash), the level of landowner supervision, and the amount of forest and pasture provided by the owner. See Lee J. Alston and Robert Higgs, "Contractual Mix in Southern Agriculture Since the Civil War: Facts, Hypotheses, and Tests," *Journal of Economic History* 42 (June 1982), pp. 327–53; Robert Higgs, "Race, Tenure, and Resource Allocation in Southern Agriculture, 1910," *Journal of Economic History* 33 (March 1973), pp. 149–69; Higgs, "Patterns of Farm Rental in the Georgia Cotton Belt," *Journal of Economic History* 34 (June 1972), pp. 468–82; Reid, "Sharecropping as an Understandable Market Response," and Gavin Wright, *The Political Economy of the Cotton South* (New York: W. W. Norton, 1978), chapter 6 for a discussion of the contractual choices available to both the landowner and land-poor.
67. "Day Book of C.M. Wood," in the A.D. O'Rear Collection, Georgia Department of Archives and History.

68. In Carroll county 648 of 824 tenant farmers reported no pasture or unimproved land and in Jackson county 57 of 245 tenants were in the same situation according to our 100 percent sample of the Agricultural Manuscript Schedules.
69. Define the tenant's expected implicit hourly wage as his expected annual net income divided by the number of hours he worked on his farm tending to his crops or animals. The expected implicit wage,  $w$ , will be a function of the price of grain ( $P_G$ ) and cotton ( $P_C$ ), the price of animal products ( $P_A$ ), the percentage of the crop owed to the landowner if a share renter ( $R_1$ ) or the cash rent owed to the landowner if a cash tenant ( $R_2$ ), and finally the amount of pasture provided by the landlord ( $P$ ). Therefore, given that we are holding constant the quality and quantity of work and land and the level of effort,  $w(P_G, P_C, P_A, R_i, P) = w(P_G, P_C, P_A, R_i, P_0)$ , where  $i = \{1, 2\}$  and  $P_0$  represents the open range. In other words, competition will drive the expected implicit wages of tenants with no pasture and those with pasture to the same level, holding everything else constant.
70. *Jefferson Forest News*, June 24, 1881; *Jefferson Forest News*, June 10, 1881; *Jackson Herald*, July 20, 1883; *Jackson Herald*, September ?, 1885; *Jackson Herald*, August 24, 1883. Similarly, see A.R. Burch, in *Newnan Herald*, June 30, 1881.
71. The reader may be concerned that we have not used tobit estimation to determine labor demand. In fact, we are interested in how labor is allocated on farms that use labor, not the demand for labor by all farms. Therefore, in our regression, we analyze only those farms for which the wage bill is positive.
72. *Carroll County Times*, September 15, 1882.
73. For a discussion of the use of the logit transformation in ecological regression, see J. Morgan Kousser, "Making Separate Equal: Integration of Black and White School Funds in Kentucky," *Journal of Interdisciplinary History*, 10 (Winter 1980), pp. 399–428. In order to calculate the transition probabilities between elections  $t$  and  $t+1$  found in Table 5, we assume that the random disturbance term is distributed according to the logistic cumulative distribution. The probability of voting for option  $j$  at  $t+1$ , then, is given by

$$P_{j(t+1)} = \frac{e^{\beta_j X_t}}{e^{\beta_0 X_t} + e^{\beta_1 X_t} + e^{\beta_2 X_t}}, \quad (1)$$

where  $X_t$  is the matrix of voting percentages from election  $t$ ,  $\beta_j'$  is the vector of coefficients,  $j = \{0, 1, 2\}$ , that indexes the voters' possible actions — voting for the fence law, the stock law, or not voting, respectively, and  $\sum_{j=0}^2 P_{j(t+1)} = 1$ . In the

log-odds model, one probability is used as the denominator or reference point, so we will be estimating two equations. Using  $P_0$  as our base and dividing  $P_1$  by  $P_0$  reduces to

$$\frac{P_1}{P_0} = \frac{e^{\beta_1 X_t}}{e^{\beta_0 X_t}}. \quad (2)$$

Dividing  $P_2$  by  $P_0$  yields

$$\frac{P_2}{P_0} = \frac{e^{\beta_2 X_t}}{e^{\beta_0 X_t}}. \quad (3)$$

Taking the log of  $\frac{P_1}{P_0}$  and  $\frac{P_2}{P_0}$  gives us

$$\log\left(\frac{P_1}{P_0}\right) = \beta_1' X_t - \beta_0' X_t = (\beta_1' - \beta_0') X_t, \quad (4)$$

$$\log\left(\frac{P_2}{P_0}\right) = \beta_2' X_t - \beta_0' X_t = (\beta_2' - \beta_0') X_t. \quad (5)$$

It is equations 4 and 5 that will be estimated using ordinary least squares.

Once we have estimated  $(\beta_1' - \beta_0')$  and  $(\beta_2' - \beta_0')$ , call them  $\bar{\beta}_1$  and  $\bar{\beta}_2$  respectively, we are able to derive the probability estimates. Algebraically manipulating equations 4 and 5, we derive the estimated probabilities of voting for the fence law ( $\hat{P}_0$ ), the stock law ( $\hat{P}_1$ ), and not voting ( $\hat{P}_2 = 1 - \hat{P}_0 - \hat{P}_1$ ) at election  $t+1$ , given what we know about voters' behavior at election  $t$ . The respective probabilities are:

$$\hat{P}_0 = \frac{1}{1 + e^{\bar{\beta}_1 \bar{X}_t} + e^{\bar{\beta}_2 \bar{X}_t}}, \quad (6)$$

$$\hat{P}_1 = \frac{e^{\bar{\beta}_1 \bar{X}_t}}{1 + e^{\bar{\beta}_1 \bar{X}_t} + e^{\bar{\beta}_2 \bar{X}_t}}, \quad (7)$$

and

$$\hat{P}_2 = 1 - \hat{P}_0 - \hat{P}_1. \quad (8)$$

Finally, in order to determine the probability estimates, the  $\bar{X}_t$  matrix must be specified.

To find the probabilities in the first column of Table 6 we use equation 6 above. The top left cell is computed using equation 6, the estimated regression coefficients, and an  $\bar{X}_t$  matrix that sets the fence law voting in election  $t$  at 100 percent. Intuitively, setting  $\bar{X}_t$  at 100 percent allows us to determine how a district

voted in the second election if it had voted unanimously for, say, the fence law in the first election. To find the probability that stock law voters at time  $t$  switched to the fence law at  $t+1$ , we again use equation 6 and set the percent stock law component of  $\bar{X}_t$  to 100. All of the other cells are computed analogously, using equations 7 and 8 to find the transition probabilities of voting for the stock law or abstaining in election  $t+1$ , respectively.

74. Hahn, *Roots*, p. 267.
75. *Carroll Free Press*, March 18, 1887; *Carroll Free Press*, March 25, 1887.
76. The rules governing the district and county elections diverged in more ways than in the wording of the ballots. In particular, the law stated that if a district adopted the stock law, landowners employing tenant farmers were required to furnish them enough pasture for one cow and calf, provided the tenant did his share of the fencing. See Kantor [1989] for a discussion of the importance of this provision in the adoption of the stock law at the district level.
77. See *Carroll Free Press*, July 18, 1890 and Bonner, *Georgia's Last Frontier*, p. 143.
78. See Anthony Downs, *An Economic Theory of Democracy* (New York: Harper & Row, 1957), chapter 14 for a discussion of the voter's cost-benefit calculus.
79. Hahn, *Roots*, pp. 262 and 267.
80. *Carroll Free Press*, June 27, 1890.
81. *Carroll Free Press*, June 4, 1890. As their correspondent "Martin," of Smithfield, noted after the 1890 election, "We got it [the stock law] by district election and we did not believe it was right to force it on those districts who did not have a majority to get themselves. So our motto was fence and no bonds." *Carroll Free Press*, July 18, 1890.
82. Bonner, *Georgia's Last Frontier*, p. 143.
83. To compute the percentage of farms achieving self-sufficiency in grain, we followed the Ransom and Sutch procedure detailed in Appendix E of *One Kind of Freedom: The Economic Consequences of Emancipation* (New York: Cambridge University Press, 1977).

84. See, for example, Georgia Session Laws, 1871, O. no. 209, p. 109 and O. no. 190, p. 128.
85. *Carroll Free Press*, March 26, 1886.
86. We included black per capita wealth in the regressions and it was never a significant determinant of voting behavior. Therefore, we exclude the variable in the analysis to follow.
87. Since we are, in essence, estimating probabilities, it might be argued that a logit model would be more appropriate since OLS does not necessarily give probability estimates between 0 and 1. The logit results we obtained are similar to those reported below and, thus, we do not include them here.

As the discussion above indicates, voter behavior within areas that adopted the stock law at the district level changed dramatically in subsequent countywide elections. It was therefore necessary to run tests to determine whether pooling the different elections across counties was statistically appropriate. In fact, for all three equations that we estimate, we could reject the hypothesis that pooling the cross-sectional time-series data was inappropriate at the 5 percent significance level.

88. In the logit estimation, we find that the relative probability of voting for the stock law significantly increased as the percentage of farms operated by tenants increased.
89. It is conceivable that blacks were coerced to stay away from the polls, but there was no mention of this occurring in Carroll or Jackson counties.
90. We were surprised by the result that neither the woodlands nor density variables had significant coefficients in the three equations. Because of the relatively high correlation between the two variables, we reran the equations leaving out one. For the most part, the original results of the paper are robust to this specification change. However, when density is left out of the equations, the only changes that occur are that the percent forest becomes significant at the 0.10 level in the fence and abstain regressions (with positive and negative signs, respectively). All of the other variables keep the same signs and significance levels as reported in Table 8. When the forest variable is removed, per capita cotton production significantly (0.10 level) reduced the fence law vote and significantly (0.05) increased voter abstention. This result further mars Hahn's contention that rebellion against the intrusion of the capitalist market rallied support for the open range. If anything, relatively more cotton produced meant a decreased voter turnout. All of the other variables of Table 8 retain their same signs and significance levels.

91. See, for example, *Jefferson Forest News*, April 23, 1880 and June 17, 1881. "Fructus," in the *Southern Cultivator*, 31 (August 1877), p. 299, estimated that 6.25 percent of his farm was consumed by fences.
92. Ransom and Sutch, *One Kind of Freedom*, Table E. 1, p. 246.
93. Weiman, "Economic Emancipation," p. 76, footnote 12.
94. Ransom and Sutch, *One Kind of Freedom*, p. 208.
95. "Annual Report... 1875", p. 135.
96. Robert C. Allen, "The Efficiency and Distributional Consequences of Eighteenth Century Enclosure," *The Economic Journal* 92 (December 1982), p. 952.
97. For evidence that animals were pastured on unimproved land see, *Southern Cultivator*, 35 (January 1877), pp. 19–20 and *The Southern Cultivator and Dixie Farmer*, 41 (September 1883), p. 15.