

Comment

Joseph B. Kadane

1. INTRODUCTION

In assessing the paper by Freedman and Navidi, we must remind ourselves of what it was that brought so many statisticians to New York City in 1984 to put their views on trial in a United States district court. The problem at hand, then and today, is that the Decennial Census on which so many of this country's decisions depend does not do what it is supposed to do: fairly measure the population. The census falls short of that standard in a particularly intolerable manner, for it is by and large the least advantaged members of our society who are consistently left out. In the face of this, the courts have turned to our profession to ask, "can we do better, and if so, how?" It was that question, one that inherently calls for comparisons, that Ericksen and I sought to address in presenting our regression analysis.

In criticizing the regression and indeed any proposed means of adjusting the census, therefore, one must strive to quantify alleged deficiencies and compare them to the deficiencies in the census itself. Freedman and Navidi, while they enumerate points at which a regression analysis could fall short of truth, fail to make that fundamental comparison. While we welcome insights as to our methodology, what is called for from those who would criticize proposed adjustments is an honest effort to measure their weaknesses against those of the census. Without such an approach, we are given only the sound of one hand clapping and may be saddled with the injustices of the census for decades to come.

I begin by explaining the context of the New York lawsuit, and the rebuttal testimony in which I participated. Next, I discuss Freedman's surrebuttal testimony. I then explain my view of the proper role of assumptions in a statistical analysis and conclude by addressing specific points raised by Freedman and Navidi.

2. CONTEXT

In *Cuomo v. Baldrige*, New York City and State (and a number of New York officials and residents) sued the U. S. Census Bureau and other federal gov-

ernment officials and entities seeking:

- "(1) Judgement declaring that New York City and New York State were disproportionately undercounted in the 1980 Census and
 - (2) An order requiring the Bureau to adjust the 1980 Census to reduce that disproportionate adjustment to the maximum extent feasible"
- (Plaintiffs' memorandum, pp. 90, 91)

The first point, at least with regard to New York City, was essentially conceded by the middle of the trial ("I am prepared to find right now, and based upon the testimony I heard from both the government's witnesses and your witnesses, that New York City was disproportionately undercounted. I don't even think that's an issue anymore" (Judge Sprizzo, transcript at pp. 2099–2100)). Inasmuch as Freedman and Navidi point out that adjustment methodologies are subject to biases, it is important to understand the biases in the *census* that lead to the conclusion that there was a disproportionate undercount. According to demographic analysis of the 1980 Census, blacks were undercounted by 4.8%, while nonblacks were overcounted by 1.1% (Bureau of the Census, 1982). In stating briefly that the Census Bureau made intensive efforts to eliminate the undercount in the 1980 Census, Freedman and Navidi note that demographic analysis "indicated that at the national level, there was an overcount of about $\frac{1}{4}$ of 1% of the legal population, although some of the illegal population was missed." The apparent effort to minimize the extent of the undercount ignores the well recognized fact that it is the *differential* undercount between the rates at which different groups are missed that causes inequity—not the overall national undercount. Places having disproportionate numbers of groups that are highly undercounted receive unfair treatment. The gap between the 1980 Census black undercount rate and the nonblack undercount rate is about the same size as it was in 1970 (when the gap was 6.1%) (Bureau of the Census, 1982). The Bureau's Post Enumeration Program (PEP) estimates of undercount, derived from matching studies, also showed disproportionately high undercounts for blacks as well as the poor, Hispanics, and other disadvantaged groups (Ericksen affidavit, paragraphs 111–121.)

Thus attention focused on the second point, which would require the Census Bureau to adjust, but does

Joseph B. Kadane is Leonard J. Savage Professor of Statistics and Social Science at Carnegie-Mellon University. His mailing address is Department of Statistics, Carnegie-Mellon University, Pittsburgh, PA 15213.