Collective Action, White Flight, and the Origins of Racial Zoning Laws

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This article develops and tests a simple model to explain a watershed moment in the history of residential segregation: the passage of municipal segregation ordinances. Passed by American cities between 1909 and 1917, these ordinances were the first formal laws in American history designed to segregate city neighborhoods along racial lines. The ordinances prohibited whites (blacks) on a given city block from selling or renting property to blacks (whites). We argue that prior to these ordinances, cities sustained residential segregation through private norms and vigilante activity. Only when these private arrangements began to break down during the early 1900s did whites start lobbying municipal governments for segregation ordinances (*JEL* J15, N32, N92, R30).

1. Introduction

It is widely believed that laws, government regulations, and public agencies have played a central role in propagating and maintaining residential segregation in American cities. While there is evidence to support this claim (e.g., Fishback et al. 2013; Fischel 1985), there is also evidence that social norms and private actions are important as well (e.g., Berry 2001; Brooks 2011). Indeed, for much of American history there were few (if any) laws regulating where African Americans (and other minority groups) could reside and yet one can still observe patterns of residential segregation along racial and ethnic lines (Shertzer and Walsh 2019). It was only during the early 20th century that policymakers began passing laws to regulate the racial geography of cities. As we explain below, the rise of racial zoning started in December of 1910 when, starting with Baltimore, cities in the American South and border-states began passing ordinances restricting the locational choices of African Americans. Referred to in the literature as municipal segregation ordinances or racial zoning, these laws prohibited blacks (whites) from purchasing and occupying homes on majority white (black) city blocks. Although the Supreme Court declared

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such ordinances unconstitutional in 1917, these ordinances ushered in a host of laws and regulations thought to have promoted segregation. In this way, segregation ordinances represent a watershed moment in the rise of residential segregation.

Building on a long-standing literature that explores how norms and private-order arrangements can promote cooperation (e.g., Grief 1993) and/or protect established economic interests and property rights (e.g., Alston and Ferrie 1993, 1999), we formalize and test the hypothesis that segregation laws emerged in response to a collective action problem. More precisely, the patterns we find support the following conclusion. As long as urban whites lived in stable and tightly knit communities, and black housing demand was limited, whites could maintain segregation through private arrangements that defined and policed the norms governing the racial composition of neighborhoods. However, as urban populations grew so too did free rider problems, and as a result, it became increasingly difficult to rely solely on social norms and private arrangements to support residential segregation. In response, white communities turned to local governments for assistance.[1]

We organize our analysis around a political economy framework that integrates the logic of collective action (Olson 1969) with a simple tipping framework (e.g., Card et al. 2008; Schelling 1971). In this framework, a segregated equilibrium is sustained through private-order enforcement so long as the price of housing in the black community is less than our equal to the price of housing in the white community plus some punishment cost that is imposed on blacks who defect and migrate into white neighborhoods.[2] Segregation laws emerge in response to threats to this equilibrium, and can arise through two possible channels. The first channel relates to increased demand for housing in black neighborhoods. In particular, because the black housing stock was relatively limited, as black urban populations during the early 20th century expanded, black households had to pay a premium over whites for the same housing stream. This difference created incentives for blacks to violate the informal norms that dictated where black families could, and could not, reside. The second channel focuses on the ability of whites to organize and carry out private vigilante activity designed to discourage blacks from violating the informal norms governing neighborhood choice. To the extent that the ability of whites to impose costs on defectors declined over time, one expects demand for state-sponsored segregation laws to have risen. This logic suggests that

1. In this setting, zoning laws and norms are presented as substitutes, but to the extent that laws and legislation facilitated the propagation and enforcement one might also view them as complements. The distinction will be made clearer below in the context of our model below. See, more generally, Bowles and Polania-Reyes (2012) and Alston et al. (2018).

2. Collins (2004) uses the same assumption in a framework exploring the housing market effects of state level anti-discrimination laws.

cities with the lowest ability to provide segregation through private vigilante activity would have been the first places to pass segregation laws.

After developing this model, we turn to our empirical analysis. The goal of the analysis is to identify which of the two channels (i.e., increases in black housing demand and/or reductions in white vigilante activity) actually drove demand for passage of municipal segregation ordinances. Although our data and estimating strategies are limited, the patterns we observe are consistent with both of the predictions of the model but the evidence for the vigilante channel is stronger than for the housing demand channel. In particular, whether we use city-level or ward-level data, we find no evidence that black population growth is positive and significant predictor of passage of segregation ordinances, as one would expect if the black housing demand channel drove cities to pass such laws.

In contrast, we find relatively strong and robust evidence for the second channel involving white vigilante activity. Across a variety of model specifications and different measures of white vigilante activity, it is clear that in the cities where whites were able to police color lines and punish deviations through private channels, there was relatively little demand for segregation ordinances. For example, the data show that in cities located in counties with high lynching rates (a direct indicator of the ability of whites to organize privately to punish blacks for violating established racial norms) the probability of passing a segregation ordinance is significantly lower than in places with low lynching rates. Similarly, cities that possessed a robust volunteer fire department (an alternative measure of the ability to provide public goods through private channels) are significantly less likely to pass a segregation ordinance.

We supplement our city-level analysis with ward level data from St Louis. With the ward-level data from St Louis, we can identity which wards were the strongest supporters of the city's segregation ordinance. The patterns observed in St Louis suggest that support for the city's segregation ordinance was strongest in the wards where it may have been difficult for white communities to coordinate private vigilante activity (i.e., wards that exhibited the sharpest growth in white population). But again, there is little evidence for the black housing demand channel, as wards with relative high rates of black population growth do not exhibit elevated rates of support for the segregation law.

The findings reported here are significant on three dimensions. First, economists typically invoke one of the following three mechanisms to explain the origins and persistence of residential segregation: market-based processes (e.g., neighborhood tipping and white flight); social norms and privately-coordinated collective action (e.g., vigilante activity and steering by real estate agents); and publicly-coordinated collective action through formal legal instruments (e.g., segregation ordinances, zoning laws, redlining, discriminatory lending rules promulgated by government agencies). While there is much evidence to suggest all of these institutions and processes matter to some degree, there is no unifying

model that predicts how they interact, how one mechanism might come to supplant another, or how and why their incidence and effectiveness might vary over time and across space. Integrating the logic of collective action with a simple model of white flight, this article provides such a framework, and then formally tests the central predictions of that model.

Second, prevailing historical accounts suggest that segregation ordinances were passed in the immediate aftermath of black families moving into previously all-white neighborhoods, and more generally, in response to growing demand for housing among a small group of upwardly-mobile urban dwelling blacks (e.g., Rice 1968; Meyer 2001: 21). While such secondary accounts are consistent with our model, they have not been formalized or tested empirically. In this way, the existing historical literature treats as an article of faith the claim that segregation ordinances passed first in the cities with the largest and fastest growing black populations. The empirical results below, however, provide almost no support for this claim. Furthermore, the existing secondary literature on the early history of segregation largely ignores how changes in the ability of whites to coordinate their vigilante activity through private channels helped shape both the demand for segregation ordinances and the frequency with which black families violated established neighborhood color lines. Our evidence suggests understanding the efficacy of white vigilante activity is key to explaining the origins of state-sponsored laws and policies governing residential segregation.

Third, Alston and Ferrie (1993, 1999) and Alston and Higgs (1982) show how paternalism and share-cropping shaped economic and political outcomes in the American South during the late 19th and early 20th century. One of the most interesting contributions of the Alston and Ferrie work is to show how paternalism hindered the development of a formal welfare state. In the same spirit, we show how private vigilante activity undercut demand for formal laws segregating housing markets in cities in border-states and the South. In the context of a stylized tipping model, we show how threats to an established segregated equilibrium drive demand for formal segregation laws. Consistent with the model, we find evidence that two features characterized cities most likely to pass segregation ordinances. First, they had rapidly growing white populations, and second, they exhibited relatively low rates of lynching, both of which are consistent with the hypothesis that demand for segregation ordinances grew in places where it became difficult to police and enforce social norms through purely private channels.

2. The Rise and Fall of Municipal Segregation Ordinances: A Brief Overview

In 1910, Baltimore passed the first municipal segregation ordinance in American history. The ordinance forbade any white person from moving into or using as a residence a house or apartment on a city block where the majority of residences were occupied by "colored

persons"; and by the same token, it prohibited African Americans from doing the same. As a result, no African American could move into, or occupy residences on city blocks where most residences were occupied by whites.[3] Within eight years, 26 other cities in the American South, and various border states, followed suit. Table 1 lists the 27 cities that passed one or more segregation ordinances between the end of 1910 and 1917.[4] Only one of these cities is outside the South: Colwyn, a small town in Southeastern, Pennsylvania. Six of the cities were located in Virginia, and three were in North Carolina. These ordinances typically included fines that ranged from 50 to 200 dollars, and confinement in city jails from 30 to 90 days.[5]

From their inception, segregation ordinances were surrounded by debates about their constitutionality. State courts in Maryland and North Carolina struck down segregation ordinances for infringing on the vested property rights of blacks in particular (and property owners in general) while state courts in Virginia and Kentucky upheld segregation ordinances as a legitimate exercise of local police powers. In Georgia, the state's highest court struck down Atlanta's first segregation ordinance, but upheld a later ordinance reshaped in light of the court's earlier ruling. The uncertain constitutional status of segregation ordinances was only resolved in 1917, when the US Supreme Court struck down a Louisville ordinance in its landmark decision, *Buchanan v. Warley*. Quoting liberally from other opinions, the Court explained that residential segregation ordinances were different from laws segregating railroad cars and schools. In the latter instances, "the complaining person was afforded the opportunity to ride, or to attend institutions of learning, or afforded the thing of whatever nature . . . he was entitled. The most that was done was to require him as a member of a class to conform with reasonable rules in regard to the separation of the races." In contrast, "the effect" of segregation

3. On the passage of the Baltimore segregation ordinance, see *Philadelphia Inquirer*, Dec. 20, 1910, p. 2; Rice (1968); Stephenson (1914); Power (1983); and Higginbotham et al. (1990).

4. To identify all cities passing segregation ordinances, we first searched the Lexis-Nexis database for court cases and laws involving segregation ordinances and other local laws regulating the locational choices of African Americans. We then consulted the *Historical Newspapers* database at the University of Pittsburgh and the newspaper database at the Library of Congress (search terms included "municipal," "segregation," "ordinance," "law," "residence," "negro," and "neighborhood"). At the Library of Congress, we also surveyed every issue of *The Crisis* for discussions of segregation ordinances. *The Crisis* was the primary outlet for the NAACP during the early 20th century.

5. For descriptions of various ordinances, see *Hopkins v. Richmond, and Coleman v. Ashland* 117 Va. 692 (1915) (describes ordinances in Richmond and Ashland, Virginia); the Philadelphia *Inquirer*, Jan. 24, 1915, p. 4 (describes the ordinance in Colwyn, Pennsylvania); *State of Maryland v. John H. Gurry* 121 Md. 534 (1913) (describes the Baltimore ordinance); *Harris v. City of Louisville, Buchanan v. Warley* 165 Ky. 559 (1915) (describes the Louisville ordinance); the Charlotte *Observer*, Sept. 27, 1913, p. 4 (describes segregation ordinances in Anderson, South Carolina; Baltimore, Maryland; Greenville, South Carolina; and Atlanta, Georgia); and the Columbia *State*, Feb. 3, 1915, p. 3 (describe a segregation ordinance in Spartanburg, South Carolina).

Table 1. Cities Passing Municipal Segregation Ordinances between 1910 and 1917

City	State	Year passed
Abilene	Texas	1916
Anadarko	Oklahoma	1913
Anderson	South Carolina	1914
Ashland	Virginia	1913
Atlanta	Georgia	1913
Baltimore	Maryland	1910
Birmingham	Alabama	1913
Clifton Forge	Virginia	1917
Colwyn	Pennsylvania	1916
Dallas	Texas	1916
Danville	Virginia	1913
Greensboro	North Carolina	1914
Greenville	South Carolina	1912
Houston	Texas	—
Hyattsville	Maryland	1915
Louisville	Kentucky	1914
Lynchburg	Virginia	—
Madisonville	Kentucky	1913
Miami	Florida	1915
Mooresville	North Carolina	1912
Norfolk	Virginia	1913
Oklahoma City	Oklahoma	1916
Richmond	Virginia	1913
Roanoke	Virginia	1913
Spartanburg	South Carolina	1916
St. Louis	Missouri	1916
Winston-Salem	North Carolina	1912

Source: The *Crisis* (various years, various issues); *Historical Newspapers* database search; *Lexis-Nexis* database search; Dallas *Morning News*, Aug. 23, 1916, p. 7; *Municipal Journal*, vol. 43, no. 21, 1917, p. 524; Fort Worth *Star Telegram*, Dec. 26, 1913, p. 8; Fort Worth *Star Telegram*, June 17, 1916, p. 5; Fort Worth *Star Telegram*, July 29, 1916, p. 5; Rice (1968); Stephenson (1912); and Martin (1934).

ordinances "was not merely to regulate a business or the like, but was to destroy the right of the individual to acquire, enjoy, and dispose of his property (*Buchanan v. Warley* 245 U.S. 60 1917, p. 81)."

Following the Supreme Court's decision in *Buchanan v. Warley*, cities eventually stopped passing segregation ordinances. The significance of the Court's decision is shown in Figure 1, which plots the (cumulative) number of cities in the United States to have ever passed a segregation ordinance over time. Starting in 1910, there is steep upward trend in the number of cities having ever passed an ordinance.[6] But as it was, after the

6. One might view segregation ordinances (and Jim Crow more generally) as an example of the tyranny of the majority. *Buchanan v. Warley*, in turn, might be seen as an example of how an independent judiciary can effectively check the tyrannical impulses of a racist white majority. See, more generally, Fleck and Hanssen (2012).

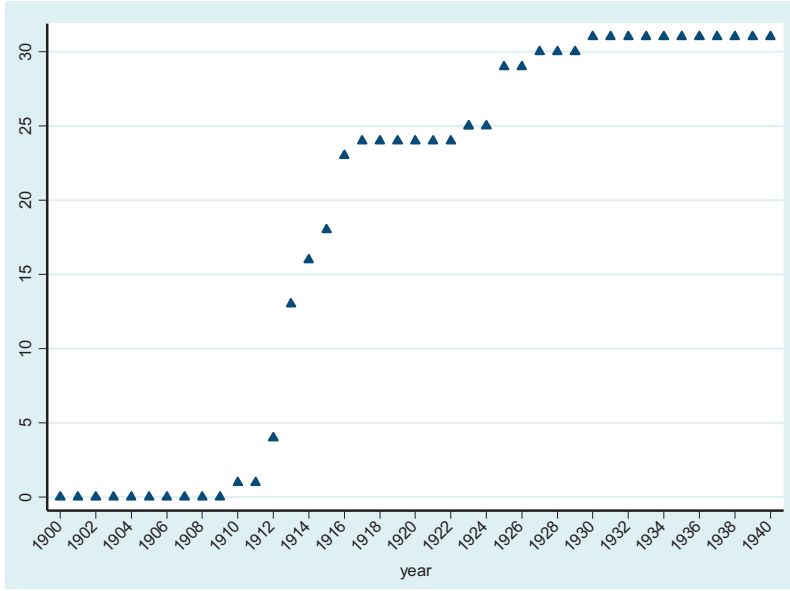

Figure 1. Cumulative Number of Cities Passing Segregation Ordinances. *Sources*: see text.

Court's decision in 1917, only seven cities passed such laws and those were all declared unconstitutional in light of *Buchanan v. Warley*. The sharp break in trend after 1917 suggest that *Buchanan v. Warley* brought a premature end to a process of legislative change that otherwise would have culminated in fairly widespread adoption of segregation ordinances. Indeed, had passage of segregation ordinances continued on its pre-*Buchanan* pace, a simple linear projection suggests that nearly seventy cities would have passed segregation ordinances by 1930.

Buchanan not only discouraged the passage of future segregation ordinances; the decision also encouraged cities and homeowners to seek alternative institutional arrangements that would accomplish similar ends and help prevent black families from migrating into previously white neighborhoods. In the wake of decision, for example, home owners began to use restrictive covenants with increasing frequency (Long and Johnson 1943).

3. Two Questions

Given the pervasiveness of white racism over time and across space, this brief historical overview raises to two related questions: first, why did not more cities pass segregation ordinances, and second, why did cities wait until around 1910 to begin passing such laws? The dearth of such ordinances seems even more surprising when one puts them in historical

context, noting that there were laws segregating virtually every other aspect of the social life of African Americans in cities and states including parks, hotels, schools, public auditoriums, libraries, hospitals, street cars, railroads, and many other areas of activity.[7] The existing historical literature answer these two questions by appealing to shifts in black demand: in times and places, where there was limited demand for black housing in urban areas, there was no need for segregation ordinances and none were passed. It was only when black populations in urban areas began to grow that black families began moving into previously all-white neighborhoods.[8]

While the emphasis on black housing demand is plausible and intuitively appealing, we argue that this focus misses a key part of the story: the breakdown of a privately-provided and sustained apartheid. Understanding this dimension of the story addresses a fundamental question: why were African Americans migrating into white neighborhoods at an increasing rate in the first place? More precisely, white homeowners could create and sustain racially segregated neighborhoods through private organizations or the state, and for most of the 19th century, segregation was maintained through private arrangements such as neighborhood associations and private vigilante activity. Only when it became costly to sustain these private arrangements during the early 1900s did whites turn to municipal governments for assistance. In support of this line of thought, we start out by reviewing the relevant historical evidence. We then formalize these ideas in a model, and subject them to formal hypothesis tests later in the article.

Newspaper accounts suggest that before 1910, whites in Southern cities did not demand segregation ordinances because segregation was maintained through informal norms and private, extra-legal means. For

7. See Margo (1990) and Pritchett (1989) on schools. Roback (1986) discusses segregation on street cars. The *Civil Rights Cases* 109 U.S. (1882) is a landmark court case describing private actions segregating hotels and public auditoriums. Klarman (1998) analyzes railroad segregation and judicial treatment of segregation laws more generally. Stephenson (1911) provides an encyclopedic review of segregation and race-separation laws in the American South before 1910. Kirsch (2007) and McKay (1954) look at the history of segregation of public golf courses and other forms of recreation. Cresswell (1996) and Wolters (2002) focus on libraries. Doyle (1990) and Connerly (2013) explore various types of segregation laws in a series of Southern cities. The canonical treatment of Jim Crow remains Woodward (1955).

8. Writing in the *Journal of Southern History*, Rice (1968) argues: "[African-American] sections were traditionally located in the older, run-down parts of a town. Since the migration increased at a faster rate than the [housing stock in the black area] expanded, crowding became a severe problem. In addition ... more prosperous [blacks] sought relief from the crowded conditions of the [black] section by moving outside ... traditional boundaries." Similarly, describing conditions in Baltimore, Meyer (2001: 21) writes: "It is not hard to explain the city council's willingness to enact a segregation ordinance. The growth of the black community and the economic progress of a small segment of the [black population] had rendered ineffective the customary restrictions on African American advancement .... The unrest caused by the movement of middle-class blacks into white districts forced the city take some action to restore stability." Meyer (2001: 18–27) also suggests that the experience of Baltimore is representative of broader historical patterns.

example, the Macon *Daily Telegraph* wrote that: "A social color line [is] imperative . . . in the matter of residence. The black man may have as fine a house as his money can buy . . . but his house must stand in a neighborhood occupied by his own race. This is the South's unenacted but irrevocable law." According to the paper, this "unwritten law of segregation" was in most places a "sufficient check" on any black migration into all-white neighborhoods. Highlighting the punishment that would be visited upon black families and real estate agents who dared violate this "unwritten law," the *Daily Telegraph* discussed the stability of residential segregation in Charleston, South Carolina:

> Social and business ostracism would be the portion of any real estate dealer in this typical old Southern city if he were to aid the negro [sic] to invade the residential sections occupied by whites, but the fact that the negro [sic] 'knows his place,' and realizes the wisdom of living in harmony with the white man, whose superiority he recognizes, makes it practically impossible that the issue [i.e., black migration into all white neighborhoods] should ever arise here.

The paper documented similar patterns for other Southern cities (Macon *Daily Telegraph*, Oct. 27, 1910, p. 4).

Sometime around 1910, however, the privately-sustained equilibrium described by the *Daily Telegraph* began to break down. And as a result, when blacks began moving into previously all white neighborhood, their movement was unaffected by the pleas and threats made by white organizations. For example, in 1907 in St Louis, Missouri, three black families moved into homes on Finney Street in the city's West End. These families were promptly visited by members of the West End Protective Association, who "politely" explained to them why their new neighbors preferred that they sell their homes, or break their leases, and move elsewhere. At one point the spokesman for the association, a Catholic Priest named Father McDonald, asked a newly arrived black resident why he was refusing to entertain the association's "polite" requests that he move. The resident, L.T. Traddock, who worked as a post office clerk, replied: "I have never liked this house, and have been trying to ever since I moved here in February to find another. But since my neighbors are so anxious to be rid of me I shan't overwork myself from now on in seeking another residence. In fact, I guess I'll stay as long as my landlord will permit me (St. Louis *Post Dispatch*, July 13, 1907, p. 3)."

Similarly, when Father McDonald explained to Bertha Williams, a school teacher, that "from a Christian and moral point of view segregation was the best thing for both races," she could only ask: "will segregation be practiced in heaven?" When Father McDonald persisted, explaining that if Williams were willing to rent her home he could find her a white family willing to pay a handsome monthly fee, she "emphatically refused to consider the proposition." Williams did, however, make a counteroffer, telling

the representatives of the Protective Association that if they found a buyer for her home, she would consider offers that well exceeded her original purchase price. "I am open to proposition[s] to sell the property," she said. "I paid $4, 000 for it, and did not buy it on speculation. But if the control of it is so valuable to my neighbors, I will sell at a substantial increase on my purchase price (St. Louis *Post Dispatch*, July 13, 1907, p. 3)." What happened in St Louis's West End was not unusual: the same story of blacks moving in and/or refusing to leave white neighborhoods even in the face of veiled and explicit threats of violence began to occur throughout the city. It was only when these private associations failed to sustain the equilibrium described by the Macon *Daily Telegraph* above that whites in St Louis began lobbying local politicians for a municipal segregation ordinance.[9]

A few years after the West End Protective Association visited black families in St Louis, the same series of events played themselves out in Atlanta, Georgia. In the city's fourth ward whites organized a committee of prominent citizen's to confront real estate agents and white homeowners who were offering housing to black renters and buyers. These same groups also visited black families bold enough to accept such offers (Atlanta *Constitution*, Oct. 9, 1915, p. 4). Although these committees and associations typically characterized themselves as polite and nonviolent, when they failed to deter black in-migration violence against the new black arrivals often followed. For example, between 1917 and 1920, white vigilante groups in Chicago, detonated more than 50 bombs in the homes of blacks and black real estate agents (Chicago Commission on Race Relations 1922: 121–39), and at a smaller level in Dallas, the home of William Connor was bombed after he moved into a "restricted" whites-only area (Lincoln *Daily News*, Aug. 3, 1916, p. 1; see also, Martin 1934). Even in those cases where black in-migration was not met with such extreme violence, the black "pioneer in a new white section [was] generally subjected to a number of petty annoyances, such as broken windows, defaced woodwork, mud on the steps, and unpleasant epithets (Macon *Daily Telegraph*, Jan. 1, 1911, p. 3)."

When veiled threats by neighborhood groups and vigilante activity proved ineffective, whites turned to the political process. For example, in Atlanta's fourth ward, the ward's alderman, Claude Ashley, introduced and eventually passed the city's first segregation ordinance in 1913.[10] The same legislative patterns that were observed in Atlanta and St Louis were

9. See the following issues of the St Louis *Post-Dispatch*: Feb. 16, 1916, p. 4; May 28, 1908, p. 7; Aug. 12, 1908, p. 4; Oct. 6, 1909, p. 6; Dec. 9, 1909, p. 4; Feb. 12, 1910, p. 12; May 19, 1911, p. 24; and May 29, 1907, p. 9.

10. For the origins of the Atlanta segregation ordinance, see the following issues of the Atlanta *Constitution*: June 13, 1913, p. 5; June 16, 1913, p. 7; July 3, 1913, p. 12; and Jan. 10, 1914, p. 1. After the Georgia Supreme Court struck down his first ordinance, Ashley immediately began redrafting a second ordinance he hoped would pass judicial scrutiny. See Atlanta *Constitution*, Feb. 13, 1915, pp. 1 and 12.

also seen in other cities passing segregation ordinances (Meyer 2001: 18–27). It is ironic that when associations of white homeowners lobbied for segregation ordinances they argued that such legislation would promote the peaceful coexistence of the races and protect blacks from violence and white vigilantism, despite the fact white homeowners where typically the ones perpetuating the violence. The Northside Improvement Association in Miami, Florida, claimed that it "deplored" the violence that had driven several black families from their homes on Avenue I between Fifth and Sixth Street. To prevent such violence, the association advocated a municipal segregation ordinance that would clearly delineate white and black neighborhoods and forestall racial provocations (Miami *Herald*, August 18, 1915, p. 8).[11]

It is not surprising that the equilibrium described by the *Daily Telegraph* could break down over time. Imagine a city where all segregation was privately provided and there were no laws supporting private efforts to mandate residential segregation. Assume that through some sort of private coordination, the city was cordoned off into two areas, one relatively small area for blacks, and another larger area for whites. This informal arrangement would have been vulnerable to shocks that increased demand for housing among blacks, or conversely, undercut the ability of whites to organize and punish those who violated the established norms of segregation. Along these lines, in describing the breakdown of informal segregation in Baltimore, Maryland, the Macon *Daily Telegraph* (Oct. 27, 1910, p. 4) attributed that breakdown, and the subsequent passage of the city's first segregation ordinance, to the misplaced "ambitions of prosperous [African]-Americans."

As to the effects of demand shocks, suppose that black demand for housing rose either in response to growing income among blacks or because the number of blacks living in the city was growing over time. In either case, as blacks were forced to locate in the small area, housing prices in that area would have risen relative to those in the white area. Eventually, housing prices in the black area would have exceeded those in the white area, and blacks would have paid more than whites for the same stream of housing. This, in turn, would have generated incentives for both black home buyers and white home sellers to deviate from established norms and begin making exchanges. Consistent with this line of thought, Cutler et al. (1999) present data suggesting that in 1940 blacks in segregated cities were paying more housing than were blacks in less segregated cities, and they hypothesize that these price differentials were the

11. Also, in their model of how unorganized interests sometimes gain representation, Denzau and Munger (1986) hypothesize that political entrepreneurs (i.e., politicians looking for votes) might pull together otherwise disparate and unorganized individuals. Along these lines, Bernstein (1990) quotes a passage from Booker T. Washington who argues that it was not unorganized white voters who pushed for segregation ordinances, but white politicians who whipped up voters and invented the problems that drove passage of segregation ordinances. In the case of Atlanta, there is evidence that the Alderman Claude Ashley might have played this sort of role. See citations in footnote 10.

product of collective action on the part of whites to exclude blacks from white neighborhoods. Along the same lines, newspaper accounts suggest that price differential existed between black and white housing, and that blacks had to pay more for identical housing streams.[12]

It is also possible that increases in the size and/or heterogeneity of the white population undermined the ability of whites to organize and punish those who deviated from established norms.[13] As the quotations above imply, in the absence of state intervention, the threat of violence and retribution were essential to maintaining racially segregated neighborhoods. But for the whites who desired to maintain residential segregation, the central difficulty was that campaigns of violence and retribution were plagued by free rider problems. The individuals perpetuating such acts risked arrest, prosecution, and personal injury. Given this, they would have under-provided (from the perspective of the whites concerned with black in-migration) violence and punishment against those who deviated from established practices.

One theme that repeats itself in the literature on the private-provision of public goods is that private provision is most likely to survive and function effectively in a world where communities are small and homogenous, while private provision is less likely to survive in communities where there is rapid population growth and increasing heterogeneity (Olson 1965; Ledyard 1995). The upshot of these observations is that a privately-sustained equilibrium of complete residential segregation would have been less likely to survive in settings where white communities were experiencing rapid population growth that undermined the cohesiveness and homogeneity of those communities.

Newspaper accounts from the era suggest that whites desired segregation not solely, or even primarily, because of their own individual preferences, but because integration was detrimental to property values. To this way of thinking, new black in-migration would cause other whites to flee, driving down property values and culminating in an all-black neighborhood where property values were significantly lower than in the original (pre-in-migration) equilibrium. As the St Louis *Post-Dispatch* (Aug. 19, 1901, p. 1) explained: "The [white] property owners will carry on the fight, not because they dislike Negroes but because the advent of a Negro family will, they say, depreciate the value of their real estate." Newspaper accounts from other cities also emphasized how (in their view) it was not

12. See Columbia *State*, December 7, 1922. This newspaper account argues that as of the early 1920s, housing prices in black and white neighborhoods were similar, but suggests that in the past there were differences. Along the same lines, one German homeowner in St Louis explained to his angry white neighbors after selling his home to a black man: "We would rather sell to colored [sic] than to white folks because we can get more from the colored [sic] folks (St. Louis *Post Dispatch*, Sept. 4, 1901, p. 2)."

13. As with African Americans, white migration into southern and border cities during this period was happening concurrent with a marked upswing in migration out of the south. During the 1910s was nearly 10 times that occurred during the ought's. See Wright (1987) for an overview of the Southern Economy during this period.

racism that drove the violence often directed toward newly arrived black families but the fact that "hard-working" laborers and middle class families stood to lose their life savings because a few "ambitious" blacks could not respect established color lines (Macon *Daily Telegraph*, Aug. 14, 1913, p. 4; Gulfport *Daily Herald*, Dec. 23, 1910, p. 4).

4. The Political Economy of Segregation

In this section, we present a simple political economy framework to generate hypotheses regarding the mechanisms that drove the political demand for segregation ordinances. Rationalizing many of the observations in the preceding historical narrative, this framework draws inspiration from two existing literatures in economics. The first is the literature surrounding the logic of collective action as first developed by Olson (1969). The second is the literature surrounding neighborhood tipping as first formalized by Schelling (1971) and tested by Card et al. (2008). We begin with a model of segregated housing markets. In this setup, integration is temporary, and in the absence of formal legislation, segregation is maintained by private vigilante groups who punish defectors for violating established color lines.

As explained below, we assume that because black housing supply is more inelastic than white housing supply and because blacks incur punishment costs for entering the white market, blacks (in equilibrium) can pay a premium (relative to whites) for the same housing stream. However, when the financial premium African Americans pay for housing exceeds the punishment costs inflicted by white vigilante groups, there are incentives for blacks to enter the white market despite these costs. Black entry into the white market causes whites near the point of entry to flee and leads to a one-time expansion in the stock of land and housing available to blacks, which in turn, results in a new segregated equilibrium. Because there are costs to whites associated with moving from one segregated equilibrium to another, threats to any initial equilibrium generate political support for formal legislation mandating residential segregation.

More formally, consider a city with N^{b} (N^{w}) blacks (whites). Demand for housing is perfectly inelastic; everyone consumes one unit of housing no matter the price. As a result, market demand for both blacks and whites is simply the population of the respective group. Whites only purchase housing in the white housing market; black home-buyers decide whether to operate in the black or white market based on the relative prices of housing in both markets. In terms of supply, sellers in both the black and white markets act as perfect competitors but black housing supply is relatively inelastic. This structure suggests a setting where whites can always move outward from the city center and build more housing on land in outlying areas, while black families can only purchase housing on land already abandoned by whites. Because whites do not face a land constraint, the supply of white housing (S^{w}) is perfectly elastic and

sold at a constant price, $\bar{p}^{w}$. In contrast, because housing providers in the black market face a land constraint (they can only operate in the areas whites are unwilling to occupy), the black housing supply curve (S^{b}) is upward sloping in the short run.

If blacks violate the norms dictating where they can purchase housing, and move into the white market, they incur some cost, C. This cost reflects the monetary value of the violence and property damage imposed on defecting blacks by white vigilante groups. Private vigilante activity promotes segregation by imposing a tax on any black family that might choose to migrate into a previously all-white neighborhood. This violence tax drives a wedge between housing prices in black and white communities, and creates a premium on the price blacks pay in the exclusively black market. One might think of the private vigilante activity that whites use to generate C as a public good for white homeowners. Given this, in settings where white communities are (not) tightly knit and can (not) easily overcome the free-rider problems associated with the private provision of local public goods (such as policing the racial make-up of a given neighborhood), C would be relatively high (low).

In our setup, integration is temporary, and all equilibria are segregated. To maintain any initial segregated equilibrium, the price of housing in the black-only market (p^{b}) must be weakly less than the effective price of housing for blacks in the all-white neighborhood. The effective price for blacks in the all-white market includes both the financial price of the home and the violence tax imposed by private vigilante groups so that for any segregated equilibrium to survive it must the case that $p^{b} \leqslant \bar{p}^{w} + C$. Violations of this inequality are temporary, inducing both black migration into the white market and white flight near the point of black entry. As whites abandon land and housing near the entry point, the short-run supply curve of black housing shifts out, reducing price pressures in the black housing market and returning the market to a new segregated equilibrium. As explained further below, this process generates a saw-tooth pattern in the long-run black supply curve for black housing, with a series of teeth rising from $\bar{p}^{w}$ to $(\bar{p}^{w} + C)$.

Two types of shocks threaten any initial segregated equilibrium. First, because black housing supply is relatively inelastic, as black housing demand increases, so too does the premium blacks pay for housing in the exclusively black market. If black housing prices rise sufficiently, the premium surpasses the costs blacks incur from private vigilante groups working to preserve the racial integrity of the white housing market, and blacks enter the white market despite C. Figure 2 shows how shocks to black housing demand can threaten any existing equilibrium at ϵ_0 by inducing white flight and movement to the new segregated equilibrium at ϵ_1. (In the figure, we suppress the b superscript.) As demand shifts from D_0 toward D_1, the price blacks pay for housing in the black market rises until the premium blacks pay for housing temporarily exceeds C (or more precisely, $p^{b} > \bar{p}^{w} + C$) this induces some blacks to enter the white market

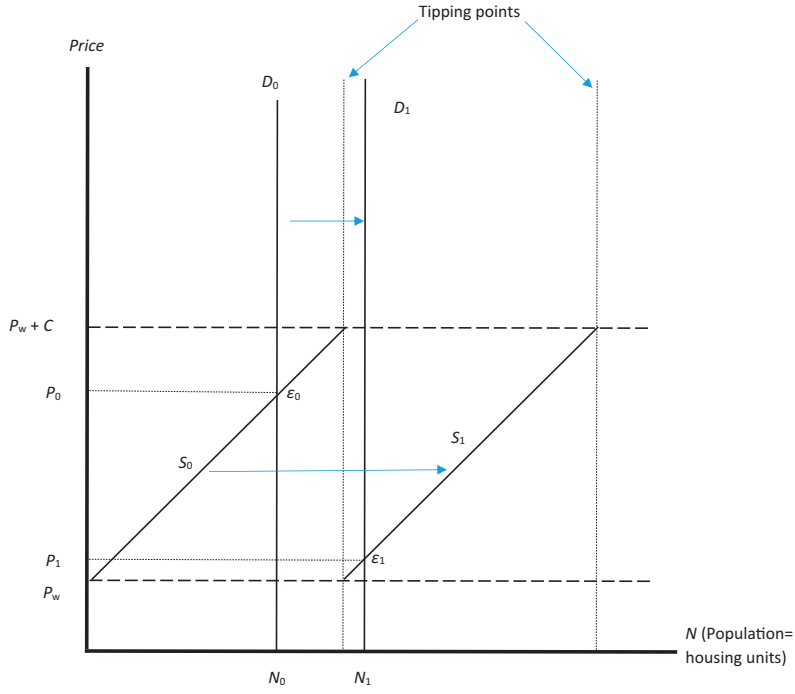

Figure 2. How Increased Housing Demand in the Black Market Might Alter Equilibrium Outcomes.

causing white flight and an outward shift in the short-run supply of black housing. In particular, when white families flee the area where black families enter, whites who abandon their residences make more land and housing available to blacks, and the black housing supply curve shifts from S_0 to S_1. The new segregated equilibrium (ϵ_1) is obtained at the intersection of D_1 and S_1. Discrete breaks in the short-run supply curve for housing (identified by the vertical dotted lines) represent tipping points; at these points, blacks enter the white market and induce white flight near the entry point.

The second channel through which any segregated equilibrium is threatened involves reductions in the violence tax, C. Figure 3 illustrates. The initial equilibrium is at point ϵ_0, with a violence tax C_0 and with N_0 blacks paying P_0 for housing. Assume there is some shock to the ability of whites to organize and punish blacks through private channels, and the violence tax falls from C_0 to C_1. This would reduce the effective price that blacks paid for housing in the white market, and in turn, induce some black families to enter the white market. Just as above, this entry results in some whites abandoning land and housing, which in turn makes more land and housing available for blacks and results in the black housing supply curve shifting outward from S_0 to S_1. Because more land and

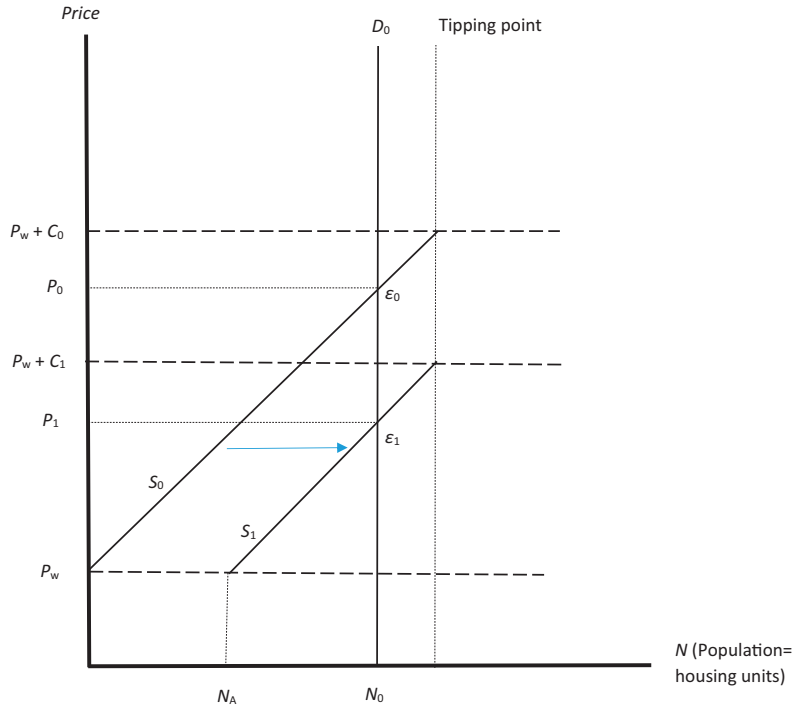

Figure 3. How Reductions in the Violence Tax Might Alter Equilibrium Outcomes.

housing are available to the black population (N_0) at the new equilibrium ϵ_1, the equilibrium price falls from p_0 to p_1. Also, note that with the reduction in violence costs from C_0 to C_1, tipping and flight now occur whenever $p^b > \bar{p}^w + C_1$ which is a lower threshold than $\bar{p}^w + C_0$.

Transitioning from one segregated equilibrium to another imposes movement costs (m) on whites. We allow movement costs to vary across white families for two reasons. First, while we assume such actors are not politically relevant, the very first white family to sell to a black family would gain from entry as that family would be able to sell their home at a price above $\bar{p}^w$. Second, white homeowners located close to (far from) the black entry points where the most (least) likely to have had to move. We therefore expect those whites located closest to points of black incursion to have the largest movement costs (and the strongest demand for a formal law prohibiting black in-migration into their neighborhoods), while white homeowners located far from points of black entry would have no movement costs.[14] In this setting, movement costs are the

14. In a world where land is scarce, it is possible that in those areas receiving new white homeowners (i.e., those fleeing), property values would rise and homeowners in those areas would actually benefit from white flight. We abstract away from this possibility by assuming land and city boundaries can expand infinitely.

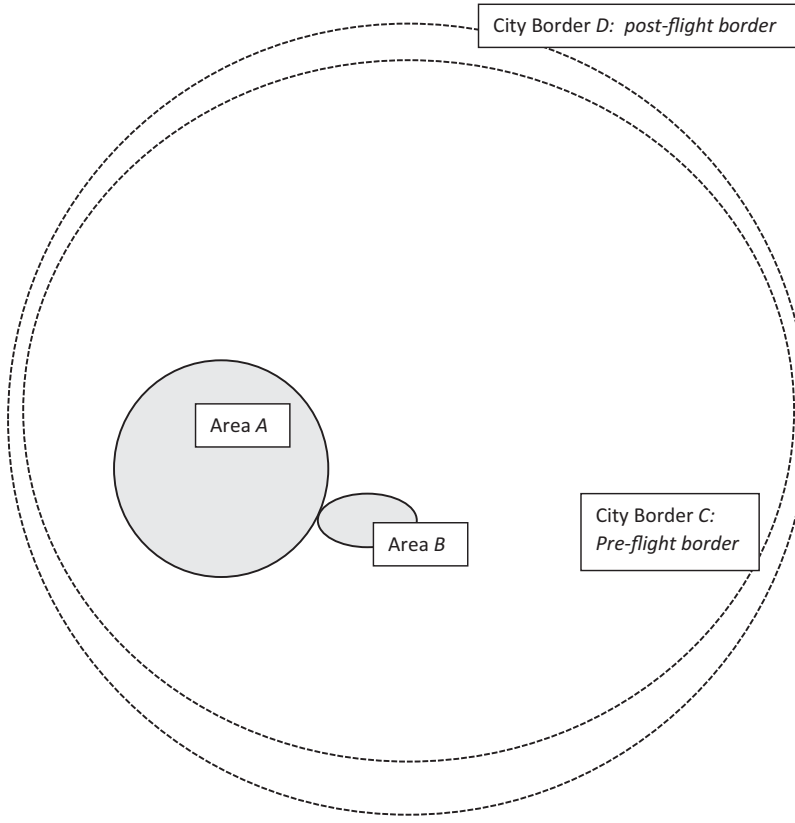

Figure 4. A Hypothetical City.

proximate drivers of segregation laws, while increases in black housing demand and/or an erosion in the ability of whites to provide private vigilante activity are the ultimate causes.

Figure 4 accomplishes two ends. First, it highlights the spatial assumptions we make in our model; and second, it encapsulates our thinking on the role of proximity in driving the political demand for segregation ordinances. Figure 4 depicts a circular city. The borders of the city can expand indefinitely so that whites fleeing blacks can always find new housing and land at constant price. In the initial equilibrium, with $p^{w} < p^{b} < (p^{w} + C)$, blacks occupy the housing and land in the smaller, gray circle labeled A. Suppose a shock to black housing demand or a reduction in the violence tax drives up the price blacks pay for housing in area A relative to the effective housing price in the rest of the city so that so that p^{b} temporarily exceeds $(\bar{p}^{w} + C)$. This would induce some black families to enter the white housing market, causing whites in the proximity of this entry, denoted by the circle B, to abandon their housing and relocate into some other area of the city.

Whites in area B would be the most adversely affected by the breakdown in the initial equilibrium, and would incur the largest movement costs. One expects whites in areas most at risk for such black in-migration to have exhibited the strongest demand for segregation ordinances. That said, because land is unconstrained for whites, white flight away from entry points in area B causes the city boundaries and land supply to expand from C to D. As a result, the whites who flee can always find land and housing on the outskirts of the city at $\bar{p}^{w}$. The variable m captures whatever penalty they incur from movement.[15]

5. Empirical Strategy and Data

To motivate our empirical work we begin by estimating a simple Probit model that predicts whether a city passes segregation ordinances. We emphasize that the first model we estimate is offered purely as a motivational exercise. To estimate this naïve model, we first use the *Census* to gather population data on all urban areas (cities) in the American South and in border-states with populations greater than 2500 in 1910. The *Census* treats places with populations below 2500 as rural and provides relatively limited information on rural areas. This results in a sample of 549 cities and includes all urban areas for which Census data are available. Of these cities, 24 passed segregation ordinances.

With these data, we estimate the following:

$$\Pr(Y_i = 1|X) = \Phi(X'\beta),$$

where, Y_i equals one if city i passes a segregation sometime between 1910 and 1917, and zero otherwise; Φ is the standard normal distribution function; and $\boldsymbol{X}$ is a vector regressors that includes the total population of city i in 1910, the black population in city i in 1910, the percentage change in the white population in city i between 1910 and 1920, and the percentage change in the black population in city i between 1910 and 1920.

In this naïve setup, black population levels and growth capture the black housing demand channel suggested by the model in Section 3.

15. In this discussion, we have suggested that formal laws and norms are substitutes for one another: municipal governments passed segregation ordinances when the ability to enforce social norms regarding residential location of racial groups broke down. One, however, might also view laws and norms as complements. This can be seen clearly in Brooks (2011) in his analysis of racial restrictive covenants. As Brooks explains: "Racial restrictive covenants [were] private agreements prohibiting sale, rental, use or occupancy of properties by persons of designated races, ethnicities, nationalities and religions. Widely acknowledged for facilitating residential segregation, the Supreme Court ruled covenants unenforceable in 1948. Yet they remained legal to write and reference, allowing realtors, banks, insurers, title companies and government agencies to continue to rely on unenforceable covenants in their decisions and policies. Beyond legal enforceability, covenants were essentially signals that coordinated the behavior of a variety of private individual and institutional actors–signals that remained effective without the courts."

Presumably, the cities with the largest and fastest growing black populations would have experienced the sharpest increases in black housing demand and would have been the most likely to have passed segregation ordinances if this channel had been important historically. The model in Section 3 also suggests that demand for segregation ordinances would have been a negative function of the ability of whites to enforce norms governing residential segregation through private vigilante activity; in places where whites had the ability to overcome collective action problems through private channels there would have been fewer incentives to organize and lobby for local legislation. To isolate this private vigilante channel in our naïve specification, we use city size and the growth of the white population (which as explained elsewhere, would be negatively correlated with the ability to provide private vigilante activity).

The results of this exercise are reported in detail below (Table 3), but generally show the following: white population growth, and to a lesser extent, city size, are both positive and significant predictors of passage of a segregation ordinance. To the extent it was more difficult for whites to organize private action in large and fast-growing places, one might interpret this result as evidence consistent with the private vigilante channel. In contrast, the evidence for the black housing demand channel is weaker. Although the coefficient on black population levels in 1910 is significant at 10%, the coefficient on black population growth is negative and insignificant. In short, this naïve specification finds evidence of the private vigilante channel, but little evidence in favor of the black housing demand channel. This is surprising as the existing literature universally suggests cities passed segregation ordinances primarily in response to rising black populations and black housing demand, and the associated incursions into previously all-white neighborhoods.

There are, however, three objections to this naïve specification and our associated interpretation of that model. First, unobservable factors correlated with demographic change in cities might bias our analysis. Probably the most likely hypothesis in this regard is that segregation ordinances reflect nothing more than the intensity of racial preferences among whites. If so, cities where whites held the strongest anti-black preferences would have been the most likely to pass segregation ordinances. Blacks would have been reluctant to migrate into such places, which would suggest a negative coefficient on black population growth.[16] Moreover, if most whites preferred living around whites who held intense anti-black preferences, cities with the strongest anti-black preferences would have experienced the most rapid population growth among whites, which could account for the strong positive correlation between white population growth and passage of segregation ordinances.

16. We note, however, that in the raw data, black population growth is much faster in cities passing segregation ordinances than in those without such ordinances. See the discussion of Table 2.

This line of thinking suggests we add controls that captures the intensity of white animosity toward African Americans and more direct measures of the ability of whites to organize vigilante activity through private channels. Hence, we first add the lynching rate in the county surrounding every city in our sample as a control variable. To the extent cities with the strongest and most virulent anti-black attitudes had the highest rates of lynching, lynching will capture the intensity of white animosity toward blacks. And if it is the intensity of white preferences that drove passage of segregation ordinances, one expects that the lynching measure would enter the regressions positively and that its inclusion would greatly reduce the size and significance of the coefficients on the white (total) population level and growth rate. Alternatively, if municipal segregation ordinances were passed because the ability of whites to organize and punish blacks through private means was breaking down, one expects the coefficient on the lynching rate to be negative and significant. In this way, the lynching rate is a good metric for distinguishing a preference-based explanation for municipal segregation ordinances from our argument that segregation ordinances were substitutes for privately-organized vigilante activity.

In addition to data on lynching, we also gather data on the size of volunteer fire departments (i.e., volunteer fire fighters per capita) in all the cities in our sample. To the extent that a large volunteer fire department in a city reflects the ability of whites to organize and provide public goods through private mechanisms (such as vigilante activity), we expect fewer segregation ordinances passed in cities with relatively large volunteer fire departments. By the same token, if unobserved heterogeneity in preferences drives the correlation between white population growth and segregation ordinances, one would not expect to observe any relationship between the number of volunteer firefighters per capita and the probability of passage of a segregation ordinance.

The data on volunteer fire departments are from the Fire and Marine Insurance Yearbook (1905–06). The lynching data are from a map available online through the Library of Congress. Originally constructed by the Tuskegee Institute, this map records the number of lynchings for every county in the United States for the years 1900 through 1931. With these data, we link the number of lynchings in the surrounding county to the associated city or town located in that county. The lynching rate is measured as lynchings per 10,000 African Americans and is based on the number of lynchings in the county in which a city is located. We do not have data on the size of volunteer fire departments and lynching for all 549 counties, and so including the lynching and volunteer fire department data forces us to drop 59 observations for all but one regression model.

The second objection to the naïve specification above (where we regress the passage of segregation ordinances against only population levels and growth for blacks and whites) is that it fails to control for interstate variation in institutions that may have shaped the passage of segregation ordinances. For example, both North Carolina and Virginia passed

legislation that expressly authorized cities to pass segregation ordinances, while constitutions in other states put express limits on the authority of cities to pass and enforce taxes and various forms of regulation. The interstate variation in institutional setting might explain geographic and state clustering observed in the passage of segregation ordinances. As Table 1 above shows, segregation ordinances were especially common in North Carolina (3), South Carolina (3), Texas (3), and Virginia (7). The geographic clustering of cities passing segregation ordinances can also be seen in Figure 5, which maps the location of all the cities in our sample and color codes the lynching rate in the county surrounding each city.

To address concerns about interstate variation in constitutions and municipal powers, we adopt the following five strategies. First, in one set of regressions we include an indicator variable that assumes a value of 1 for every city located in North Carolina and Virginia (the two states to have passed statewide legislation expressly empowering cities to pass segregation ordinances), and 0 otherwise. Second, we restrict the sample to only cities located in states where at least one city passed a segregation ordinance. Third, we drop the indicator variable for North Carolina or Virginia and include instead state fixed effects. Fourth, for all specifications, we estimate robust standard errors clustered at the state level. Fifth, we calculate how a one standard deviation in key explanatory variables affect the probability of passage in different states, depending on the median values and overall probability of passage across states.

The third objection to this naïve specification is the result of our efforts to construct a sample of cities that is as comprehensive as possible. With only 24 cities passing segregation ordinances, a sample that inadvertently excludes only a few cities could generate estimates that are, at best, unduly noisy, and at worst, biased. Hence, in assembling the data, we constructed a sample that is broadly representative, and includes all urban areas in the South and border states. While this approach allows us to maximize power, and avoids concerns about selective sample construction, it raises the possibility that we might include cities that, because of their size, were never at risk for (not) passing a segregation ordinance.

The stark contrast in city size can be seen generally in our descriptive statistics, presented in Table 2, where we show cities passing segregation ordinances were, on average, more than 10 times larger than cities those that did. More precisely, no city with a population less than 3400 passed a segregation ordinance (184 cities), while no city with a population greater than 339,075 failed to pass an ordinance (2 cities). Appealing to a loose common-support logic, one might argue that it is not appropriate to include these cities in the analysis. To address concerns about city size, we adopt two strategies: in some specifications we add nonlinear terms for city size up to a quartic; in another specification, we restrict the same sample to cities with populations greater than or equal to 3400 (the smallest city have passed a segregation ordinance) and less than 339,075 (the largest city to have failed to pass a segregation ordinance).

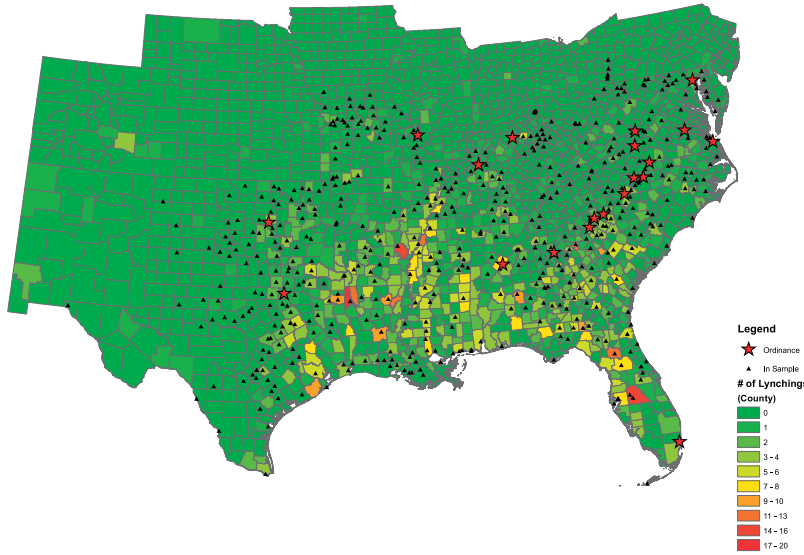

Figure 5. Map of Sample Cities with Number of Lynchings by County. *Source*: see text.

6. Results and Discussion

Table 3 reports the results from these more robust probit specifications. Note that all continuous variables have been normalized by their standard deviation to make it easier to make crude comparisons of magnitudes across variables. Robust state-clustered *p*-values are reported in parentheses. For the time being, the discussion will focus on levels of statistical significance. We will turn to magnitudes after reviewing the results in Table 3.

The first regression in Table 3 is our naïve model. It only includes controls for population levels and growth for blacks and whites. This specification allows us to preserve our entire sample of cities; as noted above, adding controls forces us to drop cities because of data availability. Regression (2) adds the following variables as controls: the North Carolina/Virginia indicator; the lynching rate; and the size of the volunteer fire department. Regression (3) uses the same model as in (2) but restricts the sample to only those cities located in states where at least one city passed a segregation ordinance. This approach allows us to address concerns about institutions in some states forestalling passage of segregation laws, but avoids the loss of observations associated with adding state fixed effects. Regression (4) controls for the interstate variation in institutions by adding state fixed effects. Regression (5) adds the square, cube and quartic of initial (1910) population to model (4). Along with controlling for state level institutional features through state fixed effects, this specification controls for any nonlinear relationship between

Table 2. Summary Statistics

	No segregation ordinance ($y=0$)		Passed segregation ordinance ($y=1$)	
Variable	Mean	Std. dev.	Mean	Std. dev.
Black population, 1910	2627	5927	18,972	22,568
Percent Black, 1910	0.275	0.179	0.272	0.120
Black population, 1920	2938	6889	24,884	29,282
%Δ BlackPop, 1910–1920	0.098	0.547	0.304	0.689
White Population, 1910	7071	16,958	80,372	155,444
%Δ WhitePop, 1910–1920	0.312	0.426	0.577	1.048
Volunteer Firemen per 10,000 Persons	76.463	181.757	16.737	23.389
Lynchings per 10,000 African Americans	2.588	5.583	0.292	0.536
Number of observations	525		24	

Source: United States *Census* (various years, various volumes); data on fire departments are from the *Insurance Year Book, 1905-1906 [Fire and Marine]*, New York: The Spectator Company, 1905. For data on lynching, see the map at: http://www.loc.gov/item/2006636636/.

Table 3. Probit Estimates

	$Y_i = 1$ if city/town passed segregation ordinance						
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Totpop1910	0.190	0.175	0.223	1.367		1.302	0.090
	(0.068)	(0.011)	(0.422)	(0.109)	...	(0.127)	(0.680)
Black1910	0.225	0.202	0.411	−0.0316	−0.101	−0.0368	0.228
	(0.072)	(0.106)	(0.024)	(0.946)	(0.846)	(0.938)	(0.112)
Blackgrowth	−0.050	−0.030	−0.115	−0.134	−0.176	−0.139	0.00810
	(0.481)	(0.817)	(0.568)	(0.550)	(0.508)	(0.660)	(0.971)
Whitegrowth	0.191	0.197	0.234	0.272	0.295	0.260	0.164
	(0.001)	(0.013)	(0.040)	(0.059)	(0.075)	(0.159)	(0.166)
Lynchrate	...	−0.776	−0.686	−0.833	−0.779	−0.899	−0.859
		(0.005)	(0.038)	(0.021)	(0.054)	(0.046)	(0.012)
Volpc	...	−0.998	−0.715	−0.607	−0.548	−0.506	−0.951
		(0.002)	(0.001)	(0.007)	(0.117)	(0.031)	(0.011)
VA/NC = 1	...	0.868	0.766	...	...	...	0.861
		(0.001)	(0.005)				(0.002)
Totpop quartic	No	No	No	No	Yes	No	No
State fixed effect	No	No	No	Yes	Yes	Yes	No
Restricted sample	No	No	Yes[a]	No	No	Yes[b]	Yes[b]
Observations	548	480	365	365	365	228	361

Notes: An n preceding the variable name indicates that the variable has been normalized by its standard deviation to facilitate comparisons in magnitudes. *p*-values are reported in parentheses, and are calculated from robust standard errors clustered at the state level.

[a]Indicates that the sample is restricted to cities located in states where at least one city passed a segregation ordinance.

[b]Indicates that the sample is restricted to cities with a population greater than 3400 (the smallest city to have passed a segregation ordinance) and less than 339,075 (the largest city to have failed to pass a segregation ordinance).

city size and passage segregation ordinances that might confound the analysis.

To address concerns about city size and "common support," our final two specifications restrict the sample to exclude cities and towns that were never at risk for passing (not passing) segregation ordinances because of size or institutional setting. Accordingly, regression (6) reestimates (5) with the aforementioned sample restriction: we limit the sample to cities with populations above 3400 (the smallest city to have passed a segregation ordinance) and below 339, 075 (the largest city to have failed to pass a segregation ordinance). Regression (6) is our most restrictive model, and addresses all three of the potential objections raised in regards to our naïve specification. With this approach, however, more than half the original sample is lost. To preserve observations, regression (7) uses the same sample restriction but replaces the state fixed effects with the North Carolina/Virginia indicator variable.

Overall, our results provide relatively strong (weak) support for the private vigilante (black housing demand) channel. To the extent that increased demand for housing in black neighborhoods drove the passage of segregation ordinances, we would expect cities with the largest and fastest growing African American populations to have been the most likely to have passed segregation ordinances. Although the black population level in 1910 is a positive and significant predictor in models (1) and (3), and it approaches conventional levels of significance in models (2) and (7), black population growth is typically negative and never enters significantly. In contrast, the variables that provide indirect measures of the white vigilante activity channel enter most or all specifications at significant levels. White population growth is always positive and enters regressions (1) through (5) at the 10% level or higher, and enters regressions (6) and (7) at the 0.16 level. The lynching rate is negative and significant in all relevant specifications. Similarly, volunteer fire fighters per capita is significant in five of six specifications at the 5% level or higher, and enters model (5) at the 12% level. These patterns obtain even in model (6), the most restrictive specification.

Less formally, the finding that white population pressure is often a significant and positive predictor of segregation ordinances is consistent with the idea that white population growth undermined the ability of whites to organize and coordinate the private vigilante activity necessary to deter black in-migration, which in turn, fostered demand for formal segregation ordinances. Similarly, the fact that the lynching rate consistently comes in negative and significant suggests that places that with lots of private vigilante activity were less likely to pass segregation ordinances. Given the discussion above, it also suggests that private vigilante activity and segregation ordinances were substitutes, and not merely reflections of the intensity of anti-black preferences. (If it were the preferences channel one would expect a positive coefficient on lynching, not negative.) Finally, to the extent that size and vitality of local volunteer fire departments says

something about the ability of the white community to organize to provide public goods through private channels, the consistently negative and significant coefficient on that variable offers further suggestive evidence that it was only when the ability to organize collective action through private mechanisms began to break down that segregation ordinances began to emerge.

Turning to the size of these effects, in Table 4 we use the coefficients estimated in model (6) to assess magnitudes in two different exemplar states: Georgia and Virginia. Georgia is at one extreme. Atlanta was the only city or town in Georgia to pass a segregation ordinance. Evaluated at the median values for the state's variables (including the state fixed effect), our model predicts that there is only a 0.005% probability of the median town in Georgia adopting an ordinance. Off of this very low baseline, a one standard deviation increase in White Population Growth Rate increases this probability to 0.01%. A big relative effect, but still a very low probability event. Lynch rates and volunteer firefighters per capita are predicted to have marginal effects roughly three times those of white population growth—thus, they have very large relative effects, but still on a very low base.

At the other extreme is Virginia. Six of the Virginia cities in our sample adopted a segregation ordinance and our model predicts that the median Virginia city in had a 6.98% probability of adopting an ordinance over the relevant seven-year period. At the margin, increasing white population growth by one standard deviation is predicted to increase this probability to 10.6%. Conversely, a one standard deviation reduction in the lynch rate (volunteer firefighters per capita) increases the probability of adopting an ordinance to 18.2% (15.1%). Thus, in states where there was significant scope for ordinance adoption, our analysis suggests that variation along dimensions associated with the private vigilante channel could lead to meaningful variation in the probability of ordinance adoption.

The results and discussion thus far raise a key question: if increases in the white population (and other proxies for the ability to act collectively through private mechanisms) undermined the ability of whites to organize private vigilante groups, why did those same pressures not also undermine the ability of whites to lobby for segregation ordinances? There are at least two possible answers. First, the preferences of the median voter might have driven the political pressure for segregation ordinances. Consistent with this observation, many of the qualitative sources we consulted suggest that pressure among (unorganized) white voters drove passage of segregation ordinances (e.g., Atlanta *Constitution*, Oct. 6, 1915, p. 1; Boger 2009; Meyers 2001: 18–27; Powers 1983).

Second, white population pressures might well have reduced the ability to organize political pressure groups, but as long as the costs of organizing politically were less affected by population growth than the costs of organizing private vigilante groups the results above would be sensible. Along the same lines, to be effective private action required sustained and

Table 4. Magnitude Analysis

	Georgia		Virginia	
	Predicted probability of passing a segregation ordinance in Georgia = 0.005%		Predicted probability of passing a segregation ordinance in Virginia = 6.98%	
Variable	Median	dy/dx	Median	dy/dx
Black1910	2165	−0.00001	1475	−0.0042
Blackgrowth	0.0613	−0.00003	−0.0181	−0.0179
Whitegrowth	0.2587	0.00005	0.2327	0.0365
Lynchrate	2.146	−0.00016	0	−0.1117
Volpc	2.091	−0.00012	3.815	−0.0814

repeated efforts, but white vigilante activity often dissipated quickly—even the Klan, probably the best organized and persistent white racist vigilante group saw waves of participation and inaction (Fryer and Levitt 2012). In contrast, once it was passed, a segregation law was durable and required little in the way of repeat organizational activity to sustain it. As one black community leader described the situation, after a black family moved in, there would be some violence, but "after a short time the excitement wore off" and whites would either move or resign themselves to their fate (Meyer 2001: 17).

7. Voting Patterns in St Louis

Our final source of systematic empirical evidence comes from St Louis. In early 1916, the City of St Louis held a city-wide referendum on a segregation ordinance. If the majority of voters in the city voted yes on the referendum, the segregation ordinance would become law. The referendum passed with roughly two-thirds of the city voting in favor of the law: of the roughly 70,000 ballots cast, more than 50,000 voted in favor of passage of the segregation ordinance. St Louis is distinguished from most other cities in our sample in that blacks in border-states like Missouri could still vote, while those in the deeper South were fully disenfranchised by this point in time. We use this referendum vote to explore how variation in black housing demand and white population levels (which one might view as a negative indicator of the ability of whites to engage in collective action) across wards predicts the proportion of voters casting ballots in favor of the referendum. Regressing the ward-level votes and vote shares against population levels and growth rates, the equations we estimate allow us to measure the correlates of support for this law. Table 5 provides descriptive statistics of the ward level data.

In the first specification, we regress the number of yes votes in 1916 against the size of the black and white population in 1920, and the

Table 5. Summary Statistics for St Louis Wards

Variables	*N*	Mean	SD	Min	Max
Blackpop: black population in 1920	28	2495	3342	25.42	13,412
Whitepop: white population in 1920	28	25,098	10,743	9241	49,697
Pctblack: (Blackpop)/(Total population in 1920)	28	0.107	0.149	0.00125	0.531
Yes votes: total yes votes cast	28	1862	927.9	516	4133
PctYes: (Yes votes)/(Total votes)	28	0.717	0.149	0.369	0.891
Change in black population (1910–1920)	28	911.1	1626	−338.2	6531
Change in white population (1910–1920)	28	2247	7666	−12,041	19,527
%Δblack: % change in blackpop, 1910–1920	28	0.578	1.102	−0.678	4.972
%Δwhite: % change in white pop, 1910–1920	28	0.0717	0.293	−0.331	0.771

Sources: population data are from the 1910 and 1920 *Census* volumes; voting data are from St Louis *Post-Dispatch* and St Louis *Globe-Democrat*.

absolute change in the black and white population between 1910 and 1920. See Table 6 for results. Assuming that most whites (blacks) vote yes (no), the population levels in 1920 reflect the simple idea that wards with large white (black) populations would have more yes (no) votes. The changes in the black and white population are of primary interest because these two measures are the most likely to capture the dynamics of housing market. Consistent with the predictions of our model, controlling for population size, the number of yes votes was largest in wards experiencing rapid growth in the black and white population between 1910 and 1920. As in the prior section, we are assuming that growth in the black population is an indirect indicator of increases in black housing demand, and that growth in the white population is an indirect and inverse measure of the ability to organize privately to deter black in-migration into the ward.[17]

The final two columns of Table 6 use a different dependent variable: yes votes as a proportion of total votes cast. In these specifications, the proportion yes is lowest in wards with high black population shares and in those experiencing rapid growth in the white population (measured as the percentage change in the white population between 1910 and 1920). Also, excluding the ninth ward (an outlier in terms of black population growth) from the regression yields evidence that wards experiencing rapid growth in the black population (measured as the percentage change in the black population between 1910 and 1920) had a higher proportion of yes votes. Overall, these results provide mixed support for the black housing demand

17. As discussed above, the logic of collective action suggests the ability to provide segregation through private vigilante activity would have been lowest in those wards experiencing the most rapid growth in the white population. This, in turn, would have generated demand for a formal segregation ordinance in those same wards.

Table 6. Correlates of Ward Level Votes and Vote Shares for St Louis Segregation Ordinance

Variables	(1) Yesvotes	(2) Pctyes	(3) Pctyes
BlackPop	−0.100**	—	—
	(0.0442)		
WhitePop	0.0304*	—	—
	(0.0165)		
ChangeBlackPop	0.231***	—	—
	(0.0674)		
ChangeWhitePop	0.0646***	—	—
	(0.0210)		
PctBlack		−0.593***	−0.697***
		(0.105)	(0.104)
PctChangeBlack		0.0107	0.0602**
		(0.0203)	(0.0229)
PctChangeWhite		0.190***	0.181***
		(0.0639)	(0.0565)
Constant	992.5**	0.760***	0.757***
	(422.6)	(0.0226)	(0.0202)
Sample restriction	No	No	Exclude 9th ward
Observations	28	28	27
R^2	0.798	0.723	0.796

Robust standard errors in parentheses.
***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

channel increasing political support for the St Louis segregation ordinance, and consistent support for the vigilante activity channel.

8. Concluding Remarks

The existing literature on municipal segregation ordinances argues that cities passed these laws because of rapidly growing black populations and variation in the intensity anti-black preferences across cities. Our results revise this understanding. While there is evidence that cites with larger black populations were more likely than others to pass segregation ordinances, there is little evidence that black population growth was a meaningful predictor of passage. Instead, the results here suggest that a decline in the ability of whites to provide a local public good (i.e., segregation) through private vigilante activity was especially important. In particular, the negative coefficient on lynching and the positive coefficients on white population growth are consistent with the hypothesis that segregation ordinances were passed in those cities where it was becoming increasingly difficult for whites to organize and punish blacks for violating established color lines in residential housing markets.

More generally, the model developed and tested here has broad implications for our understanding of residential segregation the processes that give rise to it. Of particular interest is the exploration of how market processes such as tipping interact with institutional change. While prior research has tended to treat market-related processes such as tipping independently from institutions, both formal and informal, the framework here integrates them. In the process, it can help us understand political institutions and market processes work together to drive segregation and make it persistent. Our results suggest that the costs of associated with white flight helped drive political demand for formal laws restricting the locational choices of African Americans.

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