

Connecticut



**RACIAL PROFILING  
PROHIBITION PROJECT**

**WETHERSFIELD BORDER  
DISCONTINUITY ANALYSIS  
REPORT FINDINGS**

Released: June 3, 2021

[www.ctrp3.org](http://www.ctrp3.org)

## TABLE OF CONTENTS

Table of Contents .....	2
Preamble .....	3
CTRP3 Advisory Board Statement.....	4
Wethersfield’s Border Discontinuity Analysis Findings.....	6
I. Introduction .....	6
II. Identifying the Geolocation of Traffic Stops in Wethersfield and Surrounding Towns .....	8
III. Findings from the Border Discontinuity Analysis .....	9
III.A: Wethersfield-Hartford Border Analysis .....	9
III.B: Wethersfield-Newington Border Analysis .....	11
III.C: Wethersfield-Rocky Hill Border Analysis .....	13
IV. Conclusions.....	15



# PREAMBLE

This preamble was written by an ad-hoc committee of the Connecticut Racial Profiling Prohibition Project advisory board and endorsed unanimously by the board on December 6, 2018.

1. Racial Profiling has historically occurred and continues to occur throughout America.
2. The Alvin W. Penn Racial Profiling Law enacted by the Connecticut General Assembly in 1999 required state and local police to collect traffic stop data and report the data to the state.
3. The 2011 federal investigation into the East Haven Police Department brought this issue to the forefront in Connecticut again and led to the Connecticut General Assembly updating the Profiling Legislation in 2012.
4. Disparities across racial and ethnic groups occur in traffic stops in Connecticut.
5. Enforcing the law's data reporting requirement and collecting and analyzing racial disparities in traffic stop records in the primary charge of the advisory board.
  - a. A broader analysis, utilizing multiple methodologies in the preferred method for measuring for the presence of racial disparities in traffic enforcement;
  - b. Although no measure is 100% accurate in measuring disparities, the analysis utilized in Connecticut is sufficient in determining the presence of disparities;
  - c. We will continue to modify and refine our methodologies based on the best available research and accepted practices in the field.
6. We will take a proactive approach in understanding, explaining and addressing disparities found in the analysis by:
  - a. Utilizing input from all stakeholders to understand the underlying causes for such disparities;
  - b. Clearly explaining to the public and stakeholders if there are justifiable reasons for such disparities;
  - c. Reporting to the Office of Policy and Management instances where the Connecticut Racial Profiling Prohibition Project Advisory Board believes that a police department is in violation of the Alvin W. Penn law.

## **CTRP3 ADVISORY BOARD STATEMENT**

Since 2013, pursuant to the requirements of the revised Alvin W. Penn Racial Profiling Prohibition Act, the advisory board has rigorously analyzed traffic stop data for every Connecticut law enforcement agency to identify and assess racial and ethnic disparities occurring within a given jurisdiction. Through input from stakeholders, we take a proactive approach in understanding, explaining, and addressing disparities identified through the analyses. It is our strong belief that the CTRP3 advisory board's data driven, evidence based, and transparent process of examining traffic stops is a critical tool to mitigate racial and ethnic disparities in Connecticut thereby creating greater trust between law enforcement and the communities they serve.

Since 2015, working in concert with the CTRP3 advisory board, the Institute for Municipal and Regional Policy (IMRP) at Central Connecticut State University (CCSU) has published five statewide reports that have identified statistically significant racial and ethnic disparities in traffic stops in multiple jurisdictions. Each of these jurisdictions has participated in our follow up analyses, the results of which are included in the annual reports.

Over the course of the five reporting years, Wethersfield has consistently shown among the broadest based and, in some respects, the most significant disparities in its stop data. Following the annual reports published in 2015 and 2016, the IMRP conducted follow up analyses of Wethersfield's racial and ethnic traffic stop disparities. Both of those analyses revealed that a large share of traffic stops, particularly involving racial and ethnic minority motorists, occurred along the border of Wethersfield and Hartford. At the time, department administrators contended that the disparity was a natural outcome stemming largely from Hartford residents traveling into Wethersfield, thus making the driving population more diverse than in other communities. Researchers have always acknowledged that drivers from surrounding communities impact driving populations in most communities across the state but believe this impact is adequately accounted for in the initial analysis. The IMRP made numerous observations about the factors driving racial and ethnic disparities in Wethersfield and issued recommendations to address those disparities in two supplemental reports on Wethersfield. Racial and ethnic disparities persisted in the years that immediately followed those reports largely for the same reasons previously identified.

The CTRP3 advisory board has consistently supported the development of new methodologies to help assess disparities in traffic enforcement. As a way of addressing the stated concerns of administrators in Wethersfield, researchers and the advisory board agreed that understanding the impact of neighboring communities on a driving population was worth further exploration with more targeted analysis. In June 2020, additional resources were made available by the Connecticut General Assembly that allowed such analysis to occur. With additional resources, the IMRP was able to apply, for the first time in the area of traffic stop analysis, a widely accepted and utilized statistical technique to examine whether the degree to which Wethersfield's traffic enforcement patterns near its borders could disproportionately affect racial and ethnic minority motorists. In doing this, we have developed a new tool that allows for a more meaningful evaluation of border effects in traffic stops as well as streamlining and improving our ability to locate stops more accurately.

The following report highlights a number of findings related to racial and ethnic disparities near the border of Wethersfield and its neighboring communities. We invite the Wethersfield Police Department and other town officials to work with the advisory board to both understand and, if

warranted, develop strategies to address the significant disparities highlighted in this report. We remain committed to working with all stakeholders to build trust between law enforcement and the communities they serve.

# WETHERSFIELD'S BORDER DISCONTINUITY ANALYSIS

## FINDINGS

Jesse J. Kalinowski<sup>1,2</sup>, Kenneth Barone<sup>3</sup>, Matthew B. Ross<sup>2,4</sup>

---

(1) Department of Economics, Quinnipiac University, Hamden, CT

(2) Computational Justice Lab, Claremont Graduate University, Claremont, CA

(3) Institute for Municipal and Regional Policy, Central Connecticut State University, New Britain, CT

(3) Economic Science Department, Claremont Graduate University, Claremont, CA

### I. Introduction

In several follow-up studies of Wethersfield, researchers at the Institute for Municipal and Regional Policy (IMRP) have conducted corridor analyses using the specific geographic location of Wethersfield's traffic stops<sup>1</sup>. These analyses have revealed that a large share of the stops of racial and ethnic minority motorists is made along the border of Wethersfield with surrounding towns, particularly Hartford. Although these analyses have provided an extremely valuable and rich set of findings, they have stopped short of developing the necessary counterfactual to say anything definitive about racial and ethnic disparities in Wethersfield. Put differently, the IMRP has not previously had the available data to rigorously estimate the likelihood that a minority motorist is stopped in these specific geographic locations and causally link observed disparities to specific enforcement activities by the Wethersfield Police Department. Here, we present findings from the first such analysis, where we have used state-of-the-art analytical techniques to examine whether Wethersfield's apparent emphasis on traffic enforcement near its borders disproportionately affects racial and ethnic minority motorists.

The classic challenge faced by researchers in Connecticut (and elsewhere) when analyzing traffic stop data for evidence of disparity is the lack of a compelling counterfactual, i.e. data on the population on the roadway who are at risk of being stopped. In this context, the counterfactual represents what the demographic composition of traffic stops would look like in the absence of police enforcement that implicitly or explicitly affects minority motorists.<sup>2</sup> Due to the absence of a benchmark for comparing

---

<sup>1</sup> Researchers conducted two additional reports on traffic stop disparities in Wethersfield. The first report was released in 2016 (Ross et al. 2016, p. 165; Barone et al. 2017, p. 163).

<sup>2</sup> Although not used by Connecticut, observational approaches have been proposed to construct a more convincing benchmark for traffic stop data (see Lamberth 1994; Lange et al. 2001; McConnell and Scheidegger 2004; and Montgomery County MD 2002). The difficulty of survey-based approaches is that they are not uniformly representative and can be extremely cost prohibitive for large geographies like the entire state of Connecticut (Kowalski and Lundman 2007, p. 168; Grogger and Ridgeway 2006, p. 879; Fridell et al. 2001, p. 22). In states where race is collected in traffic accident reports, a federal requirement only for fatalities and something not collected in Connecticut, not-at-fault accidents also provide a useful and cost-effective benchmark (Alpert et al. 2004).<sup>2</sup> A popular approach by Grogger and Ridgeway (2006) circumvents this problem by leveraging seasonal variation in daylight to compare stops made at the same time where some stops were in daylight and others in darkness based on the premise that motorist race cannot be easily identified after nightfall. Another common solution is to examine a secondary outcome such as vehicle searches where the general counterfactual, individuals involved in a police encounter, is observed (Knowles et al. 2001; Dharmapala and Ross 2004; Anwar and Fang 2006; Antonovics and Knight 2009; Marx 2018; Gelbach 2018). Also see Arnold, Dobbie and Yang

traffic stop data, researchers must rely on a series of sophisticated empirical tests. Such tests both identify the existence of disparities within specific agencies and assess whether those disparities are possibly the result of discrimination or profiling by police. For instance, in Connecticut's annual report researchers apply the Veil of Darkness test wherein traffic stops made in darkness (when race/ethnicity is less easily observed by police) are used as a counterfactual for stops made in daylight. Similarly, researchers also rely on a Synthetic Control method to build a benchmark for each department (and even individual officers) using similar traffic stops made in other jurisdictions with similar geographic, demographic, and economic characteristics as well as enforcement patterns. In short, the annual report must rely on a multitude of sophisticated empirical tests because there just isn't sufficiently granular data about who is driving on a given roadway at different times of the day.

The lack of a proper counterfactual is especially salient when the distribution of motorists stopped by police varies substantially along both geographic and racial/ethnic dimensions (Kalinowski et al, 2019). Nearly every test for disparity in the current empirical literature is unable to convincingly disentangle disparate treatment that varies exclusively along geographic lines from specific enforcement patterns or the population living in these areas. For instance, the Veil of Darkness test will identify disparity when police are more likely to stop racial and ethnic minority motorists in daylight at a particular location relative to darkness. However, it will fail to detect a disparity if police always target racial and ethnic minority motorists in a particular area regardless of lighting conditions (see Horrace and Rohlin 2016). Similarly, since the geographic dispersion of police enforcement along demographic and economic dimensions is used in constructing the benchmark in the Synthetic Control Test, it too is unable to disentangle whether the geographic distribution of traffic stops is itself an aspect of the disparate treatment. In this analysis, we apply a well-respected empirical methodology used to identify discontinuous changes across geographic space.

In this analysis, we exploit a statistical technique known as regression discontinuity design (RDD) to examine the racial/ethnic composition of traffic stops along Wethersfield's border. We use this technique to ask whether the observed enforcement activity by Wethersfield is reasonably comparable to the stops made at nearby locations by other policing agencies. In particular, we allow the likelihood a racial and ethnic minority motorist is stopped by police to vary nonparametrically across geographic space and simply examine whether there is a discontinuous break from the estimated trend right at the border of Wethersfield and a neighboring town. Intuitively, the model allows for the share of stopped racial and ethnic minority motorists to vary by location based on things like retail/entertainment establishments, crime rates, accidents, and numerous other factors. However, the model relies on the assumptions that these factors are the same for extremely close geographic areas. For example, the model assumes that two proximate locations (e.g. 10 meters apart) along the Berlin Turnpike separated by the Wethersfield-Hartford are virtually identical along demographic and economic dimensions. Thus, we assume that these locations should have the same driving population and any discontinuous change to the share of racial and ethnic minority motorists stopped must be due to either differential treatment or different types of enforcement by police in Wethersfield relative to a neighboring community. Under these relatively innocuous set of identifying assumptions, any resulting disparity can only be attributed to differences in the underlying enforcement policy of Wethersfield such that it results in relatively more racial and ethnic minority motorists being stopped by police.

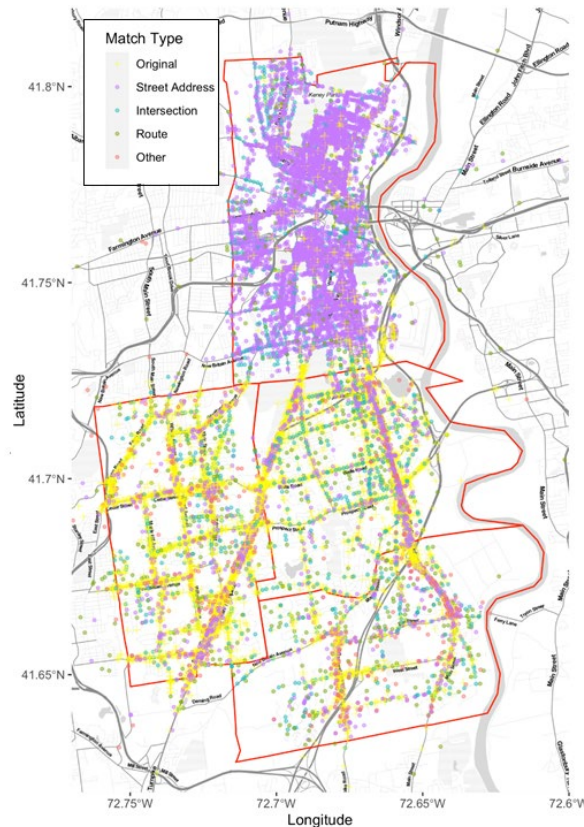
---

(2018) and Fryer (2019) who examine bail among a population of those arrested and use-of-force among a population with police interactions, respectively.

## II. Identifying the Geolocation of Traffic Stops in Wethersfield and Surrounding Towns

Our application of an RDD in this context critically relies on the precise geographic location of traffic stops made by police in Wethersfield and the surrounding towns, i.e. Hartford, Newington, and Rocky Hill.<sup>3</sup> Although Connecticut collects the geographic location of traffic stops, only a small share of the location information is automatically recorded as latitude/longitude coordinates by an officer's CAD system when a traffic stop is made. The total CAD recorded location data represented only 28% of stops in Wethersfield, 1% in Hartford, 26% in Newington, and 5% in Rocky Hill. However, all stops include a text-based description of the location entered by the police officer making the traffic stop. This information ranges from an exact address to cross streets, a road, an intersection, a specific business location, or some combination of these elements. Using a text-matching algorithm and Google Map's Geocoding API, we translate the text-based location description provided by officers into latitude and longitude. In total, we have processed and geocoded over 190,000 location descriptions entered by police in these communities. Currently, the accuracy (i.e. relative to the *actual* stop location, which is unknown in most cases) of the transcribed latitude and longitude may vary but has been tested using the subset of stops with a CAD recorded location and appears to be extremely precise. Figure 1 provides a graphical representation of the source and location of all traffic stops for Wethersfield, Hartford, Newington, and Rocky Hill.

**Figure 1: Source of Geographic Data in Wethersfield and Surrounding Towns**



<sup>3</sup> We omit Glastonbury because it is largely separated by the Connecticut river.



Notes: The figure shows the location of all traffic stops in Wethersfield and the surrounding towns. The markers are colored by the specific source of geographic information used to identify the location of the traffic stop. Except for the traffic stops annotated with a yellow marker, all of the stops required preprocessing of the text information entered by officers as well as geocoding using the GoogleMaps API.

### III. Findings from the Border Discontinuity Analysis

As discussed, our empirical approach utilizes the geographic information associated with the traffic stop data to estimate the likelihood a minority driver is stopped by police in Wethersfield relative to neighboring departments. We apply a geographic RDD such that we allow for the racial and ethnic composition to vary spatially and exploit the jurisdictional boundaries between Wethersfield and neighboring towns. We conduct three separate analyses for each of Wethersfield’s three geographic borders (Hartford, Newington, and Rocky Hill) and separately for Hispanic and Black motorists relative to White non-Hispanics. In all of our regression estimates, the dependent variable is an indicator of whether a given stop was made of a minority motorist (either Black or Hispanic) relative to a White non-Hispanic motorist. The primary independent variable is an indicator of whether the traffic stop was made in Wethersfield or the specific comparison town being used in the given analysis. In all of the estimates, we include a non-parametric trend variable based on the distance (in Meters) to the Wethersfield border. If our assumptions hold, this simple design should consistently identify the effect of the discontinuity. For posterity, however, we additionally control for day of week, hour of day, calendar month, and the specific road where the stop was made. Since we include road-specific controls, all the identification on the primary explanatory variables in these models comes from major roadways which bisect the border between Wethersfield and one of these towns.

#### III.A: Wethersfield-Hartford Border Analysis

Table 1 presents the results of the analysis where we control for a number of temporal and geographic features in the data including the specific roadway where the stop is made. Moving from Hartford into Wethersfield, we find that the likelihood a Black motorist is stopped by police increases by over 13 percentage points and the likelihood a Hispanic motorist is stopped increases by approximately 15 percentage points.

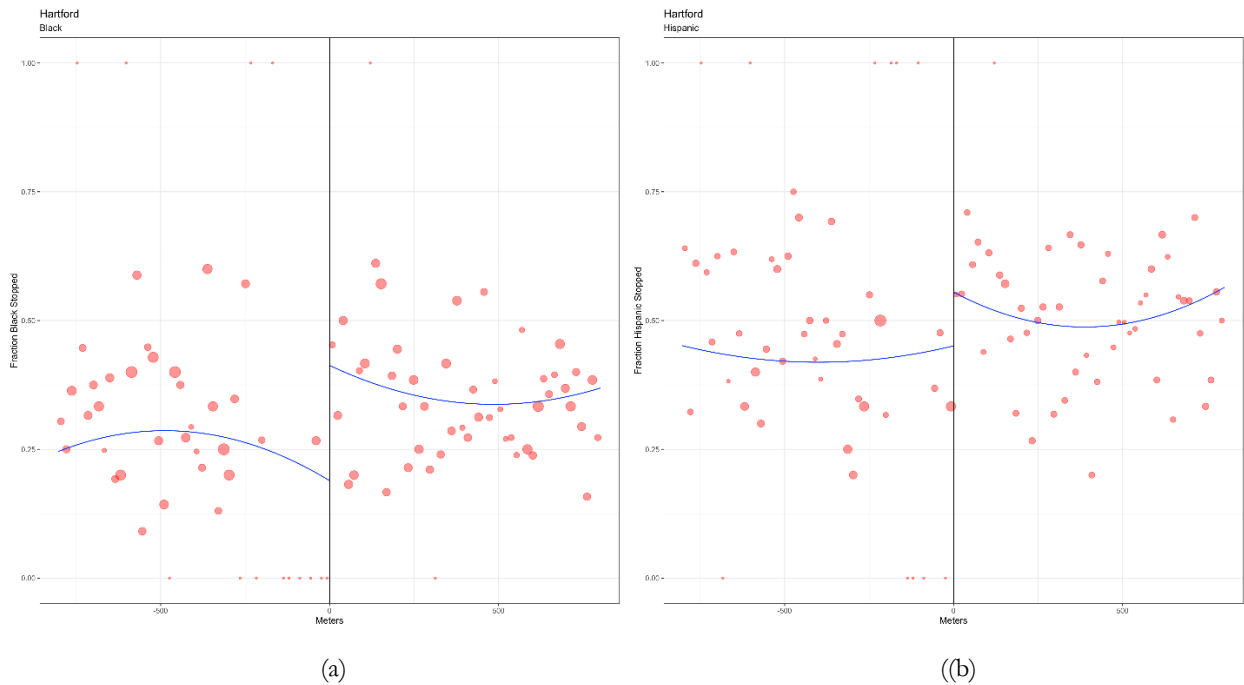
**Table 1: Regression Discontinuity Estimates, Hartford Border**

Ethnicity	Observations	Estimate	Standard Error	P-value
<b>Black</b>	12,078	0.1324	0.0535	0.0160
<b>Hispanic</b>	15,725	0.1545	0.0845	0.0723

Notes: The table presents results from a non-parametric regression discontinuity analysis on the likelihood that a Black or Hispanic motorist is stopped as a function of distance and the discrete jurisdictional border between Wethersfield and Hartford. An optimal bandwidth of 1,600 meters or one mile was used and standard errors are two-way clustered at the route and calendar month level.

Figure 2 plots the point estimates and predicted residuals from the non-parametric regression discontinuity design without controls. Moving from the left to the right of the graphs represents the distance (in meters) to the Wethersfield-Hartford border while moving from top to bottom represents the predicted likelihood a stop involves a minority. The markers correspond with 10-meter increments and are sized by the relative number of traffic stops. As seen below, the non-parametric trend variable fits the data quite well and there is a large statistically significant increase in the share of both Black and Hispanic motorists as soon as the data crosses into Wethersfield.

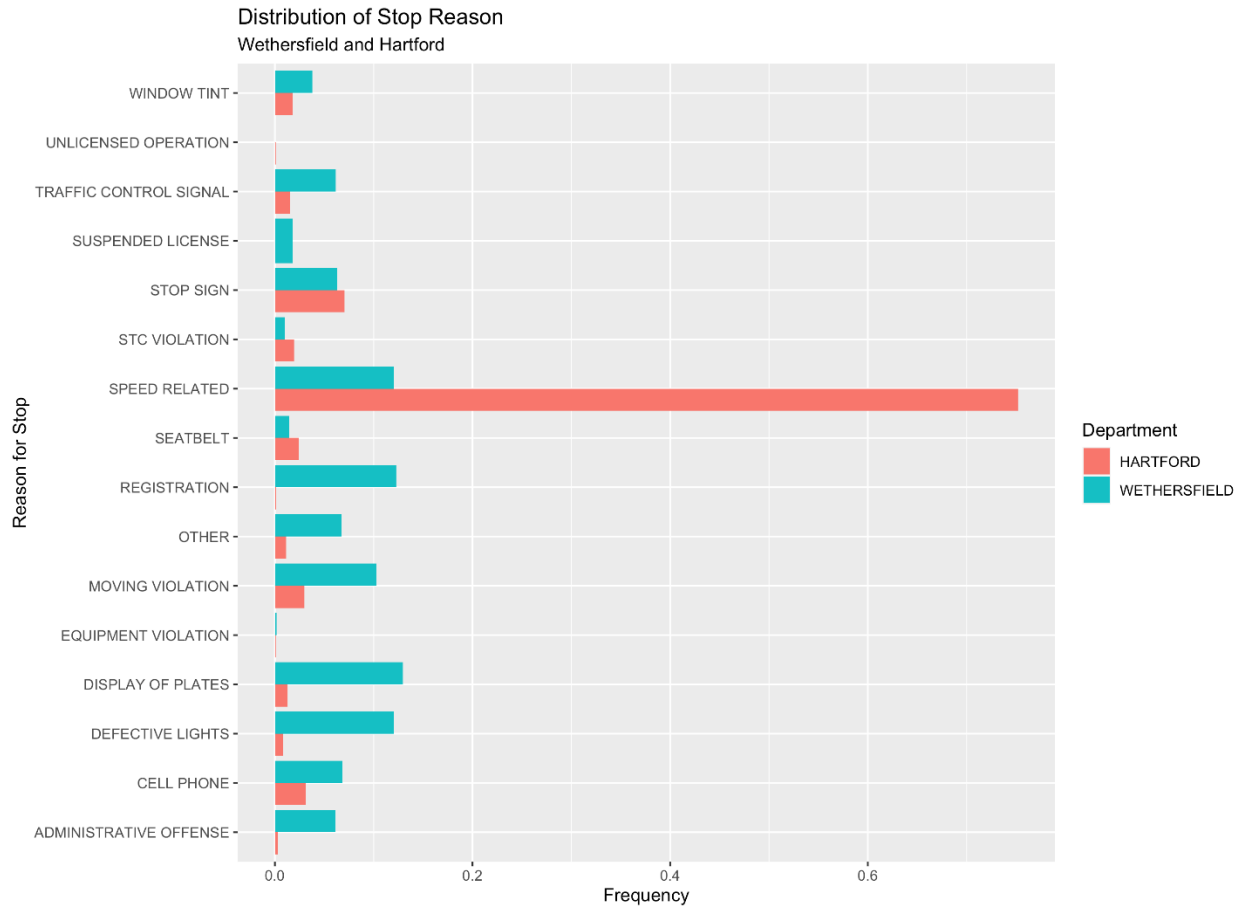
**Figure 2: Likelihood that a Stopped Motorist is Black or Hispanic, Hartford Border**



Notes: Panel (a) presents regression results for the likelihood a Black motorist is stopped by police based on distance to the Wethersfield border while panel (b) presents the same results for Hispanic motorists. Moving from the left to the right of the graphs represents the distance (in meters) to the Wethersfield-Hartford border while moving from top to bottom represents the predicted likelihood a stop involves a minority.

Figure 3 contrasts differences in terms of enforcement activity on either side of Wethersfield’s border with Hartford. The red bars correspond with traffic stops made by Hartford police while the green bars are for Wethersfield. The vertical axis reports the reason for stop listed by the associated officers while the horizontal axis displays the share of total stops made by each agency. As with the regression discontinuity analysis, the sample of stops used to generate this figure is limited to those falling immediately on either side of the border, i.e. within a 1,600 meter or one-mile bandwidth. The figure demonstrates that Wethersfield police tend to make more administrative and equipment violations relative to Hartford which appears to focus predominantly on speeding. The decision by policing administrators in Wethersfield to focus on these types of violations is likely a contributing factor to the disparity identified in Table 1 and Figure 2.

**Figure 3: Distribution of Reason for Stop, Hartford Border**



Notes: The figure presents differences in the reason that police stop motorists (regardless of race) within the narrow optimal bandwidth used in the regression discontinuity analysis, i.e. within an optimal bandwidth of 1,600 meters or one mile. The vertical axis lists the violation listed as the reason for the stop by the officer and the y-axis reports the share of total stops within the sample. The red lines correspond to stops made by Hartford police while the green are stops associated with Wethersfield.

**III.B: Wethersfield-Newington Border Analysis**

Table 2 presents the results of the analysis where we control for a number of temporal and geographic features in the data including the specific roadway where the stop is made. Moving from Newington into Wethersfield, we find that the likelihood a Black motorist is stopped does not change and the likelihood a Hispanic motorist is stopped increases by approximately 7 percentage points.

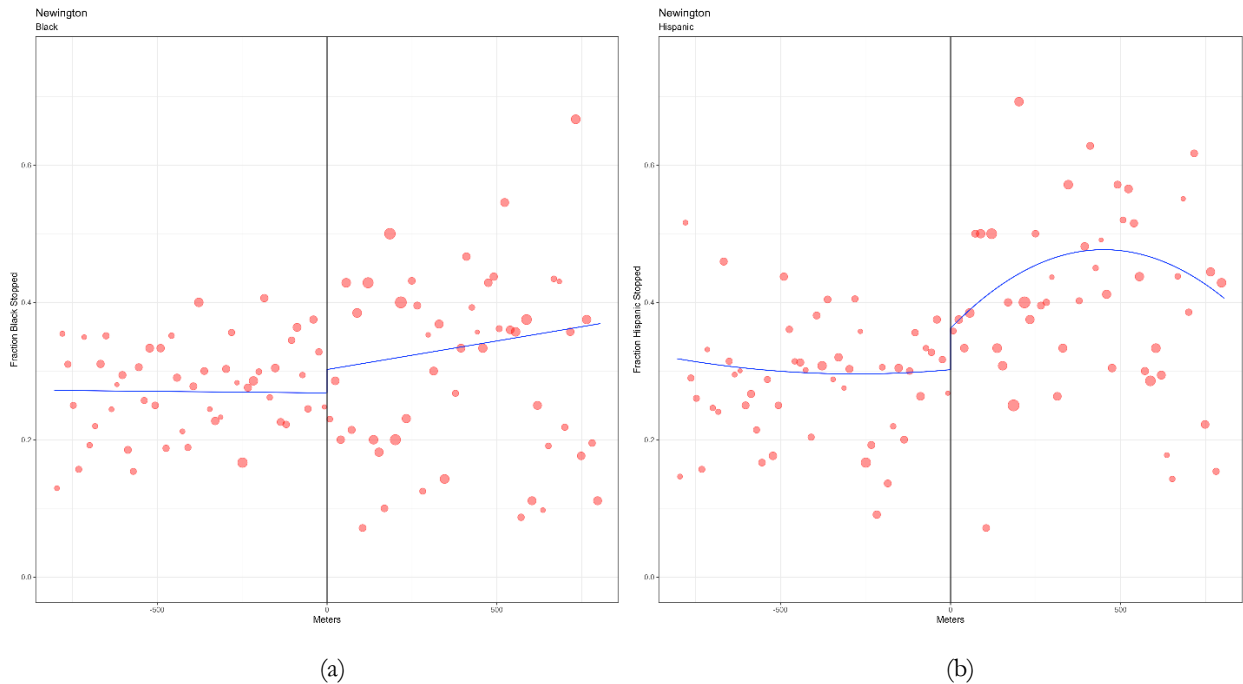
**Table 2: Regression Discontinuity Estimates, Newington Border**

Ethnicity	Observations	Estimate	Standard Error	P-value
Black	22,811	-0.0053	0.0191	0.7811
Hispanic	25,194	0.0752	0.0223	0.0012

Notes: The table presents results from a non-parametric regression discontinuity analysis on the likelihood that a Black or Hispanic motorist is stopped as a function of distance and the discrete jurisdictional border between Wethersfield and Newington. An optimal bandwidth of 1,600 meters or one mile was used and standard errors are two-way clustered at the route and calendar month level.

Figure 4 plots the point estimates and predicted residuals from the non-parametric regression discontinuity design without controls. Moving from the left to the right of the graphs represents the distance (in meters) to the Wethersfield-Newington border while moving from top to bottom represents the predicted likelihood a stop involves a racial and ethnic minority. The markers correspond with 10-meter increments and are sized by the relative number of traffic stops. There is a statistically insignificant increase in the share of Black motorists and larger statistically significant increase in the share of Hispanic motorists as soon as the data crosses into Wethersfield.

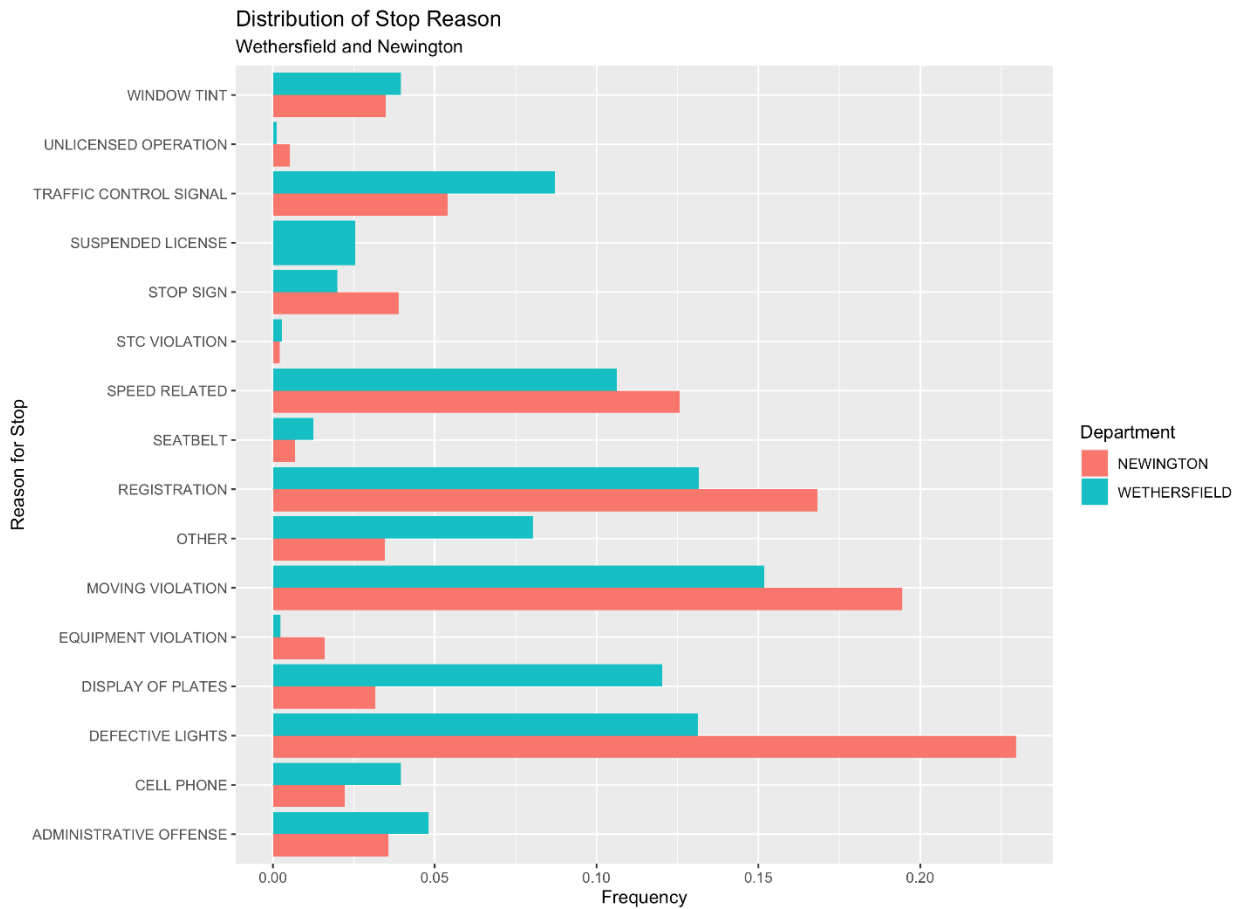
**Figure 4: Likelihood that a Stopped Motorist is Black or Hispanic, Newington Border**



Notes: Panel (a) presents regression results for the likelihood a Black motorist is stopped by police based on distance to the Wethersfield border while panel (b) presents the same results for Hispanic motorists. Moving from the left to the right of the graphs represents the distance (in meters) to the Wethersfield-Hartford border while moving from top to bottom represents the predicted likelihood a stop involves a minority.

Figure 5 contrasts differences in terms of enforcement activity on either side of Wethersfield’s border with Newington. The red bars correspond with traffic stops made by Newington police while the green bars are for Wethersfield. The vertical axis reports the reason for stop listed by the associated officers while the horizontal axis displays the share of total stops made by each agency. As with the regression discontinuity analysis, the sample of stops used to generate this figure is limited to those falling immediately on either side of the border, i.e. within a 1,600 meter or one-mile bandwidth. The figure demonstrates that Wethersfield police tend to make more display of plate and traffic control signal violations relative to Newington which appears to focus on a different set of violations. Although there are clear differences in enforcement activity between Wethersfield relative to Newington versus Hartford, the disparity identified across the Newington-Wethersfield border is comparably sized compared to that observed at the Hartford-Wethersfield border. We note that the enforcement of Wethersfield compared to Newington looks quite similar to the comparison to Rocky Hill and that enforcement along the Hartford border appears to be particularly unique despite the fact that all three locations have a disparity.

**Figure 5: Distribution of Reason for Stop, Newington Border**



Notes: The figure presents differences in the reason that police stop motorists (regardless of race) within the narrow optimal bandwidth used in the regression discontinuity analysis, i.e. within an optimal bandwidth of 1,600 meters or one mile. The vertical axis lists the violation listed as the reason for the stop by the officer and the y-axis reports the share of total stops within the sample. The red lines correspond to stops made by Newington police while the green are stops associated with Wethersfield.

**III.C: Wethersfield-Rocky Hill Border Analysis**

Table 3 presents the results of the analysis where we control for a number of temporal and geographic features in the data including the specific roadway where the stop is made. Moving from Rocky Hill into Wethersfield, we find that the likelihood a Black motorist is stopped by police increases by over 10 percentage points and the likelihood a Hispanic motorist is stopped increases by approximately 13 percentage points.

**Table 3: Regression Discontinuity Estimates, Rocky Hill Border**

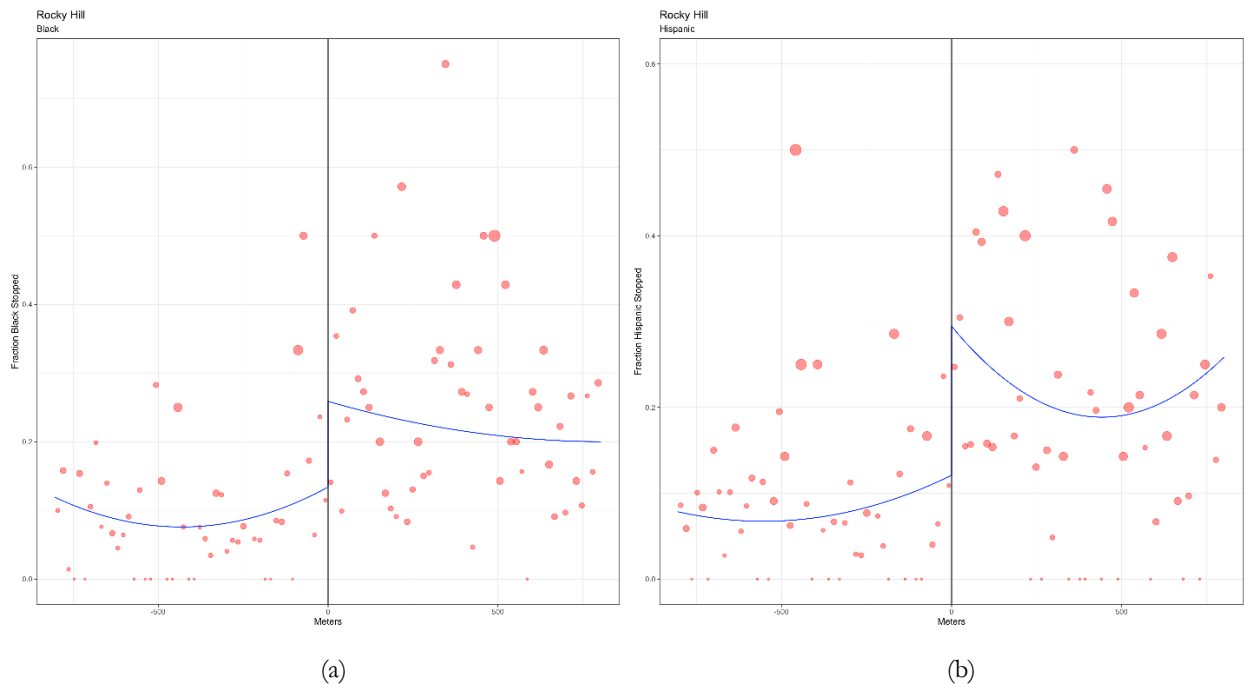
Ethnicity	Observations	Estimate	Standard Error	P-value
<b>Black</b>	14,073	0.1013	0.0265	0.0003
<b>Hispanic</b>	13,877	0.1332	0.0214	0.0000

Notes: The table presents results from a non-parametric regression discontinuity analysis on the likelihood that a Black or Hispanic motorist is stopped as a function of distance and the discrete jurisdictional border

between Wethersfield and Rocky Hill. An optimal bandwidth of 1,600 meters or one mile was used and standard errors are two-way clustered at the route and calendar month level.

Figure 6 plots the point estimates and predicted residuals from the non-parametric regression discontinuity design without controls. Moving from the left to the right of the graphs represents the distance (in meters) to the Wethersfield-Rocky Hill border while moving from top to bottom represents the predicted likelihood a stop involves a racial and ethnic minority motorist. The markers correspond with 10-meter increments and are sized by the relative number of traffic stops. As seen below, there is a statistically significant increase in the share of both Black and Hispanic motorists as soon as the data crosses into Wethersfield.

**Figure 6: Likelihood that a Stopped Motorist is Black or Hispanic, Rocky Hill Border**

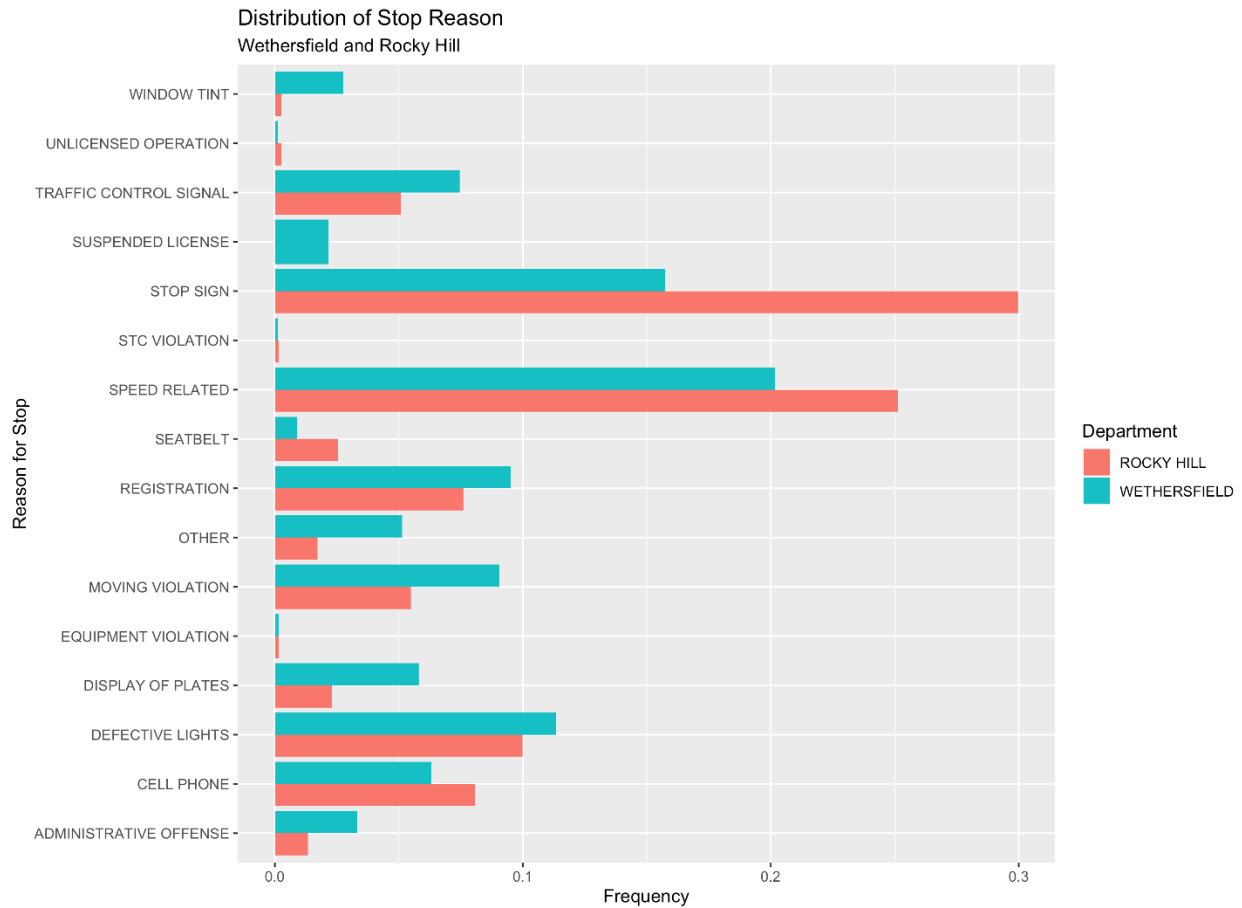


Notes: Panel (a) presents regression results for the likelihood a Black motorist is stopped by police based on distance to the Wethersfield border while panel (b) presents the same results for Hispanic motorists. Moving from the left to the right of the graphs represents the distance (in meters) to the Wethersfield-Hartford border while moving from top to bottom represents the predicted likelihood a stop involves a minority.

Figure 7 contrasts differences in terms of enforcement activity on either side of Wethersfield’s border with Rocky Hill. The red bars correspond with traffic stops made by Rocky Hill police while the green bars are for Wethersfield. The vertical axis reports the reason for stop listed by the associated officers while the horizontal axis displays the share of total stops made by each agency. As with the regression discontinuity analysis, the sample of stops used to generate this figure is limited to those falling immediately on either side of the border, i.e. within a 1,600 meter or one-mile bandwidth. The figure demonstrates that Wethersfield police tend to make more display of plate, registration, and traffic control signal violations relative to Rocky Hill which appears to focus on a different set of violations. Although there are clear differences in enforcement activity between Wethersfield relative to Rocky Hill versus Hartford, the disparity identified across the Rocky Hill-Wethersfield border is comparably sized compared to that observed at the Hartford-Wethersfield border. We also note that the enforcement of Wethersfield compared to Rocky Hill looks quite similar to the comparison to

Newington and that enforcement along the Hartford border appears to be particularly unique despite the fact that all three locations have a disparity.

**Figure 7: Distribution of Reason for Stop, Rocky Hill Border**



Notes: The figure presents differences in the reason that police stop motorists (regardless of race) within the narrow optimal bandwidth used in the regression discontinuity analysis, i.e. within an optimal bandwidth of 1,600 meters or one mile. The vertical axis lists the violation listed as the reason for the stop by the officer and the y-axis reports the share of total stops within the sample. The red lines correspond to stops made by Rocky Hill police while the green are stops associated with Wethersfield.

#### IV. Conclusions

In this analysis, we have applied a well-respected technique (RDD) from the economics and policy evaluation literature to the problem of evaluating Wethersfield’s border-centric enforcement for evidence of disparate treatment. Although RDD analysis has not specifically been used to assess whether geographically targeted police enforcement disproportionately impacts racial and ethnic minority motorists, applications of the RDD to arbitrary jurisdictional boundaries are common. In our analysis, the identifying assumptions of the RDD intuitively necessitate that proximate geographic locations bisected by a border between Wethersfield and a neighboring town are relatively identical. That is, locations separated by a very small geographic distance have virtually the same population on the roadway at risk of being stopped by police. Rather than making any

assumptions about how the driving population changes over geographic space, we allow the demographic composition of motorists to vary non-parametrically. Thus, any remaining discontinuous break in the likelihood a minority motorist is stopped by police in Wethersfield relative to a neighboring community is undoubtedly the result of police enforcement policies that either explicitly or implicitly disproportionately affect racial and ethnic minority motorists.

In our empirical estimates, we find that Black motorists are 13 percentage points more likely to be stopped by Wethersfield police across the Hartford border and 10 percentage points more likely across the Rocky Hill border. Across all years and communities in the analytical sample, Black motorists are involved in approximately 28 percent of traffic stops. Relative to the mean likelihood a Black motorist is stopped, the estimated 10 to 13 percentage point increase in the likelihood a stopped motorist is Black is extremely large and indicates a potentially massive difference in how Wethersfield police treat racial and ethnic minority motorists. Similarly, we find that Hispanic motorists are 15 percentage points more likely to be stopped by Wethersfield police across the Hartford border, 7 percentage points across the Newington border, and 13 percentage points across the Rocky Hill border. In the analytical sample, Hispanic motorists are involved in approximately 24 percent of traffic stops. Relative to the mean likelihood a Hispanic motorist is stopped, the estimated 7 to 15 percentage point increase in the likelihood a stopped motorist is Hispanic is extremely large and indicates a potentially massive difference in how Wethersfield police treat racial and ethnic minority motorists.

The discontinuous increase in the likelihood a racial and ethnic minority motorist is stopped by Wethersfield police relative to proximate stops made by the surrounding policing agencies can be potentially attributed to some combination of three factors. First and most apparent, the disparity could be the result of discriminatory policing by Wethersfield police against racial and ethnic minority motorists. Second, Wethersfield police might engage in a drastically different type of enforcement strategy relative to their peers which implicitly result in more racial and ethnic minority motorists being stopped across the border. Third, proximate geographic locations in our sample are systematically different in such a way that more racial and ethnic minority motorists are simply on the roadway just across the border in Wethersfield relative to neighboring towns. With respect to the third case, which represents a violation of the underlying identifying assumptions of the RDD, differences in the underlying driving population could be driven by things like retail/entertainment, crime or calls for service, accidents, or the geographic structure of the roadways. Although we are in the process of exploring this possibility further with data on such factors, it is simply not very likely given the rigor of our empirical design which exploits very small geographic distances. Further, these differences would have to be occurring systematically in the same way across Wethersfield's border with three towns that vary dramatically in their demographic and economic composition. Thus, it remains our overarching conclusion that the estimated discontinuity identified in this analysis must be due to enforcement policies in Wethersfield that have either implicitly or explicitly affected racial and ethnic minority motorists in disproportionate ways.