

MAN VS. MACHINE: AN INVESTIGATION OF SPEEDING TICKET DISPARITIES BASED ON GENDER AND RACE

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This paper analyzes the extent to which police behavior in giving speeding tickets differs from the ticketing pattern of automated cameras, which provide an estimate of the population of speeders. The novel data are obtained from Lafayette, Louisiana court records, and provide specific details about the ticketed driver as well as a wide range of violation characteristics. In contrast to the automated cameras, the probability of a ticketed driver being female is consistently and significantly higher when the ticket was given by a police officer. For African-American drivers this effect is less robust, though in general still positive and significant. This implies that police use gender and race as a determining factor in issuing a speeding ticket. Potential behavioral reasons for this outcome are discussed. The validity of using automated cameras as a population measure for police-issued tickets is thoroughly investigated and supportive evidence is provided.

JEL classification codes: J71, K42

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I. Introduction

Since the seminal work of Becker (1957), which created the theoretical foundation of economics of discrimination, researchers have empirically investigated the existence of discrimination in a variety of settings ranging from wages to murder

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trials.¹ Of particular relevance to the present work is the investigation of racial and gender bias of police in motor vehicle searches and ticketing for driving violations, which is costly to innocent individuals of a targeted race or gender (Durlauf 2006). As a result of little to no external validity of studies across different police departments, findings are mixed: some researchers find evidence of racial and/or gender discrimination (Antonovics and Knight 2009, Blalock et al. 2007, Makowsky and Stratmann 2009, Anwar and Fang 2006), while others report evidence of no discriminatory behavior by law enforcement officers (Knowles et al. 2001, Persico and Todd 2007, Grogger and Ridgeway 2006).

This paper exploits detailed, unique data from automated speed detection to measure differences in the proportion of speeding tickets issued to gender and racial groups in Lafayette, Louisiana. By comparing the proportion of women and African-Americans who receive tickets from police officers to those who receive tickets from an automated source, it is possible to determine if police use gender or race as a determinant in issuing speeding tickets. I find strong, statistically significant evidence that police consider gender when deciding to ticket speeders, and some evidence that race is also a factor even when accounting for potential endogeneity of the location of officers and automated sources.

In the context of this analysis, it is impossible to distinguish between tastes versus statistical motives for differential ticketing; however, the first-order issue is whether or not these types of behaviors exist at all. Preference-based discrimination means police derive an additional non-monetary benefit by ticketing these individuals. Differential treatment based on gender (or race) is considered statistical discrimination if police officers use gender (or race) as a proxy for a relevant characteristic which is difficult to observe. For example, perhaps police frequently ticket women because, on average, they are considered more dangerous, more likely to change their future behavior as a result of the stop, or even more likely to pay a speeding ticket fine instead of going to court to contest it (Blalock et al. 2007). Though taste for discrimination cannot be ruled out, later I present evidence that police behave rationally in that they issue tickets more frequently to those who speed 16 miles an hour or more over the limit (rather than those who were only traveling 5-15 miles an hour above the speed limit), which is associated with higher fines.

¹ For example, Munnell et al. (1996) control for credit worthiness, labor characteristics, race, gender, age, job history, and neighborhood characteristics in identifying the impact of race on mortgage rejection rates. Argys and Mocan (2004) investigate the impact of race and gender on death row commutation by controlling for characteristics of the criminal and crime, as well as the governor's party affiliation, race, and gender.

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