

A Multi-Level Bayesian Analysis of Racial Bias in Police Shootings at the County-Level in the United States, 2011-2014

MEMO 2: USING THE CRIME RATE RATIO

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Abstract

The original publication included analysis of race-specific crime rates (in the main paper) and the sum and difference of race specific crime rates (in the Appendix). Philippe Lemoine from Cornell commented that it would be more elegant to instead use the ratio of the black and white crime rates. I have revised the analysis using the average crime rate, and the black-to-white crime rate ratio. I check the sensitivity of the original models to this new definition of crime rates. I find no qualitative changes in inference.

I. INTRODUCTION

Table 1 provides the new results from the revised models (for all original models which included crime rate data). Again, we find that all elasticity parameters on crime are very near zero, and there are no significant effects of the crime rate, or the black-to-white crime rate ratio, on the levels of racial bias in police shootings of unarmed black individuals relative to unarmed white individuals. The results of the original publication are fully robust to this sensitivity analysis.

Table 1: Regression results with the log of the police shooting ratio of unarmed black individuals relative to unarmed white individuals. All variables are as in the original publication.

model	Intercept	SD	log(Top.)	log(Pct. B.)	log(Md. In.)	log(Gini)	log(GRP)	log(Ast. Rate)	log(Ast. Ratio)	log(Wps. Rate)	log(Wps. Ratio)
M7	1.373 (0.502)	0.053 (0.045)	0.166 (0.048)					-0.01 (0.073)	0.001 (0.005)		
M8	1.375 (0.547)	0.053 (0.037)	0.126 (0.047)	0.063 (0.058)				-0.015 (0.077)	0.001 (0.004)	-0.01 (0.077)	0 (0.005)
M12	1.477 (0.519)	0.099 (0.043)	0.121 (0.052)	0.083 (0.069)				-0.021 (0.079)	0.001 (0.006)	0.02 (0.077)	0.001 (0.006)
M13	1.754 (0.558)	0.061 (0.041)	0.121 (0.055)	0.037 (0.063)	-0.333 (0.301)						
M16	1.854 (0.546)	0.056 (0.022)	0.153 (0.065)	0.039 (0.063)	-0.372 (0.344)						
M17	1.957 (0.756)	0.075 (0.025)	0.152 (0.064)	0.039 (0.063)		0.743 (1.048)		-0.074 (0.077)	0.001 (0.004)	-0.015 (0.089)	0 (0.006)
M19	1.587 (0.911)	0.121 (0.033)	0.118 (0.048)	0.035 (0.05)		1.172 (0.8)					
M20	2.397 (0.818)	0.071 (0.029)	0.103 (0.055)	0.035 (0.058)							
M21	1.372 (1.456)	0.104 (0.027)	0.165 (0.059)	0.034 (0.061)	-0.295 (0.326)		0.093 (0.317)	-0.029 (0.083)	0.001 (0.004)	-0.006 (0.081)	0 (0.006)
M22	1.503 (1.362)	0.066 (0.023)	0.145 (0.054)	0.052 (0.057)	-0.309 (0.299)		0.109 (0.289)			-0.007 (0.095)	0.001 (0.007)
M23	1.642 (1.45)	0.104 (0.044)	0.116 (0.056)	0.04 (0.066)		0.784 (0.925)	0.103 (0.279)	-0.01 (0.086)	0.001 (0.004)		
M24	1.588 (1.298)	0.075 (0.033)	0.098 (0.043)	0.049 (0.071)		0.574 (1.047)	0.125 (0.219)			0.017 (0.092)	0 (0.006)
M25	1.742 (1.727)	0.097 (0.038)	0.138 (0.062)	0.041 (0.068)	-0.229 (0.359)	0.588 (1.099)	0.089 (0.316)	-0.03 (0.099)	0.001 (0.004)	-0.002 (0.085)	-0.001 (0.007)