LIBERTY AND ENVIRONMENTAL JUSTICE FOR ALL? AN EMPIRICAL APPROACH TO ENVIRONMENTAL RACISM

The Environmental Protection Agency ("EPA") was created to serve the public interest by shielding the environment from the byproducts of industrialization and development. The EPA exercises some discretion in its enforcement decisions, and this Study examines whether racial minority populations are disproportionately impacted by environmental degradation and EPA enforcement. The results of this Study indicate that there is a negative relationship between the percentage of minority residents living in a congressional district and EPA enforcement severity, indicating that when controlling for economic, ideological, and political factors, the EPA systematically regulates high minority population areas less stringently than predominately white areas.

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I. INTRODUCTION

Government regulation is much like a police officer catching an occasional speeder—sparse and slightly deterring at best. Given a budget of less than $5.7 billion[1] and a duty to monitor and regulate approximately 3.5 million square miles of land,[2] the Environmental Protection Agency ("EPA"), even with the assistance of state government regulators, cannot possibly enforce regulations in every area. Given the impracticability of regulating the entire country, the EPA, like every other federal enforcement agency, has broad discretion to administer and enforce regulations.[3] From policy and legal perspectives, it is acceptable—and perhaps even preferable—that EPA enforcement is less than all-encompassing; however, it is not acceptable when an agency's enforcement systematically favors certain areas and groups.

The Flint, Michigan, water crisis of 2014 is a prime case study for the failure of state, local, and federal governments to cooperate to serve the needs of an underprivileged community,[4] yet "Flint is less a story of weak laws than a tragedy of under enforcement."[5] The situation in Flint, aside from an illustration of governmental failure and incompetence, is a story of regulatory blind spots. How could the EPA fail to monitor the water quality in Flint when the local citizens, on average, were underprivileged and unable to guard themselves from contaminated water?[6] This Study seeks to determine if the EPA systematically under enforces in areas with a high racial minority population.

Agency discretion is a necessary component of a functioning bureaucracy, and numerous factors understandably influence agency enforcement decisions. However, when certain immutable factors systematically affect agency decisions, there is cause for concern. By combining agency variables along with congressional district demographics, this Study seeks to unite the literature on agency enforcement with that on environmental justice to determine if there is a systematic bias in EPA enforcement slanted against minorities.

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1. EPA, FY 2018 EPA BUDGET IN BRIEF 1 (2017), https://www.epa.gov/sites/production/files/2017-05/documents/fy-2018-budget-in-brief.pdf.

2. *Quick Facts*, U.S. CENSUS BUREAU, https://www.census.gov/quickfacts/fact/table/US/PST045217 (last visited Oct. 1, 2018) (describing U.S. geography in 2010).

3. Alice Kaswan, *Environmental Justice: Bridging the Gap Between Environmental Laws and "Justice,"* 47 AM. U. L. REV. 221, 238 (1997).

4. *See* David A. Dana & Deborah Tuerkheimer, *After Flint: Environmental Justice as Equal Protection*, 111 NW. U. L. REV. ONLINE 93, 93 (2017).

5. *Id.*

6. *Id.* at 93–94.

The results of this Study support the view that when controlling for various extraneous variables, congressional districts with higher minority populations receive less severe EPA oversight and regulation.[7]

In Part II, this Study will first examine the background of the environmental justice movement as well as current and previous government attempts to control the disparate impact of environmental degradation on minorities.[8] Then this Study will outline theories on agency enforcement in an attempt to better understand the causal mechanisms driving EPA enforcement.[9]

Next, Part III will detail the methodology and process behind data collection and synthesis before moving into analysis of the data in Part IV.[10] Part IV will also suggest structural changes within the government to better serve minority populations and ensure that there is no systematic deprivation of environmental protection on the basis of racial identity.[11]

This Study is the first comprehensive attempt to operationalize external variables to explain national EPA enforcement decisions. This Study examines each of the 435 U.S. congressional districts, ensuring that the results represent enforcement realities. This Study ultimately finds that the racial makeup of each congressional district is a significant predictor of enforcement, meaning that EPA violators in high minority population areas systematically receive less punishment than violators in high white population areas.[12]

II. BACKGROUND

A. *The Environmental Justice Movement*

The environmental justice movement emerged in response to the disparate treatment of minorities with regard to environmental policy decisions made by state and federal agencies.[13] Environmental protection became a serious policy topic, however, instead of environmental policies minimizing environmental harm, in many cases these policies externalized the hazards to certain locales.[14] The flawed yet prevailing view was that environmental regulation was a zero-sum game, permitting high standards of living for some

7. *See infra* Part IV.
8. *See infra* Part II.
9. *See id.*
10. *See infra* Part III; *infra* Subpart IV.A.
11. *See infra* Subpart IV.B.
12. *See infra* Part IV.
13. Amanda K. Franzen, *The Time Is Now for Environmental Justice: Congress Must Take Action by Codifying Executive Order 12898*, 17 PENN ST. ENVTL. L. REV. 379, 382–83 (2009).
14. *See id.* at 384–85.

privileged environments by pushing ill environmental effects to underprivileged areas.[15]

The first real fight between the EPA and those fighting for environmental equality was semantic. The EPA viewed disparities in enforcement as an issue of "environmental equity,"[16] but opponents of this view preferred the more sensational term "environmental racism"—a term coined by Benjamin Chavis, one of the first leaders of the environmental justice movement.[17] Chavis was dismayed by what he viewed as discriminatory environmental policies in North Carolina that led to environmental under enforcement and placement of landfills in high minority neighborhoods.[18] Early supporters of the environmental justice movement understood the importance of convincing the EPA, and the federal government generally, to recognize that there was a problem with environmental policies—specifically, that such policies disproportionately favored white populations at the expense of minorities, thus resembling an issue of racism more than equity.[19]

B. The Costs Associated With Environmental Regulation

The consequences of environmental regulation are economic costs and redistributed environmental risks.[20] Increasing environmental regulation and environmental standards on firms consequently places an economic cost on society—a cost that is generally paid in the form of taxes and reduced firm profitability.[21] An economic cost is not a novel consequence for a sweeping government program, but the issue lies in who bears the cost. Generally, pollution controls are regressive: policy makers choose allocative efficiency over distributional fairness of environmental regulation.[22] All laws have distributional consequences, but the key to equitable lawmaking is to ensure that the distributional effects of these actions do not systematically favor one group over another.[23] The economic costs of environmental regulation fall heavily upon minorities.[24] The benefits of environmental regulation are mostly felt in wealthier, suburban

15. *See id.* at 384.
16. April Hendricks Killcreas, *The Power of Community Action: Environmental Injustice and Participatory Democracy in Mississippi*, 81 MISS L.J. 769, 774 (2012).
17. *Id.*
18. *Id.* at 774–75.
19. *See id.*
20. Richard J. Lazarus, *Pursuing "Environmental Justice": The Distributional Effects of Environmental Protection*, 87 NW. U. L. REV. 787, 799 (1993).
21. *Id.* For purposes of this Article, "firm" means an entity subject to EPA regulations.
22. *Id.* at 800.
23. *See id.* at 793.
24. *See id.* at 795.

neighborhoods, and even when these benefits spread to low income, high minority population areas, these benefits typically flow to those outside the community.[25] Since most low-income residents in these areas are renters instead of homeowners, the outsiders who own the rental properties experience the true benefit of such environmental regulation.[26] The widespread policy of gentrification in inner-cities reveals this unfairness: what on the surface appears to be lasting economic and environmental empowerment for low income areas is actually a thinly veiled system benefiting wealthy outsiders who, as a result of rising home values, squeeze out low income tenants with rising rents.[27]

In terms of redistributed environmental risks, an environmental equity report by the EPA in 1992 found differences in exposure to pollutants when considering race and major discrepancies in disease and death rates among minorities.[28] The EPA cited a greater urban concentration of minorities, and a greater concentration of minority populations in substandard air quality regions, as factors explaining the increased environmental risks to the nonwhite population.[29] The general theory behind redistributed environmental risks is that as environmental hazards and risks decrease in the aggregate, they increase within subsets of the population, such as areas with a high minority population.[30] For example, the current general sentiment is that climate change is most intense for those who cannot adapt: in this case, the minority population dispersed across the United States.[31] While there are costs to any new regulatory regime, these costs should not be absorbed by the minority population—such an environmental enforcement regime creates aggregate gains at the marginal expense of minorities.

C. *The Law*

The current legal framework does not promote uniform environmental justice—it promotes a piecemeal litigation process

25. *Id.* at 800. For example, in a low-income area that is under enforced, residents bear the costs of this under enforcement through dirtier natural resources and declining neighborhoods. Even when low-income areas benefit from environmental regulation—such as the EPA targeting a polluting factory in a low-income area—the economic effects of cleaner air, water, and rising home values also generally flow to those who are outsiders to those areas. *Id.* In low-income and pre-gentrified areas, many of the properties are rented and the actual owners live outside the area—so if a rental home's value doubles, the tenant actually living in the area and experiencing the effects of enforcement would not gain any of the economic benefit of enforcement. *Id.*

26. *Id.*

27. *See id.*

28. *Id.* at 804.

29. *Id.* at 805.

30. *Id.* at 847.

31. Uma Outka, *Fairness in the Low-Carbon Shift: Learning from Environmental Justice*, 82 BROOK. L. REV. 789, 791 (2017).

that is costly and unpredictable for the victims of environmental harm.[32] Despite the growth of the environmental justice movement, Congress has not specifically addressed racial disparities in environmental enforcement.[33] The lack of statutory protection from environmental racism is due in part to the affected groups' inabilities to mobilize and legitimately compete with larger, well-funded, and politically entrenched stakeholders, such as corporations and state and local governments.[34]

The path for a citizen suit alleging environmental racism is convoluted and difficult to navigate. Early citizen suits against allegedly discriminatory governmental action, which were brought under the Equal Protection Clause of the Fourteenth Amendment,[35] failed due to the almost impossible burden of proving the government's discriminatory intent.[36] Constitutional protection against the government under the Fourteenth Amendment would require proving that certain governmental action is the byproduct of disparate treatment targeting minorities[37]—disparate impact cases, which would be the norm for environmental racism suits, fall outside this protection.[38]

In 1973, the EPA entered this statutory and constitutional void by promulgating disparate impact regulations, pursuant to Title VI of the Civil Rights Act of 1964,[39] prohibiting those receiving EPA funds from "engaging in acts that had discriminatory effects" against private citizens.[40] However, the Supreme Court in *Alexander v. Sandoval*[41] found that there is no implied right of private action to enforce Title VI disparate impact claims.[42] The Third Circuit has also extended the *Sandoval* holding to foreclose § 1983 claims[43] as an avenue to enforce EPA disparate impact regulations.[44]

While the Supreme Court has explicitly limited the scope of private rights of action under Title VI, there are still methods for

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32. *See* Killcreas, *supra* note 16, at 771.

33. *Id.*

34. *See* Patrice L. Simms, *Leveraging Supplemental Environmental Projects: Toward an Integrated Strategy for Empowering Environmental Justice Communities*, 47 ENVTL. L. REP. NEWS & ANALYSIS 10,511, 10,512 (2017).

35. U.S. CONST. amend. XIV, § 1.

36. Brian Crossman, *Resurrecting Environmental Justice: Enforcement of EPA's Disparate-Impact Regulations Through Clean Air Act Citizens Suits*, 32 B.C. ENVTL. AFF. L. REV. 599, 602–03 (2005).

37. *Id.* at 603.

38. *Id.*

39. Civil Rights Act of 1964, Pub. L. No. 88-352, §§ 601–02, 78 Stat. 252 (codified at 42 U.S.C. §§ 2000d–2000d-1 (2012)).

40. Crossman, *supra* note 36, at 603.

41. 532 U.S. 275 (2001).

42. *Id.* at 293; Crossman, *supra* note 36, at 604.

43. 42 U.S.C. § 1983 (2012).

44. Crossman, *supra* note 36, at 619 (citing South Camden Citizens in Action v. New Jersey Dept. of Envtl. Prot., 274 F.3d 771, 774 (3d Cir. 2001), *cert. denied*, 536 U.S. 939 (2002)).

litigants to challenge governmental actions—such as under enforcement, landfill siting decisions, and toxic waste dumping—that have a disparate impact on minority populations.[45] For example, litigants have a right of action through the EPA's interpretation of "discrimination."[46] Pursuant to *Chevron, U.S.A. v. Natural Resources Defense Council, Inc.*,[47] courts must defer to an agency's reasonable interpretation of a statute if the agency administers the statute and Congress' intent is unclear or not present.[48] Given that Congress' intent regarding what form of "discrimination" is actionable under Title VI is ambiguous,[49] courts defer to the EPA's reasonable interpretation that "discrimination" includes disparate impact regulations.[50] Therefore, despite the *Sandoval* holding, the EPA disparate impact regulations remain good law—albeit without an explicit right of private action.[51]

In order for EPA regulations allowing a private right of action to have any effect, they must connect to a state implementation plan ("SIP")—each state's plan must comply with the National Ambient Air Quality Standards under the Clean Air Act.[52] A SIP may not violate any federal law.[53] Included under the purview of "federal law" are EPA regulations, including those regulations promulgated under Title VI that provide a disparate impact claim for people disproportionately affected by governmental action.[54] Therefore, by a circuitous route, litigants may bring a disparate impact claim through EPA regulations by way of SIP requirements.[55] However, despite the EPA's technical ability to enforce Title VI claims, the EPA's Office of Civil Rights has never found discrimination under Title VI.[56]

D. EPA Action

In addition to creating a disparate impact private right of action through agency regulation, the EPA has taken further steps to combat the distributive effects of environmental regulation. In 1992, the EPA commissioned the Environmental Equity Workgroup to study the inequities in environmental policy and enforcement.[57] This

45. *Id.* at 620–25.
46. *Id.* at 621–22.
47. 467 U.S. 837 (1984).
48. *Id.* at 843; Crossman, *supra* note 36, at 621–22.
49. Crossman, *supra* note 36, at 621–22.
50. *Id.*
51. *Id.*
52. Clean Air Act, 42 U.S.C. §§ 7401–7671q (2012); Crossman, *supra* note 36, at 622.
53. Crossman, *supra* note 36, at 623.
54. *Id.* at 623–24.
55. *See id.* at 623.
56. Outka, *supra* note 31, at 801.
57. Marguerite L. Spencer, *Environmental Racism and Black Theology: James H. Cone Instructs Us on Whiteness*, 5 U. ST. THOMAS L.J. 288, 295 (2008).

workgroup concluded that minorities disproportionately felt the ill effects of environmental policy.[58] Subsequently, the EPA created the Office of Environmental Justice to examine environmental justice concerns more closely, with hopes of providing more equitable treatment.[59] The EPA also created the National Environmental Justice Advisory Council to overcome the disconnect between the agency and relevant interest groups.[60]

Due to the absence of meaningful legislative action to address environmental inequities, the Clinton administration promulgated Executive Order 12,898,[61] an executive order demanding that agency decisions must not disproportionately affect minority populations.[62] Under the purview of this executive order, the EPA has issued several guidance documents, including a document clarifying the right to a Title VI disparate impact claim under the EPA's regulatory framework.[63] Although the executive order outlines broad goals and supports data collection programs, it does not offer real protection to those disproportionately affected by environmental policy—it is merely an internal mandate to the executive branch that can be ignored by subsequent administrations.[64] Furthermore, the executive order does not create a right to sue the government, and it does not prescribe remedies for violations of the order.[65] Therefore, the executive order is an advisory document without force of law.[66]

The EPA outlined future goals concerning environmental discrimination towards the end of President Obama's second term, publishing Environmental Justice 2020 ("EJ 2020") for comment.[67] This guidance document presented three broad goals for the EPA to attain by 2020: "1. Deepen environmental justice practice within EPA programs to improve the health and environment of overburdened communities; 2. Work with partners to expand our positive impact within overburdened communities; and 3. Demonstrate progress on significant national environmental justice challenges."[68] These goals emerged during the time period examined under this Study; however, these goals likely do not translate to the EPA under the Trump administration. In some of the Trump administration's first actions,

58. *Id.*
59. *Id.*
60. *Id.* at 295–96.
61. Exec. Order No. 12,898, 32 C.F.R. § 651.17 (1994).
62. Spencer, *supra* note 57, at 296.
63. *Id.* at 297.
64. Franzen, *supra* note 13, at 389.
65. *Id.*
66. *Id.*
67. Outka, *supra* note 31, at 801–03.
68. *Id.* at 802.

it departed from environmental justice initiatives and adopted policies favoring industry.[69]

E. *Previous Studies*

1. *Early Nonempirical Studies*

In the years following the emergence of the environmental justice movement, various studies and literature arose concerning the disparate impact of environmental protection statutes on minorities. Previous studies indicate that there is a correlation between minority centric areas and increased environmental costs and risks; this Study attempts to build on these studies by taking an empirical approach through an expansive view of environmental enforcement nationwide.

A 1983 General Accounting Office ("GAO") study, conducted in response to widespread protests of governments siting landfills in predominantly minority neighborhoods, revealed a government policy of externalization—instead of limiting total environmental hazards, the policy moved those hazards to areas with high concentrations of minorities.[70] This GAO study was not only pivotal because of its findings, but also because the congressman who called for the study was the chairman of the Congressional Black Caucus.[71] The study focused on landfills in the South and found that 75% of the landfills studied were in majority black areas, and that every landfill was in an area with an impoverished black community.[72] Although the study was groundbreaking—the EPA and the GAO recognized openly a correlation between minority areas and landfill siting decisions—it was not comprehensive—it only examined four landfills and was not a controlled empirical study accounting for extraneous factors and variables that may commingle or diminish the correlation.[73]

A subsequent study by the United Church of Christ's ("UCC") Commission for Racial Justice found that racial makeup was the crucial factor in landfill siting decisions.[74] Not only did the UCC study reaffirm the GAO study, it was an even stronger indicator of

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69. *See* Natasha Geiling, *New Report Details Just How Toxic Trump's Environmental Agenda Has Been Thus Far*, THINK PROGRESS (Sept. 19, 2017, 12:24 PM), https://thinkprogress.org/trump-administration-environmental-justice-report-67763a30b6ed/.

70. U.S. GEN. ACCOUNTING OFFICE, RCED-83-168, B-211461, SITING OF HAZARDOUS WASTE LANDFILLS AND THEIR CORRELATION WITH RACIAL AND ECONOMIC STATUS OF SURROUNDING COMMUNITIES 4, 7 (1983) (finding the community surrounding a controversial landfill site in North Carolina to be 66% African-American despite that racial group comprising only 22% of North Carolina's population).

71. Killcreas, *supra* note 16, at 779.

72. *Id.*

73. *Id.*

74. *Id.* at 780.

racial discrimination in environmental policy because it looked nationwide.[75] The UCC study was also powerful because it found that race was "the single most important factor" in determining hazardous waste sites.[76]

Similarly, a 1992 *National Law Journal* study found major racial disparities in the EPA's enforcement of its Superfund program.[77] Penalties under the program were 500% higher in predominately white areas than in predominantly minority areas.[78] In the aggregate, penalties were 46% higher in white areas than in predominately minority areas.[79]

2. Empirical Studies

In one empirical study, Bosch, Eckard, and Lee examined the economic effects on firms investigated by the EPA.[80] Sampling 525 cases involving 244 firms between 1970 (the creation of the EPA) and 1990, the study examined the costs incurred by firms under EPA scrutiny.[81] Specifically, the analysis focused on a firm's costs and benefits when dealing with the EPA during enforcement actions.[82] The findings suggested that firms receiving formal enforcement pay real economic costs, both from the EPA and private investors who may lose confidence in the firm—suggesting that the EPA wields economic power over violating firms.[83] These findings showed that these costs are often redistributed to minority centric geographic areas.

Professors Hunter and Waterman offered another perspective on EPA enforcement, viewing enforcement and compliance activity on a spectrum between no discretion and maximum discretion.[84] They presented two competing models for agency enforcement: the "enforced compliance model" and the "negotiated compliance model."[85] The enforced compliance model assumes strict oversight with clearly defined standards, regulations, and routine enforcement

75. *Id.* at 779–80.

76. Spencer, *supra* note 57, at 291 (quoting Robert D. Bullard, *Environmental Justice for All*, *in* UNEQUAL PROTECTION: ENVIRONMENTAL JUSTICE AND COMMUNITIES OF COLOR 3, 11 (Robert D. Bullard ed., 1994)).

77. *Id.* at 295.

78. *Id.* at 295 n.48.

79. *Id.*

80. J.C. Bosch et al., *EPA Enforcement, Firm Response Strategies, and Stockholder Wealth: An Empirical Examination*, 19 MANAGERIAL & DECISION ECON. 167, 167–68 (1998).

81. *Id.*

82. *Id.*

83. *Id.* at 176.

84. Susan Hunter & Richard W. Waterman, *Determining an Agency's Regulatory Style: How Does the EPA Water Office Enforce the Law?*, 45 WESTERN POL. Q. 403, 403–04 (1992).

85. *Id.* at 403.

options.[86] Alternatively, the negotiated compliance model assumes discretionary oversight, allowing for more interpretation of standards and more flexible guidelines and enforcement mechanisms.[87] The authors considered these two models and applied them to the EPA enforcement structure under the EPA Water Office.[88] Hunter and Waterman emphasized that the EPA faces an inherent tradeoff in its enforcement, balancing the uniformity of regulatory activity nationally with the unique challenges faced regionally in the United States.[89] This tradeoff led the EPA to decentralize oversight to state governments in thirty-seven states.[90] To discern the enforcement structure of the EPA, Hunter & Waterman coded EPA actions on a scale of 0–7, with 0–2 representing informal enforcement actions, 3–5 representing unilateral EPA actions, and 6–7 representing legal actions against violators.[91] The study revealed that 2 was the modal response of EPA enforcement, accounting for 40.2% of the total dataset.[92] In only 7.3% of cases was legal action taken against the violator.[93] This is indicative of the EPA's enforcement structure—in most cases, the EPA chooses a flexible punishment, such as a warning letter or an informal violation notice, that is not a predetermined sanction on the violator but rather varies depending on the case.[94] This "negotiated compliance model" aids this Study greatly and guides this Study's hypotheses. In addition, Hunter and Waterman's system of coding inspires this Study's ordinal regression model's measure of EPA enforcement severity. This Study truncates the levels of enforcement to 0 for informal actions, 1 for formal actions, and 2 for legal actions against violators.[95]

III. METHODOLOGY

This Study is an empirical examination of the driving forces that underlie EPA enforcement decisions, and it delves into a regression analysis by examining EPA enforcement activity from 2010–2015. The initial research question concerns how differing enforcement

86. *See id.* at 404–05.

87. *Id.* at 403–05. For example, under the negotiated compliance model, a farmer's stream with a slightly elevated level of contaminants could be given a soft punishment such as a warning letter or a harsh penalty if there are multiple violations or if the farmer is a large-scale, industrial enterprise. *See id.* at 411. Under the enforced compliance model, such a violation would have a clear penalty, meaning EPA regulators must charge, without flexibility, all landowners with stream samples registering over the requisite limit a $10,000 fine. *See id.* at 404.

88. *Id.* at 405.

89. *Id.* at 407.

90. *Id.* at 407–08.

91. *Id.* at 410.

92. *Id.* at 411.

93. *Id.*

94. *Id.* at 411–12.

95. *See infra* Subpart III.B.

catalysts influence EPA discretion. While this Study examines numerous variables, the central variable is the racial makeup per congressional district. As predicted, race is the key factor influencing EPA enforcement decisions.[96] This Part begins with a brief overview of this Study's hypotheses and the theory behind each hypothesis. Next, this Part outlines each stage of the empirical process, explaining the data sources and underlying assumptions. Finally, this Part explains the choice of an ordinal regression model to best illustrate the trends in the data.

A. Hypotheses

> (1) When controlling for extraneous variables, higher population levels of minorities will have a negative relationship with EPA enforcement severity.
>
> (2) The strength of the correlation between population levels of minorities and EPA enforcement severity will gradually weaken over the period studied.

This Study's first hypothesis posits that high minority areas will less likely encounter severe EPA enforcement, as measured on the 0–2 ordinal regression model. Hypothesis (1) assumes that there are necessary costs to environmental regulation and that those costs disproportionately affect minority populations. The EPA, operating under this assumption, will likely use its limited resources and human capital to effectuate enforcement and compliance in areas with higher white populations. While these enforcement choices may not be explicit or made with the intent to discriminate, this theory proposes that this is the reality of EPA enforcement.

This Study's second hypothesis assumes that the Obama administration, generally viewed as more environmentally aware and race conscious than previous administrations,[97] effectuated a more equitable EPA policy in terms of enforcement and effect on minority populations. Towards the end of the period studied, the race-conscious policies that the Obama administration effectuated will lead to less racial disparity in enforcement in 2015 than in 2010.

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96. *See infra* Part IV.

97. *See, e.g.*, Angela Nelson, *15 Things Obama Has Done for the Environment*, MOTHER NATURE NETWORK (Oct. 10, 2016, 5:45 AM) https://www.mnn.com/earth-matters/wilderness-resources/stories/things-obama-has-done-environment.

B. *EPA Data Collection*

TABLE 1: EPA VARIABLES

Variable	Variable Type	Variable Value
Year	Interval	2010–15
Region	Nominal	1-10
Enforcement Type	Ordinal	0-2
EPA Annual Budget	Interval	$ Value
EPA Enforcement Budget	Interval	$ Value

The dependent variable—the level of EPA enforcement for each particular citation decision—was drawn from a consolidated EPA database that tracks the EPA's varying levels of enforcement and citation activities. In general, the EPA data used in this Study derives from the Enforcement Compliance History Online ("ECHO") database.[98] The ECHO database provides every enforcement decision and citation recorded by the EPA;[99] each decision and citation served as a dependent variable. This Study examined the Federal Enforcement and Compliance ("FE&C") data from the Integrated Compliance Information System ("ICIS") because it provides detailed information for each case,[100] including the facility information linked to that source via the Facility Registry Service ("FRS").[101] The comprehensive ECHO data includes not only enforcement or citation actions where the EPA was the lead regulator but also state environmental agency enforcement actions, providing a more complete picture of environmental enforcement in the United States.[102] Each enforcement action was coded according to the ordinal scale of severity mentioned before: 0 for informal actions, 1 for formal actions, and 2 for legal actions against violators.[103] This Study

98. *See generally Enforcement and Compliance History Online*, EPA, https://echo.epa.gov/ (last updated Aug. 27, 2018) (providing a tool to "search for facilities . . . to assess their compliance with environmental regulations" and to "investigate pollution sources, examine and create enforcement-related maps, or explore . . . [a] state's performance").

99. *See id.*

100. *Data Downloads*, EPA, https://echo.epa.gov/tools/data-downloads (last updated July 13, 2018) (follow "ICIS FE&C Data Set (ZIP)" hyperlink) [hereinafter ICIS FE&C Data Set].

101. *Data Downloads*, EPA, https://echo.epa.gov/tools/data-downloads (last updated July 13, 2018) (follow "FRS Facilities and Linkages (ZIP)" hyperlink).

102. *See* ICIS FE&C Data Set, *supra* note 100.

103. *See supra* Subpart II.E.2; *supra* Table 1; *see also infra* Chart 3.

analyzes a period from 2010–2015, encompassing approximately 26,000 EPA enforcement actions nationwide.[104]

The unique case number for each EPA enforcement action in the FE&C-ICIS data matched the FRS data to provide a street address for a vast majority of facilities, and these addresses tied each facility to its respective congressional district.[105] It was important to tie each enforcement action to a particular address because the explanatory variables were linked primarily to a respective congressional district. Without the exact ZIP code and address of each violating firm, it would have been impossible to conduct this Study accurately. This Study could not place every facility to an address—those facilities without a ZIP code had to be discarded. There was no systematic bias in this discarding process—the missing addresses were not from the same congressional districts, or even from the same states, but rather most were missing randomly across the 435 congressional districts.[106]

After tying each enforcement action to a specific address, this Study entered the data into ArcGIS to create a map of each action;[107] every enforcement action appeared as a blip on the map. Using a congressional district overlay, this Study spatially divided the map into the 435 congressional districts, segregating every enforcement action into its respective congressional district to effectuate the tying of independent variables to each enforcement action later in the Study. This mapping process required certain coding decisions. The most impactful decision concerned how to code offshore enforcement actions. For example, there is not a physical address for a rig in the Gulf of Mexico. This Study used an equation that mapped each offshore violation to the closest coastal congressional district.[108] This might not reflect the actual location of the violating firm, but it was the best coding option. This Study considered removing offshore enforcement actions, but such a method would remove an entire industry from the analysis and likely result in systematic bias.

104. *See supra* Table 1; *see also infra* Chart 3.

105. *See* ICIS FE&C Data Set, *supra* note 100.

106. *Id.*

107. *See generally* ARCGIS, https://www.arcgis.com/index.html (last visited Oct. 1, 2018) (providing a tool to create interactive overlays on maps to aggregate and organize data).

108. *See id.*

C. *Congressional District Ideological Data*

TABLE 2: CONGRESSIONAL IDEOLOGICAL CHARACTERISTICS

Variable	Variable Type	Variable Value
Member of Congress ("MoC") Party ID	Dummy	1 Rep, 0 Dem
MoC Terms in Office	Interval	Positive Integer
MoC Environmental Rating (LCV Score)	Interval	0–100

After connecting each enforcement action to a particular congressional district and year, this Study had an operable dependent variable to connect to congressional district characteristics as independent variables. For each year, this Study tracked the congressional member's party identification for each congressional district—coding either 1 for Republican or 0 for Democrat. Independent congressional members were coded as 1 or 0 based on the party for which the member caucused.[109]

For the number of terms in office, this Study counted how many terms each congressional member had served—including nonconsecutive terms and terms served in a different district, and rounding incomplete terms to the nearest complete term.[110] This Study used this term number as a predictor of each congressional member's political capital—assuming that more entrenched congressional members were able to lobby more successfully for or against increased environmental regulation in their respective district.

The League of Conservation Voters ("LCV") National Environmental Scorecard is a scoring system that gauges how often congressional members vote for environmentally conscious bills or proposals, and it ultimately provides a "LCV Score" for each member each year.[111] The LCV Scores are on a scale of 0 to 100 with 0 representing a member who voted against all measures supported by the LCV (generally representing a member who is against environmental protection policies), and 100 representing a member who voted for all measures supported by the LCV (generally representing a member who is for maximum environmental

109. *See generally Members of Congress*, GOVTRACK, https://www.govtrack.us/congress/members/current (last visited Oct. 1, 2018); *see also supra* Table 2.

110. *Id.*

111. *See generally Archive*, LEAGUE CONSERVATION VOTERS SCORECARD, http://scorecard.lcv.org/scorecard/archive (last visited Oct. 1, 2018); *see also supra* Table 2.

protection policies).[112] When a member did not complete a term, this Study averaged the LCV scores of the outgoing member and the appointed or elected member to provide a fair reflection of the environmental representation of each congressional district for each year.

D. Congressional District Demographics Data

TABLE 3: CONGRESSIONAL DISTRICT DEMOGRAPHICS

Variable	Variable Type	Variable Value
Per Capita GDP	Interval	$ Value
Unemployment Rate	Interval	%
District Ideology	Interval	% Vote Obama in Previous Election
Minority Population	Interval	%

Beyond the political leanings of each congressional member for each district for each year, this Study examined the demographics of each congressional district to have a more complete picture of the causal forces driving EPA enforcement. As a crude but consistent measure of economic well-being per district per year, this Study used the median income per year per district according to the American Community Survey conducted by the U.S. Census Bureau.[113] This Study also used the district's unemployment rate, gathered from the American Community Survey, as another measure of district economic health.[114]

In an effort to measure overall district political ideology beyond a congressional member's party identification, this Study used the district's vote percentage for President Obama in the previous presidential elections.[115] For years 2010–2011, this Study used the 2008 election results per district, and for years 2012–2015, this Study used the 2012 election result per district. Although this is not a perfect measure of ideology, it is a good indicator of each district's

112. *Methodology*, LEAGUE CONSERVATION VOTERS SCORECARD, http://scorecard.lcv.org/methodology (last visited Oct. 1, 2018); *see also supra* Table 2.

113. *See generally American Community Survey Summary File Data*, U.S. CENSUS BUREAU, https://www.census.gov/programs-surveys/acs/data/summary-file.html (last visited Oct. 1, 2018) [hereinafter *American Community Survey*]; *see also supra* Table 3.

114. *American Community Survey*, *supra* note 113; *see also supra* Table 3.

115. *See* Jeff Singer, *Daily Kos Elections' Statewide Election Results by Congressional and Legislative Districts*, DAILY KOS (July 9, 2013) https://www.dailykos.com/stories/2013/07/09/1220127/-%20Daily-Kos-Elections-2012-election-results-by-%20congressional-and-legislative-%20districts#AL; *see also supra* Table 3.

political affiliations, especially for districts that strongly favored or strongly opposed President Obama.[116]

The last and perhaps most important variable for this Study, the percentage of minorities living within each congressional district per year, was gathered using congressional district data from the American Community Survey.[117] The data was broken down by Congress, drawing data from the 111th to the 114th Congresses. Thus, data for 2010 was drawn from the 111th Congress, data for 2011–2012 from the 112th, data for 2013–2014 from the 113th, and data for 2015 from the 114th. Due to the data presentation being per Congress, there were repeating values (i.e., the 112th minority population percentage was used for both 2011 and 2012). This Study calculated the actual minority population percentage by subtracting the white population percentage from 100, rounding to the nearest tenth of a percent.[118]

E. Control Variables

In order to account for time effects, this Study controlled the data using dummy variables for each year. Six time dummy variables were used for each year, which were set to 1 for that particular year and 0 for all other years.[119] Similarly, to account for spatial discrepancies, this Study controlled the data using dummy variables for each EPA region represented by each congressional district, with ten dummy variables where the region connoted is set to 1 and all others set to 0.[120] Additionally, to control for national economic downturns and mitigate years when the national economy was subpar overall, this Study incorporated the national unemployment rate into the model.[121]

F. Choice of Model

Ordinarily, studies use multiple linear regression models to interpolate relationships between multiple variables.[122] For this Study, a linear model would not accurately reflect the relationship, because linear models assume linear values for the dependent

116. *See, e.g.*, *How Groups Voted in 2012*, ROPER CTR., https://ropercenter.cornell.edu/polls/us-elections/how-groups-voted/how-groups-voted-2012/ (last visited Oct. 1, 2018) (providing demographic information about voters in the 2012 presidential election).

117. *American Community Survey*, *supra* note 113; *see also supra* Table 3.

118. *American Community Survey*, *supra* note 113; *see also supra* Table 3.

119. *See supra* Table 1.

120. *See supra* Table 2.

121. *See American Community Survey*, *supra* note 113; *see also supra* Table 3.

122. *See Multiple Linear Regression*, PA. ST. U., https://onlinecourses.science.psu.edu/stat501/node/283/ (last visited Oct. 1, 2018).

variable.[123] In this Study, the dependent variable was an ordinal measure of enforcement coded as either 0, 1, or 2. Thus, the relationship between dependent variables in this Study is not linear—the assumption is not that a value of 1.5 would fall exactly between formal enforcement and judicial proceedings. Rather, each value is a discrete ordinal value, meaning that the continuum of values is not infinite between 0 and 2. In other words, there were only three possible outcomes.[124]

Furthermore, this Study used ordinal regression, which accounts for the lack of a linear dependent variable in exchange for an ordinal dependent variable, based on goodness of fit tests in Statistical Package for the Social Science ("SPSS") software[125] as well as the author's prior experience creating statistical models. The relationships examined in this Study's ordinal regression model will be the same—how each independent variable, while controlling for the other variables, influences the EPA enforcement outcome in each particular case examined. The p values for each variable will be a more accurate reflection of the realities of enforcement under the ordinal regression model as compared to linear regression.[126]

IV. DISCUSSION

A. Results

1. Hypothesis One: Interaction Between Race and EPA Enforcement

Overall, several of the independent variables and analyzed factors prove to be consistent predictors of EPA enforcement severity. When controlling for economic, ideological, and political factors, a negative relationship exists between the percentage of minority residents in a congressional district and EPA enforcement severity—this is especially significant at the .000 level.[127] Thus, when the percentage of minorities is higher in a particular district, the expected level of EPA enforcement is lower.[128] The inverse relationship is also

123. *See id.*

124. *See supra* Table 1; *see also infra* Chart 3.

125. *See* UNIV. OF WINDSOR, WHAT IS SPSS? 1 https://www.uwindsor.ca/its/sites/uwindsor.ca.its/files/What%20is%20SPSS.pdf (last visited Oct. 1, 2018); *see also infra* Chart 2.

126. The p value is the likelihood that by chance alone a correlation would exist. *See generally* Ed, *Statistical Significance: Cutoffs for P Values*, STAT. SOLUTIONS, http://www.statisticssolutions.com/statistical-significance-cutoffs-for-p-values/ (last visited Oct. 1, 2018) (explaining that "p value corresponds to the probability of obtaining a random sample with an effect or difference as extreme (or more extreme) as what was observed in the data"). Thus, the lower the p value, the stronger the relationship between variables. *See id.*

127. *See infra* Chart 1.

128. *See id.*

true—when there is a lower minority population in a congressional district, the expected level of EPA enforcement is higher.[129] The negative relationship between the percentage of minority residents in a congressional district and EPA enforcement severity is consistent with the first hypothesis positing that the EPA systematically regulates areas with a high minority population less stringently than it regulates areas with a higher white population.

This finding, that race is a predictor of EPA enforcement severity, is even clearer when viewed in the larger context of the model. The median household income level per district, an indicator of wealth and affluence per district, has neither a positive nor negative effect on the EPA enforcement level—again, this is especially significant at the .000 level.[130] This means that income and race are two independent factors explaining EPA enforcement severity. In other words, the relationship between race and enforcement level cannot be explained or weakened by a similar relationship with income. Therefore, no examined variables truly commingle race with another factor, meaning that when race is isolated it has a negative relationship with EPA enforcement severity that is statistically significant. Thus, a demand for equity in enforcement might be a demand for racial equity alone, unlike the EPA's past equity positions that mixed race with poverty and other factors.[131] While equity in all phases is preferable, the relationship between race and enforcement is strong enough to warrant its own oversight without cooptation from other factors.

2. *Hypothesis Two: Any Relationship Between Race and EPA Enforcement Will Weaken During the Period Studied*

The ordinal regression model does not indicate that the relationship between race and EPA enforcement level changed over time.[132] The ordinal regression model indicates similar statistical significance values for each time control variable, indicating no time interference aspect to the model.[133] When examining the distribution of the simple count of enforcement by level of severity graphically over the six-year span, enforcement severity for high minority population areas does not increase.[134] Overall, with the information available, this Study rejects the second hypothesis.

The theory behind the hypothesis is that once President Obama's EPA became entrenched, there would be less discrepancy in

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129. *See id.*

130. *See id.*

131. *See* Killcreas, *supra* note 16, at 776 ("To define instances where non-racially based populations are disproportionately exposed to environmental harm, the EPA has adopted the more inclusive term *environmental justice* as opposed to *environmental racism*.").

132. *See infra* Chart 1.

133. *See id.*

134. *See infra* Chart 3.

enforcement levels for the minority population.[135] However, the data suggests that there is no real weakening in the trend, further suggesting a systemic issue. The results do not indicate an indifference to environmental justice issues by the Obama administration per se. Alternatively, the results might indicate that the relationship between race and EPA enforcement was so latent that it was never truly identified. The systemic nature of this issue requires further governmental action to remedy the inequitable effects of environmental regulation.

B. Analysis

The results reveal a systemic trend affecting EPA enforcement concerning race. When accounting for economic factors as well as political leanings, in the aggregate, the EPA is less likely to prescribe more severe enforcement penalties or citations in areas with higher minority populations.[136] This trend remained unchanged during the Obama administration, despite the administration's favorable attitude towards environmental regulation and guidance documents, such as EJ 2020.[137] Overall, EPA guidance documents, such as EJ 2020, and President Clinton's executive order,[138] are largely toothless attempts to address the real problem of environmental racism.

Given an EPA enforcement regime that systematically overlooks minority populations, the U.S. government must do more to ensure equitable treatment of minorities. This protection would be more beneficial and consistent if it were lasting protection that remained in place throughout periods of change and turmoil in the White House.

A statutory remedy is the most appropriate solution to address environmental racism within the EPA enforcement structure. The EPA has promulgated regulations that have the force of law via *Chevron* deference; however, these regulations are clearly not addressing the problem.[139] The issue of racial inequity in environmental enforcement is largely unaddressed despite the executive branch's past efforts.[140]

Like guidance documents, regulations can be unwound just as easily because they are created by subsequent administrations and administrators who have differing views on environmental justice. A stark example of backtracking on agency regulations is currently unfolding in the Trump administration, with the enactment of the

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135. *See supra* Subpart III.A.
136. *See infra* Chart 3.
137. *See supra* Subpart II.D.
138. *See supra* Subpart II.D.
139. *See* Crossman, *supra* note 36, at 621–22; *supra* text accompanying note 137.
140. *See, e.g.*, Outka, *supra* note 31, at 803–04.

"one regulation in, two regulations out" policy to slash government regulation.[141]

Therefore, a statute guaranteeing a right of action in response to agency action that implicates environmental racism would be more lasting than any action by the executive branch. It would also signal consensus, as such an action would be introduced, debated, and voted on by representatives from each state and each district—and not just chosen by the president. Broad representation would create a statute with input from more citizens and would likely be more politically costly to overturn due to the number of stakeholders involved in the initial drafting process.

Such a statute would also provide textual support for litigants arguing disparate impact claims. Presumably, a statute extending protection for future victims of environmental racism would state explicitly a citizen's right of action against discriminatory agency action. Such a statute would also supersede the *Sandoval* interpretation of when a litigant has a right of action under Title VI[142]—litigants would have a textual basis for a disparate impact claim. Furthermore, a statute would provide more certainty to agencies and litigants alike, as all parties would know what types of claims courts would hear, thus reducing court costs and increasing judicial efficiency. Textual support for litigants would also signal the federal government's appreciation for the rights of minorities in regard to environmental enforcement, which would be a significant extension of the Civil Rights Act of 1964 and in the spirit of a more equitable society.[143]

In addition to statutory protection for environmental justice litigants, the EPA needs a neutral watchdog to monitor its future environmental justice efforts. The EPA's ability to monitor its efforts to address environmental justice has consistently been subpar. For example, since its creation, the EPA Office of Civil Rights has never found a formal case of discrimination.[144] Part of this potential statutory framework could create such a body to oversee the EPA's compliance with environmental justice mandates. This body could function like the Consumer Financial Protection Bureau ("CFPB")

141. Exec. Order No. 13,771, 82 Fed. Reg. 9339 (Feb. 3, 2017); Clyde Wayne Crews Jr., *How is Trump's "One-In, Two-Out" Policy on Federal Regulations Going?*, FORBES (July 24, 2017, 7:09 PM), https://www.forbes.com/sites/waynecrews/2017/07/24/how-is-trumps-one-in-two-out-policy-on-federal-regulations-going.

142. Alexander v. Sandoval, 532 U.S. 275, 293 (2001) ("Neither as originally enacted nor as later amended does Title VI display an intent to create a freestanding private right of action to enforce regulations promulgated under § 602.").

143. 42 U.S.C. §§ 2000d–2000d-1 (2016).

144. *See* Outka, *supra* note 31, at 801 (describing outcome of Title VI claims through 2016).

created by the Dodd-Frank Act[145] to ensure that there was an independent body to monitor compliance with consumer financial protection laws.[146] While the CFPB monitors private companies and industries,[147] the EPA's oversight body would monitor all federal agency actions to ensure that the agencies comply with the goals of environmental justice. To ensure impartiality in findings and enforcements, this body would be independently funded by Congress and would fall under the executive branch with no mandate to report to the EPA. This body would also help aggrieved citizens work towards alternatives to litigation. Providing potential litigants alternative solutions would facilitate mutual compromises and save taxpayers money by funneling potential suits out of the court system and into the body's arbitration-like process.

V. CONCLUSION

All administrations and citizens should be concerned about environmental justice. Furthermore, as a marker of core American principles, the policies in place to ensure environmental equity should be robust enough to survive subsequent administrations. Racial equity in environmental enforcement, once thought to be commingled with other factors, is its own unique issue. Controlling for extraneous variables, race is a predictor of EPA enforcement—high minority population areas receive less severe EPA enforcement. These findings are no surprise to advocates of the environmental justice movement, but with empirical data indicating a systemic trend in EPA under enforcement in high minority population areas, Congress and the EPA should address the problem by real solutions instead of by symbolic executive orders and guidance documents. The enactment of an environmental justice statute appended to the Civil Rights Act of 1964 would be an important first step. It would stabilize environmental justice policy and provide victims with a textual right to file suit. The creation of an oversight body would also ensure that the EPA and other agencies administer policies that, in the aggregate, benefit all groups equally so that high minority population areas would no longer be systematically overlooked.

Aside from ideological wishes for an equitable EPA regime, from a practical standpoint, taxpayers should want the agencies they fund to administer regulations equitably. When an agency does not effectively monitor certain areas, particularly high minority population areas, taxpayers pay for expensive restorative action when preventative action could have been much cheaper and more cost

145. Wall Street Reform and Consumer Protection ("Dodd-Frank") Act, 12 U.S.C. §§ 5491–5603 (2012).

146. *See* Jean Eaglesham, *Warning Shot on Financial Protection*, WALL ST. J. (Feb. 9, 2011, 12:01 AM), https://www.wsj.com/articles/SB10001424052748703507804576130370862263258?mod=googlenews_wsj.

147. *See id.*

effective. The water crisis in Flint, Michigan, is a harrowing example. If the EPA had effectively monitored the water source switch, it could have prevented a public health crisis for $100 per day—meanwhile the actual result in Flint is costing taxpayers millions of dollars.[148] Future administrations, regardless of political party, should want to create an environmental enforcement and compliance mechanism that not only serves and benefits all citizens but that also strives for efficiency, resolving $100-per-day problems before they transform into multimillion-dollar crises.

*Logan Judy**

148. *See* Julia Calderone, *This Billion-Dollar American Water Crisis Could've Been Averted For $36,000*, BUS. INSIDER (Jan. 16, 2016, 11:15 AM), http://www.businessinsider.com/trevor-noah-lead-water-flint-michigan-river-2016-1.

* J.D. Candidate 2019, Wake Forest University School of Law; B.A. Political Science & Peace, War, and Defense 2016, The University of North Carolina at Chapel Hill ("UNC"). I first would like to thank the *Wake Forest Law Review* Editorial Board and Staff for their tireless efforts to further legal scholarship. I also thank Stuart Macdonald and Timothy McKeown, Professors of Political Science at UNC, for their guidance and statistical expertise in the early stages of this Study. I further gratefully acknowledge Vanessa Zboreak, Professor of Practice at Wake Forest University School of Law, for her editing and administrative law expertise. Lastly, I thank my parents, Buddy and Andrea Judy, my siblings, Ethan and Kylie Judy, and my fiancée, Kathryn Brown, for their love and unwavering support.

CHART 1: ORDINAL REGRESSION RESULTS

PARAMETER ESTIMATES

		Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Threshold	**[EnforcementLevel02 = 0]**	-5.553	16.496	.113	1	.736	-37.884	26.779
	[EnforcementLevel02 = 1]	82.245	19.712	17.409	1	.000	43.610	120.879
Location	**MoCParty**	-2.377	1.102	4.653	1	.031	-4.537	-.217
	MedHouseIncome	.000	3.364E-5	25.364	1	.000	.000	.000
	UnemDist	.873	.148	34.585	1	.000	.582	1.164
	Minority	-.109	.023	23.505	1	.000	-.153	-.065
	Obama	.099	.027	13.654	1	.000	.046	.151
	UnemNatl	-7.652	1.337	32.768	1	.000	-10.272	-5.032
	MoCTerms	.329	.075	19.018	1	.000	.181	.477
	MoCLCV	.020	.014	1.861	1	.172	-.009	.048
	[T2010=0]	6.957	2.412	8.319	1	.004	2.230	11.685
	[T2010=1]	0[a]	.	.	0	.	.	.
	[T2011=0]	8.684	2.009	18.675	1	.000	4.745	12.622
	[T2011=1]	0[a]	.	.	0	.	.	.
	[T2012=0]	11.174	1.785	39.180	1	.000	7.675	14.673
	[T2012=1]	0[a]	.	.	0	.	.	.
	[T2013=0]	0[a]	.	.	0	.	.	.

Location								
[T2013=1]	0[a]	.	.	0	.	.	.	.
[T2014=0]	0[a]	.	.	0	.	.	.	.
[T2014=1]	0[a]	.	.	0	.	.	.	.
[Reg1=0]	-9.191	2.553	12.965	1	.000	-14.194	-4.188	
[Reg1=1]	0[a]	.	.	0	.	.	.	.
[Reg2=0]	-6.395	2.156	8.796	1	.003	-10.622	-2.169	
[Reg2=1]	0[a]	.	.	0	.	.	.	.
[Reg3=0]	21.137	3.492	36.632	1	.000	14.292	27.981	
[Reg3=1]	0[a]	.	.	0	.	.	.	.
[Reg4=0]	40.282	5.884	46.874	1	.000	28.751	51.814	
[Reg4=1]	0[a]	.	.	0	.	.	.	.
[Reg5=0]	22.771	3.689	38.099	1	.000	15.540	30.001	
[Reg5=1]	0[a]	.	.	0	.	.	.	.
[Reg6=0]	-13.161	2.644	24.782	1	.000	-18.342	-7.979	
[Reg6=1]	0[a]	.	.	0	.	.	.	.
[Reg7=0]	26.644	4.214	39.981	1	.000	18.385	34.903	
[Reg7=1]	0[a]	.	.	0	.	.	.	.
[Reg8=0]	-14.649	3.010	23.681	1	.000	-20.549	-8.749	
[Reg8=1]	0[a]	.	.	0	.	.	.	.
[Reg9=0]	-11.807	2.702	19.095	1	.000	-17.103	-6.511	
[Reg9=1]	0[a]	.	.	0	.	.	.	.

Scale	**Minority**	-.006	.001	48.235	1	.000	-.008	-.004
	UnemNatl	.280	.014	422.992	1	.000	.254	.307
	UnemDist	.007	.004	2.683	1	.101	-.001	.016
	MedHouseIncome	-1.139E-6	9.332E-7	1.491	1	.222	-2.968E-6	6.896E-7
	MoCLCV	-.002	.001	4.269	1	.039	-.003	-8.488E-5
	MoCTerms	.007	.003	6.269	1	.012	.002	.013
	Obama	.008	.001	44.536	1	.000	.006	.010
	MoCParty	-.060	.058	1.050	1	.305	-.174	.054

Link function: Logit.

a. This parameter is set to zero because it is redundant.

Number of Observations: 24,149

CHART 2: GOODNESS OF FIT AND ROBUSTNESS RESULTS

MODEL FITTING INFORMATION

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	23154.747			
Final	12958.679	10196.068	28	.000

Link function: Logit.

GOODNESS-OF-FIT

	Chi-Square	df	Sig.
Pearson	64300.038	3996	.000
Deviance	11454.675	3996	.000

Link function: Logit.

PSEUDO R-SQUARE

Cox and Snell	.344
Nagelkerke	.444
McFadden	.283

Link function: Logit.

CHART 3: DISTRIBUTION OF ENFORCEMENT DECISIONS (2010–15)