



***U.S. CENSUS MONITORING BOARD***  
***Presidential Members***

*Final Report to Congress*  
*September 1, 2001*

**U.S. Census Monitoring Board**  
**Presidential Members**  
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U.S. Census Monitoring  
Board

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September 1, 2001

The Honorable Richard Cheney  
President  
United States Senate  
Washington, D.C. 20510

The Honorable J. Dennis Hastert  
Speaker  
U.S. House of Representatives  
Washington, D.C. 20515

Mr. President and Mr. Speaker:

Pursuant to Public Law 105-119, the undersigned members of the U.S. Census Monitoring Board (CMB) hereby transmit our final report to Congress.

The following report represents over three years of dedicated service to the cause of an accurate Census 2000. It embodies not only our legacy, but also our belief that the census, as a foundation of democracy, should count every single individual in our great nation. It is also our hope that this final report will serve as a useful roadmap for Census 2010.

We would like to thank President Clinton, House Democratic Leader Richard Gephardt and Senate Majority Leader Tom Daschle for providing us with the opportunity to serve. The Constitution of the United States provided for a decennial census for the purpose of apportioning seats in the House of Representatives. As Presidential Members of the Board, we were honored to have been a part of the historic process for Census 2000.

We also wish to acknowledge the heroes of Census 2000 – the thousands of individuals, local governments and community organizations who tried so hard to achieve a complete count. To the degree that Census 2000 was a success, the Census 2000 partners deserve the lion's share of the credit. We enjoyed working with these and other census stakeholders over the past three years through all phases of the operation. In addition, we are very grateful for the assistance provided to us by the Commerce Department, the Government Printing Office, many Members of Congress and their staffs, and, of course, our own staff and expert consultants at the CMB.

Finally, we want to thank the Bureau for providing office space to the CMB and for accommodating our oversight efforts in Washington and in the more than 50 local offices in all 12 census regions in the country.

Census 2000 posed many challenges, including how to use new technology to achieve a more accurate count, how to stem the tide of non-participation, and how to adjust for the differential undercount evident since the 1940 census.

While our experience with the Bureau was generally good, we must note that the spirit of transparency and cooperation that marked the CMB's relations with the Bureau under former Acting Director James Holmes and former Director Kenneth Prewitt dissolved following the change of Administration in January of 2001.

Our efforts to monitor census operations in accordance with our statutory mandate were met with resistance from the Bureau. Several requests for data – to which we were legally entitled under the CMB's authorizing statute – were delayed or simply ignored. As a result, we were unable to conduct additional research beyond that which is included in this report.

The most significant set of data delayed by the Bureau related to the Local Update of Census Addresses (LUCA), one of the three major initiatives the Bureau cited as having contributed to the operational success of Census 2000. We strongly felt that review of this data and analysis of its effectiveness would have proven invaluable.

This final report details the operational milestones achieved in Census 2000, a set of recommendations for future censuses, a comprehensive analysis of the 2000 Census conducted by Dr. Eugene Ericksen of Temple University, an examination of demographic analysis by Dr. Jeffrey Passel of the Urban Institute, an in-depth forecast of lost Federal funding as a result of the undercount provided by PricewaterhouseCoopers, a brief overview of the Census Partnership Program and a listing of activities conducted by the CMBP.

Since the recommendation of the Executive Steering Committee for A.C.E. Policy (ESCAP) was announced and made official by the Secretary of Commerce, Don Evans, we have attempted to analyze the rationale behind the decision. The ESCAP committee cited inconsistencies between the Accuracy and Coverage Evaluation (A.C.E.) estimates and demographic analysis (DA), and the lack of time available to the committee to resolve these differences.

Dr. Jeffrey Passel, a noted expert in the field, concluded that the Bureau's DA estimate failed to incorporate the best available estimates of immigration and therefore was seriously flawed. Dr. Passel said that had the base DA been somewhat different, "there would have been more attention to the areas of agreement rather than disagreement between the two measures and more attention to the potential deficiencies in Census 2000 itself."

Additionally, in an effort to better comprehend the decision, CMBP invited the participation of noted experts Dr. Stephen Fienberg and Dr. Jay Kadane to join the team of Ericksen and Passel. Their findings were made public and provided the basis for understanding the ESCAP decision. These scientists concluded that given the results of their combined research and the information currently available from the Census Bureau, a more accurate census would have been achieved by adjusting.

In conclusion, despite being unable to access and analyze data withheld by the Bureau, we are nonetheless proud of what we were able to accomplish. In particular, CMBP played a leading role in the discovery, analysis, documentation, and publication of some of the most critical census issues, including:

- The social, political and economic effects of a census undercount;
- The release of estimates of the 2000 Census undercount for all 50 states and many of the country's counties;
- The discovery of the larger-than-expected immigrant population and;
- The vast number of errors, imputations and potential duplications in Census 2000.

Our hope is that the volume of scientific research provided as a result of this initiative will be utilized to gain a better understanding of Census 2000.

And finally, we would be remiss if we did not reaffirm our belief that overall, the Census Bureau's workforce is among the most skilled, dedicated, and nonpartisan in all of government. They perform a tremendous and essential public service, not just every 10 years, but year in and year out.

We are confident that the legacy of the Board will provide Congress and the nation with a valuable perspective leading into Census 2010.

Respectfully submitted,



Gilbert F. Casellas  
Co-Chair, Presidential Members



Everett M. Ehrlich  
Presidential Member



Cruz M. Bustamante  
Presidential Member



Lorraine A. Green  
Presidential Member

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# CENSUS 2000 AND CENSUS MONITORING BOARD MILESTONES

## Introduction

Planning for a census begins long before the actual census day or even census year. Each planning cycle brings about its own set of challenges. Census 2000 was confronted by a persistent undercount of minorities and the poor, a number which had increased in the 1990 census. Additionally, 1990 was the first census since 1940 that had not improved coverage over the previous census. The data revealed that of the 4 million net undercount, 4.4 percent of Blacks, 5 percent of Hispanics, 2.3 percent of Asians and Pacific Islanders, and 4.5 percent of American Indians were missed compared to 0.7 percent of non-Hispanic whites.

The 1990 results generated several lawsuits, the formation of committees, research studies and reports on how best to remedy the persistent differential undercount. After due consideration of all the findings presented, Dr. Barbara Bryant, Director of the Census Bureau, along with the majority of the Bureau's Undercount Steering Committee, who had assessed the accuracy of the data, recommended that the 1990 census be statistically adjusted. The decision was, however, overruled on July 15, 1991, by Secretary of Commerce Robert Mosbacher.

In light of the 1990 census controversy, a broad range of stakeholders, including those in scientific professions, the Bureau and Congress agreed that review and modification to the existing methodology was needed. The Decennial Census Improvement Act of 1991 required the Bureau to contract with the National Academy of Sciences (NAS) to study ways in which to achieve a more accurate count. Additionally, the Address List Improvement Act, enabled the Census Bureau to form partnerships with state, local, and Tribal governments to develop and update address lists to assist with identifying where people could be found.

Numerous panels and advisory committees were organized including: The Task Force for Planning for the Year 2000 Census and Census-Related Activities for 2000-2009, the NAS Panel to Evaluate Alternative Census Methods, and The Panel on Census Requirements in the Year 2000 and Beyond. By the mid 1990s it was evident that the Bureau and the NAS favored a 2000 census design that included greater reliance on statistical methods. NAS, the General Accounting Office, and the Commerce Department's Office of the Inspector General, along with other stakeholders ultimately recommended that the Bureau incorporate dual system estimation methods to achieve high quality statistical correction.

The following are milestones in the Census 2000 operation and the history of the Census Monitoring Board (CMB).

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## 1997

### **Congress Addresses Funding for Statistical Adjustment and Establishes the Census Monitoring Board**

The Census Bureau unveiled its Census 2000 strategy in February 1996, affirming the recommendations of the various groups and including plans for sampling. However, the plan generated heated congressional debate centered primarily on the issue of sampling. As the debate intensified, it consequently spilled onto the FY 1998 appropriation bills. The discussion broke primarily along partisan lines, with Republicans opposing sampling as a method of increasing the rolls of Democratic voters, and Democrats wanting to ensure that the growing net undercount from previous censuses be eliminated. In November of 1997 Congress reached a compromise with the passage of Public Law 105-119. The law allowed the Census Bureau to design a two-track plan, one track was to include sampling, the other would not, which ultimately affected the 1998 Dress Rehearsal. It authorized Congress to challenge the census plan in court, provided for expedited judicial review of any legal challenges to the use of sampling in the census, setting the stage for the January 1999 Supreme Court decision, and established the Census Monitoring Board as an oversight body to observe and monitor all aspects of the preparation and implementation of the 2000 decennial census.

## 1998

### **Census "Dress Rehearsal"**

In 1998, the Census Bureau began testing its proposed 2000 plan in three sites: Columbia, South Carolina (mainly rural); Sacramento, California (mainly urban); and Menominee, Wisconsin (an American Indian reservation). The plan included a pre-census promotional campaign before mailing out the forms to households; the non-response follow up; a new program called Sampling for Non-Response Follow-up, and the traditional post-enumeration statistical survey to assess accuracy. This process would apply the results of the non-response follow up to the final ten percent of the non-response population. The rehearsal took place in as near a census-like environment as possible.

### **Census Monitoring Board Organizes**

In June 1998, the Census Monitoring Board was organized and held its first meeting in Washington, D.C. By statute, the Board was divided evenly along partisan lines, with four members appointed by President Bill Clinton and four by the Republican leaders in Congress:

- ◆ Presidentially-appointed members included Tony Coelho (co-chair), Gilbert F. Casellas, Dr. Everett M. Ehrlich, and Lorraine A. Green; and
- ◆ Congressionally-appointed members included J. Kenneth Blackwell (co-chair), Dr. David M. Murray, A. Mark Neuman, and Joe D. Whitley.

The authorizing statute gave CMB the responsibility for monitoring "all aspects" of Census 2000, including operational planning, implementation, and post-censal analysis. The law mandated that CMB report to Congress at least once every six months on its findings and issue a Final Report by September 1, 2001, before ceasing operations on September 30, 2001.

Congress appropriated \$4 million for the Board for its first year – with the money to be shared equally between CMB-Presidential and CMB-Congressional. Each year thereafter, Congress appropriated

\$3.5 million, also to be shared equally between the two groups. The Board was designed to operate as two Boards within one, each with separate Executive Directors and staff.

At its organizing meeting, the Board agreed that an affirmative vote of at least five members of the Board would be required to issue any report or recommendation in the Board's name.

In July 1998, the Board held its first hearing at Census Headquarters in Suitland, Maryland. Acting Census Bureau Director, James Holmes, testified and provided a detailed briefing on the Bureau's "dual track" preparations for Census 2000. One track was designed to include sampling while the other would not.

## 1999

### Supreme Court Rules on Statistical Sampling

The discussion surrounding the use of sampled data intensified over time. It ultimately came to a head when the Bureau announced their plan to use two forms of statistical sampling in the 2000 Decennial Census in an effort to address the issue of the undercount. Two major lawsuits were filed in opposition, which were eventually incorporated into one, the *Department of Commerce et al. v. United States House of Representatives et al.* The suit challenged the legality and constitutionality of using sampled data for the purposes of reapportionment. The U.S. Supreme Court heard the case and in January, in a narrow 5 to 4 majority, the court ruled that current law prohibited the use of sampling methods in deriving the state population totals used for reapportionment of the House of Representatives. Writing for the majority, Justice Sandra Day O'Connor stated that the 1976 amendments to Title 13 U.S.C. (Census Act) changed the provision in law from one that "permitted" the use of sampling for purposes other than apportionment into one that "required" that sampling be used for such purposes if "feasible."

Following the decision, the Bureau issued a revised Census 2000 plan that included expanded efforts to count the population directly for apportionment data and a smaller post enumeration survey to measure the accuracy of that count. It also requested additional funds (\$1.7 billion) to handle the new operation. The post-enumeration survey, this time called the Accuracy and Coverage Evaluation (A.C.E.), was designed to survey 300,000 households over 11,000 blocks or block-clusters around the country.

This, however, did not lessen the debate on the issue. Opponents as well as supporters of sampling disagreed regarding whether the Court's interpretation of the Census Act allowed the use of sampling methods to produce numbers to be used for redistricting.

### CMBP Report to Congress

On February 1, the CMBP issued its first report to Congress in which it provided information on the six bipartisan public hearings held and discussed the results of the three dress rehearsals. Some conclusions reached were that no matter how sophisticated and well funded a traditional census might be, it will still result in a substantial undercount of minorities and children, and only a timely Post-Enumeration Survey can substantially reduce the differential undercount. The report also endorsed the Local Update of Census Addresses (LUCA) program as a superior method for ensuring local review and urged Congress to extend grants to state and local governments to develop standardized address lists.



### **CMB Issues its First Joint Report**

On April 1, the CMB issued its first joint report to Congress. The Report dealt with field office staffing, complete count committees, partnership specialists, questionnaire assistance centers, the "Be Counted" program, questionnaires and language assistance, and targeting how best to reach the hard-to-enumerate population.

### **Casellas Replaces Coelho as CMB Co-Chair**

In May, Co-Chair Tony Coelho stepped down from the Board and was replaced by CMBP member Gilbert F. Casellas. California Lt. Governor Cruz M. Bustamante is later appointed by President Clinton to fill the fourth slot.

### **CMBP Report on State and Local Operational Plans**

On June 9, the Presidential Members provided Congress with a compilation of responses from state and local officials on the Census Bureau's operational plans for 2000. The information represented strong bipartisan support for a full and accurate census utilizing modern statistical methods to adjust for the undercount.

### **Second CMB Report Focuses on Advertising Campaign**

The CMB's second bipartisan report to Congress, issued October 1, focused on the \$167 million paid advertising campaign and "enthusiastically" endorsed the Bureau's efforts. This marked the first time that such a program had been instituted. The objectives outlined by Young & Rubicam, the agency contracted to conduct the campaign, were:

- ◆ to raise public awareness about Census 2000;
- ◆ to motivate Americans to return their census forms;
- ◆ to create an environment that would facilitate the work of the enumerators during the non-response follow-up phase.

The scope of the campaign was appropriately comprehensive for a decennial census and covered diverse populations.

### **CMBP Releases Public Attitudes Survey Results**

On October 26, CMBP published the results of a national nonpartisan opinion survey measuring public attitudes toward the census and tested the effectiveness of the messages contained in the Census Bureau's advertising campaign. Belden Russonello & Stewart in collaboration with Research/Strategy/Management, conducted a non-partisan survey of 1,885 participants in six separate focus groups and identified reasons for participation as well as those factors that inhibit participation in the census.

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## 2000

### **CMBP Report Details Potential Effects of Unadjusted Census**

On March 9, the CMBP issued the first of its 15 research papers, detailing the effects of an unadjusted census. PricewaterhouseCoopers, a CMBP consultant, conducted a comprehensive analysis of how the undercount could affect the allocation of Federal funds among the states, metropolitan areas and center counties of metropolitan areas. The report "Effect of Census 2000 Undercount on Federal Funding to States and Local Areas, 2002-2012," noted that 26 states and the District of Columbia would lose at least \$9.1 billion in federal funds over the next decade if the 2000 census undercount produced a similar undercount rate as that of the 1990 census.

### **Census Day**

April 1, Census Day, Americans are asked to identify where they lived on this day in the year 2000.

April 19, Dr. Kenneth Prewitt, Director of the Census Bureau, announced that the mailback response rate of 65 percent had exceeded expectations and reversed a trend of declining participation, which started in 1980.

### **Third CMB Report Focuses on Census Preparations**

The CMB issued its third joint report to Congress on April 1, and concluded that the Bureau's preparations for Census 2000 had "generally" proceeded well and included detailed findings from a series of joint field observations.

### **Census Bureau Issues Report on the Feasibility of Using Adjusted Data**

In June, the Census Bureau in addressing the matter of "feasibility" (as raised by the January 1999 Supreme Court decision) issued its report "Accuracy and Coverage Evaluation, Statement on the Feasibility of Using Statistical Methods to Improve the Accuracy of Census 2000." The report concluded that traditional census methodologies would not effectively reduce the differential undercount and that the most effective way to increase accuracy was through the use of scientific sampling applications. It also reported that completion of the A.C.E. was operationally feasible and that it would be possible to produce statistically adjusted data prior to April 1, 2001.

### **Fourth CMB Report Focuses on Partnership and Promotion**

The fourth CMB bipartisan report to Congress was presented on October 1. It detailed oversight visits to 51 Local Census Offices. The report focused on the Bureau's partnership and promotion efforts, especially targeting the hard-to-enumerate; recruitment and staffing; mailback response rates; field operations; update/leave, update/enumerate, and list/enumerate operations; data capture, quality assurance, and coverage improvement programs.

On October 6, the Department of Commerce issued a final rule, which gave the Director of the Census Bureau authority to make the final determination regarding the matter of sampling after receiving the recommendations of the Executive Steering Committee for A.C.E. Policy (ESCAP). It further stipulated that the decision of the Director was not subject to review, reconsideration, or reversal by the Secretary of Commerce. The rule was to become effective on November 6, 2000.

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## **Bureau Announces first Population Count Results**

On December 28, the Census Bureau announced that the national population of the United States on April 1, 2000, was 281,421,906, up from 248.7 million in 1990. The 281.4 million figure was based on the raw enumeration and did not include any statistical adjustment based on the A.C.E. State-by-state totals were also released at that time.

## **2001**

### **Census Director Kenneth Prewitt Departs**

In January, following the change in Administration, Dr. Prewitt stepped down as Census Director. William Barron was named Acting Director.

### **Commerce Secretary Assumes Control Over Census Adjustment Decision**

In February, shortly after being sworn in, the new Secretary of Commerce Don Evans announced that he was rescinding the Federal regulation that gave the Census Bureau Director and a committee of senior, nonpartisan careerists the authority to decide whether the raw census count should be adjusted. The Secretary of Commerce was restored as the ultimate decision-maker.

### **Bureau Announces A.C.E. Results**

On March 1, the Bureau released the findings and recommendations of the ESCAP. The committee recommended that unadjusted census data should be released to the states in March for redistricting purposes based on the “apparent inconsistency in population growth over the decade as estimated by the A.C.E. and demographic analysis.” Additionally, the committee determined that the differences could not be resolved given the April 1, 2001, deadline for delivering intra-state population figures for redistricting.

The results of the A.C.E. revealed a significant error rate in the raw census count, although not as great as in 1990. According to A.C.E.:

- The total population of the United States was 284.7 million, as compared to the census figure of 281.4 million.
- 6.4 million persons were missed and 3.1 million were counted twice. In other words, the 2000 raw census count produced a net undercount of 3.3 million persons, or 1.2 percent of the population, and a minimum of 9.5 million total errors, or miscounts.
- The undercount continued to be “differential” in nature. Asians were missed nearly twice as often as whites; African Americans missed nearly three times as often, Hispanics four times as often as whites; Native Hawaiians and other Pacific Islanders over six times as often as whites, and American Indians seven times as often as whites.

The following chart summarizes the national 2000 census results:

|                                  |                      |
|----------------------------------|----------------------|
| <b>Raw count in Census 2000:</b> | <b>281.4 million</b> |
| <b>A.C.E. count:</b>             | <b>284.7 million</b> |
| Number counted twice:            | 3.1 million          |
| Number missed:                   | 6.4 million          |
| Net undercount:                  | 3.3 million          |
| <b>Net undercount rate:</b>      | <b>1.2 %</b>         |
| <b>Undercount rate by group</b>  |                      |
| Non-Hispanic whites:             | .67 %                |
| Blacks:                          | 2.17 %               |
| Hispanics:                       | 2.85 %               |
| Asians:                          | .96 %                |
| Native Americans and Alaskans:   | 4.74 %               |

On March 6, Secretary Evans, in agreement with the recommendations of the ESCAP and the Acting Director, officially announced that the unadjusted numbers would be released to the states for their use in redistricting.

### **CMBP Analyses Compares 2000 and 1990 Census Errors**

On March 9, the CMBP released the first of a series of informational briefs analyzing census data and reporting on the results obtained by CMBP experts. It dealt with the number of errors and uncertain cases contained in the 2000 Census in comparison to those of the 1990 Census. The Bureau responded by providing information on their assessment of the errors, reporting that the 1990 Census contained 12.9 million gross errors, while Census 2000 contained 9.5 million gross errors.

On March 28, the CMBP produced estimates of the number of people missed in the 2000 Census in all 50 states, the District of Columbia and five cities.

### **CMBP Issues Semi-Annual Report to Congress**

In its semi-annual report to Congress, issued on April 1, the CMBP published summaries of nine research projects commissioned to analyze and evaluate the results of the 1990 undercount on the populations most affected. Additionally, it provided in-depth information regarding the net undercount of 3.3 million people; levels of error which included the number of people missed, those counted twice, or in the wrong place, as well as information on non-data defined people and re-instated possible duplications. The report also provided a discussion on demographic analysis as one of the components used by the Bureau to determine the nation's population. Dr. Jeffrey S. Passel, demographer and researcher at the Urban Institute, noted that the discrepancy between the Bureau's estimates of the population were due primarily to incorrect assumptions about the level of legal and illegal immigration between 1990 and 2000. The A.C.E. and preliminary demographic analysis estimates of the total population differed by about 5.2 million persons.

### **Experts Call for Release of Data**

On April 18, CMBP convened a panel of noted census experts to discuss their analysis of Census 2000 data and the factors that led the ESCAP and the Acting Director to recommend against adjustment. In presenting their findings, they explained why they had arrived at a different conclusion from the one reached by the Bureau. Dr. Jeffrey Passel, demographer and researcher, argued that “the inconsistency with DA should not be used as a basis for deciding against adjustment because the current estimate underestimates immigration, particularly Hispanic and undocumented immigration.” On the matter of synthetic error, Dr. Joseph Kadane, Professor of Statistics and Social Sciences at Carnegie Mellon University, wondered “why the Bureau used synthetic error as a reason not to adjust when their materials make a case for just the opposite.” Dr. Stephen Fienberg, Professor at Carnegie Mellon University, noted “that balancing error was even less a problem in 2000 than in 1990” and went on to suggest “inconsistencies with the Bureau’s methodology when determining the accuracy of populations below 100,000.” The experts concluded by reiterating a call for the Bureau to release all data for further scientific study and review.

### **CMBP Study Details County-Level Undercounts**

Continuing to meet the need for critical information and in the absence of the necessary data being released by the Bureau, in July, the CMBP provided undercount estimates for the nation’s largest counties, those with populations over 500,000.

### **CMBP Study Shows Fiscal Impact of Not Adjusting Census Count**

On August 7, PricewaterhouseCoopers released a study, sponsored by the CMBP, projecting a loss of federal funding of more than \$4 billion in 31 states and the District of Columbia for the 8 programs studied as a result of the 2000 Census undercount. The majority of the funds lost (\$3.6 billion) would be in 58 of the nation's largest counties. On a per capita basis, the funding loss translated into nearly \$3,000 per uncounted person in these counties. The eight programs were: Medicaid, Foster Care, Social Services Block Grants, Rehabilitation Services, Basic Support, Substance Abuse Prevention, and Treatment Block Grants, Vocational Education Basic Grants, Child Care and Development Block Grants, and Adoption Assistance.

### **CMBP Issues Final Report**

In September, CMBP issued their Final Report. The Board is scheduled to close its doors on September 30, 2001, having made every effort to fulfill its statutory responsibilities.

## RECOMMENDATIONS

Throughout the course of our operation, our semi-annual reports to Congress have included recommendations based on our observation and oversight. Many of them were incorporated and ultimately contributed to the operational success of Census 2000. Based on our overall experience, research and field observations, the following recommendations are offered in an effort to improve future censuses.

### Overall Recommendations

*All efforts should be made to remove partisan politics from the census process.* The decennial census is Constitutionally mandated as the method to re-distribute representation fairly. In recent times, the census data has also been used as the most accurate basis for the allocation of federal funds. The perception of political manipulation of census results is an unfortunate by-product of making political appointees the final arbiters of census policy. The decisions regarding accuracy of the census should be based on sound science. While the National Academy of Sciences, the American Statistical Association, the Council of Professional Associations on Federal Statistics, the American Sociological Association, the National Association of Business Economists and other professional associations advocated the positive use of sampling methods, the decisions made by the Census Bureau left the issue unresolved, thereby co-opting it to the field of politics.

*The Census Bureau Director should have a 5 or 7 year term appointment.* Other agencies charged with developing critical statistical information, including the Bureau of Labor Statistics, have a fixed term for their directors. This would serve to provide continuity and remove the challenge of political pressure from the Office of the Director.

*An early deadline should be set for resolving 2010 methodology.* For the 2000 Census, the Bureau had to prepare a “dual track” census plan, pending resolution of a lawsuit regarding the Bureau’s methodology. One track of the plan would incorporate modern scientific methods, or sampling, while the other track would not. Just one year before the 2000 Census, the Supreme Court decided that based upon a 1976 statute, sampling could not be used for apportioning the House of Representatives. Following the decision, the Bureau requested an additional \$1.7 billion from Congress to adjust for the consequences of the court ruling. While it is important to recognize the need for flexibility in the planning and preparation stages, it is also important to note that operations used in the decennial census should be tested during the dress rehearsals. When an operation is employed during the decennial that has not been tested, it is necessary to understand that it may be subject to unknown error.

*Congress and other oversight bodies should be more sensitive to the consequences of redundant or overlapping oversight.* While a \$6.5 billion dollar operation deserves full Congressional scrutiny and oversight, the Census Bureau endured oversight and investigation by at least six different entities – the Commerce Department’s Inspector General, the General Accounting Office, the U.S. House of Representatives Census Subcommittee (which operates as two separate entities), the Census Bureau’s own Race and Ethnic Advisory Committees, the Commerce Department’s Census 2000 Advisory Committee and both sides of the U.S. Census Monitoring Board, which most often worked as two distinct bodies. Each entity was able to provide valuable information to Congress and to the public, but top officials at the Bureau spent many hours answering repetitive and at times, unreasonable requests

for information (including a request to read *all* Census Bureau e-mail) just when the Bureau was at the peak of its operation.

*The Census Bureau should strive to maintain a transparent census operation.* For the 2000 Census, most operational aspects were pre-specified and scrutinized by the public. During Acting Director James Holmes' and Director Ken Prewitt's tenure, the Bureau maintained a high level of transparency and public communication. The Bureau outlined a plan for making decisions and worked with the Commerce Department to establish regulations, which allowed for public comment. However, with the change in Administration, extracting information from the Bureau became difficult. For example, requests submitted by the CMBP went unanswered for months. In some cases the Bureau denied the requests citing the possibility that the information would be misunderstood as the basis for its decision on adjustment.

*Congress should continue to fund a post-enumeration survey.* Regardless of the debate over sampling, the post-enumeration survey serves as an invaluable quality check on the accuracy of the census. In 2000, the post-enumeration survey was called the Accuracy and Coverage Evaluation (A.C.E.) and allowed the Bureau to measure the net and differential undercounts and to document increased improvement.

*A national paid advertising program should be included in future plans.* Our own polling pointed to strong public interest in the messages that the Census Bureau and the paid advertising agency of Young & Rubicam employed to address the twin challenges of increasing awareness and commitment to participate. Both sides of the Monitoring Board unanimously endorsed the Bureau's decision to pursue a paid advertising campaign as part of Census 2000. Increased participation of all communities provided solid evidence that the overall objectives of the program were achieved.

*Funding for the decennial Census must be judiciously considered.* The actual and projected cycle cost of the 2000 Census (\$6.5 billion) nearly doubled the cycle cost of the 1990 Census. A national paid advertising program, advancing technology and adequate pay for temporary employees create costs but are an essential element of the operational success of the 2000 Census.<sup>1</sup> As the country and the associated census-taking costs continue to grow, Congress must continue to evaluate the swelling expenditures associated with traditional census taking methods.

*Demographic Analysis (DA) is a useful benchmark from which to evaluate census results, however, it should not be used as a determining factor in the debate over adjustment.* DA was designed to identify whether or not a racial differential undercount exists between the Black and Non-Black population primarily because when DA was developed in 1940, the largest minority was the Black population. Given the increased imprecision in measuring race and ethnicity caused by the changing nature of American society, the race/ethnic-specific estimates from DA for future censuses should probably not be held to the same standards as coverage measurement surveys. Inconsistencies between DA and the surveys in terms of relative coverage of race/ethnic groups would need to be "explained" in demographic or sociological terms, but failure to agree should not be treated as *prima facie* evidence that coverage has not been adequately measured or that adjustment is not warranted.

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<sup>1</sup> "2000 Census Review of Partnership Program Highlights Best Practices for Future Operations," GAO-01-579, page 2 and "Bureau of the Census Federal Funds," Appendix to the Budget of the United States Government, submitted by the President of the United States, 1986 through 1996, adjusted for inflation.

Furthermore, measures of immigration have always been the weakest link in compiling a demographic estimate of the U.S. population. By its very definition, undocumented immigrants are the least likely to be included in an estimate of the U.S. population that relies largely on administrative records such as birth and death records. Most disappointing is that as the economy expanded and the number of immigrants dramatically increased over the past decade, the Census Bureau was unable to understand how its own survey results showed increases in immigration. In 2000, the failure of DA to incorporate estimates of immigration based on the best available information — estimates of undocumented immigration consistent with measures from the reweighted Current Population Survey, nonimmigrants from all categories based on INS data, and increased special agricultural worker (SAW) populations — changed the nature of the ESCAP decision on adjustment. Had the “base DA” estimate included a better estimate of the immigrant population, there would have been more attention paid to the A.C.E, more attention to the areas of agreement between the two measures, and more attention to the potential deficiencies in Census 2000 itself rather than the inconsistency between DA and the A.C.E.

*It is essential that the Census Bureau develop greater capacity to measure immigration.* The Census Bureau’s measure of undocumented immigration and nonimmigrants during the 1990s were drawn entirely from outside the agency. Developing current estimates of undocumented and legal immigration and measuring changes in the flow of immigration should be done by the Bureau. Developing the expertise within the agency is needed to enhance its ability to assess these changes.

*Gross error, rather than net error, should be the primary basis for evaluating the accuracy of the census.* Some errors “cancel out,” leaving the impression that the results are more accurate than they really are. For example, the net undercount in the 2000 Census is 3.3 million but the number of people missed is 6.4 million while the number of people counted twice is 3.1 million.<sup>2</sup> Knowing where people are missed is also important because omissions do not necessarily occur in the same place as duplications. Errors are often geographically and racially differential. Indeed, the persistent racial differential undercount in Census 2000 illustrates this point.<sup>3</sup>

*Imputations and removed potential duplicates should be included when discussing measures of gross and net error in the census.* Imputations make use of information not based upon direct observation but rather, a computer is directed to “impute” people, based upon various clues, including how their neighbors responded. Census 2000 included 5.7 million imputations – 2 percent of the nation’s population. Furthermore, imputations were applied differentially by race. The rate of imputation for Blacks and Hispanics was twice that for Whites. Potential duplicates were identified late in the census process but before delivering the apportionment number. The Bureau used a complex computer program to identify about 6 million potential duplicate persons in the census. The Bureau further screened the 6 million people and added 2.4 million people back into the census, while taking out 3.6 million people. Neither the 5.7 million imputations nor the 2.4 million re-instated duplications were included in the Accuracy and Coverage Evaluation. The effect of these uncertain cases should be thoroughly evaluated before they are extensively used in future censuses.

*The effects of the Local Update of Census Addresses (LUCA) program should be further analyzed.* The Census Bureau plans to conduct an ongoing LUCA program, which allows local governments and

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<sup>2</sup> “Statement by William C. Barron, Jr. on the Current Status of Results of Census 2000 Accuracy and Coverage Evaluation Survey,” July 13, 2001.

<sup>3</sup> Executive Steering Committee on Accuracy and Coverage Evaluation Policy Report, March 1, 2001.



the Census Bureau to develop a more comprehensive address list over time.<sup>4</sup> LUCA allows direct input by local governments in the process of assembling address lists, a process, which should be encouraged. However, there is much yet to understand about the effectiveness of LUCA. It is presumed that by improving the address lists for the 2000 Census, it should have decreased the number of persons missed or allocated to the wrong locality. However, it may also have increased the variability by local area in the undercount or overcount, which in turn might have made the census estimates of shares (by state or local area) more accurate or less accurate.

*Federal funds should be made available to state and local governments to allow them to modernize and standardize their own address list and mapping technologies in order to better contribute to updating the Bureau's national address list.*<sup>5</sup>

*The Census Bureau should comply with its pre-determined data products release schedule.* Following its scheduled timeframe, the Bureau released the Congressionally mandated redistricting data summary file and additional Census 2000 demographic products. However, it failed to provide information regarding the number of people sleeping in shelters, living in cars, under bridges and on sidewalks, again out of fear that the public would misunderstand the numbers. Their action only added to the degree of frustration, confusion and suspicion surrounding Bureau decisions.

*Census Bureau Headquarters and the Regional Offices should continue partnerships with governmental, community-based, and religious organizations, as well as school systems, to encourage cooperation with the Census Bureau's activities throughout the decade.* It is widely believed that the over 140,000 partnerships contributed significantly to the reduced net undercount. The Census Bureau has already expanded its Census Information Center program which partners the Bureau with community based organizations in an effort to distribute census information more widely in traditionally less accessible communities. The Census Bureau would benefit from its continued outreach to traditionally undercounted communities through its Census in the Schools program. Scholastic, Inc. developed a census curriculum for teachers to use in the classroom during the 2000 Census, which proved to be highly popular. Better-educated children lead to better enumerated households.

*Census Bureau Headquarters should strive to provide the Regional Offices with materials and other resources available for partnership efforts.* Local and state governments often times communicated directly with Census Bureau Headquarters rather than their Regional Offices for partnership information because information appeared not to filter down to the Regional Offices in a timely manner.

*Congress should provide adequate funds to increase the number of qualified Partnership Specialists who can serve as a bridge between the Bureau and local community leaders.* While the more than 600 partnership specialists the Bureau hired often performed Herculean tasks, these census ambassadors were often spread too thin. Partnership specialists were expected to attend public functions, schedule meetings and organize census awareness events in order to ensure that every member of every community in the country was enumerated by the census. There are over 39,000 communities in the nation and many of them have their own governments, several civic organizations, and numerous religious institutions. More partnership specialists would allow the Bureau to achieve greater participation.

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<sup>4</sup> LUCA was mandated by P.L. 103-430, to allow the Census Bureau to share their address list with local governments for a local check on the address list's accuracy. This public law also mandated that the Post Office share their address list with the Census Bureau.

<sup>5</sup> Both sides of the Monitoring Board also agree that federal funds should be made available for cities and towns to form Complete Count Committees, which allowed local governments to help raise awareness about participating in the 2000 Census. Joint Report to Congress by U.S. Census Monitoring Board, April 1, 1999.

## Operational Recommendations

The following recommendations are the result of Monitoring Board staff meeting with 50 local census office (LCO) managers during peak decennial operations in the months of April, May, June and July of 2000.<sup>6</sup> The 50 offices visited cover a broad cross-section of the country – rural, urban and suburban, East Coast, West Coast and the Mid-West. Most of the offices were selected because they contained large numbers of historically undercounted populations, as documented by the Bureau's Planning Database.<sup>7</sup> We selected two locations in each of the Bureau's 12 Regions, attempting to include a variety of operations – mailout/mailback, update/leave, and list/enumerate.<sup>8</sup>

*Local Census Offices should be encouraged to contact building and gated community managers early, in order to gain access to some areas with surprisingly low cooperation.* Most of the attention to fixing the undercount in the years leading up to Census 2000 was focused on educating people who have historically been undercounted – children and minorities. In many areas of the country, traditionally undercounted communities worked closely with the Bureau to increase awareness such as in Chula Vista, California and El Paso, Texas. However, during Census 2000, an unexpected challenge arose in gaining access to large apartment buildings and gated communities in wealthier neighborhoods in Chicago and New York. Contacting building and gated community managers early on could help prevent some of these unexpected and last minute problems that arose during field operations during Census 2000.

*A similar program to the Planning Database should be locally updated leading up to the next censuses.* The planning database organized 1990 Census data to help the Bureau determine census tracts that would need greater attention in 2000 to improve the census count. Factors such as mail response rate, poverty rate and racial composition helped local census offices direct their resources. Both sides of the Monitoring Board agree that the Planning Database was a useful tool in guiding local census offices where to concentrate resources.<sup>9</sup> For example, while cities such as New York, Chicago or Los Angeles have always experienced a large population of immigrants, even remote and rural areas saw more recent immigrants settle into their communities. Places like Burlington, Vermont, Dalton, Georgia and Cheyenne, Wyoming saw an increased immigrant population since the 1990 Census and the Bureau was able to both identify pockets of recent immigrants and to work with local community leaders to encourage increased inclusion in the census count.

*The “notice of visit” cards – flyers left by enumerators after an unsuccessful non-response follow-up visit – should include information in the 5 other major languages spoken in the U.S. (Spanish, Chinese, Vietnamese, Tagalog, and Korean).* The English-only flyers were successfully used in 2000 as a calling card when people were not at home. However, the practice could be improved by providing them in multiple languages.

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<sup>6</sup> Findings from these visits are included in the October 2000 semi-annual report to Congress which was authored jointly by both sides of the U.S. Census Monitoring Board.

<sup>7</sup> In preparation for the 2000 Census, Census Bureau Headquarters examined every local census office jurisdiction to determine factors that might pose challenges to enumeration. This information gathered is called the Planning Database.

<sup>8</sup> Mailout/mailback is the type of enumeration area where the Census Bureau relies on the U.S. Postal Service to deliver a form to an address and expects a form returned in the mail. For those housing units that do not return their form in the mail by the deadline, the Bureau sends an enumerator to the door. This type of enumeration is used in 80 percent of the nation's housing units. Update/leave is when the Census Bureau updates its address list as it delivers a questionnaire to housing units that did not have a city-style address. For those housing units that do not return their form in the mail by the deadline, the Bureau sends an enumerator to the door. List/enumerate is when the Census Bureau updates its address list at the same time as sending a person to the housing unit's door for enumeration. This type of enumeration is used in sparsely populated and remote areas.

<sup>9</sup> Joint Report to Congress by U.S. Census Monitoring Board, April 1, 1999.

*In-language forms should be continued.* Findings from the Census 2000 Supplemental Survey indicated that one in five persons speaks a language other than English at home. This clearly identifies the need for continued use of in-language forms. In 2000, the census forms were available in six languages – English, Spanish, Korean, Chinese, Vietnamese, and Tagalog. In areas along the Mexican border where the update/leave type of enumeration is used, both sides of the CMB agree that LCOs, working in consultation with the Regional Offices, should be able to determine whether or not leaving a Spanish-language form is a better option than leaving an English-language form.<sup>10</sup>

*More attention should be paid to recruiting and hiring bilingual enumerators and translators. Further, LCOs should prioritize hiring to reflect the population of the community it serves.* The 2000 Census results document the need for greater diversity in the census workforce. With nearly a 60 percent growth in the Asian and Hispanic population and a surprising growth of immigrants even in areas not historically associated with large immigrant populations, the diverse staff helped the Bureau reach those traditionally hard to enumerate.

*The Bureau's policy of adjusting its wage scales based on local labor market conditions should be continued.* The caliber and dedication of the temporary workforce was extremely impressive in the 2000 Census. With few exceptions, the temporary employees interviewed and observed performed their duties professionally and competently. In areas where recruiting was difficult, adjusting the wage scale proved to be an effective tool in generating a larger applicant pool.

*Enumerators would benefit from photo-identification badges, especially in urban areas where residents are most concerned about security.* The badges used during the 2000 Census identified enumerators by signature only. Residents might be more comfortable with each enumerator's photograph on his or her badge.

*Partnership specialists should report to the LCO Manager rather than a Regional Office Manager.* Partnership specialists played an important role in the operational success of the 2000 Census. However, they were hired and directed by the Regional Offices rather than the LCO Manager that, at times, created communication difficulties and animosity among LCO staff.

*Local facilitators should be used again.* Local facilitators were not required to pass the enumerator test or security background checks but served as invaluable "gatekeepers" for the Bureau to enter traditionally closed communities such as Alaska Native villages or some publicly assisted housing neighborhoods. Facilitators were used on an ad hoc basis to reach areas that resisted cooperation with the census. LCOs identified ahead of time where facilitators would be most useful.

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<sup>10</sup> Joint Report to Congress by U.S. Census Monitoring Board, April 1, 2000.

# AN EVALUATION OF THE 2000 CENSUS

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## Introduction

Census 2000 has been marked by controversy and debate, both political and academic. On one side of the debate are those who favor the use of sampling and statistical models to adjust for the inevitable undercount of the population. Opposed are those who believe that any estimation will create more error than it removes, and that the goal of the census should be to reduce the undercount with better procedures.

Census 2000 was unprecedented in terms of its budget – more money was spent on it than on any previous census. Its achievements are impressive. Not only did the Census Bureau reduce the net undercount below the levels of previous censuses, but it also reduced the differentials between the non-Hispanic White and minority undercounts.

As a statistical consultant to the Presidential Members of the Census Monitoring Board, I have enjoyed the opportunity to observe the workings of Census 2000 and to analyze its results. In this report, my goal is to evaluate the accuracy of the census. To do this, I must first present criteria for defining accuracy, and discuss the merits of various alternatives. I will then provide my own analyses and draw conclusions.

As with many things that are large and complicated, the answer to the question of whether Census 2000 was more accurate than its predecessors depends on the criteria you use to judge. Census 2000 appears to have been successful by the key standard of allocating the population among states, counties, and places. It did not accomplish this feat, however, by observing and counting a greater share of the population than in 1990.

## Goals of the Census

The Constitutional goal of the census is to allocate the population among states. This goal conceivably could be attained without a complete count of persons. For example, if every housing unit had two people living in it, we could simply count the dwellings to get a good estimate of the population distribution. This fanciful thought underlies a more serious point. When the census misses 5 percent of minority populations, but less than 1 percent of non-Hispanic Whites, its results are biased against the minorities.<sup>1</sup> It is better to have a consistent undercount of 3 percent for all groups than undercounts of 3 percent for minorities and 0.3 percent for Whites. The latter census is less fair, even though the net undercount of the national population is lower than it would be for the alternative. The Constitutional goal of the census is to fairly allocate the population distribution among local areas. The differential, rather than the national net undercount, is the key statistic.

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<sup>1</sup> In 1990, the Bureau obtained the following estimates of undercount: American Indians – 12.2 percent; Hispanics – 5.0 percent; Blacks – 4.6 percent; Asians and Pacific Islanders – 2.4 percent; non-Hispanic Whites and others – 0.7 percent.

A second goal of the census is to describe the nature of the population. We need to know the racial and ethnic composition of the population, as well as observe the distributions of age, gender, income, and country of birth. For this, we need to obtain information directly from individuals, counting each person once, and only once.

Many of the methods used in Census 2000, such as whole person imputation, identifying duplicate cases by computer and then deleting them, and improving the address register with local information help to achieve the first goal. Some of these methods, however, detract from the second goal.

### **People Counted Directly and Correctly**

In 1990, the official census count was 248.7 million, the adjusted estimate was 252.7 million, and the implied net national undercount was 4.0 million. The comparable results for Census 2000 are 281.4 million counted, 284.7 million estimated to exist, and an implied net undercount of 3.3 million. The net undercount was smaller in 2000 by 700,000 people, and in percentage terms the rate dropped from 1.6 to 1.2 percent.<sup>2</sup>

The Census Bureau estimated that 4.4 million of the counted people in the 1990 Census were “erroneous enumerations,” people who were fabricated by enumerators or counted twice at the same location.<sup>3</sup> They also stated that 2.2 million were “whole person imputations,” or people created by a computer program rather than counted directly.<sup>4</sup> Combining these two groups and dividing by the total count, we see that 2.65 percent of the official population was not counted directly and correctly. If we subtract the 6.6 million imputations and erroneous enumerations from the official count, we have 242.1 million people counted directly and correctly in 1990. Subtracting this figure from the estimated total, we estimate that  $(252.7 - 242.1 =)$  10.6 million were omitted, or not counted directly. They comprise 4.19 percent of the estimated total.

For Census 2000, the Bureau informs us that there were 3.1 million erroneous enumerations and 5.7 million imputations for a total of 8.8 million.<sup>5</sup> They comprise 3.13 percent of the official count, an increase over 1990. There were 272.6 million people directly and correctly counted, and  $(284.7 - 272.6 =)$  12.1 million omissions. They comprise 4.25 percent of the estimated total, and this percentage is about the same as obtained for 1990.

There was a shift in the nature of the undercount, though. In 1990, of the estimated 10.6 million persons not directly counted, 8.4 million were omissions and 2.2 million were imputations. In 2000, of the estimated 12.1 million persons not directly counted, 6.4 million were omissions and 5.7 million were imputations.

### **Omissions and Erroneous Enumerations**

The Census Bureau’s definition of erroneous enumerations is controversial, as it omits a substantial category of people counted at the wrong location. For example, if a person moved from New York to California on April 15, 2000, but was counted in California, (s) he would create two errors. New York would have one person too few and California would have one person too many. Because such an

<sup>2</sup> *Report of the Executive Steering Committee for Accuracy and Coverage Evaluation Policy (ESCAP)*, March 1, 2001.

<sup>3</sup> U. S. Bureau of the Census, Memorandum from Ruth Ann Killion to John Thompson, dated May 15, 1997, “Gross Errors and Erroneous Enumerations in the 1990 Decennial Census.”

<sup>4</sup> John H. Thompson, “Census 2000 – Decision on Release of Statistically Corrected Redistricting Data,” August 8, 2001 at the Joint Statistical Meetings of the American Statistical Association, Atlanta, Georgia.

<sup>5</sup> Letter from William Barron to Representative Carolyn Maloney, dated April 9, 2001.

error does not affect the national net undercount, the Census Bureau does not include it in its definition of erroneous enumeration. I believe that such an error should be counted as an omission in New York and an erroneous enumeration in California.

Moreover, had the person been counted in both states, creating only one error, the Census Bureau would still not consider it to be an erroneous enumeration. This seems especially incorrect to me. Other examples of persons counted at locations other than their main residence, and not considered erroneous by the Bureau are:

- College students living away from home, counted both at home and school,
- Families counted at their main and vacation homes, and
- One or both members of a commuter marriage counted at both addresses.

Adding these incorrectly located people to the count of erroneous enumerations increases the Census Bureau estimate considerably. In 1990, 1.8 percent of the “E – sample” was a fictitious or duplicate case; 2.2 percent of the sample was counted at the wrong location.<sup>6</sup> Adding these in, the total estimate of people erroneously enumerated rose from 4.4 to 9.9 million. The estimated total of imputations and erroneous enumerations is 12.1 million, 4.87 percent of the official count.

For Census 2000, the parallel calculation provides an estimate of 6.3 million erroneous enumerations by the broader definition.<sup>7</sup> Adding these to the 5.7 million imputations gives a total of 12.0 million, 4.26 percent of the official count. The percentage of persons not directly counted is lower than in 1990, but the number of such cases is substantial in both censuses.

The Census Bureau estimates the number of omissions in the Census as the sum of erroneous enumerations and the net undercount.<sup>8</sup> In 1990, the net undercount was 4.0 million, and by the Bureau’s definition 4.4 million were erroneously enumerated and 8.4 million were omitted. The comparable total for Census 2000 is 6.4 million omissions.

The gross error is defined to be the sum of omissions and erroneous enumerations. By the Bureau’s calculations, this quantity fell from  $(8.4 + 4.4 =) 12.8$  million in 1990 to  $(6.4 + 3.1 =) 9.5$  million in 2000. By the expanded definition, there were 13.9 million omissions in 1990 for a gross error of 23.8 million.<sup>9</sup> There were 9.6 million omissions in 2000 for a gross error of 15.9 million.<sup>10</sup> Making no allowance for whole person imputations, the decline from 23.8 to 15.9 million indicates substantial improvement in Census 2000, relative to 1990. Even so, the number of omissions is very large.

It can be argued that each computer imputation represents one omitted person whom the Bureau could not directly count so the computer created his/her record. Adding these omissions to the previous totals, we obtain gross error estimates of 25.0 million in 1990 and 21.6 million in 2000.<sup>11</sup>

<sup>6</sup> The “E-sample” is the sample of census records that the Bureau matched against the A.C.E. survey data to determine the percentages correctly and erroneously counted. The “P-sample” is the survey sample which is matched against the census records to determine the percentages included and omitted from the count.

<sup>7</sup> Obtained from the Census Bureau data file entitled “E-Sample Person Dual System Estimation Output File,” delivered to the Census Monitoring Board on February 16, 2001.

<sup>8</sup> In making these calculations, the Census Bureau did not estimate the number of omissions directly. Noting that the net undercount is the difference between omissions and erroneous enumerations, it calculated the number of omissions as the sum of the net undercount and erroneous enumerations, e.g., for 1990,  $4.4 + 4.0 = 8.4$  million.

<sup>9</sup> We have 9.9 million erroneous enumerations, 4.0 million net undercount, and 13.9 million omissions for a total gross error of 23.8 million.

<sup>10</sup> We have 6.3 million erroneous enumerations, 3.3 million net undercount, and 9.6 million omissions for a total gross error of 15.9 million.

<sup>11</sup> For 1990, the number of omissions is 16.1 million, which when added to 9.9 erroneous enumerations provides a total of 25.0 million; for 2000 the comparable sum is  $15.3 + 6.3 = 21.6$  million.

To summarize, the Bureau's achieved reduction in the net national and differential undercounts did not necessarily occur because they "counted" many more people directly and correctly. Depending on how one defines erroneous enumerations, omissions, and the gross error, the Bureau either did about as well in Census 2000 as it did in 1990, or moderately better in 2000. Even by the definitions most favorable to the Census Bureau, however, there was a substantial amount of indirect and erroneous counting in 2000.

### Geographic Considerations

If an omission and erroneous enumeration occur on the same block, but to two different people, they cancel each other out at all meaningful levels of geography. To evaluate the effect of errors on population distributions, we need estimates of net undercount for each block. For example, if one block had 100 counts, 10 omissions and 5 erroneous enumerations, the adjustment would add 5 people even though the gross error was 15. An adjoining block might have 80 counts, 1 omission and 9 erroneous enumerations, and the adjustment would subtract 8 people even though the gross error was 10. The key statistic would be  $(5 + 8 =) 13$  "changes."

In 1990, when the Census Bureau calculated adjustments to individual blocks, it added 5.45 million people and subtracted 1.46 million people for a total of 6.91 million changes.<sup>12</sup> This statistic is much smaller than the previously calculated estimates of gross error for two reasons: (1) many errors cancel out because they occur on the same blocks, and (2) the Bureau's adjustment procedure does not fully correct for the distribution of net errors across all blocks. I illustrate the point with two groups of blocks included in the 1990 Post Enumeration Survey.

The 1990 survey, as did the 2000 Accuracy and Coverage Evaluation (A.C.E.) survey, sampled entire blocks and then calculated direct dual systems estimates of each block's population. In the examples just given previously, the survey data would indicate census counts of 100 and 80 respectively, along with dual systems estimates of 105 and 72. In a perfect world, the adjusted estimates for our two blocks would equal the direct estimates, i.e., 105 and 72. The synthetic adjustment method used by the Bureau, since it could not "explain" all the variation in net undercount rates across sample blocks, considerably understated the block-level adjustments.<sup>13</sup>

In Table 1, I illustrate the point using estimates for 11 sample blocks in Manhattan and 8 sample blocks in Ulster County, New York. I present the percentage undercount as estimated by the direct and synthetic dual systems estimates for each block. For both Manhattan and Ulster, the direct estimates are more highly variable than are the synthetic estimates. This is demonstrated by the larger standard deviations for the direct (13.88 for Manhattan and 5.89 for Ulster) than the synthetic (4.81 for Manhattan and 1.28 for Ulster) estimates. More to the point, the synthetic estimate is usually between zero and the value of the direct estimate. For example, Block 1 in Manhattan has a direct estimate of -24.20 percent and a synthetic estimate of -4.93 percent while Block 11 has estimates of 21.49 and 7.74 percent respectively.

The synthetic adjustments are therefore smaller in absolute value than the direct estimates would be if they were available for all blocks. For Manhattan and Ulster combined, the ratio of the average direct to synthetic adjustment is about three.

<sup>12</sup> Howard Hogan, "The 1990 Post-Enumeration Survey: Operations and Results," *Journal of the American Statistical Association*, September 1993, p.1054.

<sup>13</sup> This is because the variables used to define post-strata in both 1990 and 2000 predict patterns of undercount in a general way for large aggregates. Different variables would be needed to predict which particular blocks in a neighborhood would have larger and smaller undercounts or overcounts. This point does not indicate errors on the part of Bureau; it merely points out the inevitable limitations of any adjustment model.

I repeated this calculation for the entire nation, and found that on average, the direct adjustment was 2.3 times larger than the synthetic adjustment. Therefore, if the synthetic adjustment created 6.91 million changes, as indicated above, the number of changes that needed to be made was larger, i.e.,  $2.3 * 6.91 = 15.9$  million.

To explain it another way, had it been possible to sample all blocks in the United States, and calculate dual systems estimates for each one, I estimate that there would be 12.5 million additions and 3.4 million deletions to be made. Because the factors included in the adjustment model cannot fully predict the block-to-block variation in net undercount, the adjustments actually calculated only account for a share, about 43 percent, of the adjustments that need to be made. The Bureau's adjustments improve the estimated distribution of population, but not perfectly.<sup>14</sup> Moreover, the 15.9, rather than the 6.91 million, better indicate the extent of the undercount.

In Census 2000, the Bureau added 4.26 million and subtracted 1.00 million for a total of 5.26 million changes.<sup>15</sup> If we assume that the factor of 2.3 is appropriate for Census 2000, then the estimated number of changes that needed to be made would be  $2.3 * 5.26 = 12.1$  million. Looking at it another way, I estimate that there need to be 9.8 million additions and 2.3 million deletions across all blocks.

To summarize, when we define the gross error geographically, we see substantial progress in Census 2000, by  $(15.9 - 12.1 =) 3.8$  million. To the extent, however, that the multiplier of 2.3 is too low, we should revise the estimated number of changes for 2000 upward from 12.1 million, and the actual improvement over 1990 would be smaller.<sup>16</sup>

### Patterns of Undercount

A major story of Census 2000 is the reduction in the differential undercount (see Table 2). Both the Hispanic and the non-Hispanic Black undercounts in Census 2000 are about half of what they were in 1990, the non-Hispanic White undercount remained constant, and the differentials were cut sharply. This improvement in the estimated allocation of population among demographic groups reinforces the apparent reduction in gross error just discussed.

In designing the survey and estimation procedure for Census 2000, the Bureau defined post-strata not only by race and Hispanic origin, but also by tenure, metropolitan status, region (for White owners) and the mail return rate. Only the first three of these factors had a consistent effect on the estimated net undercount (Table 3).

Looking first at 16 groups of non-Hispanic White owners defined by geographic location, the rates cluster around zero. Six of the estimates are overcounts, seven of them are between 0 and 0.99 percent, and the remaining three are between 1.00 and 1.99 percent. Rates of undercount are slightly higher in non-metropolitan areas than elsewhere.

Rates of undercount are somewhat higher for White non-owners than owners, but the differences are not large. We also observe this pattern for other racial groups. For Hispanics, the undercounts were higher in smaller and non-metropolitan areas, while the opposite was true for the non-Hispanic Blacks. Indeed, the rates of net undercount for non-Hispanic Blacks and Whites living in smaller and

<sup>14</sup> The "imperfections" of the Bureau's method are likely to mean that remaining errors, after adjustment, exist at the block level. These block level errors largely cancel out within census tracts and legislative districts. The remaining errors for larger areas would be smaller on a percentage basis than they are for blocks.

<sup>15</sup> U. S. Census Bureau press release, "Statement by William G. Barron, Jr. on the Current Status of Results of Census 2000 Accuracy and Coverage Evaluation Survey," dated July 13, 2001.

<sup>16</sup> The associations between the variables used to define the post-strata and the pattern of net undercount appear to be weak in 2000, suggesting that the factor of 2.3 might be too low, and the estimate of 12.1 million therefore biased downward.



non-metropolitan areas were similar to each other. Finally, for non-Hispanic Asians, Pacific Islanders, and American Indians the rates of undercount were generally higher than average but substantially below their comparable estimates for 1990.

In general, the rates of undercount among different post-strata within the same racial category are not greatly different from each other, the one exception being owners versus non-owners. As different states typically have similar percentages of owner-occupied housing units, we would not expect to see large variations in undercount rates, once race has been taken into account. For smaller areas such as counties and places, concentrations of owner or renter occupied housing may have a more substantial impact.

### **Rates of Net Undercount for States**

Relying on data provided by the Census Bureau, I have replicated their estimates of net undercount by state (Table 4). I have also calculated “synthetic” estimates of undercount, or estimates of undercount that you would get if you assumed that the national rates of undercount applied to each state. For example, if a state’s population included 20 percent Hispanics, 30 percent non-Hispanic Blacks, and 50 percent non-Hispanic Whites, its synthetic estimate would be

$$.20 * 2.85 + .3 * 2.17 + .5 * 0.67 = 1.56 \text{ percent.}$$

Comparing the actual and synthetic estimates in Table 4, we see that they are quite similar. The estimates differ by more than a percentage point in only one state, Alaska. They differ by more than one-half of one percentage point in only eight states.

The synthetic and A.C.E. estimates for states are close because states are large and diverse areas including rich and poor, city, suburban and rural, and owner and non-owner areas. Moreover, the A.C.E. estimates themselves do not vary greatly, as the range extends only from 0.29 percent (Minnesota) to 2.67 percent (Alaska).

Variability on tenure and other indicators is greater for local areas within states. The Census Bureau defined minority post-strata by putting large and medium metro areas into one group, and smaller and non-metro areas into another group. This makes it possible to compare, within states, the minority-White differentials in more and less metropolitan districts. For example, in Georgia, is the Black-White differential in cities like Atlanta similar to the Black-White differential in more rural areas? In Tables 5 and 6, I present comparisons of undercount differentials, first for non-Hispanic Blacks and Whites and second for Hispanics and non-Hispanic Whites within more and less metropolitan areas in the same state.

To illustrate the method, we see in Alabama, that the Black – White differential for large and medium metro areas was  $(2.50 - 0.66 =) 1.84$  percent. The corresponding differential for smaller and non-metro areas was  $(0.94 - 1.09 =) -0.15$  percent, indicating a greater racial disparity in urban areas like Birmingham and Mobile than elsewhere.

Looking at the Black-White differentials in different states, they are consistently between 1.5 and 3 percent in the large/medium category. In these more metropolitan areas, the racial differential is consistently in the direction that we would expect from past censuses – the Black undercount is higher than the White. The story changes in the small/non-metro category, where there is no consistent difference in Black and White undercount rates, and they are usually close together. Indeed, the Black rate is lower than the White rate, though not by very much, in the rural and small city areas of 14 of the 34 states. This result has important implications for the South, as 85 percent of the non-Hispanic Black popula-

tion living in smaller and non-metropolitan areas is located there. There appears to have been no racial-ly differential undercount in the less metropolitan South. While the Census Bureau has not offered any explanation for this result, my hypothesis would focus on the relative difficulties of building complete address lists, without duplications, in minority compared to White areas. I suspect that good address lists are most difficult to build in minority areas of large cities.

The pattern differs for the Hispanic – White comparison. As we would expect from past censuses, Hispanic undercounts are consistently higher, by a few percentage points, than non-Hispanic White undercounts. Both groups have higher undercounts in smaller and non-metropolitan areas, and the differential between Hispanics and Whites is somewhat larger there as well. As a result, in many areas of the West and Southwest the non-metropolitan rates of undercount are higher than those of large cities.

### **Undercount Rates for Counties**

The preceding discussion suggests that the variation in undercount rates among counties may not be substantial. The racial differentials that we have just observed are typically less than three percentage points and are sometimes much less than this amount. To study this question, I calculated undercount rate estimates for approximately 1,500 counties located in 23 states. The states were selected by one or both of two criteria: (a) at least 25 percent of the population was something other than non-Hispanic White, or (b) it had a substantial share of its population located in large metropolitan areas as defined by the Census 2000 post-stratification plan. States with large minority, or “big city” populations are more likely to have variable rates of undercount among counties than the remaining less metropolitan states with smaller minority populations.

To calculate the undercount estimates, I first divided the non-group quarters populations of each county into eight categories – owners and non-owners among Hispanics, non-Hispanic Blacks, non-Hispanic Whites, and non-Hispanic others. I then obtained the ratios of adjusted to official populations for each state as provided by the Census Bureau. I display the individual county estimates in Appendix A and summarize the results in Table 7.

The variation in county rates of undercount is not substantial. A full 87 percent of all counties studied have rates of undercount between 0.00 and 1.99 percent. There are only four counties, all with small populations, that have rates of undercount above three percent. Six percent of counties, generally located in the Midwest, have overcounts but none of these is greater than one percentage point. As a general pattern, county rates of undercount are higher in the West and lower in the Midwest. The lack of a Black – White differential in less metropolitan areas had a substantial role in minimizing the variation among counties located in Southern states.

### **Effects of the Reduction in the Rate of Net Undercount**

The ability of the Census Bureau to reduce both the national net and the racially differential undercounts is a major success story. Having counted a greater share of the minority population in Census 2000, we would expect to see the greatest improvement in areas with large minority populations. This could make it difficult, though, to know how much of the measured 1990 – 2000 population growth was real and how much was due to a reduced undercount.

I conducted a study of those counties located in large metropolitan areas, as defined by the A.C.E. post-stratification scheme. I selected these counties, whose collective Census 2000 official count is 86 million, because I believed these counties to be the ones where census-taking problems were most serious

in 1990. I sorted them into four groups defined by the percentage minority, as (a) 50 percent or more, (b) 25 to 49.9 percent, (c) 10 to 24.9 percent, and (d) less than 10 percent minority.<sup>17</sup>

I then obtained 1998 and 1999 population estimates from the Census Bureau website.<sup>18</sup> Because these estimates did not incorporate an adjustment for the undercount of the 1990 Census, they provided a good benchmark to evaluate Census 2000. In other words, the 1999 estimate added the 1990 – 99 growth to the unadjusted 1990 count. I calculated a “2000 Census Projection” by adding the 1998 – 99 change to the 1999 estimate. For example, if the 1998 estimate was 180,000 and the 1999 estimate was 185,000, I calculated the 2000 projection to be 190,000. This projection estimates what the Census 2000 count would have been had the level of undercount been the same. It is subject to the errors generally associated with population estimates, but there is no reason to expect these errors to be consistently positive or consistently negative.

I compared the projection to the official 2000 count. If the count was 200,000, and the projection 190,000, then the projection was short by 10,000 or 5 percentage points. I summed the relevant population counts and projections by category, and calculated the overall shortfalls by county group (Table 8).

Together, the counties with the largest minority populations had the largest shortfall. They were projected to grow by 5.24 percent, but actually “grew” by 9.25 percent. The shortfall of the population projection was 3.67 percentage points, and this shortfall may well reflect the effects of improved counting. It is larger than the shortfalls of 1.34, 1.10, and –0.55 percent found for the other three groups of counties. In other words, those counties with higher minority shares had larger shortfalls than did counties with lower shares.

New York City is an especially good example, as its projected growth rate was 1.73 percent compared to actual growth of 9.36 percent. Washington DC, Philadelphia, and Hudson County, New Jersey had similarly high and unexpected amounts of growth. The shortfall was positive in 15 of the 16 “high minority” counties. It was three percentage points or more in 10 of the 16 counties. While there is variation, we see consistently high and unexpected growth in urban areas with large minority populations. Some of this growth is undoubtedly due to improved counting.

It is tempting to believe that this improvement is due to the use of the Local Update of Census Addresses (LUCA) program. In this program, local governments were allowed to submit lists of addresses that they believed might not have been included in the master address file of the census. In all, the Bureau added just over 4 million addresses through LUCA.<sup>19</sup> One of the largest files of added addresses came from New York City, where the Census Bureau accepted over 280,000 added addresses. These comprised 8.88 percent of the eventual city total of 3.2 million housing units. LUCA’s contribution compares to the 6.98 percent “shortfall” in New York City, suggesting that LUCA played no small part in creating a large amount of measured growth.

There is, however, no consistent pattern in other cities, some of whom such as Washington DC and Suffolk County, Massachusetts had large unexpected growth and a small LUCA contribution. Other counties had the opposite experience, i.e., they made a big LUCA contribution but did not observe unexpected growth. The overall correlation between the ratios of LUCA adds to all housing units and the shortfall of the population projection, measured among counties, is -.014.

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<sup>17</sup> Minority is here defined as persons who did not self-identify as only one race, non-Hispanic White.

<sup>18</sup> See U. S. Bureau of the Census website, July 30, 2001

<sup>19</sup> Data file received July 13, 2001 by the Census Monitoring Board, Presidential Members, from U. S. Bureau of the Census, entitled “LUCA submissions and ‘adds’ by local government jurisdiction.”

## The Nature of Census Error

My emphasis on the improvement in Census 2000 in terms of the national net and differential undercounts is not intended to minimize the importance of remaining error, both for political representation and fund allocation. The Census Bureau decided not to adjust the results of Census 2000 on its Redistricting file, but continues to consider whether or not it should adjust these results for use in fund allocation and other purposes. In this section, I discuss some of the issues associated with that decision.

Perhaps the major reason for the Bureau's decision was the inconsistency between national population totals calculated by the A.C.E. survey and demographic analysis. As the Bureau put it in the March 1 ESCAP report,

“Initial D[emographic] A[nalysis] results, however, presented a major inconsistency with the A.C.E. results – instead of confirming a net undercount, DA estimates that Census 2000 overcounted the national population by 1.8 million individuals . . . substantially below the net undercount of 3.3 million shown by the A.C.E. (page 3).”

The most likely culprit, from the perspective of the A.C.E., is the underestimation of erroneous enumerations. In other words, the official count includes more duplications, fabrications, and persons counted in the wrong place than the A.C.E. indicated. Increasing the estimated number of erroneous enumerations would reduce the net undercount, but also increase the gross error and indicate that the quality of Census 2000 data was not as good as we originally thought.

There are good logical reasons to believe that the Census Bureau did underestimate erroneous enumerations. There were 16 million counted people excluded from the A.C.E., 8 million who lived in group quarters, 5.7 million who were whole person imputations in households, and 2.3 million “late adds” who were cases originally thought to be duplicates but who were added back into the count at the end of the census counting period.<sup>20</sup>

The group quarters population could include overcounts, for example, among people included in outdated lists of residents at places such as hospitals, dormitories, and prisons. The number of “whole person” imputations, 5.7 million, may be too large, and to my knowledge the Bureau has never studied the question of whether its computers created on average the correct number of records for addresses where whole person imputation occurred. Finally, we already have reason to suspect that many of the 2.3 million “late census adds” were duplicated cases. The Bureau may be studying these possibilities, along with their announced studies of subjects such as balancing error. We await its conclusions.

In general, problems of census taking arise due to the circumstances in which people live. There are neighborhoods where poverty is high, education is low, use of foreign languages may be common, housing is crowded or irregular, and crime rates high where it is especially difficult to count. Even where some but not all of these conditions exist in extreme forms, census taking may still be difficult. These difficulties lead not only to higher rates of omission, but also to higher rates of erroneous enumeration, whole person imputation, and records with incomplete and incorrect recording of characteristics such as race and Hispanic origin.

The focus on the racially differential undercount sometimes leads to a misplaced emphasis on racial identity itself, rather than the conditions in which many minority group members live, as an explanation for why the undercount exists. Just as we would expect counting for non-Hispanic Whites to be difficult when their living circumstances are difficult, we would expect the counting for Hispanics and non-Hispanic Blacks to be easier when their conditions were better.

<sup>20</sup> John H. Thompson, “Census 2000 – Decision on Release of Statistically Corrected Redistricting Data,” August 8, 2001 at the Joint Statistical Meetings of the American Statistical Association, Atlanta, Georgia.

As part of its planning for Census 2000, the Bureau created a census tract planning file including information on the demographic and economic circumstances of local populations and tract level estimates of the undercount.<sup>21</sup> This file afforded me the opportunity to study the effects of poverty, as it combines with race, on the undercount. Because the poverty information is based on long-form data, it was not available for use in calculating actual adjustments to either of the 1990 or 2000 Censuses.

Working with the 1990 census tract data, I created five categories defined by race. One included those areas with Native American majorities. The second included that majority of tracts where the percentages non-Hispanic Black and Hispanic were each below 10 percent. I then identified tracts (a) where each percentage was between 10 and 29.9, (b) where one or both were between 30 and 49.9 but neither was as high as 50, and (c) where there was either a Black or Hispanic majority. I then subdivided the tracts a second way, depending on the poverty rate. My cross-classification made it possible to compare high and low poverty tracts where the racial composition was similar, as well as tracts of different racial composition where the poverty level was similar.

Table 9 shows that higher rates of poverty are associated with higher rates of undercount. Areas where the poverty rate is low and the population predominantly non-Hispanic White, have very low rates of undercount, 0.4 percent. Increases in this rate are associated both with increased percentages of poverty and racial minorities. It should be noted that the rate of undercount for predominantly White areas with a poverty rate over 50 percent is 3.6 percent, higher than the corresponding rate, 2.9 percent, for areas with concentrated minority populations but a low poverty rate. Many of the variables actually used to define post-strata, such as tenure and the mail return rate, are attempts to create proxies for the difficult counting conditions created in part by poverty. It is important, though, not to consider these proxies to be the same as the conceptual variables that best explain the variation in rates of undercount, but for which no data are available.

In the next step of my analysis, I attempted, for Census 2000, to demonstrate the manner in which the various forms of census error congregate in similar locations. I compared rates of omission, erroneous enumeration, and imputation for groups of post-strata (see Table 10) defined by the key proxy predictors – race, Hispanic origin, tenure, and metropolitan status.

There we see that those post-strata with higher rates of net undercount, generally those with minority non-owner populations, also have higher rates of non-matching,<sup>22</sup> erroneous enumeration, and imputation. Indeed the correlations between the net undercount and these three variables are, respectively, .88, .51, and .67. The correlation between non-match and erroneous enumeration rates is .80. In sum, conditions of poverty create difficult counting of all types. It is theoretically possible to imagine that the Bureau might solve the problem of differential undercount by increasing rates of erroneous enumeration and imputation in poor neighborhoods. This would offset the higher rates of omission and reduce the differential undercount. It would not mean, however, that a greater proportion of people were counted directly and correctly.

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<sup>21</sup> This file is called the Planning Database “CD-DSSD-comm-7 1990 data for Census 2000” and was delivered to the Census Monitoring Board on November 14, 2000.

<sup>22</sup> The Census Bureau uses the term “non-match” to refer to persons in the P-sample whose record could not be found in the census.

## The Limits of Improved Counting

The budget for Census 2000 is \$6.55 billion, a large increase over the \$2.6 billion budget for the 1990 Census even after inflation is taken into account.<sup>23</sup> Using constant fiscal year 2000 dollars, the “per household” cost rose from \$36 in 1990 to \$62 in 2000. There is little doubt that the added spending improved census data quality. At the same time, there are important types of census error that are impervious to budget size.

Better address lists are expensive to create, but they improve the count. While I was unable to demonstrate a direct link between LUCA investment and the improvement of the count in specific areas, it is intuitively logical that it should exist. This is especially true in a place like New York City with a concentration of older housing subdivided into apartments after originally being built for one family. Moreover, among the counties I studied, areas with a larger minority share were more likely to participate in LUCA, increasing the chance of reducing the differential undercount.

Paying enumerators more money also seems like a good return on investment, because enumerator mistakes are a major source both of omission and erroneous enumeration. Indeed, this investment may even lead to savings since the count may be completed more quickly. Similarly, money spent on advance publicity increases the mail return rate, and reduces the time and error of subsequent data collection. Finally, by investing in better and more extensive computer equipment, the Bureau can improve its ability to manage the entire data collection and estimation process.

An increased Census Bureau budget is not likely, though, to reduce very much the frequency of errors made by individuals filling out their census forms. The errors of people who enumerate themselves at two locations, add inappropriate people to their census forms, and/or mistakenly leave others off are usually honest mistakes. They occur frequently among people filling out and mailing back the forms. Once such errors have been made, there is no feature of the census process that can correct them. Within-household errors are probably the major component of omissions, and they are an important component of erroneous enumerations.<sup>24</sup>

Problems of obtaining correct enumerations within households lead me to believe that census error is inevitable, and is unresponsive to budget increases and design improvements. People will always be left off census questionnaires. This sort of omission is so prevalent, and impervious to census method, that we should always expect it to occur in the millions. The only way that the net undercount could ever be zero, or close to it, is to have the numbers of omissions and erroneous enumerations offset each other. The problem would then be that the geographic distributions of omissions and erroneous enumerations would differ, and the differences cause distortions to the census results. This is why some statistical adjustment is essential to correct the inevitable errors of the initial count. And, throughout the 1990s until this year, the Census Bureau agreed.

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<sup>23</sup> U. S. General Accounting Office, “2000 Census: Review of Partnership Program Highlights Best Practices for Future Operations,” August 2001. In fiscal year 2000 dollars, the cost of the 1990 Census was \$3.275 billion. Based on fiscal year 2000 dollars, the per officially counted person costs of the 1990 and 2000 Censuses were, respectively, \$13.17 and \$23.29. These calculations for 1990 are based on data given in “Bureau of the Census Federal Funds,” Appendices to the Budgets of the United States Governments, submitted by the President of the United States, 1986 – 1996.

<sup>24</sup> Howard Hogan, “The 1990 Post-Enumeration Survey: Operations and Results,” *Journal of the American Statistical Association*, September 1993, p.1056. See also Elizabeth Martin, “Who Knows Who Lives Here?” *Public Opinion Quarterly*, Summer 1999, pp. 220-36 and Eugene Ericksen, Leo Estrada, John Tukey and Kirk Wolter, “Report on the 1990 Decennial Census and Post-Enumeration Survey,” submitted to the U. S. Secretary of Commerce, June 21, 1991, Appendix A, Table 6.

## Imputing and Deleting Records

Statistical estimation to adjust the census has been a controversial issue, especially when it appeared that the Bureau planned to adjust the results of Census 2000. Due in part to the political opposition to adjustment, the Bureau received a substantial budget increase, for a stated goal of “counting,” as opposed to “creating people by computer.” The Bureau did not adjust Census 2000, and it did reduce both the national net and the differential undercount. Yet it did not do these things simply by “counting more people.” Moreover, if it had adjusted, it could have “eliminated” or corrected the remaining undercount.

Had an adjustment taken place, about 4.3 million records would have been added to the count and 1.0 million deleted. These changes are what the political opposition to adjustment prevented. Yet, a computer imputed 5.7 million persons. This imputation makes use of information about people who live in houses like those where the information was needed, but it is not based on direct observation. Critics of adjustment point out that people living in places like Midland, Texas may be used to change the populations of people living in New Haven, Connecticut.<sup>25</sup> Yet they are silent about the fact that donors and intended recipients of imputation are often very different. For example, it is very likely that information about a White male age 35 could be used for a Black female age 57. Imputation, like adjustment, improves the statistical estimate on average. For both methods, there are individual examples that appear to be incongruous.

The Bureau did not limit its use of the computer to imputation. Late in the census process, the Bureau used a complex computer program to identify about 6 million duplications in their data file. As the Bureau put it,

“[A]nalyzes of the April 2000 and June 2000 MAF extracts still indicated that there was an overcoverage problem. These concerns led the Census Bureau to identify and remove housing units (MAFIDs) from Census 2000. Housing units were identified as being included in error with a relatively high likelihood based on a set of person and address matching rules.”<sup>26</sup>

It eliminated 3.64 million person records,<sup>27</sup> i.e., it took records of “real people” out of the census. The Bureau returned the other 2.37 million people to the count, and they are referred to as “late census adds.” Because the deletion and reinstatement operations took place late in the census process, the Bureau was not able to include the late census adds in the A.C.E.

A review of these materials makes it clear that the Bureau monitored the level of the count throughout the census data collection period, and took the appropriate action that it deemed necessary. When the count appeared to be too large, and therefore the rate of erroneous enumeration too high, the Bureau eliminated 6 million person records. Most of the information on these records was received from persons actually living in the affected households. Later, when it appeared that they might have reduced the count by too great an amount, they put about 2.4 million of the records back in. The net effect of these operations is that the eventual net undercount of 1.18 percent is substantially an artifact of the Bureau’s decisions about the apparently duplicated housing.

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<sup>25</sup> U. S. Census Monitoring Board, Congressional members, “A Guide to Statistical Adjustment: How it Really Works,” June 7, 2001.

<sup>26</sup> U. S. Bureau of the Census, Memorandum from Howard Hogan to Susan Miskura, dated November 7, 2000, “Specification for Reinstating Addresses Flagged as Deletes on the Hundred percent Census Unedited File (HCUF).”

<sup>27</sup> U. S. Bureau of the Census, Memorandum from Susan Miskura to Preston J. Waite, dated November 21, 2000, “Results of Reinstatement Rules for the Housing Unit Duplication Operations.”

Left unasked is the question of how these 6 million (now 3.64 million) duplications occurred in the first place. Their inclusion in the census would have doubled the rate of erroneous enumeration by the Bureau's definition.<sup>28</sup>

Review of the Census Bureau procedure for removing duplicates reveals a complex method relying on the assumption that the census forms in question were filled out correctly. If a family filled out two forms, but did so inconsistently, the Bureau may not have recognized it as a duplication. Like adjustment, "duplication removal by computer" will improve census distributions on average, but make many individual mistakes. Duplication removal procedures are statistical in that they rely on prespecified rules applied consistently to actual census data. A rational census policy would apply the same criteria to duplication removal that they apply to statistical adjustment. The current policy, which depicts adjustment as a statistical procedure not to be used, but duplication removal as a permissible procedure, makes a very fine distinction. I am not certain that it is meaningful.

### **Conclusion**

In this report, I have attempted to summarize, discuss and analyze the issues of Census 2000 that I considered to be most pertinent, with one exception. I have left the discussion of the possible fit between the demographic estimate and the census count to my colleague, Dr. Jeffrey Passel.

As I have said repeatedly, the Bureau improved Census 2000 substantially over its 1990 counterpart, helped no doubt by a doubling of the "per person" census budget. We must understand the limits to our ability to improve things by "better counting." The Bureau, even though it did not statistically adjust the census through the A.C.E. survey, did conduct an adjustment of sorts when it deleted 3.64 million apparent duplicates from the count. I believe that we need to broaden the discussion of census error and its possible remedies to include operations such as imputation and the deletion of possibly duplicate records.

While we note the improvement of Census 2000 over its predecessors, we must keep in mind that the differential undercount, especially in large cities, persists.

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<sup>28</sup> For the Bureau, the increase is from 3.1 to 6.74 million, and if we add persons counted at the wrong location to the count of erroneous enumerations the increase is from 6.3 to 9.94 million.



**Table 1: Comparison of Direct and Synthetic Dual Systems Estimates for 1990 in Manhattan and Ulster County, New York**

| <u><b>Manhattan</b></u>   |               |                  |                     |                  |                  |                  |       |
|---------------------------|---------------|------------------|---------------------|------------------|------------------|------------------|-------|
|                           | <b>Direct</b> | <b>Synthetic</b> | <b>Subtractions</b> |                  | <b>Additions</b> |                  |       |
|                           |               |                  | <b>Direct</b>       | <b>Synthetic</b> | <b>Direct</b>    | <b>Synthetic</b> |       |
| Block 1                   | -24.20%       | -4.93%           | 11.69               | 2.82             | -                | -                |       |
| Block 2                   | -17.11%       | -4.59%           | 15.05               | 4.52             | -                | -                |       |
| Block 3                   | -9.68%        | -5.56%           | 14.92               | 8.9              | -                | -                |       |
| Block 4                   | -6.89%        | 0.95%            | 7.09                | -                | -                | 1.05             |       |
| Block 5                   | -5.10%        | 3.32%            | 1.99                | -                | -                | 1.41             |       |
| Block 6                   | -4.14%        | -4.75%           | 4.77                | 5.44             | -                | -                |       |
| Block 7                   | 1.34%         | -0.71%           | -                   | 0.58             | 1.11             | -                |       |
| Block 8                   | 3.39%         | 7.62%            | -                   | -                | 2.74             | 6.43             |       |
| Block 9                   | 15.43%        | 4.21%            | -                   | -                | 39.04            | 9.4              |       |
| Block 10                  | 18.68%        | 3.36%            | -                   | -                | 8.73             | 1.32             |       |
| Block 11                  | 21.49%        | 7.74%            | -                   | -                | 20.8             | 6.38             |       |
| <b>Standard Deviation</b> | 13.88%        | 4.81%            | <b>Sum</b>          | 55.51            | 22.26            | 72.42            | 25.99 |

| <u><b>Ulster</b></u>      |               |                  |                     |                  |                  |                  |      |
|---------------------------|---------------|------------------|---------------------|------------------|------------------|------------------|------|
|                           | <b>Direct</b> | <b>Synthetic</b> | <b>Subtractions</b> |                  | <b>Additions</b> |                  |      |
|                           |               |                  | <b>Direct</b>       | <b>Synthetic</b> | <b>Direct</b>    | <b>Synthetic</b> |      |
| Block 1                   | -13.94%       | 2.15%            | 9.42                | -                | -                | 1.69             |      |
| Block 2                   | -11.17%       | 0.10%            | 12.06               | -                | -                | 0.12             |      |
| Block 3                   | -3.84%        | -0.99%           | 1.96                | 0.52             | -                | -                |      |
| Block 4                   | -0.83%        | -0.45%           | 0.48                | 0.26             | -                | -                |      |
| Block 5                   | 0.00%         | -0.27%           | -                   | 0.1              | 0                | -                |      |
| Block 6                   | 0.35%         | -1.90%           | -                   | 0.69             | 0.13             | -                |      |
| Block 7                   | 1.11%         | 1.90%            | -                   | -                | 0.73             | 1.26             |      |
| Block 8                   | 3.99%         | -0.13%           | -                   | 0.11             | 3.49             | -                |      |
| <b>Standard Deviation</b> | 5.89%         | 1.28%            | <b>Sum</b>          | 23.92            | 1.68             | 4.35             | 3.07 |

Source: File of 5180 blocks from 1990 Census [www.cmbc.gov/p/user/share/Census 2000/](http://www.cmbc.gov/p/user/share/Census%2000/)  
FINAL REPORT/Tables/ Manhattan and Ulster

**Table 2: Comparisons of Undercount Rates and Differences, 1990 and 2000 Census**

| <b>Racial Group</b>                  | <b>1990</b> | <b>2000</b> | <b>Change</b> |
|--------------------------------------|-------------|-------------|---------------|
| Hispanics ( A )                      | 4.99%       | 2.85%       | -2.14%        |
| Non-Hispanic Blacks ( B )            | 4.57%       | 2.17%       | -2.40%        |
| Non-Hispanic Whites ( C )            | 0.68%       | 0.67%       | -0.01%        |
| Hispanic- White Difference ( A - C ) | 4.31%       | 2.18%       | -2.13%        |
| Black- White Difference ( B - C )    | 3.89%       | 1.50%       | -2.39%        |

Source: Report of the Executive Steering Committee for Accuracy and Coverage Evaluation Policy, March 1, 2001, pages 3 and 4.

Table 3: Net Undercount Rates for Post-strata Groups<sup>1</sup>

| <b><u>GROUP</u></b>     | <b><u>AREA</u></b> | <b><u>RATE</u></b> |
|-------------------------|--------------------|--------------------|
| <b>NH White Owners</b>  |                    |                    |
| Northeast               | Large              | -0.09%             |
| Northeast               | Medium             | -0.04%             |
| Northeast               | Small              | 0.06%              |
| Northeast               | Non-metro          | 1.52%              |
| Midwest                 | Large              | -0.23%             |
| Midwest                 | Medium             | -0.14%             |
| Midwest                 | Small              | 0.33%              |
| Midwest                 | Non-metro          | -0.98%             |
| South                   | Large              | 0.78%              |
| South                   | Medium             | 0.51%              |
| South                   | Small              | 0.95%              |
| South                   | Non-metro          | 0.51%              |
| West                    | Large              | -0.18%             |
| West                    | Medium             | 0.18%              |
| West                    | Small              | 1.02%              |
| West                    | Non-metro          | 1.26%              |
| <b>NH White Renters</b> |                    |                    |
| Total US                | Large              | 1.58%              |
| Total US                | Medium             | 1.09%              |
| Total US                | Small              | 2.67%              |
| Total US                | Non-metro          | 2.46%              |
| <b>NH Blacks</b>        |                    |                    |
| Owners                  | Large/Medium       | 0.91%              |
| Owners                  | Small/Non-metro    | 0.17%              |
| Non-Owners              | Large/Medium       | 3.96%              |
| Non-Owners              | Small/Non-metro    | 2.32%              |
| <b>Hispanics</b>        |                    |                    |
| Owners                  | Large/Medium       | 1.17%              |
| Owners                  | Small/Non-metro    | 1.45%              |
| Non-Owners              | Large/Medium       | 3.90%              |
| Non-Owners              | Small/Non-metro    | 6.17%              |
| <b>NH Asians</b>        |                    |                    |
| Total US                | Owners             | 0.55%              |
| Total US                | Non-Owners         | 1.58%              |

Table 3: Net Undercount Rates for Post-strata Groups<sup>1</sup> (continued)

| <b><u>GROUP</u></b>        | <b><u>AREA</u></b> | <b><u>RATE</u></b> |
|----------------------------|--------------------|--------------------|
| <b>Pacific Islanders</b>   |                    |                    |
| Total US                   | Owners             | 2.71%              |
| Total US                   | Non-Owners         | 6.58%              |
| <b>AI on Reservations</b>  |                    |                    |
| Total US                   | Owners             | 5.04%              |
| Total US                   | Non-Owners         | 4.10%              |
| <b>AI off Reservations</b> |                    |                    |
| Total US                   | Owners             | 1.60%              |
| Total US                   | Non-Owners         | 5.57%              |
| <b>Total US</b>            | <b>Overall</b>     | <b>1.18%</b>       |

<sup>1</sup>High and low return rates have been combined for the post-strata groups.  
 Poststrata are defined by the Census 2000 A.C.E. Methodology, vol. 3, tab 9, pg. 4.

Source: FinalDSEUS.dat Census files delivered to Census Monitoring Board by Census Bureau 02/26/01 and 02/16/01/neraphl/user/share/C200 Census 2000/Final Report/tables p/user/share/Census2000/FINAL REPORT/Tables/Net Undercount Rates for Post-strata

**Table 4: Comparisons of A.C.E. Undercount Rates with Synthetic Estimates**

| <b>State</b>     | <b>A.C.E. Undercount</b> | <b>Synthetic Undercount</b> | <b>Difference</b> |
|------------------|--------------------------|-----------------------------|-------------------|
| Alaska           | 2.67%                    | 1.15%                       | 1.53%             |
| Vermont          | 1.51%                    | 0.71%                       | 0.80%             |
| Idaho            | 1.64%                    | 0.90%                       | 0.74%             |
| Wyoming          | 1.56%                    | 0.91%                       | 0.66%             |
| Maine            | 1.33%                    | 0.72%                       | 0.61%             |
| Montana          | 1.57%                    | 0.96%                       | 0.61%             |
| West Virginia    | 1.19%                    | 0.74%                       | 0.45%             |
| Washington       | 1.41%                    | 0.98%                       | 0.44%             |
| Delaware         | 1.50%                    | 1.08%                       | 0.42%             |
| Kentucky         | 1.23%                    | 0.82%                       | 0.41%             |
| New Hampshire    | 1.13%                    | 0.73%                       | 0.40%             |
| Nevada           | 1.68%                    | 1.28%                       | 0.39%             |
| Utah             | 1.35%                    | 0.96%                       | 0.39%             |
| Dist of Columbia | 2.15%                    | 1.78%                       | 0.36%             |
| Oregon           | 1.27%                    | 0.93%                       | 0.34%             |
| Hawaii           | 2.16%                    | 1.88%                       | 0.28%             |
| Arkansas         | 1.28%                    | 1.00%                       | 0.28%             |
| Georgia          | 1.48%                    | 1.23%                       | 0.25%             |
| Tennessee        | 1.23%                    | 0.98%                       | 0.25%             |
| Virginia         | 1.33%                    | 1.09%                       | 0.24%             |
| North Carolina   | 1.36%                    | 1.14%                       | 0.22%             |
| Oklahoma         | 1.40%                    | 1.19%                       | 0.21%             |
| Maryland         | 1.40%                    | 1.21%                       | 0.19%             |
| Texas            | 1.76%                    | 1.57%                       | 0.19%             |
| Colorado         | 1.26%                    | 1.14%                       | 0.12%             |
| Louisiana        | 1.34%                    | 1.23%                       | 0.11%             |
| Alabama          | 1.19%                    | 1.11%                       | 0.07%             |
| South Carolina   | 1.20%                    | 1.18%                       | 0.02%             |
| Mississippi      | 1.24%                    | 1.26%                       | -0.02%            |
| New Mexico       | 1.94%                    | 1.96%                       | -0.02%            |
| Arizona          | 1.43%                    | 1.46%                       | -0.03%            |
| California       | 1.52%                    | 1.55%                       | -0.04%            |
| Florida          | 1.24%                    | 1.28%                       | -0.04%            |
| Connecticut      | 0.97%                    | 1.03%                       | -0.06%            |

**Table 4: Comparisons of A.C.E. Undercount Rates with Synthetic Estimates (continued)**

| <b>State</b>  | <b>A.C.E. Undercount</b> | <b>Synthetic Undercount</b> | <b>Difference</b> |
|---------------|--------------------------|-----------------------------|-------------------|
| Pennsylvania  | 0.82%                    | 0.90%                       | -0.08%            |
| Rhode Island  | 0.85%                    | 0.95%                       | -0.10%            |
| Indiana       | 0.77%                    | 0.89%                       | -0.12%            |
| Massachusetts | 0.76%                    | 0.92%                       | -0.16%            |
| Wisconsin     | 0.70%                    | 0.87%                       | -0.17%            |
| New York      | 1.09%                    | 1.26%                       | -0.18%            |
| Michigan      | 0.71%                    | 0.98%                       | -0.27%            |
| Kansas        | 0.66%                    | 0.95%                       | -0.29%            |
| Iowa          | 0.48%                    | 0.78%                       | -0.30%            |
| Nebraska      | 0.56%                    | 0.89%                       | -0.32%            |
| Ohio          | 0.57%                    | 0.90%                       | -0.33%            |
| North Dakota  | 0.47%                    | 0.89%                       | -0.42%            |
| Missouri      | 0.46%                    | 0.91%                       | -0.44%            |
| South Dakota  | 0.56%                    | 1.02%                       | -0.46%            |
| Minnesota     | 0.29%                    | 0.84%                       | -0.55%            |
| New Jersey    | 1.15%                    | 1.96%                       | -0.81%            |

Source: Census 2000 Summary File 100 Percent Data/CurrentStateSum.dat and FinalDSEUS.dat Census files delivered to Census Monitoring Board by Census Bureau 02/26/01 and 02/16/01/neraphl/user/share/C200 Census 2000/Final Report/tables

Note: Synthetic Estimates are based on race and Hispanic origin only.

Table 5: State Undercount Rates

| State                | Large/ Medium <sup>1</sup> |       |            | Small/ Non Metro <sup>2</sup> |       |            |
|----------------------|----------------------------|-------|------------|-------------------------------|-------|------------|
|                      | Undercount                 |       | Difference | Undercount                    |       | Difference |
| <b>Alabama</b>       | NH - Black                 | 2.50% | 1.84%      | NH - Black                    | 0.94% | -0.16%     |
|                      | NH - White                 | 0.66% |            | NH - White                    | 1.09% |            |
| <b>Arizona</b>       | NH - Black                 | 2.84% | 2.43%      | NH - Black                    | 1.26% | -0.09%     |
|                      | NH - White                 | 0.41% |            | NH - White                    | 1.35% |            |
| <b>Arkansas</b>      | NH - Black                 | 2.82% | 2.18%      | NH - Black                    | 1.21% | 0.09%      |
|                      | NH - White                 | 0.64% |            | NH - White                    | 1.12% |            |
| <b>California</b>    | NH - Black                 | 2.96% | 2.53%      | NH - Black                    | 1.57% | 0.10%      |
|                      | NH - White                 | 0.43% |            | NH - White                    | 1.48% |            |
| <b>Colorado</b>      | NH - Black                 | 2.99% | 2.62%      | NH - Black                    | 1.40% | -0.23%     |
|                      | NH - White                 | 0.36% |            | NH - White                    | 1.64% |            |
| <b>Connecticut</b>   | NH - Black                 | 2.57% | 2.18%      | NH - Black                    | 1.74% | 0.58%      |
|                      | NH - White                 | 0.39% |            | NH - White                    | 1.15% |            |
| <b>Delaware</b>      | NH - Black                 | 2.58% | 1.49%      | NH - Black                    | 1.20% | -0.25%     |
|                      | NH - White                 | 1.10% |            | NH - White                    | 1.44% |            |
| <b>Florida</b>       | NH - Black                 | 2.38% | 1.80%      | NH - Black                    | 0.97% | -0.04%     |
|                      | NH - White                 | 0.58% |            | NH - White                    | 1.01% |            |
| <b>Georgia</b>       | NH - Black                 | 2.96% | 2.25%      | NH - Black                    | 1.18% | 0.00%      |
|                      | NH - White                 | 0.71% |            | NH - White                    | 1.19% |            |
| <b>Illinois</b>      | NH - Black                 | 2.29% | 2.25%      | NH - Black                    | 1.32% | 0.82%      |
|                      | NH - White                 | 0.04% |            | NH - White                    | 0.51% |            |
| <b>Indiana</b>       | NH - Black                 | 2.74% | 2.61%      | NH - Black                    | 1.53% | 0.77%      |
|                      | NH - White                 | 0.13% |            | NH - White                    | 0.76% |            |
| <b>Kansas</b>        | NH - Black                 | 2.76% | 2.62%      | NH - Black                    | 1.57% | 1.22%      |
|                      | NH - White                 | 0.14% |            | NH - White                    | 0.35% |            |
| <b>Kentucky</b>      | NH - Black                 | 2.80% | 2.14%      | NH - Black                    | 1.39% | 0.15%      |
|                      | NH - White                 | 0.65% |            | NH - White                    | 1.24% |            |
| <b>Louisiana</b>     | NH - Black                 | 2.48% | 1.70%      | NH - Black                    | 1.09% | -0.16%     |
|                      | NH - White                 | 0.78% |            | NH - White                    | 1.25% |            |
| <b>Maryland</b>      | NH - Black                 | 2.44% | 1.62%      | NH - Black                    | 1.04% | -0.22%     |
|                      | NH - White                 | 0.82% |            | NH - White                    | 1.26% |            |
| <b>Massachusetts</b> | NH - Black                 | 2.56% | 2.18%      | NH - Black                    | 1.52% | 0.63%      |
|                      | NH - White                 | 0.38% |            | NH - White                    | 0.89% |            |
| <b>Michigan</b>      | NH - Black                 | 2.70% | 2.49%      | NH - Black                    | 1.27% | 0.92%      |
|                      | NH - White                 | 0.21% |            | NH - White                    | 0.35% |            |

Table 5: State Undercount Rates (continued)

| State                 | Large/ Medium <sup>1</sup> |        |            | Small/ Non Metro <sup>2</sup> |        |            |
|-----------------------|----------------------------|--------|------------|-------------------------------|--------|------------|
|                       | Undercount                 |        | Difference | Undercount                    |        | Difference |
| <b>Minnesota</b>      | NH - Black                 | 3.25%  | 3.19%      | NH - Black                    | 2.38%  | 2.45%      |
|                       | NH - White                 | 0.06%  |            | NH - White                    | -0.07% |            |
| <b>Mississippi</b>    | NH - Black                 | 2.46%  | 1.71%      | NH - Black                    | 1.12%  | -0.13%     |
|                       | NH - White                 | 0.76%  |            | NH - White                    | 1.24%  |            |
| <b>Missouri</b>       | NH - Black                 | 2.48%  | 2.41%      | NH - Black                    | 1.77%  | 1.63%      |
|                       | NH - White                 | 0.07%  |            | NH - White                    | 0.14%  |            |
| <b>Nevada</b>         | NH - Black                 | 2.73%  | 1.96%      | NH - Black                    | 1.41%  | -0.11%     |
|                       | NH - White                 | 0.78%  |            | NH - White                    | 1.52%  |            |
| <b>New Jersey</b>     | NH - Black                 | 2.27%  | 1.72%      | NH - Black                    | 0.52%  | -1.25%     |
|                       | NH - White                 | 0.55%  |            | NH - White                    | 1.77%  |            |
| <b>New York</b>       | NH - Black                 | 2.17%  | 2.26%      | NH - Black                    | 1.56%  | 0.12%      |
|                       | NH - White                 | -0.09% |            | NH - White                    | 1.44%  |            |
| <b>North Carolina</b> | NH - Black                 | 2.86%  | 2.12%      | NH - Black                    | 0.97%  | -0.16%     |
|                       | NH - White                 | 0.73%  |            | NH - White                    | 1.13%  |            |
| <b>Ohio</b>           | NH - Black                 | 2.66%  | 2.54%      | NH - Black                    | 1.41%  | 0.98%      |
|                       | NH - White                 | 0.12%  |            | NH - White                    | 0.42%  |            |
| <b>Oklahoma</b>       | NH - Black                 | 3.17%  | 2.43%      | NH - Black                    | 1.29%  | 0.24%      |
|                       | NH - White                 | 0.74%  |            | NH - White                    | 1.05%  |            |
| <b>Pennsylvania</b>   | NH - Black                 | 1.99%  | 1.77%      | NH - Black                    | 1.42%  | 0.36%      |
|                       | NH - White                 | 0.22%  |            | NH - White                    | 1.06%  |            |
| <b>South Carolina</b> | NH - Black                 | 2.52 % | 1.76%      | NH - Black                    | 0.79%  | -0.32%     |
|                       | NH - White                 | 0.76%  |            | NH - White                    | 1.10%  |            |
| <b>Tennessee</b>      | NH - Black                 | 2.40%  | 1.66%      | NH - Black                    | 1.05%  | -0.08%     |
|                       | NH - White                 | 0.74%  |            | NH - White                    | 1.13%  |            |
| <b>Texas</b>          | NH - Black                 | 2.67%  | 1.57%      | NH - Black                    | 1.14%  | 0.02%      |
|                       | NH - White                 | 1.10%  |            | NH - White                    | 1.13%  |            |
| <b>Virginia</b>       | NH - Black                 | 2.91%  | 2.11%      | NH - Black                    | 0.82%  | -0.35%     |
|                       | NH - White                 | 0.80%  |            | NH - White                    | 1.17%  |            |
| <b>Washington</b>     | NH - Black                 | 3.20%  | 2.46%      | NH - Black                    | 1.83%  | 0.15%      |
|                       | NH - White                 | 0.75%  |            | NH - White                    | 1.68%  |            |
| <b>Wisconsin</b>      | NH - Black                 | 2.93%  | 2.84%      | NH - Black                    | 2.30%  | 1.74%      |
|                       | NH - White                 | 0.09%  |            | NH - White                    | 0.56%  |            |

<sup>1</sup> Large/ Medium MSA's as defined by Census poststrata found in the Census 2000 ACE methodology vol. 3 tab 9 pg. 4

<sup>2</sup> Small/ Non Metro MSA's and all other TEA's as defined by the Census poststrata found in the Census 2000 ACE methodology vol. 3 tab 9 pg. 4

Source: Census 2000 Summary File 100 Percent Data/CurrentStateSum.dat and FinalDSEUS.dat Census files delivered to Census Monitoring Board by Census Bureau 02/26/01 and 02/16/01/neraph/user/share/C200 Census 2000/Final Report/tables



**Table 6: State Undercount Rates**

| State                | Large/ Medium <sup>1</sup> |       |            | Small/ Non Metro <sup>2</sup> |        |            |
|----------------------|----------------------------|-------|------------|-------------------------------|--------|------------|
|                      | Undercount                 |       | Difference | Undercount                    |        | Difference |
| <b>Arizona</b>       | Hispanic                   | 2.54% | 2.14%      | Hispanic                      | 3.12%  | 1.77%      |
|                      | NH - White                 | 0.41% |            | NH - White                    | 1.35%  |            |
| <b>California</b>    | Hispanic                   | 2.57% | 2.14%      | Hispanic                      | 3.60%  | 2.13%      |
|                      | NH - White                 | 0.43% |            | NH - White                    | 1.48%  |            |
| <b>Colorado</b>      | Hispanic                   | 2.59% | 2.23%      | Hispanic                      | 2.92%  | 1.28%      |
|                      | NH - White                 | 0.36% |            | NH - White                    | 1.64%  |            |
| <b>Connecticut</b>   | Hispanic                   | 3.08% | 2.69%      | Hispanic                      | 3.84%  | 2.69%      |
|                      | NH - White                 | 0.39% |            | NH - White                    | 1.15%  |            |
| <b>Florida</b>       | Hispanic                   | 2.18% | 1.61%      | Hispanic                      | 4.25%  | 3.23%      |
|                      | NH - White                 | 0.58% |            | NH - White                    | 1.01%  |            |
| <b>Georgia</b>       | Hispanic                   | 3.82% | 3.11%      | Hispanic                      | 5.05%  | 3.86%      |
|                      | NH - White                 | 0.71% |            | NH - White                    | 1.19%  |            |
| <b>Illinois</b>      | Hispanic                   | 2.63% | 2.59%      | Hispanic                      | 3.67%  | 3.16%      |
|                      | NH - White                 | 0.04% |            | NH - White                    | 0.51%  |            |
| <b>Indiana</b>       | Hispanic                   | 2.66% | 2.54%      | Hispanic                      | 4.33%  | 3.56%      |
|                      | NH - White                 | 0.13% |            | NH - White                    | 0.76%  |            |
| <b>Kansas</b>        | Hispanic                   | 2.76% | 2.62%      | Hispanic                      | 3.85%  | 3.51%      |
|                      | NH - White                 | 0.14% |            | NH - White                    | 0.35%  |            |
| <b>Louisiana</b>     | Hispanic                   | 2.51% | 1.73%      | Hispanic                      | 3.41%  | 2.16%      |
|                      | NH - White                 | 0.78% |            | NH - White                    | 1.25%  |            |
| <b>Maryland</b>      | Hispanic                   | 2.79% | 1.97%      | Hispanic                      | 3.83%  | 2.57%      |
|                      | NH - White                 | 0.82% |            | NH - White                    | 1.26%  |            |
| <b>Massachusetts</b> | Hispanic                   | 3.11% | 2.73%      | Hispanic                      | 3.37%  | 2.48%      |
|                      | NH - White                 | 0.38% |            | NH - White                    | 0.89%  |            |
| <b>Michigan</b>      | Hispanic                   | 2.57% | 2.36%      | Hispanic                      | 3.06%  | 2.71%      |
|                      | NH - White                 | 0.21% |            | NH - White                    | 0.35%  |            |
| <b>Minnesota</b>     | Hispanic                   | 3.15% | 3.09%      | Hispanic                      | 3.45%  | 3.52%      |
|                      | NH - White                 | 0.06% |            | NH - White                    | -0.07% |            |
| <b>Missouri</b>      | Hispanic                   | 2.56% | 2.49%      | Hispanic                      | 3.84%  | 3.70%      |
|                      | NH - White                 | 0.07% |            | NH - White                    | 0.14%  |            |
| <b>Nevada</b>        | Hispanic                   | 2.90% | 2.13%      | Hispanic                      | 3.75%  | 2.22%      |
|                      | NH - White                 | 0.78% |            | NH - White                    | 1.52%  |            |
| <b>New Jersey</b>    | Hispanic                   | 2.86% | 2.31%      | Hispanic                      | 2.84%  | 1.07%      |
|                      | NH - White                 | 0.55% |            | NH - White                    | 1.77%  |            |
| <b>New Mexico</b>    | Hispanic                   | 1.98% | 1.72%      | Hispanic                      | 2.41%  | 0.85%      |
|                      | NH - White                 | 0.26% |            | NH - White                    | 1.56%  |            |

**Table 6: State Undercount Rates (continued)**

| State                 | Large/ Medium <sup>1</sup> |        |            | Small/ Non Metro <sup>2</sup> |       |            |
|-----------------------|----------------------------|--------|------------|-------------------------------|-------|------------|
|                       | Undercount                 |        | Difference | Undercount                    |       | Difference |
| <b>New York</b>       | Hispanic                   | 3.09%  | 3.18%      | Hispanic                      | 3.62% | 2.18%      |
|                       | NH - White                 | -0.09% |            | NH - White                    | 1.44% |            |
| <b>North Carolina</b> | Hispanic                   | 4.19%  | 3.46%      | Hispanic                      | 5.34% | 4.21%      |
|                       | NH - White                 | 0.73%  |            | NH - White                    | 1.13% |            |
| <b>Ohio</b>           | Hispanic                   | 2.63%  | 2.51%      | Hispanic                      | 2.88% | 2.45%      |
|                       | NH - White                 | 0.12%  |            | NH - White                    | 0.42% |            |
| <b>Oklahoma</b>       | Hispanic                   | 2.99%  | 2.25%      | Hispanic                      | 3.45% | 2.40%      |
|                       | NH - White                 | 0.74%  |            | NH - White                    | 1.05% |            |
| <b>Oregon</b>         | Hispanic                   | 3.23%  | 2.85%      | Hispanic                      | 3.90% | 2.24%      |
|                       | NH - White                 | 0.38%  |            | NH - White                    | 1.67% |            |
| <b>Pennsylvania</b>   | Hispanic                   | 2.39%  | 2.17%      | Hispanic                      | 4.49% | 3.43%      |
|                       | NH - White                 | 0.22%  |            | NH - White                    | 1.06% |            |
| <b>Tennessee</b>      | Hispanic                   | 4.02%  | 3.28%      | Hispanic                      | 4.57% | 3.45%      |
|                       | NH - White                 | 0.74%  |            | NH - White                    | 1.13% |            |
| <b>Texas</b>          | Hispanic                   | 2.60%  | 1.50%      | Hispanic                      | 2.85% | 1.73%      |
|                       | NH - White                 | 1.10%  |            | NH - White                    | 1.13% |            |
| <b>Utah</b>           | Hispanic                   | 2.61%  | 1.96%      | Hispanic                      | 3.77% | 2.10%      |
|                       | NH - White                 | 0.65%  |            | NH - White                    | 1.67% |            |
| <b>Virginia</b>       | Hispanic                   | 2.85%  | 2.06%      | Hispanic                      | 4.31% | 3.15%      |
|                       | NH - White                 | 0.80%  |            | NH - White                    | 1.17% |            |
| <b>Washington</b>     | Hispanic                   | 2.96%  | 2.21%      | Hispanic                      | 4.35% | 2.66%      |
|                       | NH - White                 | 0.75%  |            | NH - White                    | 1.68% |            |
| <b>Wisconsin</b>      | Hispanic                   | 2.99%  | 2.90%      | Hispanic                      | 4.14% | 3.58%      |
|                       | NH - White                 | 0.09%  |            | NH - White                    | 0.56% |            |

<sup>1</sup> Large/ Medium MSA's as defined by Census poststrata found in the Census 2000 ACE methodology vol. 3 tab 9 pg. 4

<sup>2</sup> Small/ Non Metro MSA's and all other TEA's as defined by the Census poststrata found in the Census 2000 ACE methodology vol. 3 tab 9 pg. 4

Source: Census 2000 Summary File 100 Percent Data/CurrentStateSum.dat and FinalDSEUS.dat Census files delivered to Census Monitoring Board by Census Bureau 02/26/01 and 02/16/01/neraphl/user/share/C200 Census 2000/Final Report/tables

Table 7: Undercount Numbers and Rates by Region

| <b>Region and State</b> | <b>Less than 0.00%</b> | <b>0.00 to 0.99%</b> | <b>1.00 to 1.99%</b> | <b>2.00 to 2.99%</b> | <b>3.00% or Higher</b> | <b>Total</b> |
|-------------------------|------------------------|----------------------|----------------------|----------------------|------------------------|--------------|
| <b>Northeast</b>        |                        |                      |                      |                      |                        | <b>0</b>     |
| Connecticut             | 0                      | 5                    | 3                    | 0                    | 0                      | 8            |
| Massachusetts           | 0                      | 11                   | 3                    | 0                    | 0                      | 14           |
| New Jersey              | 0                      | 11                   | 9                    | 1                    | 0                      | 21           |
| New York                | 3                      | 20                   | 38                   | 1                    | 0                      | 62           |
| Pennsylvania            | 0                      | 33                   | 34                   | 0                    | 0                      | 67           |
| Subtotal                | 3                      | 80                   | 87                   | 2                    | 0                      | 172          |
| Shares                  | 1.7%                   | 46.5%                | 50.6%                | 1.2%                 | 0.0%                   | 100.0%       |
| <b>Midwest</b>          |                        |                      |                      |                      |                        |              |
| Illinois                | 49                     | 43                   | 10                   | 0                    | 0                      | 102          |
| Michigan                | 38                     | 41                   | 4                    | 0                    | 0                      | 83           |
| Subtotal                | 87                     | 84                   | 14                   | 0                    | 0                      | 185          |
| Shares                  | 47.0%                  | 45.4%                | 7.6%                 | 0.0%                 | 0.0%                   | 100.0%       |
| <b>South</b>            |                        |                      |                      |                      |                        |              |
| Alabama                 | 0                      | 40                   | 27                   | 0                    | 0                      | 67           |
| Delaware                | 0                      | 0                    | 3                    | 0                    | 0                      | 3            |
| Florida                 | 0                      | 35                   | 30                   | 2                    | 0                      | 67           |
| Georgia                 | 0                      | 59                   | 93                   | 7                    | 0                      | 159          |
| Louisiana               | 0                      | 23                   | 40                   | 1                    | 0                      | 64           |
| Maryland                | 0                      | 5                    | 18                   | 1                    | 0                      | 24           |
| Mississippi             | 0                      | 40                   | 42                   | 0                    | 0                      | 82           |
| North Carolina          | 0                      | 33                   | 67                   | 0                    | 0                      | 100          |
| South Carolina          | 0                      | 23                   | 23                   | 0                    | 0                      | 46           |
| Texas                   | 0                      | 26                   | 186                  | 41                   | 1                      | 254          |
| Virginia                | 0                      | 31                   | 99                   | 5                    | 0                      | 135          |
| Subtotal                | 0                      | 315                  | 628                  | 57                   | 1                      | 1,001        |
| Shares                  | 0.0%                   | 31.5%                | 62.7%                | 5.7%                 | 0.1%                   | 100.0%       |
| <b>West</b>             |                        |                      |                      |                      |                        |              |
| Arizona                 | 0                      | 1                    | 6                    | 7                    | 1                      | 15           |
| California              | 0                      | 5                    | 41                   | 12                   | 0                      | 58           |
| Hawaii                  | 0                      | 0                    | 0                    | 4                    | 1                      | 5            |

Table 7: Undercount Numbers and Rates by Region (continued)

| <b>Region and State</b> | <b>Less than 0.00%</b> | <b>0.00 to 0.99%</b> | <b>1.00 to 1.99%</b> | <b>2.00 to 2.99%</b> | <b>3.00% or Higher</b> | <b>Total</b> |
|-------------------------|------------------------|----------------------|----------------------|----------------------|------------------------|--------------|
| Nevada                  | 0                      | 1                    | 16                   | 0                    | 0                      | 17           |
| New Mexico              | 0                      | 0                    | 10                   | 22                   | 1                      | 33           |
| Subtotal                | 0                      | 7                    | 73                   | 45                   | 3                      | 128          |
| Shares                  | 0.0%                   | 5.5%                 | 57.0%                | 35.2%                | 2.3%                   | 100.0%       |
| <b>All States</b>       | 90                     | 486                  | 802                  | 104                  | 4                      | 1,486        |
| <b>Shares</b>           | 6.1%                   | 32.7%                | 54.0%                | 7.0%                 | 0.3%                   | 100.0%       |

Source: Census 2000 Summary File 100 Percent Data/CurrentStateSum.dat and FinalDSEUS.dat Census files delivered to Census Monitoring Board by Census Bureau 02/26/01 and 02/16/01/neraphl/user/share/C200 Census 2000/Final Report/tables

Table 8: Projected and Actual Growth in Large Metropolitan Counties, 1999-2000

| Percent Minority  | Official 1990 Population | Projected 2000 Population | Official 2000 Population | 1990-2000 Percentage of Growth |          |                        |
|-------------------|--------------------------|---------------------------|--------------------------|--------------------------------|----------|------------------------|
|                   |                          |                           |                          | Projected                      | Official | Shortfall <sup>1</sup> |
| <b>50 or more</b> | 36,095,387               | 37,986,821                | 39,435,665               | 5.24%                          | 9.25%    | 3.67%                  |
| <b>25 to 49</b>   | 22,725,781               | 25,224,826                | 25,568,405               | 11.00%                         | 12.51%   | 1.34%                  |
| <b>10 to 24.9</b> | 15,620,043               | 17,510,324                | 17,704,654               | 12.10%                         | 13.35%   | 1.10%                  |
| <b>0 to 9.9</b>   | 2,807,202                | 3,242,678                 | 3,225,047                | 15.51%                         | 14.88%   | -0.55%                 |
| <b>Total</b>      | 77,248,473               | 83,964,649                | 85,933,771               | 8.69%                          | 11.24%   | 2.29%                  |

<sup>1</sup> Defined as 1 minus the projected 2000 population over the official 2000 population.

Table 9: Percent of Population Living in Poverty in 1990

| Racial Composition <sup>1</sup>  | <u>Percent of Population Living in Poverty</u> |            |            |            | Total | Size of Population <sup>2</sup><br>(millions) |
|--|--|------------|------------|------------|-------|---|
|  | 0 to 9.9                                       | 10 to 29.9 | 30 to 49.9 | 50 or more |       |   |
| Percentages Non-Hispanic Black and Hispanic each below 10                          | 0.4%   | 1.1%       | 2.2%       | 3.6%       | 0.7%  | 146.6   |
| Percentages Non-Hispanic Black and Hispanic each between 10 and 29.9               | 1.8%   | 2.2%       | 2.7%       | 3.9%       | 2.1%  | 49.3  |
| One or both of the percentages Non-Hispanic Black and Hispanic between 30 and 49.9 | 2.3%   | 3.0%       | 3.3%       | 3.7%       | 2.9%  | 18.4  |
| One or both of the percentages Non-Hispanic Black and Hispanic above 50            | 2.9%   | 3.8%       | 4.3%       | 4.7%       | 4.0%  | 31.7  |
| Native American Majority   | 0.0%   | 3.7%       | 9.1%       | 11.5%      | 8.9%  | 0.5   |
| <b>Total</b>   | 0.8%   | 2.0%       | 3.8%       | 4.9%       | 1.6%  | 246.5   |
| <b>Size of population (millions)</b>   | 127.0  | 96.9       | 18.7       | 3.9        | 246.5 |   |

<sup>1</sup> Except where specified, census tracts with Native American majorities are excluded from the calculations.

<sup>2</sup> An additional 2.2 million people live in census tracts with no poverty rate available.

Source: Census Bureau planning database issued September 20, 2000, CD-DSS D-COMM 7

Table 10: Undercount Rankings

| Race <sup>1</sup> | Location                | Tenure    | Net Undercount | Nonmatch     | Erroneous Enumeration <sup>2</sup> | Imputations <sup>3</sup> |
|-------------------|-------------------------|-----------|----------------|--------------|------------------------------------|--------------------------|
| Pacific Is.       | All Areas               | Non-owner | 6.58%          | 17.62%       | 7.67%                              | 4.70%                    |
| Hispanic          | Small MSA/<br>Non-metro | Non-owner | 6.17%          | 18.22%       | 7.74%                              | 5.59%                    |
| American Indian   | Off Reservation         | Non-owner | 5.57%          | 15.21%       | 6.84%                              | 4.12%                    |
| American Indian   | On Reservation          | Owner     | 5.04%          | 14.57%       | 4.35%                              | 6.00%                    |
| American Indian   | On Reservation          | Non-owner | 4.10%          | 12.92%       | 3.85%                              | 5.59%                    |
| NH Black          | Lg/Med MSA              | Non-owner | 3.96%          | 17.05%       | 9.04%                              | 5.07%                    |
| Hispanic          | Lg/Med MSA              | Non-owner | 3.90%          | 14.91%       | 7.09%                              | 4.81%                    |
| Pacific Is.       | All Areas               | Owner     | 2.71%          | 12.17%       | 6.21%                              | 4.49%                    |
| NH White          | Small MSA               | Non-owner | 2.67%          | 11.01%       | 6.09%                              | 2.73%                    |
| NH White          | Non-metro               | Non-owner | 2.46%          | 13.38%       | 6.73%                              | 4.99%                    |
| NH Black          | Small MSA/<br>Non-metro | Non-owner | 2.32%          | 14.04%       | 8.21%                              | 4.26%                    |
| American Indian   | Off Reservation         | Owner     | 1.60%          | 10.33%       | 5.45%                              | 3.51%                    |
| NH Asian          | All Areas               | Non-owner | 1.58%          | 12.67%       | 7.55%                              | 4.10%                    |
| NH White          | Large                   | Non-owner | 1.58%          | 11.77%       | 6.92%                              | 3.76%                    |
| Hispanic          | Small/<br>Non-metro     | Owner     | 1.45%          | 10.19%       | 3.88%                              | 5.34%                    |
| Hispanic          | Lg/Med MSA              | Owner     | 1.17%          | 8.88%        | 3.71%                              | 4.34%                    |
| NH White          | Medium MSA              | Non-owner | 1.09%          | 11.08%       | 7.32%                              | 3.04%                    |
| NH Black          | Lg/Med MSA              | Owner     | 0.91%          | 9.89%        | 5.68%                              | 3.72%                    |
| NH White          | Small MSA               | Owner     | 0.63%          | 5.10%        | 3.16%                              | 1.38%                    |
| NH Asian          | All Areas               | Owner     | 0.55%          | 7.66%        | 4.16%                              | 3.13%                    |
| NH White          | Non-metro               | Owner     | 0.42%          | 7.44%        | 3.85%                              | 3.32%                    |
| NH White          | Medium MSA              | Owner     | 0.17%          | 4.49%        | 3.01%                              | 1.41%                    |
| NH Black          | Small/<br>Non-metro     | Owner     | 0.17%          | 9.82%        | 5.90%                              | 3.99%                    |
| NH White          | Large MSA               | Owner     | 0.03%          | 4.99%        | 3.30%                              | 1.73%                    |
| <b>Total</b>      |                         |           | <b>1.18%</b>   | <b>8.42%</b> | <b>4.72%</b>                       | <b>2.93%</b>             |

<sup>1</sup> Whites and Blacks are non-Hispanic.

<sup>2</sup> Erroneous enumerations include people who are counted in the wrong area or people who are counted multiple times.

<sup>3</sup> Housing units that assumed to be occupied that the Census Bureau imputes.

Source: FinalDSEUS.dat Census files delivered to Census Monitoring Board by Census Bureau 02/26/01 and 02/16/01/neraphl/user/share/ C200 Census 2000/Final Report/tables p/user/share/Census2000/FINAL REPORT/Tables/Net Undercount Rates for Post-strata.

## APPENDIX A

### Estimated Rates of Undercount and Numbers of Persons Missed by County

Estimated Rates of Undercount and Numbers of Persons Missed by County-- Alabama

| <u>County Name</u> | <u>Official Count</u> | <u>Adjusted Count</u> | <u>Undercount Rate</u> | <u>Persons Missed</u> |
|--------------------|-----------------------|-----------------------|------------------------|-----------------------|
| Autauga            | 43,411                | 43,952                | 1.23%                  | 541                   |
| Baldwin            | 138,141               | 139,291               | 0.83%                  | 1,150                 |
| Barbour            | 26,320                | 26,628                | 1.16%                  | 308                   |
| Bibb               | 19,587                | 19,745                | 0.80%                  | 158                   |
| Blount             | 50,414                | 50,871                | 0.90%                  | 457                   |
| Bullock            | 10,203                | 10,306                | 1.00%                  | 103                   |
| Butler             | 21,134                | 21,305                | 0.80%                  | 171                   |
| Calhoun            | 109,821               | 111,332               | 1.36%                  | 1,511                 |
| Chambers           | 36,065                | 36,377                | 0.86%                  | 312                   |
| Cherokee           | 23,628                | 23,831                | 0.85%                  | 203                   |
| Chilton            | 39,242                | 39,586                | 0.87%                  | 344                   |
| Choctaw            | 15,789                | 15,883                | 0.59%                  | 94                    |
| Clarke             | 27,480                | 27,677                | 0.71%                  | 197                   |
| Clay               | 13,988                | 14,114                | 0.89%                  | 126                   |
| Cleburne           | 14,010                | 14,135                | 0.88%                  | 125                   |
| Coffee             | 42,835                | 43,308                | 1.09%                  | 473                   |
| Colbert            | 54,392                | 55,101                | 1.29%                  | 709                   |
| Conecuh            | 14,010                | 14,111                | 0.71%                  | 101                   |
| Coosa              | 11,810                | 11,892                | 0.69%                  | 82                    |
| Covington          | 37,108                | 37,450                | 0.91%                  | 342                   |
| Crenshaw           | 13,505                | 13,623                | 0.86%                  | 118                   |
| Cullman            | 76,485                | 77,244                | 0.98%                  | 759                   |
| Dale               | 47,464                | 48,224                | 1.58%                  | 760                   |
| Dallas             | 45,826                | 46,312                | 1.05%                  | 486                   |
| DeKalb             | 63,588                | 64,279                | 1.08%                  | 691                   |
| Elmore             | 60,533                | 61,267                | 1.20%                  | 734                   |
| Escambia           | 35,435                | 35,751                | 0.88%                  | 316                   |
| Etowah             | 101,416               | 102,695               | 1.25%                  | 1,279                 |
| Fayette            | 18,155                | 18,316                | 0.88%                  | 161                   |
| Franklin           | 30,821                | 31,222                | 1.29%                  | 401                   |
| Geneva             | 25,490                | 25,718                | 0.88%                  | 228                   |
| Greene             | 9,896                 | 9,969                 | 0.73%                  | 73                    |
| Hale               | 16,895                | 17,012                | 0.69%                  | 117                   |
| Henry              | 16,131                | 16,258                | 0.78%                  | 127                   |
| Houston            | 87,639                | 88,836                | 1.35%                  | 1,197                 |



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**Estimated Rates of Undercount and Numbers of Persons Missed by County-- Alabama (continued)**

| <u>County Name</u> | <u>Official Count</u> | <u>Adjusted Count</u> | <u>Undercount Rate</u> | <u>Persons Missed</u> |
|--------------------|-----------------------|-----------------------|------------------------|-----------------------|
| Jackson            | 53,347                | 53,856                | 0.94%                  | 509                   |
| Jefferson          | 645,934               | 655,360               | 1.44%                  | 9,426                 |
| Lamar              | 15,705                | 15,852                | 0.93%                  | 147                   |
| Lauderdale         | 86,259                | 87,396                | 1.30%                  | 1,137                 |
| Lawrence           | 34,572                | 34,990                | 1.19%                  | 418                   |
| Lee                | 110,625               | 112,087               | 1.30%                  | 1,462                 |
| Limestone          | 63,033                | 63,902                | 1.36%                  | 869                   |
| Lowndes            | 13,426                | 13,505                | 0.58%                  | 79                    |
| Macon              | 21,820                | 22,010                | 0.86%                  | 190                   |
| Madison            | 269,442               | 273,122               | 1.35%                  | 3,680                 |
| Marengo            | 22,346                | 22,510                | 0.73%                  | 164                   |
| Marion             | 30,307                | 30,588                | 0.92%                  | 281                   |
| Marshall           | 81,259                | 82,505                | 1.51%                  | 1,246                 |
| Mobile             | 391,775               | 397,163               | 1.36%                  | 5,388                 |
| Monroe             | 24,083                | 24,262                | 0.74%                  | 179                   |
| Montgomery         | 211,467               | 214,142               | 1.25%                  | 2,675                 |
| Morgan             | 109,357               | 110,966               | 1.45%                  | 1,609                 |
| Perry              | 11,390                | 11,481                | 0.79%                  | 91                    |
| Pickens            | 20,738                | 20,893                | 0.74%                  | 155                   |
| Pike               | 28,407                | 28,779                | 1.29%                  | 372                   |
| Randolph           | 21,806                | 21,992                | 0.85%                  | 186                   |
| Russell            | 49,069                | 49,748                | 1.36%                  | 679                   |
| St. Clair          | 62,839                | 63,330                | 0.78%                  | 491                   |
| Shelby             | 141,618               | 142,658               | 0.73%                  | 1,040                 |
| Sumter             | 14,545                | 14,664                | 0.81%                  | 119                   |
| Talladega          | 76,620                | 77,530                | 1.17%                  | 910                   |
| Tallapoosa         | 40,616                | 41,013                | 0.97%                  | 397                   |
| Tuscaloosa         | 156,184               | 158,388               | 1.39%                  | 2,204                 |
| Walker             | 69,692                | 70,301                | 0.87%                  | 609                   |
| Washington         | 18,013                | 18,128                | 0.63%                  | 115                   |
| Wilcox             | 12,882                | 12,959                | 0.60%                  | 77                    |
| Winston            | 24,537                | 24,756                | 0.89%                  | 219                   |
| <b>Total</b>       | <b>4,332,380</b>      | <b>4,384,456</b>      | <b>1.19%</b>           | <b>52,076</b>         |

Source: Census 2000 Summary File 100 Percent Data/CurrentStateSum.dat and FinalDSEUS.dat Census files delivered to Census Monitoring Board by Census Bureau 02/26/01 and 02/16/01/neraphl/user/share/C200 Census 2000/Final Report/tables

Note: Calculations apply to the non-group quarters population only.

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**Estimated Rates of Undercount and Numbers of Persons Missed by County-- Arizona**

| <b>County Name</b> | <b>Official Count</b> | <b>Adjusted Count</b> | <b>Undercount Rate</b> | <b>Persons Missed</b> |
|--------------------|-----------------------|-----------------------|------------------------|-----------------------|
| Apache             | 68,150                | 70,350                | 3.13%                  | 2,200                 |
| Cochise            | 112,088               | 114,436               | 2.05%                  | 2,348                 |
| Coconino           | 113,230               | 116,076               | 2.45%                  | 2,846                 |
| Gila               | 50,404                | 51,335                | 1.81%                  | 931                   |
| Graham             | 30,257                | 30,892                | 2.05%                  | 635                   |
| Greenlee           | 8,520                 | 8,762                 | 2.76%                  | 242                   |
| La Paz             | 19,435                | 19,829                | 1.99%                  | 394                   |
| Maricopa           | 3,027,366             | 3,066,626             | 1.28%                  | 39,260                |
| Mohave             | 153,801               | 155,076               | 0.82%                  | 1,275                 |
| Navajo             | 95,230                | 97,695                | 2.52%                  | 2,465                 |
| Pima               | 821,712               | 831,642               | 1.19%                  | 9,930                 |
| Pinal              | 164,497               | 167,401               | 1.73%                  | 2,904                 |
| Santa Cruz         | 38,176                | 39,244                | 2.72%                  | 1,068                 |
| Yavapai            | 163,753               | 166,520               | 1.66%                  | 2,767                 |
| Yuma               | 154,163               | 157,716               | 2.25%                  | 3,553                 |
| <b>Total</b>       | <b>5,020,782</b>      | <b>5,093,601</b>      | <b>1.43%</b>           | <b>72,819</b>         |

Source: Census 2000 Summary File 100 Percent Data/CurrentStateSum.dat and FinalDSEUS.dat Census files delivered to Census Monitoring Board by Census Bureau 02/26/01 and 02/16/01/neraphl/user/share/C200 Census 2000/Final Report/tables

Note: Calculations apply to the non-group quarters population only.

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**Estimated Rates of Undercount and Numbers of Persons Missed by County-- California**

| <b>County Name</b> | <b>Official Count</b> | <b>Adjusted Count</b> | <b>Undercount Rate</b> | <b>Persons Missed</b> |
|--------------------|-----------------------|-----------------------|------------------------|-----------------------|
| Alameda            | 1,416,006             | 1,436,499             | 1.43%                  | 20,493                |
| Alpine             | 1,207                 | 1,226                 | 1.54%                  | 19                    |
| Amador             | 30,519                | 30,960                | 1.43%                  | 441                   |
| Butte              | 197,327               | 200,888               | 1.77%                  | 3,561                 |
| Calaveras          | 40,129                | 40,734                | 1.49%                  | 605                   |
| Colusa             | 18,357                | 18,815                | 2.44%                  | 458                   |
| Contra Costa       | 937,479               | 946,778               | 0.98%                  | 9,299                 |
| Del Norte          | 23,674                | 24,099                | 1.76%                  | 425                   |
| El Dorado          | 155,247               | 155,991               | 0.48%                  | 744                   |
| Fresno             | 781,740               | 794,136               | 1.56%                  | 12,396                |
| Glenn              | 26,065                | 26,634                | 2.14%                  | 569                   |
| Humboldt           | 122,445               | 124,624               | 1.75%                  | 2,179                 |
| Imperial           | 131,317               | 135,201               | 2.87%                  | 3,884                 |
| Inyo               | 17,788                | 18,109                | 1.77%                  | 321                   |
| Kern               | 631,675               | 641,460               | 1.53%                  | 9,785                 |
| Kings              | 109,332               | 112,095               | 2.46%                  | 2,763                 |
| Lake               | 57,220                | 58,218                | 1.71%                  | 998                   |
| Lassen             | 24,918                | 25,341                | 1.67%                  | 423                   |
| Los Angeles        | 9,344,086             | 9,520,496             | 1.85%                  | 176,410               |
| Madera             | 115,009               | 116,768               | 1.51%                  | 1,759                 |
| Marin              | 235,803               | 237,663               | 0.78%                  | 1,860                 |
| Mariposa           | 15,704                | 15,961                | 1.61%                  | 257                   |
| Mendocino          | 84,124                | 85,762                | 1.91%                  | 1,638                 |
| Merced             | 207,699               | 212,884               | 2.44%                  | 5,185                 |
| Modoc              | 9,037                 | 9,197                 | 1.74%                  | 160                   |
| Mono               | 12,495                | 12,761                | 2.08%                  | 266                   |
| Monterey           | 380,786               | 390,997               | 2.61%                  | 10,211                |
| Napa               | 119,046               | 120,273               | 1.02%                  | 1,227                 |
| Nevada             | 91,167                | 92,463                | 1.40%                  | 1,296                 |
| Orange             | 2,803,924             | 2,839,802             | 1.26%                  | 35,878                |
| Placer             | 245,511               | 246,717               | 0.49%                  | 1,206                 |
| Plumas             | 20,636                | 20,972                | 1.60%                  | 336                   |
| Riverside          | 1,511,034             | 1,529,341             | 1.20%                  | 18,307                |
| Sacramento         | 1,198,004             | 1,211,008             | 1.07%                  | 13,004                |
| San Benito         | 52,727                | 53,975                | 2.31%                  | 1,248                 |
| San Bernardino     | 1,664,402             | 1,690,236             | 1.53%                  | 25,834                |
| San Diego          | 2,716,820             | 2,750,616             | 1.23%                  | 33,796                |
| San Francisco      | 756,976               | 768,991               | 1.56%                  | 12,015                |
| San Joaquin        | 544,827               | 551,879               | 1.28%                  | 7,052                 |
| San Luis Obispo    | 231,110               | 235,532               | 1.88%                  | 4,422                 |
| San Mateo          | 696,711               | 704,799               | 1.15%                  | 8,088                 |
| Santa Barbara      | 382,730               | 392,031               | 2.37%                  | 9,301                 |
| Santa Clara        | 1,652,871             | 1,673,275             | 1.22%                  | 20,404                |
| Santa Cruz         | 246,574               | 249,407               | 1.14%                  | 2,833                 |
| Shasta             | 159,897               | 162,462               | 1.58%                  | 2,565                 |
| Sierra             | 3,519                 | 3,575                 | 1.56%                  | 56                    |

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**Estimated Rates of Undercount and Numbers of Persons Missed by County-- California (continued)**

| <u>County Name</u> | <u>Official Count</u> | <u>Adjusted Count</u> | <u>Undercount Rate</u> | <u>Persons Missed</u> |
|--------------------|-----------------------|-----------------------|------------------------|-----------------------|
| Siskiyou           | 43,611                | 44,323                | 1.61%                  | 712                   |
| Solano             | 378,568               | 383,097               | 1.18%                  | 4,529                 |
| Sonoma             | 447,512               | 451,551               | 0.89%                  | 4,039                 |
| Stanislaus         | 439,508               | 448,880               | 2.09%                  | 9,372                 |
| Sutter             | 77,547                | 79,091                | 1.95%                  | 1,544                 |
| Tehama             | 55,034                | 56,022                | 1.76%                  | 988                   |
| Trinity            | 12,780                | 12,983                | 1.56%                  | 203                   |
| Tulare             | 361,980               | 371,291               | 2.51%                  | 9,311                 |
| Tuolumne           | 49,665                | 50,468                | 1.59%                  | 803                   |
| Ventura            | 739,985               | 748,417               | 1.13%                  | 8,432                 |
| Yolo               | 161,145               | 163,018               | 1.15%                  | 1,873                 |
| Yuba               | 58,885                | 60,112                | 2.04%                  | 1,227                 |
| <b>Total</b>       | <b>33,051,894</b>     | <b>33,560,906</b>     | <b>1.52%</b>           | <b>509,012</b>        |

Source: Census 2000 Summary File 100 Percent Data/CurrentStateSum.dat and FinalDSEUS.dat Census files delivered to Census Monitoring Board by Census Bureau 02/26/01 and 02/16/01/neraphl/user/share/C200 Census 2000/Final Report/tables

Note: Calculations apply to the non-group quarters population only.

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**Estimated Rates of Undercount and Numbers of Persons Missed by County-- Connecticut**

| <b>County Name</b> | <b>Official Count</b> | <b>Adjusted Count</b> | <b>Undercount Rate</b> | <b>Persons Missed</b> |
|--------------------|-----------------------|-----------------------|------------------------|-----------------------|
| Fairfield          | 864,591               | 874,000               | 1.08%                  | 9,409                 |
| Hartford           | 830,338               | 837,435               | 0.85%                  | 7,097                 |
| Litchfield         | 179,682               | 181,400               | 0.95%                  | 1,718                 |
| Middlesex          | 148,844               | 149,829               | 0.66%                  | 985                   |
| New Haven          | 796,334               | 805,399               | 1.13%                  | 9,065                 |
| New London         | 247,208               | 249,524               | 0.93%                  | 2,316                 |
| Tolland            | 125,311               | 125,669               | 0.29%                  | 358                   |
| Windham            | 105,318               | 106,687               | 1.28%                  | 1,369                 |
| <b>Total</b>       | <b>3,297,626</b>      | <b>3,329,944</b>      | <b>0.97%</b>           | <b>32,318</b>         |

Source: Census 2000 Summary File 100 Percent Data/CurrentStateSum.dat and FinalDSEUS.dat Census files delivered to Census Monitoring Board by Census Bureau 02/26/01 and 02/16/01/neraphl/user/share/C200 Census 2000/Final Report/tables

Note: Calculations apply to the non-group quarters population only.

**Estimated Rates of Undercount and Numbers of Persons Missed by County-- Delaware**

| <u>County Name</u> | <u>Official Count</u> | <u>Adjusted Count</u> | <u>Undercount Rate</u> | <u>Persons Missed</u> |
|--------------------|-----------------------|-----------------------|------------------------|-----------------------|
| Kent               | 123,067               | 125,365               | 1.83%                  | 2,298                 |
| New Castle         | 482,751               | 490,220               | 1.52%                  | 7,469                 |
| Sussex             | 153,199               | 155,019               | 1.17%                  | 1,820                 |
| <b>Total</b>       | <b>759,017</b>        | <b>770,604</b>        | <b>1.50%</b>           | <b>11,587</b>         |

Source: Census 2000 Summary File 100 Percent Data/CurrentStateSum.dat and FinalDSEUS.dat  
Census files delivered to Census Monitoring Board by Census Bureau 02/26/01 and  
02/16/01/neraphl/user/share/  
C200 Census 2000/Final Report/tables

Note: Calculations apply to the non-group quarters population only.

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**Estimated Rates of Undercount and Numbers of Persons Missed by County-- Florida**

| <b>County Name</b> | <b>Official Count</b> | <b>Adjusted Count</b> | <b>Undercount Rate</b> | <b>Persons Missed</b> |
|--------------------|-----------------------|-----------------------|------------------------|-----------------------|
| Alachua            | 205,107               | 208,536               | 1.64%                  | 3,429                 |
| Baker              | 20,154                | 20,326                | 0.85%                  | 172                   |
| Bay                | 144,873               | 146,656               | 1.22%                  | 1,783                 |
| Bradford           | 21,933                | 22,133                | 0.90%                  | 200                   |
| Brevard            | 466,535               | 471,980               | 1.15%                  | 5,445                 |
| Broward            | 1,603,094             | 1,622,540             | 1.20%                  | 19,446                |
| Calhoun            | 11,297                | 11,410                | 0.99%                  | 113                   |
| Charlotte          | 139,035               | 140,453               | 1.01%                  | 1,418                 |
| Citrus             | 115,924               | 117,037               | 0.95%                  | 1,113                 |
| Clay               | 139,247               | 140,463               | 0.87%                  | 1,216                 |
| Collier            | 246,587               | 250,917               | 1.73%                  | 4,330                 |
| Columbia           | 53,586                | 54,107                | 0.96%                  | 521                   |
| DeSoto             | 28,980                | 29,560                | 1.96%                  | 580                   |
| Dixie              | 12,720                | 12,815                | 0.74%                  | 95                    |
| Duval              | 763,204               | 772,533               | 1.21%                  | 9,329                 |
| Escambia           | 272,444               | 275,729               | 1.19%                  | 3,285                 |
| Flagler            | 49,370                | 49,865                | 0.99%                  | 495                   |
| Franklin           | 9,339                 | 9,424                 | 0.90%                  | 85                    |
| Gadsden            | 42,665                | 43,074                | 0.95%                  | 409                   |
| Gilchrist          | 13,116                | 13,217                | 0.77%                  | 101                   |
| Glades             | 9,666                 | 9,789                 | 1.26%                  | 123                   |
| Gulf               | 11,935                | 12,036                | 0.84%                  | 101                   |
| Hamilton           | 10,826                | 10,931                | 0.96%                  | 105                   |
| Hardee             | 25,019                | 25,567                | 2.14%                  | 548                   |
| Hendry             | 33,488                | 34,192                | 2.06%                  | 704                   |
| Hernando           | 128,693               | 129,498               | 0.62%                  | 805                   |
| Highlands          | 86,047                | 87,244                | 1.37%                  | 1,197                 |
| Hillsborough       | 981,521               | 993,328               | 1.19%                  | 11,807                |
| Holmes             | 16,845                | 17,005                | 0.94%                  | 160                   |
| Indian River       | 110,650               | 111,987               | 1.19%                  | 1,337                 |
| Jackson            | 40,561                | 40,941                | 0.93%                  | 380                   |
| Jefferson          | 11,868                | 11,955                | 0.73%                  | 87                    |
| Lafayette          | 5,700                 | 5,777                 | 1.33%                  | 77                    |
| Lake               | 206,761               | 208,465               | 0.82%                  | 1,704                 |
| Lee                | 435,271               | 441,195               | 1.34%                  | 5,924                 |
| Leon               | 225,858               | 228,894               | 1.33%                  | 3,036                 |
| Levy               | 33,833                | 34,125                | 0.86%                  | 292                   |
| Liberty            | 5,578                 | 5,629                 | 0.90%                  | 51                    |
| Madison            | 17,032                | 17,176                | 0.84%                  | 144                   |
| Manatee            | 257,997               | 260,350               | 0.90%                  | 2,353                 |
| Marion             | 252,035               | 254,851               | 1.11%                  | 2,816                 |
| Martin             | 123,375               | 124,946               | 1.26%                  | 1,571                 |
| Miami-Dade         | 2,207,391             | 2,250,053             | 1.90%                  | 42,662                |
| Monroe             | 78,227                | 79,672                | 1.81%                  | 1,445                 |
| Nassau             | 56,976                | 57,533                | 0.97%                  | 557                   |
| Okaloosa           | 164,991               | 167,226               | 1.34%                  | 2,235                 |

**Estimated Rates of Undercount and Numbers of Persons Missed by County-- Florida (continued)**

| <b>County Name</b> | <b>Official Count</b> | <b>Adjusted Count</b> | <b>Undercount Rate</b> | <b>Persons Missed</b> |
|--------------------|-----------------------|-----------------------|------------------------|-----------------------|
| Okeechobee         | 33,815                | 34,405                | 1.72%                  | 590                   |
| Orange             | 877,513               | 889,008               | 1.29%                  | 11,495                |
| Osceola            | 170,093               | 172,557               | 1.43%                  | 2,464                 |
| Palm Beach         | 1,111,856             | 1,123,433             | 1.03%                  | 11,577                |
| Pasco              | 339,393               | 341,589               | 0.64%                  | 2,196                 |
| Pinellas           | 898,571               | 906,278               | 0.85%                  | 7,707                 |
| Polk               | 471,378               | 477,758               | 1.34%                  | 6,380                 |
| Putnam             | 69,025                | 69,720                | 1.00%                  | 695                   |
| St. Johns          | 120,942               | 121,777               | 0.69%                  | 835                   |
| St. Lucie          | 189,983               | 192,338               | 1.22%                  | 2,355                 |
| Santa Rosa         | 115,191               | 116,352               | 1.00%                  | 1,161                 |
| Sarasota           | 319,484               | 321,743               | 0.70%                  | 2,259                 |
| Seminole           | 361,590               | 364,983               | 0.93%                  | 3,393                 |
| Sumter             | 47,078                | 47,449                | 0.78%                  | 371                   |
| Suwannee           | 34,179                | 34,524                | 1.00%                  | 345                   |
| Taylor             | 18,039                | 18,191                | 0.83%                  | 152                   |
| Union              | 9,294                 | 9,397                 | 1.09%                  | 103                   |
| Volusia            | 428,606               | 433,694               | 1.17%                  | 5,088                 |
| Wakulla            | 21,719                | 21,887                | 0.77%                  | 168                   |
| Walton             | 38,806                | 39,199                | 1.00%                  | 393                   |
| Washington         | 19,524                | 19,696                | 0.87%                  | 172                   |
| <b>Total</b>       | <b>15,593,433</b>     | <b>15,789,117</b>     | <b>1.24%</b>           | <b>195,684</b>        |

Source: Census 2000 Summary File 100 Percent Data/CurrentStateSum.dat and FinalDSEUS.dat Census files delivered to Census Monitoring Board by Census Bureau 02/26/01 and 02/16/01/neraphl/user/share/C200 Census 2000/Final Report/tables

Note: Calculations apply to the non-group quarters population only.



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**Estimated Rates of Undercount and Numbers of Persons Missed by County-- Georgia**

| <u>County Name</u> | <u>Official Count</u> | <u>Adjusted Count</u> | <u>Undercount Rate</u> | <u>Persons Missed</u> |
|--------------------|-----------------------|-----------------------|------------------------|-----------------------|
| Appling            | 17,177                | 17,368                | 1.10%                  | 191                   |
| Atkinson           | 7,563                 | 7,681                 | 1.53%                  | 118                   |
| Bacon              | 9,948                 | 10,065                | 1.16%                  | 117                   |
| Baker              | 4,062                 | 4,100                 | 0.94%                  | 38                    |
| Baldwin            | 36,889                | 37,313                | 1.14%                  | 424                   |
| Banks              | 14,422                | 14,571                | 1.02%                  | 149                   |
| Barrow             | 45,687                | 46,203                | 1.12%                  | 516                   |
| Bartow             | 75,118                | 75,883                | 1.01%                  | 765                   |
| Ben Hill           | 17,117                | 17,347                | 1.33%                  | 230                   |
| Berrien            | 16,082                | 16,263                | 1.11%                  | 181                   |
| Bibb               | 148,577               | 150,850               | 1.51%                  | 2,273                 |
| Bleckley           | 11,029                | 11,139                | 0.99%                  | 110                   |
| Brantley           | 14,548                | 14,661                | 0.77%                  | 113                   |
| Brooks             | 16,051                | 16,209                | 0.98%                  | 158                   |
| Bryan              | 23,287                | 23,514                | 0.97%                  | 227                   |
| Bulloch            | 52,393                | 53,242                | 1.59%                  | 849                   |
| Burke              | 21,963                | 22,213                | 1.12%                  | 250                   |
| Butts              | 17,607                | 17,776                | 0.95%                  | 169                   |
| Calhoun            | 5,005                 | 5,055                 | 0.99%                  | 50                    |
| Camden             | 41,814                | 42,409                | 1.40%                  | 595                   |
| Candler            | 9,165                 | 9,295                 | 1.40%                  | 130                   |
| Carroll            | 84,039                | 85,041                | 1.18%                  | 1,002                 |
| Catoosa            | 52,867                | 53,421                | 1.04%                  | 554                   |
| Charlton           | 9,156                 | 9,234                 | 0.84%                  | 78                    |
| Chatham            | 223,998               | 227,498               | 1.54%                  | 3,500                 |
| Chattahoochee      | 10,006                | 10,280                | 2.67%                  | 274                   |
| Chattooga          | 23,800                | 24,072                | 1.13%                  | 272                   |
| Cherokee           | 140,920               | 142,161               | 0.87%                  | 1,241                 |
| Clarke             | 93,309                | 95,318                | 2.11%                  | 2,009                 |
| Clay               | 3,300                 | 3,331                 | 0.92%                  | 31                    |
| Clayton            | 233,259               | 238,216               | 2.08%                  | 4,957                 |
| Clinch             | 6,519                 | 6,587                 | 1.03%                  | 68                    |
| Cobb               | 600,457               | 609,046               | 1.41%                  | 8,589                 |
| Coffee             | 35,954                | 36,383                | 1.18%                  | 429                   |
| Colquitt           | 40,788                | 41,545                | 1.82%                  | 757                   |
| Columbia           | 88,597                | 89,785                | 1.32%                  | 1,188                 |
| Cook               | 15,531                | 15,703                | 1.10%                  | 172                   |
| Coweta             | 88,428                | 89,469                | 1.16%                  | 1,041                 |
| Crawford           | 12,381                | 12,486                | 0.84%                  | 105                   |
| Crisp              | 21,533                | 21,881                | 1.59%                  | 348                   |
| Dade               | 14,384                | 14,520                | 0.94%                  | 136                   |
| Dawson             | 15,902                | 16,056                | 0.96%                  | 154                   |
| Decatur            | 27,539                | 27,922                | 1.37%                  | 383                   |
| DeKalb             | 652,194               | 666,810               | 2.19%                  | 14,616                |
| Dodge              | 17,482                | 17,665                | 1.04%                  | 183                   |
| Dooly              | 10,254                | 10,376                | 1.18%                  | 122                   |

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**Estimated Rates of Undercount and Numbers of Persons Missed by County-- Georgia (continued)**

| <u>County Name</u> | <u>Official Count</u> | <u>Adjusted Count</u> | <u>Undercount Rate</u> | <u>Persons Missed</u> |
|--------------------|-----------------------|-----------------------|------------------------|-----------------------|
| Dougherty          | 91,584                | 93,048                | 1.57%                  | 1,464                 |
| Douglas            | 91,325                | 92,378                | 1.14%                  | 1,053                 |
| Early              | 12,096                | 12,220                | 1.01%                  | 124                   |
| Echols             | 3,754                 | 3,824                 | 1.83%                  | 70                    |
| Effingham          | 37,287                | 37,614                | 0.87%                  | 327                   |
| Elbert             | 20,243                | 20,451                | 1.02%                  | 208                   |
| Emanuel            | 21,029                | 21,286                | 1.21%                  | 257                   |
| Evans              | 9,911                 | 10,041                | 1.29%                  | 130                   |
| Fannin             | 19,654                | 19,833                | 0.90%                  | 179                   |
| Fayette            | 90,685                | 91,494                | 0.88%                  | 809                   |
| Floyd              | 86,809                | 88,342                | 1.74%                  | 1,533                 |
| Forsyth            | 97,678                | 98,478                | 0.81%                  | 800                   |
| Franklin           | 19,695                | 19,885                | 0.95%                  | 190                   |
| Fulton             | 784,622               | 801,518               | 2.11%                  | 16,896                |
| Gilmer             | 23,290                | 23,612                | 1.36%                  | 322                   |
| Glascock           | 2,452                 | 2,475                 | 0.91%                  | 23                    |
| Glynn              | 66,306                | 67,187                | 1.31%                  | 881                   |
| Gordon             | 43,675                | 44,327                | 1.47%                  | 652                   |
| Grady              | 23,381                | 23,672                | 1.23%                  | 291                   |
| Greene             | 14,209                | 14,353                | 1.00%                  | 144                   |
| Gwinnett           | 582,063               | 589,901               | 1.33%                  | 7,838                 |
| Habersham          | 34,035                | 34,486                | 1.31%                  | 451                   |
| Hall               | 136,980               | 140,030               | 2.18%                  | 3,050                 |
| Hancock            | 8,613                 | 8,680                 | 0.77%                  | 67                    |
| Haralson           | 25,352                | 25,628                | 1.08%                  | 276                   |
| Harris             | 23,486                | 23,664                | 0.75%                  | 178                   |
| Hart               | 22,463                | 22,755                | 1.28%                  | 292                   |
| Heard              | 10,903                | 11,015                | 1.02%                  | 112                   |
| Henry              | 118,586               | 119,705               | 0.93%                  | 1,119                 |
| Houston            | 108,372               | 109,704               | 1.21%                  | 1,332                 |
| Irwin              | 9,562                 | 9,659                 | 1.01%                  | 97                    |
| Jackson            | 40,780                | 41,262                | 1.17%                  | 482                   |
| Jasper             | 11,343                | 11,453                | 0.96%                  | 110                   |
| Jeff Davis         | 12,588                | 12,731                | 1.13%                  | 143                   |
| Jefferson          | 16,806                | 17,007                | 1.18%                  | 201                   |
| Jenkins            | 8,449                 | 8,544                 | 1.11%                  | 95                    |
| Johnson            | 7,933                 | 8,001                 | 0.85%                  | 68                    |
| Jones              | 23,287                | 23,461                | 0.74%                  | 174                   |
| Lamar              | 15,082                | 15,242                | 1.05%                  | 160                   |
| Lanier             | 6,963                 | 7,033                 | 1.00%                  | 70                    |
| Laurens            | 43,630                | 44,101                | 1.07%                  | 471                   |
| Lee                | 23,959                | 24,195                | 0.97%                  | 236                   |
| Liberty            | 56,826                | 57,891                | 1.84%                  | 1,065                 |
| Lincoln            | 8,276                 | 8,343                 | 0.80%                  | 67                    |
| Long               | 10,304                | 10,454                | 1.43%                  | 150                   |
| Lowndes            | 85,291                | 86,667                | 1.59%                  | 1,376                 |

**Estimated Rates of Undercount and Numbers of Persons Missed by County-- Georgia (continued)**

| <b>County Name</b> | <b>Official Count</b> | <b>Adjusted Count</b> | <b>Undercount Rate</b> | <b>Persons Missed</b> |
|--------------------|-----------------------|-----------------------|------------------------|-----------------------|
| Lumpkin            | 19,664                | 19,987                | 1.61%                  | 323                   |
| McDuffie           | 20,899                | 21,183                | 1.34%                  | 284                   |
| McIntosh           | 10,683                | 10,765                | 0.76%                  | 82                    |
| Macon              | 13,091                | 13,219                | 0.97%                  | 128                   |
| Madison            | 25,572                | 25,823                | 0.97%                  | 251                   |
| Marion             | 7,059                 | 7,136                 | 1.08%                  | 77                    |
| Meriwether         | 22,105                | 22,323                | 0.98%                  | 218                   |
| Miller             | 6,250                 | 6,310                 | 0.96%                  | 60                    |
| Mitchell           | 21,960                | 22,193                | 1.05%                  | 233                   |
| Monroe             | 21,131                | 21,322                | 0.89%                  | 191                   |
| Montgomery         | 7,516                 | 7,592                 | 1.01%                  | 76                    |
| Morgan             | 15,288                | 15,436                | 0.96%                  | 148                   |
| Murray             | 36,302                | 36,772                | 1.28%                  | 470                   |
| Muscogee           | 177,184               | 180,190               | 1.67%                  | 3,006                 |
| Newton             | 60,931                | 61,672                | 1.20%                  | 741                   |
| Oconee             | 25,985                | 26,245                | 0.99%                  | 260                   |
| Oglethorpe         | 12,519                | 12,623                | 0.82%                  | 104                   |
| Paulding           | 81,166                | 81,800                | 0.78%                  | 634                   |
| Peach              | 22,594                | 22,871                | 1.21%                  | 277                   |
| Pickens            | 22,771                | 22,992                | 0.96%                  | 221                   |
| Pierce             | 15,521                | 15,670                | 0.95%                  | 149                   |
| Pike               | 13,373                | 13,490                | 0.87%                  | 117                   |
| Polk               | 37,287                | 37,834                | 1.45%                  | 547                   |
| Pulaski            | 8,482                 | 8,579                 | 1.13%                  | 97                    |
| Putnam             | 18,542                | 18,722                | 0.96%                  | 180                   |
| Quitman            | 2,598                 | 2,619                 | 0.79%                  | 21                    |
| Rabun              | 14,766                | 14,938                | 1.15%                  | 172                   |
| Randolph           | 7,488                 | 7,566                 | 1.03%                  | 78                    |
| Richmond           | 188,864               | 191,778               | 1.52%                  | 2,914                 |
| Rockdale           | 69,009                | 69,910                | 1.29%                  | 901                   |
| Schley             | 3,755                 | 3,795                 | 1.05%                  | 40                    |
| Screven            | 15,065                | 15,194                | 0.85%                  | 129                   |
| Seminole           | 9,065                 | 9,148                 | 0.91%                  | 83                    |
| Spalding           | 57,544                | 58,340                | 1.36%                  | 796                   |
| Stephens           | 24,494                | 24,768                | 1.10%                  | 274                   |
| Stewart            | 4,983                 | 5,031                 | 0.95%                  | 48                    |
| Sumter             | 31,688                | 32,120                | 1.35%                  | 432                   |
| Talbot             | 6,481                 | 6,528                 | 0.72%                  | 47                    |
| Taliaferro         | 2,054                 | 2,072                 | 0.87%                  | 18                    |
| Tattnall           | 18,367                | 18,640                | 1.47%                  | 273                   |
| Taylor             | 8,397                 | 8,472                 | 0.89%                  | 75                    |
| Telfair            | 10,247                | 10,344                | 0.94%                  | 97                    |
| Terrell            | 10,762                | 10,882                | 1.10%                  | 120                   |
| Thomas             | 41,588                | 42,169                | 1.38%                  | 581                   |
| Tift               | 36,898                | 37,412                | 1.37%                  | 514                   |
| Toombs             | 25,593                | 25,990                | 1.53%                  | 397                   |

**Estimated Rates of Undercount and Numbers of Persons Missed by County-- Georgia (continued)**

| <b>County Name</b> | <b>Official Count</b> | <b>Adjusted Count</b> | <b>Undercount Rate</b> | <b>Persons Missed</b> |
|--------------------|-----------------------|-----------------------|------------------------|-----------------------|
| Towns              | 8,812                 | 8,888                 | 0.85%                  | 76                    |
| Treutlen           | 6,466                 | 6,529                 | 0.97%                  | 63                    |
| Troup              | 57,262                | 58,162                | 1.55%                  | 900                   |
| Turner             | 9,343                 | 9,446                 | 1.10%                  | 103                   |
| Twiggs             | 10,450                | 10,533                | 0.79%                  | 83                    |
| Union              | 16,846                | 17,004                | 0.93%                  | 158                   |
| Upson              | 27,145                | 27,458                | 1.14%                  | 313                   |
| Walker             | 60,048                | 60,941                | 1.47%                  | 893                   |
| Walton             | 60,145                | 60,774                | 1.04%                  | 629                   |
| Ware               | 33,232                | 33,731                | 1.48%                  | 499                   |
| Warren             | 6,219                 | 6,270                 | 0.82%                  | 51                    |
| Washington         | 19,724                | 19,903                | 0.90%                  | 179                   |
| Wayne              | 24,417                | 24,779                | 1.46%                  | 362                   |
| Webster            | 2,388                 | 2,409                 | 0.87%                  | 21                    |
| Wheeler            | 5,099                 | 5,154                 | 1.07%                  | 55                    |
| White              | 19,429                | 19,629                | 1.02%                  | 200                   |
| Whitfield          | 82,757                | 84,753                | 2.35%                  | 1,996                 |
| Wilcox             | 7,102                 | 7,165                 | 0.88%                  | 63                    |
| Wilkes             | 10,552                | 10,683                | 1.23%                  | 131                   |
| Wilkinson          | 10,137                | 10,217                | 0.78%                  | 80                    |
| Worth              | 21,759                | 21,974                | 0.98%                  | 215                   |
| <b>Total</b>       | <b>7,952,631</b>      | <b>8,072,483</b>      | <b>1.48%</b>           | <b>119,852</b>        |

Source: Census 2000 Summary File 100 Percent Data/CurrentStateSum.dat and FinalDSEUS.dat Census files delivered to Census Monitoring Board by Census Bureau 02/26/01 and 02/16/01/neraphl/user/share/C200 Census 2000/Final Report/tables

Note: Calculations apply to the non-group quarters population only.

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**Estimated Rates of Undercount and Numbers of Persons Missed by County-- Hawaii**

| <b>County Name</b> | <b>Official Count</b> | <b>Adjusted Count</b> | <b>Undercount Rate</b> | <b>Persons Missed</b> |
|--------------------|-----------------------|-----------------------|------------------------|-----------------------|
| Hawaii             | 145,873               | 149,445               | 2.39%                  | 3,572                 |
| Honolulu           | 845,211               | 862,954               | 2.06%                  | 17,743                |
| Kalawao            | 147                   | 153                   | 4.13%                  | 6                     |
| Kauai              | 57,831                | 59,211                | 2.33%                  | 1,380                 |
| Maui               | 126,693               | 129,967               | 2.52%                  | 3,274                 |
| <b>Total</b>       | <b>1,175,755</b>      | <b>1,201,729</b>      | <b>2.16%</b>           | <b>25,974</b>         |

Source: Census 2000 Summary File 100 Percent Data/CurrentStateSum.dat and FinalDSEUS.dat Census files delivered to Census Monitoring Board by Census Bureau 02/26/01 and 02/16/01/neraphl/user/share/C200 Census 2000/Final Report/tables

Note: Calculations apply to the non-group quarters population only.

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**Estimated Rates of Undercount and Numbers of Persons Missed by County-- Illinois**

| <b>County Name</b> | <b>Official Count</b> | <b>Adjusted Count</b> | <b>Undercount Rate<sup>1</sup></b> | <b>Persons Missed<sup>1</sup></b> |
|--------------------|-----------------------|-----------------------|------------------------------------|-----------------------------------|
| Adams              | 65,527                | 65,355                | -0.26%                             | -172                              |
| Alexander          | 8,995                 | 9,003                 | 0.08%                              | 8                                 |
| Bond               | 15,219                | 15,162                | -0.38%                             | -57                               |
| Boone              | 41,467                | 41,933                | 1.11%                              | 466                               |
| Brown              | 4,978                 | 4,963                 | -0.30%                             | -15                               |
| Bureau             | 35,003                | 34,949                | -0.16%                             | -54                               |
| Calhoun            | 5,029                 | 5,008                 | -0.42%                             | -21                               |
| Carroll            | 16,426                | 16,576                | 0.90%                              | 150                               |
| Cass               | 13,483                | 13,501                | 0.13%                              | 18                                |
| Champaign          | 164,831               | 166,947               | 1.27%                              | 2,116                             |
| Christian          | 33,562                | 33,860                | 0.88%                              | 298                               |
| Clark              | 16,761                | 16,703                | -0.35%                             | -58                               |
| Clay               | 14,083                | 14,024                | -0.42%                             | -59                               |
| Clinton            | 33,169                | 33,431                | 0.78%                              | 262                               |
| Coles              | 48,642                | 48,678                | 0.07%                              | 36                                |
| Cook               | 5,283,124             | 5,354,117             | 1.33%                              | 70,993                            |
| Crawford           | 18,884                | 19,038                | 0.81%                              | 154                               |
| Cumberland         | 11,118                | 11,067                | -0.46%                             | -51                               |
| De Witt            | 16,532                | 16,682                | 0.90%                              | 150                               |
| DeKalb             | 81,184                | 81,690                | 0.62%                              | 506                               |
| Douglas            | 19,622                | 19,579                | -0.22%                             | -43                               |
| DuPage             | 889,048               | 892,169               | 0.35%                              | 3,121                             |
| Edgar              | 18,916                | 18,871                | -0.24%                             | -45                               |
| Edwards            | 6,899                 | 6,867                 | -0.46%                             | -32                               |
| Effingham          | 33,797                | 33,882                | 0.25%                              | 85                                |
| Fayette            | 20,028                | 19,949                | -0.40%                             | -79                               |
| Ford               | 13,838                | 13,801                | -0.27%                             | -37                               |
| Franklin           | 38,453                | 38,787                | 0.86%                              | 334                               |
| Fulton             | 35,688                | 36,005                | 0.88%                              | 317                               |
| Gallatin           | 6,374                 | 6,348                 | -0.41%                             | -26                               |
| Greene             | 14,436                | 14,567                | 0.90%                              | 131                               |
| Grundy             | 37,188                | 37,123                | -0.18%                             | -65                               |
| Hamilton           | 8,416                 | 8,380                 | -0.43%                             | -36                               |
| Hancock            | 19,761                | 19,919                | 0.79%                              | 158                               |
| Hardin             | 4,563                 | 4,545                 | -0.39%                             | -18                               |
| Henderson          | 8,136                 | 8,109                 | -0.34%                             | -27                               |
| Henry              | 50,433                | 50,869                | 0.86%                              | 436                               |
| Iroquois           | 30,648                | 30,784                | 0.44%                              | 136                               |
| Jackson            | 53,404                | 54,103                | 1.29%                              | 699                               |
| Jasper             | 10,039                | 9,986                 | -0.53%                             | -53                               |
| Jefferson          | 37,475                | 37,383                | -0.25%                             | -92                               |
| Jersey             | 20,771                | 20,695                | -0.37%                             | -76                               |
| Jo Daviess         | 22,086                | 22,283                | 0.88%                              | 197                               |

**Estimated Rates of Undercount and Numbers of Persons Missed by County-- Illinois (continued)**

|             |         |         |        |       |
|-------------|---------|---------|--------|-------|
| Johnson     | 10,154  | 10,102  | -0.52% | -52   |
| Kane        | 397,616 | 400,191 | 0.64%  | 2,575 |
| Kankakee    | 99,737  | 100,334 | 0.60%  | 597   |
| Kendall     | 54,352  | 54,398  | 0.08%  | 46    |
| Knox        | 51,466  | 51,416  | -0.10% | -50   |
| La Salle    | 108,301 | 109,375 | 0.98%  | 1,074 |
| Lake        | 623,378 | 626,394 | 0.48%  | 3,016 |
| Lawrence    | 14,864  | 14,998  | 0.90%  | 134   |
| Lee         | 33,056  | 32,989  | -0.20% | -67   |
| Livingston  | 36,055  | 35,980  | -0.21% | -75   |
| Logan       | 26,908  | 26,865  | -0.16% | -43   |
| Macon       | 111,133 | 111,866 | 0.66%  | 733   |
| Macoupin    | 47,829  | 47,655  | -0.37% | -174  |
| Madison     | 253,162 | 253,818 | 0.26%  | 656   |
| Marion      | 40,722  | 40,610  | -0.28% | -112  |
| Marshall    | 12,903  | 12,851  | -0.40% | -52   |
| Mason       | 15,819  | 15,963  | 0.90%  | 144   |
| Massac      | 14,827  | 14,950  | 0.82%  | 123   |
| McDonough   | 28,137  | 28,153  | 0.06%  | 16    |
| McHenry     | 258,558 | 258,871 | 0.12%  | 313   |
| McLean      | 139,140 | 140,416 | 0.91%  | 1,276 |
| Menard      | 12,304  | 12,254  | -0.40% | -50   |
| Mercer      | 16,744  | 16,681  | -0.38% | -63   |
| Monroe      | 27,235  | 27,103  | -0.49% | -132  |
| Montgomery  | 28,093  | 28,111  | 0.06%  | 18    |
| Morgan      | 33,246  | 33,571  | 0.97%  | 325   |
| Moultrie    | 13,818  | 13,933  | 0.83%  | 115   |
| Ogle        | 50,418  | 50,940  | 1.02%  | 522   |
| Peoria      | 176,553 | 178,338 | 1.00%  | 1,785 |
| Perry       | 20,651  | 20,575  | -0.37% | -76   |
| Piatt       | 16,173  | 16,102  | -0.44% | -71   |
| Pike        | 16,662  | 16,609  | -0.32% | -53   |
| Pope        | 4,126   | 4,107   | -0.47% | -19   |
| Pulaski     | 7,057   | 7,056   | -0.01% | -1    |
| Putnam      | 6,075   | 6,048   | -0.45% | -27   |
| Randolph    | 29,778  | 29,667  | -0.38% | -111  |
| Richland    | 15,999  | 15,950  | -0.31% | -49   |
| Rock Island | 144,729 | 146,408 | 1.15%  | 1,679 |
| Saline      | 25,550  | 25,776  | 0.88%  | 226   |
| Sangamon    | 185,617 | 187,396 | 0.95%  | 1,779 |
| Schuyler    | 7,084   | 7,058   | -0.37% | -26   |
| Scott       | 5,481   | 5,463   | -0.32% | -18   |
| Shelby      | 22,600  | 22,502  | -0.44% | -98   |
| St. Clair   | 251,213 | 253,187 | 0.78%  | 1,974 |
| Stark       | 6,215   | 6,195   | -0.32% | -20   |
| Stephenson  | 48,159  | 48,588  | 0.88%  | 429   |
| Tazewell    | 125,183 | 125,953 | 0.61%  | 770   |

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**Estimated Rates of Undercount and Numbers of Persons Missed by County-- Illinois (continued)**

|              |                   |                   |              |                |
|--------------|-------------------|-------------------|--------------|----------------|
| Union        | 17,378            | 17,537            | 0.91%        | 159            |
| Vermilion    | 80,810            | 81,630            | 1.00%        | 820            |
| Wabash       | 12,760            | 12,722            | -0.30%       | -38            |
| Warren       | 17,512            | 17,481            | -0.18%       | -31            |
| Washington   | 14,886            | 14,821            | -0.44%       | -65            |
| Wayne        | 16,944            | 16,877            | -0.40%       | -67            |
| White        | 14,944            | 14,894            | -0.34%       | -50            |
| Whiteside    | 59,399            | 60,050            | 1.08%        | 651            |
| Will         | 492,605           | 493,886           | 0.26%        | 1,281          |
| Williamson   | 59,643            | 60,195            | 0.92%        | 552            |
| Winnebago    | 273,344           | 276,341           | 1.08%        | 2,997          |
| Woodford     | 34,371            | 34,620            | 0.72%        | 249            |
| <b>Total</b> | <b>12,097,512</b> | <b>12,202,511</b> | <b>0.86%</b> | <b>104,999</b> |

Negative undercount rates indicate over counts.

Source: Census 2000 Summary File 100 Percent Data/CurrentStateSum.dat and FinalDSEUS.dat Census files delivered to Census Monitoring Board by Census Bureau 02/26/01 and 02/16/01/neraphl/user/share/C200 Census 2000/Final Report/tables

Note: Calculations apply to the non-group quarters population only.



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**Estimated Rates of Undercount and Numbers of Persons Missed by Parish-- Louisiana**

| <b>Parish<br/>Name</b> | <b>Official<br/>Count</b> | <b>Adjusted<br/>Count</b> | <b>Undercount<br/>Rate</b> | <b>Persons<br/>Missed</b> |
|------------------------|---------------------------|---------------------------|----------------------------|---------------------------|
| Acadia                 | 57,879                    | 58,769                    | 1.52%                      | 890                       |
| Allen                  | 21,258                    | 21,486                    | 1.06%                      | 228                       |
| Ascension              | 75,981                    | 76,695                    | 0.93%                      | 714                       |
| Assumption             | 23,188                    | 23,377                    | 0.81%                      | 189                       |
| Avoyelles              | 38,379                    | 38,787                    | 1.05%                      | 408                       |
| Beauregard             | 31,796                    | 32,115                    | 0.99%                      | 319                       |
| Bienville              | 15,379                    | 15,522                    | 0.92%                      | 143                       |
| Bossier                | 96,225                    | 97,592                    | 1.40%                      | 1,367                     |
| Caddo                  | 245,764                   | 249,366                   | 1.44%                      | 3,602                     |
| Calcasieu              | 179,030                   | 181,687                   | 1.46%                      | 2,657                     |
| Caldwell               | 9,852                     | 9,952                     | 1.01%                      | 100                       |
| Cameron                | 9,926                     | 10,018                    | 0.92%                      | 92                        |
| Catahoula              | 10,412                    | 10,502                    | 0.86%                      | 90                        |
| Claiborne              | 15,686                    | 15,840                    | 0.97%                      | 154                       |
| Concordia              | 19,558                    | 19,756                    | 1.00%                      | 198                       |
| De Soto                | 25,172                    | 25,414                    | 0.95%                      | 242                       |
| East Baton Rouge       | 398,268                   | 404,168                   | 1.46%                      | 5,900                     |
| East Carroll           | 8,364                     | 8,466                     | 1.21%                      | 102                       |
| East Feliciana         | 18,508                    | 18,656                    | 0.79%                      | 148                       |
| Evangeline             | 33,662                    | 34,056                    | 1.16%                      | 394                       |
| Franklin               | 20,474                    | 20,686                    | 1.03%                      | 212                       |
| Grant                  | 18,479                    | 18,662                    | 0.98%                      | 183                       |
| Iberia                 | 71,651                    | 72,528                    | 1.21%                      | 877                       |
| Iberville              | 29,966                    | 30,231                    | 0.88%                      | 265                       |
| Jackson                | 15,119                    | 15,272                    | 1.00%                      | 153                       |
| Jefferson              | 451,109                   | 457,132                   | 1.32%                      | 6,023                     |
| Jefferson Davis        | 31,020                    | 31,363                    | 1.09%                      | 343                       |
| Lafayette              | 185,654                   | 188,338                   | 1.43%                      | 2,684                     |
| Lafourche              | 88,258                    | 89,555                    | 1.45%                      | 1,297                     |
| La Salle               | 13,358                    | 13,485                    | 0.94%                      | 127                       |
| Lincoln                | 37,200                    | 37,686                    | 1.29%                      | 486                       |
| Livingston             | 91,230                    | 91,941                    | 0.77%                      | 711                       |
| Madison                | 12,261                    | 12,417                    | 1.25%                      | 156                       |
| Morehouse              | 30,066                    | 30,392                    | 1.07%                      | 326                       |
| Natchitoches           | 36,476                    | 36,934                    | 1.24%                      | 458                       |
| Orleans                | 467,033                   | 477,332                   | 2.16%                      | 10,299                    |
| Ouachita               | 142,285                   | 144,507                   | 1.54%                      | 2,222                     |
| Plaquemines            | 26,029                    | 26,295                    | 1.01%                      | 266                       |
| Pointe Coupee          | 22,426                    | 22,635                    | 0.92%                      | 209                       |
| Rapides                | 120,833                   | 122,661                   | 1.49%                      | 1,828                     |
| Red River              | 9,339                     | 9,432                     | 0.98%                      | 93                        |
| Richland               | 19,812                    | 20,032                    | 1.10%                      | 220                       |
| Sabine                 | 23,042                    | 23,275                    | 1.00%                      | 233                       |
| St. Bernard            | 66,441                    | 67,241                    | 1.19%                      | 800                       |
| St. Charles            | 47,642                    | 48,073                    | 0.90%                      | 431                       |
| St. Helena             | 10,453                    | 10,528                    | 0.72%                      | 75                        |

**Estimated Rates of Undercount and Numbers of Persons Missed by Parish-- Louisiana (continued)**

| <b>Parish Name</b>   | <b>Official Count</b> | <b>Adjusted Count</b> | <b>Undercount Rate</b> | <b>Persons Missed</b> |
|----------------------|-----------------------|-----------------------|------------------------|-----------------------|
| St. James            | 20,951                | 21,097                | 0.69%                  | 146                   |
| St. John the Baptist | 42,601                | 42,960                | 0.84%                  | 359                   |
| St. Landry           | 86,172                | 87,339                | 1.34%                  | 1,167                 |
| St. Martin           | 47,791                | 48,379                | 1.22%                  | 588                   |
| St. Mary             | 52,871                | 53,441                | 1.07%                  | 570                   |
| St. Tammany          | 188,922               | 190,584               | 0.87%                  | 1,662                 |
| Tangipahoa           | 97,313                | 98,352                | 1.06%                  | 1,039                 |
| Tensas               | 6,127                 | 6,196                 | 1.12%                  | 69                    |
| Terrebonne           | 103,090               | 104,344               | 1.20%                  | 1,254                 |
| Union                | 22,353                | 22,561                | 0.92%                  | 208                   |
| Vermilion            | 53,040                | 53,655                | 1.15%                  | 615                   |
| Vernon               | 49,161                | 50,033                | 1.74%                  | 872                   |
| Washington           | 42,139                | 42,563                | 1.00%                  | 424                   |
| Webster              | 40,895                | 41,460                | 1.36%                  | 565                   |
| West Baton Rouge     | 21,031                | 21,258                | 1.07%                  | 227                   |
| West Carroll         | 11,524                | 11,644                | 1.03%                  | 120                   |
| West Feliciana       | 9,965                 | 10,065                | 1.00%                  | 100                   |
| Winn                 | 15,122                | 15,285                | 1.06%                  | 163                   |
| <b>Total</b>         | <b>4,333,011</b>      | <b>4,392,074</b>      | <b>1.34%</b>           | <b>59,063</b>         |

Source: Census 2000 Summary File 100 Percent Data/CurrentStateSum.dat and FinalDSEUS.dat Census files delivered to Census Monitoring Board by Census Bureau 02/26/01 and 02/16/01/neraphl/user/share/C200 Census 2000/Final Report/tables

Note: Calculations apply to the non-group quarters population only.

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**Estimated Rates of Undercount and Numbers of Persons Missed by County-- Maryland**

| <b>County Name</b> | <b>Official Count</b> | <b>Adjusted Count</b> | <b>Undercount Rate</b> | <b>Persons Missed</b> |
|--------------------|-----------------------|-----------------------|------------------------|-----------------------|
| Allegany           | 68,772                | 69,823                | 1.51%                  | 1,051                 |
| Anne Arundel       | 473,666               | 478,763               | 1.06%                  | 5,097                 |
| Baltimore City     | 625,401               | 638,809               | 2.10%                  | 13,408                |
| Baltimore          | 736,652               | 745,774               | 1.22%                  | 9,122                 |
| Calvert            | 73,982                | 74,861                | 1.17%                  | 879                   |
| Caroline           | 29,319                | 29,697                | 1.27%                  | 378                   |
| Carroll            | 147,316               | 148,614               | 0.87%                  | 1,298                 |
| Cecil              | 84,730                | 85,535                | 0.94%                  | 805                   |
| Charles            | 119,177               | 120,555               | 1.14%                  | 1,378                 |
| Dorchester         | 30,004                | 30,381                | 1.24%                  | 377                   |
| Frederick          | 190,622               | 192,457               | 0.95%                  | 1,835                 |
| Garrett            | 29,229                | 29,585                | 1.20%                  | 356                   |
| Harford            | 217,028               | 219,153               | 0.97%                  | 2,125                 |
| Howard             | 244,224               | 247,163               | 1.19%                  | 2,939                 |
| Kent               | 17,849                | 18,074                | 1.25%                  | 225                   |
| Montgomery         | 863,910               | 875,540               | 1.33%                  | 11,630                |
| Prince George's    | 784,158               | 799,379               | 1.90%                  | 15,221                |
| Queen Anne's       | 40,054                | 40,409                | 0.88%                  | 355                   |
| St. Mary's         | 83,429                | 84,472                | 1.23%                  | 1,043                 |
| Somerset           | 19,843                | 20,087                | 1.22%                  | 244                   |
| Talbot             | 33,200                | 33,635                | 1.29%                  | 435                   |
| Washington         | 122,503               | 123,934               | 1.15%                  | 1,431                 |
| Wicomico           | 81,500                | 82,602                | 1.33%                  | 1,102                 |
| Worcester          | 45,862                | 46,505                | 1.38%                  | 643                   |
| <b>Total</b>       | <b>5,162,430</b>      | <b>5,235,806</b>      | <b>1.40%</b>           | <b>73,376</b>         |

Source: Census 2000 Summary File 100 Percent Data/CurrentStateSum.dat and FinalDSEUS.dat Census files delivered to Census Monitoring Board by Census Bureau 02/26/01 and 02/16/01/neraphl/user/share/C200 Census 2000/Final Report/tables

Note: Calculations apply to the non-group quarters population only.

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**Estimated Rates of Undercount and Numbers of Persons Missed by County-- Massachusetts**

| <b>County Name</b> | <b>Official Count</b> | <b>Adjusted Count</b> | <b>Undercount Rate</b> | <b>Persons Missed</b> |
|--------------------|-----------------------|-----------------------|------------------------|-----------------------|
| Barnstable         | 216,553               | 218,510               | 0.90%                  | 1,957                 |
| Berkshire          | 128,821               | 130,147               | 1.02%                  | 1,326                 |
| Bristol            | 521,004               | 523,639               | 0.50%                  | 2,635                 |
| Dukes              | 14,794                | 14,938                | 0.96%                  | 144                   |
| Essex              | 706,530               | 711,954               | 0.76%                  | 5,424                 |
| Franklin           | 70,129                | 70,825                | 0.98%                  | 696                   |
| Hampden            | 441,799               | 445,402               | 0.81%                  | 3,603                 |
| Hampshire          | 134,006               | 134,495               | 0.36%                  | 489                   |
| Middlesex          | 1,412,506             | 1,422,014             | 0.67%                  | 9,508                 |
| Nantucket          | 8,760                 | 8,858                 | 1.11%                  | 98                    |
| Norfolk            | 632,876               | 635,792               | 0.46%                  | 2,916                 |
| Plymouth           | 461,098               | 463,119               | 0.44%                  | 2,021                 |
| Suffolk            | 653,214               | 664,410               | 1.69%                  | 11,196                |
| Worcester          | 725,791               | 730,782               | 0.68%                  | 4,991                 |
| <b>Total</b>       | <b>6,127,881</b>      | <b>6,174,884</b>      | <b>0.76%</b>           | <b>47,003</b>         |

Source: Census 2000 Summary File 100 Percent Data/CurrentStateSum.dat and FinalDSEUS.dat Census files delivered to Census Monitoring Board by Census Bureau 02/26/01 and 02/16/01/neraphl/user/share/C200 Census 2000/Final Report/tables

Note: Calculations apply to the non-group quarters population only.

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**Estimated Rates of Undercount and Numbers of Persons Missed by County-- Michigan**

| <b>County Name</b> | <b>Official Count</b> | <b>Adjusted Count</b> | <b>Undercount Rate<sup>1</sup></b> | <b>Persons Missed<sup>1</sup></b> |
|--------------------|-----------------------|-----------------------|------------------------------------|-----------------------------------|
| Alcona             | 11,520                | 11,450                | -0.61%                             | -70                               |
| Alger              | 8,876                 | 8,840                 | -0.41%                             | -36                               |
| Allegan            | 103,748               | 103,884               | 0.13%                              | 136                               |
| Alpena             | 30,747                | 30,974                | 0.73%                              | 227                               |
| Antrim             | 22,824                | 22,718                | -0.47%                             | -106                              |
| Arenac             | 16,465                | 16,389                | -0.46%                             | -76                               |
| Baraga             | 7,963                 | 7,954                 | -0.12%                             | -9                                |
| Barry              | 56,320                | 56,670                | 0.62%                              | 350                               |
| Bay                | 108,384               | 109,221               | 0.77%                              | 837                               |
| Benzie             | 15,734                | 15,658                | -0.49%                             | -76                               |
| Berrien            | 158,086               | 158,923               | 0.53%                              | 837                               |
| Branch             | 42,661                | 43,012                | 0.82%                              | 351                               |
| Calhoun            | 133,853               | 135,086               | 0.91%                              | 1,233                             |
| Cass               | 50,360                | 50,738                | 0.74%                              | 378                               |
| Charlevoix         | 25,802                | 25,941                | 0.53%                              | 139                               |
| Cheboygan          | 26,087                | 25,985                | -0.39%                             | -102                              |
| Chippewa           | 32,577                | 32,583                | 0.02%                              | 6                                 |
| Clare              | 30,751                | 30,624                | -0.41%                             | -127                              |
| Clinton            | 63,948                | 63,634                | -0.49%                             | -314                              |
| Crawford           | 13,806                | 13,748                | -0.42%                             | -58                               |
| Delta              | 37,951                | 38,224                | 0.71%                              | 273                               |
| Dickinson          | 27,005                | 27,196                | 0.70%                              | 191                               |
| Eaton              | 101,921               | 102,783               | 0.84%                              | 862                               |
| Emmet              | 30,725                | 30,638                | -0.28%                             | -87                               |
| Genesee            | 430,794               | 434,485               | 0.85%                              | 3,691                             |
| Gladwin            | 25,685                | 25,851                | 0.64%                              | 166                               |
| Gogebic            | 16,353                | 16,298                | -0.34%                             | -55                               |
| Grand Traverse     | 75,831                | 76,435                | 0.79%                              | 604                               |
| Gratiot            | 37,228                | 37,553                | 0.86%                              | 325                               |
| Hillsdale          | 45,046                | 45,121                | 0.17%                              | 75                                |
| Houghton           | 32,910                | 32,848                | -0.19%                             | -62                               |
| Huron              | 35,397                | 35,234                | -0.46%                             | -163                              |
| Ingham             | 262,493               | 265,751               | 1.23%                              | 3,258                             |
| Ionia              | 55,729                | 56,150                | 0.75%                              | 421                               |
| Iosco              | 26,944                | 27,016                | 0.27%                              | 72                                |
| Iron               | 12,563                | 12,507                | -0.45%                             | -56                               |
| Isabella           | 57,248                | 57,926                | 1.17%                              | 678                               |
| Jackson            | 148,383               | 149,618               | 0.83%                              | 1,235                             |
| Kalamazoo          | 227,463               | 229,830               | 1.03%                              | 2,367                             |
| Kalkaska           | 16,377                | 16,299                | -0.48%                             | -78                               |
| Kent               | 561,546               | 564,909               | 0.60%                              | 3,363                             |
| Keweenaw           | 2,123                 | 2,109                 | -0.67%                             | -14                               |
| Lake               | 10,730                | 10,698                | -0.30%                             | -32                               |
| Lapeer             | 86,035                | 86,234                | 0.23%                              | 199                               |
| Leelanau           | 20,899                | 20,825                | -0.35%                             | -74                               |
| Lenawee            | 93,744                | 94,159                | 0.44%                              | 415                               |

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**Estimated Rates of Undercount and Numbers of Persons Missed by County-- Michigan (continued)**

| <b>County Name</b> | <b>Official Count</b> | <b>Adjusted Count</b> | <b>Undercount Rate<sup>1</sup></b> | <b>Persons Missed<sup>1</sup></b> |
|--------------------|-----------------------|-----------------------|------------------------------------|-----------------------------------|
| Livingston         | 155,270               | 155,475               | 0.13%                              | 205                               |
| Luce               | 5,965                 | 5,948                 | -0.29%                             | -17                               |
| Mackinac           | 11,746                | 11,735                | -0.09%                             | -11                               |
| Macomb             | 779,288               | 782,065               | 0.36%                              | 2,777                             |
| Manistee           | 23,363                | 23,280                | -0.35%                             | -83                               |
| Marquette          | 60,598                | 60,485                | -0.19%                             | -113                              |
| Mason              | 27,739                | 27,964                | 0.80%                              | 225                               |
| Mecosta            | 37,170                | 37,110                | -0.16%                             | -60                               |
| Menominee          | 24,891                | 24,799                | -0.37%                             | -92                               |
| Midland            | 81,416                | 81,298                | -0.15%                             | -118                              |
| Missaukee          | 14,272                | 14,210                | -0.44%                             | -62                               |
| Monroe             | 144,402               | 144,850               | 0.31%                              | 448                               |
| Montcalm           | 58,549                | 58,689                | 0.24%                              | 140                               |
| Montmorency        | 10,188                | 10,134                | -0.54%                             | -54                               |
| Muskegon           | 164,141               | 164,981               | 0.51%                              | 840                               |
| Newaygo            | 47,193                | 47,004                | -0.40%                             | -189                              |
| Oakland            | 1,180,408             | 1,187,435             | 0.59%                              | 7,027                             |
| Oceana             | 26,108                | 26,079                | -0.11%                             | -29                               |
| Ogemaw             | 21,341                | 21,243                | -0.46%                             | -98                               |
| Ontonagon          | 7,641                 | 7,602                 | -0.52%                             | -39                               |
| Osceola            | 22,837                | 22,745                | -0.41%                             | -92                               |
| Oscoda             | 9,358                 | 9,311                 | -0.50%                             | -47                               |
| Otsego             | 23,070                | 22,967                | -0.45%                             | -103                              |
| Ottawa             | 229,536               | 230,167               | 0.27%                              | 631                               |
| Presque Isle       | 14,190                | 14,113                | -0.54%                             | -77                               |
| Roscommon          | 25,136                | 25,013                | -0.49%                             | -123                              |
| Saginaw            | 204,439               | 206,366               | 0.93%                              | 1,927                             |
| St. Clair          | 162,558               | 163,125               | 0.35%                              | 567                               |
| St. Joseph         | 61,426                | 61,753                | 0.53%                              | 327                               |
| Sanilac            | 43,791                | 43,880                | 0.20%                              | 89                                |
| Schoolcraft        | 8,522                 | 8,492                 | -0.35%                             | -30                               |
| Shiawassee         | 70,966                | 71,493                | 0.74%                              | 527                               |
| Tuscola            | 56,805                | 57,192                | 0.68%                              | 387                               |
| Van Buren          | 74,347                | 74,985                | 0.85%                              | 638                               |
| Washtenaw          | 301,593               | 304,482               | 0.95%                              | 2,889                             |
| Wayne              | 2,028,544             | 2,058,051             | 1.43%                              | 29,507                            |
| Wexford            | 30,113                | 30,344                | 0.76%                              | 231                               |
| <b>Total</b>       | <b>9,688,555</b>      | <b>9,757,591</b>      | <b>0.71%</b>                       | <b>69,036</b>                     |

Negative undercount rates indicates over counts.

Source: Census 2000 Summary File 100 Percent Data/CurrentStateSum.dat and FinalDSEUS.dat Census files delivered to Census Monitoring Board by Census Bureau 02/26/01 and 02/16/01/neraphl/user/share/C200 Census 2000/Final Report/tables

Note: Calculations apply to the non-group quarters population only.

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**Estimated Rates of Undercount and Numbers of Persons Missed by County-- Mississippi**

| <b>County Name</b> | <b>Official Count</b> | <b>Adjusted Count</b> | <b>Undercount Rate</b> | <b>Persons Missed</b> |
|--------------------|-----------------------|-----------------------|------------------------|-----------------------|
| Adams              | 33,853                | 34,222                | 1.08%                  | 369                   |
| Alcorn             | 34,044                | 34,423                | 1.10%                  | 379                   |
| Amite              | 13,575                | 13,674                | 0.72%                  | 99                    |
| Attala             | 19,279                | 19,468                | 0.97%                  | 189                   |
| Benton             | 7,910                 | 7,974                 | 0.81%                  | 64                    |
| Bolivar            | 38,441                | 39,004                | 1.44%                  | 563                   |
| Calhoun            | 14,821                | 14,978                | 1.05%                  | 157                   |
| Carroll            | 10,467                | 10,547                | 0.76%                  | 80                    |
| Chickasaw          | 19,232                | 19,485                | 1.30%                  | 253                   |
| Choctaw            | 9,442                 | 9,524                 | 0.86%                  | 82                    |
| Claiborne          | 10,027                | 10,106                | 0.79%                  | 79                    |
| Clarke             | 17,776                | 17,917                | 0.79%                  | 141                   |
| Clay               | 21,553                | 21,766                | 0.98%                  | 213                   |
| Coahoma            | 29,848                | 30,256                | 1.35%                  | 408                   |
| Copiah             | 27,511                | 27,836                | 1.17%                  | 325                   |
| Covington          | 19,113                | 19,259                | 0.76%                  | 146                   |
| DeSoto             | 106,621               | 107,747               | 1.05%                  | 1,126                 |
| Forrest            | 67,194                | 68,304                | 1.62%                  | 1,110                 |
| Franklin           | 8,355                 | 8,416                 | 0.73%                  | 61                    |
| George             | 18,741                | 19,001                | 1.37%                  | 260                   |
| Greene             | 11,070                | 11,150                | 0.72%                  | 80                    |
| Grenada            | 22,737                | 22,996                | 1.12%                  | 259                   |
| Hancock            | 42,515                | 43,161                | 1.50%                  | 646                   |
| Harrison           | 182,320               | 185,503               | 1.72%                  | 3,183                 |
| Hinds              | 240,607               | 243,955               | 1.37%                  | 3,348                 |
| Holmes             | 20,937                | 21,140                | 0.96%                  | 203                   |
| Humphreys          | 11,111                | 11,257                | 1.29%                  | 146                   |
| Issaquena          | 2,011                 | 2,035                 | 1.16%                  | 24                    |
| Itawamba           | 22,002                | 22,202                | 0.90%                  | 200                   |
| Jackson            | 129,454               | 131,447               | 1.52%                  | 1,993                 |
| Jasper             | 17,987                | 18,111                | 0.68%                  | 124                   |
| Jefferson          | 9,104                 | 9,173                 | 0.75%                  | 69                    |
| Jefferson Davis    | 13,858                | 13,959                | 0.72%                  | 101                   |
| Jones              | 63,250                | 63,920                | 1.05%                  | 670                   |
| Kemper             | 10,056                | 10,133                | 0.76%                  | 77                    |
| Lafayette          | 33,922                | 34,390                | 1.36%                  | 468                   |
| Lamar              | 38,605                | 39,186                | 1.48%                  | 581                   |
| Lauderdale         | 74,749                | 75,873                | 1.48%                  | 1,124                 |
| Lawrence           | 13,164                | 13,270                | 0.80%                  | 106                   |
| Leake              | 20,185                | 20,382                | 0.97%                  | 197                   |
| Lee                | 74,405                | 75,368                | 1.28%                  | 963                   |
| Leflore            | 34,987                | 35,509                | 1.47%                  | 522                   |
| Lincoln            | 32,521                | 32,822                | 0.92%                  | 301                   |
| Lowndes            | 59,677                | 60,571                | 1.48%                  | 894                   |
| Madison            | 72,615                | 73,632                | 1.38%                  | 1,017                 |
| Marion             | 24,665                | 24,988                | 1.29%                  | 323                   |

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**Estimated Rates of Undercount and Numbers of Persons Missed by County-- Mississippi (continued)**

| <u>County Name</u> | <u>Official Count</u> | <u>Adjusted Count</u> | <u>Undercount Rate</u> | <u>Persons Missed</u> |
|--------------------|-----------------------|-----------------------|------------------------|-----------------------|
| Marshall           | 33,294                | 33,580                | 0.85%                  | 286                   |
| Monroe             | 37,599                | 38,102                | 1.32%                  | 503                   |
| Montgomery         | 12,039                | 12,155                | 0.95%                  | 116                   |
| Neshoba            | 28,076                | 28,378                | 1.06%                  | 302                   |
| Newton             | 21,102                | 21,290                | 0.88%                  | 188                   |
| Noxubee            | 12,370                | 12,473                | 0.82%                  | 103                   |
| Oktibbeha          | 38,522                | 39,156                | 1.62%                  | 634                   |
| Panola             | 33,677                | 33,996                | 0.94%                  | 319                   |
| Pearl River        | 47,833                | 48,295                | 0.96%                  | 462                   |
| Perry              | 12,020                | 12,114                | 0.78%                  | 94                    |
| Pike               | 38,081                | 38,464                | 1.00%                  | 383                   |
| Pontotoc           | 26,483                | 26,755                | 1.02%                  | 272                   |
| Prentiss           | 24,703                | 24,944                | 0.96%                  | 241                   |
| Quitman            | 9,988                 | 10,097                | 1.08%                  | 109                   |
| Rankin             | 110,458               | 112,080               | 1.45%                  | 1,622                 |
| Scott              | 28,099                | 28,420                | 1.13%                  | 321                   |
| Sharkey            | 6,475                 | 6,555                 | 1.23%                  | 80                    |
| Simpson            | 26,675                | 26,911                | 0.88%                  | 236                   |
| Smith              | 16,051                | 16,168                | 0.73%                  | 117                   |
| Stone              | 12,918                | 13,035                | 0.90%                  | 117                   |
| Sunflower          | 29,029                | 29,450                | 1.43%                  | 421                   |
| Tallahatchie       | 14,800                | 14,939                | 0.93%                  | 139                   |
| Tate               | 24,217                | 24,448                | 0.94%                  | 231                   |
| Tippah             | 20,446                | 20,658                | 1.03%                  | 212                   |
| Tishomingo         | 18,887                | 19,187                | 1.56%                  | 300                   |
| Tunica             | 9,117                 | 9,261                 | 1.56%                  | 144                   |
| Union              | 25,117                | 25,372                | 1.01%                  | 255                   |
| Walthall           | 14,978                | 15,100                | 0.81%                  | 122                   |
| Warren             | 49,043                | 49,608                | 1.14%                  | 565                   |
| Washington         | 62,117                | 63,029                | 1.45%                  | 912                   |
| Wayne              | 21,015                | 21,172                | 0.74%                  | 157                   |
| Webster            | 10,100                | 10,200                | 0.98%                  | 100                   |
| Wilkinson          | 9,273                 | 9,342                 | 0.74%                  | 69                    |
| Winston            | 19,599                | 19,783                | 0.93%                  | 184                   |
| Yalobusha          | 12,952                | 13,071                | 0.91%                  | 119                   |
| Yazoo              | 25,774                | 26,141                | 1.40%                  | 367                   |
| <b>Total</b>       | <b>2,749,244</b>      | <b>2,783,770</b>      | <b>1.24%</b>           | <b>34,157</b>         |

Source: Census 2000 Summary File 100 Percent Data/CurrentStateSum.dat and FinalDSEUS.dat Census files delivered to Census Monitoring Board by Census Bureau 02/26/01 and 02/16/01/neraphl/user/share/C200 Census 2000/Final Report/tables

Note: Calculations apply to the non-group quarters population only.



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**Estimated Rates of Undercount and Numbers of Persons Missed by County-- Nevada**

| <b>County Name</b> | <b>Official Count</b> | <b>Adjusted Count</b> | <b>Undercount Rate</b> | <b>Persons Missed</b> |
|--------------------|-----------------------|-----------------------|------------------------|-----------------------|
| Carson City        | 49,234                | 50,218                | 1.96%                  | 984                   |
| Churchill          | 23,568                | 24,001                | 1.80%                  | 433                   |
| Clark              | 1,356,350             | 1,378,606             | 1.61%                  | 22,256                |
| Douglas            | 41,023                | 41,713                | 1.65%                  | 690                   |
| Elko               | 44,497                | 45,318                | 1.81%                  | 821                   |
| Esmeralda          | 965                   | 983                   | 1.81%                  | 18                    |
| Eureka             | 1,642                 | 1,671                 | 1.75%                  | 29                    |
| Humboldt           | 15,883                | 16,167                | 1.76%                  | 284                   |
| Lander             | 5,708                 | 5,803                 | 1.64%                  | 95                    |
| Lincoln            | 3,814                 | 3,874                 | 1.54%                  | 60                    |
| Lyon               | 33,992                | 34,576                | 1.69%                  | 584                   |
| Mineral            | 4,962                 | 5,046                 | 1.66%                  | 84                    |
| Nye                | 32,254                | 32,505                | 0.77%                  | 251                   |
| Pershing           | 5,279                 | 5,379                 | 1.85%                  | 100                   |
| Storey             | 3,395                 | 3,446                 | 1.48%                  | 51                    |
| Washoe             | 334,076               | 340,694               | 1.94%                  | 6,618                 |
| White Pine         | 7,940                 | 8,068                 | 1.59%                  | 128                   |
| <b>Total</b>       | <b>1,964,582</b>      | <b>1,998,067</b>      | <b>1.68%</b>           | <b>33,485</b>         |

Source: Census 2000 Summary File 100 Percent Data/CurrentStateSum.dat and FinalDSEUS.dat  
 Census files delivered to Census Monitoring Board by Census Bureau 02/26/01 and  
 02/16/01/neraphl/user/share/  
 C200 Census 2000/Final Report/tables

Note: Calculations apply to the non-group quarters population only.

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**Estimated Rates of Undercount and Numbers of Persons Missed by County-- New Jersey**

| <b>County Name</b> | <b>Official Count</b> | <b>Adjusted Count</b> | <b>Undercount Rate</b> | <b>Persons Missed</b> |
|--------------------|-----------------------|-----------------------|------------------------|-----------------------|
| Atlantic           | 246,058               | 248,854               | 1.12%                  | 2,797                 |
| Bergen             | 872,769               | 880,663               | 0.90%                  | 7,898                 |
| Burlington         | 409,222               | 412,191               | 0.72%                  | 2,971                 |
| Camden             | 498,526               | 503,406               | 0.97%                  | 4,883                 |
| Cape May           | 99,670                | 100,389               | 0.72%                  | 720                   |
| Cumberland         | 134,173               | 135,864               | 1.25%                  | 1,692                 |
| Essex              | 770,844               | 785,159               | 1.82%                  | 14,319                |
| Gloucester         | 249,472               | 251,764               | 0.91%                  | 2,294                 |
| Hudson             | 599,525               | 612,758               | 2.16%                  | 13,236                |
| Hunterdon          | 117,643               | 118,245               | 0.51%                  | 603                   |
| Mercer             | 329,669               | 333,307               | 1.09%                  | 3,640                 |
| Middlesex          | 729,342               | 737,009               | 1.04%                  | 7,671                 |
| Monmouth           | 605,265               | 609,939               | 0.77%                  | 4,678                 |
| Morris             | 461,026               | 465,032               | 0.86%                  | 4,008                 |
| Ocean              | 503,025               | 506,212               | 0.63%                  | 3,190                 |
| Passaic            | 479,073               | 486,840               | 1.60%                  | 7,770                 |
| Salem              | 63,063                | 63,601                | 0.85%                  | 539                   |
| Somerset           | 292,981               | 296,411               | 1.16%                  | 3,432                 |
| Sussex             | 142,479               | 144,539               | 1.43%                  | 2,061                 |
| Union              | 514,733               | 521,685               | 1.33%                  | 6,954                 |
| Warren             | 100,971               | 101,640               | 0.66%                  | 670                   |
| <b>Total</b>       | <b>8,219,529</b>      | <b>8,315,510</b>      | <b>1.15%</b>           | <b>96,026</b>         |

Source: Census 2000 Summary File 100 Percent Data/CurrentStateSum.dat and FinalDSEUS.dat Census files delivered to Census Monitoring Board by Census Bureau 02/26/01 and 02/16/01/neraphl/user/share/C200 Census 2000/Final Report/tables

Note: Calculations apply to the non-group quarters population only.

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**Estimated Rates of Undercount and Numbers of Persons Missed by County-- New Mexico**

| <b>County Name</b> | <b>Official Count</b> | <b>Adjusted Count</b> | <b>Undercount Rate</b> | <b>Persons Missed</b> |
|--------------------|-----------------------|-----------------------|------------------------|-----------------------|
| Bernalillo         | 546,051               | 553,613               | 1.37%                  | 7,562                 |
| Catron             | 3,533                 | 3,601                 | 1.90%                  | 68                    |
| Chaves             | 60,086                | 61,462                | 2.24%                  | 1,376                 |
| Cibola             | 24,529                | 25,262                | 2.90%                  | 733                   |
| Colfax             | 13,768                | 14,083                | 2.24%                  | 315                   |
| Curry              | 43,863                | 44,856                | 2.21%                  | 993                   |
| De Baca            | 2,169                 | 2,215                 | 2.08%                  | 46                    |
| Dona Ana           | 169,663               | 173,582               | 2.26%                  | 3,919                 |
| Eddy               | 50,908                | 51,856                | 1.83%                  | 948                   |
| Grant              | 30,398                | 31,071                | 2.17%                  | 673                   |
| Guadalupe          | 4,155                 | 4,251                 | 2.25%                  | 96                    |
| Harding            | 810                   | 826                   | 1.88%                  | 16                    |
| Hidalgo            | 5,847                 | 5,995                 | 2.46%                  | 148                   |
| Lea                | 53,711                | 54,740                | 1.88%                  | 1,029                 |
| Lincoln            | 19,192                | 19,584                | 2.00%                  | 392                   |
| Los Alamos         | 18,251                | 18,515                | 1.43%                  | 264                   |
| Luna               | 24,763                | 25,328                | 2.23%                  | 565                   |
| McKinley           | 73,939                | 76,779                | 3.70%                  | 2,840                 |
| Mora               | 5,124                 | 5,219                 | 1.82%                  | 95                    |
| Otero              | 61,070                | 62,337                | 2.03%                  | 1,267                 |
| Quay               | 9,967                 | 10,200                | 2.28%                  | 233                   |
| Rio Arriba         | 40,725                | 41,620                | 2.15%                  | 895                   |
| Roosevelt          | 17,253                | 17,688                | 2.46%                  | 435                   |
| Sandoval           | 89,213                | 90,484                | 1.40%                  | 1,271                 |
| San Juan           | 112,587               | 115,495               | 2.52%                  | 2,908                 |
| San Miguel         | 28,735                | 29,377                | 2.18%                  | 642                   |
| Santa Fe           | 126,916               | 129,602               | 2.07%                  | 2,686                 |
| Sierra             | 13,004                | 13,280                | 2.08%                  | 276                   |
| Socorro            | 17,504                | 17,942                | 2.44%                  | 438                   |
| Taos               | 29,679                | 30,322                | 2.12%                  | 643                   |
| Torrance           | 16,387                | 16,692                | 1.83%                  | 305                   |
| Union              | 4,158                 | 4,251                 | 2.19%                  | 93                    |
| Valencia           | 64,781                | 65,886                | 1.68%                  | 1,105                 |
| <b>Total</b>       | <b>1,782,739</b>      | <b>1,818,015</b>      | <b>1.94%</b>           | <b>35,276</b>         |

Source: Census 2000 Summary File 100 Percent Data/CurrentStateSum.dat and FinalDSEUS.dat Census files delivered to Census Monitoring Board by Census Bureau 02/26/01 and 02/16/01/neraphl/user/share/C200 Census 2000/Final Report/tables

Note: Calculations apply to the non-group quarters population only.

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**Estimated Rates of Undercount and Numbers of Persons Missed by County-- New York**

| <b>County Name</b> | <b>Official Count</b> | <b>Adjusted Count</b> | <b>Undercount Rate<sup>1</sup></b> | <b>Persons Missed<sup>1</sup></b> |
|--------------------|-----------------------|-----------------------|------------------------------------|-----------------------------------|
| Albany             | 279,008               | 282,700               | 1.31%                              | 3,692                             |
| Allegany           | 45,623                | 46,408                | 1.69%                              | 785                               |
| Bronx              | 1,285,415             | 1,320,464             | 2.65%                              | 35,049                            |
| Broome             | 191,421               | 193,520               | 1.08%                              | 2,099                             |
| Cattaraugus        | 80,719                | 82,091                | 1.67%                              | 1,372                             |
| Cayuga             | 77,162                | 77,853                | 0.89%                              | 691                               |
| Chautauqua         | 133,363               | 135,049               | 1.25%                              | 1,686                             |
| Chemung            | 85,557                | 86,562                | 1.16%                              | 1,005                             |
| Chenango           | 50,143                | 50,999                | 1.68%                              | 856                               |
| Clinton            | 72,797                | 74,059                | 1.70%                              | 1,262                             |
| Columbia           | 60,371                | 61,441                | 1.74%                              | 1,070                             |
| Cortland           | 45,479                | 45,890                | 0.90%                              | 411                               |
| Delaware           | 46,037                | 46,828                | 1.69%                              | 791                               |
| Dutchess           | 261,987               | 261,883               | -0.04%                             | -104                              |
| Erie               | 919,474               | 924,381               | 0.53%                              | 4,907                             |
| Essex              | 35,943                | 36,558                | 1.68%                              | 615                               |
| Franklin           | 44,155                | 44,897                | 1.65%                              | 742                               |
| Fulton             | 53,146                | 53,530                | 0.72%                              | 384                               |
| Genesee            | 58,931                | 59,943                | 1.69%                              | 1,012                             |
| Greene             | 44,252                | 44,920                | 1.49%                              | 668                               |
| Hamilton           | 5,284                 | 5,374                 | 1.67%                              | 90                                |
| Herkimer           | 63,319                | 63,777                | 0.72%                              | 458                               |
| Jefferson          | 103,536               | 104,714               | 1.13%                              | 1,178                             |
| Kings              | 2,426,027             | 2,470,205             | 1.79%                              | 44,178                            |
| Lewis              | 26,680                | 27,134                | 1.67%                              | 454                               |
| Livingston         | 57,579                | 57,715                | 0.24%                              | 136                               |
| Madison            | 64,767                | 65,868                | 1.67%                              | 1,101                             |
| Monroe             | 708,834               | 713,116               | 0.60%                              | 4,282                             |
| Montgomery         | 48,498                | 49,371                | 1.77%                              | 873                               |
| Nassau             | 1,312,886             | 1,311,387             | -0.11%                             | -1,499                            |
| New York           | 1,477,358             | 1,505,582             | 1.87%                              | 28,224                            |
| Niagara            | 215,628               | 216,396               | 0.36%                              | 768                               |
| Oneida             | 220,055               | 222,709               | 1.19%                              | 2,654                             |
| Onondaga           | 444,830               | 447,040               | 0.49%                              | 2,210                             |
| Ontario            | 97,133                | 97,401                | 0.27%                              | 268                               |
| Orange             | 327,675               | 333,466               | 1.74%                              | 5,791                             |
| Orleans            | 40,685                | 40,805                | 0.29%                              | 120                               |
| Oswego             | 118,372               | 119,828               | 1.21%                              | 1,456                             |
| Otsego             | 56,664                | 57,645                | 1.70%                              | 981                               |
| Putnam             | 93,581                | 95,132                | 1.63%                              | 1,551                             |
| Queens             | 2,202,506             | 2,232,299             | 1.33%                              | 29,793                            |
| Rensselaer         | 147,346               | 149,104               | 1.18%                              | 1,758                             |
| Richmond           | 434,542               | 435,730               | 0.27%                              | 1,188                             |
| Rockland           | 279,104               | 279,440               | 0.12%                              | 336                               |
| Saratoga           | 196,326               | 196,802               | 0.24%                              | 476                               |
| Schenectady        | 141,893               | 142,549               | 0.46%                              | 656                               |

**Estimated Rates of Undercount and Numbers of Persons Missed by County-- New York (continued)**

| <b>County Name</b> | <b>Official Count</b> | <b>Adjusted Count</b> | <b>Undercount Rate<sup>1</sup></b> | <b>Persons Missed<sup>1</sup></b> |
|--------------------|-----------------------|-----------------------|------------------------------------|-----------------------------------|
| Schoharie          | 29,841                | 30,347                | 1.67%                              | 506                               |
| Schuyler           | 18,602                | 18,919                | 1.68%                              | 317                               |
| Seneca             | 31,717                | 32,048                | 1.03%                              | 331                               |
| St. Lawrence       | 100,765               | 102,026               | 1.24%                              | 1,261                             |
| Steuben            | 97,197                | 98,862                | 1.68%                              | 1,665                             |
| Suffolk            | 1,390,791             | 1,388,294             | -0.18%                             | -2,497                            |
| Sullivan           | 69,141                | 70,464                | 1.88%                              | 1,323                             |
| Tioga              | 51,273                | 52,138                | 1.66%                              | 865                               |
| Tompkins           | 84,546                | 85,507                | 1.12%                              | 961                               |
| Ulster             | 166,455               | 168,240               | 1.06%                              | 1,785                             |
| Warren             | 62,010                | 62,167                | 0.25%                              | 157                               |
| Washington         | 57,294                | 58,274                | 1.68%                              | 980                               |
| Wayne              | 92,036                | 92,579                | 0.59%                              | 543                               |
| Westchester        | 899,806               | 904,806               | 0.55%                              | 5,000                             |
| Wyoming            | 39,003                | 39,237                | 0.60%                              | 234                               |
| Yates              | 23,428                | 23,570                | 0.60%                              | 142                               |
| <b>Total</b>       | <b>18,395,996</b>     | <b>18,598,045</b>     | <b>1.09%</b>                       | <b>202,049</b>                    |

<sup>1</sup> Negative undercount rates indicate over counts.

Source: Census 2000 Summary File 100 Percent Data/CurrentStateSum.dat and FinalDSEUS.dat Census files delivered to Census Monitoring Board by Census Bureau 02/26/01 and 02/16/01/neraphl/user/share/C200 Census 2000/Final Report/tables

Note: Calculations apply to the non-group quarters population only.

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**Estimated Rates of Undercount and Numbers of Persons Missed by County-- North Carolina**

| <b>County Name</b> | <b>Official Count</b> | <b>Adjusted Count</b> | <b>Undercount Rate</b> | <b>Persons Missed</b> |
|--------------------|-----------------------|-----------------------|------------------------|-----------------------|
| Alamance           | 127,049               | 128,725               | 1.30%                  | 1,676                 |
| Alexander          | 33,368                | 33,889                | 1.54%                  | 521                   |
| Alleghany          | 10,468                | 10,587                | 1.12%                  | 119                   |
| Anson              | 23,848                | 24,051                | 0.84%                  | 203                   |
| Ashe               | 24,083                | 24,318                | 0.97%                  | 235                   |
| Avery              | 15,293                | 15,439                | 0.94%                  | 146                   |
| Beaufort           | 44,381                | 44,834                | 1.01%                  | 453                   |
| Bertie             | 19,575                | 19,732                | 0.80%                  | 157                   |
| Bladen             | 31,580                | 31,876                | 0.93%                  | 296                   |
| Brunswick          | 72,419                | 73,109                | 0.94%                  | 690                   |
| Buncombe           | 199,565               | 202,834               | 1.61%                  | 3,269                 |
| Burke              | 85,538                | 87,011                | 1.69%                  | 1,473                 |
| Cabarrus           | 128,894               | 130,333               | 1.10%                  | 1,439                 |
| Caldwell           | 76,266                | 77,243                | 1.26%                  | 977                   |
| Camden             | 6,881                 | 6,935                 | 0.78%                  | 54                    |
| Carteret           | 58,299                | 58,894                | 1.01%                  | 595                   |
| Caswell            | 22,202                | 22,386                | 0.82%                  | 184                   |
| Catawba            | 139,543               | 142,056               | 1.77%                  | 2,513                 |
| Chatham            | 48,726                | 49,368                | 1.30%                  | 642                   |
| Cherokee           | 24,014                | 24,230                | 0.89%                  | 216                   |
| Chowan             | 13,827                | 13,964                | 0.98%                  | 137                   |
| Clay               | 8,651                 | 8,721                 | 0.81%                  | 70                    |
| Cleveland          | 93,807                | 95,222                | 1.49%                  | 1,415                 |
| Columbus           | 53,370                | 53,882                | 0.95%                  | 512                   |
| Craven             | 86,299                | 87,749                | 1.65%                  | 1,450                 |
| Cumberland         | 284,497               | 289,571               | 1.75%                  | 5,074                 |
| Currituck          | 18,027                | 18,198                | 0.94%                  | 171                   |
| Dare               | 29,735                | 30,065                | 1.10%                  | 330                   |
| Davidson           | 145,350               | 146,863               | 1.03%                  | 1,513                 |
| Davie              | 34,459                | 34,791                | 0.95%                  | 332                   |
| Duplin             | 48,081                | 48,824                | 1.52%                  | 743                   |
| Durham             | 213,504               | 217,750               | 1.95%                  | 4,246                 |
| Edgecombe          | 54,484                | 55,121                | 1.15%                  | 637                   |
| Forsyth            | 296,118               | 300,552               | 1.48%                  | 4,434                 |
| Franklin           | 46,009                | 46,496                | 1.05%                  | 487                   |
| Gaston             | 187,274               | 189,770               | 1.32%                  | 2,496                 |
| Gates              | 10,359                | 10,438                | 0.76%                  | 79                    |
| Graham             | 7,876                 | 7,946                 | 0.88%                  | 70                    |
| Granville          | 43,007                | 43,447                | 1.01%                  | 440                   |
| Greene             | 17,751                | 17,962                | 1.17%                  | 211                   |
| Guilford           | 407,071               | 413,358               | 1.52%                  | 6,287                 |
| Halifax            | 55,610                | 56,341                | 1.30%                  | 731                   |
| Harnett            | 88,138                | 89,248                | 1.24%                  | 1,110                 |
| Haywood            | 53,072                | 53,616                | 1.01%                  | 544                   |
| Henderson          | 87,332                | 88,329                | 1.13%                  | 997                   |
| Hertford           | 22,181                | 22,397                | 0.96%                  | 216                   |

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**Estimated Rates of Undercount and Numbers of Persons Missed by County-- Pennsylvania**

| <b>County Name</b> | <b>Official Count</b> | <b>Adjusted Count</b> | <b>Undercount Rate</b> | <b>Missed Persons</b> |
|--------------------|-----------------------|-----------------------|------------------------|-----------------------|
| Adams              | 87,681                | 88,193                | 0.62%                  | 549                   |
| Allegheny          | 1,241,049             | 1,246,401             | 0.47%                  | 5,869                 |
| Armstrong          | 71,217                | 72,424                | 1.71%                  | 1,237                 |
| Beaver             | 177,005               | 177,423               | 0.28%                  | 492                   |
| Bedford            | 49,516                | 50,356                | 1.71%                  | 861                   |
| Berks              | 361,219               | 365,488               | 1.21%                  | 4,421                 |
| Blair              | 125,037               | 126,087               | 0.87%                  | 1,103                 |
| Bradford           | 61,721                | 62,769                | 1.71%                  | 1,074                 |
| Bucks              | 588,611               | 592,090               | 0.63%                  | 3,725                 |
| Butler             | 167,668               | 170,511               | 1.71%                  | 2,914                 |
| Cambria            | 144,290               | 144,974               | 0.51%                  | 744                   |
| Cameron            | 5,893                 | 5,993                 | 1.71%                  | 103                   |
| Carbon             | 57,884                | 58,105                | 0.42%                  | 245                   |
| Centre             | 120,981               | 122,684               | 1.43%                  | 1,754                 |
| Chester            | 418,757               | 420,835               | 0.53%                  | 2,252                 |
| Clarion            | 39,448                | 40,123                | 1.72%                  | 691                   |
| Clearfield         | 80,147                | 80,866                | 0.93%                  | 752                   |
| Clinton            | 35,719                | 35,910                | 0.57%                  | 206                   |
| Columbia           | 60,393                | 61,223                | 1.40%                  | 855                   |
| Crawford           | 86,664                | 88,017                | 1.58%                  | 1,389                 |
| Cumberland         | 199,722               | 200,084               | 0.22%                  | 445                   |
| Dauphin            | 245,011               | 246,492               | 0.64%                  | 1,583                 |
| Delaware           | 529,123               | 532,446               | 0.67%                  | 3,544                 |
| Elk                | 34,646                | 35,234                | 1.71%                  | 603                   |
| Erie               | 266,890               | 268,694               | 0.71%                  | 1,916                 |
| Fayette            | 145,633               | 145,919               | 0.24%                  | 347                   |
| Forest             | 4,570                 | 4,647                 | 1.70%                  | 79                    |
| Franklin           | 126,284               | 127,021               | 0.62%                  | 790                   |
| Fulton             | 14,159                | 14,399                | 1.71%                  | 246                   |
| Greene             | 37,405                | 37,606                | 0.58%                  | 217                   |
| Huntingdon         | 40,903                | 41,597                | 1.71%                  | 711                   |
| Indiana            | 84,325                | 85,764                | 1.72%                  | 1,475                 |
| Jefferson          | 45,003                | 45,649                | 1.46%                  | 665                   |
| Juniata            | 22,334                | 22,726                | 1.77%                  | 402                   |
| Lackawanna         | 205,460               | 206,267               | 0.43%                  | 893                   |
| Lancaster          | 456,302               | 459,841               | 0.81%                  | 3,730                 |
| Lawrence           | 91,671                | 92,067                | 0.47%                  | 435                   |
| Lebanon            | 115,964               | 116,277               | 0.31%                  | 361                   |
| Lehigh             | 301,839               | 303,261               | 0.51%                  | 1,548                 |
| Luzerne            | 306,387               | 306,909               | 0.21%                  | 649                   |
| Lycoming           | 114,531               | 115,651               | 1.01%                  | 1,168                 |
| McKean             | 43,296                | 43,510                | 0.53%                  | 232                   |
| Mercer             | 113,931               | 114,462               | 0.50%                  | 578                   |
| Mifflin            | 45,796                | 46,577                | 1.72%                  | 800                   |
| Monroe             | 134,847               | 136,618               | 1.34%                  | 1,827                 |
| Montgomery         | 726,840               | 730,552               | 0.55%                  | 4,015                 |

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**Estimated Rates of Undercount and Numbers of Persons Missed by County-- Pennsylvania (continued)**

| <u>County Name</u> | <u>Official Count</u> | <u>Adjusted Count</u> | <u>Undercount Rate</u> | <u>Missed Persons</u> |
|--------------------|-----------------------|-----------------------|------------------------|-----------------------|
| Montour            | 17,233                | 17,528                | 1.72%                  | 302                   |
| Northampton        | 256,529               | 257,865               | 0.56%                  | 1,443                 |
| Northumberland     | 90,837                | 91,319                | 0.57%                  | 520                   |
| Perry              | 43,100                | 43,832                | 1.71%                  | 750                   |
| Philadelphia       | 1,462,819             | 1,481,482             | 1.30%                  | 19,278                |
| Pike               | 45,910                | 46,687                | 1.70%                  | 796                   |
| Potter             | 17,781                | 18,082                | 1.71%                  | 309                   |
| Schuylkill         | 143,110               | 145,100               | 1.41%                  | 2,051                 |
| Snyder             | 35,257                | 35,864                | 1.73%                  | 622                   |
| Somerset           | 76,529                | 76,844                | 0.45%                  | 347                   |
| Sullivan           | 6,113                 | 6,217                 | 1.71%                  | 106                   |
| Susquehanna        | 41,804                | 42,310                | 1.24%                  | 523                   |
| Tioga              | 39,486                | 40,157                | 1.71%                  | 688                   |
| Union              | 32,931                | 33,102                | 0.56%                  | 185                   |
| Venango            | 55,735                | 56,682                | 1.71%                  | 971                   |
| Warren             | 42,794                | 42,963                | 0.43%                  | 187                   |
| Washington         | 197,556               | 198,446               | 0.49%                  | 972                   |
| Wayne              | 45,821                | 46,601                | 1.71%                  | 799                   |
| Westmoreland       | 361,497               | 363,601               | 0.62%                  | 2,255                 |
| Wyoming            | 27,390                | 27,855                | 1.71%                  | 477                   |
| York               | 373,749               | 377,473               | 1.03%                  | 3,881                 |
| <b>Total</b>       | <b>11,847,753</b>     | <b>11,940,753</b>     | <b>0.82%</b>           | <b>97,954</b>         |

Source: Census 2000 Summary File 100 Percent Data/CurrentStateSum.dat and FinalDSEUS.dat Census files delivered to Census Monitoring Board by Census Bureau 02/26/01 and 02/16/01/neraphl/user/share/C200 Census 2000/Final Report/tables

Note: Calculations apply to the non-group quarters population only.



## Estimated Rates of Undercount and Numbers of Persons Missed by County-- South Carolina

| <u>County Name</u> | <u>Official Count</u> | <u>Adjusted Count</u> | <u>Undercount Rate</u> | <u>Persons Missed</u> |
|--------------------|-----------------------|-----------------------|------------------------|-----------------------|
| Abbeville          | 25,457                | 25,654                | 0.77%                  | 197                   |
| Aiken              | 140,479               | 142,296               | 1.28%                  | 1,817                 |
| Allendale          | 10,033                | 10,123                | 0.89%                  | 90                    |
| Anderson           | 163,064               | 164,761               | 1.03%                  | 1,697                 |
| Bamberg            | 15,593                | 15,719                | 0.80%                  | 126                   |
| Barnwell           | 23,201                | 23,403                | 0.86%                  | 202                   |
| Beaufort           | 114,328               | 116,268               | 1.67%                  | 1,940                 |
| Berkeley           | 137,209               | 138,995               | 1.28%                  | 1,786                 |
| Calhoun            | 15,024                | 15,125                | 0.67%                  | 101                   |
| Charleston         | 298,571               | 303,072               | 1.49%                  | 4,501                 |
| Cherokee           | 51,808                | 52,596                | 1.50%                  | 788                   |
| Chester            | 33,752                | 34,101                | 1.02%                  | 349                   |
| Chesterfield       | 42,109                | 42,517                | 0.96%                  | 408                   |
| Clarendon          | 30,976                | 31,219                | 0.78%                  | 243                   |
| Colleton           | 37,931                | 38,240                | 0.81%                  | 309                   |
| Darlington         | 66,163                | 66,718                | 0.83%                  | 555                   |
| Dillon             | 30,295                | 30,603                | 1.01%                  | 308                   |
| Dorchester         | 94,324                | 95,677                | 1.41%                  | 1,353                 |
| Edgefield          | 22,002                | 22,271                | 1.21%                  | 269                   |
| Fairfield          | 23,033                | 23,221                | 0.81%                  | 188                   |
| Florence           | 121,895               | 123,249               | 1.10%                  | 1,354                 |
| Georgetown         | 55,216                | 55,825                | 1.09%                  | 609                   |
| Greenville         | 368,791               | 373,455               | 1.25%                  | 4,664                 |
| Greenwood          | 63,960                | 64,714                | 1.16%                  | 754                   |
| Hampton            | 19,674                | 19,832                | 0.79%                  | 158                   |
| Horry              | 194,124               | 197,111               | 1.52%                  | 2,987                 |
| Jasper             | 19,331                | 19,557                | 1.15%                  | 226                   |
| Kershaw            | 52,127                | 52,539                | 0.78%                  | 412                   |
| Lancaster          | 59,367                | 59,954                | 0.98%                  | 587                   |
| Laurens            | 66,939                | 67,566                | 0.93%                  | 627                   |
| Lee                | 18,433                | 18,576                | 0.77%                  | 143                   |
| Lexington          | 213,131               | 215,291               | 1.00%                  | 2,160                 |
| McCormick          | 8,512                 | 8,572                 | 0.70%                  | 60                    |
| Marion             | 35,132                | 35,466                | 0.94%                  | 334                   |
| Marlboro           | 27,183                | 27,441                | 0.94%                  | 258                   |
| Newberry           | 35,079                | 35,458                | 1.07%                  | 379                   |
| Oconee             | 65,575                | 66,507                | 1.40%                  | 932                   |
| Orangeburg         | 87,925                | 88,638                | 0.80%                  | 713                   |
| Pickens            | 103,348               | 104,325               | 0.94%                  | 977                   |
| Richland           | 292,665               | 297,519               | 1.63%                  | 4,854                 |
| Saluda             | 18,919                | 19,156                | 1.24%                  | 237                   |
| Spartanburg        | 246,352               | 249,458               | 1.25%                  | 3,106                 |
| Sumter             | 101,201               | 102,464               | 1.23%                  | 1,263                 |
| Union              | 29,455                | 29,707                | 0.85%                  | 252                   |
| Williamsburg       | 36,882                | 37,136                | 0.69%                  | 254                   |
| York               | 160,407               | 161,842               | 0.89%                  | 1,435                 |
| <b>Total</b>       | <b>3,876,975</b>      | <b>3,923,934</b>      | <b>1.20%</b>           | <b>46,959</b>         |

Source: Census 2000 Summary File 100 Percent Data/CurrentStateSum.dat and FinalDSEUS.dat Census files delivered to Census Monitoring Board by Census Bureau 02/26/01 and 02/16/01/neraphl/user/share/C200 Census 2000/Final Report/tables

Note: Calculations apply to the non-group quarters population only.

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**Estimated Rates of Undercount and Numbers of Persons Missed by County- Texas**

| <u>County Name</u> | <u>Official Count</u> | <u>Adjusted Count</u> | <u>Undercount Rate</u> | <u>Persons Missed</u> |
|--------------------|-----------------------|-----------------------|------------------------|-----------------------|
| Anderson           | 40,481                | 40,949                | 1.14%                  | 468                   |
| Andrews            | 12,925                | 13,152                | 1.73%                  | 227                   |
| Angelina           | 77,423                | 78,705                | 1.63%                  | 1,282                 |
| Aransas            | 22,229                | 22,538                | 1.37%                  | 309                   |
| Archer             | 8,799                 | 8,881                 | 0.93%                  | 82                    |
| Armstrong          | 2,071                 | 2,093                 | 1.04%                  | 22                    |
| Atascosa           | 38,273                | 39,053                | 2.00%                  | 780                   |
| Austin             | 23,314                | 23,695                | 1.61%                  | 381                   |
| Bailey             | 6,534                 | 6,667                 | 2.00%                  | 133                   |
| Bandera            | 17,464                | 17,640                | 1.00%                  | 176                   |
| Bastrop            | 55,728                | 56,344                | 1.09%                  | 616                   |
| Baylor             | 4,044                 | 4,094                 | 1.22%                  | 50                    |
| Bee                | 24,803                | 25,440                | 2.50%                  | 637                   |
| Bell               | 228,837               | 233,366               | 1.94%                  | 4,529                 |
| Bexar              | 1,358,420             | 1,383,073             | 1.78%                  | 24,653                |
| Blanco             | 8,265                 | 8,363                 | 1.17%                  | 98                    |
| Borden             | 729                   | 739                   | 1.41%                  | 10                    |
| Bosque             | 16,670                | 16,870                | 1.19%                  | 200                   |
| Bowie              | 82,527                | 83,564                | 1.24%                  | 1,037                 |
| Brazoria           | 230,806               | 234,142               | 1.42%                  | 3,336                 |
| Brazos             | 139,070               | 142,180               | 2.19%                  | 3,110                 |
| Brewster           | 8,466                 | 8,653                 | 2.16%                  | 187                   |
| Briscoe            | 1,790                 | 1,814                 | 1.35%                  | 24                    |
| Brooks             | 7,904                 | 8,115                 | 2.60%                  | 211                   |
| Brown              | 35,451                | 35,926                | 1.32%                  | 475                   |
| Burleson           | 16,365                | 16,552                | 1.13%                  | 187                   |
| Burnet             | 33,255                | 33,650                | 1.17%                  | 395                   |
| Caldwell           | 30,513                | 31,082                | 1.83%                  | 569                   |
| Calhoun            | 20,473                | 20,841                | 1.77%                  | 368                   |
| Callahan           | 12,783                | 12,910                | 0.99%                  | 127                   |
| Cameron            | 331,138               | 340,294               | 2.69%                  | 9,156                 |
| Camp               | 11,374                | 11,567                | 1.67%                  | 193                   |
| Carson             | 6,417                 | 6,476                 | 0.91%                  | 59                    |
| Cass               | 29,959                | 30,228                | 0.89%                  | 269                   |
| Castro             | 8,220                 | 8,395                 | 2.09%                  | 175                   |
| Chambers           | 25,797                | 26,034                | 0.91%                  | 237                   |
| Cherokee           | 43,835                | 44,565                | 1.64%                  | 730                   |
| Childress          | 5,934                 | 6,019                 | 1.41%                  | 85                    |
| Clay               | 10,912                | 11,008                | 0.87%                  | 96                    |
| Cochran            | 3,655                 | 3,721                 | 1.78%                  | 66                    |
| Coke               | 3,571                 | 3,612                 | 1.14%                  | 41                    |
| Coleman            | 9,072                 | 9,188                 | 1.26%                  | 116                   |
| Collin             | 488,343               | 494,530               | 1.25%                  | 6,187                 |
| Collingsworth      | 3,153                 | 3,192                 | 1.23%                  | 39                    |
| Colorado           | 19,541                | 19,836                | 1.49%                  | 295                   |
| Comal              | 76,754                | 77,592                | 1.08%                  | 838                   |

**Estimated Rates of Undercount and Numbers of Persons Missed by County- Texas (continued)**

| <b>County Name</b> | <b>Official Count</b> | <b>Adjusted Count</b> | <b>Undercount Rate</b> | <b>Persons Missed</b> |
|--------------------|-----------------------|-----------------------|------------------------|-----------------------|
| Comanche           | 13,684                | 13,879                | 1.41%                  | 195                   |
| Concho             | 2,596                 | 2,637                 | 1.56%                  | 41                    |
| Cooke              | 35,521                | 35,985                | 1.29%                  | 464                   |
| Coryell            | 58,046                | 59,102                | 1.79%                  | 1,056                 |
| Cottle             | 1,867                 | 1,895                 | 1.50%                  | 28                    |
| Crane              | 3,951                 | 4,016                 | 1.62%                  | 65                    |
| Crockett           | 4,044                 | 4,123                 | 1.92%                  | 79                    |
| Crosby             | 6,980                 | 7,142                 | 2.26%                  | 162                   |
| Culberson          | 2,966                 | 3,032                 | 2.19%                  | 66                    |
| Dallam             | 6,206                 | 6,323                 | 1.85%                  | 117                   |
| Dallas             | 2,185,429             | 2,231,188             | 2.05%                  | 45,759                |
| Dawson             | 12,713                | 12,956                | 1.87%                  | 243                   |
| Deaf Smith         | 18,307                | 18,735                | 2.28%                  | 428                   |
| Delta              | 5,212                 | 5,263                 | 0.96%                  | 51                    |
| Denton             | 423,826               | 429,769               | 1.38%                  | 5,943                 |
| DeWitt             | 18,229                | 18,492                | 1.42%                  | 263                   |
| Dickens            | 2,243                 | 2,274                 | 1.38%                  | 31                    |
| Dimmit             | 10,126                | 10,377                | 2.42%                  | 251                   |
| Donley             | 3,625                 | 3,665                 | 1.10%                  | 40                    |
| Duval              | 12,536                | 12,807                | 2.12%                  | 271                   |
| Eastland           | 17,510                | 17,711                | 1.13%                  | 201                   |
| Ector              | 119,412               | 121,862               | 2.01%                  | 2,450                 |
| Edwards            | 2,134                 | 2,168                 | 1.57%                  | 34                    |
| Ellis              | 109,427               | 110,884               | 1.31%                  | 1,457                 |
| El Paso            | 666,878               | 680,784               | 2.04%                  | 13,906                |
| Erath              | 31,193                | 31,810                | 1.94%                  | 617                   |
| Falls              | 16,490                | 16,703                | 1.27%                  | 213                   |
| Fannin             | 27,865                | 28,169                | 1.08%                  | 304                   |
| Fayette            | 21,244                | 21,479                | 1.09%                  | 235                   |
| Fisher             | 4,268                 | 4,327                 | 1.37%                  | 59                    |
| Floyd              | 7,630                 | 7,781                 | 1.95%                  | 151                   |
| Foard              | 1,580                 | 1,600                 | 1.28%                  | 20                    |
| Fort Bend          | 348,154               | 352,868               | 1.34%                  | 4,714                 |
| Franklin           | 9,295                 | 9,393                 | 1.05%                  | 98                    |
| Freestone          | 16,324                | 16,490                | 1.01%                  | 166                   |
| Frio               | 14,112                | 14,475                | 2.51%                  | 363                   |
| Gaines             | 14,372                | 14,587                | 1.48%                  | 215                   |
| Galveston          | 246,002               | 250,024               | 1.61%                  | 4,022                 |
| Garza              | 4,415                 | 4,505                 | 2.00%                  | 90                    |
| Gillespie          | 20,257                | 20,511                | 1.24%                  | 254                   |
| Glasscock          | 1,406                 | 1,434                 | 1.95%                  | 28                    |
| Goliad             | 6,805                 | 6,904                 | 1.43%                  | 99                    |
| Gonzales           | 18,265                | 18,631                | 1.97%                  | 366                   |
| Gray               | 21,033                | 21,268                | 1.10%                  | 235                   |
| Grayson            | 107,622               | 109,170               | 1.42%                  | 1,548                 |
| Gregg              | 108,285               | 109,776               | 1.36%                  | 1,491                 |
| Grimes             | 20,821                | 21,060                | 1.13%                  | 239                   |
| Guadalupe          | 87,411                | 88,508                | 1.24%                  | 1,097                 |
| Hale               | 34,198                | 35,036                | 2.39%                  | 838                   |

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**Estimated Rates of Undercount and Numbers of Persons Missed by County- Texas (continued)**

| <b>County Name</b> | <b>Official Count</b> | <b>Adjusted Count</b> | <b>Undercount Rate</b> | <b>Persons Missed</b> |
|--------------------|-----------------------|-----------------------|------------------------|-----------------------|
| Hall               | 3,741                 | 3,797                 | 1.47%                  | 56                    |
| Hamilton           | 7,994                 | 8,084                 | 1.11%                  | 90                    |
| Hansford           | 5,283                 | 5,371                 | 1.64%                  | 88                    |
| Hardeman           | 4,657                 | 4,720                 | 1.34%                  | 63                    |
| Hardin             | 47,647                | 48,287                | 1.33%                  | 640                   |
| Harris             | 3,358,444             | 3,426,843             | 2.00%                  | 68,399                |
| Harrison           | 60,431                | 61,259                | 1.35%                  | 828                   |
| Hartley            | 4,112                 | 4,158                 | 1.10%                  | 46                    |
| Haskell            | 5,989                 | 6,068                 | 1.30%                  | 79                    |
| Hays               | 89,950                | 91,453                | 1.64%                  | 1,503                 |
| Hemphill           | 3,206                 | 3,244                 | 1.18%                  | 38                    |
| Henderson          | 72,137                | 72,857                | 0.99%                  | 720                   |
| Hidalgo            | 563,801               | 576,049               | 2.13%                  | 12,248                |
| Hill               | 31,501                | 31,909                | 1.28%                  | 408                   |
| Hockley            | 22,106                | 22,518                | 1.83%                  | 412                   |
| Hood               | 40,499                | 40,983                | 1.18%                  | 484                   |
| Hopkins            | 31,488                | 31,901                | 1.29%                  | 413                   |
| Houston            | 20,186                | 20,391                | 1.01%                  | 205                   |
| Howard             | 28,840                | 29,345                | 1.72%                  | 505                   |
| Hudspeth           | 3,312                 | 3,374                 | 1.85%                  | 62                    |
| Hunt               | 74,700                | 75,592                | 1.18%                  | 892                   |
| Hutchinson         | 23,560                | 23,934                | 1.56%                  | 374                   |
| Irion              | 1,771                 | 1,793                 | 1.24%                  | 22                    |
| Jack               | 7,682                 | 7,769                 | 1.12%                  | 87                    |
| Jackson            | 14,136                | 14,353                | 1.51%                  | 217                   |
| Jasper             | 34,667                | 34,968                | 0.86%                  | 301                   |
| Jeff Davis         | 2,139                 | 2,178                 | 1.81%                  | 39                    |
| Jefferson          | 236,952               | 240,588               | 1.51%                  | 3,636                 |
| Jim Hogg           | 5,237                 | 5,359                 | 2.28%                  | 122                   |
| Jim Wells          | 38,818                | 39,645                | 2.09%                  | 827                   |
| Johnson            | 124,321               | 125,703               | 1.10%                  | 1,382                 |
| Jones              | 15,820                | 16,010                | 1.19%                  | 190                   |
| Karnes             | 11,832                | 12,060                | 1.89%                  | 228                   |
| Kaufman            | 69,875                | 70,824                | 1.34%                  | 949                   |
| Kendall            | 23,264                | 23,581                | 1.34%                  | 317                   |
| Kenedy             | 410                   | 428                   | 4.25%                  | 18                    |
| Kent               | 821                   | 830                   | 1.05%                  | 9                     |
| Kerr               | 41,882                | 42,581                | 1.64%                  | 699                   |
| Kimble             | 4,417                 | 4,481                 | 1.44%                  | 64                    |
| King               | 299                   | 307                   | 2.52%                  | 8                     |
| Kinney             | 3,356                 | 3,415                 | 1.73%                  | 59                    |
| Kleberg            | 30,238                | 31,033                | 2.56%                  | 795                   |
| Knox               | 4,121                 | 4,181                 | 1.44%                  | 60                    |
| Lamar              | 47,382                | 48,111                | 1.51%                  | 729                   |
| Lamb               | 14,422                | 14,680                | 1.76%                  | 258                   |
| Lampasas           | 17,405                | 17,639                | 1.32%                  | 234                   |
| La Salle           | 5,263                 | 5,381                 | 2.19%                  | 118                   |
| Lavaca             | 18,738                | 18,953                | 1.13%                  | 215                   |
| Lee                | 15,035                | 15,210                | 1.15%                  | 175                   |

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**Estimated Rates of Undercount and Numbers of Persons Missed by County- Texas (continued)**

| <b>County Name</b> | <b>Official Count</b> | <b>Adjusted Count</b> | <b>Undercount Rate</b> | <b>Persons Missed</b> |
|--------------------|-----------------------|-----------------------|------------------------|-----------------------|
| Leon               | 15,224                | 15,364                | 0.91%                  | 140                   |
| Liberty            | 65,113                | 65,936                | 1.25%                  | 823                   |
| Limestone          | 20,196                | 20,436                | 1.18%                  | 240                   |
| Lipscomb           | 3,011                 | 3,050                 | 1.27%                  | 39                    |
| Live Oak           | 10,711                | 10,864                | 1.41%                  | 153                   |
| Llano              | 16,796                | 16,955                | 0.94%                  | 159                   |
| Loving             | 67                    | 68                    | 1.21%                  | 1                     |
| Lubbock            | 233,022               | 238,068               | 2.12%                  | 5,046                 |
| Lynn               | 6,506                 | 6,630                 | 1.88%                  | 124                   |
| McCulloch          | 8,083                 | 8,239                 | 1.89%                  | 156                   |
| McLennan           | 204,292               | 208,005               | 1.79%                  | 3,713                 |
| McMullen           | 851                   | 864                   | 1.48%                  | 13                    |
| Madison            | 10,069                | 10,185                | 1.14%                  | 116                   |
| Marion             | 10,852                | 10,986                | 1.22%                  | 134                   |
| Martin             | 4,661                 | 4,742                 | 1.71%                  | 81                    |
| Mason              | 3,705                 | 3,750                 | 1.20%                  | 45                    |
| Matagorda          | 37,482                | 38,159                | 1.77%                  | 677                   |
| Maverick           | 47,182                | 48,440                | 2.60%                  | 1,258                 |
| Medina             | 37,522                | 38,117                | 1.56%                  | 595                   |
| Menard             | 2,319                 | 2,356                 | 1.58%                  | 37                    |
| Midland            | 114,415               | 116,456               | 1.75%                  | 2,041                 |
| Milam              | 23,806                | 24,211                | 1.67%                  | 405                   |
| Mills              | 4,860                 | 4,916                 | 1.13%                  | 56                    |
| Mitchell           | 7,027                 | 7,133                 | 1.48%                  | 106                   |
| Montague           | 18,713                | 18,903                | 1.00%                  | 190                   |
| Montgomery         | 292,077               | 295,423               | 1.13%                  | 3,346                 |
| Moore              | 19,911                | 20,318                | 2.01%                  | 407                   |
| Morris             | 12,882                | 13,004                | 0.93%                  | 122                   |
| Motley             | 1,426                 | 1,444                 | 1.26%                  | 18                    |
| Nacogdoches        | 54,691                | 55,680                | 1.78%                  | 989                   |
| Navarro            | 43,694                | 44,465                | 1.73%                  | 771                   |
| Newton             | 14,472                | 14,578                | 0.72%                  | 106                   |
| Nolan              | 15,302                | 15,568                | 1.71%                  | 266                   |
| Nueces             | 307,884               | 315,714               | 2.48%                  | 7,830                 |
| Ochiltree          | 8,933                 | 9,114                 | 1.99%                  | 181                   |
| Oldham             | 1,915                 | 1,945                 | 1.55%                  | 30                    |
| Orange             | 83,985                | 84,956                | 1.14%                  | 971                   |
| Palo Pinto         | 26,714                | 27,083                | 1.36%                  | 369                   |
| Panola             | 22,304                | 22,495                | 0.85%                  | 191                   |
| Parker             | 85,574                | 86,579                | 1.16%                  | 1,005                 |
| Parmer             | 9,863                 | 10,065                | 2.01%                  | 202                   |
| Pecos              | 14,742                | 15,038                | 1.97%                  | 296                   |
| Polk               | 37,784                | 38,139                | 0.93%                  | 355                   |
| Potter             | 106,522               | 108,821               | 2.11%                  | 2,299                 |
| Presidio           | 7,208                 | 7,383                 | 2.37%                  | 175                   |
| Rains              | 9,067                 | 9,148                 | 0.89%                  | 81                    |
| Randall            | 102,546               | 103,976               | 1.38%                  | 1,430                 |
| Reagan             | 3,281                 | 3,333                 | 1.55%                  | 52                    |
| Real               | 2,969                 | 3,012                 | 1.42%                  | 43                    |

**Estimated Rates of Undercount and Numbers of Persons Missed by County- Texas (continued)**

| <b>County Name</b> | <b>Official Count</b> | <b>Adjusted Count</b> | <b>Undercount Rate</b> | <b>Persons Missed</b> |
|--------------------|-----------------------|-----------------------|------------------------|-----------------------|
| Red River          | 14,041                | 14,192                | 1.07%                  | 151                   |
| Reeves             | 11,982                | 12,235                | 2.07%                  | 253                   |
| Refugio            | 7,717                 | 7,857                 | 1.78%                  | 140                   |
| Roberts            | 887                   | 896                   | 1.05%                  | 9                     |
| Robertson          | 15,728                | 15,939                | 1.32%                  | 211                   |
| Rockwall           | 42,463                | 42,871                | 0.95%                  | 408                   |
| Runnels            | 11,202                | 11,365                | 1.44%                  | 163                   |
| Rusk               | 44,641                | 45,136                | 1.10%                  | 495                   |
| Sabine             | 10,345                | 10,420                | 0.72%                  | 75                    |
| San Augustine      | 8,679                 | 8,751                 | 0.82%                  | 72                    |
| San Jacinto        | 22,103                | 22,259                | 0.70%                  | 156                   |
| San Patricio       | 65,583                | 67,009                | 2.13%                  | 1,426                 |
| San Saba           | 5,617                 | 5,697                 | 1.40%                  | 80                    |
| Schleicher         | 2,888                 | 2,940                 | 1.77%                  | 52                    |
| Scurry             | 14,699                | 14,922                | 1.49%                  | 223                   |
| Shackelford        | 3,240                 | 3,274                 | 1.05%                  | 34                    |
| Shelby             | 24,844                | 25,119                | 1.10%                  | 275                   |
| Sherman            | 3,107                 | 3,157                 | 1.60%                  | 50                    |
| Smith              | 170,032               | 172,756               | 1.58%                  | 2,724                 |
| Somervell          | 6,651                 | 6,734                 | 1.24%                  | 83                    |
| Starr              | 53,200                | 54,437                | 2.27%                  | 1,237                 |
| Stephens           | 9,025                 | 9,144                 | 1.30%                  | 119                   |
| Sterling           | 1,368                 | 1,389                 | 1.49%                  | 21                    |
| Stonewall          | 1,652                 | 1,670                 | 1.10%                  | 18                    |
| Sutton             | 4,046                 | 4,127                 | 1.97%                  | 81                    |
| Swisher            | 7,738                 | 7,886                 | 1.88%                  | 148                   |
| Tarrant            | 1,423,249             | 1,447,269             | 1.66%                  | 24,020                |
| Taylor             | 120,201               | 122,564               | 1.93%                  | 2,363                 |
| Terrell            | 1,081                 | 1,100                 | 1.73%                  | 19                    |
| Terry              | 11,789                | 12,021                | 1.93%                  | 232                   |
| Throckmorton       | 1,828                 | 1,851                 | 1.24%                  | 23                    |
| Titus              | 27,466                | 27,912                | 1.60%                  | 446                   |
| Tom Green          | 99,742                | 101,812               | 2.03%                  | 2,070                 |
| Travis             | 791,574               | 804,911               | 1.66%                  | 13,337                |
| Trinity            | 13,599                | 13,725                | 0.92%                  | 126                   |
| Tyler              | 19,287                | 19,437                | 0.77%                  | 150                   |
| Upshur             | 34,842                | 35,142                | 0.85%                  | 300                   |
| Upton              | 3,371                 | 3,429                 | 1.70%                  | 58                    |
| Uvalde             | 25,307                | 25,869                | 2.17%                  | 562                   |
| Val Verde          | 44,051                | 45,202                | 2.55%                  | 1,151                 |
| Van Zandt          | 47,194                | 47,668                | 0.99%                  | 474                   |
| Victoria           | 82,581                | 84,284                | 2.02%                  | 1,703                 |
| Walker             | 44,667                | 45,335                | 1.47%                  | 668                   |
| Waller             | 29,454                | 29,859                | 1.36%                  | 405                   |
| Ward               | 10,540                | 10,703                | 1.52%                  | 163                   |
| Washington         | 28,640                | 28,971                | 1.14%                  | 331                   |
| Webb               | 190,039               | 195,486               | 2.79%                  | 5,447                 |
| Wharton            | 40,441                | 41,244                | 1.95%                  | 803                   |
| Wheeler            | 5,150                 | 5,214                 | 1.23%                  | 64                    |

**Estimated Rates of Undercount and Numbers of Persons Missed by County- Texas (continued)**

| <b>County Name</b> | <b>Official Count</b> | <b>Adjusted Count</b> | <b>Undercount Rate</b> | <b>Persons Missed</b> |
|--------------------|-----------------------|-----------------------|------------------------|-----------------------|
| Wichita            | 120,544               | 122,753               | 1.80%                  | 2,209                 |
| Wilbarger          | 13,755                | 13,975                | 1.58%                  | 220                   |
| Willacy            | 19,010                | 19,458                | 2.30%                  | 448                   |
| Williamson         | 245,041               | 247,764               | 1.10%                  | 2,723                 |
| Wilson             | 31,890                | 32,294                | 1.25%                  | 404                   |
| Winkler            | 7,038                 | 7,133                 | 1.34%                  | 95                    |
| Wise               | 47,640                | 48,124                | 1.01%                  | 484                   |
| Wood               | 35,293                | 35,630                | 0.95%                  | 337                   |
| Yoakum             | 7,274                 | 7,396                 | 1.64%                  | 122                   |
| Young              | 17,541                | 17,841                | 1.68%                  | 300                   |
| Zapata             | 12,157                | 12,408                | 2.02%                  | 251                   |
| Zavala             | 11,237                | 11,533                | 2.57%                  | 296                   |
| <b>Total</b>       | <b>20,290,711</b>     | <b>20,654,743</b>     | <b>1.76%</b>           | <b>364,032</b>        |

Source: Census 2000 Summary File 100 Percent Data/CurrentStateSum.dat and FinalDSEUS.dat Census files delivered to Census Monitoring Board by Census Bureau 02/16/01 and 02/16/01/neraphl/user/share/C200 Census 2000/Final Report/tables

Note: Calculations apply to the non-group quarters population only.

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**Estimated Rates of Undercount and Numbers of Persons Missed by County-- Virginia**

| <u>County Name</u> | <u>Official Count</u> | <u>Adjusted Count</u> | <u>Undercount Rate</u> | <u>Missed Persons</u> |
|--------------------|-----------------------|-----------------------|------------------------|-----------------------|
| Accomack           | 37,441                | 37,897                | 1.22%                  | 461                   |
| Albemarle          | 77,701                | 78,699                | 1.28%                  | 1,008                 |
| Alleghany          | 12,677                | 12,812                | 1.06%                  | 136                   |
| Amelia             | 11,294                | 11,397                | 0.92%                  | 104                   |
| Amherst            | 29,922                | 30,228                | 1.02%                  | 310                   |
| Appomattox         | 13,570                | 13,703                | 0.98%                  | 135                   |
| Arlington          | 185,295               | 188,839               | 1.89%                  | 3,568                 |
| Augusta            | 63,616                | 64,306                | 1.09%                  | 698                   |
| Bath               | 4,814                 | 4,867                 | 1.10%                  | 54                    |
| Bedford            | 59,995                | 60,599                | 1.01%                  | 611                   |
| Bland              | 6,233                 | 6,298                 | 1.04%                  | 66                    |
| Botetourt          | 29,968                | 30,273                | 1.02%                  | 309                   |
| Brunswick          | 15,518                | 15,650                | 0.86%                  | 134                   |
| Buchanan           | 25,773                | 26,053                | 1.09%                  | 283                   |
| Buckingham         | 13,424                | 13,548                | 0.93%                  | 126                   |
| Campbell           | 50,574                | 51,112                | 1.06%                  | 544                   |
| Caroline           | 21,543                | 21,732                | 0.88%                  | 192                   |
| Carroll            | 28,736                | 29,064                | 1.14%                  | 332                   |
| Charles City       | 6,926                 | 6,969                 | 0.63%                  | 44                    |
| Charlotte          | 12,241                | 12,361                | 0.98%                  | 121                   |
| Chesterfield       | 255,664               | 258,181               | 0.99%                  | 2,550                 |
| Clarke             | 12,340                | 12,482                | 1.15%                  | 144                   |
| Craig              | 5,049                 | 5,104                 | 1.09%                  | 56                    |
| Culpeper           | 32,547                | 32,968                | 1.29%                  | 425                   |
| Cumberland         | 8,981                 | 9,064                 | 0.93%                  | 84                    |
| Dickenson          | 16,258                | 16,435                | 1.09%                  | 179                   |
| Dinwiddie          | 23,535                | 23,758                | 0.95%                  | 226                   |
| Essex              | 9,829                 | 9,919                 | 0.92%                  | 91                    |
| Fairfax            | 959,452               | 971,772               | 1.28%                  | 12,444                |
| Fauquier           | 54,571                | 55,195                | 1.14%                  | 631                   |
| Floyd              | 13,819                | 13,974                | 1.12%                  | 156                   |
| Fluvanna           | 19,116                | 19,302                | 0.97%                  | 188                   |
| Franklin           | 46,240                | 46,738                | 1.08%                  | 504                   |
| Frederick          | 58,423                | 59,089                | 1.14%                  | 674                   |
| Giles              | 16,562                | 16,748                | 1.12%                  | 188                   |
| Gloucester         | 34,446                | 34,809                | 1.05%                  | 367                   |
| Goochland          | 15,475                | 15,612                | 0.89%                  | 139                   |
| Grayson            | 16,754                | 16,944                | 1.14%                  | 192                   |
| Greene             | 15,097                | 15,262                | 1.10%                  | 167                   |
| Greensville        | 8,485                 | 8,552                 | 0.79%                  | 68                    |
| Halifax            | 36,431                | 36,782                | 0.97%                  | 355                   |
| Hanover            | 84,197                | 84,914                | 0.86%                  | 728                   |
| Henrico            | 258,488               | 261,799               | 1.28%                  | 3,345                 |
| Henry              | 57,493                | 58,148                | 1.14%                  | 662                   |
| Highland           | 2,536                 | 2,563                 | 1.08%                  | 28                    |
| Isle of Wight      | 29,548                | 29,829                | 0.96%                  | 285                   |
| James City         | 46,857                | 47,290                | 0.93%                  | 439                   |
| King and Queen     | 6,630                 | 6,686                 | 0.86%                  | 57                    |
| King George        | 16,448                | 16,659                | 1.28%                  | 213                   |
| King William       | 13,047                | 13,165                | 0.91%                  | 120                   |



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**Estimated Rates of Undercount and Numbers of Persons Missed by County-- Virginia (continued)**

| <u>County Name</u>    | <u>Official Count</u> | <u>Adjusted Count</u> | <u>Undercount Rate</u> | <u>Missed Persons</u> |
|-----------------------|-----------------------|-----------------------|------------------------|-----------------------|
| Lancaster             | 11,146                | 11,248                | 0.92%                  | 103                   |
| Lee                   | 23,354                | 23,631                | 1.19%                  | 280                   |
| Loudoun               | 168,748               | 170,706               | 1.16%                  | 1,980                 |
| Louisa                | 25,442                | 25,688                | 0.97%                  | 249                   |
| Lunenburg             | 11,955                | 12,075                | 1.00%                  | 121                   |
| Madison               | 12,301                | 12,436                | 1.10%                  | 137                   |
| Mathews               | 9,138                 | 9,231                 | 1.02%                  | 94                    |
| Mecklenburg           | 30,811                | 31,131                | 1.04%                  | 324                   |
| Middlesex             | 9,673                 | 9,767                 | 0.98%                  | 96                    |
| Montgomery            | 74,469                | 75,518                | 1.40%                  | 1,059                 |
| Nelson                | 14,239                | 14,388                | 1.05%                  | 151                   |
| New Kent              | 13,066                | 13,186                | 0.92%                  | 122                   |
| Northampton           | 12,726                | 12,876                | 1.18%                  | 152                   |
| Northumberland        | 12,247                | 12,354                | 0.88%                  | 109                   |
| Nottoway              | 14,069                | 14,223                | 1.10%                  | 156                   |
| Orange                | 25,394                | 25,673                | 1.10%                  | 282                   |
| Page                  | 22,917                | 23,194                | 1.21%                  | 280                   |
| Patrick               | 19,178                | 19,394                | 1.13%                  | 219                   |
| Pittsylvania          | 61,350                | 61,934                | 0.96%                  | 592                   |
| Powhatan              | 19,898                | 20,051                | 0.77%                  | 155                   |
| Prince Edward         | 15,967                | 16,139                | 1.08%                  | 174                   |
| Prince George         | 28,079                | 28,464                | 1.37%                  | 389                   |
| Prince William        | 278,424               | 282,259               | 1.37%                  | 3,871                 |
| Pulaski               | 34,015                | 34,416                | 1.18%                  | 405                   |
| Rappahannock          | 6,973                 | 7,054                 | 1.16%                  | 82                    |
| Richmond              | 7,057                 | 7,130                 | 1.03%                  | 74                    |
| Roanoke               | 83,522                | 84,424                | 1.08%                  | 913                   |
| Rockbridge            | 20,604                | 20,837                | 1.13%                  | 236                   |
| Rockingham            | 66,162                | 66,955                | 1.20%                  | 801                   |
| Russell               | 28,818                | 29,136                | 1.10%                  | 322                   |
| Scott                 | 23,060                | 23,323                | 1.14%                  | 266                   |
| Shenandoah            | 34,562                | 35,013                | 1.30%                  | 456                   |
| Smyth                 | 31,996                | 32,378                | 1.19%                  | 386                   |
| Southampton           | 15,917                | 16,074                | 0.99%                  | 159                   |
| Spotsylvania          | 89,841                | 90,774                | 1.04%                  | 945                   |
| Stafford              | 90,952                | 91,892                | 1.04%                  | 952                   |
| Surry                 | 6,829                 | 6,886                 | 0.84%                  | 58                    |
| Sussex                | 9,961                 | 10,059                | 0.99%                  | 100                   |
| Tazewell              | 43,779                | 44,278                | 1.14%                  | 505                   |
| Warren                | 31,038                | 31,405                | 1.18%                  | 371                   |
| Washington            | 49,761                | 50,327                | 1.14%                  | 572                   |
| Westmoreland          | 16,613                | 16,784                | 1.03%                  | 174                   |
| Wise                  | 39,012                | 39,468                | 1.17%                  | 461                   |
| Wythe                 | 27,189                | 27,499                | 1.14%                  | 313                   |
| York                  | 55,670                | 56,234                | 1.02%                  | 572                   |
| Alexandria city       | 126,382               | 129,185               | 2.18%                  | 2,819                 |
| Bedford city          | 5,690                 | 5,763                 | 1.28%                  | 74                    |
| Bristol city          | 16,735                | 16,966                | 1.38%                  | 234                   |
| Buena Vista city      | 6,058                 | 6,131                 | 1.21%                  | 74                    |
| Charlottesville city  | 38,217                | 38,936                | 1.86%                  | 724                   |
| Chesapeake city       | 195,070               | 197,477               | 1.23%                  | 2,432                 |
| Clifton Forge city    | 4,083                 | 4,133                 | 1.22%                  | 50                    |
| Colonial Heights city | 16,663                | 16,822                | 0.96%                  | 161                   |

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**Estimated Rates of Undercount and Numbers of Persons Missed by County-- Virginia**

| <u>County Name</u>  | <u>Official Count</u> | <u>Adjusted Count</u> | <u>Undercount Rate</u> | <u>Missed Persons</u> |
|---------------------|-----------------------|-----------------------|------------------------|-----------------------|
| Covington city      | 6,292                 | 6,368                 | 1.20%                  | 76                    |
| Danville city       | 46,732                | 47,363                | 1.35%                  | 638                   |
| Emporia city        | 5,407                 | 5,484                 | 1.42%                  | 78                    |
| Fairfax city        | 20,970                | 21,246                | 1.31%                  | 279                   |
| Falls Church city   | 10,306                | 10,435                | 1.25%                  | 130                   |
| Franklin city       | 8,072                 | 8,179                 | 1.32%                  | 108                   |
| Fredericksburg city | 16,960                | 17,305                | 2.01%                  | 347                   |
| Galax city          | 6,698                 | 6,807                 | 1.61%                  | 109                   |
| Hampton city        | 133,969               | 136,369               | 1.77%                  | 2,417                 |
| Harrisonburg city   | 33,274                | 33,918                | 1.91%                  | 648                   |
| Hopewell city       | 22,026                | 22,364                | 1.52%                  | 341                   |
| Lexington city      | 4,598                 | 4,659                 | 1.32%                  | 61                    |
| Lynchburg city      | 58,718                | 59,503                | 1.33%                  | 793                   |
| Manassas city       | 34,274                | 34,761                | 1.41%                  | 491                   |
| Manassas Park city  | 10,288                | 10,416                | 1.25%                  | 130                   |
| Martinsville city   | 14,728                | 14,917                | 1.28%                  | 191                   |
| Newport News city   | 174,317               | 177,559               | 1.84%                  | 3,264                 |
| Norfolk city        | 211,114               | 215,518               | 2.06%                  | 4,432                 |
| Norton city         | 3,855                 | 3,907                 | 1.35%                  | 53                    |
| Petersburg city     | 32,834                | 33,684                | 2.54%                  | 855                   |
| Poquoson city       | 11,468                | 11,593                | 1.09%                  | 127                   |
| Portsmouth city     | 95,751                | 97,594                | 1.90%                  | 1,856                 |
| Radford city        | 13,046                | 13,284                | 1.80%                  | 239                   |
| Richmond city       | 186,554               | 190,777               | 2.23%                  | 4,247                 |
| Roanoke city        | 92,373                | 93,709                | 1.44%                  | 1,348                 |
| Salem city          | 23,051                | 23,353                | 1.30%                  | 305                   |
| Staunton city       | 21,216                | 21,491                | 1.29%                  | 278                   |
| Suffolk city        | 62,698                | 63,691                | 1.57%                  | 1,001                 |
| Virginia Beach city | 417,574               | 422,701               | 1.23%                  | 5,181                 |
| Waynesboro city     | 19,255                | 19,526                | 1.40%                  | 273                   |
| Williamsburg city   | 7,500                 | 7,606                 | 1.40%                  | 106                   |
| Winchester city     | 22,800                | 23,251                | 1.95%                  | 454                   |
| <b>Total</b>        | <b>6,847,117</b>      | <b>6,938,813</b>      | <b>1.33%</b>           | <b>92,582</b>         |

Source: Census 2000 Summary File 100 Percent Data/CurrentStateSum.dat and FinalDSEUS.dat Census files delivered to Census Monitoring Board by Census Bureau 02/26/01 and 02/16/01/neraphl/user/share/C200 Census 2000/Final Report/tables

Note: Calculations apply to the non-group quarters population only.

## DEMOGRAPHIC ANALYSIS: AN EVALUATION

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The Census Bureau used three methods to determine the nation's population in 2000: the traditional headcount, the post-enumeration survey (Accuracy and Coverage Evaluation or A.C.E.), and Demographic Analysis (DA). The three estimates produced significantly different and confounding results. The divergence among the three — especially, the discrepancy between DA and the A.C.E. — is considered the primary reason the Census Bureau recommended against adjusting the 2000 Census.

### What is Demographic Analysis?

DA is one of the two techniques used by the Census Bureau to measure coverage of Census 2000. DA involves first constructing an estimate of the population using demographic techniques applied to data from sources essentially independent of Census 2000. As described by the Census Bureau, the 2000 DA estimate is computed as:

$$P_{2000} = P_{1990} + B - D + I - E$$

or,

Estimated population at the Census 2000 date ( $P_{2000}$ ) equals

Population at the 1990 Census date ( $P_{1990}$ ) plus

Births during the interval (B) minus

Deaths during the interval (D) plus

Immigrants during the interval (I) minus

Emigrants during the interval (E).

For the 2000 adjustment decision, the Census Bureau constructed DA estimates for the Black and the non-Black populations by sex for four age groups. Then, the estimated net undercount (or overcount) from DA for a group is the difference between the DA estimate and the census count:

$$U_i = P_{i, 2000} - C_{i, 2000}$$

where,

Undercount for group  $i$  ( $U_i$ ) equals

Estimated population in group  $i$  at the Census 2000 ( $P_{i, 2000}$ ) minus

Census 2000 count for group  $i$  ( $C_{i, 2000}$ ).

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<sup>1</sup> The views and opinions expressed are the authors' and do not necessarily represent nor should they be attributed to the Urban Institute, its staff, officers or trustees, or any organizations providing financial support.

Unlike survey-based measures of census coverage, DA does not measure components of census undercount, such as gross omissions and erroneous enumerations, but only the net undercount. In addition, when comparisons are made for subgroups of the population, the DA measure includes not only coverage errors, but also reporting and classification errors. Thus, the reported DA undercounts for race groups include, as part of the census “error,” differences in race reporting between Census 2000 and the historical data used to construct the DA estimate. Similarly, for age groups, the reported DA undercounts include age misreporting as part of the error.

**DA Estimation Methods for 2000.** The DA estimates for 2000 consist of two main “pieces” — the population under age 65 and the population aged 65 and over. The estimates for the older group were constructed with data on the population enrolled in Medicare with a correction for underenrollment. For the population under age 65, the DA estimates begin with the DA estimates for the population under age 55 in 1990 and update the estimates with the following demographic components of population change between April 1, 1990 and April 1, 2000:

- Births, adjusted for underregistration (+);
- Deaths (-);
- Legal immigration, except refugees (+);
- Refugee arrivals (+);
- Emigration of legal foreign-born residents (-);
- Emigration of U.S. natives (-);
- Puerto Rican migration (+);
- Net change in temporary residents, i.e. nonimmigrants (+);
- Net undocumented immigration (+);
- Net civilian citizen migration, mainly government (+);
- Net change in Armed Forces overseas (-).

Most of these components employ the same data used for the Census Bureau’s on-going national estimates program with updates and refinements. (See Robinson 2001b for a description of the DA methods and Robinson 2001c for estimates of the components.) For the preliminary DA estimates initially supplied by the Census Bureau (Robinson 2001a), the population aged 65 and over was estimated with the same component method as the younger group rather than adjusted Medicare data.

Although this description of methods focuses on the change since 1990, the underlying method is actually a good deal more complicated because the 1990 DA estimate is based on a considerable amount of historic demographic data. The DA estimate for ages 65 and over in 1990 is based on Medicare enrollments corrected for underregistration. For ages under 55 in 1990, the DA estimates begin with registered births for 1935–1990 corrected for underregistration using factors derived from birth registration tests conducted for 1940, 1950, and 1964–68. The corrected births are carried forward to 1990 with estimates of the same demographic components noted above covering the period from 1935 through 1990. The intermediate group, ages 55–64 in 1990 begins with corrected births from 1925–1935 for whites, the estimated 1960 population aged 25–34 for Blacks, and an interpolated population estimate in 1990 for the other races. Finally, for undocumented immigrants, an estimate

of the number of residing in the country in 1990 is added, rather than estimating this component for each time interval. (See Robinson et al. 1993.)

**Historical Development of DA.** Demographic estimates of net census undercount were first developed by the Census Bureau following the 1970 Census, for both the 1960 and 1970 Censuses (Siegel 1974). The methods paralleled those described above: (1) births corrected for underregistration from 1935 to 1970, carried forward with demographic components of change; (2) Medicare enrollments corrected for underregistration in 1970 for ages 65 and over, with “backward survival” to 1960 for ages 55 and over; and (3) estimates of the intermediate group aged 35–64 in 1970 using specialized demographic techniques.

Whereas the results from the birth registration tests of 1940 and 1950 had been used to evaluate census coverage for infants, there had not been a full demographic evaluation of census coverage prior to the 1970 Census. Several important developments aided Siegel’s pioneering effort. First, the implementation of the Medicare program in the mid-1960s provided a means for measuring coverage of the population aged 65 and over without relying on historical demographic data from the 19th century and early 20th century, periods when the official U.S. data were incomplete in terms of both geographic and population coverage. Second, newly developed techniques of mathematical population modeling had been applied to historical data for whites (Coale and Zelnik 1963) and for Blacks (Coale and Rives 1973) to provide estimates of population and undercount through 1960 for persons born between 1905 and 1935 (ages 35–64 in 1970). Third, a new birth registration test (U.S. Bureau of the Census 1973) provided evidence to complete the series of births through 1970.

Several gaps remained in the demographic series, but these were deemed to be sufficiently small as to not affect the overall results. Specifically, there were no available measures of undocumented immigration nor were there reliable measures of emigration since the 1950s. However, both of these components were thought to be small and, further, were thought to approximately offset one another. Subsequent research proved those assumptions to be essentially correct.

Following the 1970 Census, Census Bureau demographers worked within the framework of the estimates developed by Siegel and introduced a number of improvements and refinements. In developing the estimates for the 1980 Census, Passel and Robinson were able to “backwards survive” the DA estimates to 1950 and 1940 (Fay et al. 1988). This work provided a consistent, integrated set of demographic population and undercount estimates for every census since 1940. With the complete series of estimates, Passel (1991) and Robinson et al. (1990) introduced some further corrections to estimates for Blacks born between 1935 and 1945.

In comparison with the estimates for the intermediate cohorts (i.e., born before 1935), the Medicare-based estimates for the elderly and the birth-based estimates for the younger age groups (born since 1935) are thought to be more reliable because they draw on more recent data and fewer mathematical models. The simple passage of time has lessened the importance of these middle age groups, limiting them to ages 45–64 in 1980, ages 55–64 in 1990, and eliminating the need for them entirely in 2000. In addition, further research and comparisons with the Medicare-based estimates permitted the substitution of estimates based on births for whites between 1925 and 1935 (Whelpton 1950) into the estimates for 1990.

The emergence of large-scale undocumented immigration in the 1970s greatly complicated DA because the assumption of offsetting emigration and undocumented immigration was no longer satisfactory. This component remains the most elusive and, with emigration, is at the heart of much of the

uncertainty surrounding DA estimates of coverage for recent censuses. The initial DA estimates undercount for 1980 showed no “measured” undercount in large part because DA assumed that there were no undocumented immigrants in the country or in the 1980 Census (Fay et al. 1988). Subsequent work by Warren and Passel (1987) showed that about *2 million undocumented immigrants* were included in the 1980 Census. Ultimately, the DA estimates for 1980 included about 3 million undocumented immigrants (Fay et al. 1988). As will be discussed below, the uncertainty in the estimate of this population for 1990 at 3.3 million (Robinson et al. 1993) and for 2000 remain the major issue in resolving the discrepancy between the DA and A.C.E. estimates for Census 2000.

## Demographic Analysis Results

**Historical Results for 1940–1990.** Table 1 displays the DA estimates of census coverage for 1940 through 1990. The DA estimates show a steady pattern of improvement in census coverage from 1940 (5.4 percent net undercount) through 1980 (1.2 percent) but a worsening of coverage in 1990 (1.8 percent). The same pattern of change is apparent for both the minority Black population and the balance of the U.S. population (largely the majority white population). However, the difference in undercoverage between the Black and non-Black population shows no such trend; in fact, the 4.4 percentage point difference in coverage in the 1990 Census is the highest shown.

The series of undercount estimates from DA show other strong and persistent patterns over the series of six censuses. Undercount rates for males have been generally higher than for females. For Blacks, the male-female difference has been in the range of 4-6 percentage points; for non-Blacks, the difference was less than 1 percentage point through 1960 and has gradually widened to about 1.4 percentage points (Robinson et al. 1993: Table 2). For both groups, the principal source of the sex differentials is significantly higher undercount rates for adult males (roughly ages 25–64). Undercount rates for the youngest children (under age 5) tend to be high and did not experience any reduction from 1970 through 1990. For older children, each successive age group through 15–19 years has a lower undercount rate than the next younger one.

**Preliminary Results for 2000.** The initial DA estimate for 2000 showed a total population for the United States of 279.6 million. This figure was about 1.8 million *lower* than the census count of 281.4 million, implying an *overcount* of 0.65 percent. In other words, according to the DA estimate, Census 2000 counted more people than there were in the country. This result was inconsistent with the A.C.E. results which showed a total population of 284.7 million or an *undercount* of 3.3 million or 1.13 percent (Table 2). Both the A.C.E. and preliminary DA suggested a reduction in the undercount rate for the Black population. Further, according to both measures the difference in undercount rate between the Black and the non-Black populations was in the 1–2 percentage point range, a difference considerably smaller than in previous censuses.

The nature of the inconsistency between the A.C.E. and DA differs considerably from previous censuses. The Census Bureau has conducted coverage measurement surveys in conjunction with the censuses of 1950 through 1990 although none was as extensive as the A.C.E. Historically, the difference in measured undercount between DA and the coverage measurement surveys was not nearly as large as the difference between the preliminary DA results and A.C.E., generally only a few tenths of a percentage point, not almost 2 percentage points, and never approaching 5 million people. Further, the coverage measurement surveys tended to produce *lower* undercount estimates than DA, a pattern usually attributed to correlation bias in the surveys and/or their inability to reach all segments of the population. One pattern from previous studies did occur in 2000. The coverage measurement surveys in

the past have not found a significantly higher undercount rate for adult males than adult females, especially among the Black population — a persistent pattern in the DA estimates that is strongly supported by sex ratio analyses (Robinson et al. 1993). In the preliminary DA estimates for 2000, Black males aged 18–49 had an undercount rate almost 8 percentage points higher than Black females. In the A.C.E., the difference was only about 1 percentage point.

The Census Bureau's investigation of the A.C.E.-DA discrepancy has included studies of both DA and A.C.E.. Several indications in analysis of the DA results pointed toward problems in measuring some components of immigration, particularly undocumented immigration (Robinson 2001b). In addition, a smaller share of the difference may also be related to the adjustments for undercoverage in the Medicare data. Ultimately, the Census Bureau was unable to reconcile the difference of 5.1 million between the two estimates to its satisfaction. The low DA estimate proved to be a significant factor, perhaps the most significant factor, in the recommendation not to employ an adjustment based on the A.C.E.. Below are possible modifications to the DA estimates based on current research on measuring immigration. The results suggest that DA and A.C.E. are considerably more consistent with one another than the initial analyses suggest. Finally, some recommendations for future work at the Census Bureau are presented.

### **Strengths and Weaknesses of Demographic Analysis**

Demographic Analysis does not merely measure census coverage. Rather, it provides a structured estimate of the U.S. population classified by age, sex, and race. Further, it provides this information at different points in time, not just the census date. Thus, if a discrepancy arises between the DA estimate and other measures or between DA and expected patterns, the inherent demographic structure both across time and across the population provides a means for assessing the source of the anomaly and either explaining or resolving it.

In contrast, coverage measurement surveys provide considerably more detail about census coverage, especially in terms of geographic variation, components of under- and overcounts, and for groups defined by social or economic rather than basic demographic characteristics. However, each coverage measurement survey is an entity unto itself. There is no necessity that results are consistent across space and time. (In fact, they tend not to be because of variations in survey operations and improvements in survey and matching methods.)

The demographic structure inherent in DA also means that some measures from DA are considerably more robust than equivalent measures from the census or A.C.E.. For example, the sex ratio in an age group (i.e., the ratio of males to females or males per 100 females), is a function of the sex ratio of the group at birth, changes since birth attributable to sex differences in mortality, and changes driven by migration. The sex ratio at birth varies little over time (and somewhat more across race groups). For young cohorts especially, mortality-induced changes in sex composition tend to be small and predictable in size and direction; the latter is true in general for all cohorts. Similarly, migration changes are limited by the magnitude and sex balance of migration. Thus, sex ratios from DA are relatively robust with respect to estimation problems. Further, differences between adjacent age groups are constrained to be small by the continuous nature of demographic change. These structural limitations make sex ratio analyses extremely useful in identifying both coverage differences in the census and potential measurement problems in the A.C.E. (See Passel 1993 for further discussion of these issues.)

The limitations of DA generally have to do with the ability to produce precise estimates, that is estimates with relatively small bands of error, rather than the ability to produce accurate or unbiased estimates. Because the ultimate purpose of DA is the assessment of census coverage, the DA estimates must conform to categories available in the census. Further, because it is the difference between the DA estimate and the census that is important, the potential error in the DA estimate must be smaller than this difference.

Demographers are generally able to produce estimates for any demographic group or any level of geography. For example, the Census Bureau produces monthly estimates of the U.S. population by age and sex for four major race groups (white, Black, American Indian and Alaska Native, and Asian or Pacific Islander) and for the Hispanic and non-Hispanic population. In addition, it produces annual estimates for states with the same demographic detail as well as annual population estimates for every county and almost all places in the country. Nonetheless, in producing estimates of census coverage with demographic techniques, the Census Bureau uses only two race groups — Black and non-Black — and produces only national estimates. This limitation is related to the ultimate purpose of the measurement, comparison with the census. The Census Bureau, thus, recognizes that estimating population for subnational levels of geography requires measuring internal migration and locating the destinations of immigrants, factors that generally have larger ranges of variation (and larger errors) than the potential undercounts. For alternative race groupings (beyond Black and non-Black), the estimates suffer from other measurement limitations (discussed below).

The Census Bureau has attempted to assess the degree of potential error in the DA estimates and to provide measures somewhat analogous to statistical confidence intervals. (See Robinson et al. 1993.) These measures have focused on the problems in measuring each of the various components of population change and the ability to reduce errors in measurement. As such, they have produced some useful results. However, the measures are limited. The lack of fully appropriate models of estimation error tends to produce intervals that are too narrow, thus, implying more precision in the DA estimates than may actually exist. On the other hand, none of the current models fully incorporate the robustness implied by demographic structures relating to age and sex composition. This factor works in the opposite direction and leads to intervals that are too wide, thus understating the precision in the demographic estimates.

**Current and Future Limitations.** Changes in the demographic composition of the U.S. population over the last generation have made the development of DA estimates of census coverage more difficult and introduced new limitations. Since the 1950s, the racial/ethnic composition of the country's population has changed considerably. In 1950, the United States was basically a "Black and white" country with the "majority" population (i.e. white non-Hispanic population) representing just under 90 percent of the population. Blacks were about 10 percent of the population and represented almost 90 percent of the racial/ethnic "minority" population (Passel and Edmonston 1994). By 2000, the white non-Hispanic population accounted for less than 70 percent of the population and Blacks represented only about 40 percent of the minority population. Aside from the measurement difficulties induced by these changes (discussed below), the compositional factors mean that the difference between Black and non-Black undercount rates, the central comparison available from DA, is no longer a comparison of the undercount of virtually all of the racial/ethnic minority population with the undercount of the majority population. In fact, according to the results from Census 2000, between 20 and 25 percent of the DA non-Black population consists of racial/ethnic minorities.



Changing definitions and conceptions of race and ethnicity together with increasing prevalence of marriage and childbearing across racial/ethnic lines has further complicated the construction and interpretation of DA estimates. Because DA uses historical data on births, deaths, and immigration, the categories of the estimates are limited by the available data. Further, comparisons with census figures must be for groupings that are the same or nearly the same; if the comparison groups are defined differently, then one component of the difference, and possibly a major component, is definitional change. Complicating such comparisons even more is the new method of collecting race data in Census 2000 which allows respondents to select more than one race, an option that was not available when the historical series of birth and death data were collected.

Intermarriage rates are particularly high for the Hispanic and American Indian populations with moderate levels in the Asian population (Edmonston et al. 2000). Further, intermarriage rates and multiracial childbearing for Blacks have increased considerably in the last 30 years. As recently as 1970, only about 1–2 percent of births with one Black parent had a non-Black parent; during the 1990s, this figure was in the 10–15 percent range. In Census 2000, almost 5 percent of respondents identifying as Black also gave another racial response. For DA, these patterns introduce a considerable amount of uncertainty as to whether individuals classified as Black in the historical statistics on births are identifying themselves as Black in Census 2000 and, conversely, whether the Black population as measured by Census 2000 is accurately represented by the historical time series. As difficult as these issues are for the Black population, they loom considerably larger in trying to measure census coverage of the American Indian and Asian populations with demographic techniques. In fact, application of DA to the American Indian population shows that most of the increase in the American Indian population between 1960 and 1990 was attributable to “non-demographic” factors such as individual changes in racial identity and classification (Passel 1996). In response to measurement problems such as these, the Census Bureau groups the American Indian and Asian populations together with whites in the DA estimates even though all of the requisite data on demographic components are produced for all of the race groups.

Measurement of the Hispanic population encounters similar difficulties but is further complicated by the fact that the definition of this group is separate from racial classifications. National data on the components of population change for Hispanics (e.g., births and deaths) are not complete until the 1980s. Consequently, a full demographic estimate is not possible for this group using the same methods as for race groups. An additional complication for DA is introduced by the response patterns of Hispanics to the race item in Census 2000. Almost 15 million Hispanics or more than 40 percent of the Hispanic population did not select one of the specific races listed but chose the “other” category. In historical vital statistics data, there is no such category. Thus, to make the census data consistent with the DA categories, it is necessary to “re-cast” or reclassify the census data. This reclassification involves not only choosing how to assign persons who gave more than one race response, but also how to assign specific races to the persons choosing “other” race. The choice of reclassification method can obviously have an impact on the measured undercount. For the DA comparison, the Census 2000 Black population is 37.1 million or about 700,000 persons more than the figure used for the A.C.E. comparison (Table 2). From a measurement perspective, none of the race classification issues is fatal. In particular, they have no impact on the measured population total (or the age-sex totals). They do, however, affect the race group comparisons by introducing more imprecision into the population estimates, the modified census totals, and the undercount measures. Further, by using reclassified census populations for DA, the undercount estimates from DA do not relate to any of the populations appearing in standard tabulations or publications.

**Immigration in Demographic Analysis.** The generational changes in the U.S. population noted above are related to substantial increases in the level of international migration and the origins of the migrants over the last three decades. Measuring immigration flows accurately and completely has become a critical factor in demographic analysis where it was not in 1970. According to the 1970 Census, there were fewer than 10 million immigrants living in the country, accounting for less than 5 percent of the U.S. population (Passel and Fix 2001); further, the foreign-born population had changed little since 1940, *decreasing* slightly. By 2000, the immigrant population had reached 30 million and represented about 11 percent of the population. Even more important for DA, the role of immigration in population change had grown substantially. The total number of births during the 1960s and the 1990s was about the same — just under 39 million registered in the 1960s versus a little over 40 million in the 1990s. However, the magnitude of immigration flows differed considerably. The 1970 Census included about 3 million immigrants who had arrived in the 1960s. In contrast, the Census 2000 Supplementary Sample (C2SS) has more than 13 million immigrants who arrived in the previous 10 years. Obviously, accurate measurement of immigration flows is much more critical to assessing the size (and composition) of the U.S. population in 2000 than it was when DA was first developed.

Further complications are introduced into DA by the nature of the immigration flows and the data available. By the 1990s, a significant portion of immigration was occurring outside of the normal process of admitting legal immigrants and refugees for permanent residence in the United States. The best known and most important aspect of this problem is undocumented immigration. According to the Census Bureau's estimates used in the preliminary DA, more than 25 percent of immigrants arriving during the 1990s were undocumented. This figure is clearly too low; from the data presented below, a better estimate would be 40 percent. Regardless of the exact figure, it is clear that this one component introduces a considerable amount of uncertainty and imprecision into the DA estimate. In contrast, the best available evidence suggests that virtually none of the immigrants enumerated in the 1970 Census were undocumented (Passel 1999).

Another less well-known measurement problem concerning immigration surrounds aliens admitted on a temporary basis for residence in the United States, known as “nonimmigrants” in the terminology of the Immigration and Naturalization Service (INS). The nonimmigrant population includes foreign students and various kinds of “guest workers” such as specialized technical workers (H-1B visas), intracompany transfers (L-1), and agricultural workers (H-2A). The number of nonimmigrant admissions and the resident nonimmigrant population have grown considerably during the last decade. Unfortunately, there is only a small amount of data on these groups and there are no “official” estimates of the number of residents made by any agency (Passel 1997). In the preliminary DA estimates, the Census Bureau allows for increases during the 1990s in the number of H-1B workers and the number of foreign students (F-1 visas), but omits a considerable number of legal temporary aliens, at least hundreds of thousands and possibly more.

Yet another complication relates to the assignment of immigrants to race groups. Most of the data on immigration comes from INS information on the number of legal immigrants admitted. These data are classified by country of birth, but not by race. The Census Bureau assigns the legal immigrants to race groups based on responses from the previous census or more recent data, if available. For other immigrant groups, similar procedures are used. Thus, not only are some of the immigration statistics quite old, they all suffer because the race classification is not based on responses from the immigrants themselves.

The difficulties surrounding measurement of immigration obviously have seriously affected the quality of the DA estimates. All of these issues affect the precision of the DA estimates because they introduce potential sources of error in classification. In addition, unlike many of the limitations noted above, problems related to measuring immigration can bias the DA estimates. In the case of the preliminary estimates, underestimation of immigration has led to underestimating the overall level of the undercount. Below, we assess the potential impact of this understatement.

### **Alternative Measures and Impact on Demographic Analysis**

In its “Report of the Executive Steering Committee for Accuracy and Coverage Evaluation Policy (ESCAP)” and the supporting Memorandum B-4 on “Accuracy and Coverage Evaluation: Demographic Analysis Results” (Robinson 2001b), the Census Bureau focused its primary attention on the measure of undocumented immigration during the 1990s. Comparison of the DA components with research results on immigration flows strongly supports the view that the Census Bureau underestimated undocumented immigration during the decade, possibly by a substantial amount. In addition, there is direct as well as indirect evidence that the DA assumptions understated other immigration components, but to a lesser degree than undocumented immigration.

This section includes a discussion of the various immigration components and suggests corrections based on available research. In addition, some estimation issues on other components are presented. Correcting the estimate of net undocumented immigration during the 1990s increases the DA estimate by 2.6 million. Two other changes to the immigration components add another 750,000 to the DA estimate from the legal nonimmigrant or temporary immigration flow (500,000) and the entry of legalized farmworkers (250,000). In addition, there are indications that the estimate for the elderly population based on Medicare data adjusted for underregistration could be too low by 500,000. Taken together, these corrections add 3.9 million or possibly more to the DA estimate of the total population, bringing it to 283.5 million (Table 5). With these assumptions, DA shows an undercount of 2.1 million or 0.7 percent (Table 6). This estimate differs by about 1.2 million or only 0.4 percent from the A.C.E. estimate, a figure only slightly greater than the DA-PES difference in 1990.

**Undocumented Immigration.** The base DA estimate implicitly assumes that there are 6.1 million undocumented immigrants living in the United States as of April 1, 2000 — 3.3 million from the 1990 DA estimate plus a net increase during the 1990s of 2.8 million. The net increase, based on the work of Warren (1997), is extrapolated from trends for 1992–1996 and assumes an annual net increase of 281,000 for 1990–1992 and 275,000 for the rest of the decade (Robinson 2001b). In its report on DA, the Census Bureau produced an “alternative” DA estimate that arbitrarily doubled the increase in undocumented immigration during the 1990s (Robinson 2001b). This alternative figure produced population estimates that were more consistent with the A.C.E. results, but the Census Bureau did not adopt the alternative because it had not developed empirical evidence to support the higher figure. Although the Bureau’s lower estimate of undocumented migration comported well with what had been a widely-accepted consensus on the “conventional wisdom” regarding the numbers of undocumented immigrants, at least through September or October 2000, *data available from several sources since then supports a significantly higher estimate.*

**Residual Estimates of the Undocumented Population.** Virtually all of the estimates of the size of the undocumented immigrant population currently available use some form of residual estimation. (See Passel 1999 for a discussion of the method and some examples. See also Bean et al. 2001 and Warren 2000 for variants.) This method basically involves making an estimate of legal foreign-born residents

and subtracting it from a measure of the total foreign-born population, usually measured with a survey or census. The difference (or residual) is treated as an estimate of the undocumented population. Variations on the method involve different definitions and computations for the legal population and assumptions regarding the coverage of the legal and undocumented populations in the census or survey.

The residual method employs data on the foreign-born population classified by country of birth and period of entry, and ideally by age and sex. Generally, the most detailed and best data for such estimates come from the decennial census itself. Since the sample data from Census 2000 will not be available until 2002, alternative data sources are necessary. The principal data now available for measuring undocumented migration come from the March Supplements to the Current Population Survey (CPS). For evaluating Census 2000, the March 2000 CPS Supplement has been available since October 2000. However, the March 2000 CPS is weighted to population estimates very similar to the preliminary DA estimates. As such, the survey does not adequately represent the population enumerated in Census 2000, particularly for the Hispanic and Asian populations that are immigrant-dominated. For purposes of measuring undocumented immigration, the population weights for the March 2000 CPS have been adjusted to agree with the appropriate population figures from Census 2000.<sup>2</sup>

Another useful data source is the Census 2000 Supplementary Survey (C2SS). C2SS is a 700,000 household survey that was conducted during 2000 using essentially the same questionnaire as Census 2000. This survey is weighted to agree with the household population from Census 2000 on a state-by-state basis. Because the C2SS sample is almost 15 times the size of the CPS, the age-sex-country detail from this survey is potentially a much better representation of the population than the CPS. Unfortunately, the C2SS data currently available outside the Census Bureau are quite limited — the foreign-born population by citizenship for states is cross-classified separately by period of entry and by region of birth, but not by both and not by country of birth. For the analysis presented here, the publicly-available data from C2SS are combined with tabulations from the re-weighted March 2000 CPS to provide more detailed data.

**Estimates of Legal Residents.** The legally-resident immigrant population for April 2000 is estimated by carrying forward the legally-resident population of March 1995 with demographic components of change.<sup>3</sup> This initial population is subdivided by 35 countries and regions of birth, six periods of entry (1990–1995, 1985–1989, 1980–1984, 1975–1979, 1970–1974, pre-1970), five-year age groups, and sex for the six largest immigrant states (California, New York, Texas, Florida, Illinois, New Jersey, and the balance of the country). New immigrants are added each year; the total is the number of refugee and parolee arrivals derived from Office of Refugee Resettlement (ORR) data plus the number of INS admissions of legal permanent residents, excluding those who have already been counted as refugees or parolees. INS data on date of arrival, state of intended residence, age, and sex by coun-

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<sup>2</sup> The Census Bureau reweighted the March 2000 CPS using Census 2000 data for its ESCAP evaluation (Robinson 2001a), but did not use it in re-estimating undocumented immigration flows. The Bureau did not release either the weights or the necessary tabulations until August 20, 2001 — too late to be used for this report. The analysis in this report is based on reweighting done according to Census Bureau specifications using approximations to the required population totals based on available data from Census 2000 and other Census Bureau estimates (Passel 2001a). Comparison of the approximation to the Census Bureau's weights shows that the two data sets are extremely close. The foreign-born populations differ by only 5,000 persons or about .02 percent% — 30.081 million from the Census Bureau versus the approximation of 30.087 million. Differences for specific countries and periods of entry also tend to be small in

<sup>3</sup> See Passel 1999 for a detailed description of the 1995 estimate and data used to develop it. Passel 2001b contains a more detailed description of the estimation techniques and components of change for 1995–2000, but percentage differences are larger; none of the differences are substantively important for the estimates presented here.

try of birth are used to distribute the new arrivals across the demographic-geographic categories. Deaths are estimated for each year with race-specific life tables and emigration is estimated by applying a set of age-specific emigration rates derived from the work of Ahmed and Robinson (1994). Finally, movement of legal immigrants between states is estimated using in- and out-migration rates and the age distribution of interstate migrants derived from annual CPS data (Passel and Zimmermann 2001). The estimated legally-resident immigrant population in April 2000 is about 22 million (Table 3, row *d*).<sup>4</sup>

The next step in the estimation procedure is to determine the number of legal foreign-born residents who are represented in the surveys (March 2000 CPS, reweighted March 2000 CPS, C2SS). This step requires measuring or estimating the coverage of legal immigrants. Because there are no direct measures of coverage of immigrants, legal or otherwise, it is necessary to introduce some assumptions. The basic premise is that recently-arrived legal immigrants are more likely to be missed than the general population because of language difficulties, fear or discomfort of governmental contact, and less regular living conditions. (See also Bean et al. 2001) Accordingly, the undercount rates assumed for legal immigrants are a multiple of the appropriate age-sex-race specific undercount rates estimated from the 2000 A.C.E. for Hispanics, Blacks, whites, and Asian/Pacific Islanders combined.<sup>5</sup> Immigrants arriving in the 1990s are assumed to have undercount rates equal to 1.5 times the A.C.E. rates; those arriving in the 1980s are assigned the A.C.E. undercount rates. With these assumptions, immigrants arriving after the mid-1970s have an undercount of about 1.5 percent in the data systems (Table 3, row *e*).

**Undocumented Immigrants Enumerated.** The foreign-born population in the CPS or census includes three different populations: (1) enumerated legal residents, estimated with the methods described above; (2) enumerated legal temporary foreign-born residents or legal nonimmigrants; and (3) enumerated undocumented immigrants. The number of legal temporary residents enumerated is estimated by matching the characteristics of CPS respondents, such as date of arrival, occupation, and living arrangements with the legal requirements for various nonimmigrant visa categories (Passel and Clark 1998). Individuals in the CPS who appear to meet the admission criteria are assumed to be legal nonimmigrants. Based on these procedures, the March 2000 CPS is estimated to contain about 842,000 legal nonimmigrants and the reweighted March 2000 CPS, about 900,000 (Table 3, row *b*). These detailed methods cannot be applied to the C2SS yet, because the requisite public-use data on individuals have not been released. For the estimates presented here, the C2SS is assumed to contain somewhat more legal nonimmigrants than the CPS because of better outreach and housing unit coverage, or just over 1.0 million (Table 3).<sup>6</sup>

The number of undocumented immigrants represented in the CPS or C2SS is computed as the total foreign-born population from the survey minus the estimate of legal immigrants enumerated minus the estimate of legal temporary residents enumerated. For the March 2000 CPS, the

<sup>4</sup> The estimates of legal foreign-born residents in 2000 differ for comparison with each data source. The component estimation procedure described in the text is used only for immigrants arriving after the mid-1970s. For earlier arrival cohorts, the number of legal residents in 2000 is assumed to be equal to the number in the survey. In other words, the procedure assumes that of immigrants who came to the country before the mid-1970s, none remains in an undocumented status in 2000.

<sup>5</sup> Rates for race groups are for non-Hispanics. Each country or region of birth is assigned rates for a race/Hispanic group based on the predominant race/Hispanic group in the CPS data.

<sup>6</sup> The C2SS figures for legal nonimmigrants are assumed to be 20 percent higher than the reweighted CPS for those entering from 1995–2000 and 10 percent higher for those entering before 1995. It is important to stress that these estimates are for legal nonimmigrants represented in the survey, not the total number in the country. For DA estimates of census coverage, the latter figures are required, however.

method yields an estimate of 5.9 million undocumented immigrants included in the survey. For the reweighted CPS, the estimate is considerably larger at 7.3 million. The reweighted estimate is 1.4 million larger because the overall foreign-born population is almost 1.7 million. Finally, the still larger foreign-born population in the C2SS yields an even larger estimate of undocumented immigrants enumerated in the survey — 7.9 million. In all of the various estimates, more than 50 percent of the enumerated undocumented immigrants are from Mexico (Table 3).

**Total Undocumented Population and Change Since 1990.** The procedures outlined to this point yield an estimate of the undocumented population in the CPS or C2SS, but the DA estimates require an estimate of the total number of undocumented immigrants in the United States, not just the number in the survey. To arrive at such an estimate, it is necessary to know what proportion of the undocumented population appears in the survey. Again, without direct measures of coverage for this group it is necessary to use indirect measures or assumptions based on other evidence. Recent studies (reported in Bean et al. 2001, Van Hook and Bean 1997) using data from Mexico and other sources, suggest that omission rates for undocumented immigrants are approximately three times that of legal immigrants. The estimates shown in Table 3 assume that undercount rates for undocumented immigrants entering in the 1990s are three times the corresponding rates for legal immigrants; for those entering in the 1980s, twice the rate of legal immigrants. For the CPS-based estimates, age-sex specific rates are computed with these assumptions; for the C2SS estimates, the period-specific rates from the CPS estimates are used because detailed information by age and sex is not available. These assumptions imply that 8–12 percent of undocumented immigrants are missed by the CPS and C2SS (Table 3, row *i*).

From the C2SS, these methods yield an estimate of 8.6 million undocumented immigrants in the United States. From the CPS, the estimates are lower — 6.6 million from the March 2000 CPS and 8.3 million from the reweighted CPS. Both the reweighted CPS and C2SS yield estimates that are considerably higher than the estimate implied by DA of 6.1 million.

The component actually used in the DA estimates is “change in the undocumented population since 1990,” so the estimated undocumented population in 1990 of 3.3 million (Woodrow 1991) must be subtracted from the estimates for 2000. For the “base DA” estimates, the Census Bureau incorporated estimated change of just less than 2.8 million people. The C2SS estimates imply almost twice as much change in the undocumented population during the decade or 5.3 million and the reweighted CPS implies 5.0 million.

Refinement of the DA estimates for the undocumented immigration component also requires changing the age-sex structure of “net undocumented immigration.” The figures used in DA assume that the age-sex distribution of undocumented immigrants is the same as “persons who acquired legal status under the provisions of the Immigration Reform and Control Act (IRCA)” of 1986 (Robinson 2001b). While this is a reasonable assumption for the characteristics of *undocumented immigrants entering the country*, it fails to recognize the demographic properties of the actual DA component. The DA component should represent *change in the undocumented population*, not the number of new undocumented immigrants. As undocumented immigrants get older, many either leave the United States, die, or transition to the legal immigrant population. All of these demographic changes should be included in the DA component conceptually, but are omitted from the actual DA component. The correct basis for estimating the DA component is to take the difference in the estimates undocumented immigrant population at two points in time on an age-by-age basis. Table 4 shows the results of such a calculation based on the estimated undocumented immigrant population for 2000. Even if the

level of change incorporated in DA were maintained, the appropriate estimation methodology yields a substantially larger change for the groups aged 18–29 years in 2000 and much smaller changes for ages 30–49 years and 50 years and over; in fact, for the oldest age group, the change in the undocumented population should be negative. These changes bring both the DA estimates and the Census Bureau’s postcensal estimates more in line with the Census 2000 and A.C.E. results by reducing the extremely large shortfall in the estimates at young adult ages for Hispanics (Robinson 2001b).

While it is likely that a full analysis of the long-form data from Census 2000 will yield better estimates of the undocumented population than either the CPS or the C2SS, there is no reason not to incorporate these new results into DA since they are based on empirical analysis of data through the year 2000 whereas DA assumptions are extrapolations based on data through 1996 only. ***Incorporation of the C2SS-based estimate into DA reduces the discrepancy between DA and A.C.E. by about half.***

**Temporary Migrants.** There is a large, but unknown number of foreign-born persons living in the United States legally with temporary visas. According to the residence rules used in the census, many of these individuals should be enumerated in the census and, in fact, many are. For DA, it is necessary to determine which categories of nonimmigrants are to be considered U.S. residents and estimate the number in the country for each category. The DA estimates for 2000 incorporate 1990–2000 change for two large groups of nonimmigrants — foreign students (F-1 visa holders) and the “hi-tech guest workers” (or H1-B visa holders). Both groups grew substantially during the 1990s and the DA estimates incorporate estimated change of 374,000.<sup>7</sup>

While these estimates seem accurate, they omit a number of potentially significant categories. The major categories of nonimmigrants which could possibly account for a significant number of U.S. residents include:

- A (foreign diplomatic personnel)
- E (treaty traders & investors)
- G (international organizations or foreign governments)
- H-1A (registered nurses)
- H-2 (temporary workers)
- J-1 (exchange visitors, including)
  - Physicians
  - Scholars
  - Au pairs
  - Exchange students

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<sup>7</sup> The estimates for foreign students are based on data from the Institute of International Education (2001) and for H-1B visa holders on the work of Lowell (2000).

L-1 (intracompany transfers)

N (NATO workers)

O-1 (workers with extraordinary ability or achievement)

P-1 (internationally recognized athletes or entertainers)

Q-1 (cultural exchange)

R-1 (religious workers)

T (NAFTA workers)

Dependents of principals in these and other various visa categories

One indicator of growth is the increasing number of admissions of nonimmigrants. Between 1990 and 1998, *annual* admissions other than tourists, students, and H-1B's grew by 75 percent from 750,000 to 1.3 million. A basic problem in estimating the nonimmigrant population is that while INS counts admissions by visa category, it does not keep track of departures from the country, transitions to other categories, or multiple arrivals of the same individual.

There are no widely-accepted estimates of nonimmigrants or techniques for developing them. One possible approach uses INS information on duration of stay of departing nonimmigrants (INS 1996) to translate the arrival data into estimates of the number of nonimmigrants residing in the U.S. long enough to be considered U.S. residents for census purposes (generally 6 months or more). Applying the proportions of these longer-term stays from the INS study to admissions for 1990 and 1998 and then extrapolating to 2000 yields an estimate of approximately 500,000 additional U.S. residents in 2000 beyond the DA assumptions. More up-to-date and more detailed data might yield different estimates, but the base DA assumption of no change in the nonimmigrant population since 1990 other than students and H-1B workers is clearly too low and larger numbers should be incorporated into the DA estimate.

In addition to the proposed revisions for additional *change* in the nonimmigrant population between 1990 and 2000, it is possible that the estimate of the resident nonimmigrant population in 1990, the base for the 2000 DA estimate, is too low. To derive the total number of nonimmigrants residing in the country in 1990, the Bureau apparently used the work of Word (1995) who estimated that the 1990 Census included approximately 450,000 legal nonimmigrants. As an estimate of the total resident nonimmigrant population, this figure could be low by several hundred thousand, because it represents those counted in the census. If this is indeed the source of the DA estimate for 1990, then both the 1990 and 2000 DA estimates would need to be increased. The alternative DA estimates presented below do not deal with this component because the evidence supporting a revision is not compelling enough to warrant an increase in the estimate at this.

**Legal Immigration and Emigration.** Every one of the components of immigration poses measurement problems for DA, but net undocumented immigration and legal temporary residents appear to be the ones with the largest measurement problems during the 1990s. There are two others that bear mentioning, however: legal emigration and another that the Census Bureau has not included in its estimates at all, movement of persons admitted for residence but not living in the United States. The lat-



ter is particularly problematic for base DA estimates. Research conducted by Mexican and U.S. demographers for the Mexico-United States Binational Migration Study showed that the number of Mexicans living in the United States as legal residents increased during the 1990s more than indicated by data on legal admissions. (See Bean et al. 2001.) This increase occurred because many Mexicans who were granted the right to become legal U.S. residents as a result of the Immigration Reform and Control Act of 1986 actually lived in Mexico when they acquired legal U.S. residency. This phenomenon was especially prevalent among the special agricultural workers (SAWs) who did not have to prove that they had *lived* in the United States, but merely had to show that they had *worked* in U.S. agriculture for 90 days to acquire temporary legal status. Approximately 900,000 of the 1.1 million SAWs who eventually acquired legal status were from Mexico.<sup>8</sup>

For the residual estimates, what is required is an estimate of the number of SAWs residing legally in the United States at the time of the estimate. Without firm data, many analysts employed a range of assumptions for this group and most assumed that a significant fraction of the Mexican SAWs, possibly as many as half of them, did not live in the United States in the late 1980s or early 1990s (e.g., Woodrow 1991; Woodrow and Passel 1990; Clark et al. 1994). More recently, studies conducted in Mexico have supplied more definitive information on SAWs, specifically the number living in Mexico and, by extension, the number living in the United States. Bean et al. (2001) place the number of Mexican SAWs in the U.S. in the mid-1990s at 580,000–690,000. These figures imply larger numbers than were included in the DA estimates for 1990 (Woodrow 1991). This increase is not accounted for in any of the other components of DA. Thus, the DA estimates for 2000 are too low by the increase in the number of Mexican SAWs residing in the United States since 1990; there should include an allowance for this component in DA. The available evidence puts this increase at about 250,000 for the decade of the 1990s.<sup>9</sup>

The DA estimates of legal emigration are computed by multiplying a set of age-specific emigration rates times the estimated legal foreign-born population. The emigration rates used are derived from the work of Ahmed and Robinson (1994) for the 1980s. This method, then, assumes implicitly that the rate of emigration from the U.S. for legal immigrants remained the same during the 1980s and the 1990s. Evidence to validate this assumption is essentially lacking. However, given the very strong U.S. economy of the mid-to-late 1990s and the indications of increased attractiveness of the U.S., as evidenced by the greatly increased level of undocumented immigration, it would seem reasonable that emigration rates could have *decreased* during the 1990s. A decrease in the estimate of emigration leads to an increase in the DA estimate of the population. If emigration rates during the 1990s were only 10 percent less than in the 1980s, then the DA estimate in 2000 would increase by 270,000. Because of the more speculative nature of potential changes in the emigration component, they are not incorporated in the illustrative revised DA estimates shown below.

**Medicare.** The base DA estimate for the population aged 65 and over in 2000 (34.5 million) is almost 600,000 or 1.7 percent less than the estimate the Census Bureau obtained by carrying forward the 1990 population aged 55 and over with demographic components of change (Robinson 2001a, 2001c). This demographic method is used for all groups below age 65 in 2000, but the elderly population is estimated for the base DA by adjusting the number of persons enrolled in Medicare for underenroll-

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<sup>8</sup> As an indicator that many SAWs were not U.S. residents when they applied, more than 100,000 of the Mexican SAWs applied for legal status at the U.S.-Mexico border after coming from the interior of Mexico.

<sup>9</sup> This component was also included in the new residual estimates of undocumented immigrants. If fewer SAWs are assumed to be in the United States, then the revised estimates of undocumented immigrants would be larger by roughly the same amount.

ment. The available data and information supplied by the Census Bureau do not permit a detailed, thorough review of this adjustment. However, part of the underenrollment is the newly-arrived immigrants who are not eligible for Medicare. It seems very possible that the adjustment for Medicare underenrollment could be slightly higher than the Census Bureau employs. This component clearly warrants further investigation. In the illustrative estimates shown in the next section, the previous Census Bureau estimates based on components (Robinson 2001a) are used, in part, because more demographic detail on race and ethnic origin is available for them.

In terms of size, the most important demographic components of change for the 1990s are births and deaths; for the full DA estimates, these same two components prior to 1990 are also the largest. Rather small percentage revisions in these components could thus translate into larger changes than those discussed above. However, the historical data on births and deaths have been analyzed in detail several times and are less problematic. Accordingly, no changes to these components are incorporated into our illustrative estimates, but continuing attention to them is clearly warranted.

**Comparison with A.C.E. Results.** It is very difficult to compare DA with the A.C.E. results under the best of circumstances. The two sets of data use different definitions of race groups and refer to different populations — A.C.E. to the household population and DA to the total population. Further, some of the data needed to try to align the two datasets have not been released by the Census Bureau.<sup>10</sup> Nonetheless, it is possible to piece together some comparisons from the available data. DA estimates for the Hispanic population and the non-Hispanic Black population were computed by updating the 1990 DA population to 2000 using the base DA components supplied by the Census Bureau in detailed age, sex, detailed race, and Hispanic categories (Robinson 2001c).<sup>11</sup> The A.C.E. estimates of both the adjusted and unadjusted household population were added to figures from Census 2000 for the group quarters population<sup>12</sup> to develop population and undercount figures by age, sex, and race/ethnic group using the A.C.E. definitions. For these versions of DA, A.C.E., and Census 2000, the definitions of the Hispanic population, the non-Hispanic Black population, and the balance of the population are sufficiently close that the results can be readily compared.

From the base DA population (incorporating the component estimate for ages 65 and over), a “revised DA” figure was developed by adding the additional undocumented immigration estimated using the C2SS data, the additional change in legal nonimmigrants, and the extra population from migration of SAWs into the United States. With the revisions, the new DA estimate for the total population in 2000 is 283.5 million, implying an undercount of 2.1 million (Tables 5 and 6). The new DA population is substantially closer to the A.C.E. population of 284.6 million than the Base DA population — only 1.2 million less rather than 4.5 million less.<sup>13</sup> The revised DA undercount rate of 0.7 percent is only 0.4 percentage points less than the A.C.E. rate of 1.1 percent.

As can be seen in the table below and in Table 6, the revised DA estimates agree fairly closely with the level and pattern of the A.C.E. estimates. The highest undercount rates in both are for the Hispanic population with non-Hispanic Blacks significantly higher than the balance of the population but lower

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<sup>10</sup> Examples include the group quarters population classified according to the A.C.E. race/ethnic groups and fully detailed demographic estimates of the Hispanic population consistent with the DA estimates

<sup>11</sup> The 1990 population carried forward to 2000 for these modified DA estimates incorporates the results for race/Hispanic groups from the 1990 PES while retaining the population totals from the basic 1990 DA estimates for Blacks and non-Blacks by age and sex.

<sup>12</sup> Some approximations were required to convert the race and Hispanic groups as tabulated into the groups used in A.C.E., but these were small.

<sup>13</sup> The true “base DA” from Robinson (2001b) is 5 million less than the A.C.E. because it uses the adjusted Medicare estimates for the elderly.

than the Hispanic population. The differences across groups are larger in the revised DA, with the DA undercount rate (and population estimate) for Hispanics exceeding the A.C.E. estimate.

| <u>Group</u>          | <b>Percent Undercount</b> |                      |               |                         |
|-----------------------|---------------------------|----------------------|---------------|-------------------------|
|                       | Base<br><u>DA</u>         | Revised<br><u>DA</u> | <u>A.C.E.</u> | Revised<br><u>Diff.</u> |
| Total                 | -0.4                      | 0.7                  | 1.1           | 0.4                     |
| Black, not Hispanic   | 1.9                       | 1.9                  | 2.1           | 0.1                     |
| Hispanic              | -3.8                      | 3.6                  | 2.8           | -0.8                    |
| Balance of population | -0.3                      | 0.0                  | 0.7           | 0.7                     |

Source: Table 6

The major effect of the suggested revisions to DA is a substantial increase in the estimated Hispanic population. The addition of 2.6 million Hispanics to the DA estimate converts the base DA estimated *overcount* of 3.8 percent into an estimated *undercount* of 3.6 percent. In addition, the Base DA versus A.C.E. difference for Hispanic males is reduced from 9.3 percentage points to 0.2 percentage points.

While the revised DA estimates are much closer to the A.C.E. than were the original DA estimates for the total population and for race/ethnic totals, the two sets of estimates still do not give the same picture of sex differences in coverage. The DA estimates tend to show much greater percentage point differences in male and female coverage rates within each race/ethnic group than do the A.C.E. estimates. For non-Hispanic Blacks, the revised DA estimates show a 4.9 percentage point difference in coverage for the sexes (4.5 percent undercount for males versus 0.4 percent overcount for females), whereas the A.C.E. estimates show only a 0.6 percentage point difference. For the non-Black non-Hispanic population, the revised DA shows a sex differential of 1.9 percentage points and the A.C.E., a 0.6 percentage point difference. For Hispanics, the direction is reversed with DA showing a 0.5 percentage point difference and the A.C.E., 1.7 percentage points.

The revised DA estimates bring the A.C.E. and DA figures into approximate agreement as to the amount of undercount and the race/ethnic differences. The two systems should not be expected to give exactly the same estimates of coverage and, indeed, demographic analysis and survey estimates of coverage have always shown some difference in the United States. The principal area of disagreement remaining between the two estimates is the sex difference in undercount. This pattern is quite similar to the results for 1990 comparisons of DA with the 1990 post-enumeration survey (PES) and for 1980 comparisons. A more detailed assessment of the DA components, including more refined estimates of undocumented immigration, a fuller assessment of the nonimmigrant population, and further study of foreign-born emigration would probably bring the two sets of estimates into even closer alignment for 2000, but such work is beyond the scope of this study.

### **Conclusion and Recommendations for the Future of Demographic Analysis**

Two broad, related trends in American society over the past generation or so have made the application of demographic analysis to measuring census coverage considerably more difficult and severely

limited its utility. The rise of large-scale immigration and the emergence of undocumented immigration as a significant factor in population change have greatly increased the problems in accurately measuring the size of the U.S. population. Related to the first trend is the substantial increase in the size of the racial/ethnic minority population, particularly the portion that is not Black. With the current DA methods limited to producing estimates of coverage for the Black and non-Black populations, the utility of DA is severely circumscribed.

Individual identification with a single race/ethnic group in the United States has lessened due to increasing rates of intermarriage. The racial/ethnic changes brought about by immigration and intermarriage have blurred the linkage of historical data (from both census and non-census sources) with contemporary census race/ethnic categories. This blurring is further exacerbated by changes in collection methods permitting multiple responses to the census race question. Accordingly, the interpretation of even the existing DA estimates has become more problematic as the reference population requires the construction of race categories increasingly more removed from the collection and tabulation categories used in census data.

As a consequence of these trends, even improved DA estimates (along the lines recommended below) will suffer from serious limitations. Nonetheless, DA should remain an essential part of any census evaluation program. The age and sex structure of the population can be specified with high precision using DA. Thus, DA can be used to judge the quality of both the census data and results from coverage measurement studies, such as A.C.E. However, race estimates from DA are likely to become even more imprecise in the future as immigration, intermarriage, and changing individual identification continue. But, DA estimates can be used as guides to the changes that are occurring and to the quality of census and survey data.

Expansion of DA to groups other than Blacks would enhance the utility of the data. However, given the increased imprecision in measuring race and ethnicity caused by the changing nature of American society, the race/ethnic-specific estimates from DA for future censuses should probably not be held to the same standards as coverage measurement surveys. Disagreements between DA and the surveys in terms of relative coverage of race/ethnic groups would need to be “explained” in demographic or sociological terms, but failure to agree should not be treated as *prima facie* evidence that coverage has not been adequately measured or that adjustment is not warranted.

**Measurement of Immigration.** The failure of DA to incorporate estimates of immigration based on the best available information — estimates of undocumented immigration consistent with measures from the reweighted CPS, nonimmigrants from all categories based on INS data, and increased SAW populations — changed the nature of the ESCAP decision on adjustment. Had the “base DA” estimate been 2.1 million greater than the census rather than 1.8 million less and had it been only 1.2 million below the A.C.E. rather than 5 million, there would have been more attention to the A.C.E., more attention to the areas of agreement rather than disagreement between the two measures, and more attention to the potential deficiencies in Census 2000 itself.

The problems with measuring immigration in DA relate directly to the Census Bureau’s national population estimates. The Census Bureau’s measures of undocumented immigration and nonimmigrants during the 1990s were drawn entirely from outside the agency. It is essential that the Census Bureau develop greater capacity to measure immigration. More attention needs to be paid to developing current estimates of undocumented immigration and to measuring changes in the flow. Although data and methods have improved recently, the available methods remain somewhat limited, but promising

approaches are under investigation. However, virtually none of the current research is being done at the Census Bureau. Greater focus on this topic from the Census Bureau with its own staff and in cooperative efforts with outside researchers could greatly improve the Bureau's ability to measure undocumented immigration and various other components of immigration.

The nonimmigrant population has also increased in numerical importance. It has proved difficult to measure, but the Census Bureau has devoted almost no attention to this component. Here again, more research is required. Increasingly, changes in immigration laws and regulations have affected the flows of people into the country and changed the size and composition of the U.S. resident population. During the 1990s, modifications to the Census Bureau's estimates resulting from such changes were serendipitous rather than the result of careful planning and investigation of data and methods. It is essential that the Census Bureau develop the capacity to monitor changes in immigration laws and regulations for their potential effect on the U.S. population. Attention to all aspects of immigration should become a regular part of the estimates program together with an on-going research program to incorporate regulatory and legislative changes national and subnational population estimates.

**Race and Hispanic Origin.** The measurement of race in Census 2000 and other data systems, as directed by the Office of Management and Budget, represents a historic disjuncture for the country. The explicit recognition of persons identifying with more than one race group is a reflection of the current demographic reality in the United States and permits the census to better capture the characteristics of the population. However, the new categories and data do not fit neatly into the categories used in historical data, both from previous censuses and non-census sources. As a consequence, the DA estimates for race/ethnic groups should be considered only as approximations to the contemporary census data, at best. The current approach of DA has been to re-cast the census data into historical categories. This approach is certainly reasonable and is probably the simplest to implement. However, it limits the interpretation of DA results because they do not relate clearly to categories of data as collected and published.

The Census Bureau needs to devote more research to developing methods to "map" historical data for race/ethnic categories into the current ones. This approach will require developing more historical data on intermarriage patterns than currently exists. Further, it also requires study of response patterns to the race and Hispanic origin items on the part of persons with multiple backgrounds. The Bureau is currently pursuing such research, but it must be integrated into the population estimates and DA programs.

The Census Bureau should also devote more attention to developing DA estimates for more detailed race/ethnic categories (i.e., other than Black). Such estimates are likely to be considerably less precise than the estimates for Blacks, probably too imprecise to be used for census adjustment. Nonetheless, such estimates should be an integral part of the demographic assessment of every census and should enter adjustment decisions in at least an advisory role.

**Table 1. Demographic Analysis Estimates of Percent Net Census Undercount, by Race, for the United States: 1940–1990**

| <b>Race</b>                   | <b>1990</b> | <b>1980</b> | <b>1970</b> | <b>1960</b> | <b>1950</b> | <b>1940</b> |
|-------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Total                         | 1.8         | 1.2         | 2.7         | 3.1         | 4.1         | 5.4         |
| Black                         | 5.7         | 4.5         | 6.5         | 6.6         | 7.5         | 8.4         |
| Not Black                     | 1.3         | 0.8         | 2.2         | 2.7         | 3.8         | 5.0         |
| Black-Not Black<br>Difference | 4.4         | 3.7         | 4.3         | 3.9         | 3.6         | 3.4         |

Source: Table 2, Robinson et al.1993.

**Table 2. Population and Percent Net Census Undercount, by Race According to Alternative Measures, for the United States: 2000**

| Race and Measure      | Census 2000 | Preliminary DA (Base) | A.C.E.* |
|-----------------------|-------------|-----------------------|---------|
| Total population**    | 281.4       | 279.6                 | 284.7   |
| Undercount            | —           | -1.8                  | 3.3     |
| Pct. Undercount       | —           | -0.65%                | 1.15%   |
| Black (tabulated)     | 36.4        | —                     | 37.2    |
| Black (modified)      | 37.1        | 37.5                  | —       |
| Undercount            | —           | 0.3                   | 0.8     |
| Pct. Undercount       | —           | 0.93%                 | 2.08%   |
| Not Black (tabulated) | 245.0       | —                     | 247.5   |
| Not Black (modified)  | 244.3       | 242.1                 | —       |
| Undercount            | —           | -2.2                  | 2.5     |
| Pct. Undercount       | —           | -0.90%                | 1.01%   |
| Black-Not Black       |             |                       |         |
| Difference            | —           | 1.83%                 | 1.07%   |

Source: Appendix Table 2, Robinson 2001b.

Notes:

\*\* All populations in millions.

\* Figures for A.C.E. include groups quarters population from Census 2000 and assume, in effect, that the group quarters population was enumerated without error. Census populations by race differ because of the treatment of persons who marked the "other race" category. For the DA comparison, these persons are reassigned to a specific race category (including Black) for consistency with the historical demographic data used to construct the DA estimates. For the A.C.E. comparison, these persons are grouped with the non-Hispanic white category, part of the "Not Black" category in the table. Table 3. Components of estimates of undocumented immigrant population based on different data sources, for the all undocumented immigrants and those born in Mexico: 2000

**Table 3. Components of Estimates of Undocumented Immigrant Population Based on Different Data Sources, For All Undocumented Immigrants and Those Born in Mexico: 2000**

| Population<br>(in thousands)                   | All countries of birth |                |        | Born in Mexico |                |       |                  |
|--|------------------------|----------------|--------|----------------|----------------|-------|------------------|
|  | March<br>CPS           | Rewgtd.<br>CPS | C2SS   | March<br>CPS   | Rewgtd.<br>CPS | C2SS  |                  |
| Total Foreign-born<br>in census/survey         | 28,381                 | 30,088         | 30,523 | 7,841          | 8,388          | 8,774 | <i>a</i>         |
| Legal Nonimmigrants<br>in census/survey        | 842                    | 898            | 1,026  | 23             | 27             | 32    | <i>b</i>         |
| Total Immigrants<br>in census/survey           | 27,539                 | 29,191         | 29,497 | 7,818          | 8,361          | 8,743 | <i>c=a-b</i>     |
| Estimated Total<br>Legal Immigrants            | 21,878                 | 22,081         | 21,791 | 4,642          | 4,648          | 4,511 | <i>d</i>         |
| Undercount for Post-1970s<br>Percent           | 1.5%                   | 1.5%           | 1.4%   | 2.1%           | 2.1%           | 1.9%  | <i>e</i>         |
| Amount   | 229                    | 229            | 214    | 68             | 68             | 61    | <i>f=e*d</i>     |
| Estimated Legal Immigrants<br>in census/survey | 21,649                 | 21,852         | 21,577 | 4,574          | 4,581          | 4,451 | <i>g=d-f</i>     |
| Enumerated Undocumented<br>in census/survey    | 5,890                  | 7,339          | 7,920  | 3,244          | 3,780          | 4,292 | <i>h=c-g</i>     |
| Percent Undercount for<br>Undocumented         | 10.5%                  | 11.8%          | 8.4%   | 10.1%          | 15.3%          | 10.4% | <i>i</i>         |
| Total Undocumented<br>Immigrants               | 6,581                  | 8,323          | 8,650  | 3,608          | 4,462          | 4,789 | <i>j=h/(1-i)</i> |

## Notes:

- See text and Passel 2001b for methods. All computations carried out for detailed groups — 35 countries and regions by age, sex, and period for legal immigrants and CPS data; 8 regions and Mexico by period for C2SS.
- b. Based on methods from Passel and Clark (1998). C2SS assumed to have 20% better coverage for 1995–2000 entrants and 10% for 1990–1995 entrants.
- d. Estimates of immigrants entering before the mid-1970s come from census or survey.
- e. Assumed undercount rates: 150% of A.C.E. rates for 1990s entrants; 100% for 1980s entrants; 50% for late 1970s; none for earlier. Rates from reweighted CPS applied to C2SS.
- i. Assumed undercount rates: 1990s entrants — 3 times rates for corresponding legals; 1980s entrants — 2 times; 1970s entrants — 1 times. Rates from reweighted CPS applied to C2SS.

Source: Passel 2001b.



**Table 4. Alternative Estimates of Change in the Undocumented Population, for the United States: 1990 to 2000 (in thousands)**

| <b>Sex and Age in 2000</b> | <b>Change Based on C2SS</b> | <b>Preliminary DA (Base)</b> | <b>DA Total with C2SS Distribution</b> | <b>Difference: Adjusted DA minus Base</b> |
|----------------------------|-----------------------------|------------------------------|--|---|
| Both sexes, total          | 5,317                       | 2,765                        | 2,765                                  | 0   |
| Under 18 years             | 1,231                       | 576                          | 640                                    | 64  |
| 18-29 years                | 3,318                       | 1,207                        | 1,726                                  | 519                                       |
| 30-49 years                | 1,065                       | 844                          | 554                                    | -290                                      |
| 50 years and over          | -297                        | 139                          | -154                                   | -293                                      |
| Males, total               | 3,171                       | 1,453                        | 1,649                                  | 196                                       |
| Under 18 years             | 707                         | 287                          | 368                                    | 80  |
| 18-29 years                | 2,062                       | 675                          | 1,072                                  | 397                                       |
| 30-49 years                | 479                         | 434                          | 249                                    | -185                                      |
| 50 years and over          | -77                         | 56                           | -40                                    | -96                                       |
| Females, total             | 2,147                       | 1,312                        | 1,116                                  | -196                                      |
| Under 18 years             | 524                         | 289                          | 272                                    | -16                                       |
| 18-29 years                | 1,256                       | 531                          | 653                                    | 122                                       |
| 30-49 years                | 586                         | 410                          | 305                                    | -105                                      |
| 50 years and over          | -219                        | 83                           | -114                                   | -197                                      |

Source: Demographic estimates — data supplied by Census Bureau (Robinson 2001c);  
C2SS estimates — derived from Passel 2001b.

**Table 5. Suggested Modifications to "Base" Demographic Analysis Estimate, A.C.E., and Census 2000, by Sex and Race/Ethnicity (in millions)**

| <b>Sex and Race/Hispanic</b> | <b>Base DA (Mod.)</b> | <b>Revised Undoc. Change</b> | <b>Revised Nonimm. &amp; SAWs</b> | <b>Revised DA</b> | <b>A.C.E.</b> | <b>Census (unadj.)</b> |
|------------------------------|-----------------------|------------------------------|-----------------------------------|-------------------|---------------|------------------------|
| Total                        | 280.2                 | 2.6                          | 0.7                               | 283.5             | 284.6         | 281.4                  |
| Male                         | 138.2                 | 1.7                          | 0.5                               | 140.5             | 140.1         | 138.0                  |
| Female                       | 141.9                 | 0.8                          | 0.2                               | 143.0             | 144.5         | 143.4                  |
| Black*                       | 35.8                  | 0.0                          | 0.0                               | 35.8              | 35.9          | 35.1                   |
| Male                         | 17.4                  | 0.0                          | 0.0                               | 17.4              | 17.1          | 16.7                   |
| Female                       | 18.4                  | 0.0                          | 0.0                               | 18.4              | 18.8          | 18.5                   |
| Hispanic                     | 34.0                  | 2.3                          | 0.3                               | 36.6              | 36.3          | 35.3                   |
| Male                         | 17.2                  | 1.4                          | 0.3                               | 18.9              | 18.8          | 18.2                   |
| Female                       | 16.8                  | 0.8                          | 0.1                               | 17.7              | 17.4          | 17.1                   |
| Balance**                    | 210.4                 | 0.3                          | 0.4                               | 211.1             | 212.5         | 211.0                  |
| Male                         | 103.6                 | 0.3                          | 0.3                               | 104.2             | 104.2         | 103.2                  |
| Female                       | 106.8                 | 0.0                          | 0.1                               | 106.9             | 108.3         | 107.8                  |

## Notes and sources:

\* Not Hispanic.

\* Non-Hispanic, non-Black population.

"Base DA" population uses component estimates for all ages. Under 65 is identical to "Base DA" from ESCAP supporting report (Robinson 2001b); 65 and over uses preliminary components from Robinson 2001a.

"Revised Undocumented Change" is the difference between the estimates of change in the undocumented population from 1990 to 2000 based on the C2SS analysis and the "Base DA" estimate of change. See Table 4 and text.

"Revised Nonimmigrants and SAWs" includes the additional 491,000 estimates change in legal temporary residents other than students and H-1B's plus the additional 250,000 movement of SAWs into the country. See text for explanation.

"Revised DA" equals the Base DA plus the two revised components. The Hispanic estimate from DA uses the adjusted 1990 population plus components of change from Robinson (2001c).

"A.C.E." is the estimated (adjusted) household population from A.C.E. plus the unadjusted group quarters population. The Black, not Hispanic population includes persons responding to the race question as Black either alone or in combination with other race groups. The Hispanic population excludes American Indians, as defined by A.C.E.

"Census 2000 (unadjusted)" is the unadjusted A.C.E. household population plus the unadjusted group quarters population.

**Table 6. Amount and Percent Net Census Undercount based on "Base" Demographic Analysis, A.C.E., and Modified Demographic Analysis, by Sex and Race/Ethnicity: Census 2000**

| Sex and Race/Hispanic | Amount of Net Undercount (millions) |       |         |            |               | Percent Net Undercount |       |         |            |               |
|-----------------------|-------------------------------------|-------|---------|------------|---------------|------------------------|-------|---------|------------|---------------|
|                       | Base DA                             | A.C.E | Rev. DA | A.C.E Base | minus DA Rev. | Base DA                | A.C.E | Rev. DA | A.C.E Base | minus DA Rev. |
| Total                 | -1.2                                | 3.3   | 2.1     | 4.5        | 1.2           | -0.4%                  | 1.1%  | 0.7%    | 1.6%       | 0.4%          |
| Male                  | 0.3                                 | 2.1   | 2.5     | 1.9        | -0.4          | 0.2%                   | 1.5%  | 1.8%    | 1.3%       | -0.3%         |
| Female                | -1.5                                | 1.1   | -0.4    | 2.6        | 1.6           | -1.0%                  | 0.8%  | -0.3%   | 1.8%       | 1.1%          |
| Black*                | 0.7                                 | 0.7   | 0.7     | 0.1        | 0.0           | 1.9%                   | 2.1%  | 1.9%    | 0.2%       | 0.1%          |
| Male                  | 0.8                                 | 0.4   | 0.8     | -0.4       | -0.4          | 4.4%                   | 2.4%  | 4.5%    | -2.0%      | -2.1%         |
| Female                | -0.1                                | 0.3   | -0.1    | 0.4        | 0.4           | -0.5%                  | 1.8%  | -0.4%   | 2.3%       | 2.2%          |
| Hispanic              | -1.3                                | 1.0   | 1.3     | 2.3        | -0.3          | -3.8%                  | 2.8%  | 3.6%    | 6.6%       | -0.8%         |
| Male                  | -1.0                                | 0.7   | 0.7     | 1.7        | 0.0           | -5.7%                  | 3.6%  | 3.8%    | 9.3%       | -0.2%         |
| Female                | -0.3                                | 0.3   | 0.6     | 0.6        | -0.2          | -1.9%                  | 1.9%  | 3.3%    | 3.8%       | -1.4%         |
| Balance**             | -0.6                                | 1.5   | 0.1     | 2.1        | 1.4           | -0.3%                  | 0.7%  | 0.0%    | 1.0%       | 0.7%          |
| Male                  | 0.5                                 | 1.0   | 1.0     | 0.6        | 0.0           | 0.5%                   | 1.0%  | 1.0%    | 0.5%       | 0.0%          |
| Female                | -1.1                                | 0.5   | -0.9    | 1.5        | 1.4           | -1.0%                  | 0.4%  | -0.9%   | 1.4%       | 1.3%          |

Notes and sources:

\* Not Hispanic.

\* Non-Hispanic, non-Black population.

Computed from populations in Table 5. Net undercount is estimate minus census; negative sign indicates estimated net overcount. Base of percent is estimated population. See Table 5 and text for definitions and sources.

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# **EFFECT OF CENSUS 2000 UNDERCOUNT ON FEDERAL FUNDING TO STATES AND SELECTED COUNTIES, 2002-2012**

prepared by *PRICEWATERHOUSECOOPERS* 

## **ABSTRACT**

Congress relies on the census for purposes of allocating funds under various federal grant programs to state governments. Inaccuracies in the census count can cause federal funds to be distributed in a way that is not fully consistent with congressional intent. Many state-funded grant programs to localities also rely on census counts, compounding the misallocation of grant money. For those jurisdictions that are counted relatively poorly by the census, this translates into fewer services for families with the greatest needs. Analysis by the Census Bureau estimates that Census 2000 undercounted the actual U.S. population by a net of over three million individuals, representing an undercount rate of 1.18 percent.

This study focuses on eight programs with a combined total of \$145 billion in federal spending in FY 2001 that would be most affected by the undercount. Because this study does not consider all programs affected by census population figures, the total effect of the Census 2000 undercount on the allocation of federal funds is likely to exceed the estimates in this report.

For the eight federal grant programs included in this study, the Census 2000 undercount is estimated to cause the District of Columbia and the 31 states adversely affected by the undercount to lose \$4.1 billion in federal funding over the 2002-2012 fiscal year period. The shift in federal funds due to the undercount is most pronounced in metropolitan counties. These areas not only share in state losses from the undercount but also lose funds to other localities within the state because of the relatively high undercounts of urban areas.

The federal funding loss to the 58 largest counties adversely affected by the undercount is estimated to reach \$3.6 billion over the ten year period, or \$2,913 per uncounted person in these jurisdictions. The census undercount not only redistributes funds among jurisdictions, it also causes a net loss to the states of funds from federal entitlement programs, such as Medicaid and Foster Care. For the programs included in this study, the Census 2000 undercount is estimated to reduce net federal funds to the states by \$478 million over the 2002-2012 period.

## **Previous Research**

In March 2000, PricewaterhouseCoopers prepared a study 4 for the Presidential Members of the U.S. Census Monitoring Board that estimated the impact of the projected Census 2000 undercount on the allocation of federal funds. This March 2000 report assumed similar undercount rates by demograph-

ic group as were estimated following the 1990 census and used Census population projections for 2000. The study projected that the 2000 census undercount rate would be 1.75 percent. This was considered a conservative estimate since the Census Bureau predicted an undercount rate of 1.9 percent.

Now that Census 2000 is complete, the data indicate that the Census Bureau counted a higher percentage of the population in 2000 than in 1990. The Census Bureau estimates that the Census 2000 net undercount rate was 1.18 percent. This report updates PricewaterhouseCooper's previous study by using Dr. Ericksen's analysis and extension of the information the Census Bureau has made public about the Census 2000 undercount rate rather than projections based on the 1990 Census experience.

## Methodology

This study generally follows the same methodology for estimating funding effects as the March 2000 PricewaterhouseCoopers report.

The eight programs studied accounted for \$145 billion in federal grant spending in fiscal year 2001 (see Table A). These programs represent 87 percent of the funding of major programs identified by the General Accounting Office (GAO) as being affected by the undercount.<sup>1</sup> The effect of the undercount on smaller federal programs has been excluded. State programs that rely on census data to distribute funds to localities also have been excluded. Because all federal and state grant programs affected by the undercount were not analyzed in this study, the shift in funds due to the Census 2000 undercount is likely to be larger than is estimated in this report.

The methodology used in this report can be summarized as follows:

1. Based on the Census Bureau's and Dr. Ericksen's estimates of the Census 2000 undercount rate by state and selected county, derive adjusted state and county population levels for comparison with Census 2000 population counts.
2. Determine the formulae for allocating the eight federal grant programs included in this study.
3. Project national funding levels for these federal programs through 2012.
4. Project the effect of the Census 2000 undercount on the allocation of federal funds to states and selected counties over the period affected by Census 2000 (generally, fiscal years 2002-2012).

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<sup>1</sup> General Accounting Office, Formula Grants: Effects of Adjusted Population Counts on Federal Funding to States, GAO/HEHS-99-69, February 1999.



**Table A. Federal Formula Grant Programs and FY 2001 Obligations**  
 [Dollar amounts in billions; Major programs affected by census undercount]

| Program  | Description  | Obligations    |
|--|--|----------------|
| 1. Medicaid  | Provides medical assistance (such as inpatient and outpatient hospital care, laboratory and x-ray services, and physician services) to low-income individuals. Eligible individuals include low-income children and pregnant women, low-income persons with disabilities, and low-income elderly persons.  | \$130.0        |
| 2. Foster Care   | Provides support to homes and facilities that provide homes to needy foster children. Payments cover food, shelter, and supervision costs. Any foster child eligible for Aid to Families with Dependent Children, as in effect in 1995, is eligible for the program.   | 5.1            |
| 3. Rehabilitation Services Basic Support                     | Provides vocational rehabilitation to disabled individuals and their families. Services include reader services for the blind, interpreter services for the deaf, prosthetic devices, and job placement.   | 2.4            |
| 4. Child Care and Development Block Grant                    | Provides assistance to low-income families to improve the availability and quality of childcare. Name changed to Child Care and Development Fund Discretionary Funds.  | 2.0            |
| 5. Social Services Block Grant                               | Provides support to states to prevent or reduce dependency; promote self-sufficiency; prevent abuse, neglect, or exploitation of children and adults; prevent inappropriate institutional care; and secure institutional care where appropriate. Funds have been used for child day care, protective and emergency services for children and adults, and counseling. | 1.7            |
| 6. Substance Abuse Prevention and Treatment Block Grant      | Provides resources to states to design and implement programs to reduce drug and alcohol abuse and provide rehabilitation to individuals with drug and alcohol problems.   | 1.7            |
| 7. Adoption Assistance                                       | Provides support for the adoption of children with special needs. Payments train professional staff and parents involved in the adoptions, provide resources to families adopting the children, and cover costs associated with placing children in adoptive homes.  | 1.2            |
| 8. Vocational Education Basic Grants                         | Provides grants to states for vocational education programs for youths and adults. Funds used for activities such as purchasing occupationally-relevant equipment and curriculum materials, providing career counseling and guidance, hiring staff, and offering remedial classes.   | 1.1            |
| <b>Total for eight programs included in this report</b>      |  | <b>\$145.1</b> |
| <b>Total for major grant programs affected by undercount</b> |  | <b>\$166.6</b> |

Several key assumptions underlie the results in this report. First, Dr. Ericksen's extension of the Census Bureau's methods is assumed to be accurate. Second, the undercount rate is assumed to not vary substantially between group-quarters and non-group-quarters persons.<sup>2</sup> Third, current formulae for allocating federal grant programs are assumed to remain unchanged over the 2002-12 period. Fourth, the national funding level for these programs over the FY 2002-2012 period is based on the Administration's fiscal year 2001 Current Services Budget. Last, states are assumed to allocate federal funding among local governments in proportion to their respective populations, as enumerated in the decennial census. To the extent possible, the results in this study are based on federal data, estimates, and methodology.

### **Effect of Census 2000 Undercount on Federal Funding to States**

The Census Bureau has estimated a national net undercount rate for the non-group-quarters population in Census 2000 of 1.18 percent, totaling nearly 3.3 million persons missed. Assuming the same undercount rate for the group-quarters population, Dr. Ericksen estimates a total net undercount of 3.4 million.<sup>3</sup> Over the 2002-2012 fiscal year period, for the eight programs analyzed, PricewaterhouseCoopers estimates that this Census 2000 undercount will result in a loss of \$4.1 billion in federal funding among the 31 states adversely affected by the undercount and the District of Columbia. Medicaid accounts for the largest shift in federal funds, representing 92 percent of all reallocated funds (see Figure A).<sup>4</sup>

The estimated 2000 undercount is expected to cause the biggest dollar losses in California, Texas and Georgia (see Figure B). These are large states that have relatively large undercount rates.

Even in states that are relatively well counted by the census, certain portions of the state may have high undercount rates. For example, while Massachusetts is counted relatively well, Suffolk County (containing Boston, MA) is estimated to lose \$58 million in federal funds over the 2002-2012 period as a result of its high undercount. Similarly, while Illinois is counted relatively well, Cook County (containing part of Chicago, IL) is estimated to lose \$193 million in federal funds over the 2002-2012 period.

Note that the funding effects of the Census 2000 undercount are not a "zero-sum game." The shift in federal funds *away from* states that are counted relatively poorly is greater than the shift in funds to states that are counted relatively well. The Census 2000 undercount is expected to result in a net loss of \$478 million in federal funds to the states as a whole. This overall loss in federal funding is due to federal entitlement programs such as Medicaid, under which the national level of funding depends on population measures and is not a fixed sum.

<sup>2</sup> The Census Bureau only provided undercount rates for the non-group-quarters population. In order to evaluate the funding effects, we require an undercount estimate for the entire population. We assumed that the undercount rate for the group-quarters population equals the undercount rate for the non-group-quarters population. The alternative assumption of a perfect count of the group-quarters population would not materially affect our results.

<sup>3</sup> The Census Bureau excluded the group-quarters population (7.8 million persons) from its undercount estimates. Assuming that the group-quarters population is undercounted at the same rate as the non-group-quarters population implies a national undercount of 3.4 million persons and an overall national undercount rate of 1.18 percent. Source: *Report of the Executive Steering Committee for Accuracy and Coverage Evaluation Policy*, March 1, 2001 and Dr. Eugene Ericksen, *Estimates of State and County Undercount Rates*, May 1, 2001.

<sup>4</sup> Because of statutory provisions that guarantee minimum reimbursement rates, Medicaid funding for certain states would remain the same using either adjusted or unadjusted population counts. Some states, like New York, receive the minimum reimbursement of 50 percent of state expenditures under adjusted or unadjusted figures. The District of Columbia has a reimbursement rate set by statute at 70 percent. These areas experience significant undercounts, but the Medicaid minimum reimbursement provisions limit the federal funding losses from the undercount.

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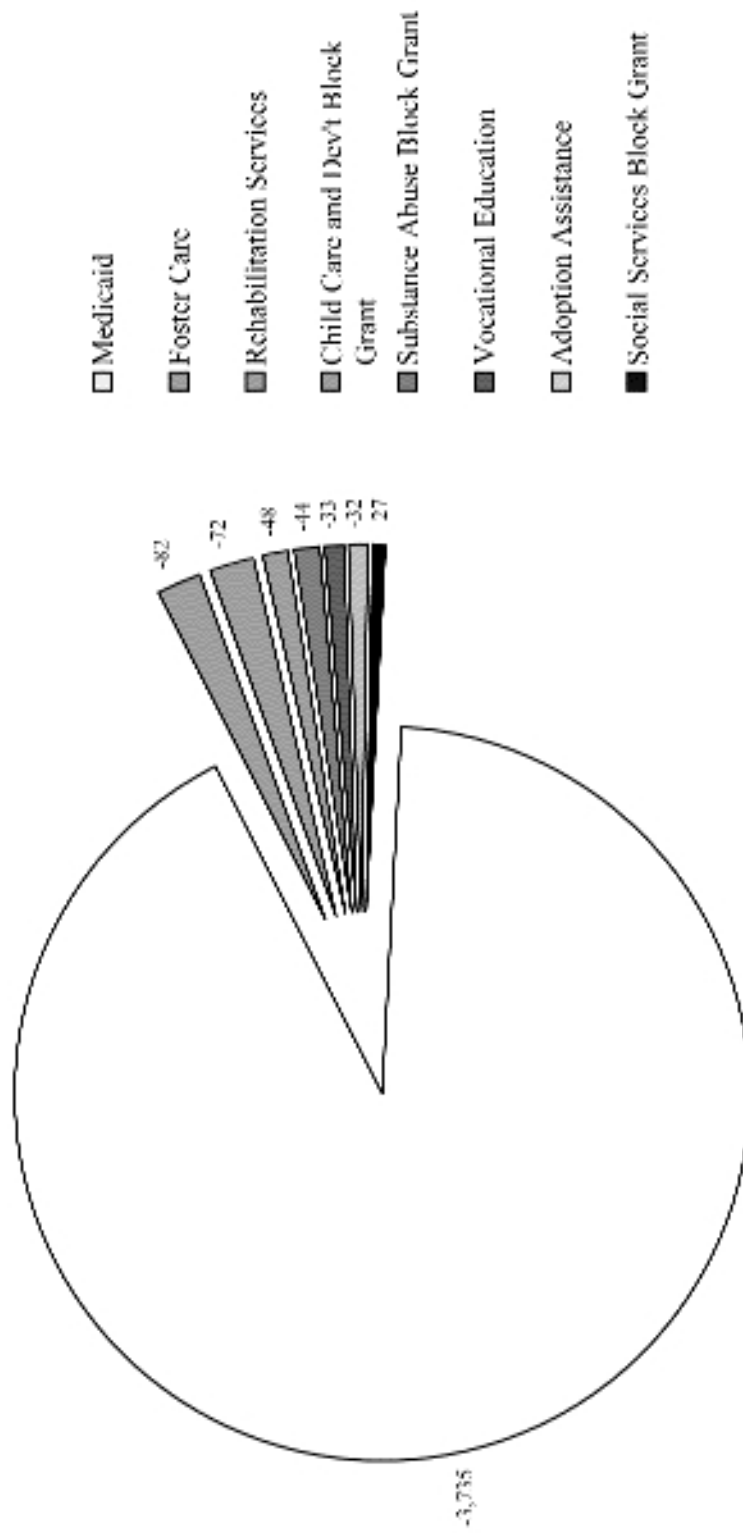
## **Effect of Census 2000 Undercount on Federal Funding to Selected Counties**

The Census 2000 undercount also will affect counties receiving a portion of federal grants allotted to states. The net impact on county funding depends on the effect of the undercount on both the allocation of federal funds between states (the "between-state" effect) and the allocation of funds among jurisdictions within a state (the "within-state" effect). The net impact of the Census 2000 undercount on the allocation of federal funds to counties is the sum of the between-state and within-state effects.

Over the 2002-2012 period, the federal funding loss to the 58 largest counties adversely affected by the undercount is estimated to reach \$3.6 billion, or \$2,913 per uncounted person in these jurisdictions. Because counties with large populations generally experience undercount rates that are higher than the state average, we assume that they will fail to receive their proportionate share of any funds distributed by the state based on unadjusted population counts. These "within-state" effects cause the funding losses of metropolitan areas to exceed the funding losses at the state level.

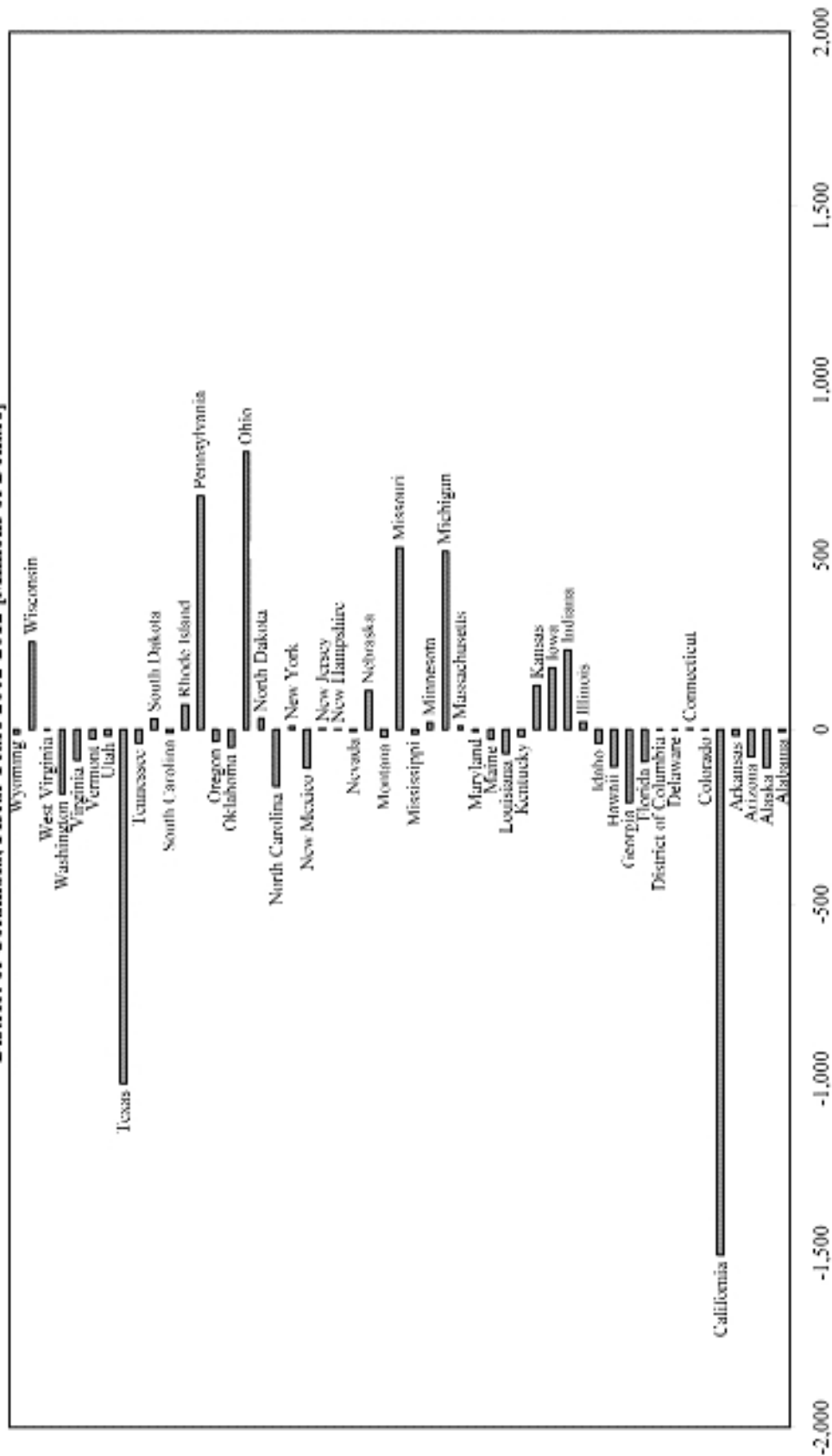
Eight counties are estimated to lose over \$100 million each in federal funds: Los Angeles County, CA; Bronx County, NY; Kings County, NY (which comprises the borough of Brooklyn, NY); Harris County, TX (which contains the city of Houston, TX); New York County, NY (which comprises the borough of Manhattan, NY); Cook County, IL (Chicago), Dallas County, TX, and Miami-Dade County, FL (see Figure C). In New York City, the funding loss across the five boroughs is estimated to reach \$847 million. Because some state-funded grant programs also rely on the decennial census for purposes of allocating funds among localities, the impact of the Census 2000 undercount on metropolitan areas will be larger than the federal funding effect.

**Figure A. Estimated Effect of Census 2000 Undercount on Eight Federal Grant Programs:  
31 States with Funding Losses and the District of Columbia, Fiscal Years 2002-2012**  
[Millions of Dollars]



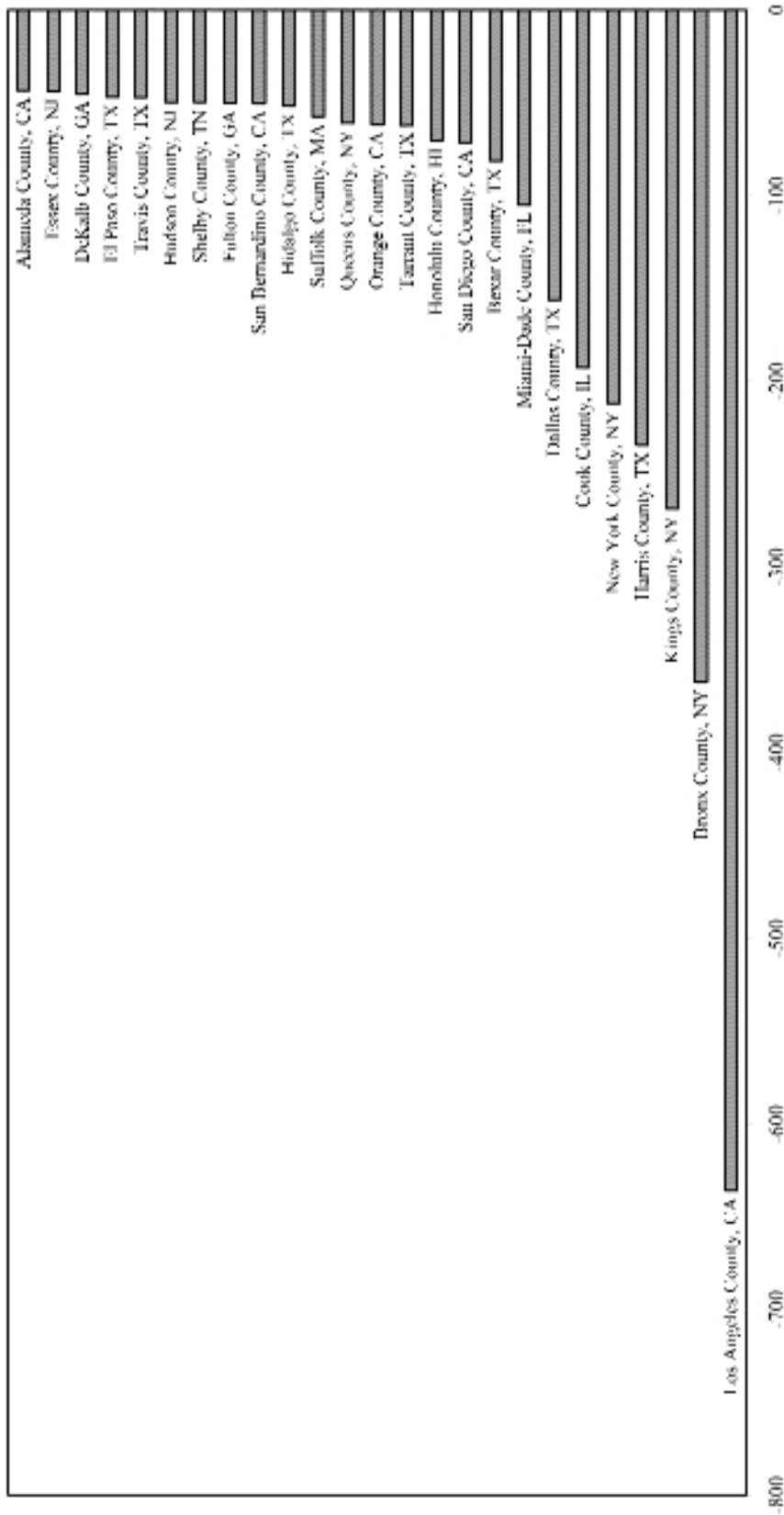
Source: PricewaterhouseCoopers calculations.

**Figure B. Estimated Effect of Census 2000 Undercount on Eight Federal Grant Programs: All States and the District of Columbia, Fiscal Years 2002-2012 [Millions of Dollars]**



Source: PricewaterhouseCoopers calculations.

Figure C. Estimated Effect of Census 2000 Undercount on Eight Federal Grant Programs: 25 Selected Counties with Largest Funding Loss, Fiscal Years 2002-2012 [Millions of Dollars]



Source: PricewaterhouseCoopers calculations.

## I. INTRODUCTION

The Presidential Members of the United States Census Monitoring Board retained PricewaterhouseCoopers LLP (PwC) to conduct an independent estimate of the funding effects of the Census 2000 undercount, based on undercount rate estimated by decennial census expert and Temple University statistics professor Dr. Eugene P. Ericksen. PwC was asked to project the undercount's effects on the allocation of federal funds among states and selected counties over the next decade.

This report updates the results of the March 2000 PwC report<sup>1</sup> which was based on projections of the Census 2000 undercount rate made before Census 2000 was completed.

Estimates of the Census 2000 undercount at the state and selected county levels are presented in this report. These undercounts are derived from undercount rates estimated by the Census Bureau and extended by Dr. Eugene P. Ericksen of Temple University. Using these undercount estimates, we calculate adjusted population counts for the states and selected counties for comparison with the Census 2000 counts.

Additionally, the impact of the Census 2000 undercount on the allocation of federal funds to states and selected counties is estimated in this report. Formula allocations under federal grant programs that depend on population counts were calculated with unadjusted and then adjusted population figures to estimate the change in federal funds flowing to each state. Changes in funding levels at the state level were then translated into changes at the county level.

The main findings of the report are summarized in the final section.

Six appendices accompany this report:

1. Appendix A reports Census 2000 state population totals (adjusted and unadjusted) along with estimated undercounts and undercount rates of persons over and under 18 years of age.
2. Appendix B shows 2000 population totals by selected county with and without adjustments for the estimated undercount along with number of persons missed and the undercount rate.
3. Appendix C describes the federal programs analyzed in this report.
4. Appendix D provides detailed information on the estimated funding effects of the Census 2000 undercount by state by program.
5. Appendix E provides details on the funding effects for selected counties.

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<sup>1</sup> "Effect of Census 2000 Undercount on Federal Funding to States and Local Areas," 2002-2012 (March 2000).

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## II. ESTIMATE OF CENSUS 2000 UNDERCOUNT

### A. Methodology Used by the Census Bureau and Dr. Ericksen

For the 2000 Census, the Census Bureau conducted the Accuracy and Coverage Evaluation (A.C.E.) survey, the successor to the Census 1990 Post-Enumeration Survey (PES), to determine the accuracy of the census count. Historically the census has not achieved an exact count of the population because it has missed certain individuals and incorrectly enumerated others.<sup>2</sup> For the A.C.E. survey, the Bureau conducted detailed interviews with a sample of households. The results of this intensive interview process can be compared to the official 2000 census enumeration to assess the accuracy of the census. This information can be used to estimate the net undercount (persons missed less persons incorrectly enumerated) by geographic region or demographic group, and to prepare an adjusted 2000 population count (i.e., the official count plus an estimate of net uncounted persons).

The A.C.E. survey established undercount adjustment factors for 448 post-strata (e.g., Black renters in small Metropolitan Statistical Areas or White owners in large Metropolitan Statistical Areas in the North). From the results of the A.C.E. survey, the Census Bureau developed undercount rates for the 50 states, and the District of Columbia. Dr. Eugene P. Ericksen, a census expert and professor of statistics at Temple University, working on behalf of the Presidential Members of the U.S. Census Monitoring Board, has reviewed the estimates of the state undercount rates and extended the analysis for counties with population in excess of 500,000 plus Richmond County (Staten Island), NY.<sup>3</sup>

For the states and the District of Columbia, Dr. Ericksen obtained the undercount adjustment factors from a file that the Bureau provided. The file contains adjustment factors for 448 post-strata for each of the 50 states plus the District of Columbia.<sup>4</sup> For each state-level post-stratum, Dr. Ericksen divided the dual system undercount estimate by the census count to calculate the adjustment factor, or ratio. Dr. Ericksen then created a weighted average of the adjustment factors, where the population shares in the post-strata were the weights. For the large county undercount rate estimates, Dr. Ericksen did not have the exact distributions of post-strata populations by county, but he approximated them with 2000 Census state totals by racial group and 1990 census data sorted by racial group and housing tenure.

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<sup>2</sup> Incorrect enumerations would arise from the inclusion of a child born after April 1, a person who died before April 1, or a college student living away from home but counted in the parents' house instead of his or her usual place of residence.

<sup>3</sup> Dr. Ericksen's estimates, like the Census Bureau rate upon which they are based, are for non-group-quarters residents. For this study we will be assuming that the undercount rate for group-quarters residents is comparable by state and post-strata.

<sup>4</sup> Access to this file was given to the Census Subcommittee, the National Academy of Sciences, and the Census Monitoring Board in February 2001.



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## B. Estimated 2000 Undercount by State

Based on the Census Bureau's methodology, the undercount rate for the non-group-quarters population in Census 2000 is estimated to be 1.18 percent or nearly 3.3 million persons. Assuming the same undercount rate for the group-quarters population, Dr. Ericksen estimates a total national undercount of 3.4 million (see Table 1).<sup>5</sup> Table A-2 in Appendix A shows net undercount rates by state for populations over and under 18 years of age. Children have undercount rates that exceed the national average. Nationally, persons under the age of 18 are estimated by Dr. Ericksen to have an undercount rate of 1.56 percent<sup>6</sup> of the actual population, resulting in over 1.1 million uncounted children. Consequently, funding programs targeting children, such as the Child Care and Development Block Grant, are especially vulnerable to the undercount.<sup>7</sup>

Four states account for nearly 40 percent of the estimated Census 2000 undercount: California (522,796), Texas (373,567), New York (209,123), and Florida (200,670). States (plus the District of Columbia) with the highest percentage undercounts are Alaska (2.67 percent), Hawaii (2.16 percent), the District of Columbia (2.15 percent), New Mexico (1.94 percent), and Texas (1.76 percent). States with the lowest undercount rates are Minnesota (0.29 percent), Missouri (0.46 percent), North Dakota (0.47 percent), Iowa (0.48 percent), Nebraska (0.56 percent), and South Dakota (0.56 percent).

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<sup>5</sup> The Census Bureau excluded the group-quarters population (7.8 million persons) from its undercount estimates. In order to evaluate the funding effects, we require an undercount estimate for the entire population. We assumed that the undercount rate for the group-quarters population equals the undercount rate for the non-group-quarters population. Assuming that the group-quarters population is undercounted at the same rate as the non-group-quarters population implies a national undercount of 3.4 million persons and an overall national undercount rate of 1.18 percent. The alternative assumption of a perfect count of the group-quarters population would not materially affect our results. Source: Report of the Executive Steering Committee for Accuracy and Coverage Evaluation Policy, March 1, 2001 and Dr. Eugene Ericksen, Estimates of State and County Undercount Rates, May 1, 2001.

<sup>6</sup> In the Report of the Executive Steering Committee for Accuracy and Coverage Evaluation Policy, March 1, 2001, the Census Bureau reports a national undercount for the under 18 population of 1.54 percent.

<sup>7</sup> See the GAO report for a detailed description of the funding formulas. General Accounting Office, Formula Grants: *Effects of Adjusted Population Counts on Federal Funding to States*, GAO/HEHS-99-69, February 1999.

**Table 1. Estimated Census 2000 Undercount by State**

| State                | 2000 Population Projections       |                                | Estimated 2000 Census Undercount |                   |
|----------------------|-----------------------------------|--------------------------------|----------------------------------|-------------------|
|                      | Without adjustment for undercount | With adjustment for undercount | Number <sup>a</sup>              | Rate <sup>b</sup> |
| United States        | 281,421,906                       | 284,777,491                    | 3,355,585                        | 1.18              |
| Alabama              | 4,447,100                         | 4,500,658                      | 53,558                           | 1.19              |
| Alaska               | 626,932                           | 644,130                        | 17,198                           | 2.67              |
| Arizona              | 5,130,632                         | 5,205,064                      | 74,432                           | 1.43              |
| Arkansas             | 2,673,400                         | 2,708,063                      | 34,663                           | 1.28              |
| California           | 33,871,618                        | 34,391,111                     | 522,796                          | 1.52              |
| Colorado             | 4,301,261                         | 4,356,148                      | 54,887                           | 1.26              |
| Connecticut          | 3,405,565                         | 3,438,923                      | 33,358                           | 0.97              |
| Delaware             | 783,600                           | 795,533                        | 11,933                           | 1.50              |
| District of Columbia | 572,059                           | 584,629                        | 12,570                           | 2.15              |
| Florida              | 15,982,378                        | 16,183,048                     | 200,670                          | 1.24              |
| Georgia              | 8,186,453                         | 8,309,433                      | 122,980                          | 1.48              |
| Hawaii               | 1,211,537                         | 1,238,281                      | 26,747                           | 2.16              |
| Idaho                | 1,293,953                         | 1,315,528                      | 21,575                           | 1.64              |
| Illinois             | 12,419,293                        | 12,527,025                     | 107,732                          | 0.86              |
| Indiana              | 6,080,485                         | 6,127,668                      | 47,183                           | 0.77              |
| Iowa                 | 2,926,324                         | 2,940,438                      | 14,114                           | 0.48              |
| Kansas               | 2,688,118                         | 2,706,279                      | 17,861                           | 0.66              |
| Kentucky             | 4,041,769                         | 4,092,102                      | 50,333                           | 1.23              |
| Louisiana            | 4,468,976                         | 4,529,674                      | 60,698                           | 1.34              |
| Maine                | 1,274,923                         | 1,292,108                      | 17,185                           | 1.33              |
| Maryland             | 5,296,186                         | 5,371,690                      | 75,201                           | 1.40              |
| Massachusetts        | 6,349,097                         | 6,397,720                      | 48,623                           | 0.76              |
| Michigan             | 9,938,444                         | 10,009,512                     | 71,068                           | 0.71              |
| Minnesota            | 4,919,179                         | 4,933,787                      | 14,308                           | 0.29              |
| Mississippi          | 2,844,658                         | 2,880,375                      | 35,717                           | 1.24              |
| Missouri             | 5,595,211                         | 5,621,068                      | 25,857                           | 0.46              |
| Montana              | 902,195                           | 916,585                        | 14,390                           | 1.57              |
| Nebraska             | 1,711,263                         | 1,720,900                      | 9,637                            | 0.56              |
| Nevada               | 1,998,257                         | 2,032,101                      | 34,144                           | 1.68              |
| New Hampshire        | 1,235,786                         | 1,249,910                      | 14,124                           | 1.13              |
| New Jersey           | 8,414,350                         | 8,512,241                      | 97,891                           | 1.15              |
| New Mexico           | 1,819,046                         | 1,855,034                      | 35,988                           | 1.94              |
| New York             | 18,976,457                        | 19,185,580                     | 209,123                          | 1.09              |
| North Carolina       | 8,049,313                         | 8,160,293                      | 110,980                          | 1.36              |
| North Dakota         | 642,200                           | 645,233                        | 3,033                            | 0.47              |
| Ohio                 | 11,353,140                        | 11,418,224                     | 65,084                           | 0.57              |
| Oklahoma             | 3,450,654                         | 3,499,649                      | 48,995                           | 1.40              |
| Oregon               | 3,421,399                         | 3,465,410                      | 44,011                           | 1.27              |
| Pennsylvania         | 12,281,054                        | 12,382,591                     | 101,537                          | 0.82              |
| Rhode Island         | 1,048,319                         | 1,057,306                      | 8,987                            | 0.85              |
| South Carolina       | 4,012,012                         | 4,060,741                      | 48,729                           | 1.20              |
| South Dakota         | 754,844                           | 759,095                        | 4,251                            | 0.56              |
| Tennessee            | 5,689,283                         | 5,760,133                      | 70,850                           | 1.23              |
| Texas                | 20,851,820                        | 21,225,387                     | 373,567                          | 1.76              |
| Utah                 | 2,233,169                         | 2,263,729                      | 30,560                           | 1.35              |
| Vermont              | 608,827                           | 618,161                        | 9,334                            | 1.51              |
| Virginia             | 7,078,515                         | 7,173,928                      | 95,413                           | 1.33              |
| Washington           | 5,891,121                         | 5,978,117                      | 81,296                           | 1.41              |
| West Virginia        | 1,808,344                         | 1,830,122                      | 21,778                           | 1.19              |
| Wisconsin            | 5,363,675                         | 5,401,485                      | 37,810                           | 0.70              |
| Wyoming              | 493,782                           | 501,607                        | 7,825                            | 1.56              |

Source: PricewaterhouseCoopers calculations.

<sup>a</sup> Adjusted minus unadjusted 2000 population projections. Dr. Erickson's undercount totals are slightly larger than those estimated by the Census Bureau (which excluded the group-quarters population from its analysis). For further explanation see footnote 6 on page 3.

<sup>b</sup> Undercount as a percent of adjusted population. Source: U.S. Census Bureau and Dr. Eugene Erickson, *Estimates of State and County Undercount Rates*, May 1, 2001.

## II. FUNDING EFFECT OF CENSUS 2000 UNDERCOUNT

### A. Federal Programs Analyzed

This study examines the effect of the Census 2000 undercount on the allocation of funds under eight federal grant programs: (1) Medicaid; (2) Foster Care; (3) Rehabilitation Services Basic Support; (4) Social Services Block Grant; (5) Substance Abuse Prevention and Treatment Block Grant; (6) Adoption Assistance; (7) ChildCare and Development Block Grant; and (8) Vocational Education Basic Grants. These eight programs account for all of the funding shifts identified in the General Accounting Office (GAO) study of the effects of the 1990 census undercount on federal funding to states in fiscal year 1998.<sup>8</sup>

The GAO study focused on 25 large formula grant programs, whose funding represented 90 percent of the total federal grants affected by the census undercount. Of the 25 programs analyzed in the GAO study, ten programs (amounting to \$21 billion in 2001) were excluded because their funding formulae depended on population variables for which undercount rates are not available (e.g., the population below the poverty line). Of the remaining 15 programs, five of the programs (amounting to \$43 billion) were not affected by the undercount because the formulae had components which made the undercount immaterial. Two programs (amounting to \$2 million) used population figures adjusted for the undercount.<sup>9</sup>

The remaining eight programs (listed in Table 4) were affected by the undercount. These programs represent over 87 percent of the funding under major programs that depend on unadjusted census counts.

**Table 4: Federal Grant Programs and FY 2001 Obligations**

[Obligations in billions of dollars; Major programs affected by census undercount]

| <b>Program</b>  | <b>Obligations</b> |
|---|--------------------|
| Medicaid  | \$130.0            |
| Foster Care   | 5.1                |
| Rehabilitation Services Basic Support                 | 2.4                |
| Child Care and Development Block Grant                | 2.0                |
| Social Services Block Grant                           | 1.7                |
| Substance Abuse Prevention and Treatment Block Grant  | 1.7                |
| Adoption Assistance                                   | 1.2                |
| Vocational Education Basic Grants                     | 1.1                |
| Subtotal, eight programs included in study            | <b>145.1</b>       |
| Total for major grant programs affected by undercount | <b>\$166.6</b>     |

Source: Budget of the United States, FY 2002, GAO, and PricewaterhouseCoopers calculations.

<sup>8</sup> General Accounting Office, *Formula Grants: Effects of Adjusted Population Counts on Federal Funding to States*, GAO/HEHS-99-69, February 1999.

<sup>9</sup> These two programs, administered by the Department of Labor, rely on estimates of the civilian labor force. If the Department of Labor does not adjust its estimates of the labor force, these programs would also be affected by the undercount.

## B. Current Services Funding Levels over FY 2002-2012 Period

Depending on the first year of impact, Census 2000 will affect federal grant allocations over the 2002-2011 or the 2003-2012 period.<sup>10</sup>

For each of the eight federal grant programs analyzed in this report, the Administration's FY 2002 budget projects Current Services funding levels through 2011. The Current Services Budget estimates funding levels necessary to continue programs at a level equal to the most recently funded year (i.e., 2001 for the 2002 budget). In essence, it is a prediction of the funding necessary to support current law expenditures over the budget period.

The Current Services Budget projects that funding of *discretionary* programs will grow with inflation. Unlike entitlement programs, the funding of discretionary programs is dependent on the annual Congressional appropriations process. Three of the eight federal grant programs included in this study are classified as discretionary: (1) Substance Abuse Block Grant, (2) Vocational Education, and (3) Child Care and Development Block Grant.

The Current Services Budget projects that funding for *entitlement* programs will grow with the underlying eligible population and inflation. Three of the federal programs included in this study are classified as entitlement programs: (1) Medicaid, (2) Foster Care, and (3) Adoption Assistance.

The remaining two programs included in this study, Social Services Block Grant and Rehabilitation Services, are *mandatory* programs that are projected to grow at rates consistent with their enacting legislation.

The fiscal year 2002 budget includes Current Services funding levels through 2011. Funding levels for four programs included in this study were extrapolated through 2012 based on the growth rates projected by the Office of Management and Budget over the FY 2002-2011 budget period (see Table 5).

Current Services funding levels for the Substance Abuse Block Grant are extrapolated through 2012 using the annual Office of Management and Budget general budget inflator for the 2003-2011 period of 2.2 percent. The Current Services Budget projects slowing growth for the entitlement programs, and this trend is assumed to continue through 2012. No extrapolations were necessary for the mandatory programs because the 2000 Census will affect their funding allocations over 2002-2011, the current budget period.

Assuming the Current Services spending levels, census population counts from Census 2000 ultimately will be used to distribute \$2.5 trillion over the 2002-2012 fiscal year period.

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<sup>10</sup> This report assumes that the effects of Census 2000 are not incorporated until 2000 population figures are used in allocation formulas. If population estimates from earlier years, such as 1999, are adjusted consistent with Census 2000, allocations could be affected before 2002.

### C. Funding Effect of Census 2000 Undercount on States

State allocation shares under federal grant programs are determined before the onset of the funding year; thus, state allocations for the current year are based on population estimates from several years earlier. The Census Bureau publishes population estimates for the years between decennial censuses. These estimates are based on the decennial population enumeration and are updated using administrative records (e.g., birth and death certificates). Consequently, errors in the decennial population count persist for ten years, until the next census enumeration. Consequently, the Census 2000 undercount will affect federal grant allocations over a ten-year period.

For example, the funding formula for the Social Services Block Grant program depends on population estimates from the second prior year. Thus, Census 2000 will affect Social Services Block Grant allocations over the 2002-2011 period. For the eight programs included in this report, Census 2000 will first affect grant allocations in either 2002 or 2003, and the effect will persist over the 2002-2011 or 2003-2012 period, depending on the program.

The effect of the Census 2000 undercount on the allocation of federal funds to states initially was calculated for a base year and then extrapolated over the 2002-2012 period. The base year for each grant program was determined as: the first year affected by the 2000 census figures or the most recent year for which data were available for all of the variables (other than population) in the funding formula. For most programs, 2002 was the base year used in the calculations. Because data for some of the formulae were not available to calculate the 2002 allocation, the base year for the corresponding programs is 2001. For example, the formula for Vocational Education depends on per capita personal income by state as released by the Bureau of Economic Analysis (BEA) for the second preceding year. Final per capita personal income figures are available for 1999; consequently, the base year for the Vocational Education program is 2001.

Once a base year was established for each program, we calculated state funding allocations using both official and adjusted 2000 state population projections. These calculations take into account all elements of the current funding formulae, including hold harmless and minimum share provisions. Each state's share of national program funding in the base year was then determined under both the official and adjusted 2000 population projections. The difference between these two shares of national program funding is an estimate of the impact of the Census 2000 undercount on the state's allocation of federal funds. For example, suppose that a state's share of federal program funds increases from 3.0 percent to 3.1 percent, in the base year, as a result of using adjusted versus official 2000 population projections. For this state, the effect of the Census 2000 undercount is estimated to be a loss of 0.1 percentage points (3.1 percent minus 3.0 percent) of national program funding.

For the eight federal grant programs analyzed in this study, the Census 2000 undercount is estimated to reduce federal funding in 31 states and the District of Columbia by \$4.1 billion over the 2002-2012 period (see Table 6). In 2003 alone, the undercount is estimated to reduce federal funds allocated to these states by \$277 million. By comparison, the General Accounting Office estimated that the effect of the 1990 census undercount on these federal programs was to shift \$449 million among states in 1998. Because the estimated 2000 undercount is both smaller and more uniform across jurisdictions than the estimated 1990 undercount, the total amount of federal funds reallocated is smaller.

States that are counted relatively well in the census are estimated to receive higher levels of federal funding as a result of the undercount; however, the additional federal funds received by these states

are less than the loss of federal funds in the other states. The effect of census undercounts on the federal funding of *entitlement* programs is not a “zero-sum game” among the states because an increase in funding to one state does not require a reduction in funding to other states. For the federal programs analyzed in this study, federal funds allocated to all 50 states and the District of Columbia are estimated to be \$478 million less over the 2002-2012 fiscal year period as a result of the Census 2000 undercount.

The loss of funds over the 2002-2012 period for the eight analyzed programs ranges from \$26 per undercounted person in Colorado to over \$6,300 per person missed by the census in Alaska (see Table 7).<sup>11</sup> In 2003, the first year fully impacted by the undercount, the funding loss in 31 undercounted states and the District of Columbia averages \$114 per uncounted individual. This figure is less than GAO’s 1998 estimate of \$145 per uncounted individual, which was based on the higher 1990 undercount rate.

Of the eight federal programs analyzed in this report, Medicaid accounts for 92 percent of the federal funds that would be shifted as a result of the Census 2000 undercount. As a percent of total program funding, the programs most affected by the Census 2000 undercount are Vocational Education (0.28 percent) and Rehabilitation Services (0.27 percent).<sup>12</sup> Table 8 summarizes the impact of the Census 2000 undercount by program.

#### **D. Funding Effect of Census 2000 Undercount on Counties**

This section analyzes the effect of the Census 2000 undercount on counties. The county effects are estimated under the assumption that states allocate federal funds among county in proportion to their official census population counts.

The Census 2000 undercount can affect federal funding to counties in two ways. First, the undercount at the state level affects the allocation of funds among the states, which alters the amount of funds that states have available to pass through to local governments (the “between-state” funding effect). For example, the Census 2000 undercount is estimated to cause the state of Illinois to receive a larger share of the federal funds under the programs analyzed than it would with an accurate census count (other states, therefore, receive a smaller share because of the undercount). Counties in the state, such as Cook County (Chicago), benefit from the fact that the state receives these additional funds. The *between-state* effect measures the effect on metropolitan areas of the funding shifts among the states due to the census undercount.

Second, the undercount at the local level may affect a state’s allocation of federal funds among its counties (the “within-state” funding effect). Assuming the state allocates funds to local areas within the state using population counts, any undercount would distort the flow of funds within the state. Because Cook County is estimated to experience a high undercount rate relative to the other areas in

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<sup>11</sup> Because of statutory provisions that guarantee minimum reimbursement rates, Medicaid funding for certain states would remain the same using either adjusted or unadjusted population counts. Some states, like New York, receive the minimum reimbursement of 50 percent of state expenditures under adjusted or unadjusted figures. The District of Columbia has a reimbursement rate set by statute at 70 percent. These areas experience significant undercounts, but the Medicaid minimum reimbursement provisions limit the federal funding losses from the undercount. Table D-5 in Appendix D lists the effect of the census undercount on state funding levels under the Medicaid program.

<sup>12</sup> These percentages translate into \$33 million for Vocational Education and \$72 million for Rehabilitation Services.

Illinois, it receives a smaller share of the state funds than it would have gotten under an accurate census count. Therefore, it experiences a negative within-state effect. The *within-state* effect measures the impact of the undercount on funding allocations within states.

The “net” funding effect of the census undercount on a county is the sum of the between-state and within-state funding effects. Because the between-state and within-state effects could have the same or different signs, the *net* effect could be larger or smaller than the between-state or within-state effects alone.

### ***1. Between-State Funding Effect***

For the counties within each state, the between-state funding effect was estimated in two steps. The effect of the Census 2000 undercount on the state’s level of federal funding was first calculated for the 2002-2012 period (see section III.C., above). The funding effect at the state level was then apportioned among the counties in proportion to their *unadjusted* population counts. Thus, counties in states that lose federal funding as a result of the Census 2000 undercount are each estimated to share proportionately in this funding loss.

### ***2. Within-State Funding Effect***

For the counties within each state, the within-state funding effect was estimated in four steps. First, the state’s share of federal funding over the 2002-2012 period was determined based on adjusted 2000 population counts (as described in section III.C., above). Second, state funding was apportioned among the counties in proportion to their estimated 2000 *adjusted* census counts. Third, state funding was apportioned among the counties in proportion to their 2000 *official* (unadjusted) census counts. Finally, the within-state funding effect was estimated by subtracting the county funding levels determined in step two (based on *adjusted* population counts) from step three (based on *official* population counts).

Counties with an undercount rate higher than the overall state average have a negative within-state funding effect, while relatively well counted areas have a positive within-state funding effect.

### ***3. Net Funding Effect***

For the counties within each state, the net funding effect of the Census 2000 undercount over the 2002-2012 period was calculated as the sum of the between-state and within-state funding effects. For any county, these two funding effects can work in the same or opposite directions. For example, Cook County is estimated to have a *positive* \$9 million *between-state* funding effect, because the State of Illinois is relatively well counted by the census. However, Cook County is estimated to have a *negative* \$202 million *within-state* funding effect because it is relatively poorly counted by the census compared to other jurisdictions within the state. Thus, the *net* federal funding effect in Cook County of the Census 2000 undercount is *negative* \$193 million (\$9 million less \$202 million) over the 2002-2012 period, because the funding loss from the within-state effect is larger than the funding gain from the between-state effect. The federal funding loss to the 58 largest counties adversely affected by the undercount is estimated to reach \$3.6 billion over the period, or an average of \$2,913 per uncoun-tered person in these jurisdictions.

Table 9 shows the net funding effect of the Census 2000 undercount on the 25 counties that are estimated to experience the largest loss in federal funding over the 2002-2012 period. The five counties

expecting the largest funding loss from the Census 2000 undercount are Los Angeles County, CA (\$636 million), Bronx County, NY (\$362 million), Kings County, NY (\$269 million), Harris County, TX (\$234 million), and New York County, NY (\$212 million). Results for all 112 selected counties are shown in Appendix E.

This analysis only considers the effect of the Census 2000 undercount on *federal* funds allocated to local governments. Because a variety of *state* grant programs are also distributed to local governments on the basis of official population counts, the total shift in funds from federal and state grant programs will likely be larger than the estimates in this report.



## APPENDIX A

### 2000 Population Counts and Estimated Undercounts of Persons Over and Under 18 Years of Age by State

Table A-1. Unadjusted and Adjusted Year 2000 Census Population Counts by State

| State                | Unadjusted Population Counts <sup>1</sup> |             |            | Adjusted Population Counts <sup>2</sup> |             |            |
|----------------------|---|-------------|------------|---|-------------|------------|
|                      | State/TIS Total                           | Over 18     | Under 18   | State/TIS Total                         | Over 18     | Under 18   |
| United States        | 281,421,906                               | 209,128,094 | 72,293,812 | 284,777,491                             | 211,341,436 | 73,436,055 |
| Alabama              | 4,917,100                                 | 3,323,678   | 1,123,022  | 4,500,658                               | 3,351,582   | 1,196,075  |
| Alaska               | 626,932                                   | 436,215     | 190,717    | 644,130                                 | 448,098     | 196,033    |
| Arizona              | 5,130,632                                 | 3,763,685   | 1,366,947  | 5,205,064                               | 3,814,335   | 1,390,730  |
| Arkansas             | 2,673,400                                 | 1,993,031   | 680,369    | 2,708,063                               | 2,014,343   | 693,720    |
| California           | 33,871,648                                | 24,621,819  | 9,249,829  | 34,394,444                              | 24,998,670  | 9,395,773  |
| Colorado             | 4,301,261                                 | 3,200,166   | 1,100,795  | 4,356,148                               | 3,237,889   | 1,118,259  |
| Connecticut          | 3,405,265                                 | 2,563,877   | 841,688    | 3,438,923                               | 2,586,781   | 852,141    |
| Delaware             | 783,600                                   | 589,013     | 194,587    | 795,533                                 | 596,972     | 198,561    |
| District of Columbia | 572,039                                   | 437,067     | 114,992    | 584,629                                 | 463,879     | 118,750    |
| Florida              | 15,082,378                                | 12,336,038  | 3,646,340  | 16,183,048                              | 13,468,415  | 3,714,633  |
| Georgia              | 8,186,453                                 | 6,017,219   | 2,169,234  | 8,309,453                               | 6,091,998   | 2,217,455  |
| Hawaii               | 1,211,537                                 | 915,770     | 295,767    | 1,238,284                               | 933,251     | 305,033    |
| Idaho                | 1,293,953                                 | 924,923     | 369,030    | 1,315,528                               | 938,913     | 376,615    |
| Illinois             | 12,419,293                                | 9,173,842   | 3,245,451  | 12,527,025                              | 9,246,298   | 3,280,727  |
| Indiana              | 6,080,485                                 | 4,506,089   | 1,574,396  | 6,127,668                               | 4,534,460   | 1,593,208  |
| Iowa                 | 2,926,324                                 | 2,192,686   | 733,638    | 2,940,138                               | 2,201,785   | 738,353    |
| Kansas               | 2,688,418                                 | 1,975,425   | 712,993    | 2,706,279                               | 1,986,671   | 719,609    |
| Kentucky             | 4,041,769                                 | 3,046,951   | 994,818    | 4,092,102                               | 3,078,249   | 1,013,852  |
| Louisiana            | 4,468,976                                 | 3,249,177   | 1,219,799  | 4,529,674                               | 3,283,507   | 1,246,167  |
| Maine                | 1,274,923                                 | 973,685     | 301,238    | 1,292,108                               | 983,215     | 308,893    |
| Maryland             | 5,296,486                                 | 3,910,314   | 1,386,172  | 5,371,690                               | 3,980,873   | 1,390,817  |
| Massachusetts        | 6,349,097                                 | 4,849,033   | 1,500,064  | 6,397,720                               | 4,884,369   | 1,513,351  |
| Michigan             | 9,938,444                                 | 7,342,677   | 2,595,767  | 10,009,512                              | 7,385,498   | 2,624,013  |
| Minnesota            | 4,919,479                                 | 3,632,385   | 1,286,894  | 4,933,787                               | 3,638,847   | 1,294,940  |
| Mississippi          | 2,844,638                                 | 2,069,471   | 775,167    | 2,880,375                               | 2,089,389   | 790,985    |
| Missouri             | 5,595,211                                 | 4,167,519   | 1,427,692  | 5,621,068                               | 4,180,603   | 1,440,465  |
| Montana              | 902,195                                   | 672,153     | 230,042    | 916,585                                 | 681,916     | 234,669    |
| Nebraska             | 1,711,263                                 | 1,261,021   | 450,242    | 1,720,900                               | 1,266,872   | 454,028    |
| Nevada               | 1,998,257                                 | 1,486,458   | 511,799    | 2,032,401                               | 1,511,027   | 521,373    |
| New Hampshire        | 1,233,786                                 | 926,234     | 307,552    | 1,249,910                               | 934,690     | 315,220    |
| New Jersey           | 8,911,350                                 | 6,326,792   | 2,087,558  | 8,512,241                               | 6,397,661   | 2,114,580  |
| New Mexico           | 1,819,016                                 | 1,210,172   | 508,571    | 1,852,031                               | 1,325,597   | 526,434    |
| New York             | 18,976,457                                | 14,286,350  | 4,690,107  | 19,185,580                              | 14,428,065  | 4,757,515  |
| North Carolina       | 8,049,313                                 | 6,085,266   | 1,964,047  | 8,160,293                               | 6,156,125   | 2,004,168  |
| North Dakota         | 642,200                                   | 481,351     | 160,849    | 645,233                                 | 483,302     | 161,931    |
| Ohio                 | 11,353,140                                | 8,164,801   | 2,888,339  | 11,418,224                              | 8,295,518   | 2,922,706  |
| Oklahoma             | 3,450,654                                 | 2,558,291   | 892,360    | 3,499,649                               | 2,586,403   | 913,246    |
| Oregon               | 3,421,399                                 | 2,574,873   | 846,526    | 3,465,410                               | 2,603,182   | 862,228    |
| Pennsylvania         | 12,281,054                                | 9,358,833   | 2,922,221  | 12,382,591                              | 9,416,396   | 2,966,196  |
| Rhode Island         | 1,048,319                                 | 800,497     | 247,822    | 1,057,306                               | 806,842     | 250,464    |
| South Carolina       | 4,012,012                                 | 3,002,371   | 1,009,641  | 4,060,744                               | 3,031,370   | 1,029,373  |
| South Dakota         | 751,814                                   | 552,195     | 202,619    | 759,095                                 | 554,727     | 204,368    |
| Tennessee            | 5,689,283                                 | 4,290,762   | 1,398,521  | 5,760,133                               | 4,333,431   | 1,426,701  |
| Texas                | 20,851,820                                | 14,965,061  | 5,886,759  | 21,225,387                              | 15,231,864  | 5,993,523  |
| Utah                 | 2,233,169                                 | 1,514,471   | 718,698    | 2,263,739                               | 1,533,133   | 730,607    |
| Vermont              | 608,827                                   | 461,304     | 147,523    | 618,161                                 | 466,666     | 151,495    |
| Virginia             | 7,078,215                                 | 5,240,253   | 1,738,262  | 7,173,928                               | 5,301,806   | 1,769,062  |
| Washington           | 5,894,121                                 | 4,380,278   | 1,513,843  | 5,978,417                               | 4,435,942   | 1,542,475  |
| West Virginia        | 1,808,344                                 | 1,405,951   | 402,393    | 1,830,122                               | 1,421,169   | 408,954    |
| Wisconsin            | 5,363,675                                 | 3,994,919   | 1,368,756  | 5,401,485                               | 4,017,548   | 1,383,938  |
| Wyoming              | 493,782                                   | 364,909     | 128,873    | 501,607                                 | 370,216     | 131,391    |

<sup>1</sup>Source: U.S. Census Bureau, *Census 2000 Redistricting Data (P.L. 94-171) Summary File, Table 1*.

<sup>2</sup>Equals unadjusted population count plus undercount (See Table A-2).

Table A-2. Year 2000 Census Undercount and Undercount Rate by State

| State                | Undercount     |                      |                       | Undercount Rate <sup>2</sup> |         |          |
|----------------------|----------------|----------------------|-----------------------|------------------------------|---------|----------|
|                      | State/US Total | Over 18 <sup>1</sup> | Under 18 <sup>1</sup> | State/US Total               | Over 18 | Under 18 |
| United States        | 3,355,585      | 2,213,342            | 1,142,243             | 1.18                         | 1.05    | 1.56     |
| Alabama              | 53,558         | 30,904               | 22,653                | 1.19                         | 0.92    | 1.94     |
| Alaska               | 17,198         | 11,883               | 5,316                 | 2.67                         | 2.65    | 2.72     |
| Arizona              | 74,432         | 50,650               | 23,783                | 1.43                         | 1.33    | 1.70     |
| Arkansas             | 34,663         | 21,312               | 13,351                | 1.28                         | 1.06    | 1.90     |
| California           | 522,796        | 376,851              | 145,944               | 1.52                         | 1.51    | 1.51     |
| Colorado             | 54,887         | 37,433               | 17,454                | 1.26                         | 1.16    | 1.55     |
| Connecticut          | 33,358         | 22,901               | 10,457                | 0.97                         | 0.89    | 1.22     |
| Delaware             | 11,933         | 7,959                | 3,974                 | 1.50                         | 1.33    | 2.00     |
| District of Columbia | 12,570         | 8,812                | 3,758                 | 2.13                         | 1.89    | 3.09     |
| Florida              | 200,670        | 132,377              | 68,293                | 1.21                         | 1.06    | 1.82     |
| Georgia              | 122,980        | 77,779               | 45,201                | 1.48                         | 1.28    | 2.04     |
| Hawaii               | 26,747         | 17,481               | 9,266                 | 2.16                         | 1.87    | 3.01     |
| Idaho                | 21,575         | 13,990               | 7,585                 | 1.64                         | 1.49    | 2.00     |
| Illinois             | 107,732        | 72,456               | 35,276                | 0.86                         | 0.78    | 1.07     |
| Indiana              | 47,185         | 28,371               | 18,812                | 0.77                         | 0.63    | 1.15     |
| Iowa                 | 14,114         | 9,099                | 5,015                 | 0.48                         | 0.41    | 0.69     |
| Kansas               | 17,861         | 11,246               | 6,616                 | 0.66                         | 0.57    | 0.91     |
| Kentucky             | 50,333         | 31,298               | 19,034                | 1.23                         | 1.02    | 1.85     |
| Louisiana            | 60,698         | 34,330               | 26,368                | 1.34                         | 1.05    | 2.11     |
| Maine                | 17,185         | 9,550                | 7,635                 | 1.33                         | 0.97    | 2.44     |
| Maryland             | 75,204         | 50,559               | 24,645                | 1.40                         | 1.27    | 1.78     |
| Massachusetts        | 48,623         | 35,336               | 13,287                | 0.76                         | 0.72    | 0.88     |
| Michigan             | 71,068         | 42,821               | 28,246                | 0.71                         | 0.58    | 1.06     |
| Minnesota            | 11,208         | 6,262                | 8,016                 | 0.29                         | 0.17    | 0.60     |
| Mississippi          | 35,717         | 19,918               | 15,798                | 1.21                         | 0.95    | 1.97     |
| Missouri             | 25,857         | 13,084               | 12,773                | 0.46                         | 0.31    | 0.88     |
| Montana              | 14,390         | 9,813                | 4,577                 | 1.57                         | 1.44    | 1.93     |
| Nebraska             | 9,637          | 5,851                | 3,786                 | 0.56                         | 0.46    | 0.84     |
| Nevada               | 34,144         | 24,569               | 9,576                 | 1.68                         | 1.63    | 1.82     |
| New Hampshire        | 14,124         | 8,466                | 5,658                 | 1.13                         | 0.91    | 1.78     |
| New Jersey           | 97,891         | 70,869               | 27,022                | 1.15                         | 1.11    | 1.29     |
| New Mexico           | 35,988         | 25,035               | 10,952                | 1.94                         | 1.87    | 2.11     |
| New York             | 209,123        | 141,715              | 67,408                | 1.09                         | 0.98    | 1.39     |
| North Carolina       | 110,980        | 70,859               | 40,121                | 1.36                         | 1.15    | 1.99     |
| North Dakota         | 3,033          | 1,951                | 1,082                 | 0.47                         | 0.40    | 0.67     |
| Ohio                 | 65,084         | 30,747               | 34,337                | 0.57                         | 0.36    | 1.14     |
| Oklahoma             | 48,995         | 28,109               | 20,886                | 1.40                         | 1.09    | 2.27     |
| Oregon               | 41,011         | 28,309               | 15,702                | 1.27                         | 1.09    | 1.81     |
| Pennsylvania         | 101,537        | 57,563               | 43,975                | 0.82                         | 0.61    | 1.16     |
| Rhode Island         | 8,987          | 6,345                | 2,642                 | 0.85                         | 0.79    | 1.05     |
| South Carolina       | 48,729         | 28,999               | 19,730                | 1.20                         | 0.96    | 1.88     |
| South Dakota         | 4,251          | 2,532                | 1,719                 | 0.56                         | 0.46    | 0.84     |
| Tennessee            | 70,850         | 42,669               | 28,180                | 1.23                         | 0.98    | 1.94     |
| Texas                | 373,567        | 266,803              | 106,764               | 1.76                         | 1.75    | 1.79     |
| Utah                 | 30,560         | 18,662               | 11,899                | 1.35                         | 1.22    | 1.62     |
| Vermont              | 9,334          | 5,362                | 3,972                 | 1.51                         | 1.15    | 2.58     |
| Virginia             | 95,413         | 64,613               | 30,800                | 1.33                         | 1.20    | 1.74     |
| Washington           | 84,296         | 55,664               | 28,632                | 1.41                         | 1.25    | 1.85     |
| West Virginia        | 21,778         | 15,218               | 6,561                 | 1.19                         | 1.07    | 1.58     |
| Wisconsin            | 37,810         | 22,629               | 15,182                | 0.70                         | 0.56    | 1.10     |
| Wyoming              | 7,825          | 5,327                | 2,499                 | 1.56                         | 1.44    | 1.91     |

<sup>1</sup>Source: Dr. Eugene Erickson, *Estimates of State and County Undercount Rates*, May 1, 2001.

<sup>2</sup>PricewaterhouseCoopers calculations based on undercount rates provided by Dr. Erickson.

<sup>3</sup>Undercount as a percent of adjusted population. U.S. Census Bureau and Dr. Eugene Erickson, *Estimates of State and County Undercount Rates*, May 1, 2001.

**APPENDIX B****2000 Population Undercount by Selected County****Appendix B. Year 2000 Census Undercount by County**

| State, County                           | 2000 Population Projection    |                             | Estimated Undercount |                   |
|---|-------------------------------|-----------------------------|----------------------|-------------------|
|   | Unadjusted Count <sup>1</sup> | Adjusted Count <sup>2</sup> | Number <sup>3</sup>  | Rate <sup>4</sup> |
| <b>Total, All 112 Selected Counties</b> | <b>125,460,358</b>            | <b>127,081,879</b>          | <b>1,621,521</b>     | <b>1.28</b>       |
| <b>Alabama</b>                          | <b>4,447,100</b>              | <b>4,500,658</b>            | <b>53,558</b>        | <b>1.19</b>       |
| Jefferson County                        | 662,017                       | 672,565                     | 10,518               | 1.56              |
| <b>Arizona</b>                          | <b>5,130,632</b>              | <b>5,205,064</b>            | <b>74,432</b>        | <b>1.43</b>       |
| Maricopa County                         | 3,072,149                     | 3,109,081                   | 36,932               | 1.19              |
| Pima County                             | 813,716                       | 851,259                     | 10,513               | 1.23              |
| <b>California</b>                       | <b>33,871,648</b>             | <b>34,394,444</b>           | <b>522,796</b>       | <b>1.52</b>       |
| Alameda County                          | 1,443,741                     | 1,463,267                   | 19,526               | 1.33              |
| Contra Costa County                     | 918,816                       | 957,328                     | 8,512                | 0.89              |
| Fresno County                           | 799,407                       | 817,747                     | 12,940               | 1.59              |
| Kern County                             | 661,645                       | 670,843                     | 9,198                | 1.37              |
| Los Angeles County                      | 9,519,338                     | 9,694,716                   | 175,378              | 1.81              |
| Orange County                           | 2,846,289                     | 2,881,546                   | 35,257               | 1.22              |
| Riverside County                        | 1,345,387                     | 1,363,399                   | 18,012               | 1.15              |
| Sacramento County                       | 1,223,499                     | 1,236,842                   | 13,343               | 1.08              |
| San Bernardino County                   | 1,709,434                     | 1,737,375                   | 27,941               | 1.32              |
| San Diego County                        | 2,813,833                     | 2,850,103                   | 36,270               | 1.27              |
| San Francisco County                    | 776,733                       | 788,191                     | 11,458               | 1.45              |
| San Joaquin County                      | 563,598                       | 571,318                     | 7,720                | 1.35              |
| San Mateo County                        | 707,161                       | 714,694                     | 7,533                | 1.05              |
| Santa Clara County                      | 1,682,585                     | 1,702,011                   | 19,426               | 1.14              |
| Ventura County                          | 753,197                       | 761,381                     | 8,184                | 1.07              |
| <b>Colorado</b>                         | <b>4,301,261</b>              | <b>4,356,148</b>            | <b>54,887</b>        | <b>1.26</b>       |
| Denver County                           | 554,636                       | 563,619                     | 8,983                | 1.59              |
| El Paso County                          | 516,929                       | 521,732                     | 4,803                | 0.92              |
| Jefferson County                        | 527,056                       | 529,927                     | 2,871                | 0.54              |
| <b>Connecticut</b>                      | <b>3,405,565</b>              | <b>3,438,923</b>            | <b>33,358</b>        | <b>0.97</b>       |
| Fairfield County                        | 882,567                       | 891,041                     | 8,474                | 0.95              |
| Hartford County                         | 857,183                       | 866,052                     | 8,869                | 1.02              |
| New Haven County                        | 824,008                       | 831,688                     | 7,680                | 0.92              |
| <b>Delaware</b>                         | <b>783,600</b>                | <b>795,533</b>              | <b>11,933</b>        | <b>1.50</b>       |
| New Castle County                       | 500,265                       | 507,573                     | 7,308                | 1.41              |
| <b>Florida</b>                          | <b>15,982,378</b>             | <b>16,183,048</b>           | <b>200,670</b>       | <b>1.24</b>       |
| Broward County                          | 1,623,018                     | 1,642,842                   | 19,824               | 1.21              |
| Miami-Dade County                       | 2,253,362                     | 2,297,091                   | 43,729               | 1.90              |
| Duval County                            | 778,879                       | 787,957                     | 9,078                | 1.15              |
| Hillsborough County                     | 998,948                       | 1,010,386                   | 11,438               | 1.13              |
| Orange County                           | 896,341                       | 907,877                     | 11,533               | 1.27              |
| Palm Beach County                       | 1,131,184                     | 1,147,954                   | 11,770               | 1.03              |
| Pinellas County                         | 921,482                       | 929,008                     | 7,526                | 0.81              |
| <b>Georgia</b>                          | <b>8,186,453</b>              | <b>8,309,433</b>            | <b>122,980</b>       | <b>1.48</b>       |
| Cobb County                             | 607,751                       | 616,957                     | 9,201                | 1.49              |
| DeKalb County                           | 665,865                       | 680,465                     | 14,600               | 2.15              |
| Fulton County                           | 816,006                       | 833,051                     | 17,045               | 2.05              |
| Gwinnett County                         | 588,448                       | 596,806                     | 8,358                | 1.40              |

Footnotes appear at end of table.

## Appendix B. Year 2000 Census Undercount by County, continued

| State, County               | 2000 Population Projection    |                             | Estimated Undercount |                   |
|-----------------------------|-------------------------------|-----------------------------|----------------------|-------------------|
|                             | Unadjusted Count <sup>1</sup> | Adjusted Count <sup>2</sup> | Number <sup>3</sup>  | Rate <sup>4</sup> |
| <b>Hawaii</b>               | <b>1,211,537</b>              | <b>1,238,284</b>            | <b>26,747</b>        | <b>2.16</b>       |
| Honolulu County             | 876,156                       | 894,559                     | 18,403               | 2.06              |
| <b>Illinois</b>             | <b>12,419,293</b>             | <b>12,527,025</b>           | <b>107,732</b>       | <b>0.86</b>       |
| Cook County                 | 5,376,711                     | 5,453,560                   | 76,819               | 1.41              |
| DuPage County               | 904,161                       | 907,141                     | 2,980                | 0.33              |
| Lake County                 | 644,356                       | 647,892                     | 3,536                | 0.55              |
| Will County                 | 502,266                       | 503,952                     | 1,686                | 0.33              |
| <b>Indiana</b>              | <b>6,080,485</b>              | <b>6,127,668</b>            | <b>47,183</b>        | <b>0.77</b>       |
| Marion County               | 860,454                       | 868,891                     | 8,437                | 0.97              |
| <b>Kentucky</b>             | <b>4,041,769</b>              | <b>4,092,102</b>            | <b>50,333</b>        | <b>1.23</b>       |
| Jefferson County            | 693,604                       | 701,961                     | 8,357                | 1.19              |
| <b>Maryland</b>             | <b>5,296,486</b>              | <b>5,371,690</b>            | <b>75,204</b>        | <b>1.40</b>       |
| Baltimore City <sup>5</sup> | 651,154                       | 664,993                     | 13,839               | 2.08              |
| Baltimore County            | 754,292                       | 763,672                     | 9,380                | 1.23              |
| Montgomery County           | 873,341                       | 885,453                     | 12,112               | 1.37              |
| Prince George's County      | 801,515                       | 817,093                     | 15,578               | 1.91              |
| <b>Massachusetts</b>        | <b>6,349,097</b>              | <b>6,397,720</b>            | <b>48,623</b>        | <b>0.76</b>       |
| Bristol County              | 534,678                       | 537,658                     | 2,980                | 0.55              |
| Essex County                | 723,419                       | 728,856                     | 5,437                | 0.75              |
| Middlesex County            | 1,465,396                     | 1,474,743                   | 9,347                | 0.63              |
| Norfolk County              | 650,308                       | 653,016                     | 2,708                | 0.41              |
| Suffolk County              | 689,807                       | 701,348                     | 11,541               | 1.65              |
| Worcester County            | 750,963                       | 755,887                     | 4,924                | 0.65              |
| <b>Michigan</b>             | <b>9,938,444</b>              | <b>10,009,512</b>           | <b>71,068</b>        | <b>0.71</b>       |
| Kent County                 | 574,335                       | 577,662                     | 3,327                | 0.58              |
| Macomb County               | 788,149                       | 790,664                     | 2,515                | 0.32              |
| Oakland County              | 1,194,156                     | 1,200,981                   | 6,825                | 0.57              |
| Wayne County                | 2,061,162                     | 2,091,394                   | 30,232               | 1.45              |
| <b>Minnesota</b>            | <b>4,919,479</b>              | <b>4,933,787</b>            | <b>14,308</b>        | <b>0.29</b>       |
| Hennepin County             | 1,116,200                     | 1,123,958                   | 7,758                | 0.69              |
| Ramsey County               | 511,035                       | 513,913                     | 2,878                | 0.56              |
| <b>Missouri</b>             | <b>5,595,211</b>              | <b>5,621,068</b>            | <b>25,857</b>        | <b>0.46</b>       |
| Jackson County              | 654,880                       | 661,305                     | 6,425                | 0.97              |
| St. Louis County            | 1,016,315                     | 1,022,272                   | 5,957                | 0.58              |
| <b>Nevada</b>               | <b>1,998,257</b>              | <b>2,032,401</b>            | <b>34,144</b>        | <b>1.68</b>       |
| Clark County                | 1,375,765                     | 1,396,215                   | 20,450               | 1.46              |
| <b>New Jersey</b>           | <b>8,414,350</b>              | <b>8,512,241</b>            | <b>97,891</b>        | <b>1.15</b>       |
| Bergen County               | 884,118                       | 892,354                     | 8,236                | 0.92              |
| Camden County               | 508,932                       | 513,949                     | 5,017                | 0.98              |
| Essex County                | 793,633                       | 808,624                     | 14,991               | 1.85              |
| Hudson County               | 608,975                       | 622,595                     | 13,620               | 2.19              |
| Middlesex County            | 750,162                       | 758,371                     | 8,209                | 1.08              |
| Monmouth County             | 615,301                       | 620,014                     | 4,713                | 0.76              |
| Ocean County                | 510,916                       | 514,011                     | 3,095                | 0.60              |
| Union County                | 522,541                       | 529,612                     | 7,071                | 1.34              |

Footnotes appear at end of table.

## Appendix B. Year 2000 Census Undercount by County, continued

| State, County                | 2000 Population Projection    |                             | Estimated Undercount |                   |
|------------------------------|-------------------------------|-----------------------------|----------------------|-------------------|
|                              | Unadjusted Count <sup>1</sup> | Adjusted Count <sup>2</sup> | Number <sup>3</sup>  | Rate <sup>4</sup> |
| <b>New Mexico</b>            | <b>1,819,046</b>              | <b>1,855,034</b>            | <b>35,988</b>        | <b>1.94</b>       |
| Bernalillo County            | 556,678                       | 564,539                     | 7,861                | 1.39              |
| <b>New York</b>              | <b>18,976,457</b>             | <b>19,185,580</b>           | <b>209,123</b>       | <b>1.09</b>       |
| Bronx County                 | 1,332,650                     | 1,369,358                   | 36,708               | 2.68              |
| Erie County                  | 950,265                       | 955,016                     | 4,751                | 0.50              |
| Kings County                 | 2,465,326                     | 2,508,872                   | 43,546               | 1.74              |
| Monroe County                | 735,343                       | 739,316                     | 3,973                | 0.51              |
| Nassau County                | 1,334,544                     | 1,332,925                   | -1,619               | -0.12             |
| New York County              | 1,537,195                     | 1,567,060                   | 29,865               | 1.91              |
| Queens County                | 2,229,379                     | 2,257,703                   | 28,324               | 1.25              |
| Richmond County <sup>6</sup> | 443,728                       | 445,203                     | 1,475                | 0.33              |
| Suffolk County               | 1,419,369                     | 1,416,194                   | -3,175               | -0.22             |
| Westchester County           | 923,459                       | 928,775                     | 5,316                | 0.57              |
| <b>North Carolina</b>        | <b>8,049,313</b>              | <b>8,160,293</b>            | <b>110,980</b>       | <b>1.36</b>       |
| Mecklenburg County           | 695,454                       | 707,386                     | 11,932               | 1.69              |
| Wake County                  | 627,846                       | 637,077                     | 9,231                | 1.45              |
| <b>Ohio</b>                  | <b>11,353,140</b>             | <b>11,418,224</b>           | <b>65,084</b>        | <b>0.57</b>       |
| Cuyahoga County              | 1,393,978                     | 1,407,137                   | 13,159               | 0.94              |
| Franklin County              | 1,068,978                     | 1,077,965                   | 8,987                | 0.83              |
| Hamilton County              | 845,303                       | 852,737                     | 7,434                | 0.87              |
| Montgomery County            | 559,062                       | 563,089                     | 4,027                | 0.72              |
| Summit County                | 542,899                       | 545,497                     | 2,598                | 0.48              |
| <b>Oklahoma</b>              | <b>3,450,654</b>              | <b>3,499,649</b>            | <b>48,995</b>        | <b>1.40</b>       |
| Oklahoma County              | 660,448                       | 671,690                     | 11,242               | 1.67              |
| Tulsa County                 | 563,299                       | 571,988                     | 8,689                | 1.52              |
| <b>Oregon</b>                | <b>3,421,399</b>              | <b>3,465,410</b>            | <b>44,011</b>        | <b>1.27</b>       |
| Multnomah County             | 660,486                       | 666,731                     | 6,245                | 0.94              |
| <b>Pennsylvania</b>          | <b>12,281,054</b>             | <b>12,382,591</b>           | <b>101,537</b>       | <b>0.82</b>       |
| Allegheny County             | 1,281,666                     | 1,287,406                   | 5,740                | 0.45              |
| Bucks County                 | 597,635                       | 600,363                     | 2,728                | 0.45              |
| Delaware County              | 550,864                       | 554,354                     | 3,490                | 0.63              |
| Montgomery County            | 750,097                       | 754,000                     | 3,903                | 0.52              |
| Philadelphia County          | 1,517,550                     | 1,536,930                   | 19,380               | 1.26              |
| <b>Rhode Island</b>          | <b>1,048,319</b>              | <b>1,057,306</b>            | <b>8,987</b>         | <b>0.85</b>       |
| Providence County            | 621,602                       | 625,596                     | 3,994                | 0.64              |
| <b>Tennessee</b>             | <b>5,689,283</b>              | <b>5,760,133</b>            | <b>70,850</b>        | <b>1.23</b>       |
| Davidson County              | 569,891                       | 578,765                     | 8,874                | 1.53              |
| Shelby County                | 897,472                       | 912,769                     | 15,297               | 1.68              |
| <b>Texas</b>                 | <b>20,851,820</b>             | <b>21,225,387</b>           | <b>373,567</b>       | <b>1.52</b>       |
| Bexar County                 | 1,392,931                     | 1,419,991                   | 27,060               | 1.33              |
| Dallas County                | 2,218,899                     | 2,266,128                   | 47,229               | 0.89              |
| El Paso County               | 679,622                       | 693,922                     | 14,300               | 1.59              |
| Harris County                | 3,400,578                     | 3,472,170                   | 71,592               | 1.37              |
| Hidalgo County               | 569,463                       | 583,365                     | 13,902               | 1.81              |
| Tarrant County               | 1,446,219                     | 1,470,880                   | 24,661               | 1.22              |
| Travis County                | 812,280                       | 828,012                     | 15,732               | 1.15              |

Footnotes appear at end of table.

**Appendix B. Year 2000 Census Undercount by County, continued**

| State, County     | 2000 Population Projection    |                             | Estimated Undercount |                   |
|-------------------|-------------------------------|-----------------------------|----------------------|-------------------|
|                   | Unadjusted Count <sup>1</sup> | Adjusted Count <sup>2</sup> | Number <sup>3</sup>  | Rate <sup>4</sup> |
| <b>Utah</b>       | <b>2,233,169</b>              | <b>2,263,729</b>            | <b>30,560</b>        | <b>1.35</b>       |
| Salt Lake County  | 898,387                       | 907,947                     | 9,560                | 1.05              |
| <b>Virginia</b>   | <b>7,078,515</b>              | <b>7,173,928</b>            | <b>95,413</b>        | <b>1.33</b>       |
| Fairfax County    | 969,749                       | 981,909                     | 12,160               | 1.24              |
| <b>Washington</b> | <b>5,894,121</b>              | <b>5,978,417</b>            | <b>84,296</b>        | <b>1.41</b>       |
| King County       | 1,737,034                     | 1,757,102                   | 20,068               | 1.14              |
| Pierce County     | 700,820                       | 709,038                     | 8,218                | 1.16              |
| Snohomish County  | 606,024                       | 611,706                     | 5,682                | 0.93              |
| <b>Wisconsin</b>  | <b>5,363,675</b>              | <b>5,401,485</b>            | <b>37,810</b>        | <b>0.70</b>       |
| Milwaukee County  | 940,164                       | 951,412                     | 11,248               | 1.18              |

<sup>1</sup>Source: U.S. Census Bureau, *Census 2000 Redistricting Data (P.L. 94-171) Summary File, Table 1*.

<sup>2</sup>Equals unadjusted population count plus undercount.

<sup>3</sup>Equals adjusted minus unadjusted 2000 population projections.

<sup>4</sup>Undercount as a percent of adjusted population. U.S. Census Bureau and Dr. Eugene Erickson, *Estimates of State and County Undercount Rates*, May 1, 2001.

<sup>5</sup>Baltimore City is an independent city (i.e., it is independent of any county organization).

<sup>6</sup>Richmond County is included in order to comprise the 5 counties of New York City.

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## **APPENDIX C**

### **Federal Program Descriptions**

#### **Federal Program Descriptions**

The federal programs analyzed in the report are summarized below. Additional information, such as the formulas used to allocate funds to states, is available from the General Accounting Office report.<sup>1</sup> The total effect on the eight federal programs analyzed appears in Table D-1 in Appendix D.

#### **1. Adoption Assistance**

The Adoption Assistance program supports the adoption of children with special needs. Specifically, the program provides maintenance payments to the families adopting the qualifying children, payments to state agencies for the administrative costs involved with placing the children in adoptive homes, and payments for training professional staff and parents involved in the adoptions. States determine which children qualify for the assistance; in general, children with special circumstances that make their adoption less likely, such as a mental or physical handicap, are eligible for the program.

The federal government provides a specified percentage of the payments made to the qualifying families, and states provide the remainder. Administrative and training expenses are matched at the same rate in all states (50 percent and 75 percent, respectively). The federal government reimburses maintenance payments based on a state-specific percentage that depends on each state's per capita income. This percentage, the Federal medical assistance percentage (FMAP), ranges from 50 percent to 83 percent and also determines reimbursement rates under the Medicaid program.

To calculate the effect of the 2000 undercount on the Adoption Assistance funding received by each state, the FMAP for each state was calculated using adjusted and unadjusted per capita income, which relied on adjusted and unadjusted population counts. Adjusted and unadjusted funding levels by state were produced by calculating the product of the FMAP (adjusted or unadjusted) and the maintenance payments.<sup>2</sup> Table D-2 in Appendix D summarizes the estimated effect of the Census 2000 undercount on this program.

#### **2. Child Care and Development Fund Discretionary Funds (formerly the Child Care and Development Block Grant)**

This program provides funding to assist low-income families with child care and to improve the availability and quality of child care. States establish programs with the funds subject to certain Federal restrictions. For instance, to qualify for services under the program, children must be from families that earn less than 85 percent of the state median income.

The program allocates funding amounts to states based on a formula that includes the state population under 5 years old, the number of children qualifying for the School Lunch program, and the state per capita income. To calculate the effect of the 2000 undercount on the funding received by each state, adjusted and unadjusted population (under 5 and overall) figures were used in the formula to calculate adjusted and unadjusted state shares. Multiplying these shares by the total funding level for the program yielded the adjusted and unadjusted state funding levels. Table D-3 in Appendix D summarizes the estimated effect of the Census 2000 undercount on this program.

### **3. Foster Care**

The Foster Care program supports families and facilities that provide homes to needy foster children. The program provides funding for maintenance payments to the homes hosting the children, payments to the state agencies for administrative costs, and payments to state and local agencies for training expenses. Any foster child that would have qualified for the Aid to Families with Dependent Children (AFDC) program, as in effect in 1995, qualifies for Foster Care payments, which are made to the foster care family home, private child care facility, or public child care institution (with more than 25 people). The maintenance payments are intended to cover the costs associated with raising a child, such as expenses for food, shelter, and supervision.

Similar to the Adoption Assistance program, administrative and training expenses are matched at the same rate in all states (50 percent and 75 percent, respectively). The federal government reimburses maintenance payments based on the FMAP.

To calculate the effect of the 2000 undercount on the Foster Care funding received by each state, the FMAP for each state was calculated using adjusted and unadjusted per capita income, which relied on adjusted and unadjusted population counts. Adjusted and unadjusted funding levels by state were produced by calculating the product of the FMAP (adjusted or unadjusted) and the maintenance payments. Table D-4 in Appendix D summarizes the estimated effect of the Census 2000 undercount on this program.

### **4. Medicaid**

The Medicaid program provides medical assistance to certain low-income individuals. States design and administer their own programs, subject to Federal regulations, and receive reimbursements from the Federal government for their expenses. In general, low-income children and pregnant women, adults in families with dependent children, low-income persons with disabilities, and low-income elderly persons qualify for the program. The program covers expenses for medical assistance such as inpatient and outpatient hospital care, laboratory and x-ray services, and physician services.

Administrative expenses, amounts for family planning, and amounts paid to Indian Health Services facilities are matched at the same rate in all states (50 percent, 90 percent, and 75 percent, respectively). Medical assistance payments (i.e., payments for care) are matched based on the FMAP.

To calculate the effect of the 2000 undercount on the Foster Care funding received by each state, the FMAP for each state was calculated using adjusted and unadjusted per capita income, which relied on adjusted and unadjusted population counts. Adjusted and unadjusted funding levels by state were produced by calculating the product of the FMAP (adjusted or unadjusted) and the medical assistance payments. Table D-5 in Appendix D summarizes the estimated effect of the Census 2000 undercount on this program.

### **5. Rehabilitation Services, Basic Grants**

This program provides vocational rehabilitation to disabled individuals and their families. Specifically, individuals with physical or mental impairments receive services such as reader services for the blind, interpreter services for the deaf, prosthetic devices, job placement, and transportation to vocational rehabilitation facilities. States administer independent programs, subject to Federal guidelines, and receive grants annually from the Federal government.



The program allocates funding to states based on a formula that considers the amount received by the state in 1978, state population, and per capita income. To calculate the effect of the 2000 undercount, state shares were calculated using adjusted and unadjusted state and national population figures. Adjusted and unadjusted state funding levels were calculated by multiplying the state shares (adjusted and unadjusted) by the total funding for the program. States are guaranteed to receive at least one-third of one percent of the total appropriation; state funding levels (adjusted and unadjusted) were adjusted to conform to this restriction. Table D-6 in Appendix D summarizes the estimated effect of the Census 2000 undercount on this program.

## **6. Social Services Block Grant**

This program provides grants to states for providing social services. States determine the use of the funds at their own discretion but must use the funds towards one of five goals: (1) to prevent, reduce, or eliminate dependency; (2) to achieve or maintain self-sufficiency; (3) to prevent neglect, abuse, or exploitation of children and adults; (4) to prevent or reduce inappropriate institutional care; and (5) to secure admission or referral for institutional care when other forms of care are inappropriate.<sup>3</sup> In the past, states have used the funds for child day care, protective and emergency services for children and adults, adoption, foster care, and counseling.

States receive allotments under the program based on a formula that relies on the state's share of the national population. To calculate the effect of the 2000 undercount, state shares were calculated using adjusted and unadjusted state and national population figures. Adjusted and unadjusted state funding levels were calculated by multiplying the state shares (adjusted and unadjusted) by the total funding for the program. Table D-7 in Appendix D summarizes the estimated effect of the Census 2000 undercount on this program.

## **7. Substance Abuse Prevention and Treatment Block Grant**

This program provides grants to states for the prevention and treatment of drug and alcohol abuse. Subject to certain federal restrictions, states design and implement programs to reduce drug and alcohol abuse and provide rehabilitation to individuals with drug and alcohol problems.

States receive allocations under the program based on a formula that depends on the population aged 18 to 24, population aged 25 to 64, urban population aged 18 to 24, per capita income, and a cost index. The cost index, which is recalculated every three years, consists of a wage component and a measure of average rental prices for housing.

To calculate the effect of the 2000 undercount, state shares were calculated using adjusted and unadjusted state and national population figures (the cost index and urban share of population were assumed to remain constant). Adjusted and unadjusted state funding levels were calculated by multiplying the state shares (adjusted and unadjusted) by the total funding for the program. After the calculation of these funding levels, additional adjustments were made to guarantee that each state received a minimum share of the increase in the national funding level and a minimum share of the national funding level, as is standard practice under current law. Table D-8 in Appendix D summarizes the estimated effect of the Census 2000 undercount on this program.

## **8. Vocational Education**

This program provides grants to states for vocational education programs for youths and adults. State programs offer courses to prepare individuals for employment in occupations not requiring a baccalaureate or an advanced degree. States use the funds provided by this program for a variety of activities, including purchasing occupationally-relevant equipment and curriculum materials, providing career counseling and guidance, hiring staff, and offering remedial classes.

The formula used to allot the funding amount to states depends on the population aged 15 to 19, population aged 20 to 24, population aged 25 to 65, and per capita income. To calculate the effect of the 2000 undercount, state shares were calculated using adjusted and unadjusted state and national population figures. Adjusted and unadjusted state funding levels were calculated by multiplying the state shares (adjusted and unadjusted) by the total funding for the program. Current law contains a “hold-harmless” provision to guarantee that the amount a state receives in the current year always exceeds the amount received in the prior year (assuming the national funding level rises). State funding levels were adjusted to ensure that this provision was satisfied. Table D-9 in Appendix D summarizes the estimated effect of the Census 2000 undercount on this program.

**APPENDIX D****Estimated Funding Effect by State Program****Table D-1. Estimated Funding Effect of Census 2000 Undercount by State on Eight Federal Programs, FY 2002-2012** [Fiscal years; thousands of dollars]

| State                       | 2002     | 2003           | 2004           | 2005           | 2006           | 2007           | 2002-2012       |
|-----------------------------|----------|----------------|----------------|----------------|----------------|----------------|-----------------|
| Alabama                     | 112      | 341            | 367            | 396            | 426            | 459            | 4,850           |
| Alaska                      | -293     | -7,321         | -7,945         | -8,633         | -9,363         | -10,157        | -108,455        |
| Arizona                     | -476     | -5,317         | -5,745         | -6,216         | -6,715         | -7,258         | -77,201         |
| Arkansas                    | -116     | -1,172         | -1,268         | -1,373         | -1,481         | -1,606         | -17,087         |
| California                  | -3,873   | -102,117       | -110,676       | -120,163       | -130,220       | -141,153       | -1,506,191      |
| Colorado                    | -100     | -132           | -135           | -138           | -141           | -143           | -1,429          |
| Connecticut                 | 181      | 245            | 249            | 254            | 259            | 264            | 2,635           |
| Delaware                    | -88      | -90            | -92            | -93            | -95            | -97            | -963            |
| District of Columbia        | 106      | 108            | 110            | 111            | 113            | 115            | 1,145           |
| Florida                     | -488     | -6,247         | -6,766         | -7,337         | -7,947         | -8,600         | -91,641         |
| Georgia                     | -1,056   | -14,265        | -15,441        | -16,735        | -18,105        | -19,598        | -208,754        |
| Hawaii                      | -399     | -7,180         | -7,778         | -8,437         | -9,136         | -9,896         | -105,516        |
| Idaho                       | -198     | -2,613         | -2,876         | -3,067         | -3,311         | -3,582         | -38,145         |
| Illinois                    | 1,594    | 1,954          | 1,994          | 2,035          | 2,075          | 2,117          | 21,078          |
| Indiana                     | 971      | 15,518         | 16,804         | 18,220         | 19,720         | 21,354         | 227,572         |
| Iowa                        | 832      | 12,098         | 13,093         | 14,192         | 15,356         | 16,623         | 177,085         |
| Kansas                      | 583      | 8,653          | 9,366          | 10,153         | 10,986         | 11,893         | 126,708         |
| Kentucky                    | -177     | -1,314         | -1,473         | -1,543         | -1,669         | -1,808         | -19,333         |
| Louisiana                   | -348     | -4,684         | -5,075         | -5,504         | -5,959         | -6,455         | -68,794         |
| Maine                       | -89      | -1,862         | -2,020         | -2,191         | -2,378         | -2,578         | -27,516         |
| Maryland                    | -406     | -514           | -525           | -535           | -546           | -557           | -5,545          |
| Massachusetts               | 744      | 953            | 971            | 991            | 1,010          | 1,029          | 10,258          |
| Michigan                    | 1,806    | 34,757         | 37,655         | 40,858         | 44,253         | 47,945         | 511,379         |
| Minnesota                   | 1,520    | 1,904          | 1,942          | 1,982          | 2,021          | 2,062          | 20,533          |
| Mississippi                 | -113     | -857           | -927           | -1,001         | -1,085         | -1,171         | -12,181         |
| Missouri                    | 1,570    | 35,315         | 38,307         | 41,589         | 45,072         | 48,867         | 571,486         |
| Montana                     | 110      | 1,454          | 1,575          | 1,708          | 1,848          | 2,001          | 21,326          |
| Nebraska                    | 431      | 7,579          | 8,212          | 8,908          | 9,647          | 10,450         | 111,424         |
| Nevada                      | -318     | -425           | -434           | -443           | -451           | -461           | -4,591          |
| New Hampshire               | 7        | 7              | 8              | 8              | 8              | 8              | 79              |
| New Jersey                  | 167      | 136            | 139            | 142            | 144            | 147            | 1,455           |
| New Mexico                  | -394     | -7,475         | -8,100         | -8,787         | -9,516         | -10,309        | -109,930        |
| New York                    | 666      | 850            | 867            | 885            | 903            | 921            | 9,173           |
| North Carolina              | -660     | -11,064        | -11,992        | -13,013        | -14,094        | -15,273        | -162,873        |
| North Dakota                | 122      | 2,164          | 2,347          | 2,547          | 2,760          | 2,992          | 31,917          |
| Ohio                        | 2,530    | 54,030         | 58,567         | 63,566         | 68,864         | 74,679         | 796,077         |
| Oklahoma                    | -360     | -3,439         | -3,717         | -4,023         | -4,347         | -4,700         | -49,990         |
| Oregon                      | -143     | -2,285         | -2,476         | -2,687         | -2,910         | -3,153         | -33,623         |
| Pennsylvania                | 1,446    | 45,229         | 49,075         | 53,322         | 57,823         | 62,723         | 669,759         |
| Rhode Island                | 104      | 4,765          | 5,179          | 5,634          | 6,117          | 6,643          | 71,011          |
| South Carolina              | -91      | -629           | -681           | -738           | -798           | -863           | -9,183          |
| South Dakota                | 173      | 2,096          | 2,269          | 2,459          | 2,661          | 2,880          | 30,678          |
| Tennessee                   | 216      | 2,636          | 2,857          | 3,100          | 3,357          | 3,638          | 38,777          |
| Texas                       | -4,648   | -69,361        | -75,070        | -81,350        | -88,002        | -95,247        | -1,014,599      |
| Utah                        | -111     | -1,202         | -1,299         | -1,404         | -1,517         | -1,639         | -17,424         |
| Vermont                     | -73      | -1,816         | -1,971         | -2,141         | -2,322         | -2,519         | -26,891         |
| Virginia                    | -391     | -5,974         | -6,468         | -7,011         | -7,588         | -8,215         | -87,539         |
| Washington                  | 517      | 12,489         | 13,549         | 14,715         | 15,952         | 17,299         | 184,651         |
| West Virginia               | -2       | -139           | -151           | -164           | -179           | -194           | -2,076          |
| Wisconsin                   | 974      | 17,143         | 18,570         | 20,143         | 21,810         | 23,624         | 251,858         |
| Wyoming                     | -58      | -812           | -879           | -951           | -1,032         | -1,118         | -11,920         |
| <b>Total, United States</b> | <b>0</b> | <b>-31,924</b> | <b>-34,726</b> | <b>-37,826</b> | <b>-41,114</b> | <b>-44,693</b> | <b>-478,297</b> |
| Funding Gains               | 16,436   | 245,656        | 265,865        | 288,148        | 311,756        | 319,336        | 3,594,813       |
| Funding Losses              | -16,436  | -277,580       | -300,591       | -325,974       | -352,870       | -364,028       | -4,073,140      |

Source: PricewaterhouseCoopers calculations.

**Table D-2. Estimated Funding Effect of Census 2000 Undercount by State: Adoption Assistance, FY 2002-2012** [Fiscal years; thousands of dollars]

| State                       | 2003       | 2004       | 2005        | 2006        | 2007        | 2003-2007   | 2003-2012     |
|-----------------------------|------------|------------|-------------|-------------|-------------|-------------|---------------|
| Alabama                     | *          | *          | *           | *           | *           | -1          | -3            |
| Alaska                      | -129       | -138       | -150        | -162        | -175        | -755        | -1,861        |
| Arizona                     | -54        | -58        | -63         | -68         | -74         | -317        | -784          |
| Arkansas                    | -6         | -7         | -7          | -8          | -9          | -38         | -93           |
| California                  | -1,200     | -1,281     | -1,390      | -1,507      | -1,626      | -7,005      | -17,299       |
| Colorado                    | 0          | 0          | 0           | 0           | 0           | 0           | 0             |
| Connecticut                 | 0          | 0          | 0           | 0           | 0           | 0           | 0             |
| Delaware                    | 0          | 0          | 0           | 0           | 0           | 0           | 0             |
| District of Columbia        | 0          | 0          | 0           | 0           | 0           | 0           | 0             |
| Florida                     | -21        | -25        | -27         | -30         | -32         | -138        | -312          |
| Georgia                     | -88        | -93        | -101        | -110        | -119        | -511        | -1,262        |
| Hawaii                      | -63        | -67        | -73         | -79         | -85         | -366        | -905          |
| Idaho                       | -7         | -7         | -8          | -8          | -9          | -39         | -96           |
| Illinois                    | 0          | 0          | 0           | 0           | 0           | 0           | 0             |
| Indiana                     | 119        | 128        | 138         | 150         | 162         | 697         | 1,722         |
| Iowa                        | 178        | 190        | 206         | 224         | 241         | 1,039       | 2,567         |
| Kansas                      | 35         | 37         | 40          | 44          | 47          | 203         | 502           |
| Kentucky                    | -3         | -4         | -4          | -4          | -5          | -20         | -49           |
| Louisiana                   | -14        | -15        | -16         | -17         | -19         | -80         | -197          |
| Maine                       | -17        | -17        | -14         | -15         | -16         | -68         | -168          |
| Maryland                    | 0          | 0          | 0           | 0           | 0           | 0           | 0             |
| Massachusetts               | 0          | 0          | 0           | 0           | 0           | 0           | 0             |
| Michigan                    | 729        | 779        | 842         | 916         | 989         | 4,258       | 10,212        |
| Minnesota                   | 0          | 0          | 0           | 0           | 0           | 0           | 0             |
| Mississippi                 | 2          | 2          | 2           | 2           | 2           | 10          | 26            |
| Missouri                    | 137        | 141        | 153         | 166         | 179         | 777         | 1,906         |
| Montana                     | 7          | 7          | 8           | 8           | 9           | 38          | 91            |
| Nebraska                    | 48         | 51         | 56          | 60          | 65          | 281         | 694           |
| Nevada                      | 0          | 0          | 0           | 0           | 0           | 0           | 0             |
| New Hampshire               | 0          | 0          | 0           | 0           | 0           | 0           | 0             |
| New Jersey                  | 0          | 0          | 0           | 0           | 0           | 0           | 0             |
| New Mexico                  | -57        | -55        | -60         | -65         | -70         | -307        | -748          |
| New York                    | 0          | 0          | 0           | 0           | 0           | 0           | 0             |
| North Carolina              | -43        | -45        | -49         | -53         | -58         | -248        | -613          |
| North Dakota                | 10         | 11         | 11          | 12          | 12          | 58          | 112           |
| Ohio                        | 457        | 488        | 530         | 574         | 620         | 2,669       | 6,592         |
| Oklahoma                    | -16        | -17        | -19         | -20         | -22         | -91         | -232          |
| Oregon                      | -22        | -23        | -25         | -28         | -30         | -128        | -316          |
| Pennsylvania                | 203        | 216        | 235         | 255         | 275         | 1,183       | 2,922         |
| Rhode Island                | 37         | 39         | 43          | 46          | 50          | 214         | 529           |
| South Carolina              | -2         | -2         | -3          | -3          | -3          | -11         | -33           |
| South Dakota                | 11         | 11         | 12          | 14          | 15          | 63          | 155           |
| Tennessee                   | -1         | -5         | -5          | -6          | -6          | -26         | -63           |
| Texas                       | -340       | -363       | -394        | -427        | -461        | -1,987      | -4,906        |
| Utah                        | -8         | -8         | -9          | -10         | -10         | -41         | -109          |
| Vermont                     | -19        | -21        | -22         | -24         | -26         | -113        | -280          |
| Virginia                    | -28        | -30        | -33         | -35         | -38         | -161        | -406          |
| Washington                  | -85        | -91        | -99         | -107        | -115        | -497        | -1,226        |
| West Virginia               | *          | *          | -1          | -1          | -1          | -3          | -7            |
| Wisconsin                   | 178        | 190        | 206         | 223         | 241         | 1,038       | 2,563         |
| Wyoming                     | -2         | -2         | -2          | -3          | -3          | -12         | -30           |
| <b>Total, United States</b> | <b>-93</b> | <b>-99</b> | <b>-108</b> | <b>-117</b> | <b>-126</b> | <b>-543</b> | <b>-1,340</b> |
| Funding Gains               | 2,137      | 2,282      | 2,476       | 2,684       | 2,897       | 12,476      | 30,810        |
| Funding Losses              | -2,230     | -2,381     | -2,584      | -2,800      | -3,023      | -13,018     | -32,150       |

Source: PricewaterhouseCoopers calculations.

Note: An asterisk (\*) denotes a positive shift of less than \$500. A negative asterisk (-\*) denotes a negative shift of less than \$500.

States with zeros would have identical reimbursement rates using unadjusted or adjusted population counts. See footnote 12 in main report.

**Table D-3. Estimated Funding Effect of Census 2000 Undercount by State: Child Care and Development Block Grant, FY 2002-2012** [Fiscal years; thousands of dollars]

| State                       | 2002     | 2003     | 2004     | 2005     | 2006     | 2002-2006 | 2002-2011 |
|-----------------------------|----------|----------|----------|----------|----------|-----------|-----------|
| Alabama                     | -63      | -64      | -65      | -67      | -68      | -327      | -691      |
| Alaska                      | -95      | -97      | -100     | -102     | -104     | -498      | -1,050    |
| Arizona                     | -133     | -136     | -139     | -142     | -144     | -693      | -1,462    |
| Arkansas                    | -33      | -34      | -34      | -35      | -36      | -171      | -361      |
| California                  | -766     | -782     | -798     | -815     | -832     | -3,993    | -8,422    |
| Colorado                    | -12      | -12      | -13      | -13      | -13      | -61       | -131      |
| Connecticut                 | 35       | 36       | 36       | 37       | 38       | 181       | 383       |
| Delaware                    | -24      | -24      | -25      | -25      | -26      | -125      | -263      |
| District of Columbia        | -18      | -18      | -18      | -19      | -19      | -91       | -193      |
| Florida                     | -175     | -179     | -182     | -186     | -190     | -913      | -1,923    |
| Georgia                     | -345     | -353     | -360     | -368     | -375     | -1,800    | -3,798    |
| Hawaii                      | -148     | -152     | -155     | -158     | -161     | -771      | -1,634    |
| Idaho                       | -23      | -24      | -24      | -25      | -25      | -121      | -255      |
| Illinois                    | 477      | 487      | 497      | 508      | 518      | 2,487     | 5,243     |
| Indiana                     | 260      | 266      | 271      | 277      | 283      | 1,358     | 2,864     |
| Iowa                        | 330      | 335      | 340      | 345      | 350      | 1,700     | 3,530     |
| Kansas                      | 168      | 172      | 175      | 179      | 183      | 878       | 1,851     |
| Kentucky                    | -40      | -41      | -43      | -43      | -44      | -209      | -441      |
| Louisiana                   | 93       | 95       | 97       | 99       | 101      | 487       | 1,026     |
| Maine                       | -47      | -48      | -49      | -50      | -52      | -247      | -531      |
| Maryland                    | 90       | 92       | 94       | 96       | 98       | 472       | 995       |
| Massachusetts               | 341      | 346      | 351      | 356      | 362      | 1,755     | 3,648     |
| Michigan                    | 467      | 477      | 487      | 497      | 508      | 2,457     | 5,140     |
| Minnesota                   | 397      | 400      | 409      | 417      | 426      | 2,043     | 4,311     |
| Mississippi                 | 44       | 45       | 46       | 47       | 48       | 231       | 488       |
| Missouri                    | 478      | 477      | 446      | 456      | 465      | 2,333     | 4,710     |
| Montana                     | 11       | 11       | 12       | 12       | 12       | 58        | 123       |
| Nebbraska                   | 173      | 175      | 178      | 180      | 183      | 638       | 1,346     |
| Nevada                      | 70       | 72       | 73       | 75       | 76       | 367       | 774       |
| New Hampshire               | -4       | -5       | -5       | -5       | -5       | -23       | -49       |
| New Jersey                  | 87       | 88       | 90       | 92       | 94       | 451       | 952       |
| New Mexico                  | -39      | -40      | -41      | -42      | -43      | -205      | -433      |
| New York                    | 218      | 223      | 228      | 232      | 237      | 1,138     | 2,401     |
| North Carolina              | -225     | -230     | -235     | -240     | -245     | -1,174    | -2,477    |
| North Dakota                | 23       | 24       | 24       | 25       | 25       | 121       | 256       |
| Ohio                        | 600      | 613      | 625      | 639      | 652      | 3,129     | 6,600     |
| Oklahoma                    | -97      | -99      | -101     | -103     | -105     | -505      | -1,066    |
| Oregon                      | -45      | -46      | -47      | -48      | -49      | -236      | -499      |
| Pennsylvania                | 287      | 293      | 299      | 305      | 312      | 1,496     | 3,156     |
| Rhode Island                | 36       | 36       | 37       | 38       | 39       | 186       | 392       |
| South Carolina              | -15      | -16      | -17      | -18      | -19      | -231      | -491      |
| South Dakota                | 62       | 63       | 65       | 66       | 67       | 324       | 683       |
| Tennessee                   | -98      | -100     | -103     | -105     | -107     | -513      | -1,082    |
| Texas                       | -1,317   | -1,345   | -1,373   | -1,402   | -1,431   | -6,869    | -14,489   |
| Utah                        | -3       | -3       | -3       | -3       | -3       | -15       | -32       |
| Vermont                     | -30      | -31      | -32      | -32      | -33      | -159      | -335      |
| Virginia                    | -91      | -93      | -95      | -97      | -99      | -476      | -1,005    |
| Washington                  | -128     | -131     | -134     | -137     | -139     | -669      | -1,411    |
| West Virginia               | 2        | 2        | 2        | 2        | 2        | 11        | 24        |
| Wisconsin                   | 239      | 244      | 249      | 255      | 260      | 1,247     | 2,631     |
| Wyoming                     | -18      | -18      | -19      | -19      | -19      | -93       | -196      |
| <b>Total, United States</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b>  |
| Funding Gains               | 4,375    | 4,467    | 4,561    | 4,657    | 4,754    | 22,813    | 48,122    |
| Funding Losses              | -4,375   | -4,467   | -4,561   | -4,657   | -4,754   | -22,813   | -48,122   |

Source: PricewaterhouseCoopers calculations.

Note: An asterisk (\*) denotes a positive shift of less than \$500. A negative asterisk (-\*) denotes a negative shift of less than \$500.

**Table D-4. Estimated Funding Effect of Census 2000 Undercount by State: Foster Care, FY 2002-2012**

[Fiscal years; thousands of dollars]

| State                       | 2003          | 2004          | 2005          | 2006          | 2007          | 2003 2007     | 2003 2012      |
|-----------------------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|
| Alabama                     | -7            | -1            | -1            | -1            | -1            | -3            | -7             |
| Alaska                      | -67           | -72           | -78           | -85           | -91           | -393          | -970           |
| Arizona                     | -74           | -80           | -86           | -94           | -101          | -435          | -1,074         |
| Arkansas                    | -8            | -8            | -9            | -10           | -11           | -45           | -112           |
| California                  | -4,072        | -4,349        | -4,719        | -5,114        | -5,520        | -23,773       | -58,710        |
| Colorado                    | 0             | 0             | 0             | 0             | 0             | 0             | 0              |
| Connecticut                 | 0             | 0             | 0             | 0             | 0             | 0             | 0              |
| Delaware                    | 0             | 0             | 0             | 0             | 0             | 0             | 0              |
| District of Columbia        | 0             | 0             | 0             | 0             | 0             | 0             | 0              |
| Florida                     | -63           | -67           | -73           | -79           | -85           | -367          | -907           |
| Georgia                     | -117          | -124          | -135          | -146          | -158          | -680          | -1,680         |
| Hawaii                      | -112          | -120          | -130          | -141          | -152          | -656          | -1,620         |
| Idaho                       | -5            | -6            | -6            | -7            | -7            | -31           | -77            |
| Illinois                    | 0             | 0             | 0             | 0             | 0             | 0             | 0              |
| Indiana                     | 143           | 153           | 166           | 180           | 194           | 837           | 2,068          |
| Iowa                        | 219           | 233           | 251           | 274           | 296           | 1,276         | 3,151          |
| Kansas                      | 222           | 237           | 258           | 279           | 301           | 1,298         | 3,206          |
| Kentucky                    | -14           | -15           | -17           | -18           | -19           | -83           | -206           |
| Louisiana                   | -44           | -47           | -51           | -55           | -60           | -257          | -636           |
| Maine                       | -61           | -65           | -71           | -77           | -83           | -357          | -881           |
| Maryland                    | 0             | 0             | 0             | 0             | 0             | 0             | 0              |
| Massachusetts               | 0             | 0             | 0             | 0             | 0             | 0             | 0              |
| Michigan                    | 609           | 651           | 706           | 765           | 826           | 3,558         | 8,787          |
| Minnesota                   | 0             | 0             | 0             | 0             | 0             | 0             | 0              |
| Mississippi                 | 2             | 2             | 2             | 2             | 2             | 10            | 25             |
| Missouri                    | 314           | 336           | 364           | 395           | 426           | 1,836         | 4,534          |
| Montana                     | 15            | 16            | 17            | 19            | 20            | 88            | 216            |
| Nebraska                    | 126           | 134           | 143           | 158           | 170           | 733           | 1,810          |
| Nevada                      | 0             | 0             | 0             | 0             | 0             | 0             | 0              |
| New Hampshire               | 0             | 0             | 0             | 0             | 0             | 0             | 0              |
| New Jersey                  | 0             | 0             | 0             | 0             | 0             | 0             | 0              |
| New Mexico                  | -39           | -41           | -45           | -49           | -53           | -225          | -557           |
| New York                    | 0             | 0             | 0             | 0             | 0             | 0             | 0              |
| North Carolina              | -107          | -115          | -124          | -135          | -145          | -606          | -1,547         |
| North Dakota                | 31            | 37            | 40            | 43            | 47            | 200           | 495            |
| Ohio                        | 1,310         | 1,399         | 1,518         | 1,645         | 1,776         | 7,647         | 18,885         |
| Oklahoma                    | -13           | -16           | -19           | -21           | -23           | -106          | -262           |
| Oregon                      | -18           | -19           | -21           | -23           | -25           | -106          | -262           |
| Pennsylvania                | 1,203         | 1,285         | 1,395         | 1,512         | 1,632         | 7,027         | 17,351         |
| Rhode Island                | 32            | 34            | 37            | 40            | 43            | 185           | 457            |
| South Carolina              | -2            | -2            | -3            | -3            | -3            | -13           | -32            |
| South Dakota                | 21            | 23            | 25            | 27            | 29            | 124           | 307            |
| Tennessee                   | -10           | -11           | -12           | -13           | -14           | -61           | -151           |
| Texas                       | -596          | -636          | -690          | -748          | -808          | -3,478        | -8,589         |
| Utah                        | -6            | -6            | -7            | -8            | -8            | -35           | -87            |
| Vermont                     | -51           | -55           | -59           | -64           | -69           | -298          | -736           |
| Virginia                    | -83           | -88           | -96           | -104          | -112          | -482          | -1,191         |
| Washington                  | -83           | -89           | -97           | -105          | -113          | -486          | -1,201         |
| West Virginia               | -1            | -2            | -2            | -2            | -2            | -9            | -21            |
| Wisconsin                   | 289           | 309           | 335           | 364           | 392           | 1,690         | 4,173          |
| Wyoming                     | -8            | -9            | -10           | -11           | -12           | -50           | -122           |
| <b>Total, United States</b> | <b>-1,179</b> | <b>-1,259</b> | <b>-1,367</b> | <b>-1,481</b> | <b>-1,599</b> | <b>-6,885</b> | <b>-17,001</b> |
| Funding Gains               | 4,524         | 4,831         | 5,243         | 5,682         | 6,133         | 26,412        | 65,228         |
| Funding Losses              | -5,703        | -6,091        | -6,609        | -7,163        | -7,732        | -33,297       | -82,231        |

Source: PricewaterhouseCoopers calculations.

Note: An asterisk (\*) denotes a positive shift of less than \$500. A negative asterisk (-\*) denotes a negative shift of less than \$500.

States with zeros would have identical reimbursement rates using unadjusted or adjusted population counts. See footnote 12 in main report.

**Table D-5. Estimated Funding Effect of Census 2000 Undercount by State: Medicaid, FY 2002-2012 [Fiscal years; thousands of dollars]**

| State                       | 2003           | 2004           | 2005           | 2006           | 2007           | 2003 2007       | 2003 2012       |
|-----------------------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|
| Alabama                     | -282           | -307           | -335           | -364           | -395           | -1,683          | -4,233          |
| Alaska                      | -6,826         | -7,130         | -8,095         | -8,800         | -9,568         | -10,719         | -102,421        |
| Arizona                     | -4,594         | -5,001         | -5,448         | -5,922         | -6,440         | -27,404         | -68,932         |
| Arkansas                    | -1,013         | -1,135         | -1,237         | -1,344         | -1,462         | -6,221          | -15,819         |
| California                  | -91,356        | -99,449        | -108,343       | -117,773       | -128,062       | -544,984        | -1,370,847      |
| Colorado                    | 0              | 0              | 0              | 0              | 0              | 0               | 0               |
| Connecticut                 | 0              | 0              | 0              | 0              | 0              | 0               | 0               |
| Delaware                    | 0              | 0              | 0              | 0              | 0              | 0               | 0               |
| District of Columbia        | 0              | 0              | 0              | 0              | 0              | 0               | 0               |
| Florida                     | -5,681         | -6,184         | -6,737         | -7,323         | -7,963         | -33,889         | -85,213         |
| Georgia                     | -12,836        | -13,973        | -15,223        | -16,548        | -17,994        | -76,573         | -192,612        |
| Hawaii                      | -6,504         | -7,080         | -7,713         | -8,385         | -9,117         | -38,798         | -97,593         |
| Idaho                       | -2,353         | -2,561         | -2,790         | -3,033         | -3,298         | -14,034         | -35,301         |
| Illinois                    | 0              | 0              | 0              | 0              | 0              | 0               | 0               |
| Indiana                     | 14,037         | 15,281         | 16,647         | 18,096         | 19,677         | 83,739          | 210,636         |
| Iowa                        | 10,702         | 11,650         | 12,607         | 13,797         | 15,002         | 63,842          | 160,588         |
| Kansas                      | 7,689          | 8,370          | 9,119          | 9,912          | 10,778         | 45,868          | 115,376         |
| Kentucky                    | -1,191         | -1,297         | -1,413         | -1,536         | -1,670         | -7,107          | -17,876         |
| Louisiana                   | -4,284         | -4,663         | -5,080         | -5,523         | -6,005         | -25,555         | -64,282         |
| Maine                       | -1,699         | -1,849         | -2,013         | -2,190         | -2,381         | -10,134         | -25,497         |
| Maryland                    | 0              | 0              | 0              | 0              | 0              | 0               | 0               |
| Massachusetts               | 0              | 0              | 0              | 0              | 0              | 0               | 0               |
| Michigan                    | 31,167         | 33,928         | 36,962         | 40,179         | 43,690         | 185,926         | 467,677         |
| Minnesota                   | 0              | 0              | 0              | 0              | 0              | 0               | 0               |
| Mississippi                 | 766            | 824            | 908            | 987            | 1,073          | 4,268           | 11,490          |
| Missouri                    | 32,931         | 35,848         | 39,054         | 42,453         | 46,162         | 196,447         | 494,142         |
| Montana                     | 1,320          | 1,437          | 1,566          | 1,702          | 1,851          | 7,876           | 19,812          |
| Nebraska                    | 6,883          | 7,492          | 8,162          | 8,873          | 9,648          | 41,059          | 103,278         |
| Nevada                      | 0              | 0              | 0              | 0              | 0              | 0               | 0               |
| New Hampshire               | 0              | 0              | 0              | 0              | 0              | 0               | 0               |
| New Jersey                  | 0              | 0              | 0              | 0              | 0              | 0               | 0               |
| New Mexico                  | -6,865         | -7,474         | -8,142         | -8,851         | -9,674         | -40,955         | -103,018        |
| New York                    | 0              | 0              | 0              | 0              | 0              | 0               | 0               |
| North Carolina              | -10,194        | -11,097        | -12,089        | -13,142        | -14,390        | -60,811         | -152,964        |
| North Dakota                | 1,996          | 2,173          | 2,367          | 2,573          | 2,798          | 11,908          | 29,952          |
| Ohio                        | 48,999         | 53,340         | 58,110         | 63,168         | 68,687         | 292,304         | 735,259         |
| Oklahoma                    | -3,010         | -3,276         | -3,569         | -3,880         | -4,219         | -17,955         | -45,161         |
| Oregon                      | -2,095         | -2,280         | -2,484         | -2,700         | -2,936         | -12,495         | -31,431         |
| Pennsylvania                | 11,897         | 15,609         | 19,687         | 24,012         | 28,721         | 219,936         | 628,685         |
| Rhode Island                | 4,591          | 4,998          | 5,445          | 5,919          | 6,436          | 27,390          | 68,896          |
| South Carolina              | 566            | -617           | -672           | -730           | -791           | -3,379          | -8,199          |
| South Dakota                | 1,888          | 2,055          | 2,239          | 2,433          | 2,646          | 11,260          | 28,324          |
| Tennessee                   | -2,413         | -2,659         | -2,897         | -3,149         | -3,421         | -14,573         | -36,656         |
| Texas                       | -62,320        | -67,841        | -73,908        | -80,341        | -87,360        | -371,770        | -935,148        |
| Utah                        | -1,011         | -1,137         | -1,239         | -1,346         | -1,461         | -6,231          | -15,672         |
| Vermont                     | -1,671         | -1,819         | -1,982         | -2,155         | -2,343         | -9,970          | -25,078         |
| Virginia                    | -5,382         | -5,858         | -6,382         | -6,938         | -7,514         | -32,105         | -80,755         |
| Washington                  | -11,693        | -12,729        | -13,867        | -15,075        | -16,391        | -69,756         | -175,463        |
| West Virginia               | -135           | -147           | -160           | -174           | -189           | -806            | -2,027          |
| Wisconsin                   | 15,463         | 16,833         | 18,339         | 19,935         | 21,676         | 92,246          | 232,035         |
| Wyoming                     | -742           | -808           | -880           | -957           | -1,011         | -4,129          | -11,110         |
| <b>Total, United States</b> | <b>-30,652</b> | <b>-33,368</b> | <b>-36,352</b> | <b>-39,516</b> | <b>-42,968</b> | <b>-182,855</b> | <b>-459,953</b> |
| Funding Gains               | 218,243        | 237,577        | 258,823        | 281,352        | 305,931        | 1,301,925       | 3,274,850       |
| Funding Losses              | -248,895       | -270,945       | -295,175       | -320,868       | -348,899       | -1,484,781      | -3,734,803      |

Source: PricewaterhouseCoopers calculations.

Note: An asterisk (\*) denotes a positive shift of less than \$500. A negative asterisk (-\*) denotes a negative shift of less than \$500.

States with zeros would have identical reimbursement rates using unadjusted or adjusted population counts. See footnote 12 in main report.

**Table D-6. Estimated Funding Effect of Census 2000 Undercount by State: Rehabilitation Services, FY 2002-2012** [Fiscal years; thousands of dollars]

| State                       | 2002     | 2003     | 2004     | 2005     | 2006     | 2002 2006 | 2002 2011 |
|-----------------------------|----------|----------|----------|----------|----------|-----------|-----------|
| Alabama                     | -7       | -7       | -8       | -8       | -8       | -38       | -80       |
| Alaska                      | -139     | -142     | -146     | -150     | -153     | -730      | -1,556    |
| Arizona                     | -187     | -191     | -196     | -201     | -206     | -982      | -2,095    |
| Arkansas                    | -41      | -42      | -43      | -44      | -45      | -216      | -460      |
| California                  | -1,667   | -1,707   | -1,752   | -1,798   | -1,843   | -8,767    | -18,693   |
| Colorado                    | -48      | -49      | -50      | -51      | -53      | -251      | -535      |
| Connecticut                 | 82       | 84       | 87       | 89       | 91       | 433       | 923       |
| Delaware                    | -35      | -36      | -37      | -38      | -39      | -185      | -395      |
| District of Columbia        | -56      | -58      | -59      | -61      | -62      | -297      | -632      |
| Florida                     | -139     | -143     | -146     | -150     | -154     | -732      | -1,560    |
| Georgia                     | -357     | -365     | -375     | -385     | -394     | -1,876    | -4,000    |
| Hawaii                      | -176     | -181     | -185     | -190     | -195     | -927      | -1,977    |
| Idaho                       | -92      | -95      | -97      | -100     | -102     | -485      | -1,035    |
| Illinois                    | 549      | 567      | 577      | 592      | 607      | 2,887     | 6,156     |
| Indiana                     | 371      | 380      | 390      | 400      | 410      | 1,953     | 4,163     |
| Iowa                        | 306      | 314      | 327      | 330      | 339      | 1,611     | 3,436     |
| Kansas                      | 209      | 214      | 219      | 225      | 231      | 1,097     | 2,339     |
| Kentucky                    | -37      | -37      | -37      | -34      | -35      | -167      | -355      |
| Louisiana                   | 112      | 114      | 117      | 120      | 123      | 587       | 1,251     |
| Maine                       | -30      | -30      | -31      | -32      | -33      | -156      | -332      |
| Maryland                    | 162      | 166      | 170      | 175      | 179      | 852       | 1,816     |
| Massachusetts               | 343      | 351      | 361      | 370      | 379      | 1,804     | 3,847     |
| Michigan                    | 688      | 705      | 723      | 742      | 761      | 3,619     | 7,717     |
| Minnesota                   | 606      | 620      | 636      | 653      | 669      | 3,184     | 6,789     |
| Mississippi                 | 27       | 28       | 28       | 29       | 30       | 142       | 302       |
| Missouri                    | 596      | 610      | 626      | 642      | 658      | 3,132     | 6,678     |
| Montana                     | 56       | 57       | 58       | 60       | 61       | 292       | 623       |
| Nebraska                    | 155      | 159      | 163      | 168      | 172      | 817       | 1,743     |
| Nevada                      | 131      | 134      | 138      | 141      | 145      | 689       | 1,469     |
| New Hampshire               | 8        | 8        | 9        | 9        | 9        | 44        | 93        |
| New Jersey                  | 29       | 30       | 31       | 31       | 32       | 153       | 327       |
| New Mexico                  | -214     | -220     | -225     | -231     | -237     | -1,127    | -2,404    |
| New York                    | 218      | 223      | 229      | 235      | 241      | 1,145     | 2,412     |
| North Carolina              | -212     | -217     | -223     | -229     | -235     | -1,116    | -2,379    |
| North Dakota                | 71       | 72       | 71       | 76       | 78       | 372       | 791       |
| Ohio                        | 1,029    | 1,054    | 1,082    | 1,110    | 1,138    | 5,413     | 11,541    |
| Oklahoma                    | -118     | -121     | -121     | -127     | -130     | -620      | -1,322    |
| Oregon                      | -46      | -47      | -48      | -50      | -51      | -242      | -515      |
| Pennsylvania                | 636      | 652      | 668      | 686      | 703      | 3,345     | 7,132     |
| Rhode Island                | 48       | 49       | 50       | 51       | 53       | 251       | 535       |
| South Carolina              | -13      | -13      | -13      | -14      | -14      | -66       | -111      |
| South Dakota                | 70       | 72       | 74       | 76       | 78       | 370       | 789       |
| Tennessee                   | -43      | -44      | -45      | -47      | -48      | -227      | -484      |
| Texas                       | -1,787   | -1,829   | -1,877   | -1,926   | -1,974   | -9,393    | -20,028   |
| Utah                        | -58      | -59      | -61      | -62      | -61      | -302      | -617      |
| Vermont                     | -30      | -31      | -32      | -33      | -34      | -160      | -341      |
| Virginia                    | -153     | -157     | -161     | -165     | -169     | -805      | -1,717    |
| Washington                  | -195     | -200     | -205     | -210     | -216     | -1,027    | -2,189    |
| West Virginia               | -3       | -3       | -3       | -3       | -3       | -15       | -32       |
| Wisconsin                   | 378      | 387      | 397      | 408      | 418      | 1,988     | 4,238     |
| Wyoming                     | -28      | -29      | -30      | -30      | -31      | -148      | -316      |
| <b>Total, United States</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b>  |
| Funding Gains               | 6,394    | 6,548    | 6,718    | 6,893    | 7,066    | 33,618    | 71,680    |
| Funding Losses              | -6,394   | -6,548   | -6,718   | -6,893   | -7,066   | -33,618   | -71,680   |

Source: PricewaterhouseCoopers calculations.

Note: An asterisk (\*) denotes a positive shift of less than \$500. A negative asterisk (-\*) denotes a negative shift of less than \$500.



**Table D-7. Estimated Funding Effect of Census 2000 Undercount by State: Social Services Block Grant, FY 2002-2012** [Fiscal years; thousands of dollars]

| State                       | 2002     | 2003     | 2004     | 2005     | 2006     | 2002 2006 | 2002 2011 |
|-----------------------------|----------|----------|----------|----------|----------|-----------|-----------|
| Alabama                     | -4       | -4       | -4       | -4       | -4       | -19       | -39       |
| Alaska                      | -59      | -59      | -59      | -59      | -59      | -295      | -590      |
| Arizona                     | -76      | -76      | -76      | -76      | -76      | -382      | -764      |
| Arkansas                    | -17      | -17      | -17      | -17      | -17      | -83       | -167      |
| California                  | -718     | -718     | -718     | -718     | -718     | -3,589    | -7,179    |
| Colorado                    | -21      | -21      | -21      | -21      | -21      | -107      | -214      |
| Connecticut                 | 42       | 42       | 42       | 42       | 42       | 212       | 423       |
| Delaware                    | -15      | -15      | -15      | -15      | -15      | -77       | -154      |
| District of Columbia        | -32      | -32      | -32      | -32      | -32      | -160      | -320      |
| Florida                     | -61      | -61      | -61      | -61      | -61      | -304      | -608      |
| Georgia                     | -149     | -149     | -149     | -149     | -149     | -745      | -1,490    |
| Hawaii                      | -74      | -74      | -74      | -74      | -74      | -370      | -739      |
| Idaho                       | -37      | -37      | -37      | -37      | -37      | -183      | -366      |
| Illinois                    | 740      | 740      | 740      | 740      | 740      | 1,198     | 2,396     |
| Indiana                     | 151      | 151      | 151      | 151      | 151      | 754       | 1,507     |
| Iowa                        | 174      | 174      | 174      | 174      | 174      | 872       | 1,744     |
| Kansas                      | 85       | 85       | 85       | 85       | 85       | 427       | 855       |
| Kentucky                    | -13      | -13      | -13      | -13      | -13      | -67       | -134      |
| Louisiana                   | 45       | 45       | 45       | 45       | 45       | 225       | 451       |
| Maine                       | -17      | -17      | -17      | -17      | -17      | -81       | -171      |
| Maryland                    | 73       | 73       | 73       | 73       | 73       | 364       | 729       |
| Massachusetts               | 160      | 160      | 160      | 160      | 160      | 807       | 1,604     |
| Michigan                    | 287      | 287      | 287      | 287      | 287      | 1,435     | 2,870     |
| Minnesota                   | 763      | 763      | 763      | 763      | 763      | 1,315     | 2,630     |
| Mississippi                 | 11       | 11       | 11       | 11       | 11       | 56        | 111       |
| Missouri                    | 744      | 744      | 744      | 744      | 744      | 1,719     | 3,438     |
| Montana                     | 22       | 22       | 22       | 22       | 22       | 110       | 219       |
| Nebraska                    | 64       | 64       | 64       | 64       | 64       | 320       | 640       |
| Nevada                      | 58       | 58       | 58       | 58       | 58       | 288       | 575       |
| New Hampshire               | 3        | 3        | 3        | 3        | 3        | 17        | 35        |
| New Jersey                  | 13       | 13       | 13       | 13       | 13       | 66        | 132       |
| New Mexico                  | -84      | -84      | -84      | -84      | -84      | -420      | -840      |
| New York                    | 98       | 98       | 98       | 98       | 98       | 490       | 980       |
| North Carolina              | -89      | -89      | -89      | -89      | -89      | -443      | -885      |
| North Dakota                | 28       | 28       | 28       | 28       | 28       | 139       | 279       |
| Ohio                        | 425      | 425      | 425      | 425      | 425      | 2,126     | 4,253     |
| Oklahoma                    | -17      | -17      | -17      | -17      | -17      | -87       | -173      |
| Oregon                      | -20      | -20      | -20      | -20      | -20      | -98       | -196      |
| Pennsylvania                | 267      | 267      | 267      | 267      | 267      | 1,334     | 2,668     |
| Rhode Island                | 20       | 20       | 20       | 20       | 20       | 101       | 202       |
| South Carolina              | -6       | -6       | -6       | -6       | -6       | -29       | -59       |
| South Dakota                | 28       | 28       | 28       | 28       | 28       | 141       | 282       |
| Tennessee                   | -19      | -19      | -19      | -19      | -19      | -93       | -186      |
| Texas                       | -739     | -739     | -739     | -739     | -739     | -3,694    | -7,388    |
| Utah                        | -23      | -23      | -23      | -23      | -23      | -116      | -233      |
| Vermont                     | -12      | -12      | -12      | -12      | -12      | -62       | -125      |
| Virginia                    | -67      | -67      | -67      | -67      | -67      | -333      | -665      |
| Washington                  | -85      | -85      | -85      | -85      | -85      | -424      | -847      |
| West Virginia               | -2       | -2       | -2       | -2       | -2       | -8        | -16       |
| Wisconsin                   | 156      | 156      | 156      | 156      | 156      | 780       | 1,560     |
| Wyoming                     | -12      | -12      | -12      | -12      | -12      | -58       | -116      |
| <b>Total, United States</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b>  |
| Funding Gains               | 2,700    | 2,700    | 2,700    | 2,700    | 2,700    | 13,499    | 26,998    |
| Funding Losses              | -2,700   | -2,700   | -2,700   | -2,700   | -2,700   | -13,499   | -26,998   |

Source: PricewaterhouseCoopers calculations.

Note: An asterisk (\*) denotes a positive shift of less than \$500. A negative asterisk (-\*) denotes a negative shift of less than \$500.

**Table D-8. Estimated Funding Effect of Census 2000 Undercount by State: Substance Abuse Prevention and Treatment Block Grant, FY 2002-2012** [Fiscal years; thousands of dollars]

| State                       | 2003     | 2004     | 2005     | 2006     | 2007     | 2003 2007 | 2003 2012 |
|-----------------------------|----------|----------|----------|----------|----------|-----------|-----------|
| Alabama                     | 56       | 57       | 59       | 60       | 61       | 293       | 621       |
| Alaska                      | 0        | 0        | 0        | 0        | 0        | 0         | 0         |
| Arizona                     | -109     | -112     | -114     | -117     | -119     | -571      | -1,208    |
| Arkansas                    | 3        | 3        | 4        | 4        | 4        | 18        | 38        |
| California                  | -1,591   | -1,626   | -1,663   | -1,700   | -1,738   | -8,317    | -17,604   |
| Colorado                    | -30      | -31      | -32      | -32      | -33      | -158      | -335      |
| Connecticut                 | 58       | 59       | 60       | 61       | 63       | 301       | 636       |
| Delaware                    | 0        | 0        | 0        | 0        | 0        | 0         | 0         |
| District of Columbia        | 0        | 0        | 0        | 0        | 0        | 0         | 0         |
| Florida                     | 17       | 18       | 18       | 18       | 19       | 90        | 190       |
| Georgia                     | -149     | -152     | -156     | -159     | -163     | -779      | -1,649    |
| Idaho                       | -95      | -97      | -99      | -101     | -104     | -496      | -1,019    |
| Illinois                    | -46      | -47      | -48      | -49      | -50      | -242      | -512      |
| Indiana                     | 330      | 337      | 345      | 352      | 360      | 1,734     | 3,649     |
| Indiana                     | 228      | 233      | 238      | 244      | 249      | 1,192     | 2,523     |
| Iowa                        | 151      | 154      | 158      | 161      | 165      | 790       | 1,677     |
| Kansas                      | 113      | 115      | 118      | 120      | 123      | 589       | 1,248     |
| Kentucky                    | 19       | 20       | 20       | 21       | 21       | 100       | 213       |
| Louisiana                   | 12       | 13       | 13       | 13       | 13       | 64        | 136       |
| Maine                       | 0        | 0        | 0        | 0        | 0        | 0         | 0         |
| Maryland                    | 100      | 102      | 105      | 107      | 109      | 524       | 1,108     |
| Massachusetts               | 195      | 199      | 204      | 208      | 213      | 1,070     | 2,158     |
| Michigan                    | 411      | 420      | 430      | 439      | 449      | 2,149     | 4,548     |
| Minnesota                   | 356      | 363      | 377      | 380      | 388      | 1,859     | 3,934     |
| Mississippi                 | 27       | 28       | 28       | 29       | 30       | 162       | 301       |
| Missouri                    | 338      | 345      | 353      | 361      | 369      | 1,766     | 3,737     |
| Montana                     | 0        | 0        | 0        | 0        | 0        | 0         | 0         |
| Nebbraska                   | 84       | 86       | 88       | 89       | 91       | 438       | 927       |
| Nevada                      | 101      | 103      | 106      | 108      | 111      | 529       | 1,120     |
| New Hampshire               | 0        | 0        | 0        | 0        | 0        | 0         | 0         |
| New Jersey                  | 29       | 30       | 31       | 31       | 32       | 153       | 321       |
| New Mexico                  | -118     | -121     | -124     | -127     | -129     | -619      | -1,310    |
| New York                    | 171      | 171      | 178      | 182      | 186      | 892       | 1,887     |
| North Carolina              | -47      | -48      | -49      | -50      | -51      | -246      | -520      |
| North Dakota                | 0        | 0        | 0        | 0        | 0        | 0         | 0         |
| Ohio                        | 685      | 701      | 716      | 732      | 749      | 3,583     | 7,584     |
| Oklahoma                    | -3       | -3       | -3       | -3       | -3       | -17       | -35       |
| Oregon                      | -4       | -4       | -4       | -4       | -4       | -21       | -45       |
| Pennsylvania                | 452      | 462      | 473      | 483      | 491      | 2,365     | 5,006     |
| Rhode Island                | 0        | 0        | 0        | 0        | 0        | 0         | 0         |
| South Carolina              | 38       | 38       | 39       | 40       | 41       | 196       | 415       |
| South Dakota                | 0        | 0        | 0        | 0        | 0        | 0         | 0         |
| Tennessee                   | 42       | 43       | 44       | 45       | 46       | 219       | 461       |
| Texas                       | -1,368   | -1,398   | -1,429   | -1,461   | -1,494   | -7,150    | -15,134   |
| Utah                        | -31      | -32      | -33      | -33      | -34      | -161      | -316      |
| Vermont                     | 0        | 0        | 0        | 0        | 0        | 0         | 0         |
| Virginia                    | -82      | -84      | -86      | -88      | -90      | -431      | -912      |
| Washington                  | -100     | -103     | -105     | -107     | -110     | -525      | -1,111    |
| West Virginia               | *        | *        | *        | *        | *        | 2         | 4         |
| Wisconsin                   | 220      | 225      | 230      | 235      | 240      | 1,148     | 2,430     |
| Wyoming                     | 0        | 0        | 0        | 0        | 0        | 0         | 0         |
| <b>Total, United States</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b>  |
| Funding Gains               | 4,005    | 4,095    | 4,186    | 4,279    | 4,375    | 20,940    | 44,321    |
| Funding Losses              | -4,005   | -4,095   | -4,186   | -4,279   | -4,375   | -20,940   | -44,321   |

Source: PricewaterhouseCoopers calculations.

Note: An asterisk (\*) denotes a positive shift of less than \$500. A negative asterisk (-\*) denotes a negative shift of less than \$500.

States with zeros would have identical reimbursement rates using unadjusted or adjusted population counts.

**Table D-9. Estimated Funding Effect of Census 2000 Undercount by State: Vocational Education, FY 2002-2012** [Fiscal years; thousands of dollars]

| State                       | 2002     | 2003     | 2004     | 2005     | 2006     | 2002 2006 | 2002 2011 |
|-----------------------------|----------|----------|----------|----------|----------|-----------|-----------|
| Alabama                     | -38      | -39      | -40      | -40      | -41      | -198      | -419      |
| Alaska                      | 0        | 0        | 0        | 0        | 0        | 0         | 0         |
| Arizona                     | -80      | -81      | -83      | -85      | -87      | -417      | -882      |
| Arkansas                    | -26      | -26      | -27      | -27      | -28      | -131      | -283      |
| California                  | -672     | -687     | -702     | -718     | -734     | -3,514    | -7,438    |
| Colorado                    | -19      | -20      | -20      | -20      | -21      | -100      | -211      |
| Connecticut                 | 24       | 25       | 25       | 26       | 27       | 127       | 270       |
| Delaware                    | -14      | -14      | -14      | -15      | -15      | -71       | -151      |
| District of Columbia        | 0        | 0        | 0        | 0        | 0        | 0         | 0         |
| Florida                     | -113     | -115     | -118     | -120     | -123     | -589      | -1,217    |
| Georgia                     | -205     | -209     | -214     | -219     | -223     | -1,069    | -2,263    |
| Hawaii                      | 0        | 0        | 0        | 0        | 0        | 0         | 0         |
| Idaho                       | -46      | -47      | -48      | -49      | -50      | -238      | -504      |
| Illinois                    | 378      | 335      | 343      | 351      | 358      | 1,716     | 3,631     |
| Indiana                     | 189      | 193      | 197      | 202      | 206      | 987       | 2,089     |
| Iowa                        | 171      | 175      | 179      | 183      | 187      | 896       | 1,897     |
| Kansas                      | 120      | 123      | 126      | 129      | 131      | 629       | 1,331     |
| Kentucky                    | -37      | -37      | -38      | -39      | -40      | -191      | -405      |
| Louisiana                   | -98      | -100     | -103     | -105     | -107     | -514      | -1,087    |
| Maine                       | 0        | 0        | 0        | 0        | 0        | 0         | 0         |
| Maryland                    | 81       | 83       | 85       | 87       | 89       | 424       | 898       |
| Massachusetts               | 0        | 0        | 0        | 0        | 0        | 0         | 0         |
| Michigan                    | 364      | 372      | 380      | 389      | 397      | 1,901     | 4,024     |
| Minnesota                   | 339      | 365      | 371      | 377      | 383      | 1,356     | 2,869     |
| Mississippi                 | 31       | 31       | 32       | 33       | 34       | 161       | 340       |
| Missouri                    | 307      | 309      | 316      | 323      | 330      | 1,579     | 3,341     |
| Montana                     | 22       | 22       | 23       | 23       | 24       | 113       | 238       |
| Nebraska                    | 89       | 91       | 93       | 95       | 97       | 466       | 987       |
| Nevada                      | 59       | 60       | 62       | 63       | 64       | 308       | 653       |
| New Hampshire               | 0        | 0        | 0        | 0        | 0        | 0         | 0         |
| New Jersey                  | 33       | 34       | 35       | 35       | 36       | 171       | 367       |
| New Mexico                  | -56      | -57      | -59      | -60      | -61      | -293      | -673      |
| New York                    | 132      | 135      | 138      | 141      | 144      | 691       | 1,462     |
| North Carolina              | -134     | -137     | -141     | -144     | -147     | -703      | -1,488    |
| North Dakota                | 0        | 0        | 0        | 0        | 0        | 0         | 0         |
| Ohio                        | 485      | 495      | 507      | 518      | 529      | 2,534     | 5,363     |
| Oklahoma                    | -98      | -100     | -102     | -105     | -107     | -512      | -1,083    |
| Oregon                      | -33      | -33      | -34      | -35      | -36      | -170      | -360      |
| Pennsylvania                | 256      | 262      | 268      | 274      | 280      | 1,310     | 2,825     |
| Rhode Island                | 0        | 0        | 0        | 0        | 0        | 0         | 0         |
| South Carolina              | -31      | -32      | -32      | -33      | -34      | -161      | -311      |
| South Dakota                | 13       | 13       | 13       | 13       | 14       | 66        | 139       |
| Tennessee                   | -56      | -57      | -58      | -60      | -61      | -292      | -618      |
| Texas                       | -806     | -824     | -842     | -861     | -880     | -4,213    | -8,916    |
| Utah                        | -27      | -27      | -28      | -29      | -29      | -140      | -297      |
| Vermont                     | 0        | 0        | 0        | 0        | 0        | 0         | 0         |
| Virginia                    | -80      | -82      | -84      | -86      | -88      | -419      | -887      |
| Washington                  | -109     | -111     | -114     | -116     | -119     | -568      | -1,203    |
| West Virginia               | 0        | 0        | 0        | 0        | 0        | 0         | 0         |
| Wisconsin                   | 201      | 206      | 210      | 215      | 220      | 1,052     | 2,227     |
| Wyoming                     | 0        | 0        | 0        | 0        | 0        | 0         | 0         |
| <b>Total, United States</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b>  |
| Funding Gains               | 2,967    | 3,033    | 3,101    | 3,170    | 3,241    | 15,513    | 32,835    |
| Funding Losses              | -2,967   | -3,033   | -3,101   | -3,170   | -3,241   | -15,513   | -32,835   |

Source: PricewaterhouseCoopers calculations.

Note: An asterisk (\*) denotes a positive shift of less than \$500. A negative asterisk (-\*) denotes a negative shift of less than \$500. States with zeros would have identical reimbursement rates using unadjusted or adjusted population counts.

## APPENDIX E

### Estimated Funding Effect by Selected County

Appendix E. Estimated Funding Effect of Census 2000 Undercount by County:  
Eight Federal Grant Programs, FY 2002-2012

| State, County         | Between-<br>State Effects<br>(Thousands) | Within-<br>State Effects<br>(Thousands) | Net Effect            |                      |
|-----------------------|--|---|-----------------------|----------------------|
|                       |  |   | Amount<br>(Thousands) | Percent <sup>1</sup> |
| <b>Alabama</b>        |  |   |                       |                      |
| Jefferson County      | -722                                     | -19,846                                 | -20,568               | -0.4%                |
| <b>Arizona</b>        |  |   |                       |                      |
| Maricopa County       | -46,227                                  | 48,614                                  | 2,387                 | *                    |
| Pima County           | -12,696                                  | 11,000                                  | -1,696                | *                    |
| <b>California</b>     |  |   |                       |                      |
| Alameda County        | -64,200                                  | 20,600                                  | -43,599               | -0.4%                |
| Contra Costa County   | -42,192                                  | 45,820                                  | 3,628                 | 0.1%                 |
| Fresno County         | -35,548                                  | -4,494                                  | -40,042               | -0.7%                |
| Kern County           | -29,422                                  | 7,574                                   | -21,848               | -0.4%                |
| Los Angeles County    | -423,302                                 | -212,558                                | -635,860              | -0.9%                |
| Orange County         | -126,568                                 | 64,807                                  | -61,761               | -0.3%                |
| Riverside County      | -68,720                                  | 43,634                                  | -25,086               | -0.2%                |
| Sacramento County     | -54,406                                  | 41,399                                  | -13,008               | -0.1%                |
| San Bernardino County | -76,014                                  | 25,725                                  | -50,289               | -0.4%                |
| San Diego County      | -125,124                                 | 53,499                                  | -71,626               | -0.3%                |
| San Francisco County  | -34,539                                  | 3,962                                   | -30,578               | -0.5%                |
| San Joaquin County    | -25,062                                  | 7,310                                   | -17,752               | -0.4%                |
| San Mateo County      | -31,446                                  | 25,268                                  | -6,177                | -0.1%                |
| Santa Clara County    | -74,821                                  | 48,889                                  | -25,932               | -0.2%                |
| Ventura County        | -33,493                                  | 25,711                                  | -7,782                | -0.1%                |
| <b>Colorado</b>       |  |   |                       |                      |
| Denver County         | -184                                     | -9,072                                  | -9,257                | -0.3%                |
| El Paso County        | -172                                     | 8,539                                   | 8,368                 | 0.3%                 |
| Jefferson County      | -175                                     | 18,354                                  | 18,179                | 0.7%                 |
| <b>Connecticut</b>    |  |   |                       |                      |
| Fairfield County      | 683                                      | 1,591                                   | 2,274                 | *                    |
| Hartford County       | 663                                      | -4,412                                  | -3,749                | *                    |
| New Haven County      | 638                                      | 3,651                                   | 4,288                 | 0.1%                 |
| <b>Delaware</b>       |  |   |                       |                      |
| New Castle County     | -615                                     | 2,237                                   | 1,622                 | *                    |
| <b>Florida</b>        |  |   |                       |                      |
| Broward County        | -9,306                                   | 3,303                                   | -6,003                | -0.1%                |
| Miami-Dade County     | -12,921                                  | -92,026                                 | -104,947              | -0.8%                |
| Duval County          | -4,466                                   | 4,183                                   | -283                  | *                    |
| Hillsborough County   | -5,728                                   | 6,585                                   | 857                   | *                    |
| Orange County         | -5,140                                   | -1,665                                  | -6,804                | -0.1%                |
| Palm Beach County     | -6,486                                   | 14,506                                  | 8,020                 | 0.1%                 |
| Pinellas County       | -5,284                                   | 24,111                                  | 18,827                | 0.3%                 |
| <b>Georgia</b>        |  |   |                       |                      |
| Cobb County           | -15,498                                  | -436                                    | -15,934               | -0.4%                |
| DeKalb County         | -16,980                                  | -28,267                                 | -45,246               | -1.1%                |
| Fulton County         | -20,808                                  | -29,435                                 | -50,243               | -1.0%                |
| Gwinnett County       | -15,005                                  | 2,965                                   | -12,040               | -0.3%                |

Footnotes appear at end of table.

**Appendix E. Estimated Funding Effect of Census 2000 Undercount by County, continued**

| State, County               | Between-<br>State Effects<br>(Thousands) | Within-<br>State Effects<br>(Thousands) | Net Effect            |                      |
|-----------------------------|--|---|-----------------------|----------------------|
|                             |  |   | Amount<br>(Thousands) | Percent <sup>1</sup> |
| <b>Hawaii</b>               |  |   |                       |                      |
| Honolulu County             | -76,307                                  | 5,911                                   | -70,396               | -1.3%                |
| <b>Illinois</b>             |  |   |                       |                      |
| Cook County                 | 9,125                                    | -201,695                                | -192,570              | -0.5%                |
| DuPage County               | 1,535                                    | 32,506                                  | 34,041                | 0.6%                 |
| Lake County                 | 1,094                                    | 13,728                                  | 14,821                | 0.3%                 |
| Will County                 | 852                                      | 17,852                                  | 18,705                | 0.6%                 |
| <b>Indiana</b>              |  |   |                       |                      |
| Marion County               | 32,204                                   | -13,328                                 | 18,875                | 0.3%                 |
| <b>Kentucky</b>             |  |   |                       |                      |
| Jefferson County            | -3,304                                   | 2,792                                   | -512                  | *                    |
| <b>Maryland</b>             |  |   |                       |                      |
| Baltimore City <sup>2</sup> | -682                                     | -28,288                                 | -28,970               | -0.7%                |
| Baltimore County            | -790                                     | 8,194                                   | 7,404                 | 0.2%                 |
| Montgomery County           | -914                                     | 1,773                                   | 859                   | *                    |
| Prince George's County      | -839                                     | -25,851                                 | -26,690               | -0.5%                |
| <b>Massachusetts</b>        |  |   |                       |                      |
| Bristol County              | 864                                      | 10,465                                  | 11,329                | 0.2%                 |
| Essex County                | 1,169                                    | 969                                     | 2,138                 | *                    |
| Middlesex County            | 2,368                                    | 17,610                                  | 19,978                | 0.1%                 |
| Norfolk County              | 1,051                                    | 21,335                                  | 22,386                | 0.4%                 |
| Suffolk County              | 1,114                                    | -58,776                                 | -57,661               | -0.9%                |
| Worcester County            | 1,213                                    | 7,767                                   | 8,980                 | 0.1%                 |
| <b>Michigan</b>             |  |   |                       |                      |
| Kent County                 | 29,546                                   | 5,806                                   | 35,352                | 0.8%                 |
| Macomb County               | 40,546                                   | 23,228                                  | 63,774                | 1.1%                 |
| Oakland County              | 61,433                                   | 12,756                                  | 74,189                | 0.8%                 |
| Wayne County                | 106,036                                  | -115,309                                | -9,273                | -0.1%                |
| <b>Minnesota</b>            |  |   |                       |                      |
| Hennepin County             | 4,659                                    | -36,992                                 | -32,333               | -0.4%                |
| Ramsey County               | 2,133                                    | -11,410                                 | -9,277                | -0.2%                |
| <b>Missouri</b>             |  |   |                       |                      |
| Jackson County              | 61,036                                   | -34,949                                 | 26,087                | 0.4%                 |
| St. Louis County            | 94,723                                   | -12,962                                 | 81,761                | 0.8%                 |
| <b>Nevada</b>               |  |   |                       |                      |
| Clark County                | -3,161                                   | 10,907                                  | 7,746                 | 0.2%                 |
| <b>New Jersey</b>           |  |   |                       |                      |
| Bergen County               | 153                                      | 15,674                                  | 15,826                | 0.2%                 |
| Camden County               | 88                                       | 6,913                                   | 7,001                 | 0.2%                 |
| Essex County                | 137                                      | -44,037                                 | -43,900               | -0.7%                |
| Hudson County               | 105                                      | -49,981                                 | -49,876               | -1.0%                |
| Middlesex County            | 130                                      | 3,964                                   | 4,094                 | 0.1%                 |
| Monmouth County             | 106                                      | 18,700                                  | 18,807                | 0.4%                 |
| Ocean County                | 88                                       | 21,788                                  | 21,876                | 0.6%                 |
| Union County                | 90                                       | -7,586                                  | -7,496                | -0.2%                |

Footnotes appear at end of table.

**Appendix E. Estimated Funding Effect of Census 2000 Undercount by County, continued**

| State, County                | Between-<br>State Effects<br>(Thousands) | Within-<br>State Effects<br>(Thousands) | Net Effect            |                      |
|------------------------------|--|---|-----------------------|----------------------|
|                              |  |   | Amount<br>(Thousands) | Percent <sup>1</sup> |
| <b>New Mexico</b>            |  |   |                       |                      |
| Bernalillo County            | -33,641                                  | 35,946                                  | 2,305                 | *                    |
| <b>New York</b>              |  |   |                       |                      |
| Bronx County                 | 644                                      | -362,643                                | -361,999              | -1.6%                |
| Erie County                  | 459                                      | 94,212                                  | 94,671                | 0.6%                 |
| Kings County                 | 1,192                                    | -269,695                                | -268,503              | -0.6%                |
| Monroe County                | 355                                      | 68,026                                  | 68,381                | 0.6%                 |
| Nassau County                | 645                                      | 268,842                                 | 269,487               | 1.2%                 |
| New York County              | 743                                      | -212,837                                | -212,094              | -0.8%                |
| Queens County                | 1,078                                    | -61,842                                 | -60,764               | -0.2%                |
| Richmond County <sup>2</sup> | 214                                      | 56,239                                  | 56,454                | 0.8%                 |
| Suffolk County               | 686                                      | 309,855                                 | 310,542               | 1.3%                 |
| Westchester County           | 446                                      | 80,046                                  | 80,493                | 0.5%                 |
| <b>North Carolina</b>        |  |   |                       |                      |
| Mecklenburg County           | -14,072                                  | -20,426                                 | -34,498               | -0.6%                |
| Wake County                  | -12,704                                  | -5,006                                  | -17,711               | -0.3%                |
| <b>Ohio</b>                  |  |   |                       |                      |
| Cuyahoga County              | 97,745                                   | -43,725                                 | 54,020                | 0.5%                 |
| Franklin County              | 74,956                                   | -24,186                                 | 50,770                | 0.6%                 |
| Hamilton County              | 59,272                                   | -21,898                                 | 37,374                | 0.5%                 |
| Montgomery County            | 39,201                                   | -6,952                                  | 32,249                | 0.7%                 |
| Summit County                | 38,068                                   | 4,354                                   | 42,422                | 0.9%                 |
| <b>Oklahoma</b>              |  |   |                       |                      |
| Oklahoma County              | -9,568                                   | -14,869                                 | -24,437               | -0.5%                |
| Tulsa County                 | -8,161                                   | -5,506                                  | -13,667               | -0.3%                |
| <b>Oregon</b>                |  |   |                       |                      |
| Multnomah County             | -6,491                                   | 18,207                                  | 11,717                | 0.2%                 |
| <b>Pennsylvania</b>          |  |   |                       |                      |
| Allegheny County             | 69,897                                   | 46,631                                  | 116,528               | 0.9%                 |
| Bucks County                 | 32,593                                   | 21,247                                  | 53,839                | 0.9%                 |
| Delaware County              | 30,042                                   | 10,219                                  | 40,261                | 0.8%                 |
| Montgomery County            | 40,907                                   | 22,067                                  | 62,974                | 0.9%                 |
| Philadelphia County          | 82,761                                   | -65,610                                 | 17,151                | 0.1%                 |
| <b>Rhode Island</b>          |  |   |                       |                      |
| Providence County            | 42,106                                   | 15,920                                  | 58,026                | 0.8%                 |
| <b>Tennessee</b>             |  |   |                       |                      |
| Davidson County              | -3,884                                   | -18,895                                 | -22,779               | -0.4%                |
| Shelby County                | -6,117                                   | -43,818                                 | -49,935               | -0.5%                |
| <b>Texas</b>                 |  |   |                       |                      |
| Bexar County                 | -67,777                                  | -13,601                                 | -81,378               | -0.9%                |
| Dallas County                | -107,966                                 | -48,311                                 | -156,278              | -1.1%                |
| El Paso County               | -33,069                                  | -13,728                                 | -46,797               | -1.0%                |
| Harris County                | -165,464                                 | -68,936                                 | -234,400              | -1.0%                |
| Hidalgo County               | -27,709                                  | -23,907                                 | -51,615               | -1.4%                |
| Tarrant County               | -70,369                                  | 8,068                                   | -62,301               | -0.7%                |
| Travis County                | -39,524                                  | -7,625                                  | -47,148               | -0.9%                |

Footnotes appear at end of table.

**Appendix E. Estimated Funding Effect of Census 2000 Undercount by County, continue**

| State, County     | Between-<br>State Effects<br>(Thousands) | Within-<br>State Effects<br>(Thousands) | Net Effect            |                      |
|-------------------|--|---|-----------------------|----------------------|
|                   |  |   | Amount<br>(Thousands) | Percent <sup>1</sup> |
| <b>Utah</b>       |  |   |                       |                      |
| Salt Lake County  | -7,009                                   | 14,914                                  | 7,904                 | 0.2%                 |
| <b>Virginia</b>   |  |   |                       |                      |
| Fairfax County    | -11,993                                  | 4,135                                   | -7,858                | -0.2%                |
| <b>Washington</b> |  |   |                       |                      |
| King County       | -54,418                                  | 35,842                                  | -18,575               | -0.1%                |
| Pierce County     | -21,955                                  | 13,550                                  | -8,405                | -0.2%                |
| Snohomish County  | -18,986                                  | 22,409                                  | 3,423                 | 0.1%                 |
| <b>Wisconsin</b>  |  |   |                       |                      |
| Milwaukee County  | 44,147                                   | -33,665                                 | 10,481                | 0.2%                 |

Source: PricewaterhouseCoopers calculations.

\* Denotes less than 0.05%.

<sup>1</sup> Net effect as a percent of the adjusted funding level under the eight programs over 2002-2012.

<sup>2</sup> Baltimore City is an independent city (i.e., it is independent of any county organization).

<sup>3</sup> Richmond County is included in order to comprise the 5 counties of New York City.

## CENSUS 2000 PARTNERSHIP PROGRAM

### Overview

For the 2000 Census, the U.S. Census Bureau embarked on a comprehensive Partnership program with state, local, and tribal governments as well as community-based organizations and the private sector. The intended purpose of the program was to improve census response rates.

The Partnership Program involved as many as 140,000 organizations. The focus was to mobilize grass roots efforts to boost participation in the census. Organizations were asked to place the census on their meeting agendas and participate in public awareness initiatives. The Program involved promotional activities with national/umbrella community, religious and educational organizations; trade associations; labor unions; foundations; and Fortune 500 companies. The 2000 effort also included a Colonias Initiative, Rural Initiative, Minority College and University Initiative, Large City and State Initiative, Special Language Initiative, Natural Disaster Initiative and the African and Caribbean Immigrants Initiative.<sup>1</sup>

Partnership activities were conducted nationwide during every major phase of Census 2000 operations: Master Address File (MAF) Development, Recruitment, Identification of Hard to Enumerate Areas, Service Based Enumeration, Multiple Language Mailing, and Non-Response Follow-Up (NRFU). More than 600 Partnership specialists were hired in the 2000 Census to coordinate activities between headquarters, regional offices and the local census operations. The Bureau spent \$142.9 million on Partnership activities between October 1997 and September 2000.<sup>2</sup> These funds were complemented by state and local resources, as well as creative in-kind contributions from Non Government Organizations.

Given the size and scope of the program, this report reviews the program as conducted in two fast-growing and diversely populated states, Georgia and California, and seeks to evaluate its effectiveness. The Monitoring Board held field hearings in Atlanta, Los Angeles and San Diego specifically on the partnership program; our analysis draws upon testimony presented in those hearings.

### GEORGIA

#### Regional/State Profile

Georgia falls within the Bureau's Atlanta Region, which in addition to Georgia, comprises Florida and Alabama, 12,895,935 housing units, 168,751 square miles, 41 congressional districts and 55 local census offices.

The Regional Office identified a common set of challenges including extensive areas of Non English speaking Asian and Hispanic populations, the growing homeless population, residents who live in recreational vehicles and move frequently, isolated communities reachable only by boat, multiple families living in public housing projects, "snowbirds," people who move south for the winter, and pockets of communities with low literacy rates.

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<sup>1</sup> Partnership Report, Volume I, U.S. Census Bureau, March 2000.

<sup>2</sup> 2000 Census: Review of Partnership Program Highlights Best Practices for Future Operations, GAO August 2001.



Goals set by the Atlanta Regional Office were uniform for Georgia, Florida and Alabama and were: using partners to help set priorities; managing expectations; offering a wide-ranging menu of partnership opportunities; developing an approach based on the interests, needs and benefits of individuals and organizations; seeking to help where it was needed the most; and providing assistance to customers.<sup>3</sup>

### **Regional Office's Partnership Efforts For Georgia**

While the Atlanta Office developed a set of common goals to motivate census participation and developed a regional strategy based on shared enumeration challenges, the office clearly had a tailor-made strategy for Georgia. It took into account state demographic trends including an increase of about one million residents since 1990 and a rapidly increasing Spanish-speaking population.

The Regional Office actively sought partnerships with state and local officials as well as numerous business representatives and community leaders. The Regional Office offered program ideas, material support and partnership specialists dedicated to community outreach, especially in hard to count areas in the metropolitan Atlanta area and throughout the state. The Office provided a structured framework in carrying out the partnerships, though a principal objective for the office was to allow local groups autonomy in performing their work.<sup>4</sup>

More than 3,000 partnerships were officially recorded statewide; however, census observers in the state estimate that the number is a mere fraction of the total number of partnerships that were actually generated. Many of the census partnerships were formed during the 1990 Census and have been ongoing; some had roots in other collaborative efforts and re-emerged in Census 2000; and others were virtual start-ups that proved highly effective.

The following are examples of Best Practices involving collaborations at every level and were the focus of a Monitoring Board hearing held in Atlanta on September 11, 2000.

### **Best Practices in Georgia**

#### ***Governor Roy Barnes' Outreach Plan***

In preparing for Census 2000, Georgia Governor Barnes appointed a 40-member Complete Count Committee comprised of a broad cross section of business and community leaders. Approximately \$3.5 million of state funding was used in developing a marketing and media campaign aimed at raising awareness of the census among different population groups.

The States' outreach efforts proved to be successful, in large part because of a "three tiered" outreach strategy involving the State, 16 Regional Development Committees (RDCs) and local community groups. The RDCs, especially helpful in the development of address lists and the Local Update of the Census Addresses (LUCA) program, played a pivotal role in the Partnership effort from beginning to end. Working to enhance public participation in the census, the State sought to build on pre-existing relationships with major organizations operating within the State, i.e. the Georgia Homebuilders Association and the Poultry Association (both of which have close ties to the Hispanic community in Georgia), the Bankers Association and the Public Service Commission.

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<sup>3</sup> Partnership Report, Volume I, U.S. Census Bureau, March 2000.

<sup>4</sup> *Ibid.*

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### ***Local Grant Program***

In recognition that the Bureau would publicly announce the mail back response rates for the state and each county in the state, a local grant program was launched that offered a \$10,000 grant to the county in each of the RDC's with the highest percentage increase from 1990. The program was developed on the basis that it would enhance community interest in the census and that the grant money would ultimately be used for the equipment and recreational facilities benefiting children in the local area.

### ***Census in the Schools***

Georgia, like other states, deployed a Census in the Schools Initiative developed by the Bureau. As a first step in implementing the program in Georgia, a former employee of the State Department of Education worked to ensure that the program was able to be formally included in the state's school curriculum. Secondly, the generic census information provided by the Census Bureau was modified to include information more applicable to Georgians. A leading state official said the 8-page packets students were provided in the classroom made their way home at high rates and that the program succeeded like no other program in getting census information to hard to count households.

### ***Alpha Kappa Alpha Sorority***

In October 1998, the Phi Alpha Omega Chapter of the Alpha Kappa Alpha Sorority partnered with the local census office in Atlanta in "spreading the word about Census 2000." Committing itself to a two-year outreach plan, the sorority worked to enhance African American participation in the census by focusing its attention on four areas: the church, schools, the metro Atlanta community and the sorority itself. Speaker training offered by the Census Bureau helped in communicating their message.

The Omega Chapter completed a total of twenty-five projects over a two-year period. Activities included sharing census information in local schools, PTA's and churches, hosting information booths and distributing fliers and promotional items at a local housing project. In addition, information was provided to the homeless community.

The Census Bureau recognized the chapter as an "extraordinary" partner for its census outreach efforts and awarded them two grants which were used to produce and disseminate Census 2000 memorabilia such as personalized Phi Alpha Omega cups, T-shirts and mugs.

### ***Mexican American Legal Defense and Education Fund (MALDEF), Regional Office***

MALDEF focused its outreach efforts in five population groups identified as hard to enumerate. These included apartment dwellers and transients, migrant workers, people who worked at poultry plants and factories, the elderly and children. Activities included distributing brochures, posters and videos to 12,000 employees in the poultry industry, most of whom were Hispanic. MALDEF worked cooperatively with state officials and the Poultry Association to maximize available networks to the Spanish-speaking community.

### ***Georgia Power Company***

The Census Bureau contacted Georgia Power Company in early 1999 to coordinate efforts in educating minority communities of the value in census participation. Georgia Power embraced the proposed partnership, and recognizing that outreach efforts in the African American and Hispanic communities were relatively well advanced, chose to concentrate its minority outreach to Asian Americans. The company's goal was to add value to the census campaign where it could.

In concert with the Census Bureau, Georgia Power identified a few key leaders in the Asian American community and worked closely with them in organizing an Asian American Census Summit. More than 150 leaders participated in the event. The event drew widespread media attention and led to a number of local initiatives within the Asian American community.

Georgia Power also advertised census jobs and the importance of the census in people's everyday lives through bill inserts to their customers. This initiative contributed significantly to the state's public awareness efforts given the company's large customer base.

## **CALIFORNIA**

### **Regional/State Profile**

The Bureau's Los Angeles Region covers California's 39 southern counties (and Hawaii) and the Seattle Region covers California's 39 northern counties (and Alaska, Idaho, Oregon and Washington). In this report we limit our examination to Partnership efforts in two of the largest and most diversely populated southern counties—Los Angeles County and San Diego County.

The Regional Office cited numerous challenges in motivating people to participate in the census. They included the inflow of immigrants who often fear and mistrust government, communities that are either non-English speaking or have low literacy rates, large homeless populations, and multiple families living in single-dwelling housing units.

The over-arching goal set by the Regional Office was to meet these challenges and “acquire an accurate count of all residents including previously undercounted population groups—African Americans, Asians and Pacific Islanders, Hispanics and American Indians through extensive partnerships.”<sup>5</sup>

### **Regional Office Partnership Strategy For Southern California**

The Bureau's Los Angeles Regional Office began reaching out to local jurisdictions in March 1997, thus enabling the establishment of strong local Complete Count Committees early in the census process. Booklets offering useful recommendations on how the committees could be structured and on types of activities that could be undertaken were offered. In addition, with support from local community groups, the Regional Office aggressively advertised local employment opportunities relating to the census. In Los Angeles County alone, the applicant pool reached 315,000; more than 63,000 candidates were appointed.

According to Regional Director John Reeder, the following three census programs led to the high response rates in Los Angeles and San Diego Counties: the first-ever national advertising campaign bolstered by complementary advertising efforts carried out at the state and local level; the nationally-run Census in the Schools initiative which was especially welcome in the Los Angeles Unified School District; and finally, targeted outreach efforts by the Local Census Offices (The Santa Ana Office in particular) including “neighborhood walks” timed with the March 2000 mass mailing of census questionnaires to residents. Reeder acknowledged that community outreach efforts at the local level are indispensable in an undertaking as large and personal as the census.

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<sup>5</sup> Partnership Report, Volume I, U.S. Census Bureau, March 2000.

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The following are Best Practices as carried out in California. They were highlighted in Monitoring Board hearings held in Los Angeles (June 26, 2000) and in San Diego (June 27, 2000).

## **Best Practices in California**

### ***Governor Gray Davis' Outreach Plan***

The State of California spent \$24.7 million to increase the Census 2000 response rate among its citizens. The funds were distributed to local groups demonstrating an ability to carry out outreach programs in an effective manner. The State's Complete Count Committee, created in the Fall of 1999, met regularly to ensure census promotion efforts were being implemented and that funds were allocated appropriately.<sup>6</sup>

### ***L.A. County Efforts***

Beginning in 1998, Los Angeles County worked closely with the Census Bureau in updating local addresses for Census 2000. In that first year, the County provided 78,000 address updates (more than half the addresses were accepted by the Bureau). In 1999, the County provided about 3,000 new rural addresses and in 2000, 77,000 new addresses were added to the lists. These technical efforts were made possible through partnerships with all 88 cities falling within the County's jurisdiction.

In addition, L.A. County supported other Bureau address list programs including the Consolidated Boundary Initiative designed to ensure that those counted in the census were attributed to the appropriate city or unincorporated community in the County. More than 2,000 boundary adjustments were made in L.A. County because of the program. The County's participation in the Bureau's Special Places Survey for the homeless led to the addition of approximately 3,000 address sites as well. These efforts are said to have been successful due to the dedication of the County's diverse Complete Count Committee, as well as the commitment of leading county agencies including the Department of Social Services.

In terms of promoting the census, the County trained upwards of 800 employees to become "Census Ambassadors." The employees were trained to speak with authority about the census and emphasized the confidentiality aspect of the undertaking to allay fears people may have had about personal information being misused by Government. Moreover, the County set up a web site, listed toll free phone numbers so that people could have questions answered, posted links to other census web sites including the Bureau's, and enlisted "Walking Man," a local organization that distributed census fliers to doorsteps. The fliers, printed in English and Spanish, informed residents that enumerators would be visiting their homes and that they should be welcomed.

Los Angeles County received \$1.75 million from the State of California for outreach.

### ***Los Angeles City Efforts***

The City of Los Angeles established close ties with a broad network of groups to account for those typically missed in the census. Using state and city funds, the L.A. Outreach Project developed carefully crafted messages concerning the census. The city also prepared an educational video in six different languages that saw wide circulation.

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<sup>6</sup> CMB-P Board Member, Lt. Governor Cruz M. Bustamante, served on the California Complete Count Committee.

The City played a lead role in updating local address lists, and considerable time and effort was spent to ensure that the city's homeless encampments were properly identified. The city allocated approximately \$330,000 to implement the Bureau's Non-Sheltered Outdoor (TNSOL) program. In doing so numerous homeless sites were identified for the Bureau to visit.<sup>7</sup> In a complementary effort, more than 300 homeless Outreach Workers were hired, ultimately serving as "cultural agents" who not only sought to encourage census participation among the homeless but also accompanied census enumerators during NRFU to increase the response rate. City employees themselves were encouraged to work part-time as enumerators, as well.

### ***Long Beach City Efforts***

The City of Long Beach, falling within the Los Angeles County jurisdiction, partnered with a wide range of representatives of predominantly minority neighborhoods, community groups and organizations throughout the city in an effort to reduce the undercount rate in the area. As in Los Angeles, city agencies and employees were tasked to use their positions in promoting the census.

Long Beach enhanced momentum for the Bureau's Census in the Schools program and reached out to local students in many other ways, as well. For instance, to capture the public's attention, the city launched an "It's Cool to be Counted" campaign that involved "Census Guy," who became a recognizable icon appearing on census materials distributed throughout the Long Beach area. Moreover, special efforts were made to ensure that the Bureau's scholastic materials were distributed to all schools in the Long Beach Unified School District rather than merely to schools with 50 percent or more of their school children in public-free lunch programs, as the Bureau originally planned.

Other innovative activities carried out by the city included the development and placement of banners, theater slides, and bus advertisements. The local Complete Count Committee paved the way for census promotion as well, by making \$500,000 in grant money available to soccer teams, neighborhood associations and churches for the purpose of disseminating educational census materials.

Preparations for Census 2000 began in 1997 with the city's development of a well-formed work plan. A prominent city planner credited the federal, state and local partnership for the high response rate in traditionally hard to count communities.<sup>8</sup>

### ***County and City of San Diego Efforts***

In Fall 1998, the San Diego Association of Governments (SANDAG) formed a Complete Count Committee involving elected officials, city and county staff, educators, the media and a host of other community leaders. The committee met regularly over a two-year period for the purpose of developing and implementing "creative activities" as a means to achieve the greatest possible mail back response rate in the diverse community of about 2.8 million people.<sup>9</sup>

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<sup>7</sup> Local officials in Los Angeles and the city's homeless advocates regret the Bureau ultimately opted not to post the homeless count at the block level.

<sup>8</sup> The overall mail response rate for Long Beach was a high 66 percent.

<sup>9</sup> The mail response rate reached a robust 71 percent in 2000 as compared to the 1990 response rate of 67 percent.

The County received approximately \$400,000 in State funding that was distributed to 24 city, county and community-based organizations in the area, for the purpose of census education. Local groups and agencies dedicated an additional \$200,000 for public outreach activities, a majority of which were aimed at already identified hard-to-enumerate neighborhoods.

The City of San Diego established an independent Complete Count Committee and made a conscientious effort not to duplicate efforts of the Regional Committee. The outreach efforts of the committee were geared toward three groups: the general public, city staff and contractors and select, targeted populations. City-sponsored activities included the development of a web site, production and distribution of bookmarks at city libraries, as well as posting banners at libraries, recreation centers, fire stations and many public places. In addition, the city promoted the census by sending out an educational mailing to 11,000 families receiving housing assistance, using its cable-access station for public service announcements and distributing census wash cloths for the homeless.<sup>10</sup>

### ***Community Efforts in San Diego***

Community efforts to raise awareness and motivate people to participate in the undertaking were extensive.

For example, The Black Health Network organized a number of census activities in recognition of the fact that the African American community has historically been undercounted at a disproportionate rate compared to non-Hispanic Whites. Such activities included producing and distributing census videos to clinics and physicians' offices, collaborations with African American churches, as well as distribution of census materials to beauty salons and other places where residents typically gather.

The Union of Pan Asian Communities (UPAC), which serves Asian Pacific Islanders and new immigrants and refugees, worked with the National Asian Pacific Legal Center in Washington, D.C. to maximize census participation. Through the network, UPAC was instrumental in translating census materials into 16 different Asian and Pacific Islander languages. The Lao, Cambodian, Hmong, Vietnamese, Samoan and Tongan communities received priority attention based on 1990 results indicating a high undercount rate. The California endowment helped finance UPAC's census efforts.

The San Diego Police Department's Gang Unit worked closely with the Bureau's Local Census Office in Chula Vista whose jurisdiction is home to several gangs. The unit provided enumerators with safety tips including advice on appropriate clothing to wear (some gangs claim certain colors) and which blocks required back-up support. The Gang Unit supplied enumerators with protective vests to be worn in case of shootings. The Unit also offered training on how to diffuse tense situations in the event of confrontation.

Finally, San Diego's neighboring City of Chula Vista worked to promote the census through Census 2000 Street Theatre, which became a popular local attraction. Using grant money provided by SANDAG, the city hired a producer/director who wrote two plays concerning the census, in Spanish and English. The five-to-ten minute skits were carried out in parks, restaurants, at the local trolley station and at other public meeting places. The theatre group made about 70 presentations addressing concerns about confidentiality and other issues that sometimes cause people not to participate in the census.

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<sup>10</sup> LA kept its homeless shelters open an extra month to ensure the homeless the opportunity to be counted on Census Day.

**Conclusion**

The Census 2000 Partnership programs in Georgia and California serve as good examples of how Government and Non-Government organizations can work together for the public good. The programs achieved success stressing local operations and grass roots initiatives. However, the Partnership program was not perfect.

Concerns aired in Georgia were that the Bureau could have committed more resources to advertising buys in non-English media and that there were sometimes problems in filtering materials from Bureau headquarters to the Regional Office in a timely manner. In addition, cooperation between the Bureau and the U.S. Postal Service would have yielded an even higher response rate in the State; the LUCA program (while successful) should have been launched earlier in the process; and the Regional office did not always provide local partners the autonomy they needed.

Concerns aired in California were that more cooperation in translating materials at the national level would have been helpful; State funds could have been distributed earlier, and in large, diverse population areas, the number of partnership specialists should have been allocated accordingly.

Many of the above issues were raised in interviews held with stakeholders in other parts of the country. While we address some of the principal issues in 2010 Recommendations, ongoing study of the 2000 Partnership program and its efficacy are needed so as to ensure the program is further enhanced ten years forward.

## CENSUS MONITORING BOARD ACTIVITIES BY CATEGORY

Congress appropriated \$4 million to create the U.S. Census Monitoring Board in 1998, and \$3.5 million for every year thereafter, and charged it with the responsibility of monitoring and reporting on “all aspects of the 2000 decennial census.” The office opened in June 1998 and is scheduled to close, as mandated, September 30, 2001. The following represents our efforts to raise public awareness, to study, and to report about Census 2000. Further information about each of these listings is available on our website, [www.cmbp.gov](http://www.cmbp.gov).

### HEARINGS

**July 8, 1998** – Hearing. Subject: General Status of 2000 Census. Witnesses: James Holmes, Acting Director, Census Bureau. Location: Suitland Federal Center, Suitland, Maryland.

**August 5, 1998** – Hearing. Subject: Census 2000 Dress Rehearsal in Columbia, South Carolina. Census Bureau Witnesses: James Holmes, Acting Director; Susan Hardy, Regional Director; Diane Bennett, Community Partnership Coordinator for the Charlotte Region. State and Local Government Witnesses: Richard Semon, Director of Community Development, City of Columbia; Ken Knudsen, Land Development Administrator, Richland County; Bobby Bowers, Director, Office of Research and Statistics, State of South Carolina; Jack Maguire, Geographic Information Specialist, Office of Research and Statistics. Community Witnesses: Anita Floyd, Director, Women’s Shelter in Columbia; Reggie Alexander, Director, Alston Wilkes Society; Karen Rutherford, Complete Count Committee Liaison, Benedict College; Virginia Saunders, Management Analyst, Fort Jackson Military Base. Location: Strom Thurmond Federal Center, Columbia, South Carolina.

**November 6, 1998** – Hearing. Subject: Status of 2000 Census. Department of Commerce Witnesses: Jonnie Frazier, Acting Inspector General, Department of Commerce; Dr. Kenneth Prewitt, Director, Census Bureau; James Holmes, Former Acting Director, Census Bureau; John Thompson, Associate Director for the Decennial Census, Census Bureau. County Government Witnesses: Shoreh Elhami, GIS Director for Delaware County, Ohio Auditor’s Office; Jon Peterson, Auditor, Delaware County, Ohio. Location: Rayburn House Office Building, Washington, D.C.

**November 23, 1998** – Hearing. Subject: Administrative Records. Census Bureau Witnesses: Dr. Kenneth Prewitt, Director; Cynthia Clark, Associate Director for Standards and Methodology; Howard Hogan, Acting Chief of the Decennial Statistical Studies Division; Paula Schneider, Principal Associate Director for Programs. Independent Expert Witness: Dr. John Czajka, Mathematica Policy Research, Inc. Location: Suitland Federal Center, Suitland, Maryland.

**December 16, 1998** – Field Hearing. Subject: Census 2000 Dress Rehearsal in Sacramento, California. Census Bureau Witnesses: James Holmes, Atlanta Regional Director and Special Advisor to the Director; Moises Carrascos, Seattle Regional Director; Ed Salazar, Sacramento Community



Partnership Specialist. Local Government Witnesses: Joe Serna Jr., Mayor of Sacramento; Lauren Hammond, City Councilperson, City of Sacramento; David Martinez, Deputy City Manager, City of Sacramento; Kelly Grieve, Analyst, Sacramento Area Council of Governments. Community Witnesses: Israel Valdez, Member, Census 2000 Complete Count Committee; Tom Buruss, Member, Census 2000 Complete Count Committee; Steve Ybarra, Member, Census 2000 Complete Count Committee. Location: City Hall, Sacramento, California.

**March 8, 1999** – Hearing. Subject: Census 2000 Operations Update. Census Bureau Witnesses: Kenneth Prewitt, Director; John Thompson, Associate Director for Decennial Census. Statistician Witnesses: Stephen Fienberg, Carnegie Mellon University; Barbara Bailar, National Opinion Research Center. Community Witnesses: Wade Henderson, Leadership Conference on Civil Rights; Marisa Demeo, Mexican American Legal Defense and Education Fund. Additional Witness: William Hill, Retired Bureau Regional Director. Location: Suitland Federal Center, Suitland, Maryland.

**August 3, 1999** – Hearing. Subject: Young and Rubicam Advertising Campaign. Briefed by: John Thompson, Associate Director for the Decennial Census; Terry Dukes, Account Managing Director, Young and Rubicam. Location: Government Printing Office Conference Room, Washington, DC.

**November 18, 1999** – Hearing. Subject: Census 2000 field operations update from Regional Directors. Participants: All 12 Regional Directors; Dr. Kenneth Prewitt, Director of Bureau of the Census. Location: Suitland Federal Center, Suitland, Maryland.

**June 26, 2000** – Hearing. Subject: Census partnership efforts in Los Angeles. Census Bureau Witness: John Reeder, Los Angeles Regional Director. Local Government Witnesses: John Humphrey, Census 2000 Coordinator, City of Long Beach; Jan Perry, City of Los Angeles Census 2000 Project; Lari Sheehan, Chair, Los Angeles Complete Count Committee; Jessica Heinz, City Attorney's office of Los Angeles; Natalie Profant Komuro, Los Angeles Homeless Services Authority. Community Witnesses: Antonia Hernandez, Mexican American Legal Defense and Education Fund; John Mack, Los Angeles Urban League; Bonnie Tang, Equal Access Unit, Asian Pacific American Legal Center. Location: University of Southern California, Los Angeles, CA.

**June 27, 2000** – Hearing. Subject: Census partnership efforts in San Diego. Local Government Witnesses: Jeri Gulbransen, Office of the City Manager of Chula Vista; Karen Lamphere, San Diego Association of Governments; Joey Perry, City Planning Department of San Diego. Community Witnesses: Grover Diemert, Bayside Settlement House; Augie Bereno, Chicano Federation Questionnaire Assistance Program; William Rowel, Black Health Network; Tanya Farley, Union of Pan Asian Communities; Peter Martinez, Gang Suppression Unit. Location: San Diego Association of Governments (SANDAG), San Diego, CA.

**September 11, 2000** – Hearing. Subject: Census partnership efforts in Atlanta area. Local Government Witnesses: Roy E. Barnes, Governor of Georgia; Cathy Cox, Georgia Secretary of State; Bill Campbell, Mayor of Atlanta; Tracey-Ann Nelson, State of Georgia; Linda Meggers, Georgia Legislative Redistricting Services; John Heath, Atlanta City Planning Department. Community Witnesses: Lani Wong, National Association of Chinese Americans, Stephanie Tan, Georgia Power and Light Company; Jacqueline Thomas-Rosier, Mexican-American Legal Defense and Education Fund; Gloria Carithers, Alpha Kappa Alpha Sorority; Myrna Ballard, Valdosta Chamber of Commerce; Phyllis Stephens, Dalton Whitfield Chamber of Commerce; Rafael Sanhueza-Bazaes, Centro Latino, Inc.; Luz Rodman, Fulton-Atlanta Community Action Authority; Rev. Timothy McDonald, Concerned

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Black Clergy. Census Bureau Participant: Jim Holmes, Atlanta Region Director. Location: Georgia Capitol Education Center, Atlanta Georgia.

## RESEARCH REPORTS

**December 28, 2000** – Findings Issued. Subject: Demographic Analysis Estimate of U.S. Population.

**December 28, 2000** – Findings Issued. Subject: Evaluation of the Census Net and Differential Undercounts. Researched and authored by Dr. Eugene P. Ericksen.

**January 18, 2001** – Report. “Implications for Minority Voters in 2001: An Analysis from the 1990 Census.” Researched and authored by Dr. Allan Lichtman.

**January 24, 2001** – Report. “An Analysis of the 1990 Infant and Children Undercount: Implications for Census 2000.” Researched and authored by Dr. Beth Osborne Daponte and Amelia Haviland.

**February 1, 2001** – Findings Issued. “Will Poor Children Be Left Behind? Research Showing 500,000 to 2,000,000 Poor Children Missed in 1990 Census Demonstrates Need for Accurate Data in 2001.” Researched by Drs. Don Hernandez and Nancy Denton.

**February 9, 2001** – Report. “Profiling the Native American Community in Albuquerque: Assessing the Impacts of Census Undercounts and Adjustments.” Researched and authored by Dr. Theodore Jojola.

**February 13, 2001** – Report. “Effects of Census Undercoverage on Analyses of School Enrollments: A Case Study of Portland Public Schools.” Researched and authored by Dr. Barry Edmonston.

**February 15, 2001** – Report. “Long Beach: A Case Study of the Effects of Uncorrected vs. Corrected Data on Funding and Planning.” Researched and authored by Dr. Chris Williamson

**February 20, 2001** – Report. “The Effects of Using Unadjusted Data on Measures of Access to Health Care.” Researched and authored by Dr. Darrell Gaskin.

**February 20, 2001** – Report. “Undercounting Commuters.” Researched and authored by Dr. Paul Ong.

**February 20, 2001** – Report. “Examining the Effects of Census Adjustments on Estimates of Working-Age Uninsured Minorities in the United States.” Researched and authored by Dr. Lee Cornelius.

**March 6, 2001** – Findings Released. Subject: Demographic Analysis should not be used as a reason against adjustment Census 2000. Researched and authored by Dr. Jeffrey S. Passel.

**March 9, 2001** – Findings Released. Subject: Errors in Census 2000. Researched and authored by Dr. Eugene P. Ericksen.

**March 28, 2001** – Findings Released. Subject: Estimates of State Undercounts in Census 2000. Researched by Dr. Eugene P. Ericksen.

**July 2, 2001** – Findings Released. Subject: Census 2000 undercount estimates for the nation’s largest counties. Estimates based on Census Bureau’s state level post-strata by analyzed by Dr. Eugene P. Ericksen.

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**August 7, 2001** – Findings Released. “Effect of Census 2000 Undercount on Federal Funding to States and Selected Counties, 2002-2012.” Researched and authored by PriceWaterhouseCoopers.

## BRIEFINGS

**July 21, 1998** – Briefing. Subject: Dress Rehearsals. Conducted by: Christopher Mihm, Acting Associate Director for Federal Management and Workforce Issues, General Accounting Office. Location: General Accounting Office, Washington, D.C.

**October 20, 1998** – Briefing. Subject: Methodology behind the Integrated Coverage Measurement (ICM). Conducted by: Howard Hogan, Acting Chief of Decennial Statistical Studies Division, Census Bureau. Location: Suitland Federal Center, Suitland, Maryland.

**October 21, 1998** – Briefing. Subject: Local Update of Census Addresses (LUCA) and re-engineering of the Master Address File (MAF). Conducted by: Bob Marx, Geography Division Chief, Census Bureau. Location: Suitland Federal Center, Suitland, Maryland.

**October 27, 1998** – Briefing. Subject: Budget for the 2000 Decennial Census. Conducted by: Preston Jay Waite, Assistant Director for the Decennial Census, Census Bureau; Carol Vanhorn, Assistant to the Associate Director for Field Programs, Census Bureau; Mike Perez, Assistant Division Chief, Decennial Census Management Division, Census Bureau. Location: Suitland Federal Center, Suitland, Maryland.

**October 28, 1998** – Briefing. Subject: 2000 Census Advertising. Conducted by: Census Bureau; Ken Meyer, Chief of Census 2000 Publicity Office, Census Bureau; Jennifer Marks, Assistant Chief of Census 2000 Publicity Office, Census Bureau. Location: Suitland Federal Center, Suitland, Maryland.

**October 28, 1998** – Briefing. Subject: Administrative Records, Plans and Research. Conducted by: Cynthia Clark, Associate Director for Standards and Methodology, Census Bureau; John Thompson, Principal Associate Director for Programs, Census Bureau. Location: Suitland Federal Center, Suitland, Maryland.

**January 20, 1999** – Briefing. Subject: Dual Track Preparations. Conducted by: John Thompson, Principal Associate Director for Programs, Census Bureau. Location: Suitland Federal Center, Suitland, Maryland.

**February 12, 1999** – U.S. Commission on Civil Rights Briefing. Subject: Evaluation of January 1999 Supreme Court decision on Census 2000. Participants: Lorraine A. Green, U.S. Census Monitoring Board, Presidential Members; A. Mark Neuman, U.S. Census Monitoring Board, Congressional Members; Matt Glavin, President of the Southeastern Legal Foundation; Edward Still, Lawyers’ Committee for Civil Rights Under Law; Wade Henderson, Executive Director, Leadership Conference on Civil Rights; Marisa Demeo, Regional Counsel, Mexican American Legal Defense and Education Fund; Karen Narasaki, Executive Director, National Asian Pacific American Legal Consortium; Charles Schultze, Senior Fellow Emeritus, Brookings Institution; Andrew Pincus, General Counsel U.S. Commerce Department; Jack C. Jackson, Jr., Government Affairs Director, National Congress of American Indians; and Kenneth Darga, Senior Demographer, State of Michigan. Location: Washington, D.C.

**July 8, 1999** – Board Briefing. Subject: Young and Rubicam Advertising Campaign. Conducted by:

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Terry Dukes, EVP, Account Managing Director, Young and Rubicam; various subcontractors. Location: Young and Rubicam Headquarters, New York City.

**August 5, 1999** – Briefing. Subject: Census 2000 in New York City. Conducted by: Sara Vidal, City-wide Census 2000 Coordinator; Dr. Joseph Salvo, New York City Department of Planning; Pat Lally, Legislative Representative, Mayor Rudolph Giuliani. Location: Office of the Mayor of New York City.

**June 15, 2000** – Briefing. Subject: Census 2000 in New York City. Conducted by: Sara Vidal, City-wide Census 2000 Coordinator; Dr. Joseph Salvo, New York City Department of Planning; Pat Lally, Legislative Representative, Mayor Rudolph Giuliani. Location: Office of the Mayor of New York City.

**June 19, 2000** – Briefing. Subject: Hard To Enumerate Action Plan. Conducted By: Marvin Raines, Associate Director for Field Operations, Rick Blitzer, Field Operations; John Gidneck, Field Operations. Location: Suitland Federal Center, Suitland, Maryland.

**February 22-24, 2000** – Regional Census Center Briefing and Two Local Census Office Visits. Subject: Status of Operations in the New York Region. Location: New York City.

**February 28-29, 2000** – Regional Census Center Briefing and Two Local Census Office Visits. Subject: Status of Operations in the Dallas Region. Locations: Dallas and El Paso, Texas.

**September 14, 2000** – Staff Briefing. Subject: Count Question Resolution program. Conducted by: Susan M. Miskura, Decennial Management Division Chief. Location: Suitland Federal Center, Suitland, Maryland.

**December 19, 2000** – Staff Briefing. Subject: Demographic Analysis. Conducted by: John Thompson, Associate Director for Decennial Census; J. Gregory Robinson, Population Analysis and Evaluation Division. Location: Suitland Federal Center, Suitland, Maryland.

**January 9, 2001** – Staff Briefing. Subject: Address duplications in the Master Address File. Conducted by: John Thompson, Associate Director for Decennial Census; Howard Hogan, Chief of Decennial Statistical Studies Division; Susan Miskura, Chief of Decennial Management Division. Location: Suitland Federal Center, Suitland, Maryland.

**March 21, 2001** – Briefing. Subject: Executive Steering Committee on Accuracy and Coverage Evaluation Policy recommendation not to adjust 2000 Census. Participants: Dr. Everett M. Ehrlich, U.S. Census Monitoring Board, Presidential Members; J. Kenneth Blackwell, Co-Chair, U.S. Census Monitoring Board, Congressional Members; John Thompson, Associate Director for Decennial Census, Howard Hogan, Chief, Decennial Statistical Studies Division, U.S. House of Representatives Census Subcommittee staff; U.S. Census Monitoring Board staff; National Academy of Sciences staff. Location: Suitland Federal Center, Suitland, Maryland.

## REPORTS TO CONGRESS

**February 1, 1999** – First Report to Congress.

**April 1, 1999** – Joint Report to Congress.

**June 9, 1999** – Report to Congress.

**October 1, 1999** – Joint Report to Congress.

**October 26, 1999** – Report to Congress. Researched and authored by Belden, Russenello and Stewart.

**March 9, 2000** – Report to Congress. Researched and authored by PricewaterhouseCoopers..

**April 1, 2000** – Joint Report to Congress.

**October 1, 2000** – Joint Report to Congress.

**April 1, 2001** – Report to Congress.

**September 1, 2001** – Final Report to Congress.

## NEWSLETTERS

**May 17, 2000** – “Countdown” Newsletter.

**December 31, 2000** – “Countdown” Newsletter.

**May 31, 2001** – “Countdown” Newsletter.

## OFFICIAL LETTERS

**December 20, 2000** – Letter to President-elect George W. Bush regarding media reports that a Bush Administration would block release of statistically corrected census results.

**May 31, 2001** – Letter to Commerce Secretary Don Evans expressing shock over a proposed Memorandum of Understanding that plainly violated the U.S. Census Monitoring Board’s enabling legislation, threatened the ability to obtain information from the Census Bureau, and severely impeded statutory reporting requirements.

**July 2, 2001** – Letter to U.S. Senators Ernest Hollings, Joseph Lieberman, and Richard Durbin alerting them that the Bureau’s refusal to provide necessary data would limit the scope of a final report to Congress.

## FIELD OBSERVATION

(Listing does not include observations at 50 local census offices as reported in our October 2000 Report to Congress. Listing also does not include site visits to all 12 Accuracy and Coverage Evaluation Regional Offices and field observations made during the Summer and Fall of 2000.)

**October 23, 1998** – Field Observation. Objective: Assess Operations at the Census Bureau’s Data Capture Center in Jeffersonville, Indiana. Location: Jeffersonville, Indiana.

**November 4, 1998** – Field Observation. Objective: Assess Operations at Menominee Dress Rehearsal Site. Board Attendance: Lorraine Green. Location: Menominee, Wisconsin.

## COMMUNITY FORUMS

**February 24, 1999** – Community Forum. Subject: Census 2000 Participation Promotion. Participants: Tony Coelho, Co-Chair, U.S. Census Monitoring Board; Mario Salas, City Councilman; Ray Lopez, President of the Board of Trustees, North Side Independent School District; Ms. Pilar Oates, Methodist Healthcare Ministries; Dr. William Vega, Metropolitan Research, University of Texas at San Antonio; Aurora Ortega-Geis, Director, San Antonio Partnership Office, Fannie Mae. Location: San Antonio, Texas.

**February 25, 1999** – Community Forum. Subject: Census 2000 Participation Promotion. Participants: Gilbert F. Casellas, U.S. Census Monitoring Board, Presidential Members; Dr. Everett M. Ehrlich, U.S. Census Monitoring Board, Presidential Members; Annie Neasman, Executive Administrator for the Florida Department of Health, Miami-Dade County, Roger Cuevas, Superintendent, Miami-Dade County Public Schools; Sara Herald, Acting District 11 Administrator for the Department of Children and Families. Location: Miami-Dade Public Library, Miami, Florida.

**June 14, 1999** – Community Forum. Subject: Community Participation in the Census. Participants: Gilbert F. Casellas, Co-Chair, U.S. Census Monitoring Board; Dr. Everett M. Ehrlich, U.S. Census Monitoring Board, Presidential Members; Thomas Scott, County Commissioner; Jan Platt, County Commissioner; Jim Norman, County Commissioner; State Representative Bob Henriquez, Bob Buckhorn, City Councilmember; Gwen Miller, City Councilmember; Jim Hosler, Director of Research and Economic Development; Carmen Ledo, Supervisor, Hillsborough County Health and Social Services Department; Charlie Reese, Chamber of Commerce; Jerry Harvey, African-American Liaison to County Administrator. Location: Hillsborough County Commissioner Board Room, Tampa, Florida.

**November 10, 1999** – Community Forum. Subject: Census partnership efforts in New York City. Board Participants: Gilbert F. Casellas, Co-Chair, U.S. Census Monitoring Board, Presidential Members; Dr. Everett M. Ehrlich, U.S. Census Monitoring Board, Presidential Member; Ken Blackwell, Co-Chair, U.S. Census Monitoring Board, Congressional Members. Census Bureau Witness: Tony Farthing, New York Regional Director. Local Government Witnesses: Roberto Ramirez, State Assembly of New York; Virginia Fields, Manhattan Borough President; Herbert Berman, City Council Member; Helen Marshall, City Council Member. Community Witnesses: Margaret Chin, Asian Americans for Equality; Margie McHugh, New York Immigration Coalition; Fr. Kevin Sullivan, Catholic Charities; John Flateau, Medgar Evers College of CUNY; Michael Amezcuita, Northern Manhattan Coalition for Immigrant's Rights. Location: Hispanic Federation, New York City.

**April 13, 2000** – Community Forum/Town Hall Meeting. Subject: Census 2000 in Ward 8, Washington, D.C. Participants: Lorraine Green, U.S. Census Monitoring Board, Presidential Members; A. Mark Neuman, U.S. Census Monitoring Board, Congressional Members; U.S. House Representative Eleanor Holmes Norton; Sandra Allen, Member of City Council; Vincent Gray, Covenant House; Reverend Allan Lipscombe, Allen Chapel AME Church; William Lockeridge, School Board Member; Winston Robinson, Jr., 7<sup>th</sup> District Police Commander. Location: Covenant House, Washington, D.C.

**January 28, 2001** – Community Forum. Subject: Effects of census undercounts on children. Participants: U.S. House Representative Charles Gonzalez; Margarita Roque, Executive Director of the U.S. Census Monitoring Board, Presidential Members; Rebecca Maria Barrera, President of the National Latino Children’s Institute; Felix Sanchez, President and CEO of TerraCom. Location: San Antonio, Texas.

**February 9, 2001** – Community Roundtable. Subject: Effects of Census Undercount on American Indians. Participants: Margarita Roque, Executive Director of the U.S. Census Monitoring Board, Presidential Members; Jim Baca, Mayor of the City of Albuquerque; LaDonna Harris, Founder and President of Americans for Indian Opportunity; Theodore Jojola, University of New Mexico; Joyce Knows His Gun, Morning Star Center; Louis Tutt, Navajo Nation. Location: Albuquerque, New Mexico.

**February 20, 2001** – Research Summit. Subject: Effects of Census Undercount. Participants: Gilbert F. Casellas, Presidential Co-Chair, U.S. Census Monitoring Board, Presidential Members; Dr. Everett M. Ehrlich, U.S. Census Monitoring Board, Presidential Members; Lorraine A. Green, U.S. Census Monitoring Board, Presidential Members; Dr. Lee Cornelius, University of Maryland; Dr. Beth Osborne Daponte, Carnegie Mellon University; Dr. Darrell Gaskin, Georgetown University Medical Center; Dr. Ted Jojola, University of New Mexico; Dr. Allan Lichtman, American University; Dr. Paul Ong, University of California Los Angeles; Dr. Chris Williamson, University of Southern California. Location: National Press Club, Washington, DC.

**February 23, 2001** – Community Forum. Subject: Leave No Child Behind: Census Data & Its Impact on Children. Participants: Mary Rose Wilcox, Maricopa County Board Supervisor; U.S. House Representative Ed Pastor; Gilbert F. Casellas, Co-Chair, U.S. Census Monitoring Board, Presidential Members; Carol Kamin, Executive Director, Children’s Advocate Alliance; John Lewis, Executive Director, Arizona Intertribal Council; Domingo Rodriguez, Vice President for Health and Human Services, Chicanos Por La Causa. Location: Maricopa County Board of Supervisors Auditorium, Phoenix, Arizona.

**March 2, 2001** – Community Forum. Subject: Effects of Census Undercount in Chicago. Participants: U.S. House Representative Danny K. Davis; Gilbert F. Casellas, Co-Chair, U.S. Census Monitoring Board; Al Pritchett, Chair, Cook County Complete Count Committee; Dr. John Lumpkin, Director, Illinois Department of Public Health; Dr. Linda Murray, Co-Chief Medical Director of the Ambulatory and Community Health Network of Cook County; Javette C. Orgain, M.D., Assistant Professor of Clinical Family Medicine, University of Illinois College of Medicine and Past President of the National Medical Association; Joanna Su, Executive Director, Asian Health Coalition of Illinois; Carmen Valezquez, Executive Director, Alivio Medical Center; Dr. Lee Cornelius, University of Maryland. Location: Cook County Board of Supervisors Auditorium, Chicago, Illinois.

**June 21, 2001** – Community Forum. Subject: Latinos & the Census Undercount. Participants: Gilbert F. Casellas, Co-Chair, U.S. Census Monitoring Board; John Gutierrez, Center for Latin American, Caribbean, & Latino Studies, City University of New York Graduate Center; Lorraine Cortés-Vázquez, President, Hispanic Federation; Fernando Ferrer, Bronx Borough President; Jeffrey Passel, Urban Institute; Darrell Gaskin, Institute for Health Care Research and Policy at Georgetown University Medical Center; Guillermo Linares, Member of New York City Council; Ken Fisher, Member of New York City Council; Rosa Gil, University Dean for Health Sciences, City University

of New York; Beth Osborne Daponte, Carnegie Mellon University; Nancy Denton, State University of New York at Albany; Gladys Padró-Soler, Executive Director, Casita María. Location: Martin E. Segal Theatre, City University of New York Graduate Center, New York City.

## CONFERENCES/MEETINGS/PANEL DISCUSSIONS

**June 3, 1998** – Organizing Meeting. Subject: Census Monitoring Board rules and procedures. Location: Suitland Federal Center, Suitland, Maryland.

**December 3, 1998** – Workshop. Subject: National League of Cities on Census 2000. Participants: Jeff Wice, consultant to U.S. Census Monitoring Board, Presidential Members; J. Kenneth Blackwell, Co-Chair, U.S. Census Monitoring Board, Congressional Members; Mike Morrison, Mayor, Waco, Texas. Location: Kansas City, Missouri.

**January 27, 1999** – Presentation at U.S. Conference of Mayors Winter Meeting. Subject: Census 2000 Preparations. Participants: Gilbert F. Casellas, U.S. Census Monitoring Board, Presidential Members; J. Kenneth Blackwell, Co-Chair, U.S. Census Monitoring Board, Congressional Members; U.S. Representative Dan Miller, Chairman of Census Subcommittee; U.S. Representative Carolyn Maloney, Ranking Member of Census Subcommittee; Robert Shapiro, Undersecretary for Economic Affairs, U.S. Department of Commerce. Location: Washington, DC.

**April 9, 1999** – Presentation at National Conference of State Legislatures Task Force Meetings. Subject: Census 2000 Preparations. Participants: Tony Coelho, Co-Chair of U.S. Census Monitoring Board, Presidential Members; J. Kenneth Blackwell, Co-Chair of U.S. Census Monitoring Board, Congressional Members; State Representative Wes Marsh, Arizona. Location: Jacksonville, Florida.

**April 24, 1999** – Keynote address at American Federation of State, County and Municipal Employees Conference. Subject: Census 2000 Participation and Promotion. Participants: Tony Coelho, Co-Chair, U.S. Census Monitoring Board, Presidential Members. Location: Las Vegas, Nevada.

**May 8, 1999** – Keynote address for National Conference of State Legislatures Assembly on Federal Issues. Subject: Census 2000 Preparations. Participants: Tony Coelho, Co-Chair of U.S. Census Monitoring Board, Presidential Members; A. Mark Neuman, U.S. Census Monitoring Board, Congressional Members; State Representative Brian Flaherty, Connecticut; State Representative Jim Costa, California. Location: Washington, DC.

**May 21, 1999** – Keynote address. Subject: Census 2000 Activities Update for Asian Pacific American Institute for Congressional Studies. Participants: Dr. Everett M. Ehrlich, U.S. Census Monitoring Board, Presidential Members. Location: J.W. Marriott Hotel, Washington, DC.

**June 18, 1999** – Meeting. Subject: Census 2000 and Latinos at National Association of Latino Elected and Appointed Officials (NALEO). Participants: Gilbert F. Casellas, Co-Chair, U.S. Census Monitoring Board; Ray Sanchez, Speaker of the State House, New Mexico; State Representative Rene Olivera, Chair of the House Mexican American Legislative Caucus, Texas; State Senator Efrain Gonzalez, New York; Councilmember Jenny Oropeza, Long Beach City Council; Larry Gonzalez, Director of the NALEO Washinton, DC office. Location: Philadelphia, Pennsylvania.



**July 30, 1999** – Workshop at Organization of Chinese Americans Annual Conference. Subject: Census 2000 Participation. Participants: Carrie Pugh, U.S. Census Monitoring Board staff. Location: Dallas, Texas.

**September 9, 1999** – Meeting. Subject: Update of Census 2000 Activities in Washington, DC. Participants: Lorraine A. Green, U.S. Census Monitoring Board, Presidential Members; Mayor Anthony Williams, Mayor of Washington, DC; Wanda Alston, City Census 2000 Coordinator. Location: Office of the Mayor, Washington, DC.

**November 9, 1999** – Navajo Nation Meeting. Subject: Encourage Participation in Census 2000. Participants: Regena Thomas, consultant to the U.S. Census Monitoring Board, Presidential Members; David Murray, U.S. Census Monitoring Board, Congressional Members; Dr. Kenneth Prewitt, Director, U.S. Census Bureau; Arbin Mitchell, Navajo Nation Local Census Office Manager; Edward T. Begay, Speaker, Navajo Nation Council; Larry Rodgers, Administrator, Utah Navajo Trust Fund Office; Belva Morrison, Tribal Partnership Team Leader, U.S. Census Bureau, Denver Region; Leila Help-Tulley, Tribal Government Partnership Specialist, U.S. Census Bureau, Denver Region. Location: Gallup, New Mexico.

**November 15, 1999** – Presentation. Subject: Texas State Mexican American Legislative Caucus Census 2000 Update. Participants: Gilbert F. Casellas, Co-Chair, U.S. Census Monitoring Board, Presidential Members; Marisela Lopez, Partnership Staff, U.S. Census Bureau Dallas Regional Census Office; Steve Murdock, Texas State Data Center; Viviana Lopez-Davis, Mexican American Legal Defense and Education Fund; Bill Hobby, former Lt. Governor of Texas. Location: Texas State House, Austin, Texas.

**November 30, 1999** – Maryland Statewide Latino Census 2000 Summit. Subject: Latinos and Census 2000 Preparations. Participants: Maryland Lt. Governor Kathleen Kennedy Townsend; Douglas M. Duncan, Montgomery County Executive; Gilbert F. Casellas, U.S. Census Monitoring Board, Presidential Members; Gilberto de Jesus, Secretary of Juvenile Justice; Council Member Peter Shapiro; U.S. Representative Connie Morella; Fernando Armstrong, U.S. Census Bureau, Philadelphia Regional Director. Location: Long Branch Community Center, Silver Spring, MD.

**December 2, 1999** – National Conference of State Legislatures Panel Discussion. Participants: Dr. Everett M. Ehrlich, U.S. Census Monitoring Board, Presidential Members; David Murray, U.S. Census Monitoring Board, Congressional Members; Rudy Garcia, Florida State House of Representatives. Location: Hyatt Regency on Capitol Hill, Washington, DC.

**December 3, 1999** – Meeting. Subject: Promote Census 2000 Participation at National Black Caucus of State Legislators. Participants: Lorraine Green, U.S. Census Monitoring Board, Presidential Members; Gloria Griffin, Baltimore City's Complete Count Committee Coordinator. Location: Baltimore, Maryland.

**February 11, 2000** – Empowerment Summit. Subject: Encourage African-American Census Participation in Baltimore, Prince George's County, Maryland and Washington, D.C. Participants: Lorraine A. Green, U.S. Census Monitoring Board, Presidential Members; Earl Shinhoster, co-host, NAACP Census 2000 Coordinator; Deputy Mayor of Baltimore; Wanda Alston, co-host, Washington, DC Office of Public Advocate; Dorothy Bailey, Chair, Prince George's County Council; Iris T. Metts, Superintendent of Schools for Prince George's County; Jerusa Williams, Baltimore City Complete

Count Committee; Kent Amos, Chair of the District of Columbia Complete Count Committee; Elizabeth Hewlett, Chair of Prince George's County Complete Count Committee; Mondrea Jacobs, Evangelist, Never Say Never Foundation; Robert Hill, Vice Chair of the Census Bureau's Race and Ethnic Advisory Committee; John Tschechtelin, President, Baltimore City Community College  
Location: Baltimore City Community College, Baltimore, MD.

**July 18, 2000** – Meeting. Subject: Census 2000 Activities in Chicago, Illinois. Participants: Dr. Everett M. Ehrlich, U.S. Census Monitoring Board, Presidential Members; Don Davis, Director of Special Projects, Office of Budget and Management. Location: Office of the Mayor, Chicago, Illinois.

**February 15, 2001** – Press Conference. Subject: Release of report on effects of census undercounts on city services in Long Beach. Participants: Beverly O'Neill, Mayor of City of Long Beach; Jack Humphrey, Advance Planning Officer; Chris Williamson, Research Associate Professor of Geography at the University of Southern California. Location: Long Beach, California.

**April 18, 2001** – Press Briefing. Subject: Census Bureau recommendation not to adjust Census 2000 count. Participants: Dr. Everett M. Ehrlich, U.S. Census Monitoring Board, Presidential Members; David Murray, U.S. Census Monitoring Board, Congressional Members; Dr. Jeffrey S. Passel, Urban Institute; Dr. Joseph B. Kadane, Carnegie Mellon University; Dr. Stephen Fienberg, Carnegie Mellon University. Location: National Press Club, Washington, D.C.

**June 20, 2001** – Meeting. Subject: Proposed Memorandum of Understanding from Census Bureau. Participants: Gilbert F. Casellas, Co-Chair, U.S. Census Monitoring Board, Presidential Members; Stan Brand, Counsel to U.S. Census Monitoring Board, Presidential Members; William G. Barron, Acting Director, Census Bureau; John Thompson, Principal Associate Director for Programs; Carol Vanhorn, Assistant to the Associate Director for Field Programs. Location: Suitland Federal Center, Suitland, Maryland.

**August 8, 2001** – Presentation at Joint Statistical Meetings. Subject: Census 2000-Decision on Release of Statistically Corrected Redistricting Data. Participants: Dr. Everett Ehrlich, U.S. Census Monitoring Board, Presidential Members; David Murray, U.S. Census Monitoring Board, Congressional Members; William Barron, Jr., Acting Director, U.S. Bureau of the Census; John Thompson, Principal Associate Director for Programs, U.S. Bureau of the Census; Alan Zaslavsky, Harvard University. Location: Atlanta, Georgia.

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