

Urbana IDOT Traffic Stop Data Task Force

Statistics Subcommittee Report

Prepared for Meeting on March 18, 2015

EXECUTIVE SUMMARY

The State of Illinois requires that police departments collect information on traffic stops for the purpose of identifying racial disparities and profiling in policing. One approach to measuring racial disparities is to compare the proportion of minorities who are stopped to the estimated proportion of minority drivers in the population. The disparity ratios for Urbana, IL, from 2004 to 2013 range between 1.7 in 2010 and 1.07 in 2012. The observed disparity among minorities as a whole is due almost entirely to disparities in the rates at which African Americans are stopped, which ranges from a low of 1.71 in 2012 and 2013 to a high of 2.18 in 2010. All else equal, we should expect these ratios to be close to 1, with numbers higher than one suggesting that minorities are more likely to be stopped than we would expect given their relative distribution in the population. All else is rarely equal, however, and there are many factors that could give rise to these disparities. Below we summarize some of the potential explanations and what evidence the data provide either for or against these possible causes.

Demographic and Socio-economic Differences

Demographic and socio-economic differences across racial groups may explain part of the disparity in stops. Older cars are more likely to have equipment failures. If certain racial groups are more likely to drive older cars, than we might expect them to be more likely to be pulled over for equipment violations. Similarly, if younger drivers are more inexperienced and more likely to commit traffic violations, then to the extent that some racial groups tend to be younger demographically than others, this might also produce disparities in the rates at which these groups are stopped.

The data provide some support for this claim. African Americans and Hispanics do tend to drive older cars and are more likely to be pulled over for equipment violations. Minority drivers who are stopped also tend to be younger than white drivers, possibly reflecting underlying demographic differences in age. It is unlikely, however, that demographic differences alone explain the disparities that we observe. If this were true, we would not observe African Americans being stopped at rates nearly twice what we would expect given their relative distribution in the population, while Hispanics are stopped at rates somewhat below what we would expect. Demographic and socioeconomic differences may play a role in explaining differences in the type of stops minorities experience, but play only a marginal role in explaining overall disparities.

Patterns of Policing

Some areas of Urbana have a higher police presence than others. This is due both to calls for service from citizens and tactical decisions by the police department about where their resources are most effectively used to reduce accidents and crime. To the extent that minorities live in areas with a higher police presence, this could account for some of the disparity in the rates at which minorities are stopped.

The data provide some support for this view. The total number of traffic stops in a geographic area is positively correlated with both the total number of calls for service and the percentage of minorities living in that area.¹ The data do not let us assess the direction of causality in these relationships, that is, whether the stops are higher in an area because there are more minorities living there or because there are more calls for service. The current data also do not provide much information as to whether traffic stops have an effect on the total calls for service in area, that is, whether more stops lead to less crime.

¹Urbana is divided into five police beats. Each beat is divided into smaller geocodes (close to 140 total depending on the year), which are used to report the locations of both stops and calls for service. The data for calls for service are available for 2010 to 2013 with correlations between stops and calls for service ranging 0.41 in 2010 to 0.53 in 2012

Comparing the relative disparities in minority stops for individual geographic areas provides some further leverage on this question. We see that areas with the highest total number of minority stops tend to have relatively high numbers of minorities living in those neighborhoods. In fact, areas with relatively low estimated minority populations tend to have persistently higher disparity indexes. While the estimated minority populations of these neighborhoods may not accurately reflect the population which drives through these areas, these figures provide some evidence that minorities are more likely to be stopped when driving in neighborhoods where minorities are less likely to live.

For 2013, we are also able to assess the relative disparities in stops when police are focused specifically on enforcing traffic safety laws through the STEPS program. We see that minorities are stopped at relatively lower rates in the STEPS program (although African Americans are still about 25 percent more likely to be stopped than we would expect). Outside of the STEPS program, the disparity ratios are significantly higher for African Americans.

Racial Profiling

Minorities, and in particular African Americans, are significantly more likely to be stopped given their relative representation in the driving population. This fact may be evidence that racial profiling is occurring, but it may also reflect other confounding factors like demographic differences and patterns of policing more broadly.

One difficulty when looking at measures like a disparity ratio is determining what the appropriate baseline is. For example, when we examined disparity ratios by individual geographic units, we see that the region associated with Meadowbrook park has a consistently high disparity ratio. The estimated minority population for the area is only 3 percent, but the true minority population driving along Windsor Road is probably much higher. Similarly, the recent declines in the total disparity ratio for Urbana may be due to changes in police practice, but also likely reflect the fact that the estimated minority driving population increased from 30.6 percent for 2004 to 2011 to 39.5 in 2012 and 2013

Disentangling this relationship with traffic stop data alone is difficult. One test for racial profiling begins from the assumption that if racial profiling is occurring it should be harder to do when it is dark out than when it is light out. Since the sun sets at different times during the year, stops that occur during this intertilight period (times when it could be light or dark out depending on the time of year) create a sort of natural experiment in which to test for racial profiling. In theory, the only thing that should differ between a person stopped at 7 pm in December and 7 pm in the June, is that it was light out in June and dark out in December.² If when it is dark out, minorities are less likely to be stopped, this provides evidence that racial profiling is occurring.

The results from this approach are inconclusive and depend on how the relationship is modeled (for example whether we include controls for different years and the time of day within this intertilight period). Looking at minorities as a whole, there appears to be little evidence of racial profiling. Look at African Americans relative to all other stops (whites and other minorities), there appears to be some evidence of profiling in some years and some times of day. Looking at African Americans relative to whites only, the results are again more mixed.

Disparity in Outcomes

The disparity in the rates at which minorities and African Americans are stopped persists in outcomes after the stop. Minorities, in particular, African Americans and Hispanics, are more likely to receive citations as opposed to written warnings when stopped. They are also more likely to be searched and more likely to be subject to stops of longer duration. Relatively few stops (1 to 3 percent of all stops) result in contraband being found, with the majority of contraband found during stops of Whites and African Americans.

In terms of the financial impact of traffic stops, African Americans and Hispanics pay higher fines on average. This appears to be due primarily to the fact that these minorities are charged with offenses that carry higher fines (such as driving without insurance or a license), are more likely to be charged with multiple offenses,

²The validity of this assumption may be questionable in college town where the minority population varies with the school year.

and more likely to be stopped and charged multiple times. Within a particular offense, the average fines across racial groups are relatively similar.

Summary

Complex social problems rarely have simple answers. The traffic stop data show that minorities, and in particular African Americans, are more likely to be stopped by the police. The extent to which racial profiling is the cause of these disparities, is a difficult question to answer with these data alone. As discussed above, there are many possible reasons for why we observe these relationships. Socio-economic factors may play a role. The fact that minorities live in neighborhoods where police are more present almost certainly increases the rates at which they are stopped. Whether this relationship reflects evidence of racial profiling is more difficult to say. The fact that minorities are more likely to be stopped in neighborhoods where they are less likely to live is consistent with racial profiling, but may also reflect inaccurate estimates of the population driving through a neighborhood. Direct tests of profiling are inclusive and depend upon the modeling assumptions we are willing to make

What the data can tell us and what people actually experience are two separate things. We can imagine a world in which disparity ratios are close to one, and yet racial profiling occurs in a targeted pernicious manner. We can also imagine a world in which the disparity ratios are greater than one in spite of the absence of racial profiling. What the data clearly show is that there is a disparate impact in the rate and outcome of traffic stops in our community. Regardless of whether one chooses to interpret the traffic stop data as strong, weak or inconclusive evidence of racial profiling, the disparate impact of these stops likely creates the perception that policing is racially motivated or unfairly targeting minorities. Addressing these concerns requires a deeper understanding of both policing and community impact.

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OVERVIEW OF ANALYSIS

Below are the analyses summarized in the executive summary above. The document contains information presented in previous reports, as well as new analysis. The analysis remains a work in progress. Some sections are more preliminary than others. Emphasis has been placed on presenting data with further context and explanation to follow shortly. The goal for this report was to provide as much information as possible and get the task force’s feedback on what should be included in the final report

Whats New: - Calls for Service and Traffic Stops - STEPS program - Financial impact from court data

What’s old

- IDOT disparity ratios
- Disparity Maps
- Demographic Analysis
- Veil of Darkness analysis
- Tables for Figures in Appendix

IDOT DISPARITIES

IDOT DISPARITY RATIOS BY YEAR

This is the starting point for our analysis:

Table 1: Yearly IDOT Disparity Ratios

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
# White Stops	1948	1707	2131	1854	2194	2240	1476	1463	2169	2365
# Minority Stops	1602	1348	1884	1527	1831	2037	1603	1367	1582	1930
% Stops White	54.9	55.9	53.1	54.8	54.5	52.4	47.9	51.7	57.8	55.1
% Stops Minority	45.1	44.1	46.9	45.2	45.5	47.6	52.1	48.3	42.2	44.9
Min % of Driv Pop	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	39.5	39.5
Disparity	1.47	1.44	1.53	1.48	1.49	1.56	1.7	1.58	1.07	1.14

YEARLY DISPARITIES BY RACE

We can break out using census blocks to provide an estimate of the racial composition of the Urbana

Maps of race

Table 2: Yearly Disparities by Race

African Americans	AA Stops	Total Stops	% Total	Est % Population	Disparity
2004	1227	3548	0.35	0.17	1.99
2005	1005	3049	0.33	0.17	1.9
2006	1401	4014	0.35	0.17	2.01
2007	1160	3380	0.34	0.17	1.97
2008	1332	4024	0.33	0.17	1.9
2009	1458	4275	0.34	0.17	1.96
2010	1169	3077	0.38	0.17	2.18
2011	992	2829	0.35	0.17	2.02
2012	1116	3746	0.3	0.17	1.71
2013	1273	4287	0.3	0.17	1.71
Hispanics	HS Stops	Total Stops	% Total	Est % Population	Disparity
2004	112	3548	0.03	0.05	0.63
2005	107	3049	0.04	0.05	0.7
2006	138	4014	0.03	0.05	0.68
2007	115	3380	0.03	0.05	0.68
2008	171	4024	0.04	0.05	0.84
2009	186	4275	0.04	0.05	0.86
2010	139	3077	0.05	0.05	0.9
2011	130	2829	0.05	0.05	0.91
2012	133	3746	0.04	0.05	0.71
2013	157	4287	0.04	0.05	0.73
Asians	AS Stops	Total Stops	% Total	Est % Population	Disparity
2004	261	3548	0.07	0.14	0.52
2005	230	3049	0.08	0.14	0.53
2006	344	4014	0.09	0.14	0.61
2007	251	3380	0.07	0.14	0.53
2008	327	4024	0.08	0.14	0.57
2009	391	4275	0.09	0.14	0.65
2010	293	3077	0.1	0.14	0.67
2011	244	2829	0.09	0.14	0.61
2012	328	3746	0.09	0.14	0.62
2013	492	4287	0.11	0.14	0.81
Whites	WH Stops	Total Stops	% Total	Est % Population	Disparity
2004	1948	3548	0.55	0.63	0.87
2005	1707	3049	0.56	0.63	0.89
2006	2131	4014	0.53	0.63	0.84
2007	1854	3380	0.55	0.63	0.87
2008	2194	4024	0.55	0.63	0.86
2009	2240	4275	0.52	0.63	0.83
2010	1476	3077	0.48	0.63	0.76
2011	1463	2829	0.52	0.63	0.82
2012	2169	3746	0.58	0.63	0.92
2013	2365	4287	0.55	0.63	0.87

Note, 29 stops identified themselves as Native American, and are excluded from the analysis.

DISPARITIES BY STOP AND OUTCOME

See appendix

DEMOGRAPHIC AND SOCIO-ECONOMIC DIFFERENCES

DRIVER RESIDENCY

Table 3: Traffic Stops and Driver Residency

Driver From:	# Stops	% Total
Urbana	18974	0.52
Urbana-Champaign	27242	0.75
Local	28384	0.78
Within 50 Miles	30875	0.85
Chicago	505	0.01
Illinois	35425	0.98

Just over half of the drivers stopped from 2004-2013 had addresses in Urbana, IL. Three-quarters lived in Urbana-Champaign (Local includes Savoy and St Joseph), about 85 percent lived within 50 miles, and close to 98 percent lived in-state.

DRIVER AGE

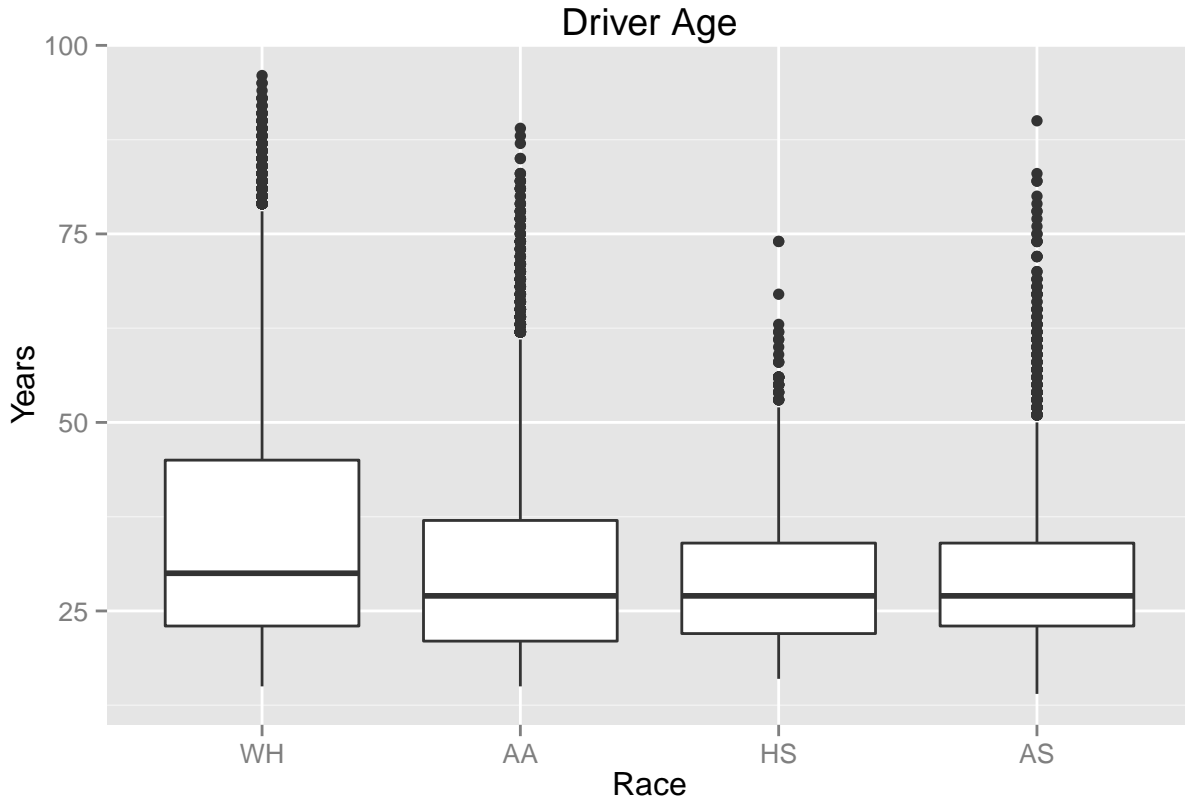


Figure 1: Distribution of Driver's Age by Race

There's greater variation in the age of white drivers, who also on average, tend to be slightly older than minority drivers.

Comments

- What other age comparisons would you like to see?
 - Broken out by type of stop?
 - Broken down by outcome of stop

VEHICLE AGE

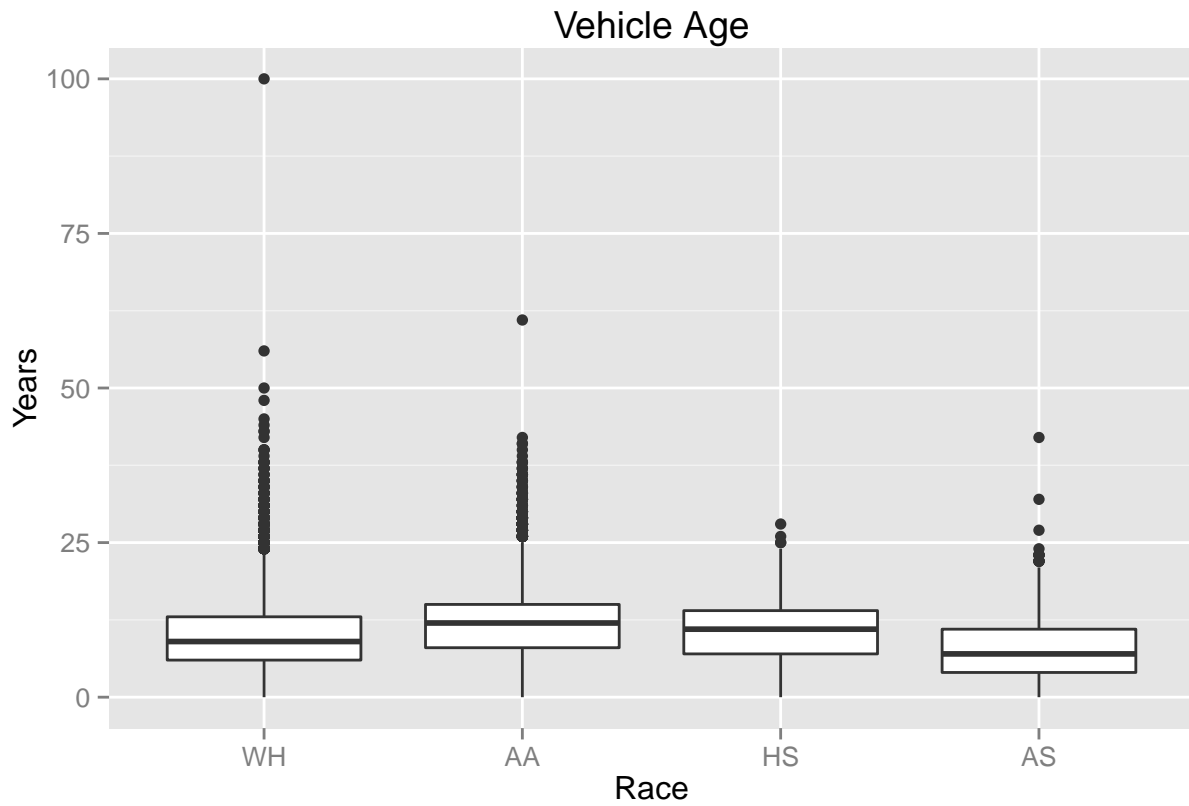


Figure 2: Distribution of Vehicle Age by Race

African Americans and Hispanics tend to drive slightly older cars than Whites and Asians. The hundred-year-old car is likely a 1989 Geo miscoded as a 1909. We'll go through and check to make sure there aren't other outliers.

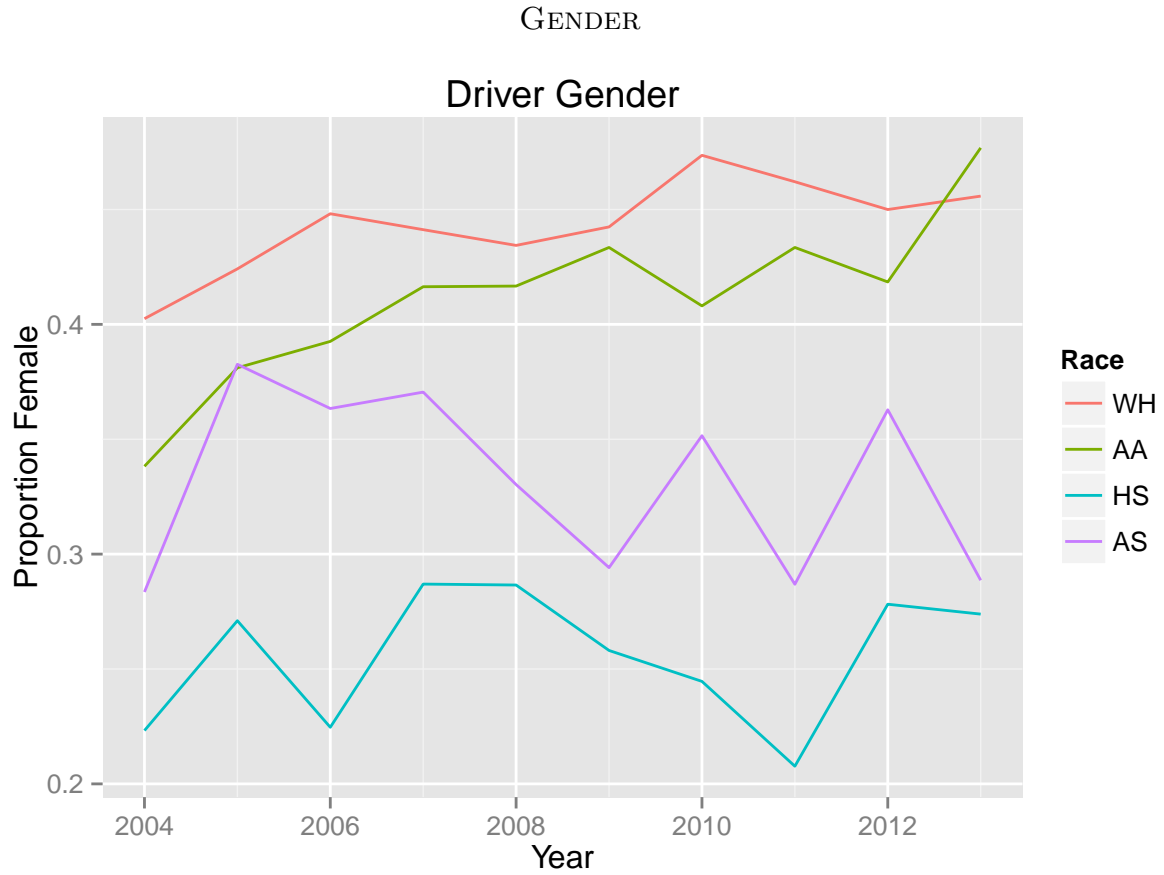


Figure 3: Proportion of Stopped Drivers who are Female

The figure shows the proportion of drivers stopped who are female for each racial group each year. For the most part, men are more likely to be stopped than women, particularly for Asians and Hispanics. Again it would be relatively easy to break this out by type of stop, and also by outcome of stop.

TRAFFIC STOPS AND PATTERNS OF POLICING

STOPS AND CALLS FOR SERVICE

CALLS FOR SERVICE 2010-2013

2010-2013

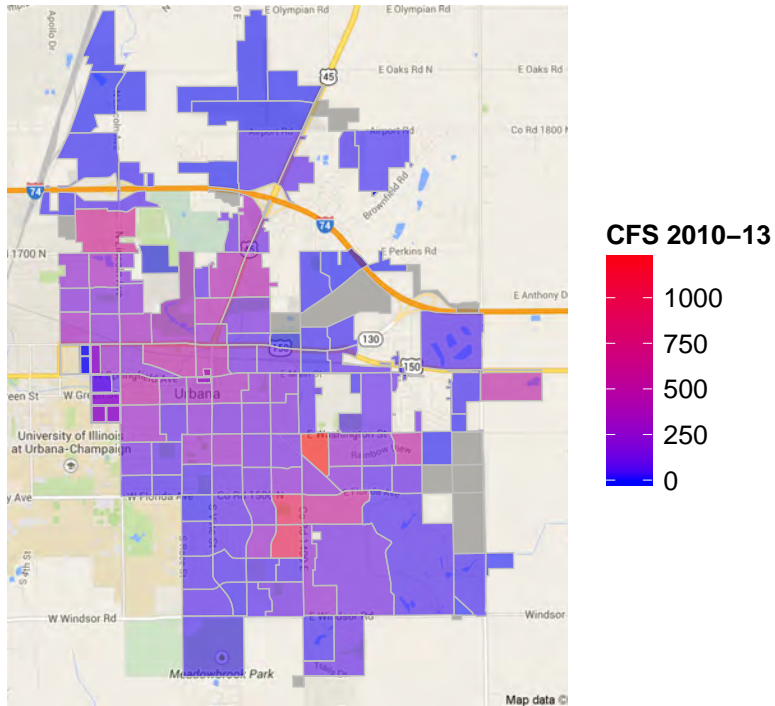


Figure 4: Total Calls for Service 2010-2013

CORRELATION BETWEEN CALLS FOR SERVICE AND TRAFFIC STOPS

Table 4: Correlations between CFS and Traffic Stops

	2010	2011	2012	2013	2010-13
Correlation	0.47	0.53	0.41	0.46	0.49

Table 5: Correlations between CFS and Minority Percent of Population

	2010	2011	2012	2013	2010-13
Correlation	0.30	0.33	0.29	0.29	0.31

Table 6: Correlations between CFS and Minority Percent of Population

	2010	2011	2012	2013	2010-13
Correlation	0.32	0.27	0.25	0.31	0.30

OLS REGRESSIONS OF STOPS ON CFS AND MINORITY POPULATION

Will rename variable names in these tables for consistency

Table 7

	<i>Dependent variable:</i>				
	TotStops (1)	TotStops10 (2)	TotStops11 (3)	TotStops12 (4)	TotStops13 (5)
TotCFS	0.250*** (0.056)				
crime2010		0.206*** (0.049)			
crime2011			0.194*** (0.038)		
crime2012				0.224*** (0.066)	
crime2013					0.348*** (0.079)
Min.p	86.500** (40.800)	22.730** (9.151)	10.620 (7.532)	22.900* (12.670)	32.780** (13.680)
pop	0.035 (0.035)	0.011 (0.008)	0.007 (0.007)	0.016 (0.011)	0.003 (0.012)
Constant	27.340 (16.860)	4.936 (3.793)	7.655** (3.098)	7.183 (5.265)	6.966 (5.680)
Observations	138	138	138	138	138
R ²	0.268	0.267	0.298	0.202	0.244
Adjusted R ²	0.251	0.251	0.283	0.184	0.227
Residual Std. Error (df = 134)	107.200	24.130	19.650	33.500	36.160
F Statistic (df = 3; 134)	16.320***	16.300***	19.000***	11.290***	14.420***

Note:

*p<0.1; **p<0.05; ***p<0.01

Neighbor Matrix

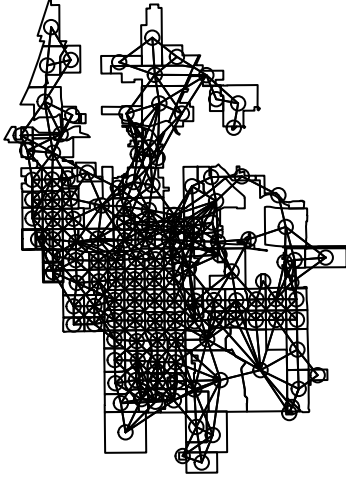


Table 8

	<i>Dependent variable:</i>				
	TotStops (1)	TotStops10 (2)	TotStops11 (3)	TotStops12 (4)	TotStops13 (5)
TotCFS	0.196*** (0.047)				
crime2010		0.175*** (0.041)			
crime2011			0.150*** (0.032)		
crime2012				0.169*** (0.058)	
crime2013					0.278*** (0.069)
Min.p	27.400 (35.000)	7.395 (7.842)	3.178 (6.397)	8.045 (11.250)	13.280 (12.100)
pop	0.005 (0.030)	0.005 (0.007)	0.001 (0.006)	0.008 (0.010)	-0.005 (0.010)
Constant	1.900 (15.020)	-0.867 (3.320)	0.883 (2.758)	1.435 (4.877)	0.759 (5.160)
Observations	138	138	138	138	138
Log Likelihood	-822.500	-616.100	-587.300	-666.600	-675.400
σ^2	8,232.000	412.600	271.300	871.000	987.900
Akaike Inf. Crit.	1,657.000	1,244.000	1,187.000	1,345.000	1,363.000
Wald Test (df = 1)	43.460***	46.260***	49.140***	30.580***	32.620***
LR Test (df = 1)	32.870***	34.100***	35.020***	23.500***	27.000***

Note:

*p<0.1; **p<0.05; ***p<0.01

Table 9

	<i>Dependent variable:</i>				
	TotStops (1)	TotStops10 (2)	TotStops11 (3)	TotStops12 (4)	TotStops13 (5)
TotCFS	0.217*** (0.049)				
crime2010		0.190*** (0.044)			
crime2011			0.164*** (0.034)		
crime2012				0.194*** (0.060)	
crime2013					0.298*** (0.070)
Min.p	36.340 (36.580)	10.250 (8.387)	4.375 (6.774)	10.700 (11.700)	15.260 (12.240)
pop	-0.007 (0.031)	0.003 (0.007)	-0.0003 (0.006)	0.006 (0.010)	-0.011 (0.011)
Constant	2.627 (16.030)	-0.072 (3.640)	1.575 (3.019)	1.538 (5.155)	0.024 (5.298)
Observations	138	138	138	138	138
Log Likelihood	-826.600	-622.700	-593.000	-670.100	-676.300
σ^2	8,937.000	468.100	302.800	934.700	1,009.000
Akaike Inf. Crit.	1,665.000	1,257.000	1,198.000	1,352.000	1,365.000
Wald Test (df = 1)	28.220***	22.920***	27.470***	17.900***	30.880***
LR Test (df = 1)	24.510***	20.810***	23.590***	16.580***	25.150***

Note:

*p<0.1; **p<0.05; ***p<0.01

STOPS AND THE STEPS PROGRAM

Disparities are lower for STEP-stops relative to non-STEP stops

Table 10: Comparing Disparities in Steps vs Non-Steps Stops

	Est Pop %	STEPS stops	%	STEPS Disparities	Non-STEPS stops	%	Non-STEPS Disparities
White	63.14	588	65.33	1.03	1761	52.22	0.83
Black	17.39	195	21.67	1.25	1077	31.94	1.84
Hispanic	5.03	32	3.56	0.71	127	3.77	0.75
Asian	14.14	85	9.44	0.67	407	12.07	0.85
Minority	36.86	312	34.67	0.94	1611	47.78	1.3
Total		900	100		3372	0	

DISPARITIES BY GEOGRAPHIC REGION

Working with data from the 2010 census, we've produced population estimates weighted by the census block for the racial composition of the 130+ police geocodes.³

POPULATION ESTIMATES BY GEOCODE

2004–2013

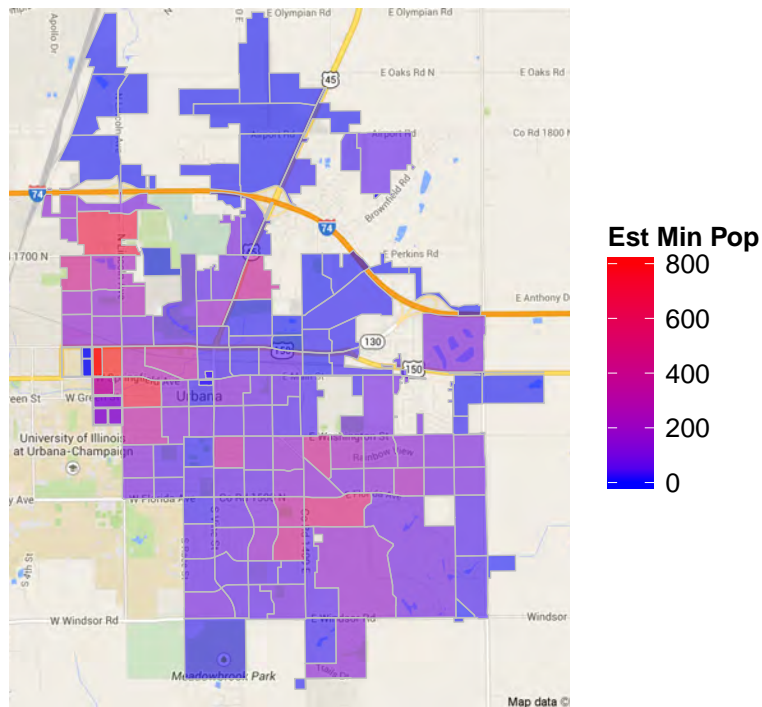


Figure 5: Estimated Minority Population

³Specifically, we overlaid the police geocode map onto the census block maps and then weighted populations for each block by the proportion of the blocks total area within the geocode. Consider a block with 10 people. If that block falls entirely within a geocode, all 10 are counted toward the estimated population of the geocode. If only half of the block falls within a geocode, that block would add 5 people to the estimate of the total population of that geocode.

TOTAL STOPS BY GEOCODE

2004–2013

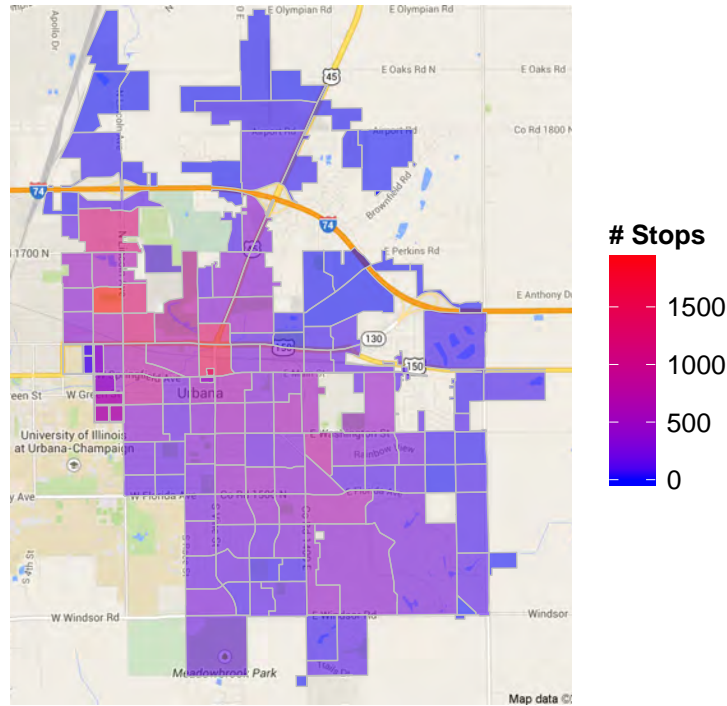


Figure 6: Estimated Minority Population

We can use information from the figures above to produce geocode-level measures of the IDOT disparity or relative risk of a minority being stopped based on the estimated minority population in each geocode. Specifically, for each geocode, i we calculate θ_i , a ratio of two proportions:

$$\theta_i = \frac{\frac{\text{Minority Stops}}{\text{Total Stops}}}{\frac{\text{Minority Population}}{\text{Total Population}}}$$

The figures below shows these estimates for each geocode, with blue being values below 1 (lower than expected risk of being stopped based on relative the proportion of minorities in the geocode’s population), white being values close to 1 and red being values above 1 (more than expected risk). The same caveats about the IDOT measures apply to these, and note that when there few stops and/or small population in a geocode these estimates can be quite volatile.

DISPARITY RATIO 2004-2013

2004-2013

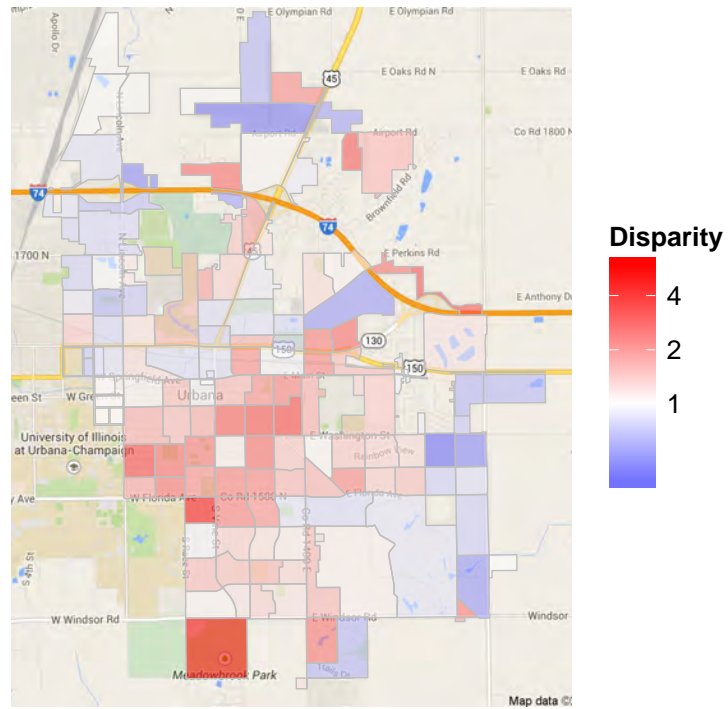


Figure 7: Disparity Ratio by Geocode

RECENT YEARS: 2011-2013

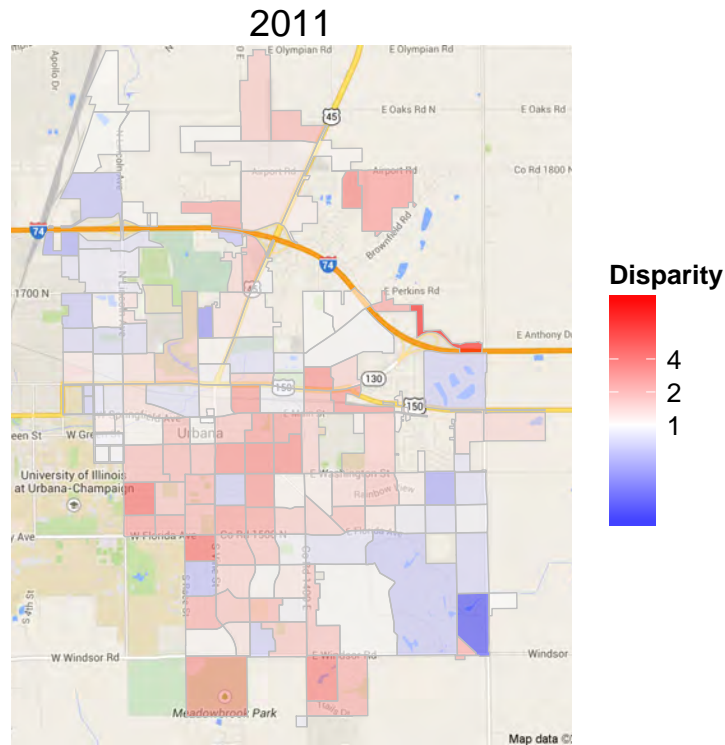


Figure 8: 2011 Disparity Ratio by Geocode

ONLY STATISTICALLY SIGNIFICANT DISPARTIES

To capture this volatility, we also constructed confidence intervals for the point estimates, that reflect the uncertainty of estimates where there are relatively few stops or small populations. The figures below shows the geocodes with $\theta > 1$ (i.e. more than expected risk) whose 95-percent confidence intervals do not include 1.

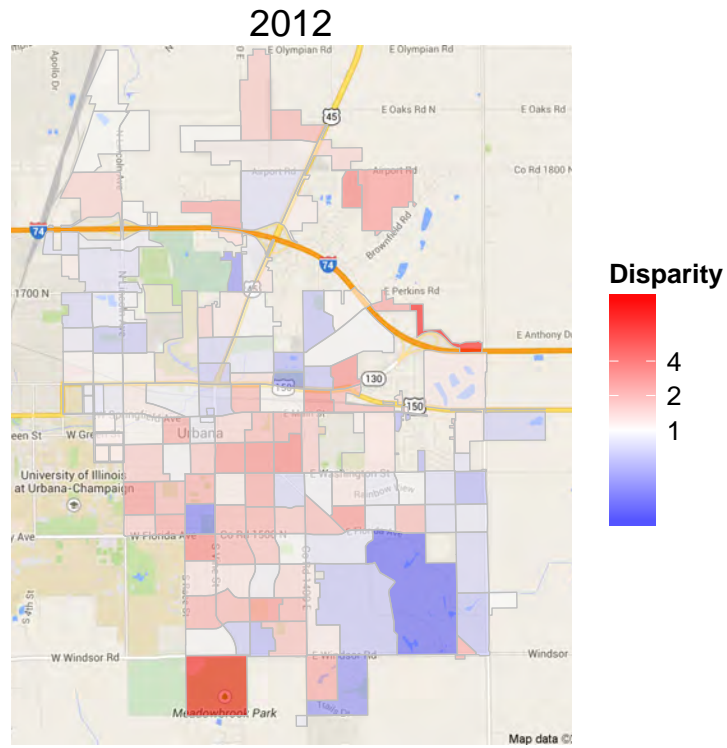


Figure 9: 2012 Disparity Ratio by Geocode

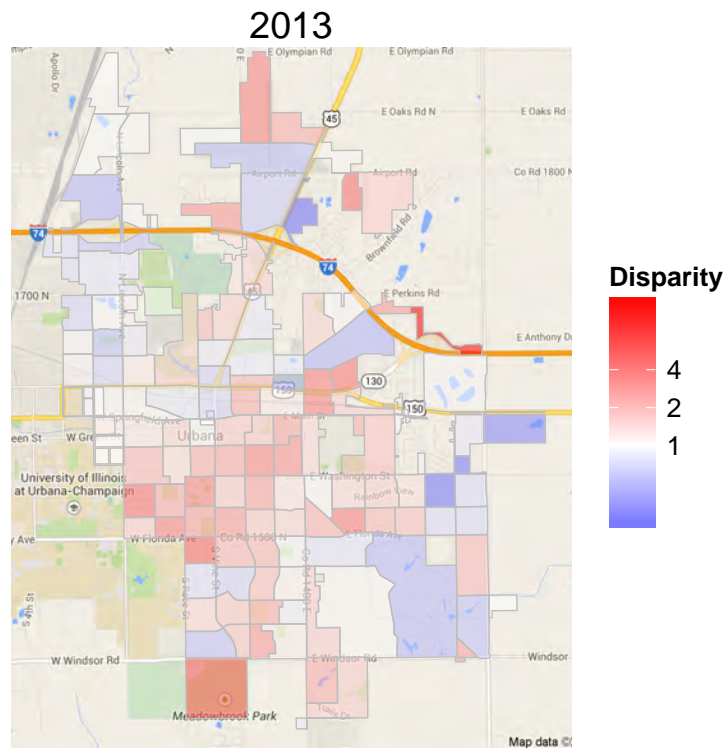


Figure 10: 2013 Disparity Ratio by Geocode

2004-2013

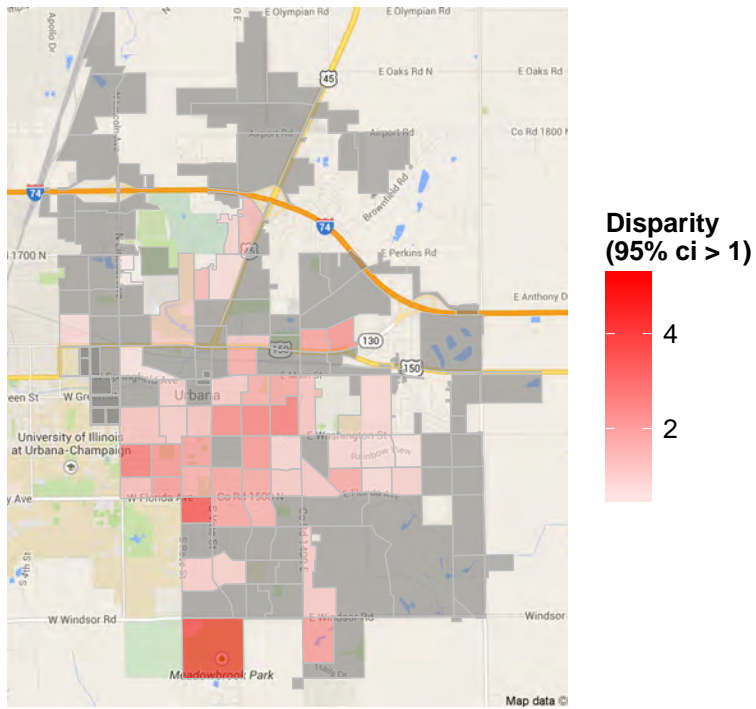


Figure 11: Statistically Significant Disparities by Geocode

RECENT YEARS: 2011-2013 (ONLY STATISTICALLY SIGNIFICANT DISPARTIES)

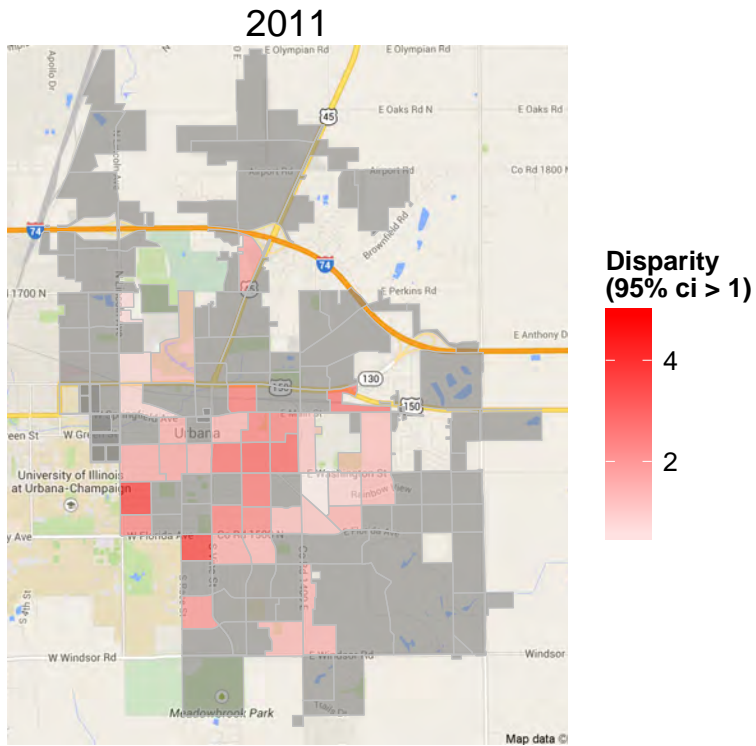


Figure 12: 2011 Disparity Ratio by Geocode

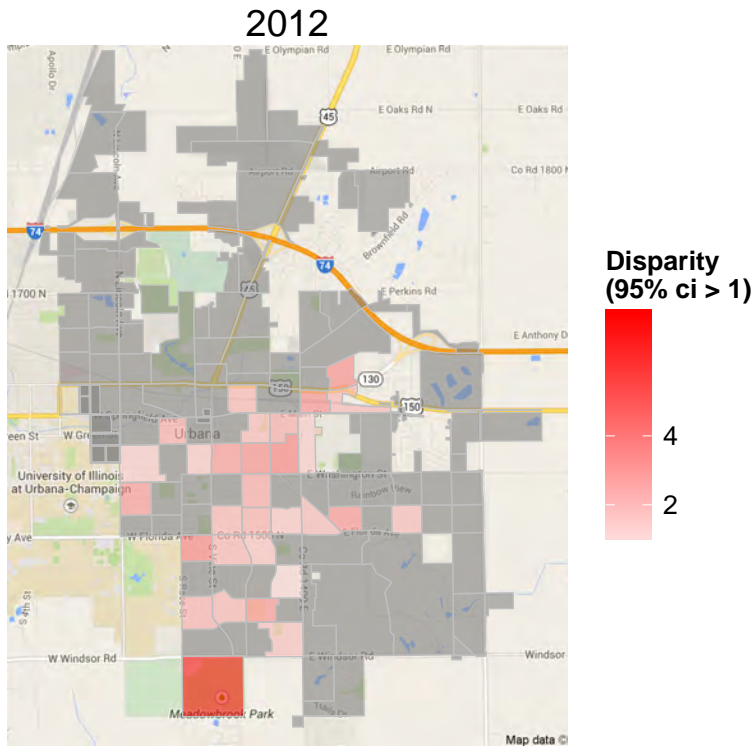


Figure 13: 2012 Disparity Ratio by Geocode

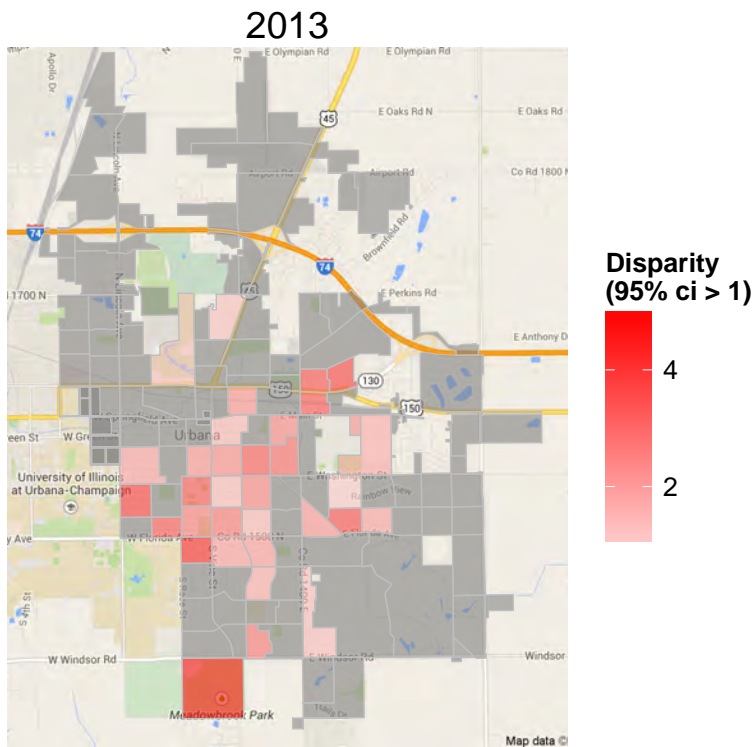


Figure 14: 2013 Disparity Ratio by Geocode

TESTING FOR RACIAL PROFILING USING THE VEIL OF DARKNESS MODELS

	No Time of Day	Linear Effect	Cubic Spline	Interaction	Year FE
Dark Out	0.12*	-0.13	-0.12	-0.97	-0.93
	(0.06)	(0.07)	(0.07)	(0.51)	(0.51)
Time of Day		0.00***			
		(0.00)			
Spline(Time of Day) 1			0.27	0.19	0.19
			(0.21)	(0.25)	(0.25)
Spline(Time of Day) 2			0.74*	0.42	0.42
			(0.34)	(0.45)	(0.45)
Spline(Time of Day) 3			0.88***	1.12***	1.12***
			(0.22)	(0.31)	(0.31)
Spline(Time of Day) 4			0.78***	0.32	0.35
			(0.18)	(0.34)	(0.34)
Spline(Time of Day) 5			1.30**	0.98	0.96
			(0.40)	(0.51)	(0.51)
Spline(Time of Day) 6			0.54**	0.63	0.56
			(0.17)	(0.48)	(0.49)
Time of Day X Spline(Time of Day) 1				0.72	0.67
				(0.53)	(0.53)
Time of Day X Spline(Time of Day) 2				1.20	1.22
				(0.81)	(0.81)
Time of Day X Spline(Time of Day) 3				0.30	0.25
				(0.58)	(0.58)
Time of Day X Spline(Time of Day) 4				1.05*	0.98*
				(0.50)	(0.50)
Time of Day X Spline(Time of Day) 5				1.90	1.90
				(1.16)	(1.16)
Time of Day X Spline(Time of Day) 6				0.01	0.08
				(0.53)	(0.54)
AIC	5991.48	5940.06	5945.93	5951.22	5948.63
BIC	6004.24	5959.19	5996.95	6040.52	6095.33
Log Likelihood	-2993.74	-2967.03	-2964.96	-2961.61	-2951.32
Deviance	5987.48	5934.06	5929.93	5923.22	5902.63
Num. obs.	4351	4351	4351	4351	4351

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

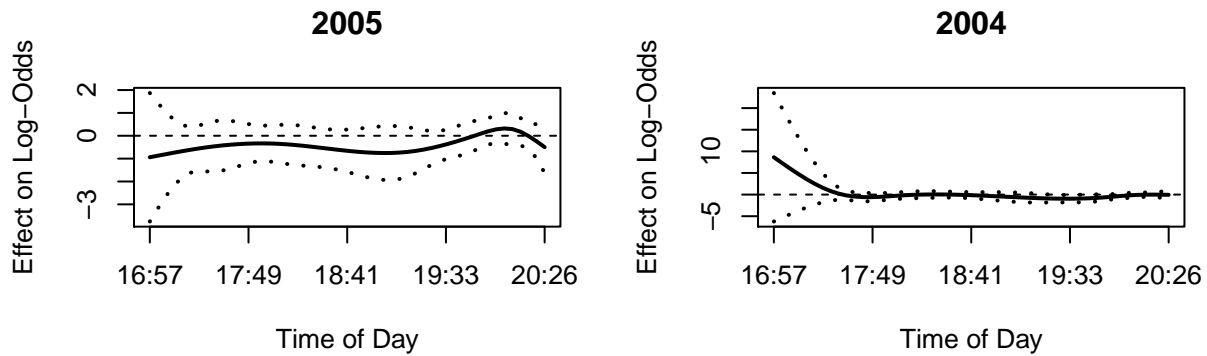
Table 11: Testing for Racial Profiling of Minorities

YEARLY ESTIMATES OF RACIAL PROFILING OF MINORITIES WITH LOG-ODDS

	No Time of Day	Linear Effect	Cubic Spline	Interaction	Year FE
Dark Out	-0.15*	0.11	0.10	1.02	0.92
	(0.06)	(0.07)	(0.07)	(0.56)	(0.56)
Time of Day		0.00***			
		(0.00)			
Spline(Time of Day) 1			-0.04	0.60	0.48
			(0.22)	(0.51)	(0.51)
Spline(Time of Day) 2			0.72*	1.60*	1.55*
			(0.36)	(0.73)	(0.73)
Spline(Time of Day) 3			0.83***	1.38*	1.28*
			(0.23)	(0.54)	(0.54)
Spline(Time of Day) 4			0.62**	1.27**	1.17**
			(0.19)	(0.39)	(0.39)
Spline(Time of Day) 5			0.94*	2.75*	2.64*
			(0.43)	(1.16)	(1.15)
Spline(Time of Day) 6			0.52**	0.57*	0.53*
			(0.18)	(0.24)	(0.24)
Time of Day X Spline(Time of Day) 1				-0.71	-0.57
				(0.58)	(0.58)
Time of Day X Spline(Time of Day) 2				-1.19	-1.21
				(0.87)	(0.87)
Time of Day X Spline(Time of Day) 3				-0.23	-0.10
				(0.63)	(0.63)
Time of Day X Spline(Time of Day) 4				-1.21*	-1.11*
				(0.53)	(0.53)
Time of Day X Spline(Time of Day) 5				-2.32	-2.23
				(1.28)	(1.27)
Time of Day X Spline(Time of Day) 6				-0.05	-0.06
				(0.55)	(0.56)
AIC	5564.53	5512.76	5513.80	5515.47	5506.23
BIC	5577.29	5531.89	5564.83	5604.76	5652.93
Log Likelihood	-2780.27	-2753.38	-2748.90	-2743.73	-2730.12
Deviance	5560.53	5506.76	5497.80	5487.47	5460.23
Num. obs.	4351	4351	4351	4351	4351

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Table 12: Testing for Racial Profiling of African Americans



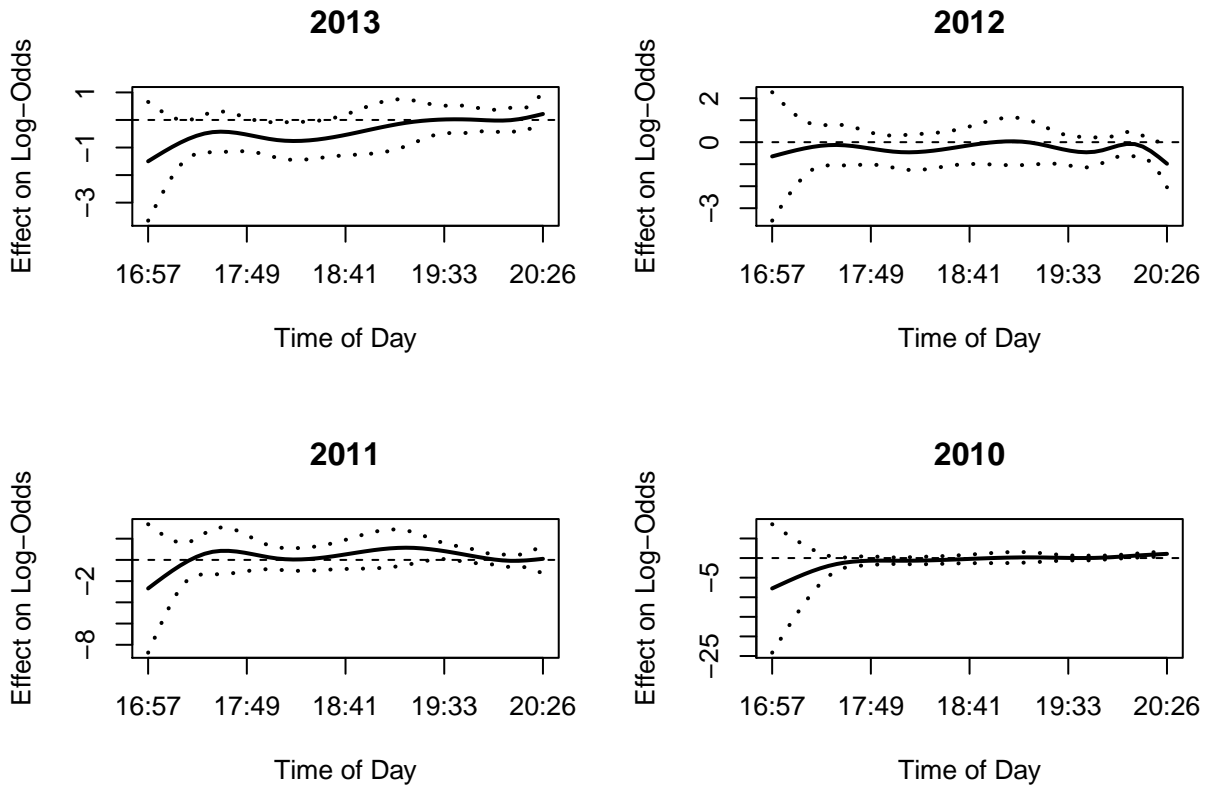


Figure 15: Yearly Estimates of Racial Profiling of Minorities (2000-13)

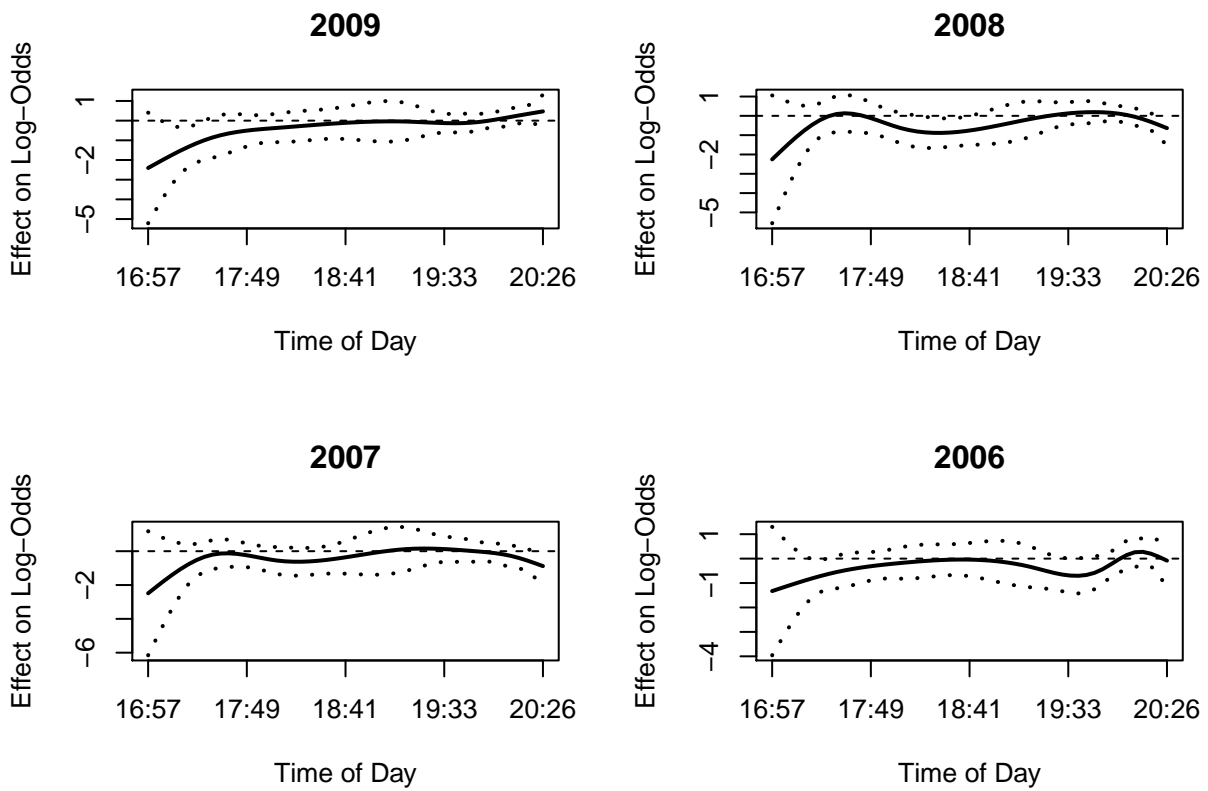


Figure 16: Yearly Estimates of Racial Profiling of Minorities (2006-09)

	No Time of Day	Linear Effect	Cubic Spline	Interaction	Year FE
Dark Out	0.15*	-0.13	-0.12	-1.06	-0.98
	(0.07)	(0.08)	(0.08)	(0.56)	(0.56)
Time of Day		0.00***			
		(0.00)			
Spline(Time of Day) 1			0.07	0.00	0.01
			(0.23)	(0.28)	(0.28)
Spline(Time of Day) 2			0.81*	0.46	0.38
			(0.37)	(0.49)	(0.49)
Spline(Time of Day) 3			0.92***	1.23***	1.27***
			(0.24)	(0.33)	(0.33)
Spline(Time of Day) 4			0.76***	0.19	0.18
			(0.20)	(0.37)	(0.37)
Spline(Time of Day) 5			1.18**	0.70	0.66
			(0.44)	(0.56)	(0.56)
Spline(Time of Day) 6			0.58**	0.62	0.57
			(0.18)	(0.52)	(0.52)
Time of Day X Spline(Time of Day) 1				0.74	0.61
				(0.59)	(0.59)
Time of Day X Spline(Time of Day) 2				1.27	1.33
				(0.89)	(0.89)
Time of Day X Spline(Time of Day) 3				0.25	0.14
				(0.64)	(0.64)
Time of Day X Spline(Time of Day) 4				1.23*	1.14*
				(0.54)	(0.54)
Time of Day X Spline(Time of Day) 5				2.29	2.24
				(1.29)	(1.29)
Time of Day X Spline(Time of Day) 6				0.03	0.05
				(0.57)	(0.57)
AIC	5123.67	5066.12	5069.45	5072.35	5065.71
BIC	5136.18	5084.89	5119.51	5159.95	5209.63
Log Likelihood	-2559.83	-2530.06	-2526.73	-2522.18	-2509.86
Deviance	5119.67	5060.12	5053.45	5044.35	5019.71
Num. obs.	3855	3855	3855	3855	3855

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Table 13: Testing for Racial Profiling of African Americans (Other Minorities Excluded)

YEARLY ESTIMATES OF RACIAL PROFILING OF AFRICAN AMERICANS WITH LOG-ODDS

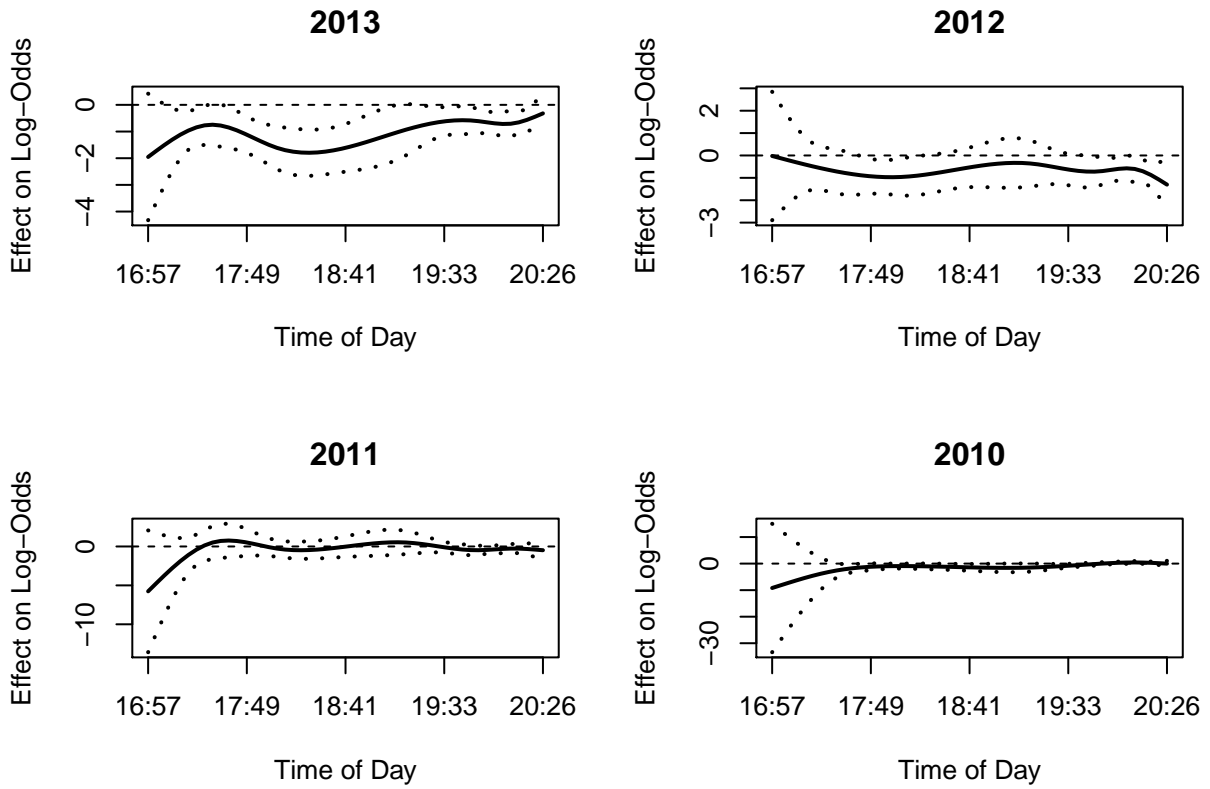
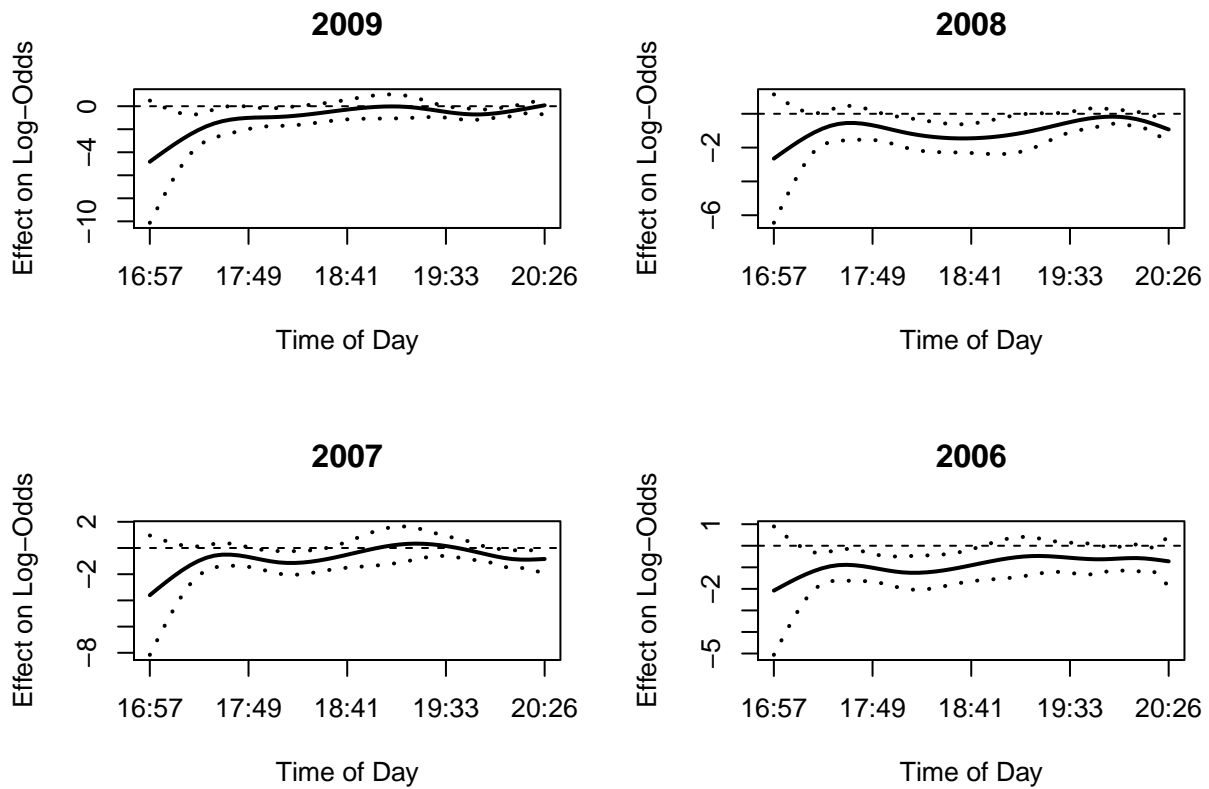


Figure 17: Yearly Estimates of Racial Profiling of African Americans(2000-13)



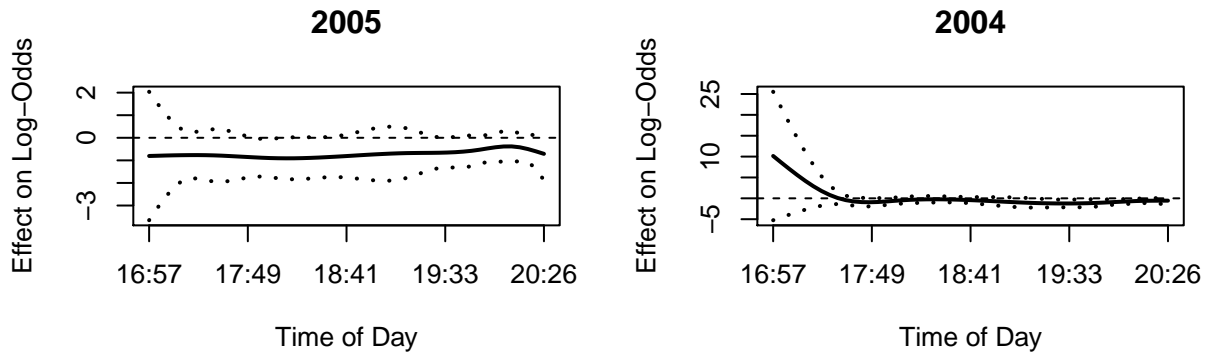


Figure 18: Yearly Estimates of Racial Profiling of African Americans (2004-06)

YEARLY ESTIMATES OF RACIAL PROFILING OF AFRICAN AMERICANS WITH LOG-ODDS
(EXCLUDING OTHER MINORITIES FROM ANALYSIS)

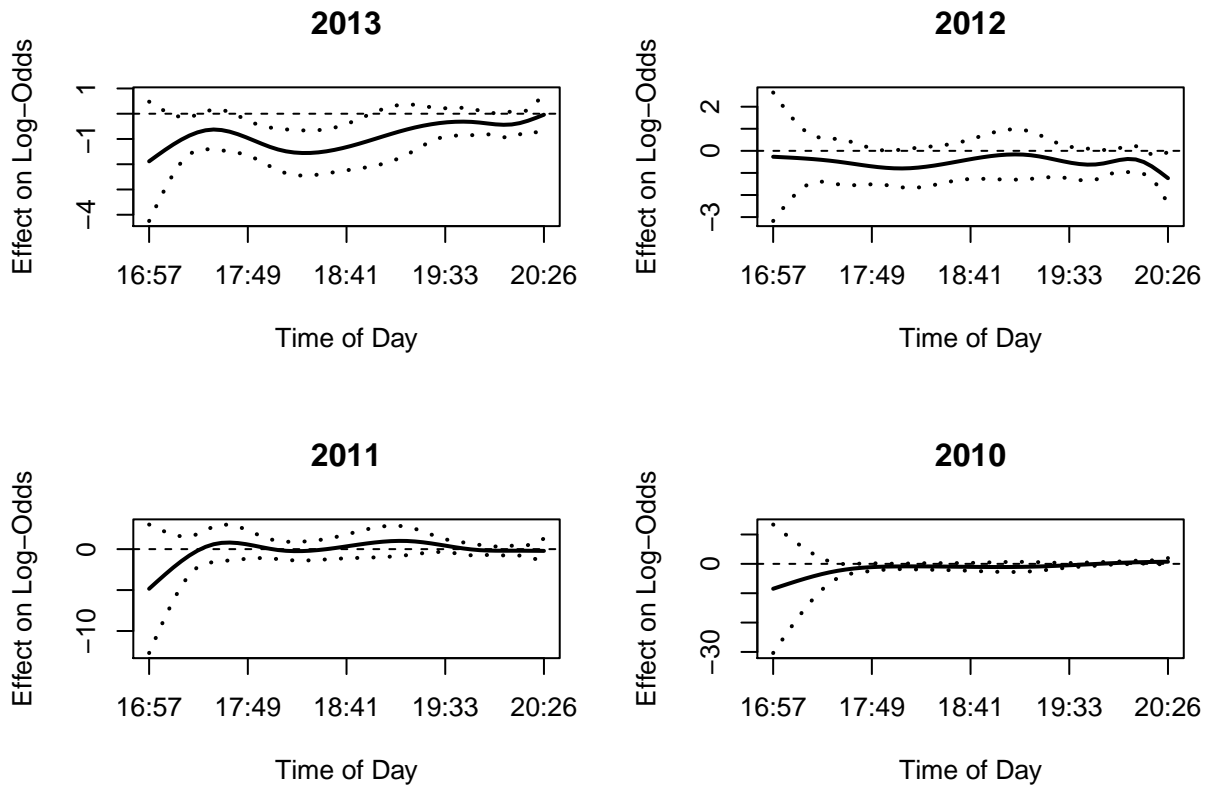
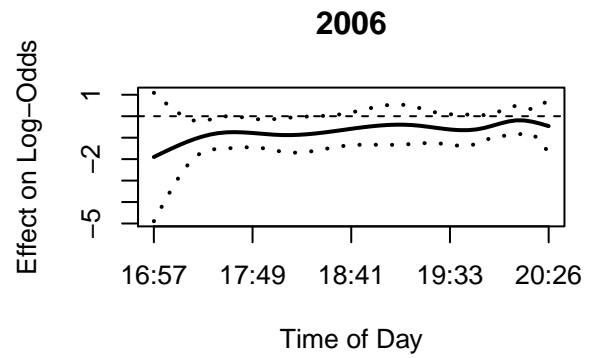
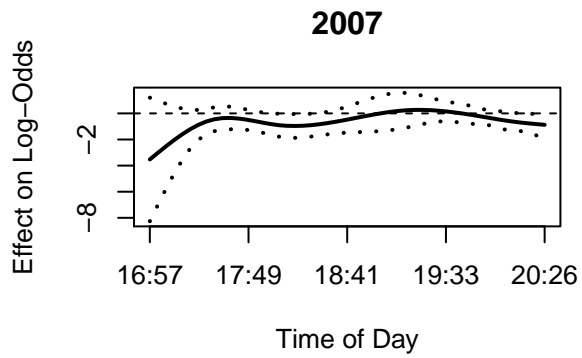
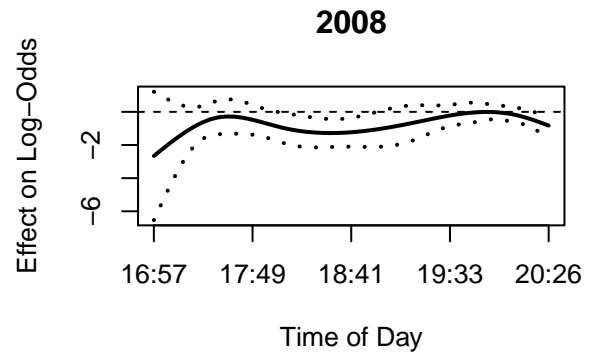
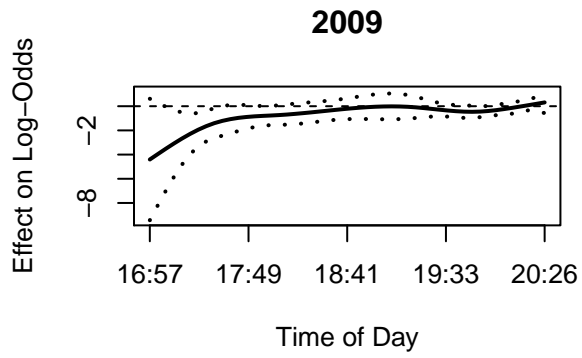


Figure 19: Yearly Estimates of Racial Profiling of African Americans(2000-13)



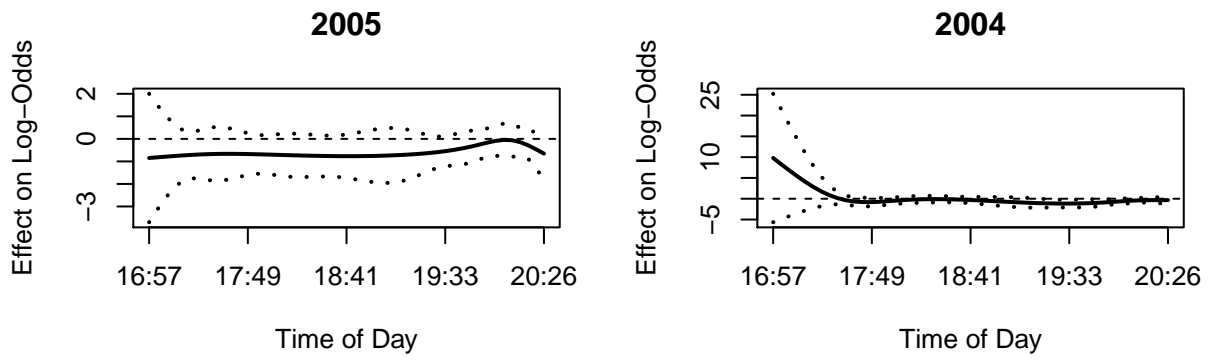


Figure 20: Yearly Estimates of Racial Profiling of African Americans (2004-06)

DISPARITIES IN FINANCIAL IMPACT

MERGING IDOT DATA WITH COURT DATA

To obtain estimates of the financial impact of traffic stops, we merged data on driver’s race from the IDOT data with the Champaign County Court data on traffic citations from 2004 to 2014 using the driver’s first and last names. There are a total of 40,868 charges, with 26,389 unique defendants, with some defendants receiving multiple charges. Overall, we were able to match 77 percent of the court records with the IDOT data. In a given year, we are able to match between 15 and 20 percent of the cases, while in 2014, 58 percent of the cases are unknown (labeled “UK” below). Since there are only 13 respondents who identify as Native American or Alaskan, they are excluded from subsequent analysis.

Table 14: Defendants by Race (2004-2013)

	AA	AS	HS	NA	WH	UK
Count	6184	1968	988	13	11060	6176
Proportion	0.23	0.07	0.04	0	0.42	0.23

AVERAGE FINE BY RACE

In the sample, the average fine paid by a person in given case, (for which there may be multiple charges) is about \$186.68. The median fine is \$77 dollars. The distribution of fines is very skewed. About 22 percent of the sample pay no fine, while 6 percent of the sample pay over \$600 in fines.

Looking at the distribution of fines by race, we see that African Americans and Hispanics, on average, are ordered to pay more fines than Whites and Asians. There are several possible reasons for this disparity, each of which we explore in more detail below.

Table 15: Average Fines by Race (2004-2014)

Race	Average Fine	Stnd Dev	50th percentile	75 percentile	Maximum
AA	204.03	516.39	77	164.0	16235
AS	154.50	386.01	120	122.0	12191
HS	295.38	607.29	120	300.0	7593
WH	171.60	388.80	77	121.0	7614
UK	186.72	449.85	115	156.0	17442

TYPES OF CHARGES BY RACE

First, the distribution of charges may vary across racial groups. African Americans and Hispanics, may be more likely to be charged with offenses that carry a higher fine. The table below provides some evidence of this. Driving without insurance or on a revoked license carry higher average fines than moving violations, and are more common among African Americans and Hispanics, than Whites and Asians.

Table 16: Top 10 Charges by Race (2004-2014)

White	Count	Mean Fine
Driving 15-20 Mph Above Limit	2411	\$108.25
Operate Uninsured Mtr Vehicle	2125	\$100.75
Driving 11-14 Mph Above Limit	2003	\$104.17
Disregard Stop Sign	1702	\$101.5
Seat Belt Required/driver	717	\$52.92
Disreg Traffic Control Light	636	\$100.05
Fail To Reduce Speed	578	\$112.03
Driving On Suspended License	464	\$238.34
Driving 1-10 Mph Above Limit	423	\$102.64
Drvg Under Inflv Of Alcohol	421	\$790.87
African American	Count	Mean Fine
Operate Uninsured Mtr Vehicle	2503	\$186.67
Driving On Suspended License	1121	\$209.82
Driving 15-20 Mph Above Limit	969	\$92.81
Unlicensed	893	\$171.87
Driving 11-14 Mph Above Limit	828	\$92.08
Disregard Stop Sign	760	\$82.17
Op Veh W/loud System >75 Ft	452	\$65.89
Driving On Revoked License	426	\$90.45
Seat Belt Required/driver	333	\$44.06
Fail To Reduce Speed	297	\$83.53
Hispanic	Count	Mean Fine
Unlicensed	475	\$172.02
Operate Uninsured Mtr Vehicle	394	\$295.78
Driving 15-20 Mph Above Limit	136	\$104.56
Disregard Stop Sign	118	\$86.19
Driving 11-14 Mph Above Limit	103	\$90.55
Driving On Suspended License	94	\$311.28
Drvg Under Inflv Of Alcohol	61	\$244.93
Improper Traffic Lane Usage	43	\$73.86
Disreg Traffic Control Light	41	\$88.05
Drvg Under Inflv/bac 0.08	41	\$179.44
Asian	Count	Mean Fine
Driving 15-20 Mph Above Limit	528	\$107.06
Driving 11-14 Mph Above Limit	317	\$105.95
Operate Uninsured Mtr Vehicle	303	\$70.73
Disregard Stop Sign	298	\$100.96
Disreg Traffic Control Light	160	\$107.03
Unlicensed	97	\$49.93
Unsafe Equipment/1st and 2nd	90	\$243.19
Fail To Reduce Speed	84	\$135.35
Driving 21-25 Mph Above Limit	70	\$120.86
Improper Traffic Lane Usage	55	\$107.73

NUMBER OF CHARGES BY RACE

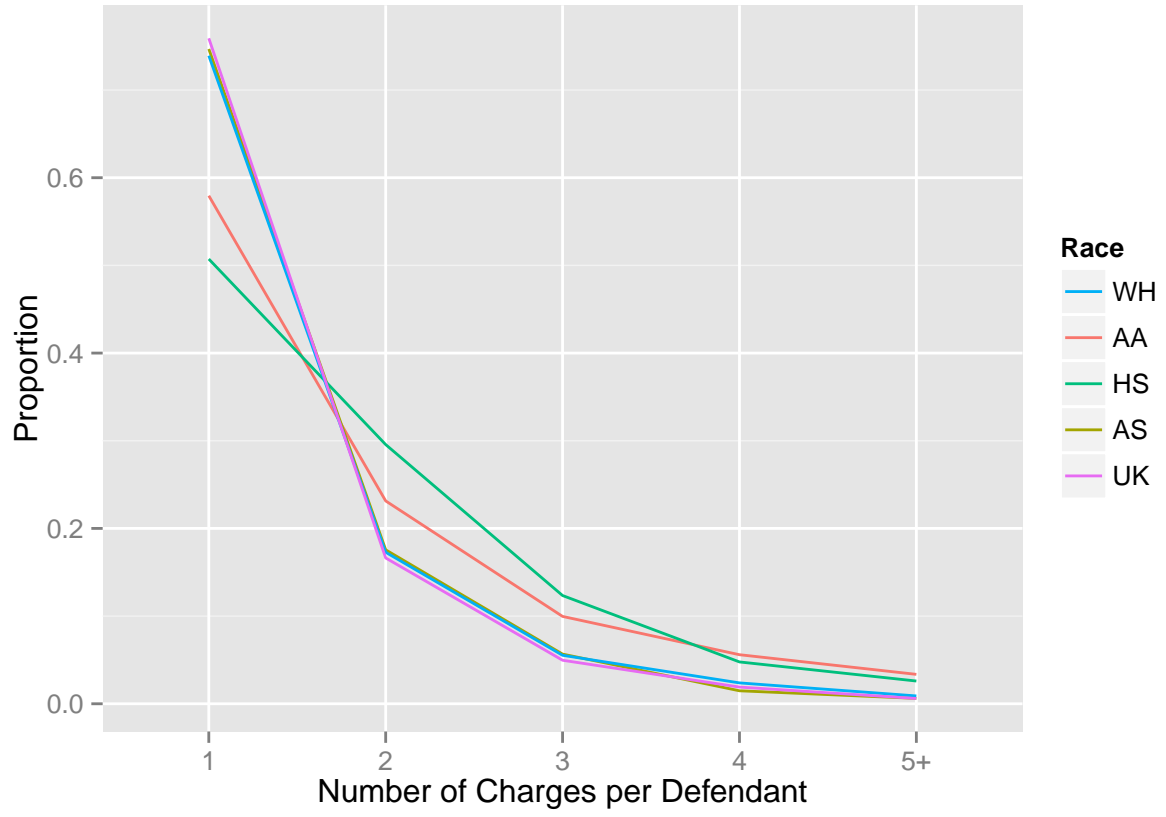
Second, members of different racial groups may be more or less likely to be charged with multiple offenses (e.g. speeding and driving without insurance), which would raise the average fine per person in these groups. Again, the data support this view. Forty-two percent of African Americans and 49 percent of Hispanics are charged with more than one violation, compared to 25 percent of Asians and 26 percent of Whites. Individuals with one charge, pay between \$100 and \$130 dollars in fines. Those charged with more than one fine pay about \$300 to \$400 dollars more

Table 17: Number of Charges by Race (2004-2014)

	One	Two	Three	Four	Five +
AA	3489	1393	600	337	202
AS	1463	344	111	29	12
HS	489	285	119	46	25
WH	8103	1894	606	261	98
UK	4664	1022	305	117	37

Table 18: Proportion of Multiple Charges by Race (2004-2014)

	One	Two	Three	Four	Five +
AA	0.58	0.23	0.10	0.06	0.03
AS	0.75	0.18	0.06	0.01	0.01
HS	0.51	0.30	0.12	0.05	0.03
WH	0.74	0.17	0.06	0.02	0.01
UK	0.76	0.17	0.05	0.02	0.01



AVERAGE FINE BY VIOLATION AND RACE

Finally, it is possible, that for the same offense, different minority groups receive different fines. The evidence here is mixed. African Americans and Hispanics are significantly more likely to pay higher fines for driving without insurance and being unlicensed. Whites pay more for moving violations and DUIs compared to African Americans and Hispanics, but not Asians. Asians are fined more for traffic lane violations

““

Table 19: Differences in Average Fines for Selected Charges by Race (2004-2014)

White-African American	Mean WH Fine	Mean AA Fine	Difference
Driving 15-20 Mph Above Limit	108.25	92.81	-15.44*
Driving 11-14 Mph Above Limit	104.17	92.08	-12.09*
Seat Belt Required/driver	52.92	44.06	-8.86*
Disregard Stop Sign	101.5	82.17	-19.32*
Improper Traffic Lane Usage	65.49	63.65	-1.84
Operate Uninsured Mtr Vehicle	100.75	186.67	85.92*
Unlicensed	90.32	171.87	81.56*
Driving On Suspended License	238.34	209.82	-28.53
Driving On Revoked License	121.9	90.45	-31.45
Drvg Under Inflv Of Alcohol	790.87	439.77	-351.11*
White-Hispanic	Mean WH Fine	Mean HS Fine	Difference
Driving 15-20 Mph Above Limit	108.25	104.56	-3.69
Driving 11-14 Mph Above Limit	104.17	90.55	-13.62*
Seat Belt Required/driver	52.92	34.71	-18.21*
Disregard Stop Sign	101.5	86.19	-15.31*
Improper Traffic Lane Usage	65.49	73.86	8.37
Operate Uninsured Mtr Vehicle	100.75	295.78	195.03*
Unlicensed	90.32	172.02	81.7*
Driving On Suspended License	238.34	311.28	72.93
Driving On Revoked License	121.9	185.12	63.21
Drvg Under Inflv Of Alcohol	790.87	244.93	-545.94*
White-Asian	Mean WH Fine	Mean AS Fine	Difference
Driving 15-20 Mph Above Limit	108.25	107.06	-1.19
Driving 11-14 Mph Above Limit	104.17	105.95	1.78
Seat Belt Required/driver	52.92	50.93	-2
Disregard Stop Sign	101.5	100.96	-0.54
Improper Traffic Lane Usage	65.49	107.73	42.24*
Operate Uninsured Mtr Vehicle	100.75	70.73	-30.03
Unlicensed	90.32	49.93	-40.39*
Driving On Suspended License	238.34	252.15	13.8
Driving On Revoked License	121.9	175.8	53.9
Drvg Under Inflv Of Alcohol	790.87	952.8	161.93

Note:*p < 0.05

APPENDIX

Complete Summary of Stops, Citations, Searches, and Contraband by Race

TYPE OF STOP

TOTAL STOPS



Figure 21: Total Number of Stops by Year and Race

The figure shows the total number of stops by year and type of stop for each racial group.

Comments

- Moving violations are the most common reason for stop, followed by equipment violations, and stops for License plates/Registration (L/R)
- Increase in total stops peaks at 2009, driven by rises in the number of equipment and L/R stops.
- Increase from 2011-2013 reflects increase across all type of stops.
- White and African American drivers make up the majority of stops.

PERCENT OF TOTAL STOPS

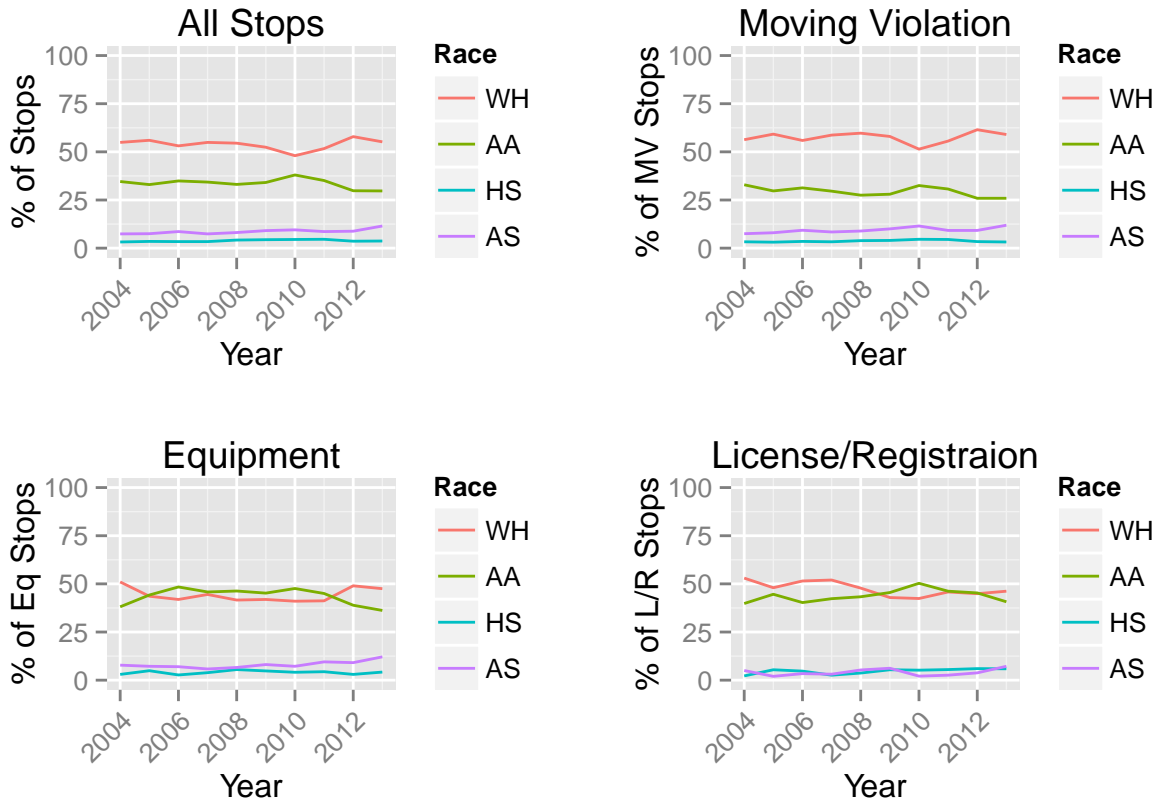


Figure 22: Proportion of Yearly Stops by Race

The figure shows for a given year and type of stop, what proportion of the stops are from what racial group. - The proportion of total stops by race is relatively constant over the years. - Whites and African Americans account for generally over 90 percent of all stops - Whites make up the majority of moving violations - African Americans account for the plurality of Equipment and L/R stops

TYPE OF STOP BY RACE

The figure shows the proportion of each racial group's total stops that are for moving violations, equipment, and L/R.

Comments

- Moving violations are the most common type of stop for all races
- Equipment and L/R stops tend to be more common among African Americans and Hispanics

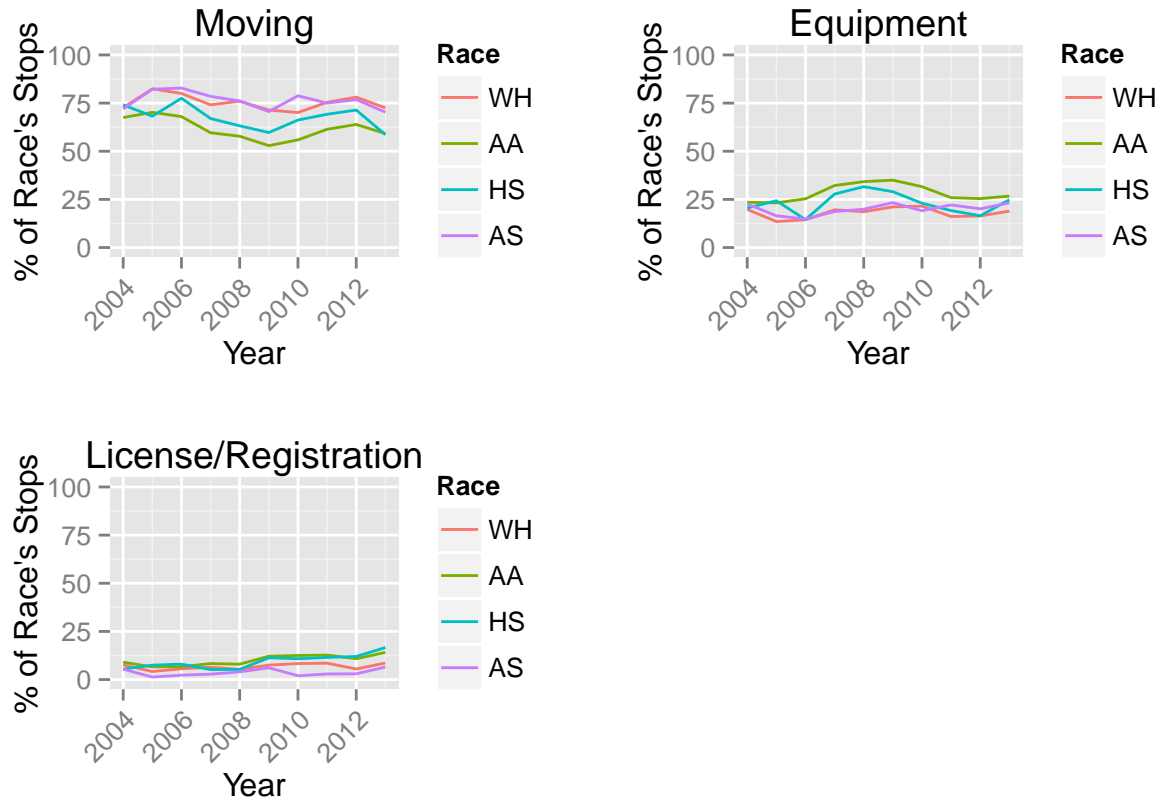


Figure 23: Type of Stop by Race and Year

Table 20: Traffic Stops by Race

	Total	WH		AA		HS		AS	
		#	%	#	%	#	%	#	%
2004	3548	1948	54.9	1227	34.6	112	3.2	261	7.4
2005	3049	1707	56	1005	33	107	3.5	230	7.5
2006	4014	2131	53.1	1401	34.9	138	3.4	344	8.6
2007	3380	1854	54.9	1160	34.3	115	3.4	251	7.4
2008	4024	2194	54.5	1332	33.1	171	4.2	327	8.1
2009	4275	2240	52.4	1458	34.1	186	4.4	391	9.1
2010	3077	1476	48	1169	38	139	4.5	293	9.5
2011	2829	1463	51.7	992	35.1	130	4.6	244	8.6
2012	3746	2169	57.9	1116	29.8	133	3.6	328	8.8
2013	4287	2365	55.2	1273	29.7	157	3.7	492	11.5

Table 21: Moving Violations by Race

	Total	WH		AA		HS		AS	
		#	%	#	%	#	%	#	%
2004	2514	1415	56.3	828	32.9	83	3.3	188	7.5
2005	2374	1406	59.2	706	29.7	73	3.1	189	8
2006	3049	1704	55.9	953	31.3	107	3.5	285	9.3
2007	2338	1373	58.7	691	29.6	77	3.3	197	8.4
2008	2795	1668	59.7	770	27.5	108	3.9	249	8.9
2009	2758	1600	58	771	28	111	4	276	10
2010	2012	1035	51.4	654	32.5	92	4.6	231	11.5
2011	1985	1103	55.6	609	30.7	90	4.5	183	9.2
2012	2754	1694	61.5	713	25.9	95	3.4	252	9.2
2013	2906	1715	59	753	25.9	92	3.2	346	11.9

Table 22: License and Registration Violations By Race

	Total	WH		AA		HS		AS	
		#	%	#	%	#	%	#	%
2004	279	148	53	111	39.8	6	2.2	14	5
2005	148	71	48	66	44.6	8	5.4	3	2
2006	233	120	51.5	94	40.3	11	4.7	8	3.4
2007	227	118	52	96	42.3	6	2.6	7	3.1
2008	245	117	47.8	106	43.3	9	3.7	13	5.3
2009	389	167	42.9	177	45.5	21	5.4	24	6.2
2010	290	123	42.4	146	50.3	15	5.2	6	2.1
2011	273	125	45.8	126	46.2	15	5.5	7	2.6
2012	265	119	44.9	120	45.3	16	6	10	3.8
2013	442	204	46.2	180	40.7	26	5.9	32	7.2

Table 23: Equipment Violations by Race

	Total	WH		AA		HS		AS	
		#	%	#	%	#	%	#	%
2004	755	385	51	288	38.1	23	3	59	7.8
2005	527	230	43.6	233	44.2	26	4.9	38	7.2
2006	732	307	41.9	354	48.4	20	2.7	51	7
2007	815	363	44.5	373	45.8	32	3.9	47	5.8
2008	984	409	41.6	456	46.3	54	5.5	65	6.6
2009	1128	473	41.9	510	45.2	54	4.8	91	8.1
2010	775	318	41	369	47.6	32	4.1	56	7.2
2011	571	235	41.2	257	45	25	4.4	54	9.5
2012	727	356	49	283	38.9	22	3	66	9.1
2013	939	446	47.5	340	36.2	39	4.2	114	12.1

CITATIONS

TOTAL NUMBER OF CITATIONS



Figure 24: Total Number of Citations by Year, Race, and Type of Stop

The figure shows total number of citations issued in a given year to drivers of a certain race.

PERCENT OF TOTAL CITATIONS



Figure 25: Proportion of Total Citations by Year, Race, and Type of Stop

The figure shows the proportion of total citations in a year issued to each racial group for all stops, and then separately for moving, equipment and L/R violations.

Comments

- Gaps between Whites and African American Drivers in terms of citations for Equipment and L/R stops

RATES OF CITATION

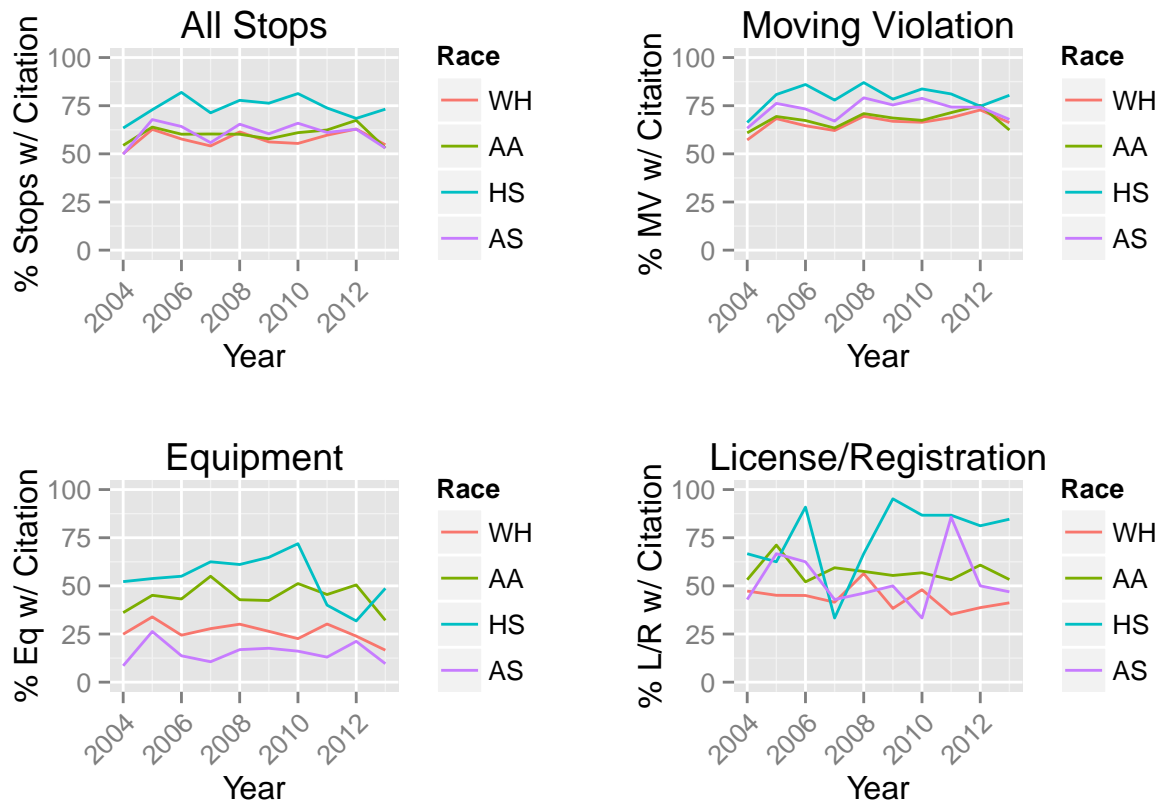


Figure 26: Rates of Citations by Year, Race, and Type of Stop

The figure shows the rates of stops which result in citations for each racial group.

Comments

- Hispanics are far more likely to get a citation, particularly for L/R stops.

Table 24: Citations by Race

	Total	WH		AA		HS		AS	
		#	%	#	%	#	%	#	%
2004	1948	975	52.9	667	36.2	71	3.9	130	7.1
2005	1707	1070	55	642	33	78	4	156	8
2006	2131	1229	51.1	843	35	113	4.7	221	9.2
2007	1854	1003	52.1	700	36.4	82	4.3	140	7.3
2008	2194	1348	54	802	32.1	133	5.3	214	8.6
2009	2240	1260	50.8	843	34	142	5.7	236	9.5
2010	1476	818	44.5	713	38.8	113	6.2	193	10.5
2011	1463	874	50.3	619	35.6	96	5.5	149	8.6
2012	2169	1365	56.5	752	31.2	91	3.8	206	8.5
2013	2365	1293	55.2	675	28.8	115	4.9	261	11.1

Table 25: Moving Violation Citations by Race

	Total	WH		AA		HS		AS	
		#	%	#	%	#	%	#	%
2004	1487	809	54.4	504	33.9	55	3.7	119	8
2005	1653	960	58.1	490	29.6	59	3.6	144	8.7
2006	2042	1100	53.9	641	31.4	92	4.5	209	10.2
2007	1483	853	57.5	438	29.5	60	4	132	8.9
2008	1996	1159	58.1	546	27.4	94	4.7	197	9.9
2009	1895	1071	56.5	529	27.9	87	4.6	208	11
2010	1387	687	49.5	441	31.8	77	5.6	182	13.1
2011	1403	759	54.1	435	31	73	5.2	136	9.7
2012	2028	1234	60.8	536	26.4	71	3.5	187	9.2
2013	1914	1135	59.3	470	24.6	74	3.9	235	12.3

Table 26: Lic/Reg Citations by Race

	Total	WH		AA		HS		AS	
		#	%	#	%	#	%	#	%
2004	139	70	50.4	59	42.4	4	2.9	6	4.3
2005	86	32	37.2	47	54.7	5	5.8	2	2.3
2006	118	54	45.8	49	41.5	10	8.5	5	4.2
2007	111	49	44.1	57	51.4	2	1.8	3	2.7
2008	139	66	47.5	61	43.9	6	4.3	6	4.3
2009	194	64	33	98	50.5	20	10.3	12	6.2
2010	157	59	37.6	83	52.9	13	8.3	2	1.3
2011	130	44	33.8	67	51.5	13	10	6	4.6
2012	137	46	33.6	73	53.3	13	9.5	5	3.6
2013	217	84	38.7	96	44.2	22	10.1	15	6.9

Table 27: Equipment Citations by Race

	Total	WH		AA		HS		AS	
		#	%	#	%	#	%	#	%
2004	217	96	44.2	104	47.9	12	5.5	5	2.3
2005	207	78	37.7	105	50.7	14	6.8	10	4.8
2006	246	75	30.5	153	62.2	11	4.5	7	2.8
2007	331	101	30.5	205	61.9	20	6	5	1.5
2008	362	123	34	195	53.9	33	9.1	11	3
2009	392	125	31.9	216	55.1	35	8.9	16	4.1
2010	293	72	24.6	189	64.5	23	7.8	9	3.1
2011	205	71	34.6	117	57.1	10	4.9	7	3.4
2012	249	85	34.1	143	57.4	7	2.8	14	5.6
2013	213	74	34.7	109	51.2	19	8.9	11	5.2

Table 28: Percent of Stops with Citations by Race

	Stops	WH		AA			HS			AS		
		#	%	Stops	#	%	Stops	#	%	Stops	#	%
2004	1948	975	50.1	1227	667	54.4	112	71	63.4	261	130	49.8
2005	1707	1070	62.7	1005	642	63.9	107	78	72.9	230	156	67.8
2006	2131	1229	57.7	1401	843	60.2	138	113	81.9	344	221	64.2
2007	1854	1003	54.1	1160	700	60.3	115	82	71.3	251	140	55.8
2008	2194	1348	61.4	1332	802	60.2	171	133	77.8	327	214	65.4
2009	2240	1260	56.2	1458	843	57.8	186	142	76.3	391	236	60.4
2010	1476	818	55.4	1169	713	61	139	113	81.3	293	193	65.9
2011	1463	874	59.7	992	619	62.4	130	96	73.8	244	149	61.1
2012	2169	1365	62.9	1116	752	67.4	133	91	68.4	328	206	62.8
2013	2365	1293	54.7	1273	675	53	157	115	73.2	492	261	53

Table 29: Percent of Stops with Citations for Moving Violations by Race

	Stops	WH		AA			HS			AS		
		#	%	Stops	#	%	Stops	#	%	Stops	#	%
2004	1415	809	57.2	828	504	60.9	83	55	66.3	188	119	63.3
2005	1406	960	68.3	706	490	69.4	73	59	80.8	189	144	76.2
2006	1704	1100	64.6	953	641	67.3	107	92	86	285	209	73.3
2007	1373	853	62.1	691	438	63.4	77	60	77.9	197	132	67
2008	1668	1159	69.5	770	546	70.9	108	94	87	249	197	79.1
2009	1600	1071	66.9	771	529	68.6	111	87	78.4	276	208	75.4
2010	1035	687	66.4	654	441	67.4	92	77	83.7	231	182	78.8
2011	1103	759	68.8	609	435	71.4	90	73	81.1	183	136	74.3
2012	1694	1234	72.8	713	536	75.2	95	71	74.7	252	187	74.2
2013	1715	1135	66.2	753	470	62.4	92	74	80.4	346	235	67.9

Table 30: Percent of Stops with Citations for Lic/Reg Violations by Race

	WH			AA			HS			AS		
	Stops	#	%	Stops	#	%	Stops	#	%	Stops	#	%
2004	148	70	47.3	111	59	53.2	6	4	66.7	14	6	42.9
2005	71	32	45.1	66	47	71.2	8	5	62.5	3	2	66.7
2006	120	54	45	94	49	52.1	11	10	90.9	8	5	62.5
2007	118	49	41.5	96	57	59.4	6	2	33.3	7	3	42.9
2008	117	66	56.4	106	61	57.5	9	6	66.7	13	6	46.2
2009	167	64	38.3	177	98	55.4	21	20	95.2	24	12	50
2010	123	59	48	146	83	56.8	15	13	86.7	6	2	33.3
2011	125	44	35.2	126	67	53.2	15	13	86.7	7	6	85.7
2012	119	46	38.7	120	73	60.8	16	13	81.2	10	5	50
2013	204	84	41.2	180	96	53.3	26	22	84.6	32	15	46.9

Table 31: Percent of Stops with Citations for Equipment Violations by Race

	WH			AA			HS			AS		
	Stops	#	%	Stops	#	%	Stops	#	%	Stops	#	%
2004	385	96	24.9	288	104	36.1	23	12	52.2	59	5	8.5
2005	230	78	33.9	233	105	45.1	26	14	53.8	38	10	26.3
2006	307	75	24.4	354	153	43.2	20	11	55	51	7	13.7
2007	363	101	27.8	373	205	55	32	20	62.5	47	5	10.6
2008	409	123	30.1	456	195	42.8	54	33	61.1	65	11	16.9
2009	473	125	26.4	510	216	42.4	54	35	64.8	91	16	17.6
2010	318	72	22.6	369	189	51.2	32	23	71.9	56	9	16.1
2011	235	71	30.2	257	117	45.5	25	10	40	54	7	13
2012	356	85	23.9	283	143	50.5	22	7	31.8	66	14	21.2
2013	446	74	16.6	340	109	32.1	39	19	48.7	114	11	9.6

SEARCHES

TOTAL NUMBER OF SEARCHES



Figure 27: Total Number of Searches by Year, Race, and Type of Stop

The figure shows the overall number of stops in year by racial group.

Comments

- Overall, it seems the number of searches has been declining.
- The format for reporting searches are reported in the data frequently changed over 2004-2012.

PROPORTION OF TOTAL SEARCHES



Figure 28: Proportion of Total Searches by Year, Race, and Type of Stop

The figure shows for each year what proportion of the years searches were conducted on drivers from each racial group

Comments

- African Americans consistently make up the majority of drivers searched.

RATES OF SEARCHES



Figure 29: Rates of Searches by Year, Race, and Type of Stop

The figure shows a given racial group, what proportion of their stops result in a search

Comments

- Hispanic and African American drivers are consistently more likely to be searched during a stop

Table 32: Total Searches by Race

	Total	WH		AA		HS		AS	
		#	%	#	%	#	%	#	%
2004	426	196	46	207	48.6	18	4.2	5	1.2
2005	331	133	40.2	175	52.9	19	5.7	4	1.2
2006	392	132	33.7	224	57.1	30	7.7	6	1.5
2007	312	111	35.6	166	53.2	29	9.3	6	1.9
2008	288	100	34.7	159	55.2	26	9	3	1
2009	262	80	30.5	132	50.4	43	16.4	7	2.7
2010	214	43	20.1	127	59.3	38	17.8	6	2.8
2011	186	43	23.1	117	62.9	24	12.9	2	1.1
2012	117	39	33.3	71	60.7	7	6	0	0
2013	183	60	32.8	110	60.1	11	6	2	1.1

Table 33: Searches for Moving Violations by Race

	Total	WH		AA		HS		AS	
		#	%	#	%	#	%	#	%
2004	306	144	47.1	145	47.4	12	3.9	5	1.6
2005	230	97	42.2	119	51.7	11	4.8	3	1.3
2006	261	91	34.9	145	55.6	20	7.7	5	1.9
2007	192	71	37	94	49	22	11.5	5	2.6
2008	173	69	39.9	87	50.3	16	9.2	1	0.6
2009	139	52	37.4	60	43.2	22	15.8	5	3.6
2010	120	32	26.7	63	52.5	20	16.7	5	4.2
2011	111	26	23.4	67	60.4	17	15.3	1	0.9
2012	72	26	36.1	43	59.7	3	4.2	0	0
2013	102	34	33.3	62	60.8	4	3.9	2	2

Table 34: Searches for Lic/Reg by Race

	Total	WH		AA		HS		AS	
		#	%	#	%	#	%	#	%
2004	31	13	41.9	17	54.8	1	3.2	0	0
2005	18	5	27.8	12	66.7	1	5.6	0	0
2006	36	13	36.1	19	52.8	4	11.1	0	0
2007	27	11	40.7	16	59.3	0	0	0	0
2008	27	7	25.9	17	63	2	7.4	1	3.7
2009	36	7	19.4	22	61.1	6	16.7	1	2.8
2010	37	3	8.1	24	64.9	9	24.3	1	2.7
2011	28	5	17.9	21	75	2	7.1	0	0
2012	25	6	24	15	60	4	16	0	0
2013	43	14	32.6	26	60.5	3	7	0	0

Table 35: Searches for Equipment Violations by Race

	Total	WH		AA		HS		AS	
		#	%	#	%	#	%	#	%
2004	89	39	43.8	45	50.6	5	5.6	0	0
2005	83	31	37.3	44	53	7	8.4	1	1.2
2006	95	28	29.5	60	63.2	6	6.3	1	1.1
2007	93	29	31.2	56	60.2	7	7.5	1	1.1
2008	88	24	27.3	55	62.5	8	9.1	1	1.1
2009	87	21	24.1	50	57.5	15	17.2	1	1.1
2010	57	8	14	40	70.2	9	15.8	0	0
2011	47	12	25.5	29	61.7	5	10.6	1	2.1
2012	20	7	35	13	65	0	0	0	0
2013	38	12	31.6	22	57.9	4	10.5	0	0

Table 36: Percent of Stops with Searches by Race

	Stops	WH		AA		HS		AS				
		#	%	Stops	#	%	Stops	#	%			
2004	1948	196	10.1	1227	207	16.9	112	18	16.1	261	5	1.9
2005	1707	133	7.8	1005	175	17.4	107	19	17.8	230	4	1.7
2006	2131	132	6.2	1401	224	16	138	30	21.7	344	6	1.7
2007	1854	111	6	1160	166	14.3	115	29	25.2	251	6	2.4
2008	2194	100	4.6	1332	159	11.9	171	26	15.2	327	3	0.9
2009	2240	80	3.6	1458	132	9.1	186	43	23.1	391	7	1.8
2010	1476	43	2.9	1169	127	10.9	139	38	27.3	293	6	2
2011	1463	43	2.9	992	117	11.8	130	24	18.5	244	2	0.8
2012	2169	39	1.8	1116	71	6.4	133	7	5.3	328	0	0
2013	2365	60	2.5	1273	110	8.6	157	11	7	492	2	0.4

Table 37: Percent of Stops with Searches for Moving Violations by Race

	Stops	WH		AA		HS		AS				
		#	%	Stops	#	%	Stops	#	%			
2004	1415	144	10.2	828	145	17.5	83	12	14.5	188	5	2.7
2005	1406	97	6.9	706	119	16.9	73	11	15.1	189	3	1.6
2006	1704	91	5.3	953	145	15.2	107	20	18.7	285	5	1.8
2007	1373	71	5.2	691	94	13.6	77	22	28.6	197	5	2.5
2008	1668	69	4.1	770	87	11.3	108	16	14.8	249	1	0.4
2009	1600	52	3.2	771	60	7.8	111	22	19.8	276	5	1.8
2010	1035	32	3.1	654	63	9.6	92	20	21.7	231	5	2.2
2011	1103	26	2.4	609	67	11	90	17	18.9	183	1	0.5
2012	1694	26	1.5	713	43	6	95	3	3.2	252	0	0
2013	1715	34	2	753	62	8.2	92	4	4.3	346	2	0.6

Table 38: Percent of Stops with Searches for Lic/Reg Violations by Race

	WH			AA			HS			AS		
	Stops	#	%	Stops	#	%	Stops	#	%	Stops	#	%
2004	148	13	8.8	111	17	15.3	6	1	16.7	14	0	0
2005	71	5	7	66	12	18.2	8	1	12.5	3	0	0
2006	120	13	10.8	94	19	20.2	11	4	36.4	8	0	0
2007	118	11	9.3	96	16	16.7	6	0	0	7	0	0
2008	117	7	6	106	17	16	9	2	22.2	13	1	7.7
2009	167	7	4.2	177	22	12.4	21	6	28.6	24	1	4.2
2010	123	3	2.4	146	24	16.4	15	9	60	6	1	16.7
2011	125	5	4	126	21	16.7	15	2	13.3	7	0	0
2012	119	6	5	120	15	12.5	16	4	25	10	0	0
2013	204	14	6.9	180	26	14.4	26	3	11.5	32	0	0

Table 39: Percent of Stops with Searches for Equipment Violations by Race

	WH			AA			HS			AS		
	Stops	#	%	Stops	#	%	Stops	#	%	Stops	#	%
2004	385	39	10.1	288	45	15.6	23	5	21.7	59	0	0
2005	230	31	13.5	233	44	18.9	26	7	26.9	38	1	2.6
2006	307	28	9.1	354	60	16.9	20	6	30	51	1	2
2007	363	29	8	373	56	15	32	7	21.9	47	1	2.1
2008	409	24	5.9	456	55	12.1	54	8	14.8	65	1	1.5
2009	473	21	4.4	510	50	9.8	54	15	27.8	91	1	1.1
2010	318	8	2.5	369	40	10.8	32	9	28.1	56	0	0
2011	235	12	5.1	257	29	11.3	25	5	20	54	1	1.9
2012	356	7	2	283	13	4.6	22	0	0	66	0	0
2013	446	12	2.7	340	22	6.5	39	4	10.3	114	0	0

CONTRABAND

NUMBER OF STOPS WITH CONTRABAND FOUND

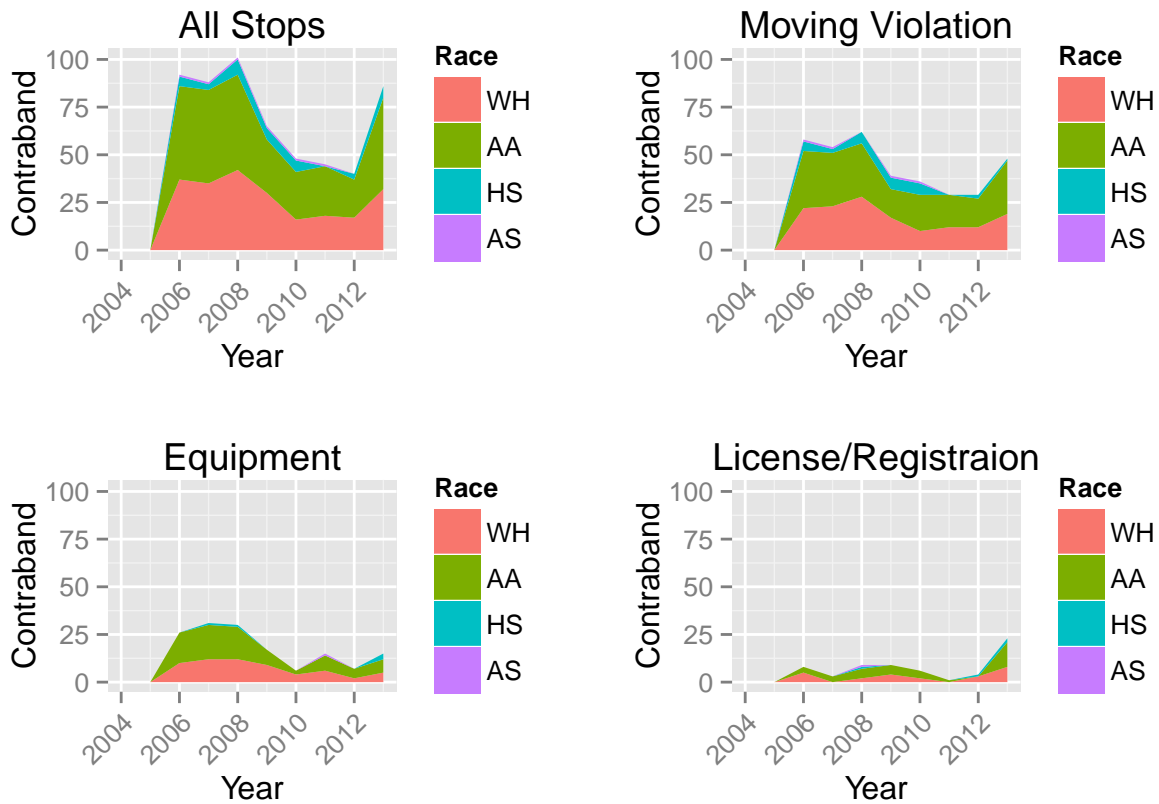


Figure 30: Amount of Contraband by Year, Race, and Type of Stop

The figure shows the total number of stops that resulted in contraband (drugs, paraphernalia, alcohol, weapons) being found.

** Comments**

- The data start in 2006.
- Finding contraband is a relatively rare experience
- Decline mirrors decline in total number of searches
- A back of the envelop calculation suggests a third of searches produce contraband (will follow up, more formally)

PERCENT OF TOTAL CONTRABAND FOUND



Figure 31: Porportion of Contraband by Year, Race, and Type of Stop

The figure shows the porportion of contraband found by driver's race.

** Comments**

- Majority of contraband found from stops involving African Americans and Whites

PERCENT OF STOPS WITH CONTRABAND FOUND



Figure 32: Porportion of Stops with Contraband by Year, Race, and Type of Stop

The figure shows the proportion of the stops which result in contraband being found for each racial group.

Comments

- A relatively small proportion of stops result in contraband being found.

Table 40: Total Contraband Found by Race

	Total	WH		AA		HS		AS	
		#	%	#	%	#	%	#	%
2004									
2005									
2006	92	37	40.2	49	53.3	5	5.4	1	1.1
2007	88	35	39.8	49	55.7	3	3.4	1	1.1
2008	101	42	41.6	50	49.5	8	7.9	1	1
2009	65	30	46.2	28	43.1	6	9.2	1	1.5
2010	48	16	33.3	25	52.1	6	12.5	1	2.1
2011	45	18	40	26	57.8	0	0	1	2.2
2012	40	17	42.5	20	50	3	7.5	0	0
2013	86	32	37.2	48	55.8	6	7	0	0

Table 41: Contraband Found During Moving Violations

	Total	WH		AA		HS		AS	
		#	%	#	%	#	%	#	%
2004									
2005									
2006	58	22	37.9	30	51.7	5	8.6	1	1.7
2007	54	23	42.6	28	51.9	2	3.7	1	1.9
2008	62	28	45.2	28	45.2	6	9.7	0	0
2009	39	17	43.6	15	38.5	6	15.4	1	2.6
2010	36	10	27.8	19	52.8	6	16.7	1	2.8
2011	29	12	41.4	17	58.6	0	0	0	0
2012	29	12	41.4	15	51.7	2	6.9	0	0
2013	48	19	39.6	28	58.3	1	2.1	0	0

Table 42: Contraband Found During Lic/Reg Violations

	Total	WH		AA		HS		AS	
		#	%	#	%	#	%	#	%
2004									
2005									
2006	8	5	62.5	3	37.5	0	0	0	0
2007	3	0	0	3	100	0	0	0	0
2008	9	2	22.2	5	55.6	1	11.1	1	11.1
2009	9	4	44.4	5	55.6	0	0	0	0
2010	6	2	33.3	4	66.7	0	0	0	0
2011	1	0	0	1	100	0	0	0	0
2012	4	3	75	0	0	1	25	0	0
2013	23	8	34.8	13	56.5	2	8.7	0	0

Table 43: Summary of Contraband Found During Equipment Violations

	Total	WH		AA		HS		AS	
		#	%	#	%	#	%	#	%
2004									
2005									
2006	26	10	38.5	16	61.5	0	0	0	0
2007	31	12	38.7	18	58.1	1	3.2	0	0
2008	30	12	40	17	56.7	1	3.3	0	0
2009	17	9	52.9	8	47.1	0	0	0	0
2010	6	4	66.7	2	33.3	0	0	0	0
2011	15	6	40	8	53.3	0	0	1	6.7
2012	7	2	28.6	5	71.4	0	0	0	0
2013	15	5	33.3	7	46.7	3	20	0	0

Table 44: Percent of Stops with Contraband Found by Race

	WH			AA			HS			AS		
	Stops	#	%	Stops	#	%	Stops	#	%	Stops	#	%
2004												
2005												
2006	2131	37	1.7	1401	49	3.5	138	5	3.6	344	1	0.3
2007	1854	35	1.9	1160	49	4.2	115	3	2.6	251	1	0.4
2008	2194	42	1.9	1332	50	3.8	171	8	4.7	327	1	0.3
2009	2240	30	1.3	1458	28	1.9	186	6	3.2	391	1	0.3
2010	1476	16	1.1	1169	25	2.1	139	6	4.3	293	1	0.3
2011	1463	18	1.2	992	26	2.6	130	0	0	244	1	0.4
2012	2169	17	0.8	1116	20	1.8	133	3	2.3	328	0	0
2013	2365	32	1.4	1273	48	3.8	157	6	3.8	492	0	0

Table 45: Percent of Stops with Contraband Found During Moving Violations by Race

	WH			AA			HS			AS		
	Stops	#	%	Stops	#	%	Stops	#	%	Stops	#	%
2004												
2005												
2006	1704	22	1.3	953	30	3.1	107	5	4.7	285	1	0.4
2007	1373	23	1.7	691	28	4.1	77	2	2.6	197	1	0.5
2008	1668	28	1.7	770	28	3.6	108	6	5.6	249	0	0
2009	1600	17	1.1	771	15	1.9	111	6	5.4	276	1	0.4
2010	1035	10	1	654	19	2.9	92	6	6.5	231	1	0.4
2011	1103	12	1.1	609	17	2.8	90	0	0	183	0	0
2012	1694	12	0.7	713	15	2.1	95	2	2.1	252	0	0
2013	1715	19	1.1	753	28	3.7	92	1	1.1	346	0	0

Table 46: Percent of Stops with Rates of Contraband Found During Lic/Reg Violations by Race

	WH			AA			HS			AS		
	Stops	#	%	Stops	#	%	Stops	#	%	Stops	#	%
2004												
2005												
2006	120	5	4.2	94	3	3.2	11	0	0	8	0	0
2007	118	0	0	96	3	3.1	6	0	0	7	0	0
2008	117	2	1.7	106	5	4.7	9	1	11.1	13	1	7.7
2009	167	4	2.4	177	5	2.8	21	0	0	24	0	0
2010	123	2	1.6	146	4	2.7	15	0	0	6	0	0
2011	125	0	0	126	1	0.8	15	0	0	7	0	0
2012	119	3	2.5	120	0	0	16	1	6.2	10	0	0
2013	204	8	3.9	180	13	7.2	26	2	7.7	32	0	0

Table 47: Percent of Stops with Contraband Found During Equipment Violations by Race

	WH			AA			HS			AS		
	Stops	#	%	Stops	#	%	Stops	#	%	Stops	#	%
2004												
2005												
2006	307	10	3.3	354	16	4.5	20	0	0	51	0	0
2007	363	12	3.3	373	18	4.8	32	1	3.1	47	0	0
2008	409	12	2.9	456	17	3.7	54	1	1.9	65	0	0
2009	473	9	1.9	510	8	1.6	54	0	0	91	0	0
2010	318	4	1.3	369	2	0.5	32	0	0	56	0	0
2011	235	6	2.6	257	8	3.1	25	0	0	54	1	1.9
2012	356	2	0.6	283	5	1.8	22	0	0	66	0	0
2013	446	5	1.1	340	7	2.1	39	3	7.7	114	0	0