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ELECTRONICALLY TRANSMITED

Paul Compton, Jr., General Counsel
Anna Maria Farias, Assistant Secretary for Fair Housing and Equal Opportunity
Krista Mills, Deputy Assistant Secretary, Office of Policy, Legislative Initiatives, and Outreach
U.S. Department of Housing and Urban Development
451 7th Street, SW
Washington, DC 20410

Re: Disparate Impact and HUD's Longstanding Failure to Understand That Relaxing Lending Standards Tends to Increase, Not Reduce, Relative Racial Differences in Adverse Borrower Outcomes; HUD's Obligation to Advise Lenders and Other Entities of the Ways HUD Has Misled Them Regarding the Effects of Policies on Measures of Racial Disparity

Dear General Counsel Compton, Assistant Secretary Farias, and Deputy Assistant Secretary Mills:

I understand that the Department of Housing and Urban Development (HUD) is considering modifying the agency's interpretation of the disparate impact doctrine under the Fair Housing Act or guidance regarding the application of the doctrine. This letter has two purposes that are highly relevant to HUD's consideration of that modification, but that would be highly relevant to HUD activities regardless of such consideration. The first purpose is to explain to the agency that the longstanding belief of HUD and other agencies involved with enforcement of fair lending laws that reducing adverse borrower outcomes tends to reduce relative (percentage) racial and other demographic differences in rates of experiencing the outcomes is incorrect, as well as to explain certain other problems in standard analyses of demographic differences. The second purpose is to advise HUD of its obligation to correct misunderstandings it has promoted.

A. The Mistaken Belief That Generally Reducing Adverse Outcomes Tends to Reduce, Rather Than Increase, Relative Demographic Differences in Rates of Experiencing the Outcomes and Other Problems in the Analysis of Demographic Differences Regarding Matters Within HUD's Purview

HUD and other agencies involved with the enforcement of fair lending laws and related matters involving housing issues have long promoted the belief that relaxing lending standards

and otherwise generally reducing adverse borrower outcomes tends to reduce relative racial and other demographic differences in rates of experiencing the outcomes. In fact, exactly the opposite is the case.

That is, generally reducing any outcome by increasingly restricting it to those most susceptible to it, while tending to reduce relative differences between the rates at which advantaged and disadvantaged groups experience the opposite outcome, tends to increase relative differences between the rates at which such groups experience the outcome itself.

Tables 1 and 2 below should make the point quite clear. The tables, which also appear as Tables 2 and 3 of that attached April 13, 2017 letter[1] to the Attorney General (Attachment A) and Table 1 and 2 of the attached April 17, 2018 letter to the Comptroller General (Attachment B), show the proportions of blacks and whites falling above and below five income and credit score levels. The tables thus can illustrate the effects of lowering income or credit score requirements on measures of racial differences between rates of meeting the requirements and between rates of failing to meet the requirements.

In each table, Column 5 shows the ratio of the white rate of falling above the level to the black rate of falling above the level.[2] Moving down the table, Column 5 illustrates that lowering a cutoff from point to point would reduce that ratio (and the associated relative difference between black and white rates of meeting the requirement).

[1] To facilitate consideration of issues raised in letters such as this I include links to referenced materials in electronic copies of the letters, in some cases, for the reader's convenience, providing the links more than once. Such copies are available by means of the Measurement Letters page of jpscanlan.com. If the online version of a letter is amended, such fact will be noted on the first page of that version.

[2] While I commonly refer to patterns of relative differences in this letter, the tables actually present rate ratios (which are also termed "risk ratios," "relative risks," or, in the language of the National Disproportionate Minority Contact Databook, "relative risk indexes"). The relative difference is the rate ratio minus 1 where the rate ratio is above 1 and 1 minus the rate ratio where the rate ratio is below one. In the former case, the larger the rate ratio, the larger the relative difference; in the latter case, the smaller the rate ratio, the larger the relative difference. It is more common to employ the disadvantaged group's rate as the numerator for the favorable as well as the adverse outcome, which is the approach as to favorable outcomes of the "four-fifths" or "80 percent" rule for identifying disparate impact under the Uniform Guideline for Employee Selection Procedures. I have sometimes employed this approach, as in "Can We Actually Measure Health Disparities?," *Chance* (Spring 2006). Recently, however, I have usually used the larger figure as the numerator for both rate ratios, in which case, as to both favorable and adverse outcomes, the larger the ratio, the larger the relative difference. In my view, this approach makes it easier for observers to understand that the two relative differences are changing in opposite directions. Choice of numerator in the rate ratio, however, has no bearing on the patterns by which as the frequency of an outcome changes, the two relative differences tend to change in opposite directions.

Table 1. Illustration of effects of lowering an income requirement on relative differences in meeting the requirement and relative differences in failing to meet the requirement

Income	(1) Perc of Wh Abv	(2) Perc of Bl Abv	(3) Perc of Wh Bel	(4) Perc of Bl Bel	(5) Wh/Bl Abv Ratio	(6) Bl/Wh Bel Ratio
$100,000	27.0%	12.1%	73.0%	87.9%	2.23	1.20
$85,000	34.6%	17.3%	65.4%	82.7%	2.00	1.26
$75,000	41.1%	22.7%	58.9%	77.3%	1.81	1.31
$60,000	52.5%	31.3%	47.5%	68.7%	1.68	1.45
$50,000	61.0%	39.2%	39.0%	60.8%	1.56	1.56

Table 2. Illustration of effects of lowering a credit score requirement on relative differences in meeting the requirement and relative differences in failing to meet the requirement

Score	(1) Perc of Wh Abv	(2) Perc of Bl Abv	(3) Perc of Wh Bel	(4) Perc of Bl Bel	(5) W/B Abv Ratio	(6) B/W Bel Ratio
740	46.80%	19.50%	53.20%	80.50%	2.40	1.51
720	57.77%	27.01%	42.23%	72.99%	2.14	1.73
700	67.83%	35.67%	32.17%	64.33%	1.90	2.00
680	76.73%	45.42%	23.27%	54.58%	1.69	2.35
660	83.90%	55.70%	16.10%	44.30%	1.51	2.75

Column 6, however, shows the ratio of the black rate of failing to meet the requirement to the white rate of failing to meet the requirement. Moving down the table, Column 6 illustrates that lowering a cutoff from point to point would increase that ratio (and the associated relative difference between black and white rates of failing to meet the requirement). Column 6 thus demonstrates why reducing income or credit score requirements for receipt of loans would tend to increase the ratio of the black loan rejection rate to the white loan rejection rate, which is the measure on which HUD and other fair lending enforcement agencies have long relied to appraise the size of a racial disparity in borrower outcomes.

As discussed in the April 13, 2017 letter to the Attorney General (at 7), the tables are abbreviated versions of Tables 1 and 2 of the Income and Credit Score Examples subpage of the Lending Disparities page of jpscanlan.com, which also explains the origins of the data. The tables on that page show that the same pattern exists across all 16 income levels and all 14 credit score levels displayed in the tables.

If you have any questions as to the interpretation in the data in the tables set above, I urge you to seek the advice of HUD data analysts, something that I would recommend in any event. It is probable that no data analyst at HUD currently understands that lowering an income or credit score requirement tends to increase, rather than reduce, relative racial differences in rates of failure to meet the requirement. But all such analysts, once confronted with the information in the tables, should readily acknowledge that it in fact is indisputable that lowering an income or credit score requirement will tend to increase, rather than decrease, relative racial differences in rates of failure to meet the requirement.[3]

Since 1987, I have explained in scores of publications, conferences presentations, and university methods workshops, as well as the testimony before the U.S. Commission on Civil Rights discussed at the end of this section, that generally reducing any outcome in a way that increasingly restricts it to those most susceptible to it tends to increase, rather than reduce, relative demographic differences in rates of experiencing the outcome. The following are some of the more prominent articles addressing the matter in varied contexts, including two in American Statistical Association publications (denoted by asterisks) and two that discuss lending disparities issues (denoted by double asterisks): "The Mismeasure of Health Disparities," *Journal of Public Health Management and Practice* (July/Aug. 2016), "Race and Mortality Revisited," *Society* (July/Aug. 2014)**, "Can We Actually Measure Health Disparities?," *Chance* (Spring 2006)*, "Race and Mortality," *Society* (Jan./Feb. 2000) (reprinted in *Current* (Feb. 2000))**, "Divining Difference," *Chance* (Fall 1994)*, "The Perils of Provocative Statistics," *Public Interest* (Winter 1991), and "The 'Feminization of Poverty' is Misunderstood," *Plain Dealer* (Nov 11, 1987) (reprinted in *Current* (May 1988) and *Annual Editions: Social Problems 1988/89* (Dushkin 1988)).

The following are some recent treatments of the issue, at moderate or extended length, with regard to demographic differences in borrower outcomes, including differences in the receipt or failure to receive a loan at all and differences in whether the borrower receives a prime or subprime loan: "Is the Disparate Impact Doctrine Unconstitutionally Vague?," Federalist Society Blog (May 6, 2016), amicus curiae brief of James P. Scanlan in *Texas Department of Housing and Community Development, et al. v. The Inclusive Communities Project, Inc.*, Supreme Court No. 13-1731 (Nov. 17, 2014) (TDHCD brief), "The Perverse Enforcement of Fair Lending Laws," *Mortgage Banking* (May 2014). The aforementioned "Race and Mortality Revisited," while principally devoted to explaining that the failure to understand patterns by which all standard measures of differences between outcome rates tend to be affected by the prevalence of an outcome undermines virtually all analyses of demographic differences between outcome rates in the law and the social and medical sciences, gives significant attention to

[3] Some might point out reasons why the pattern would not be observed in every single case, as I also have done in numerous places. But the facts would remain that the pattern reflected in the tables would be the predominant pattern and that this pattern is the opposite of what HUD and other fair lending enforcement agencies have long assumed to be the predominant pattern.

lending disparities issues. The article's treatment of lending disparities issues includes discussion of the failure to understand that having high income will tend to reduce adverse borrower outcome rates proportionately more for whites than blacks, while increasing the corresponding favorable outcome rates proportionately more for blacks than whites (thus causing relative racial differences in adverse borrower outcomes to be larger, but relative differences in the corresponding favorable outcomes to be smaller, among higher-income than lower-income loan applicants), and the impossibility of drawing inferences about processes on the basis of the comparative size of any relative difference (or proportionate effect) without understanding the patterns described in the article.[4]

The items in the immediately preceding paragraph discuss, among other things: (a) the perverse history of fair lending enforcement in circumstance where the enforcing agencies have an understanding of the effects of policies on measures of racial disparity that is the opposite of reality and where lenders who follow government guidance to relax standards increase the chances that the government or others will accuse the lenders of discrimination; (b) issues concerning the impossibility of soundly quantifying a demographic difference involving outcome rates without consideration of the ways measures of such difference tend to be affected by the prevalence of an outcome; and (c) issues, including constitutional ones, arising from the fact that relaxing a standard will tend to reduce the disparate impact of the standard if measured in terms of relative differences in meeting the standard, but will tend to increase the disparate impact of the standard if measured in terms of relative differences in failure to meet the standard,

The last issue may be more complicated in circumstances where enforcement agencies are unaware that the described pattern is even possible and incorrectly assume that relaxing a standard will tend to reduce the relative difference in rates of failing to meet the standard. But it would exist even in situations where the agencies fully understand the pattern. Similar issues exist with regard to whether fines levied by HUD based on disparate impact theory would be deemed to involve arbitrary and capricious agency action. Further, implicit in the discussion in these items (especially the discussion pertaining to Table 5 of "Race and Mortality Revisited") is that any determination that one entity had a larger racial disparity than another without consideration of the way the measure used to make that determination tends to be affected by the prevalence of the outcome would be an essentially nonsensical determination, thus, presumably also being arbitrary and capricious.

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[4] "Race and Mortality Revisited" and my other recent treatments of issues in the analysis of demographic differences give significant attention to the pattern by which absolute (percentage point) differences between rates tends to be affected by the prevalence of an outcome. This is an important issue in many areas. Since lending disparities issues tend to be analyzed in terms of relative differences – and the universal mistaken belief about effects of policies on measures of racial disparities in borrower outcomes involves relative differences – most of my treatment of lending disparities issues have not discussed absolute differences between rates. But because Federal Reserve personnel have sometimes analyzed lending disparities issues in terms of absolute differences between rates, I discussed the ways absolute differences between rates tend to be affected by the prevalence of an outcome in the Appendix to my March 4, 2013 letter to the Federal Reserve Board.

Numerous other treatments of the government's failure to understand that relaxing a lending standard tends to increase, rather than decrease, relative differences in adverse borrower outcomes are treated in the margin.[5] Note that, as early as 1992, my *American Banker* article explained that relaxing standards tended to increase relative differences in mortgage rejection rates. Yet, more than a quarter century later, HUD and other fair lending enforcement agencies continue to take for granted that relaxing a standard will tend to reduce such differences. This situation has persisted not because analysts at HUD and other agencies have considered the arguments raised in the referenced materials and found that, for some reason, the arguments are not correct. More likely, as in the case of analysts at various agencies whose activities involve appraisal of demographic differences in outcome rates, and who have invariably assumed that reducing an outcome tends to reduce relative differences in rates of experiencing the outcome, analysts of demographic differences in borrower outcomes have never considered the possibility that the opposite is the case. And they have never carefully examined data of the type presented in Tables 1 and 2 that should make it absolutely clear that the opposite is the case.

The failure to understand this pattern is remarkable is many contexts, including those like the school discipline context where agencies have had ample opportunity to observe that the policies the agencies maintain will tend to reduce relative racial differences in adverse outcome rates have usually increased those differences. But it is especially remarkable in the case of fair lending enforcement agencies, since readily available data demonstrate unequivocally that relaxing standards will tend to increase relative racial differences in failure to meet the standards. Moreover, agencies enforcing fair lending laws, including, not only HUD, but the Consumer Financial Protection Bureau, the Office of the Comptroller of the Currency, the Federal Reserve Board, and the Federal Deposit Insurance Corporation, would be expected to be especially proficient in quantitative reasoning. But the continuing failure of such agencies to understand this easily illustrated pattern will reasonably raise questions regarding their understanding of the

[5] "What the government gets wrong about fair lending," *American Banker* (Apr. 9, 2018), "Case may reveal government's perverse fair lending enforcement," *The Hill* (Dec. 29, 2014), "Is HUD's Disparate Impact Rule Unconstitutionally Vague?," *American Banker* (Nov. 10, 2014), Let's Hope Insurer Lawsuit Makes HUD Rethink "Disparate Impact", *American Banker* (Jan. 8, 2014), "Things government doesn't know about racial disparities," *The Hill* (Jan. 28, 2014), Misunderstanding of Statistics Leads to Misguided Law Enforcement Policies," *Amstat News* (Dec. 2012), "Regulators Need Schooling on Measuring Lending Bias," *American Banker* (June 14, 2013), "Fair Lending Studies Paint Incomplete Picture," *American Banker* (April 24, 2013), "Misunderstanding of Statistics Leads to Misguided Law Enforcement Policies," *Amstat News* (Dec. 2012), "'Disparate Impact': Regulators Need a Lesson in Statistics,"*American Banker*, June 5, 2012), "The Lending Industry's Conundrum," *National Law Journal* (Apr. 2, 2012), "Both Sides Misuse Data in the Credit Discrimination Debate," *American Banker* (July 22, 1998), "Responsive Banks Hurt by Improper Data Interpretation," *Montgomery Journal* (May 5, 1998), "Perils of Using Statistics to Show Presence or Absence of Loan Bias," *American Banker* (Jan. 3, 1997), "Statistical Anomaly Penalizes Fair-Lending Effort," *American Banker* (Nov. 18, 1996), "When Statistics Lie" *Legal Times* (Jan. 1 1996), "Getting it Straight When Statistics Can Lie," *Legal Times* (June 23, 1993), "Bias Data Can Make the Good Look Bad," *American Banker* (Apr. 27, 1992).

more complex quantitative matters as to which the public and policy makers commonly defer to the agencies' presumptive expertise.

See also discussion in the aforementioned "Race and Mortality Revisited" and "The Mismeasure of Health Disparities" regarding the fact the National Center for Health Statistics, as early as 2004, recognized that as health and healthcare improved, relative difference between rates at which advantaged and disadvantaged groups experienced the increasing (favorable) health and healthcare outcomes tended to decrease, while relative differences between the rates at which the groups experienced the corresponding decreasing (adverse) health and healthcare outcomes tended to increase. No other arm of the federal government has recognized that it is even possible for the relative difference between rates of experiencing an outcome and the relative difference between rates of experiencing the opposite outcome to change in opposite directions as the prevalence of an outcome changes, much less that the National Center for Health Statistics has recognized that this tends to occur systematically. And all agencies enforcing civil rights law have proceeded on the belief that reducing an adverse outcome will tend to reduce relative differences in rates of experiencing the outcome, the opposite of the pattern recognized by National Center for Health Statistics. As reflected in the attached April 17, 2018 letter to the Comptroller General, the Government Accountability Office, which possibly more than any other agency one might expect to correct executive branch agencies' misunderstandings of issues like this, has instead itself affirmatively promoted the misunderstandings.

The above discussion and referenced materials pertaining to lending issues principally involve the fact that relaxing lending standards, or policies like giving additional review to applications initially rejected that have similar effects, while tending to reduce relative demographic differences in loan approvals, tend to increase relative demographic differences in loan rejections. The same issues apply to matters involving foreclosure. That is, any action that generally reduces foreclosure rates, while tending to reduce relative differences between rates at which borrowers from advantaged and disadvantaged groups avoid foreclosure, will tend to increase relative differences between such groups' foreclosure rates. Provisions of the Dodd-Frank Act requiring that borrowers demonstrate an ability repay a mortgage (which, by reducing mortgage availability, will tend to reduce, not increase, relative racial differences in mortgage rejection rates) will tend to increase relative racial differences in foreclosures. Provisions of the $25 billion dollar settlement reached in 2012 between state and federal government agencies, including HUD, and the nation's five largest lenders regarding mortgage servicing and foreclosure abuses, including provisions requiring lenders to devote substantial funds to reducing foreclosures, are of nature that will tend to increase relative racial difference in foreclosure rates. Three of those lenders are subjects of the type of suits regarding the disproportionate concentration of foreclosure in minority neighborhoods that were addressed by the Supreme Court in *Bank of America Corp., et al. v. City of Miami* (2017). Actions the defendants in such suits took to reduce foreclosures pursuant to the 2012 agreement, like any other action lenders might take to generally reduce foreclosures, would tend to increase the perceived merit of the cases.

As suggested above, an understanding of these patterns does not resolve whether, in any context, modification to a policy in a way the generally reduces adverse outcome rates can be reasonably deemed to increase or decrease the policy's disparate impact. See Section E of "The Mismeasure of Discrimination," Faculty Workshop, University of Kansas School of Law (Sept. 20, 2013) (Kansas Law paper) regarding the complexity of such issues. Issues as to what is the less discriminatory of two alternatives may be even more complex with respect to housing policies such as those at issue in the *Texas Department of Housing and Community Development* case. See the LIHTC Approval Disparities subpage of the Scanlan's Rule page of jpscanlan.com.

I have not studied this matter with respect to zoning issues. Thus, I merely note that relaxing a zoning requirement that disproportionately affects disadvantaged groups, while tending to reduce relative demographic differences in rates of being able to live in the zoned areas, will tend to increase relative differences in rates of being unable to live in the zoned areas. Correspondingly, relaxing the requirement will tend to increase the proportion a disadvantaged group makes up of persons who live in the zoned area and the proportion such group makes up of persons who do not live in the zoned area (a pattern illustrated by the last two rows of Table 1 of the April 13, 2017 letter to the Attorney General). See also Table 1 in each of the aforementioned 1994 and 2006 *Chance* articles "Divining Difference" and "Can We Actually Measure Health Disparities?."

Most of the above-referenced materials go to issues regarding securing or failing to secure some desired outcome. Issues regarding loan terms received raise an additional issue concerning the impossibility of analyzing discrimination issues (whether deemed disparate impact or disparate treatment issues) based solely on data regarding persons who accepted some outcome or situation. See the last section of "The Perverse Enforcement of Fair Lending Laws," *Mortgage Banking* (May 2014), Part II (at 41-45) of Comments for Commission on Evidence-Based Policymaking (Nov. 14, 2016), Section F (at 32-35) of the Kansas Law paper, and Section I.B (at 23-27) the TDHCD brief. See also "Fair Lending Studies Paint Incomplete Picture," *American Banker* (April 24, 2013). Recent brief and extended treatments of this subject, which also pertains to pay equity issues, may be found in "Partial Picture Issue Undermines Chadbourne Pay Equity Case," Law360 (Jan. 25, 2017) and "EEOC, OMB, and the Collection of Data That Can't Be Analyzed," Federalist Society Blog (Sept. 7, 2017).

Note especially the discussion in the last three items regarding the way that a belief among racial minorities that they face widespread lending discrimination can contribute to racial/ethnic differences in loan terms received. The mistaken understanding that relaxing lending standards tends to reduce relative differences in loan rejection rates, as well as the mistaken understanding that a larger relative difference in an adverse outcome necessarily means a greater likelihood of discrimination than a smaller one, can play a substantial role in furthering the belief that there exists widespread, and increasing, discrimination in loan outcomes. See "The Pernicious Misunderstanding of Effects or Policies on Racial Differences in Criminal Justice Outcomes," Federalist Society Blog (Oct. 12, 2017) my November 27, 2018 letter to the Coalition for Juvenile Justice (at 12-13) regarding the way similar misunderstandings promote

distrust in the fairness of criminal justice and public school discipline processes. See also the discussion in "Bias Data Can Make the Good Look Bad," *American Banker* (Apr. 27, 1992), and "When Statistics Lie" *Legal Times* (Jan. 1, 1996), regarding the fact that a lender's comparatively large relative racial/ethnic differences in mortgage rejection rates commonly indicates that racial minorities have a higher, rather than a lower, chance of having their mortgage applications approved by the lender than by other lenders.

The issues discussed in the immediately preceding paragraphs are among many that HUD must master in order to conduct or provide guidance on statistical analyses of demographic differences pertinent to the agency's mission. But a key starting point in the mastery of these issues is recognition that generally reducing adverse outcomes tends to increase, not reduce, relative differences between the rates at which advantaged and disadvantaged groups experience the outcomes. Some discussions of prospects that this or more complicated issues issue will be recognized by executive branch agencies during the current administration may be found in "United States Exports Its Most Profound Ignorance About Racial Disparities to the United Kingdom," Federalist Society Blog (Nov. 2, 2017), "The Government's Uncertain Path to Numeracy," Federalist Society Blog (Aug. 24, 2017), "Innumeracy at the Department of Education and the Congressional Committees Overseeing It," Federalist Society Blog (July 21, 2017), "Will Trump Have the First Numerate Administration?" Federalist Society Blog (Jan. 4, 2017).

Not mentioned in these items is my December 8, 2017 testimony to the U.S. Commission on Civil Rights that principally pertains to the mistaken belief that generally reducing adverse public school discipline outcomes tends to reduce relative racial differences in rates of experiencing the outcomes. But the testimony also discusses the failure to understand the issue in other contexts, including the fair lending enforcement context. I will continue to attempt to cause the Commission on Civil Rights to understand this issue (and related issues). If the Commission understands the issue in any context, it will likely understand the issue in other contexts as well, especially the lending context where, as noted, available data should make the pertinent statistical pattern especially easy to understand.

It would behoove HUD to master the issue before the issue has to be explained to it by other agencies or by Congress, or, in an administrative or court proceeding, by the respondent or defendant, or by the judge handling the proceeding.

B. HUD's Obligation to Advise Other Entities of The Mistaken Understanding Reflected in Prior HUD Guidance and Actions

Attachments A and B both discuss the obligations of the Department of Justice and the Government Accountability Office to explain to various entities that the agencies have misled the entities regarding the effects of policies on measures of racial disparity. See also the July 17, 2017 letter to the Departments of Education, Health and Human Services, and Justice regarding those agencies' obligations to advise school administrators and others that the belief promoted by

the agencies that generally reducing adverse school discipline outcomes will tend to reduce relative racial differences in such outcomes is incorrect.

HUD has similar obligations arising from its promotion of the belief that generally reducing adverse borrower outcomes tends to reduce relative racial differences in rates of experiencing the outcomes. One such obligation is to lenders whom the agency has encouraged to relax standards in order to reduce relative differences in adverse borrower outcomes at the same time that the agency has monitored the fairness of practices on the basis of the relative differences in adverse borrower outcomes that relaxing standards actually tends to increase.

Congress is frequently considering fair lending and other housing-related disparities issues, as well as issues concerning the collection of data regarding demographics of persons securing and failing to secure desired borrower outcomes (such as I recently mentioned in "What the government gets wrong about fair lending," *American Banker* (Apr. 9, 2018)). Thus, HUD should make it a high priority to expeditiously advise Congress of the way HUD and other fair lending enforcement agencies have been providing incorrect guidance as to the effects of policies on measures of racial disparity.

These obligations exist regardless of any action HUD may take respecting modification of the agency's interpretation of the disparate impact doctrine or guidance regarding the application of the doctrine. It should be evident, however, that taking any action concerning that matter without careful consideration of the way the agency has long misled Congress, lenders, and the public, and without formally addressing that issue, would have the effect of reinforcing prior incorrect guidance.

Further, HUD provides much funding to organizations involved in the promotion of fair housing (including grants of $37 million announced in January 2018 and $23 million announced in December 2018). The statistical issues discussed above or in the references above may be implicated in the work of many of the recipients of these grants, especially work involving efforts to identify discrimination by means of statistical analyses. As reflected in "Race and Mortality Revisited" and the Kansas Law paper, analyses of discrimination issues can never be sound without considering the ways the measures employed tend to be affected by the prevalence of an outcome, and virtually never has an entity analyzing a discrimination issue done this.

Thus, HUD should closely monitor these grants to ensure that statistical analyses conducted pursuant to the grants are sound. Moreover, due to HUD's promotion of the mistaken understanding of the effects of policies on measures of racial disparity, HUD itself shares responsibility for failures of HUD grantees to understand how to analyze demographic differences. Thus, HUD should inform grantees of problems in past analyses of such issues in order to prevent the grantees from wasting their own time and resources in the conduct of unsound research.

Finally, HUD is one of many agencies involved in the enforcement of fair lending laws, which sometimes provide joint guidance on compliance and enforcement issues. Thus, assuming

HUD is able to understand the issues addressed in this letter and its references, it has an obligation to bring the issues to the attention of fair lending enforcement agencies that may be less able to understand the issues or simply have not had the issues called to their attention.

Sincerely,

/s/ James P. Scanlan

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Attachments

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April 13, 2017

The Honorable Jeff Sessions
Attorney General
T. E. Wheeler, II
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United States Department of Justice
950 Pennsylvania Avenue, NW
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Re: Misunderstandings of Statistics Relating to the Department of Justice's Enforcement of Civil Rights Laws

Dear Attorney General Sessions and Acting Assistant Attorney General Wheeler:

Introduction

This letter has two purposes. The first purpose, addressed in Section A, is to explain to the Department of Justice (DOJ) that many federal civil rights enforcement policies have long been based on an understanding of statistics that is the exact opposite of reality and to urge the agency to take certain steps to remedy the consequences of its actions based on that understanding. A second purpose, addressed in Section B, is to explain to the agency that, even apart from consequences of the aforementioned mistaken understanding, almost all law enforcement activities involving statistical analyses of discrimination issues have been statistically unsound and to urge the agency to form a committee to study the soundness of such analyses.

By way of summary as to the letter's first purpose, many civil rights enforcement policies of DOJ and other agencies regarding matters including criminal justice, lending, school discipline, voter qualification, and employment have been based on the belief that relaxing standards and otherwise reducing the frequency of some adverse outcome will tend to reduce (a) relative (percentage) demographic differences in rates of experiencing the outcome and (b) the proportions groups more susceptible to the outcome make up of persons experiencing it. Further, DOJ, alone or in conjunction with other agencies, has been leading entities covered by civil rights laws, the courts, and the public also to believe that actions that generally reduce adverse outcomes will tend to reduce (a) and (b) as to the outcomes.

In fact, generally reducing any outcome will tend to increase, not reduce, both (a) and (b) as to the outcome. Moreover, while such fact is little known even among persons deemed expert in the analyses of demographic differences, it is by no means debatable. By way of simple examples as to which there exists no plausible basis for disagreement (and which will be illustrated in Tables 1 to 3 *infra*), (1) test score data show that lowering a test cutoff, while tending to reduce relative differences between the pass rates of higher- and lower scoring-groups, will tend to increase relative differences between the failure rates of such groups; and (2) income and credit score data on African Americans and whites show that lowering an income or credit score requirement to secure some desired borrowing or other outcome, while tending to reduce relative racial differences between rates of meeting the requirement, will tend to increase relative racial differences between rates of failing to meet the requirement.

Further, more than a decade ago the National Center for Health Statistics recognized that improvements in health and healthcare, while tending to reduce relative differences in favorable health and healthcare outcomes (the increasing outcomes), tend to increase relative differences in the corresponding adverse health and healthcare outcomes (the decreasing outcomes). No other arm of the federal government, however, has yet shown a recognition that it is even possible for the relative difference in a favorable outcome and the relative difference in the corresponding adverse outcome to change in opposite directions as the frequency of an outcome changes, much less that such pattern tends to occur systematically.

Once understanding this issue, I suggest, DOJ has an obligation to review all of its activities that may be based on the aforementioned mistaken understanding with a view toward taking appropriate corrective action. Such actions should include advising all entities that DOJ may have has misled with respect to this matter that the agency's understanding was incorrect. And such actions should be taken immediately, especially with respect to alerting the court in *United States v. Baltimore Police Department et al.*, Civ. No. JKB-17-99 (D. Md.), that contrary to a central premise of the consent decree the court entered on April 7, 2017, actions required by the decree are more likely to increase than decrease relative racial and other demographic differences in adverse criminal justice outcomes and the proportions African Americans and other more susceptible groups make up of persons experiencing those outcomes.

By way of summary as to the second purpose of the letter, the misunderstanding regarding the effects of relaxing standards and otherwise reducing the frequency of adverse outcomes on measures of demographic differences regarding such outcomes is but part of a larger failure of the DOJ and other arms of the federal government, as well as the nongovernmental social and medical science research communities, to recognize the ways all measures commonly employed in analyses of demographic differences involving binary outcomes tend to be affected by the frequency of an outcome. That failure, along with a failure to understand certain other matters, has long undermined civil rights enforcement by DOJ and other agencies. But resolving these issues will require concerted action from the agency and other arms of the government whose missions have been similarly compromised by the inadequate understanding of statistics. Thus, I suggest that DOJ should form a committee to address this subject thoroughly, preferably in conjunction with other agencies whose activities involve the interpretation of data on

demographic differences. While doing so, the agency should limit enforcement activities involving statistical evidence to those where agency attorneys and consultants, while fully informed of the issues raised in this letter and materials it references, are confident that the agency is proceeding with an adequate understanding of the statistical issues involved in the matter.

The second subject of this letter is as important as the first. But this letter principally addresses the first subject because, with respect to matters in Baltimore, Maryland and other places, in consequence of the mistaken understanding described at the outset, law enforcement agencies, and individual within those agencies, are placed in untenable positions. For they are being required to take actions that will tend to increase (a) relative demographic differences in rates of experiencing certain outcomes and (b) the proportions groups more susceptible to the outcomes make up of persons experiencing them, at the same time that high values for (a) and (b) are being regarded as evidence of noncompliance with decrees or agreements and discrimination on the part of agencies and individuals within agencies. Moreover, public perceptions about racial disparities in adverse outcomes, which are commonly based on provocative but misunderstood statistics, will grow even more distorted as actions aimed at reducing certain measures of disparities in fact increase them.

Further, decisions now being made within DOJ regarding actions to take in light of the entry of the decree in Baltimore over the agency's objections should be informed by an understanding of the fallacy of a central premise of the decree. Similarly, the review of consent decrees and other activities involving state and local law enforcement agencies pursuant to the Attorney General's Memorandum of March 31, 2017, ought to be informed by a complete understanding of the extent to which premises of those activities are incorrect.

Recent treatments of these issues as they bear on situations in Baltimore (or Ferguson, Missouri and Chicago, Illinois) may be found in "Things DoJ doesn't know about racial disparities in Ferguson," *The Hill* (Feb. 22, 2016),[1] "Misunderstanding of Statistics Confounds Analyses of Criminal Justice Issues in Baltimore and Voter ID Issues in Texas and North Carolina," Federalist Society Blog (Oct. 3, 2016), "Will Trump Have the First Numerate Administration?" Federalist Society Blog (Jan. 4, 2017), "Compliance Nightmare Looms for Baltimore Police Department," Federalist Society Blog (Feb. 8, 2017), and "Racial Impact Statement Laws in New Jersey and Elsewhere," Federalist Society Blog (Mar. 20, 2017).

A recent, extended treatment of the larger issues, which issues are also touched upon in the January 4, 2017 Federalist Society Blog post, may be found in my Comments for the Commission on Evidence-Based Policymaking (Nov. 14, 2016) (CEBP comments). Other extended treatments in recent years include my letter to American Statistical Association (Oct. 8,

[1] To facilitate consideration of issues raised in documents such as this I include links to referenced materials in electronic copies of the documents, in some cases, for the reader's convenience, providing the links more than once. Such copies are available by means of the Measurement Letters page of jpscanlan.com. If the online version of the letter is amended, such fact will be noted on the first page.

2015) (ASA letter), amicus curiae brief in *Texas Department of Housing and Community Development, et al. v. The Inclusive Communities Project, Inc*., Sup. Ct. No. 13-1731 (Nov. 17, 2014) (TDHCA brief), "Race and Mortality Revisited," *Society* (July/Aug. 2014), "The Perverse Enforcement of Fair Lending Laws," *Mortgage Banking* (May 2014), and "The Mismeasure of Discrimination," Faculty Workshop, University of Kansas School of Law (Sept. 20, 2013) (Kansas Law paper).

Prior explanations of these issues to DOJ itself may be found in my April 23, 2012 letter to the agency and my March 9, 2015 letter to the agency and the City of Ferguson, Missouri.

Some of the above materials contain graphical or tabular illustrations of the pertinent statistical patterns and situations where the patterns are misunderstood. More extensive graphical and tabular illustrations may be found in methods workshops I have given since 2012 at the following American educational institutions: University of Massachusetts Medical School (2015), University of California, Irvine (2015), George Mason University (2014), University of Maryland (2014), University of Minnesota (2014), Harvard University (2012), American University (2012). [2]

A. The Department of Justice's Mistaken Belief That Relaxing Standards and Otherwise Reducing the Frequency of an Adverse Outcome Will Tend to Reduce (a) Relative Differences in Rates of Experiencing the Outcome and (b) the Proportion Groups Most Susceptible to the Outcome Make up of Persons Experiencing the Outcome

For reasons related to the shapes of underlying distributions of factors associated with experiencing an outcome or its opposite, all standard measures of differences between outcome rates (*i.e.*, the proportions of demographic groups experiencing a binary outcome) tend to be affected by the frequency of an outcome. The pattern most pertinent here is that whereby the rarer an outcome, the greater tends to be the relative difference in experiencing it and the smaller tends to be the relative difference in avoiding it (*i.e.*, experiencing the opposite outcome). A corollary to this pattern is a pattern whereby the rarer an outcome, the greater tend to be the proportions groups most susceptible to the outcome make up of both persons who experience the outcome and persons who avoid the outcome.

The patterns can be easily illustrated with normally distributed test score data. Table 1 below shows the pass and fail rates of an advantaged group (AG) and a disadvantaged group (DG) at two cutoff points in a situation where the groups have normally distributed test scores with means that differ by half a standard deviation (a situation where approximately 31 percent of

[2] The workshops are similar in content, though with some variation as to focus or emphasis. The workshop most pertinent to the subject of this letter is that titled "The Mismeasure of Discrimination," given at the Center for Demographic and Social Analysis of the University of California, Irvine. Shorter PowerPoint presentations with a similar focus include "The Mismeasure of Disparate Impact," Federalist Society Fourth Annual Executive Branch Review Conference (May 17, 2016), and a presentation titled "The Mismeasure of Discrimination" that was delivered in conjunction with the September 20, 2013 Kansas Law paper of the same title.

DG's scores are above the AG mean) and both distributions have the same standard deviation. The table also shows (in columns 5 through 8) measures that might be used to appraise differences in test outcomes of AG and DG.

Column 5, which presents the ratio of AG's pass rate to DG's pass rate,[3] shows that at the higher cutoff, where pass rates are 80 percent for AG and 63 percent for DG, AG's pass rate is 1.27 times (27 percent greater than) DG's pass rate. If the cutoff is lowered to the point where AG's pass rate is 95 percent, DG's pass rate would be about 87 percent. At the lower cutoff, AG's pass rate is only 1.09 times (9 percent greater than) DG's pass rate.

Table 1. Illustration of effects of lowering a test cutoff on measures of differences in test outcomes

Row	(1) AG Pass Rate	(2) DG Pass Rate	(3) AG Fail Rate	(4) DG Fail Rate	(5) AG/DG Pass Ratio	(6) DG/AG Fail Ratio	(7) DG Prop of Pass	(8) DG Prop of Fail
1	80%	63%	20%	37%	1.27	1.85	44%	65%
2	95%	87%	5%	13%	1.09	2.60	48%	72%

That lowering a cutoff tends to reduce relative differences in pass rates is well understood and underlies the widespread view that lowering a cutoff tends to reduce the disparate impact of tests on which some groups outperform others.

But, whereas lowering a cutoff tends to reduce relative differences in pass rates, it tends to increase relative differences in failure rates. As shown in column 6, initially DG's failure rate was 1.85 times (85 percent greater than) AG's failure rate. With the lower cutoff, DG's failure rate is 2.6 times (160 percent greater than) AG's failure rate.

Columns 7 and 8 show the proportions DG makes up of persons who pass and fail the test at each cutoff in a situation where DG makes up 50 percent of persons taking the test. Column 7 shows that lowering the cutoff increases the proportion DG makes up of persons who pass from

[3] While I commonly refer to patterns of relative differences in this letter, the table actually presents rate ratios (also termed risk ratios or relative risks). The relative difference is the rate ratio minus 1 where the rate ratio is above 1 and 1 minus the rate ratio where the rate ratio is below one. In the former case, the larger the rate ratio, the larger the relative difference; in the latter case, the smaller the rate ratio, the larger the relative difference. It is more common to employ the disadvantaged group's rate as the numerator for the favorable as well as the adverse outcome, which is the approach as to favorable outcomes of the "four-fifths" or "80 percent" rule for identifying disparate impact under the Uniform Guideline for Employee Selection Procedures. I have sometimes employed this approach, as in "Can We Actually Measure Health Disparities?," *Chance* (Spring 2006). More recently, however, I have used the larger figure as the numerator for both rate ratios, in which case, as to both favorable and adverse outcomes, the larger the ratio, the larger the relative difference. Choice of numerator in the rate ratio, however, has no bearing on the patterns by which as the frequency of an outcome changes, the two relative differences tend to change in opposite directions.

44 percent to 48 percent (hence, *reducing* all measures of difference between the proportions DG makes up of persons who took the test and persons who passed the test). Column 8 shows that lowering the cutoff increases the proportion DG makes up persons who fail the test from 65 percent to 72 percent (hence, *increasing* all measures of difference between the proportions DG makes up of persons who took the test and persons who failed the test).

Inasmuch as the pattern by which the proportions more susceptible groups make up of persons experiencing and avoiding an outcome tend to be affected by the frequency of an outcome is a corollary to the pattern by which the two relative differences tend to be affected by the frequency of the outcome, in the discussion that follows I limit discussion of those proportions to situations where that matter is pertinent.

It is important to understand that DOJ and other entities analyzing racial and other disparities issues have not reasoned as follows: It is true that lowering test cutoffs will tend to increase relative differences in test failure rates. But there are reasons why, in other settings, one will in fact find that relaxing standards and otherwise reducing the frequency of adverse outcomes will tend to reduce relative differences in adverse outcome rates.

Rather, it simply has never occurred to these entities that lowering test cutoffs would increase relative differences in failure rates. Presumably, they assumed (to the extent they gave it thought) that if lowering a cutoff reduced relative differences in pass rates, it would also reduce relative differences in failure rates.[4] And I interject here that as to all matters where less discriminatory alternatives are at issue, neither the DOJ nor any other entity has recognized that

[4] Some have regarded the pattern whereby reducing the frequency of an outcome (a) tends to increase relative differences between rates of experiencing the outcome at the same time that it (b) tends to reduce relative differences between rates of avoiding the outcome as counterintuitive or surprising. In fact, however, (b) is implied in (a), if in fact (b) is not exactly the same thing as (a). For if reducing the frequency of an outcome tends to increase relative differences in rates of experiencing the outcome, it necessarily follows that increasing the frequency of an outcome tends to reduce relative differences in rates of experiencing the outcome. And if one outcome declines in frequency (hence, tending to increase relative differences as to that outcome), it necessarily follows that the opposite outcome increases in frequency (hence, tending to reduce relative differences as to that outcome).

The same point can be made with regard to the pattern whereby reducing the frequency of an outcome tends to cause the group (of two groups) more susceptible to an outcome to make up a larger proportion of persons experiencing the outcome and a larger proportion of persons experiencing the opposite outcome. For if a reduction in the frequency of an outcome tends to cause the group more susceptible to the outcome to make up a larger proportion of persons experiencing the outcome, it follows that an increase in the frequency of an outcome tends to cause the group more susceptible to the outcome to make up a smaller proportion of persons experiencing it. Thus, if an outcome increases in frequency (hence, tending to increase the proportion the more susceptible group makes up of persons experiencing the outcome), the opposite outcome necessarily decreases in frequency (hence, tending to decrease the proportion the group more susceptible to that outcome makes up of persons experiencing it). See the ASA letter (at 10 note 14) with respect to the same point regarding the corollary pattern (not addressed here) whereby as an outcome changes in frequency, the group with the lower baseline rate for the outcome tends to experience a larger proportionate change in its rate of experiencing the outcome than the other group, while the other group tends to experience a larger proportionate change in its rate of experiencing the opposite outcome than the first group.

lowering a test cutoff or otherwise relaxing a standard as a means of reducing the discriminatory impact of any requirement, while tending to reduce the relative difference for the favorable outcome, tends to increase the relative difference for the corresponding adverse outcome.[5] See my "Is the Disparate Impact Doctrine Unconstitutionally Vague?," Federalist Society Blog (May 6, 2016) (available as a PDF here), and "Is HUD's Disparate Impact Rule Unconstitutionally Vague?," *American Banker* (Nov. 10, 2014).

In any case, the pattern of relative differences described above is by no means limited to test score data. It can be found in virtually any setting where two groups have different, more or less normal, distributions of factors associated with experiencing some outcome. Income and credit score date, for example, show how lowering an income or credit score requirement, while tending to reduce relative racial differences in meeting the requirement, will tend to increase relative racial differences in failing to meet the requirement.

Such pattern is illustrated in Tables 2 and 3 below, which are abbreviated versions of Tables 1 and 2 of the Income and Credit Score Examples subpage of the Lending Disparities page of jpscanlan.com, which also explains the origins of the data. It follows the format of Table 1 above (without the last two columns), while presenting, in place of the AG and DG pass and fail rates, the white and black rates of falling above and below various income levels or credit scores. Movement down the five rows of the tables illustrates the effects of lowering the income or credit score requirements on the two relative differences, revealing the patterns just described. That is, the lower the requirement, and thus the greater the overall rates of meeting the requirement and the smaller the overall rates of failing to meet the requirement, the smaller is the relative difference in meeting the requirement (column 5) and the larger is the relative difference in failing to meet the requirement (column 6). One will observe the same pattern for all 16 rows of Table 1 and all 14 rows of Table 2 on the referenced webpage.[6]

[5] That no agencies have recognized this or related patterns does not mean that no individuals within agencies have recognized them. For the patterns are quite evident in many types of data and I have described them in many places over many years and have brought them to the attention of many individuals within agencies. Further, as of 1995 (and several years earlier), I was the Assistant General Counsel for Expert Services of the Equal Employment Opportunity Commission (EEOC) and had been describing the patterns in various publications since 1987. As of that time, it might be said that, to a degree, EEOC understood the patterns in an institutional sense.

[6] Usually I use the phrase "tends to" in order to preclude (or at least make more difficult) efforts to dispute my descriptions of patterns by which measures tend to be affected by the prevalence of an outcome on the basis that the patterns will not always be observed. The discussion above does not use the phrase because the discussion pertains to what the tables in fact show. We know from the tables that in actual situations, lowering standards will tend to have effects described above (and will almost always do so in cases where standards are substantially lowered). But that does not mean that the patterns will be observed in every case. That the patterns may not always be observed in no way lessens the necessity of seeking to understand the effects of the frequency on outcome on the measures employed in analyses of demographic differences, either generally or in the situations where one must interpret data on a demographic difference for a particular purpose.

Table 2. Illustration of effects of lowering an income requirement on relative differences in meeting the requirement and relative differences in failing to meet the requirement

Income	(1) Perc of Wh Abv	(2) Perc of Bl Abv	(3) Perc of Wh Bel	(4) Perc of Bl Bel	(5) Wh/Bl Abv Ratio	(6) Bl/Wh Bel Ratio
$100,000	27.0%	12.1%	73.0%	87.9%	2.23	1.20
$85,000	34.6%	17.3%	65.4%	82.7%	2.00	1.26
$75,000	41.1%	22.7%	58.9%	77.3%	1.81	1.31
$60,000	52.5%	31.3%	47.5%	68.7%	1.68	1.45
$50,000	61.0%	39.2%	39.0%	60.8%	1.56	1.56

Table 3. Illustration of effects of lowering a credit score requirement on relative differences in meeting the requirement and relative differences in failing to meet the requirement

Score	(1) Perc of Wh Abv	(2) Perc of Bl Abv	(3) Perc of Wh Bel	(4) Perc of Bl Bel	(5) W/B Abv Ratio	(6) B/W Bel Ratio
740	46.80%	19.50%	53.20%	80.50%	2.40	1.51
720	57.77%	27.01%	42.23%	72.99%	2.14	1.73
700	67.83%	35.67%	32.17%	64.33%	1.90	2.00
680	76.73%	45.42%	23.27%	54.58%	1.69	2.35
660	83.90%	55.70%	16.10%	44.30%	1.51	2.75

Notwithstanding that data like that in Tables 2 and 3 should make it abundantly clear that relaxing income and credit requirements for securing a loan product will tend to increase relative racial differences in failing to meet the requirements, since at least 1994 the DOJ and other agencies enforcing fair lending laws have been encouraging lenders to relax standards in order to reduce relative differences in adverse borrower outcomes. And because those agencies have continued to monitor the fairness of practices on the basis of relative differences in adverse borrower outcomes, lenders that acceded to government encouragements or pressures to relax standards increased the chances that the government (or others) will sue them for discrimination.

See my "Bias Data Can Make the Good Look Bad," *American Banker* (Apr. 27, 1992), and "Getting it Straight When Statistics Can Lie," *Legal Times* (June 23, 1993), explaining this issue before the government (by the 1994 Interagency Policy Statement on Discrimination in Lending) formally began encouraging the relaxing of standards to reduce relative racial/ethnic differences in mortgage rejection rates. The government, however, was already targeting lenders on the basis of the size of relative racial differences in mortgage rejection rates without understanding that lenders with more lenient standards would tend to have larger differences in mortgage

rejection rates than lenders with less lenient standards. See my "When Statistics Lie," *Legal Times* (Jan. 1 1996), regarding a putative private class action based on a study that found the defendant to have the largest relative racial difference in mortgage rejection rates in the Washington, DC area.

See my "The Perverse Enforcement of Fair Lending Laws," *Mortgage Banking* (May 2014), "Misunderstanding of Statistics Leads to Misguided Law Enforcement Policies," *Amstat News* (Dec. 2012), "'Disparate Impact': Regulators Need a Lesson in Statistics" (*American Banker*, June 5, 2012), and "The Lending Industry's Conundrum," *National Law Journal* (Apr. 2, 2012) regarding the pertinence of this issue to the suits involving the disproportionate assignment of minority loans to subprime status in which DOJ secured settlements totaling more than half a billion dollars from Countrywide Financial Services and Wells Fargo Bank earlier this decade.[7]

As noted, the pattern whereby reducing the frequency of an outcome tends to increase the proportions more susceptible groups make up of persons experiencing the outcome – an increasing focus of analyses of school discipline disparities and possibly the predominant focus of analyses of criminal justice disparities – is simply a corollary to the pattern by which reducing the frequency of an outcome tends to increase the relative difference in experiencing the outcome. An easy to understand illustration of the effects of relaxing a standard on the proportion the most susceptible group makes up of persons experiencing an adverse outcome may be found in a Department of Education (DOE) March 1, 2014 Issue Brief on school discipline. A chart on page 7 indicates that black children made up 42 percent of preschool students suspended once and 48 percent of preschool students suspended multiple times. In conjunction with numbers of suspensions shown in a note (5,000 for single suspensions and 2,500 for multiple suspensions), one can divine that black children made up 44 percent of children suspended one or more times. Thus, if all students suspended had been given a lesser punishment instead of their first suspension, the 44 percent figure would be 48 percent.

With respect to the seemingly huge racial disparities in suspensions among preschool students cited in the report and that received much attention in the press when the report was released, see Table 8 (at 342) of "Race and Mortality Revisited" for an illustration the way that relative racial differences in multiple suspensions were larger, while relative differences in rates of avoiding multiple suspension were smaller, in preschool, where multiple suspensions are rare, than in K-12, where multiple suspensions are far more common.[8]

Similarly, a DOE Office of Civil Rights November 2012 document titled "Helping to Ensure Equal Access to Education: Report to the President and Secretary" notes (at 28) that among all

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[7] As discussed in the *Mortgage Banking* article, DOJ analyses in these cases also suffered from the failure to examine the entire universe of persons subject to the challenged process. This issue is discussed further in Section B.

[8] See my August 14, 2015 letter to the Department of Health and Human Services and the Department of Education (at 4 note 6) regarding the fact that a substantial proportion of school districts with preschool programs, and an even more substantial proportion of individual programs within districts, had no preschool suspensions.

school district in the report's sample with at least one expulsion, African Americans made up 18 percent of students and 39 percent of students expelled, and that in sampled districts with at least one expulsion under zero tolerance policies, African Americans made up 19 percent of students and 33 percent of students expelled. That is, though African Americans made up approximately equal proportion of students in districts with and without zero tolerance policies, they made up a larger proportion of expelled students in districts without such policies.[9]

See my November 15, 2015 letter to the Boston Lawyers' Committee for Civil Rights and Economic Justice (regarding data showing that Massachusetts, which had lower suspension rates than the national average, had larger relative differences in suspension rates (by race and disability status), but smaller relative differences in rates of avoiding suspensions, than the national average) and the Suburban Disparities subpage of the Discipline Disparities page of jpscanlan.com (regarding the larger relative racial differences suspension rate in the suburbs of Philadelphia than in the city itself).[10]

Nevertheless, at least since 2014, the Departments of Justice and Education (and more recently the Department Health and Human Services) have been attributing large relative racial/ethnic differences in school discipline rates or high proportions racial minorities make up of students disciplined to stringent discipline policies and have encouraged or pressured school district to relax standards in order to reduce those relative differences and proportions. And across the country state and local jurisdictions that have relaxed standards, presumably in many cases relying on the expertise of the federal government in this area, have generally found those differences and proportions to increase. See the subpages to the Discipline Disparities page

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[9] See the DOE Equity Report subpage of the Discipline Disparities page of jpscanlan.com regarding certain calculation issues.

[10] One of the most profoundly misunderstood commonplace patterns is that where comparatively advantaged geographic areas (or subgroups) tend to have comparatively large relative socioeconomic and racial differences in adverse outcomes. Observers remarking on such pattern (or intensely studying it) have invariably failed to see the connection to the rarity of the adverse outcome in the comparatively advantaged area or subgroup or to note the comparatively small relative differences in the corresponding favorable outcome. See "Race and Mortality Revisited"(at 339-341) and the abstract to the University of Massachusetts Medical School seminar titled "The Mismeasure of Health Disparities in Massachusetts and Less Affluent Places." See also my "It's easy to misunderstand gaps and mistake good fortune for a crisis," *Minneapolis Star Tribune* (Feb. 8, 2014), "Race and Mortality," *Society* (Jan./Feb. 2000), and "The Perils of Provocative Statistics," *Public Interest* (Winter 1991). See "The Perverse Enforcement of Fair Lending Laws," *Mortgage Banking* (May 2014), and "Statistical Quirks Confound Lending Bias Claims," *American Banker* (Aug. 14, 2012), regarding the mistaken significance attributed by DOJ and others to comparatively large relative differences in adverse borrower outcomes among high income groups, which can be compared with the mistaken significance attributed to comparatively small relative differences in favorable borrower outcomes discussed in "Race and Mortality Revisited" at 340-341. See "The 'Feminization of Poverty' is Misunderstood," *Plain Dealer* (Nov 11, 1987), regarding the fact that, even though female-headed families make up a far higher proportion of black families in the comparatively poor state of Mississippi than they make up of white families in the comparatively wealthy state of Massachusetts, female-headed families make up a substantially higher proportion of poor white families in Massachusetts than they make up of poor black families in Mississippi.

discussing this situation with regard to the jurisdictions indicated in the titles of the subpages: California Disparities, Colorado Disparities, Connecticut Disparities, Maryland Disparities, Minnesota Disparities, Oregon Disparities. Beaverton, OR Disparities, Denver Disparities, Henrico County, VA Disparities, Los Angeles SWPBS, Minneapolis Disparities, Montgomery County, MD Disparities, Portland, OR Disparities, St. Paul Disparities.[11] This has occurred, moreover, notwithstanding that teachers and administrators are likely doing many things apart from relaxing standards in order to reduce racial differences in discipline rates.

See my September 20, 2016 letter to the Oklahoma City School District and the Oakland Agreement subpage of the Discipline Disparities page regarding some of the problems facing school districts operating under agreements with the DOE where the latter believes that modifications to practices under the agreement will tend to reduce relative racial differences in suspensions and the proportions racial minorities make up of persons suspended.

Turning to criminal justice disparities issues, such as those that have been the addressed in DOJ investigations of police departments in Ferguson, Baltimore, and Chicago, one of the more striking figures cited in the DOJ report on Ferguson police and court practices was the 97 percent African Americans made up of persons involved in traffic stops who were arrested solely for having an outstanding warrant. And one of Ferguson's court procedures the report regarded as especially harsh was that whereby a single missed court appearance triggered issuance of an arrest warrant. The 97 percent figure is not the same as the proportion African Americans made up of persons against whom warrants were issued for one or more missed court appearances, though one can assume that the latter proportion is also very high. Yet, if one understands the patterns described above, one can also assume with virtual certainty that if the court policy were changed to one whereby only a second missed court appearance triggers issuance of a warrant, the proportion would increase. And as suggested at page 6 of the March 9, 2015 letter to DOJ and the City of Ferguson (in the discussion of an interpretive issue arising from the failure to understand issues addressed in this letter and its references), if in Ferguson African American drivers tended to exceed the speed limit more often than white drivers, increasing the number of miles per hour above a posted limit as the threshold for stopping a driver for speeding would tend to increase the proportion African Americans make up of persons stopped for speeding.

Similarly, in the case of the very high proportion African Americans made up of persons against whom force was used in Chicago cited in the report on the city's police practices issued by DOJ on January 13, 2017, the restrictions on the use of force that the same report suggested were appropriate would almost certainly increase that proportion. See the March 20, 2017 Federalist Society Blog post regarding figures cited in the report on Chicago.

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[11] Reportage of situations where general reductions in discipline rates have been accompanied by reduced racial differences in discipline rates have generally pertained to studies that measured disparities in terms of absolute differences between rates. As discussed in my September 12, 2016 letter to the Antioch (CA) Unified School District, absolute differences between rates tend to decline when outcomes in the rate ranges commonly observed for adverse school discipline outcomes generally decline.

Increases in relative differences in adverse outcomes or the proportions more susceptible groups make up of persons experiencing those outcomes do not have always to occur as a result of modifications to practices ordained by the Baltimore decree or like decrees in other jurisdictions. Limiting arrests for particular types of crimes or reducing police presence or aggressiveness of enforcement in particular neighborhoods could affect measures of difference in a variety of ways. And, of course, to the extent that any observed disparity is a result of racial bias, and modifications to practices reduce that bias, all measures of racial differences will be reduced.

But typically reducing the frequency of an outcome will tend to affect measures of disparity in accordance with the patterns described above, especially with respect to actions that involve limiting the adverse outcomes in the way that relaxing a standard does (which, with regard to police or court practices, means raising the standard for imposition of the adverse outcome). See my "Mired in Numbers," *Legal Times* (Oct. 12, 1996), regarding the fact that changing a three-strikes rule to a four strikes rule will almost certainly increase the proportion African Americans make up of persons who are sentenced pursuant to such a rule.[12] But regardless of how often one may find departures from these patterns, the government cannot effectively enforce civil rights laws without understanding the patterns, and it certainly cannot rationally monitor consent decrees while mistakenly believing that generally reducing adverse outcomes will tend to reduce relative racial differences in rates of experiencing the outcomes.

In fact, to rationally monitor decrees or effectively enforce civil rights generally, one must understand that, in a situation where the two rows of Table 1 reflect favorable and adverse outcome rates of members of the public interacting with two police officers, there is no basis for distinguishing between the officers as to the likelihood that that they engaged in biased policing. One must also know that, all else being equal, officers who try hardest to limit adverse interactions with the public will tend to show patterns more like those in row 2 than in row 1, while other officers will tend to show patterns more like those in row 1 than in row 2.

Otherwise, I refer you to the description of the compliance difficulties facing the Baltimore Police Department and its officers under the proposed (now entered) consent decree covering Baltimore police practices in the February 8, 2017 Federalist Society Blog post titled "Compliance Nightmare Looms for Baltimore Police Department," (a PDF of which is available here), on which my March 7, 2017 Comments to the court are primarily based. As to the compliance difficulties facing the Ferguson Police Department under a consent decree entered in the Eastern District of Missouri in April 2016 in *United States v. City of Ferguson*, No. 4:16-cv-180-CDP, I refer you to my April 11, 2016 Submission in that case.

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[12] See my "An Issue of Numbers," *National Law Journal* (Mar. 5, 1990), and The Perils of Provocative Statistics," *Public Interest* (Winter 1991) regarding the fact that the high proportion African Americans make up of persons disqualified from intercollegiate athletics by the NCAA's Proposition 48 was a reflection of the leniency rather than the stringency of the standard. And as with the modification of a three strikes rule, relaxing the NCAA standard would almost certainly increase the proportion African Americans make up of persons experiencing the adverse outcome. But these things are no better understood today than they were when these articles were written.

Regarding other matters where the misunderstanding discussed in this section is pertinent, I refer you to the discussion in January 4, 2017 Federalist Society Blog post titled "Will Trump Have the First Numerate Administration?" concerning the emphasis in the DOJ's November 28, 2016 brief in *Abbott v. Veasey*, Sup Ct. No. 16-393,[13] on difficulties in securing an acceptable ID and the large percentage differences between rates at which whites and African Americans failed to secure one. But the greater the difficulty in securing an ID, the smaller (not larger) will tend to be relative racial/ethnic differences in failing to do so. With regard to the effects of sentencing reform on measures of racial/ethnic differences in incarceration, I refer you to the Federalist Society Blog posts of August 5, 2016 titled "Things the President Doesn't Know About Racial Disparities," and March 20, 2017 titled "Racial Impact Statement Laws in New Jersey and Elsewhere." The latter item emphasizes the guidance DOJ can give to states on measures aimed at reducing racial differences in incarceration rates, but only after DOJ comes to understand issues better than it now understands them.

Other matters where the misunderstanding that is the principal subject of this section is pertinent are discussed my April 23, 2012 letter to the agency and many more such subjects are discussed in "Race and Mortality Revisited," *Society* (July/Aug. 2014) and the materials it references.[14]

In the introduction to this letter, I suggested some things DOJ would be obligated to do upon coming to recognize that its understanding of this matter (an understanding the agency has imparted to so many other entities) is manifestly incorrect. To take two simple examples, having for so long led lenders and public schools to believe that relaxing standards will tend to reduce relative racial/ethnic differences in adverse borrowing and adverse school discipline outcomes, the government can hardly justify failing to inform such entities that its views on these subjects were mistaken. I suggest, however, that there may be many areas that I have not considered where there exist similar obligations to take corrective action.

B. Problems in Standard Statistical Analyses of Discrimination Issues

Almost all analyses of demographic differences involving rates of experiencing adverse or favorable outcomes, whether involving discrimination issues or any other matter, have been undermined by a failure to understand and address patterns by which the measures employed (including measures other than the relative measures discussed above) tend to be affected by the frequency of an outcome. This subject is treated at length in "Race and Mortality Revisited," the ASA letter, and the CEBP comments, and the materials referenced in those items. Recommendation 4 (at 45-46) of the CEBP comments discusses an approach that may somewhat

[13] The post erroneously refers to the brief as an *amicus curiae* brief. It was a brief in opposition. The government is a party in the case.

[14] "Getting it Straight When Statistics Can Lie," *Legal Times* (June 23, 1993), previously mentioned for its discussions of lending disparities issues, also discusses several employment issues with regard to the failure of observers (or a court) to understand that making it easier for all employees to keep their jobs will tend to increase relative demographic differences in rates of failing to keep the jobs.

address this issue with regard to some types of government-funded research. Whether or not that recommendation satisfactorily addresses the matter as to government-funded research, it does not satisfactorily address the matter with regarding to analyses of discrimination issues for civil rights law enforcement purposes. In addition, many analyses of discrimination issues, whether involving binary or continuous outcomes, examine data solely on persons who accepted some outcome or situation. These analyses are fundamentally unsound because they fail to examine data on all persons subject to the processes at issue.

With regard to the former subject, if one has the actual rates at which two groups experience some outcome, one may be able to quantify the strength of association reflected by those rates (something I have also described as the strength of the forces causing the rates to differ or the difference in the circumstances of the groups reflected by their favorable or adverse outcome rates). A method for doing so that is theoretically unaffected by the frequency of an outcome is given substantial attention in "Race and Mortality Revisited," the Kansas Law paper, the TDHCA brief , and many other recent materials, including the methods workshops listed at the end of the Introduction. For instant purposes, it is unnecessary to discuss whether the suggested approach is the best method or is even a satisfactory method for quantifying the strength of an association for law enforcement or any other purpose. But it is crucial to understand that one must have the actual rates at which groups experience a particular outcome in order to quantify the effects of being in a particular demographic group[15]or to draw sound inferences about processes or the likelihood of discrimination in particular settings.

Thus, it is also necessary to understand that one cannot analyze a discrimination issue based solely on the information regarding the proportion a group makes up of persons potentially experiencing an outcome and the proportion it makes up of persons actually experiencing the outcome, though this is quite common way of analyzing many discrimination issues. This subject is discussed in the Section C (at 23-26) of the Kansas Law paper, Section I.B (at 23-27) of the TDHCA brief, and Section I.C (at 39-41) of the CEBP comments.

A particular problem in analyses of racial differences in criminal justice outcomes, which are very often analyzed in terms of differences between the referenced proportions, is that sometimes it is quite difficult to identify the appropriate numerator and denominator in order calculate the rates at which members of the groups being compared experience an outcome. See the Addendum to the Ferguson, Missouri Arrest Disparities subpage of the Discipline Disparities page of jpscanlan.com regarding my uncertainty as to how that issue can be addressed.

The problem with analyses of discrimination issues that examine data solely on persons who accepted some outcome or situation is addressed in Section F (at 32-35) of the Kansas Law paper, Section I.C (at 27-30) of the TDHCA brief, and Part II (at 41-43) of the CEBP comments. This problem has been present in almost all race or gender discrimination suits that have yielded recoveries in excess of $50 million dollars. With regard to the so-called job segregation or

[15] It is important to understand that the strength of an association reflected by a pair of rates involves a different issue from that of whether any observed difference is statistically significant. See Section D (at 26-27) regarding the way preoccupation with statistical significance issues has long undermined analyses of many discrimination issues.

assignment discrimination cases that were prominent in the late 1980s and the 1990s, see my "Illusions of Job Segregation," *Public Interest* (Fall 1988), "Are Bias Statistics Nonsense?" *Legal Times* (Apr. 17, 1989), "Unlucky Stores: Are They All Guilty of Discrimination?" *San Francisco Daily Journal* (Jan. 29, 1993), "Multimillion-Dollar Settlements May Cause Employers to Avoid Hiring Women and Minorities for Less Desirable Jobs to Improve the Statistical Picture," *National Law Journal* (Mar. 27, 1995). With regard to the large monetary settlements DOJ secured from Countrywide Financial Services and Wells Fargo Bank based on claims involving assignment of loans to subprime status or other loan cost issues, see my "The Perverse Enforcement of Fair Lending Laws," *Mortgage Banking* (May 2014), and "Fair Lending Studies Paint Incomplete Picture," *American Banker* (April 24, 2013).

A recent treatment of this subject with regard to a private putative class action regarding pay equity at a prominent New York law firm, and which mentions the $54 million settlement DOJ secured against JP Morgan Chase Bank on January 18, 2017, may be found in my "Partial Picture Issue Undermines Chadbourne Pay Equity Case," *Law360* (Jan. 25, 2017). The points discussed in that item would apply as well to the pay equity claims in an administrative complaint that the Department of Labor filed the same day against JP Morgan Chase Bank.

The issues addressed in this section are quite complicated. As I suggested in the Introduction, the DOJ should form a committee to address these issues and should include on such committee representatives of other agencies whose activities involve the interpretation of data on demographic differences. In that regard, I note that I mentioned at the outset that more than a decade ago the National Center for Health Statistics recognized that improvements in health and healthcare, while tending to reduce relative differences in favorable health and healthcare outcomes, will tend to increase relative differences in adverse health and healthcare outcomes. As discussed in "Race and Mortality Revisited," however, the NCHS's actions based on the understanding were not sensible ones, and other agencies involved in health and healthcare research have yet even to shown an awareness that NCHS came to recognition. See also my "The Mismeasure of Health Disparities," *Journal of Public Health Management and Practice* (July/Aug. 2016) and "Measuring Health and Healthcare Disparities," Proceedings of Federal Committee on Statistical Methodology 2013 Research Conference (March 2014). In my view, nothing the federal government has so far produced regarding health and healthcare disparities can be regarded as statistically sound or useful for informing policy. Thus, there are many parts of the federal government that would benefit from an effort to reform the analyses of demographic differences by a committee in which I suggest that DOJ should take a lead.

The mission of the committee will have to be carefully specified. Otherwise, guidance produced by the committee, like virtually all guidance on measurement of demographic differences in outcome rates so far produced, not only will fail to address the crucial issues, but will give the false impression that no such issues exist. See "Race and Mortality Revisited" (at 343-344) and "The Mismeasure of Health Disparities" (at 419).

Many of these issues were raised in my comments to the Commission on Evidence-Based Policymaking, and the Commission is scheduled to provide a report to the legislative and

executive branches at the end of the summer. Possibly the Commission will provide something useful regarding these issues. I do not, however, hold strong hopes in that regard. In any case, I suggest that, given the challenges the DOJ and other agencies involved with discrimination issues face on a daily basis, DOJ should not defer action while awaiting a report of the Commission.

Further, the complexity of the larger issues is not a reason to delay at all the actions warranted to correct the consequences of the DOJ's longstanding misunderstanding of the effects of reducing the frequency of an outcome on relative differences in rates of experiencing the outcome and the proportions groups most susceptible to the outcome make up of persons experiencing it. The agency should address that matter immediately in Baltimore and elsewhere.

Sincerely,

/s/ James P. Scanlan

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April 17, 2018

ELECTRONICALLY TRANSMITTED

The Honorable Gene L. Dodaro
Comptroller General of the United States
GAO Headquarters
441 G Street, NW
Washington, DC 20548

Subj: Obligation of GAO to Explain to Congress and Executive Branch Agencies That Relaxing Lending Standards Tends to Increase, Not Reduce, Relative Racial Differences in Adverse Borrower Outcomes

Dear Mr. Dodaro:

This a follow-up to my letter[1] to you dated April 12, 2018, discussing obligations of the Government Accountability Office (GAO) relating to the mistaken understanding in the March 2018 GAO report *K-12 Education, Discipline Disparities for Black Students, Boys, and Students with Disabilities* that generally reducing public school discipline rates will tend to reduce, rather than increase, the proportions blacks and other more susceptible groups make up of disciplined students. The principal subject of that letter is a matter of substantial urgency, given that, in a highly-publicized document, GAO itself communicated an incorrect understanding to Congress, Executive Branch Agencies, and the public about a matter that is currently of great public concern. It is also a matter of urgency to GAO as an institution, since the agency's failure to understand the statistical issue addressed in the letter may undermine confidence in the agency's treatments of more complex matters, including the recondite subjects as to which Congress and the public ordinarily have to defer to the presumptive expertise of institutions like GAO. In that regard – both generally and with respect to the specific subject of this letter – GAO's situation may be compared to that of the Board of Governors of the Federal Reserve System discussed at page 6 of my March 4, 2013 letter explaining the Fed's mistaken understanding of the

[1] As discussed in the earlier letter, to facilitate consideration of issues raised in documents such as this I include links to referenced materials in electronic copies of the documents, in some cases, for the reader's convenience, providing the links more than once. Such copies are available by means of the Measurement Letters page of jpscanlan.com. If the online version of the letter is amended, such fact will be noted on the first page of that version.

relationship between the stringency of lending standards and measures of demographic differences in borrower outcomes.[2]

The April 12 letter only touched upon the government's longstanding mistaken belief that relaxing lending standards will tend to reduce, rather than increase, relative racial differences in adverse borrower outcomes like rejection of mortgage applications, a matter that had also been a subject of my September 9, 2014 letter to the GAO Director, Financial Markets and Community Investment (which is attached). To my knowledge, that matter does not necessarily involve a situation where GAO itself has specifically communicated a misunderstanding as to the effects of policies on measures of racial differences employed to evaluate compliance with fair lending laws (though the mistaken understanding is implied in materials like the recent report on discipline disparities). But that matter, too, is one of some urgency, among other things, because of banking reform legislation being considered in the Senate and House of Representatives (see my "What the government gets wrong about fair lending," *American Banker* (Apr. 9, 2018)), as well as the fact that the Consumer Financial Protection Bureau has recently issued requests for comment on the agency's activities and regulations.

Thus, I thought it would be useful to provide GAO additional information regarding important misunderstandings underlying federal fair lending enforcement policies and related matters. There are two key issues, both of which were discussed in the September 9, 2014 letter. One involves the same mistaken understanding of the effects of generally reducing an adverse outcome on measures of demographic differences addressed in the April 12 letter with respect to public school discipline issues. The other involves the impossibility of analyzing discrimination issues on the basis of information solely on persons accepting some outcome or situation.

With regard to the former matter, data directly pertinent to lending standards provide especially useful illustrations of the fact that, contrary to the belief underlying many federal civil rights law enforcement policies, relaxing a standard, while tending to reduce relative demographic differences in meeting the standard, tends to increase relative demographic differences in failing to meet the standard.

Tables 1 and 2 below are replications (with minor title/heading edits) of Tables 2 and 3 of my April 13, 2017 letter to Attorney General Jeff Sessions, which explains them somewhat more fully. Table 1, which underlies the illustration in the April 9, 2018 *American Banker* commentary mentioned above, shows, based on published income data, the relationship between the stringency of an income requirement for securing some favorable borrower outcome and measures of racial differences regarding the outcome. Movement down the rows of the table illustrates that lowering an income requirement, while tending to reduce relative racial

[2] The point applies to many of the recipients of the letters collected on the Measurement Letters page.

differences in meeting the requirement (column 5), tends to increase relative racial differences in failing to meet the requirement (column 6).[3]

Table 1. Illustration of effects of lowering an income requirement on relative racial differences in meeting the requirement and failing to meet the requirement

Income	(1) Perc of Wh Abv	(2) Perc of Bl Abv	(3) Perc of Wh Bel	(4) Perc of Bl Bel	(5) Wh/Bl Abv Ratio	(6) Bl/Wh Bel Ratio
$100,000	27.0%	12.1%	73.0%	87.9%	2.23	1.20
$85,000	34.6%	17.3%	65.4%	82.7%	2.00	1.26
$75,000	41.1%	22.7%	58.9%	77.3%	1.81	1.31
$60,000	52.5%	31.3%	47.5%	68.7%	1.68	1.45
$50,000	61.0%	39.2%	39.0%	60.8%	1.56	1.56

Table 2, which is based on credit score data from a putative class action against Wells Fargo Bank, shows how lowering a credit score requirement would have the same effect.

Table 2. Illustration of effects of lowering a credit score requirement on relative racial differences in meeting the requirement and failing to meet the requirement

Credit Score	(1) Perc of Wh Abv	(2) Perc of Bl Abv	(3) Perc of Wh Bel	(4) Perc of Bl Bel	(5) W/B Abv Ratio	(6) B/W Bel Ratio
740	46.80%	19.50%	53.20%	80.50%	2.40	1.51
720	57.77%	27.01%	42.23%	72.99%	2.14	1.73
700	67.83%	35.67%	32.17%	64.33%	1.90	2.00
680	76.73%	45.42%	23.27%	54.58%	1.69	2.35
660	83.90%	55.70%	16.10%	44.30%	1.51	2.75

As discussed in the letter to Attorney General Sessions, Tables 1 and 2 of the Income and Credit Score Examples subpage of the Scanlan's Rule page of jpscanlan.com show the same pattern for all 16 rows of the former table and all 14 rows of the latter table. Figure 7 (slide 63) of the University of Maryland workshop discussed in the earlier letter to you graphically illustrates the patterns by which the two relative differences (as well as the absolute difference between rates and the difference between rates measured by the odd ratio) interact across the full range of income levels (though based on the 2004 income data underlying the illustrations in my "Can We Actually Measure Health Disparities?," *Chance* (Spring 2006), rather than the more recent data underlying Table 1 above). Graphical illustrations of the pattern by which the two relative differences and the absolute difference between rates tend to be affected by the prevalence of an outcome across the full range of credit score values in the Wells Fargo data may be found in

[3] See note 3 (at 5) of the letter to Attorney General Sessions regarding the relationship between the rate ratio and the relative difference the ratio reflects and my preferences for using the larger figure in the numerator of the rate ratios for both favorable and adverse outcomes.

Figure 1 (at 4) and Appendix Figure 1 (Appendix at 2) of the March 4, 2013 letter to the Board of Governors of the Federal Reserve System mentioned above.[4]

It should be recognized that many actions taken to reduce adverse borrower outcomes that do not specifically involve lowering a requirement – such as giving further considerations to applications initially deemed to fall somewhat short of the requirement – will have effects on measures of racial differences similar to the effects of lowering the requirement. See the discussion in "When Statistics Lie," *Legal Times* (Jan. 1 1996), regarding the way that actions that the complaint in a putative class action suggested that the defendant should have taken to cause more favorable treatment of the named plaintiffs are of a nature that, generally applied, would tend to increase the relative racial difference in mortgage rejection rates on which the suit was principally based.

The same issues apply to demographic differences in foreclosures. That is, as discussed in the recent *American Banker* commentary, actions lenders or the government take to generally reduce foreclosures, while tending to reduce relative differences between rates at which whites and minorities avoid foreclosures, will tend to increase relative racial/ethnic differences in foreclosure rates and the concentration of foreclosures in minority neighborhoods. See also the Addendum to my "EEOC, OMB, and the Collection of Data That Can't Be Analyzed," Federalist Society Blog (Sept. 7, 2017), and the Lending Disparities page of jpscanlan.com and its Foreclosure Disparities subpage. See slide 73 of the September 5, 2104 workshop at the University of Minnesota regarding a study that failed to recognize that recession-associated general increases in the number of vacant buildings tend to reduce, rather than increase, the concentration of vacant buildings in poorer neighborhoods. The discussion in the study addressed in that slide may be compared to the discussion regarding the concentration of abandoned foreclosures in economically distressed areas in the November 2010 GAO report *Mortgage Foreclosures: Additional Mortgage Servicer Actions Could Help Reduce the Frequency and Impact of Abandoned Foreclosures*.[5]

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[4] The credit score data will not show the same pattern of changes in the difference measured by the odds ratio that one finds in normal data because credit score data on persons who received loans are based on truncated portions of larger distributions. See the Credit Score Illustrations and Truncation Issues subpages of the Scanlan's Rule page of jpscanlan.com. That data on demographic differences may often be based on truncated portions of larger distributions is one of the issues GAO must consider in endeavoring to address the need for sound measures of demographic differences, as informed by, though not constrained by, the materials discussed in my earlier letter. See "Race and Mortality Revisited," *Society* (July/Aug. 2014) at 37.

[5] Some of the pervasive problems with discussions of demographic differences in terms of the proportion a more susceptible group makes up of persons experiencing an outcome without recognizing that reductions in the outcome, including within the more susceptible group, will tend to increase that proportion are addressed on the Feminization of Poverty page and the Restraint Disparities subpage of the Discipline Disparities page of jpscanlan.com. See also Table 4 of the March 22, 2018 Department of Education materials mentioned in the earlier letter. With respect to adverse school discipline outcomes, of course, this was a key subject of that letter.

I have not examined GAO reports on lending and foreclosures issues closely enough to determine whether such reports, including the report just mentioned, would directly mislead readers as to the effects of policies on demographic or geographic differences. But discussion of the effects of policies on measures of demographic or geographic differences can only be useful if informed by an understanding of the ways measures employed tend to be affected by the prevalence of an outcome.

Perverse consequences of the mistaken understanding of the effects of reducing adverse outcomes on measures of demographic difference in borrower outcomes include the fact that lenders that follow government guidance to relax standards tend to increase the chances that the government (and others) will sue the lenders for discrimination. See, for example, my "The Perverse Enforcement of Fair Lending Laws," *Mortgage Banking* (May 2014), and *amicus curiae* brief in *Texas Department of Housing and Community Development, et al. v. The Inclusive Communities Project, Inc.*, Supreme Court No. 13-1731 (Nov. 17, 2014), as well as the above-mentioned 1996 *Legal Times* article.[6] Similar anomalies exist in the case of lenders that have lenient foreclosure policies or make special efforts to reduce foreclosures – including actions required of certain large lenders pursuant to the $25 billion settlement in 2012 of mortgage abuse claims brought by the Department of Justice and state attorneys general. For such policies and actions increase the perceived strength of suits like the recent ones brought by the cities of Miami and Philadelphia alleging injuries to cities as a result of the concentration of foreclosures in minority neighborhoods.

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[6] I have explicitly or impliedly made the same point in many articles dating back to 1992. See "Case may reveal government's perverse fair lending enforcement," *The Hill* (Dec. 29, 2014), "Is HUD's Disparate Impact Rule Unconstitutionally Vague?, *American Banker* (Nov. 10, 2014), Race and Mortality Revisited," *Society* (July/Aug. 2014), "Things Government Doesn't Know About Racial Disparities," *The Hill* (Jan. 28, 2014),"Let's Hope Insurer Lawsuit Makes HUD Rethink 'Disparate Impact'," *American Banker* (Jan. 8, 2014), "Regulators Need Schooling on Measuring Lending Bias," *American Banker* (June 14, 2013), "Fair Lending Studies Paint Incomplete Picture," *American Banker* (April 24, 2013), "Misunderstanding of Statistics Leads to Misguided Law Enforcement Policies," *Amstat News*, (Dec. 2012), "Statistical Quirks Confound Lending Bias Claims," *American Banker* (August 14, 2012), "'Disparate Impact': Regulators Need a Lesson in Statistics," *American Banker* (June 5, 2012), "The Lending Industry's Conundrum," *National Law Journal* (Apr. 2, 2012), "Race and Mortality," *Society* (Jan.-Feb. 2000), "Both Sides Misuse Data in the Credit Discrimination Debate," *American Banker* (July 22, 1998), "Responsive Banks Hurt by Improper Data Interpretation," *Montgomery Journal* (May 5, 1998), "Perils of Using Statistics to Show Presence or Absence of Loan Bias," *American Banker* (Jan. 3, 1997), "Statistical Anomaly Penalizes Fair-Lending Effort," *American Banker* (Nov. 18, 1996), "Getting it Straight When Statistics Can Lie," *Legal Times* (June 23, 1993), "Bias Data Can Make the Good Look Bad," *American Banker* (Apr. 27, 1992). Some of my early discussions of this subject uncritically assume that the relative difference in the favorable outcome is the appropriate measure of the disparate impact of lending (and certain other) policies. The matter, however, is rather more complex. See my "Is the Disparate Impact Doctrine Unconstitutionally Vague? ," Federalist Society Blog (May 6, 2016), and Section E of my "The Mismeasure of Discrimination," Faculty Workshop, University of Kansas School of Law (Sept. 20, 2013).

Whether or not GAO has specifically contributed to the misunderstandings of effects of policies on measures of adverse borrower outcomes, its failure to correct the misunderstandings has substantially undermined the agency's efforts to promote sound enforcement of fair lending laws. It should now act expeditiously to remedy the matter.

The above matter is a fairly simple one in this sense. Even if no person or organization analyzing demographic differences in borrower outcomes currently understands that relaxing an income or credit score requirement tends to increase, not reduce, relative differences in failure to meet the requirement and associated adverse borrower outcomes, all such persons and organizations ought to be able to readily understand the matter after reviewing the information in Table 1 and 2.

The impossibility of analyzing discrimination issues on the basis of information solely on persons accepting some outcome or situation is also virtually unknown to persons and organizations analyzing demographic differences in lender outcomes. But it is a more complex matter.

It is, however, also a matter of great importance, with respect not only to analyses of demographic differences in borrower outcomes, but also to analyses of demographic differences in compensation and types of jobs into which persons are hired. A recent, fairly succinct, treatment of the matter may be found in my "Partial Picture Issue Undermines Chadbourne Pay Equity Case," Law360 (Jan. 25, 2017). A more comprehensive treatment of the matter, with reference to many earlier treatments of the subject, including my "Illusions of Job Segregation" *Public Interest* (Fall 1988), may be found in the above-mentioned "EEOC, OMB, and the Collection of Data That Can't Be Analyzed," Federalist Society Blog (Sept. 7, 2017). The matter is also the subject of Part II (at 43-45) of my Comments for Commission on Evidence-Based Policymaking (Nov. 14, 2016) that, in the earlier letter, I suggested could serve as a guide for actions GAO ought to take to reform the government's analyses of demographic differences.

Like those actions, fully addressing this complex matter is something GAO probably cannot accomplish immediately. But that should not cause GAO to delay explaining to Congress and to the many federal agencies that currently believe that reducing adverse borrower outcomes will tend to reduce the measures of racial disparity in adverse borrower outcomes on which the agencies commonly rely that the belief is incorrect.

Sincerely,

/s/ James P. Scanlan

James P. Scanlan

Attachment

ATTACHMENT

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September 9, 2014

Mathew J. Scirè
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BY EMAIL

Re: Recommendation That GAO Examine Federal Fair Lending Enforcement with Respect to Failure of Regulators to Recognize That Standard Measures of Differences Between Outcome Rates Tend to be Systematically Affected by the Frequency of an Outcome or That Reducing the Frequency of Adverse Outcomes Tends to Increase Relative Differences between Adverse Outcome Rates of Advantaged and Disadvantaged Groups

Dear Mr. Scirè:

This is a recommendation that the Government Accountability Office (GAO) examine federal fair lending enforcement policies with respect to the failure of enforcement agencies to recognize that standard measures of differences between outcome rates tend to be systematically affected by the frequency of an outcome or that reducing the frequency of adverse lending outcomes tends to increase relative differences in rates at which advantaged and disadvantaged groups experience those outcomes.

In summary, for more than twenty years, out of concern about the fact that certain minority groups commonly experience adverse lending outcomes several times as often as whites, federal fair lending enforcement agencies have been encouraging lenders to relax criteria and otherwise reduce the frequency of adverse lending outcomes. Reducing an adverse lending outcome (e.g., rejection of a mortgage loan application), while tending to reduce relative difference in rates of experiencing the corresponding favorable outcome, tends to increase relative differences in the adverse outcome. But, because federal agencies are unaware that reducing the frequency of an outcome tends to increase relative differences in experiencing it, they continue to monitor the fairness of lender practices on the basis of relative differences in adverse outcomes. Thus, by complying with regulator encouragements to reduce the frequency of adverse outcomes, lenders increase the chance that the federal government will sue them for discrimination. Equally important, however, federal fair lending enforcement agencies do not understand how to measure the strength of the forces causing outcome rates of advantaged and disadvantaged to differ.

I discuss the statistics underlying these points further below. Initially, however, I note that, while this letter is principally aimed at prompting a GAO examination of the soundness of actions by other entities, the letter is also akin to those I have written to many institutions or organizations alerting them to ways in which their activities are undermined by the failure to recognize patterns by which standard measures of differences between favorable or adverse outcome rates of advantaged and disadvantaged groups tend to be systematically affected by the overall prevalence of an outcome. Other recipients of letters involving the statistical issues discussed in this letter include (with those specifically addressing fair lending enforcement issues) Robert Wood Johnson Foundation (Apr. 8, 2009), National Quality Forum (Oct. 22, 2009), Institute of Medicine (June 1, 2010), The Commonwealth Fund (June 1, 2010), United States Department of Education (Apr. 18, 2012), United States Department of Justice (Apr. 23, 2012)*, Federal Reserve Board (March 4, 2013)*, Harvard University (Oct. 9, 2012), Harvard Medical School and Massachusetts General Hospital (Oct. 26, 2012), Senate Committee on Health, Education, Labor and Pensions (Apr. 1, 2013), Mailman School of Public Health of Columbia University (May 24, 2013), the Investigations and Oversight Subcommittee of House Finance Committee (Dec. 4, 2013)*, Education Trust (April 30, 2014), Annie E. Casey Foundation (May 13, 2014), Institute of Medicine II (May 28, 2014), IDEA Data Center (Aug. 11, 2014), and Education Law Center (Aug. 14, 2014).[1]

These letters reflect the fact none of the recipient institutions or organization recognizes that each standard measure of differences between outcome rates commonly used in analyzing group differences is systematically affected by the frequency of an outcome. But the same failure of understanding undermines the activities of virtually every institution or organization whose activities involve analyses of demographic differences in outcome rates. That holds for GAO as well, and it holds with respect to all GAO evaluations of government programs involving appraisals of demographic differences in outcome rates. Thus, I will at some point send GAO a letter similar to those listed in the prior paragraph.

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For reasons relating to the shapes of underlying risk distributions, all standard measures of differences between outcome rates tend to be systematically affected by the frequency of an outcome. Most notable with respect to fair lending issues is a pattern whereby the rarer an outcome the greater tends to be the relative difference in experiencing it and the smaller tends to be the relative difference in avoiding it. I have explained this pattern and its bearing on fair lending issues in quite a few articles since 1992.

[1] To facilitate consideration of issues raised in letters such as this I include links to referenced materials in electronic copies of the letters. All such letters may be found by means of the Institutional Correspondence subpage of the Measuring Health Disparities page of jpscanlan.com. If the letter is corrected after it is first posted on the website, such fact will be noted on the final page.

One recent article in which I explain this patterns and the implications of the failure to understand it in the fair lending enforcement context (as well as other problems in standard fair lending analyses) is "The Perverse Enforcement of Fair Lending Laws," *Mortgage Banking* (May 2014). Other recent articles include "Race and Mortality Revisited," Society (July/Aug. 2014) (which addressed a great many issues concerning the failure to understand the patterns by which measures change as the prevalence of an outcome changes, while addressing fair lending issues mainly at 14-16); "Things government doesn't know about racial disparities," The Hill (Jan. 28, 2014); "Misunderstanding of Statistics Leads to Misguided Law Enforcement Policies," *Amstat News* (Dec. 2012); "'Disparate Impact': Regulators Need a Lesson in Statistics," *American Banker* (June 5, 2012); and "The Lending Industry's Conundrum," *National Law Journal* (Apr. 2, 2012).[2] The most comprehensive treatment of the issues as they bear on discrimination issues may be found in my September 20, 2013 University of Kansas School of Law Faculty Workshop paper titled "The Mismeasure of Discrimination."

Table 1 below is based a hypothetical used in each of the articles listed in the prior paragraph. It shows the implications, with respect to relative differences in pass rates and failure rates, of lowering a test cutoff where two groups' average test scores differ by half a standard deviation. At the higher cutoff (first data row), the pass rate is 80 percent for the advantaged group (AG) and 63 percent for the disadvantaged group (DG); the corresponding failure rates are 20 percent for AG and 37 percent for DG. At that that cutoff, AG's pass rate is 1.27 times DG's pass rate, while DG's failure rate is 1.85 times AG's failure rate.

Table 1. Pass and fail rates of advantaged group (AG) and disadvantaged group (DG) at different cutoffs, with measures of difference between rates.

Cutoff	AG Pass	DG Pass	AG Fail	DG Fail	AG/DG Pass Ratio	DG/AG Fail Ratio
High	80%	63%	20%	37%	1.27	1.85
Low	95%	87%	5%	13%	1.09	2.60

Lowering the cutoff to the point where 95 percent of AG passes (second data row) would result in a situation where approximately 87 percent of DG passes; the corresponding failure rates

[2] My other articles addressing fair lending issues include "Let's Hope Insurer Lawsuit Makes HUD Rethink 'Disparate Impact'," *American Banker* (Jan. 8, 2014); "Regulators Need Schooling on Measuring Lending Bias," *American Banker* (June 14, 2013); "Fair Lending Studies Paint Incomplete Picture," *American Banker* (April 24, 2013); "Statistical Quirks Confound Lending Bias Claims," *American Banker* (August 14, 2012); "Race and Mortality," *Society* (Jan.-Feb. 2000); "Both Sides Misuse Data in the Credit Discrimination Debate," *American Banker* (July 22, 1998);"Perils of Using Statistics to Show Presence or Absence of Loan Bias," *American Banker* (Jan. 3, 1997); "Statistical Anomaly Penalizes Fair-Lending Effort," *American Banker* (Nov. 18, 1996); "When Statistics Lie" (*Legal Times*, Jan. 1 1996); "Getting it Straight When Statistics Can Lie," *Legal Times* (June 23, 1993); "Bias Data Can Make the Good Look Bad," *American Banker* (Apr. 27, 1992).

would be 5 percent for AG and 13 percent for DG. At the lower cutoff, AG's pass rate would be only 1.09 times DG's pass rate, while DG's failure rate would be 2.6 times AG's failure rate.

Thus, lowering the cutoff, while decreasing the relative difference in pass rates, increased the relative difference in failure rates.

The pattern whereby the relative difference in the favorable outcome and the relative difference in the corresponding adverse outcome tend to change in opposite directions as the frequency of an outcome change is not peculiar to test score data or the numbers I chose to illustrate it. Rather, the pattern can be found in virtually any data that allow one to examine various points on a continuum of factors associated with experiencing or avoiding an outcome or simply examine relative differences in favorable and adverse outcomes at various levels of the frequency of an outcome. Many illustrations may be found in recent *Society* articles and various pages of jpscanlan.com. See especially the Collected Illustrations subpage of the Scanlan's Rule page.

Figure 1 (at page 4) of the April 23, 2012 letter to the Department of Justice uses the same hypothetical test score data underlying Table 1 above to illustrate the pattern shown in the table across a full range of pass and fail rates. Figure 1 (at page 4) of the March 4, 2013 letter to the Federal Reserve Board illustrates a similar pattern using actual credit score data for black and white borrowers from a lending discrimination suit. That is, the figure shows that the lower the credit score cutoff, the smaller the relative difference in meeting it but the larger the relative difference in failing to meet it.

Absolute differences and differences measured by odds ratios tend also to be systematically affected by the prevalence of an outcome. But, inasmuch as most fair lending analyses rely on relative differences in outcome rates, it is not necessary to treat absolute differences and odds ratios at length here. I note, however, that Appendix Figure 2 (at Appendix page 2) of the Federal Reserve letter illustrates the pattern by which absolute differences tend to be systematically affected by the frequency of an outcome.

Many illustrations of the patterns by which the two relative differences, the absolute difference, and the difference measured by the odds ratio tend to be affected by the frequency of an outcome can also be found in my October 17, 2012 applied statistics workshop at Harvard's Institute for Quantitative Social Science titled "The Mismeasure of Group Differences in the Law and the Social and Medical Sciences" and my September 5, 2014 methods workshop for the demography and epidemiology arms of the University of Minnesota titled "The Mismeasure of Association: The Unsoundness of the Rate Ratio and Other Measures That Are Affected by the Prevalence of an Outcome."

These workshops, as well as the 2014 *Mortgage Banking* article and the 2014 *Society* article and the 2013 Kansas Law paper, also explain a method for appraising differences in the circumstances of two groups reflected by a pair of outcome rates that is unaffected by the frequency of the outcome.

On October 10, 2014, I will be giving a methods workshop similar to the University of Minnesota workshop at the Maryland Population Research Center of the University of Maryland. The workshop, titled "Rethinking the Measurement of Demographic Differences in Outcome Rates," will be held from 10:00 a.m. to 12:00 p.m. at 1101 Morill Hall and will be open to the public. Members of your staff dealing with quantitative issues may benefit from attending.

In addition, by email of July 24, 2014 to George Scott, the GAO contact persons for the GAO report *Standards Needed to Improve Identification of Racial and Ethnic Overrepresentation in Special Education* (Mar. 29, 2013),[3] I proposed my giving a methods workshop to GAO staff involved with activities such as drafting of the referenced report. As made evident in the second to fourth articles mentioned in this letter, as well as the Department of Justice letter, the federal government's enforcement of fair lending laws and its enforcement of laws concerning fairness in public schools share the same failure to recognize that reducing the frequency of an outcome tends to increase relative differences in experiencing it. In the event that GAO does allow me to conduct a workshop, GAO staff involved with fair lending issues would benefit from it as much as GAO staff involved with education issues.

Finally, I maintain a number of web pages devoted to fair lending issues, many of which provide more detailed discussion of such issue than found in the references mentioned above. The main Lending Disparities page broadly addresses the issues discussed above, but also discusses some particular issues, including, in Section 7, issues regarding the interpretation of data on demographic differences under the Home Affordable Mortgage Program.

The page has thirteen subpages. The Disparities – High Income subpage addresses the erroneous perception that the fact that relative differences in adverse outcomes tend to be greater among higher-income than lower-income mortgage applicants indicates that differences in income do not explain rejection rate disparities. The Underadjustment Issues subpage addresses the fact that efforts to adjust for racial differences in characteristics related to securing some outcome are invariably inadequate. The Absolute Differences – Lending subpage addresses issues concerning the measurement of lending disparities by means of absolute differences.

The Lathern v. NationsBank subpage discuses a putative class action brought against NationsBank Mortgage Corp. on the basis of its comparatively large relative differences in mortgage rejection rates even though it had comparatively small relative differences in mortgage approval rates. The United States v. Countrywide subpage addresses several issues involving the lending discrimination claims that were subject of $335 million settlement announced in December 2011. The United States v. Wells Fargo subpage addresses several issues involving the lending discrimination claims underlying the $175 million dollar settlement announced in

[3] The report is also discussed in my IDEA Data Center Disproportionality Guide subpage of the Discipline Disparities page of jpscanlan.com. The subject of that subpage is addressed in Table 19 and 20 of the University of Minnesota workshop.

July 2012. The Partial Picture Issues subpage addresses a fundamental problem with analyses underlying claims of discrimination in assignment to subprime status and discrimination in loan pricing at issue in cases like *United States v. Countrywide* and *United States v. Wells Fargo* that was not present in analyses of rejection rate disparities – *i.e.*, that the analyses of the claims fail to examine the entire universe of persons seeking the desired outcome (an issue also addressed in the 2014 *Mortgage Banking* article and the 2013 Kansas Law paper). The File Comparison Issues subpage discusses the problematic nature of efforts to identify discrimination by means of comparisons of files of rejected and approved applicants. The FHA/VA Steering Study discusses a study that regarded the fact that a larger proportion of minority than white mortgage loans were FHA/VA loans as suggesting that minorities were steered to such loans but without providing an estimate of what the difference in proportions would be absent discrimination. The CAP TARP Study subpage employs data from a 2009 Center for American Progress study of subprime loans at banks in the Troubled Asset Relief Program to illustrate the extent to which lenders with lower proportions of total loans assigned to subprime status show comparatively large relative differences between black and white rates of assignment to subprime status. The Foreclosure Disparities subpage discusses attention given to large relative differences in foreclosure rates without recognizing that generally reducing the number of foreclosures, while reducing relative differences between rates at which advantaged and disadvantaged groups avoid foreclosure, will tend to increase relative differences in foreclosure rates.

The Holder/Perez Letter subpage addresses the April 23, 2012 letter to the Department of Justice and the Federal Reserve Letter subpage discusses the March 4, 2013 letter to the Board of Governors of the Federal Reserve System, as well as the responses of those agencies.

Sincerely,

/s/ James P. Scanlan

James P. Scanlan