The Effect of Police Quota Laws

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ABSTRACT: This Article examines the effect of state laws restricting the use of police quotas. Police quotas describe the establishment of a predetermined number of traffic stops, citations, or arrests that officers must make within a particular time period. Some police supervisors have historically used quotas to ensure adequate productivity by officers. However, critics argue that quotas incentivize officers to engage in unnecessary, and in some cases, unconstitutional, coercive behavior. Numerous states across the country have enacted laws banning or limiting the use of police quotas.

This Article analyzes a dataset of traffic and pedestrian stops from eleven law enforcement agencies with varied laws on police quotas over time. It finds minimal evidence that laws limiting police quotas reduce coercive behavior by police. If anything, agencies may engage in slightly more coercive behavior after the introduction of these laws. However, we find evidence that restrictions on the use of police quotas may improve the quality of traffic stops and vehicle searches.

We offer several hypotheses to explain these results. First, the narrow focus of quota laws may limit their effectiveness. Second, the managerial tactics that replace police quotas may incentivize officers to engage in similar amounts of coercive behavior. And third, the relatively weak enforcement mechanisms in state quota bans may reduce their deterrent effect.

We conclude by discussing the implications of these findings for the literature on police regulation. We also offer recommendations for reforming police quota laws.

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INTRODUCTION

Few criminal justice issues inspire more bipartisan outrage than police quotas.[1] Police quotas describe the establishment of a predetermined number of stops, citations, or arrests that officers must complete within a particular time period.[2] Historically, some police supervisors have used quotas as a form of officer evaluation to ensure adequate productivity.[3] But opponents of quotas argue that they incentivize officers to engage in unnecessary, and in some

1. *See* Shaun Ossei-Owusu, *Police Quotas*, 96 N.Y.U. L. REV. 529, 546 (2021) ("The existence of bipartisan and multi-constituent opposition to quotas is apparent from the widespread enactment of these statutory prohibitions.").

2. *See, e.g.*, MD. CODE ANN., PUB. SAFETY § 3-504 (West 2017) (defining "quota" in subsection (a) to mean "the mandating of a finite number of arrests made or citations issued that a law enforcement officer must meet in a specified time period"); CONN. GEN. STAT. ANN. § 7-282d (West 2020) (defining "quota" as "a specified number of [police behaviors] to be issued within a specified period of time"); 31 R.I. GEN. LAWS ANN. § 31-27-25 (West 2010) (similarly defining "[q]uota" to mean "any requirement regarding the number of arrests or investigative stops made, or summonses or citations issued, by an officer regarding motor vehicle traffic or parking violations").

3. Ossei-Owusu, *supra* note 1, at 568–72 (describing several possible defenses of quotas, including the need to deter idleness by officers, increase productivity, and facilitate employee evaluation).

cases unconstitutional, coercive behavior.[4] Evidence from numerous jurisdictions suggest that cash-strapped municipalities sometimes use quotas to encourage high numbers of traffic citations to generate revenue and fill government coffers.[5]

It should come as no surprise that at least twenty-two states have enacted legislation to ban the use of quotas by police officers.[6] Nevertheless, even in jurisdictions that affirmatively outlaw quotas, it is not immediately apparent that the managerial systems that replace quotas produce better outcomes. Take, as an example, the experience of the New York Police Department ("NYPD"). In 2008, Officers Adrian Schoolcraft, Adhyl Polanco, and Pedro Serrano began secretly recording internal management practices of the NYPD.[7] Two years later, the *Village Voice* ran a lengthy exposé on Officer Schoolcraft's recordings.[8] The article exposed numerous examples of supervisors implicitly or explicitly threatening officers with disciplinary action if they failed to meet specific "activity" thresholds.[9] Supervisors relayed the importance of these quotas "down the chain from headquarters . . . over and over again in the roll calls by the precinct commander, the lieutenants, and the sergeants."[10] Audio recordings revealed that precinct supervisors punished officers that "failed to write enough tickets" or "failed to stop-and-frisk enough people."[11]

Shortly after the publication of the *Village Voice* article, the State of New York signed into law a revised statewide ban on the use of quotas by police

4. *Id.* at 575–90 (walking through numerous general critiques of police quotas, including concerns about arbitrariness, revenue generation, unconstitutional behavior, and racially disparate outcomes).

5. *See, e.g.*, U.S. DEP'T OF JUST. CIV. RTS. DIV., INVESTIGATION OF THE FERGUSON POLICE DEPARTMENT 9–15, 91 (2015) [hereinafter FERGUSON REPORT], https://www.justice.gov/sites/default/files/opa/press-releases/attachments/2015/03/04/ferguson_police_department_report.pdf [https://perma.cc/A8FQ-L233] (describing how revenue generation goals influenced the frequency and approach to policing in Ferguson; further explaining how, in order to remedy these problems, the department ought to "[p]rohibit the use of ticketing and arrest quotas, whether formal or informal").

6. Ossei-Owusu, *supra* note 1, at 598–602 (providing the most comprehensive and recent state survey on police quota bans). Since the publication of Ossei-Owusu's article, at least one additional state has enacted a quota ban. Jackie DeFusco, *Virginia Banning Police Ticket Quotas Starting This Summer*, ABC 8 NEWS (May 27, 2022, 9:08 PM), https://www.wric.com/news/virginia-news/virginia-banning-police-ticket-quotas-starting-this-summer [https://perma.cc/4ZQJ-ZKZ6].

7. Floyd v. City of New York, 959 F. Supp. 2d 540, 596 (S.D.N.Y. 2013).

8. Graham Rayman, *The NYPD Tapes: Inside Bed-Stuy's 81st Precinct*, VILL. VOICE (May 4, 2010), https://www.villagevoice.com/2010/05/04/the-nypd-tapes-inside-bed-stuys-81st-precinct [https://perma.cc/S7N8-ZP43]. As the federal district judge in *Floyd* concluded, the recordings provided "abundant evidence" that the NYPD forced "officers to meet numerical . . . goals" for stops, tickets, and arrests, and "threaten[ed] the officers with negative consequences if they did not achieve those goals." *Floyd*, 959 F. Supp. 2d at 596.

9. Rayman, *supra* note 8 ("[T]he tapes indicate that 'activity' was routinely tied to direct and implied threats of discipline.").

10. *Id.*

11. *Id.* It is worth noting that, for some officers, this pressure was greatest near the end of the month or at the end of each quarter when supervisors had "to file activity reports on" officers in each precinct. *Id.* This is relevant to one of the tests we attempt to employ in Appendix B.

supervisors, including pedestrian stop quotas.[12] The law stated that police departments could not "penalize or threaten, expressly or impliedly, an employee" based on their "failure to meet a quota."[13] The law further defined quotas so as to include those based on the number of tickets, summonses, arrests, or stops (including pedestrian stops) made by an officer "within a specified period of time."[14]

Understandably, legislators believed that this measure would curb the kinds of problems identified by the *Village Voice* article. But a few years later, Federal District Judge Shira Scheindlin issued a scathing assessment of the NYPD's allegedly unlawful use of a quota-like system, as part of a lengthy opinion issued in *Floyd v. City of New York*.[15] Shortly after the passage of the New York state law, Judge Scheindlin found that Chief of Patrol James Hall sent a memorandum to supervisors throughout the NYPD "purporting to clarify the NYPD's position on performance quotas."[16] The memorandum clarified that any explicit "number of summonses be issued or arrests be made over a specific period of time has always been prohibited."[17] However, Chief Hall reminded supervisors that the state law "only explicitly [barred] 'discussing *specific numerical objectives*' or linking 'the failure to reach a *specific numerical goal* with an adverse employment consequence.'"[18] In future guidance, the NYPD continued to ask supervisors to "evaluate officers based on their activity numbers" including "summonses, stops, and arrests," and recommended that supervisors discipline officers who obtain unreasonably low numbers.[19]

Thus, as Judge Scheindlin observed, the state law banning police quotas in New York did not eliminate the use of quotas by the NYPD.[20] Rather, the law may have merely relabeled quotas with the euphemistic title "performance goals" that achieved the same practical endpoint—albeit, without a transparent, minimum threshold of acceptable productivity.[21] The NYPD story should worry opponents of police quotas. It suggests that even in states that passed bans or strict limitations on police quotas, the practical effects of these bans may not be as transformative as some hope. Without adequate statutory specification, external oversight, and remedies in the event of unlawful behavior, police quota bans may do little to influence officer conduct. A relatively small body

12. Act of Aug. 30, 2010, 2010 N.Y. Sess. Laws ch. 460 (McKinney) (codified as amended at N.Y. LAB. LAW § 215-a (McKinney 2024)).

13. *Id.*

14. *Id.*

15. Floyd v. City of New York, 959 F. Supp. 2d 540, 600–02 (S.D.N.Y. 2013) ("It is difficult to see any difference between a performance goal and a quota if 'performance goals' operate as Deputy Commissioner Beirne testified.").

16. *Id.* at 600.

17. *Id.*

18. *Id.*

19. *Id.*

20. *Id.* at 602 (describing that this served as a basis for nine grievances filed by officers in the NYPD alleging that the department was still engaged in a quota system even after the 2010 law).

21. *Id.* at 600–01.

of literature, though, has explored the effect of these laws on officer behavior or management practices.

To examine the effect of ticket quota bans on officer behavior, this Article exploits a dataset of traffic stops drawn from the Stanford Open Policing Project database from jurisdictions with varied laws on quotas. This dataset includes millions of traffic stops conducted by the primary state highway patrols in four states—Illinois, Michigan, Rhode Island, and Tennessee—that restricted the use of police ticket quotas between 2010 and 2015. This dataset also includes data from six states that do not have formal state prohibitions on police ticket quotas. Additionally, this Article uses data on around four million pedestrian stops from New York City between 2004 and 2022. This includes the time period before and after the passage of the revised New York law prohibiting pedestrian stop quotas.

We find minimal evidence that state laws banning police quotas reduce the overall amount of coercive actions by officers. In fact, in the state highway patrol data, we observe a slight increase in the number of traffic citations issued per month, and the rate of citations issued per traffic stop after the passage of police ticket quota bans. We similarly find minimal evidence that the New York law contributed to any significant decline in pedestrian stops by the NYPD. Nevertheless, we find some evidence that the quality of traffic enforcement may improve after the passage of these laws, as measured by the rate for contraband discovered during vehicle searches in our state patrol data.

We offer several hypotheses for these findings.[22] First, these findings may be the result of the narrow focus of many quota bans. The language in many state laws merely ban explicit quotas based on "arrest[s],"[23] "traffic citations,"[24] "investigative stops,"[25] and/or "parking violations."[26] Often, this sort of statutory language allows supervisors to use these or similar metrics as part of a broader evaluation system, so long as a single coercive behavior is not the "sole"[27] or "exclusive means of evaluating"[28] an officer's performance. This leaves open

22. Additionally, we argue that our findings have several implications for the literature on police regulation. These findings add to the body of literature on regulatory evasion by police departments. Much like police departments have successfully evaded other external regulations of officer conduct, like regulations on coercive interrogation procedures, our evidence suggests that departments may be able to evade or mediate the effects of bans on ticket quotas. Moreover, these results suggest that states should carefully craft their statutory language to avoid this type of regulatory evasion.

23. ARK. CODE ANN. § 12-6-302 (2016); *see also* CAL. VEH. CODE § 41602 (West 2021) (using this same language).

24. MINN. STAT. ANN. § 169.985 (West 2016); *see also* MICH. COMP. LAWS ANN. § 257.750 (West 2021) (using similar language to prohibit quotas based on the "number of citations"); MO. ANN. STAT. § 304.125 (West 2009 & Supp. 2023) (using similar language in banning quotas based on "citations for traffic violations on a daily, weekly, monthly, quarterly, yearly, or other quota basis").

25. 31 R.I. GEN. LAWS ANN. § 31-27-25(b)(2) (West 2010).

26. *Id.*

27. N.J. STAT. ANN. § 40A:14-181.2 (West 2019), *amended by* 2021 N.J. Sess. Law. Serv. Ch. 249 (West).

28. CONN. GEN. STAT. ANN. § 7-282d (West 2020).

the possibility that departments will continue to evaluate officers, at least in part, based on some quantification of their coercive behaviors.

Second, and relatedly, this finding may be the result of the unintended effects of the managerial tactics that replaced quotas. Some evidence suggests that agencies have replaced quotas with information sharing systems that publicize officer productivity statistics in hopes of encouraging competition. The competitive pressures created by these alternative managerial approaches may motivate some officers to engage in similar or more coercive actions than under prior quota systems. While this possibility does not justify the use of quotas by any department, we argue that this hypothesis has some broader implications for the study of police quotas in the future.

Third, relatively weak enforcement mechanisms in state quota bans may reduce their deterrent effect. Enforcing quota laws can be challenging. In some of the few documented cases where officers have objected to an evaluation system on quota grounds, police unions or officers have initiated litigation against law enforcement agencies alleging violation of state law.[29] Even so, enforcement of police quota laws appears rare, and the statutes remain "under-litigated."[30] While at least one prominent scholar has argued for the use of pension forfeitures as a remedy for violation of police quota laws, no state law currently includes such "an extraordinary" remedy.[31]

We conclude by offering some recommendations for reforming police quota laws. Drawing on the example of recent reforms to the New Jersey police quota law, we argue that states should consider explicitly banning the publication of officer productivity data internally within a department. Such internal publication of data may contribute to competition among officers, and potentially create many of the same harms as quotas. And we offer additional enforcement mechanisms that states could adopt to ensure managerial compliance with quota bans.

We have divided this Article into four parts. Part I provides some background on efforts by police departments to measure and comparatively evaluate officer productivity. It situates the state efforts to ban quotas within this broader effort to quantify officer behavior. Part II lays out our methodology approach for evaluating the effects of police quota laws. Part III summarizes our core findings and discusses the limitations of the available datasets. Part IV presents preliminary hypotheses for the statistical patterns we observe and offers some normative recommendations for reforming police quota laws.

I. ASSESSING OFFICER PRODUCTIVITY

Extensive literature has considered the ways to measure the effectiveness of a policing organization. For example, policing scholars have debated whether

29. *See infra* note 384 and accompanying text.

30. Ossei-Owusu, *supra* note 1, at 548.

31. *Id.* at 596.

crime rates,[32] community satisfaction,[33] clearance rates,[34] or some other metric should be used to judge the effectiveness of a law enforcement agency. A comparably smaller literature, though, has examined how police management should assess the effectiveness or productivity of individual rank-and-file officers.

It can be challenging for supervisors to develop a fair and accurate quantification approach for officer productivity or effectiveness. Police officers engage in a wide range of daily behaviors that may advance various goals of law enforcement in some manner.[35] Depending on their role within the department, a police officer on any given day may attend a community policing meeting, testify in court, complete a criminal investigation, interview witnesses to crimes, collect evidence, complete traffic stops, make arrests, issue citations, and more.[36] The goal of police management is to equitably oversee officers engaged in a wide range of different policing behaviors to ensure officers are both productive and advancing the public good. How, then, can management create a uniform assessment tool that quantifies the completion of these tasks?

This Part summarizes some of the tools that police management have used over time to judge how to assess officers. Some departments have historically responded to this managerial challenge by setting explicit productivity quotas—or minimum quantitative thresholds that officers must meet over set periods of time. As prior scholars have persuasively argued, these quota systems can create perverse incentives for officers to engage in harmful

32. *See, e.g.*, Aaron Chalfin & Justin McCrary, *Are U.S. Cities Underpoliced? Theory and Evidence*, 100 REV. ECON. & STAT. 167, 167 (2018) (concluding that police departments are understaffed, and that better staffing may contribute to lower crime rates).

33. *See, e.g.*, CHRISTOPHER STONE, TODD FOGLESONG & CHRISTINE M. COLE, HARV. KENNEDY SCH.: PROGRAM IN CRIM. JUST. POL'Y & MGMT., POLICING LOS ANGELES UNDER A CONSENT DECREE: THE DYNAMICS OF CHANGE AT THE LAPD 44–53 (2009), https://www.hks.harvard.edu/publications/policing-los-angeles-under-consent-decree-dynamics-change-lapd (on file with the *Iowa Law Review*) (measuring the success of the LAPD reform process by, in part, relying on community satisfaction surveys).

34. *See, e.g.*, Paul G. Cassell & Richard Fowles, *Handcuffing the Cops? A Thirty-Year Perspective on* Miranda*'s Harmful Effects on Law Enforcement*, 50 STAN. L. REV. 1055, 1132 (1998) (finding *Miranda* caused a reduction in clearance rates; concluding that this reflected the harmful effects of *Miranda* on policing success).

35. Roy H. Herndon III, *Productivity Analysis for Basic Police Patrol Activities*, 74 F.B.I. L. ENF'T BULL. 20, 20 (2005) ("Law enforcement officers prove valuable to their communities in a variety of ways, not all of which can be measured easily."); Jeff Asher & Ben Horwitz, *How Do the Police Actually Spend Their Time?*, N.Y. TIMES (Nov. 8, 2021), https://www.nytimes.com/2020/06/19/upshot/unrest-police-time-violent-crime.html (on file with the *Iowa Law Review*) (showing a detailed breakdown of the various tasks that occupy officer time in jurisdictions across the country); Wesley G. Skogan, *Efficiency and Effectiveness in Big-City Police Departments*, 36 PUB. ADMIN. REV. 278, 278–79 (1976) (noting that officers may be primarily tasked with "facilitat[ing] the smooth flow of traffic through the city, interced[ing] in vexsome family disputes, and often . . . perform[ing] mundane tasks of city management" like "reporting streetlight outages").

36. Asher & Horwitz, *supra* note 35, at 20–21 (breaking down police tasks, including responding to calls, investigating incidents, administrative duties, responding to noncriminal disturbances and traffic accidents, and more). *See generally* Christopher Slobogin, *Testilying: Police Perjury and What to Do About It?*, 67 U. COLO. L. REV. 1037 (1996) (discussing in detail the phenomenon of police officers lying when testifying in court, including evidentiary hearings and trials).

conduct.[37] This has led many states to explicitly ban the use of quotas. As an alternative to quota systems, some departments have established so-called activity management systems that quantify officer behavior into more complicated point systems.[38] While these alternative systems generally do not involve the setting of explicit minimum thresholds of expected productivity on single metrics, some departments nevertheless internally publicize data generated by these systems in hopes of motivating officers to increase their productivity relative to their peers.[39] Police executives have argued that, as long as departments do not establish strict thresholds that an officer must satisfy over a period of time, these alternative systems do not necessarily violate many state quota bans.[40] The subparts that follow consider these various approaches to quantifying officer productivity.

A. QUOTA SYSTEMS

In his seminal article on the topic, Professor Shaun Ossei-Owusu defined police quotas as "formal and informal measures that require law enforcement to have a certain number of contacts with individuals or issue a certain number of citations or arrests."[41] This definition integrates four common features of most quota systems: (1) some level of formality, (2) some type of numerical quantification of an acceptable threshold of behavior, (3) some requirement that officers meet this threshold, and (4) the possibility of negative employment action in the event an officer fails to meet this quota.[42] Professor Ossei-Owusu's article pointed to examples of quotas, either informal or formal, in large cities like Brooklyn, New York; Denver, Colorado; and Tucson, Arizona; as well as smaller cities like Ferguson, Missouri; Gretna, Louisiana; and Santee, South Carolina.[43]

In the time since Ossei-Owusu's publication, news stories of police quotas have continued to make headlines in cities across the country. For example, officers in Richardson, Texas have recently filed a lawsuit against the police department alleging that some supervisors use impermissible quotas in violation of state law.[44] Subsequent emails revealed that some Richardson

37. *See, e.g.*, Ossei-Owusu, *supra* note 1, at 575–82.

38. While the exact number of agencies that employ these point systems is somewhat unclear, at least one state policing group claims these systems are common. *See* Amicus Curiae Brief of the Ill. Ass'n of Chiefs of Police at 1, Policemen's Benevolent Lab. Comm. v. City of Sparta, 181 N.E.3d 848 (Ill. 2020) (No. 125508) (stating that, among the 400 law enforcement agencies in the State of Illinois, they "almost universally engage in activities targeting enforcement of Illinois traffic laws, including issuance of traffic citations. . . . [M]any of these jurisdictions have adopted point-based systems for evaluating duty performance by the officers they employ").

39. *See infra* notes 235–37 and accompanying text (providing New Jersey as an example).

40. *See infra* notes 233–43 and accompanying text.

41. Ossei-Owusu, *supra* note 1, at 537.

42. *Id.* (citing these "four features" of police quotas).

43. *Id.* at 538–42.

44. Virginia Mingorance, *Two Police Officers Sue the City of Richardson over an Alleged Illegal Ticket Quota*, LOCAL PROFILE (July 28, 2022, 10:00 AM), https://www.localprofile.com/community/law suit-richardson-police-ticket-quota-7505365 [https://perma.cc/EQ3U-UPSM].

supervisors allegedly expected officers to reach various "averages" or "productivity" metrics each month for both arrests and citations.[45] If proven true, these officers' allegations would seem to constitute a violation of Texas state law, which bans quota systems based on traffic citations.[46] In Los Angeles, California, an officer recently filed a retaliation suit alleging that a commander allegedly used an illegal quota mandating a specific number of gang contacts, "gun-related arrests[,] and [gun] seizures."[47] If true, this approach would violate a California state law that explicitly bans arrest quotas.[48] And in Evansville, Indiana, the former president of the department's Fraternal Order of Police claimed to have faced possible suspension for his failure to enforce a quota requirement.[49] That officer claimed that the department required "officers to self-initiate at least one 'enforcement action' per four-day workweek."[50] The term "enforcement action" included any arrest, citation, or the issuance of written warnings.[51]

While there may be occasional news headlines about police quotas, it is difficult to estimate the prevalence of police quotas across the country. One of the best estimates comes from a 2017 national survey of police officers conducted by the Pew Research Center.[52] That report found that around thirty-seven percent of police officers reported that their department used some sort of arrest or ticket quota.[53] Among these, the overwhelming majority reported that their quota system involved "informal expectations" rather than "formal expectations."[54] As an empirical matter, this can make the study of police quotas challenging. Within a large police department, some supervisors may use quotas. Others may not. And even if some supervisors employ quotas, such expectations are unlikely to be formally memorialized in written policy.

The harms of police quotas are well-documented. First, police quotas may theoretically influence an officer's decision to engage in coercive action for

45. *Id.*

46. TEX. TRANSP. CODE ANN. § 720.002 (West 2009) (stating that no agency may "establish or maintain, formally or informally, a plan to evaluate, promote, compensate, or discipline . . . a peace officer according to the officer's issuance of a predetermined or specified number of any type or combination of types of traffic citations").

47. *LAPD Officer Sues the City over Gang-Related Arrest Quotas*, L.A. MAG. (Oct. 6, 2022), https://www.lamag.com/citythinkblog/lapd-officer-sues-the-city-over-gang-related-arrest-quotas [https://perma.cc/BW7V-HFCW].

48. CAL. VEH. CODE § 41602 (West 2021).

49. Houston Harwood, *An Evansville Police Officer Says He Was Disciplined for Not Enforcing a 'Quota,'* EVANSVILLE COURIER & PRESS (Jan. 23, 2023, 5:12 PM), https://www.courierpress.com/story/news/local/2023/01/13/evansville-police-department-sgt-dj-thompson-says-chief-billy-bolin-has-put-a-quota-system-in-place/69798477007 [https://perma.cc/8PQ7-FGAV].

50. *Id.*

51. *Id.* (noting that the officer also alleged that the Evansville Police Department publicly posted officer statistics on enforcement action).

52. Rich Morin, Kim Parker, Renee Stepler & Andrew Mercer, *Inside America's Police Departments*, PEW RSCH. CTR. (Jan. 11, 2017), https://www.pewresearch.org/social-trends/2017/01/11/inside-americas-police-departments [https://perma.cc/8FCQ-8VL6].

53. *Id.*

54. *Id.*

reasons unrelated to public safety or law enforcement need. Recent events in Rockford, Michigan perhaps best illustrate this risk.[55] There, police in 2019 stopped Black driver Thurman King for allegedly failing to stop completely at a four-way stop and having a nonoperational license plate light.[56] The stop occurred after King had pulled into his home's driveway.[57] After King exited the vehicle, King claimed he was thrown to the ground by police and spent fourteen hours in jail for resisting and obstructing police.[58] King filed a lawsuit against the Rockford Police Department alleging false arrest and violations of his federal constitutional rights and state law.[59] In a ruling in October of 2022 denying Rockford's motion for summary judgment, the federal district court found potentially persuasive evidence that the Rockford Police Department employed a quota system that required officers to conduct "a minimum number of traffic stops, enforceable through discipline or threat of discipline" which could "create[] an inference that the [d]epartment was engaged in a pattern and practice that resulted in depriving Plaintiff of his Fourth Amendment rights."[60] In Rockford, not only were officers expected to make at least two stops per ten-hour shift, traffic stop statistics were displayed in the hallway of the police station.[61] King has argued that the presence of such a quota system significantly heightens the risk that officers will foreseeably conduct traffic stops for pretextual reasons to avoid discipline, increasing the risk of false seizures and other misconduct.

Second, quotas may be used as part of a broader attempt to generate revenue from policing.[62] This may further cause officers to focus time on meeting these quotas at the expense of solving more serious crimes. For example, one study by Rebecca Goldstein, Michael W. Sances, and Hye Young You found that as departments collect a greater share of their overall revenue from traffic fines and fees, they also tend to solve fewer violent and property crimes.[63] This should be particularly concerning since, according to one examination by *The New York Times*, over 730 communities in the United States "rely on fines and fees,"

55. Kalyn Womack, *Michigan Police Quotas May Target Black Drivers, Judge Says*, ROOT (Oct. 27, 2022), https://www.theroot.com/michigan-police-quotas-may-target-black-drivers-judge-1849712100 [https://perma.cc/CDY5-VBN7] (tying traffic quotas to increased "pretextual traffic stops and police misconduct," along with racial targeting).

56. John Agar, *Black Motorist Says Rockford Police "Quota" for Traffic Stops Led to Arrest, Assault*, MLIVE (Oct. 26, 2022, 3:41 PM), https://www.mlive.com/news/grand-rapids/2022/10/black-motorist-says-rockford-police-quota-for-traffic-stops-led-to-arrest-assault.html [https://perma.cc/8GSS-33EA].

57. *Id.*

58. *Id.*

59. *Id.*

60. *Id.*

61. *Id.*

62. Joel Rose, *Despite Laws and Lawsuits, Quota-Based Policing Lingers*, NPR (Apr. 4, 2015, 4:47 AM), https://www.npr.org/2015/04/04/395061810/despite-laws-and-lawsuits-quota-based-policing-lingers [https://perma.cc/JZ7N-F5R6] (using Ferguson as an example and connecting quotas to revenue generation).

63. *See generally* Rebecca Goldstein, Michael W. Sances & Hye Young You, *Exploitative Revenues, Law Enforcement, and the Quality of Government Service*, 56 URB. AFFS. REV. 5 (2018).

generated in large part from traffic enforcement, to cover at least ten percent of their overall budgets.[64] Take as an example the story of the Windsor, Virginia Police Department.[65] Like "nearly [one hundred] Virginia communities," Windsor receives federal grants that potentially encourage the Police Department to write tickets.[66] While Windsor's police chief denies the use of any quota system, open information requests revealed an email to officers where the chief reminded them "that you are required to write a minimum of two tickets per hour while on grant time and there is zero tolerance."[67]

Third, scholars have also worried that quotas may disproportionately harm communities of color.[68] The events in New Brunswick, New Jersey provide a useful example.[69] There, a media investigation found that police officers used a practice they referred to as "hunting at the border" to fulfill quota requirements.[70] Officers informally understood that they would receive additional compensation and overtime benefits by increasing their citation count.[71] These officers would allegedly even compete to see who could write the most tickets.[72] And whistleblowing officers claimed that they could easily

64. Mike McIntire & Michael H. Keller, *The Demand for Money Behind Many Police Traffic Stops*, N.Y. TIMES (Nov. 2, 2021), https://www.nytimes.com/2021/10/31/us/police-ticket-quotas-money-funding.html (on file with the *Iowa Law Review*); *see also* Mike Maciag, *Addicted to Fines*, GOVERNING (Aug. 19, 2019), https://www.governing.com/archive/gov-addicted-to-fines.html [https://perma.cc/KHR2-FLMR] (describing the reliance of small towns on revenue generated from traffic enforcement and connecting this phenomenon to quotas).

65. McIntire & Keller, *supra* note 64.

66. *Id.*

67. *Id.* The Office of the State Inspector General in Virginia stated in a 2013 report that these kind of rules could result in "excessive enforcement solely to generate additional revenue" and recommended steps to separate local law enforcement from revenue generation incentives. *Id.*; OFF. OF THE STATE INSPECTOR GEN., COMMONWEALTH OF VA., REPORT ON THE INDEPENDENT EVALUATION OF COURT FINES AND FEES 26 (2013), https://rga.lis.virginia.gov/Published/2013/RD176/PDF [https://perma.cc/2R6Z-ATGK].

68. *See, e.g.*, Mark Puente, Stan Donaldson Jr. & Cid Standifer, *How a Wealthy Cleveland Suburb Profits from Ticketing Black Drivers*, MARSHALL PROJECT (Nov. 21, 2022, 6:00 AM), https://www.themarshallproject.org/2022/11/21/ohio-cleveland-traffic-tickets-black-drivers-bratenahl [https://perma.cc/RD3S-DM5H] (using Bratenahl, Ohio as an example of a city that, while claiming to not technically employ a quota, engages in significant traffic enforcement that falls primarily on Black drivers); *see also* Shaun Ossei-Owusu, *Race and the Tragedy of Quota-Based Policing*, AM. PROSPECT (Nov. 3, 2016), https://prospect.org/justice/race-tragedy-quota-based-policing [https://perma.cc/49M9-N5MR] (stating "[m]oreover, a police quota, as opposed to racial profiling, but sometimes in concert with it, can be the prelude to minorities' ensnarement in the legal system (à la Ferguson) or the beginning of a fatal police interaction," and providing details on the Ferguson case).

69. Julian Shen-Berro, *N.J. Police Targeted Black and Latino Neighborhoods to Fulfill Ticket Quotas, Officers Say*, NBC NEWS (Feb. 14, 2020, 3:56 PM), https://www.nbcnews.com/news/nbcblk/n-j-police-targeted-black-latino-neighborhoods-fulfill-ticket-quotas-n1137191 [https://perma.cc/2HKA-U6K7] (describing the targeting of communities of color by the North Brunswick Police Department to satisfy quota requirements).

70. *Id.*

71. *See* Sarah Wallace, *NJ Police Targeted Black and Latino Neighborhoods to Fulfill Ticket Quotas, Cops Say*, NBC N.Y. (Feb. 13, 2020, 8:08 PM), https://www.nbcnewyork.com/investigations/nj-police-targeted-black-and-latino-neighborhoods-to-fulfill-ticket-quotas-cops-say/2289221 [https://perma.cc/5NGY-FAPQ].

72. *Id.*

find numerous low-level violations on the roadways near the border of North Brunswick and New Brunswick, which are heavily trafficked by drivers of color.[73] The result is that racial minorities, particularly Black and Latino drivers, were disproportionately impacted by the alleged existence of the quota system. Similar accusations of racial profiling tied to police quota systems have emerged in other jurisdictions across the country, including Cranston, Rhode Island,[74] and the Michigan State Police,[75] just to name a few.

Given the significant potential harms generated by police quotas, many states have moved to regulate or ban their use. The next Section considers the scope of these state laws.

B. BANS ON QUOTAS

At least twenty-two states have banned quotas in some way.[76] Broadly, nearly all these state statutes define a quota as supervisory requirements that officers engage in some set amount of coercive conduct within a particular time frame. These laws vary considerably in other respects. For one thing, these laws vary in the scope of unauthorized conduct. Some, like those in Connecticut,[77] Florida,[78] Illinois,[79] Michigan,[80] Minnesota,[81] Missouri,[82]

73. *See id.*

74. Sam LaFrance & Olivia DaRocha, *ACLU of R.I. Calls for Halt of Cranston PD's 'Traffic Stop Quota', Says It Encourages Racial Profiling*, ABC 6 (July 19, 2021, 11:43 AM), https://www.abc6.com/aclu-of-r-i-calls-for-halt-of-cranston-pds-traffic-stop-quota [https://perma.cc/GQL5-99KW] (involving a case where departmental policy allegedly required officers to stop two cars per shift).

75. Kate Wells, *State Police Traffic Quotas Could Lead to Racial Profiling, ACLU Says*, MICH. PUB. (Aug. 24, 2016, 5:52 PM), https://www.michiganradio.org/news/2016-08-24/state-police-traffic-quotas-could-lead-to-racial-profiling-aclu-says [https://perma.cc/LLN8-FG85] (providing statements from a Michigan trooper about the incentives created by quotas to target minority drivers because of a belief that those drivers are less likely to challenge the ticket in court).

76. Ossei-Owusu, *supra* note 1, at 598–602 app. A (showing a list of all existing quota restrictions as of May 2021). Virginia has also recently passed a quota ban. *See* DeFusco, *supra* note 6.

77. CONN. GEN. STAT. ANN. § 7-282d (West 2020) (defining quota as a particular number of "summonses for motor vehicle violations to be issued within a specified period of time").

78. FLA. STAT. ANN. § 316.640(8)(b) (West Supp. 2024) (stating that police "may not establish a traffic citation quota").

79. 65 ILL. COMP. STAT. ANN. 5/11-1-12 (West Supp. 2005) (limiting its quota ban to those establishing "a specific number of citations within a designated period of time").

80. MICH. COMP. LAWS ANN. § 257.750(1) (West 2021) (specifying that police may "not be required to issue a predetermined or specified number of citations for violations . . . including parking or standing violations").

81. MINN. STAT. ANN. § 169.985 (West 2016) (prohibiting the use of "a quota for the issuance of traffic citations").

82. MO. ANN. STAT. § 304.125 (West 2009 & Supp. 2023) (barring quotas based on "citations for traffic violations").

Nebraska,[83] Pennsylvania,[84] South Carolina,[85] and Tennessee[86] are limited to tickets or equivalent enforcement of traffic violations. By contrast, those in Arkansas,[87] California,[88] and Louisiana[89] prohibit quotas based on the number of arrests completed by an officer. Other states, like Maryland,[90] New Jersey,[91] and Rhode Island[92] include multiple categories of coercive behavior into their definition of quotas.

Quota laws also vary in their method of enforcement. Most seemingly leave enforcement to individual officers or police unions. This means enforcement may need to occur through lawsuits seeking to enjoin a police management tool in violation of the state quota ban. Conversely, at least one state—Tennessee—has recently amended their state statute to classify use of an unauthorized quota as a criminal offense.[93]

Finally, states' statutes differ in the extent to which they articulate exceptions to their quota bans. States like Illinois[94] and South Carolina[95] clarify that their statutes still permit police supervisors to consider other "points of contact" by a police officer other than those included in their state's definition of a quota.

83. NEB. REV. STAT. § 48-235 (2021) (prohibiting police agencies from "requir[ing] a law enforcement officer . . . to issue a certain number or percentage of traffic citations").

84. 71 PA. STAT. AND CONS. STAT. ANN. § 2001 (West 2021) (defining quotas so as to include orders that officers "issue a certain number of traffic citations, tickets or any other type of citation on any daily, weekly, monthly, quarterly or yearly basis").

85. S.C. CODE ANN. § 23-1-245(A) (Supp. 2023) (barring requirements for officers to "meet a quota for the number of citations he issues during a designated period of time").

86. TENN. CODE ANN. § 39-16-516(a) (Supp. 2023) (prohibiting the "issuance of a predetermined or specified number of any type or combination of types of traffic citations").

87. ARK. CODE ANN. § 12-6-302 (2016) (barring police from using any "arrest quota").

88. CAL. VEH. CODE § 41602 (West 2021) ("No state or local agency" is permitted to "establish any policy requiring . . . an arrest quota.").

89. LA. STAT. ANN. § 40:2401.1 (2022) (defining quota as "a predetermined or specified number of any type or combination of types of arrests within a specified period").

90. MD. CODE ANN., PUB. SAFETY § 3-504(a) (West 2017) ("In this section, 'quota' means the mandating of a finite number of arrests made or citations issued that a law enforcement officer must meet in a specified time period.").

91. N.J. STAT. ANN. § 40A:14-181.2 (West 2019) ("[Departments] shall not establish any quota for arrests or citations.").

92. 31 R.I. GEN. LAWS ANN. § 31-27-25(b)(2) (West 2010) (defining quota to include "any requirement regarding the number of arrests or investigative stops made, or summonses or citations issued, by an officer regarding motor vehicle traffic or parking violations").

93. TENN. CODE ANN. § 39-16-516(d) (Supp. 2023) (making it a class B misdemeanor to violate the statute).

94. 65 ILL. COMP. STAT. ANN. 5/11-1-12 (West Supp. 2005) ("Nothing in this Section shall prohibit a municipality from evaluating a police officer based on the police officer's points of contact.").

95. S.C. CODE ANN. § 23-1-245(B) (Supp. 2023) ("Nothing in this section shall prohibit a law enforcement agency . . . from evaluating an officer's performance based on the officer's points of contact.").

Others, like Connecticut,[96] Maryland,[97] Rhode Island,[98] and Tennessee,[99] further clarify that police agencies are free to continue to use quantitative measures of policing behavior, provided these are not the "sole" or "exclusive" means for evaluating officers.

Overall, while many state laws contain broadly similar prohibitions on the use of strict quantifications of some types of coercive police behavior in officer evaluation, these laws vary considerably in their scope, enforcement, and exceptions.

C. POINT SYSTEMS AS AN ALTERNATIVE TO QUOTAS

Regardless of whether a supervisor employs a quota system to evaluate officers, police management still may attempt to quantify the productivity of officers through some other means.[100] This type of quantification helps supervisors conduct regular performance evaluations and take various employment actions, including promotions, demotions, and disciplinary action.[101] Quantification of officer performance can be important to ensure that officers are evaluated on uniform metrics to avoid bias or prejudice in these types of employment decisions.[102] As an alternative to quotas, some police departments require that officers complete daily, weekly, or monthly activity reports to help management engage in performance oversight. As an example, Figure 1 shows an example of a daily activity log used by the Conway Police Department in Conway, Arkansas, reproduced from a study published by Roy H. Herndon III in 2005 in the FBI Law Enforcement Bulletin.[103]

96. CONN. GEN. STAT. ANN. § 7-282d (West 2020) ("Nothing in this section shall prohibit such department from using data . . . provided such data is not the exclusive means of evaluating such performance.").

97. MD. CODE ANN., PUB. SAFETY § 3-504(c)(2) (West 2017) (permitting the "collecting, analyzing, and applying information concerning the number of arrests and citations" issued by an officer, as long as it does not explicitly conflict with their state quota ban).

98. 31 R.I. GEN. LAWS ANN. § 31-27-25(c) (West 2010) (allowing use of this information, so long as it "is not the exclusive means of evaluating" an officer).

99. TENN. CODE ANN. § 39-16-516 (Supp. 2023) (similarly permitting use of this data, as long as it is not the "sole" means of evaluation).

100. *See, e.g.*, Amicus Curiae Brief of the Ill. Ass'n of Chiefs of Police, *supra* note 38, at 2 (explaining how "Activity Point Systems (APS) for the management and evaluation of law enforcement personnel . . . are widely used by law enforcement agencies across the state to maintain accountability" even with a state law in Illinois banning police quotas).

101. *See, e.g.*, John Zebrowski, *Don't Take Away Tools for Police Chiefs to Assess Crime-Fighting Performance*, NORTHJERSEY.COM (Aug. 2, 2021, 9:02 AM), https://www.northjersey.com/story/opinion/2021/08/02/nj-police-chiefs-we-need-assessment-tools/5451746001 [https://perma.cc/YUM8-LGCA] (describing measurements of officer productivity like the disposition of arrests and citations as a "critical tool" that management needs "when evaluating poorly-performing officers").

102. Kate Levine, *Discipline and Policing*, 68 DUKE L.J. 839, 842, 898 (2019) (labeling police discipline in many departments as "uneven, arbitrary, and entirely discretionary" in some cases, and further arguing for the development of internal policies that minimize the possibility of such arbitrariness).

103. Herndon III, *supra* note 35, at 21.

Figure 1: Officer Daily Activity Report from Conway, Arkansas
(Reproduced from Herndon, 2005)

Police Department
Officer's Daily Activity Report

T.Jones	1357	03-01-04	51
Officer	Badge No.	Date	District

4063	12	16758	16800	42
Unit	Spike	Odometer Reading		Total Miles

Criminal Arrest					
Felony	0	Misdemeanor	2		
Traffic Arrest					
DWI	0	Warning	11		
Moving	4	Nonmoving	2		
Reports and Calls					
Accidents	2	Incidents	3	Other	6
Hours Spent					
Scheduled on Duty	10	On Detail: Court	2		

Others Logged/Notes:

1) Alarm call: 1416 Willow Street - false, human error
2) Alarm call: 1201 Oak Street - false, mechanical
3) Traffic assist: Salem Road and Prince Street
4) Road hazard: U.S. Highway 64 and 65 split - pipe in roadway
5) VIN assist @ P.D.
6) Visit with a citizen at the station

In this daily activity report, Officer Jones reports the number of miles driven during their shift, the number of arrests completed, the number of traffic stop warnings, and the number of citations issued. It also reports the number of times the officer reported to a call of an accident or other incident during the shift. And it reports the number of hours spent in court.[104] The goal is to help quantify the overall productivity of Officer Jones during their shift. But by itself, this daily activity report provides little information on the value of Officer Jones to the Conway Police Department relative to their peers.[105] After all, is seventeen traffic stops resulting in eleven warnings, four moving traffic violations, and two nonmoving violations considered an acceptable level of productivity by an officer patrolling this part of Conway, Arkansas?

The answer to that question relies on several factors, including the number of drivers on Conway roads, the frequency of traffic violations, and the time of day

104. *Id.*
105. *Id.*

Officer Jones was patrolling the streets of Conway.[106] Additionally, some of this information is potentially unknowable. For example, racial profiling researchers have struggled for decades to develop an accurate benchmark for the number of drivers violating traffic laws within a particular geographical space and the race of these drivers.[107] In the absence of any reliable benchmark on these matters, police departments have frequently turned to an alternative approach to quantitatively evaluate employees like Officer Jones: comparative analysis.

Even if we cannot say, in the abstract, whether these numbers posted by Officer Jones represent an acceptable level of productivity relative to the amount of unlawful behavior on the roads, we can compare Officer Jones's productivity to the productivity of other officers on the force. In Conway, officers' daily productivity reports are aggregated into monthly reports for all individuals serving in substantially similar roles within the department.[108] The department then assigns weights to each officer behavior to create a metric for the total number of enforcement activities.[109] The department then adds the number of enforcement activities completed by officers each month to the number of times the officer responded to calls for service.[110] This creates a metric that the department refers to as the "[t]otal patrol activities" for each officer.[111] By dividing the number of total patrol activities by the number of overall hours worked by that officer, the department creates a final ratio metric that it uses for evaluation.[112] Any ratio below 0.50 is considered substandard.[113] The department considers metrics between 0.50 and 0.65 to be roughly

106. *See* WILLIAM R. SMITH ET AL., THE NORTH CAROLINA HIGHWAY TRAFFIC STUDY 6 (2003), https://www.ncjrs.gov/pdffiles1/nij/grants/204021.pdf [https://perma.cc/G6YW-H35X] (finding "empirical evidence to the effect that there is . . . racial variation by time of day in the distribution of drivers on the highways of North Carolina. African Americans are more likely to be driving in the evening and early morning hours *relative to their distribution in the licensed driver population*" (emphasis added)); *see also* Greg Ridgeway & John MacDonald, *Methods for Assessing Racially Biased Policing*, *in* RACE, ETHNICITY, AND POLICING: NEW AND ESSENTIAL READINGS 180, 182 (Stephen K. Rice & Michael D. White eds., 2010) (explaining that census estimates fail to account for how the time of day may impact variations in traffic patterns based on the location of shopping centers, commuter patterns, etc.).

107. *See e.g.*, Stephen Rushin & Griffin Edwards, *An Empirical Assessment of Pretextual Stops and Racial Profiling*, 73 STAN. L. REV. 637, 669–73 (2021) (explaining the mismatch between the racial breakdown of the residential population in a geographic space and the racial breakdown of drivers on the roads in that geographical space and explaining why the racial profiling literature has generally avoided the use of residential benchmarks as a result). *But c.f.* Rohit Asirvatham & Michael D. Frakes, *Are Constitutional Rights Enough? An Empirical Assessment of Racial Bias in Police Stops*, 116 NW. U. L. REV. 1481, 1510–17 (2022) (using population benchmarks and failing to find evidence of increased racial targeting after a change in law relaxing Washington restrictions on pretextual stops).

108. Herndon III, *supra* note 35, at 23 (explaining that, because of the differences in officer responsibilities, comparisons should not be made between officers that work substantially different jobs or different shifts).

109. *Id.* at 22–23 (showing the comparative breakdown of officer behavior and the formula that this department employs).

110. *Id.* at 23.

111. *Id.* (using this terminology in the formula).

112. *Id.*

113. *Id.* at 24.

average.[114] And metrics above that range are considered above average (0.66 to 0.80), excellent (0.81 to 1.0), or outstanding (over 1.0).[115] Figure 2 shows an example of a monthly productivity comparison of twelve officers in Conway, again reproduced from Herndon's 2005 study.

Figure 2: Example of Monthly Productivity Report by Shift from Conway, Arkansas (Reproduced from Herndon, 2005)[116]

Monthly Productivity Analysis Report by Shift																	
Officer	Miles Driven	Felony Arrests	Misdemeanor Arrests	DWI	Moving Citations	Nonmoving Citations	Warning Tickets	Enforcement Services	Accident Reports	Incident Reports	Other Calls	Total Service Calls	Total Hours	Hours of Sick Time Used	Hours on Detail (e.g., Court, Vacation)	Hours Worked	Average
Allen	450	1	0	0	7	1	4	13	0	14	16	30	160	0	82	78	0.551
Brady	578	0	0	0	16	11	6	33	3	22	55	80	160	0	53	107	1.056
Clark	731	4	5	0	4	9	16	38	5	30	26	61	160	0	36	124	0.798
Davis	629	1	2	0	4	0	22	29	5	19	20	44	160	16	21	123	0.593
Evans	568	2	2	0	5	3	15	27	2	26	36	64	160	0	8	152	0.599
Fitzgerald	949	5	14	0	2	15	10	46	6	36	17	59	160	0	10	150	0.700
Gill	635	1	6	0	2	10	10	29	3	42	44	89	160	0	31	129	0.915
Hardy	715	1	5	0	2	7	25	40	3	22	33	58	160	8	31	121	0.810
Lewis	822	0	1	1	5	12	13	32	8	27	16	51	160	0	21	139	0.597
Martin	508	2	4	0	2	10	9	27	4	35	21	60	160	8	19	133	0.654
Taylor	192	1	0	0	5	1	3	10	4	19	20	43	160	0	96	64	0.828
Yates	847	0	3	0	5	10	12	30	5	18	4	27	160	0	50	110	0.518
Column Totals	7624	18	42	1	59	89	145	354	48	310	308	666	1920	32	458	1430	8.62
Average	635.33	1.5	3.5	0.1	4.9	7.4	12	29.5	4	26	26	55.5	160	2.7	38.2	119	0.72

Proponents of this approach to evaluation might say that this incentivizes officers to engage in necessary policing tactics that protect the community and advance the purposes of law enforcement. It is unclear, though, whether this type of a performance evaluation system runs afoul of many states' bans

114. *Id.*
115. *Id.*
116. *Id.* at 22 (showing figure reproduced from the original Herndon article).

on police quotas. It does not specify a set number of tickets, arrests, or stops that an officer *must* complete each month. An officer can achieve acceptable ratios while completing few stops or arrests, if they still respond to enough service calls, drive an acceptable number of miles, or work enough hours. Nevertheless, ticketing motorists, conducting traffic stops, and completing arrests could be one route to increase an officer's average productivity number.

Courts have rarely weighed in on whether these types of complex quantitative evaluation systems violate state bans on quotas. In *Policemen's Benevolent Labor Committee v. City of Sparta*, the Illinois Supreme Court attempted to do just this, by clarifying the meaning and significance of this Illinois statute.[117] In that case, the police union in Sparta, Illinois sought a declaratory judgment holding that the city's activity points system ("APS") violated the state ban on police quotas.[118] Under this APS, the city required day-shift officers to accumulate eighty-two points per month and night-shift officers to accumulate at least sixty-five points per month.[119] In many ways, the Sparta system mirrored that of their counterparts in Conway, Arkansas. Officers received two points for issuing citations, one point for issuing traffic stop warnings, and additional points for working on task forces, appearing in court, or working overtime.[120] If officers failed to reach these overall activity minimums, the Sparta policy called for progressive discipline against the officers, starting with a verbal warning and escalating each time an officer fell short of the activity threshold thereafter.[121]

In an amicus brief, the Illinois Association of Chiefs of Police argued that police management throughout the state used APSs as tools "to maintain accountability for officer duty performance."[122] They emphasized that the APS used in Sparta did not evaluate officers exclusively on citations, but rather a wide range of activity. Officers could satisfy the monthly activity thresholds while issuing few, if any citations.[123] The Illinois Association of Chiefs of Police also emphasized language used by Illinois legislators who repeatedly assured their fellow lawmakers that such APS management tools would not run afoul of the new proposed quota ban.

On appeal, the Illinois Supreme Court found that the plain language of the statute meant that Sparta's APS approach was unlawful. Although the law permits jurisdictions to use activity measurements that include officer contacts, the law provided that the jurisdictions definition of "[p]oints of contact shall not include either the issuance of citations or the number of citations issued by a police officer."[124] Since the Sparta APS awarded points based on the

117. Policemen's Benevolent Lab. Comm. v. City of Sparta, 181 N.E.3d 848, 848–50 (Ill. 2020).

118. *Id.* at 848.

119. *Id.* at 849.

120. *Id.*

121. *Id.*

122. Amicus Curiae Brief of the Ill. Ass'n of Chiefs of Police, *supra* note 38, at 2.

123. *Id.* at 3 ("In fact, the APS goals can frequently be met by engaging in a variety of law enforcement activity other than citation issuance.").

124. 65 ILL. COMP. STAT. ANN. 5/11-1-12 (West Supp. 2005).

number of citations written by police officers each month, it violated the plain language of the Illinois police quota ban.[125]

This ruling rested on highly specific language found in one part of the Illinois law. Other courts have found that their state laws explicitly permit supervisors to use stops, citations, or arrests as one part of a broader quantitative officer evaluation system.[126] Once more, even in Illinois, the *Policemen's Benevolent Labor Committee* case does not prevent police management from documenting officer productivity as measured by citations. It merely bans the use of official quantitative evaluations tied to that metric. And it leaves open the ability of departments to develop quotas based on the number of other coercive behaviors by police, like arrests or stops. Departments remain potentially free to use data collection and publicity of these statistics in hopes of creating pressure on officers to engage in more coercive behavior.

Thus, even if a state prohibits quotas, that does not necessarily mean police management cannot still use some quantification of officer behavior. This raises a difficult and unanswered empirical question: What has been the effect of the roughly twenty-two state laws that ban or restrict some form of police quotas? Have these laws reduced police coercive behavior or otherwise influenced enforcement actions? To better understand the effect of some of the existing police quota bans, the next Part describes this study's methodology.

II. METHODOLOGY

This Article takes advantage of recent jurisdictional variation in police quota laws to consider the effect of these regulations on officer behavior. It broadly explores the effect of police quotas in two ways. First, it examines trends in traffic enforcement across ten states with varying laws on ticket quotas. Second, it explores the effect of a New York specific quota restriction on pedestrian stops on NYPD officer behavior. Before turning to these methodologies, it is important to recognize the inherent challenges in empirically estimating the effects of quota laws.

It is quite difficult to measure the effectiveness of quota laws. This is because it can be difficult to define what outcome a successful quota law ought to achieve. On one hand, prior quota systems may have motivated officers to engage in coercive actions in some number of circumstances that were unjustified by public safety concerns. If this were the case, then we may assume that police quotas create an excess number of coercive behaviors by officers. We might call this the *excessive policing hypothesis*. If this hypothesis is true, then a successful quota restriction should eliminate some of this coercive behavior. This would, in turn, presumably result in less overall coercive behavior by officers.

125. *Policemen's Benevolent Lab. Comm*, 181 N.E.3d at 852 ("Accordingly, we conclude that the plain language of section 11-1-12 prohibits municipalities from including the issuance of citations in a 'points of contact' system used to evaluate the job performance of police officers.").

126. Nathaniel Bronstein, *Police Management and Quotas: Governance in the CompStat Era*, 48 COLUM. J.L. & SOC. PROBS. 543, 560 (2015) (citing Fraternal Ord. of Police v. Pa. Lab. Rels. Bd., 722 A.2d 1118, 1122 (Pa. Commw. Ct. 1998)).

On the other hand, a successful quota law may not intend to reduce the overall amount of coercive behavior by police. Instead, it may be that, after they are freed from the incentives created by a quota system, officers can merely shift their focuses to other worthwhile law enforcement priorities. For example, officers may no longer focus on low value traffic enforcement designed to meet quota standards, and instead emphasize higher value enforcement actions. We might call this the *low value policing hypothesis*. If this hypothesis is true, then a successful quota restriction may not necessarily result in any reduction in coercive action in the aggregate. Instead, a successful quota law may result in more frequent use of traffic enforcement to identify unlawful conduct.

While imperfect, the available data allow us to explore both hypotheses, at least preliminarily. To test the excessive policing hypothesis, we use data from state highway patrol agencies to examine whether state bans on ticket quotas influenced the number of tickets or the percentage of stops that result in a ticket. We also use data from New York City to consider whether prohibitions on pedestrian stop quotas affected the number of pedestrian stops carried out by NYPD officers. Alternatively, to test the law value policing hypothesis, we consider whether quota prohibitions influenced the rate at which enforcement actions resulted in the collection of contraband. The subsections below lay out our datasets and methodological approaches in more detail.

A. STATE PATROL DATA AND CITATIONS

To access the effect of quota laws on traffic enforcement, this Article relies on data made available by the Stanford Open Policing Project.[127] This dataset includes relatively comprehensive traffic stop information for dozens of state and local law enforcement agencies across the country.[128] This Article also takes advantage of a comprehensive survey of state laws on police quotas published by Professor Ossei-Owusu in 2021.[129] As discussed in Section I.B, Ossei-Owusu identified twenty-one states that have enacted some limitation on police quotas through May 2021.[130] He also noted another seven states

127. *Data*, STAN. OPEN POLICING PROJECT, https://openpolicing.stanford.edu/data [https://perma.cc/G7XW-A2MN]; *see also* Emma Pierson et al., *A Large-Scale Analysis of Racial Disparities in Police Stops Across the United States*, 4 NATURE HUM. BEHAV. 736, 736–37 (2020) (utilizing the data that resulted from the data collection by these researchers).

128. STAN. OPEN POLICING PROJECT, *supra* note 127 (laying out the entire scope of the dataset, variables, and municipalities covered under the "data" tab).

129. Ossei-Owusu, *supra* note 1, at 598–604 (providing thorough tables with state statutes and bills considered by state legislatures).

130. *Id.* at 598–602 (identifying Arkansas, California, Connecticut, Florida, Illinois, Louisiana, Maryland, Michigan, Minnesota, Missouri, Nebraska, New Jersey, New York, North Carolina, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Utah, and Wisconsin as states who have limited police quotas).

that have considered, but ultimately failed to pass, legislation related to police quotas through May 2021.[131]

Although the Stanford Open Policing Project remains one of the most comprehensive repositories for data on police traffic stops over the last several decades, it only covers a small number of the nation's roughly eighteen thousand state and local law enforcement agencies.[132] Using Ossei-Owusu's state survey, we identified four states that both enacted recent bans on police quotas and reported data on traffic stops conducted by their primary state highway patrol agency to the Stanford Open Policing Project. For the purposes of our study, these four states serve as our treatment group—that is the group of jurisdictions that experienced a change in state law banning the use of quotas during the time period studied. These four agencies include:

Illinois. The State of Illinois officially banned ticket or citation quotas on January 1, 2015. It has separate bans on ticket quotas that apply to both municipal police departments[133] and the state police[134] that use similar language. Both prohibit law enforcement agencies from evaluating an "officer's job performance [by] compar[ing] the number of citations issued by the . . . officer to the number of citations issued by any other . . . officer." But the Illinois laws allow law enforcement agencies to evaluate officers by the number of "points of contact," defined as "including, but not limited to, the number of traffic stops completed, arrests, written warnings, and crime prevention measures."[135] The Illinois State Patrol provided data to the Stanford Open Policing Project on officer traffic stops and subsequent behavior from December 2011 through December 2017. This includes data on 12,748,173 traffic stops and contains data on stop date, time, location, driver race, driver sex, driver age, the reason for the stop, and the violation identified by the officer.[136] The data also notes whether the stop resulted in a warning, citation, search, or discovery of contraband.[137]

Michigan. The State of Michigan initially limited the use of quotas in 1988. That law limited law enforcement agencies from using officer evaluation systems that exclusively relied on citation quotas. But the law permitted the consideration of the number of citations issued by an officer in evaluation, as long as that factor was "not given any greater consideration than any other

131. *Id.* at 603–04 (identifying Arizona, Colorado, Georgia, Nevada, Virginia, Washington, and West Virginia as states that considered bills banning ticket quotas). One of those states—Virginia—has since passed a quota ban. DeFusco, *supra* note 6.

132. BRIAN A. REAVES, U.S. DEP'T OF JUST., CENSUS OF STATE AND LOCAL LAW ENFORCEMENT AGENCIES, 2008, at 2 (2011), https://bjs.ojp.gov/library/publications/census-state-and-local-law-enforcement-agencies-2008 [https://perma.cc/8HGQ-7KWY] (providing an estimate for the number of law enforcement agencies).

133. 65 ILL. COMP. STAT. ANN. 5/11-1-12 (West Supp. 2005).

134. 20 ILL. COMP. STAT. ANN. 2610/24 (West 2015).

135. *Id.*

136. STAN. OPEN POLICING PROJECT, *supra* note 127 (choose data sets; scroll down and choose Illinois State Patrol).

137. *Id.*

factor in the evaluation of a police officer's performance."[138] Then on December 10, 2010, the state enacted a stricter limitation on quota systems, simply stating that no law enforcement agencies may require an officer "to issue a predetermined or specified number of citations."[139] The Michigan State Patrol provided data to the Stanford Open Policing Project for traffic stops conducted between July 2001 and May 2016.[140] This includes data from 800,302 traffic stops and includes data on stop date, time, location, driver race, and the violation identified by the officer.[141] The data also notes whether the stop resulted in a warning, citation, or arrest.[142]

Rhode Island. The State of Rhode Island outlawed quotas on June 25, 2010. The law in Rhode Island states that no municipal or state law enforcement agency "may establish or maintain any policy, formally or informally, requiring any officer to meet a quota."[143] The law further defines the term "quota" to "mean[] any requirement regarding the number of arrests or investigative stops made, or summonses or citations issued, by an officer regarding motor vehicle traffic or parking violations."[144] However, as is the case in several of the states analyzed as part of this study, Rhode Island's statute clarifies that law enforcement agencies can use data on traffic stops, arrests, citations, and summons "in the evaluation of an officer's work performance, provided such data is not the exclusive means of evaluating such performance."[145] The Rhode Island State Patrol provided data to the Stanford Open Policing Project for traffic stops conducted between January 2005 and December 2015.[146] This data includes 509,671 traffic stops and includes data on stop date, time, location, driver race, driver sex, and the reason for the stop.[147] The data also notes whether the stop resulted in a warning, citation, arrest, search, or discovery of contraband.[148]

Tennessee. The State of Tennessee enacted a ban on quotas on June 2, 2010.[149] The Tennessee statute stated that "[a] political subdivision or any agency" in the state "may not establish or maintain, formally or informally, a plan to evaluate, promote, compensate, or discipline a law enforcement officer solely by the issuance of a predetermined or specified number of any type or combination of types of traffic citations."[150] But the law allows police agencies

138. MICH. COMP. LAWS ANN. § 257.750(1) (West 1988).

139. *Id.* § 257.750(1) (West 2021).

140. STAN. OPEN POLICING PROJECT, *supra* note 127 (choose data sets; scroll down and choose Michigan State Patrol).

141. *Id.*

142. *Id.*

143. 31 R.I. GEN. LAWS ANN. § 31-27-25(a) (West 2010).

144. *Id.* § 31-27-25(b)(2).

145. *Id.* § 31-27-25(c).

146. STAN. OPEN POLICING PROJECT, *supra* note 127.

147. *Id.*

148. *Id.*

149. 2010 Tenn. Pub. Acts ch. 1000.

150. *Id.*

to establish performance standards that include some measure related to the number of traffic citations—so long as that is not "the sole means of meeting such performance standards."[151] In 2020, the legislature amended the language of the law slightly to clarify that violation of the statute constitutes a Class B misdemeanor.[152] The Tennessee State Patrol provided data to the Stanford Open Policing Project for traffic stops conducted between December 1999 and June 2016.[153] This data includes 3,828,141 traffic stops and includes data on stop date, time, location, driver race, driver sex, and the violation identified by the officer.[154] The data also notes whether the stop resulted in a citation.[155]

While the quota bans in Illinois, Michigan, Rhode Island, and Tennessee differ in several ways, they share one common feature: each restricts or bans the use of quota based on traffic tickets or citations. Thus, we focus our primary analysis on the effect of these laws on the count and rate of traffic citations. Additionally, Illinois and Rhode Island provided data on the frequency that traffic encounters resulted in the discovery of contraband. Thus, as a secondary analysis, we also explore whether the introduction of traffic citation quotas contributed to higher quality traffic policing, using contraband hit rate as a rough proxy for traffic stop quality.

In addition to these four states that enacted bans on ticket quotas in recent years, we identified another six states that both have not enacted any official, statewide bans on ticket quotas, and whose primary state law enforcement agency reported data to the Stanford Open Policing Project. These represent our control jurisdictions for this study. These include the Arizona Highway Patrol Division of the Department of Public Safety, the Colorado State Patrol, the Massachusetts State Police, the Montana Highway Patrol, the Ohio State Highway Patrol, and the Washington State Patrol.[156] While Arizona, Colorado, and Washington have considered legislative proposals to limit police quotas,[157] none of these jurisdictions appear to have any state prohibition on police ticket quotas during the time period studied in this Article.

The Stanford Open Policing Project reported data on 32,589,455 traffic stops in these ten states within the requisite time periods studied.[158] In conducting our analysis, we aggregate the data to the county by month. That is, each of the observations in our study measures the number of citations per county per month. We use a difference-in-differences framework. This methodological approach compares the frequency of traffic citations (both as count and as percentages of all traffic encounters) in treatment jurisdictions compared to control jurisdictions before and after the introduction of state laws banning ticket quotas. Where data is available, we replicate this

151. *Id.*
152. *See* 2020 Tenn. Pub. Acts ch. 801, amending TENN. CODE ANN. § 39-16-516.
153. STAN. OPEN POLICING PROJECT, *supra* note 127.
154. *Id.*
155. *Id.*
156. *Id.*
157. Ossei-Owusu, *supra* note 1, at 603–04.
158. STAN. OPEN POLICING PROJECT, *supra* note 127.

methodological approach for discovery of contraband.[159] Conceptually that regression technique is often operationalized in the following way:

$$O_{it} = \alpha + \beta Q_{it} + \gamma_t + \tau_i + \varepsilon_{it}$$

Where O_{it} is the outcome of interest measured in a variety of ways previously discussed, γ_t is a set of county dummy variables, called year fixed effects, τ_i is a set of month by year fixed effects, and the coefficient of interest, β, is the difference-in-differences estimate of the effect of the quota restrictions. Given the inclusion of time and location fixed effects, this method is sometimes referred to as two-way fixed effects and, until recently, was considered analogous to difference-in-differences regressions.[160]

Recently, some research suggested that two-way fixed effects do not always accurately estimate difference-in-differences regressions.[161] These methodological concerns are particularly salient when the timing of the intervention or legal change is staggered across multiple jurisdictions. The first potential shortfall is the so-called "forbidden comparisons" concern. Goodman-Bacon decomposed the two-way fixed effects model into a series of 2x2 mini difference-in-differences comparisons.[162] While most of the mini 2x2 comparisons are valid, there exists a certain type of comparison—comparing a group that receives the treatment late in the dataset to a baseline group that already received treatment earlier in the dataset—that is inappropriate and could bias the results. The second potential pitfall is the influence that each

159. This method has been used in a wide array of empirical legal studies contexts. *See generally* Griffin Edwards, Stephen Rushin & Joseph Colquitt, *The Effects of Voluntary and Presumptive Sentencing Guidelines*, 98 TEX. L. REV. 1 (2019) (evaluating the effects of different sentencing guideline regimes introduced over time in Alabama); Fredrick E. Vars, Benjamin Meadows & Griffin Edwards, *Slipping Through the Cracks? The Impact of Reporting Mental Health Records to the National Firearm Background Check System*, 195 J. ECON. BEHAV. & ORG. 52 (2022) (using this methodology to assess the impact of rules mandating the reporting of mental health records to national background check systems); Rushin & Edwards, *supra* note 107 (using this approach to judge the effects of the Washington Supreme Court weakening its prior prohibition on pretext traffic stops by race).

160. *See* Justin Wolfers, *Did Unilateral Divorce Laws Raise Divorce Rates? A Reconciliation and New Results*, 96 AM. ECON. REV. 1802, 1814–16 (2006) (using this method in such a manner); *see also* Marianne Bertrand, Esther Duflo & Sendhil Mullainathan, *How Much Should We Trust Differences-in-Differences Estimates?*, 119 Q.J. ECON. 249, 252–54 (2004) (providing examples of analyses that use two-way fixed effects to estimate difference-in-differences regressions).

161. *See generally* Brantly Callaway & Pedro H.C. Sant'Anna, *Difference-in-Differences with Multiple Time Periods*, 225 J. ECONOMETRICS 200 (2021) (showing that a family of parameters are identified in staggered difference-in-difference setups, even if differences in observed characteristics create nonparallel outcome dynamics between groups); Andrew Goodman-Bacon, *Difference-in-Differences with Variation in Treatment Timing*, 225 J. ECONOMETRICS 254 (2021) (showing that the two-way fixed effects estimator equals a weighted average of all possible two-group/two-time period difference-in-difference estimators in the data); Andrew C. Baker, David F. Larcker & Charles C.Y. Wang, *How Much Should We Trust Staggered Difference-in-Differences Estimates?*, 144 J. FIN. ECON. 370 (2022) (explaining when and how staggered difference-in-differences regression estimators are biased).

162. Goodman-Bacon, *supra* note 161, at 254–56.

mini 2x2 comparison plays in the overall estimation which varies based on where, relative to the dataset, the law passes.[163]

While the literature is far from settled on the appropriate way to address and adjust for these two potential pitfalls, and even how problematic these issues are in practice, there are a couple of techniques researchers employ to address these potential pitfalls.[164] This study employs various precautionary strategies to address these concerns. Nevertheless, it is important to note that fundamental concern driving these criticisms of two-way fixed effects and difference-in-differences frameworks is the staggered nature of some interventions. In our case, while the various legal interventions in question—here state laws banning ticket quotas–are indeed staggered, they are staggered within a relatively narrow time frame. In fact, three of our treatment jurisdictions (Michigan, Rhode Island, and Tennessee) all passed their state laws in 2010.[165] And the fourth (Illinois) passed their law shortly thereafter in 2015. Thus, while we employ methodologies to correct for these concerns, we believe they are less likely to influence our results, even without correction.

Even so, to address the developing theoretical econometrics literature on two-way fixed effects and difference-in-differences regressions, we estimate all our results using two-way fixed effects, Mundlak regressions, and centered and stacked regressions. These centered and stacked regressions take our entire dataset and create a series of sub-datasets that we then merge back together. Each subset is created by including only one treated state (say Rhode Island) and all the control states. Time is adjusted to relative time, so that the month the state passed their ticket quota law becomes zero, the previous month is time minus one, first month after passage time one, and so on. All other control states left in the dataset receive the same relative time centering, and the time window is truncated to thirty-six months before law passage to thirty-six months after.[166] We saved that cohort and then repeated the process for each treated state. Eventually, we merged this new dataset. This approach addresses the potential problem of staggered timing by centering each cohort of data to the same time window (plus or minus thirty-six months with treatment at time zero) and stops forbidden comparisons by only including as controls for each cohort the states that never receive treatment in the entire time window.

Recent work by Jeffery Wooldridge has proposed another approach to mitigate the potential bias that can occur in two-fixed effects through what he

163. For instance, if we were to look at two states that passed a law and our dataset spanned from 2000 to 2020, a law passed in 2010 would more heavily influence the results than a law passed in 2005.

164. *See generally* Vars et al., *supra* note 159 (providing a broader discussion of these techniques).

165. In the case of Michigan, the state law went from a relatively lax limitation on quotas to a more stringent limitation on quotas. We ran our models both with and without the inclusion of Michigan. Both approaches produced substantially similar results.

166. The 36-month window was chosen in our context as it is the furthest that we can extend our analysis while remaining inclusive of all treated states in our analysis.

calls Mundlak regressions.[167] This approach is like the centered and stacked regressions in the measurement of cohort specific effects. More precisely, Wooldridge proposes to include cohort fixed effects and time fixed effects. Further, the estimated coefficient is the average of all interactions of cohort by time after treatment effects. Essentially, this technique measures an effect by year for each cohort separately, and then reports the average effect of all effects by year. This helps mitigate the concerns associated with two-way fixed effects modeling.

A series of fully interacted dummy variables consisting of post-time, treatment, cohort, and treated state fixed effects provide the average difference-in-difference estimate across all cohort or subset groupings. Since we are estimating an effect on only a small number of policy changes, we perform hypothesis testing based on common standard error clustering,[168] but also use wild bootstrapping.

Finally, it is important to acknowledge one additional methodological challenge inherent to virtually all empirical studies of traffic stop data: the benchmark or baseline problem used to account for the underlying population on a road in a particular jurisdiction.[169] It can be challenging to develop accurate benchmarks in traffic stop studies because researchers often do not know the exact population or demographics of those individuals on the roads in a given geographical space. Driving populations on a highway often look nothing like the demographics of the nearby residential populations, particularly on interstate highways that connect large population centers through rural communities. Numerous studies in places like Denver, Colorado;[170] Sacramento,

167. *See* Jeffrey Wooldridge, Two-Way Fixed Effects, the Two-Way Mundlak Regression, and Difference-in-Differences Estimators (Aug. 17, 2021) (unpublished manuscript) (manuscript at 2–3), https://ssrn.com/abstract=3906345 [https://perma.cc/SMS2-F33B].

168. For more details on the handling of difference-in-difference applications in situations with a small number of changes in law, see generally Timothy G. Conley & Christopher R. Taber, *Inference with "Difference in Differences" with a Small Number of Policy Changes*, 93 REV. ECON. & STATS. 113 (2011).

169. This problem is particularly acute in the context of estimating the presence of racial bias in police traffic stops. LORIE A. FRIDELL, BY THE NUMBERS: A GUIDE FOR ANALYZING RACE DATA FROM VEHICLE STOPS 7 (2004), https://portal.cops.usdoj.gov/resourcecenter/content.ashx/cops-w0242-pub.pdf [https://perma.cc/H32N-2TV2]. As one publication by Lorie Fridell explained:

> Jurisdictions collecting police-citizen contact data are calling upon social science to determine whether there is a cause-and-effect relationship between a driver's race/ethnicity and vehicle stopping behavior by police. In analyzing the data, researchers have attempted to develop comparison groups to produce a "benchmark" against which to measure their stop data. If an agency determines that, say, 25 percent of its vehicle stops are of racial/ethnic minorities, to what should this be compared? In other words, what percentage would indicate racially biased policing? This is the question at the core of benchmarking.

Id. (quotation omitted).

170. Geoffrey P. Alpert, Michael R. Smith & Roger G. Dunham, *Toward a Better Benchmark: Assessing the Utility of Not-at-Fault Traffic Crash Data in Racial Profiling Research*, 6 JUST. RSCH. & POL'Y, Spring 2004, at 43, 45.

California;[171] Miami-Dade County, Florida;[172] and Plano, Texas[173] have found that residential population differs in sometimes significant ways from the driving population within that same jurisdiction. This means use of residential population to generate stop or citation rates may skew the data by using an improper or inaccurate denominator.[174]

Further, some benchmark or baseline may be important in cases where researchers compare traffic stop data from multiple jurisdictions that vary substantially in size. Fifteen additional citations written in King County, Washington—one of the largest counties in our dataset—means something very different from an additional fifteen citations in Fallon County, Montana —one of the smallest counties in our dataset. While it might feel natural to just simply adjust all our data by the residential population in a jurisdiction, this may not always solve this benchmark problem, and may inadvertently skew the data.

We address this benchmark problem in several ways. First, because we use a difference-in-differences framework, our methodology compares communities to themselves pre- and post-treatment. Thus, if the jurisdictions in our study did not experience a sudden and dramatic change in driving population over the relatively narrow time period that we study, we do not believe this benchmark problem should significantly skew our results. Second, to ensure some accounting for population differences by jurisdiction, we include in our analysis both the number of traffic citations, as well as the percentage of traffic stops that culminate in the issuance of a citation. We similarly evaluate the percentage of traffic encounters that result in the discovery of contraband in evaluating stop quality. Thus, we do not rely exclusively on the raw number of citations, but the rates at which traffic stops result in some further coercive behavior.

B. NEW YORK DATA AND PEDESTRIAN STOPS

Next, as an additional test of quotas on law enforcement behavior, we examine data from the New York City Police Department. The State of New York has outlawed some types of police quotas for decades. The earlier version of the New York law prohibited any state employer for penalizing an employee because of their failure to "meet a quota" defined as a set number "of tickets

171. HOWARD P. GREENWALD, FINAL REPORT: POLICE VEHICLE STOPS IN SACRAMENTO, CALIFORNIA 38–39 (2001), https://www.cityofsacramento.org/-/media/Corporate/Files/Police/Transparency/VSDF/SacPD-2001-VSDF-Study.pdf [https://perma.cc/96RL-JCB2] (urging "extreme caution" when using residential population to estimate driving population given the fact that a substantial of the driving population in Sacramento are not residents of Sacramento).

172. Alpert et al., *supra* note 170, at 45.

173. PLANO POLICE DEPARTMENT, 2019 REPORT: RACIAL PROFILING 5–7 (2019), https://content.civicplus.com/api/assets/f576938a-a703-414e-8a38-9f6ac1d9ceb1 [https://perma.cc/NQ66-ZE9L] (finding a similar mismatch between residential population and driving population).

174. This problem comes up frequently in racial profiling research. Given the difficulty in crafting an accurate benchmark of the driving population by race, assessment of racial bias in police behavior can be methodologically challenging. *Racial Profiling and Traffic Stops*, NAT'L INST. OF JUST. (Jan. 9, 2013), https://nij.ojp.gov/topics/articles/racial-profiling-and-traffic-stops [https://perma.cc/W24A-7GRP] ("[S]ocial scientists now disregard comparisons to the census for assessing racial bias.").

or summonses issued within a specified period of time for traffic violations."[175] In 2010, the state passed an updated quota ban that expanded the definition of the term "quota" to include not just tickets or summons, but also "arrests" and "stops."[176] The 2010 revision also removed any reference to "traffic violations," thereby expanding the application of the law to include pedestrian stops.[177] The New York Civil Liberties Union makes available pedestrian stop data from the NYPD by quarter and by precinct from 2004 through early 2023.[178] This data includes information on 3,984,435 pedestrian stops, along with quarterly dates.[179]

This data allows for a preliminary exploration of the effect of the New York pedestrian stop quota ban on the behavior of NYPD officers. We faced a methodological challenge in examining the New York pedestrian stop data, as there is no natural comparison city to New York with pedestrian stop data readily available. Thus, rather than employing difference-in-difference analysis, we are left to employ other analyses in evaluating the NYPD pedestrian stop data. In this context, we conceptualize the data through a series of changing time periods, or "regimes." The first regime is represented by the pre-law period that existed before any law passage. The second is the window of time after the law was passed, but before public protests began. The third regime is the window of time in which residents were protesting stop-and-frisk practices, but prior to the court's ruling in *Floyd*. The last regime is what occurs in the data after the courts rule in *Floyd*. Given the strong theoretical reason to suggest that each regime might affect stop patterns in unique ways, we want to model this series of data in a way that allows each regime to have its own growth and/or decay rate. The first approach we employ is through a piecewise-defined regression function where the slope of each regime is independently estimated. This is operationalized through the following equation:

$$S_{lt} = \beta_0 + \beta_1 law_t + \beta_2 law_t * date_t + \beta_3 protests_t + \beta_4 protests_t * date_t + \beta_5 Floyd_t + \beta_6 Floyd_t * date_t + \beta_7 prelaw_t * date_t + \varepsilon_{lt}$$

Where S_{lt} is the number of stops per location, l, per quarter of the year, t, the variable law_t, is a dummy variable that flags all incidences of time in our dataset where the law had passed but before the protests began, $date_t$ is a running time variable that increases by one per quarter, $protests_t$ is a dummy variable flagging the protest regime, and $Floyd_t$ the final regime in our dataset that flags the post-court case regime until the end of the dataset. In this analysis, each regime dummy variable (except for the pre-law period) is included in the model as well as an interaction term between each dummy variable and the date

175. Taxes, Surcharges and Fees—Tax on Income, Energy Businesses, Computer Software, Motor Vehicle Damage Insurance Awards, etc., 1991 N.Y. Sess. Laws Ch. 166 (McKinney).

176. N.Y. LAB. LAW § 215-a (McKinney 2024).

177. *Id.*

178. *NYPD Quarterly Reports*, N.Y.C.L. UNION, https://www.nyclu.org/en/nypd-quarterly-reports [perma.cc/VK9A-CNDS].

179. *Id.*

variable. The coefficient on each interaction provides the slope of the trend line in each regime independent of the neighboring regime. The advantage of this method is that it allows for piecewise analysis of each regime separately. While this provides potentially useful information about the trend in stopping patterns across each regime, we also model the data in a way that allows the trend in each regime to be influenced by the surrounding regimes through a series of linear and non-linear spline regressions.[180]

Linear spline regressions are like the piecewise regressions explained above, but with the inclusion of knots at each switch point that allows for each regime to start where the previous regime ended. Formally, the linear spline regression is estimated similarly to the piecewise equation listed above, except that each slope per regime is allowed to connect to the adjacent regime by not turning off when the regime changes, but rather maintaining the last value.

To allow for even more flexibility, we also estimate quadradic and cubic splines which allows for non-linearities in the trend lines. In the quadradic and cubic spline regressions, we de-mean the non-linear terms, which allows the interpretation of the main coefficient to be the average rate of change in stops over the entire regime.

III. EFFECT OF POLICE QUOTA BANS ON OFFICER BEHAVIOR

Across all our datasets, we find minimal evidence that quota restrictions reduced the frequency of overall coercive behavior by officers. Across the four state patrol jurisdictions that restricted traffic ticket quotas during the relevant time frame, we find no evidence that these restrictions reduced the number of tickets issued by police or the frequency that a traffic stop resulted in a ticket, relative to our control jurisdictions. In fact, we find that citation count and citation rates in the state patrol jurisdictions *increased* somewhat in the aggregate, relative to our control group. This result is insensitive to various modeling choices, including the use of two-way fixed effects, stacked-and-centered differences-in-differences, or Mundlak regressions. We also find that police quota bans may be associated with a small, but statistically significant increase in the percentage of traffic stops resulting in the discovery of contraband. This could suggest an increase in the quality of some traffic enforcement after states moved to restrict quotas.

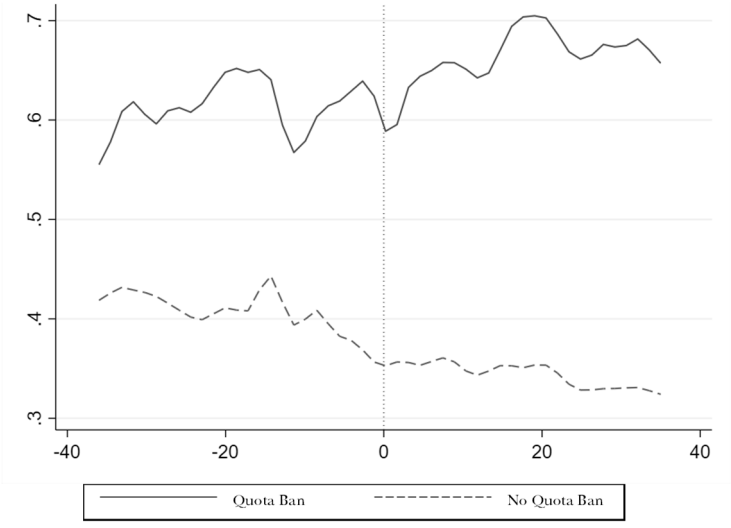
Similarly, in New York, we see minimal changes in pedestrian stops coinciding with the passage of the new state pedestrian stop quota restriction in 2010. The number of these stops remain relatively steady, until the *Floyd* litigation and associated protests. The subsections that follow walk through the results for each of these methodologies.

180. For examples of legal research using spline regressions, see generally Joanna M. Shepherd, *Deterrence Versus Brutalization: Capital Punishment's Differing Impacts Among States*, 104 MICH. L. REV. 203 (2005); Tom Ginsburg & Mila Versteeg, *Why Do Countries Adopt Constitutional Review?*, 30 J.L. ECON. & ORG. 587 (2014).

A. EVIDENCE FROM STATE PATROLS IN ILLINOIS, MICHIGAN, RHODE ISLAND, AND TENNESSEE

To begin with, Figure 3 presents the trends of the citation rate for traffic stops by county by month in our treatment and control jurisdictions.[181] This figure uses the methodological approach described in Part II to center the data around the date that each state passed their respective restriction on police citations quotas. The vertical line represents the date of the police quota ban, and the horizontal axis represents the number of months before and after this intervention. The solid trend line indicates the number of traffic citations per stop by county by month in treatment jurisdictions that implemented quota bans, while the dashed line shows the matching trends in control jurisdictions.

Figure 3: Trends in Tickets per Stop by County by Month[182]



The trend lines between the treatment and control jurisdictions look roughly parallel in the years leading up to the introduction of quota restrictions. In the years after our treatment jurisdictions introduced ticket quota restrictions, we see a slight and gradual reduction in the citation rate. By contrast, the citation rate appears to creep upwards in treatment jurisdictions. The distance between these two lines appears to grow somewhat over time. But it is difficult to evaluate the significance of this shift without further analysis.

181. Stephen Rushin & Griffin Edwards, The Effect of Police Quota Laws Dataset (2024) (unpublished dataset) (on file with the *Iowa Law Review*) [hereinafter The Effect of Police Quota Laws Dataset].

182. *Id.*

To estimate the effect of ticket quota bans on officer behavior with more precision, Table 1 shows the results of our regressions.[183] In this table, each column is a unique regression in which we estimate each outcome using two-way fixed effects ("TWFE"), centered-and-stacked differences-in-differences ("DD"), and Mundlak regressions. In columns (1), (2), and (3) we estimate the effect of ticket quota bans on the number of traffic citations issued per county per month.[184] We find that the introduction of restriction of traffic citation quotas is not associated with any decline in the average monthly number of citations issued per county. In fact, it is associated with a somewhat small, but statistically significant *increase* in traffic citations issued per month per county. Nevertheless, we recognize that these results may be influenced by shifting population patterns. More drivers on the road or officers on patrol may create an opportunity for more traffic stops and more traffic citations.

Thus, to address this concern about changing population patterns, columns (4), (5), and (6) estimate the effect of ticket quota bans on the rate of citations issued per traffic stop.[185] The unconditional rate of traffic citations is quite high—around forty-four percent of stops result in a ticket in our dataset. Again, we fail to find any evidence that ticket quota laws reduced coercive behavior officers. Instead, our estimates suggest that ticket quota bans were associated with an *increased* probability of police issuing tickets during a traffic stop. When states introduced citation quota bans, the probability of a stop resulting in a ticket increased somewhere between five and seven percentage points relative to our control, a percent increase of between roughly ten and fourteen percent.[186] This result gives us the preferred look at the effect of ticket quota bans, as it allows us account for underlying base rate of policing and driving behavior.

183. *Id.*

184. *Id.*

185. *Id.*

186. Note the difference between percentage point increases and percent increases here. Our outcome here is a ratio of citations divided by total number of stops. Thus, if every stop resulted in a ticket, this variable would equal one, and if half the stops resulted in a ticket, the variable would equal 0.5. Thus, the coefficient is a measure of the increase/decrease of that variable that is bounded between zero and one and interprets as a percentage point increase (i.e., a move from forty-four percent ticket rate to forty-seven percent ticket rate). The *percent* increase/decrease is how much the baseline percent of stops increase in percentage terms.

Table 1: Aggregate Effect of Quota Bans on Citations Across All Treatment States[187]

	1. Citations			2. Citation Rates		
	TWFE	DD	Mundlak	TWFE	DD	Mundlak
	(1)	(2)	(3)	(4)	(5)	(6)
Ticket Quota Ban	53.743‡	295.065‡	391.116‡	0.050‡	0.052†	0.068‡
Clustered SE	(23.760)	(92.512)	(111.648)	(0.015)	(0.020)	(0.022)
P Value	{0.023}	{0.000}	–	{0.001}	{0.015}	–
Sample Size	31,890	42,845	21,125	21,125	28,978	18,576
R Squared	0.226	0.022	0.482	0.679	0.303	0.108

Notes: Each column represents a unique regression. Standard errors, in parentheses, are clustered at the county level to address autocorrelation in the errors. Additionally, the p values for Wild Bootstrapped standard errors are reported in brackets. ^ p<0.10 † p<0.05 ‡ p<0.01

Next, we recognize that Michigan is unique among the states that we study. Illinois, Rhode Island, and Tennessee all passed new restrictions on police citation quotas during the time period that we study. But Michigan originally passed a restriction of citation quotas in 1988.[188] That law permitted citation quotas, but only if they were given no more weight than other factors during officer evaluations.[189] Then in 2010, Michigan altered its statute to prohibit the use of citation quotas generally, regardless of weighting.[190] Thus, while we think it is reasonable to define Michigan's change law in 2010 as effectively the introduction of a new quota restriction, we recognize that some may view Michigan differently than the other three states we include in our treatment group. To address this possibility, in Table 2 we rerun the regressions for Table 1, excluding Michigan from our treatment group.[191]

187. The Effect of Police Quota Laws Dataset, *supra* note 181.

188. Police Officers—Issuance of Certain Number of Citations for Civil Infractions, 1988 Mich. Legis. Serv. 446 (West).

189. *Id.*

190. MICH. COMP. LAWS ANN. § 257.750 (West 1988).

191. The Effect of Police Quota Laws Dataset, *supra* note 181.

Table 2: Aggregate Effect of Quota Bans on Citations in Illinois, Rhode Island, and Tennessee[192]

	1. Citations			2. Citation Rates		
	TWFE	DD	Mundlak	TWFE	DD	Mundlak
	(1)	(2)	(3)	(4)	(5)	(6)
Ticket Quota Ban	46.209†	298.216‡	293.276‡	0.050‡	0.071‡	0.078‡
Clustered SE	(22.844)	(93.758)	(86.145)	(0.015)	(0.017)	(0.013)
P Value	{0.042}	{0.000}	–	{0.001}	{0.000}	–
Sample Size	31,926	41,149	17,327	17,327	27,282	17,327
R Squared	0.227	0.016	0.345	0.658	0.199	0.345

Notes: Each column represents a unique regression. Standard errors, in parentheses, are clustered at the county level to address autocorrelation in the errors. Additionally, the p values for Wild Bootstrapped standard errors are reported in brackets. ^ p<0.10 † p<0.05 ‡ p<0.01

As seen in Table 2, when we remove Michigan from our treatment group, the results generally remain stable. We still see the introduction of citation quota restrictions in Illinois, Rhode Island, Tennessee associated with a statistically significant increase in both citations issued per county per month, as well as the rate of citations issued per traffic stop. Across all these models, this increase is statistically significant.[193]

Overall, these results are inconsistent with the excessive policing hypothesis of quotas. To the extent that these quota laws were enacted to reduce some amount of excessive or unnecessary ticketing, we would have expected quota laws to correlate with a reduction in ticketing. Under these assumptions, our findings may suggest that quota restrictions failed to achieve their intended result. Viewed this way, our findings may be consistent with prior findings that law enforcement agencies can successfully evade regulatory control and mediate the impact of external legal rules. In numerous other contexts researchers have found that effort by courts and legislators to regulate police behavior have not always had their intended impact.[194] To the extent that quota bans

192. *Id.*

193. *Id.*

194. For example, when the courts regulated police interrogations via *Miranda v. Arizona* and subsequent court rulings, some researchers have found that police departments adeptly mediated the impact of the ruling on then-existing psychologically coercive interrogation techniques. *See generally* George C. Thomas III & Richard A. Leo, *The Effects of* Miranda v. Arizona*: "Embedded" in Our National Culture?*, 29 CRIME & JUST. 203 (2002). Prior to *Miranda*, courts analyzed whether the tactics used by police made a confession effectively "involuntary," thereby warranting exclusion. *Id.* at 204. While the court interpreted this prior rule barred police use of physical abuse or torture to procure confessions, it did comparatively less to regulate other more psychologically coercive tactics. *Id.* When the Court handed down its decision in *Miranda* in 1966, it "created a presumption of compulsion that can be dispelled only if the suspect receives a set of [prophylactic] warnings." *Id.* The results of *Miranda*, though, have frustrated many civil rights advocates. As George C.

were intended to eliminate some appreciable number of unnecessary coercive actions taken by police, the data could suggest that the departments in our study may have successfully evaded the reach of these regulations.

But as mentioned previously, it might be that quota laws were not intended to reduce overall coercive behavior by police. Rather, the goal may have been to merely improve the quality of policing more generally. For example, quota restrictions may force officers to use their discretion more judiciously. Even if the officers are making the same number of traffic stops and issuing the same number of citations, they may be targeting their enforcement action more effectively after the state restricted the use of quotas. Measuring the quality of traffic stops is admittedly difficult. It is hard to establish an accurate baseline for the "right" number of traffic stops, citations, or arrests that an officer ought to complete. This has long plagued those studying traffic enforcement.[195]

One tactic that researchers have employed to circumvent this problem is hit-rate analysis.[196] In the racial profiling literature, this methodology attempts to detect the presence of racial bias in traffic enforcement by comparing the rate at which searches of vehicles during traffic stops uncover contraband for different racial groups. Hit-rate analysis rests on the assumption that all individuals subject to vehicle searches are equally situated.[197] In the context of racial profiling research, assuming officers are employing consistent standards of probable cause, we should expect that a similar percentage of searches of white and non-white drivers to produce contraband.[198] If searches of white drivers

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Thomas III and Richard A. Leo observed in a 2002 meta-analysis, two decades of empirical studies largely found that the ruling had "a negligible effect on the ability of the police to elicit confessions and on the ability of prosecutors to win convictions." *Id.* at 203. Admittedly, this raises a more complicated question that is beyond the scope of this paper: how should researchers measure the successfulness of legal interventions like *Miranda*? And are measurements like confession rate or conviction rate an accurate measure of *Miranda*'s success? It is beyond the focus of this paper to answer these broader questions in the existing literature.

195. This problem is particularly acute in the context of racial profiling studies. Increasingly, states and localities publicly release traffic stop data, including the race of those stopped, ticketed, searched, and arrested in context of traffic enforcement. But even with complete data on all these metrics, researchers struggle to determine whether police are engaged in racial profiling. To answer this question, some researchers have attempted to develop a benchmark that estimates the number of individuals of each race on a given stretch of roadway that are violating traffic laws. They then compare the rate of traffic enforcement for each racial group to this benchmark. But many of these benchmarks, like residential populations, are poor proxies for the drivers on the road. *See* Rushin & Edwards, *supra* note 107, at 659 n.135 (explaining the basis of the benchmark problem and citing studies that address this issue).

196. *See, e.g.*, Robin Shepard Engel & Jennifer M. Calnon, *Examining the Influence of Drivers' Characteristics During Traffic Stops with Police: Results from a National Survey*, 21 JUST. Q. 49, 57 (2004) ("Studies that explore differences in driving behavior, however, do not get at the heart of the profiling controversy . . . . To examine this issue, one must consider the discovery of evidence during searches of citizens, often referred to as search success rates, or 'hit rates' . . . .").

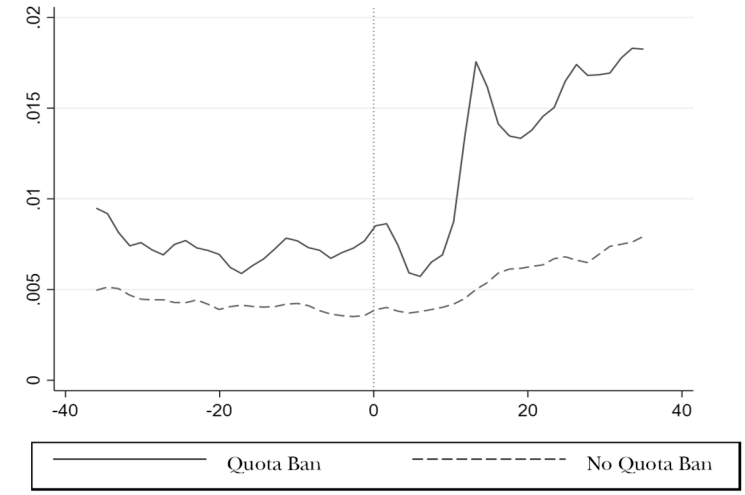
197. Andrew Gelman, Jeffrey Fagan & Alex Kiss, *An Analysis of the New York City Police Department's "Stop-and-Frisk" Policy in the Context of Claims of Racial Bias*, 102 J. AM. STAT. ASS'N 813, 815 (2007) ("A finding that searches of minorities are less productive than searches of whites could be evidence that police have a lower threshold of probable cause when searching minorities. At the very least, it is a sign of differential treatment of minorities that in turn produces a disparate impact.").

198. *Id.*

produce contraband more frequently than searches of non-white drivers, this may reveal that officers are applying a lower standard of probable cause of non-white drivers relative to white drivers.[199] And even outside of the context of racial profiling research, we may reasonably assume that higher quality policing should result in a higher hit rate than low quality policing.

Only two of our treatment states, Illinois and Rhode Island, report data on searches that produce contraband. Figure 4 presents trend data on contraband hit rates by county by month in our treatment states (Illinois and Rhode Island) as compared to our control group.[200]

Figure 4: Trends in Hit Rate by County by Month[201]



In the years before the introduction of citation quota bans, we see the hit rate for contraband stay relatively flat in both our treatment and control group. But in the months after the passage of the quota restrictions in Illinois and Rhode Island, we see contraband hit rates increase more significantly than the control group. To further test the strength of this apparent trend, Table 3 replicates our regression models focusing specifically on the effect of traffic quota laws on contraband hit rates in Illinois and Rhode Island relative to our control jurisdictions.[202]

199. *Id.*
200. The Effect of Police Quota Laws Dataset, *supra* note 181.
201. *Id.*
202. *Id.*

Table 3: Effect of Ticket Quota Bans on Contraband Hit Rates in Rhode Island and Illinois[203]

	TWFE	**DD**	**Mundlak**
	(1)	(2)	(3)
Ticket Quota Ban	0.003‡	0.003‡	0.005†
Clustered SE	(0.001)	(0.001)	(0.002)
P Value	{0.001}	{0.020}	–
Sample Size	18,576	20,917	18,833
R Squared	0.365	0.060	0.108

Notes: Each column represents a unique regression. Standard errors, in parentheses, are clustered at the county level to address autocorrelation in the errors. Additionally, the p values for Wild Bootstrapped standard errors are reported in brackets. ^ p<0.10 † p<0.05 ‡ p<0.01

Columns (1) through (3) are interpreted as a percentage point increase in the rate. For instance, in column (1) we see that ticket quota bans were associated with an increase in the contraband hit rate—the proportion of stops that lead to the discover of contraband—by 0.3 percentage points.[204] It is important to note that the base mean is quite low. That is, an average of only 0.57 percent of stops resulted in the discovery of contraband. So, officers would ordinarily discover contraband about six times per thousand stops in control states. Police quota bans in Illinois and Rhode Island may have increased that by three to five times per thousand, depending on whether you use the estimate from the TWFE, DD, or Mundlak model. Though statistically significant, practically the effect is quite small. Nevertheless, the increased contraband hit rate could potentially suggest improvement in the quality of police action after bans on ticket quotas.[205]

These results could be consistent with the low value policing hypothesis discussed earlier. Under this view, a successful quota restriction may not necessarily result in any reduction in coercive action in the aggregate. Instead, a successful quota law may result in more frequent use of traffic enforcement to identify unlawful conduct, as measured by traffic stops that result in arrests and discovery of contraband. Measured by this standard, we find evidence that

203. *Id.*

204. *Id.*

205. For an example of prior researchers using such hit-rate analysis in assessing the quality of police conduct (and particularly the possibility of racial bias), see, for example, Frank R. Baumgartner, Derek A. Epp, Kelsey Shoub & Bayard Love, *Targeting Young Men of Color for Search and Arrest During Traffic Stops: Evidence from North Carolina, 2002–2013*, 5 POL., GRPS., & IDENTITIES 107, 110–12 (2016) (using hit-rate analysis, including the frequency that police action uncovered evidence of contraband, in an analysis of police behavior in North Carolina); see also Tom R. Tyler, Jeffrey Fagan & Amanda Geller, *Street Stops and Police Legitimacy: Teachable Moments in Young Urban Men's Legal Socialization*, 11 J. EMPIRICAL LEGAL STUD. 751, 753 (2014) ("The standard inquiry in this type of evaluation is whether stops turn up active offenders or those being sought by the police or the seizure of contraband.").

the quota laws may be working as intended. They may be motivating officers to engage in more high value traffic enforcement. This could explain the uptick in contraband discovery in Illinois and Rhode Island after the introduction of quota restrictions.

Overall, the results from the study of state patrol data are mixed. We fail to find any evidence that quota restrictions reduced coerciveness by police officers. If anything, we find small but statistically significant upticks in citations issued per month per county, and upticks in rates of citations issued per traffic stop in our treatment group relative to our control group. These results hold regardless of whether we include Michigan in our treatment group. At the same time, we also find some tentative evidence supporting the hypothesis that quota laws may be associated with improvements in the quality of some traffic encounters as measured by contraband hit rate. Each of these results should be interpreted with measured caution, given the limitations of our methodology outlined in Section III.C and the limited number of jurisdictions studied.

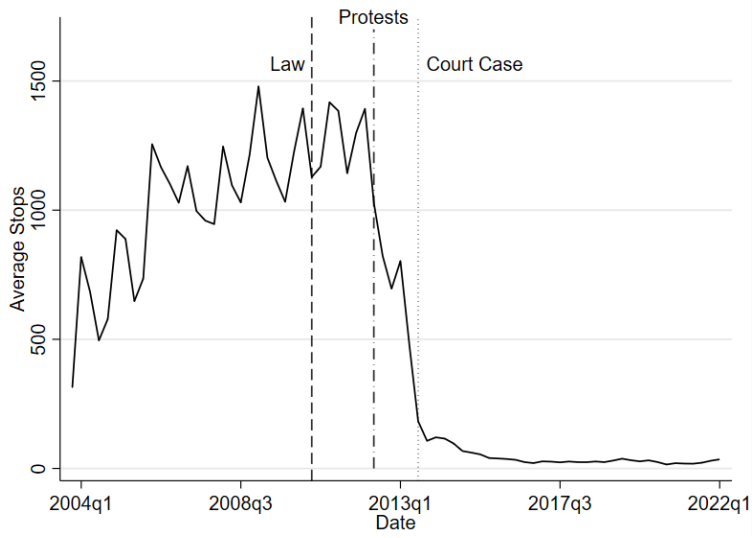
B. EVIDENCE FROM PEDESTRIAN STOPS IN NEW YORK CITY

As another test of the effect of police quota laws, we next examine the effect of the New York law on pedestrian stops by the NYPD. Figure 5 shows the number of pedestrian stops conducted by the NYPD per quarter between 2004 and 2023.[206] The first vertical line represents the date that Governor signed into law the updated state law banning quotas in the context of pedestrian stops. The second vertical line approximately represents the date of major public protests of the NYPD's stop-and-frisk policy. The third line signifies the date that the district court issued its opinion in the *Floyd v. City of New York* case admonishing the NYPD for the use of a quota system in violation of state law, among other violations.[207]

206. The Effect of Police Quota Laws Dataset, *supra* note 181.

207. *Id.*

Figure 5: Pedestrian Stops in New York City over Time[208]



The passage of the more expansive state law in New York quota ban did not correlate with any immediate or apparent change in the average number of pedestrian stops per quarter. After the law's passage, the number of pedestrian stops remained relatively stable for multiple quarters thereafter. It was not until around 2012 that pedestrian stops began to decline precipitously—around the same time that thousands of protestors took to the streets of New York alongside numerous politicians, including the soon-to-be Mayor Bill de Blasio.[209] At that point, the trial in *Floyd* was underway, and evidence of the city's stop-and-frisk policy received greater public attention. By the time that the district court issued its decision in *Floyd* in August of 2013, the number of stops and frisks were in freefall. All of this suggests that the New York state ban on pedestrian quotas may have had minimal impact on NYPD behavior. It was only after public sentiment shifted and the likely outcome of the *Floyd* litigation became clearer that the NYPD drastically reduced their use of pedestrian stops.

Table 4 reports the rate of change of pedestrian stops during each of four different regimes or time periods: (a) the "pre-law trend," which we define as the period between the start of the dataset in 2003 and the expansion of the New York quota ban to include pedestrian stops in 2010, (b) the "post-law trend," which we define as the period between the passage of the expanded quota prohibition in 2010 and the initiation of large-scale public protests of

208. *Id.*

209. John Leland & Colin Moynihan, *Thousands March Silently to Protest Stop-and-Frisk Policies*, N.Y. TIMES (June 17, 2012), https://www.nytimes.com/2012/06/18/nyregion/thousands-march-silently-to-protest-stop-and-frisk-policies.html (on file with the *Iowa Law Review*).

the NYPD stop-and-frisk program in 2012, (c) the "protest trend," which we defined as the period between these protests and the issuance of the federal district court decision in *Floyd*, and (d) the "*Floyd* trend," which we defined as the period after the *Floyd* decision.[210] The temporal proximity of these events to each other makes empirical estimation somewhat challenging. As described earlier in the methodology section, Part II, we attempt to address this concern by offering four different modeling approaches. Each modeling approach makes different assumptions about the measurement of the trends during periods (a) through (d), as described above. We visually illustrate each model's assumed trend lines in the Appendix.

The results of each regression represent the change in pedestrian stops per precinct per quarter. So, a positive result indicates an increasing trend in pedestrian stops during this time period. And a negative result suggests the number of pedestrian stops per precinct per quarter is declining during this time window.

210. The Effect of Police Quota Laws Dataset, *supra* note 181.

Table 4: Effect of Quota Ban on Pedestrian Stops in New York City[211]

	Piecewise	Linear Spline	Quadratic Spline	Cubic Spline
	(1)	(2)	(3)	(4)
(a) Pre-Law Trend	26.78‡	25.568‡	2.795	9.133†
	(2.87)	(2.668)	(4.323)	(4.427)
Pre-Law^2	.	.	-1.327‡	0.056
	.	.	(0.240)	(0.724)
Pre-Law^3	.	.	.	0.053^
	.	.	.	(0.027)
(b) Post-Law Trend	18.46†	-21.827†	-40.389‡	1.358
	(7.64)	(8.751)	(7.539)	(12.469)
Post-Law^2	.	.	-18.625‡	-23.292‡
	.	.	(2.724)	(2.860)
Post-Law^3	.	.	.	-4.251‡
	.	.	.	(1.329)
(c) Protest Trend	-125.01‡	-214.894‡	-180.025‡	-105.028‡
	(10.36)	(12.605)	(11.238)	(15.880)
Protest^2	.	.	-20.943‡	-19.133‡
	.	.	(3.679)	(3.621)
Protest^3	.	.	.	-10.973‡
	.	.	.	(2.423)
(d) *Floyd* Trend	-2.87‡	-3.785‡	-7.960‡	-8.290‡
	(0.34)	(0.411)	(0.824)	(0.879)
Floyd^2	.	.	0.272‡	0.819‡
	.	.	(0.028)	(0.078)
Floyd^3	.	.	.	-0.022‡
	.	.	.	(0.002)
Sample Size	7,213	7,213	7,213	7,213
R Squared	0.639	0.636	0.641	0.642

Notes: Each column represents a unique regression and also includes location and quarter of year fixed effects though the results are insensitive to their inclusions/exclusion, as well as the dummy variables for each regime and time interaction with each dummy variable as explained in the methods section. Standard errors, in parentheses, are clustered by location to address autocorrelation in the errors. ^ p<0.10 † p<0.05 ‡ p<0.01

Using the modeling assumptions underlying the piecewise regressions, we see that the estimated increase in pedestrian stops prior to any legal intervention was 26.78. This suggests that prior to the law change, the number of pedestrian

211. *Id.*

stops was, on average, increasing by about twenty-seven stops per quarter per precinct[212] which translates to an increase in stops of around 10,500 per year. This model estimates that the stop-and-frisk rate continued to increase after New York passed their pedestrian quota restriction, but before the protests begin. During this window of time, the model estimates that pedestrian stops increased by about eighteen stops per precinct per quarter. But once protests began, pedestrian stops declined precipitously, falling by about 125 per precinct per quarter. Then, stops continued to decline further after *Floyd*, but much more modestly—with a decline of about three stops per precinct per quarter thereafter. Using the modeling assumptions underlying the piecewise regressions, the rate of increase in pedestrian stops began to slow around the time the state expanded its quota ban to cover pedestrian stops. But it was not until the public protests over stop-and-frisk occurred that the number of pedestrian stops began to decline. And when this decline began, pedestrian stops fell precipitously.

The spline regressions tell a somewhat different, but not inconsistent story. They display a similar magnitude of increase in pedestrian stops prior to the passage of the New York law banning pedestrian stop quotas. Once the law passed, though, the precise trend varies somewhat depending on the modeling approach. For example, the linear spline model estimates that the number of pedestrian stops per precinct per quarter began declining after the passage of the New York quota ban by around twenty-one stops per precinct per quarter. By contrast, the quadratic spline puts this number somewhat higher, and the cubic spline puts this number lower. The difference in the slope estimation between models is likely due to the connectedness at the knot in the spline regression. As we allow for more flexible, higher order polynomial estimation, the sign on the trend for each regime remains constant though the magnitudes vary.[213]

Comparing each regime in the linear spline estimate reported in column (2), we see that pedestrian stops increased during the pre-law regime by a magnitude of twenty-five per precinct per quarter and decreased by about twenty-one tickets per precinct per quarter after the law passed. Nevertheless, stops did not decrease markedly until after the protests. After the protests began, stops declined by 214 per precinct per quarter. By the time of *Floyd*, the rate of decrease has slowed to only a drop of three per precinct per quarter. The quadratic spline results reported in column (3) and cubic spline results reported in column (4) tell broadly similar stories.

Overall, the models suggest that the New York law may have had a relatively small impact on the number of pedestrian stops.[214] It is difficult, though, to

212. In the NYPD dataset, there are ninety-eight locations which include police precincts, housing authority districts, and transit bureau districts.

213. The variation in the magnitudes across polynomial specification is due to the demeaning the polynomial terms. The linear spline calculates a constant rate of change across the entire regime while higher order polynomials allow the rate of change to vary across time in each regime with the main estimate reporting the rate of change at the very middle of the regime, so, for instance, if the higher order polynomial estimate suggests some flattening of the trend rate in the middle of the time period, that would be reflected in a smaller magnitude estimate.

214. The Effect of Police Quota Laws Dataset, *supra* note 181.

measure any such impact with precision. And whatever the magnitude of this possible impact, it likely paled in comparison to the impact of the public protests and *Floyd* decision that immediately upended the legal and political landscape for the NYPD's pedestrian stop policy. Given the relatively short period of time between these various events, disentangling the effect of these various events remains challenging.

C. LIMITATIONS OF EXISTING DATA AND METHODOLOGIES

While our methodologies shed some light on the effectiveness of police quotas, they fall short of demonstrating causation. Our methodology has several limitations. First, the findings from our study may not be generalizable to all jurisdictions restricting quotas. As discussed in Section I.B, quota laws vary by jurisdiction. Some are more specific than others. Some are nothing more than broad prohibitions with little in the way of enforcement mechanisms. And data is only available for a small number of the approximately twenty-two states that have passed police quota bans. So, we cannot say with confidence that the trends we observe in Illinois, Michigan, Rhode Island, and Tennessee are generalizable to the entire universe of quota laws. Additionally, for the traffic citation portion of our study, we only examine data from a small number of agencies—primarily state law highway patrol agencies. And for the pedestrian stop portion of the study, we focus exclusively on the NYPD, the largest municipal police department in the United States. There are thousands of police agencies in the United States, each with a somewhat different set of law enforcement prerogatives.[215] The agencies we studied may not be representative of many law enforcement organizations in the United States.

Second, we cannot say with certainty that supervisors in the departments we study employed quotas before the introduction of the state laws in question. As previously discussed, quota systems are often not formalized as a matter of departmental policy.[216] Even within a single law enforcement agency, some supervisors may employ quotas as a management tool while others may not. We were able to identify some media reports providing anecdotal support of the idea that the agencies we studied attempt to quantify officer productivity via a quota or quota-like system, even if informal.[217] But since supervisors frequently employ informal quotas that are not reflected in formal policy

215. REAVES, *supra* note 132, at 2 (citing a number of law enforcement agencies in the United States).

216. Morin et al., *supra* note 52 (finding most quotas not formalized in policy).

217. There are media reports that give us reason to believe that the jurisdictions we study may have employed quotas prior to the passage of their respective state laws. *See, e.g.*, John Clark, *Are Illinois Police Required to Meet a Quota of Speeding Tickets Each Month?*, MYSTATELINE.COM (Nov. 21, 2022, 11:11 AM), https://www.mystateline.com/news/are-illinois-police-required-to-meet-a-quota-of-speeding-tickets-each-month [https://perma.cc/WWG7-3QYM] ("Prior to the law's passage, police officers were sometimes required to issue 100 tickets a month, a quota that was used during a performance review."); Wells, *supra* note 75 ("It's illegal in Michigan for police to have quotas for traffic *tickets*, but Michigan State Police tracks the number of traffic *stops* its troopers make, as well as the number of arrests on patrol and in investigation"; further providing a statement from a trooper describing a quota system in use previously in Michigan).

documents, we cannot identify the strength of any existing quota policy prior to these changes in state law.

Third, we cannot eliminate all endogeneity concerns. Unlike some court opinions that arguably serve as an unexpected, exogenous shock that upends departmental practices, the laws studied in this Article were likely the result of legislative collaboration with stakeholders. Some departments likely understood these proposals would become law well before they were passed by their state legislators and signed by their governors. In some cases, departments may have already begun altering policies to comply with these expected mandates well before their official passage. This limits our ability to empirically demonstrate a causal link between these policies and any subsequent changes in officer behavior.

Finally, the lack of some types of data prevents us from drawing firmer conclusions. For example, if we had accurate officer identifiers attached to all traffic stops across agencies, we could potentially evaluate how the passage of quota restrictions comparatively influenced previously aggressive or lax officers. This would allow us to test some of the hypotheses that we propose in the next Part. But in the absence of this kind of nuanced data, we are left with limited findings that force us to merely theorize on possible explanations.

Thus, readers should interpret the results of this study for what they are—a single datapoint that merely builds on the ongoing discussions related to police quotas. On this point, the next Part considers the implications of our findings for the literature on policing. It proposes some theories to explain the statistical patterns we observe. And it offers some possible paths forward for states to better regulate police quotas.

IV. THE PATH FORWARD IN REGULATING QUOTAS

This Article finds that police quota bans were not associated with subsequent decreases in the frequency of coercive behaviors by officers. Instead, bans on police quotas may even be associated with a slight increase in the frequency of traffic citations in the jurisdictions in our dataset. At the same time, we also find some evidence that the passage of quota laws may be associated with an improvement in the quality of traffic enforcement, as measured by the frequency that vehicle searches result in the discovery of contraband. As discussed previously, interpreting these results is difficult, because it rests on various assumptions about the appropriate measure of success for a quota regulation. Nevertheless, our results may still provide a foundation for future regulation of police quotas.

We offer three possible paths for regulating police quotas in the future. First, we argue that states should consider expanding the scope of their quota laws. The narrowness of the laws that we study may explain our results. Even though the four states we study all took some steps to limit the usage of quotas—specifically citation quotas in all four states—these laws generally still permitted supervisors to use quantitative measures of coercive conduct by police officers in some manner. The narrow scope of these laws may have left considerable room for supervisors to continue the utilization of some management tool that resembled quotas or had the same practical effect. Thus, we propose ways

that states could expand the scope of quota laws. Second, and relatedly, we argue that states should more proactively regulate quota alternatives that may create similar incentives. We hypothesize that the management tools that replaced quotas may create similar or even greater incentives for officers to engage in certain types of coercive action. If true, this may necessitate a broader reimagination of quota laws to regulate any management tool that considers quantitative measurements of coercive behavior by police. Third, we suggest that the general lack of enforcement mechanisms in quota laws may impede their overall effectiveness. In addressing this potential shortfall of quota laws, states may consider a variety of alternative approaches, including empowering state attorneys general with enforcement power.

A. NARROWNESS OF EXISTING LAWS

To begin with, the somewhat narrow focus of the quota bans may impede their effectiveness. This realization might motivate states to adopt broader prohibitions on police quotas. Two of the states in our study explicitly permit consideration of the volume of traffic citations issued by police officers, provided it is not the only metric of evaluation. For example, the Tennessee statute only bars police departments from establishing a quota system that judges an officer's performance "*solely* by the issuance of a predetermined or specified number of any type or combination of types of traffic citations."[218] Rhode Island similarly specifies in their statute that their law does not "preclude [agencies] from using data concerning arrests or investigative stops made, or summonses or citations issued, and their disposition in the evaluation of an officer's work performance, provided such data is not the *exclusive* means of evaluating such performance."[219] The other two states in our study similarly do not foreclose the consideration of this data in some manner by supervisors. Illinois explicitly permits use of "points of contact" in evaluating officers.[220] Michigan merely says that supervisors cannot "require a predetermined or specified number of citations to be issued."[221]

Effectively, most states in this study only prohibit police from using specific measures of police behaviors (most commonly citations) as a single indicator of officer productivity. This leaves considerable room for supervisors to continue to use these kinds of quantitative measures as part of a broader system of performance evaluation.[222] It also allows supervisors to potentially just shift

218. TENN. CODE ANN. § 39-16-516(a) (West Supp. 2023) (emphasis added).

219. 31 R.I. GEN. LAWS ANN. § 31-27-25(c) (West 2010) (emphasis added).

220. 65 ILL. COMP. STAT. ANN. 5/11-1-12 (West Supp. 2005).

221. MICH. COMP. LAWS ANN. § 257.750(1) (West 1988).

222. We also acknowledge the possibility that the patterns we observe in the data—particularly, the increase in apparent arrests after the passage of quota laws—could be the result of a displacement of incentives. That is, supervisors that previously measured officer productivity via the frequency of traffic citations may have responded to these quota bans by establishing focusing somewhat more on other measures of productivity like arrests. Remember that the quota bans in Illinois, Michigan, and Tennessee apply exclusively to citation or ticket quotas. They still permit supervisors to employ quotas for other measures, like arrests or traffic stops. Only one of the states in our study—

a quota system from reliance on one metric (e.g., citations) to another coercive metric (e.g., stops or arrests). Recall from Section I.C the example of the Monthly Productivity Analysis conducted by the Conway, Arkansas Police Department. That system measured officer activities across several different metrics: miles driven, number of arrests, moving citations, nonmoving citations, traffic warnings, incident reports, accident reports, service calls, and more.[223] It then combined all of this activity into a numerical formula to estimate overall productivity.[224] Under Rhode Island and Tennessee's laws, this sort of a productivity system would likely withstand judicial review, as it does not assess officers "sole[ly]" or "exclusive[ly]" on the basis of their citation count.[225] It arguably does not violate the Michigan law either, because it does not establish any "predetermined" number of citations that an officer must complete each month.[226] Officers can increase their productivity score through many measures other than citations.

Based on the Illinois Supreme Court's holding in *Policemen's Benevolent Labor Committee,* such a system would likely violate Illinois law.[227] But by merely removing any measure of citations from their productivity formula, Illinois could likely still employ the same system as Conway. After all, the Illinois statute explicitly states that the Illinois State Police may evaluate officers based on "points of contact" which include "the number of traffic stops completed, arrests, written warnings, and crime prevention measures."[228] Thus, it may not be surprising that the passage of these quota laws failed to reduce coercive behavior by police officers. Most of these states still permit supervisors to even use citation numbers as some part of a broader activity management system. And most continue to permit supervisors to employ explicit quota systems based on metrics other than traffic citations. Thus, our results may reflect the narrowness of the existing regulatory approach to police quota bans.

To address this potential shortfall of existing quota bans, states might consider broader prohibitions that target more than just explicit citation quotas. For example, states like Illinois, Michigan, and Tennessee could prohibit

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Rhode Island—expanded the scope of their ban beyond citation quotas. *See supra* Part II.A on the state datasets included in this study. Thus, it could be that supervisors in some of these states are shifting the focus of existing quota systems (be they formal or informal) from traffic citations to other coercive measures like arrests. But while this might partially explain the uptick in arrests that we observe in Table 1, it does not explain the lack of apparent change in overall traffic stops. Were a displacement of incentives occurring after the passage of these quota bans, we might expect this displacement to affect *both* the frequency of traffic stops and the frequency of arrests—as both are similarly unregulated by the laws passed in most states in our dataset. Additionally, the displacement theory would presumably result in fewer citations and more arrests. Instead, we observe *both* an increase in citations and arrests.

223. Herndon III, *supra* note 35 at 21–22 (showing Herndon's figures from Conway, Arkansas).

224. *Id.* at 22.

225. TENN. CODE ANN. § 39-16-516(c) (West Supp. 2023); 31 R.I. GEN. LAWS ANN. § 31-27-25(c) (West 2010).

226. MICH. COMP. LAWS ANN. § 257.750(1).

227. *See supra* notes 122–23 and accompanying text (describing the amicus brief in the *Policemen's Benevolent Lab. Comm.* litigation making this similar argument).

228. 65 ILL. COMP. STAT. ANN. 5/11-1-12 (West Supp. 2005).

quotas based on traffic stops, pedestrian stops, arrests, or searches in addition to quotas based on citations.[229] This could reduce the risk that citation quota bans merely displace the focus of quotas from citations to other coercive behaviors like stops, arrests, or searches. Additionally, states like Rhode Island and Tennessee might remove language from their statutes that permit supervisors to still consider coercive conduct like citations, so long as this quantitative measure is not the "exclusive" or "sole" factor in performance evaluation.[230] This change could discourage supervisors from adopting alternative productivity management systems that create similarly harmful incentives for police to engage in unnecessary coercive conduct.

B. Anchoring Effects and the Unintended Effects of Quota Alternatives

Second, we hypothesize that the management tools that replace quotas may create similarly harmful incentives. This may caution states to more carefully craft regulations of police quotas, and deliberately prohibit some of these potentially harmful replacements. Prior commentators have understandably connected police quotas to revenue generation.[231] These viewpoints implicitly assume that management use quotas to drive up the overall amount of coercive behavior of police officers within a department. In many jurisdictions, this may be how quotas operate in practice. Yet, it is possible that some police management use quotas for a different purpose. Some supervisors may use quotas to modestly improve productivity among a small cohort of their least productive officers. If this were the case, it is possible that such low-level quotas could have had the unintended effect of driving down aggressiveness of many other officers. We describe this as the possible *anchoring effect of quota systems*. A hypothetical may better illustrate the plausibility of this anchoring effect hypothesis.

Imagine that the fictional Pleasanton Police Department employs 100 officers. The average officer issues around ten citations per month. Officers vary substantially in the number of citations issued each month. The most productive quartile of officers (call them the aggressive officers) issues around twenty citations per month. By contrast, the least productive quartile of officers (call them the lax officers) issue fewer than two citations per month.

Were supervisors to establish a traffic citation quota for Pleasanton officers, the effect may depend on the level of productivity required by such a rule. If the quota required officers to issue twenty-five citations each month, this would almost certainly have the effect of driving up the number of citations issued by nearly all officers, including the quartile of officers who were previously among the most productive relative to their peers (the so-called aggressive officers). Conversely, if the supervisors set the quota relatively low—say five citations per month—the effect of the system may be different. Such a relatively low quota threshold may only increase the number of citations

229. *Id.*; MICH. COMP. LAWS ANN. § 257.750; TENN. CODE ANN. § 39-16-516.

230. 31 R.I. GEN. LAWS ANN. § 31-27-25 (c); TENN. CODE ANN. § 39-16-516(c).

231. Ossei-Owusu, *supra* note 1, at 573–75.

among a minority of the force that was previously less productive (the so-called lax officers). At the same time, such a modest monthly quota may have the opposite effect on the previously aggressive officers. Faced with a stated policy that anchors management expectations to a relatively low level of productivity, these previously aggressive officers may feel little motivation to issue further tickets after they have satisfied the modest quota each month. Thus, the effect of a quota system may depend on how a municipality employs it.

To be clear, this observation does not support the use of quotas. We do not intend this Article to provide support for any kind of quota systems. Even tacit quota systems may incentivize police officers to engage in a pattern of unlawful or unconstitutional behavior. In *Floyd*, Judge Scheindlin found that the existence of a quasi-quota system was "a predictable formula for producing unjustified stops" and likely resulted in "officer[s] taking enforcement action for the purpose of meeting a performance goal rather than because a violation of the law has occurred."[232] Similarly, in other jurisdictions like Ferguson, Missouri, the U.S. Department of Justice found that quotas (or at minimum, quasi-quotas) facilitated a widespread effort by the municipal government to use its citizens as a source of revenue generation, disproportionately harming residents of color in the process.[233]

Even so, we must recognize that the statistical pattern we observe could be consistent with this anchoring effect theory of police quotas. Each state in our highway patrol data explicitly outlawed the use of quotas based on traffic citations.[234] Yet traffic citations, both in absolute numbers and as a percentage of all traffic stops, increased thereafter compared to our control group. At minimum, we must acknowledge the possibility that the management system these agencies used after the passage of their state quota bans may have incentivized officers to issue more rather than fewer citations.

This risk is more than hypothetical. In New Jersey, state legislators originally passed a law in 2000 that banned explicit police quotas based on arrests or citations.[235] But that law stated that law enforcement agencies could still "collect, analyze and apply information concerning the number of arrests and citations" and this information "may be considered in evaluating the overall performance of a law enforcement officer" as long as it is not "the sole criterion for promotion, demotion, dismissal" or other employment action.[236] New Jersey police chiefs argued that this carve out was necessary so that management had some tool for considering officer productivity in internal assessments.[237] But the Policemen's Benevolent Association argued that the original version of the New Jersey law permitted departments to use informal quota equivalents, like

232. Floyd v. City of New York, 959 F. Supp. 2d. 540, 602 (S.D.N.Y. 2013).

233. *See generally* FERGUSON REPORT, *supra* note 5.

234. *See supra* Section II.A (describing the scope of the four states studied in this article).

235. 2000 N.J. Sess. Law, Serv. Ch. 164 (West).

236. *Id.*

237. Zebrowski, *supra* note 101 (including a detailed rebuttal of the proposed New Jersey law by the president of the New Jersey State Association of Chiefs of Police).

publicizing officer statistics and offering incentives to officers that engaged in more coercive behavior.[238]

In October of 2021, New Jersey amended their quota law to ban the use of data on arrests or citations in any form of officer evaluation, and explicitly banned departments from posting the "data regarding the number of arrests or citations in any area that is common to all law enforcement officers of the department or force, including a police station or barracks, for the purpose of creating competition between officers with respect to arrests and citations."[239] Thus, New Jersey legislators recognized the risk that, even with a formal ban on quotas, police departments in the state were still able to publicize data on stops, citations, and arrests in a manner that created significant pressure on frontline officers to engage in large amounts of coercive behavior.

As another example, Michigan's law currently bans the use of ticket quotas by state law enforcement agencies.[240] But officers have complained that departments regularly circumvent the spirit of this law by giving prizes to officers that write the most tickets or considering tickets, as part of a broader quantitative evaluation scheme during promotion decisions.[241] New York similarly illustrates how quota bans may not necessarily have the intended effect of reducing coercive officer behavior. Remember that in 2010 New York passed a state law banning police quotas.[242] That statute prohibits the state and local governments from taking any negative employment action against an officer for "failure to meet a quota" defined as "a specific number of . . . tickets or summonses[,] . . . arrests[, or] . . . stops . . . within a specified period of time."[243] As Nathaniel Bronstein observed, the NYPD technically complied with this law by prohibiting supervisors from establishing formal activity quotas.[244] However, state law still arguably permits supervisors to publicize officer productivity metrics internally within the department, creating "a culture inside its precincts where the quantity of enforcement activity is all that

238. Larry Higgs, *Cops Say They Don't Want Ticket, Arrest Quotas. N.J. Bill Banning Them Takes Step Forward*, NJ.COM (June 3, 2021, 11:56 PM), https://www.nj.com/news/2021/06/cops-say-they-dont-want-ticket-arrest-quotas-nj-bill-banning-them-takes-step-forward.html [https://perma.cc/YU23-9QSX] (describing Policemen's Benevolent Association support for the legislation); *see also* Michael Symons, *New NJ Law Ends Arrest, Ticket Quota Data When Evaluating Cops*, N.J. 101.5 (Oct. 8, 2021), https://nj1015.com/new-nj-law-ends-arrest-ticket-quota-data-when-evaluating-cops [https://perma.cc/U42U-QBCT] ("Police officers had long complained that even though quotas were officially banned that departments essentially continued them by tying advancement and even preferred vacation and meal times to arrest and ticket stats.").

239. N.J. STAT. ANN. § 40A:14–181.2c (West Supp. 2023); Amanda Hoover, *N.J. Cops Can't Be Fired or Promoted Based on How Many Arrests They Make Under New Law*, NJ.COM (Oct. 9, 2021), https://www.nj.com/crime/2021/10/nj-cops-cant-be-fired-or-promoted-based-on-how-many-arrests-they-make-under-new-law.html [https://perma.cc/GZ6Z-K4CM].

240. MICH. COMP. LAWS ANN. § 257.750 (West 2024).

241. Keith Goble, *Michigan Bill Would Close Ticket Quotas Loophole*, LAND LINE (Sept. 7, 2021), https://landline.media/michigan-bill-would-close-ticket-quotas-loophole [https://perma.cc/AJH5-9MGL].

242. N.Y. LAB. LAW § 215-a (McKinney 2024).

243. *Id.*

244. Bronstein, *supra* note 126, at 577 ("The NYPD does not tell officers they need to perform a certain amount of enforcement activity over a certain amount of time.").

matters."[245] Thus, after the passage of the New York state ban, the NYPD merely replaced quotas with a system that publicized officer productivity within the department, thereby establishing "constant pressure [on officers] to do more."[246] This allowed NYPD supervisors "to reap all the managerial rewards of quotas, without facing the legal consequences."[247]

Put simply, general bans on police quotas may not, by themselves, drive down coercive behavior by officers. The managerial systems that replace quotas may create similar, or even greater incentives for officers to engage in coercive behavior. To address this possibility, states might consider legislation like New Jersey that targets alternative managerial systems that generate similar risks.

C. LACK OF ADEQUATE ENFORCEMENT MECHANISMS

Third, quota laws may prove ineffective when not paired with adequate enforcement mechanisms. To remedy this issue, states may consider legislatively adopting more aggressive enforcement mechanisms. Because of limited data reported by states that banned police ticket quotas, we focus our analysis on four jurisdictions that generally provide somewhat limited bans on some types of quotas with relatively mild penalties attached in case of violation. As a result, it is possible that our results are not generalizable to all quota regulations that exist across the country. State bans on police quotas that provide more carefully tailored language, or stiffer penalties, may create different incentives than the laws in Illinois, Michigan, Rhode Island, and Tennessee. As Professor Ossei-Owusu has illustrated in his prior work, quota bans vary substantially in the penalties attached to violation of state law.[248] Thus, one limitation of our study is that it cannot account for the nuanced ways that differential remedies and statutory language may impact the effectiveness of a quota ban.

Professor Ossei-Owusu has argued that states may most effectively deter police quotas by both limiting "ambiguity" in statutory language and employing aggressive remedies in the event of violation, including the forfeiture of pensions.[249] Such a drastic remedy for violations of police quotas "could add teeth to existing statutes and help stamp out stubborn police quotas" that appear to continue even in states that outlaw them.[250] At present, though, the available data does not allow us to test this compelling hypothesis. The Tennessee law makes violation of the state quota ban a criminal misdemeanor subject to a fine.[251] The Michigan law defines violation of the quota law as "misconduct"

245. *Id.* at 578; *see also id.* at 573–78 (noting that the New York State quota ban appeared to have little effect on the number of stops, citations, or arrests by NYPD officers, nor did it appear to improve the quality of these interactions as measured by dismissals or adjournments in contemplation of dismissal at arraignment).

246. *Id.* at 578.

247. *Id.*

248. Ossei-Owusu, *supra* note 1, at 595–96 (describing the need for more significant penalties in the event a supervisor violates a quota ban).

249. *See id.* at 595.

250. *Id.* at 596.

251. TENN. CODE ANN. § 39-16-516(d) (West Supp. 2023).

that makes a police officer "subject to removal from office."[252] Conversely, the law in Illinois has historically been enforced by police unions seeking injunctive relief in state court to prevent enforcement of management tools that they believe violate the state's ban on traffic citation quotas.[253] In all of these contexts, it appears enforcement is relatively rare. While we see some differences in the effect of state quota bans across individual states, it remains difficult for us to attribute any of these differences to the various enforcement mechanisms used by each state.

It seems plausible, though, that police quota bans may fail to reduce the amount of coercive behavior by police because relatively weak enforcement mechanisms reduce the likelihood of supervisor compliance. States interested in banning police quotas may consider adopting statutes with alternative enforcement mechanisms. For example, states could grant state attorneys general the authority to intervene and block productivity management systems that run afoul of state laws on quotas. Similar to 34 U.S.C. § 12601[254] at the federal level and its state equivalents,[255] states could invite attorneys general into the process of regulating this aspect of state and local law enforcement. State attorneys general may be able to independently and aggressively respond to allegations of unlawful quotas in a way that local prosecutors cannot.[256] State attorneys general may also be more efficient and responsive than police unions or individual officers seeking injunctive relief in state courts.[257] State attorneys general have more resources than individual litigants or police unions,[258] and they arguably have the necessary expertise in criminal justice matters to take on such a responsibility.[259]

CONCLUSION

Even the best of intentions sometimes come up short. We find that, at least in four states, efforts to ban ticket quotas by police officers may have

252. MICH. COMP. LAWS ANN. § 257.750(2) (West 2024).

253. *See, e.g.*, *supra* notes 117–21 and accompanying text (describing the *Policemen's Benevolent Lab. Comm.* case).

254. 34 U.S.C. § 12601 (2018) establishes that the U.S. Attorney General has the authority to seek equitable or declaratory relief against law enforcement agencies engaged in a pattern or practice of unlawful misconduct.

255. Jason Mazzone & Stephen Rushin, *State Attorneys General as Agents of Police Reform*, 69 DUKE L.J. 999, 1030 n.173 (2020) (describing a California statute that grants that state's attorney general the authority to seek relief against police departments engaged in patterns of wrongdoing); *see also id.* at 1030–33 (describing the past and possible future role of state attorneys general in police reform).

256. *Id.* at 1062 ("State attorneys general may be less indebted to police unions than other governmental actors. They are well positioned to recognize and investigate violations of constitutional rights." (footnote omitted)).

257. Margaret H. Lemos & Ernest A. Young, *State Public-Law Litigation in an Age of Polarization*, 97 TEX. L. REV. 43, 65, 120–21 (2018) (stating that "state [attorneys general] have emerged as a uniquely powerful cadre of lawyers" and pointing to the unique powers held by state attorneys general).

258. Mazzone & Rushin, *supra* note 255, at 1062–63 ("They have considerably more resources than do private litigants.").

259. *Id.* at 1063 (describing their "technical expertise" on policing matters).

failed to reduce the number of tickets issued by officers. Instead, we find that bans on ticket quotas may instead be associated with a statistically significant increase in traffic citations and traffic citations issued per stop per month per county. Nevertheless, we do find some evidence that may be consistent with improvement in the quality of traffic enforcement. Like any study, though, this does not serve as the final word on the effect of police ticket quotas. Given the relatively small number of departments studied in this Article dataset and the unique nature of these states' statutory language, it is difficult for us to make any definitive causal claims about the generalizable effects of ticket quota bans. Nevertheless, we hypothesize that our findings may not be as counterintuitive as they first appear.

In other organizational contexts, observers sometimes recognize that the lack of an anchoring metric for productivity, evaluation, or benefits can increase management pressures on employees.[260] Despite the obvious problems with quotas, the systems that replace them may not substantially reduce the incentives to issue citations.

This finding is of immediate national concern. In the last year, legislators in at least eleven states have actively considered new legislation to restrict ticket quotas.[261] These new laws could soon reshape the legal landscape on quotas. But if they follow the same blueprint of many existing quota laws, these new measures may fail to achieve their intended aim. Based on the findings of this Article, future legislators regulating police quotas should carefully specify statutory language and consider more expansive remedies than many existing laws. Together, these reforms could better deter the harms of police quotas.

APPENDIX

We present below additional information on placebo testing, alternative modeling focusing on each state individually, and further examinations of the number of citations and traffic stops per day of the month in our treatment jurisdictions.

260. For example, employees at companies that claim to offer "unlimited" paid time off ("PTO") sometimes complain that they feel less comfortable using such PTO than their peers at companies with less generous, but clearly defined PTO benefits. *See, e.g.*, Jena McGregor, *Why Unlimited Vacation Is Basically a No-Brainer for Employers*, WASH. POST (Oct. 8, 2015, 1:56 PM), https://www.washingtonpost.com/news/on-leadership/wp/2015/10/08/what-your-company-gains-when-it-gives-you-unlimited-vacation (on file with the *Iowa Law Review*) (stating that unlimited paid vacation time leaves employees without a "parameter" sometimes resulting in them "taking less time off" and emphasizing the importance of guidelines on actual expectations under such a system). It seems similarly possible that some police departments experience a similar effect as they move away from quotas.

261. These states include Alabama, Illinois, Maryland, Michigan, Mississippi, New York, Ohio, Oklahoma, Pennsylvania, and Virginia. Keith Goble, *Eleven States Take Steps to End Ticket Quotas*, LAND LINE (Feb. 2, 2022), https://landline.media/eleven-states-take-steps-to-end-ticket-quotas [https://perma.cc/M32L-YX9Y]. And since the publication of that article, at least one state (Virginia) has passed a state law banning arrest and ticket quotas. Nick Sibilla, *New Virginia Law Bans Police Arrest and Ticket Quotas*, WASH. POST (May 20, 2022, 10:00 AM), https://www.washingtonpost.com/opinions/2022/05/20/virginia-law-prevents-traffic-quotas (on file with the *Iowa Law Review*).

A. PLACEBO TEST FOR PRIMARY MODEL

While we feel confident in the main results, especially given the consistency between the DD and TWFE results, we nonetheless want to consider alternative non-causal explanations for our results we find. For instance, as is the case with many empirical legal analyses, we want to ensure that our results are not an endogenous artifact of some unobserved factor or random noise in the recording or collecting of the data. One way to do this is through a placebo test. In this approach, we select random dates different from the actual dates that each state in our dataset passed a ban on police quotas. We then rerun our regressions using these placebo dates.[262] For each outcome, we repeat this random date generation process and regression process over five hundred simulations. We then compare the average placebo effect to the actual measured effect in our primary model. These results are reported in Table A.1.[263] If our placebo test produces substantially similar effects as our primary model, then we cannot rule out the null hypothesis.

Each row of Table A.1 represents a unique outcome.[264] The first column is the estimated effect of the TWFE regressions from Table 1. The second column is the average placebo law effect over the five hundred simulations per outcome. Column 3 reports the t statistic of a simple t-test where the null hypothesis is that the average placebo effect is equal to our estimated effect (and equality test between columns 2 and 1), and column 4 reports the associated p-value. As seen in Table A.1, in each circumstance, we reject the null that the average placebo effect is equal to the actual estimated effect.[265] Even in the arrest and hit rate outcomes where the coefficients are quite close in magnitude, we still reject tests of equality between the estimated coefficients and the average of the placebo law coefficients suggesting that or estimated coefficients do not lie within the bounds of what a randomly generated law would produce. This bolsters our confidence in the validity of our primary model.

262. *See* Griffin Edwards, Erik Nesson, Joshua J. Robinson & Frederick Vars, *Looking Down the Barrel of a Loaded Gun: The Effect of Mandatory Handgun Purchase Delays on Homicide and Suicide*, 128 ECON. J. 3117 app. at 3139 (2018) (using a similar approach); Griffin Edwards, Erik Nesson, Joshua J. Robinson & Frederick Vars, *Web Appendix, Looking Down the Barrel of a Loaded Gun: The Effect of Mandatory Handgun Purchase Delays on Homicide and Suicide*, ECON. J., https://onlinelibrary.wiley.com/action/downloadSupplement?doi=10.1111%2Fecoj.12567&file=ecoj12567-sup-0001-Appendix.pdf [https://perma.cc/2555-5674].

263. The Effect of Police Quota Laws Dataset, *supra* note 181.

264. *Id.*

265. *Id.*

Table A.1: Testing the Regression Estimates Against Placebo Laws[266]

	estimated coefficient	average placebo coefficient	T-Test	
			t-stat	p-value
Stops	-26.42	48.31	6.48	0.00
Citations	52.22	-14.34	-8.81	0.00
Citation Rate	0.03	-0.02	-14.70	0.00
Arrest Rate	0.015	0.022	2.33	0.02
Hit Rate	0.003	0.002	-1.81	0.07

Another potential pitfall to model validity might exist if the passage of the laws were endogenous to underlying trends in policing behavior. Using methods employed in the literature,[267] we find no evidence of any relationship between traffic stop outcomes lagged to various periods when these laws were under various levels of consideration by legislators. While not definitive, this gives us additional confidence that laws regulating police quotas may be exerting an exogenous influence on police officer management and subsequent officer behavior.

B. DATA ON CITATIONS PER DAY OF THE MONTH

In Section IV.B, we argued that our results may be consistent with quota systems operating differently than some commentators assumed. Rather than using quotas to drive up overall numbers of tickets or coercive behavior among all officers, managers may use quotas to nudge the behavior of the historically least productive officers. This may marginally increase productivity among the previously unproductive officers. But these uses of quotas could also exert an anchoring effect on other officers. That is, they may anchor expectations for the number of coercive behaviors (e.g., citations or stops) officers must complete within a set period of time. This may result in somewhat lower productivity overall when management implements quota systems. By banning quotas, states may inadvertently incentivize management to adopt alternative oversight strategies, like transparently disclosing officer productivity numbers, to comply with the law. We hypothesized that this, in turn, may be causing the pattern that we observe, whereby citations increase in states after they ban citation quotas.

To further test the validity of this hypothesis, we consider the number of stops conducted and tickets written on average each calendar day of the month in treatment states (those that enacted police ticket quotas) before and after the laws' passage. This assumes that former quota systems work on a monthly

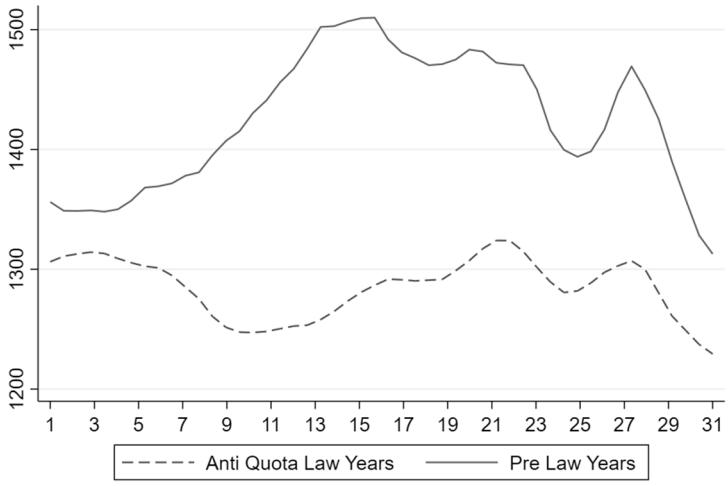
266. *Id.*

267. Vars et al., *supra* note 159, at 65–66 (using such an approach as a robustness test in a similar context).

calendar,[268] but also addresses the common assumption that officers' incentives to conduct stops and issue citations may vary by day of the month based on a formal or informal quota system.

In Figures A.1 and A.2, we graph the average statewide number of stops (or citations) in treatment states before the law passage (solid line) and after (dashed line).[269] On the horizontal axis is the day of the month. The trend lines represent the average number of tickets written statewide on each day of the month.[270] In Figure A.1, we do not find obvious evidence that police quota bans influenced the number of stops on each day of the month. Both before and after the passage of the ticket quota bans in our four treatment states, we generally see parallel trends in the number of stops conducted on each day of the month—although there may be some evidence that in the years before quotas, officers in these four states increased the frequency of traffic stops per day until about mid-month, with traffic stops per day generally declining thereafter.

Figure A.1: Traffic Stops by Day of Month[271]



268. We use this assumption for illustration purposes since the NYPD example was based in part on a monthly quota system. *See* Rayman, *supra* note 8 (noting that in New York, this meant that "pressure is the worst at the end of the month and at the end of every quarter" when the data was reported to police headquarters).

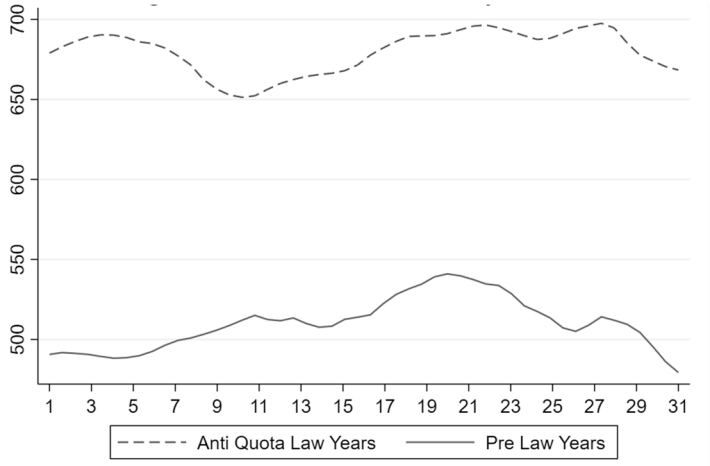
269. The Effect of Police Quota Laws Dataset, *supra* note 181.

270. We adjust our data to reflect the fact that some months have different number of days. As best we can tell, the dip in the end of the month is not due to the different number of days in each month. However, we also recognize that some holidays may fall near the end of the month (for example Halloween, New Year's Eve, and Thanksgiving). It is possible that differential policing practices during these holidays may influence stops at the end of certain months—although the trends roughly hold even in months without holidays near the end of the month.

271. The Effect of Police Quota Laws Dataset, *supra* note 181.

In Figure A.2, before the introduction of ticket quota bans, we see that average daily citations generally increased until about the twentieth day of the month. Thereafter, the number of citations per day begins to decline steadily until the month's end. Contrast that to the trend line after the passage of the ticket quota ban, which citations remain mostly stable until the last few days of the month.

Figure A.2: Citations by Day of Month[272]



While generally consistent with our hypothesis, this data alone cannot prove our theory. And it is important to not overstate the usefulness of the data in Figures A.1 and A.2. The trends in these figures are quite modest and fall short of statistical significance. At most, this data is potentially consistent with our hypothesis. But it falls well short of validating this theory.

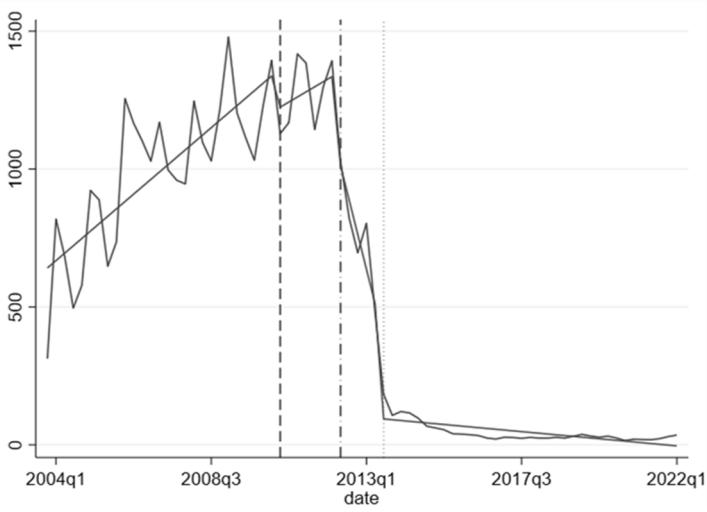
Ideally, we would have tested this hypothesis through the use of unique officer identifiers to explore trends in stops, citations, and arrests before and after the introduction of quota bans. If such data were available, we could have tracked the differential impact of quota bans on officers with previous histories of high and low productivity. Among the states in our current dataset, only Michigan includes some officer identifiers. But inconsistencies in the officer identifiers in the Michigan dataset suggest a strong possibility of measurement or reporting errors. Thus, future studies on the effect of ticket quota bans may benefit from broader datasets that allow researchers to track individual officer behaviors over time.

272. *Id.*

C. ADDITIONAL FIGURES FOR PEDESTRIAN STOP MODELS

Below we produce additional figures visually illustrating the trend estimations for each regression model of NYPD stop-and-frisk trend data in Figure A.3 through A.6.[273]

Figure A.3: Estimated Trend Lines, Piecewise Regressions[274]



273. *Id.*
274. *Id.*

Figure A.4: Estimated Trend Lines, Linear Spline Regressions[275]

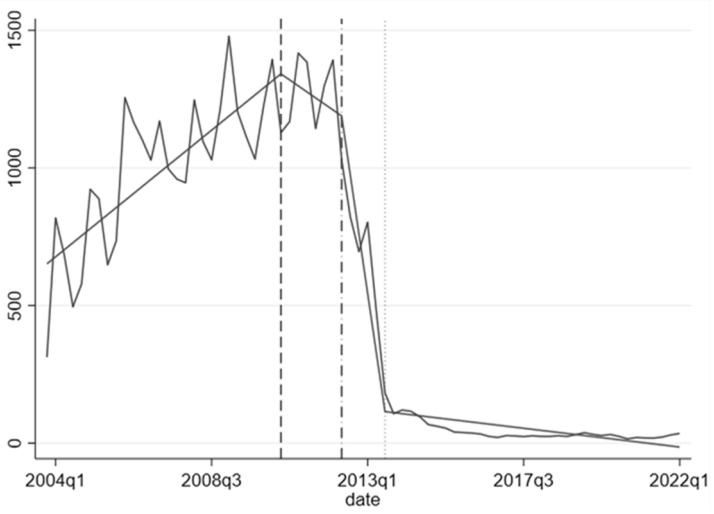
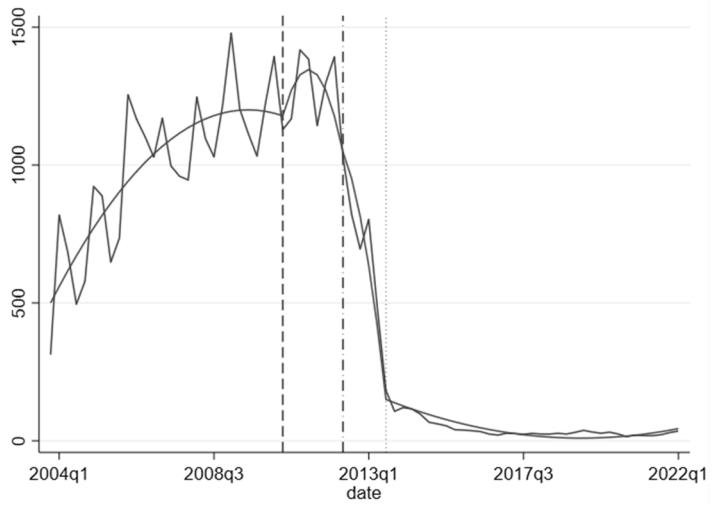
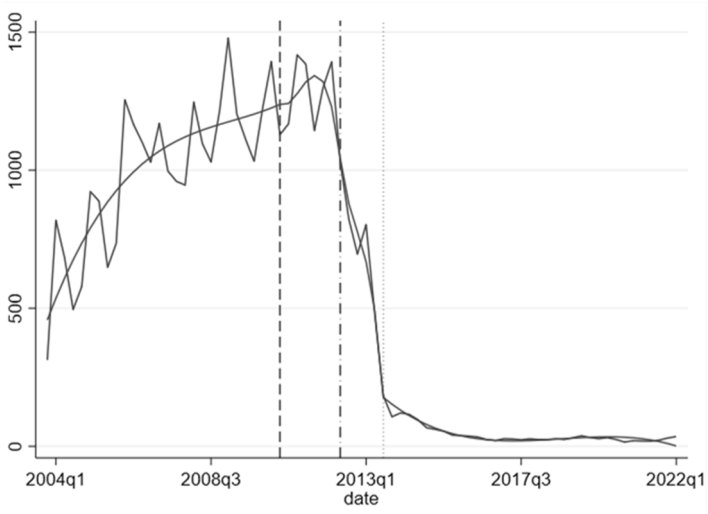


Figure A.5: Estimated Trend Lines, Quadratic Spline Regressions[276]



275. *Id.*
276. *Id.*

Figure A.6: Estimated Trend Lines, Cubic Spline Regressions[277]



277. *Id.*