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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
Director
Financial Markets and Community Investment
U.S. Government Accountability Office
441 G Street
Washington, DC 20548

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