Bad Men, Good Roads, Jim Crow, and the Economics of Southern Chain Gangs

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Abstract

Penology in the Jim Crow South centered on the chain gang. Gangs ostensibly served three purposes: their severity served as a deterrent; their putting convicts to work on roads and other public improvements reduced the taxpayers' costs of infrastructure; and their discriminatory implementation reinforced the social order defined by Jim Crow. Drawing on insights from the economics of crime literature, this paper analyzes whether chain gangs reduced road maintenance costs. Using a fixed-effects design, the analysis finds that the costs of using gangs in road maintenance were marginally lower on average than using wage labor. The results are consistent with county officials choosing between convict and free labor in manner consistent with minimizing taxpayers' costs.

JEL Classifications: K4, N0.

Key Words: crime, punishment, chain gangs, public finance, highway finance.

"Bad men on bad roads make good roads, while good roads make good men."
– J.C. Davis (1916, 41)

Introduction

Economists' standard models of crime suggest that socially optimal enforcement of and punishment for violations of the criminal code should be determined by the seriousness of the offense and the effect of punishment on marginal deterrence (Gary Becker 1968; David Friedman 2001; Mitchell Polinsky and Steven Shavell 1992). Recent contributions, however, recognize that law enforcement officials respond to incentives other than minimizing the social costs of crime. Enforcement agents may act on biases, prejudices, and preferences with respect to race, gender, age, or other observable and unobservable (to the econometrician) offender characteristics (Roland Fryer 2016; John Knowles, Nicola Persico, and Petra Todd 2001). Efforts to minimize the social costs of crime are exchanged at the margin for maximizing the utility of agents who act, as least in part, on their own preferences. Enforcement agents, too, may respond to fiscal or financial incentives provided by revenue-maximizing bureaucrats (Michael Makowsky and Thomas Stratmann 2009; Makowsky, Stratmann and Alex Tabarrok 2019). Traffic enforcement officers, for example, are more likely to issue traffic citations or impose higher fines for violations when local municipalities experience budget deficits. Officers may target certain individuals in their enforcement efforts when doing so reduces the officers' expected cost of issuing summonses and raises revenues for the municipality.

This paper applies the insights of these three approaches to the study of criminal enforcement to better understand the operation of South Carolina's Jim Crow-era chain gangs. Being sentenced to a convict gang meant enduring harsh punishments that served deterrent and retributive purposes. Gangs were populated mostly by disfranchised, young Black men. And gangs were justified by the authorities as a cost-saving road maintenance strategy.

Between 1915 and 1920, South Carolina's county courts sentenced between 31 (Allendale County) and 1,813 (Spartanburg) mostly Black convicts to work on road maintenance chain gangs (South Carolina Board of Charities and Corrections 1915-1920). The average county had 35 convicts at work at a given time. The state's larger cities also operated their own convict gangs that worked on the cities' streets. Despite the relatively large number of convicts put to work, there were more miles of road in need of maintenance than gangs could keep in good repair. Counties and cities also hired wage labor to maintain roads and streets. Sometimes gang and wage labor worked together; most times they worked separately. The principal question addressed here is whether South Carolina's counties realized any measurable cost savings from convict rather than wage labor in the provision of road maintenance.

Using hand-coded data from the South Carolina Highway Department, this paper analyzes the costs and potential cost savings of employing convicts rather than wage labor in road maintenance. Early nineteenth-century politicians argued that gangs would save taxpayers money by putting unproductive prisoners to work rather than warehousing them in prisons and jails. Even though studies conducted at the time questioned the politicians' assertions, historians tend to believe that gangs maintained the roads at lower costs than wage labor. The results reported below find that gangs lowered maintenance costs only when they worked relatively long sections of road; average cost per mile was minimized on 75 to 100-mile sections. Wage labor was the lower cost alternative in maintaining shorter sections of road and minimized around 50 miles. If county road commissioners were conscientious agents of taxpayers, they would have deployed gangs and wage labor in this way. The evidence is mixed, but teams of wage laborers rarely worked roads of more than 50 miles and most worked sections less than 25 miles in length. Gang labor was used across the entire 125-mile range reported in the data.

One threat to identification is convict gang use responding endogenously to road conditions and, therefore, labor costs. The choice to treat the use of gangs on specific road sections as plausibly exogenous can be justified in three ways. First, if the endogenous choice of gang versus patrol is the product of county-level time-invariant preferences over the appropriate treatment of criminals, then fixed-effects estimates derived from a short panel will yield unbiased estimates of the costs of employing convict gangs. Second, the choice of whether to have a gang and how to employ them was made at the county level and not the road segment level. Three counties, for example, used convict gangs sparingly. Other counties mandated that local roads receive a specific number of days of maintenance regardless of road condition, gang size, and traffic load. Thus, the choice of gang or wage labor did not respond endogenously to cost or road conditions. Third, temporal changes in county gang sizes were driven by factors that influenced the propensity of potential criminals to engage in crime, which is plausibly unrelated to road mileage or condition. One threat to exogeneity, however, is Makowsky and Stratmann's (2009) finding that local law enforcement may step up enforcement efforts in periods of municipal financial stringency, but this would have the effect of increasing gang size not necessarily the choice of gangs or patrols. Exogenous forces determined gang sizes and gang use. During America's participation in the First World War, for example, average county gang size declined by six to eight convicts. Young men who may have engaged in criminal activity found themselves instead in trenches on the western front. Wages also rose notably during the war. Both effects were completely exogenous to local road conditions and local fiscal conditions, but surely influenced both the choice of young men to engage in crime and the gang convict versus wage labor choices of road supervisors.

Questions of external validity hang over most case studies, but South Carolina's experience was not unique. Davis (1916, 38) observes that "the question of utilizing convict or prison labor upon works of public improvement … is the subject of legislation in practically every state", and Jesse Steiner and Roy Brown (1927/1969) argue that convicts in the South Atlantic states, other than Florida, worked under similar conditions in similarly organized chain gangs. About one-half of North Carolina's counties operated their own convict gangs; counties that did not operate a gang leased their convicts to counties that did (Joseph Hyde Pratt and H.M. Berry 1912). In June 1907 twenty-nine of Georgia's counties worked an average of 20 convicted felons on their roads, either those convicted in that county or leased from other counties. Fifty-six counties worked 1,650 misdemeanants on local roads (Georgia 1907).[1] South Carolina's system is likely to be representative of the gang system across the South.[2] Although the system evolved over time, the fundamental features of the system were that criminal offenders, both felons and misdemeanants, mostly Black men, served their terms of incarceration at hard labor work on roads working under "degrading and humiliating circumstances" (Davis 1916, 38).

It is ironic that the chain gang was viewed, or at least cast as such, by some prominent southerners as a humanitarian improvement over the penitentiary. Cole Blease, South Carolina's populist governor between 1910 and 1914 was instrumental in transforming the state's penal system of forced labor inside and outside the penitentiary. Blease considered the penitentiary a tubercular institution populated by mostly unfortunate "devils" (Amy Louise Wood 2019). Road gangs, by contrast, offered prisoners an opportunity to work outdoors and

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[1] In addition to working convicts under county supervision, several Georgia counties leased misdemeanants to work at private firms, mostly turpentine makers (Georgia 1907). When abuses of convicts by private contractors were made public, Georgia later prohibited the convict lease system.

[2] Alex Lichtenstein (1993, 1996) studies Georgia's system. Vivien Miller (2012) traces the evolution of convict labor in Florida from the post-Civil War convict lease system through the rise and fall of the chain gang and its replacement by the state prison farm. For a description of life on the chain gang, see its depiction by a contemporary federal appeals court in *Jamison v. Wimbish* (1905), 130 F. 351.

to contribute to society while doing so. Spurred on by Blease, the state legislature revised the criminal code in 1912 such that all able-bodied men were to be sentenced to work on the chain gang in the county in which they were convicted. Only those too dangerous, too old or too ill to work were to be sent to the penitentiary.

The gang system, already used though sparingly in 1905, grew quickly after 1912 and every county had prisoners working on its roads by 1915 (South Carolina Board of Charities and Corrections 1915). Between January 1915 and December 1920, the state superior courts sentenced 8,089 Black men and 1,251 white men to road work, more than two-thirds of whom were in the prime working ages of 17 to 29 (South Carolina Board of Charities and Corrections 1915-1920). Moreover, the promise of putting convicts to work on roads may have made juries readier to convict, especially for less serious crimes. The number of men sentenced to serve 30 days more than tripled between 1915 and 1916 while the number sentenced to work for more than six months declined by nearly 40 percent. Moreover, when we compare the decade before full implementation (1904-1913) with the decade after (1914-1923), the conviction rate for white defendants increased from 59.0 to 78.1 percent; for Black defendants it increased from 73.1 to 82.5 percent (South Carolina Attorney General 1904-1923).[3] It is well known that crime is a young man's game (Richard Freeman 1996). In the first third of the twentieth century, the chain gang was the young Black convict's punishment.

Besides the questions raised by early studies of convict gangs that cast doubt on the alleged cost savings attributable to convict labor, this paper contributes to a several other literatures. It adds to a now-voluminous literature that addresses the inefficiencies and inequities of the South's Jim Crow racial order, including disparate education (Robert Higgs 1989; Robert Margo 1990), race-based occupational segregation (John Donohue and James Heckman 1991), residential segregation (Dennis Halcoussis and Anton Lowenberg 1998), as well as discrimination in marriage, public accommodation, and transportation (C. Van Woodward 1957). The average convict gang in South Carolina circa 1920 was 80 percent Black; the median gang was 100 percent Black. Not only does this paper address issues of racial disparities in enforcement (Kate Antonovics and Brian Knight 2009) it also addresses, but does not test, the political economy approach to law enforcement discussed by Makowsky and Stratmann (2009). They show that nonresident drivers – those lacking the local franchise and without local political voice – are targeted for moving violations and other traffic citations. Blacks in the Jim Crow South were the equivalent of nonresident drivers. Lacking any political voice, they paid a disproportionate tax imposed for the improvement of local roads, the benefits of which were disproportionately enjoyed by middle- and upper-middle-class white voters and automobile owners.

Institutional background

The public finance of roads

The introduction of mass-produced automobiles in the early twentieth century increased public demand for good, or at least passable, roads. The Good Roads Movement emerged, which called for a rationalization of the nation's road network, the construction of more hard-surface roads, and the improved maintenance of existing roads. Accomplishing all three goals required an overhaul of the road provision and maintenance procedures. As late as the 1920s South Carolina still relied, in part, on the ancient common law system under which every able-bodied man between the ages of 18 and 50 years was required to devote up to ten 10-hour days per year at supervised road maintenance or construction (American Highway Association 1913,

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[3] These statistics are suggestive rather than conclusive of changing attitudes among jurors. They do not control for potential differences in offenses, prosecutorial abilities, judicial proclivities, or other factors that may have influenced conviction rates.

126). Although county road administrators enforced compliance, local roads were poorly maintained and often impassable in the rainy season.

Table 1 presents road statistics from select counties (and state totals) from 1908, a half-decade prior to Henry Ford's introduction of the mass-produced automobile. Several features stand out. First, counties typically had between 500 and 2000 miles of roads, but most counties had few miles that state road officials classified as improved and well maintained. The round numbers themselves point toward local government's lack of information on its own roads. Of Abbeville's 1000-odd miles of road, only five miles of those thousand were improved stone; another seven miles were improved gravel road. The remaining 988 miles were unimproved dirt roads. In 1908, Abbeville County expended about $7,500 in direct outlays on road maintenance; approximately 4,000 men worked four days each year on the roads, a labor contribution that county valued at $9,600. The sum of direct outlays and value of labor requirement amounted to 50 cents per capita or $1.70 per mile. To place Abbeville County's $17,100 annual expenditure in perspective, once states began building improved roads in earnest private contractors billed counties about $4,300 *per mile* for construction of new hard-surface (macadam) roads; regular maintenance costs for hard-surface roads averaged about $440 per mile (Virginia State Highway Commissioner 1915, 111-113). New gravel roads cost about $2,350 per mile and new sand/clay roads cost about $1,911; regular maintenance costs for existing roads of each type averaged about $250 to $350 per mile. Abbeville's pre-automobile era $17,000 expenditures would not have gone very far toward improving the driving experience whether by auto or horse-drawn wagon. It was sufficient to add about four miles of new hard-surface road per year.

Table 1
South Carolina County-Level Road Statistics, 1908 (Select Counties)

County	Total miles	Stone miles	Gravel miles	Sand miles	Road levy per $100 ($)	Cash outlays ($)	Number of men on road work	Required days	Value of labor tax ($)
Abbeville	1000	5	7	0	5	7500	4000	4	9600
Anderson	2200	0	5	0	10	16000	1000	4	3000
Charleston	700	1	0	0	0	12236	2100	4	5880
Florence	675	2	0	160	10	10000	2700	5	8775
Greenville	1500	4	500	0	10	10000	5000	3	9000
Orangeburg	1100	0	0	200	10	10000	7000	6	25200
Pickens	1000	0	100	0	10	4000	1800	5	5400
Richland	700	2	0	350	10	20000	3200	10	24000
Spartanburg	1500	10	0	0	10	48191	6000	3	13500
Union	550	0	0	100	10	4500	3000	2	3600
York	900	20	15	0	8	8400	4500	4	13500
Total	41830	69	679	15750		334079	116282		411619

Sources: South Carolina Department of Agriculture, Commerce, and Industries (1908).

In the first decade of the twentieth century few roads were good roads, a fact the American Highway Association (1913) repeatedly illustrated in its annual yearbooks, each of which included multiple photographs of automobiles buried to their axles in mud, sometimes with mules laboring to extricate them. Using an average cost of $250 per mile as typical, Abbeville County's direct and indirect expenditures in 1908 meant it could maintain about 68

miles of its 1000 miles of road. Thus, most of its roads were in disrepair most of the time. Drivers spent much of their time either avoiding muddy and rutted roads or stuck in them.

Bad roads imposed substantial costs on the citizenry as a study commissioned by the North Carolina state geologist documented. Following a comprehensive statewide survey of North Carolina's roads, the state geologist provided county-level estimates of the social costs of bad roads (Pratt and Berry 1912). Estimates were based on the difference in the ton-mile cost of hauling goods on improved versus unimproved roads by road type (earth, sand, gravel) multiplied by estimated tonnage of locally produced agricultural and manufactured goods moving across those roads. The numbers, despite the state geologist's belief that they were lower bound estimates, were eye-opening. In Alamance County, located in the state's Piedmont Plateau, for example, the geologist estimated the annual opportunity cost of bad roads at $2.77 per capita in 1911 compared to the county's total expenditures on road maintenance of $1.17. The statewide average per capita costs of bad roads were $4.54. Average per capita personal income in North Carolina in 1910 was about $123 (less than one-half the national average), so bad roads created a loss of at least 3.7 percent of annual income (Alexander Klein 2009; Paul Rhode 2002).

As government officials at every level, from municipal to federal, and their constituents recognized the potential economic gains to be realized from full exploitation of an emergent automobile technology, public investment in road construction and maintenance increased apace. Table 2 provides some evidence from South Carolina that by the early 1920s state and local governments collected revenues earmarked for roads from several sources. Panel A shows that in 1922 the state was responsible for just 1,900 miles of improved roadway. It spent $447,000 raised from annual taxes on automobiles, in addition to appropriations from general funds to build and maintain its highways.

Table 2
State and County Road Statistics, 1922

	Total	Fraction of Revenues
Panel A: State highway statistics		
Soft surface miles (number)	1,909.9	
Autos taxed (number)	81,417	
Total state road expenditures ($)	447,260	
Panel B: County road statistics		
Original assessment county road tax ($)	729,692	0.245
Added assessment county road tax ($)	11,093	0.004
Penalty county road tax ($)	10,786	0.004
Commutations ($)	439,750	0.148
Automobile registration fees ($)	527,718	0.177
Federal aid ($)	727,738	0.244
Gasoline tax ($)	530,321	0.178

Sources: miles and expenditures from SC Highway Commission (1922); remaining rows from SC State Comptroller General (1922).
Note: expenditures exclude bridge construction costs.

Panel B of Table 2 reveals several notable county-level features. First, most counties imposed a base road levy (percent reported in Table 1) that raised nearly one-fourth of the total county-level revenues available to be spent on roads. Second, if one-fourth of a county's

registered voters petitioned for it, county assessors were required to hold a referendum on the imposition of an additional property tax levy of no more than 2 mills (or, $2 per $1,000 assessed value on eligible property), to be spent on road improvements, which would go into effect if approved by a majority vote (American Highway Association 1913, 127). Such additional levies represented a trivial fraction of road revenues. Third, in lieu of laboring on the roads, eligible, able-bodied men could pay a commutation tax of $1 to $3, depending on county, earmarked for road work. Commutation assessments represented about 15 percent of revenues. Fourth, an additional source of local funds flowed from the state treasury. Eighty percent of all motor vehicle registration fees collected by the state from residents of a county were returned to the county in which the vehicles were registered. Statewide, drivers registered 81,147 vehicles (cars, trucks and motorcycles) in 1922, which generated $527,700 in fees that represented nearly 18 percent of county revenues. By the end of the decade, more than 275,000 vehicles were registered, which generated more than $2.6 million in registration fees (South Carolina State Highway Department 1929, 25). Gasoline taxes, in addition, represented 18 percent of total road revenues.

Additional funding for road construction and maintenance, which accounted for about 25 percent of all revenues, was provided by the federal government under the terms of the Federal Road Act of 1916. South Carolina's apportionment increased from $71,800 in 1917 to $1.4 million in 1921. At decade's end, South Carolina still claimed more than $750,000 in federal funds for the year (SC Highway Department 1929, 122). State and counties were required to match federal funds from taxes and registration fees to receive federal assistance. Compared to 1908 when counties spent an average of $18,100 per year ($17.70 per mile) on their roads, the $74,400 average annual expenditures ($64.70 per mile) represented a substantial commitment to the provision of public goods. Between 1910 and 1920 the increase in county revenues earmarked for road repairs meant that the average county could increase the miles of road under maintenance from 65 to 230.

A popular alternative to taxation (among law-abiding, tax-paying voters, at least) was to put able-bodied convicts to work on the roads. South Carolina's criminal code of 1912 provided that, in any case in which convicted criminal was subject to a term of incarceration, the sentence be served "at hard labor on the public works of the county in which convicted, if the county maintains a chain gang, without regard to the length of the sentence" (Andrew Bethea 1912 v.2, 244). The only convicts required to be sent to the state penitentiary were those convicted of a capital offense (murder or rape) and those considered physically unable to work at hard labor on a chain gang.

One argument offered in support of chain gangs was the assertion that the state and counties saved money on prisons and jails when convicts served on chain gangs. Moreover, federal subsidies leveraged the savings. The federal government matched eligible state and county road construction expenses, including expenditures on chain gangs (Martha Myers 1993).[4] Historians have long recognized the connection between the effect of the federal subsidy on chain gang commitments. Even absent the subsidy, the derived demand for well-maintained roads that followed from expanding vehicle ownership and a widening highway network created incentives to set criminal defendants to work on the roads.

The extent to which county chain gangs were involved in the construction and maintenance of roads, highways, and bridges in South Carolina during the chain-gang era varied by county. Three counties—Berkeley, Orangeburg, and Saluda—did not operate chain gangs continuously throughout the era. In a few other counties—Charleston being the most prominent example—gangs worked on new construction projects. In most counties, however,

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[4] The 1916 Federal Road Act provided that the federal allocation would represent a maximum of 50 percent of the eligible expenses, not to exceed $20,000 per mile, but federal allocations could exceed the 50 percent limit for bridges of greater than 20-foot span (SC Highway Commission 1920, 16).

crews of convicted felons and misdemeanants and men who opted to work on the roads rather than pay the commutation tax were, by the early 1920s, responsible only for the repair and maintenance of existing roads (SC Board of Charities and Corrections 1919, 93). Wage workers were organized into groups labeled "patrols" (SC Highway Commission 1920, 9). New construction projects in most counties were outsourced to private contractors. Most of the work done by gangs and patrols involved grading smooth the ruts cut into soil and gravel roads by traffic during wet weather, as well as ditching and clearing brush from roadsides. Grading, ditching, and clearing involved few skills other than a capacity to work long hours at unpleasant tasks under harsh conditions. Such tasks could be performed by men with little training and less motivation.

Convicts were put to work and counties provided trucks and road grading machines, in addition to mule teams, wagons, hand tools, and, of course, the accoutrements of convict labor, including guards, dogs, weapons, shackles, mobile kitchens, and moveable incarceration units, which resembled railroad box cars set on truck wheels with built-in bunks and prison-style barred doors and windows. Patrols, on the other hand, were made up of men who lived along the roads on which they worked. Counties paid wages to patrollers who worked more than their required labor days and provided them with road drags, some machinery and hand tools, but the patrollers usually furnished their own teams and wagons. The state's highway commissioners reported that "satisfactory patrolmen [were] hard to find" in sufficient numbers to keep the roads in good repair so counties augmented their required labor workers with convicts and wage labor (SC Highway Commission 1920, 35).

Extending South Carolina's Road Network

Voter demand and federal subsidies led South Carolina to embark on an ambitious road building and improvement program that included both hard-surface and soft-surface roads. The state's plan, approved by the federal government, included a network that connected every county seat with the seats of all adjacent counties. In 1915 South Carolina had virtually no hard-surface roads and few miles of soft-surface roads under state maintenance. By 1930 the state had a substantial network of completed hard- and soft-surface roads, many more miles of road under construction, and an ambitious plan for future construction.

Federally subsidized hard-surface roads increased by more than 1,000 miles between 1919 and 1929; soft-surface road (soil, sand, gravel) mileage increased by more than 4,000 miles (SC State Highway Department 1929, 49). More roads meant more routine maintenance and repair. By the end of the decade, the state was responsible for maintaining more than 5,600 miles of improved roads. Maintenance and repair costs, even when gangs were used, were not inconsequential. In the six months after July 1, 1920 the highway commission reported an annual average cost per mile of road maintained of $323 (approximately $4,000 in 2018 dollars) that did not include the use costs of capital equipment (SC Highway Commission 1920, 35). Heavy equipment, road marking, and signage were budgeted separately. In the year ending December 31, 1929 the commission reported average annual per mile maintenance costs of $332 for hard-surface roads and $419 for soft-surface roads (SC State Highway Department 1929, Table 10). One tradeoff for the state was the greater initial cost of hard-surface roads versus the higher annual maintenance costs of soft-surface (soil, sand, and gravel) roads, a choice that depended, in part, on anticipated traffic load.[5]

The second tradeoff was wage labor versus convict labor. It is generally accepted by historians that counties saved on labor costs by sentencing criminal convicts to work on roads.

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[5] In 1924 the highway commission reported that high-volume roads were more likely to be hard-surface roads, which complicated direct per-mile comparisons of maintenance costs on hard- and soft-surface roads. It also reported that it was instituting traffic surveys to better allocate maintenance funds based on traffic flows (SC Highway Commission 1924, 24).

When the average low-skilled cotton mill hand was paid about $1.25 per day, the cost of housing, clothing, and feeding a convict on the chain gang was just $0.20 per day; the cost of guards added another $0.20 per day and miscellaneous expenses another $0.15 (SC State Board of Charities 1915, 139). At 55 cents per day, the average daily cost of a convict was less than one-half the wages paid non-convict labor. Moreover, most contemporaries believed that punishments meted out for shirking motivated convicts to work more hours and exert more effort per hour than could be reasonably expected from wage labor or patrollers providing their mandatory labor quota. Miller (2012) reports that convicts worked at brisk paces between sunup and sundown with brief meal breaks. Shirkers suffered a range of punishments from denial of food to lashings to time in the box.[6]

Although the public may have believed that convicts represented an inexpensive labor force, informed contemporary observers doubted whether lower provisioning costs translated into genuine cost savings (Steiner and Brown 1969/1927; J.E. Pennybacker, H.S. Fairbank, and W.F. Draper 1916). Charleston County, for example, maintained two camps housed in permanent structures and decisions about which roads the gangs would build or repair were under central direction (SC Board of Charities and Corrections 1919, 93). The commissioners believed that Charleston's gangs were reasonably productive. Clarendon County, on the other hand, had 33 school districts and the law required that one of the county's gangs work for no less than 10 days on roads in each district. On the day the commissioners inspected one such gang, they found the convicts working "on the best road in the county, which needed work the least, but which had to be worked for the stated period" (SC Board of Charities and Corrections 1919, 94). The commissioners recommended that South Carolina impose statewide control of gangs, prioritize repairs across the state, and distribute gangs more rationally along the lines of the Georgia model. Nothing came of the recommendation; convict gangs remained under county control throughout the chain gang era.[7]

Courts and Convicts

In theory, men of all ages and races convicted of a crime could expect to find themselves sentenced to convict gangs. Men (and a few women) convicted of misdemeanors and municipal ordinances in a county magistrates' court or municipal police court typically faced the option of paying a fine or serving on a convict gang. A man convicted on a charge of drunk and disorderly in a municipal police court, for example, typically faced 20 days on the city gang or a $10 fine (Greenville City 1910-1911). State law restricted the jurisdiction of police courts to a handful of petty misdemeanors (mostly larceny of goods less than $20), municipal ordinances, and less serious felonies such as simple assault and carrying a concealed weapon for which the maximum penalty was 30 days in jail or on the gang (Bethea 1912 v.2).

South Carolina's Courts of General Sessions tried defendants charged with serious felonies. Only men and women convicted of a felony, except for those convicted of a capital crime (premeditated murder or rape) or those physically incapable of hard labor, worked on some type of convict gang. State law required that all other convicted felons serve their sentences at hard labor on a county or penitentiary chain gang (Bethea 1912 v.2). If a county did not operate a chain gang, they could send them to a neighboring county that did.

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[6] When state authorities banned lashings and beatings, gang supervisors instituted use of the sweat box: a 3-foot by 3-foot by 6-foot box, placed in the sun, in which the prisoner was forced to stand for the entire day without food and with limited water (Miller 2012). Most prisoners confined to the box lost consciousness after a few hours. Belligerent convicts and unrepentant shirkers sometimes spent several consecutive days in the box.

[7] The state put all able-bodied men sentenced to the penitentiary to work, except death-row inmates, as well. Some worked on roads; others worked on various other public works near the penitentiary in Columbia.

Sentences could (and did) range from one year to twenty. In Greenville County, the average defendant charged with murder and convicted of manslaughter was sentenced to 7.39 years (standard deviation 6.34) on the county chain gang. The average sentence for grand larceny was 2.2 years (sd = 2.02); it was 2.1 years (sd = 2.24) for housebreaking, which was South Carolina's charge for nonviolent burglary (Greenville County 2019).

Again, in theory, all men convicted and sentenced to serve time were supposed to serve their sentence at hard labor. In practice, however, Black convicts served time at hard labor; white convicts may or may or may not have. South Carolina law required that convict gangs be segregated by race, but many counties with Black gangs did not have white gangs. A few counties operated racially integrated gangs, which drew sharp rebukes but no penalties from the state's Board of Charities and Corrections when it uncovered the practice. Of the state's 42 counties that operated a gang in 1920, 27 counties had no white convicts. Only majority-white Pickens County in the western Upstate had a majority white 40-convict gang in March 1920.

Figure 1 maps total gang commitments between September 1915 and June 1920 compiled by the South Carolina Board of Charities and Corrections (1915-1920). The state required that all jails and convict camps be visited by state inspectors each year and that counties provide quarterly reports on gang commitments during the previous quarter, current gang populations, and their racial composition. The Board reprinted the information in their first six annual reports, and those statistics are summarized in Figures 1 and 2.
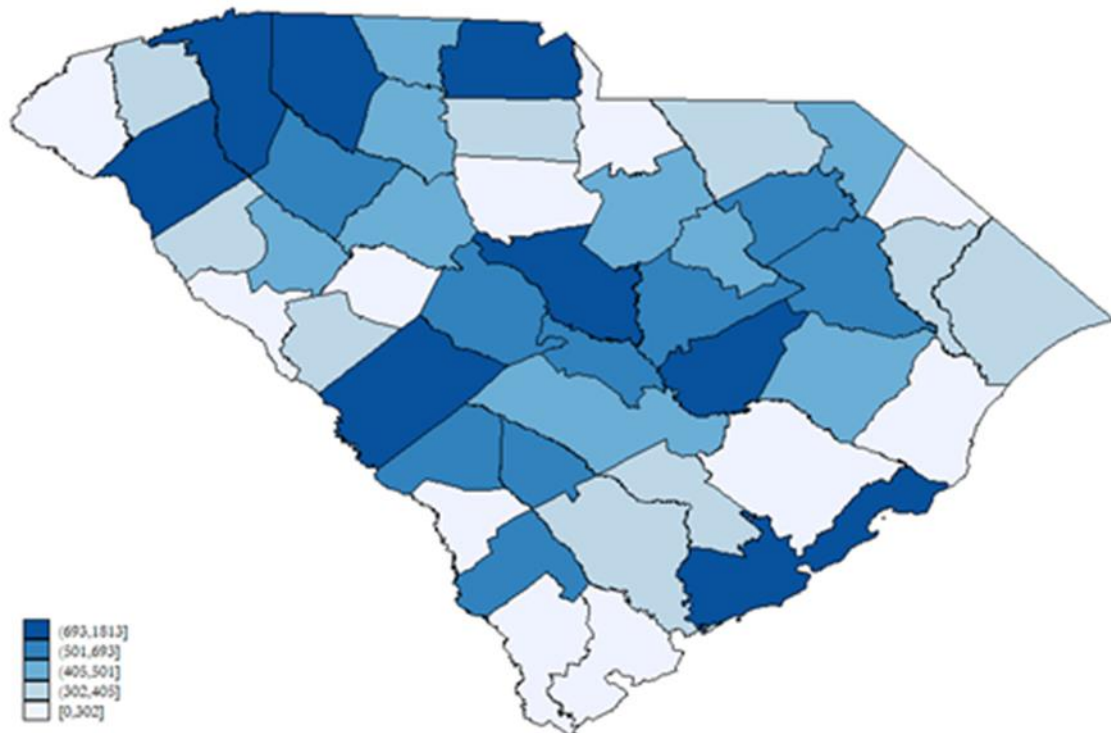

Legend:
(693,1513]
(501,693]
(405,501]
(302,405]
[0,302]

Figure 1
Chain Gang Commitments by Quintile, 1915.Q3 to 1920.Q2

Two features stand out. First, it is evident in Figure 1 that the counties with the most commitments were those with large cities. The largest gang populations are observed in Charleston County on the Atlantic coast; in the Midlands counties of Richland and Aiken; and the Upstate counties of Anderson, Greenville, and Spartanburg. In addition to having cities of 20,000 or more residents, the common thread that connected the Midlands and Upstate counties with the largest gangs was that each was home to multiple textile mills and substantial

mill village populations. Efforts to maintain order in the mill villages proved to be a constant challenge to mill managers and local authorities alike (Carlton 1982).
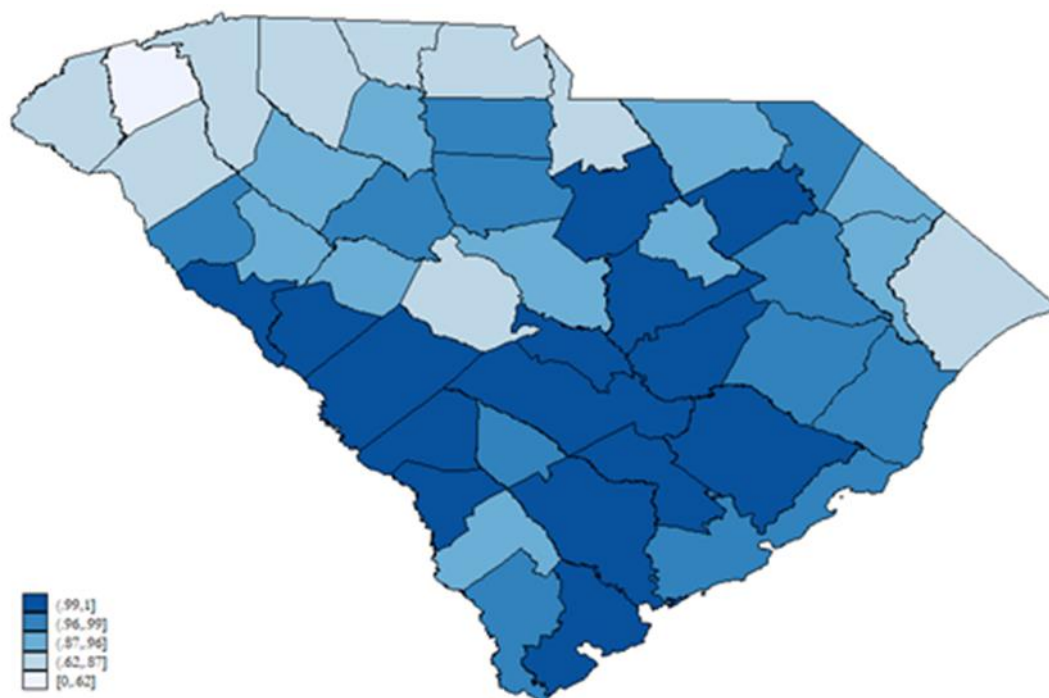

Figure 2
Percent Black Chain Gang Commitments, 1915.Q3 to 1920.Q2

Figure 2 illuminates the racially disparate treatment of Black men, the majority of whom were between the ages of 17 and 30, sentenced to the county chain gangs. The average gang was 87 percent Black; the median gang was 100 percent Black. Criminal activity was not a uniquely Black activity; nearly three-quarters of white defendants were convicted, as were more than four-fifths of Black defendants. These two facts beg the question: How did white men avoid service on convict gangs? Part of the answer is that just 7.0 percent of Blacks were sentenced to serve their time in the penitentiary compared to 14.6 percent of whites. In some cases, the differences may have resulted from physical unfitness for gang duty, but it is more likely that at least some white judges would not sentence white men to mostly Black chain gangs.[8] In others, it may have been that when whites were convicted, they were convicted of more serious crimes. Whites were then considered more dangerous and more likely to disrupt the operation of the convict gang (Bethea v.2 1912).[9] Court were more disposed to send dangerous white prisoners to the penitentiary than dangerous Black prisoners. The overriding factor, however, underlying majority-Black gangs is that the probability that 55.3 percent of Black defendants charged with manslaughter or rape were convicted and sent to gang versus 23.1 percent of white defendants similarly charged. Men convicted of these crimes typically served between two to ten years either on the gang or in the penitentiary.

A second avenue by which white convicts escaped the degradation of the chain gang was that for those convicted of less serious felonies, such as violating the state liquor laws or

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[8] It is well-known that southern whites considered it demeaning to work shoulder-to-shoulder with Blacks at the same tasks (Donohue and Heckman 1991). Moreover, it would have been especially demeaning if recalcitrant or obstreperous white convicts had been subjected to the severe punishments regularly meted out in front of Black onlookers.

[9] Noncapital murder involved a murder conviction in which the jury returned a guilty verdict with a recommendation for mercy, and the state prosecutor and judge accepted the recommendation.

larceny, and in some cases even aggravated assaults, county courts offered defendants the option of paying fines or serving time. The average exchange rate for assault and battery in Greenville County between 1912 and 1923 was 2.2 months or $68.60. The average daily wage for a white male textile worker was $1.50, and Black males earned 70 percent as much, on average, so that the option of paying the fine was in reach for most workers. But the exchange rates increased nonlinearly in seriousness of the offense. The average tradeoff for liquor law violations was 5.8 months or $174.10; for assault and battery of a high and aggravated nature it was 8.7 months or $233.10; for larceny it was 5.9 months or $220.50. A $200-plus fine would have imposed a hardship on any working-class household, but white households were more likely to have the wherewithal to pay such fines than Black households.

Courts, of course, understood this and imposed sentences aware of the consequences. A much-discussed case from Macon, Georgia in 1904 illuminates the practice (Timothy Huebner 2015). Arrested on a drunk and disorderly charge, Henry Jamison was convicted and given the option of serving seven months on the gang or paying a $60 fine, which he was unable to pay, a fact the court appeared to understand. By noon of the day of his conviction he was already shackled and at work on the gang (Supreme Court of the United States, *Jamison v. Wimbish* 130 F. 351 (1905)). A petition for a writ of habeas corpus was granted and the case argued before Judge Speer of the Southern District Court of Georgia in Savannah. Speer struck down the punishment and his decision challenged the constitutionality of the convict gang system more broadly. The case ended when the Supreme Court of the United States issued a per curiam decision in which it reversed Speer's ruling and remanded with a direction to quash the writ and dismiss the petition (*Wimbish v. Jamison*, 199 U.S. 599, 1905; Supreme Court of the United States 1905). So long as municipal and county courts minimally observed the defendants' constitutional rights, they could impose harsh punishments in discriminatory fashion. And they did.

White voters enlisted the criminal justice system in support of the region's Jim Crow regime of social control. Blacks who found themselves on the wrong side of the law faced harsh punishments that served as a tax, the benefits of which accrued mostly to whites, especially those with automobiles and those who otherwise benefitted from better maintained roads.

The Road Commissioners' Economic Problem

Jim Crow-era politicians justified the imposition of hard time on the chain gang for misdemeanants and felons alike to a combination of retributive justice, criminal deterrence, and the fiscal savings of using convict rather than wage labor on road maintenance. This section offers some insights into whether South Carolina realized cost savings from the use of convict labor.

There are reasons to think that the employment of gang labor on the state's roads was not a cost-saving measure. South Carolina's Board of Charities and Corrections (1919, 15) reported that "the present chain gang system is both inefficient and unduly expensive". Their conclusion accords with those drawn by Pennybacker, Fairbank and Draper (1916) and Steiner and Brown (1969/1927), who argue that gangs used in road construction, not maintenance as in South Carolina, was more costly than wage labor. Pennybacker, Fairbank and Draper (1916, 30) argue that the typical county chain gang of 15 to 25 convicts was too small to generate cost savings in the construction of hard-surface roads and too large to generate cost savings on soft-surface roads. Although their argument can be interpreted as a discussion of economies of scale and minimum efficient scale, they do not have counts of gang size or gang labor input. Rather they have miles completed and total costs, and they calculate average costs per mile of completed construction in Virginia between 1909 and 1915.

Their data reveal that convict labor was not less expensive in road construction, regardless of road type.

The data reveal, however, that average costs per mile of grading roads, the principal employment of South Carolina's convict gangs that repaired roads, was minimized at just more than $1,000 per mile for an approximately 15-mile section of road in Virginia. Whereas the Virginia data reports costs of new construction, South Carolina's convicts mostly repaired and (re-)graded already-constructed roads, so it is possible that the minimum efficient length of road per gang was greater than 15 miles and it is likely that the costs per mile were lower.

The early twentieth-century discussions of the efficient use of gangs on road focus on two features familiar to economists: fixed costs and scale economies. Gangs, regardless of their size at a given moment operated with a basic infrastructure that included either a permanent or moveable camp made up of food preparation, sleeping and sanitary facilities, however rudimentary the latter often was, as well as tools, mules, and machinery. Gangs also operated under the supervision of armed guards, typically one daytime guard per approximately 15 convicts, a night-shift guard for the entire camp, and a gang superintendent or manager (Pennybacker, Fairbank and Draper 1916). Gangs also usually employed a cook and an animal minder, although these functions were sometimes assigned to trustees, or long-term convicts who showed no inclination to run away and had not violated camp rules.

Given the nontrivial fixed costs, average fixed costs per convict will decline throughout the relevant range. The direct per convict variable costs of basic maintenance were low and approximately constant; meals consisted mostly of corn, pork, diluted coffee and, perhaps, some fresh vegetables and fruit in season. Clothing was basic and uniform, namely work clothes of medium-weight duck or denim with the characteristic wide horizontal black and gray stripes so that there were no mistaking convicts with civilian patrollers. The use of guards and mules were lumpy in that contemporary descriptions depict expansion paths along a near-Leontief-type production function; that is, efficiency implies approximately fixed proportions between guards and convicts (1:15), as well as between basic hand tools, likes shovels or rock hammers, and convicts (1:1), mules and convicts, and road graders and convicts, and so on.

Assume for simplicity that the only inputs to chain gangs are guards and convicts, subject to a fixed-proportion technology, while the only inputs to wage-labor patrols are wage workers and supervisors subject to a standard continuous production function, such as one that follows from a Cobb-Douglas-type technology. Assume, too, that the costs of maintaining subsistence among gangs are low and approximately constant, and that gang members themselves exhibit relatively low productivity due to constant turnover of the gang workforce, as well as the poor health and low incentives for diligent effort among convicts.[10]

The economic decision-makers' options can be illustrated with a graph as in Figure 3. There is a constant but relatively high marginal cost curve for chain gangs, which follows from the fixed-proportions technology and the low marginal product of convicts. If, in addition, we assume that a guard is added instantaneously every time the convict-to-guard ratio exceeds the optimal ratio, the marginal cost curve will exhibit a discontinuity or spike at those points (i.e., 16 convicts, 31 convicts, and so on if the ratio is 15:1). Assume, as well, diminishing marginal productivity in wage-labor patrols, which will yield the standard U-shaped marginal and average cost curves that are rising in the relevant range of miles under repair. If Pennybacker, Fairbank and Draper's (1916) interpretation is correct, the marginal cost of wage labor is below the marginal cost of convict labor when only short sections of road are under

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[10] Steiner and Brown (1969/1927) and Pennybacker, Fairbank and Draper (1916) report high rates of venereal disease, including advanced cases of syphilis, among convict road gangs; tuberculosis was not uncommon. One of Pennybacker, Fairbank and Draper's many recommendations was to separate diseased from healthy convicts, and to treat diseased convicts before putting them to work.

repair, which requires few workers. The marginal cost of wage labor is above the marginal cost of convict labor when long sections, requiring more labor, are under repair. In the intermediate region, near the intersection of the two cost curves, cost-minimizing administrators may be indifferent between gangs and patrols, or they may use some of each either separately or together. A simple OLS regression of log miles on log gang size implies a positive, but not statistically significant, elasticity of convicts to miles of +0.08. Counties with more miles of road under maintenance had more convicts. The small coefficient and its statistical insignificance suggest that gang sizes were exogenous to miles under repair and were driven by other factors, presumably crime rates, prosecutorial decisions, and judicial severity.
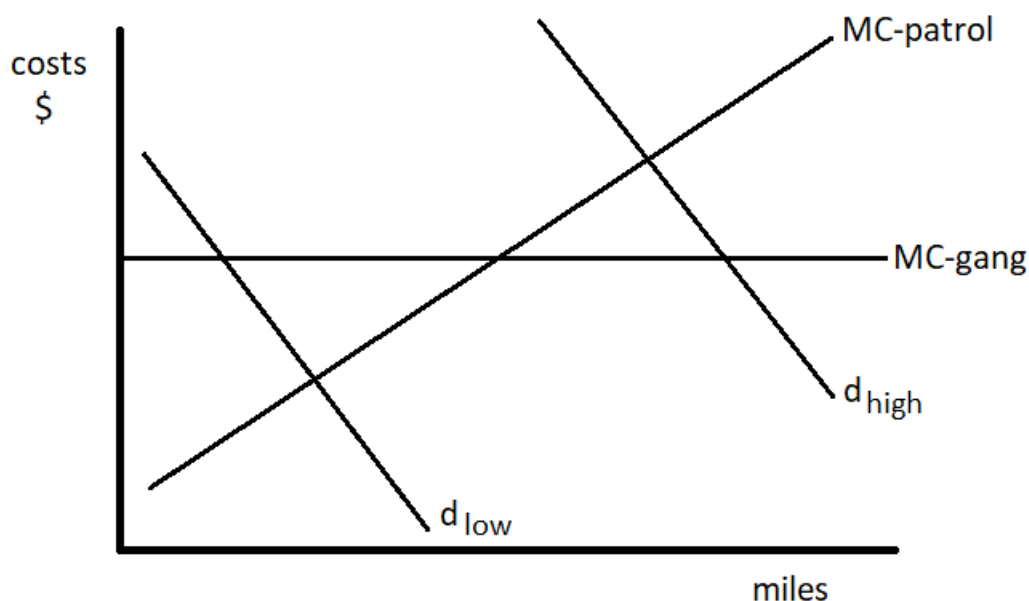

Figure 3
Costs and Demands for Gang- and Patrol-Maintained Roads

The economic problem facing southern road administrators was to minimize road maintenance costs given local taxpayers' preferred quantity and quality of a county's roads, which yielded a demand for workers, whether wage labor or convicts. Given the relative marginal costs of wage and convict labor, maintenance projects with only few miles under repair are expected to have employed mostly wage labor. Projects with many miles under repair are expected to have employed mostly convicts. Counties with projects of intermediate length will have used some combination of wage and convict labor if the demand curve for road maintenance is such that it passes through the marginal cost curves near the intersection of the horizontal gang cost curve and the rising wage-labor cost curve.

The Road Commissioners' Solution

Data come from four of the South Carolina Highway Commission's Annual Reports (1921-1924) that tabulated enough data to test the hypothesis. The commission reported cost and mileage data by road section under maintenance by county and labor force type. Although some counties relied exclusively on wage labor and patrols or convict labor, most counties employed a combination of convict and wage labor, sometimes on the same road sections. Table 3 provides summary statistics where the unit of observation is the road section under

repair. The sample is restricted to soft-surface roads, which is the type of road maintained by chain gangs. The average section under maintenance was 34.4 miles and the average cost per mile was $351.30. Approximately one-fifth of the state's roads were worked by gangs alone; 42 percent of roads were worked by wage-labor patrols alone, and the remaining 36 percent were maintained by a combination of convicts and wage workers. The commission's annual reports also rated the quality of the road under maintenance, most of which were rated "Fair" to "Good". Less than one-tenth of road sections maintained received higher ratings, which points to counties prioritizing maintenance on lower quality roads.

Table 3
Summary Statistics for South Carolina Road Maintenance, 1921-1924

Variable	Mean	Std. Dev.	Min.	Max.
Cost / mile	351.302	119.640	124.020	619.290
Soft surface miles	34.380	30.628	0.200	129.100
Gang	0.213			
Gang and patrol	0.358			
Patrol	0.429			
Fair condition	0.135			
Fair-good	0.323			
Good	0.450			
Good-excellent	0.082			
Excellent	0.011			

Sources: SC State Highway Commission (1921-1924).
Note: 317 road sections.

Figure 4 presents a scatterplot of cost per mile of road maintenance against miles of road under maintenance from the commission's reports. Regrettably, the commission did not record the number of workers or hours worked on the road sections, but it is not unreasonable to assume that miles and worker-days are functionally related. The upper left panel plots the average cost per mile of road maintenance against the miles of road maintained for each road section maintained by convict gangs. The curve plots the central tendency of the data not controlling for any other factors. The scatterplot makes clear that gangs were used across the mileage distribution of roads under repair and the central tendency traces a standard U-shaped average cost curve.

The upper right panel of Figure 4 provides a scatterplot and central tendency estimate of average cost of road maintenance using wage labor patrols. One difference between patrols and gangs is that the patrol data is concentrated on road segments less than 25 miles in length. The upper panels are consistent with Pennybacker, Fairbank and Draper's (1916) and Steiner and Brown's (1927) contention that convict labor was more efficient than wage labor only on long road sections that could be worked from one or a few convict camps with large work groups. Wage workers tended to work closer to their homes.

The lower left panel of Figure 4 plots the average costs against road miles for road sections jointly maintained by gangs and patrols. The gang/patrol data exhibit the features of each type alone: there is a concentration of observations at less than 10 miles and a substantial number of observations of 75 or more miles. The lower right panel provides the three estimated average cost curves, using a different Y-axis scale, that highlights the classic U-shape posited by economic theory.
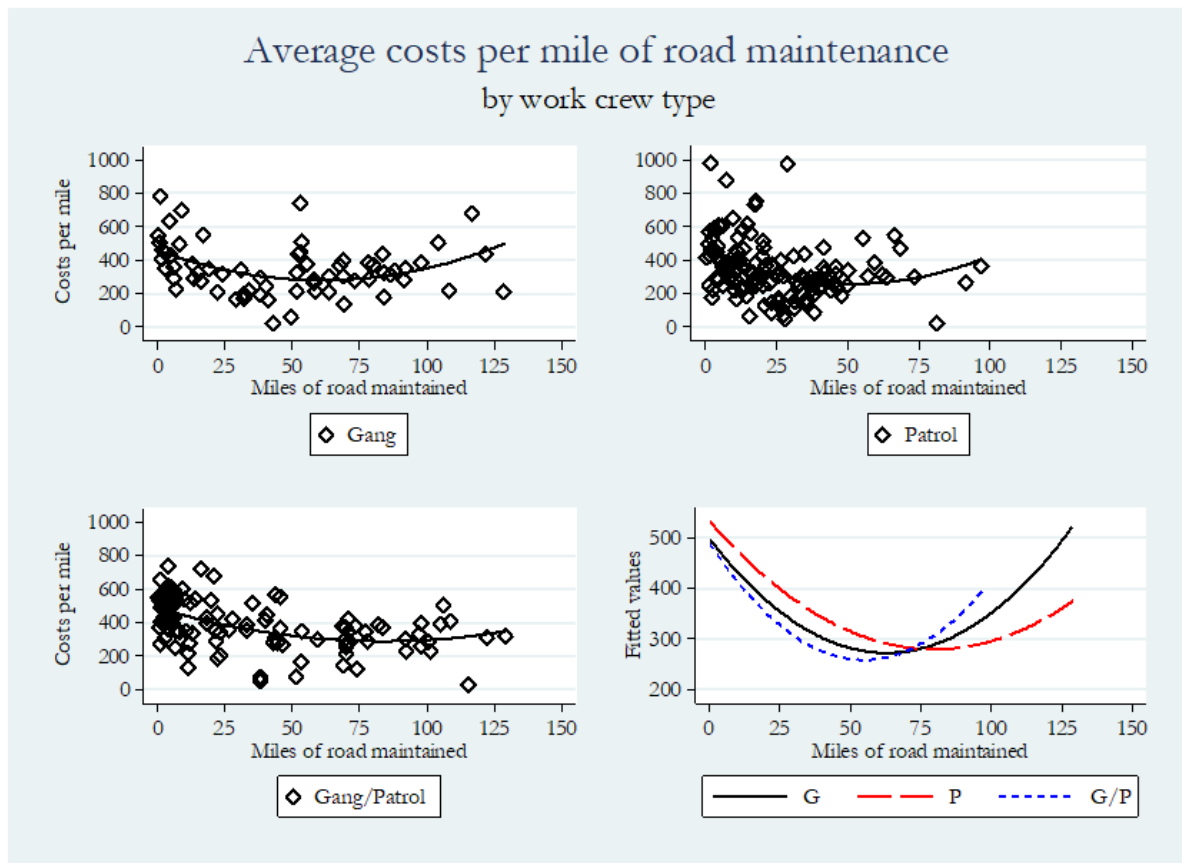
Figure 4
Average Costs per Mile of Road Maintenance

A formal empirical analysis of the cost data involves testing whether the annualized maintenance cost per mile is lower for gangs than for patrols or combinations of gangs and patrols (the reports do not provide information on the average number of men working on gangs or patrols, which will tend to attenuate the estimated effects). To test the hypothesis, I estimate the following fixed-effect regression from a multi-year panel of road section-level data:

$$costpermile_{jct} = \sum_{j=1}^{3} \beta_j \left(labortype_{jct} \times miles_{jct} \right) + \sum_{j=1}^{3} \delta_j \left(labortype_{jct} \times miles_{jct}^2 \right)$$
$$+ \gamma_{roadcondition} + \gamma_{months} + \gamma_{county} + \gamma_t + \varepsilon_{jct},$$

The j subscript indexes the labor type (gangs, patrols, or the combination), c indexes the county, and t indexes the year. The labor variables are indicator variables; the first—*gang*—equals one if the road crew is a gang, and zero otherwise; the second—*gang/patrol*—equals one if the road crew is a combination of gang and patrol and zero otherwise; the third—*patrol*—equals one if the road crew is a wage labor crew. Because the model is a fully saturated interaction model there is no excluded category.[11] Estimating the models in the quadratic form allows us to estimate the minimum average cost by gang type to understand whether there were any cost advantages to use of convict gangs on road repair. The unit of observation is

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[11] This is functionally equivalent to estimating three separate equations, one for each labor type, with the cross-equation restriction of equal fixed effects coefficients.

the road section repaired so there are multiple observations for most counties in most years. If a county worked more than one road crew, there is an entry for each such crew. It is not clear whether gangs and patrols worked together or separately, but some segments worked by gang-patrol combinations were less than two miles in length, which suggests that they coordinated their efforts if they did not work side-by-side.

Cost (dis)economies may be captured in the *Months* fixed effects, which take on values between 2 and 12 and account for the number of months a gang or patrol worked on a given road segment. Steiner and Brown (1927/1969) and Pennybacker, Draper and Fairbanks (1916) agree that it was costly to move gangs and camps between work sites. The longer a gang worked from one base, the lower were relocation costs and down time. The regressions also include fixed effects for road condition (excluded category = fair), year (excluded category = 1921), and county. County fixed effects capture all relevant time-invariant factors within a county that influence the per-mile cost of road maintenance, but these results need to be interpreted cautiously because not every county employs each type of road crew each year.

Table 3 provides key summary statistics for the road maintenance cost data. The average cost per mile was $351 and the average maintenance crew maintained about 34 miles of soft-surface roads. The regression analysis considers only soft-surface roads for two reasons: (1) counties were directly responsible for relatively few miles of hard-surface roads, some counties had none; and (2) as discussed earlier, construction and maintenance costs were considerably different for hard- and soft-surface roads. The data also reveal that about 21 percent of soft-surface roads were maintained exclusively by chain gangs. Another 36 percent were maintained by a combination of gangs and free-labor patrols; and 43 percent were maintained by patrols alone. Thus, it was not the case that most county roads in the state were maintained by chain gangs. Twice as many county-years used patrols alone as county-years used gangs alone. Finally, the State Highway Commission classified a county's roads as either Fair, Fair-Good, Good, Good-Excellent, or Excellent. Few sections of road were deemed excellent; most were considered good or just marginally so.

Table 4 presents the regression results. The dependent variable is maintenance costs per mile. Fixed effects controls are entered stepwise and tests of joint significance of the fixed effects are reported in the relevant row-column cell. Column 1 reports coefficients from a baseline regression that includes only the interaction of the indicator variables for road crew type and miles under maintenance. Column 2 includes the County fixed effects. Columns 3 through 5 sequentially add Year, Road Quality, and Months Worked fixed effects.

The first feature to note is that the coefficients for each labor type trace out the U-shape, after the inclusion of the relevant fixed effects. The implied miles associated with the minimum of the average cost curve is reported below each regression. The results are not fully consistent with the economic model implied by the discussion in Pennybacker, Fairbank and Draper (1916) and Steiner and Brown (1927), namely that gangs will be more cost effective on long road segments, but there are so few data points beyond 50 miles for road segments maintained by patrols and joint gang/patrol that the squared terms are not generally significant. The regression coefficients do, however, point to modest cost savings in the use of gangs around the mean of the data (about 35 miles). An additional mile of road maintenance conducted by a patrol, or a joint gang/patrol reduces the average cost per mile by $5 in each case. An additional mile of road maintained by a convict gang leads to a lower average cost per mile of about $8. But this comparison may be misleading because, as we have seen, gangs and patrols were used differently. Gangs tended to work longer sections on average.

A better comparison then might be to compare the costs of alternative work crews at the average length of road maintained by patrols and gangs. Around the average length of road sections worked by patrols (34 miles), the average cost per mile of road maintained was $237 if maintained by a wage labor patrol, or $247 if maintained by a convict labor gang. Counties that used patrols on 35-mile-long sections of road saved about 4.2 percent relative to gang

labor. Around the average length of road sections worked by gangs (48 miles), the average cost per mile or road maintained by a patrol was $311 compared to $286 if it were maintained by a convict gang. Counties that used gangs on 50-mile-long sections of road saved about 8.7 percent relative to the cost of wage labor patrols. We are left with the curious result that authorities who argued that the use of gangs was less expensive than wage labor and those who argued the opposite are both correct, in a way. Whether they were correct depended on whether they were talking about short or long sections of road under repair.

Table 4
Estimates Effects of Labor Type on Road Maintenance Costs

Variables	(1) costpermile	(2) costpermile	(3) costpermile	(4) costpermile	(5) costpermile
Patrol miles	-9.846***	-7.635***	-5.120**	-5.381**	-5.420
	(2.344)	(2.388)	(2.505)	(2.619)	(3.401)
Patrol miles sq	0.090***	0.056	0.028	0.029	0.033
	(0.032)	(0.036)	(0.032)	(0.034)	(0.039)
Gang miles	-7.924***	-10.883***	-8.450**	-8.478**	-7.912**
	(1.760)	(2.914)	(3.233)	(3.187)	(3.543)
Gang miles sq	0.062***	0.084***	0.065***	0.065***	0.055**
	(0.017)	(0.019)	(0.021)	(0.020)	(0.022)
Gang-patrol miles	-5.810***	-6.043**	-5.032**	-4.869*	-4.073
	(1.688)	(2.278)	(2.485)	(2.503)	(3.256)
Gang-patrol miles sq	0.036**	0.032**	0.026*	0.023	0.012
	(0.015)	(0.015)	(0.015)	(0.015)	(0.020)
County FE		7.47***	1524.72***	229.08***	246.79***
Year FE			6.20***	5.56***	3.54**
Road condition FE				6.21***	1.31
Months FE					1.25
Patrol minimum AC	54.7	68.2	91.4	92.8	82.1
Gang minimum AC	63.9	64.8	65	65.2	71.9
G-P minimum AC	80.7	94.4	96.8	105.8	169.7
Observations	315	315	315	315	315
R-squared	0.116	0.276	0.289	0.296	0.343

Dependent variable is cost per mile of road maintenance on reported soft-surface road sections. Regressions estimated with standard errors clustered on county. Values reported in fixed effects rows are F-tests of joint significance. Minimum AC values are minimum point of average cost curve implied by the relevant regression coefficients.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

The empirical findings reported here are not consistent with Pennybacker, Fairbank and Draper (1914) and Steiner and Brown (1969/1927), who argued that convict gangs were so grossly inefficient that their use inflated road building and maintenance costs. South Carolina's Board of Charities and Corrections (1919, 15), too, wrote that "the present chain gang system is both inefficient and unduly expensive". South Carolina's commissioners contended that

gangs were too small and the labor turnover too high to provide cost-effective road maintenance. But in offering this conclusion, it appears that the Board members overlooked the statistics they reported elsewhere. Their returns from county gangs between 1915 and 1920 reveal that most convicts were sentenced to relatively long terms on county convict gangs. The vast majority served terms longer than six months; some men were sentenced to terms exceeding five and even ten years. If there were any learning-by-doing efficiencies to be captured in working a mule-drawn road grader, digging ditches, and clearing roadside brush, it is hard to believe that the learning would not occur with the first few weeks of a six-plus-month term on the gang. It does not appear to be the case that gangs were notably less efficient than wage labor when deployed in gang-appropriate employments.

The results are consistent with a hypothesis that state and county authorities and road repair managers chose road crew types—gang, patrol, or a combination—that they believed to be the low-cost option for a given maintenance project. If managers were cost minimizing agents of taxpayers, they would have equalized the marginal cost of a mile of road repair across labor types. The data here are average, rather than marginal costs, but the long-run equilibrium in a competitive market equates the two. We cannot say that road supervisors were not acting in a cost-minimizing fashion in choosing between convict gangs and wage workers or patrollers.

The available data does not afford an opportunity to determine whether putting convicts to work on the roads, housing them in substandard quarters, and feeding them a nutrient-deficient diet of corn and pork was less expensive than warehousing them in county jails and state prisons. But descriptions of South Carolina's county jails depict jail conditions that were no less wretched than its county gang conditions—damp, drafty, poorly maintained structures, filthy linens, inadequate sanitary facilities, and bad food—that could not have been much more costly to taxpayers to operate than convict labor camps (SC Board of Charities and Corrections 1919). If convicts were at least as productive as wage workers when employed on road maintenance projects, taxpayers may have saved some money by putting them to work. But if convicts were not at least as productive at road work, on average, as wage labor and were no less costly to taxpayers than warehousing them in rudimentary, unsanitary jails, southerners must have believed that gangs served some purpose other than cost-saving. They may have believed that gangs deterred crime or, perhaps, served as a form of retributive justice. These issues are the subject of future research.

Concluding Comments

In its November 1906 report to the presiding criminal court judge, the grand jury convened for York County, South Carolina, provided a highly critical assessment of the county's chain gangs. After looking into the gang's practices, the grand jury members wrote that they "condemn, in the strongest terms, the apparent inefficiency, [and] loose business methods" they found (*Yorkville Enquirer* 1906, 2). The gangs cost the county taxpayers $15,000 per year for the past ten years and taxpayers had "a few miles of permanently improved roads to show for it". The jury members objected to the gang's "practice of jumping around from township to township … evidently done for the purpose of pleasing the voters". It was likely a fact that the county's roads were in poor condition; nearly all early twentieth-century roads were in poor condition. And it was likely a fact that the gang moved around from road section to road section in response to voters' expectations or complaints. But their belief that the gang was to blame for the lack of permanently improved roads is misplaced. Chain gangs were neither prepared nor equipped to make permanent improvements to the state's roads. The construction of modern paved roads required expertise that chain gangs did not and could not have. Modern road paving would not begin in earnest for a decade or more after the York County grand jury forwarded its report.

A host of studies have documented the costs and economic inefficiencies associated with other features of the South's black codes. Higgs (1989), for example, finds that the early twentieth-century racial wage gap was due, in part, to southern states' discriminatory provision of educational resources. Donohue and Heckman (1991) document that the wage gap was due, in part, to discriminatory hiring and job assignments that were eliminated only through federal affirmative-action enforcement. Jim Crow also included zoning laws designed to exclude Blacks from public goods-rich communities and neighborhoods (Halcoussis and Lowenberg 1998). In general, southern black codes constructed walls between the races in marriage, education, employment, public accommodation, and transportation (Woodward 1957). In the balance, discriminatory white southerners, through their Jim Crow policies, introduced economic inefficiency and reduced both Black and white welfare (Gavin Wright 1999).

This paper investigates one aspect of discriminatory law enforcement and penology in the Jim Crow South, which is a relatively understudied source of the region's economic inefficiency. The results generate two broad conclusions. First, it is no surprise to find that the harshest punishments for criminal offenses were reserved for young, disfranchised Black men. The sanitized Hollywood images of the South's Jim Crow-era chain gangs as racially integrated and relatively nonviolent does not fairly depict the systematic legal (corporal punishment was legal) and extralegal (brutal beatings were not) violence reserved for Black men serving on predominantly or wholly Black convict gangs.

Second, chain gangs were at least as productive as wage workers in maintaining South Carolina's roads and may have been marginally more so. Contrary to the assertions of the gangs' early twentieth-century critics, gangs were competitive with wage labor. County administrators and road supervisors found ways to use convicts in ways that made them serve the interests of local taxpayers. That Black convicts were brutalized is beyond dispute. That brutalized Black convicts were set to work in inefficient ways is not.

Acknowledgements

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