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Trial By Fury: Institutions and Southern Productivity

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Abstract

Recent empirical studies suggest that institutions are an important part of the foundation of economic performance through time, and the economic history of the South provides us with an ideal setting in which to examine this relationship in greater detail. This essay extends recent empirical analyses of the relationship between institutions and development by offering a proxy for institutions that incorporates aspects of a society's rules, norms, and enforcement characteristics. Using data on lynching, this essay argues that poorly defined, poorly enforced property rights contributed to southern poverty at the dawn of the twentieth century.

1. Introduction

Why was the South poor from the end of Reconstruction through World War II, and what can the answer tell us about economic development more generally? Scholars have traced southern failure to low wages, failure to invest in education, lack of an "indigenous technological community," capital markets, labor market isolation, and various manifestations of the legacy of slavery; however, our understanding of southern poverty in light of the region's transition to relatively more liberal property rights after emancipation remains incomplete. This essay examines the institutional foundations of southern poverty by using data on lynching to proxy for the quality of southern institutions, the strength of enforcement mechanisms, and the extent to which people contested the structure of post-emancipation property rights.

Ransom and Sutch (2001:xiii) state the essence of the southern problem:

Southern agriculture stagnated while an agricultural revolution transformed the rest of rural America. The South's industrial sector remained small and backward during the age of American industrial growth. And Southern people—white as well as black—were among the poorest, least educated, and most deprived of all Americans at a time when America was becoming the richest, best educated, most advantaged nation in the world.

Southern poverty remains a puzzle for several reasons. First, the South failed to converge against a backdrop of rapid growth and technological change in the rest of the country. Second, poverty persisted in spite of the fact that the region was relatively prosperous on the eve of the Civil War (Fogel, 1989). Finally, it occurred in spite of a move toward more liberal institutions after emancipation. Despite the loss of lives and destruction of capital, one outcome of the war was the South's move to what should have been superior, more productive institutions. The former slaves were no longer chattel to be allocated by plantation managers; in theory, at least,

they possessed the full rights of free human beings. Their new status as free and equal men should have increased southern productivity by creating a new class of entrepreneurs and investors.

Traditional renderings trace the southern problem to slavery and the Civil War, but the path from slavery and wartime destruction to persistent, widespread poverty is unclear. Data on slavery are statistically informative and the destruction wrought by the war clearly mattered, but data on slavery and war *per se* tell us little about how they manifested themselves in low productivity over the long run. Many countries have languished in poverty without American-style slavery, and other countries have recovered from wartime destruction very rapidly (England, France, Germany, and Japan after World War II, for example). The Civil War devastated the South and led to a divergence between southern and non-southern wages (Margo, 2002), and it was 1890 before the South enjoyed the level of per-capita income it had enjoyed in 1860 (Engerman, 1971a, 1971b). However, it is not clear that slavery and the Civil War should have led to protracted stagnation over the course of the late nineteenth and early twentieth centuries.[1]

All other things equal, emancipation should have increased southern productivity by allowing greater flexibility in labor markets and greater room for entrepreneurship and investment. As Nye (1997) and Acemoglu (2003) argue, societies should adopt more efficient institutions as long as the initial distribution of property rights (including the right to use force) is clearly

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[1] Engerman (1971a, 1971b) and Temin (1976) discuss the role of wartime destruction. Mitchener and McLean (2003) use data on the percentage of the population in slavery in 1860 to argue that institutions were important determinants of American productivity. Wright (1976) argues that the apparent efficiency of slavery discussed by Fogel and Engerman (1974) was an artifact not of inherent efficiencies in the system but of an unusually strong cotton market. Barro and Sala-i-Martin (1992) present a seminal analysis of income convergence across regions, noting that the South converged slowly but giving no reason why. Woodward (1951) is one of the classic treatments of post-Civil War southern history. Margo (1995) argues that given the massive economic and institutional shock occurring with the Civil War, the South grew as rapidly as could have reasonably been expected. As we will see, evidence suggests that institutions allowing lynching were an important part of the set of factors causing southern poverty to persist for so long.

defined and transaction costs are low, but "all else" is rarely equal and the distribution of property rights is often unclear.

This is especially pertinent to the case of the South. Fogel (1989:435) argues that "capitalization of the labor force" did not add to southern wealth during the antebellum era because it was a simple transfer of property rights from slaves to masters. Emancipation of the labor force should not decrease southern wealth for the same reason. In a static sense, emancipation was nothing more than the transfer of property rights to the capitalized labor from former masters to former slaves. Net of the costs of transfer, there is no reason to expect this re-definition of property rights to reduce productivity over the long run.

Data on lynching may help us identify institutional sources of unclear property rights and transaction costs that lock in low productivity. Lynching *per se* is the subject of a large body of literature, and the sickening nature of many lynchings suggests that the practice is a worthy proxy for the quality of southern institutions. The data will necessarily understate the frequency of arbitrary violence because they will not fully measure racially-motivated murders by individuals, beatings, whippings, and other forms of racist terror. Lynching is, however, a unique proxy for a breakdown in law and order.[2]

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[2] Historians, sociologists, and psychologists have authored a ponderous literature on lynching. Recent sociological studies of lynching include Clarke (1998), Stovel (2001), and Olzak (1990), while Hepworth and West (1988) use lynching data to update our understanding of the relationship between violence and economic frustration. Grant (1974) offers an historical narrative on the anti-lynching movement, while Shapiro (1988) considers lynching as a smaller subset of white-on-black violence. Dray (2002) presents a comprehensive history of American lynching. In early studies, Cutler (1905) and White (1929) attempt to explain lynching in terms of poverty, ignorance, racism, and technology. The NAACP (1969), Ginzburg (1988), and the essays in Finkelman (1992) document specific lynchings. Other recent treatments from various social science perspectives include the essays in Spierenburg (1998) and commentaries on the artwork and memory of lynching (Apel 2004, Markovitz 2004). Among economists, Berkowitz & Clay (2004) use lynching as a proxy for the historical rule of law in a study of judicial institutions. In a similar vein, Oster (2004) examines the relationship between agricultural conditions and witch-burnings. Glaeser (2005) discusses the conditions that led to the spread of anti-black political propaganda in the late nineteenth century. Alston, Libecap, and Mueller (1997) consider violence and the uncertainty associated with insecure property rights in the Brazilian Amazon. Margo (2004) notes that we will never know the full extent of lynching in the South, but the data collected and reported by the NAACP and the Tuskegee Institute provide a useful proxy for the extent of extra-legal violence. www.americanlynching.com advertises a documentary in the making, and

Beyond the purely historical question of southern underdevelopment, understanding the relationship between institutions that failed to constrain extra-legal violence and southern development can shed light on modern issues. Southern history has two prominent characteristics: the region underwent one of the most major institutional changes of the last two centuries with the abolition of chattel slavery, and racial strife has always been one of the region's defining themes. Understanding southern poverty after the transition from slavery may help us better understand transitions like those occurring in former communist countries and in countries struggling with ethnic violence.

Insecure private property rights affect incentives and curtail economic development. Institutions determine property rights and, therefore, the returns to competing via price and quality versus competing via expropriation and redistribution. Income dissipates if property rights are insecure because of trades and investments that are not made; what is more, insecure property rights reduce productivity as people scramble to exploit inefficiencies and uncertainties associated with the insecure rights. Weak enforcement and contested property rights led to uncertainty about the configuration of property rights that would ultimately obtain, and this produced an environment that was inhospitable to potential investors. Weak enforcement and insecure property rights were reflected in the horrifying lynchings that marked the late nineteenth and early twentieth centuries. Institutions that failed to prevent (and sometimes actively encouraged) lynchings appear to have been an important part of southern poverty at the beginning of the twentieth century.[3]

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www.jimcrowhistory.org links to a PBS documentary containing extensive information on lynching. Mob violence in the antebellum era is discussed in Grimstead (1998).

[3] See Tolnay and Beck (1995) for extensive discussion of the various hypotheses explaining racist lynching in the South.

2. Structure and Change in Dixie

In a market economy, people generally need three things to be rich: something to trade, trading partners, and incentives to trade. Late nineteenth-century southerners were only marginally successful in each respect. People who own their own labor will always have "something to trade," but this was certainly not the case under slavery. Labor markets in the late nineteenth-century South, however, were hampered by uncertainty over who owned the sweat of the southern worker's brow, and whites' reaction to blacks' new status in labor markets curtailed the development of well-functioning markets.[4]

This was due in part to the legacy of slavery. Combined with the Civil War and Reconstruction, slavery left three important legacies: a relatively low emphasis on education, a structure of social capital more appropriate to bondage than freedom, and racist institutions that were hostile to the development of mature markets. The region was considerably poorer than the rest of the country. Shortly after the end of Reconstruction, income per capita in the Southeast was only 49.9% of the national average. By 1900, this ratio had worsened: the Southwest made some relative progress (moving from 60.5% to 68.4% of national average per capita income), but the Southeast enjoyed only 47.8% of average national income at the turn of the twentieth century (Perloff et al, 1960:27). Meanwhile, income per worker in the South held steady at 56% of the national average over the same period (Mitchener and McLean, 1999:1019).

The structure of social capital—the network of relationships that enable trade—was inappropriate for post-Reconstruction conditions in that the relationships developed by masters

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[4] Wright (1982) and Coclanis (2000) trace aspects of post-war southern poverty to pre-war factors. Ransom (2005:42) suggests a "solid south" view of the south's role in international labor markets, with the only large concentrations of foreign-born Southerners being in coastal cities. Reid (1973) shows that sharecropping should have improved agricultural performance. Rosenbloom (2001) carries out a comprehensive analysis of late 19th century American labor markets and supports the thesis that southern labor markets were indeed isolated. Bateman and Weiss (1977) discuss structural factors preventing industrialization in the antebellum era while Fogel (1989) argues that there is no fundamental incompatibility between industrialization and slavery.

and slaves were more appropriate to the hegemonic bonds of servitude rather than the contractual bonds that would exist between free and equal men (Carden, 2006). Alston and Ferrie (1993, 1999) attribute paternalism, the system whereby planters and landlords offered protection, store credit, and other services in exchange for long-term labor commitments, to labor market transaction costs in an environment of contested and restricted property rights.[5]

Emancipation brought many difficulties. Ransom and Sutch (1977:176-77) "believe that the animosity and mutual fear that existed between the races, and in particular the whites' antagonism toward the blacks' economic advancement, were at least as powerful as were economic incentives in motivating individual economic behavior." This worked through several channels. The threat of violence prevented many blacks from acquiring education, practicing skilled trades, and acquiring land. Racist institutions also had a "more powerful…more subtle and more insidious" effect on southern development because they also removed incentives for white advancement by limiting competition and weakening signals in the marketplace. Aldrich (1973:300) argued that emancipation brought enormous disruption to southern labor markets; what was one day a "species of capital" was the next day "a disorganized and unruly labor force."

Southern poverty rests in part on an institutional foundation. Institutions are the formal rules, informal norms, and enforcement characteristics that determine the structure of property rights and shape a society's incentives (North, 1981, 1990, 2005). Rules and norms in the South restricted the development of well-functioning markets. Racist "Jim Crow" laws were aimed at maintaining the antebellum racial order, and southern markets were burdened with a complex

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[5] Chamlee-Wright (2005) amends the analogy between "physical capital" and "social capital," interpreting social capital as a heterogeneous structure of complex relationships rather than as a homogeneous quantity.

structure of norms prescribing deferential "race etiquette" (Alston, 1986) and proscribing social

equality between the races (Ransom and Sutch, 1977; Higgs, 1977).[6]

Enforcement is a key component of institutions, and it tended to be uneven across different

rules and norms. Black criminals in the South were characteristically sentenced to harsher

penalties than their northern counterparts who committed similar crimes (Tolnay and Beck,

1995), but members of white lynch mobs often avoided punishment even when their identities

were well known (White 1929, Tolnay and Beck 1995, Dray 2002). Blacks were denied

protection from mobs because police officers did not want to risk their lives protecting them and

rarely had any incentive to do so (Raper, 1933). The character of many lynchings suggests that

racist norms—particularly those having to do with social disapproval of miscegenation—were

enforced vigorously, with lynchings serving as grotesque "warning(s) to all Negroes that are too

intimate with white girls."[7]

On one hand, labor markets were competitive enough that planters did not want to develop a

reputation for cheating because it would curtail their ability to find labor. On the other hand,

ignorance and state-sanctioned depredations on black rights allowed more cheating than we

would expect if property rights were clearly defined and enforced (Alston & Ferrie, 1999).

Legislatures attempted to reduce competition among planters by enacting "anti-enticement"

statutes that made it a crime to hire another planter's workers under certain conditions. These

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[6] For example, Alabama's constitution contained a prohibition against miscegenation that was not repealed until 2000. Wright (1987) notes that while blacks and whites were paid the same for the same work, whites tended to advance into higher-paying occupations while blacks did not. Recent seminal contributions to the empirical literature relating institutions to economic development include Hall and Jones (1999), Acemoglu, Johnson, and Robinson (2001, 2002), and Glaeser et al (2004).

[7] So read the sign attached to the lynched body of Daniel Edwards, lynched in Selma, Alabama in 1893 for fathering a child with a white woman after a year-long consensual relationship (Markovitz, 2004). White (1929) discusses state measures to curb lynching by imposing fines on sheriffs in counties where lynching occurred. Variation in the adoption of anti-lynching measures across the country suggests a promising avenue for future research. In a 1921 statement, the Georgia Women's Suffrage Association argued strongly that lynching was not necessary to protect white women from black men (Chicago *Defender*, September 17, 1921, p. 2).

laws were ineffective because they applied only to workers under contract, but planters found more effective ways to reduce competition and make it harder for their tenants to leave by prosecuting them for trivial legal transgressions (Higgs, 1977:74-77).

In summary, blacks were a threat to whites in southern labor markets, and the structure of southern institutions encouraged whites to compete by violence and intimidation rather than by offering higher-quality labor. Ideal data would measure every aspect of southern institutions, but perfect measures are not forthcoming. Data on lynching provide a reasonable proxy for a state's rules and norms as well as the type and quality of enforcement. Observers contemporary and modern noted that the South was an extremely violent place: poor whites used lynchings to intimidate blacks (Tolnay & Beck, 1995), and attempts to integrate southern cotton mills sometimes provoked violence (Wright, 1986). Lynching served as both "an excellent index of the backwardness of the lower south" (White, 1929) and a signal to outside investors that liberal property rights would not be respected, integration would not be tolerated, and "life, property, person, character perish as stubble before the flame" (Curry, 1896:1291). The uncertainties of the southern institutional environment are encapsulated in the history of the lynching era.

3. Sowing Strange Fruit

The data on lynching collected by the Chicago *Tribune* and the NAACP allow us to examine the relationship between southern "backwardness" and productivity. Lynching as we know it persisted through the middle of the twentieth century, as Figure 1 indicates, and it suggested a legal environment plagued by uncertainty and arbitrariness. Jurist C.B. Lore wrote that "law has its highest function in throwing its shield of protection as a barrier before the ignorant, the weak,

and the helpless" and a "calm, just, and fair hearing" was especially necessary in cases of grievous crime. Many lynchings were a clear and obvious affront to this "highest function."[8]

(**Figure 1 Here**)

Lynching was also primarily a southern phenomenon, and it became relatively more southern as time went on. Table 1 and Figure 2 give us some indication of the extent of the enterprise in the South relative to the rest of the country: 2,500 people were lynched in the South between 1882 and 1903, compared to eleven in New England and the Mid-Atlantic, fewer than four hundred in the Midwest and great plains, and just under three hundred in the West. This constituted over half of all recorded lynchings since 1882. Lynching was more disproportionately southern over the broader period from 1889 through 1918, with almost 3,000 people meeting their deaths "at the hands of persons unknown" in the South while only 219 people were lynched in the north and 156 people were lynched in the so-called "Wild West."

(**Table 1 Here**)

(**Figure 2 Here**)

Racist attitudes reinforced wholesale disregard for the laws that should have constrained anti-black violence. Lynching occurred in spite of occasional protests by state and local governments—and sometimes with their explicit endorsement. South Carolina governor Cole Blease, when asked once about whether the state should intervene to prevent a lynching, remarked that he would sooner resign his office and lead the mob than stop a lynching, and he later campaigned as "a governor who lauds lynching."[9]

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[8] Quoted in Grant (1975:106). Lynching was also said to have frustrated American missionary efforts in Africa and Asia (Raper, 1933). The letters of black migrants documented by Scott (1919a, 1919b) suggest that black migration northward was spurred by racist violence. There appear to be clear differences between lynching in the South and lynching in the West; the particulars of these differences suggest intriguing avenues for future research.
[9] Waldrep (2002). While many lynchings occurred because of accusations of rape and murder, recent scholarship suggests that many of these accusations were unfounded (Finnegan 1997, 1998; Markovitz 2004).

Contemporaries also understood that violence blighted southern economies. Strom Thurmond prosecuted South Carolina lynchers (unsuccessfully) in the late 1940s to show that law and order, not mob law, reigned in South Carolina.[10] The Memphis *Commercial-Appeal* editorialized against lynching on the grounds that it was bad for the southern economy (Ginzburg, 1988). The Southern Commission on the Study of Lynching argued in 1931 that the direct and indirect financial costs of lynching were substantial: the direct costs came in the form of explicitly destroyed property, while the greater indirect costs of "(t)he damage a lynching does to labor conditions, investment of capital, reputation of the community, and the like are inestimable (Commission 1931:62)." In his study of early twentieth century lynching, Arthur F. Raper (1933:41-42) suggested that

> (L)ynchings focused attention on these communities [where lynchings occurred], not as places where labor conditions are settled and life and property are safe, but rather as places where human relations are unstable and life and property are subject to the whims of a mob.

It was clear that contemporary observers, scholars, and southern leaders understood that lynching sent powerful signals about the quality of labor market institutions and the security of private property rights. Lynching cast a long shadow over the southern economy through the early part of the twentieth century by creating a culture of fear and mistrust, and it had its roots in the economic, social, and political threats posed by blacks (Tolnay and Beck 1995:39).

What did it mean to be "lynched?" A consensus was reached at a conference that took place on December 11, 1940 at the Tuskegee Institute. According to Guzman and Hughes (1947:303), the group decided on four criteria by which to define a lynching:

1. "There must be legal evidence that a person was killed.

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[10] The details of the lynching of Willie Earle are documented in a story by the Greenville *News* from March 15, 2003 and are available online at http://greenvilleonline.com/news/2003/03/15/200303152914.htm.

2. The person must have met death illegally.

3. A group must have participated in the killing.

4. The group must have acted under pretext of service to justice, race, or tradition."[11]

Crimes of this sort appear to have their roots in uncertain enforcement of property rights. Lynching data also represent measurable lawless activity and are correlated with a range of activities that did not show up in statistical records (beatings, floggings, and other forms of extralegal violence) but that nonetheless contributed to low southern productivity. Photographs of some lynchings were turned into postcards and distributed widely. The House of Representatives argued that "a state deprives a person of life, liberty, or property without due process of law and denies him the equal protection of the laws when the State's inaction has the effect of a discriminatory withholding of protection."[12] It was this "discriminatory withholding of protection" that allowed vengeful lynch mobs to wreak havoc on southern markets.[13]

Lynching reflected fundamental uncertainty about the structure of property rights: it reflected uncertainty in labor markets, uncertainty about the institutions that would ultimately emerge, and uncertainty about whether the region would go back to the old system that prevailed under

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[11] In a similar vein, one version of the Federal Anti-Lynching Act (H.R. 4528, 80th Congress, 1st Session, p. 5) defined a "lynch mob" as

> any assemblage of two or more persons which shall, without authority of law, (1) commit or attempt to commit an act or acts of violence upon the person or property of any citizen or citizens of the United States or other person or persons, or (2) exercise or attempt to exercise, by physical violence against person or property, any power of correction or punishment over any citizen or citizens of the United States or other person or persons in the custody of any peace office or suspected of, charged with, or convicted of the commission of any criminal offense, with the purpose or consequence of preventing the apprehension or trial or punishment by law of such citizen or citizens, person or persons, or of imposing a punishment not authorized by law.

[12] House Anti-lynching hearings of 1948, p. 1.

[13] Images of many lynching postcards are available online at www.withoutsanctuary.org. Reports collected by the NAACP (1969), White (1929), and Ginzburg (1988) note that pieces of lynched bodies were sometimes prized souvenirs. In the case of Sam Holt (aka Sam Hose), who was lynched in Georgia in 1899, the NAACP (1969:13) reports that "(t)hose unable to obtain the ghastly relics direct paid their more fortunate possessors extravagant sums for them. Small pieces of bone went for 25 cents, and a bit of the liver, crisply cooked, for 10 cents." This appears to be adapted from the account in the Springfield (MA) *Weekly Republican* of April 28, 1899, reproduced in Ginzburg (1988).

slavery. It was clear that transgressions of racial mores—sexual congress between black men and white women, for example—would be cause for a lynching, but it was not clear exactly on what other margins blacks could act without stirring up the "lynching spirit" among whites.

This was reflected in part in the distribution of reasons for lynching, as shown in Figure 3. While most lynching victims were accused of capital crimes—41% of victims were lynched on the accusation of murder, 25% for rape or attempted rape—approximately 25% of victims were lynched either for nebulous "all other causes" or for insulting whites. These "all other causes" included attempting to vote, voting for the wrong party, conjuring, expressing sympathy with a lynching victim, "being disreputable," "being obnoxious," running a bordello, trying to act like a white man, and "for giving poor entertainment" (Raper 1933:36, Tolnay and Beck 1995:47).[14]

(Figure 3 Here)

Lynching also provides important information about the strength of enforcement mechanisms. Racist lynching stood in open defiance of conventional rules and norms about how one is to do unto others, showing that in some respects the law was ineffective when it came to dealing with lynch mobs. Lynching enforced some rules and norms (those governing relations between the races) and was an affront to others ("thou shalt not kill" and various formal codifications thereof). It was often a form of revenge against Negro depredation, real or imagined, and it was often deemed "necessary" to protect white women and keep blacks at bay (Tolnay and Beck, 1995; Markovitz, 2004).[15]

Many lynchings were spontaneous, but others were premeditated or announced in advance. A newspaper collage assembled by the NAACP to draw attention to one incident also shows that the act was hardly spontaneous, bearing headlines like "CROWD AWAITS LYNCHING" from

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[14] Raper (1933) attributes 24.2% of recorded lynchings between 1889-1929 to these seemingly trivial causes.
[15] Waldrep (2002:121) quotes South Carolina governor Cole Blease: "Whenever the constitution of my state steps between me and the defense of the virtue of white womanhood, then I say to hell with the Constitution!"

the Tampa *Tribune*, "Mob Holds Negro; Invitations Issued for Lynch Party" from the Richmond *Times-Dispatch*, "MOB PLANS FIERY DEATH FOR KILLER" from the Miami *Herald*, "Mob Invites White Folks to Lynching" from the Milwaukee *Sentinel*, "MANY AWAIT LYNCHING AT CRIME SCENE" from the Shreveport *Times*, "HUNDREDS HEADED FOR A LYNCHING" from the Savannah *News*, and finally "GOOD TIME IS HAD BY ALL AS NEGRO IS PUT TO DEATH" from the Bismarck *Tribune* (Markovitz 2004:28).[16]

Lynching came to be an important signal of institutional quality to potential outside investors. Kantrowitz (1998:227) suggests that for South Carolinians, "fears of unpicked cotton and unplowed fields" were rooted in the uncertainties associated with insecure institutions and mob violence. In summary, lynching provides a useful index of southern backwardness. The data reported by White (1929) allow us to examine the relationship between the quality of institutions and labor productivity.[17]

4. Productivity at the Turn of the Twentieth Century

The beginning of the twentieth century provides an attractive setting in which to discuss the relationship between institutions and southern productivity. The Civil War had been over for 35 years, and the first generations of southern blacks born into freedom were well into their prime working years. The turn-of-the-century Southern economy is described by Ransom and Sutch (1977:175):

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[16] One of the most provocative lynchings was that of Anthony Crawford, who was lynched in Abbeville, SC on October 21, 1916. The Crawford lynching is discussed in Finnegan (1998:244-256). In the words of a local banker, "Crawford was insolent to a white man and …deserved a thrashing." In the words of another local banker, the Crawford lynching was justified and "a white man's right to whip a negro once in a while" should not be "interfered with."

[17] White was at the forefront of the anti-lynching campaign, and his data are assembled from newspaper reports and NAACP investigations. Additional data available at the county level (such as the data reported by Tolnay and Beck, 1995) may provide an extremely useful setting in which to examine the relationship between lynching and labor productivity at a more disaggregated level.

The postemancipation era began with great gains and great hopes, but those gains were never

capitalized, and those hopes never materialized. The South of 1900 was poor. Relative to

the entire United States, per capita income was less than 50 percent of the national standard

in the South Atlantic and East South Central divisions. The South of 1900 was

underdeveloped. It remained an agrarian society with a backward technology that still

employed hand labor and mule power virtually unassisted by mechanical implements. The

rural South of 1900 was stagnant. Crop outputs, yields per acre, and agricultural technology

remained virtually the same year after year. Progress was nowhere in evidence.

To examine why "progress was nowhere in evidence" and to ascertain the impact of lawlessness

and racist violence on development, we examine two important issues. First, we turn to available

data on "ultimate factors" responsible for development—endowments of natural resources,

endowments of productive assets, colonial heritage, and lynching to examine productivity in

1900. Second, we examine the relationship between lawless violence and growth in labor

productivity and per capita income between 1900 and 1940.

Figure 4 suggests that Walter White's insight—that lynching is "an excellent index" of

Southern backwardness—was correct, as there was a clear negative relationship between the

number of blacks who were lynched between 1882 and 1903 normalized per 100,000 members

of the total 1900 population and labor productivity in 1900:

(Figure 4 Here)

This simple correlation suggests that lynching may be a useful proxy for Southern

institutions. To examine the relationship between lynching and labor productivity at the turn of

the twentieth century, we consider a simple econometric specification:

$$\ln(Y/L)_{1900} = \beta_0 + \beta_{lynch}\ln(1+lynching) + \boldsymbol{\beta}\mathbf{X} + \mu \tag{1}$$

The dependent variable is price-adjusted output per worker for 1900 as reported by Mitchener & McLean (1999, 2003) for the continental United States.[18] Several measures of the frequency of late nineteenth-century lynching are used. The first is the raw number of lynchings that occurred between 1882 and 1903. The second is the number of black lynchings occurring over the same period. Additional measures normalize these figures per 100,000 of the total 1900 population. Lynching data are taken from White (1929:254-259) and population data are from Lee et al. (1957).[19]

X is a set of controls for "endowments" and other factors. Two sets of endowments are considered—the first is the set of geographic endowments (climate, access to navigable waterways, and mineral endowments), and the second is a set of "endowments" of physical capital, human capital, and urban population left after Reconstruction, measured using their values in 1880.

Urbanization may create spillovers that lead to higher productivity and technological change, and Wright (1982, 1986) argues that one of the most important characteristics of the South was the region's failure to urbanize. We control for spillovers from urbanization using the percentage of the population in urban areas in 1880. Other distinguishing characteristics of southern history were low investments in education and manufacturing. These effects are measured using the ratio of capital invested in manufacturing to the labor force calculated from Lee et al. (1957) and Perloff et al. (1960) as well as Connolly's (2004) measure of migration-adjusted human capital per worker. Controls for long-run factors reported by Mitchener and

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[18] The model follows the specification of Mitchener and McLean (2003).

[19] 1 is added to the lynching figures to admit a pseudo-elasticity interpretation. The estimated elasticity is $[(x/y)(dy/dx)] = \beta*[x/(1+x)]$ where x and y are averages of the lynching variable and labor productivity. The multiplier used to obtain the elasticity for total lynching divided by population is 0.88; for black lynching divided by population it is 0.74. For total lynching, it is 0.99. For total black lynching, it is 0.98. For example, the coefficient of -0.36 on "black lynching victims divided by population" in Table 3 is multiplied by 0.74 to obtain an elasticity estimate of 0.27, suggesting that a 10% improvement in the quality of institutions would have produced a 2.7% increase in labor productivity.

McLean (2003) include data on the percentage of the labor force in mining to control for mineral endowments, the National Oceanographic and Atmospheric Administration's measure of "cooling days" to control for climate, and dummy variables for access to navigable waterways to control for access to trade. **X** also includes dummies for English, French, Spanish, and Dutch settler origin.

The coefficient of interest is β_{lynch}, which measures the impact of lynching (and, by hypothesis, the quality of institutions) on price-adjusted labor productivity. The empirical analysis in this section suggests that the institutions permitting lynching and other forms of chaos reduced Southern productivity. Table 2 reports OLS estimates of univariate specifications of equation 1 using four alternative measures of lynching, 1882-1903—the number of people lynched, the number of blacks lynched, the number of lynching victims divided by the 1900 population, and the number of black lynching victims divided by the 1900 population.

These initial estimates suggest a plausible range of magnitudes on the lynching coefficients and suggest that the explanatory power of lynching, particularly black lynching, is high (as measured by adjusted R-square values ranging up to 0.74).[20] They return coefficients on lynching measures that are both economically and statistically significant. Column (3), for example, suggests that an improvement in institutions as measured by a 10% reduction in lynching would produce an improvement in labor productivity of approximately 1.35%.

(Table 2 Here)

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[20] It is not entirely surprising that the R-square values for total lynching victims and total lynching victims per 100,000 of the 1900 population are so low (0.34, 0.19). Lynchings of whites were relatively more common throughout the high-productivity western states, as well, and they may have had a character altogether different from lynchings that occurred in the South. According to the inventory reported by the NAACP (1969), many of the victims of Western lynch mobs were lynched for horse-stealing, cattle rustling, or murder. The composition of lynchings in the West is currently being investigated.

This estimate is robust to the inclusion of a variety of controls. Estimates of equation (1) adding several successive sets of controls are reported in Table 3. Column (1) includes the percentage of the labor force in mining in 1880 to proxy for each state's endowment of valuable natural resources and the National Oceanographic and Atmospheric Administration's measure of "cooling degree days" to proxy for climate. The coefficient on lynching in this case is -0.17, which corresponds to a productivity increase of approximately 1.5% from each 10% decrease in lynching. This estimate is virtually unchanged when we include dummy variables for proximity to trade—specifically, dummy variables for access to navigable rivers, the Great Lakes, and oceans. Other possible effects picked up by the lynching data include the impact of the "endowments" left over after Reconstruction (particularly endowments of human capital, capital invested in manufacturing, and urban population) as well as settler origin.

It is clear here that the sign, significance, and magnitude of the coefficient on lynching stand up to the inclusion of a variety of plausible controls. These estimates suggest that once we control for human capital investment, capital invested in manufacturing, urban population, settler origin, and access to navigable waterways, the effect of racist violence was such that a 10% reduction in lynching would have produced approximately a 1.4-1.6% increase in productivity.

(Table 3 Here)

As noted, one concern is the potential difference between lynchings in the South and lynchings in the rest of the country. It may have been that lynchings in the western states were symptomatic of the emergence of order in societies with weak states. To address this issue, Table 4 revises estimates of the models reported in Table 3 using dummy variables to separate lynching victims in Southern states from lynching victims everywhere else. In other words, the

lynching variable used to construct Table 4 is separated into two variables: one for Southern

lynching, the other for lynching outside the South.

(Table 4 Here)

The negative impact of lynching appears to have been concentrated almost wholly in the

South, as the coefficient on Southern lynching is statistically significant at the 1% level in

columns (1)-(4) while the coefficient on lynchings outside the South is statistically insignificant.

Again controlling for successive groups of control variables, the estimates reported in Table 5

suggest that the impact of Southern lynching was both significant and large, with columns (3)

and (4) returning estimates consistent with an increase in labor productivity of approximately

1.6-1.7% for every 10% reduction in lynching once investment in human capital and endowment

of urban population are included in the model.[21]

An enduring fact about lynching was its overwhelmingly racist character. While just over a

third of mob victims during the period under consideration were white, lynching became

progressively more Southern and progressively more racist over time. Black lynchings in the

South were often interpreted as signals of the quality of labor relations in the region (White,

1929). To examine the relationship between racist lynching and labor productivity, Tables 6 and

7 report estimations of equation (1) using the number of blacks lynched, 1882-1903 per 100,000

members of the 1900 population and the controls used to obtain the output reported in Tables 3

and 4.

Table 5 reports estimates of equation (1) controlling for mineral endowments and climate,

(column 1), access to various navigable waterways to proxy for access to trade (column 2),

endowments of physical capital, human capital, and urban population (column 3), and settler

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[21] Including urban population eliminates Idaho and Oklahoma from the estimation, as Lee et al. (1957) report no
estimates for these states' urban populations. Missouri is added to the "Southern" states because of its history of
slavery.

origin (column 4). All four estimations return coefficients on racist lynching that are negative and significant at the 1% level, with the coefficients in columns (3) and (4) suggesting productivity increases of approximately 1.5% associated with 10% decreases in lynching.

(Table 5 Here)

Once again, differences between lynching in the South and lynchings elsewhere may provide some cause for concern, though there was relatively little racist lynching in the West (due in large part to low black populations). Table 6 reports regressions using the same controls as those reported in Tables 3, 4, and 5, but with the lynching measure interacted with dummy variables for Southern and non-Southern states.

(Table 6 Here)

These results are broadly consistent with the results reported in Table 5. The coefficients on Southern lynching are similar in magnitude and significant at the 1% level in columns (1) through (4). These estimates again suggest that a 10% improvement in Southern institutions (meaning a 10% reduction in lynching) would have increased productivity by 1-1.5%. The results are consistent with the hypothesis that Southern institutions manifesting themselves in lynching and lawlessness reduced productivity.[22]

5. Lynching and Growth

We can address the endogeneity of lynching (and the puzzle of slow Southern convergence in the first decades of the twentieth century) by looking at the relationship between early twentieth century growth and late nineteenth century lynching. The South did not stagnate completely; indeed, Southern states grew during the late nineteenth and early twentieth centuries. Evidence

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[22] Additional estimations eliminating western states from the sample return similar results on racist lynchings in the South. Surprisingly, the coefficient on non-southern lynching is positive (but statistically insignificant) once we control for capital invested in manufacturing, education spending per worker, and urban population.   This is also likely due to the different character of lynchings that occurred in the West and lynchings that occurred in the South.

suggests, however, that racist violence may have slowed Southern convergence. We can glean some insight into the reasons for slow Southern convergence by examining the factors related to growth between 1900 and 1940. As our interest is in Southern poverty during the first part of the twentieth century, we can regress changes in labor productivity, 1900-1940 on several measures of initial conditions and institutions:

$$\ln(y)_{1940} - \ln(y)_{1900} = \beta_0 + \beta_y(y_{1900}) + \beta_k \ln(k_{1900}) + \beta_h \ln(h_{1900}) + \beta_{lynch}[1+\ln(lynching)] +$$

$$\beta_S(\text{South Dummy}) + \beta_{slave}(\text{slavery}) + \varepsilon \tag{2}$$

Results of regressions using different measures of lynching, a dummy variable for Southern states to capture a generic "South" effect, data on the percentage of the population in slavery in 1860 as an alternative proxy for institutions, and data on labor productivity, capital invested in manufacturing, and Connolly's measure of human capital per worker for 1900 to capture initial conditions are reported in Table 7.

Lynching is measured several ways: total victims, 1882-1903 divided by the 1900 population, black victims, 1882-1903 per 100,000 of the 1900 population, and black victims, 1882-1903 per 100,000 of the 1900 black population. These measures are negative and statistically significant across several specifications, with striking results. Columns (1)-(3) include a dummy variable for the former slave states and columns (4)-(6) include both a dummy variable for Southern states and the percentage of the population in slavery in 1860. The impact of lynching as measured by total lynching, 1882-1903 is negative and significant at the 1% level when we control for a generic "South" effect in column 1, and it is significant at the 5% level when we add a measure of the legacy of slavery in column (4). The coefficient on black lynching victims normalized by the 1900 population lies just outside the 10% rejection region in column (2);

adding the slavery measure in column (5) increases the standard error but it also increases the estimated coefficient on lynching.[23]

(Table 7 Here)

The estimates reported in columns (3) and (6) also suggest that the impact of black lynching divided by the 1900 black population was negative and statistically significant. However, this ratio was relatively high for the border state of Kentucky as well as for states in the Great Plains and the West (such as Kansas, Nebraska, and Colorado). This result again supports the core contention that racist violence reduced growth, but it may be sensitive to the discrepancies in the size of the black population across the South and in the West.[24]

Table 8 reports results of more comprehensive models where growth from 1900 to 1940 is taken to be a function of initial conditions (initial output per worker, initial human capital per worker, and initial manufacturing capital per worker), regional effects (for the former Confederacy, the border states, and the Western states), measures of the legacy of slavery (the percentage of the population in slavery in 1860 and the percentage of the population that was black in 1900), and lynching, 1882-1903. Lynching is measured several different ways: the number of lynching victims, 1882-1903 per 100,000 of the 1900 population (column 1), the number of black lynching victims, 1882-1903 per 100,000 of the 1900 population (column 2), the raw number of lynching victims, 1882-1903 (column 3), the raw number of black lynching victims, 1882-1903 (column 4), and the number of black lynching victims, 1882-1903 per

---

[23] Mitchener and McLean (2003) note that since we do not have a set of price indices that convert state-level prices to a common base-year, the output per worker data are not strictly comparable across time in that they do cannot be manipulated to reflect changes in regional prices over time. The result holds if we consider growth in per capita income, as well.

[24] Estimations interacting these measures with regional dummy variables suggest that lynching measured various ways reduced growth in the South and West. Blacks lynched/black population is driven in part by the Western states, where black populations were relatively low. In addition, "total lynching" divided by the 1900 population is driven at least in part by the Western states, as these states had relatively low growth and relatively high lynching. The results nonetheless suggest that, at the margin, arbitrary violence reduced productivity growth in the South.

100,000 of the 1900 black population (column 5). Generally, there is a tendency toward

convergence, as the coefficient on initial output per worker is negative and statistically

significant across estimations. Each of these models returns a coefficient on lynching that is

negative and statistically significant at conventional levels. Evidence for the importance of

human capital and a manufacturing-based economy is somewhat weak as these coefficients are

positive but only statistically significant in one case for human capital (column 1) and in three

cases for manufacturing capital (columns 2, 4, and 5). Regional effects suggest that the South

performed exceptionally well, as coefficients for regional dummy variables for the former CSA

and the border states were positive and statistically significant.[25]

Interestingly, measures of the legacy of slavery, while negative, are not statistically

significant. Thus, while lynching was an outgrowth of slavery in the South and results are

moderately ambiguous when we include both slavery and lynching in models of growth

restricted to Northern and Southern states, the addition of areas that had a very limited history of

slavery—the West—suggests that weak property rights and insecurity will reduce productivity.

Moreover, arbitrary violence and insecure property rights clearly matter: the impact of lawless

violence as measured by lynching was negative and statistically significant across

specifications.[26]

(Table 8 Here)

How big was the impact? These estimates are obviously very tentative given the nature of

the data, but we can arrive at some understanding of the quantitative impact of lynching using

the coefficients on the regressions of productivity growth reported in Table 8. These coefficients

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[25] As output per worker is a function of capital and human capital, statistical insignificance for the capital and
human capital measures may be the result of a very high correlation between output, capital, and human capital.
[26] In some specifications, the coefficient on the percentage of the population in slavery in 1860 changes sign if the
measure of black population in 1900 is omitted from the estimation.

allow us to obtain a crude estimate of the productivity growth that a state that was average in every respect would have enjoyed if lynching were reduced to zero. Figures 5-8 use the coefficients from the regressions reported in Table 8 to estimate what an average state would have gained by going from "average lynching" to "zero lynching." The estimated gains are substantial, on the order of 10% using measures of black lynching.

Estimating the model using measures of black lynching produces estimates of actual growth that are very close to reality. The coefficients in the model of growth using black lynching normalized by population produces an estimate of output per worker in 1940 that differs from the actual value by less than 5% while the model using un-normalized black lynchings produces an estimate that differs from the actual value by less than two percent. Each model suggests that an average state lost approximately 10% of its potential output because of lynching. Estimates using total lynching produce stronger conclusions: while each model returns statistically significant, negative coefficients on the lynching measure (as well as predicted values of average output per worker that differ only slightly from the true value), the estimated losses from lynching were extremely large (over 19% for lynching normalized by population, almost 15% for total lynching, 1882-1903). Estimates using black lynching normalized by the black population suggest a productivity decrease of almost 25% associated with lynching. These estimates suggest that the decreases in productivity associated with insecure property rights were indeed substantial; however, their magnitude suggests that they must be viewed with caution.

The model of productivity growth as a function of initial conditions, regional effects, controls, and total black lynching, 1882-1903 suggests that late nineteenth century lynching cost an average state approximately 9.5% of potential 1940 labor productivity after controlling for initial conditions, the legacy of slavery, and regional effects. The model fits the data extremely well, as

the predicted 1940 productivity using the coefficients in the growth model was approximately

$13613, which differed from the actual estimate of labor productivity of $13779 by less than 2%.

(Figure 5 Here)

Similar results are obtained when we consider black lynching normalized by 1900 population.

The model predicts average labor productivity of $13110, which differs from the actual

estimated value by less than five percent. The productivity loss associated with black lynching

was on the order of 11%.

(Figure 6 Here)

Moving to estimates obtained using measures of total lynching produces more dramatic

results. Predicted labor productivity for an average state with average lynching is $13832, which

differs from the actual estimate of $13779 by less than 0.4%. The predicted value of "no

lynching" labor productivity of $16199 suggests a decrease in labor productivity associated with

lynching of approximately 14.6%.

(**Figure 7 Here)**

Data on lynching normalized by 1900 population tells a similar story. Estimated productivity

in 1940 using the coefficients in the growth model is $13875, which differs from the estimated

value by just under 0.7%. These data suggest a reduction in 1940 labor productivity from

lynching of approximately 19%.[27]

(Figure 8 Here)

The estimated productivity losses associated with lynching are extremely large; however,

these estimates are tentative, and should be viewed with caution. Additional research and new

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[27] Black lynching normalized by black population yields an estimate of a productivity loss of approximately 25% from lynching; however, the predicted productivity from the model is only $11068, suggesting a difference between actual estimated productivity and predicted estimated productivity of almost 20%. Thus, the plot for black lynching normalized by black population is not reported.

data are needed before we can reach strong conclusions about the cost of poorly specified, poorly-enforced private property rights. Nonetheless, these estimates suggest that lawlessness and insecure property rights were extremely costly in terms of foregone output per worker. Evidence suggests that the institutional uncertainties giving rise to lynchings reduced productivity at the turn of the century and productivity growth from 1900 to 1940.[28]

6. Conclusions & Further Directions

Qualitative and quantitative evidence on lynching suggests that uncertainty associated with insecure property rights was a key factor determining labor productivity and productivity growth. This essay suggests that rules, norms, and enforcement mechanisms that manifested themselves in lynching and racist violence were an important aspect of the legacy of slavery that reduced productivity at the beginning of the twentieth century and that reduced productivity growth over the first several decades of the twentieth century. Many aspects of Southern economic history—poverty and deprivation in what was rapidly becoming the richest society the world has ever seen—appear to have their roots in institutions that failed to protect basic rights.

While these estimates are useful, they expose some of the weaknesses of broadly aggregated state-level data. In particular, the data reported by White, which are correlated with an "institutional foundation" at the turn of the century, are awkwardly aggregated. Future work using county-level observations on lynching and data that can be aggregated in a more straightforward manner will yield additional insight. These estimates suggest important roles for

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[28] The thesis that insecure private property rights, institutional uncertainty, and weak social capital reduce economic growth is strengthened by the fact that lynching of whites may be a stronger predictor of reductions in productivity growth between 1900 and 1940. Preliminary estimates of productivity growth as a function of initial conditions, regional effects, the percentage of the population in slavery in 1860, and measures of blacks lynched and whites lynched, 1882-1903 suggest that white lynching may actually be superior to black lynching as a predictor of slower productivity growth between 1900 and 1940. While racist violence and other aspects of the legacy of slavery do appear to have played a role in the Southern economic experience since the end of the Civil War, the finding that white lynching may be a better predictor than black lynching strengthens the general thesis that secure private property rights are an important component of a political, economic, and social environment conducive to growth.

state-level "macro" institutions; however, the diversity throughout the South (particularly with respect to the Black Belt and other regions) suggests promising directions for research exploiting county-level variation.

This essay also suggests numerous directions for further work. First, these estimates consider the relationship between lynching and labor productivity in a narrow sense. Southern poverty had many different aspects—failure to move into manufacturing, failure to invest in education, failure to develop an "indigenous technological community," etc.—that need to be examined in greater detail. Further work using the inventory of Southern lynching victims collected by Tolnay and Beck (1995) and data on individual lynchings reported by the NAACP (1969) will examine the relationship between lynching and productivity at a more disaggregated level. This study also suggests a fruitful research agenda on the nature and character of extra-legal violence. It has been suggested here that at least one aspect of lynching (particularly in the West) may have been the emergence of private order in frontier economies. While Tolnay and Beck reject the "popular justice" hypothesis for lynching in the South, this intriguing possibility remains relatively unexplored.

We are only beginning to understand the general relationships between institutions, social capital, and prosperity. Southern economic history provides us with an attractive setting in which to examine these issues, and data on lynching suggest that insecure property rights reduced Southern productivity. The relationships between institutions and each of the individual "proximate causes" of wealth (capital, human capital, and technology) and the structure of the Southern labor force deserve to be studied in much greater detail, as well. Evidence on lynching improves our understanding of the general relationship between institutions and development as

well as our understanding of Southern poverty in particular, and this study suggests many

promising directions for further research.

Appendix 1: Data

Variable	Source and Definition
Labor Productivity	Income per worker, adjusted for regional discrepancies in prices, from Mitchener & McLean (1999, 2003).
Settler Origin, Access to Waterways	Dummy variables reported and described in Mitchener & McLean (2003).
Percentage of Labor Force in Mining, 1880	From Mitchener & McLean (2003). Also reported in Perloff (1960:622-23, 626-27).
Cooling Degree Days	Average cooling degree days as reported by NOAA. A "cooling degree day" is produced by a one-degree difference between average air temperature and 65 degrees. Mitchener and McLean (2003) offer as an example a case in which the average air temperature is seventy degrees over thirty-day month. This produces 150 cooling degree days: $(70\text{-}65)*30 = 150$.
Percentage of population in urban areas, 1880	Calculated from Lee et al. (1957:349,353).
Capital Invested in Manufacturing	Calculated from Lee et al. (1957). Data are for the year prior to the year in the estimates; e.g., data for 1899 are used to measure capital in 1900. Labor force data are from Perloff et al (1960).
Human Capital Stock Per Worker	Accumulated education expenditure per worker compiled from reports by the US Commissioner of Education and estimated based on the perpetual inventory model. Data are described in detail in Connolly (2004).[29]
Lynching	Systematic data on lynching begin in 1882 with the series collected by the Chicago *Tribune.* These data have been re-examined by the NAACP and most recently by Tolnay and Beck (1995). The data used in this essay are from White (1929:254-259).
Slavery	Data on percentage of 1860 population in slavery, reported in Mitchener and McLean (2003).

Where appropriate, values have been converted to 2000 dollars using the price deflators in Johnston & Williamson (2004).

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[29] I thank Michelle P. Connolly, who was kind enough to share her data.

Tables

Table 1. Estimated Lynching Victims, 1882-1918						
	1882-1903			1889-1918		
	Whites	Blacks	Total	Whites	Blacks	Total
New England	1	0	1	1	0	1
Mid-Atlantic	3	7	10	4	4	8
East North Central	75	33	108	33	30	63
West North Central	192	63	255	80	67	147
South Atlantic	**113**	**629**	**742**	**78**	**784**	**862**
East South Central	**199**	**745**	**944**	**134**	**880**	**1014**
West South Central	**327**	**577**	**904**	**213**	**745**	**958**
Mountain	273	6	279	101	9	110
Pacific	85	1	86	43	3	46
United States	1268	2061	3262	687	2522	3209

Sources: 1882-1903 from White (1929). 1889-1918 from NAACP (1969).
South Atlantic: DE, MD, VA, WV, NC, SC, GA, FL
E. South Central: KY, TN, AL, MS
W. South Central: AR, LA, OK, TX
Total for US, 1889-1918 also includes 15 whites lynched in "Alaska and unknown."

Table 2. Institutions and Real Labor Productivity

Dependent Variable: Log of price-adjusted labor productivity, 1900

	(1)	(2)	(3)	(4)
Total Lynching Victims, 1882-1903	-0.14***			
	(0.03)			
Black lynching victims, 1882-1903		-0.16***		
		(0.02)		
Total Lynching Victims, 1882-1903 divided by 1900 population			-0.16***	
			(0.05)	
Black Lynching Victims, 1882-1903 divided by 1900 population				-0.36***
				(0.04)
Cross-sections	46	46	46	46
R-Square	0.34	0.61	0.19	0.7
Adj. R-Square	0.33	0.6	0.17	0.69

OLS estimates. White's heteroskedasticity-consistent standard errors.

Ind. Vars are log (1+ lynching measure) to admit pseudo-elasticity interpretation.

Standard Errors in Parentheses.

Constant estimated, not reported.

*-Significant at 10% level

**-Significant at 5% level

***-Significant at 1% level

Table 3: Lynching and Labor Productivity				
Dependent Variable: Log of price-adjusted labor productivity				
	(1)	(2)	(3)	(4)
Constant	9.32***	9.26***	7.94***	7.83***
	(0.07)	(0.13)	(0.53)	(0.52)
Number of Lynching Victims, 1882-1903/1900 population	-0.18***	-0.19**	-0.16***	-0.17***
	(0.06)	(0.08)	(0.04)	(0.05)
Percentage of 1880 labor force in mining	2.36***	2.52***	1.28***	1.21***
	(0.77)	(0.9)	(0.34)	(0.37)
Cooling days	0	0	0	0
	(0)	(0)	(0)	(0)
Access to navigable river		0.13	0.16***	0.16***
		(0.1)	(0.05)	(0.05)
Access to Great Lakes		0.05	0.09	0.1
		(0.11)	(0.07)	(0.08)
Access to Ocean or Gulf of Mexico		-0.05	-0.01	-0.004
		(0.1)	(0.07)	(0.06)
Capital invested in Manufacturing per worker, 1880			-0.03	0
			(0.07)	(0.06)
Human capital per worker, 1880			0.18***	0.17***
			(0.02)	(0.02)
Percentage of 1880 population in urban areas			0.79***	0.67***
			(0.24)	(0.24)
English Settler Origin				-0.08
				(0.08)
French Settler Origin				0
				(0.06)
Spanish Settler Origin				0.09
				(0.06)
Dutch Settler Origin				0.06
				(0.07)
Cross-sections	46	46	44	44
R-Square	0.54	0.58	0.89	0.91
Adj. R-Square	0.51	0.51	0.87	0.87

White's heteroskedasticity-consistent standard errors in parentheses.
Lynching victims measured per 100,000 of 1900 population.
*-Significant at 10% level
**-Significant at 5% level
***-Significant at 1% level

Table 4: Lynching and Labor Productivity, By Region				
Dependent Variable: Log of price-adjusted labor productivity				
	(1)	(2)	(3)	(4)
Constant	9.23***	9.11***	7.82***	7.7***
	(0.05)	(0.09)	(0.51)	(0.51)
Number of Lynching Victims, 1882-1903/1900 population (South)	-0.32***	-0.34***	-0.17***	-0.19***
	(0.03)	(0.04)	(0.04)	(0.04)
Number of Lynching Victims, 1882-1903/1900 population (nonsouth)	-0.03	-0.04	-0.07	-0.07
	(0.04)	(0.05)	(0.07)	(0.08)
Percentage of 1880 labor force in mining	0.56	0.93	1.02***	0.93***
	(0.54)	(0.63)	(0.33)	(0.31)
Cooling days	0	0	0	0
	(0)	(0)	(0)	(0)
Access to navigable river		0.17**	0.17***	0.18***
		(0.07)	(0.05)	(0.05)
Access to Great Lakes		0.04	0.06	0.07
		(0.09)	(0.07)	(0.08)
Access to Ocean or Gulf of Mexico		0.05	-0.02	-0.008
		(0.07)	(0.06)	(0.05)
Capital invested in Manufacturing per worker, 1880			0.02	0.06
			(0.08)	(0.07)
Human capital per worker, 1880			0.12***	0.11**
			(0.04)	(0.04)
Percentage of 1880 population in urban areas			0.73***	0.62**
			(0.24)	(0.23)
English Settler Origin				-0.07
				(0.08)
French Settler Origin				0.01
				(0.05)
Spanish Settler Origin				0.11**
				(0.05)
Dutch Settler Origin				0.09
				(0.07)
Cross-sections	46	46	44	44
R-Square	0.72	0.75	0.9	0.92
Adj. R-Square	0.7	0.71	0.87	0.88

White's heteroskedasticity-consistent standard errors in parentheses.
Lynching victims measured per 100,000 of 1900 population.
*-Significant at 10% level
**-Significant at 5% level
***-Significant at 1% level

Table 5: Black Lynching and Labor Productivity				
Dependent Variable: Log of price-adjusted labor productivity				
	(1)	(2)	(3)	(4)
Constant	9.23***	9.08***	7.77***	7.66***
	(0.04)	(0.07)	(0.48)	(0.46)
Number of Black Victims, 1882-1903/1900 population	-0.36***	-0.36***	-0.19***	-0.2***
	(0.04)	(0.05)	(0.06)	(0.05)
Percentage of 1880 labor force in mining	0.48	0.91*	0.89**	0.86*
	(0.46)	(0.53)	(0.4)	(0.42)
Cooling days	0	0	0	0
	(0)	(0)	(0)	(0)
Access to navigable river		0.14**	0.17***	0.18***
		(0.06)	(0.04)	(0.06)
Access to Great Lakes		0.12	0.08	0.07
		(0.08)	(0.07)	(0.08)
Access to Ocean or Gulf of Mexico		0.1	-0.02	-0.005
		(0.06)	(0.05)	(0.05)
Capital invested in Manufacturing per worker, 1880			0.05	0.08*
			(0.05)	(0.05)
Human capital per worker, 1880			0.1**	0.08**
			(0.04)	(0.04)
Percentage of 1880 population in urban areas			0.71***	0.64***
			(0.23)	(0.22)
English Settler Origin				-0.03
				(0.07)
French Settler Origin				0.04
				(0.05)
Spanish Settler Origin				0.1**
				(0.05)
Dutch Settler Origin				0.11
				(0.06)
Cross-sections	46	46	44	44
R-Square	0.71	0.74	0.9	0.91
Adj. R-Square	0.69	0.7	0.87	0.88

White's heteroskedasticity-consistent standard errors in parentheses.
Lynching victims measured per 100,000 of 1900 population.
*-Significant at 10% level
**-Significant at 5% level
***-Significant at 1% level

Table 6: Black Lynching and Labor Productivity, By Region				
Dependent Variable: Log of price-adjusted labor productivity				
	(1)	(2)	(3)	(4)
	9.21***	9.04***	7.6***	7.43***
	(0.05)	(0.08)	(0.48)	(0.46)
Number of Black Victims, 1882-1903/1900 pop (south)	-0.35***	-0.36***	-0.18***	-0.18***
	(0.04)	(0.04)	(0.05)	(0.05)
Number of Black Victims, 1882-1903/1900 pop (nonsouth)	-0.09	-0.09	0.07	0.13
	(0.17)	(0.17)	(0.13)	(0.15)
Percentage of 1880 labor force in mining	0.4	0.86*	0.84**	0.77**
	(0.41)	(0.49)	(0.33)	(0.34)
Cooling days	0	0	0*	0**
	(0)	(0)	(0)	(0)
Access to navigable river		0.14**	0.17***	0.18***
		(0.07)	(0.04)	(0.05)
Access to Great Lakes		0.12	0.08	0.07
		(0.07)	(0.07)	(0.08)
Access to Ocean or Gulf of Mexico		0.12*	-0.003	0.01
		(0.07)	(0.05)	(0.05)
Capital invested in Manufacturing per worker, 1880			0.07	0.11**
			(0.05)	(0.05)
Human capital per worker, 1880			0.1***	0.08***
			(0.03)	(0.03)
Percentage of 1880 population in urban areas			0.69***	0.59**
			(0.23)	(0.22)
English Settler Origin				-0.05
				(0.08)
French Settler Origin				0.02
				(0.05)
Spanish Settler Origin				0.12**
				(0.05)
Dutch Settler Origin				0.11*
				(0.06)
Cross-sections	46	46	44	44
R-Square	0.72	0.75	0.91	0.92
Adj. R-Square	0.69	0.7	0.88	0.89

White's heteroskedasticity-consistent standard errors in parentheses.
Lynching victims measured per 100,000 of 1900 population.
*-Significant at 10% level
**-Significant at 5% level
***-Significant at 1% level

Table 7: Lynching and Productivity Growth, 1900-1940						
Dependent Variable: Differences in natural log of price-adjusted labor productivity						
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	4.99***	5.13***	4.01***	4.09***	4.49***	3.78***
	(0.7)	(0.66)	(0.65)	(0.77)	(0.76)	(0.77)
Output per worker, 1900	-0.64***	-0.67***	-0.53***	-0.57***	-0.62***	-0.54***
	(0.11)	(0.09)	(0.1)	(0.011)	(0.1)	(0.1)
Human capital per worker, 1900	0.12***	0.07*	0.06*	0.15***	0.08*	0.079*
	(0.03)	(0.04)	(0.04)	(0.04)	(0.04)	(0.043)
Manufacturing capital per worker, 1900	0.06**	0.11***	0.1***	0.06*	0.11***	0.13***
	(0.03)	(0.03)	(0.03)	(0.04)	(0.04)	(0.03)
Lynching Victims, 1882-1903 / 1900 population	-0.07***			-0.1***		
	(0.02)			(0.03)		
Black Lynching Victims, 1882-1903/ 1900 population		-0.09[30]			-0.13*	
		(0.055)			(0.07)	
Black Lynching Victims, 1882-1903/ 1900 black population			-0.04**			-0.04**
			(0.02)			(0.02)
South Dummy	0.17***	0.22***	0.2***	0.12**	0.19**	0.17**
	(0.06)	(0.07)	(0.07)	(0.07)	(0.09)	(0.08)
Percentage of Population in slavery, 1860				0.55	0.47	0.15
				(0.39)	(0.28)	(0.31)
Cross-sections	46	46	42	45	45	41
R-Square	0.74	0.72	0.74	0.76	0.73	0.75
Adj. R-Square	0.71	0.69	0.7	0.72	0.69	0.71

White's heteroskedasticity-consistent standard errors in parentheses.
Constant not reported.
*-Significant at 10% level
**-Significant at 5% level
***-Significant at 1% level

[30] The p-value in equation (2) is 0.1004.

	(1)	(2)	(3)	(4)	(5)
Constant	3.64***	3.92***	3.61***	3.81***	3.18***
	(0.7)	(0.81)	(0.68)	(0.8)	(0.85)
Output per worker, 1900	-0.5***	-0.54***	-0.4***	-0.48***	-0.47***
	(0.1)	(0.09)	(0.11)	(0.1)	(0.1)
Human Capital per worker, 1900	0.13**	0.08	0.02	0.04	0.08
	(0.05)	(0.06)	(0.05)	(0.05)	(0.05)
Manufacturing Capital Per worker, 1900	0.06	0.1**	0.05	0.09*	0.12**
	(0.04)	(0.05)	(0.05)	(0.05)	(0.05)
Former Confederate State	0.44***	0.45***	0.4**	0.42**	0.4***
	(0.14)	(0.14)	(0.17)	(0.16)	(0.16)
Border State	0.18***	0.2**	0.18***	0.2***	0.18**
	(0.06)	(0.14)	(0.07)	(0.07)	(0.07)
Western State	0.16**	-0.01	0.08	-0.02	-0.02
	(0.07)	(0.09)	(0.07)	(0.09)	(0.09)
Percentage of Population in Slavery, 1860	-0.36	-0.67	-0.88	-0.92	-0.87
	(0.62)	(0.6)	(0.67)	(0.69)	(0.71)
Percentage of Population Black, 1900	0.52	0.79	0.72	0.75	0.64
	(0.54)	(0.52)	(0.57)	(0.55)	(0.57)
Lynching Victims, 1882-1903/1900 population	-0.14***				
	(0.03)				
Black Lynching Victims, 1882-1903/1900 population		-0.15**			
		(0.07)			
Lynching Victims, 1882-1903			-0.06***		
			(0.02)		
Black Lynching Victims, 1882-1903				-0.05**	
				(0.03)	
Black Lynching Victims, 1882-1903/1900 black population					-0.04**
					(0.02)
Cross-sections	45	45	45	45	41
R-Square	0.81	0.76	0.78	0.75	0.77
Adj. R-Square	0.76	0.7	0.72	0.68	0.71

Table 8: Lynching and Productivity Growth, 1900-1940
Dependent Variable: labor productivity growth, 1900-1940

White's heteroskedasticity-consistent standard errors in parentheses.
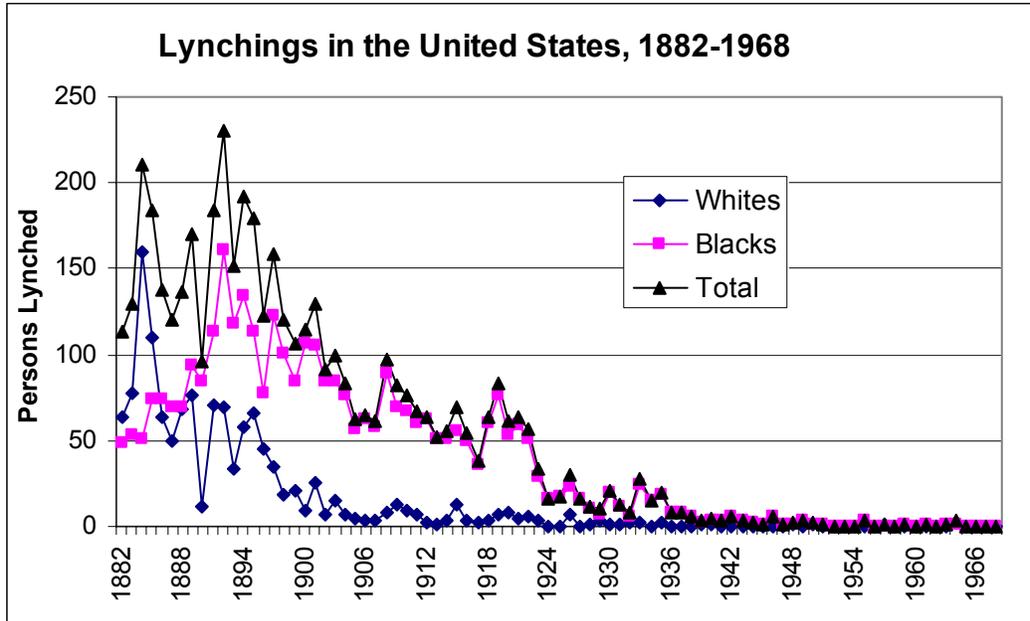*-Significant at 10% level
**-Significant at 5% level
***-Significant at 1% level
OK, Dakotas not included. MT, NM, OR, UT omitted from column (5).
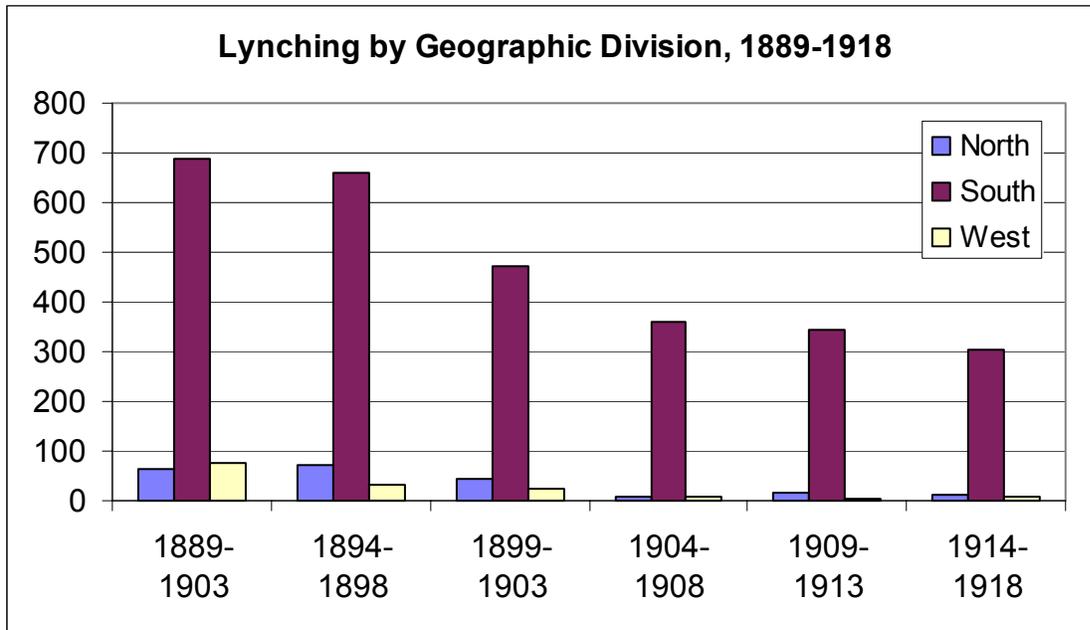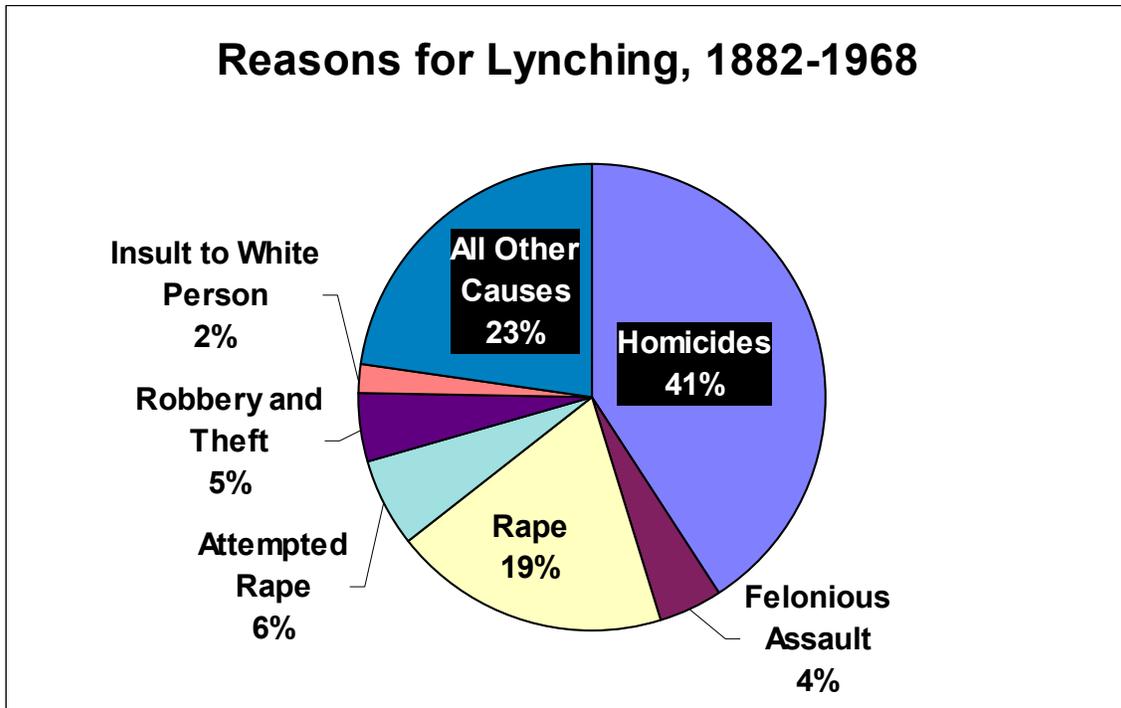"Population" is per 100,000 of 1900 population

Figures

Figure 1

Lynchings in the United States, 1882-1968

Source: University of Missouri-Kansas City "Lynching in America" database:
http://www.law.umkc.edu/faculty/projects/ftrials/shipp/lynchingyear.html

Figure 2

Lynching by Geographic Division, 1889-1918

Source: NAACP (1969:8).

Figure 3

Reasons for Lynching, 1882-1968

- Homicides 41%
- All Other Causes 23%
- Insult to White Person 2%
- Robbery and Theft 5%
- Attempted Rape 6%
- Rape 19%
- Felonious Assault 4%

Source: University of Missouri-Kansas City "Lynching in America" database:
http://www.law.umkc.edu/faculty/projects/ftrials/shipp/Lynchcauses.html
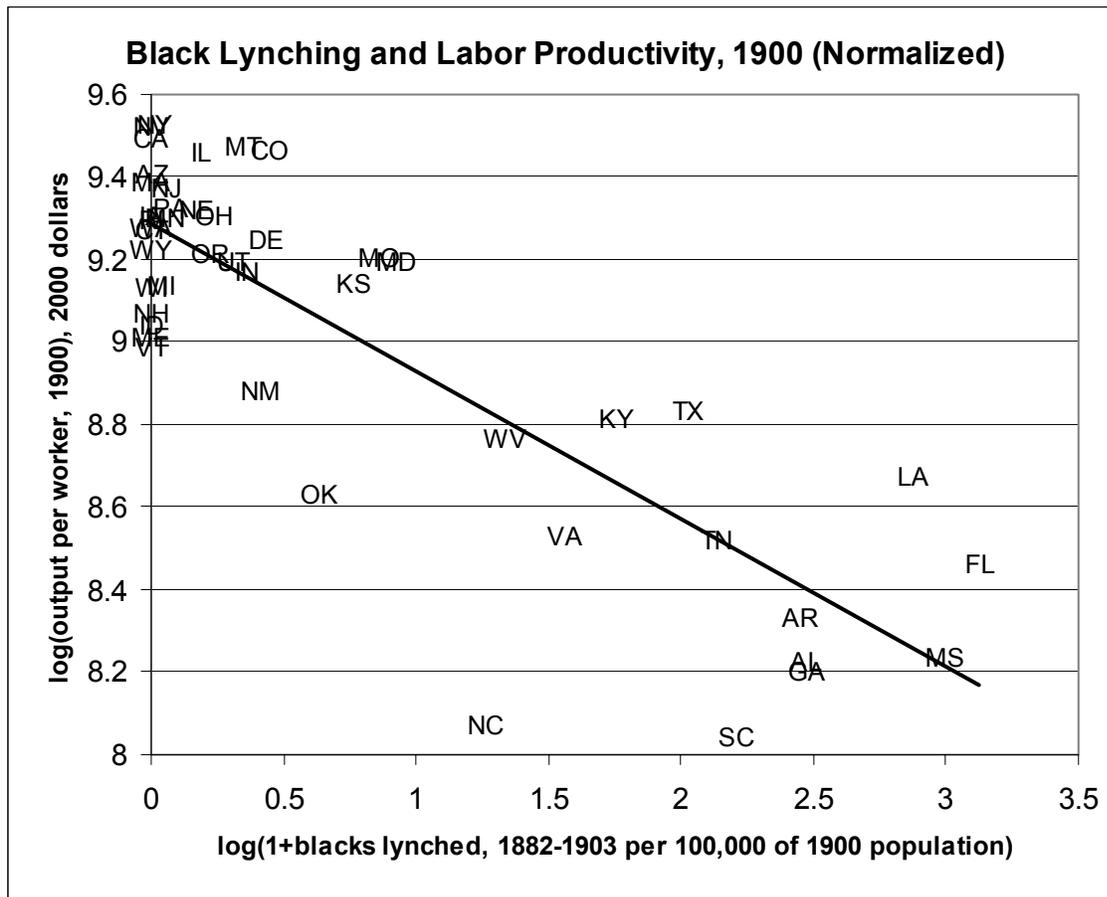
Figure 4

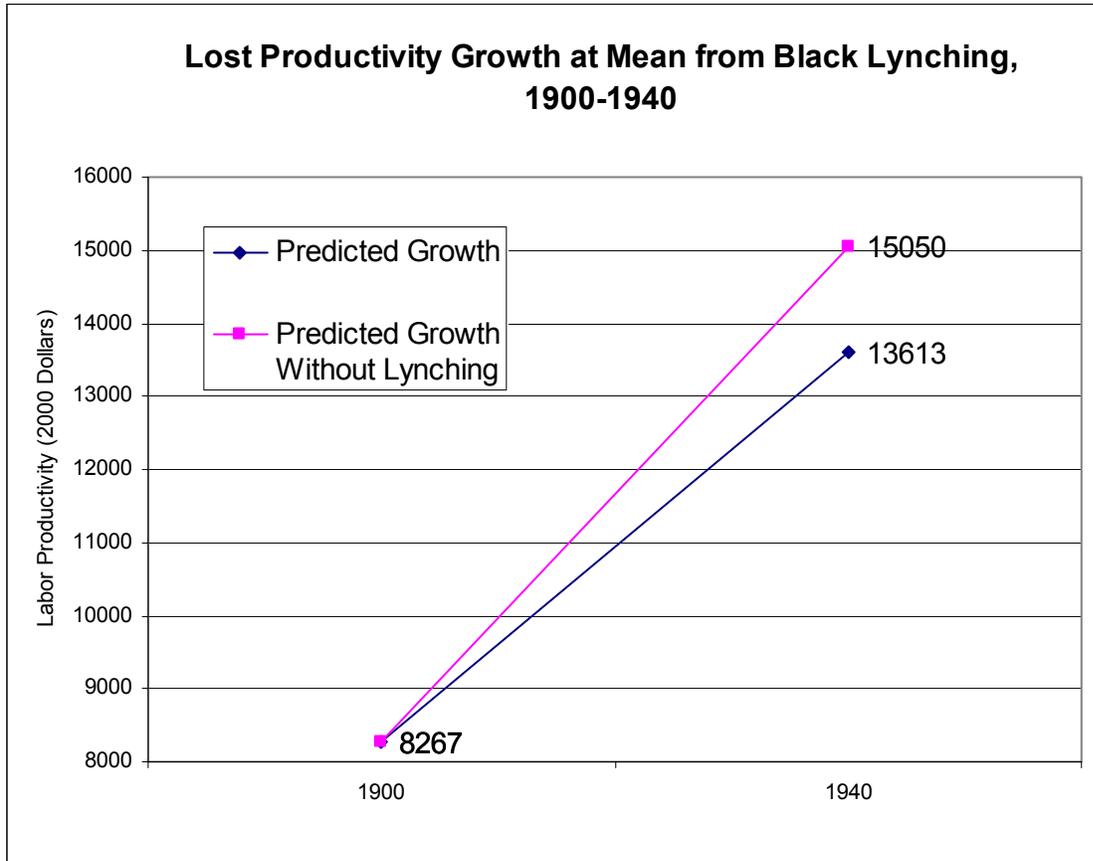Source: calculated from data reported by Mitchener and McLean (2003), White (1929), Lee et al. (1957), and Johnston and Williamson (2004).
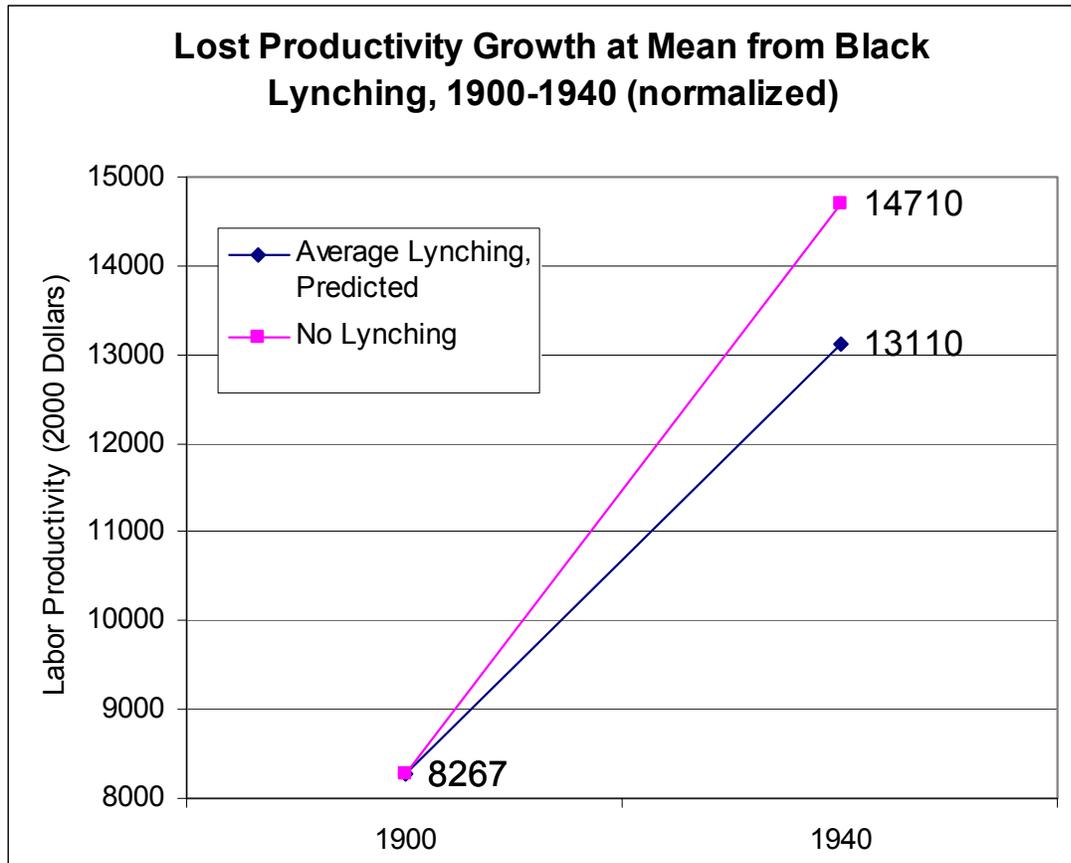
Figure 5

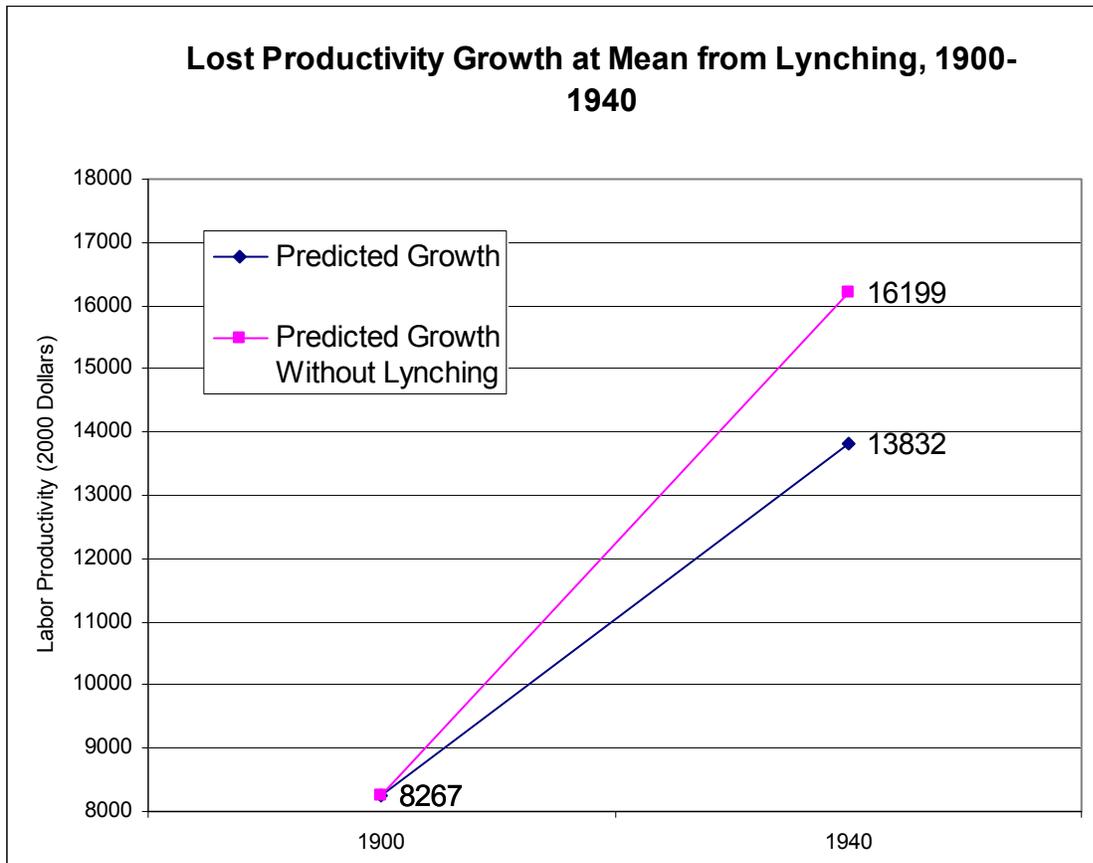Lost Productivity Growth at Mean from Black Lynching, 1900-1940

Figure 6

Lost Productivity Growth at Mean from Black Lynching, 1900-1940 (normalized)

Figure 7

Lost Productivity Growth at Mean from Lynching, 1900-1940

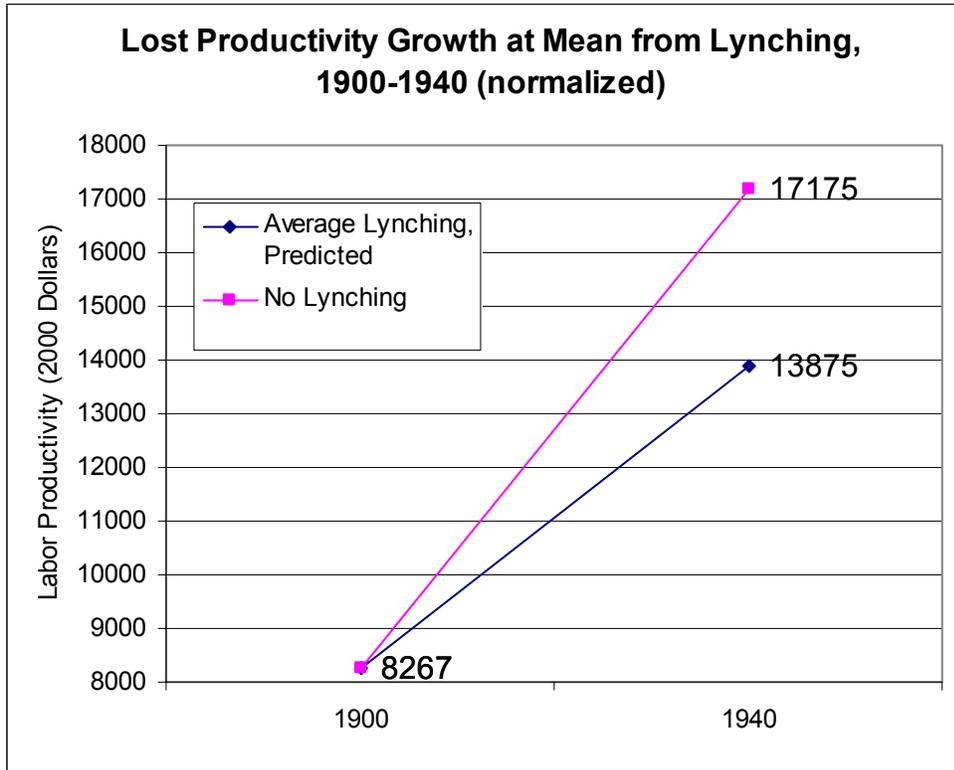**Figure 8**

Lost Productivity Growth at Mean from Lynching, 1900-1940 (normalized)

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