The Impact of Justice Department Consent Decrees from the 1970s and 1980s on Minority and Female Representation in Police and Fire Departments

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Abstract

The Justice Department began a number of suits in the 1970s and 1980s resulting in consent decrees that mandated increased hiring of minorities and women in police and fire departments. The author used Census data to compare representation in the departments of cities that were subject to consent decrees with those of cities that were not. Through a difference in difference regression model, the consent decrees were found to have a statistically significant impact on minority representation in police departments, minority representation in fire departments, and female representation in police departments (no significant impact was found on females in fire departments). Controlling for variables including location, age, poverty rate, and minority rates of sample cities confirm these results. The presence of a consent decree causes an additional 3.53% increase in minority police, 9.77% increase in minority firefighters, and 6.19% increase in female police according to the controlled model. This analysis suggests that using the judicial system may be an effective policy for federal agencies attempting to alter municipal policies.

Keywords

Public Economics (H0) Labor and Demographic Economics (J0) Economics of Minorities (J150) Economics of Gender (J160) Public Sector Labor Markets (J450) Particular Labor Markets: Public Policy (J480) Intergovernmental Relations (H770)

[1] This paper will be used as my senior thesis and will be offered to fulfill requirements both to graduate with Honors and Distinction in Economics (BS) from Syracuse University. I would like to thank Professor Perry Singleton, my advisor in the Economic Distinction program, for guiding me through the research project; Professor William Horrace for acting as my Honors Reader; and Austin Church, a classmate, for helping brainstorm and troubleshoot throughout the research process.

1. Introduction

In the late 1970s and early 1980s, many cities grappled with the same racial tensions that caused the Civil Rights movement of the 1960s. The period also yielded a growing equal rights movement as women sought access to traditionally male jobs. However, municipalities often showed a lack of support for these two equal rights movements in their symbols of public safety: police and fire departments. The lack of representation for these demographics caused a series of Justice Department led suits against the city governments. The cities would seek at times to settle these suits in the form of a Consent Decree, "a broad injunction negotiated by the parties and ratified as a court order by the signature of a federal judge."[2] In this case, the consent decrees often included language requiring hiring quotas, guidelines for giving promotions, and/or department targets for female or minority officer representation.[3] The goal of this paper is to identify the impact of court ordered consent decree on representation of minorities and women in police and fire departments

The analysis consists of a series of difference in difference models (diff-in-diff) which identify the difference in representation between cities that were subject to consent decrees (referred to as "consent decree cities") and cities that were not subject to consent decrees ("comparison cities" or "non-consent decree cities") caused by the consent decree intervention. Two central regression models were created. The first model does not control for other variables. The second model accounts for control variables that may explain changes in the department makeups outside the consent decrees (this second model may be referred to as the "controlled model").

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[2] Schwarzschild, M. (1984). Public Law by Private Bargain: Title VII Consent Decrees and the Fairness of Negotiated Institutional Reform. *Duke Law Journal*, 887–937.

[3] *United States v. City of Miami*, 614 F.2d 1322 (5th Cir. 1980)

The results of this study conclude that there is a statistically significant impact of consent decrees in increasing representation of minorities in police departments, minorities in fire departments, and females in police departments. The impact of consent decrees for female representation in fire departments was not statistically significant at the .05 level. In police departments, the controlled model attributes consent decrees with a 3.53% increase in minority representation and a 6.19% increase in female representation. The same model suggests that the consent decrees were responsible for an even larger increase of 9.78% in the share of firefighters identifying as minorities. Location in the south, poverty rates, age, and minority rates in the entire city also account for notable changes in the share of minorities and women in police departments. Only minority rates and age significantly affect the proportion of minority firefighters. As will be described later in the paper, there are some differences in the effects of control variables and sample segmentation, but the models generally come to the same conclusion. The consent decrees caused a significant increase in representation of females and minorities in police departments and minorities in fire departments.

2. Background

Empirical Literature

There has been some previous research on using litigation to improve the numbers of minorities and females in police departments, but similar research on fire departments is largely lacking. One empirical study focusing on female officers in city, county, and state police organizations found that consent decrees had a dramatic impact on hiring more female officers.[4] The study also suggests that the expiration of a consent decree usually causes female hiring to

[4] Lonsway, K., & Aguirre, P. (2003). Under Scrutiny: The Effect of Consent Decrees on the Representation of Women in Sworn Law Enforcement. *National Center for Women & Policing a Division of the Feminist Majority Foundation*, 2–27.

level off. Many of the consent decrees referenced in this paper faced similar expiration or alterations after a certain period, and the effects of these changes are noted as an area for further research.

Another paper, by Justin McCrary, uses a diff-in-diff with the intervention being similar litigation of Affirmative Action cases. His analysis found that court-orders following litigation led to increases in African-American representation in police departments of about 14%.[5] This paper also delves into the practical impacts of such a policy by noting that entrance rate exam scores go down (suggesting less qualified candidates were being hired). Although one would expect the quality of police officers to subsequently deteriorate, crime rates largely stay the same in the following decades when the hiring of African-Americans was mandated. Such a result would lead one to believe, the hiring of African-Americans did not cause less effective policing.

Another article notes the impact of increasingly diverse police departments. This author argues that the changes resulting in greater diversity result in less psychological solidarity within police departments which leads to better community relations without harming other aspects of their jobs.[6] The results of the psychological and empirical analysis of the practices of police departments point toward the benefit of measures to increase minority representation. These articles offer some evidence that underrepresented groups do have a growing presence in police departments, a claim that the following analysis will confirm and extend to fire departments. Additionally, the previous research suggests there are tangible benefits to increasing minority

[5] McCrary, J. (2007). The Effect of Court-Ordered Hiring Quotas on the Composition and Quality of Police. *The American Economic Review*, *97*(1), 318–356.

[6] Sklansky, D. A. (2006). NOT YOUR FATHER'S POLICE DEPARTMENT: MAKING SENSE OF THE NEW DEMOGRAPHICS OF LAW ENFORCEMENT. *Journal of Criminal Law & Criminology, 96*(3), 1209-1220,1222-1243. Retrieved from https://search-proquest-com.libezproxy2.syr.edu/docview/218441139?accountid=14214

and female representation in departments which justifies the importance in measuring the effectiveness of court orders in achieving these demographic changes.

Theoretical Framework

This paper focuses on public policy addressing entrenched discrimination. Discrimination in the workplace can be looked at in a similar way to other economic preferences or tastes for goods or services, a model presented by Gary Becker.[7] Through this lens, discrimination is thought of as a preference against the labor of a particular demographic. According to such a model, the demographic for which the employer has a taste against would simply not be hired. However, if the discriminated demographic has a lower wage rate or a higher marginal revenue product, the firm must weigh the costs to profits with their discriminatory tastes.[8] As a consequence, Becker concludes that in competitive markets, discrimination should not be able to persist because of the decreased efficiency.

The police and fire departments in the 1970s and 1980s reflect this discrimination taste effects. Because municipalities largely operate under standardized pay scales, one could argue that because the wage rate is the same for both groups, the employers did not hire minorities or females because of their discriminatory taste. In other cases, females and minorities were not being chosen for promotions.[9] This also fits in Becker's model because departments were more likely to put officers in leadership who match their tastes when work productivity and pay scale would be equal across demographics. There is some evidence to suggest minorities may score

[7] Becker, G. S. (1995). The Economics of Discrimination. Chicago, IL: Univ. of Chicago Press.
[8] Himmelweit, S., Simonetti, R., & Trigg, A. (2001). Economics Explains Discrimination in the Labour Market. In *Microeconomics: Neoclassical and Institutionalist Perspectives on Economic Behaviour*. Thompson Learning.
[9] Jones, T. (2019, June 4). After 39 years, Baton Rouge Released from Federal Consent Decree on Racial, Gender Hiring Disparities. *The Advocate*. Retrieved from https://www.theadvocate.com/baton_rouge/news/crime_police/article_d014e42e-8704-11e9-a75e-dbb2d8387744.html

lower on exams in police departments used as part of the promotion criteria.[10] In order to confirm equal marginal products of labor between demographics, it would prove beneficial to further research the efficacy of female and minority members in these departments once hired.

There are some who argue that discrimination in the labor market should be viewed as a combination of taste-based discrimination and statistical discrimination.[11] Statistical discrimination occurs when "distinctions between demographic groups are made on the basis of real or imagined statistical distinctions between the groups."[12] For instance, police departments may be less inclined to hire women because they are statistically more likely to need time off for maternity leave over the course of their career. It is likely that such statistical discrimination also occurred in the police and fire departments before the consent decrees or in departments that were not subject to consent decrees.

The court ordered decrees to increase representation of these discriminated groups would theoretically eliminate taste-based discrimination in the hiring decisions for police and fire departments. Furthermore, it would make bias related to statistical discrimination less likely to be entrenched in a department's hiring policy. To confirm that such policies successfully eliminate the role of prejudice in hiring officers, several diff-in-diff regression models were run to compare departments with consent decrees to those without consent decrees. These models are explained at length in the following section.

3. Empirical Strategy

[10] McCrary, J. (2007). The Effect of Court-Ordered Hiring Quotas on the Composition and Quality of Police. *The American Economic Review*, *97*(1), 318–356.

[11] Guryan, J., & Charles, K. (2013). Taste-Based or Statistical Discrimination: The Economics of Discrimination Returns to its Roots. *The Economic Journal, 123*(572), F417-F432. Retrieved April 8, 2020, from www.jstor.org/stable/42919257

[12] Dickinson, D., & Oaxaca, R. (2009). Statistical Discrimination in Labor Markets: An Experimental Analysis. *Southern Economic Journal, 76*(1), 16-31. Retrieved April 8, 2020, from www.jstor.org/stable/27751450

This paper attempts to observe the causal impact of consent decrees issued by the Justice department in the late 1970s and early 1980s on minority and female representation in police and fire departments. In order to estimate the impact of these Justice Department orders, the analysis uses a Difference in Difference Model (Diff-in-Diff) to estimate the effect of the decrees. The theoretical model may be represented by the following formula:

$$Y= \beta0 + \beta1*[Time] + \beta2*[Intervention] + \beta3*[Time*Intervention] + \beta4*[Covariates]+ \varepsilon$$

This model compares the difference between the control and treatment groups at one time with the difference between the two groups at a later time while also accounting for the impact of additional control variables. This model assumes parallel trends, meaning absent the intervention, the two groups would continue along the same trend. This does not necessarily mean that the two groups are identical at the pre-intervention observation point. β1 accounts for the changes in Y in the control group therefore showing the change in the dependent variable in the absence of the intervention. β2 indicates the difference between groups at the pre-intervention observation. β3 is the particular measure of interest because it shows the difference between the two groups' difference over time after the intervention, thus leading to the term "Difference in Difference." This last coefficient is also thought of as the effect attributed to the intervention.

In the case of this comparison, the pre-intervention observation would be 1980 while the post observation would be 2000. The court ordered consent decrees act as the Intervention because they were only issued to some cities while other cities' hiring processes were unaffected. This situation yields a quasi-experimental study. The comparison cities that did not receive the consent decrees would act as the control group, so to speak, according to the outline described above while the cities that received consent decrees would be considered the treatment group.

Essentially, β3 illustrates the change in the dependent variable directly attributed to the consent decrees. The Y in this regression consists of four separate dependent variables: minority representation in police departments, minority representation in fire departments, female representation in police departments, and female representation in fire departments. The null hypothesis is that the consent decrees have no statistically significant impact on these variables.

As mentioned above diff-in-diff models do not require that the two groups be identical pre-intervention. Instead, the diff-in-diff model assumes parallel trends meaning that absent the treatment, the two groups would continue to grow at the same rate, meaning the difference over time would be the same in both groups. Initial differences between consent decree cities and comparison cities may affect representation trends over the period. Differences in characteristics between the two groups are discussed in the "Data and Sample" section. The central model of the analysis attempts to control for several characteristics, including some pre-intervention differences, that may also influence the dependent variables over time.

To account for possible factors that could cause variance in the dependent variables of female and minority representation, this paper considers two models. One model consists of a standard diff-in-diff model without accounting for control variables:

$$Y= \beta0 + \beta1*[Time] + \beta2*[Intervention] + \beta3*[Time*Intervention]$$

The second model controls for minority representation in each city ("cityminority"), amount of poverty in each city ("citypoverty"), the age of each respondent ("age"), and whether or not the city resides in the historical South ("south").

$$Y= \beta0 + \beta1*[Time] + \beta2*[Intervention] + \beta3*[Time*Intervention] + \beta4[cityminority+ \beta5[citypoverty] + \beta6[age] + \beta7[south]$$

Controlling for these variables provided a higher R-Squared value for the regressions of each dependent variable, and accounts for many factors that would logically affect minority and female representation outside of the consent decrees.

4. Data and Sample

Data

This paper uses US Census data harmonized by IPUMS USA.[13] The data was then limited to cities with a population of over 100,000. The 100,000-person threshold served to partially control for the potential bias of large cities being more likely to receive consent decrees due to greater media attention. It was also meant to mitigate some of the influence of city population on increasing minority representation over the time interval of interest. There were 314 cities above this level according to 2018 Census estimates.[14] Several key variables were unavailable for the 1970 or earlier censuses.[15] Due to this limitation, the figures and tables do not show values for 1970. However, 1980 is a better data point to use as the pre-intervention observation because the hiring practices articulated in consent decrees often took several years to implement. At the earliest, cities were adjusting to the decrees at, or after, 1980.

Case Review

The law review consisted of combing through thousands of legal documents using a legal database, *CaseText*.[16] A keyword search was then ran using the city's name in addition to identifiers of the department in question (police or fire). As a result of this search, a number of

[13] Ruggles, S., Flood, S., Goeken, R., Grover, J., Meyer, E., Pacas, J., & Sobek, M. (2020). IPUMS USA: Version 10.0 [dataset]. Minneapolis, MN. https://doi.org/10.18128/D010.V10.0.
[14] United States Census Bureau (2018). Annual Estimates of the Resident Population for Incorporated Places of 50,000 or More, Ranked by July 1, 2018 Population: April 1, 2010 to July 1, 2018.
[15] All code may be found in the Appendix
[16] https://casetext.com/search

cases would appear, and the researcher would have to skim each document for references to a consent decree. There is no comprehensive database of Justice Department consent decrees, and most legal databases do not provide the exact text of the decree. In lieu of such evidence, this case text review mainly identified cities in which other litigation referenced the decrees.

For example, a researcher may want to see if there were consent decrees mandating the police department of Syracuse, NY to hire more minority or female officers. The researcher would then search "'Syracuse' 'discrimination' 'consent decree' 'police'" in the database to see if there were any references to a consent decree mandating increased hiring of minorities or females in the Syracuse, NY police department. In this case, a case *Alexander v. Bahou*, from 1980, appeared that references "a consent decree providing a mechanism for integration of the police and fire departments" to which the Justice Department and the city's civil service agreed.[17] The listed goal of the decree was "utilize blacks and women in all ranks of its police and fire departments in numbers approximating their representation in the labor force" and to do so, the department would hire minorities for 25% of open entry-level jobs and women for 20% of said jobs. In cases where a consent decree for a city exists, the decree would be referenced in detail in a case challenging the departments' fulfillment of the requirements, the decree would be referenced as the result of a particular suit (as in the case above), or, on rare occasion, the decree would appear in its entirety.

Overview of Data

After this legal review, 43 cities were found to have consent decrees for their police department instituted between 1975 and 1985 while 36 fire departments had consent decrees over this period. This list was not mutually exclusive in that some cities had decrees for only one

[17] *Alexander v. Bahou*, 86 F.R.D. 194 (N.D.N.Y. 1980)

department, only the other department, or both departments. Across all cities in the sample, the percentage of disadvantaged groups increased in both police and fire departments (Figure 1). There is a clear trend toward increasing representation of both minorities and women.

Figure 1 – Averages for Several Variables of Interest over Time

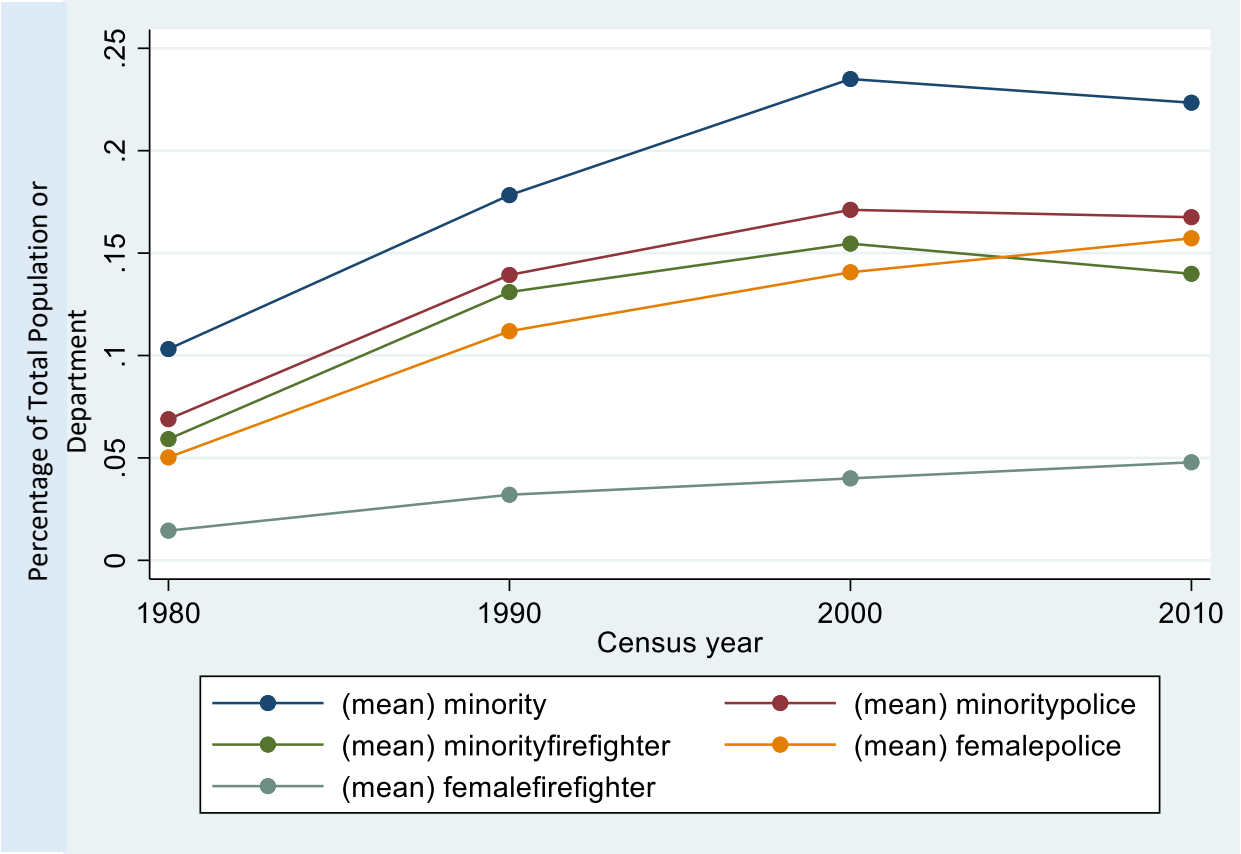


Figure 1 shows the average of several variables of consequence across all cities over the course of 1980 to 2010.

Minority police officers increase from 6.06% in 1980 to 16.75% in 2000, minority firefighters increase from 3.09% to 13.10%, and female police officers increase from 4.68% to 11.19% over the same period (Table 1). Female firefighters continue to make up a very small proportion of the departments, increasing from .91% to just under 4.79% over the period

Severe discrepancies in representation at the baseline of this study would logically draw the attention of the justice department and cause a city to be more likely to receive a consent

decree. However, 1980 levels of minorities in police and fire departments are very similar between consent decree and comparison cities (Table 2 and Table 3). Consent decree cities actually reported a .17% higher mean for minority police and .13% higher mean for minority firefighters. For women, the representation in consent decree cities is slightly lower for both (3.15% to 5.12% for police and 0.72% to 1.46% for fire). Although there is a difference of one or two percent for the female representation variables, both the intervention and control group report female representation of less than 5% meaning that there is a gross underrepresentation of women that would theoretically attract similar legal attention. This may be because consent decrees are often the result of arbitration after litigation was brought against the city by the Justice Department. Many cities that did not receive consent decrees either fought and won their legal battles, resolved the dispute in a different settlement method, or were not subjected to such a Justice Department investigation.

Control Variables

In the language of the consent decrees, there are both mandates to meet certain proportions for hiring or promotions going forward ("the next available black or woman is to be promoted until such minorities comprise 25% of the whole") and/or proportions for the department to hit by a certain time.[18] Logistically, departments may meet this requirement by firing white officers then hiring black officers or simply hiring more police officers exclusively of color. Either way, one would expect that more young officers of color would be hired following the new hiring policy. On the other hand, it may be that younger departments are more forward thinking and less biased against minorities or women. The average age of employees in the police and fire departments steadily increases over the entire sample (Table 4). However, when

[18] *Smith v. City of Cincinnati*, 929 F.2d 702 (4 April 1980).

police consent decree cities are compared to non-consent decree cities, it seems that ages for consent decree cities are almost stagnant between 1980 and 1990 before continuing at the same trend again after (Figure 2). Ages for consent decree police dropped from 37.34 to 37.05 compared to rising from 36.74 to 38.26 in comparison police departments. Firefighter age does not have a similar nor discernible trend (Figure 3). However, due to the potential affect, the second model controls for age.

Region could also play an impact on hiring minorities. It would be expected that cities in the historical south would be less inclined to include minorities in their departments. Police departments actually reject this assumption in that they have larger proportions of minorities working in their department than in other regions, but it appears that the increasing representation levels off in 1990 while it continues to rise elsewhere (Figure 4). Fire departments show a similar trend in initially having greater minority representation in Southern departments, but begins to decrease at 1990 in the South while other regions still increase (Figure 5). Female representation in these departments in the South increased at a faster rate over the interval for fire departments than outside of the South and at about the same rate for police departments in both regions. Furthermore, 16 of the 43 consent decrees for police and 14 of the 36 consent decrees for fire departments were issued to Southern cities. Due to the potential impact of the culture of the South, this was included as a covariate in the second regression model.

Although city population was partially controlled for by limiting the sample to relatively large cities, regressions controlling only for this variable (Table 5 and Table 6) were run to test their effect on minority representation in departments. Larger cities having larger populations of minorities which would lead both to a larger applicant pool of minorities to the departments and possibly increased propensity to hire minorities. Furthermore, the culture of larger cities may

yield less gender bias and bias in general resulting in more open attitudes toward hiring female firefighters and police officers. To test this hypothesis, another regression was run only controlling for the proportion of minorities in the cities' population which produced similar results as the regression controlling only for "citypop" which will be discussed at length below. To accommodate this occurrence, the second regression model controls for the minority population proportion of cities.

The second regression model also controls for total proportion of poverty in the city. Such a control stems from variations in municipal spending due to a larger impoverished population. Cities with a high poverty rate tend to spend more on welfare and less on other services.[19] It may be that such a policy causes decreases spending on police and fire departments or restricts budgets compared to cities with lower poverty rates. A smaller budget may cause less new police officers and firefighters to be added to the pay roll, causing the hiring guidelines laid out in the language of the consent decrees to be implemented at a slower pace. This would manifest in a reduced impact on increasing minority and female representation. To test this hypothesis, the poverty rate of cities was included in the second regression as a control variable.

5. Results

The diff-in-diff model without controls described in the empirical strategy section above illustrates the consent decrees had statistically significant impact for each dependent variable under consideration except female representation in fire departments. The null hypothesis that there is no statistically significant relationship between the policy intervention and the differences in outcome is rejected at the .01 p-value for minority police officer representation,

[19]Pagano, M., & Hoene, C. (2018). *City Budgets in an Era of Increased Uncertainty: Understanding the Fiscal Policy Space of Cities*. Brookings: Metropolitan Policy Program.

minority firefighter representation, and female police officer representation with this model. Figures 6 through 9 illustrate this occurrence visually while Table 7 provides numerical support.

In the first model, the coefficient on the pre/post (labeled "time" in Table 7) variable is statistically significant for all dependent variables. This suggests that even in the absence of consent decrees the representation of the group went up a certain amount, so the coefficients on the diff-in-diff variable ("time*consent decree") show the additional increase in representation. The model demonstrates that in the absence of consent decrees, minority police representation went up 8.86%, minority firefighter representation went up 8.88%, female police went up 8.41%, and female firefighters went up 2.53%. The diff-in-diff model, however, identified an additional increase in these measures caused by the presence of consent decrees. As illustrated below, the difference attributed to consent decrees is an additional 12.43% increase for minority police, 11.53% increase for minority firefighters, and 6.83% increase for female police. These coefficients on the diff-in-diff variable clearly demonstrate that the Justice Department orders caused increased representation in these respective demographics in comparison to cities that did not receive such orders.

For every dependent variable, the coefficient on the treatment variable ("consent decrees") is not statistically significant at the .05 level suggesting that there were not significant differences between the two groups at the baseline in the first model. In the controlled model in contrast, these coefficients have a statistically significant negative value meaning consent decree cities had lower pre-intervention representation of minorities and females than comparison cities. Consent decree cities had a mean representation 3.38% lower for minority police, 0.88% higher for minority firefighters, and 4.86% lower for female police according to the controlled model.

These results indicate the cities receiving police consent decrees in particular may have been selected due to their systematically low representation in the department.

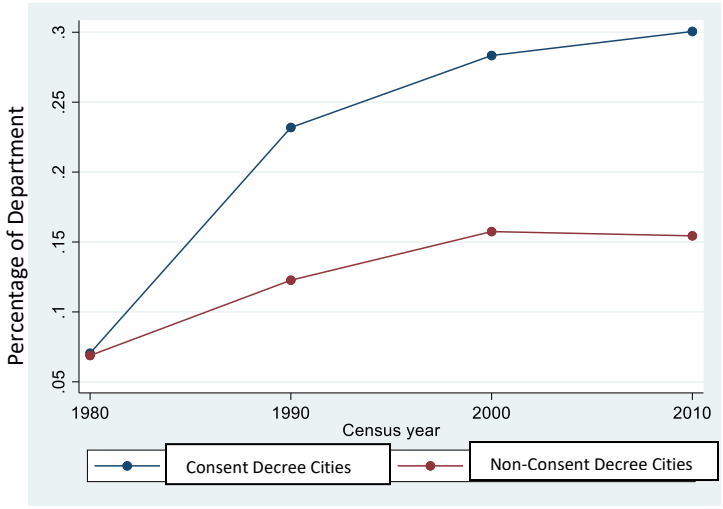
In agreement with bare bones diff-in-diff model, the model including the covariates also rejects the null hypothesis at the .01 level for all dependent variables except for female firefighter representation. The increase in representation resulting from consent decrees differs noticeably for minority police representation dropping from over 12% to 3.53%. The difference in difference coefficient for the other dependent variables, however, was less dampened by the inclusion of control variables. The impact of consent decrees only dropped to 9.77% from 11.53% for minority firefighter representation. For female police officers, the impact of the policy implementation was less than a percent, dropping from 6.83% to 6.19%. For every respective dependent variable, the R-Squared value of the regression increased between the original model to the second model that included various covariates. For the variables of minority police, female police, and minority firefighters, both models conclude that representation was significantly more likely to increase in cities where Justice Department consent decrees were implemented.

Minority Population and City Population

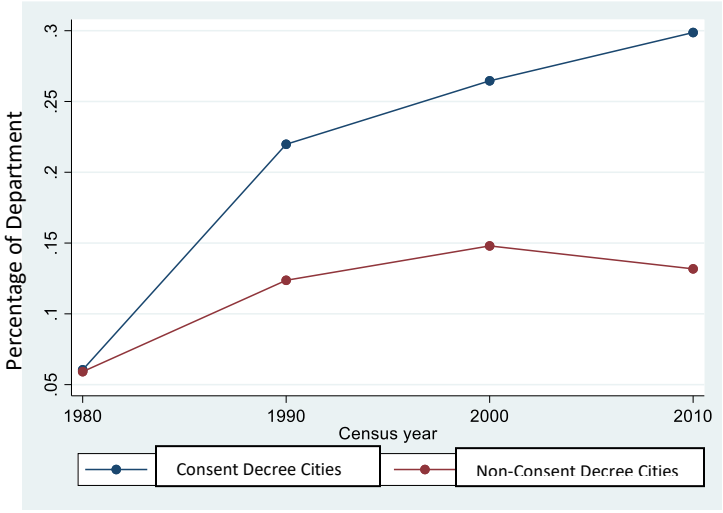
Minority population in the city at large had a statistically significant impact on every dependent variable except for female firefighters (Table 5 and Table 6). The coefficient of .73 suggests that for every one percent increase in the overall minority population in the city, there would be a .73% increase in the minority population working for the police department. This confirms the earlier hypothesis that a larger minority population leads to more minority police officers being hired. Though this was also a statistically significant coefficient for minority

Figures 6 through 9 –Representation in Consent Decree Cities vs. Non-Consent Decree Cities over Time

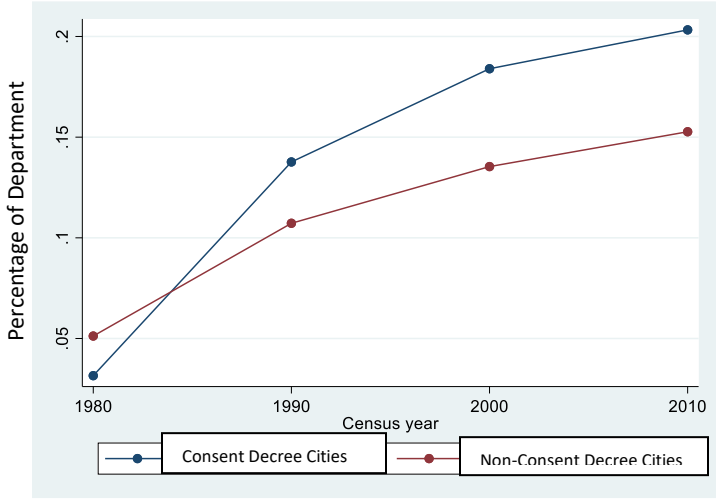
Minority Police



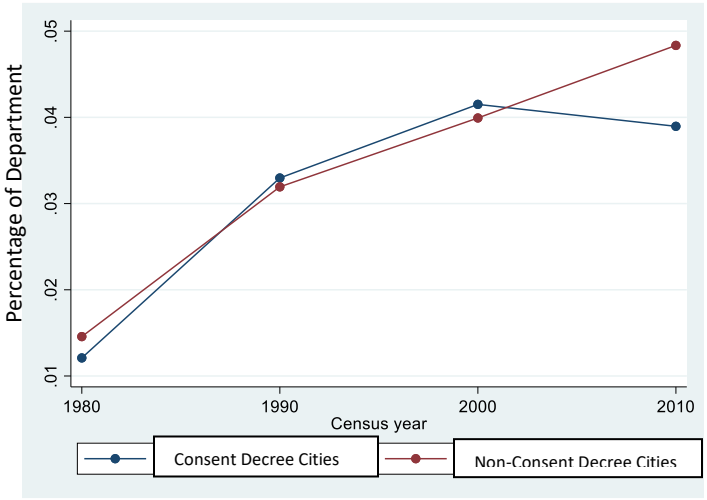
Minority Fire



Female Police



Female Fire



These figures illustrate the change in representation of various demographics in police or fire departments over time.

Table 1 – Results from Diff in Diff OLS Regressions

Dependent Variable	**Minority Police**		**Minority Firefighters**		**Female Police**		**Female Firefighters**	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Time*Consent Decree	.1242937 (.000)***	.0353007 (.008)***	0.1152717 (.000)***	.0977505 (.000)***	0.0682748 (.000)***	.0619389 (.000)***	0.0040489 (.751)	.0043405 (.737)
Time	.0886212 (.000)***	.0000514 (.992)	.0888359 (.000)***	.0586745 (.000)***	0.0841551 (.000)***	.0789532 (.000)***	0.0253589 (.000)***	.0316061 (.000)***
Consent Decree	.0016059 (.888)	-.033802 (.008)***	.0013279 (.949)	.0087929 (.000)***	-0.0196837 (.060)*	-.048612 (.000)***	-.0024724 (.823)	.0091532 (.440)
Minority Population working in city of work	X	.7307879 (.000)***	X	.2372454 (.000)***	X	.0938743 (.001)***	X	-.0420167 (.095)*
Population in poverty in city of work	X	-.382271 (.000)***	X	.0976325 (.240)	X	-.3014163 (.000)***	X	.1078468 (.016)**
Southern Region	X	.0396321 (.000)***	X	.0023255 (.609)	X	.0130214 (.000)***	X	-.0030863 (.206)
Age	X	-.0016112 (.000)***	X	-.002643 (.000)***	X	-.0014745 (.000)***	X	-.0011903 (.000)***
Constant	.0688463 (.000)***	.0892928 (.000)***	.059156 (.000)***	.1190509 (.000)***	.0512294 (.000)***	.1311412 (.000)***	.0145692 (.000)***	.0498682 (.000)***
R-Squared	0.027	0.0437	0.0248	0.0342	0.0187	0.0226	0.0052	0.0113

Table 1 outlines the coefficients for difference in difference regressions ran to identify the impact of consent decrees on four demographics. These consent decrees mandated hiring quotas or target numbers for the hiring of minorities and females to police and fire departments. Model 1 consists of a standard Difference in Difference where the time interval is 1980 to 2000 and the treatment is the consent decree. Model 2 includes four control variables: minority population in the city, poverty rate in the city, location in the Southern region, and age. P-Values are in parentheses. ***denotes significance at the .01 level **denotes significance at the .05 level ***denotes significance at the .10 level.

firefighters and female police, the magnitude of the impact was less at 0.237% and 0.094% respectively. These coefficients still suggest that a larger minority population has a positive impact on the variables. As discussed earlier, city population was partially controlled for via the 100,000-person threshold for cities to be included in the sample. It was hypothesized that this covariate would have a similar impact as the minority population in cities because larger cities generally yield higher proportions of minority residents.[20]

Too confirm this conjecture, four regression models were run for each underrepresented group in the departments which are detailed in Table 5 and Table 6. For minority police, the city population and minority population are statistically significant in each regression where the variables are controlled, and they lower the magnitude of the Diff-in-Diff coefficient even making the coefficient insignificant in Model 3 and negative in Model 4. Controlling for city population and minority population reduces the impact of consent decrees on increasing minority police representation while city population and minority population are significant factors in increasing this variable. For minority firefighters, city population is not a statistically significant variable in increasing representation while city minority population is a statistically significant variable that increases representation. Female police representation regressions show that both these control variables have a positive and significant effect on female police representation, and while it does depress the value of the Diff-in-Diff coefficient, the consent decrees still appear to significantly increase female police representation.

South

[20] Blumenberg, E. (2006). Metropolitan Dispersion and Diversity: Implications for Community Economic Development. In Ong P. & Loukaitou-Sideris A. (Eds.), *Jobs and Economic Development in Minority Communities* (pp. 13-39). Temple University Press. Retrieved April 8, 2020, from www.jstor.org/stable/j.ctt14bt2dv.5

The control variable for the city being located in the South had a statistically significant impact for female police and minority police representation at the .01 level. Both coefficients of 3.96% for minority police and 1.30% for female police suggest an increase in representation in police departments if the city in question is in the South. The originally hypothesized reason for including the variable was to account for increased bias in the region, but these coefficients contradict this theory. The results are consistent with trends of increased minority representation in Southern police departments (Figure 4). For fire departments, the position of the city in the South did not have a statistically significant impact on the employment of females or minorities.

To delve further into the impact of region, the same two regression models were run exclusively for cities located in the South (Table 10). Dividing the sample in this way caused the diff-in-diff coefficient for female police and female fire representation to become insignificant. The insignificant coefficient suggests that, in the South, the presence of consent decrees did not cause a significant impact on the representation of females in these departments. This conclusion is interesting because the culture of the South is often considered less progressive, so one would expect departments to be hesitant to hire more women. According to this assumption, consent decrees would be an intervention that would force departments to adjust their cultural bias, but the regression does not support this assumption.

Minority representation regressions for police and fire with the first model using only Southern observations, however, have a larger coefficient that is statistically significant for both fire and police departments. According to this result, one would reject the null hypothesis that consent decrees played no role in increasing minority representation for these departments. This begs the question, what differs between female and minority representation in the region? One possible answer may be that the language of consent decrees in these Southern cities focused

primarily on hiring minorities. Another possible answer could be that racial bias runs much stronger than gender bias in this section of the country. The regression suggests that comparison cities were less successful or willing to raise their minority representation. Thus, the evidence points to consent decrees being a causal impact of the policy intervention.

Poverty

The amount of poverty in a city had a statistically significant impact on the representation of minority police, female police, and female firefighters at the .05 level. The proportion of impoverished people in the city had a statistically significant coefficient of -0.3823% for minority police and -0.3014% for female police meaning that there was less likely to be these types of officers if there is greater poverty in the city. In contrast, the coefficient for the female firefighter regression was .1078% suggesting that increased poverty would lead to greater female firefighter representation. The coefficient for minority firefighter representation was not significant. The negative relationship observed in police departments may be the result of a lack of funding for police departments. Cities with higher rates of poverty could have lower tax revenue and increased spending on welfare programs to address the needs of impoverished citizens.[21] As a result, spending on other services such as police departments may be cut. This likely means that departments will not be able to hire additional police officers, and therefore their ability to increase minority and female representation is reduced. The departments instead keep their same demographic makeup leading to a statistically significant negative relationship with increasing representation of underrepresented groups.

Age

[21] Strait, J. (2001). The Disparate Impact of Metropolitan Economic Change: The Growth of Extreme Poverty Neighborhoods, 1970-1990. *Economic Geography, 77*(3), 272-305. doi:10.2307/3594075

Age is statistically significant for every dependent variable using the second regression model. This control variable is also negative for each regression. Though the magnitude of the coefficient on this control variable is small, ranging from -0.0015% to -.0026%, the typical averages for departments are between 35 and 40 years old (Table 4). These negative coefficients indicate that as the average age of the police department decreases, the minority or female representation increases. This conclusion is consistent with early reasoning because it is possible that younger departments would be more open to hiring women and minorities. On the other hand, as new personnel from underrepresented groups are hired due to the decrees, the average age would decrease. The changes in this control variable may actually be a result of the dependent variables. Hiring young female and minority officers may cause mean age to decrease as opposed to lower mean age leading to more minority and female hiring. Thus, the relationship may indicate a correlation as opposed to a causality. Either way, the consent decrees appear to serve as a catalyst for the hiring process further supporting the finding that consent decrees had a role in increasing the minority and female representation in police and fire departments.

6. Conclusion

This paper analyzed the effects of consent decrees issued in the 1970s and 1980s to increase minority and female representation in police and fire departments. Using census data, the representation of departments in cities subject to the court orders were compared to cities without the orders. Multiple variations of a diff-in-diff model confirmed that the decrees had a statistically significant impact on minority representation in police departments, minority representation in fire departments, and female representation in police departments. The findings shed some light on the effectiveness of federal government intervention through the Justice Department of the executive branch. The results may suggest that federal agencies can have

success in altering local government policy by using litigation against the cities or departments within the cities. The agencies' ability to use the legal system to sue cities appeared to have been an effective route to achieving a policy goal of increasing diversity in employment at the municipal level.

The 1980s era decrees mostly expired or were renewed with different language between 2000 and 2010, so the impact of removing or altering these agreements may be something to research further. [22] A new round of consent decrees also appeared in reaction to the police brutality incidents coming to the attention of the mainstream public following the high-profile cases of Eric Garner in New York City, Michael Brown in Ferguson, MO, and Freddie Gay in Baltimore in 2014 and 2015.[23] As more civil rights issues arise due to incidences of police brutality, the resulting consent decrees should be analyzed to compare the nature of the prescribed policies with these successful measures taken decades earlier and described in this paper. How will these decrees cause different results? What can be learned from the impacts of consent decrees in the 1970s and 1980s? Research on the impacts of the new decrees that articulate more specific department policies may also guide attempts to reform police and fire departments going forward. Furthermore, this project raised questions about department efficiency, cohesiveness, and community relations. More research on these metrics may be useful following the decrees in the 1970s and 1980s, after they were largely repealed in the early 2000s, and after the decrees in response to brutality in the 2010s are fully implemented.

[22] Boston Police's Racial Hiring Is Terminated. (2004, November 26). *Los Angeles Times*.
[23] US Department of Justice: Division of Civil Rights. (2016). *Investigation of the Baltimore City Police Department* (pp. 21–168). Washington DC.

Appendix I: Tables

Table 1 – Dependent Variables Means across Entire Sample by Year

Year	Minority Population in City	Minority Police	Minority Firefighter	Female Police	Female Firefighter
1970	12.31%	6.06%	3.09%	4.68%	0.91%
1980	10.31%	6.89%	5.92%	5.03%	1.45%
1990	17.83%	13.93%	13.10%	11.19%	3.20%
2000	23.50%	17.11%	15.46%	14.07%	4.00%
2010	22.34%	16.75%	13.99%	15.72%	4.79%

Table 1 provides the means of total minority population and minority and female representation in police and fire departments over the course of 1980 to 2010. This table only provides means for observations in the entire sample of cities.

Table 2 – Dependent Variables Means in Consent Decree Cities

Year	Minority Population in City (pd)	Minority Population in City (fd)	Minority Police	Minority Firefighter	Female Police	Female Firefighter
1980	10.01%	10.82%	7.05%	6.05%	3.15%	0.72%
1990	30.74%	28.56%	23.19%	21.98%	13.77%	3.30%
2000	36.25%	32.09%	28.34%	26.46%	18.40%	4.15%
2010	36.39%	31.83%	30.05%	29.87%	20.33%	3.90%

Table 2 provides the means of total minority population and minority and female representation in police and fire departments over the course of 1980 to 2010. This table only provides means for observations in cities subject to consent decrees. There are two columns for minority population to account for distinct treatment groups seeing as cities did not necessarily receive consent decrees for both police and fire departments.

Table 3 – Dependent Variables Means in Non-Consent Decree Cities

Year	Minority Population in City (pd)	Minority Population in City (fd)	Minority Police	Minority Firefighter	Female Police	Female Firefighter
1980	10.32%	10.30%	6.88%	5.92%	5.12%	1.46%
1990	17.13%	17.52%	12.27%	12.37%	10.72%	3.19%
2000	23.07%	23.32%	15.74%	14.80%	13.54%	3.99%
2010	21.88%	22.15%	15.44%	13.18%	15.27%	4.83%

Table 3 provides the means of total minority population and minority and female representation in police and fire departments over the course of 1980 to 2010. This table only provides means for observations in cities subject to non-consent decrees. There are two columns for minority population to account for distinct treatment groups seeing as cities did not necessarily receive consent decrees for both police and fire departments.

Table 4 – Average Police and Fire Department Age

City Characteristics	Total Police Age	Total Firefighter Age	Consent Decree Police Age	Consent Decree Fire Age	Non-Consent Decree Police Age	Non-Consent Decree Firefighter Age
1980	36.76933	37.00768	37.34385	37.17339	36.7398	37.00251
1990	38.07431	37.86694	37.06522	38.86264	38.25577	37.78542
2000	39.41303	38.36303	38.33306	38.93904	39.5444	38.32833
2010	41.31774	39.3891	40.12241	42.41558	42.09575	39.23477

Table 4 provides the means of police department and fire department age over the course of 1980 to 2010. The slowing age increases in consent decree cities suggest that there are younger employees being hired by these departments. For this reason, age is controlled for in several models of regressions in other tables.

Table 5 – Regressions to Control for Population and Minority Population in City for Minority

Dependent Variable	**Minority Police**				**Minority Firefighters**			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Time*Consent Decree	.1243 (.000) ***	.0538 (.000) ***	.0103 (.433)	-.0338 (.011) **	0.1150 (.000) ***	.1141 (.000) ***	.0996 (.000) ***	.0994 (.000) ***
Time	.0886 (.000) ***	.0844 (.000) ***	-.0182 (.000) ***	-.0065 (.203)	.0888 (.000) ***	.0881 (.000) ***	.0584 (.000) ***	.0570 (.000) ***
Consent Decree	.0016 (.888)	.0016 (.887)	-.0007 (.951)	-.0004 (.974)	.0013 (.949)	.0013 (.949)	-.0009 (.964)	-.0011 (.959)
City Population (in hundreds)	X	3.44e-06 (.000) ***	X	2.96e-06 (.000) ***	X	2.92e-07 (.213)	X	-1.78e-07 (.482)
Minority Population in city of work	X	X	.8212 (.000) ***	.7029 (.000) ***	X	X	.2221 (.000) ***	.2353 (.000) ***
Constant	.0688 (.000) ***	.0688 (.000) ***	-.0166 (.000) ***	-.0043 (.295)	.0592 (.000) ***	.0592 (.000) ***	.0364 (.000) ***	.0350 (.000) ***
R-Squared	0.027	0.0375	.0373	.0449	0.0248	.0249	.0259	.0259

Table 5 is designed to identify the effects of city population and minority population on difference in difference models meant to show the impact of consent decrees on underrepresented groups employment by police and fire department. The table outlines the coefficients for difference in difference regressions ran to identify the impact of consent decrees on minority hiring in police and fire departments (female police and fire representation are in Table 3). Model 1 consists of a standard Difference in Difference where the time interval is 1980 to 2000 and the treatment is the consent decree. Model 2 controls only for city population, Model 3 controls only for minority population in the city, and model 4 controls for both city population and minority population. P-Values in parentheses. ***denotes significance at the .01 level **denotes significance at the .05 level ***denotes significance at the .10 level.

Table 6 – Regressions to Control for Population and Minority Population in City for Female

Dependent Variable	**Female Police**				**Female Firefighters**			
Variable	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Time*Consent Decree	0.0683 (.000)***	.0370 (.002) ***	.0476 (.000) ***	.0257 (.036) **	0.0040 (.751)	.0056 (.661)	.0082 (.554)	.0079 (.540)
Time	0.0842 (.000)***	.0823 (.000) ***	.0648 (.000) ***	.0706 (.000)	0.0254 (.000) ***	.0263 (.000) ***	.0335 (.000) ***	.0311 (.000) ***
Consent Decree	-0.0197 (.060)*	-.0197 (.059) *	-.0201 (.054) *	-.0199 (.056) *	-.0025 (.823)	-.0025 (.823)	-.0019 (.865)	-.0021 (.849)
City Population (in hundreds)	X	1.53e-06 (.000) ***	X	1.46e-06 (.000) ***	X	-3.76e-07 (.003) ***	X	-3.03e-07 (.026) **
Minority Population in city of work	X	X	.1489 (.000) ***	.0903 (.002) ***	X	X	-.0591 (.015) **	-.0366 (.163)
Constant	.0512 (.000) ***	.0512 (.000) ***	.0357 (.000) ***	.0418 (.000) ***	.0146 (.000) ***	.0146 (.000) ***	.0206 (.000) ***	.0183 (.000) ***
R-Squared	0.0187	0.0212	0.0191	0.0213	0.0052	0.0056	0.0055	0.0057

Table 6 is designed to identify the effects of city population and minority population on difference in difference models meant to show the impact of consent decrees on underrepresented groups employment by police and fire department. The table outlines the coefficients for difference in difference regressions ran to identify the impact of consent decrees on female hiring in police and fire departments (female police and fire representation are in Table 3). Model 1 consists of a standard Difference in Difference where the time interval is 1980 to 2000 and the treatment is the consent decree. Model 2 controls only for city population, Model 3 controls only for minority population in the city, and model 4 controls for both city population and minority population. P-Values in parentheses. ***denotes significance at the .01 level **denotes significance at the .05 level ***denotes significance at the .10 level.

Table 7 – Results from Diff in Diff OLS Regressions

Dependent Variable	**Minority Police**		**Minority Firefighters**		**Female Police**		**Female Firefighters**	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Time*Consent Decree	.1242937 (.000)***	.0353007 (.008)***	0.1152717 (.000)***	.0977505 (.000)***	0.0682748 (.000)***	.0619389 (.000)***	0.0040489 (.751)	.0043405 (.737)
Time	.0886212 (.000)***	.0000514 (.992)	.0888359 (.000)***	.0586745 (.000)***	0.0841551 (.000)***	.0789532 (.000)***	0.0253589 (.000)***	.0316061 (.000)***
Consent Decree	.0016059 (.888)	-.033802 (.008)***	.0013279 (.949)	.0087929 (.000)***	-0.0196837 (.060)*	-.048612 (.000)***	-.0024724 (.823)	.0091532 (.440)
Minority Population working in city of work	X	.7307879 (.000)***	X	.2372454 (.000)***	X	.0938743 (.001)***	X	-.0420167 (.095)*
Population in poverty in city of work	X	-.382271 (.000)***	X	.0976325 (.240)	X	-.3014163 (.000)***	X	.1078468 (.016)**
Southern Region	X	.0396321 (.000)***	X	.0023255 (.609)	X	.0130214 (.000)***	X	-.0030863 (.206)
Age	X	-.0016112 (.000)***	X	-.002643 (.000)***	X	-.0014745 (.000)***	X	-.0011903 (.000)***
Constant	.0688463 (.000)***	.0892928 (.000)***	.059156 (.000)***	.1190509 (.000)***	.0512294 (.000)***	.1311412 (.000)***	.0145692 (.000)***	.0498682 (.000)***
R-Squared	0.027	0.0437	0.0248	0.0342	0.0187	0.0226	0.0052	0.0113

Table 7 outlines the coefficients for difference in difference regressions ran to identify the impact of consent decrees on four demographics. These consent decrees mandated hiring quotas or target numbers for the hiring of minorities and females to police and fire departments. Model 1 consists of a standard Difference in Difference where the time interval is 1980 to 2000 and the treatment is the consent decree. Model 2 includes four control variables: minority population in the city, poverty rate in the city, location in the Southern region, and age. P-Values are in parentheses. ***denotes significance at the .01 level **denotes significance at the .05 level ***denotes significance at the .10 level.

Table 8 – Regression Models with only Southern Cities from Sample

Dependent Variable	**Minority Police**		**Minority Firefighters**		**Female Police**		**Female Firefighters**	
Variable	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Time*Consent Decree	.1973315 (.000)***	.0494902 (.134)	.149697 (.000)***	.0887503 (.036)***	.0386356 (.163)	.0120847 (.681)	-.0000403 (.998)	-.0144746 (.516)
Time	.0836552 (.000)***	-.0711967 (.000) ***	.06806 (.000)***	-.0155211 (.415)	.0865965 (.000)***	.0617862 (.000)***	.0283326 (.000)***	.0167182 (.095)*
Consent Decree	-.0536801 (.049)**	-.0699332 (.015)**	.0248342 (.433)	-.0370063 (.292)	-.0169552 (.483)*	-.0209368 (.415)***	-.0034367 (.836)	.0050182 (.786)
Minority Population working in city of work	X	1.210419 (.000)***	X	.6703921 (.000)***	X	.2241977 (.000)***	X	.0808233 (.218)
Population in poverty in city of work	X	.0644205 (.575)	X	-.2629559 (.116)	X	.0169321 (.869)	X	.1455127 (.098)*
Age	X	-.00183 (.000)***	X	-.0011254 (.001)***	X	-.001575 (.000)***	X	-.0007023 (.000)***
Constant	.1015524 (.000)***	.0289485 (.195)	.0751658 (.000)***	.0811491 (.012)**	.0595084 (.000)***	.0898798 (.000)***	.0125276 (.000)***	.0102204 (.549)***
R-Squared	0.0155	0.0372	0.0196	0.0262	0.0143	0.0180	0.0064	0.0088

Table 8 describes the same models described by Table 1, but the regressions in this case used a restricted sample of only Southern cities. The table outlines the coefficients for difference in difference regressions ran to identify the impact of consent decrees on four demographics. These consent decrees mandated hiring quotas or target numbers for the hiring of minorities and females to police and fire departments. Model 1 consists of a standard Difference in Difference where the time interval is 1980 to 2000 and the treatment is the consent decree. Model 2 includes four control variables: minority population in the city, poverty rate in the city, location in the Southern region, and age. P-Values are in parentheses. ***denotes significance at the .01 level **denotes significance at the .05 level ***denotes significance at the .10 level.

Appendix II: Figures

Figure 1 – Averages for Several Variables of Interest over Time

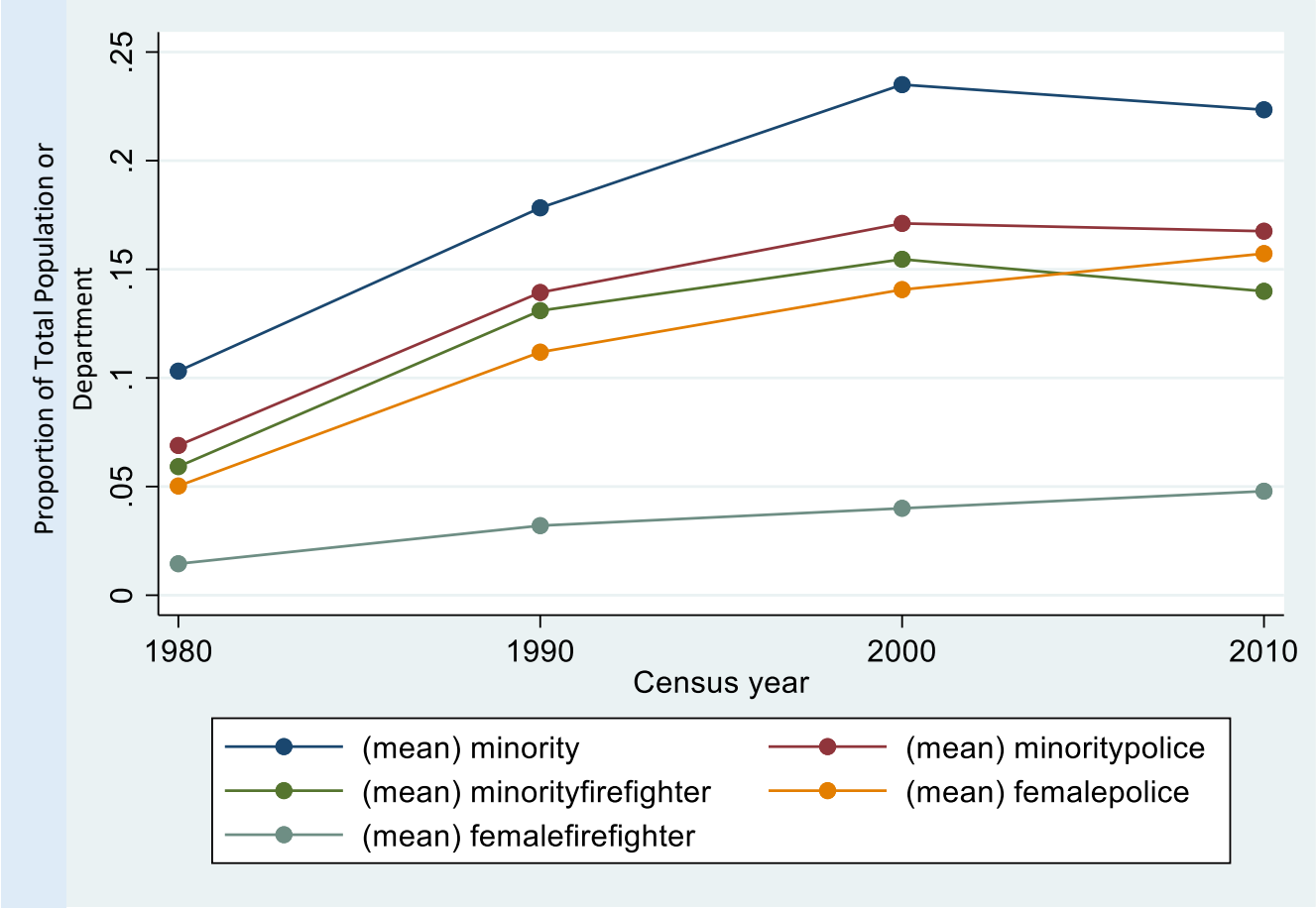


Figure 1 shows the average of several variables of consequence across all cities over the course of 1980 to 2010. The average percentage of minorities making up the total population is depicted in royal blue. The average percent of minority firefighters in their department is in green, the average percent of female firefighters in their department is in sky blue, the average percent of minority police in their department is in red, and the average percent of female police in their department is in yellow.

Figure 2 – Mean Police Age in Consent Decree Cities vs Non-Consent Decree Cities over Time

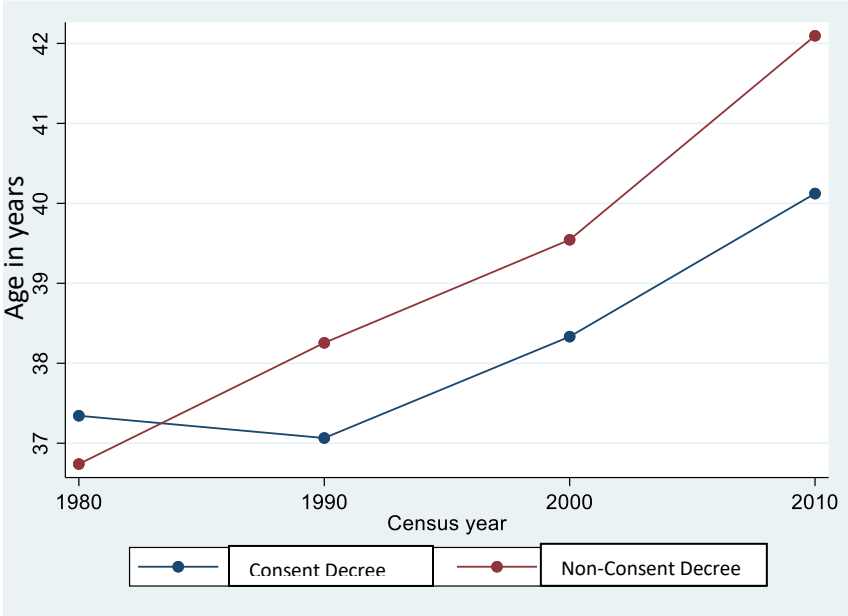


Figure 2 shows the average age over time of the officers making up the police departments of various cities separated by whether or not they had a Consent Decree. The cities that received consent decrees are depicted in blue while the cities without consent decrees are depicted in red.

Figure 3 – Mean Firefighter Age in Consent Decree Cities vs Non-Consent Decree Cities over Time

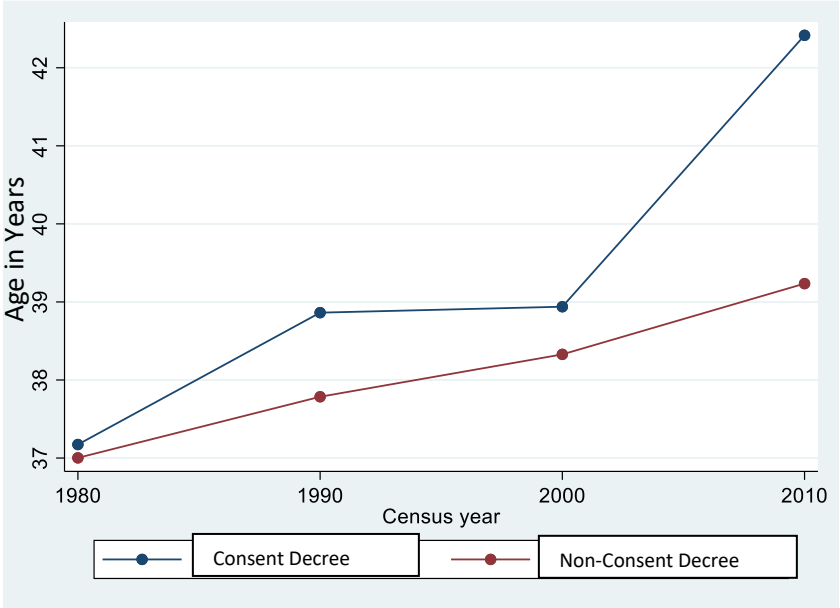


Figure 3 shows the average age of the firefighters over time making up the fire departments of various cities separated by whether or not they had a Consent Decree. The cities that received consent decrees are depicted in blue while the cities without consent decrees are depicted in red.

Figure 4 – Minority Police Representation in Southern Cities versus Cities in other Regions over Time

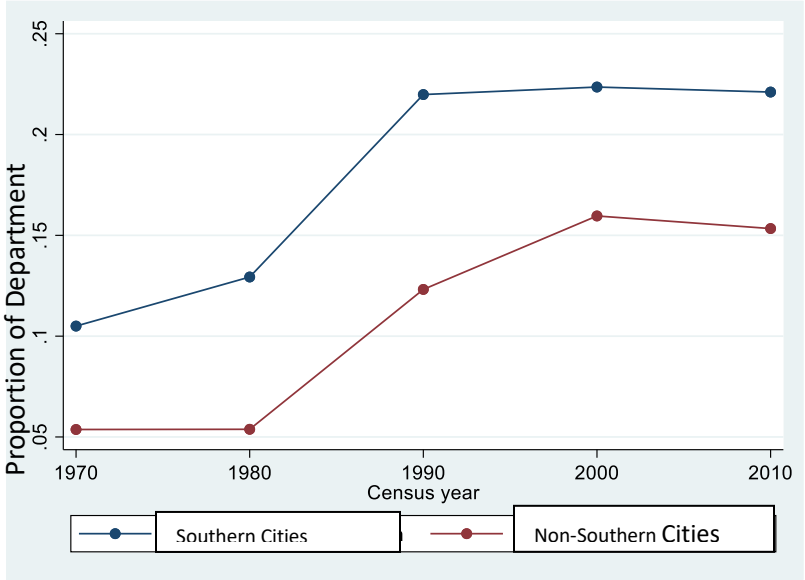


Figure 4 shows the average percentage of minorities making up the police departments of various cities separated by region over time. The Southern cities are depicted in blue while the cities not located in the South are depicted in red.

Figure 5 – Minority Firefighter Representation in Southern Cities versus Cities in other Regions over Time

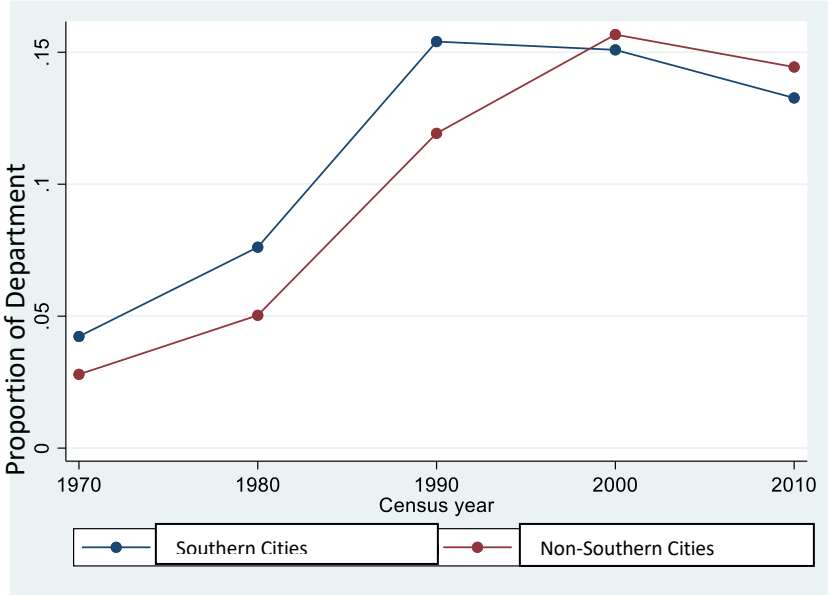


Figure 5 shows the average percentage of minorities making up the fire departments of various cities separated by region over time. The Southern cities are depicted in blue while the cities not located in the South are depicted in red.

Figure 6 – Minority Police Representation in Consent Decree Cities vs. Non-Consent Decree Cities over Time

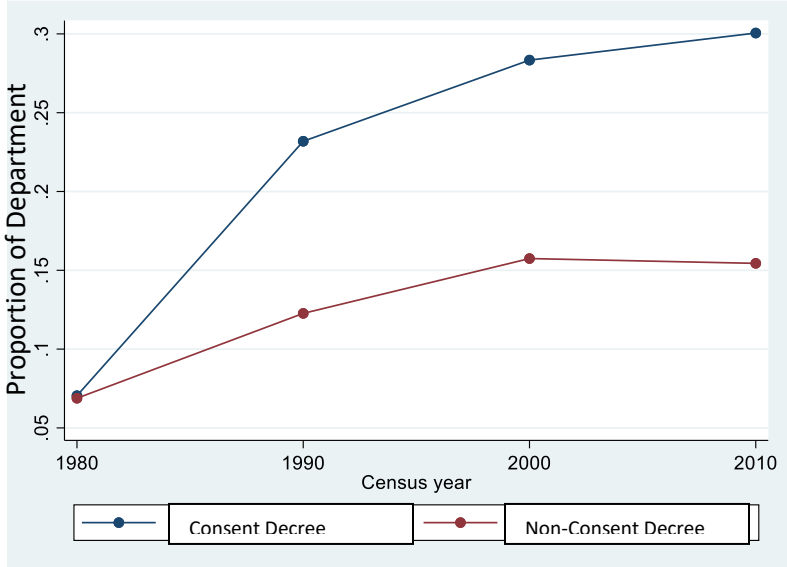


Figure 6 shows the average percentage of minority officers making up police departments in various cities over the course of 1980 to 2010. The consent decree cities are depicted in blue while the cities without consent decrees are depicted in red.

Figure 7 – Minority Police Representation in Consent Decree Cities vs. Non-Consent Decree Cities over Time

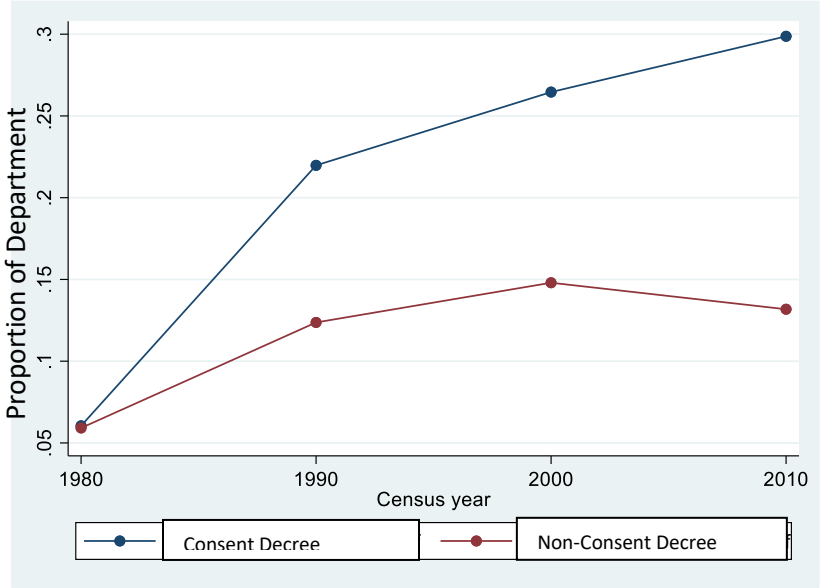


Figure 7 shows the mean percentage of minority officers making up fire departments in various cities over the course of 1980 to 2010. The consent decree cities are depicted in blue while the cities without consent decrees are depicted in red.

Figure 8 – Female Police Representation in Consent Decree Cities vs. Non-Consent Decree Cities over Time

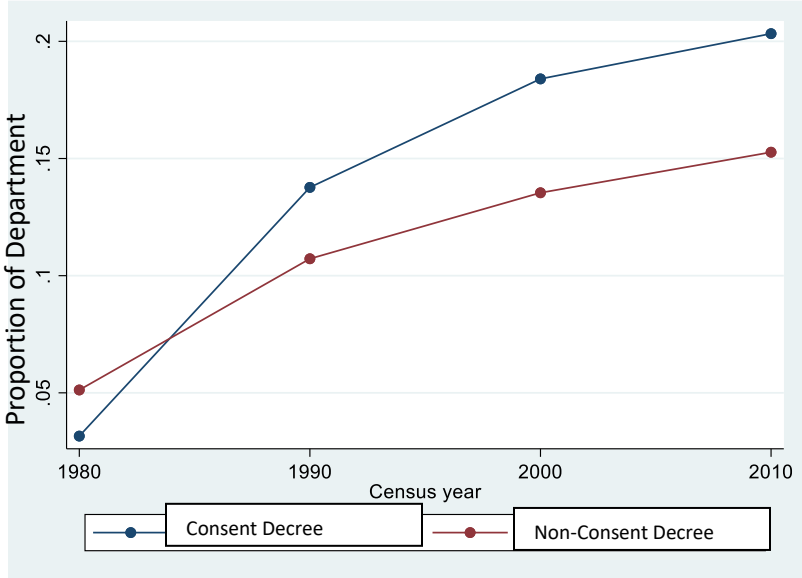


Figure 8 shows the average percentage of female officers making up police departments in various cities over the course of 1980 to 2010. The consent decree cities are depicted in blue while the cities without consent decrees are depicted in red.

Figure 9 – Female Firefighter Representation in Consent Decree Cities vs. Non-Consent Decree Cities over Time

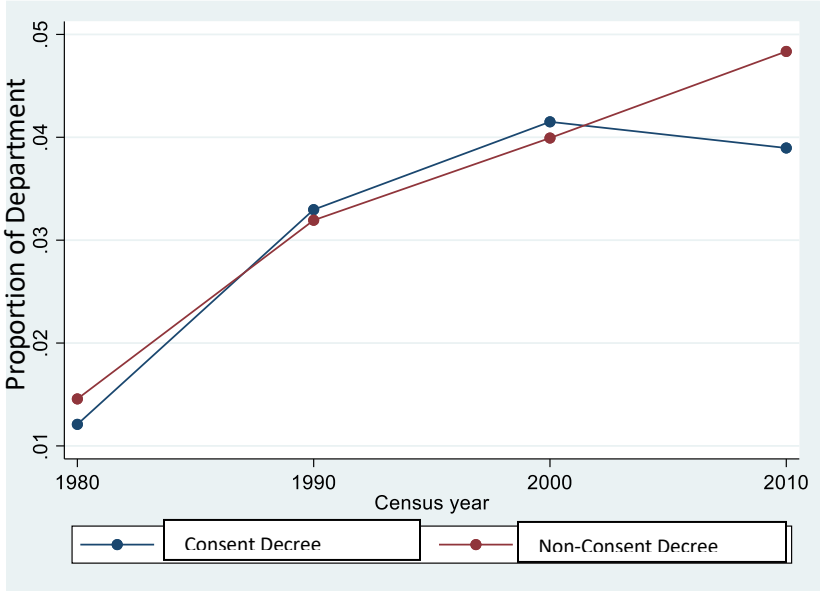


Figure 9 shows the average percentage of female officers making up fire departments in various cities over the course of 1980 to 2010. The consent decree cities are depicted in blue while the cities without consent decrees are depicted in red.

Figure 10 – Total Minority Population in Consent Decree Cities vs. Non-Consent Decree Cities over Time

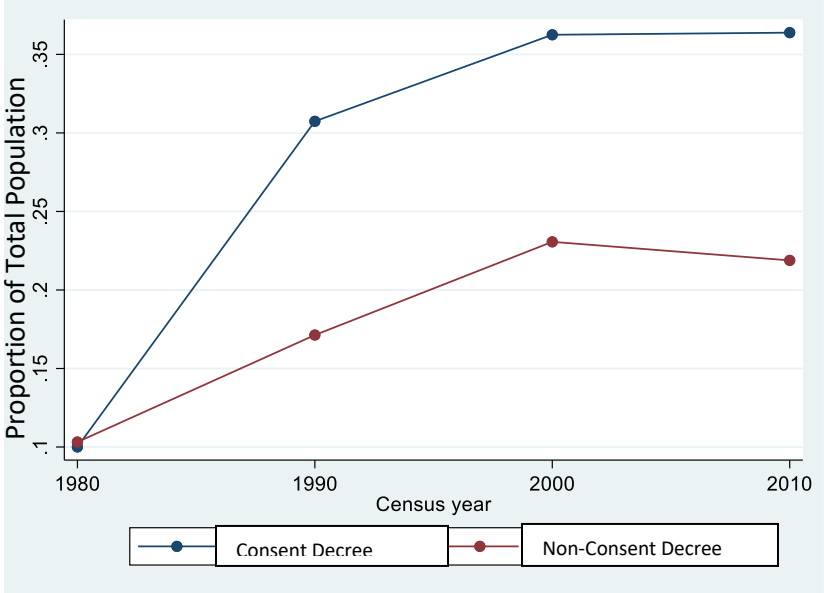


Figure 10 shows the average percentage of minorities making up the total population in various cities over the course of 1980 to 2010. The consent decree cities are depicted in blue while the cities without consent decrees are depicted in red.

Figure 11 – Mean Police and Fire Department Age Across all Cities Over Time

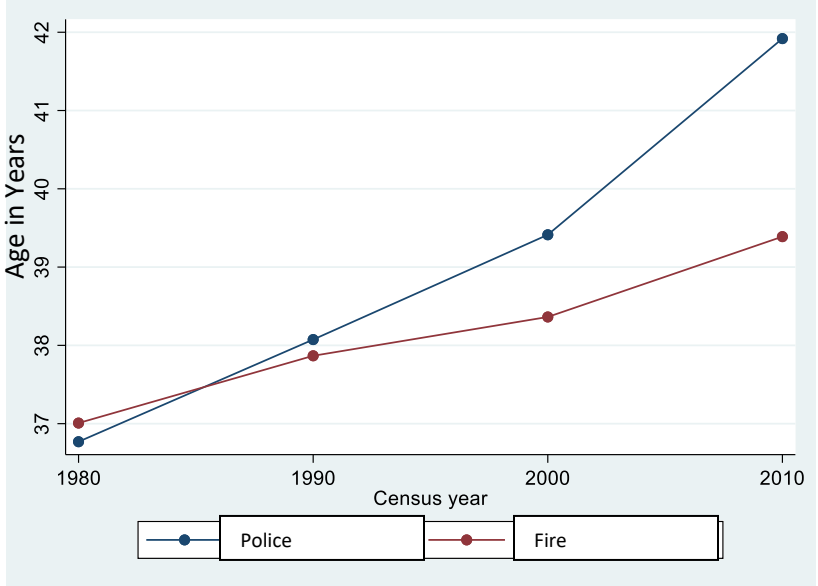


Figure 11 shows the average age of the police and fire departments across all cities in the sample over Time. The average age of police departments is depicted in blue while the average age of fire departments is depicted in red.

Figure 12 – Mean Poverty Rate in Consent Decree Cities vs Non-Consent Decree Cities over Time

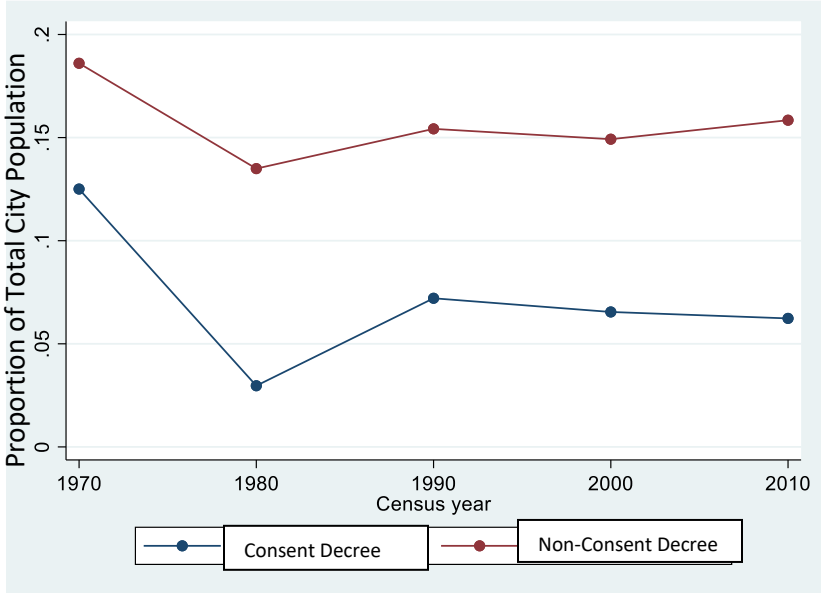


Figure 12 shows the average poverty rate over time of cities separated by whether or not they were subject to a Justice Department Consent Decree. The average poverty rate in Consent Decree Cities is depicted in Non-Consent Decree Cities is depicted in red.

Figure 13 – Female Police Representation in Southern Cities versus Cities in other Regions over Time

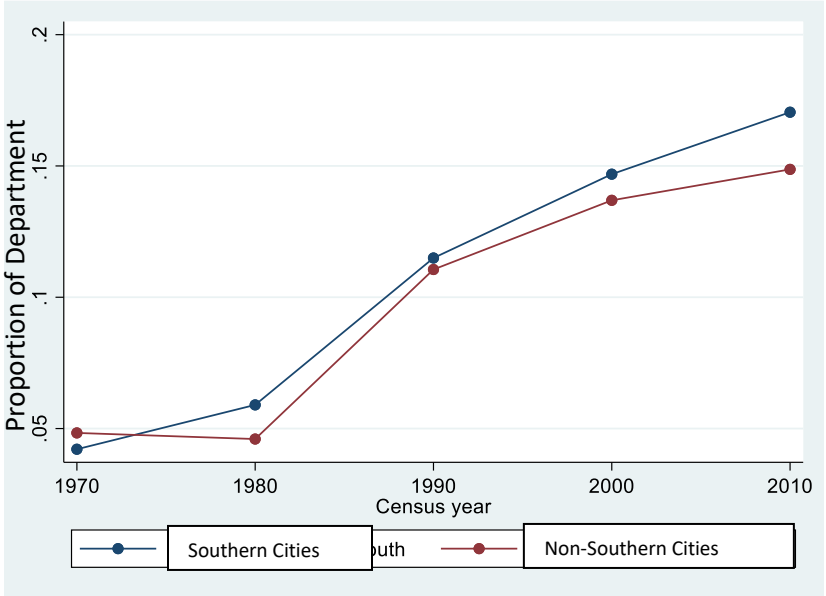


Figure 13 shows the average percentage of females over time making up the police departments of various cities separated by region. The Southern cities are depicted in blue while the cities not located in the South are depicted in red.

Figure 14 – Female Firefighter Representation in Southern Cities versus Cities in other Regions over Time

Figure 14 shows the average percentage of females over time making up the fire departments of various cities separated by region. The Southern cities are depicted in blue while the cities not located in the South are depicted in red.

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