Introduction

Across over 20,000 places in the United States, local governments use a wide range of policy levers to shape where people live. A large body of research shows that such practices as restrictive density zoning and the spatially targeted construction of affordable housing contribute to differential sorting of racial groups across neighborhoods within places (Lens 2022; Massey, Rothwell, and Domina 2009; Owens 2019; Rugh and Massey 2014), and many of these policies also contribute to growing between-place segregation by influencing the overall racial composition across different places in the U.S. (LaBriola 2022; Lichter, Parisi, and Taquino 2015; Rothwell and Massey 2009; Shlay and Rossi 1981; Trounstine 2018).

Place boundaries can be leveraged to achieve desired proportions of racial groups within the place and is an understudied practice that contributes to between-place segregation (Lichter et al. 2015). One particular form of boundary changes—municipal annexations—can be used by municipalities to exclude Black and Hispanic residents at the municipal fringe by avoiding annexation into those territories, also known as "municipal underbounding" (Aiken 1987; Durst 2014, 2019; Johnson et al. 2004; Lichter et al. 2007; Moeser and Dennis 2020; Mukhija and Mason 2013; Murphy 1978). Even though municipal underbounding is often detrimental to the quality of life for Black and Hispanic residents relegated to municipal fringes with worse services and no voting rights on municipal affairs affecting them, an unexamined extension of these previous findings is that annexations can also be detrimental to racial minority residents already living within the place if the addition of White residents dilutes minority political power in local elections (*Gomillion v. Lightfoot* 1960; Moeser and Dennis 2020; Murphy 1978; *Richmond v. Virginia* 1970). While these types of racially diluting annexations were previously subject to federal oversight for many places through Sections 4 and 5 of the Voting Rights Act (VRA), Section 4 (and by extension, Section 5) was ruled unconstitutional and barred from further enforcement on June 25th, 2013, by the US Supreme Court in *Shelby v. Holder*.

Research on the implications of policy changes for racial inequality tend to examine what happens when a new policy is put into place, such as the New Deal and the G.I. Bill (Faber 2020) or Ban the Box initiatives (Doleac and Hansen 2020), but the relationship between removing an existing legal protection and racial inequality is less clear. If an effective law is what prevents racial exclusion, removal of the law would likely result in an increase in those exclusionary

practices. On the other hand, if a law was never effective, its removal would likely have no effect. Laws can also become ingrained norms, such that compliance would plausibly persist even after removal because it is norms, not law, that drive behavior (Hirsh 2009).

In this paper, I investigate whether and how annexations affect minority racial composition in over 15,000 places in the United States between 2000 to 2020, covering all 41 states that have annexable land, and how these trends changed in relation to the *Shelby* ruling.[1] Using difference-in-differences regression models, I first compare the probability for municipalities to conduct annexations before and after *Shelby*, and then examine whether annexations result in greater racial minority population share decreases after *Shelby*. Based on my findings, removal of federal oversight of municipal annexations has not resulted in a drastic increase in municipalities wielding annexations to suppress non-White population growth—at least not immediately so in the 6 years after.

However, the reason for this is unlikely to be because minority voter suppression no longer exists, as argued by Chief Justice John Roberts in his concurring opinion (*Shelby v. Holder* 2013), but because Section 5 was not successful at preventing annexations resulting in racial dilution even when it was in effect. Additionally, the proliferation of other minority voter suppression tactics after *Shelby* like voter ID laws, registration purges, and polling place changes (Brater et al. 2018; Feder and Miller 2020; Hardy 2020; Levine, Pratheek, and Vasilogambros 2020) suggests that minority voter suppression is cause for ongoing scrutiny.

This study contributes to research on administrative boundaries as a source of racial inequality, the limitations of regulations in preventing racial exclusion, and the enduring bright Black/non-Black racial boundary. First, I highlight the importance of an understudied method through which municipalities can shape their racial composition, which has implications for macro-segregation (Lichter et al. 2015). I echo other research showing that place matters and the importance of centering municipal practices in understanding racial inequality (Judd 2005; Lichter et al. 2015; Trounstine 2009). Second, I provide empirical evidence that Section 5 was limited in effectiveness against strategic annexations used to dilute minority voting power across the country. Finally, I show significant differences in outcomes for Black versus non-Black

[1] The nine Northeast states without annexable land are Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont. Washington D.C. is also excluded.

racial minority groups in the process of annexation that signal persistent Black exceptionalism in residential racial discrimination (Parisi, Lichter, and Taquino 2011).

Background

Federal oversight and Section 5 Preclearance

While local governments are responsible for the vast majority of the type of day-to-day policymaking that influence people's lives (Trounstine 2009), federal policymaking undeniably shapes the racial geography of places (Faber 2020; Rothstein 2017). Federal policies can cement racially exclusionary practices (Faber 2020), but they can also be important sources of protection for minority rights. In 1965, Congress enacted the Voting Rights Act, one of the most important pieces of federal civil rights legislation to ensure that that citizens' rights to free and fair elections would be guaranteed without racial discrimination.[2]

One mechanism for federal oversight in the VRA was called "preclearance": under Section 5, jurisdictions subject to the preclearance requirement must submit any proposed changes to election administration and jurisdictional boundaries to a federal court to "preclear" these changes before they come into effect.[3] The burden of proof was placed on jurisdictions seeking preclearance to demonstrate that the proposed changes would not results in disparate impact on political representation by race. Section 4 outlined a "coverage formula" for determining which jurisdictions should be covered by this requirement, using a combination of historical voter registration statistics and a demonstrated history of using racist voter suppression techniques like poll taxes and literacy tests.[4] Eight states in the South were covered entirely, a few states had only some counties covered, and a few counties in other states were at one time covered but later bailed out (released from oversight) after judicial review.[5] Municipal annexations were subject to the preclearance requirement under Section 5 because they could result in minority population dilution and threaten minority citizens' right to fair representation in elections (Baumle, Fossett, and Waren 2008; Berri 1989; Motomura 1982). Between the

[2] https://www.justice.gov/crt/history-federal-voting-rights-laws.
[3] https://www.justice.gov/crt/about-section-5-voting-rights-act.
[4] https://www.justice.gov/crt/section-4-voting-rights-act.
[5] https://www.justice.gov/crt/jurisdictions-previously-covered-section-5. "Bailed out" jurisdictions are not included in the present study as covered jurisdictions.

VRA's enactment in 1965 to 2013, over 112,000 proposed municipal annexations were submitted to the Department of Justice seeking preclearance.[6] For covered jurisdictions, the burden of proof rested on the jurisdictions to show there will be no racially disparate effect of a proposed change on political representation (Baumle et al. 2008; Berri 1989; Hardy 2020; Motomura 1982).

On June 25th, 2013, the coverage formula used in the Section 4 was ruled unconstitutional by the US Supreme Court in *Shelby v. Holder*, thus rendering the preclearance requirement in Section 5 unenforceable. Previously covered jurisdictions (referred to from now on as Section 5 jurisdictions) no longer need to submit preclearance requests.[7] On the same day that the decision was announced, multiple jurisdictions enacted voter ID laws that had previously been rejected at Section 5 hearings for having a racially disparate effect (Hardy 2020; The Brennan Center for Justice 2018).

On the one hand, removing a regulation against racial discrimination would plausibly result in increases in that behavior. Reardon and colleagues (2012) find that schools previously subject to court-mandated desegregation orders resegregated after the mandates ended, albeit at a slower pace than expected. Specific to the Voting Rights Act, case studies show that minority voter suppression laws like strict voter ID and registered voter purges increased significantly after *Shelby* (Feder and Miller 2020; Hardy 2020; The Brennan Center for Justice 2018), and Durst (2019) finds that Section 5 places discriminated against Black residents at municipal fringes more during annexations after *Shelby*.

On the other hand, the removal of an ineffective law would not be associated with increases in those behaviors if the regulation never successfully deterred that behavior, as in the case of harsh laws intended to deter immigration (Cox and Goodman 2018; Ryo 2019; Wong 2018). A study of pre-*Shelby* annexations in the Houston metropolitan area concludes that Section 5 was not effectively preventing annexations that reduce minority population shares in those municipalities (Baumle et al. 2008). Or, if the normative expectations underlying a law is so publicly accepted that it becomes a norm to comply, compliance might persist even with

[6] In comparison, there were only 5,179 requests submitted for incorporations and 1,862 for political unit consolidations. https://www.justice.gov/crt/section-5-changes-type-and-year.
[7] https://www.justice.gov/crt/jurisdictions-previously-covered-section-5.

removal or discontinued enforcement (Hirsh 2009). This is similar to reasoning cited by Chief Justice John Roberts in his concurring opinion, arguing that the law was no longer needed.

In this study, I leverage panel data on municipalities' behavior spanning the period before and after *Shelby* to adjudicate between these two different predictions about the effect of *Shelby* on minority-diluting annexations. Formally, I hypothesize that after invalidation by *Shelby*, Section 5 municipalities are more likely to conduct annexations compared to pre-invalidation, since annexations are no longer subject to federal oversight before they can take place (H1).

Municipal boundaries and the governance of race

Even as the country becomes more racially diverse as a whole, scholars have highlighted the uneven racial diversification patterns between places (Hall and Lee 2010; Lichter et al. 2015). Lichter et al. (2015) document a rise in racial segregation across places within metropolitan areas as places become more racially homogenous. In concluding, they call for more research on how "places—as political and economic actors—play a large and typically unappreciated role in excluding blacks and other minorities from the geographic mainstream" (2015:870).

Municipalities exclude Black and other non-White residents by reinforcing racial boundaries. Practices like burdensome fines and fees and increased police surveillance in minority neighborhoods can have the effect of disproportionately discouraging minority residents from living there, even if there is no expressed racist intent (Beck 2019, n.d.; Carmichael and Kent 2014; Collins, Stuart, and Janulis 2021; Harris 2016; Muhammad 2011; Pacewicz and Robinson 2021). Cities can also enforce limits on geographic boundaries that deter Black and minority population growth. For example, the proliferation of zoning laws in many cities is associated with growth in the number of higher income White residents while suppressing the availability of housing for lower income minority residents (LaBriola 2022; Lens 2022; Rothwell and Massey 2009; Shlay and Rossi 1981; Trounstine 2018). Research from other types of administrative boundaries shows how school district boundaries, state legislative district boundaries, and congressional voting district boundaries can be manipulated in ways that facilitate racial inequality (Bischoff 2008; Cain and Zhang 2016; Cooperstock 2022; Palandrani and Watson 2020; Reardon, Yun, and Eitle 2000; Vargas et al. 2021; Yarbrough 2002).

Recent research by Vargas et al. (2021) reveals how the Chicago, Milwaukee, and St. Louis city councils gerrymandered their city council voting district boundaries since as early as the 1800s to maintain White political dominance over growing threats of Black political strength. Politicians in these municipalities manipulated the redistricting process to use political boundaries as an "instrument of race- and class-based social control" (2021:3). Their research focused on municipal redistricting of internal boundaries, whereas I argue that the boundaries of the place itself is also an instrument of race- and class-based social control because they are "the locality where political or economic battles are fought and where affluent or poor, White or minority, or immigrant or native groups are included or excluded from the community" (Lichter, Parisi, and Taquino 2012:367).

Termed "municipal underbounding," some municipalities refuse to annex neighboring territories with racial minority groups and instead annex majority-White neighborhoods (Aiken 1987; Anderson 2008; Durst 2014, 2019; Durst et al. 2021; Johnson et al. 2004; Marsh, Parnell, and Joyner 2010; Mukhija and Mason 2013; Murphy 1978). Less is understood about the consequences of annexations for the racial minority residents already living within the municipality. Annexation can weaken minority political power in local government if the addition of predominantly White residents through annexation dilutes their population share (Baumle et al. 2008; Moeser and Dennis 2020; Taper 1962). If pursued in this way, racially selective annexations is one method that municipalities can use to shape their overall demographic makeup to the effect of racial control (Lichter et al. 2015; Vargas et al. 2021), but prior research on this aspect of annexations this is limited in scope and has not looked at post-*Shelby* changes (Baumle et al. 2008; Berri 1989; Motomura 1982).[8] Formally, I hypothesize that after invalidation, Section 5 places that annex will have greater reduction in their percent Black and percent non-Black minority population shares at the end of the period, since they are no longer subject to federal oversight prohibiting such annexations (H2).

[8] Although annexations are not the only form of boundary changes, it is the dominant form compared to incorporation, consolidation, disincorporation, or secession. In official records of municipal boundary changes. discussed more in Data and Methods, at least 97% of all recorded boundary changes between 2000 to 2021 were for annexations. (Derived from author's own calculations from the Boundary and Annexation Survey: https://www.census.gov/geographies/reference-files/time-series/geo/bas/annex.html.)

The changing color line and Black exceptionalism

Previous research on municipal annexations has primarily investigated the avoidance of Black communities (Aiken 1987; Durst 2019; Johnson et al. 2004; Lichter et al. 2007), with three exceptions that investigate the avoidance of Hispanic communities (Durst 2014, 2018; Wilson and Edwards 2014). But, as the U.S. continues to experience growth in racial minority populations through immigration from a diverse set of countries, places are becoming even more diverse beyond Black, White, and Hispanic, with the predominant racial minority group(s) additionally varying across metropolitan areas and states (Jensen et al. 2021). The theory of racial threat posits that as cities become more racially diverse, White communities intensify efforts to maintain their dominant group position (Blumer 1958; Bobo and Hutchings 1996; Wilkes and Okamoto 2002). Other research finds that White people living in places with White population share decreases participate in a variety of racially exclusionary behavior reflecting fear or resentment towards these demographic changes (Enos 2016; King and Wheelock 2007; Pape 2022; Stacey, Carbone-López, and Rosenfeld 2011 but see Hill, Hopkins, and Huber 2019). However, in the residential context, racial threat is not merely based on differences in White/non-White population shares.

Black exceptionalism refers to the distinctly large social distance between Black versus non-Black residents compared to any other pairwise comparisons between racial groups (Parisi et al. 2011), for example White and Asian versus White and Black. This is apparent in residential segregation patterns, individual preferences for neighborhoods by neighborhood racial composition, and other indicators of closeness like interracial relationships across a variety of contexts (see Hwang and McDaniel [2022] for a review).[9] Therefore, I expect municipalities' annexation patterns to also reflect this bright Black/non-Black boundary (Fox and Guglielmo 2012; Lee and Bean 2004). In this study, I consider annexations that dilute Black population share to a greater extent than for non-Black minority populations as evidence of Black

[9] Certainly, the racial composition of residents at the unincorporated fringe is itself a legacy of race and class segregation that sort people into often lower quality living conditions at the fringe (Anderson 2008; Lichter et al. 2007), especially at the edges of new immigrant destinations (Durst 2014; Hall 2013; Lichter et al. 2010). The segregation levels between municipalities and their unincorporated, fringe territory are beyond the scope of the present study, but methodological innovations in the measurement of racial segregation should allow for future research at this geographic level (Roberto 2018).

exceptionalism. Formally, I hypothesize that the negative change should be greater (more negative) for percent Black than for percent non-Black minority after an annexation, both before and after *Shelby* (H3).

Data and Methods

Outcome Variables

To address the first question of how probabilities to annex changed before and after *Shelby*, I use a binary indicator of conducting an annexation as the outcome variable. This is assigned 1 if the place conducted an annexation in the period (e.g., 2007-2013 and 2014-2020) and 0 otherwise. Municipalities—which correspond to Census places—conduct annexations. Census blocks, the smallest available geographic units with publicly available demographic data, can be annexed, and they nest up to Census places. Following previous approaches, I identify municipal annexations by comparing block- and place-level shapefiles, aided by spatial analysis tools in the R package 'sf' (Pebesma 2018). Annexations can occur in any of the following three periods: 2007-2013, which corresponds to the period immediately prior to the Supreme Court decision; and 2014-2020, which corresponds to the period immediately after the decision. I also collected data for annexations between 2000-2007, which serves as an additional pre-decision period for assessing time trends prior to the decision in supplementary analyses.[10]

Following prior approaches, I define a block as having been annexed if a block 1) exists both in the beginning and the end of the period; 2) was not already part of another municipality at the beginning of the period; and 3) was not within the boundary of a place in the beginning of the period but became within the boundary of a place by the end of the period (Durst 2014, 2018, 2019; Lichter et al. 2007; Wilson and Edwards 2014).[11] Shapefiles for each year show boundaries updated to January 1st of that year. Hence, the best available data on pre-*Shelby*

[10] The earliest available intercensal year for shapefiles is 2007. 2000-2007, the only period with 7 instead of 6 years, is used as an additional pre-period in model assumption and robustness checks.

[11] In Decennial Censuses, every Census block is assigned a corresponding unique place identifier through the NHGIS. To track annexations between two Decennial Census years, one could harmonize block boundaries and compare the list of blocks within each unique place to discover which blocks were annexed during the decade, but block-level shapefiles for intercensal years do not contain corresponding place identifiers.

boundaries are the 2013 shapefiles (updated as of January 1st, 2013), and on the immediate post-*Shelby* boundaries are the 2014 shapefiles (updated as of January 1st, 2014).[12]

One significant challenge of this approach is that boundaries change between years for reasons unrelated to annexation. Moreover, refinements in how Census place boundaries are drawn over time, even when based on the same Census boundary-year, can result in boundary changes that are artificially recorded as annexation. I reduce the possibility of misclassification in two main ways: First, I only classify Census blocks as being within a place if they have at least 90% areal overlap with the place boundaries, both at the beginning and at the end of the period. Thus, annexed blocks must have at least 90% areal overlap with place boundaries at the end of the period.[13] Second, I validate my identified annexations with annexations recorded in the Census Bureau's Boundary and Annexation Survey (BAS), the only official source of boundary changes for all states, even though it is incomplete in coverage.[14] Using the BAS, I check whether a place I identified as having conducted an annexation during a given period is also officially recorded as having conducted an annexation in the BAS. These comparisons are listed in Table 1, shown for my analytical sample. Even though the validation rate is very low for the 2007-2013 and 2014-2020 periods, the high validation rate for the 2000-2007 period lends confidence in my procedure and suggests that discrepancies arise from the extensive lag time before annexations become officially recorded in the BAS, if ever. Importantly, I do not miss any annexations: there are no municipalities recorded officially in the BAS as having annexed that

[12] https://www.census.gov/geographies/mapping-files/time-series/geo/tiger-line-file.2013.html; https://www.census.gov/geographies/mapping-files/time-series/geo/tiger-line-file.2014.html.

[13] Results do not change significantly at even higher thresholds of 92% and 95%. Using a 100% threshold is not realistic because the challenge originates from the lack of 100% overlap when comparing shapefiles across boundary-years. Detailed code and shapefiles from these 92%, 95%, and 100% threshold analyses, and annexations identified without any such restrictions, are available upon request.

[14] The BAS is based on annual self-report by municipalities, so boundary changes in non-reporting municipalities are not recorded. There can also be significant lags between when a boundary change occurred and when it shows up in the BAS, so others studying municipal annexations have not relied on it (Aiken 1987; Baumle, Fossett, and Waren 2008; Durst 2019; Lichter et al. 2007; Wilson and Edwards 2014). Moreover, the database does not identify which blocks are annexed. Therefore, there is no way of identifying the demographic characteristics of the annexed territory through the BAS.

period that I do not pick up. Relying only on the subset of observations that are validated in the BAS does not change my substantive results.[15]

Table 1. Comparison of Author's Identification of Annexations and Official Records in the 2000-2021 Boundary and Annexation Surveys (BAS)

Analytical Sample

2000-2007		BAS		
		Not Annexing	Annexing	% Validated
Author	Not Annexing	13,392	-	
	Annexing	109	**2,092**	95.05

2007-2013		BAS		
		Not Annexing	Annexing	% Validated
Author	Not Annexing	12,870	-	
	Annexing	795	**2,272**	74.08

2014-2020		BAS		
		Not Annexing	Annexing	% Validated
Author	Not Annexing	14,560	-	
	Annexing	1,049	**328**	23.82

Annexations are identified for all states in the United States except the nine states in the Northeast, consistent with prior approaches that exclude these states due to lack of available territory for annexation (Durst 2018, 2019; Edwards 2008), resulting in 41 total states. Census Designated Places (CDPs) are unincorporated communities assigned place IDs by the Census but do not have conventional municipal government structures. I exclude them as places that could conduct annexations, but blocks located in CDPs are still viable candidates for annexation. Unincorporated Census blocks and blocks in CDPs located within a 400-meter buffer of places are candidates for annexation (Durst 2018, 2019).[16] Places must have at least one populated annexable block to be included in the sample, and they must fulfill this criteria in both years

[15] Detailed results and analyses from the sub-sample validated against the BAS are available upon request.

[16] Prior research shows that using shared boundaries instead to identify annexable blocks does not make a substantive difference in identifying them (Durst 2014, 2019).

(2007 and 2014) and have been in existence from 2000 to 2020 to ensure a balanced panel. As described in more detail below, I rely on 2000 data to generate trends as a control variable in models, so places must have been in existence since 2000 to be included in the 2007-2013 period. This means that newly incorporated places after 2000 or those that disincorporated at any point are not included. Places that only annexed unpopulated blocks are not considered to have annexed since the main goal of this paper is to understand annexations that involve populations. In total, my panel consists of observations for 15,937 cities between 2007-2020 across 41 states. I identify 3,067 and 1,377 annexations in 2007-2013 and 2014-2020 respectively.

Figures 1 to 3 show examples of municipal boundaries changing due to annexations between 2000-2020 for Atlanta, GA, Jacksonville, AL, and no changes for Waleksa, GA. Blocks are shaded with a greyscale gradient corresponding to Black composition of the fringe territory. Blocks highlighted in bold outlines are those that I identify as having been annexed during the period. Place boundaries for 2020 are shown for comparison. These plots show that my identification strategy is conservative and only picks up some but not all blocks that are annexed when annexations occur, especially when blocks are only partially annexed, but I am nevertheless able to differentiate between places that did and did not annex, even across changes in boundary-years.

To answer the second question of whether annexations play a role in shaping the racial composition of cities and how the relationship changes after *Shelby*, I use three continuous indicators of the place's racial composition at the end of the annexation period—percent of the population that is Non-Hispanic Black, Non-Hispanic White, and Non-Black minority. I use Census and ACS data for these variables. I use the 2000 Census for 2000 place-level data, 2005-2009 ACS for 2007 place-level data, 2011-2015 ACS for 2013 place-level data, and 2016-2020 ACS for 2020 data. I estimate place-level data for 2014 by linear interpolation using the 2008-2012 (as 2010) ACS and the 2015-2019 ACS (as 2017). To reduce overall missingness, I then linearly interpolate missing data for the whole panel of variables between 2000 to 2020 and linearly extrapolate for 2000 and 2020.

Figure 1. Annexations in the City of Atlanta, GA, between 2000-2020

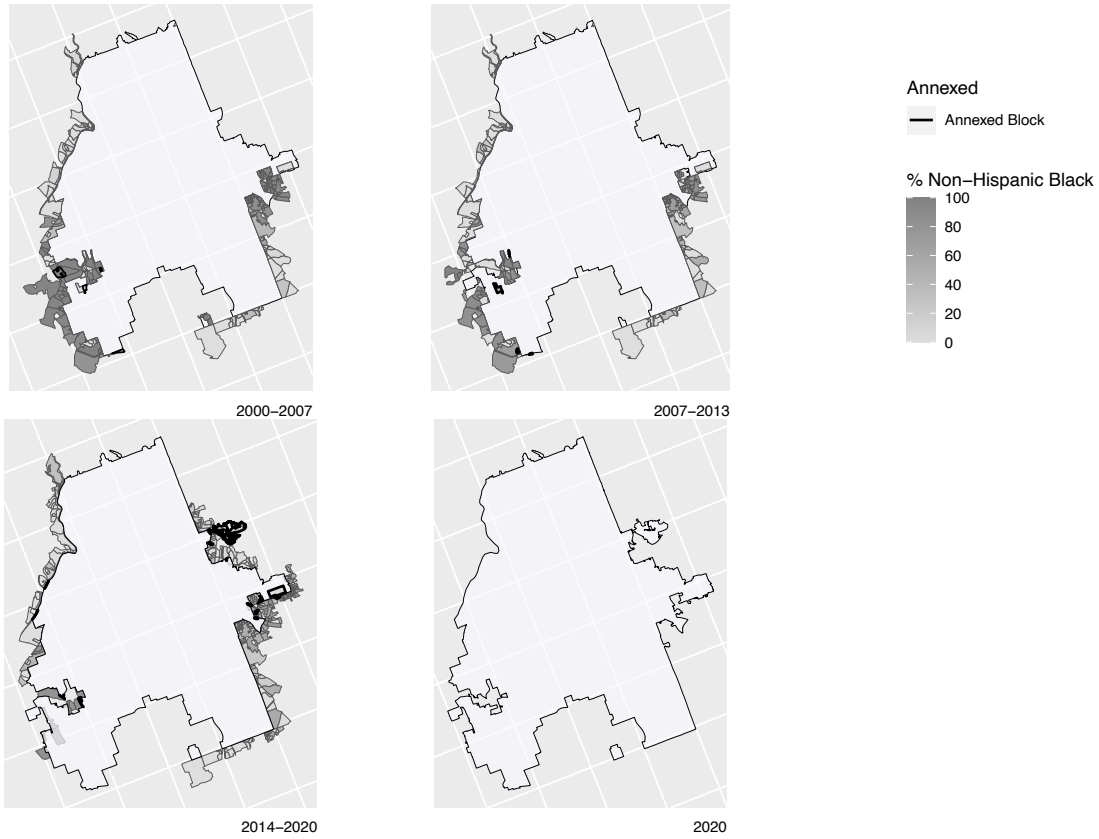


Figure 2. Annexations in the City of Jacksonville, Alabama, between 2000-2020

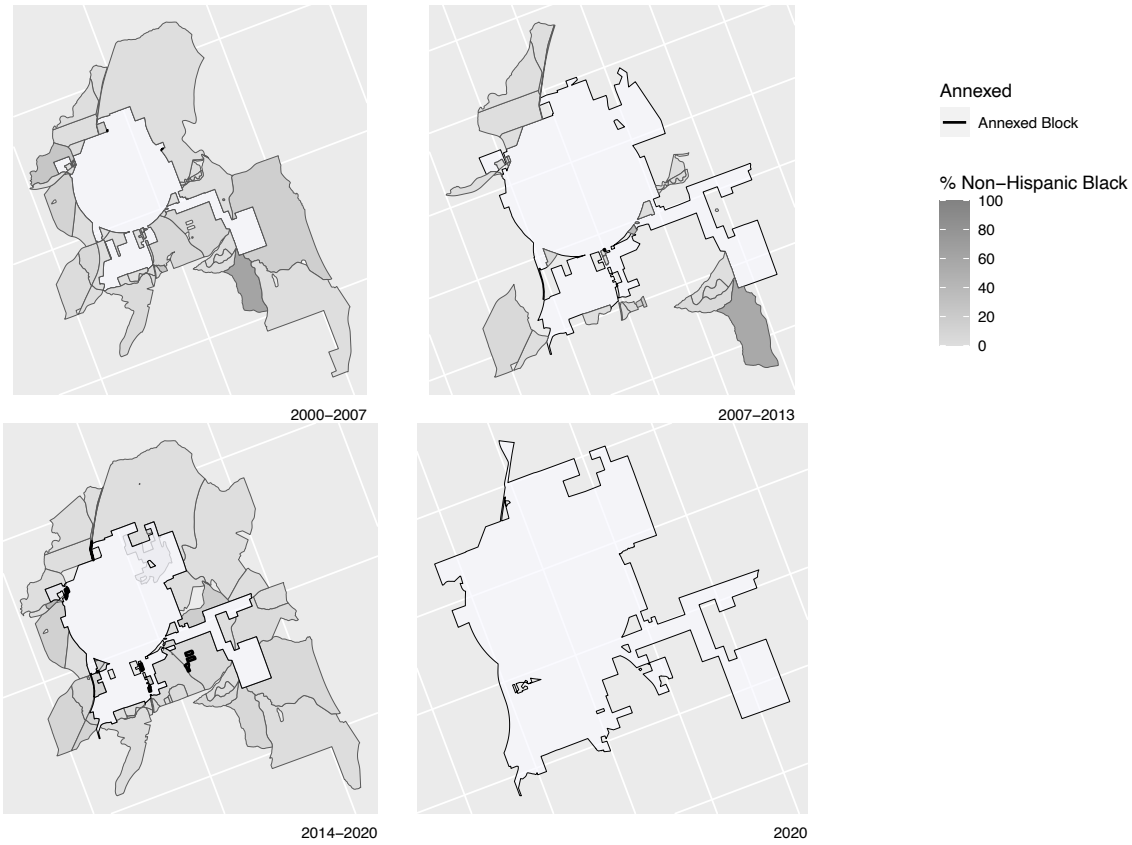
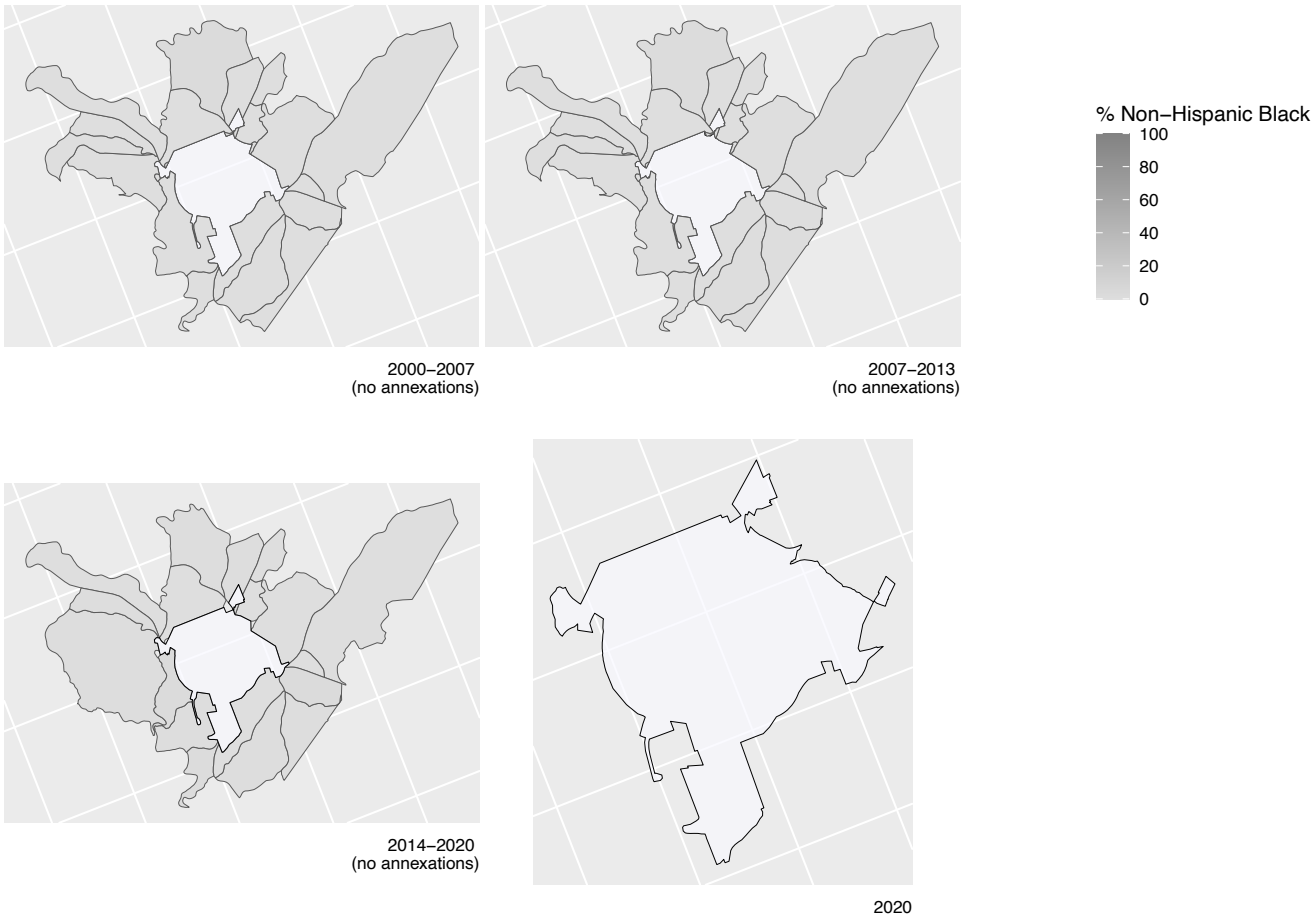


Figure 3. (No) Annexations in the City of Waleska, Georgia, between 2000-2020



Independent Variables

For the first question on whether the *Shelby* decision is associated with changes in municipalities' probability to conduct annexations, the independent variables are a binary indicator of Section 5 coverage and a binary indicator of being in the post-*Shelby* annexation period. Some states are covered by Section 5 entirely, whereas in others only a selection of counties is covered. If the municipality is in a fully covered state, or if it is in a covered county, they are assigned 1 for the Section 5 variable throughout 2007-2013 and 2014-2020 (time-invariant). Places do not have county identifiers, but Census blocks have both place and county identifiers. If any block in the place is within a Section 5-covered county, the place is assigned 1 for the coverage variable. Since I am relying on a difference-in-differences framework, described more below, I only interpret the interaction between these two variables. If this interaction term is statistically significant, it would suggest that there is a statistically significant effect of the *Shelby* decision removing Section 5 coverage on municipalities' likelihood to conduct annexations.

For the second question, I ask whether a place's racial composition at the end of a period is significantly associated with having conducted annexations during the period, and whether the *Shelby* decision changes this relationship. In addition to the above two variables, I also include a binary indicator of whether the place annexed in that period. I use a three-way interaction term between these variables. The coefficient on the annexation term itself allows me to see whether annexations are associated with reductions in minority racial composition. If the coefficient on the interaction term is significant, Section 5 invalidation moderates the relationship between annexation and racial composition.

Control variables

I include place- and block-level control variables to account for characteristics of the municipality and of its surrounding, annexable blocks. The source of place-level variables is as described above. For block-level data, I use linear interpolation to generate data for 2007 and 2014 using 2000, 2010, and 2020 Census data. To harmonize 2000 and 2020 data to 2010 boundaries, I use the 2000-to-2010 and 2020-to-2010 block-to-block crosswalk files provided by the NHGIS. Unique cross-year block pairs are selected by only retaining blocks with the largest areal overlap. Blocks with missing weights, no corresponding 2010 block IDs, or missing data at

either the beginning or end of the period are dropped from the analysis. Variables are then multiplied by the weights given in the crosswalk files (Manson et al. 2021).

A number of state-level regulations govern annexations, such as ordinances requiring petitions and public hearings (Durst 2018). Though these laws may change over time, available data on these laws are time-invariant. Since there are no places in my sample that cross multiple state lines, state-level variations in laws governing annexations are included in place fixed effects.[18] In all models, I use place fixed-effects to account for unobserved, time-invariant place-level variation influencing likelihood to annex, such as municipal-level and state-level regulations that affect how easy or hard it is to conduct annexations, community appetite for annexations, taste for discrimination, and so on.

For the first outcome—probability to annex—I include controls for the population size, prior decade population growth rate, and population density (Durst 2019; Lichter et al. 2007). Racial composition of the place and of its annexable territory are also likely associated with the likelihood to annex. A predominantly White municipality may be less likely to annex predominantly Black blocks. I include controls for the place-level percent Black and percent non-Black minority (Durst 2019; Durst et al. 2021; Lichter et al. 2007). To measure minority threat, I include the prior period changes in percent Black and non-Black minority. I also include controls for demographic characteristics of the blocks surrounding municipalities—specifically, the percent Black and non-Black minority population (Durst 2019; Lichter et al. 2007). I control for the percent Black and non-Black minority population in annexable blocks.

Socioeconomic considerations also play a role in annexation decisions (Anderson 2008, 2010), but Census block-level data are limited in socioeconomic indicators beyond housing tenure, which I include. Areas with commercial activities that could generate high sales tax revenue and areas with potential for increasing the property and income tax bases are attractive candidates for annexation (Durst 2018, 2019). I use the Residential Area Characteristics (RAC) and Worker Area Characteristics (WAC) files from the Census Bureau's LODES datasets to proxy for economic health among annexable territory. Using the RAC file for 2007 and 2014

[18] A database of state laws on annexations compiled by the author from sources cited in Durst (2018) is available upon request. Models also including state fixed effects in addition to place fixed effects do not change the results and are available upon request.

harmonized to 2010 boundaries,[19] I derive the percent of residents in each Census block earning at least $3,333 per month—the highest salary tier in the data. Using the WAC file from LODES, I calculate the percent of jobs in each block in the retail and manufacturing industries for each base period year. At the place-level, I include median home value, median household income, percent poverty, and percent owner-occupied housing units. Because socioeconomic considerations can often mask underlying racial stereotypes, I include a control for the percent Black and percent non-Black minority in poverty (Lichter et al. 2007). For the second outcome—place racial composition at the end of the annexation period, I control for the prior period change in percent of the population of that race and the average percent in surrounding blocks.

Analytic strategy

To model the probability of annexation, I use a difference-in-differences approach by using an interaction term between the binary variables for Section 5 coverage and being in the post-*Shelby* period. This interaction term is used to assess whether the *Shelby* decision is associated with an increase in the probability of a previously covered place to conduct an annexation. Interaction terms in a logistic model are not easily interpretable (Ai and Norton 2003) and its use in a difference-in-differences set-up that relies on the interaction term is challenging and not recommended without further restrictions to the data (Athey and Imbens 2006; Karaca-Mandic, Norton, and Dowd 2012). To facilitate a more straightforward analysis of the coefficient, I use a linear probability model with municipality and period fixed effects regressing annexation on the difference-in-differences estimator:

$$Annex_i \sim period_i * Section\ 5_i + X_i + MUNI_i + \varepsilon_i \quad (1)$$

Where $Annex_i$ is a binary indicator assigned 1 if a municipality *i* conducted an annexation within the period and 0 otherwise. Period is a binary indicator assigned 1 if the municipality-year observation *i* is in 2014-2020 and 0 otherwise. Section 5 is a binary indicator assigned 1 if municipality *i* is covered by Section 5 and 0 otherwise. X*i* is a matrix of time-varying covariates for place *i*, though the use of time-varying covariates is contentious in difference-in-differences

[19] The earliest year that LODES data is available is 2002 for some states and 2004 for others.

estimation, especially if the treatment influences the covariate in the next period (Angrist and Pischke 2009; Caetano et al. 2022; Gelman and Hill 2007). This source of confounding is especially plausible here. Prior research suggests that, for example, the socioeconomic status of Black residents in Section 5 jurisdictions declined after the decision (Aneja and Avenancio-León 2019), which may then affect the relationship between Black population composition and the likelihood of annexations, and also the effect of annexations on Black population composition. The use of lagged variables is also not advised here with panel data (Allison, Williams, and Moral-Benito 2017). Following the approach taken in recent work to address these sources of potential bias, I estimate models both with and without these time-varying covariates and use unit-clustered (place) robust standard errors (Faber 2020; Torche and Rauf 2021).

For question 2, to understand whether annexations are associated with a place's racial composition after annexation, and whether the *Shelby* decision moderates this association, I use a fixed effects linear regression model with a three-way interaction between annexation, period, and Section 5 to test this moderation effect. I model the share of the population that is a given race at the end of the period as follows:

$$Percent\ race_r\ at\ end\ of\ period_i \sim annexing_i * period_i * Section\ 5_i + X_i + MUNI_i + \varepsilon_i \quad (2)$$

Where *r* refers to the three separate racial composition outcomes for White, Black, and non-Black minority for place *i.* Covariates include the share of that racial group in the beginning of the period (2007 or 2014) and their prior period change (between 2000 to 2007 and between 2007 to 2014). As with model 1, I also compare models with and without these time-varying covariates.

The advantage of the difference-in-differences framework is that the use of unit and time fixed effects allows me to use each municipality as its own control over time, thus differencing out the contributions of unobservable municipality- and time-specific factors to the outcome. However, results cannot be interpreted with strict causality unless two key assumptions are met (Wing, Simon, and Bello-Gomez 2018). I present visual tests of them in greater detail in the Appendix (Figure A1 and Figure A2). While the parallel trends assumption appears to be met, other aspects of the data suggest there would be treatment anticipation (Figure A1 and Figure

A3). If municipalities ramped up annexation activity in anticipation of the *Shelby* outcome, this would violate the strict exogeneity assumption. This is also plausible since the lawsuit leading to the *Shelby v. Holder* decision began in 2010, in part because Shelby County wanted to challenge a DOJ objection to the results of an election after 177 un-precleared municipal annexations in the City of Calera, AL (*Shelby v. Holder* 2011). To test whether results are merely a reflection of treatment anticipation, I run all models using 2000-2007 as the pre-*Shelby* period instead of 2007-2013, since treatment anticipation is less likely 6-13 years in advance of the *Shelby v. Holder* decision, and results from these analyses do not change the substantive interpretation of the effects of *Shelby v. Holder*. In supplementary analyses, using data on the racial composition of annexed blocks, I construct binary indicators at varying thresholds of composition decreases (>0% or >0.5%) after the population of annexed blocks are added to the population of the place, based on levels at the beginning of the period, as case law deems even a 0.5% reduction to be too large (Berri 1989). I also conduct additional analyses on poverty rates and household income levels after annexations to consider the possibility that any findings reflect socioeconomic motivations behind annexation.

Descriptive Results

Table 2 below shows the mean values of covariates in equation 1 disaggregated by period and whether they annexed. Table 2 shows a few important trends: first, a larger proportion of Section 5 places conducted an annexation compared to non-Section 5 places regardless of the period. Places across the country are on average majority White, but places that annexed have a smaller proportion of White population by almost 10 percentage points. This difference is mostly explained by a higher proportion of non-Black minority groups—between 5 to 10% higher in 2007 to 2013 and 2014-2020 respectively, whereas places that annexed are about 2% more Black. Places that annexed have significantly larger populations, higher population density, and a faster population growth rate, and they also have higher median home values, median household incomes, and lower overall poverty compared to places that did not annex. But, places that annexed have lower owner occupancy rates, higher percent Black residents in poverty, and slightly lower employed rates compared to places that did not annex. The surrounding blocks to places that annexed have higher shares of Black and non-Black minority residents and higher

shares of residents in jobs earning high incomes and higher shares of jobs in the retail and manufacturing industries.

Table 2. Descriptive Statistics for Analytical Sample

	2007 to 2013		2014 to 2020	
Period	Not annexing	Annexing	Not annexing	Annexing
Percent Section 5	21%	27%	22%	27%
Number	12,870	3,067	14,560	1,377
Place-level charcteristics, beginning of period				
Population	4,888.98	25,404.00	6,338.26	41,423.17
Population growth rate	4.39	23.36	7.41	14.85
Population density	1,039.11	1,736.44	1,018.37	1,670.02
Median home value	128,561.50	200,068.30	129,816.70	194,717.80
Median household income	50,119.61	57,707.60	50,869.04	59,559.97
% of labor force employed	92.45	92.18	92.42	92.36
% Owner-occupied units	74.11	68.09	71.57	65.78
% in poverty	15.81	15.24	16.68	15.99
% Black population in poverty	12.65	19.14	17.03	22.23
% Non-Black minority population in poverty	13.71	16.47	23.53	23.19
% Black	7.16	9.60	7.86	9.47
% White*	83.18	75.69	80.38	70.06
% Non-Black Minority	9.66	14.72	11.75	20.46
Prior decade change in % White	-2.04	-3.31	-2.15	-3.23
Prior decade change in % Black	0.18	0.50	0.36	0.53
Prior decade change in % Non-Black minority	1.87	2.81	1.79	2.70
Block-level characteristics, beginning of period				
% Black	5.09	5.84	5.00	5.63
% White*	86.80	80.92	83.88	74.44
% Non-Black minority	8.11	13.24	11.12	19.93
% Owner-occupied units	72.41	71.78	78.42	79.63
% Jobs in retail and manufacturing	15.28	22.32	16.81	22.12
% Making $3,333/month or more	25.98	30.75	32.45	37.00
% of cities where block % white is greater than place % white	60%	72%	62%	69%

*not included in model
Note: Dollar values in 2020$

Table 3 shows the mean values of the outcomes in equation 2, disaggregated by Section 5 coverage, period, and annexation. Appendix Table A1 includes covariates. First, comparing places that annexed and those that didn't, whether they are covered by Section 5 or not, places

that annexed have a higher percent Black, lower percent White population, and higher percent non-Black minority population by 2020. Next, comparing annexing places in the post-*Shelby* period that were covered by Section 5 versus not, covered places have a *lower* percent Black population in 2020 (18.6%) compared to uncovered ones (22.9%). However, they also have a lower percent White population (53% versus 57.8%) and a larger share of non-Black minority residents by 2020 (28.4% compared to 19.4%). These differences are similar in the 2007 to 2013, pre-*Shelby* period. Trends are slightly different in places that did not annex for the Black population only. Post-*Shelby*, annexing places had a higher percent Black population (6.1%) by 2020 compared to those that were not covered (3.4%). Similar to places that annexed, covered places have a lower percent White population and higher percent non-Black minority population by 2020. And, these differences are again similar in the 2007 to 2013, pre-*Shelby* period.

Taken together, conditional on annexation, there is little descriptive evidence to suggest that annexation is associated with minority population dilution for residents already living in the municipality. It may instead be the opposite: compared to not annexing at all, annexations could hasten racial diversification of places, such that places wishing to discriminate do so by refusing to annex at all.

Table 3. Average Racial Composition Across Period and Geographic Level for Analytical Sample

	Not Annexing				Annexing			
Period	2007 to 2013		2014-2020		2007 to 2013		2014-2020	
Section V Coverage	Not Covered	Covered	Not Covered	Covered	Not Covered	Covered	Not Covered	Covered
Number	10,154	2,232	11,384	1,002	2,716	835	3,176	375
End of period (Outcome)								
% Black	3.23	5.90	3.35	6.06	23.43	21.04	22.85	18.58
% White	86.51	78.24	82.53	70.39	60.90	59.12	57.79	53.01
% Non-Black minority	10.26	15.86	14.12	23.55	15.67	19.84	19.35	28.41

Table 4 presents coefficients from linear probability models predicting annexation for both the base model without time-varying covariates and the full model with covariates, with place fixed effects across both models. There are no coefficients for being previously covered by Section 5 as it is a time-invariant attribute and thus absorbed into place fixed effects. Consistent with descriptive results, there is a statistically significant, negative coefficient for the post-*Shelby* period. Using results from models without time-varying covariates, in the 2014-2020 period, non-Section 5 cities are estimated to have a lower probability by about 8% to annex compared

against themselves in 2007-2013, while Section 5 cities are estimated to have a 10% (-0.08-0.02) lower probability to annex in this period compared to uncovered cities in 2007-2013. The removal of Section 5 oversight is associated with a 2% reduction in the probability to annex among previously covered cities. These coefficients are slightly smaller in magnitude when including time-varying covariates, with the DiD estimator losing statistical significance. While the null hypothesis for hypothesis 1 (difference-in-differences estimator = 0) is rejected, the direction is opposite to hypothesized. Instead of encouraging annexations among previously restricted cities, the removal of the restriction is associated with a decrease in annexations both for those cities and cities that were never subject to the restriction, but the extent of the decrease is greater for Section 5 cities.

Table 4. Linear Probability Regression Results Predicting Annexation by Section 5 Coverage and Period

	Model 1			
	Base model	SE	With covariates	SE
Post-Shelby	-0.08**	(0.00)	-0.04**	(0.00)
DiD estimator	-0.02**	(0.01)	0.00	(0.01)
Covariates (beginning of period)				
Place-level				
Population			-0.21**	(0.06)
Population density			0.10**	(0.01)
Population growth			0.00	(0.00)
% Black			-0.06**	(0.02)
% Black growth			-0.01**	(0.00)
% Black in poverty			-0.01*	(0.00)
% Non-Black minority			-0.07**	(0.01)
% Non-Black growth			0.01**	(0.00)
% Non-Black minority in poverty			-0.00	(0.00)
% Owner-occupied			0.01*	(0.00)
Median home value			-0.00	(0.01)
Median household income			0.00	(0.00)
% Poverty			-0.00	(0.00)
Annexed in prior period			-0.54**	(0.01)
Block higher % white			0.00	(0.01)
Block-level				
% Black			-0.00	(0.01)
% Non-Black minority			0.01	(0.01)
% Owner-occupied			0.00	(0.00)
% Making >$3,333/month			0.01**	(0.00)
% jobs in manufacturing and retail			0.00	(0.00)
Place Fixed Effects	x		x	
R-squared	0.67		0.79	
N (place-years)	31,924		31,924	

Note: *p<.05; **p<.01

Racial Composition by Annexation, Section 5 Coverage, and Shelby

Next, I ask what the consequences of annexations are. Even though annexations decreased in frequency after *Shelby*, places that conduct annexations may still do so in ways that dilute existing Black and non-Black minority population shares to a greater extent compared to prior to *Shelby*. I hypothesized that after *Shelby*, Section 5 places that annex will have smaller Black and non-Black minority population shares at the end of the period compared to similar places that did not annex, and compared to annexing, non-Section 5 places. I also hypothesized that the magnitude of population composition decreases will be larger for Black compared to non-Black minority populations. Table A2 in the appendix presents coefficients from models examining how racial composition in cities varies by annexation, Section 5 coverage, and the *Shelby* decision, with models run separately for the each of the outcomes, Black, White, and non-Black minority population share at the end of the period, z-standardized against their respective standard deviations—16.9%, 22.6%, and 16.4%. These models are run both with and without time-varying covariates and substantive results are consistent.

To facilitate the interpretation of the three-way interaction term and to interpret statistical significance, I present estimated effect sizes in Table 5, separated by period, Section 5 coverage, and whether the place annexed in that period. These estimates are derived by running each model multiple times, varying each time which level of the independent variables is the reference category. For example, by setting the reference category to pre-*Shelby*, non-Section 5 coverage, the coefficient of the annexation term is therefore the estimated effect size of annexation for non-Section 5 places prior to invalidation.

Table 5. Effect Sizes of Annexation by Section 5 Coverage and Period

Before Shelby, Section 5 places

		Without covariates	With covariates
% Black	Annexed	-0.05**	-0.04**
		(0.01)	(0.01)
	Coefficient * Standard Deviation	-0.85	-0.68
	Note: *p<.05; **p<.01		
% White	Annexed	0.04**	0.04**
		(0.01)	(0.01)
	Coefficient * Standard Deviation	0.90	0.90
	Note: *p<.05; **p<.01		
% Non-Black minority	Annexed	-0.01	-0.02
		(0.01)	(0.01)
	Coefficient * Standard Deviation	-0.16	-0.33
	Note: *p<.05; **p<.01		

After Shelby, Section 5 places

		Without covariates	With covariates
% Black	Annexed	0.02	0.01
		(0.02)	(0.02)
	Coefficient * Standard Deviation	0.34	0.17
	Note: *p<.05; **p<.01		
% White	Annexed	-0.03	-0.02
		(0.02)	(0.02)
	Coefficient * Standard Deviation	-0.68	-0.45
	Note: *p<.05; **p<.01		
% Non-Black minority	Annexed	0.02	0.01
		(0.02)	(0.02)
	Coefficient * Standard Deviation	0.33	0.16
	Note: *p<.05; **p<.01		

Before Shelby, Non-Section 5 places

		Without covariates	With covariates
% Black	Annexed	-0.00	-0.00
		(0.00)	(0.00)
	Coefficient * Standard Deviation	0.00	0.00
	Note: *p<.05; **p<.01		
% White	Annexed	0.04**	0.05**
		(0.01)	(0.01)
	Coefficient * Standard Deviation	0.90	1.13
	Note: *p<.05; **p<.01		
% Non-Black minority	Annexed	-0.06**	-0.06**
		(0.01)	(0.01)
	Coefficient * Standard Deviation	-0.98	-0.98
	Note: *p<.05; **p<.01		

After Shelby, Non-Section 5 places

		Without covariates	With covariates
% Black	Annexed	0.01	0.01
		(0.01)	(0.01)
	Coefficient * Standard Deviation	0.17	0.17
	Note: *p<.05; **p<.01		
% White	Annexed	-0.04**	-0.04**
		(0.01)	(0.01)
	Coefficient * Standard Deviation	-0.90	-0.90
	Note: *p<.05; **p<.01		
% Non-Black minority	Annexed	0.05**	0.05**
		(0.01)	(0.01)
	Coefficient * Standard Deviation	0.82	0.82
	Note: *p<.05; **p<.01		

Overall, Table 5 suggests that *Shelby* did not result in more dilution of Black and non-Black minority populations after annexation compared to before invalidation, but *Shelby* was not effective before invalidation either. Focusing first on the top left block, Table 5 shows the estimated effect size of annexation on Section 5 cities prior to invalidation in standard deviations (SD), with their actual value also shown. Prior to invalidation, Section 5 places that annexed within the period see a 0.05 SD decrease in the Black population share, which translates to a reduction of 0.85% of the population share. The coefficients are statistically significantly positive for the White population share—pre-*Shelby*, annexation is associated with a 0.04 SD increase in the White population share (0.9%). While the magnitude of composition shifts appears relatively small, the 0.85% value for Black population composition is nevertheless above the smallest dilution threshold of 0.5% in Section 5 case law denying an annexation attempt (Motomura 1982). If Section 5 coverage were effective prior to invalidation, annexations should not be significantly negatively associated with Black population shares for Section 5 places to the extent of 0.85%. Even though these types of annexations are explicitly prohibited unless federally approved, they nevertheless occurred during this period when federal oversight was still required, consistent with case studies by others (Baumle et al. 2008).

The bottom left block in Table 5 shows these estimates for places not covered by Section 5 in the same period. For non-Section 5 places, annexation is also associated with White population share increases at the same magnitude compared to Section 5 places—0.04 SD (0.92%). There are no statistically significant effects on the Black population share, but annexation is associated with a significant decrease in the non-Black minority population—0.06 SD (0.98%). The right half of Table 5 presents coefficients after *Shelby* and they show no evidence that the *Shelby v. Holder* worsened these trends for both Section 5 and non-Section 5 cities. In the top right block, annexation is not significantly associated with racial composition in Section 5 places. For non-Section 5 places, in the bottom right block, annexation reduces the White population composition while increasing the non-Black minority population composition.

Taken together, results from models 2a-2c allow me to reject the null hypothesis in hypothesis 2a that the estimate of the coefficient for the three-way interaction would not be significantly different from zero. However, these findings are unexpected. First, they do not align with expectations that *Shelby* would be associated with greater magnitudes of Black and non-Black minority population decreases when Section 5 places annex—instead, there are no

statistically significant effects of annexation on racial composition in Section 5 places post-*Shelby*. Second, they do not align with hypothesis 2b that the associated consequences of annexation on racial composition would be more negative for Black than non-Black minority groups after invalidation—both are statistically insignificant in Section 5 cities after *Shelby*. These findings suggest that in the post-*Shelby* period, places have not reverted to using annexations to dilute minority populations. However, there is not enough evidence to conclude that this is because Section 5 of the VRA were no longer necessary at the time of its invalidation. Indeed, even when these annexations were theoretically not supposed to take place during when Section 5 was still in effect, evidence suggests that Section 5 was *not* effective at preventing their occurrence.

As suggested in prior studies of municipal annexations after *Shelby*, municipalities may choose to not annex at all if the only available annexation options are limited, such as if the surrounding blocks are lower in White population composition (Durst 2018). Further analysis (not shown) shows that the racial composition of blocks at the fringe became less White over time and less Black after *Shelby*, but experienced significant and substantial increases in the non-Black minority population share. These trends may explain why annexations post-*Shelby* increase non-Black minority population shares but not Black or White shares. An alternative explanation is that the 2007-2013 and 2014-2020 comparison merely reflects the plausible anticipation shown in Figures A1 and A3, such that these results are unique to this comparison. I repeat these models comparing 2000-2007, when anticipation 6-13 years in advance of the court case was less likely, and 2014-2020. Table A3 in the Supplemental Appendix shows estimated effect sizes by whether the period was 2000-2007 or post-*Shelby*, Section 5 coverage, and annexation. Results from these models show that these findings are not unique to the 2007-2013 and 2014-2020 comparison.

Second, places' annexation patterns may merely reflect their desire to increase their socioeconomic status, rather than being racially motivated.[1] In supplementary analysis, I also test the association between annexation, Section 5 coverage, and period with the place's poverty rate

[1] Note, however, that the focus of Section 5 hearings is on disparate impact rather than intent. Jurisdictions have to show no racially disparate impact—also known as the "retrogression standard," and if there were such an impact, provide an approved plan to mitigate against this impact (Berri 1989).

and median household income at the end of the period. These analyses show it is unlikely that results discussed above merely reflect preferences for annexing higher socioeconomic status residents, since annexation does not consistently result in higher median incomes and lower poverty. Third, using binary measures of population dilution after annexation (>0% or > 0.5% reduction in the share of White, Black, or non-Black minority residents), I also find similar results that these decreased in probability after *Shelby*. Finally, using the sub-sample of annexations validated against the BAS does not change the main results.[2]

Discussion and Conclusion

Shelby v. Holder, a landmark case decided on June 25th, 2013, removed a crucial protection against minority voter suppression by releasing Section 5 jurisdictions from seeking federal oversight prior to enacting voting law changes that have the potential to dilute minority political power, including changing municipal boundaries. In this paper, I argue for the importance of paying attention to how place boundaries can be leveraged against racial minority groups, the enduring strength of Black exceptionalism, and the limits of federal oversight in reining in racial exclusion. First, I find that places that were previously covered by Section 5, are significantly *less* likely to conduct annexations after the requirement was invalidated in *Shelby*, from 2014-2020 compared to 2007-2013. Second, I find that prior to *Shelby*, annexation in Section 5 places was associated with a significantly lower Black population share at the end of an annexation period, but not after *Shelby*. Third, I find that pre-*Shelby* annexations in Section 5 places exhibited evidence of Black exceptionalism because impacts were stronger for Black populations than for non-Black minority ones.

My findings highlight the complexities of what happens when anti-exclusion regulations are removed. Previous studies show mixed findings: after school desegregation orders were lifted, the pattern of segregation re-emerged (Reardon et al. 2012). However, from the context of anti-gender discrimination laws in employment, Hirsch (2009) suggests that regulations can became ingrained norms, such that compliance may persist even in the absence of enforcement if there is normative alignment with the principles of the regulation. There is insufficient evidence that problematic annexation activity decreased after *Shelby* due to a diffusion of voter protection

[2] Detailed results and analyses from all supplementary analyses are available upon request.

norms. Rather, sharp increases in other forms of voter suppression tactics after *Shelby* (Brater et al. 2018; Feder and Miller 2020; Hardy 2020; Sweren-Becker 2021) raise the possibility that different forms of voter suppression tactics are compensatory—decreases in one type can be accompanied by increases in another type and vice versa. Though voter ID laws and voter purges were less frequent in Section 5 places prior to *Shelby*, places were nevertheless still able to conduct annexations significantly associated with Black population share reductions. After *Shelby*, these types of annexations are significantly less likely to happen, but the other types of practices increased instead. Future research should further investigate interactions between various types of voter suppression tactics.

My findings also inform discussions about racial exclusion in municipal annexations. Prior research on this area primarily focuses on whether places discriminate against Black and Hispanic communities at the fringe when conducting annexations (Aiken 1987; Baumle et al. 2008; Durst 2019; Johnson et al. 2004; Lichter et al. 2007; Wilson and Edwards 2014). But I show that annexations are also important to understand for their impacts on Black and minority populations already living within the place. I argue that the pre-*Shelby* trends in the relationship between annexations and municipal racial composition highlight the limited effectiveness of the preclearance requirement when it was in place to prevent the use of annexations to suppress minority representation. Even if Section 5 may have been effective at curbing other voter suppression behaviors, understanding why it was ineffective in the case of annexations allows us to be more vigilant about the precise strengths and weakness the Voting Rights Act to prevent racial exclusion.

This is of particular concern because Congress is currently considering legislation modeled after Section 5. Called the John Lewis Voting Rights Advancement Act ("JLVRAA"), the proposed legislation has a very specific formula for determining a preclearance standard inspired by Sections 4 and 5. According to the JLVRAA, a municipality conducting an annexation would be subject to preclearance prior to being allowed to annex if 1) the voting age population share of a given minority group would decrease by more than 3% as a result of the annexation and 2) at least two separate minority groups in the jurisdiction each comprises at least 20% of the voting age population. Only 0.87% of the place-period observations fulfill the latter criteria, while only 1 out of 4,444 observed annexations would fall under this preclearance

requirement.[3] In addition to only applying to a very small handful of jurisdictions, evidence from this study suggests future requirements modeled after Section 5 in the 1965 VRA are unlikely to prevent questionable municipal annexations from occurring.

Finally, I find some evidence for different annexation trends between Black and non-Black minority residents and contribute to the literature on Black exceptionalism in municipal racial exclusion. In Section 5 cities, annexations prior to *Shelby* are associated with significantly lower Black population share but has no statistically significant associations with non-Black minority population shares. This is consistent with expectations informed by the Black exceptionalism hypothesis, which posits that even as the country has moved from Black/White to become more multiracial, there is still a bright Black/non-Black boundary that significantly distinguishes Black residents from other racial minority groups and disadvantages them (Fox and Guglielmo 2012; Lee and Bean 2004; Parisi et al. 2011). However, this trend is not evident in non-Section 5 cities prior to *Shelby*. Further research should disentangle factors that contribute to bright Black/non-Black racial boundaries versus White/non-White ones in annexation.

There are a few important limitations to these results that provide fruitful avenues for further research. First, even though validation against an official source of boundary changes suggests that I accurately identified annexations, there could nevertheless be measurement error at both the municipal- and block-levels. For the 2007-2013 and 2014-2020 periods in particular, the low rate of validation against the BAS could either be due to the demonstrated lag in official records of annexation or due to measurement error. While my results are still robust to the subset of annexations validated against the BAS, another study using a different method of identifying annexations may find different trends. Second, I compared pre- and post-*Shelby* annexations using 6-year periods, but this approach lacks fine-grained temporal detail to determine whether municipalities that annexed did so through one annexation or multiple, additive annexations. Studying each annexation event individually could yield richer information on the relationship between annexation and racial composition, and future research would benefit from identifying sources of data to conduct this analysis. These two limitations highlight the need for more timely, complete, and official recordkeeping on annexations with enough block-level detail, which would not only help with further research, but also with enforcement of federal laws. It is

[3] Data for voting-age population is collected in the same way as described in the Data & Methods section. Detailed analyses generating these estimates are available upon request.

also possible that effects have not yet emerged, such that future research using a longer time span after *Shelby* would yield different results.

Third, my analysis does not incorporate information on other boundary changes like incorporations and mergers, which also fell under the purview of Section 5. Unincorporated, predominantly White communities can use incorporation to avoid being annexed into a more racially diverse neighboring city (Miller 1981), or if they are already part of the city, secede (Owens and Gillespie 2018). My analysis does not account for these boundary changes, as the vast majority of officially recorded boundary changes are annexations. The actual number may be very different, but to the extent that underreporting is evenly distributed across types of boundary changes, my estimation that new incorporations and successions are a small proportion of all boundary changes should nevertheless be accurate. Relatedly, my analysis does not address whether unincorporated communities at the fringes of municipalities wish to be annexed or whether they resist it (Durst 2018; Miller 1981), and similarly I do not address whether minority communities in municipalities encourage or resist the municipality's annexation plans. Including this data may provide a more complete picture of the experiences of affected communities, and it is an important qualitative aspect beyond the scope of the present study.

Lastly, while racial composition is one way of understanding the consequences of annexation for minority groups, it is an incomplete picture. What are the implications of reduced Black population share or increased White population share? I am not able to analyze local electoral outcomes to assess whether population composition translates into tangible political consequences. While my findings highlight the importance of paying attention to how places can leverage boundaries to shape racial composition, future research could shed light on concrete political outcomes at stake for individuals and communities belonging to these racial groups.

In conclusion, these findings center places of all sizes as important units of analysis for racial inequality. Building on recent work highlighting municipal practices that exclude racial minority groups (Beck 2019, n.d.; Douds 2021; Pacewicz and Robinson 2021; Vargas et al. 2021), I show how annexations is yet another way municipalities can exert racial control. These findings also provide avenues for further research into how to better craft federal legislation to guard against racially exclusionary behavior. Since municipalities may continue to conduct annexations, scholars should nevertheless continue to monitor municipal boundary changes after the *Shelby v. Holder* decision. While much attention is placed on the gerrymandering of higher-

level boundaries like congressional districts, gerrymandering of municipal boundaries also matter and have important implications for macro-segregation and minority political representation (Anderson 2010; Durst 2018; Durst et al. 2021; Lichter et al. 2015). Future research on municipal boundaries would benefit from more transparency in the annexation process, including better and more timely data on annexations at the appropriate geographic levels.

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Appendix

Table A1. Descriptive Statistics for Analytical Sample by Annexation, Section 5, and Period

	Not Annexing				Annexing			
Period	2007 to 2013		2014-2020		2007 to 2013		2014-2020	
Section V Coverage	Not Covered	Covered	Not Covered	Covered	Not Covered	Covered	Not Covered	Covered
Number	10,154	2,716	11,384	3,176	2,232	835	1,002	375
Place-level charcteristics, beginning of period								
Population	4,849.70	5,035.80	6,181.36	6,900.67	23,454.59	30,614.87	36,883.85	53,552.23
Population growth rate	2.97	9.69	7.20	8.19	18.83	35.46	12.24	21.82
Population density	1,099.88	811.92	1,083.03	786.57	1,888.74	1,329.33	1,802.06	1,317.21
Median home value	130,771.40	120,299.60	131,798.90	122,712.00	214,751.40	160,819.50	203,084.90	172,361.00
Median household income	51,110.62	46,414.64	52,030.24	46,706.84	59,076.24	54,049.14	60,135.80	58,021.33
% of labor force employed	92.82	91.07	92.86	90.85	92.48	91.38	92.71	91.43
% Owner-occupied units	1,162.41	1,123.88	1,409.62	1,473.91	5,345.13	6,675.22	7,821.13	10,972.28
% in poverty	14.58	20.38	15.53	20.82	14.00	18.56	15.24	18.00
% Black population in poverty	9.29	25.21	14.27	26.92	17.25	24.19	21.83	23.31
% Non-Black minority population in poverty	12.81	17.06	22.93	25.69	15.33	19.52	23.25	23.05
% Black	2.99	22.74	3.48	23.56	5.57	20.35	6.02	18.69
% White*	88.44	63.49	85.93	60.51	80.79	62.05	74.96	56.97
% Non-Black Minority	8.56	13.77	10.59	15.93	13.64	17.59	19.01	24.34
Prior decade change in % White	-1.94	-2.44	-1.92	-2.97	-3.11	-3.87	-3.15	-3.44
Prior decade change in % Black	0.17	0.21	0.22	0.87	0.32	0.97	0.39	0.89
Prior decade change in % Non-Black minority	1.77	2.24	1.70	2.10	2.78	2.90	2.76	2.55
Block-level characteristics, beginning of period								
% Black	1.79	17.44	1.89	16.13	3.09	13.21	3.25	12.01
% White	91.64	68.67	88.75	66.42	85.45	68.81	79.31	61.43
% Non-Black minority	6.57	13.89	9.36	17.45	11.47	17.98	17.44	26.56
% Owner-occupied units	73.45	68.54	79.22	75.55	72.57	69.65	80.49	77.33
% Jobs in retail and manufacturing	14.31	18.93	15.86	20.23	21.45	24.64	22.36	21.50
% Making $3,333/month or more	26.10	25.56	33.26	29.55	30.97	30.16	37.59	35.45
% of cities where block % white is greater than place % white	59%	63%	62%	65%	72%	72%	70%	65%

*not included in model
Note: Dollar values in 2020$

Table A2. Coefficients for Models 2a-2c by Section 5 Coverage and Period

	Model 2a % Black		Model 2b % White		Model 2c % Non-Black minority	
	Without covariates	With covariates	Without covariates	With covariates	Without covariates	With covariates
Annexed	-0.00	-0.00	0.04**	0.05**	-0.06**	-0.06**
	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)
Post-Shelby	-0.01**	-0.01**	-0.14**	-0.15**	0.2**	0.2**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Annexed * Post-Shelby	0.01	0.01	-0.08**	-0.08**	0.1**	0.11**
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Annexed * Section 5	-0.04**	-0.05**	-0.00	-0.00	0.05**	0.04**
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Post-Shelby * Section 5	-0.03**	-0.02**	0.01	0.01	0.01	0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Annexed * Post-Shelby * Section V	0.05**	0.05*	0.01	0.02	-0.08**	-0.07**
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Covariates (beginning of period)						
% Race		-0.09*		-0.12**		-0.18**
		(0.04)		(0.02)		(0.03)
% Race growth in prior period		-0.00		0.01*		0.02**
		(0.01)		(0.00)		(0.01)
% Race in surrounding blocks		0.05**		0.06**		0.07**
		(0.01)		(0.01)		(0.02)
Place Fixed Effects	x	x	x	x	x	x
R-squared	0.99	0.99	0.98	0.98	0.97	0.97
N (place-years)	31,874	31,874	31,874	31,874	31,874	31,874

Note: *p<.05; **p<.01

Table A3. Effect Sizes of Annexation by Section 5 Coverage and Period, comparing 2000-2007 and 2014-2020

2000-2007, Section V places

		Without covariates	With covariates
% Black	Annexed	-0.05**	-0.05**
		(0.02)	(0.01)
	N	31,186	31,186

Note: *p<.05; **p<.01

		Without covariates	With covariates
% White	Annexed	0.07**	0.06**
		(0.02)	(0.01)
	N	31,186	31,186

Note: *p<.05; **p<.01

		Without covariates	With covariates
% Non-Black minority	Annexed	-0.04*	-0.04**
		(0.02)	(0.01)
	N	31,186	31,186

Note: *p<.05; **p<.01

After Shelby, Section V places

		Without covariates	With covariates
% Black	Annexed	0.02	0.00
		(0.02)	(0.02)
	N	31,186	31,186

Note: *p<.05; **p<.01

		Without covariates	With covariates
% White	Annexed	-0.05*	-0.03*
		(0.02)	(0.02)
	N	31,186	31,186

Note: *p<.05; **p<.01

		Without covariates	With covariates
% Non-Black minority	Annexed	0.06*	0.06*
		(0.02)	(0.02)
	N	31,186	31,186

Note: *p<.05; **p<.01

2000-2007, Non-Section V places

		Without covariates	With covariates
% Black	Annexed	-0.02**	-0.02**
		(0.01)	(0.0)
	N	31,186	31,186

Note: *p<.05; **p<.01

		Without covariates	With covariates
% White	Annexed	0.09**	0.09**
		(0.01)	(0.01)
	N	31,186	31,186

Note: *p<.05; **p<.01

		Without covariates	With covariates
% Non-Black minority	Annexed	-0.1**	-0.1**
		(0.01)	(0.01)
	N	31,186	31,186

Note: *p<.05; **p<.01

After Shelby, Non-Section V places

		Without covariates	With covariates
% Black	Annexed	0.01	0.00
		(0.01)	(0.01)
	N	31,186	31,186

Note: *p<.05; **p<.01

		Without covariates	With covariates
% White	Annexed	-0.07**	-0.06**
		(0.01)	(0.01)
	N	31,186	31,186

Note: *p<.05; **p<.01

		Without covariates	With covariates
% Non-Black minority	Annexed	0.09**	0.09**
		(0.01)	(0.01)
	N	31,186	31,186

Note: *p<.05; **p<.01

Figure A1. Event Study for the Probability to Annex

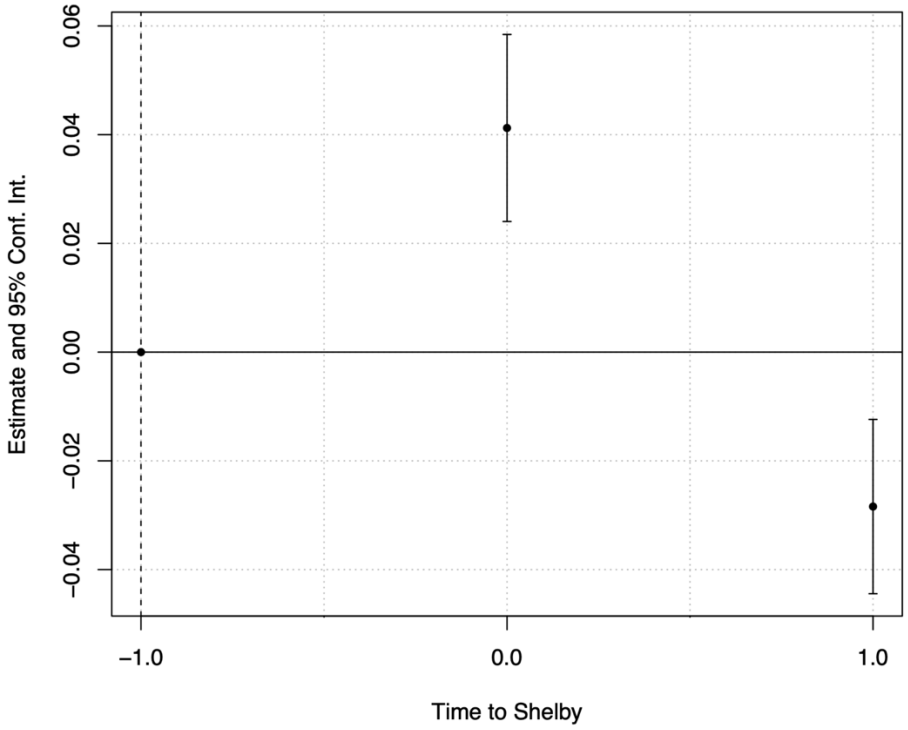

Figure A2. Visual assessment of Parallel Trends for Probability of Annexation

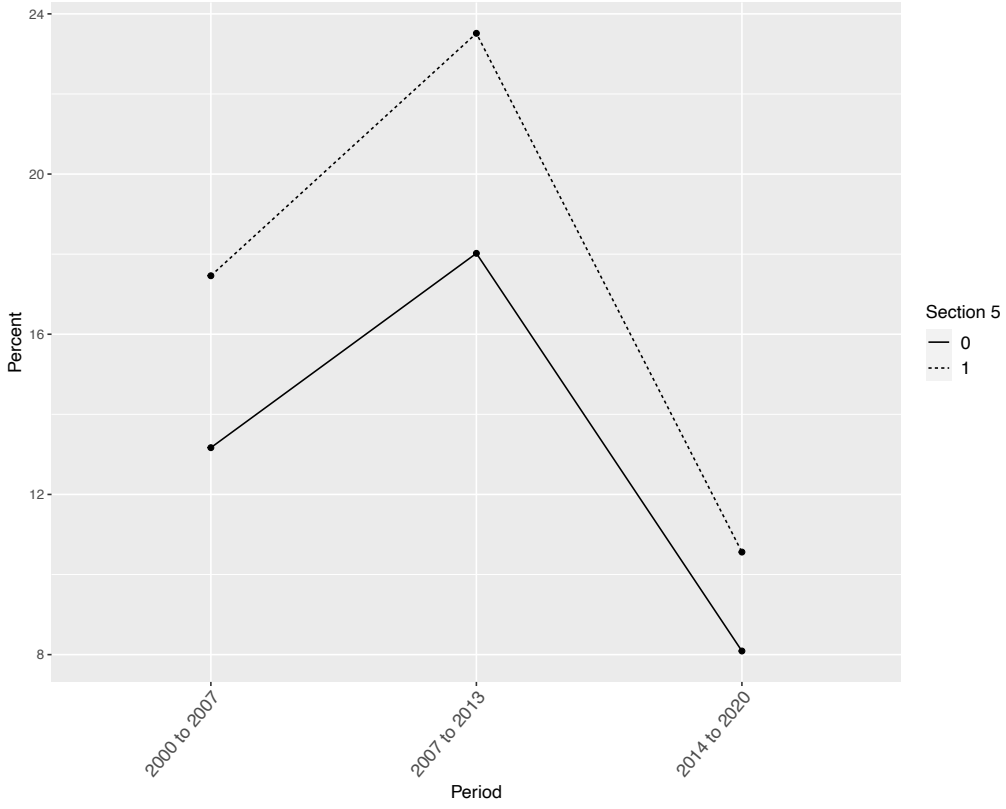

Figure A3. Visual assessment of Parallel Trends for Racial Composition by Annexation