

Politically Charged Numbers: Adjusting the Census

By **Barbara Everitt Bryant
and William Dunn**

Judge Joseph M. McLaughlin of Federal District Court in Brooklyn enrolled me in a graduate course in statistics. He didn't know it and may not to this day. Nor did I know it when he handed down the Stipulation and Order in the summer of 1989 in the adjustment lawsuit, formally known as *The City of New York et al., Plaintiffs, vs. United States Department of Commerce et al., Defendants*. When I was appointed census director, I became one of the "als," third on the list of names after the secretary and under secretary for economic affairs of the Department of Commerce. I inherited that dubious honor from my predecessor, John Keane, whose name appeared on the lawsuit when it was first filed in 1988.

The lawsuit sought to compel the Department of Commerce and the Census Bureau to correct the 1990 census to compensate for any undercount. Such a suit was all but inevitable, provoked by the Commerce Department's 1987 decision not to adjust—i.e., correct—the census, although methods to do so had been under study at the bureau throughout the 1980s. It also foreshadowed the problems to come in taking the 1990 census, which found a growing number of Americans ignoring or avoiding census enumeration. This is why building an estimate of those missed into the census count is necessary for an accu-

rate measure of the population in the future. It was so in 1990, and it will be even more so in censuses to come. It may not be the perfect solution—100 percent cooperation would be more desirable—but it is the practical solution in an imperfect world....

this research has shown the undercount to be declining as census-taking procedures improve, down to 1.2 percent in 1980 nationally, although there remained an undercount of 4.5 percent among Blacks and 0.8 percent among non-Blacks, or a differential of 3.7 percentage points. Adjustment could close this

gap by adding a statistical estimate of those missed, but would it improve the accuracy of census figures, especially at the local level? That's what I was about to find out.

My post-census graduate course in statistics began in February 1991 when I enrolled as an ex-

officio member of the bureau's Undercount Steering Committee (USC). I was not expected to do the research, but I was expected to understand the results. While the USC would advise me, only I was empowered to make a recommendation to the secretary.

Measuring the 1990 Undercount: Demographic Analysis

The demographic analysis specialists, led by Census Bureau demographer Dr. J. Gregory Robinson, gave us results first.² They shattered my optimism. While their analysis showed that the net census count was good—we had counted

**Estimated Undercount by Race in the Censuses
of 1940-1990 According to Demographic Analysis**

	1940	1950	1960	1970	1980	1990
Total population	5.4%	4.1%	3.1%	2.7%	1.2%	1.8%
Non-Blacks	5.0	3.8	2.7	2.2	0.8	1.3
Blacks	8.4	7.5	6.6	6.5	4.5	5.7
Percentage Point Difference						
(Blacks minus non-Blacks)	3.4	3.8	3.9	4.3	3.7	4.4

Source: Bureau of the Census, 1991.

Shattered Optimism

I knew it was impossible to count 100 percent of the population, no matter how much money and time we spent trying to do so. But, I was also confident that the census undercount would be no greater and possibly lower in 1990 than in 1980. Most important, I believed that the differential undercount—the difference in the undercount among racial and ethnic groups—would be lower in 1990 than in 1980....

Since the 1940 census, the Census Bureau has had data showing an undercount. These data come from what is called demographic analysis—which is an analysis of other government statistics, such as records of births, deaths, legal immigration, estimates of illegals, Medicare files, and other sources. Bureau researchers compare census counts against these records. Over the decades,

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98.2 percent of the population—it was not as good as in 1980, when we had counted 98.8 percent. Even more disappointing, given our efforts to convince diverse groups to be counted, was the increase in the differential undercount between Blacks and non-Blacks to 4.4 percentage points. This was the largest differential discovered since the bureau started measuring differentials with the 1940 census.

It wasn't much of a stretch to understand these numbers. The fact that proportionally more Blacks than Whites remained uncounted was a fairly compelling reason for adjustment. I was beginning to let the data decide.

There was no way we could use the results from this demographic analysis to adjust the census because the data were national in scope. To adjust the census, we needed geographically detailed data on the undercount. To do that, we needed many more statistics.

Measuring the 1990 Undercount: The Post-Enumeration Survey (PES)

...While the Census Bureau had experimented with post-enumeration surveys before, the results always contained more error than the undercount they aimed to fix. Was the 1990 post-enumeration survey accurate enough to use for adjustment? That's what I needed to determine. It certainly was the largest sample survey ever done by the Census Bureau, and it was probably the most accurate....

All of our work confirmed what the demographic analysis had shown. There was an undercount of about 2 percent. In the nonpolitical world of research, this would be considered an amazingly accurate result for a count of such scope and size. The census, however, is in a highly political world.

The post-enumeration survey population estimate (or what was called a dual-system estimate because it was formulated using both the PES and the census) showed that the census had

missed 2.1 percent of Americans, similar to the demographic analysis estimate of 1.8 percent missed. Not only were Blacks less well counted than Whites, but so were Hispanics, American Indians, and, to a lesser extent, Asians. The question now was how to model the undercount to statistically add people to the exact geographic locations where they belonged.

The Census Bureau had already designed such a model. The court stipulation required the bureau to design it before the census. The model divided the population into 1,392 types of people

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(or “strata”) and applied an estimate of the undercount or overcount to every person counted in the census, according to that person's stratum. For example, a young Black man living in rental housing in a Northeastern central city might be in a group that had been undercounted by 5 percent. The adjusted population estimate would count him as 1.05 persons....

Most of the members of the USC believed that an adjusted count would be more accurate. I had reviewed the research as it evolved, listened to their deliberation, and agreed. It was my judgment (with studies to back me up) that if you correct errors at a higher level, you improve things at the lower level.

The Big Decision

On June 28, 1991, two weeks be-

fore the decision deadline, I wrote: “As director of the Bureau of the Census, I, Barbara Everitt Bryant, recommend to secretary of commerce Robert A. Mosbacher, the results of the 1990 post-enumeration survey be used to statistically adjust the 1990 census....”

It is now history that Secretary Mosbacher decided against adjusting the 1990 census. His ten advisors split five to five. No member of the advisory panel changed his pre-census opinion for or against adjustment. Under Secretary Darby came down hard in opposition to adjustment, attacking several statistical procedures used by the Undercount Steering Committee. This undoubtedly had some effect in influencing Mosbacher's decision not to adjust the census. Darby is undeniably an expert statistician. He has now returned to his pre-government post as a professor in the Anderson School of Management, University of California at Los Angeles. But I feel that in supporting the anti-adjustment position, Darby looked at the statistical warts on the individual trees in the forest. He missed the big picture: In the forest, parts of some groves were missing.

I recommended one course of action; the secretary of commerce took another. I felt then, and still do today, that the drive for perfection should not stand in the way of improvements. Whether or not to adjust was a close call. Mosbacher jumped in one direction and I in the other. But when we hit the ground, we were not that far apart. I recognize that with his advisors splitting on their recommendation, it would have been hard for him to change 200 years of history. No census has ever been adjusted. Mosbacher worried that doing so would open a door to charges of political manipulation in future censuses. History was against adjustment....

Court Decisions Go On... and On

New York City et al. went back to court the day after Mosbacher announced his decision. It was two years later in April 1993, and one year after a three-

week trial, when Judge Joseph M. McLaughlin handed down his decision upholding Mosbacher's decision. Said the judge:

...the court concludes that the secretary's conclusions under each guideline and his ultimate decision against adjustment cannot be characterized as arbitrary or capricious. The breadth of the guidelines left the secretary enormous discretion. Plaintiffs have made a powerful case that the discretion would have been more wisely employed in favor of adjustment. Indeed, were this court called upon to decide this issue *de novo*, I would probably have ordered the adjustment. However, it is not within my province to make such determinations. The question is whether the secretary's decision not to adjust is so beyond the pale of reason as to be arbitrary or capricious. That far I cannot go.

In a footnote, Judge McLaughlin added, "Additionally, I note that in light of recent improvements in statistical tools and the practical benefits that the 1990 PES has provided, the use of adjustment in the next census is probably inevitable."⁹

The Battle Continues

The end of the adjustment debate? Not on your life! New York et al. appealed. Then on August 8, 1994, the US Court of Appeals for the Second Circuit made the same decision about adjusting the 1990 census that I had recommended four years earlier. The court overturned McLaughlin's ruling. It said that the standard by which the decision should be judged was not whether it was arbitrary and capricious, but whether a fundamental right had been denied on the basis of race and ethnicity.¹⁰ The court said that "...the government has not justified its use of 1990 census data that undercounted Blacks and members of other minority groups."¹¹

The Commerce Department did not appeal the decision, headed as it was in 1994 by Secretary Ronald Brown who—as chairman of the Democratic National Committee—had thumped for adjustment....

Back to 1991 and Strange Bedfellows

Shortly before the secretary's decision, the Census Bureau issued a news release showing what the adjusted population estimates would be for states, and for cities and counties with populations of 100,000 or more.

Suddenly, many of those who supported adjustment had second thoughts. Reapportionment consultants quickly figured out that if adjusted counts were used, California and Arizona would each gain a representative in Congress at the expense of Pennsylvania and Wisconsin. State and city officials compared their unadjusted counts with the adjusted estimates and discovered that if adjustment did not raise their share of the population by more than the average undercount rate, adjustment would hurt them. Political power and federal funding are fixed pies, distributed proportionately.

While large cities were less well counted than suburban and rural areas, the big winners in adjustment would be the fast-growing areas of the South and West, not the older Northeastern and Midwestern cities. While New York City would have been slightly better off after adjustment, its gain was far less than it had anticipated. Furthermore, New York State—also a party to the city's lawsuit—would actually lose compared to other states.

They say politics makes strange bedfellows, but now the politicians were jumping out of one bed and into another. They started to panic. Partisan positions fell apart as the battle lines became geographic. In favor of adjustment were the South and West and a few big cities such as New York, Chicago, and Detroit—all in states that would be hurt by adjustment. The Northeast and Midwest now

opposed adjustment, preferring the unadjusted census count that maximized their constituencies....

No More Two-Number Censuses

I have learned one thing from all the statistical research, political wrangling, nerve-jarring decisions and conflicting court decisions. A two-number census will not work. We cannot have an enumerated count followed later by an adjusted population estimate, as the Census Bureau produced in 1990 and 1991. The two numbers will always set in motion opposing political forces, each promoting numbers that maximize the count to their advantage, and all willing to go to court to try to get the number they want.

The alternative to the two-number census is not the one-number census count that has missed people for 200 years. Instead, we need a new one-number census in which estimating non-respondents and the missing becomes a part of census taking. A best-effort enumeration plus estimation would put the count outside politics and back inside the statistical arena.

Endnotes:

² Demographic analysis is described in detail in "Technical Assessment of the Accuracy of Unadjusted Versus Adjusted 1990 Census Counts," Report of the Undercount Steering Committee, Decennial Census Division, (Washington, DC: Bureau of the Census, June 1991).

⁹ United States District Court, Eastern District of New York, Memorandum and Order 88 CV 3474, 92 CV 1566, 92 CV 2037, April 13, 1993.

¹⁰ US Court of Appeals for the Second Circuit Decision vacating judgment of US District Court for the Eastern District of New York, Docket No. 93-6183, decided August 8, 1994.

¹¹ Rosenbaum, David (1994). "A Likely Long-Term Effect of Census Ruling: More Litigation," *The New York Times*, August 10, 1994, p. A8.